

CATALOGUE 2024

EDITION 15



INFINITE
POSSIBILITIES



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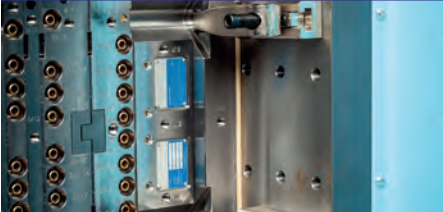
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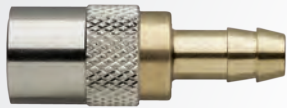
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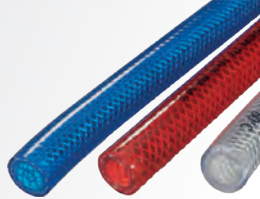
MOULD COOLING

01.

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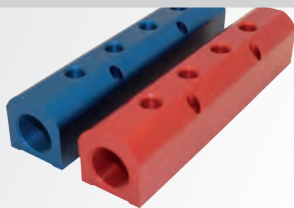
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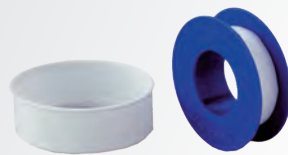
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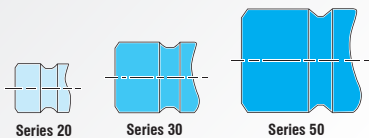
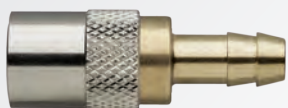


MOULD COOLING

01.

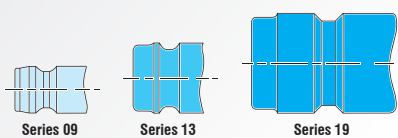
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International Series 20 / 30 / 50



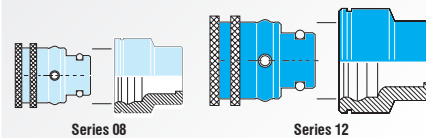
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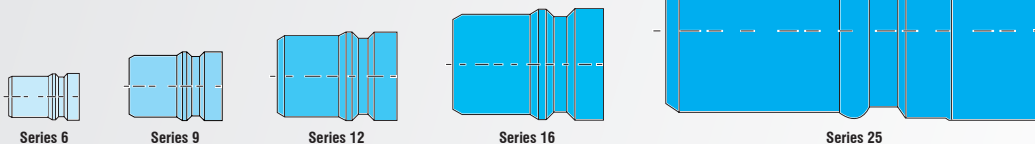
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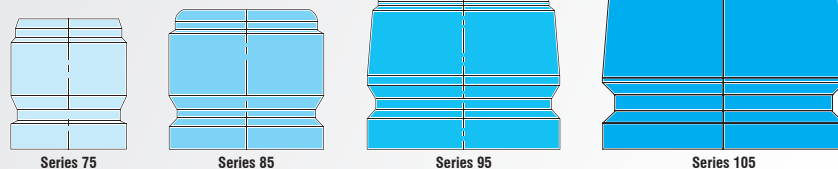
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Multi Couplings Series



MOULDPRO SAFETY COUPLING TYPE TS



The patented quick connect safety coupling features an automatic locking mechanism that offers an effective solution for accidental disconnection and unlocking.

The coupling is designed for use with aggressive media such as mould cooling applications with hot and cold water (as well as thermal oil) between -20°C and +200°C*.

High quality FKM o-rings mean that the coupling is ideal for mould cooling circuits especially for high temperature.

The couplings are available in both European and International series making it fully compatible with existing moulds; it is not necessary to change the connector nipples.

* water up to 160° C oil up to 200°C

Coupling in unlocked position, sleeve is in default position ready to connect



Coupling in locked position, and green code indicates that the coupling is locked and safe



The Mouldpro quick connect safety coupling system is characterized by its simple and intuitive connection process.

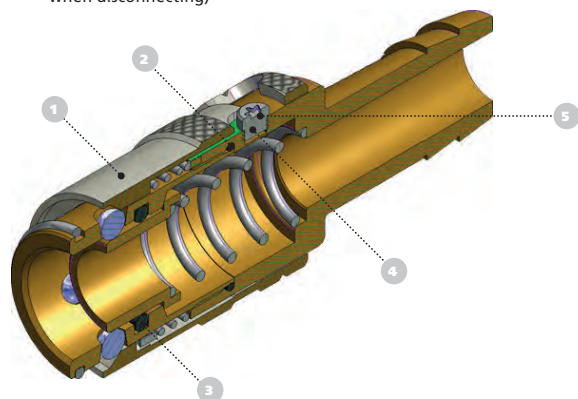
Even in difficult and hidden areas, this enables a safe operation. The connection takes place via automatic locking.

An additional colour coding on the locking sleeve indicates a correct and secure connection clearly and unequivocally.

The disconnecting process can be blindly executed due to the forced guidance of the locking sleeve – it requires an axial movement of turning the locking sleeve, basically a manual unlocking motion.

An accidental or unintentional disconnection is practically impossible.

- 1 Strengthened release sleeve made of high resistant special brass
- 2 Separate O-ring sealing on the connector
- 3 Special-Hitec-FKM-O-ring
- 4 Forced guidance design with visual colour coding on the locking sleeve
- 5 Patented automatic safety locking mechanism (dependable security when disconnecting)



INTERNATIONAL SERIES

Nominal Diameter

20 / 30 / 50

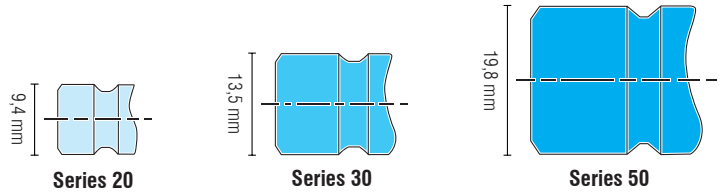
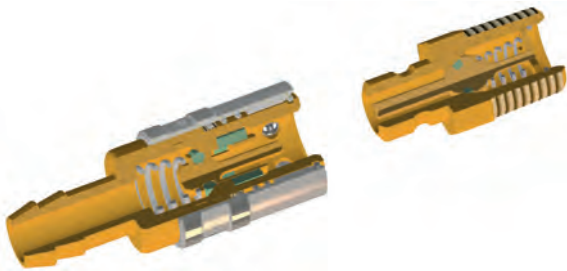


Illustration scale 1:1

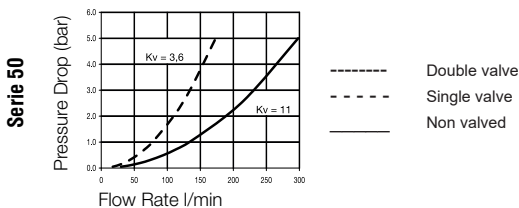
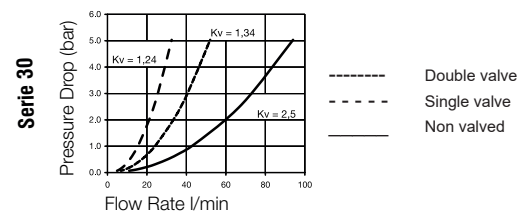
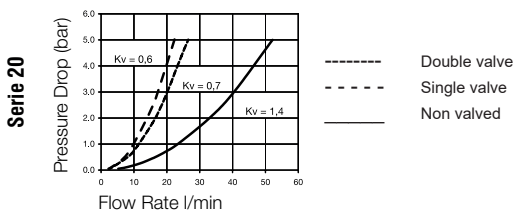
Technical Description

Coupling series especially developed for connecting coolant lines on injection moulds.

Fully interchangeable with other brands with the same plug profiles.

All dimensions and tolerances according to original specs.

Chart



Material

Coupling

| | |
|---------------|-----------------------------------|
| Back Body | Brass |
| Valve Body | Brass |
| Sleeve | Brass (without Valve) |
| Sleeve | Brass, Nickel Plated (with Valve) |
| Valve | Brass |
| Locking Balls | AISI 420 |
| Spring | AISI 301 |
| Seal | FKM |

Plug

| | |
|--------------|----------|
| Plug Profile | Brass |
| Back Body | Brass |
| Valve | Brass |
| Spring | AISI 301 |
| Seal | FKM |

Working Pressure

15 bar, maximum static working pressure with safety factor of 4 to 1.

Working Temperature

Standard Couplers

Water up to 140°C

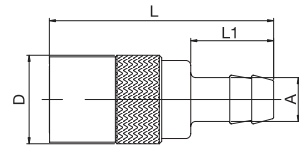
Oil up to 180°C

TS Couplers

Water up to 160°C

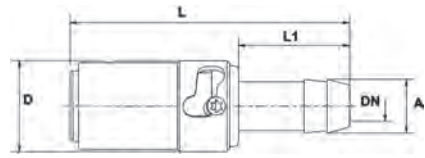
Oil up to 200°C

Straight Coupling



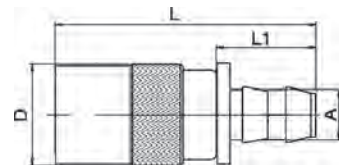
| DN | Series | ↔ | ↔ | A | D | L | L1 | 📦 |
|-----|--------|--------|-------|----|----|------|----|----|
| 4,5 | 20 | 20K6V | 20K6 | 6 | 18 | 46 | 17 | 10 |
| 6 | | 20K10V | 20K10 | 10 | 18 | 51 | 22 | 10 |
| 6 | 30 | 20K13V | 20K13 | 13 | 18 | 51 | 22 | 10 |
| 7 | | 30K10V | 30K10 | 10 | 24 | 64 | 22 | 10 |
| 9 | 50 | 30K13V | 30K13 | 13 | 24 | 66,5 | 25 | 10 |
| 15 | | 50K19V | 50K19 | 19 | 32 | 89 | 32 | 5 |

Safety Coupling, Type TS, Straight

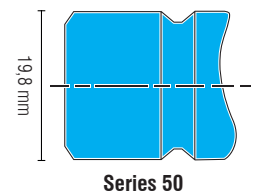
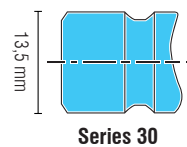
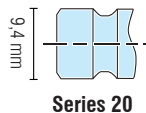


| DN | Serie | ↔ | ↔ | A | D | L | L1 | 📦 |
|----|-------|-----------|----------|----|----|------|----|---|
| 6 | 20 | 20K10V-TS | 20K10-TS | 10 | 18 | 59,5 | 22 | 5 |
| 7 | 30 | 30K10V-TS | 30K10-TS | 10 | 23 | 64,5 | 25 | 5 |
| 9 | | 30K13V-TS | 30K13-TS | 13 | 23 | 64,5 | 25 | 5 |
| 15 | 50 | 50K19V-TS | 50K19-TS | 19 | 32 | 90,8 | 34 | 1 |

Push Lock - Straight Coupling

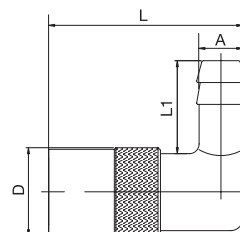


| DN | Series | ↔ | ↔ | A | D | L | L1 | 📦 |
|----|--------|-----------|----------|----|----|------|----|----|
| 6 | 20 | 20K10V-PL | 20K10-PL | 10 | 18 | 58 | 28 | 10 |
| 9 | 30 | 30K10V-PL | 30K10-PL | 10 | 24 | 64,5 | 28 | 10 |
| 9 | | 30K13V-PL | 30K13-PL | 13 | 24 | 64,5 | 28 | 10 |
| 15 | 50 | | 50K19-PL | 19 | 32 | 89 | 38 | 5 |



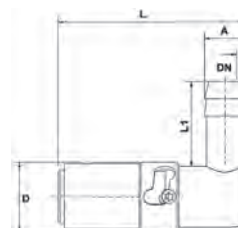
INTERNATIONAL SERIES

90° Coupling



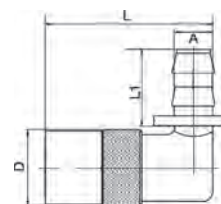
| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|-----|--------|-----------|----------|----|----|----|------|----|
| 4,5 | | 20K6V/90 | 20K6/90 | 6 | 18 | 40 | 19 | 10 |
| 6 | 20 | 20K10V/90 | 20K10/90 | 10 | 18 | 40 | 22 | 10 |
| 7 | 30 | 30K10V/90 | 30K10/90 | 10 | 24 | 56 | 22 | 10 |
| 9 | | 30K13V/90 | 30K13/90 | 13 | 24 | 56 | 28,5 | 10 |
| 15 | 50 | 50K19V/90 | 50K19/90 | 19 | 32 | 77 | 32 | 5 |

Safety Coupling, Type TS, 90°



| DN | Serie | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|-------|--------------|-------------|----|----|------|----|---|
| 6 | 20 | 20K10V/90-TS | 20K10/90-TS | 10 | 18 | 52,5 | 22 | 5 |
| 7 | 30 | 30K10V/90-TS | 30K10/90-TS | 10 | 23 | 68,5 | 25 | 5 |
| 9 | | 30K13V/90-TS | 30K13/90-TS | 13 | 23 | 68,5 | 25 | 5 |
| 15 | 50 | 50K19V/90-TS | 50K19/90-TS | 19 | 32 | 80,8 | 34 | 1 |

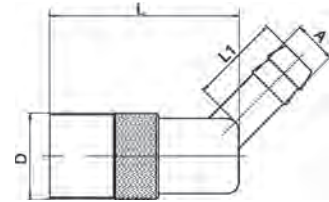
Push Lock - 90° Coupling



| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|--------|--------------|-------------|----|----|------|----|----|
| 6 | 20 | 20K10V-90-PL | 20K10-90-PL | 10 | 18 | 40,5 | 28 | 10 |
| 7 | 30 | 30K10V-90-PL | 30K10-90-PL | 10 | 23 | 61,5 | 28 | 10 |
| 9 | | 30K13V-90-PL | 30K13-90-PL | 13 | 23 | 61,5 | 28 | 10 |
| 15 | 50 | | 50K19-90-PL | 19 | 32 | 87 | 38 | 5 |

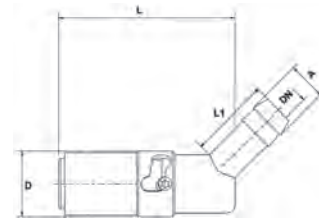
See explanation of symbols on page 404

45° Coupling



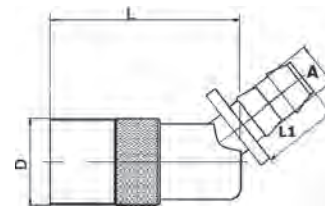
| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|-----|--------|-----------|----------|----|----|------|----|----|
| 4,5 | 20 | 20K6V/45 | 20K6/45 | 6 | 18 | 55,5 | 19 | 10 |
| 6 | | 20K10V/45 | 20K10/45 | 10 | 18 | 55,5 | 22 | 10 |
| 7 | 30 | 30K10V/45 | 30K10/45 | 10 | 24 | 71 | 22 | 10 |
| 9 | | 30K13V/45 | 30K13/45 | 13 | 24 | 75 | 25 | 10 |
| 15 | 50 | 50K19V/45 | 50K19/45 | 19 | 32 | 77 | 30 | 5 |

Safety Coupling, Type TS, 45°

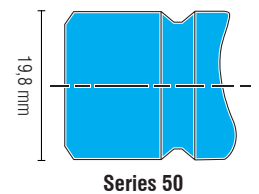
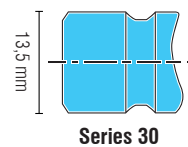
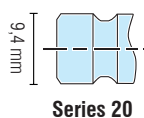


| DN | Serie | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|-------|--------------|-------------|----|----|------|----|---|
| 6 | 20 | 20K10V/45-TS | 20K10/45-TS | 10 | 18 | 52,5 | 22 | 5 |
| 7 | 30 | 30K10V/45-TS | 30K10/45-TS | 10 | 23 | 68,5 | 25 | 5 |
| 9 | | 30K13V/45-TS | 30K13/45-TS | 13 | 23 | 68,5 | 25 | 5 |
| 15 | 50 | 50K19V/45-TS | 50K19/45-TS | 19 | 32 | 80,8 | 34 | 1 |

Push Lock - 45° Coupling

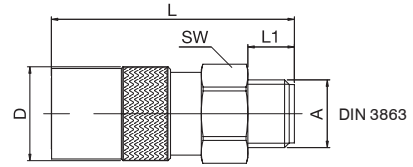
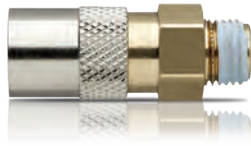


| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|--------|--------------|-------------|----|----|------|----|----|
| 6 | 20 | 20K10V-45-PL | 20K10-45-PL | 10 | 18 | 40,5 | 28 | 10 |
| 7 | 30 | 30K10V-45-PL | 30K10-45-PL | 10 | 23 | 61,5 | 28 | 10 |
| 9 | | 30K13V-45-PL | 30K13-45-PL | 13 | 23 | 61,5 | 28 | 10 |
| 15 | 50 | | 50K19-45-PL | 19 | 32 | 87 | 38 | 5 |



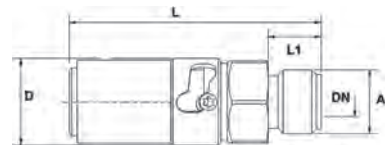
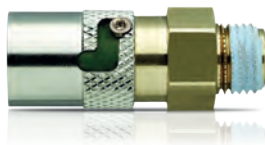
INTERNATIONAL SERIES

Male Threaded Coupling



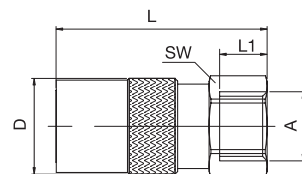
| DN | Series | ↙ | ↔ | A | D | L | L1 | SW | |
|----|--------|-----------|----------|------|----|------|----|----|----|
| 6 | 20 | 20KUR1/4V | 20KUR1/4 | G1/4 | 18 | 38 | 9 | 17 | 10 |
| | | 20KUR3/8V | 20KUR3/8 | G3/8 | 18 | 38 | 9 | 19 | 10 |
| 9 | 30 | 30KUR1/4V | 30KUR1/4 | G1/4 | 24 | 48,5 | 9 | 22 | 10 |
| | | 30KUR3/8V | 30KUR3/8 | G3/8 | 24 | 48,5 | 9 | 22 | 10 |
| | | 30KUR1/2V | 30KUR1/2 | G1/2 | 24 | 51,5 | 12 | 22 | 10 |
| 15 | 50 | 50KUR1/2V | 50KUR1/2 | G1/2 | 32 | 73 | 12 | 30 | 10 |
| | | 50KUR3/4V | 50KUR3/4 | G3/4 | 32 | 77 | 16 | 30 | 5 |

Safety Coupling, Type TS, Male Threaded



| DN | Serie | ↙ | ↔ | A | D | L | L1 | |
|----|-------|--------------|-------------|------|----|------|------|---|
| 6 | 20 | 20KUR1/4V-TS | 20KUR1/4-TS | G1/4 | 18 | 55,5 | 11 | 5 |
| | | 20KUR3/8V-TS | 20KUR3/8-TS | G3/8 | 18 | 55,5 | 11 | 5 |
| 9 | 30 | 30KUR1/4V-TS | 30KUR1/4-TS | G1/4 | 23 | 57,5 | 12,5 | 5 |
| | | 30KUR3/8V-TS | 30KUR3/8-TS | G3/8 | 23 | 57,5 | 12,5 | 5 |
| | | 30KUR1/2V-TS | 30KUR1/2-TS | G1/2 | 23 | 57,5 | 12,5 | 5 |
| 15 | 50 | 50KUR1/2V-TS | 50KUR1/2-TS | G1/2 | 32 | 75,8 | 15 | 1 |
| | | 50KUR3/4V-TS | 50KUR3/4-TS | G3/4 | 32 | 76,8 | 16 | 1 |

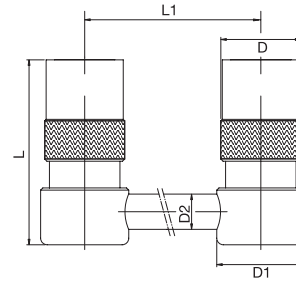
Female Threaded Coupling



| DN | Series | ↙ | ↔ | A | D | L | L1 | SW | |
|----|--------|-----------|----------|------|----|------|----|----|----|
| 6 | 20 | 20KIR1/8V | 20KIR1/8 | G1/8 | 18 | 40 | 10 | 17 | 10 |
| | | 20KIR1/4V | 20KIR1/4 | G1/4 | 18 | 40 | 10 | 17 | 10 |
| | | 20KIR3/8V | 20KIR3/8 | G3/8 | 18 | 44 | 10 | 19 | 10 |
| 9 | 30 | 30KIR1/4V | 30KIR1/4 | G1/4 | 24 | 51,5 | 10 | 21 | 10 |
| | | 30KIR3/8V | 30KIR3/8 | G3/8 | 24 | 51,5 | 10 | 21 | 10 |

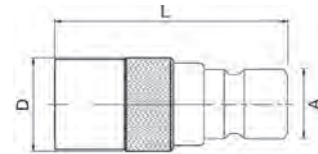
See explanation of symbols on page 404

Banjo Bridge



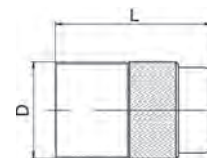
| DN | Series | ↔ | A | D | L | D1 | D2 | L1 | |
|----|--------|--------|---|----|----|----|----|-----|---|
| 6 | 20 | 20K125 | | 18 | 42 | 20 | 8 | 125 | 1 |
| | | 20K250 | | 18 | 42 | 20 | 8 | 250 | 1 |
| | | 20K500 | | 18 | 42 | 20 | 8 | 500 | 1 |
| 9 | 30 | 30K125 | | 24 | 58 | 26 | 10 | 125 | 1 |
| | | 30K250 | | 24 | 58 | 26 | 10 | 250 | 1 |
| | | 30K500 | | 24 | 58 | 26 | 10 | 500 | 1 |
| 15 | 50 | 50K160 | | 32 | 78 | 36 | 14 | 160 | 1 |
| | | 50K315 | | 32 | 78 | 36 | 14 | 315 | 1 |
| | | 50K500 | | 32 | 78 | 36 | 14 | 500 | 1 |

Coupling with Plug

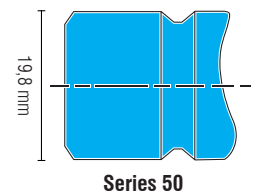
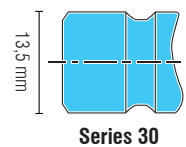
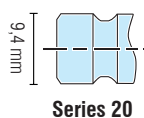


| DN | Series | ↔ | ↔ | A | D | L | |
|----|--------|---------|--------|------|----|------|----|
| 6 | 20 | 20K30NV | 20K30N | 13,5 | 18 | 50,5 | 10 |
| 9 | 30 | 30K20NV | 30K20N | 9,4 | 24 | 52,5 | 10 |

Blind Coupling

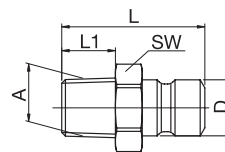
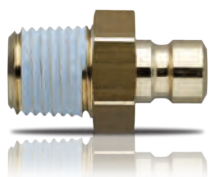
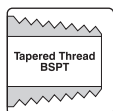


| DN | Series | ↔ | D | L | |
|----|--------|-----|----|----|----|
| 6 | 20 | 20K | 18 | 30 | 10 |
| 9 | 30 | 30K | 24 | 37 | 10 |



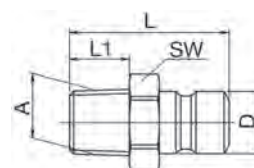
INTERNATIONAL SERIES

Male Plug



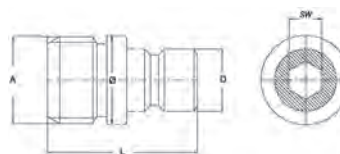
| DN | Series | ↔ | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|----------|-------|------|------|------|----|----|---|
| 6 | 20 | 20NM10 | M10x1 | 9,4 | 23 | 8 | 13 | 25 | |
| | | 20NR1/8 | R1/8 | 9,4 | 24 | 9 | 13 | 25 | |
| | | 20NR1/4 | R1/4 | 9,4 | 29 | 12 | 16 | 25 | |
| | | 20NR1/4V | R1/4 | 9,4 | 29 | 14 | 16 | 25 | |
| | | 20NR3/8 | R3/8 | 9,4 | 30 | 12 | 19 | 25 | |
| 9 | 30 | 30NR1/8 | R1/8 | 13,5 | 29,5 | 20,5 | 14 | 25 | |
| | | 30NR1/4 | R1/4 | 13,5 | 34 | 12 | 16 | 25 | |
| | | 30NR3/8V | R3/8 | 13,5 | 34 | 12 | 19 | 25 | |
| | | 30NR1/2 | R1/2 | 13,5 | 39 | 17 | 24 | 10 | |
| 15 | 50 | 50NR1/2 | R1/2 | 19,8 | 44 | 17 | 22 | 10 | |
| | | 50NR3/4 | R3/4 | 19,8 | 45 | 19 | 29 | 10 | |

Male Plug - Without Sealant



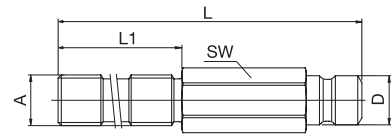
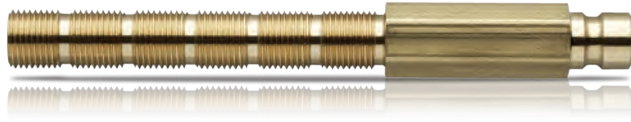
| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|----------|-------|------|------|----|----|-----|
| 6 | 20 | 20NRX1/8 | R1/8" | 9,4 | 24 | 9 | 11 | 100 |
| | | 20NRX1/4 | R1/4" | 9,4 | 24 | 12 | 14 | 100 |
| 9 | 30 | 30NRX1/8 | R1/8" | 13,5 | 29,5 | 10 | 14 | 100 |
| | | 30NRX1/4 | R1/4" | 13,5 | 32,5 | 12 | 14 | 100 |
| | | 30NRX3/8 | R3/8" | 13,5 | 32,5 | 12 | 17 | 25 |
| | | 30NRX1/2 | R1/2" | 13,5 | 37 | 17 | 26 | 25 |

Male Plug - with Internal Hex



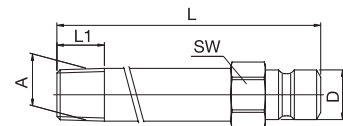
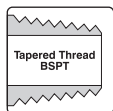
| DN | Series | ↔ | A | D | L | Ø | SW | 📦 |
|----|--------|-----------|------|------|------|------|----|----|
| 6 | 20 | 20NSWR1/8 | G1/8 | 9,4 | 20,7 | 13 | 5 | 10 |
| | | 20NSWR1/4 | G1/4 | 9,4 | 22,7 | 13,5 | 5 | 10 |
| 9 | 30 | 30NSWR1/4 | G1/4 | 13,5 | 30 | 15 | 8 | 10 |
| | | 30NSWR3/8 | G3/8 | 13,5 | 30 | 19 | 8 | 10 |

Adjustable Plug

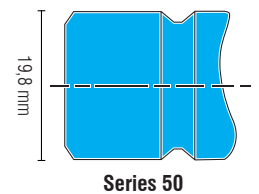
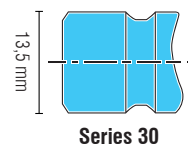
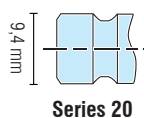


| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|-------------|------|------|-----|----|----|----|
| 6 | 20 | 20NR1/8/100 | G1/8 | 9,4 | 100 | 60 | 11 | 10 |
| | | 20NR1/4/100 | G1/4 | 9,4 | 100 | 60 | 14 | 10 |
| 9 | 30 | 30NR1/4/100 | G1/4 | 13,5 | 100 | 60 | 14 | 10 |
| | | 30NR3/8/100 | G3/8 | 13,5 | 100 | 60 | 17 | 10 |

Extended Plug

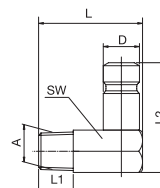
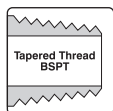


| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|------------|------|------|-----|----|----|----|
| 6 | 20 | 20N50 | R1/8 | 9,4 | 50 | 9 | 11 | 10 |
| | | 20N50-1/4 | R1/4 | 9,4 | 50 | 12 | 14 | 10 |
| | | 20N100 | R1/8 | 9,4 | 100 | 9 | 11 | 10 |
| | | 20N100-1/4 | R1/4 | 9,4 | 100 | 12 | 14 | 10 |
| | | 20N150 | R1/8 | 9,4 | 150 | 9 | 11 | 10 |
| | | 20N150-1/4 | R1/4 | 9,4 | 150 | 12 | 14 | 10 |
| | | 20N200 | R1/8 | 9,4 | 200 | 9 | 11 | 10 |
| | | 20N200-1/4 | R1/4 | 9,4 | 200 | 12 | 14 | 10 |
| | | 20N250 | R1/8 | 9,4 | 250 | 9 | 11 | 10 |
| | | 20N250-1/4 | R1/4 | 9,4 | 250 | 12 | 14 | 10 |
| 9 | 30 | 30N50 | R1/4 | 13,5 | 50 | 12 | 15 | 10 |
| | | 30N100 | R1/4 | 13,5 | 100 | 12 | 15 | 10 |
| | | 30N150 | R1/4 | 13,5 | 150 | 12 | 15 | 10 |
| | | 30N200 | R1/4 | 13,5 | 200 | 12 | 15 | 10 |
| | | 30N250 | R1/4 | 13,5 | 250 | 12 | 15 | 10 |



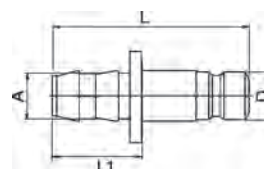
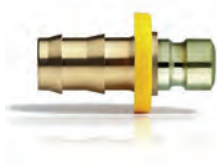
INTERNATIONAL SERIES

90° Male Plug



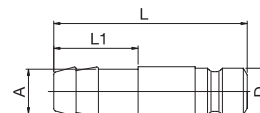
| DN | Series | ↔ | A | D | L | L1 | L2 | SW | |
|----|--------|------------|-------|------|----|----|------|----|----|
| 6 | 20 | 20NM10/90 | M10x1 | 9,4 | 27 | 9 | 28,5 | 11 | 25 |
| | | 20NR1/8/90 | R1/8 | 9,4 | 27 | 9 | 28,5 | 11 | 25 |
| | | 20NR1/4/90 | R1/4 | 9,4 | 27 | 9 | 28,5 | 11 | 25 |
| 9 | 30 | 30NR1/4/90 | R1/4 | 13,5 | 34 | 9 | 32 | 15 | 25 |
| | | 30NR3/8/90 | R3/8 | 13,5 | 34 | 9 | 32 | 15 | 25 |

Push Lock - Hosetail Plug



| DN | Series | ↔ | A | D | L | L1 | |
|----|--------|----------|----|------|----|----|----|
| 6 | 20 | 20N10-PL | 10 | 9,4 | 44 | 28 | 10 |
| 7 | 30 | 30N10-PL | 10 | 13,5 | 44 | 28 | 10 |
| 9 | | 30N13-PL | 13 | 13,5 | 44 | 28 | 10 |
| 15 | 50 | 50N19-PL | 19 | 19,8 | 65 | 36 | 5 |

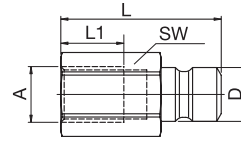
Hosetail Plug



| DN | Series | ↔ | A | D | L | L1 | |
|----|--------|-------|----|------|----|----|----|
| 6 | 20 | 20N10 | 10 | 9,4 | 39 | 22 | 25 |
| | | 20N13 | 13 | 9,4 | 39 | 22 | 25 |
| 7 | 30 | 30N10 | 10 | 13,4 | 41 | 25 | 25 |
| 9 | | 30N13 | 13 | 13,4 | 41 | 25 | 25 |
| 15 | 50 | 50N19 | 19 | 13,4 | 41 | 25 | 10 |

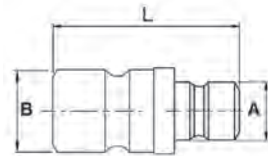
See explanation of symbols on page 404

Female Plug



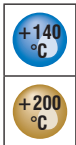
| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|----------|------|------|----|----|----|----|
| 6 | 20 | 20NR1/8I | G1/8 | 9,4 | 28 | 11 | 13 | 25 |
| | | 20NR1/4I | G1/4 | 9,4 | 32 | 13 | 16 | 25 |
| | | 20NR3/8I | G3/8 | 9,4 | 34 | 13 | 19 | 25 |
| 9 | 30 | 30NR1/4I | G1/4 | 13,5 | 37 | 13 | 16 | 25 |
| | | 30NR3/8I | G3/8 | 13,5 | 39 | 13 | 19 | 25 |

Double Plug

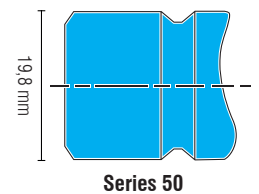
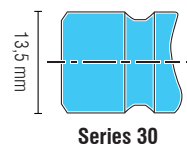
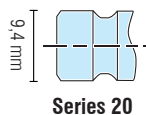


| DN | A Series | B Series | ↔ | L | 📦 |
|----|----------|----------|--------|----|----|
| 6 | 20 | 20 | 2020DB | 31 | 10 |
| | | 30 | 2030DB | 31 | 10 |
| 9 | 30 | 30 | 3030DB | 34 | 10 |

Replacement Seals FKM



| S | Series | Part No. | 📦 |
|----|--------|----------|----|
| 6 | 20 | 200V | 10 |
| 9 | 30 | 300V | 10 |
| 16 | 50 | 500V | 10 |



EUROPEAN SERIES

Nominal Diameter

09 / 13 / 19

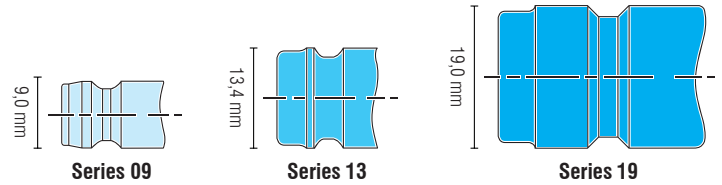
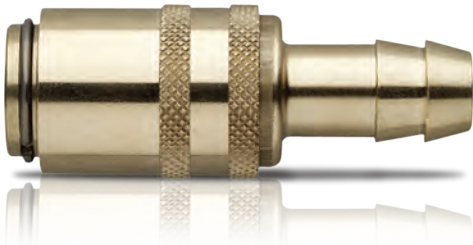


Illustration scale 1:1

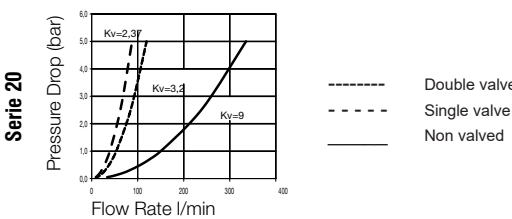
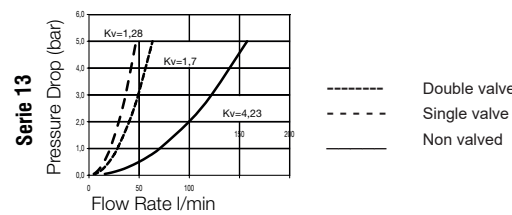
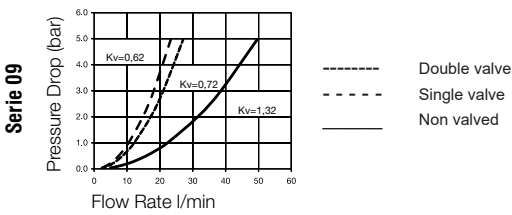
Technical Description

Coupling series especially developed for connecting coolant lines on injection moulds.

Fully interchangeable with other brands with the same plug profiles.

All dimensions and tolerances according to original specs.

Chart



Material

Coupling

| | |
|---------------|--------------------------------------|
| Back Body | Brass |
| Valve Body | Brass |
| Sleeve | Brass (with valve) |
| Sleeve | Brass, Nickel Plated (without valve) |
| Valve | Brass |
| Locking balls | AISI 420 |
| Spring | AISI 301 |
| Seal | FKM |

Plug

| | |
|--------------|----------|
| Plug Profile | Brass |
| Back Body | Brass |
| Valve | Brass |
| Spring | AISI 301 |
| Seal | FKM |

Working Pressure

15 bar, maximum static working pressure with safety factor of 4 to 1.

Working Temperature

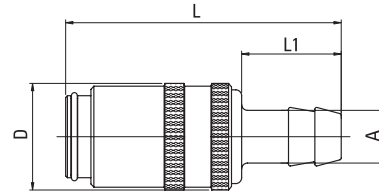
Standard Couplers

Water up to 140°C
Oil up to 180°C

TS Couplers

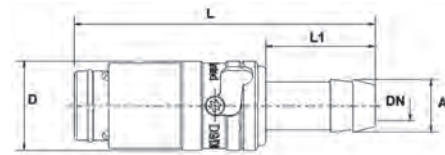
Water up to 160°C
Oil up to 200°C

Straight Coupling



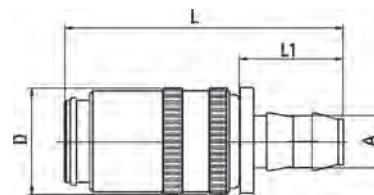
| DN | Series | | | A | D | L | L1 | |
|----|--------|--------|-------|----|----|------|----|----|
| 6 | 09 | 09K10V | 09K10 | 10 | 18 | 52 | 22 | 10 |
| | | 09K13V | 09K13 | 13 | 18 | 52 | 22 | 10 |
| 7 | 13 | 13K10V | 13K10 | 10 | 23 | 61,5 | 25 | 10 |
| 9 | | 13K13V | 13K13 | 13 | 23 | 61,5 | 25 | 10 |
| 13 | 19 | 19K19V | 19K19 | 19 | 32 | 90 | 32 | 5 |

Safety Coupling, Type TS, Straight

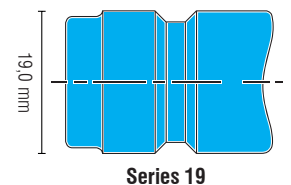
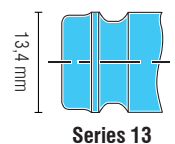
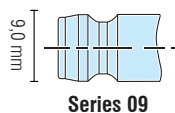


| DN | Serie | | | A | D | L | L1 | |
|----|-------|-----------|----------|----|----|------|----|---|
| 6 | 09 | 09K10V-TS | 09K10-TS | 10 | 18 | 59,5 | 22 | 5 |
| 9 | 13 | 13K13V-TS | 13K13-TS | 13 | 23 | 63 | 25 | 5 |
| 13 | 19 | 19K19V-TS | 19K19-TS | 19 | 32 | 91 | 34 | 5 |

Push Lock - Straight Coupling

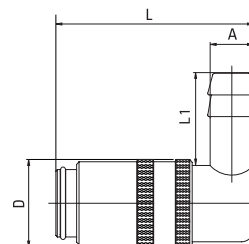


| DN | Series | | | A | D | L | L1 | |
|----|--------|-----------|----------|----|----|------|----|----|
| 6 | 09 | 09K10V-PL | 09K10-PL | 10 | 18 | 58,5 | 28 | 10 |
| 9 | 13 | 13K13V-PL | 13K13-PL | 13 | 23 | 64,5 | 28 | 10 |
| 13 | 19 | | 19K19-PL | 19 | 32 | 97 | 38 | 5 |



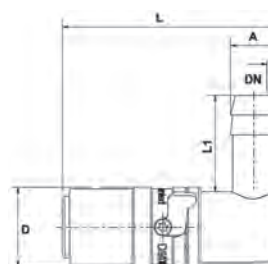
EUROPEAN SERIES

90° Coupling



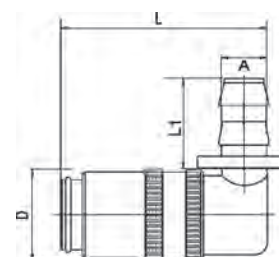
| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|--------|-----------|----------|----|----|----|------|----|
| 6 | 09 | 09K10V-90 | 09K10-90 | 10 | 18 | 41 | 22 | 10 |
| 7 | 13 | 13K10V-90 | 13K10-90 | 10 | 23 | 51 | 28,5 | 10 |
| 9 | | 13K13V-90 | 13K13-90 | 13 | 23 | 51 | 28,5 | 10 |
| 13 | 19 | 19K19V-90 | 19K19-90 | 19 | 32 | 78 | 32 | 5 |

Safety Coupling, Type TS, 90°



| DN | Serie | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|-------|--------------|-------------|----|----|------|----|---|
| 6 | 09 | 09K10V/90-TS | 09K10/90-TS | 10 | 18 | 52,5 | 22 | 5 |
| 9 | 13 | 13K13V/90-TS | 13K13/90-TS | 13 | 23 | 68,5 | 25 | 5 |
| 13 | 19 | 19K19V/90-TS | 19K19/90-TS | 19 | 32 | 81 | 34 | 1 |

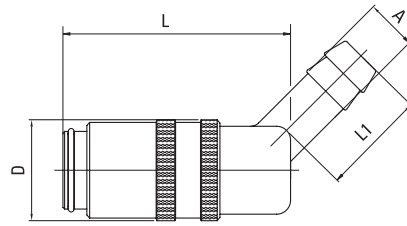
Push Lock - 90° Coupling



| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|--------|--------------|-------------|----|----|------|----|----|
| 6 | 09 | 09K10V-90-PL | 09K10-90-PL | 10 | 18 | 42,5 | 28 | 10 |
| 9 | 13 | 13K13V-90-PL | 13K13-90-PL | 13 | 23 | 51 | 28 | 10 |
| 13 | 19 | | 19K19-90-PL | 19 | 32 | 76,5 | 38 | 5 |

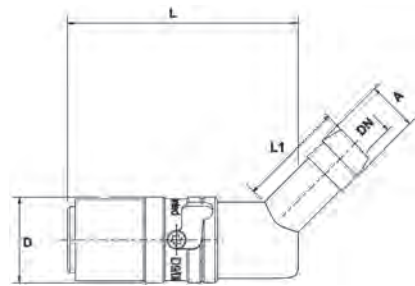
See explanation of symbols on page 404

45° Coupling



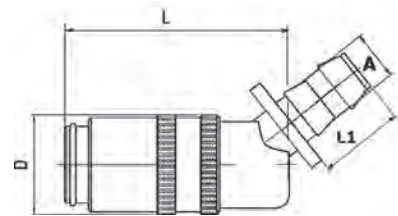
| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|--------|-----------|----------|----|----|----|------|----|
| 6 | 09 | 09K10V-45 | 09K10-45 | 10 | 18 | 41 | 22 | 10 |
| 7 | 13 | 13K10V-45 | 13K10-45 | 13 | 23 | 51 | 28,5 | 10 |
| 9 | | 13K13V-45 | 13K13-45 | 13 | 23 | 51 | 28,5 | 10 |
| 13 | 19 | 19K19V-45 | 19K19-45 | 19 | 32 | 78 | 32 | 5 |

Safety Coupling, Type TS, 45°

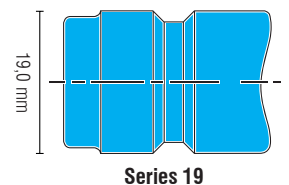
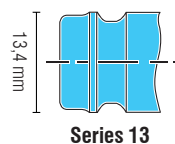
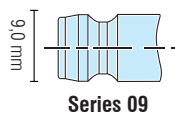


| DN | Serie | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|-------|--------------|-------------|----|----|------|----|---|
| 6 | 09 | 09K10V/45-TS | 09K10/45-TS | 10 | 18 | 52,5 | 22 | 5 |
| 9 | 13 | 13K13V/45-TS | 13K13/45-TS | 13 | 23 | 68,5 | 25 | 5 |
| 13 | 19 | 19K19V/45-TS | 19K19/45-TS | 19 | 32 | 81 | 34 | 1 |

Push Lock - 45° Coupling

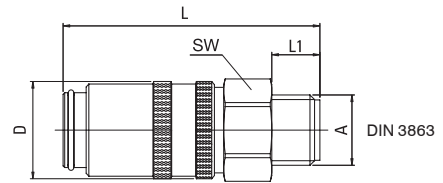


| DN | Series | ↻ | ↔ | A | D | L | L1 | 📦 |
|----|--------|--------------|-------------|----|----|------|----|----|
| 6 | 09 | 09K10V-45-PL | 09K10-45-PL | 10 | 18 | 42,5 | 28 | 10 |
| 9 | 13 | 13K13V-45-PL | 13K13-45-PL | 13 | 23 | 51 | 28 | 10 |
| 13 | 19 | | 19K19-45-PL | 19 | 32 | 76,5 | 38 | 5 |



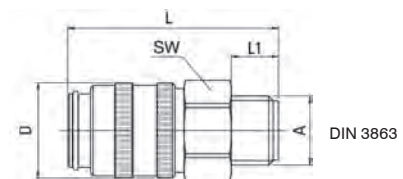
EUROPEAN SERIES

Male Threaded Coupling



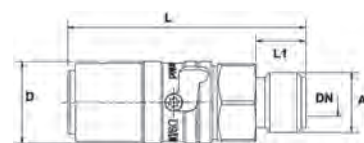
| DN | Series | ↙↘ | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|-----------|----------|---------|----|------|----|----|----|
| 6 | 09 | 09KUM14V | 09KUM14 | M14x1,5 | 18 | 48 | 9 | 17 | 10 |
| | | 09KUR1/4V | 09KUR1/4 | G1/4 | 18 | 48 | 9 | 17 | 10 |
| | | 09KUR3/8V | 09KUR3/8 | G3/8 | 18 | 48 | 9 | 19 | 10 |
| 9 | 13 | 13KUM16V | 13KUM16 | M16x1,5 | 23 | 51,5 | 9 | 22 | 10 |
| | | 13KUR1/4V | 13KUR1/4 | G1/4 | 23 | 51,5 | 9 | 22 | 10 |
| | | 13KUR3/8V | 13KUR3/8 | G3/8 | 23 | 51,5 | 9 | 22 | 10 |
| | | 13KUR1/2V | 13KUR1/2 | G1/2 | 23 | 54,5 | 12 | 22 | 10 |
| 13 | 19 | 19KUR1/2V | 19KUR1/2 | G1/2 | 32 | 74 | 12 | 30 | 5 |
| | | 19KUR3/4V | 19KUR3/4 | G3/4 | 32 | 78 | 16 | 30 | 5 |

Male Threaded Coupling, Short version



| DN | Series | ↙↘ | A | D | L | L1 | SW | 📦 |
|----|--------|----------|-------|----|----|----|----|----|
| 6 | 09 | 09KSR1/4 | G 1/4 | 18 | 38 | 9 | 17 | 10 |
| 9 | 13 | 13KSR3/8 | G 3/8 | 24 | 38 | 9 | 22 | 10 |

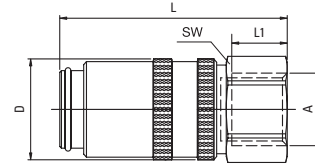
Safety Coupling, Type TS, Male Threaded



| DN | Series | ↙↘ | ↔ | A | D | L | L1 | 📦 |
|----|--------|--------------|-------------|---------|----|------|------|---|
| 6 | 09 | 09KUM14V-TS | 09KUM14-TS | M14X1,5 | 18 | 55,5 | 11 | 5 |
| | | 09KUR1/4V-TS | 09KUR1/4-TS | G1/4 | 18 | 55,5 | 11 | 5 |
| | | 09KUR3/8V-TS | 09KUR3/8-TS | G3/8 | 18 | 55,5 | 11 | 5 |
| 9 | 13 | 13KUM16V-TS | 13KUM16-TS | M16X1,5 | 23 | 57,5 | 12,5 | 5 |
| | | 13KUR1/4V-TS | 13KUR1/4-TS | G1/4 | 23 | 57,5 | 12,5 | 5 |
| | | 13KUR3/8V-TS | 13KUR3/8-TS | G3/8 | 23 | 57,5 | 12,5 | 5 |
| | | 13KUR1/2V-TS | 13KUR1/2-TS | G1/2 | 23 | 57,5 | 12,5 | 5 |
| 13 | 19 | 19KUR1/2V-TS | 19KUR1/2-TS | G1/2 | 32 | 77 | 16 | 1 |
| | | 19KUR3/4V-TS | 19KUR3/4-TS | G3/4 | 32 | 77 | 16 | 1 |

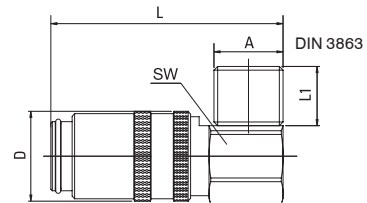
See explanation of symbols on page 404

Female Threaded Coupling



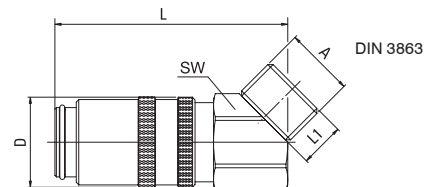
| DN | Series | | | A | D | L | L1 | SW | |
|----|--------|-----------|----------|---------|----|------|----|----|----|
| 6 | 09 | 09KIR1/4V | 09KIR1/4 | G1/4 | 18 | 41 | 10 | 17 | 10 |
| | | 09KIR3/8V | 09KIR3/8 | G3/8 | 18 | 45 | 10 | 19 | 10 |
| 9 | 13 | 13KIR1/4V | 13KIR1/4 | G1/4 | 23 | 46,5 | 10 | 21 | 10 |
| | | 13KIR3/8V | 13KIR3/8 | G3/8 | 23 | 46,5 | 10 | 21 | 10 |
| | | 13KIM16V | 13KIM16 | M16x1,5 | 23 | 46,5 | 10 | 21 | 10 |

90° Male Threaded Coupling

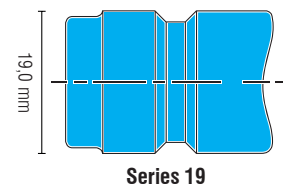
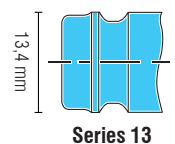
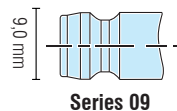


| DN | Series | | | A | D | L | L1 | SW | |
|----|--------|-------------|------------|---------|----|------|----|----|----|
| 6 | 09 | 09KM14/90V | 09KM14/90 | M14x1,5 | 18 | 47 | 12 | 17 | 10 |
| | | 09KR1/4/90V | 09KR1/4/90 | G1/4 | 18 | 47 | 12 | 17 | 10 |
| 9 | 13 | 13KUM16/90V | 13KM16/90 | M16x1,5 | 23 | 53,5 | 12 | 22 | 10 |

45° Male Threaded Coupling

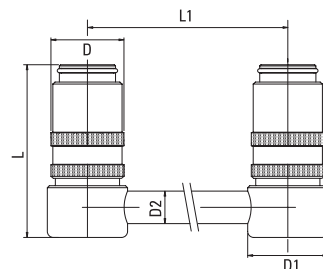


| DN | Series | | | A | D | L | L1 | SW | |
|----|--------|-------------|------------|---------|----|------|----|----|----|
| 6 | 09 | 09KM14/45V | 09KM14/45 | M14x1,5 | 18 | 47 | 9 | 17 | 10 |
| | | 09KR1/4/45V | 09KR1/4/45 | G1/4 | 18 | 47 | 9 | 17 | 10 |
| 9 | 13 | 13KUM16/45V | 13KUM16/45 | M16x1,5 | 23 | 53,5 | 9 | 22 | 10 |



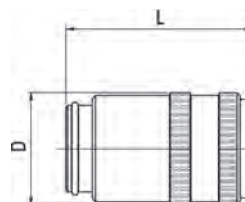
EUROPEAN SERIES

Banjo Bridge



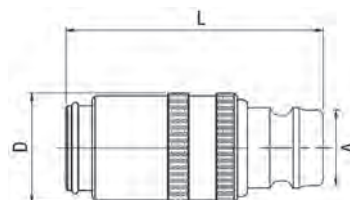
| DN | Series | ↔ | D | L | D1 | D2 | L1 | 📦 |
|----|--------|--------|----|----|----|----|-----|---|
| 6 | 09 | 09K125 | 18 | 43 | 20 | 8 | 125 | 1 |
| | | 09K250 | 18 | 43 | 20 | 8 | 250 | 1 |
| | | 09K500 | 18 | 43 | 20 | 8 | 500 | 1 |
| 9 | 13 | 13K125 | 23 | 53 | 26 | 10 | 125 | 1 |
| | | 13K250 | 23 | 53 | 26 | 10 | 250 | 1 |
| | | 13K500 | 23 | 53 | 26 | 10 | 500 | 1 |
| 13 | 19 | 19K160 | 32 | 80 | 36 | 14 | 160 | 1 |
| | | 19K315 | 32 | 80 | 36 | 14 | 315 | 1 |
| | | 19K500 | 32 | 80 | 36 | 14 | 500 | 1 |

Blind Coupling



| DN | Series | ↔ | D | L | 📦 |
|----|--------|-----|----|----|----|
| 6 | 09 | 09K | 18 | 30 | 10 |
| 9 | 13 | 13K | 24 | 37 | 10 |

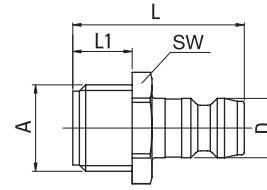
Coupling with Plug



| DN | Series | ↔ | ↔ | A | D | L | 📦 |
|----|--------|---------|--------|------|----|----|----|
| 6 | 09 | 09K13NV | 09K13N | 13,4 | 18 | 45 | 10 |
| 9 | 13 | 13K9NV | 13K9N | 9,0 | 23 | 51 | 10 |

See explanation of symbols on page 404

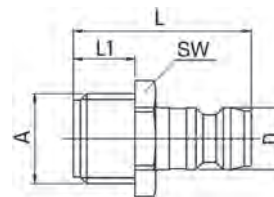
Male Plug



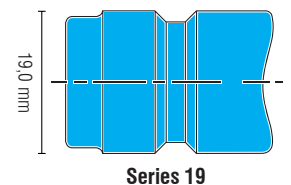
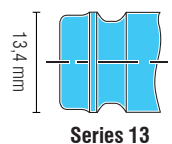
| DN | Series | ↔ | A | D | L | L1 | SW | 📦 | |
|----|--------|-----------|----------|---------|----|----|----|----|----|
| 6 | 09 | 09NM8 | M8x0,75 | 9 | 24 | 7 | 11 | 25 | |
| | | 09NM10 | M10x1 | 9 | 24 | 7 | 11 | 25 | |
| | | 09NR1/8* | G1/8 | 9 | 24 | 7 | 11 | 25 | |
| | | 09NM12 | M12x1,5 | 9 | 27 | 10 | 14 | 25 | |
| | | 09NM14 | M14x1,5 | 9 | 26 | 9 | 15 | 25 | |
| | | 09NM14V | M14x1,5 | 9 | 29 | 12 | 15 | 25 | |
| | | 09NR1/4* | G1/4 | 9 | 26 | 9 | 15 | 25 | |
| | | 09NR1/4V* | G1/4 | 9 | 29 | 12 | 15 | 25 | |
| 9 | 13 | 09NR3/8* | G3/8 | 9 | 30 | 10 | 17 | 25 | |
| | | 13NR1/8* | G1/8 | 13,4 | 25 | 8 | 14 | 25 | |
| | | 13NM14 | M14x1,5 | 13,4 | 26 | 9 | 15 | 25 | |
| | | 13NR1/4* | G1/4 | 13,4 | 26 | 9 | 15 | 25 | |
| | | 13NR1/4V* | G1/4 | 13,4 | 31 | 12 | 15 | 25 | |
| | | 13NR3/8* | G3/8 | 13,4 | 26 | 9 | 17 | 25 | |
| | | 13NR3/8V* | G3/8 | 13,4 | 30 | 12 | 17 | 25 | |
| 13 | 19 | 13NM16V | M16x1,5 | 13,4 | 26 | 9 | 17 | 25 | |
| | | 19NM24V | 19NM24 | M24x1,5 | 19 | 51 | 16 | 27 | 10 |
| | | 19NR1/2V* | 19NR1/2* | G1/2 | 19 | 47 | 12 | 22 | 10 |
| | | 19NR3/4V* | 19NR3/4* | G3/4 | 19 | 51 | 16 | 27 | 10 |

* Nickel Plated

Male Plug - Without Sealant



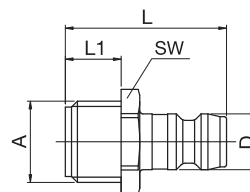
| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|----------|-------|------|------|----|----|-----|
| 6 | 09 | 09NRX1/8 | R1/8" | 9 | 24 | 7 | 11 | 100 |
| | | 09NRX1/4 | R1/4" | 9 | 24 | 9 | 14 | 100 |
| 9 | 13 | 13NRX1/8 | R1/8" | 13,4 | 29,5 | 8 | 14 | 100 |
| | | 13NRX1/4 | R1/4" | 13,4 | 32,5 | 9 | 14 | 100 |
| | | 13NRX3/8 | R3/8" | 13,4 | 32,5 | 9 | 17 | 25 |



EUROPEAN SERIES

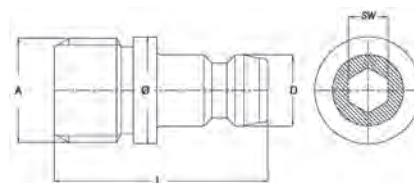
Male Plug - Stainless Steel

STAINLESS
STEEL



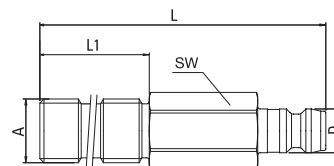
| DN | Series | ↔ | A | D | L | L1 | SW | ⊠ |
|----|--------|-----------|---------|------|----|----|----|----|
| 6 | 09 | 09NM8SS | M8x0,75 | 9 | 24 | 7 | 11 | 25 |
| | | 09NM10SS | M10x1 | 9 | 24 | 7 | 11 | 25 |
| | | 09NR1/8SS | G1/8 | 9 | 24 | 7 | 11 | 25 |
| | | 09NR1/4SS | G1/4 | 9 | 26 | 9 | 14 | 25 |
| 9 | 13 | 13NR1/4SS | G1/4 | 13,4 | 26 | 9 | 14 | 25 |
| | | 13NR3/8SS | G3/8 | 13,4 | 26 | 9 | 17 | 25 |

Male Plug - with Internal Hex



| DN | Series | ↔ | A | D | L | Ø | SW | ⊠ |
|----|--------|-----------|---------|------|----|------|----|----|
| 6 | 09 | 09NSWM8 | M8X0,75 | 9 | 24 | 10 | 5 | 10 |
| | | 09NSWM10 | M10X1 | 9 | 24 | 13 | 5 | 10 |
| | | 09NSWR1/8 | G1/8 | 9 | 24 | 13 | 5 | 10 |
| | | 09NSWM14 | M14X1,5 | 9 | 26 | 14,5 | 5 | 10 |
| | | 09NSWR1/4 | G1/4 | 9 | 27 | 13,5 | 5 | 10 |
| 9 | 13 | 13NSWM14 | M14X1,5 | 13,4 | 26 | 14,5 | 6 | 10 |
| | | 13NSWR1/4 | G1/4 | 13,4 | 26 | 13,5 | 6 | 10 |
| | | 13NSWR3/8 | G3/8 | 13,4 | 26 | 17 | 6 | 10 |

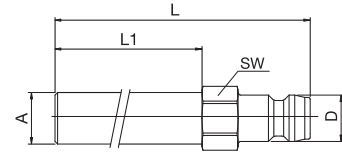
Adjustable Plug



| DN | Series | ↔ | A | D | L | L1 | SW | ⊠ |
|----|--------|-------------|------|------|-----|----|----|----|
| 6 | 09 | 09NR1/8/100 | G1/8 | 9 | 100 | 60 | 11 | 10 |
| | | 09NR1/4/100 | G1/4 | 9 | 100 | 60 | 14 | 10 |
| 9 | 13 | 13NR1/4/100 | G1/4 | 13,4 | 100 | 60 | 14 | 10 |
| | | 13NR3/8/100 | G3/8 | 13,4 | 100 | 60 | 19 | 10 |

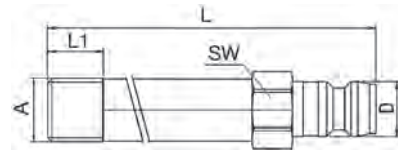
See explanation of symbols on page 404

Extended Plug

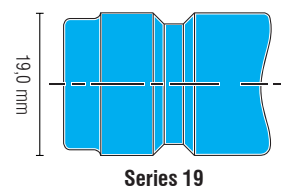
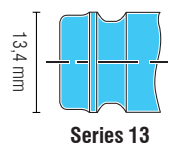


| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|--------|----|------|-----|-----|----|----|
| 6 | 09 | 09N63 | 8 | 9 | 63 | 42 | 9 | 10 |
| | | 09N100 | 8 | 9 | 100 | 79 | 9 | 10 |
| | | 09N120 | 10 | 9 | 120 | 100 | 11 | 10 |
| | | 09N240 | 10 | 9 | 240 | 220 | 11 | 10 |
| | | 09N360 | 10 | 9 | 360 | 340 | 11 | 10 |
| 9 | 13 | 13N150 | 14 | 13,4 | 150 | 125 | 15 | 10 |
| | | 13N300 | 14 | 13,4 | 300 | 275 | 15 | 10 |
| | | 13N450 | 14 | 13,4 | 450 | 425 | 15 | 10 |
| 13 | 19 | 19N500 | 21 | 19 | 500 | 465 | 22 | 5 |

Extended Plug Threaded

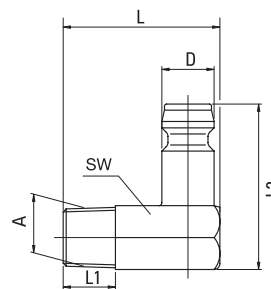


| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|-------------|--------|-------------|-------|------------|------|------|----|----|
| 6 | 09 | 09NM10-60 | M10X1 | 9 | 60 | 9 | 11 | 10 |
| | | 09NM10-100 | M10X1 | 9 | 100 | 9 | 11 | 10 |
| | | 09NM10-150 | M10X1 | 9 | 150 | 9 | 11 | 10 |
| | | 09NR1/8-60 | R1/8 | 9 | 60 | 9 | 11 | 10 |
| | | 09NR1/8-100 | R1/8 | 9 | 100 | 9 | 11 | 10 |
| | | 09NR1/8-150 | R1/8 | 9 | 150 | 12 | 14 | 10 |
| | | 09NR1/4-60 | R1/4 | 9 | 60 | 12 | 14 | 10 |
| | | 09NR1/4-100 | R1/4 | 9 | 100 | 12 | 14 | 10 |
| | | 09NR1/4-150 | R1/4 | 9 | 150 | 12 | 14 | 10 |
| | | 9 | 13 | 13NR1/4-60 | R1/4 | 13,4 | 60 | 12 |
| 13NR1/4-100 | R1/4 | | | 13,4 | 100 | 12 | 14 | 10 |
| 13NR1/4-150 | R1/4 | | | 13,4 | 150 | 12 | 14 | 10 |



EUROPEAN SERIES

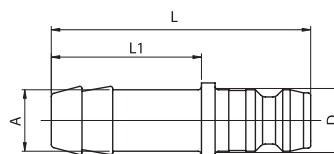
90° Male Plug



| DN | Series | ↔ | A | D | L | L1 | L2 | SW | 📦 |
|----|--------|-------------|---------|------|----|----|------|----|----|
| 6 | 09 | 09NM8/90 | M8x0,75 | 9 | 27 | 9 | 28,5 | 11 | 25 |
| | | 09NM10/90 | M10x1 | 9 | 27 | 9 | 28,5 | 11 | 25 |
| | | 09NR1/8/90* | R1/8 | 9 | 27 | 9 | 28,5 | 11 | 25 |
| | | 09NR1/4/90* | R1/4 | 9 | 27 | 9 | 28,5 | 11 | 25 |
| 9 | 13 | 13NM14/90 | M14x1,5 | 13,4 | 34 | 11 | 32 | 15 | 25 |
| | | 13NR1/4/90* | R1/4 | 13,4 | 34 | 11 | 32 | 15 | 25 |
| | | 13NR3/8/90* | R3/8 | 13,4 | 34 | 11 | 32 | 15 | 25 |
| 13 | 19 | 19NM24/90 | M24x1,5 | 19 | 47 | 16 | 54 | 24 | 5 |
| | | 19NR1/2/90* | R1/2 | 19 | 47 | 16 | 54 | 24 | 5 |

* Nickel Plated

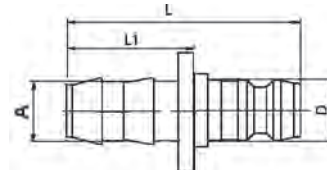
Hosetail Plug



| DN | Series | ↔ | A | D | L | L1 | 📦 |
|----|--------|-------|----|------|----|----|----|
| 6 | 09 | 09N10 | 10 | 9 | 38 | 22 | 25 |
| | | 09N13 | 13 | 9 | 38 | 22 | 25 |
| 9 | 13 | 13N10 | 10 | 13,4 | 41 | 25 | 25 |
| | | 13N13 | 13 | 13,4 | 41 | 25 | 25 |
| 13 | 19 | 19N13 | 13 | 19 | 61 | 32 | 5 |
| | | 19N19 | 19 | 19 | 61 | 32 | 5 |

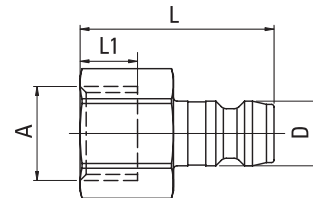
See explanation of symbols on page 404

Push Lock - Hosetail Plug



| DN | Series | ↔ | A | D | L | L1 | 📦 |
|----|--------|----------|----|------|----|----|----|
| 6 | 09 | 09N10-PL | 10 | 9 | 44 | 28 | 10 |
| 9 | 13 | 13N13-PL | 13 | 13,4 | 44 | 28 | 10 |
| 13 | 19 | 19N19-PL | 19 | 19 | 70 | 36 | 5 |

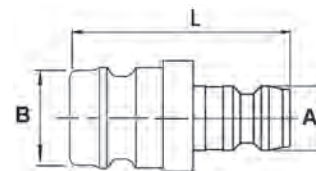
Female Plug



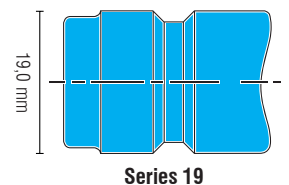
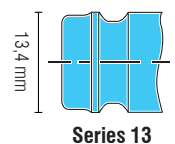
| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|----------|------|------|----|----|----|----|
| 6 | 09 | 09NR1/8I | G1/8 | 9 | 24 | 7 | 11 | 25 |
| | | 09NR1/4I | G1/4 | 9 | 24 | 7 | 16 | 25 |
| | | 09NR3/8I | G3/8 | 9 | 27 | 10 | 19 | 25 |
| 9 | 13 | 13NR1/4I | G1/4 | 13,4 | 33 | 10 | 16 | 25 |
| | | 13NR3/8I | G3/8 | 13,4 | 35 | 10 | 19 | 25 |

* Nickel Plated

Double Plug



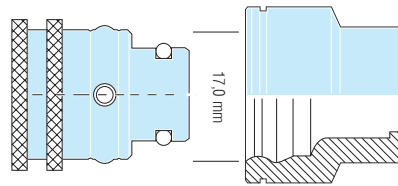
| DN | A Series | B Series | ↔ | L | 📦 |
|----|----------|----------|--------|----|----|
| 6 | 09 | 09 | 0909DB | 34 | 10 |
| | | 13 | 0913DB | 34 | 10 |
| 9 | 13 | 13 | 1313DB | 34 | 10 |



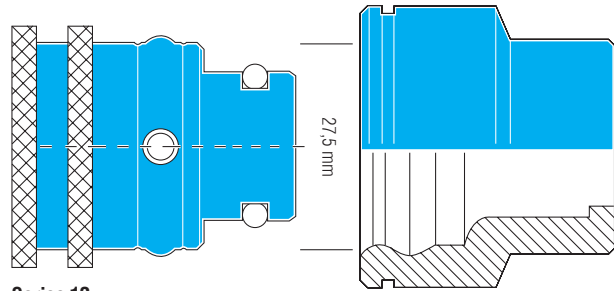
FRENCH SERIES

Nominal Diameter

08 / 12



Series 08



Series 12

Illustration scale 1:1



Technical Description

Coupling series especially developed for connecting coolant lines on injection moulds.

Fully interchangeable with other brands with same plug profiles.

All dimensions and tolerances are made according to original specs.

Material

| Coupling | | Plug | |
|---------------|----------------------|------|----------------------|
| Body | Brass, Nickel Plated | Plug | Brass, Nickel Plated |
| Locking Balls | AISI 420 | | |
| Spring | AISI 301 | | |
| Seal | FKM | | |

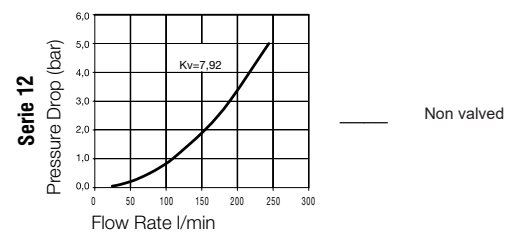
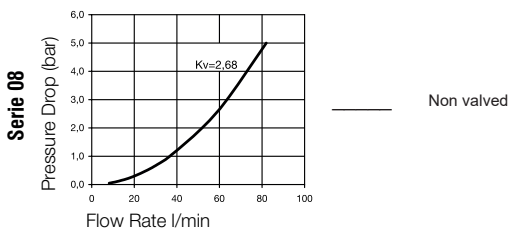
Working Pressure

15 bar, maximum static working pressure with safety factor of 4 to 1.

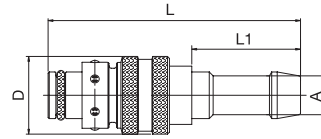
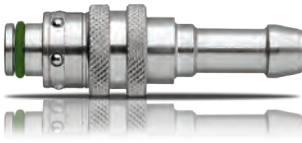
Working Temperature

Water -15°C up to +140°C
Oil -15°C up to +180°C

Chart

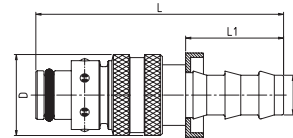
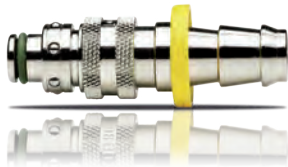


Straight Coupling



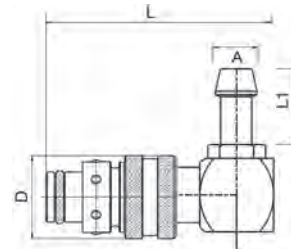
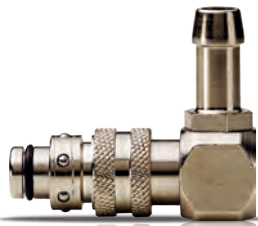
| DN | Series | ↔ | A | D | L | L1 | 📦 |
|----|--------|-------|----|----|----|----|----|
| 6 | 08 | 08K8 | 8 | 20 | 65 | 28 | 10 |
| 8 | | 08K10 | 10 | 20 | 65 | 28 | 10 |
| 8 | | 08K12 | 13 | 20 | 65 | 28 | 10 |
| 9 | 12 | 12K13 | 13 | 28 | 77 | 33 | 10 |
| 12 | | 12K16 | 16 | 28 | 77 | 33 | 5 |

Straight Coupling - Push Lock

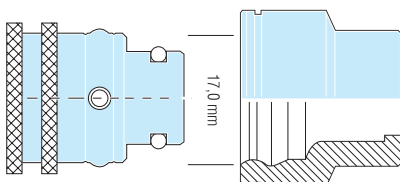


| DN | Series | ↔ | A | D | L | L1 | 📦 |
|----|--------|----------|----|----|------|------|----|
| 8 | 08 | 08K10-PL | 10 | 20 | 61,5 | 24,5 | 10 |
| 8 | | 08K12-PL | 13 | 20 | 65 | 28 | 10 |
| 12 | 12 | 12K13-PL | 13 | 28 | 77 | 33 | 10 |

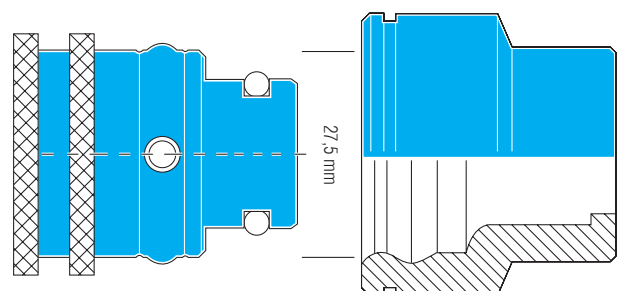
90° Coupling



| DN | Series | ↔ | A | D | L | L1 | 📦 |
|----|--------|----------|----|----|----|----|----|
| 8 | 08 | 08K10/90 | 10 | 20 | 51 | 20 | 10 |
| 8 | | 08K12/90 | 13 | 20 | 51 | 20 | 10 |
| 9 | 12 | 12K13/90 | 13 | 28 | 59 | 25 | 5 |
| 12 | | 12K16/90 | 16 | 28 | 62 | 25 | 5 |



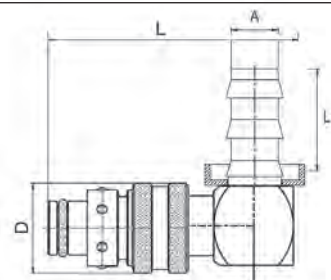
Series 08



Series 12

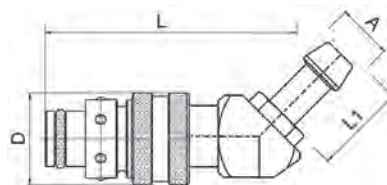
FRENCH SERIES

90° Coupling - Push Lock



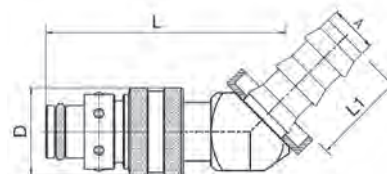
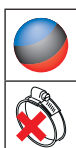
| DN | Series | ↔ | A | D | L | L1 | |
|----|--------|-------------|----|----|----|----|----|
| 8 | 08 | 08K10/90-PL | 10 | 20 | 51 | 20 | 10 |
| | | 08K12/90-PL | 13 | 20 | 51 | 20 | 10 |
| 9 | 12 | 12K13/90-PL | 13 | 28 | 59 | 25 | 10 |
| 12 | | 12K16/90-PL | 16 | 28 | 62 | 25 | 10 |

45° Coupling



| DN | Series | ↔ | A | D | L | L1 | |
|----|--------|----------|----|----|----|----|----|
| 8 | 08 | 08K10/45 | 10 | 20 | 51 | 20 | 10 |
| | | 08K12/45 | 13 | 20 | 51 | 20 | 10 |
| 9 | 12 | 12K13/45 | 13 | 28 | 55 | 25 | 5 |
| 12 | | 12K16/45 | 16 | 28 | 55 | 25 | 5 |

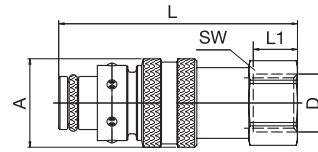
45° Coupling - Push Lock



| DN | Series | ↔ | A | D | L | L1 | |
|----|--------|-------------|----|----|----|----|----|
| 8 | 08 | 08K10/45-PL | 10 | 20 | 51 | 20 | 10 |
| | | 08K12/45-PL | 13 | 20 | 51 | 20 | 10 |
| 9 | 12 | 12K13/45-PL | 13 | 28 | 55 | 25 | 5 |
| 12 | | 12K16/45-PL | 16 | 28 | 55 | 25 | 5 |

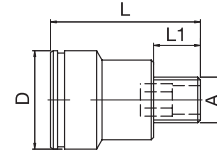
See explanation of symbols on page 404

Female Threaded Coupling



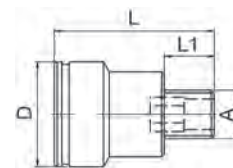
| DN | Series | ↔ | A | D | L | L1 | |
|----|--------|----------|----|------|----|----|----|
| 8 | 08 | 08KIR1/4 | 20 | G1/4 | 43 | 15 | 10 |
| 12 | 12 | 12KIR1/2 | 20 | G1/2 | 60 | 20 | 10 |

Male Plug

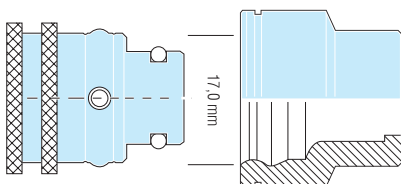


| DN | Series | ↔ | A | D | L | L1 | SW | |
|----|--------|---------|-------|----|----|----|----|----|
| 8 | 08 | 08NM10 | M10x1 | 21 | 32 | 10 | 6 | 25 |
| | | 08NR1/8 | R 1/8 | 21 | 32 | 10 | 6 | 25 |
| | | 08NR1/4 | R 1/4 | 21 | 33 | 12 | 8 | 25 |
| | | 08NR3/8 | R 3/8 | 21 | 24 | 13 | 8 | 25 |
| 12 | 12 | 12NR3/8 | R 3/8 | 32 | 41 | 13 | 10 | 10 |
| | | 12NR1/2 | R 1/2 | 32 | 44 | 16 | 14 | 10 |
| | | 12NR3/4 | R 3/4 | 32 | 32 | 19 | 14 | 10 |

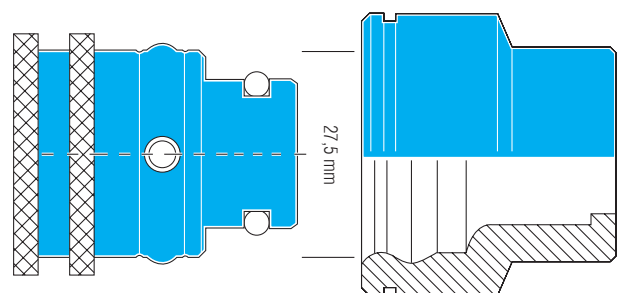
Male Plug - Without Sealant



| DN | Series | ↔ | A | D | L | L1 | SW | |
|----|--------|----------|-------|------|----|----|----|-----|
| 8 | 08 | 08NRX1/8 | R1/8" | 9 | 32 | 10 | 6 | 100 |
| | | 08NRX1/4 | R1/4" | 9 | 33 | 12 | 8 | 100 |
| | | 08NRX3/8 | R3/8" | 13,4 | 24 | 13 | 8 | 100 |
| 12 | 12 | 12NRX3/8 | R3/8" | 13,4 | 41 | 13 | 10 | 25 |
| | | 12NRX1/2 | R1/2" | 13,4 | 44 | 16 | 14 | 25 |



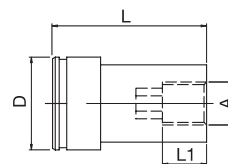
Series 08



Series 12

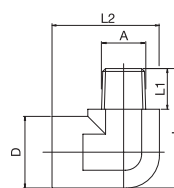
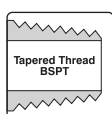
FRENCH SERIES

Female Plug



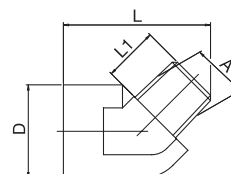
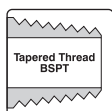
| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|----------|-------|----|----|----|----|----|
| 8 | 08 | 08NR1/8I | G 1/8 | 21 | 35 | 10 | 6 | 10 |
| | | 08NR1/4I | G 1/4 | 21 | 40 | 14 | 8 | 10 |
| | | 12NR3/8I | G 3/8 | 32 | 49 | 14 | 12 | 10 |
| 12 | 12 | 12NR1/2I | G 1/2 | 32 | 50 | 14 | 12 | 10 |

90° Plug



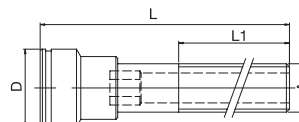
| DN | Series | ↔ | A | D | L | L1 | L2 | 📦 |
|----|--------|------------|-------|----|----|----|----|----|
| 8 | 08 | 08NR1/8/90 | R 1/8 | 22 | 34 | 11 | 33 | 10 |
| | | 08NR1/4/90 | R 1/4 | 22 | 37 | 13 | 33 | 10 |
| | | 08NR3/8/90 | R 3/8 | 22 | 37 | 13 | 33 | 10 |

45° Plug



| DN | Series | ↔ | A | D | L | L1 | L2 | 📦 |
|----|--------|------------|-------|----|----|------|----|----|
| 8 | 08 | 08NR1/8/45 | R 1/8 | 22 | 33 | 10,5 | | 10 |
| | | 08NR1/4/45 | R 1/4 | 22 | 33 | 10,5 | | 10 |

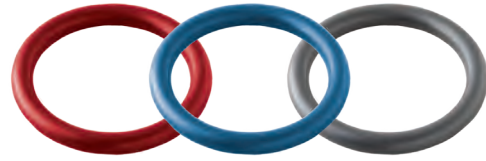
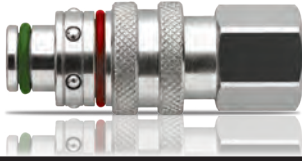
Extended Plug



| DN | Series | ↔ | A | D | L | L1 | SW | 📦 |
|----|--------|-------------|-------|----|-----|----|----|----|
| 8 | 08 | 08NR1/8/50 | G 1/8 | 21 | 50 | 28 | 6 | 10 |
| | | 08NR1/8/100 | G 1/8 | 21 | 100 | 60 | 6 | 10 |
| | | 08NR1/8/150 | G 1/8 | 21 | 150 | 60 | 6 | 10 |
| | | 08NR1/4/50 | G 1/4 | 21 | 50 | 28 | 8 | 10 |
| | | 08NR1/4/100 | G 1/4 | 21 | 100 | 60 | 8 | 10 |
| | | 08NR1/4/150 | G 1/4 | 21 | 150 | 60 | 8 | 10 |
| | | 08NR1/4/200 | G 1/4 | 21 | 200 | 60 | 8 | 10 |

See explanation of symbols on page 404

Coupling Colour Tags



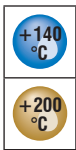
| | Series | Part No. | Colour | |
|--------------------------|--------|----------|--------|----|
| Colour Clip for Couplers | 08 | 08KR | | 10 |
| Colour Clip for Couplers | | 08KB | | 10 |
| Colour Clip for Couplers | | 08KS | | 10 |
| Colour Clip for Couplers | 12 | 12KR | | 10 |
| Colour Clip for Couplers | | 12KB | | 10 |
| Colour Clip for Couplers | | 12KS | | 10 |

Plug Colour Tags

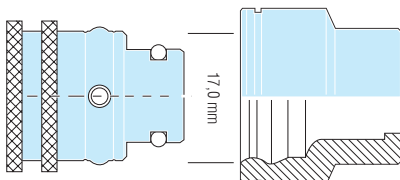


| | Series | Part No. | Colour | |
|----------------------------|--------|----------|--------|----|
| Colour Clip for Connectors | 08 | 08NR | | 10 |
| Colour Clip for Connectors | | 08NB | | 10 |
| Colour Clip for Connectors | | 08NS | | 10 |
| Colour Clip for Connectors | 12 | 12NR | | 10 |
| Colour Clip for Connectors | | 12NB | | 10 |
| Colour Clip for Connectors | | 12NS | | 10 |

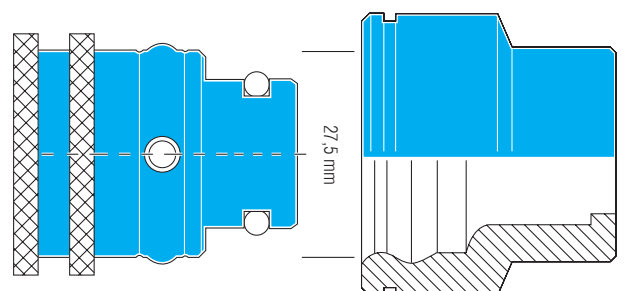
Replacement Seals FKM +200°C



| Part No. | Series | S | |
|----------|--------|---|----|
| 08V | 08 | | 10 |
| 12V | 12 | | 10 |



Series 08



Series 12

FRENCH MATIC SERIES

Nominal Diameter

6 / 9 / 12 / 16 / 25

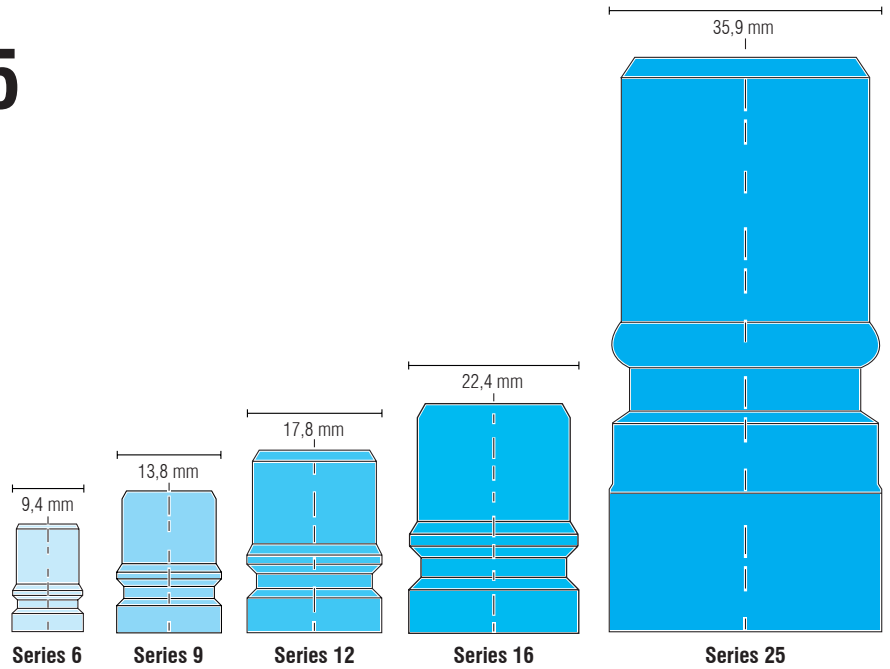
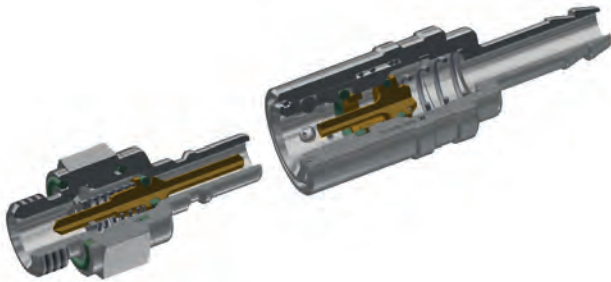


Illustration scale 1:1



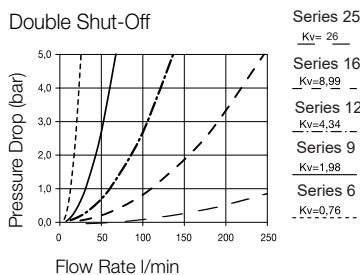
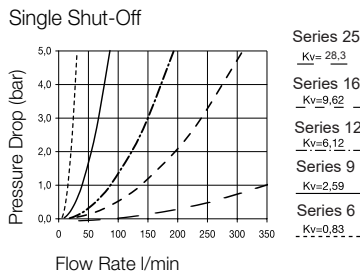
Technical Description

Coupling series especially developed for connecting coolant lines on injection moulds.

Fully interchangeable with other brands with same plug profiles.

All dimensions and tolerances are made according to original specs.

Chart



Material

Coupling

| | |
|---------------|----------------------|
| Body | Brass, Nickel Plated |
| Locking Balls | AISI 420 |
| Spring | AISI 301 |
| Seal | FKM |

Plug

| | | |
|--------------|--|---|
| Plug Profile | Series 6/9/12 Brass, Nickel Plated | Series 16/25 Steel, Zinc Plated |
| Back Body | Brass, Nickel Plated | Brass, Nickel Plated |
| Valve | Brass | Brass |
| Spring | AISI 301 | AISI 301 |
| Seal | FKM | FKM |

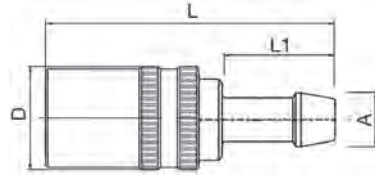
Working Pressure

15 bar, maximum static working pressure with safety factor of 4 to 1.

Working Temperature

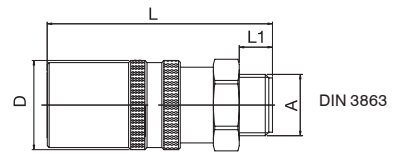
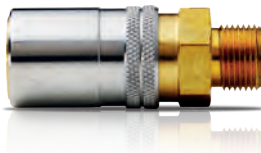
Water -15°C up to +140°C
 Oil -15°C up to +180°C

Straight Coupling



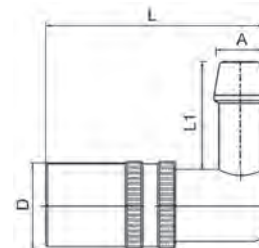
| DN | Series | Symbol | A | D | L | L1 | Icon |
|----|--------|---------|----|----|-------|----|------|
| 6 | 6 | F6K8V | 8 | 20 | 58 | 22 | 10 |
| 9 | 9 | F9K12V | 12 | 24 | 71 | 25 | 10 |
| 12 | 12 | F12K16V | 16 | 32 | 90,5 | 32 | 10 |
| 16 | 16 | F16K19V | 19 | 38 | 112,5 | 36 | 5 |

Male Threaded Coupling



| DN | Series | Symbol | A | D | L | L1 | Icon |
|----|--------|--------------|---------|----|------|----|------|
| 6 | 6 | F6KUR1/4V | G 1/4 | 20 | 54 | 9 | 10 |
| 9 | 9 | F9KUR3/8V | G 3/8 | 24 | 61,0 | 9 | 10 |
| 12 | 12 | F12KUR1/2V | G 1/2 | 32 | 74,5 | 12 | 10 |
| 16 | 16 | F16KUR3/4V | G 3/4 | 38 | 90,5 | 17 | 5 |
| 25 | 25 | F25KUR1/1V | G 1 | 60 | 142 | 19 | 1 |
| | | F25KUR1-1/4V | G 1-1/4 | 60 | 144 | 22 | 1 |

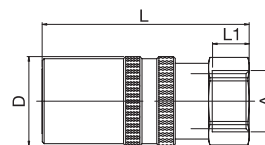
90° Coupling



| DN | Series | Symbol | A | D | L | L1 | Icon |
|----|--------|-----------|----|----|------|------|------|
| 6 | 6 | F6K8V/90 | 8 | 20 | 60,5 | 22 | 10 |
| 9 | 9 | F9K10V/90 | 10 | 24 | 60,5 | 22 | 10 |
| | | F9K12V/90 | 12 | 24 | 60,5 | 28,5 | 10 |

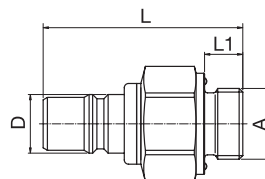
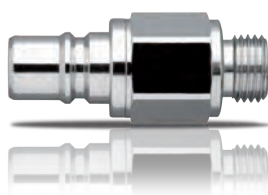
FRENCH MATIC SERIES

Female Threaded Coupling



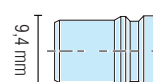
| DN | Series | Symbol | A | D | L | L1 | Box |
|----|--------|--------------|---------|----|-----|----|-----|
| 6 | 6 | F6KIR1/4V | G 1/4 | 20 | 45 | 10 | 10 |
| 9 | 9 | F9KIR3/8V | G 3/8 | 24 | 53 | 10 | 10 |
| 12 | 12 | F12KIR1/2V | G 1/2 | 32 | 67 | 12 | 10 |
| 16 | 16 | F16KIR3/4V | G 3/4 | 38 | 90 | 20 | 5 |
| 25 | 25 | F25KIR1/1V | G 1 | 60 | 140 | 21 | 1 |
| | | F25KIR1-1/4V | G 1.1/4 | 60 | 140 | 21 | 1 |

Valved Plug

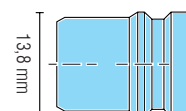


| DN | Series | Symbol | A | D | L | L1 | HEX | Box |
|----|--------|-------------|---------|------|-------|----|-----|-----|
| 6 | 6 | F6NR1/8V | G 1/8 | 9,4 | 45 | 7 | 17 | 10 |
| | | F9NR1/4V | G 1/4 | 13,8 | 45 | 9 | 19 | 10 |
| 9 | 9 | F9NR3/8V | G 3/8 | 13,8 | 48 | 12 | 24 | 10 |
| | | F9NR1/2V | G 1/2 | 13,8 | 50 | 12 | 27 | 10 |
| | | F12NR3/8V | G 3/8 | 17,8 | 60 | 9 | 24 | 10 |
| 12 | 12 | F12NR1/2V | G 1/2 | 17,8 | 62 | 12 | 27 | 10 |
| | | F12NR3/4V | G 3/4 | 17,8 | 64 | 16 | 32 | 10 |
| | | F16NR3/4V | G 3/4 | 22,4 | 78 | 16 | 34 | 5 |
| 16 | 16 | F16NR1/1V | G 1 | 22,4 | 81 | 19 | 41 | 5 |
| | | F25NR1/1V | G 1 | 36 | 149,5 | 19 | 50 | 1 |
| 25 | 25 | F25NR1-1/4V | G 1 1/4 | 36 | 152,5 | 22 | 50 | 1 |

See explanation of symbols on page 404

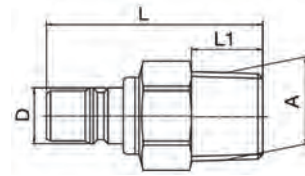


Series 6



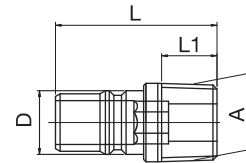
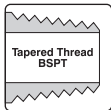
Series 9

Valved Plug Taper Thread

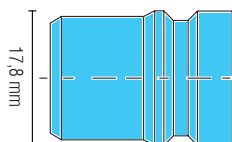


| DN | Series | Symbol | A | D | L | L1 | HEX | Icon |
|----|--------|-----------|-----|------|------|----|-----|------|
| 6 | 6 | F6NT1/8V | 1/8 | 9,4 | 45,8 | 10 | 17 | 10 |
| | | F6NT1/4V | 1/4 | 9,4 | 44,8 | 12 | 17 | 10 |
| 9 | 9 | F9NT1/4V | 1/4 | 13,8 | 48,5 | 12 | 19 | 10 |
| | | F9NT3/8V | 3/8 | 13,8 | 47 | 12 | 19 | 10 |
| 12 | 12 | F12NT3/8V | 3/8 | 17,8 | 63 | 13 | 24 | 10 |
| | | F12NT1/2V | 1/2 | 17,8 | 64,5 | 17 | 24 | 10 |
| 16 | 16 | F16NT3/4V | 3/4 | 22,4 | 83 | 21 | 32 | 5 |

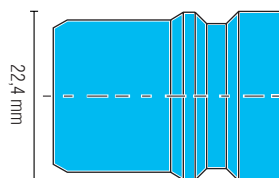
Male Plug with Inner Hex



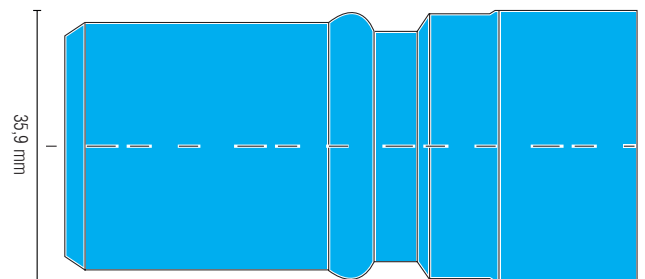
| DN | Series | Symbol | A | D | L | L1 | HEX | Icon |
|----|--------|----------|-------|------|----|----|-----|------|
| 6 | 6 | F6NR1/8 | R 1/8 | 10 | 30 | 9 | 5 | 10 |
| 9 | 9 | F9NR1/4 | R 1/4 | 13,8 | 35 | 12 | 8 | 10 |
| | | F9NR3/8 | R 3/8 | 13,8 | 35 | 12 | 8 | 10 |
| 12 | 12 | F12NR3/8 | R 3/8 | 17,8 | 40 | 12 | 10 | 10 |



Series 12



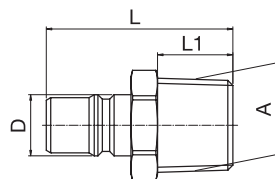
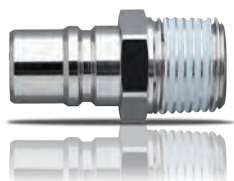
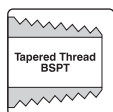
Series 16



Series 25

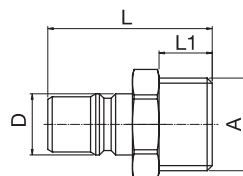
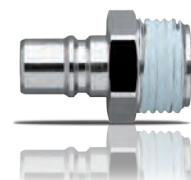
FRENCH MATIC SERIES

Male Plug Taper Thread



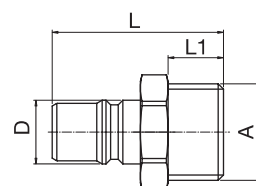
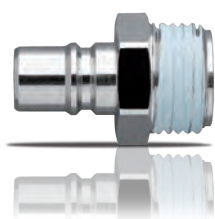
| DN | Series | ↔ | A | D | L | L1 | HEX | 📦 |
|----|--------|----------|-------|------|----|----|-----|----|
| 12 | 12 | F12NR1/2 | R 1/2 | 17,8 | 42 | 17 | 22 | 10 |
| 16 | 16 | F16NR3/4 | R 3/4 | 22,4 | 59 | 19 | 27 | 10 |

Valved Plug Short Model



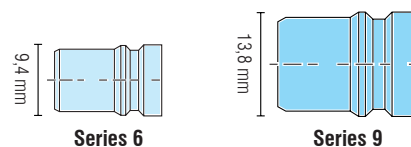
| DN | Series | ↔ | A | D | L | L1 | HEX | 📦 |
|----|--------|-------------|-------|------|----|----|-----|----|
| 9 | 9 | F9NR1/2V-S | R 1/2 | 13,8 | 37 | 12 | 22 | 10 |
| 12 | 12 | F12NR3/4V-S | R 3/4 | 17,8 | 46 | 16 | 27 | 10 |

Male Plug

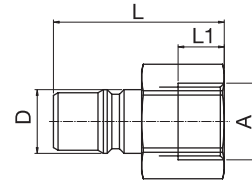


| DN | Series | ↔ | A | D | L | L1 | HEX | 📦 |
|----|--------|----------|-------|------|----|----|-----|----|
| 9 | 9 | F9NR1/2 | G 1/2 | 13,8 | 37 | 12 | 22 | 10 |
| 12 | 12 | F12NR3/4 | G 3/4 | 17,8 | 46 | 16 | 27 | 10 |

See explanation of symbols on page 404

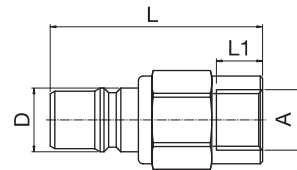
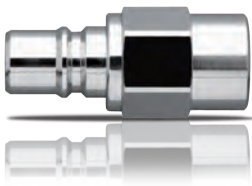


Female Plug

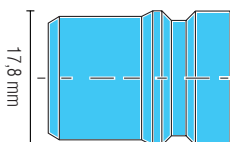


| DN | Series | ↔ | A | D | L | L1 | HEX | 📦 |
|----|--------|-----------|-------|------|-----|----|-----|----|
| 6 | 6 | F6NR1/4I | G 1/4 | 9,4 | 34 | 11 | 17 | 10 |
| 9 | 9 | F9NR3/8I | G 3/8 | 13,8 | 37 | 10 | 22 | 10 |
| 12 | 12 | F12NR1/2I | G 1/2 | 17,8 | 45 | 12 | 27 | 10 |
| 25 | 25 | F25NR1/1I | G 1 | 36 | 100 | 20 | 41 | 1 |

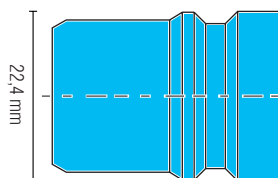
Female Plug Valved



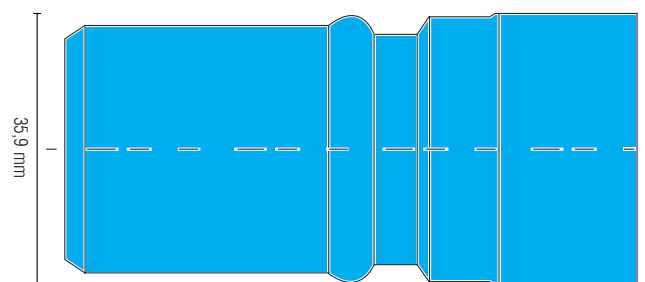
| DN | Series | ↔ | A | D | L | L1 | HEX | 📦 |
|----|--------|--------------|---------|------|-------|----|-----|----|
| 9 | 9 | F9NR1/4VI | G 1/4 | 13,8 | 46 | 10 | 19 | 10 |
| | | F9NR3/8VI | G 3/8 | 13,8 | 48 | 10 | 22 | 10 |
| 16 | 16 | F16NR3/4VI | G 3/4 | 22,4 | 80,5 | 16 | 32 | 5 |
| 25 | 25 | F25NR1/1VI | G 1 | 36 | 148,5 | 20 | 50 | 1 |
| | | F25NR1-1/4VI | G 1-1/4 | 36 | 158 | 20 | 50 | 1 |



Series 12



Series 16



Series 25

LARGE FLOW COUPLINGS

Nominal Diameter

75 / 85 / 95 / 105

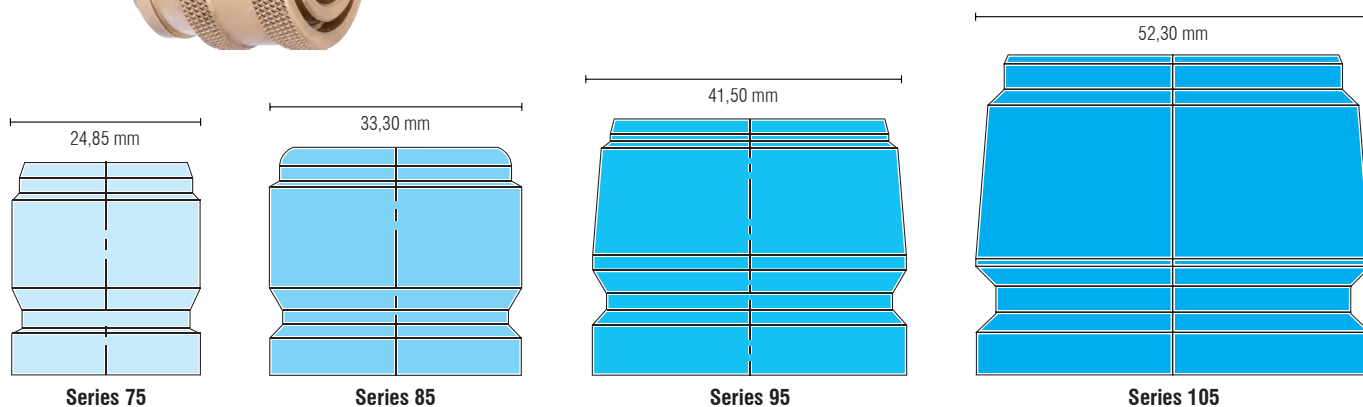
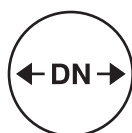


Illustration scale 1:1

| Series | Nominal Diameter (DN) |
|--------|-----------------------|
| 75 | 18,0 mm |
| 85 | 23,8 mm |
| 95 | 30,3 mm. |
| 105 | 36,5 mm. |



Technical Description

Coupling series especially developed for connecting feed lines on Manifolds. Temperature control units or chiller cooling lines. The Couplings offer maximum flow capacity.

Material

| Coupling | | Plug |
|---------------|----------|-------|
| Back Body | Brass | Brass |
| Valve Body | Brass | |
| Sleeve | Brass | |
| Locking Balls | AISI 420 | |
| Spring | AISI 301 | |
| Seal | FKM | |

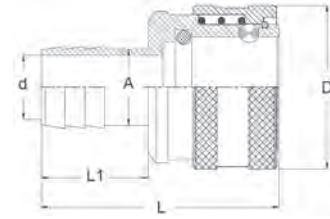
Working Pressure

15 bar, maximum static working pressure with safety factor of 4 to 1.

Working Temperature

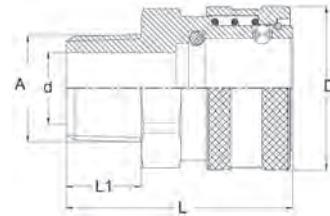
Water -15°C up to +140°C
Oil -15°C up to +180°C

Straight Coupling



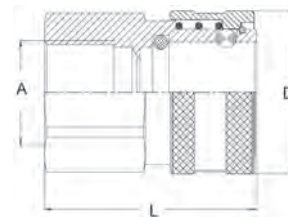
| DN | Series | Part No. | A | D | d | L | L1 | |
|------|--------|----------|----|----|------|-----|------|---|
| 18 | 75 | 75K19 | 19 | 41 | 16 | 60 | 27 | 1 |
| 23,8 | 85 | 85K25 | 25 | 50 | 21,5 | 82 | 41,5 | 1 |
| 30,3 | 95 | 95K32 | 32 | 64 | 28 | 62 | 39 | 1 |
| 36,5 | 105 | 105K38 | 38 | 79 | 34 | 104 | 46 | 1 |

Male Threaded Coupling



| DN | Series | Part No. | A | D | L | L1 | d | |
|------|--------|--------------|----------|----|------|----|------|---|
| 18 | 75 | 75KUR3/4 | R 3/4" | 41 | 57 | 19 | 18 | 1 |
| 23,8 | 85 | 85KUR1/1 | R 1" | 50 | 65,5 | 25 | 24,5 | 1 |
| 30,3 | 95 | 95KUR1-1/4 | R 1-1/4" | 64 | 76,4 | 24 | 31,8 | 1 |
| 36,5 | 105 | 105KUR 1-1/2 | R 1-1/2" | 79 | 88,8 | 25 | 36,5 | 1 |

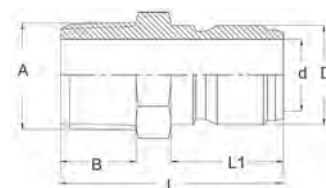
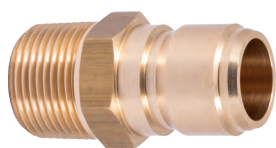
Female Threaded Coupling



| DN | Series | Part No. | A | D | L | |
|------|--------|-------------|----------|----|------|---|
| 18 | 75 | 75KIR3/4 | G 3/4" | 41 | 53,3 | 1 |
| 23,8 | 85 | 85KIR1/1 | G 1" | 50 | 60 | 1 |
| 30,3 | 95 | 95KIR1-1/4 | G 1-1/4" | 64 | 62 | 1 |
| 36,5 | 105 | 105KIR1-1/2 | G 1-1/2" | 79 | 74 | 1 |

LARGE FLOW COUPLINGS

Male Plug



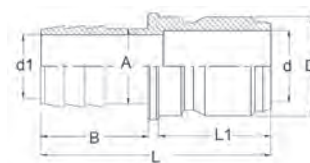
| DN | Series | Part No. | A | D | L | L1 | d | |
|------|--------|------------|----------|-------|------|------|------|---|
| 18 | 75 | 75NR3/4 | R 3/4" | 24,85 | 56 | 19 | 18 | 1 |
| 23,8 | 85 | 85NR1/1 | R 1" | 33,3 | 63,6 | 14,4 | 23,8 | 1 |
| 30,3 | 95 | 95NR1-1/4 | R 1-1/4" | 41,5 | 71 | 24,5 | 30,3 | 1 |
| 36,5 | 105 | 105NR1-1/2 | R 1-1/2" | 52,3 | 84 | 25 | 36,5 | 1 |

Female Plug

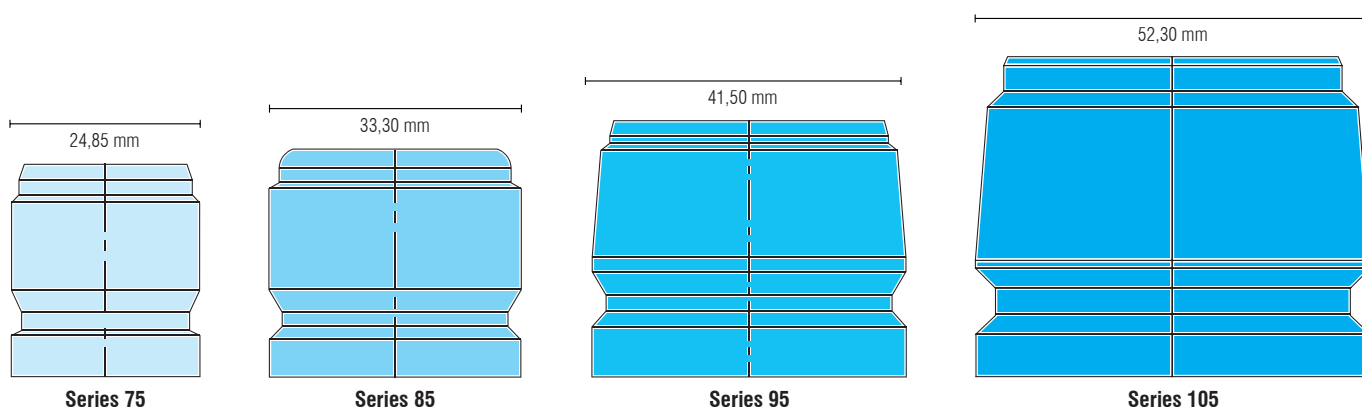


| DN | Series | Part No. | A | D | L | d | |
|------|--------|-------------|----------|-------|------|------|---|
| 18 | 75 | 75NR3/4I | G 3/4" | 24,85 | 49 | 18 | 1 |
| 23,8 | 85 | 85NR1/1I | G 1" | 33,3 | 59,5 | 23,8 | 1 |
| 30,3 | 95 | 95NR1-1/4I | G 1-1/4" | 41,5 | 61,9 | 30,3 | 1 |
| 36,5 | 105 | 105NR1-1/2I | G 1-1/2" | 52,3 | 67 | 36,5 | 1 |

Hosetail Plug



| DN | Series | Part No. | A | D | L | d1 | d | |
|------|--------|----------|----|-------|------|------|------|---|
| 18 | 75 | 75N19 | 19 | 24,85 | 49 | 16 | 18 | 1 |
| 23,8 | 85 | 85N25 | 25 | 33,3 | 59,5 | 21,5 | 23,8 | 1 |
| 30,3 | 95 | 95N32 | 32 | 41,5 | 61,9 | 28 | 30,3 | 1 |
| 36,5 | 105 | 105N38 | 38 | 52,3 | 99 | 34 | 36,5 | 1 |

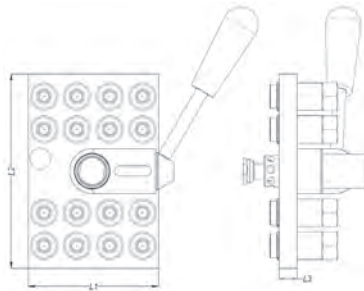





Quick and safe mould changes with our Multi Couplings

Moulds with many cooling connections can be time consuming and may lead to incorrect connections. With our Multi Couplings you can connect all connection in one single operation and eliminate any incorrect connections.

Coupling Plate (Machine Side)



| Part No. | # Circuits | # Connections | L1 | L2 | L3 |  |
|----------|------------|---------------|-----|-----|----|---|
| MC4 | 4 | 8 | 102 | 104 | 14 | 1 |
| MC6 | 6 | 12 | 154 | 78 | 14 | 1 |
| MC8 | 8 | 16 | 154 | 104 | 14 | 1 |
| MC10 | 10 | 20 | 206 | 104 | 14 | 1 |
| MC12 | 12 | 24 | 240 | 104 | 14 | 1 |

Supplied without couplings (order separately).

Coupling Plate (Machine Side) French Matic Series 9

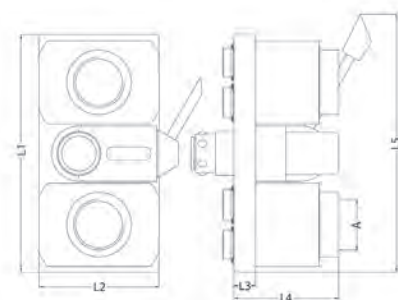


| Connection | Part No. | Part No. | Part No. |
|------------|----------|----------|----------|
| Ø 10 | MC-C10 | MC-C10P | |
| Ø 13 | MC-C13 | MC-C13P | |
| G3/8" | | | MC-C3/8 |

Locking rings included.
Couplers are with shut off valves and 9 mm. flow capacity.

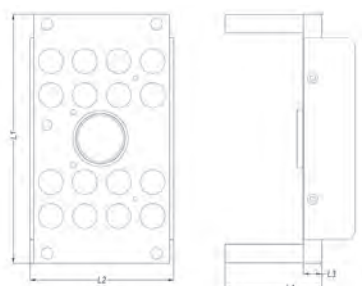
MULTI COUPLINGS

Coupling Plate - with Inlet and Outlet Female Manifold



| Part No. | # Circuits | # Connection | A | L1 | L2 | L3 | |
|------------|------------|--------------|----------|-----|-----|----|---|
| MC6-1 | 6 | 12 | G 1" | 154 | 78 | 14 | 1 |
| MC10-1-1/4 | 10 | 20 | G 1-1/4" | 206 | 103 | 14 | 1 |
| MC12-1-1/4 | 12 | 24 | G 1-1/4" | 230 | 103 | 14 | 1 |

Coupling Plate (Mould Side)



| Part No. | # Circuits | # Connections | L1 | L2 | L3 | L4 | |
|----------|------------|---------------|-----|-----|----|----|---|
| MM4-P | 4 | 8 | 140 | 104 | 14 | 60 | 1 |
| MM6-P | 6 | 12 | 190 | 88 | 14 | 60 | 1 |
| MM8-P | 8 | 16 | 190 | 110 | 14 | 60 | 1 |
| MM10-P | 10 | 20 | 206 | 110 | 14 | 90 | 1 |
| MM12-P | 12 | 24 | 256 | 110 | 14 | 90 | 1 |

Supplied without Nipples.

Nipples for Coupling Plate (Mould Side) French Matic Series 9



| Connection | Part No. | Part No. | Part No. | Part No. |
|------------|----------|----------|----------|----------|
| Ø 10 | | | NC-C10 | NC-C10P |
| Ø 13 | | | NC-C13 | NC-C13P |
| G3/8" | NC-C3/8V | NC-C3/8 | | |

Locking rings included.
Nipples are with size 9 mm. flow capacity.

See explanation of symbols on page 404

Hose Selection Guide

Our Hoses are specially engineered for Mould Cooling applications. We offer a wide range of hoses suitable to match any need for the perfect cooling circuit.

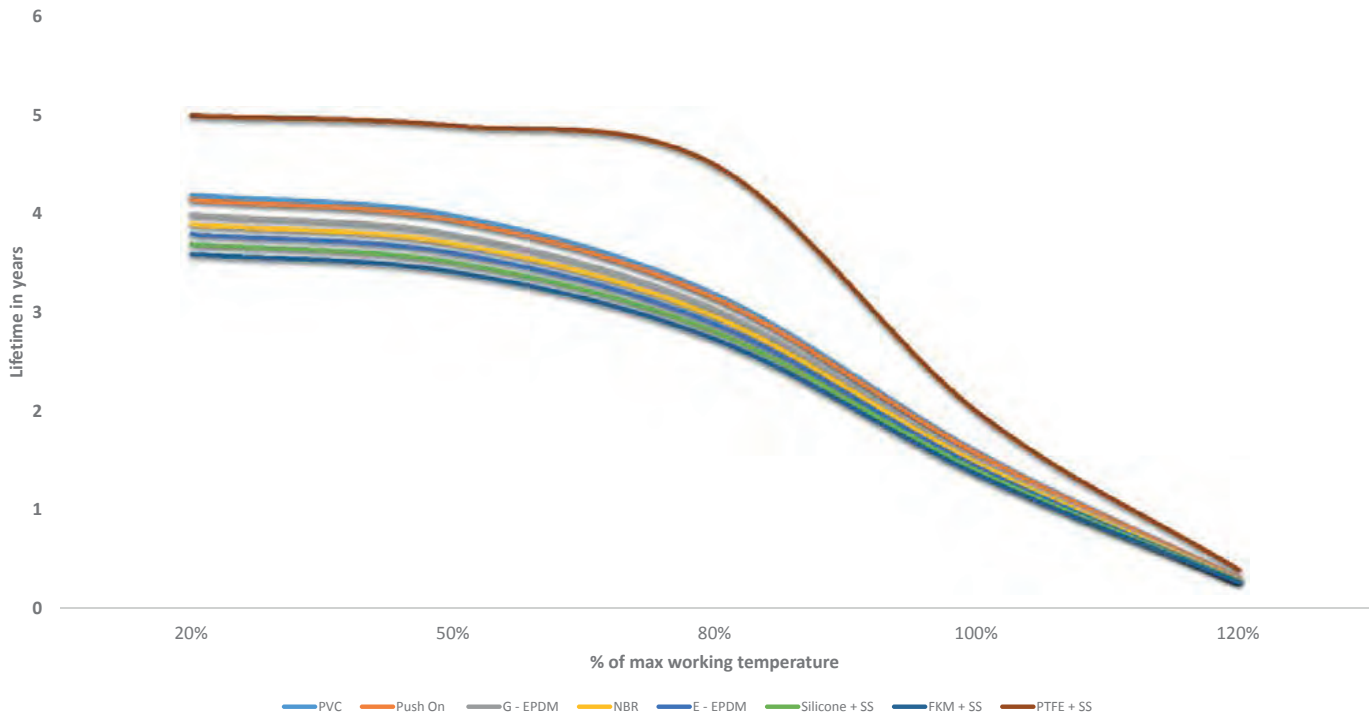
Our hoses are available in most common sizes and in 3 main colours to create logic circuits easy to identify cold and warm transfer connections.

We recommend using Stainless steel crimp ferules which allow you to make professional and safe assemblies.

If you require certified hose assemblies then visit our online configurator at www.hoseconfigurator.net.



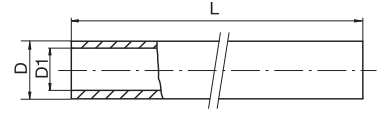
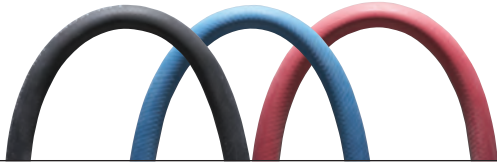
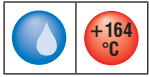
| Type | Water | Oil | Working Temperature | Wear Resistance | Chemical Resistance | Pressure Resistance | Flexibility |
|---------------|-------|-----|---------------------|-----------------|---------------------|---------------------|-------------|
| PVC | ✓✓✓ | ✓ | 60°C | ✓✓ | ✓✓ | ✓✓ | ✓ |
| Push On | ✓✓✓ | ✓ | 125°C | ✓✓✓ | ✓✓ | ✓✓ | ✓✓ |
| G - EPDM | ✓✓✓ | ✓ | 100°C | ✓ | ✓ | ✓✓ | ✓✓ |
| NBR | ✓ | ✓✓✓ | 135°C | ✓✓ | ✓✓✓ | ✓✓✓ | ✓✓ |
| E - EPDM | ✓✓✓ | ✓ | 140°C | ✓ | ✓ | ✓✓ | ✓✓ |
| Silicone + SS | ✓✓ | ✓ | 170°C | ✓✓✓ | ✓ | ✓✓ | ✓✓✓ |
| FKM + SS | ✓ | ✓✓✓ | 200°C | ✓✓✓ | ✓✓✓ | ✓✓ | ✓✓ |
| PTFE + SS | ✓✓✓ | ✓✓✓ | 260°C | ✓✓✓ | ✓✓✓ | ✓✓✓ | ✓✓✓ |



Above figures are only theoretical data, the physical properties are influenced by several factors such as: Pressure, ambient temperatures, wear, additives, sunlight, movement action, bending radius, connection clamping etc. So an individual calculation of lifetime must be based on all variables.

HOSES

Material EPDM



| Part No. | D1 | D | L (m) | Colour | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius | |
|----------|----|------|-------|--------|------------------------|----------------------|-------------|---|
| E10B | 10 | 16,5 | 50 | | 15 | 60 | 60 | 1 |
| E10R | 10 | 16,5 | 50 | | 15 | 60 | 60 | 1 |
| E10S | 10 | 16,5 | 50 | | 15 | 60 | 60 | 1 |
| E13B | 13 | 21 | 50 | | 15 | 60 | 90 | 1 |
| E13R | 13 | 21 | 50 | | 15 | 60 | 90 | 1 |
| E13S | 13 | 21 | 50 | | 15 | 60 | 90 | 1 |
| E19B | 19 | 27 | 30 | | 15 | 60 | 110 | 1 |
| E19R | 19 | 27 | 30 | | 15 | 60 | 110 | 1 |
| E19S | 19 | 27 | 30 | | 15 | 60 | 110 | 1 |

Tube:
Black, antistatic, smooth EPM Nitrosamine free rubber compound, resistant to heat, hot water and water Vapour.

Cover:
Blue, Red, or Black smooth EPDM Nitrosamine free rubber compound. Resistant to abrasion, ozone, heat, and weather.

Temperature range:
Working temperature: Up to +140°C (+284°F) peak up to +164°C (+327°F).
Note: Lifetime of this hose will be substantially reduced if operating temperatures exceed +130°C (+266°F).

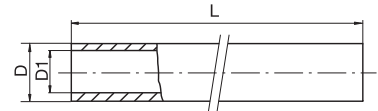
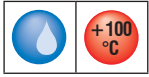
Tolerances:
UNI EN ISO 1307/97 tolerances for inside diameters up to and including 25 mm.

Reinforcement:
Synthetic textile yarns.

Applications:
Flexible hose designed for hot water and water vapour for mould temperature controlling.

On inside diameter:
for I.D. 5.1 up to 20 mm ± 0.80 mm.
Length tolerance: ± 1%.

Material EPDM



| Part No. | D1 | D | L (m) | Colour | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius | |
|----------|----|------|-------|--------|------------------------|----------------------|-------------|---|
| G10B | 10 | 16,5 | 50 | | 15 | 60 | 60 | 1 |
| G10R | 10 | 16,5 | 50 | | 15 | 60 | 60 | 1 |
| G10S | 10 | 16,5 | 50 | | 15 | 60 | 60 | 1 |
| G13B | 13 | 21 | 50 | | 15 | 60 | 90 | 1 |
| G13R | 13 | 21 | 50 | | 15 | 60 | 90 | 1 |
| G13S | 13 | 21 | 50 | | 15 | 60 | 90 | 1 |
| G19B | 19 | 27 | 30 | | 15 | 60 | 110 | 1 |
| G19R | 19 | 27 | 30 | | 15 | 60 | 110 | 1 |
| G19S | 19 | 27 | 30 | | 15 | 60 | 110 | 1 |
| G25B | 25 | 35 | 20 | | 15 | 60 | 130 | 1 |
| G25R | 25 | 35 | 20 | | 15 | 60 | 130 | 1 |
| G38B | 38 | 48 | 20 | | 10 | 30 | 200 | 1 |
| G38R | 38 | 48 | 20 | | 10 | 30 | 200 | 1 |

Tube:
Black, antistatic, smooth EPDM Nitrosamine free rubber compound, resistant to water, hot water, air, light-chemical media.

Cover:
Red, Blue or Black smooth EPDM Nitrosamine free rubber compound.

Temperature range:
Working temperature: Up to +100°C (+248°F).

Tolerances:
UNI EN ISO 1307/97 tolerances for inside diameters up to and including 25 mm.

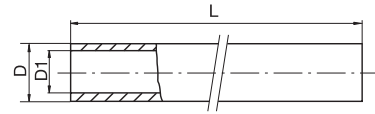
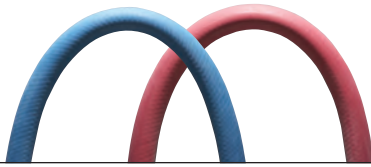
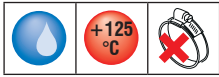
Reinforcement:
Synthetic textile yarns.

Applications:
Designed for air, cold and hot water, and light-chemical media for mould temperature controlling.

On inside diameter:
for I.D. 5.1 up to 20 mm ± 0.80 mm.
Length tolerance: ± 1%.

See explanation of symbols on page 404

Material EPDM - Push On Hose



| Part No. | D1 | D | L (m) | Colour | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius | |
|----------|----|-------|-------|--------|------------------------|----------------------|-------------|---|
| PL10B-HT | 10 | 16 | 50 | ● | 28 | 112 | 80 | 1 |
| PL10R-HT | 10 | 16 | 50 | ● | 28 | 112 | 80 | 1 |
| PL13B-HT | 13 | 20 | 50 | ● | 28 | 112 | 100 | 1 |
| PL13R-HT | 13 | 20 | 50 | ● | 28 | 112 | 100 | 1 |
| PL19B-HT | 19 | 28,50 | 50 | ● | 21 | 84 | 140 | 1 |
| PL19R-HT | 19 | 28,50 | 50 | ● | 21 | 84 | 140 | 1 |

Tube:
Black, smooth special rubber for high temperature.
Our Push On fittings are recommended.

Reinforcement:
High strength synthetic textile braids.

Cover:
Red or blue, abrasion, and weathering resistant.

Surface:
Smooth fabric.

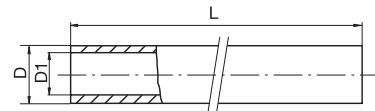
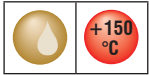
Applications:
Suitable for delivery of air, hot and cold water, and chemical products low with push lock fitting system.

Temperature range:
Up to +125°C (+257°F).

Tolerances:
UNI EN ISO 1307/97 tolerances for inside diameters up to and including 25 mm.

On inside diameter:
For I.D. 5.1 up to 20 mm ± 0.80 mm.
Length tolerance: ± 1%.
Standards: CNOMO E07.21.115.N.

Material NBR



| Part No. | D1 | D | L (m) | Colour | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius | |
|----------|----|------|-------|--------|------------------------|----------------------|-------------|---|
| N10S | 10 | 16,5 | 50 | ● | 28 | 110 | 75 | 1 |
| N13S | 13 | 20 | 50 | ● | 28 | 110 | 100 | 1 |

Tube:
Black, antistatic, smooth NBR rubber compound, resistant to Oil.

Reinforcement:
Polyvinyl alcohol (PVA).

Cover:
Black smooth CPE rubber compound.

Applications:
Designed for Oil mould temperature controlling.

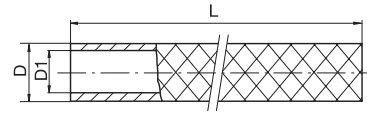
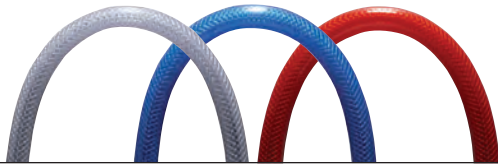
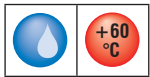
Temperature range:
Working temperature: Up to +135°C (+275°F)
peak up to +150°C (+302°F).

Tolerances:
UNI EN ISO 1307/97 tolerances for inside diameters up to and including 25 mm.

On inside diameter:
for I.D. 5.1 up to 20 mm ± 0.80 mm.
Length tolerance: ± 1%.

HOSES

Material PVC



| Part No. | D1 | D | L (m) | Colour | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius | |
|----------|----|----|-------|--------|------------------------|----------------------|-------------|---|
| P10T | 10 | 16 | 30 | ○ | 17 | 51 | 65 | 1 |
| P10B | 10 | 16 | 30 | ● | 17 | 51 | 65 | 1 |
| P10R | 10 | 16 | 30 | ● | 17 | 51 | 65 | 1 |
| P13T | 13 | 19 | 30 | ○ | 15 | 45 | 85 | 1 |
| P13B | 13 | 19 | 30 | ● | 15 | 45 | 85 | 1 |
| P13R | 13 | 19 | 30 | ● | 15 | 45 | 85 | 1 |
| P19T | 19 | 26 | 30 | ○ | 10 | 30 | 125 | 1 |
| P19B | 19 | 26 | 30 | ● | 10 | 30 | 125 | 1 |
| P19R | 19 | 26 | 30 | ● | 10 | 30 | 125 | 1 |

Tube: Transparent soft PVC hose for low temperature water and air.

Cover: Clear, blue or red transparent soft PVC. Resistant to abrasion, ozone, and weather.

Reinforcement: High-strength PES fiber.

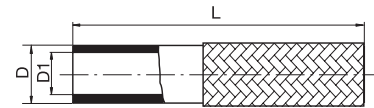
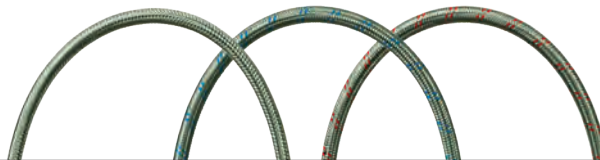
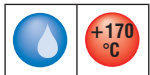
Applications: Flexible hose designed for cold water for mould temperature controlling.

Temperature range: Working temperature: Up to +60°C (+140°F) peak up to +90°C (+194°F). Note: Lifetime of this hose will be substantially reduced if operating temperatures exceed +60°C (+140°F).

Tolerances: UNI EN ISO 1307/97 tolerances for inside diameters up to and including 25 mm.

On inside diameter: for I.D. 5.1 up to 20 mm ± 0.80 mm. Length tolerance: ± 1%.

Material Silicone - Steam Resistant



| Part No. | D1 | D | L (m) | Colour | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius | |
|----------|----|----|-------|--------|------------------------|----------------------|-------------|---|
| S10 | 10 | 15 | 25 | ○ | 15 | 45 | 40 | 1 |
| S10B | 10 | 15 | 25 | ● | 15 | 45 | 40 | 1 |
| S10R | 10 | 15 | 25 | ● | 15 | 45 | 40 | 1 |
| S13 | 13 | 19 | 25 | ○ | 15 | 45 | 60 | 1 |
| S13B | 13 | 19 | 25 | ● | 15 | 45 | 60 | 1 |
| S13R | 13 | 19 | 25 | ● | 15 | 45 | 60 | 1 |
| S19 | 19 | 29 | 25 | ○ | 15 | 45 | 100 | 1 |
| S19B | 19 | 29 | 25 | ● | 15 | 45 | 100 | 1 |
| S19R | 19 | 29 | 25 | ● | 15 | 45 | 100 | 1 |

Tube: Clear Silicone Shore 60°.

Reinforcement: Stainless steel overbraid with colour marking made of textile meta aramid. (high temperature resistant)

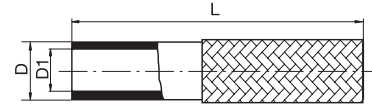
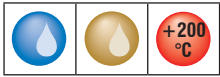
Applications: Designed for water and light chemical media for mould temperature controlling.

Temperature range: Working temperature: Max +170°C / +338°F.

Tolerances: DIN 7715.

See explanation of symbols on page 404

Material FKM



| Part No. | D1 | D | L (m) | Colour | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius | |
|----------|----|----|-------|--------|------------------------|----------------------|-------------|---|
| V10 | 10 | 16 | 25 | ● | 15 | 45 | 50 | 1 |
| V13 | 13 | 19 | 25 | ● | 15 | 45 | 60 | 1 |

Tube:
Black Viton shore 65°.

Applications:
Designed for Oil and chemical media for mould temperature controlling.

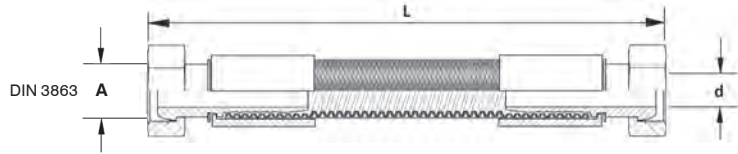
Temperature range:
Working temperature: Oil Max +200°C (+392°F)
Working temperature: Water Max +140°C (+284°F).

Tolerances:
ISO DIN 3302-1 E2.

Reinforcement:
Stainless steel overbraid.

HOSES

High Temperature Water and Oil Hose Assemblies



| Stainless Steel Braided | Stainless Steel Braided + Red Silicone Jacket | Stainless Steel Braided + Blue Silicone Jacket | A | L | Hose ID (d) | Working Pressure (Bar) | Burst Pressure (Bar) | Bend Radius |
|-------------------------|---|--|-----------|------|-------------|------------------------|----------------------|-------------|
| T10300R1/4 | T10300R1/4-R | T10300R1/4-B | 1/4" BSPP | 300 | 10 | 20 | 80 | 22 |
| T10600R1/4 | T10600R1/4-R | T10600R1/4-B | | 600 | | | | |
| T10800R1/4 | T10800R1/4-R | T10800R1/4-B | | 800 | | | | |
| T101000R1/4 | T101000R1/4-R | T101000R1/4-B | | 1000 | | | | |
| T101250R1/4 | T101250R1/4-R | T101250R1/4-B | | 1250 | | | | |
| T101500R1/4 | T101500R1/4-R | T101500R1/4-B | | 1500 | | | | |
| T102000R1/4 | T102000R1/4-R | T102000R1/4-B | | 2000 | | | | |
| T10300M14 | T10300M14-R | T10300M14-B | M14x1,5 | 300 | 10 | 20 | 80 | 22 |
| T10600M14 | T10600M14-R | T10600M14-B | | 600 | | | | |
| T10800M14 | T10800M14-R | T10800M14-B | | 800 | | | | |
| T101000M14 | T101000M14-R | T101000M14-B | | 1000 | | | | |
| T101250M14 | T101250M14-R | T101250M14-B | | 1250 | | | | |
| T101500M14 | T101500M14-R | T101500M14-B | | 1500 | | | | |
| T102000M14 | T102000M14-R | T102000M14-B | | 2000 | | | | |
| T13300R3/8 | T13300R3/8-R | T13300R3/8-B | 3/8" BSPP | 300 | 13 | 20 | 80 | 25 |
| T13600R3/8 | T13600R3/8-R | T13600R3/8-B | | 600 | | | | |
| T13800R3/8 | T13800R3/8-R | T13800R3/8-B | | 800 | | | | |
| T131000R3/8 | T131000R3/8-R | T131000R3/8-B | | 1000 | | | | |
| T131250R3/8 | T131250R3/8-R | T131250R3/8-B | | 1250 | | | | |
| T131500R3/8 | T131500R3/8-R | T131500R3/8-B | | 1500 | | | | |
| T132000R3/8 | T132000R3/8-R | T132000R3/8-B | | 2000 | | | | |

With 60° Cone Seat swivel fittings DIN 3863.

Tube:
Low profile helically convoluted PTFE (polytetrafluorethylene).

Reinforcement:
Stainless steel overbraid (Red/Blue Silicone cover).

Applications:
Designed for Water, Oil and chemical media for mould temperature controlling.

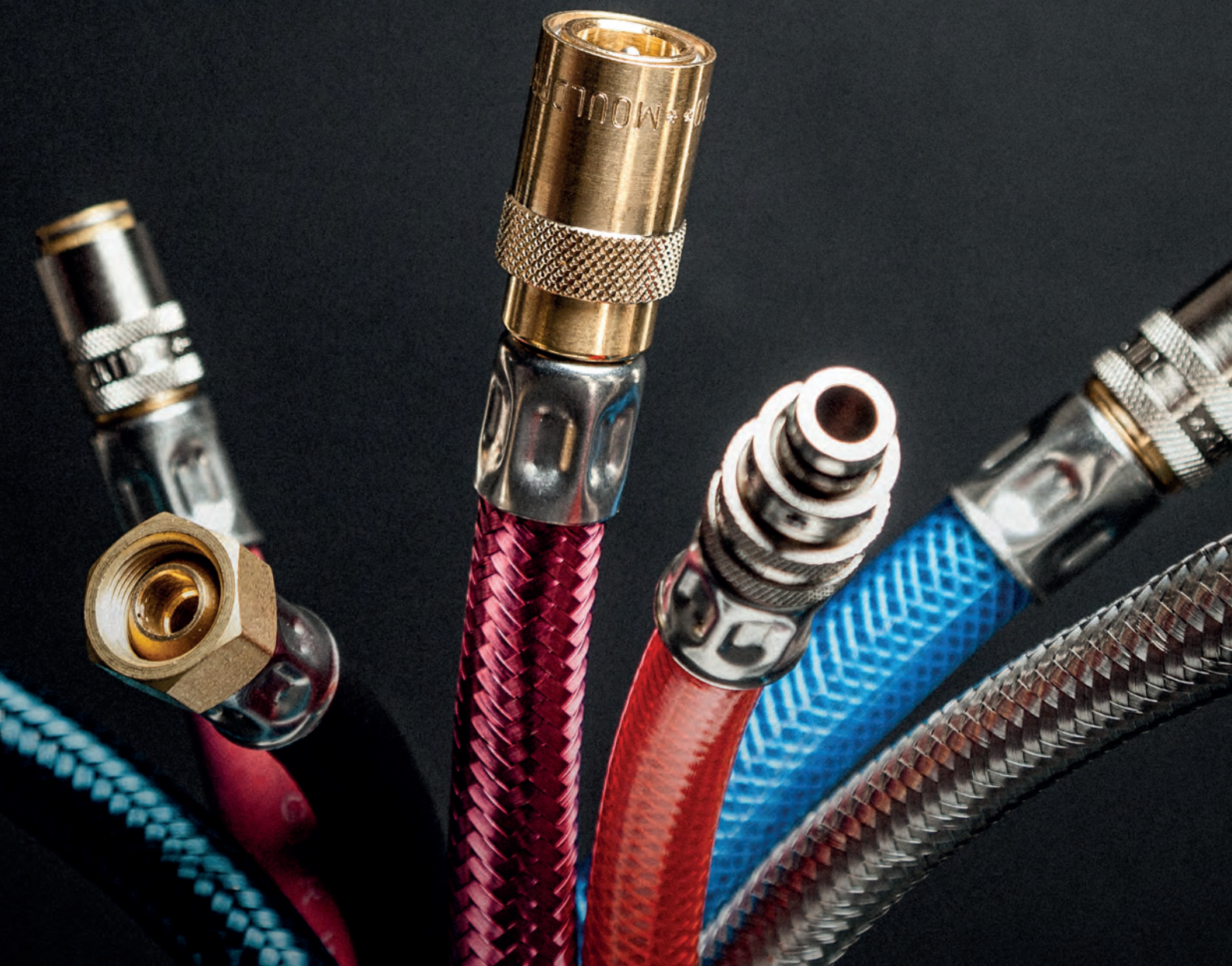
Temperature range:
Working temperature:
Max +260°C (+500°F)
RED/BLUE: Only +200°C (+392°F).

Tolerances:
ISO DIN 3302-1 E2.

See explanation of symbols on page 404

LEAK FREE HOSE ASSEMBLIES

Order online at: www.hoseconfigurator.net



HOSE PROTECTION

Safety Heat Sleeve



| Part No. | Colour | ID (mm) | Length |
|----------|--------|---------|--------|
| SHS10 | | 10 | 20 m |
| SHS10B | | 10 | 20 m |
| SHS15 | | 15 | 20 m |
| SHS15B | | 15 | 20 m |
| SHS20 | | 20 | 20 m |
| SHS20B | | 20 | 20 m |
| SHS25 | | 25 | 20 m |
| SHS25B | | 25 | 20 m |
| SHS30 | | 30 | 20 m |
| SHS30B | | 30 | 20 m |
| SHS40 | | 40 | 20 m |
| SHS40B | | 40 | 20 m |

Protect hoses and cables from heat exposure.
 Material: Glass fiber with silicone coating.
 Temperature: Up to +260°C continuous heat.

Heat Tape



| Part No. | Colour | Thickness (mm) | Width (mm) | Roll Length (mm) |
|----------|--------|----------------|------------|------------------|
| HT-B-3 | Blue | 0,5 | 25,4 | 3000 |
| HT-R-3 | Red | 0,5 | 25,4 | 3000 |

Material: Silicone.
 Resists Temps +260°C (+500°F) to -50°C (-60°F).
 No Adhesive Therefore No Residue when Removed.
 Conforms to Shape to Create an Air and Water Tight Seal.
 Stretches up to 300%.

Safety Sleeve



| Part No. | ID (mm) | Flat (mm) | Length (roll) |
|----------|---------|-----------|---------------|
| SS17 | 17 | 30 | 50 m. |
| SS23 | 23 | 40 | 50 m. |
| SS30 | 30 | 50 | 50 m. |
| SS39 | 39 | 65 | 50 m. |
| SS55 | 55 | 90 | 50 m. |

Protect in case of burst hose.
 Protect hose from abrasion.
 Resistant to chemicals.
 Polyester up to +140 degrees.

Safe-Strip, Standard



| Part No. | Length (mm) | Bundle max (mm) | Strip Width (mm) |
|----------|-------------|-----------------|------------------|
| STD70 | 310 | 70 | 40 |
| STD100 | 435 | 100 | 40 |
| STD125 | 505 | 125 | 40 |
| STD155 | 605 | 155 | 40 |
| STD180 | 680 | 180 | 40 |

Safe-Strip made of polypropylene with Velcro fasteners.

Safe-Strip, with Mounting Eyelet



| Part No. | Length (mm) | Bundle max (mm) | Strip Width (mm) |
|----------|-------------|-----------------|------------------|
| STE70 | 340 | 70 | 40 |
| STE100 | 455 | 100 | 40 |
| STE125 | 540 | 125 | 40 |
| STE155 | 660 | 155 | 40 |
| STE180 | 765 | 180 | 40 |

Safe-Strip made of polypropylene with Velcro fasteners. With Eyelet.

Safe-Strip with Buckle




| Part No. | Length (mm) | Strip Width (mm) |
|----------|-------------|------------------|
| STB50 | 500 | 25 |
| STB100 | 1000 | 25 |
| STB150 | 1500 | 25 |

Safe-Strip made of polypropylene with quick-release buckle.

Hose Ziptag



| Part No. | Type | Colour | Length (mm) |  |
|----------|-------|--------|-------------|---|
| ZT301R | Plain | Red | 300 mm. | 10 |
| ZT301B | Plain | Blue | 300 mm. | 10 |

Ziptags available in 2 styles:
 Plain for individual marking/labelling.

Material: Nylon.
 Temperature range: Up to +150°C.

HOSE CUTTING

Hose Cutting Tool



| Part No. | Size | |
|----------|---------|---|
| HC025 | 0-25 mm |  1 |

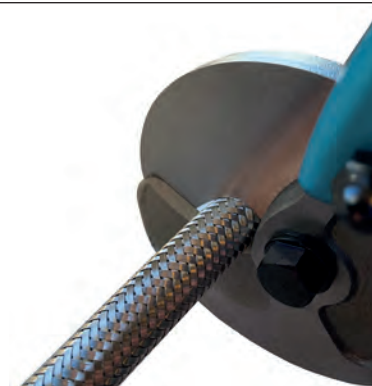
For PVC and Rubber hoses only.

Spare Blades



| Part No. | Size | |
|----------|----------|---|
| HC-SB | One Size |  1 |

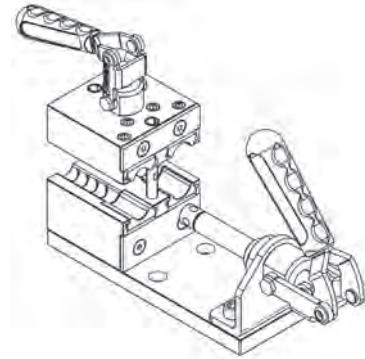
Hose Cutter



| Part No. | Hose size cut | Length | |
|----------|---------------|--------|---|
| HC-600 | 10-13-19 mm | 600 mm |  1 |

- For easy and clean cut of stainless steel braided hoses
- Weight: 1700g
- Length: 600mm

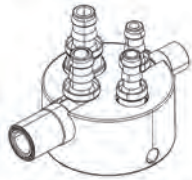
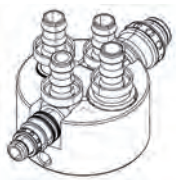
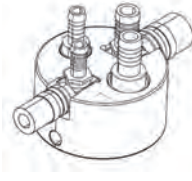
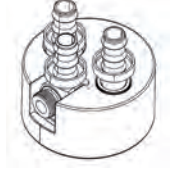
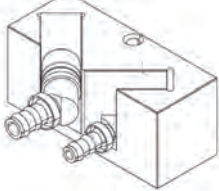
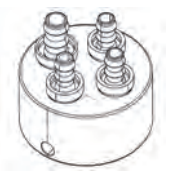
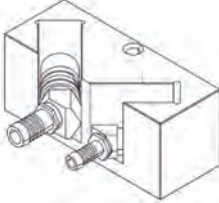
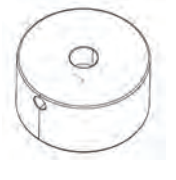
Base Tool



| Part No. | Hose range (ID) | Weight KG |
|----------|-------------------------|-----------|
| HAT-5000 | 10-13 mm. (3/8" - 1/2") | 3,3 |

Assembly tool ideal for Push-On fittings and standard hose tail couplers, to be perfectly assembled - quick and easy.
Adaptors available for all hoesetail fittings and couplers.

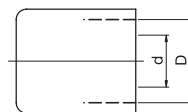
Adapters for Hose Assembly Tool


| Part No. | Reference | Image | Part No. | Reference | Image |
|----------|--|---|----------|--|---|
| HAT-01 | Series 09/13 European Series 20/30 International |  | HAT-05 | Series 08/12 French |  |
| HAT-02 | Safety - Ts Series 09/13 European Series 20/30 International |  | HAT-06 | Series Mc.. Multi-Couplers |  |
| HAT-03 | 45° Series 09/13 European Series 20/30 International |  | HAT-07 | Threaded Hose Nipples G1/8" - G1/4" - G3/8" - M10 - M14 |  |
| HAT-04 | 45° Safety - Ts Series 09/13 European Series 20/30 International |  | HAT-08 | Plain Insert For Custom Recess |  |

HOSE CLAMPING

Ferrule

STAINLESS
STEEL



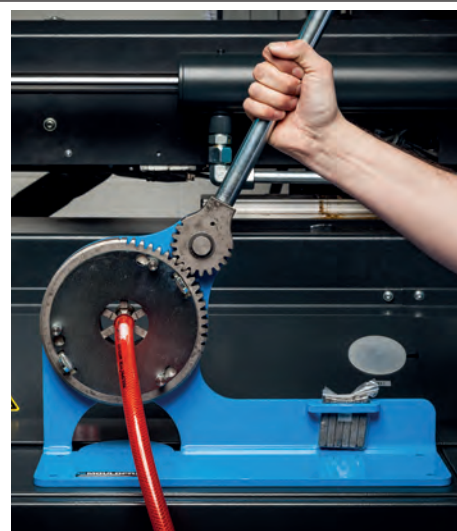
| Part No. | D | d |  | Hose Ref. |
|----------|------|----|---|-----------------|
| C10/16 | 16,9 | 10 | 100 | S10/V10/P10/N10 |
| C10/17 | 17,5 | 10 | 100 | G10/E10 |
| C13/19 | 19 | 13 | 100 | P13/S13 |
| C13/20 | 20 | 13 | 100 | P13/S13/N13/V13 |
| C13/22 | 22,5 | 13 | 100 | G13/E13 |
| C19/29 | 29 | 19 | 100 | G19/E19 |
| C19/31* | 30,5 | 19 | 20 | S19 |

Material: Stainless Steel

* Chrome Plated Steel

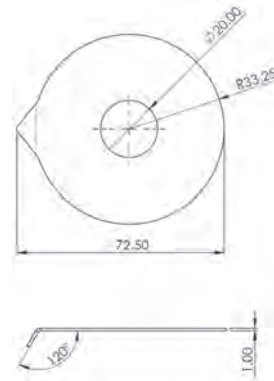
Offers perfect and safe connections.

Hand Crimper



| Part No. | Crimp Range (mm) |  |
|----------|------------------|---|
| X100 | 10-36 | 1 |

Position Gauge



| Part No. | Size | |
|----------|-----------|---|
| PG-X100 | Universal | 1 |

Description

This Position Gauge is ideal to retro-fit on the X100 Hose crimper and will indicate correct crimp position for perfect crimps everytime. To be used in connection with X100 crimper, Precision Crimp Jaws and Mouldpro Hose Ferrules.

Precision Crimp Jaws



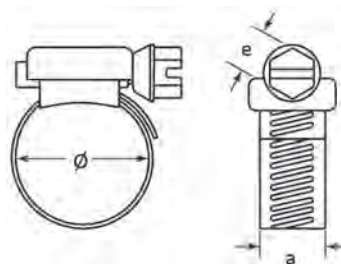
| Part No. | Crimp Diameter (mm) | Ferrule Ref | Hose Ref | |
|----------|---------------------|-------------|-----------------|-------|
| PCJ-16 | 16 | C10/16 | S10/V10/P10/N10 | 1 set |
| PCJ-17 | 17 | C10/17 | G10/E10 | 1 set |
| PCJ-20 | 20 | C13/20 | S13/V13/P13/N13 | 1 set |
| PCJ-22 | 22 | C13/22 | E13/G13 | 1 set |


Description

Precision designed to give the perfect crimp everytime. The Jaws are designed so they close completely around the ferrule without leaving gap for leaks. Use the Position Gauge in connection with X100 for the perfect result.

HOSE CLAMPING

Hose Clamps Standard Type

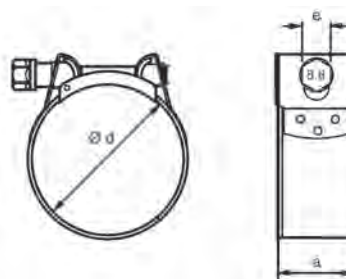


| Part No. | Ø | e | a |  | Hose ref. |
|----------|-------|---|---|---|-------------------------|
| K10 | 11-17 | 7 | 9 | 50 | S10/V10/P10/E10/G10/N10 |
| K13 | 13-20 | 7 | 9 | 50 | S13/V13/P13/E13/G13/N13 |
| K19 | 22-32 | 7 | 9 | 50 | S19/P19/E19/G19 |
| K25 | 32-44 | 7 | 9 | 50 | E25/G25 |

Screw: Electro zinc plated. Band: Galfan/Aluzink. Housing: Painted.

Hose Clamps Heavy Duty

STAINLESS
STEEL



| Part No. | Ø | e | a |  | Hose ref. |
|----------|-------|----|----|---|-------------|
| HDC2527 | 25-27 | 8 | 18 | 50 | P19/E19/G19 |
| HDC3437 | 34-37 | 11 | 20 | 50 | G25 |
| HDC4751 | 47-51 | 11 | 20 | 50 | G38 |

Material: Stainless Steel.

Flexible Hose Clip Screwdriver



Part No.
SD01

A/F
7

Flexible screwdriver for hose clips.
7 mm A/F.

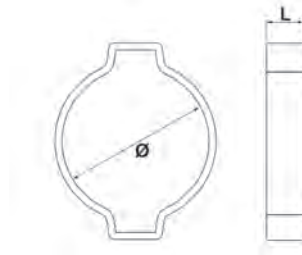
Side Pincer



| Part No. | Side Pincer | Front Pincer | |
|----------|-------------|--------------|---|
| PS01 | • | • | 1 |

Suitable for Ear Clamps.
Can be used either front or side access.

Two-ear Clip

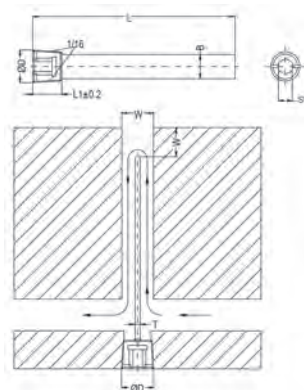
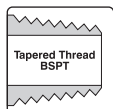


| Part No. | ø - ID | L | | HOSE Ref |
|----------|--------|-----|-----|-----------------|
| EAR15 | 13-15 | 7 | 100 | S10/V10 |
| EAR17 | 14-17 | 7 | 100 | P10/N10 |
| EAR18 | 15-18 | 7,5 | 100 | E10/G10 |
| EAR20 | 17-20 | 7,5 | 100 | S13/V13/P13/N13 |
| EAR23 | 20-23 | 8,5 | 100 | E13/G13 |
| EAR27 | 23-27 | 8,5 | 100 | P19 |
| EAR28 | 25-28 | 9 | 100 | E19/G19 |

Two-ear clips are an economical solution for simple hose assemblies.
The two ears give the clip extra grip and help to maintain constant pressure around the hose.
Two-ear clips offer great versatility in simple hose assemblies.
Material: St 34 steel : Finish Silver-white Cr3 Zinc-Plated.

FITTINGS

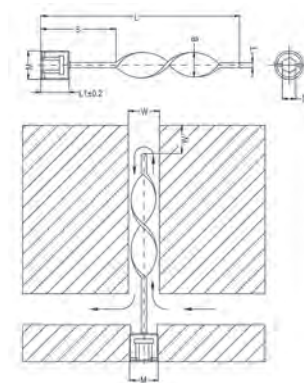
Straight Blade Baffles



| Part No | ØD | SW | W | B | L | L1 | T |
|------------|---------|----|------|------|-----|----|------|
| MB100-1/16 | R 1/16" | 4 | 6,5 | 6,2 | 104 | 8 | 1,61 |
| MB200-1/16 | R 1/16" | 4 | 6,5 | 6,2 | 204 | 8 | 1,61 |
| MB100-1/8 | R 1/8" | 5 | 8,5 | 8,2 | 104 | 8 | 1,61 |
| MB200-1/8 | R 1/8" | 5 | 8,5 | 8,2 | 204 | 8 | 1,61 |
| MB125-1/4 | R 1/4" | 7 | 11,5 | 11,2 | 131 | 10 | 2,43 |
| MB250-1/4 | R 1/4" | 7 | 11,5 | 11,2 | 258 | 10 | 2,43 |
| MB150-3/8 | R 3/8" | 8 | 15 | 14,2 | 156 | 10 | 2,43 |
| MB300-3/8 | R 3/8" | 8 | 15 | 14,2 | 309 | 10 | 2,43 |
| MB200-1/2 | R 1/2" | 10 | 18,5 | 18,2 | 207 | 10 | 2,43 |
| MB400-1/2 | R 1/2" | 10 | 18,5 | 18,2 | 410 | 10 | 2,43 |
| MB300-3/4 | R 3/4" | 12 | 23,5 | 23,2 | 309 | 12 | 3,21 |
| MB500-3/4 | R 3/4" | 12 | 23,5 | 23,2 | 512 | 12 | 3,21 |

Material: MS58 Brass.

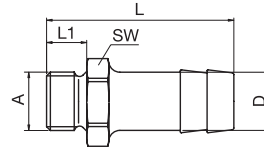
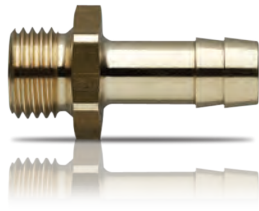
Spiral Blade Baffles




| Part No | M | S | SW | W | B | L | L1 | T |
|-------------|---------|-----|----|------|--------|-----|----|------|
| MSB100-1/16 | R 1/16" | 51 | 4 | 6,5 | 1/4" | 101 | 8 | 1,61 |
| MSB200-1/16 | R 1/16" | 102 | 4 | 6,5 | 1/4" | 203 | 8 | 1,61 |
| MSB100-1/8 | R 1/8" | 51 | 5 | 8,5 | 5/16" | 101 | 8 | 1,61 |
| MSB200-1/8 | R 1/8" | 102 | 5 | 8,5 | 5/16" | 203 | 8 | 1,61 |
| MSB125-1/4 | R 1/4" | 51 | 7 | 11,5 | 7/16" | 127 | 10 | 2,43 |
| MSB250-1/4 | R 1/4" | 102 | 7 | 11,5 | 7/16" | 254 | 10 | 2,43 |
| MSB150-3/8 | R 3/8" | 51 | 8 | 15 | 9/16" | 152 | 10 | 2,43 |
| MSB300-3/8 | R 3/8" | 102 | 8 | 15 | 9/16" | 305 | 10 | 2,43 |
| MSB200-1/2 | R 1/2" | 76 | 10 | 18,5 | 11/16" | 203 | 10 | 2,43 |
| MSB400-1/2 | R 1/2" | 127 | 10 | 18,5 | 11/16" | 406 | 10 | 2,43 |
| MSB300-3/4 | R 3/4" | 102 | 12 | 23,5 | 15/16" | 305 | 12 | 3,21 |
| MSB500-3/4 | R 3/4" | 153 | 12 | 23,5 | 15/16" | 508 | 12 | 3,21 |

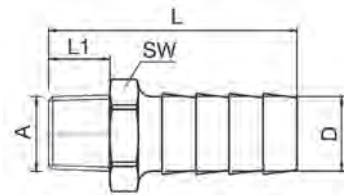
Material: MS58 Brass.


Hose Connector with Parallel Thread



| Part No. | A | D | L | L1 | SW |  |
|----------|---------|----|------|----|----|---|
| M10M8 | M8x0,75 | 10 | 33,5 | 7 | 11 | 25 |
| M10M10 | M10x1 | 10 | 33,5 | 7 | 11 | 25 |
| M10R1/8 | G 1/8" | 10 | 33 | 7 | 14 | 25 |
| M10R1/4 | G 1/4" | 10 | 35 | 9 | 17 | 25 |
| M10R3/8 | G 3/8" | 10 | 37,5 | 9 | 17 | 25 |
| M13M12 | M12x1,5 | 13 | 40 | 9 | 15 | 25 |
| M13R1/4 | G 1/4" | 13 | 42 | 9 | 17 | 25 |
| M13M14 | M14x1,5 | 13 | 43 | 10 | 17 | 10 |
| M13M16 | M16x1,5 | 13 | 40 | 9 | 17 | 10 |
| M13R3/8 | G 3/8" | 13 | 42 | 9 | 19 | 25 |
| M19M24 | M24x1,5 | 19 | 56 | 16 | 27 | 10 |
| M19R1/2 | G 1/2" | 19 | 54 | 12 | 24 | 10 |
| M19R3/4 | G 3/4" | 19 | 60 | 16 | 32 | 10 |

Hose Connector with Taper Thread BSPT

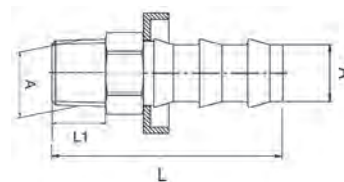


| Part No. | A | D (Inch) | D (mm) | L | SW |  |
|----------|----------|----------|--------|------|----|---|
| MH02/04 | R 1/8" | 1/4" | 6 | 34 | 10 | 25 |
| MH02/06 | R 1/8" | 3/8" | 10 | 34 | 12 | 25 |
| MH04/04 | R 1/4" | 1/4" | 6 | 37 | 14 | 25 |
| MH04/06 | R 1/4" | 3/8" | 10 | 37 | 14 | 25 |
| MH04/08 | R 1/4" | 1/2" | 13 | 37 | 14 | 25 |
| MH06/06 | R 3/8" | 3/8" | 10 | 37 | 17 | 25 |
| MH06/08 | R 3/8" | 1/2" | 13 | 37 | 17 | 25 |
| MH06/10 | R 3/8" | 5/8" | 16 | 40 | 17 | 25 |
| MH06/12 | R 3/8" | 3/4" | 19 | 44 | 21 | 25 |
| MH08/06 | R 1/2" | 3/8" | 10 | 40,5 | 21 | 25 |
| MH08/08 | R 1/2" | 1/2" | 13 | 40,5 | 21 | 25 |
| MH08/12 | R 1/2" | 3/4" | 19 | 46,5 | 21 | 25 |
| MH08/16 | R 1/2" | 1" | 25 | 50 | 27 | 25 |
| MH12/06 | R 3/4" | 3/8" | 10 | 42 | 27 | 10 |
| MH12/08 | R 3/4" | 1/2" | 13 | 42 | 27 | 10 |
| MH12/12 | R 3/4" | 3/4" | 19 | 48 | 27 | 10 |
| MH12/16 | R 3/4" | 1" | 25 | 50,5 | 27 | 10 |
| MH16/08 | R 1" | 1/2" | 13 | 45,5 | 34 | 10 |
| MH16/12 | R 1" | 3/4" | 19 | 54 | 34 | 10 |
| MH16/16 | R 1" | 1" | 25 | 54 | 34 | 10 |
| MH20/20 | R 1-1/4" | 1-1/4" | 32 | 56 | 48 | 10 |
| MH20/24 | R 1-1/4" | 1-1/2" | 38 | 56 | 48 | 10 |
| MH24/20 | R 1-1/2" | 1-1/4" | 32 | 58 | 48 | 10 |
| MH24/24 | R 1-1/2" | 1-1/2" | 38 | 58 | 48 | 10 |

 See explanation of symbols on page 404

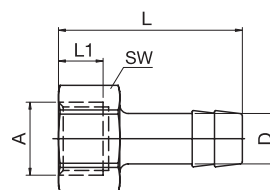
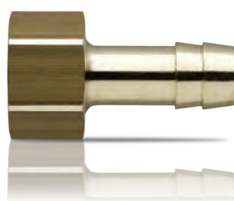
FITTINGS

Push Lock - Hose Connector



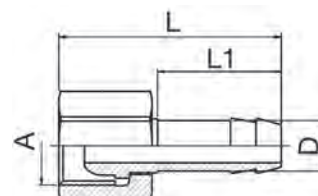
| Part No. | A | D | L | L1 | |
|----------|---------|----|----|----|----|
| P10R1/8 | R 1/8 | 10 | 39 | 7 | 10 |
| P10R1/4 | R 1/4 | 10 | 39 | 7 | 10 |
| P10M14 | M14x1,5 | 10 | 42 | 7 | 10 |
| P10R3/8 | R 3/8 | 10 | 43 | 7 | 10 |
| P13R1/4 | R 1/4 | 13 | 39 | 10 | 10 |
| P13R3/8 | R 3/8 | 13 | 43 | 10 | 10 |
| P13R1/2 | R 1/2 | 13 | 43 | 10 | 10 |
| P19R1/2 | R 1/2 | 19 | 65 | 17 | 5 |
| P19R3/4 | R 3/4 | 19 | 66 | 18 | 5 |
| P19R1/1 | R 1 | 19 | 73 | 23 | 5 |

Female Hose Connector



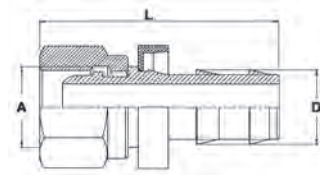
| Part No. | A | D | L | L1 | SW | |
|----------|---------|----|----|------|----|----|
| F10R1/8 | G 1/8" | 10 | 33 | 8 | 14 | 25 |
| F10R1/4 | G 1/4" | 10 | 33 | 8 | 17 | 25 |
| F10M14 | M14x1,5 | 10 | 32 | 10 | 17 | 10 |
| F13R1/4 | G 1/4" | 13 | 39 | 8 | 17 | 25 |
| F13M16 | M16x1,5 | 13 | 40 | 10,5 | 22 | 10 |
| F13R3/8 | G 3/8" | 13 | 40 | 8 | 19 | 25 |


Hose Connector - BSPP Thread, Swivel Nut and 60° Cone Seat



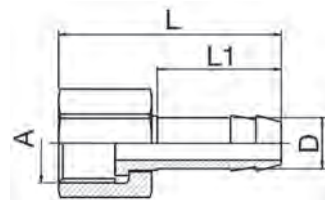
| Part No. | A | D | L | L1 | SW | |
|----------|---------|----|------|----|----|----|
| CM14 | M14x1,5 | 10 | 39,5 | 22 | 17 | 10 |
| CR1/4 | G 1/4 | 10 | 39,5 | 22 | 17 | 10 |
| CM16 | M16x1,5 | 13 | 42 | 25 | 22 | 10 |
| CR3/8 | G 3/8 | 13 | 42 | 25 | 22 | 10 |
| CR1/2 | G 1/2 | 13 | 45 | 25 | 24 | 10 |
| CM24 | M24x1,5 | 19 | 52 | 32 | 30 | 10 |
| CR3/4 | G 3/4 | 19 | 55 | 32 | 30 | 10 |
| CR1 | G 1" | 25 | 54 | 34 | 38 | 5 |


Push Lock - Hose Connector BSPP Thread, Swivel Nut and 60° Cone Seat



| Part No. | A | D | L | SW |  |
|----------|---------|----|------|----|---|
| CM14-PL | M14x1,5 | 10 | 43 | 19 | 10 |
| CR1/4-PL | G 1/4" | 10 | 46,7 | 19 | 10 |
| CM16-PL | M16x1,5 | 13 | 47,5 | 21 | 10 |
| CR3/8-PL | G 3/8" | 13 | 47,5 | 21 | 10 |
| CR1/2-PL | G 1/2" | 13 | 48 | 27 | 10 |
| CM24-PL | M24x1,5 | 19 | 60,5 | 30 | 5 |
| CR3/4-PL | G 3/4" | 19 | 60,2 | 30 | 5 |

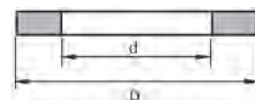
Hose Connector - BSPP Thread, Swivel Nut and Flat Seat




| Part No. | A | D | L | L1 | SW |  |
|-------------|---------|----|----|----|----|---|
| CFR3/8-10 | G 3/8 | 10 | 39 | 25 | 22 | 10 |
| CFR3/8-13 | G 3/8 | 13 | 39 | 25 | 22 | 10 |
| CFR1/2-13 | G 1/2 | 13 | 39 | 25 | 24 | 10 |
| CFR3/4-10 | G 3/4 | 10 | 34 | 18 | 29 | 5 |
| CFR3/4-13 | G 3/4 | 13 | 36 | 22 | 29 | 5 |
| CFR3/4-19 | G 3/4 | 19 | 52 | 32 | 32 | 5 |
| CFR1-19 | G 1 | 19 | 43 | 25 | 37 | 5 |
| CFR1-25 | G 1 | 25 | 55 | 32 | 38 | 5 |
| CFR1.1/4-32 | G 1-1/4 | 32 | 55 | 32 | 48 | 1 |
| CFR1.1/2-38 | G 1-1/2 | 38 | 55 | 32 | 52 | 1 |

Supplied without gaskets.

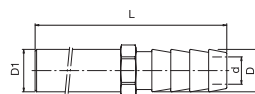
Fiber Gaskets for Flat Seat Hose Connector



| Part No. | D | d | Fit Thread Size |  |
|----------|------|------|-----------------|---|
| GK38 | 14,5 | 8 | G 3/8 | 1 |
| GK12 | 18 | 12,5 | G 1/2 | 1 |
| GK34 | 24 | 16 | G 3/4 | 1 |
| GK1 | 30 | 25 | G 1 | 1 |
| GK114 | 38 | 31 | G 1.1/4 | 1 |
| GK112 | 44 | 36 | G 1.1/2 | 1 |

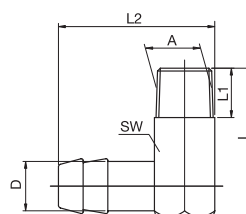
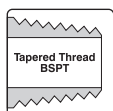
FITTINGS

Extended Hose Connector



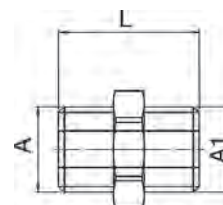
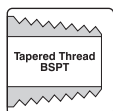
| Part No. | D | D1 | d | L | SW | |
|----------|----|----|---|-----|----|----|
| C120/10 | 10 | 10 | 6 | 120 | 11 | 10 |
| C240/10 | 10 | 10 | 8 | 240 | 11 | 10 |
| C150/13 | 13 | 14 | 9 | 150 | 15 | 10 |
| C300/13 | 13 | 14 | 9 | 300 | 15 | 10 |

90° Hose Connector



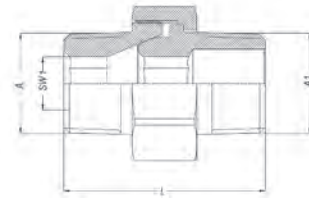
| Part No. | A | D | L | L1 | L2 | SW | |
|----------|---------|----|----|----|------|----|----|
| V10M8 | M8x0,75 | 10 | 27 | 9 | 39,5 | 15 | 25 |
| V10M10 | M10x1 | 10 | 27 | 9 | 31 | 11 | 25 |
| V10R1/8 | R 1/8" | 10 | 24 | 10 | 32,5 | 10 | 25 |
| V10R1/4 | R 1/4" | 10 | 30 | 11 | 38,5 | 12 | 25 |
| V13R1/4 | R 1/4" | 13 | 30 | 10 | 38,5 | 13 | 25 |
| V13M14 | M14x1,5 | 13 | 34 | 11 | 42 | 17 | 10 |
| V13R3/8 | R 3/8" | 13 | 37 | 11 | 44 | 19 | 25 |
| V19M24 | M24x1,5 | 19 | 47 | 12 | 56 | 24 | 10 |
| V19R1/2 | R 1/2" | 19 | 47 | 15 | 58,5 | 24 | 10 |

Double Nipple with Taper Thread



| Part No. | A | A1 | L | SW | |
|----------|----------|--------|----|----|----|
| EC02/02 | R 1/8" | 1/8" | 23 | 10 | 10 |
| EC04/04 | R 1/4" | 1/4" | 29 | 14 | 10 |
| EC06/06 | R 3/8" | 3/8" | 29 | 17 | 10 |
| EC08/08 | R 1/2" | 1/2" | 35 | 21 | 10 |
| EC12/12 | R 3/4" | 3/4" | 37 | 27 | 10 |
| EC16/16 | R 1" | 1" | 43 | 34 | 10 |
| EC20/20 | R 1.1/4" | 1.1/4" | 46 | 42 | 10 |
| EC24/24 | R 1.1/2" | 1.1/2" | 46 | 50 | 10 |

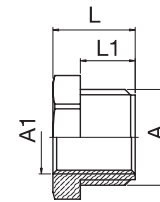
Double Union Nipple



| Part No. | A | A1 | L | SW | SW1 | |
|-----------|----------|----------|------|----|-----|----|
| DU1/8 | R 1/8" | R 1/8" | 27 | 15 | 5 | 10 |
| DU1/8-1/4 | R 1/8" | R 1/4" | 30 | 15 | 5 | 10 |
| DU1/4 | R 1/4" | R 1/4" | 33,4 | 19 | 6 | 10 |
| DU1/4-3/8 | R 1/4" | R 3/8" | 34,1 | 19 | 6 | 10 |
| DU3/8 | R 3/8" | R 3/8" | 37 | 22 | 8 | 10 |
| DU1/2 | R 1/2" | R 1/2" | 44,4 | 27 | 12 | 10 |
| DU3/4 | R 3/4" | R 3/4" | 53 | 36 | 14 | 10 |
| DU1 | R 1" | R 1" | 59 | 50 | 19 | 10 |
| DU1-1/4 | R 1-1/4" | R 1-1/4" | 68 | 60 | 22 | 10 |
| DU1-1/2 | R 1-1/2" | R 1-1/2" | 75 | 70 | 24 | 10 |

Material: Brass
 3-part connector self sealing. Ideal for positioning and connecting non-rotatable parts.

Reducer Nipple

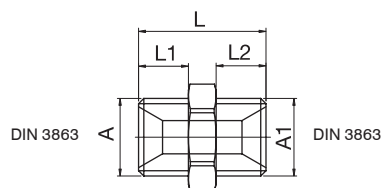



| Part No. | A | A1 | L | L1 | SW | |
|--------------|----------|---------|----|----|----|----|
| GR1/4-R1/8 | G 1/4" | G 1/8" | 11 | 7 | 17 | 10 |
| GM14-M10 | M14x1,5 | M10x1 | 11 | 7 | 17 | 10 |
| GR3/8-R1/4 | G 3/8" | G 1/4" | 13 | 9 | 19 | 10 |
| GM18-M14 | M18x1,5 | M14x1,5 | 14 | 9 | 22 | 10 |
| GR1/2-R3/8 | G 1/2" | G 3/8" | 18 | 12 | 24 | 10 |
| GR3/4-R1/2 | G 3/4" | G 1/2" | 24 | 16 | 27 | 10 |
| GM24-M16 | M24x1,5 | M16x1,5 | 24 | 16 | 27 | 10 |
| GR1/1-R3/4* | G 1" | G 3/4" | 28 | 19 | 34 | 1 |
| GR11/2-R3/4* | G 1-1/2" | G 3/4" | 32 | 22 | 50 | 1 |
| GR11/2-R1/1* | G 1-1/2" | G 1" | 32 | 22 | 50 | 1 |

* Without sealant coating.

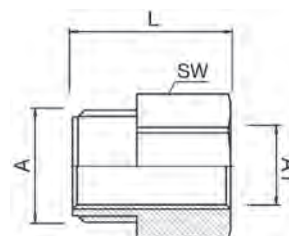
FITTINGS


Double Nipple with Parallel Thread



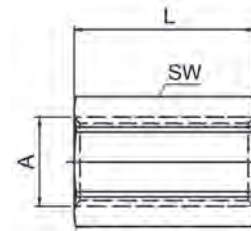
| Part No. | A | A1 | L | L1 | L2 | SW |  |
|------------|---------|---------|----|----|----|----|---|
| ZR1/8 | G 1/8 | G 1/8 | 21 | 8 | 8 | 17 | 10 |
| ZM14 | M14x1,5 | M14x1,5 | 23 | 9 | 9 | 17 | 10 |
| ZM14-R1/4 | M14x1,5 | G 1/4 | 23 | 9 | 9 | 17 | 10 |
| ZR1/4 | G 1/4 | G 1/4 | 23 | 9 | 9 | 17 | 10 |
| ZR1/4-R3/8 | G 1/4 | G 3/8 | 23 | 9 | 9 | 19 | 10 |
| ZM16 | M16x1,5 | M16x1,5 | 23 | 9 | 9 | 19 | 10 |
| ZM16-R3/8 | M16x1,5 | G 3/8 | 23 | 9 | 9 | 19 | 10 |
| ZR3/8 | G 3/8 | G 3/8 | 23 | 9 | 9 | 19 | 10 |
| ZR3/8-R1/2 | G 3/8 | G 1/2 | 29 | 9 | 12 | 24 | 10 |
| ZR1/2-M14 | G 1/2 | M14x1,5 | 27 | 12 | 9 | 22 | 10 |
| ZR1/2-M16 | G 1/2 | M16x1,5 | 27 | 12 | 9 | 22 | 10 |
| ZR1/2 | G 1/2 | G 1/2 | 30 | 12 | 12 | 24 | 10 |
| ZR1/2-R3/4 | G 1/2 | G 3/4 | 36 | 12 | 16 | 32 | 10 |
| ZR1/2-R1/1 | G 1/2 | G 1 | 40 | 12 | 16 | 36 | 10 |
| ZM24-R1/2 | M24x1,5 | G 1/2 | 36 | 16 | 12 | 27 | 10 |
| ZR3/4 | G 3/4 | G 3/4 | 40 | 16 | 16 | 32 | 10 |
| ZR3/4-M24 | G 3/4 | M24x1,5 | 40 | 16 | 16 | 32 | 10 |
| ZR3/4-R1/1 | G 3/4 | G 1 | 40 | 16 | 16 | 36 | 10 |
| ZR1/1-R1/1 | G 1 | G 1 | 42 | 16 | 16 | 36 | 10 |


Converter Nipple



| Part No. | A | A1 | L | SW |  |
|-----------|-------|-------|----|----|---|
| CN1/8-1/8 | G 1/8 | G 1/8 | 16 | 11 | 10 |
| CN1/8-1/4 | G 1/8 | G 1/4 | 19 | 17 | 10 |
| CN1/4-1/8 | G 1/4 | G 1/8 | 18 | 17 | 10 |
| CN1/4-1/4 | G 1/4 | G 1/4 | 21 | 17 | 10 |
| CN1/4-3/8 | G 1/4 | G 3/8 | 21 | 19 | 10 |
| CN3/8-1/4 | G 3/8 | G 1/4 | 21 | 17 | 10 |
| CN3/8-3/8 | G 3/8 | G 3/8 | 21 | 19 | 10 |
| CN3/8-1/2 | G 3/8 | G 1/2 | 24 | 24 | 10 |
| CN1/2-3/8 | G 1/2 | G 3/8 | 24 | 22 | 10 |
| CN1/2-1/2 | G 1/2 | G 1/2 | 25 | 24 | 10 |
| CN1/2-3/4 | G 1/2 | G 3/4 | 31 | 32 | 10 |


Female Connection Nipple



| Part No. | A | L | SW |  |
|----------|-------|----|----|---|
| FN1/8 | G 1/8 | 22 | 11 | 10 |
| FN1/4 | G 1/4 | 26 | 17 | 10 |
| FN3/8 | G 3/8 | 26 | 22 | 10 |
| FN1/2 | G 1/2 | 30 | 27 | 10 |
| FN3/4 | G 3/4 | 36 | 32 | 10 |
| FN1/1 | G 1 | 40 | 41 | 10 |

Adaptor Nipple BSPP - NPT




| Part No. | BSPP | NPT |  |
|----------|--------|--------|---|
| BN1/8 | G 1/8" | R 1/8" | 10 |
| BN1/4 | G 1/4" | R 1/4" | 10 |
| BN3/8 | G 3/8" | R 3/8" | 10 |

Material: Brass (Nickel Plated).

Adaptor Nipple NPT - BSPP

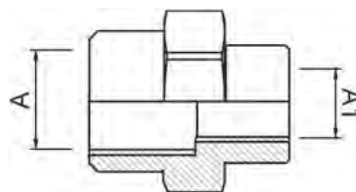


| Part No. | BSPP | NPT |  |
|----------|--------|--------|---|
| NB1/8 | G 1/8" | R 1/8" | 10 |
| NB1/4 | G 1/4" | R 1/4" | 10 |
| NB3/8 | G 3/8" | R 3/8" | 10 |
| NB1/2 | G 1/2" | R 1/2" | 10 |

Material: Brass (Nickel Plated).

FITTINGS

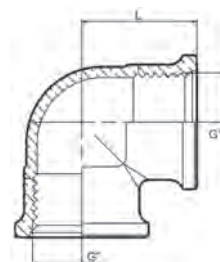
Female Reduction Nipple



| Part No. | A1 | A | |
|------------|--------|--------|----|
| FFN1/4-3/8 | G 1/4" | G 3/8" | 10 |
| FFN1/4-1/2 | G 1/4" | G 1/2" | 10 |
| FFN3/8-1/2 | G 3/8" | G 1/2" | 10 |
| FFN1/2-3/4 | G 1/2" | G 3/4" | 5 |
| FFN3/4-1 | G 3/4" | G 1" | 1 |

Material: Brass (Nickel Plated).

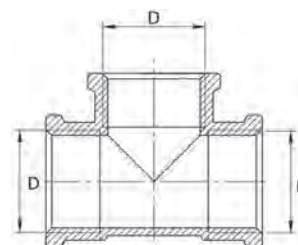
Elbow - Connector



| Part No. | G | L | |
|----------|----------|------|---|
| EL-1/2 | G 1/2" | 24,5 | 1 |
| EL-3/4 | G 3/4" | 30 | 1 |
| EL-1 | G 1" | 36 | 1 |
| EL-1-1/4 | G 1.1/4" | 42,5 | 1 |
| EL-1-1/2 | G 1.1/2" | 47,5 | 1 |

Material: Brass.

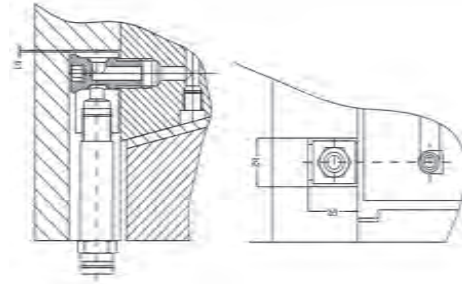
T-Connector




| Part No. | D | |
|----------|----------|----|
| FT3/8 | G 3/8" | 10 |
| FT1/2 | G 1/2" | 10 |
| FT3/4 | G 3/4" | 10 |
| FT1 | G 1" | 5 |
| FT1-1/4 | G 1.1/4" | 1 |
| FT1-1/2 | G 1.1/2" | 1 |

Material: Brass.

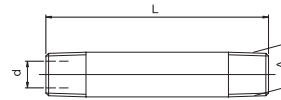
Rotatable Connector




| Part No. | Thread | b1 | b2 | b3 |  |
|----------|--------|----|----|------|---|
| VS-G1/8 | G 1/8" | 1 | 16 | 17,0 | 1 |
| VS-M10 | M10 | 1 | 16 | 17,0 | 1 |
| VS-G1/4 | G 1/4" | 1 | 16 | 23,0 | 1 |
| VS-M14 | M14 | 1 | 16 | 23,0 | 1 |
| VS-G1/2 | G 1/2" | 1 | 16 | 35,5 | 1 |

Material: Brass (Nickel Plated).

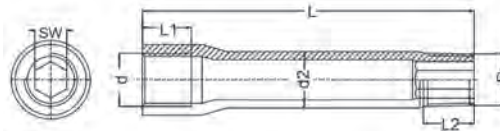
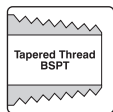
Barrel Nipple



| Part No. | A | L | d |  |
|----------|--------|-----|----|---|
| E50R1/8 | R 1/8" | 50 | 6 | 10 |
| E100R1/8 | R 1/8" | 100 | 6 | 10 |
| E150R1/8 | R 1/8" | 150 | 6 | 10 |
| E200R1/8 | R 1/8" | 200 | 6 | 10 |
| E50R1/4 | R 1/4" | 50 | 9 | 10 |
| E100R1/4 | R 1/4" | 100 | 9 | 10 |
| E150R1/4 | R 1/4" | 150 | 9 | 10 |
| E200R1/4 | R 1/4" | 200 | 9 | 10 |
| E100R3/8 | R 3/8" | 100 | 12 | 10 |
| E150R3/8 | R 3/8" | 150 | 12 | 10 |
| E200R3/8 | R 3/8" | 200 | 12 | 10 |

FITTINGS

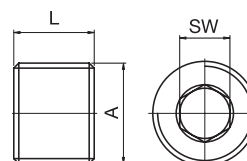
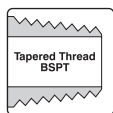
Extension Nipple



| Part No. | d | R | d2 | L | L1 | L2 | SW |
|----------|-------|-------|----|-----|----|----|----|
| EX18050 | R 1/8 | R 1/8 | 10 | 50 | 12 | 10 | 10 |
| EX18075 | R 1/8 | R 1/8 | 10 | 75 | 12 | 10 | 10 |
| EX18100 | R 1/8 | R 1/8 | 10 | 100 | 12 | 10 | 10 |
| EX18125 | R 1/8 | R 1/8 | 10 | 125 | 12 | 10 | 10 |
| EX14050 | R 1/4 | R 1/4 | 14 | 50 | 12 | 10 | 10 |
| EX14075 | R 1/4 | R 1/4 | 14 | 75 | 12 | 10 | 10 |
| EX14100 | R 1/4 | R 1/4 | 14 | 100 | 12 | 10 | 10 |
| EX14125 | R 1/4 | R 1/4 | 14 | 125 | 12 | 10 | 10 |
| EX14150 | R 1/4 | R 1/4 | 14 | 150 | 12 | 10 | 10 |

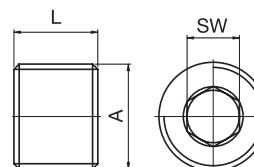
Material: Zinc Plated Steel.

Pressure Plug Taper



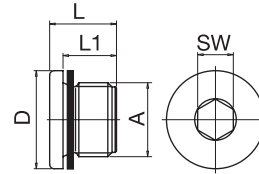
| Part No. | A | L | SW | |
|----------|---------|----|----|-----|
| RM8 | M8x0,75 | 8 | 4 | 100 |
| RM10 | M10x1 | 8 | 5 | 100 |
| R1/8 | R 1/8" | 8 | 5 | 100 |
| RM12 | M12x1,5 | 8 | 6 | 100 |
| R1/4 | R 1/4" | 10 | 7 | 100 |
| RM14 | M14x1,5 | 10 | 7 | 100 |
| R3/8 | R 3/8" | 10 | 8 | 100 |
| R1/2 | R 1/2" | 10 | 10 | 100 |

Pressure Plug Parallel



| Part No. | A | L | SW | |
|----------|---------|----|----|-----|
| RM6C | M6x0,75 | 7 | 3 | 100 |
| RM8C | M8x0,75 | 8 | 4 | 100 |
| RM10C | M10x1 | 8 | 5 | 100 |
| R1/8C | G 1/8" | 8 | 5 | 100 |
| RM12C | M12x1,5 | 8 | 6 | 100 |
| R1/4C | G 1/4" | 10 | 7 | 100 |
| RM14C | M14x1,5 | 10 | 7 | 100 |
| R3/8C | G 3/8" | 10 | 8 | 100 |
| R1/2C | G 1/2" | 10 | 10 | 100 |

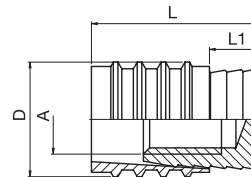
Hex Plug Parallel



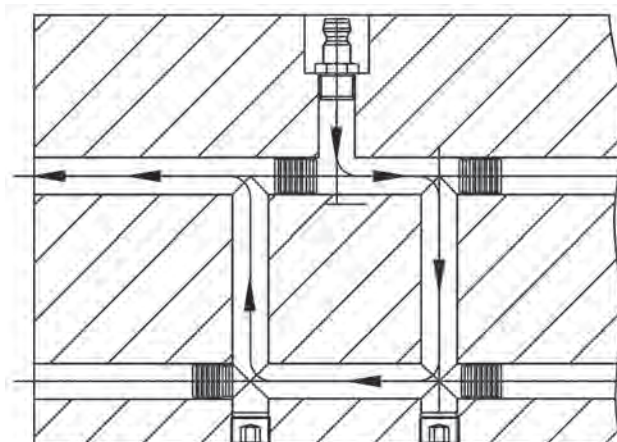
| Part No. | A | D | L | L1 | SW | |
|----------|---------|----|------|----|----|----|
| DM10 | M10x1 | 14 | 11 | 8 | 5 | 25 |
| DR1/8 | G 1/8 | 14 | 11 | 8 | 5 | 25 |
| DM12 | M12x1,5 | 17 | 15 | 12 | 6 | 25 |
| DR1/4 | G 1/4 | 18 | 15 | 12 | 6 | 25 |
| DM14 | M14x1,5 | 19 | 15 | 12 | 6 | 25 |
| DR3/8 | G 3/8 | 22 | 15 | 12 | 8 | 25 |
| DR1/2 | G 1/2 | 26 | 18 | 14 | 10 | 25 |
| DR3/4 | G3/4" | 32 | 21 | 16 | 12 | 1 |
| DR1 | G1" | 40 | 22,5 | 16 | 17 | 1 |
| DR1-1/2* | G1-1/2" | 55 | 22,5 | 16 | 24 | 1 |

* With O-ring.

Channel Plug

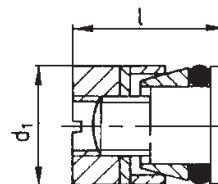



| Part No. | A | D | L | L1 | |
|----------|----|----|------|-----|----|
| S6 | M3 | 6 | 11,5 | 3,5 | 25 |
| S8 | M4 | 8 | 11,5 | 3,5 | 25 |
| S10-1 | M6 | 10 | 14 | 4 | 25 |
| S12 | M6 | 12 | 14 | 4 | 25 |
| S16 | M8 | 16 | 16 | 4 | 25 |



FITTINGS

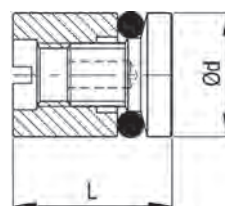
Channel Plug




| Part No. | d1 | Length |  |
|----------|----|--------|---|
| KN105-6 | 6 | 10 | 10 |
| KN105-8 | 8 | 11 | 10 |
| KN105-10 | 10 | 11 | 10 |
| KN105-12 | 12 | 11 | 10 |
| KN105-14 | 14 | 13 | 10 |
| KN105-16 | 16 | 13 | 10 |

Material: Brass.
O-ring: FKM.

Channel Pressure Plug, Threadless




| Part No. | L | d | Channel Bore d H13 | Installation Key |  |
|----------|----|----|--------------------|------------------|---|
| CP6 | 15 | 6 | 6 | CPT6-... | 10 |
| CP8 | 15 | 8 | 8 | CPT8-... | 10 |
| CP10 | 15 | 10 | 10 | CPT10-... | 10 |
| CP12 | 15 | 12 | 12 | CPT12-... | 10 |

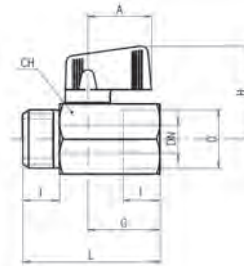
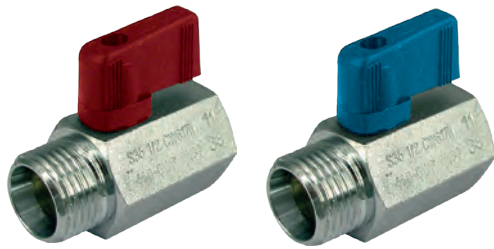
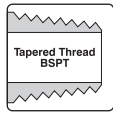
Material: Brass.
O-ring: FKM.

Installation Tool, with Plug Extractor



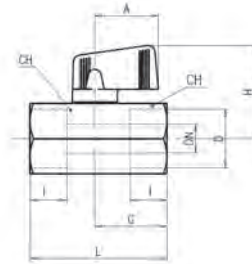
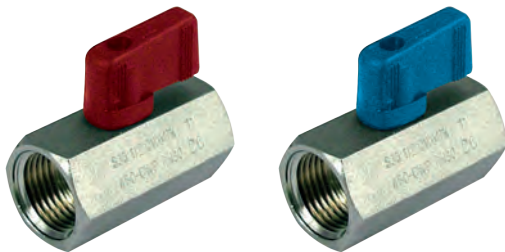
| Part No. | Length | Plug diameter |  |
|-----------|--------|---------------|---|
| CPT6-150 | 150 | 6 | 1 |
| CPT6-300 | 300 | 6 | 1 |
| CPT8-150 | 150 | 8 | 1 |
| CPT8-300 | 300 | 8 | 1 |
| CPT10-150 | 150 | 10 | 1 |
| CPT10-300 | 300 | 10 | 1 |
| CPT12-150 | 150 | 12 | 1 |
| CPT12-300 | 300 | 12 | 1 |

Mini Ball Valve - Male / Female



| Part No. | Part No. | D | DN | I | L | G | A | H | CH |
|----------|----------|--------|----|----|------|----|------|----|----|
| VMMF02R | VMMF02B | R 1/8" | 5 | 10 | 41,5 | 22 | 22,5 | 31 | 21 |
| VMMF04R | VMMF04B | R 1/4" | 8 | 11 | 41,5 | 22 | 22,5 | 31 | 21 |
| VMMF06R | VMMF06B | R 3/8" | 8 | 11 | 41,5 | 22 | 22,5 | 31 | 21 |
| VMMF08R | VMMF08B | R 1/2" | 10 | 13 | 49 | 22 | 22,5 | 31 | 25 |

Mini Ball Valve - Female / Female



| Part No. | Part No. | D | DN | I | L | G | A | H | CH |
|----------|----------|--------|----|----|------|----|------|----|----|
| VM02R | VM02B | G 1/8" | 6 | 10 | 41,5 | 22 | 22,5 | 31 | 21 |
| VM04R | VM04B | G 1/4" | 8 | 11 | 41,5 | 22 | 22,5 | 31 | 21 |
| VM06R | VM06B | G 3/8" | 8 | 11 | 41,5 | 22 | 22,5 | 31 | 21 |
| VM08R | VM08B | G 1/2" | 10 | 13 | 49 | 26 | 22,5 | 31 | 25 |

Quality:

- Dual sealing system allows valve to be operated in either direction making installation easier.
- No metal-to-metal moving parts.
- No maintenance ever required.
- Handle clearly shows ball position.
- Silicone-free lubricant on all seals.
- Chrome plated brass ball for longer life.
- Each valve is seal tested for maximum safety.

Body:

- One piece drawn sand blasted brass body with an extreme compact design.
- Finest brass according to EN 12164 specification.
- Patent n. 7011-B/89.

Thread:

- ISO 7/1, BS21 Male thread: BSPT – Female thread: BSPP.

Stem:

- Blowout-proof brass stem with FPM O-ring.

Handle:

- Metal Handle removable with valve in service.

Seals:

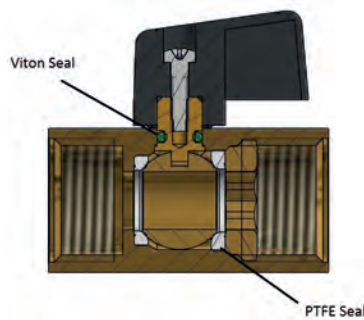
- Pure PTFE self-lubricating seats with flexible-lip design.

Working Pressure:

- 30 Bar (450 PSI).

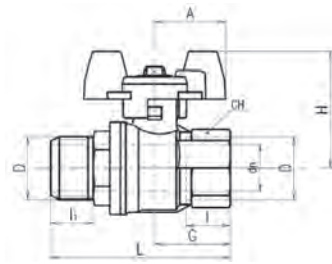
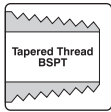
Operating Temperature:

- +120°C (+248°F).



VALVES

Ball Valve T-handle - Male / Female



| Part No. | Part No. | D | DN | I | I1 | L | G | A | H | CH |
|----------|----------|----------|-----|------|------|------|------|----|------|----|
| VTMF04R | VTMF04B | R 1/4" | 8 | 12 | 13,5 | 56,5 | 22,5 | 25 | 39 | 20 |
| VTMF06R | VTMF06B | R 3/8" | 9,5 | 12 | 13,5 | 56,5 | 22,5 | 25 | 39 | 20 |
| VTMF08R | VTMF08B | R 1/2" | 15 | 15,5 | 16,5 | 70 | 29,5 | 25 | 43 | 25 |
| VTMF12R | VTMF12B | R 3/4" | 19 | 17 | 18 | 76,5 | 32 | 30 | 49 | 31 |
| VTMF16R | VTMF16B | R 1" | 24 | 21 | 22 | 92,5 | 40,5 | 30 | 53 | 40 |
| VTMF20R | VTMF20B | R 1-1/4" | 30 | 23 | 24 | 106 | 46,5 | 57 | 84,5 | 49 |
| VTMF24R | VTMF24B | R 1-1/2" | 38 | 23 | 24 | 113 | 51 | 57 | 90,5 | 54 |

Quality:

- 24h 100% seal test guaranteed.
- Dual sealing system allows valve to be operated in either direction making installation easier.
- No maintenance ever required.
- Chrome plated brass ball for longer life.
- Travel stops on body to avoid stresses at stem.

Body:

- Hot forged sand blasted, nickel plated brass body and cap sealed with Loctite or equivalent thread sealant.
- Finest brass according to EN 12165 and EN 12164 (formerly DIN 17660 and UNI 5705-65) specifications.

Flow:

- Full port to DIN 3357 for maximum flow .

Thread:

- EN 10226-1, ISO 228 Male thread: BSPT – Female thread: BSPP.

Stem:

- Two FPM O-rings at the stem for maximum safety.

Seals:

- Pure PTFE self-lubricating seats with flexible-lip design .

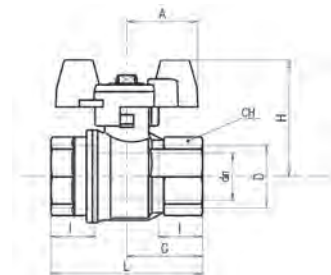
Working Pressure:

- 40 Bar (600 PSI).
- Non-shock cold working pressure.

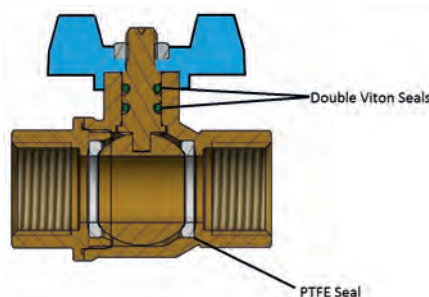
Operating Temperature:

- +170°C (+350°F).

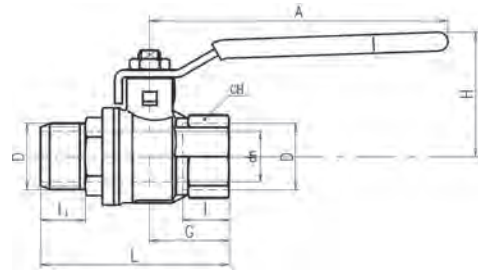
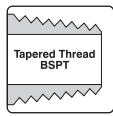
Ball Valve T-handle - Female / Female



| Part No. | Part No. | D | DN | I | L | G | A | H | CH |
|----------|----------|----------|-----|------|-----|------|----|------|----|
| VT04R | VT04B | G 1/4" | 8 | 12 | 45 | 22,5 | 25 | 39 | 20 |
| VT06R | VT06B | G 3/8" | 9,5 | 12 | 45 | 22,5 | 25 | 39 | 20 |
| VT08R | VT08B | G 1/2" | 15 | 15,5 | 59 | 29,5 | 25 | 43 | 20 |
| VT12R | VT12B | G 3/4" | 19 | 17 | 64 | 32 | 30 | 49 | 31 |
| VT16R | VT16B | G 1" | 24 | 21 | 81 | 40,5 | 30 | 53 | 40 |
| VT20R | VT20B | G 1-1/4" | 30 | 23 | 93 | 46,5 | 57 | 84,5 | 49 |
| VT24R | VT24B | G 1-1/2" | 38 | 23 | 102 | 51 | 57 | 90,5 | 54 |

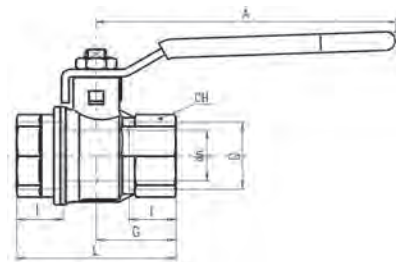


Ball Valve Standard Handle - Male / Female



| Part No. | Part No. | D | DN | I | I1 | L | G | A | H | CH |
|----------|----------|----------|-----|------|------|------|------|-----|----|----|
| VLMF04R | VLMF04B | R 1/4" | 8 | 12 | 13,5 | 56,5 | 22,5 | 82 | 38 | 20 |
| VLMF06R | VLMF06B | R 3/8" | 9,5 | 12 | 13,5 | 56,5 | 22,5 | 82 | 38 | 20 |
| VLMF08R | VLMF08B | R 1/2" | 15 | 15,5 | 16,5 | 70 | 29,5 | 100 | 43 | 25 |
| VLMF12R | VLMF12B | R 3/4" | 19 | 17 | 18 | 76,5 | 32 | 120 | 50 | 31 |
| VLMF16R | VLMF16B | R 1" | 24 | 21 | 22 | 92,5 | 40,5 | 120 | 54 | 40 |
| VLMF20R | VLMF20B | R 1-1/4" | 30 | 23 | 24 | 106 | 46,5 | 158 | 73 | 49 |
| VLMF24R | VLMF24B | R 1-1/2" | 38 | 23 | 24 | 113 | 51 | 158 | 79 | 54 |

Ball Valve Standard Handle - Female / Female



| Part No. | Part No. | D | DN | I | L | G | A | H | CH |
|----------|----------|----------|-----|------|-----|------|-----|----|----|
| VL04R | VL04B | G 1/4" | 8 | 12 | 45 | 22,5 | 82 | 38 | 20 |
| VL06R | VL06B | G 3/8" | 9,5 | 12 | 45 | 22,5 | 82 | 38 | 20 |
| VL08R | VL08B | G 1/2" | 15 | 15,5 | 59 | 29,5 | 100 | 43 | 25 |
| VL12R | VL12B | G 3/4" | 19 | 17 | 64 | 32 | 120 | 50 | 31 |
| VL16R | VL16B | G 1" | 24 | 21 | 81 | 40,5 | 120 | 54 | 40 |
| VL20R | VL20B | G 1-1/4" | 30 | 23 | 93 | 46,5 | 158 | 73 | 49 |
| VL24R | VL24B | G 1-1/2" | 38 | 23 | 102 | 51 | 158 | 79 | 54 |

Quality:

- 24h 100% seal test guaranteed.
- Dual sealing system allows valve to be operated in either direction making installation easier.
- No maintenance ever required.
- Chrome plated brass ball for longer life.
- Travel stops on body to avoid stresses at stem.

Body:

- Hot forged sand blasted, nickel plated brass body and cap sealed with Loctite or equivalent thread sealant.
- Finest brass according to EN 12165 and EN 12164 (formerly DIN 17660 and UNI 5705-65) specifications.

Flow:

- Full port to DIN 3357 for maximum flow.

Thread:

- EN 10226-1, ISO 228 Male thread: BSPT – Female thread: BSPP.

Stem:

- Two FPM O-rings at the stem for maximum safety.

Seals:

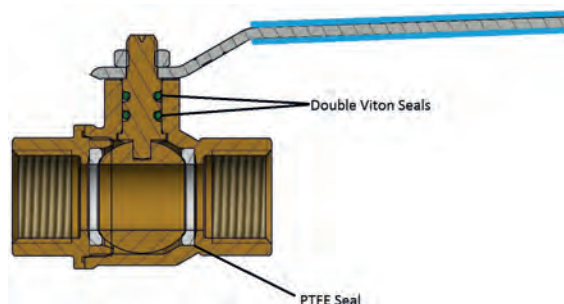
- Pure PTFE self-lubricating seats with flexible-lip design.

Working Pressure:

- 40 Bar (600 PSI).
- Non-shock cold working pressure.

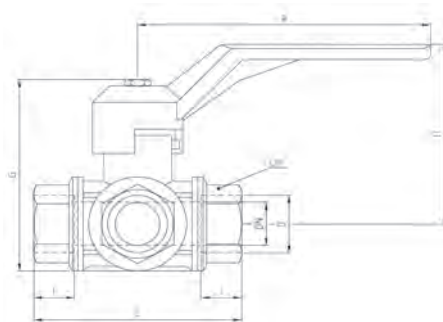
Operating Temperature:

- +170°C (+350°F).



VALVES

3 Way Ball Valve - Female (L-Type)



| Part No. | D | DN | I | L | G | A | H | CH |
|----------|----------|----|----|-----|-----|-----|-----|----|
| V3F04R | G 1/4" | 10 | 19 | 77 | 75 | 125 | 65 | 22 |
| V3F06R | G 3/8" | 12 | 19 | 77 | 75 | 125 | 65 | 22 |
| V3F08R | G 1/2" | 14 | 19 | 77 | 75 | 125 | 65 | 27 |
| V3F12R | G 3/4" | 18 | 23 | 92 | 91 | 145 | 83 | 34 |
| V3F16R | G 1" | 23 | 25 | 104 | 105 | 170 | 96 | 41 |
| V3F20R | G 1.1/4" | 29 | 27 | 118 | 115 | 170 | 102 | 50 |
| V3F24R | G 1.1/2" | 36 | 31 | 138 | 128 | 170 | 109 | 57 |

Quality:

- Chrome plated brass ball for longer life.
- UNI 8858 cycle and torque test performed.

Body:

- Hot forged sand blasted nickel plated body and caps.
- 3 Way Lever design allows complete range of flow handling applications.
- Copper alloy brass according to EN 12165 and EN 12164 specifications.

Stem:

- Two NBR O-Rings at the stem for maximum safety.

Seals:

- Four seats design limits mixture among various fluids in the system.
- PTFE seals.

Threads:

- ISO 228 female threads.

Flow:

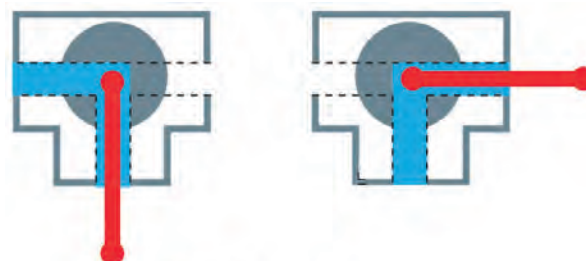
- Full port for lowest pressure drops.

Working pressure:

- 20 Bar.

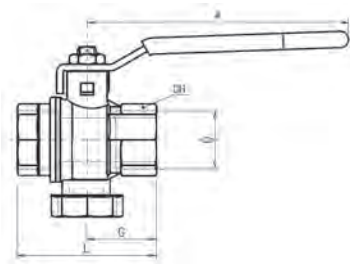
Working temperature:

- -10°C to + 120°C.



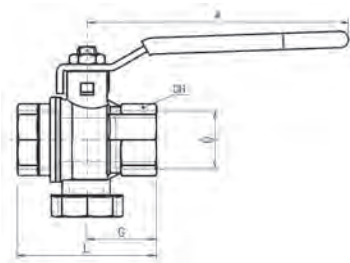
L Type

Ball Valve with Integrated Filter



| Part No. | D | L | G | A | CH |
|----------|----------|------|------|-----|----|
| BVF1/2 | G 1/2" | 50,7 | 26,7 | 100 | 25 |
| BVF3/4 | G 3/4" | 61,3 | 32,3 | 100 | 31 |
| BVF1 | G 1" | 70,1 | 35,6 | 100 | 38 |
| BVF1-1/4 | G 1.1/4" | 85 | 45 | 158 | 48 |
| BVF1-1/2 | G 1.1/2" | 97,5 | 52 | 158 | 54 |
| BVF2 | G 2" | 117 | 63 | 158 | 66 |

Ball Valve with Integrated Filter and Magnet



| Part No. | D | L | G | A | CH |
|-----------|----------|------|------|-----|----|
| BVFM3/4 | G 3/4" | 61,3 | 32,3 | 100 | 31 |
| BVFM1 | G 1" | 70,1 | 35,6 | 100 | 38 |
| BVFM1-1/4 | G 1.1/4" | 85 | 45 | 158 | 48 |
| BVFM1-1/2 | G 1.1/2" | 97,5 | 52 | 158 | 54 |
| BVFM2 | G 2" | 117 | 63 | 158 | 66 |

Quality:

- Substitutes 3 different components (2 ball valves and one filter)
- Reduces leakage risks due to lower sealing points
- Cost saving due to reduced number of components
- Time saving at installation and maintenance
- Built-in vertical filter with cartridge structure in AISI304 + Nylon (filtration degree: 500 microns / 35 mesh). Size 1/2" has a central rib to ease filter extraction.
- Final test conforming with UNI EN 12266-1 points A3 / A4 (for 1.1/2" and 2" sizes: acc. to directive 2014/68/UE)
- No metal-to-metal moving parts
- Handle clearly shows ball position
- Chrome plated brass ball for longer life
- Handle stop on body to avoid stress at stem

Body

- Hot forged sand blasted, external nickel plated brass body and cap sealed with L octite® or equivalent thread sealant
- Finest brass according to EN 12165 and EN 12164 (formerly DIN 17660 and UNI 5705-65) specifications
- Bottom plug for an easy filter maintenance

Stem

- Blowout-proof unplated brass stem
- Two O-rings at the stem (FKM + NBR) for maximum safety

Sealing

- Pure PTFE seats

Threads

- ISO 228 parallel female by female threads

Flow

- Nominal port

Handle

- Zinc plated steel handle with plastic dip coating
- WARNING: do not exceed reasonable temperature and/or electrical load

Magnet

- Neodymium (12.000 gauss) NdFeB

Working pressure & temperature

- 30 Bar (450 PSI) non-shock cold working pressure for sizes 1/2" to 1", 20 Bar (290 PSI) for sizes 1.1/4" to 2"
- -20°C / +150°C (-4°F / +300°F)
- WARNING: freezing of the fluid in the installation may severely damage the valve

PED directive

- According to 2014/68/UE, 1.1/4" and superior sizes cannot be used with dangerous fluids

Cost Saving Solution

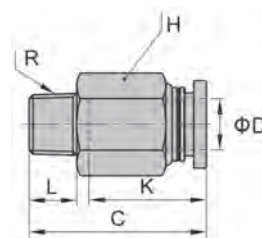
BVF Filter Valve substitutes traditional Y Strainers combined with 2 ball valves.

- Full port
- Low pressure drop
- Assembly space and time very limited
- Easy to be cleaned and maintained
- All impurities gather inside the filter
- Maximum pressure 30 bar (PN30)
- Increased filter quality with cartridge structure for all sizes. Filter for size 1/2" will have a central rib to ease filter extraction



PUSH IN FITTINGS

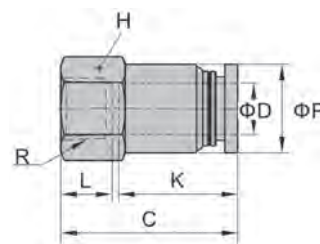
Straight Male Push-In Fitting



| Part No. | Part No. | D | R | L | K | C | H |
|-----------|-----------|----|--------|-----|------|------|----|
| MSM081/8R | MSM081/8B | 8 | R 1/8" | 7,5 | 18,5 | 27 | 14 |
| MSM081/4R | MSM081/4B | 8 | R 1/4" | 10 | 18,5 | 25 | 14 |
| MSM083/8R | MSM083/8B | 8 | R 3/8" | 9 | 18,5 | 23,5 | 17 |
| MSM101/4R | MSM101/4B | 10 | R 1/4" | 10 | 19 | 30 | 17 |
| MSM103/8R | MSM103/8B | 10 | R 3/8" | 10 | 19 | 25 | 17 |
| MSM123/8R | MSM123/8B | 12 | R 3/8" | 11 | 20 | 26 | 21 |
| MSM121/2R | MSM121/2B | 12 | R 1/2" | 13 | 20 | 26 | 21 |

Material: Brass, Nickel Plated. Seal: EPDM.

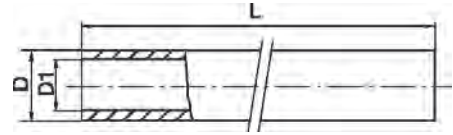
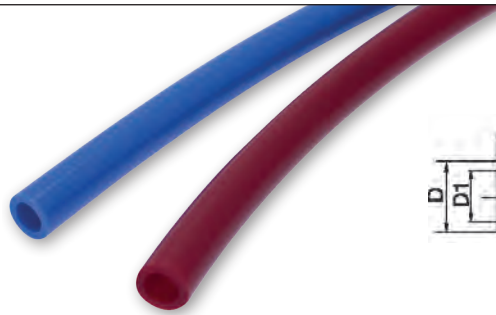
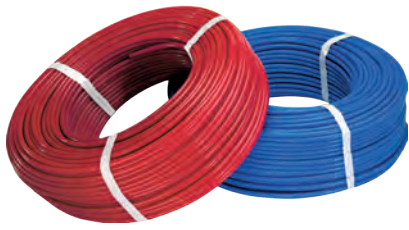
Straight Female Push-In Fitting



| Part No. | Part No. | D | R | L | K | C | H | P |
|-----------|-----------|----|--------|------|----|------|----|----|
| MSF081/8R | MSF081/8B | 8 | G 1/8" | 8 | 18 | 28,3 | 14 | 14 |
| MSF081/4R | MSF081/4B | 8 | G 1/4" | 11 | 18 | 30,5 | 17 | 14 |
| MSF083/8R | MSF083/8B | 8 | G 3/8" | 12 | 18 | 31,5 | 19 | 14 |
| MSF101/4R | MSF101/4B | 10 | G 1/4" | 11 | 19 | 30,5 | 17 | 16 |
| MSF103/8R | MSF103/8B | 10 | G 3/8" | 12 | 19 | 33 | 19 | 16 |
| MSF123/8R | MSF123/8B | 12 | G 3/8" | 12 | 20 | 33,5 | 19 | 19 |
| MSF121/2R | MSF121/2B | 12 | G 1/2" | 13,5 | 21 | 37 | 24 | 19 |

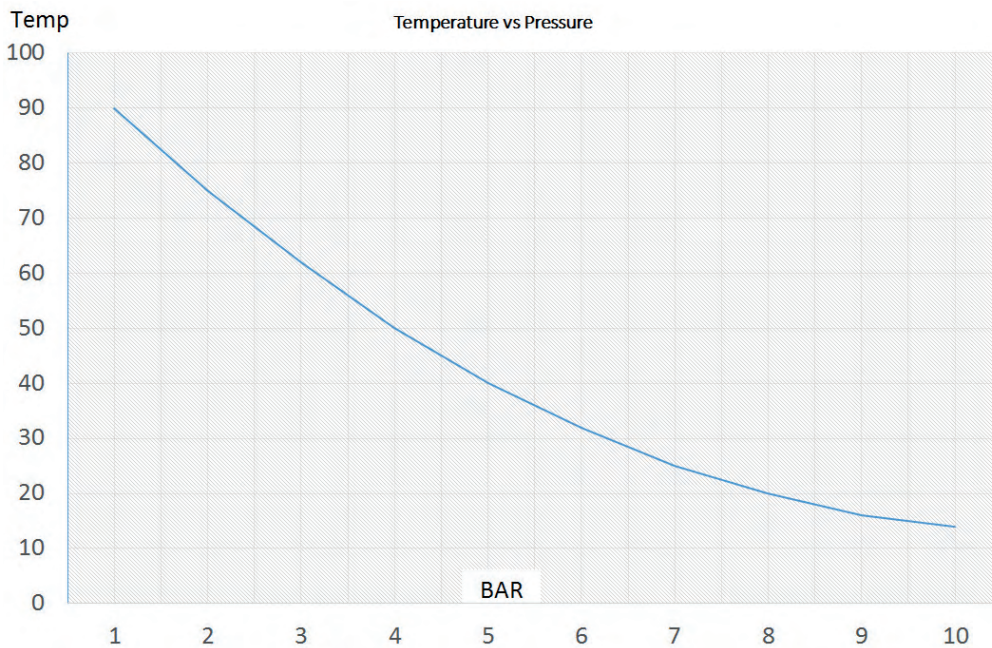
Material: Brass, Nickel Plated. Seal: EPDM.

Ether Based Polyurethane Tubing for Push-In Fittings - Temperature max 70°C / Peak 100°C



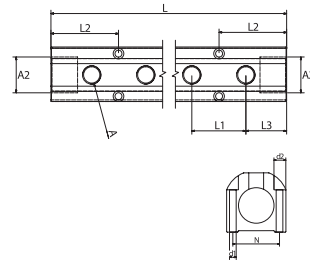
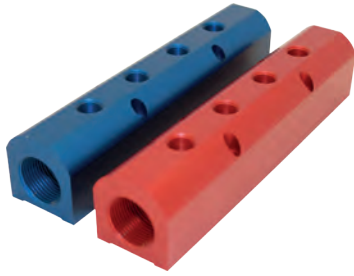
| Part No. | Description | D (mm) | D1 (mm) | Working Pressure* | | Bend Radius (mm)* | Coil Length L | Colour |
|----------|---|--------|---------|-------------------|-----|-------------------|---------------|--------|
| | | | | PSI | Bar | | | |
| PPU8B | Pneumatic Polyurethane Tubing 8mm x 5.5mm | 8 | 5.5 | 116 | 8 | 31 | 30m | Blue |
| PPU8R | Pneumatic Polyurethane Tubing 8mm x 5.5mm | 8 | 5.5 | 116 | 8 | 31 | 30m | Red |
| PPU10B | Pneumatic Polyurethane Tubing 10mm x 7mm | 10 | 7 | 116 | 8 | 40 | 30m | Blue |
| PPU10R | Pneumatic Polyurethane Tubing 10mm x 7mm | 10 | 7 | 116 | 8 | 40 | 30m | Red |
| PPU12B | Pneumatic Polyurethane Tubing 12mm x 8mm | 12 | 8 | 116 | 8 | 43 | 30m | Blue |
| PPU12R | Pneumatic Polyurethane Tubing 12mm x 8mm | 12 | 8 | 116 | 8 | 43 | 30m | Red |

* Working pressure of 8 bar / 116 PSI is based on temperature of 20°C, higher temperature will result in lower pressure resistance. See below graph for details.



MANIFOLDS

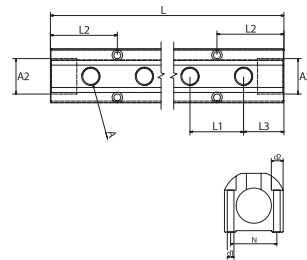
3/4" Inline Anodized Manifold



| Part No. | Colour | Ports | A | A2 | L2 | L3 | L1 | d1 | d2 | N | L |
|-------------|--------|-------|--------|--------|------|------|------|-----|----|----|-------|
| IM3-4-1/4-R | Red | 4 | G 1/4" | G 3/4" | 57,2 | 38,1 | 38,1 | 4,5 | 8 | 31 | 190,5 |
| IM3-4-1/4-B | Blue | 4 | G 1/4" | G 3/4" | 57,2 | 38,1 | 38,1 | 4,5 | 8 | 31 | 190,5 |
| IM3-6-1/4-R | Red | 6 | G 1/4" | G 3/4" | 57,2 | 38,1 | 38,1 | 4,5 | 8 | 31 | 266,7 |
| IM3-6-1/4-B | Blue | 6 | G 1/4" | G 3/4" | 57,2 | 38,1 | 38,1 | 4,5 | 8 | 31 | 266,7 |
| IM3-8-1/4-R | Red | 8 | G 1/4" | G 3/4" | 57,2 | 38,1 | 38,1 | 4,5 | 8 | 31 | 342,9 |
| IM3-8-1/4-B | Blue | 8 | G 1/4" | G 3/4" | 57,2 | 38,1 | 38,1 | 4,5 | 8 | 31 | 342,9 |

Rugged Low Cost Design.
 Anodized Aluminium in Blue or Red for easy identification of Flow and Return.
 Quick Mould Change.
 Eliminates Piping Errors.
 Shorter Hose Lengths minimise pressure drops and reduces clutter.
 Maximum Unrestricted Flow Rates Possible.

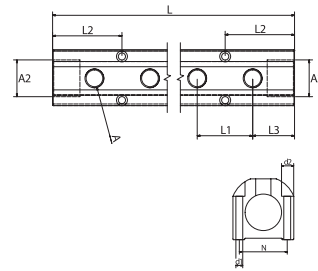
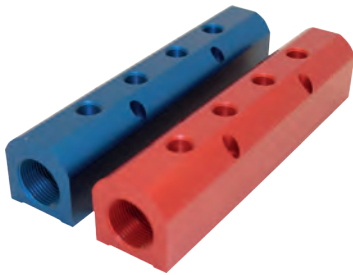
1" Inline Anodized Manifold



| Part No. | Colour | Ports | A | A2 | L2 | L3 | L1 | d1 | d2 | N | L |
|--------------|--------|-------|--------|------|------|------|------|----|------|------|-------|
| IM4-4-1/4-R | Red | 4 | G 1/4" | G 1" | 63,5 | 38,1 | 38,1 | 7 | 10,5 | 40,6 | 190,5 |
| IM4-4-1/4-B | Blue | 4 | G 1/4" | G 1" | 63,5 | 38,1 | 38,1 | 7 | 10,5 | 40,6 | 190,5 |
| IM4-4-3/8-R | Red | 4 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 228,6 |
| IM4-4-3/8-B | Blue | 4 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 228,6 |
| IM4-6-1/4-R | Red | 6 | G 1/4" | G 1" | 63,5 | 38,1 | 38,1 | 7 | 10,5 | 40,6 | 266,7 |
| IM4-6-1/4-B | Blue | 6 | G 1/4" | G 1" | 63,5 | 38,1 | 38,1 | 7 | 10,5 | 40,6 | 266,7 |
| IM4-6-3/8-R | Red | 6 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 330,2 |
| IM4-6-3/8-B | Blue | 6 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 330,2 |
| IM4-8-1/4-R | Red | 8 | G 1/4" | G 1" | 63,5 | 38,1 | 38,1 | 7 | 10,5 | 40,6 | 342,9 |
| IM4-8-1/4-B | Blue | 8 | G 1/4" | G 1" | 63,5 | 38,1 | 38,1 | 7 | 10,5 | 40,6 | 342,9 |
| IM4-8-3/8-R | Red | 8 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 431,8 |
| IM4-8-3/8-B | Blue | 8 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 431,8 |
| IM4-10-3/8-R | Red | 10 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 533,4 |
| IM4-10-3/8-B | Blue | 10 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 533,4 |
| IM4-12-3/8-R | Red | 12 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 635,0 |
| IM4-12-3/8-B | Blue | 12 | G 3/8" | G 1" | 63,5 | 38,1 | 50,8 | 7 | 10,5 | 40,6 | 635,0 |

Rugged Low Cost Design.
 Anodized Aluminium in Blue or Red for easy identification of Flow and Return.
 Quick Mould Change.
 Eliminates Piping Errors.
 Shorter Hose Lengths minimise pressure drops and reduces clutter.
 Maximum Unrestricted Flow Rates Possible.

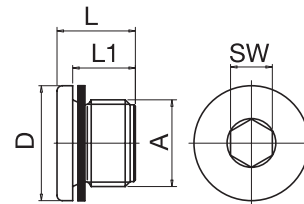
1-1/2" Inline Anodized Manifold




| Part No. | Colour | Ports | A | A2 | L2 | L3 | L1 | d1 | d2 | N | L |
|--------------|--------|-------|--------|----------|------|------|------|----|------|----|-------|
| IM6-4-1/2-R | Red | 4 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 254 |
| IM6-4-1/2-B | Blue | 4 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 254 |
| IM6-6-1/2-R | Red | 6 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 355,6 |
| IM6-6-1/2-B | Blue | 6 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 355,6 |
| IM6-8-1/2-R | Red | 8 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 457,2 |
| IM6-8-1/2-B | Blue | 8 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 457,2 |
| IM6-10-1/2-R | Red | 10 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 558,8 |
| IM6-10-1/2-B | Blue | 10 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 558,8 |
| IM6-12-1/2-R | Red | 12 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 660,4 |
| IM6-12-1/2-B | Blue | 12 | G 1/2" | G 1-1/2" | 76,2 | 50,8 | 50,8 | 7 | 10,5 | 57 | 660,4 |

Rugged Low Cost Design.
 Anodized Aluminium in Blue or Red for easy identification of Flow and Return.
 Quick Mould Change.
 Eliminates Piping Errors.
 Shorter Hose Lengths minimise pressure drops and reduces clutter.
 Maximum Unrestricted Flow Rates Possible.

Blanking Plugs



| Part No. | A | D | L | L1 | SW |  |
|----------|----------|----|------|----|----|---|
| DR3/4 | G 3/4" | 32 | 21 | 16 | 12 | 1 |
| DR1 | G 1" | 40 | 22,5 | 16 | 17 | 1 |
| DR1-1/2* | G 1-1/2" | 55 | 22,5 | 16 | 24 | 1 |

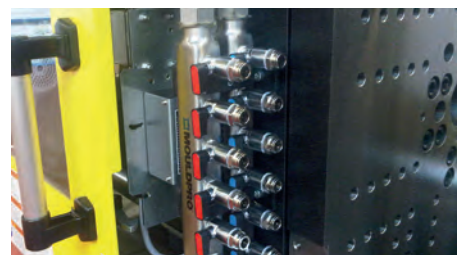
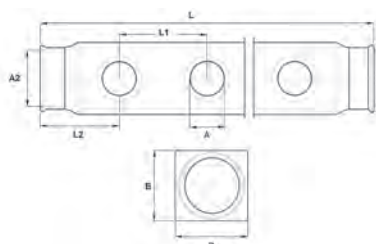
* With O-Ring.

MANIFOLDS

Inline Stainless Steel Manifold



STAINLESS
STEEL




| Part No. | Ports | A | A2 | L | L1 | L2 | B |
|--------------|-------|--------|----------|-----|----|----|----|
| SSIM4-4-1/2 | 4 | G 1/2" | G 1" | 240 | 50 | 45 | 40 |
| SSIM4-6-1/2 | 6 | G 1/2" | G 1" | 340 | 50 | 45 | 40 |
| SSIM4-8-1/2 | 8 | G 1/2" | G 1" | 440 | 50 | 45 | 40 |
| SSIM4-10-1/2 | 10 | G 1/2" | G 1" | 540 | 50 | 45 | 40 |
| SSIM4-12-1/2 | 12 | G 1/2" | G 1" | 640 | 50 | 45 | 40 |
| SSIM5-4-1/2 | 4 | G 1/2" | G 1-1/4" | 240 | 50 | 45 | 50 |
| SSIM5-6-1/2 | 6 | G 1/2" | G 1-1/4" | 340 | 50 | 45 | 50 |
| SSIM5-8-1/2 | 8 | G 1/2" | G 1-1/4" | 440 | 50 | 45 | 50 |
| SSIM5-10-1/2 | 10 | G 1/2" | G 1-1/4" | 540 | 50 | 45 | 50 |
| SSIM5-12-1/2 | 12 | G 1/2" | G 1-1/4" | 640 | 50 | 45 | 50 |

Stainless steel AISI 304.
Perfect for aggressive water and oil.

Max. pressure 10 bar.
Max temp. 200°C.

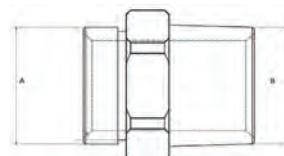
Brackets for Stainless Steel Manifolds



| Part No. | Type |  |
|--------------|--------|---|
| SS-Bracket | 1" | 1 |
| SS-5-Bracket | 1-1/4" | 1 |

Electro plated steel bracket for installation of a single manifold.
2 Brackets needed for correct installation.

Equal Connector for Stainless Manifolds



| Part No. | A | B |  |
|----------|----------|----------|---|
| ECM1 | G 1" | R 1" | 1 |
| ECM1-1/4 | G 1-1/4" | R 1-1/4" | 1 |

Material: Brass Nickel Plated.
Max temp.: 130°C.

O-Ring: 1" = EPDM.
1-1/4" = SILICONE.

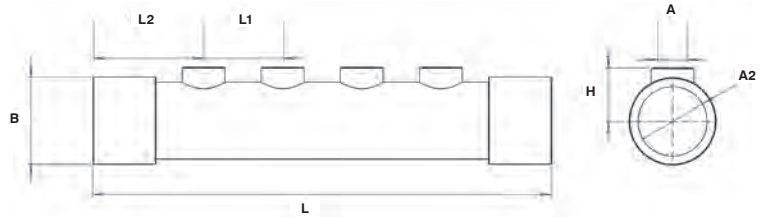
Blanking Plug



| Part No. | Thread | Seal |
|-----------|----------|----------------------|
| SSEC1 | G 1" | FKM max. temp. 200°C |
| SSEC1-1/4 | G 1-1/4" | FKM max. temp. 200°C |

Material: Nickel plated brass

Heavy Duty Inline Stainless Steel Manifold



| Part No. | Ports | A | A2 | L | L1 | L2 | B | H |
|--------------|-------|--------|----------|-----|----|------|----|----|
| SSIM6-4-1/2 | 4 | G 1/2" | G 1.1/2" | 290 | 50 | 69,5 | 55 | 34 |
| SSIM6-8-1/2 | 8 | G 1/2" | G 1.1/2" | 490 | 50 | 69,5 | 55 | 34 |
| SSIM6-12-1/2 | 12 | G 1/2" | G 1.1/2" | 690 | 50 | 69,5 | 55 | 34 |

Welded pipe construction
 Stainless Steel AISI 304
 Perfect for aggressive water and oil

Max. pressure 10 bar.
 Max temp. 200°C.

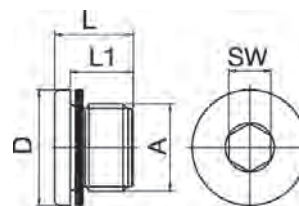
Brackets for heavy duty Stainless Steel Manifolds



| Part No. | Size |  |
|--------------|--------|---|
| SS-6-Bracket | 1.1/2" | 1 |

Electro plated steel bracket for installation of a single manifold
 2 Brackets needed for correct installation

Blanking Plugs



| Part No. | A | D | L | L1 | SW |  |
|----------|----------|----|------|----|----|---|
| DR1-1/2* | G 1-1/2" | 55 | 22,5 | 16 | 24 | 1 |

Material: Plated Brass
 With O-ring

SEALANT AND TAPE

PTFE Tape



| Part No. | Size | Length |
|----------|-------|--------|
| TEF | 12 mm | 12 m |

Excellent for sealing all thread sizes.
Temperature range: up to 230°C.

Thread Locker



| Part No. | Size | Max Thread | Temperature range |
|----------|--------|------------|-------------------|
| 77 | 50 ml. | < M80 | -50°C - +150°C |

Anaerobic Thread locker for permanent sealing of metal threaded fittings.
Single component, liquid adhesive that cures hard in the absence of air or oxygen.
Maximum Thread Size: M80.
Disassembly strength: High.
Temperature range: -50°C - +150°C.
Breakaway torque: 32 Nm.
Pack sizes: 50ml.

Pipe Sealant



| Part No. | Size | Max Thread | Temperature range |
|----------|--------|------------|-------------------|
| 542 | 50 ml. | < 3/4" | -50°C - +150°C |

Anaerobic thread sealant for fine metal threaded fittings, especially hydraulic pipes.
 Single component, liquid adhesive that cures hard in the absence of air or oxygen.
 Maximum pipe size: 3/4".
 Disassembly strength: Medium.
 Temperature range: -50°C - +150°C.
 Breakaway torque: 15 Nm.
 Pack sizes: 50ml.

Pipe Sealant



| Part No. | Size | Max Thread | Temperature range |
|----------|---------|------------|-------------------|
| 577 | 50 ml. | < 3" | -50°C - +150°C |
| 577-2 | 250 ml. | < 3" | -50°C - +150°C |

General purpose anaerobic thread sealant for all coarse metal threads.
 Single component, liquid adhesive that cures hard in the absence of air or oxygen.
 Maximum Pipe Size: 3".
 Disassembly strength: Medium.
 Temperature range: -50°C - +150°C.
 Breakaway torque: 11 Nm.
 Pack sizes: 50ml, 250ml.

THERMAL MANAGEMENT

02.

89 Digital Flow Monitors



103 Analogue Flow Meters



105 De-Scaling



107 Pressure Testing



108 Water Treatment



109 Filters



111 Valves





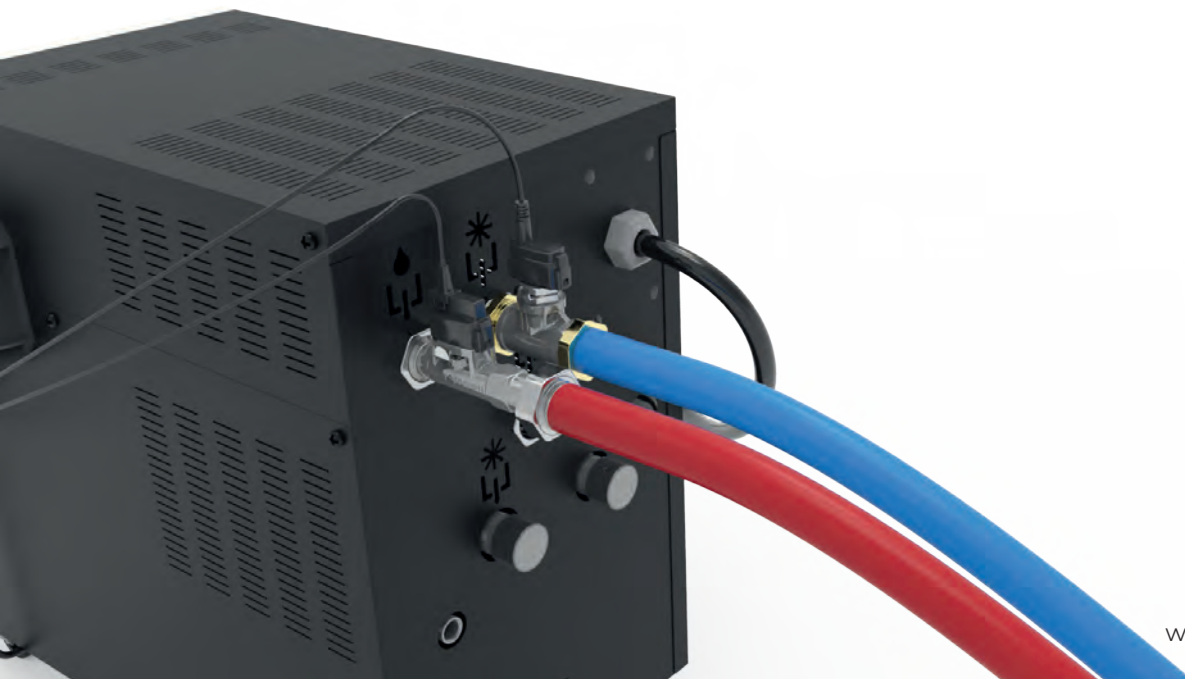
Flosense; the new affordable, flexible flow monitoring system designed for accurate measuring and monitoring of flow, temperature and pressure variations in cooling circuits

Flosense is designed to be installed in various locations within the cooling circuit including the main water supply, the mould heater, critical cooling channels or distribution manifolds.

Quick to install and easy to set-up, Flosense is a critical component in any injection moulding configuration and should form part of any setup where cost control and quality are key considerations.

Using these values, Flosense provides an indication of the stability of the process and checks the efficiency, identifying wasted energy and variations in pressure which could indicate leaks or blocked waterways.

Flosense is designed to be installed in various locations within the cooling circuit including the main water supply, the mould heater, critical cooling channels or distribution manifolds.





Pressure loss is caused by hoses, fittings and valves and will affect the productivity.

Difference between inlet pressure and return pressure is measured as Delta P.

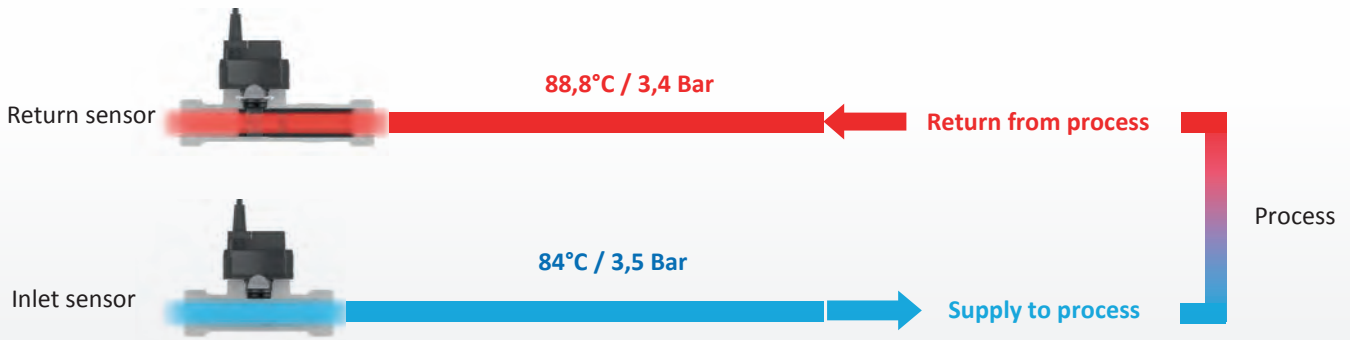
Variation in Delta P could indicate pump failure, blocked waterway, leaks etc.



As the cooling water passes through the mould it transfers heat from the steel into the cooling water. The more turbulent the flow the more efficient this process of cooling.

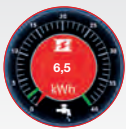
Difference between inlet temperature and return temperature is measured as Delta T.

Sudden variation in Delta T may be caused by a faulty heater/cooler, blocked channel, scale build up etc.



Flosense, provides visibility of key cooling circuit metrics, improves efficiency, enhances productivity and profitability.

Flosense, provides features and interfaces to monitor, analyse and verify data, essential for your productivity and quality.



Energy Transfer Indicator

Heat is transferred from the mould through the water channels, Flosense calculates the heat transfer as energy units BTU or kWh. This feature illustrates the efficiency of the process.



Alarm Output

With programmable alarm limits on flow, temperature and pressure any variation in the values being monitored will trigger an on-screen alarm. An external alarm output signal can be connected to auxiliary equipment which could be a visual or audible beacon, the mould heater or the injection moulding machine.



Turbulent Flow Indicator

Often regarded as a key indicator in the efficiency of a mould cooling circuit, Flosense is fitted with a turbulent flow indicator. The unit will indicate laminar, transitional and turbulent flow as well as monitoring the Reynolds number, based on flow diameter and percentage glycol in the system.

Even in a 'hose burst' situation the unit will identify a sudden loss of pressure and the unit can either be connected to an alarm or could be used to automatically shut down the mould heater.

Improving the flow from laminar to turbulent can increase the heat transfer efficiency by up to 500%.



DATA RECORDING

Data is recorded and stored in the internal memory enough to display data for the previous 30 days.

Flow, Temperature and Pressure are logged and may be viewed in the graphing screen.



The last 30 days of data is recorded and stored on the internal memory.



Data Export

It is also possible to download the data to a laptop using the integrated USB port for further analysis.

The data is stored as text file and can be analysed using excel or other analysing software.

Flow Sensor Kit - 1 or 2 Circuits

NEW: 2 flow circuits from same control



| 1 Sensor Kit | 2 Sensors Kit | Flow capacity l/m | A | Connection B | C | D | Max Temp. |
|---------------|-----------------|-------------------|-----|--------------|------|------|-----------|
| FSE-0510-K | FSE-0510-K-D | 0,5-10 | 100 | G 1/2" | 58,8 | 1/4" | 120°C |
| FSE-0510-K-HT | FSE-0510-K-HT-D | 0,5-10 | 100 | G 1/2" | 58,8 | 1/4" | 160°C |
| FSE-120-K | FSE-120-K-D | 1-20 | 100 | G 1/2" | 58,8 | 1/4" | 120°C |
| FSE-120-K-HT | FSE-120-K-HT-D | 1-20 | 100 | G 1/2" | 58,8 | 1/4" | 160°C |
| FSE-240-K | FSE-240-K-D | 2-40 | 100 | G 1/2" | 58,8 | 1/4" | 120°C |
| FSE-240-K-HT | FSE-240-K-HT-D | 2-40 | 100 | G 1/2" | 58,8 | 1/4" | 160°C |

- Touch Screen
- Power Supply
- Sensor(s) (flow + temp)
- Cable(s) (1,2 m.)
- USB Cable

Multi Sensor Kit - 1 or 2 Circuits

NEW: 2 flow circuits from same control



| 1 Sensor Kit | 2 Sensors Kit | Flow capacity l/m | A | Connection B | C | Max Temp. | Pressure Range |
|--------------|---------------|-------------------|-------|--------------|------|-----------|----------------|
| FS-115-K | FS-115-K-D | 2-20 | 110 | G 3/4" | 58,8 | 120°C | 0-10 Bar |
| FS-240-K | FS-240-K-D | 4-40 | 110 | G 3/4" | 58,8 | 120°C | 0-10 Bar |
| FS-5100-K | FS-5100-K-D | 10-100 | 129 | G 1" | 66,5 | 120°C | 0-10 Bar |
| FS-10200-K | FS-10200-K-D | 20-200 | 137,5 | G 1-1/4" | 74,1 | 120°C | 0-10 Bar |
| FS-20400-K* | FS-20400-K-D* | 20-200 | 180 | G 1-1/2" | 85 | 120°C | 0-10 Bar |

- Touch Screen
- Power Supply
- Sensor(s) (flow + temp + pressure)
- Cable(s) (1,2 m.)
- USB Cable
- * Composite (PPS, PA66)

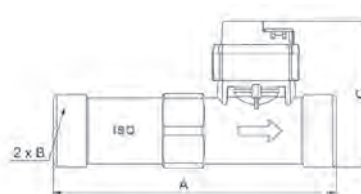
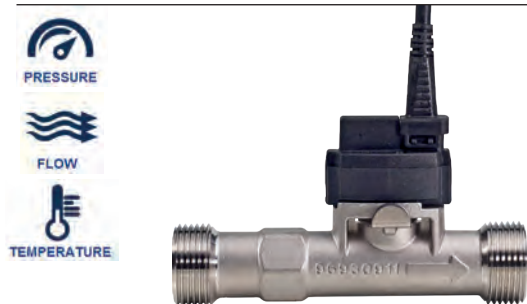
Delta Multi Sensor Kit - 1 Circuit



| Inlet/outlet Sensor Kit | Flow capacity l/m | A | Connection B | C | Max Temp. | Pressure Range |
|-------------------------|-------------------|-------|--------------|------|-----------|----------------|
| FS-115-10-K | 2-20 | 110 | G 3/4" | 58,8 | 120°C | 0-10 Bar |
| FS-240-10-K | 4-40 | 110 | G 3/4" | 58,8 | 120°C | 0-10 Bar |
| FS-5100-10-K | 10-100 | 129 | G 1" | 66,5 | 120°C | 0-10 Bar |
| FS-10200-10-K | 20-200 | 137,5 | G 1-1/4" | 74,1 | 120°C | 0-10 Bar |
| FS-20400-10-K* | 40-400 | 180 | G 1-1/2" | 85 | 120°C | 0-10 Bar |

- Touch Screen
- Power Supply
- Sensor (flow + temp + pressure)
- Inlet Sensor (Temp + pressure)
- 2 x Cables (1,2 m.)
- USB Cable
- * Composite (PPS, PA66)

Multi Sensor Unit



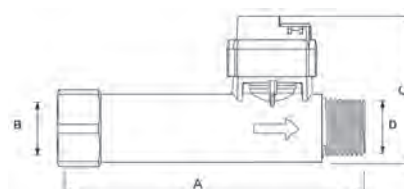
| Part No. | Flow capacity l/m | A | B | C | Max temperature | Hosetail Ref. |
|----------|-------------------|-------|----------|------|-----------------|----------------------------|
| FS-115 | 2-20 | 110 | G 3/4" | 58,8 | 120°C | CFR3/4-13 |
| FS-240 | 4-40 | 110 | G 3/4" | 58,8 | 120°C | HT-316-2 / CFR3/4-19 |
| FS-5100 | 10-100 | 129 | G 1" | 66,5 | 120°C | CFR1-25 / CFR1-25 |
| FS-10200 | 20-200 | 137,5 | G 1-1/4" | 74,1 | 120°C | HT-316-4 / CFR1.1/4-32 |
| FS-20400 | 40-400 | 180 | G1-1/2" | 80,1 | 120°C | 1.1/2" / 38 mm. (Included) |

Includes Flow Pipe and Multi Sensor (cable not included).

Optional (not included in the Kit) AISI 316

| Swivel Hosetail Fittings | | | Gaskets | |
|--------------------------|----------------|------------|-------------|----------|
| | | | | |
| Stainless Steel Part No. | Brass Part No. | A1 x D1 | Sensor Ref. | Part No. |
| HT-316-2 | CFR3/4-13 | 3/4" X 13 | FS-115 | GK34 |
| HT-316-3 | CFR3/4-19 | 3/4" X 19 | FS-240 | GK34 |
| | CFR1-25 | 1" x 25 | FS-5100 | GK1 |
| | CFR1.1/4-32 | 1.1/4 x 32 | FS-10200 | GK114 |
| | CFR1.1/2-38 | 1.1/2 x 38 | FS-20400 | GK112 |

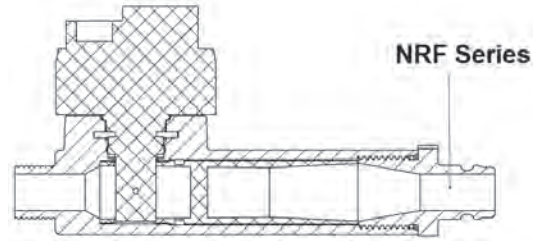
Flow Sensor Unit



| Part No. | Flow capacity l/m | A | B | C | D | Max temperature | B Connection ref. |
|-------------|-------------------|-----|--------|------|------|-----------------|-------------------|
| FSE-0510 | 0,5-10 | 100 | G 1/2" | 58,8 | 1/4" | 120°C | xxNRF |
| FSE-0510-HT | 0,5-10 | 100 | G 1/2" | 58,8 | 1/4" | 160°C | xxNRF |
| FSE-120 | 1-20 | 100 | G 1/2" | 58,8 | 1/4" | 120°C | xxNRF |
| FSE-120-HT | 1-20 | 100 | G 1/2" | 58,8 | 1/4" | 160°C | xxNRF |
| FSE-240 | 2-40 | 100 | G 1/2" | 58,8 | 1/4" | 120°C | xxNRF |
| FSE-240-HT | 2-40 | 100 | G 1/2" | 58,8 | 1/4" | 160°C | xxNRF |

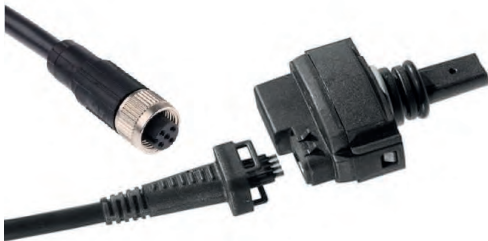
Includes Flow Pipe and Flow Sensor (cable not included)

Port Connector Plugs



| Part No. | Connection | Size/series | | |
|----------|------------|-----------------------|--|--|
| 09NRF | G 1/2" | 09 EURO Style | | |
| 13NRF | G 1/2" | 13 EURO Style | | |
| 20NRF | G 1/2" | 20 Int. Style | | |
| 30NRF | G 1/2" | 30 Int. Style | | |
| 08NRF | G 1/2" | French Type | | |
| F9NRF | G 1/2" | French Matic | | |
| 06NRF | G 1/2" | 06 Scandinavian Style | | |
| 10MF | G 1/2" | 10 mm Hosetail | | |
| 13MF | G 1/2" | 13 mm Hosetail | | |

Sensor Cable



| Part No. | Connection | Length (mm) |
|---------------|------------|-------------|
| FS-SC1200 | M8/Molex | 1200 |
| FS-SC2900 | M8/Molex | 2900 |
| FS-SC1200-GND | M8/Molex | 1200 |
| FS-SC2900-GND | M8/Molex | 2900 |

GND Type includes Earth Wire and Sensor Clip Connector

Extension Cable 4 pin



| Part No. | Connection | Length (mm) |
|--------------|------------|-------------|
| FS-4P-EC1000 | M8/M8 | 1000 |
| FS-4P-EC2000 | M8/M8 | 2000 |
| FS-4P-EC5000 | M8/M8 | 5000 |

MULTI ZONE MONITORING

Upgrade your moulding machine with a new digital flow monitor to improve your productivity

Digital flow monitors will give you many advantages such as:

- Digital monitoring of Flow, Temperature and Pressure
- Alarm Output
- Higher flow capacity
- Higher temperature range
- Data storage and export
- Faster Mould changeovers
- OPC-UA / Euromap interface



Flosense 2.0

Manifolds - Retrofit Style



Page 96

Flosense 3.0

All in One Flow Regulator Style
Integrated Control Screen



Page 97

Flosense 4.0

Compact Dual Line Manifolds
Integrated Sensors and Valves



Page 98

Touch Screen



Touch Screen mounted to the Manifolds.

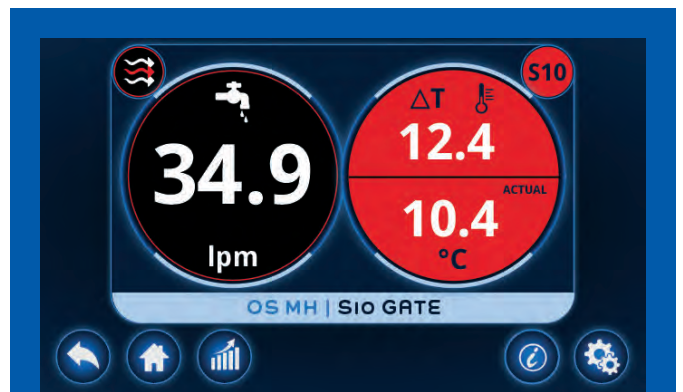
Equipped with power, alarm, USB and Ethernet connections.

| Display | |
|-----------------|---------------------------|
| Type | Touch |
| Size | 7,1" |
| Voltage | 12-24 Volt. |
| Data | USB + Ethernet |
| Communications | OPC UA |
| Internal memory | Up to 30 days data (FIFO) |

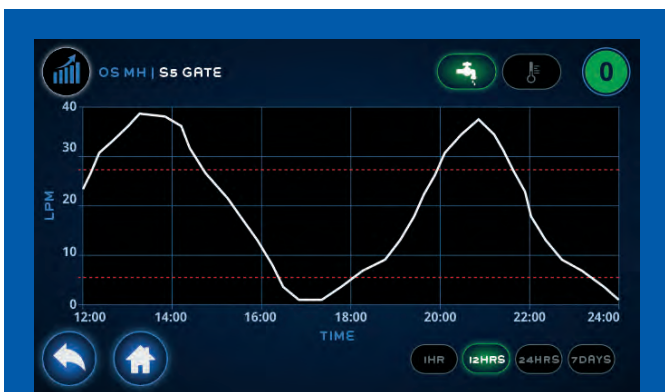
| Part No. | Size | Manifold Inputs | Power Connection | Alarm Output | Interface |
|----------|------|-----------------|------------------|--------------|-----------|
| FS-7100 | 7.1" | 4 | 12V | Yes | OPC-UA |



The main screen will show all circuits with information about flow and temperature. The main inlet and outlet will also show including pressure.



By clicking on a specific circuit you will see detailed information, including delta T (heat transfer) of the specific channel. Also, turbulent flow indicator is included.

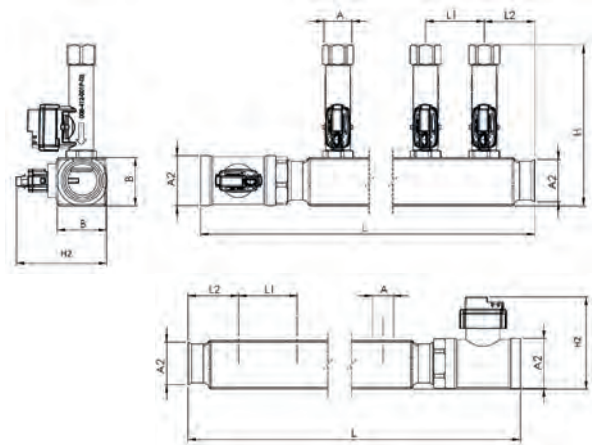
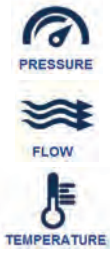


Data is stored in the internal memory and can be displayed in graphical view for each circuit. Data can also be exported for external use.

| DATE | TIME | USER | EVENT TYPE | MANIFOLD | SENSOR | ALARM |
|------------|----------|------|---|----------|--------|-------|
| 12/07/2019 | 15:37:05 | NJR | Change to High / Low Temperature Alarm Settings | FS MH | S7 | 🔴 |
| 10/07/2019 | 06:11:45 | CBS | Change to High / Low Temperature Alarm Settings | OS MH | S12 | 🟡 |
| 09/07/2019 | 00:34:28 | PLR | Change to High / Low Temperature Alarm Settings | MH OS | OUTLET | 🔴 |
| 09/07/2019 | 03:14:36 | PWB | Change to High / Low Temperature Alarm Settings | OS MH | S10 | 🟡 |
| 08/07/2019 | 09:22:11 | NJR | Change to High / Low Temperature Alarm Settings | FS MH | S6 | 🟡 |
| 04/07/2019 | 13:45:48 | PLR | Change to High / Low Temperature Alarm Settings | MH OS | INLET | 🟡 |
| 02/07/2019 | 14:11:57 | CBS | Change to High / Low Temperature Alarm Settings | OS MH | S1 | 🟡 |

The system is equipped with Audit Log to keep track of all events including user ID tracer.

Flosense 2.0 Manifold



| 1" Manifold | Flow sensor range option (l/m) | | | Ports | A | A2 | B | L | L1 | L2 | H | H2 | Temp. |
|--------------|--------------------------------|------|------|-------|--------|------|----|-----|----|----|-----|------|-------|
| | 0.5-10 | 1-20 | 2-40 | | | | | | | | | | |
| F2M4-x-xx | • | • | • | 4 | G 1/2" | G 1" | 40 | 315 | 50 | 45 | 140 | 66,5 | 120°C |
| F2M4HT-x-xx | • | • | • | 4 | G 1/2" | G 1" | 40 | 315 | 50 | 45 | 140 | 66,5 | 160°C |
| F2M6-x-xx | • | • | • | 6 | G 1/2" | G 1" | 40 | 415 | 50 | 45 | 140 | 66,5 | 120°C |
| F2M6HT-x-xx | • | • | • | 6 | G 1/2" | G 1" | 40 | 415 | 50 | 45 | 140 | 66,5 | 160°C |
| F2M8-x-xx | • | • | • | 8 | G 1/2" | G 1" | 40 | 515 | 50 | 45 | 140 | 66,5 | 120°C |
| F2M8HT-x-xx | • | • | • | 8 | G 1/2" | G 1" | 40 | 515 | 50 | 45 | 140 | 66,5 | 160°C |
| F2M10-x-xx | • | • | • | 10 | G 1/2" | G 1" | 40 | 615 | 50 | 45 | 140 | 66,5 | 120°C |
| F2M10HT-x-xx | • | • | • | 10 | G 1/2" | G 1" | 40 | 615 | 50 | 45 | 140 | 66,5 | 160°C |
| F2M12-x-xx | • | • | • | 12 | G 1/2" | G 1" | 40 | 715 | 50 | 45 | 140 | 66,5 | 120°C |
| F2M12HT-x-xx | • | • | • | 12 | G 1/2" | G 1" | 40 | 715 | 50 | 45 | 140 | 66,5 | 160°C |

| 1.1/4" Manifold | Flow sensor range option (l/m) | | | Ports | A | A2 | B | L | L1 | L2 | H | H2 | Temp. |
|-----------------|--------------------------------|------|------|-------|--------|----------|----|-----|----|----|-----|------|-------|
| | 0.5-10 | 1-20 | 2-40 | | | | | | | | | | |
| F2M4-L-x-xx | • | • | • | 4 | G 1/2" | G 1.1/4" | 50 | 315 | 50 | 45 | 150 | 74,1 | 120°C |
| F2M4HT-L-x-xx | • | • | • | 4 | G 1/2" | G 1.1/4" | 50 | 315 | 50 | 45 | 150 | 74,1 | 160°C |
| F2M6-L-x-xx | • | • | • | 6 | G 1/2" | G 1.1/4" | 50 | 415 | 50 | 45 | 150 | 74,1 | 120°C |
| F2M6HT-L-x-xx | • | • | • | 6 | G 1/2" | G 1.1/4" | 50 | 415 | 50 | 45 | 150 | 74,1 | 160°C |
| F2M8-L-x-xx | • | • | • | 8 | G 1/2" | G 1.1/4" | 50 | 515 | 50 | 45 | 150 | 74,1 | 120°C |
| F2M8HT-L-x-xx | • | • | • | 8 | G 1/2" | G 1.1/4" | 50 | 515 | 50 | 45 | 150 | 74,1 | 160°C |
| F2M10-L-x-xx | • | • | • | 10 | G 1/2" | G 1.1/4" | 50 | 615 | 50 | 45 | 150 | 74,1 | 120°C |
| F2M10HT-L-x-xx | • | • | • | 10 | G 1/2" | G 1.1/4" | 50 | 615 | 50 | 45 | 150 | 74,1 | 160°C |
| F2M12-L-x-xx | • | • | • | 12 | G 1/2" | G 1.1/4" | 50 | 715 | 50 | 45 | 150 | 74,1 | 120°C |
| F2M12HT-L-x-xx | • | • | • | 12 | G 1/2" | G 1.1/4" | 50 | 715 | 50 | 45 | 150 | 74,1 | 160°C |

| 1.1/2" Manifold | Flow sensor range option (l/m) | | | Ports | A | A2 | B | L | L1 | L2 | H | H2 | Temp. |
|-----------------|--------------------------------|------|------|-------|--------|----------|----|-----|----|----|-------|----|-------|
| | 0.5-10 | 1-20 | 2-40 | | | | | | | | | | |
| F2M4-XL-x-xx | • | • | • | 4 | G 1/2" | G 1.1/2" | 50 | 365 | 50 | 70 | 161,5 | 85 | 120°C |
| F2M4HT-XL-x-xx | • | • | • | 4 | G 1/2" | G 1.1/2" | 50 | 365 | 50 | 70 | 161,5 | 85 | 160°C |
| F2M8-XL-x-xx | • | • | • | 8 | G 1/2" | G 1.1/2" | 50 | 565 | 50 | 70 | 161,5 | 85 | 120°C |
| F2M8HT-XL-x-xx | • | • | • | 8 | G 1/2" | G 1.1/2" | 50 | 565 | 50 | 70 | 161,5 | 85 | 160°C |
| F2M12-XL-x-xx | • | • | • | 12 | G 1/2" | G 1.1/2" | 50 | 765 | 50 | 70 | 161,5 | 85 | 120°C |
| F2M12HT-XL-x-xx | • | • | • | 12 | G 1/2" | G 1.1/2" | 50 | 765 | 50 | 70 | 161,5 | 85 | 160°C |

- Comes in pairs of 2 manifolds
- One feed Manifold with Pressure and Temperature Sensor
 - One return Manifold with Flow, Temperature and Pressure Sensor

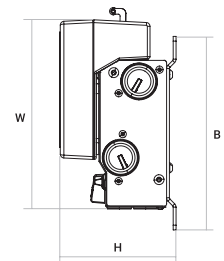
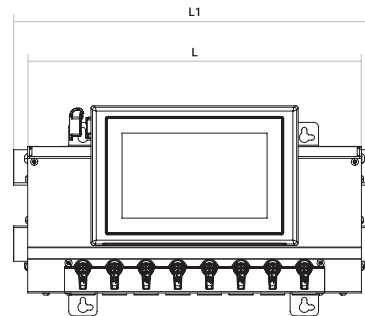
HT = High Temperature.
 Complete unit with Pressure sensor installed on main inlet / return. Connect up to 4 manifolds to the touch screen in order to monitor up to 48 separate cooling circuits.
 Use the alarm limits (and output) on flow and temperature to control the process stability and part quality.

Supplied without connector nipples (see page 93)
 Ordering Example: Part No. + Flow sensor range (F2M4-1-20)

Material:
 Stainless Steel

Digital Flow Regulator

Replace analogue water flow regulators with the new digital industry 4.0 ready monitors






| Part No. | Ports | Length mm | Length 1 mm | Width mm | Height mm | B mm | Flow | Temp. |
|---------------|-------|-----------|-------------|----------|-----------|------|------------|-------|
| FFRM4-0.5-10 | 4 | 220 | 250 | 200 | 123 | 205 | 0,5-10 l/m | 120°C |
| FFRM4-1-20 | 4 | 220 | 250 | 200 | 123 | 205 | 1-20 l/m | 120°C |
| FFRM4-2-40 | 4 | 220 | 250 | 200 | 123 | 205 | 2-40 l/m | 120°C |
| FFRM6-0.5-10 | 6 | 287 | 317 | 200 | 123 | 205 | 0,5-10 l/m | 120°C |
| FFRM6-1-20 | 6 | 287 | 317 | 200 | 123 | 205 | 1-20 l/m | 120°C |
| FFRM6-2-40 | 6 | 287 | 317 | 200 | 123 | 205 | 2-40 l/m | 120°C |
| FFRM8-0.5-10 | 8 | 354 | 384 | 200 | 123 | 205 | 0,5-10 l/m | 120°C |
| FFRM8-1-20 | 8 | 354 | 384 | 200 | 123 | 205 | 1-20 l/m | 120°C |
| FFRM8-2-40 | 8 | 354 | 384 | 200 | 123 | 205 | 2-40 l/m | 120°C |
| FFRM10-0.5-10 | 10 | 421 | 451 | 200 | 123 | 205 | 0,5-10 l/m | 120°C |
| FFRM10-1-20 | 10 | 421 | 451 | 200 | 123 | 205 | 1-20 l/m | 120°C |
| FFRM10-2-40 | 10 | 421 | 451 | 200 | 123 | 205 | 2-40 l/m | 120°C |
| FFRM12-0.5-10 | 12 | 488 | 518 | 200 | 123 | 205 | 0,5-10 l/m | 120°C |
| FFRM12-1-20 | 12 | 488 | 518 | 200 | 123 | 205 | 1-20 l/m | 120°C |
| FFRM12-2-40 | 12 | 488 | 518 | 200 | 123 | 205 | 2-40 l/m | 120°C |

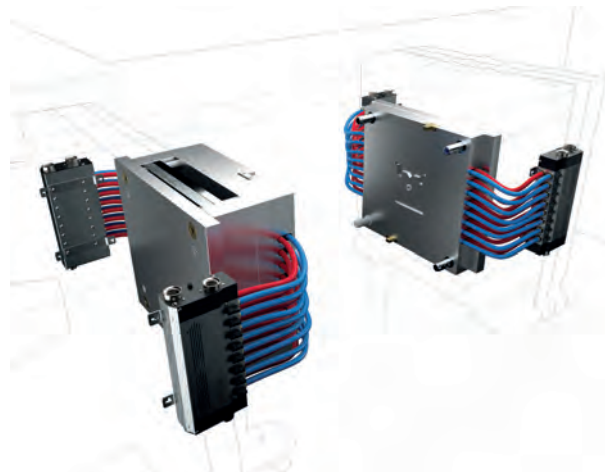
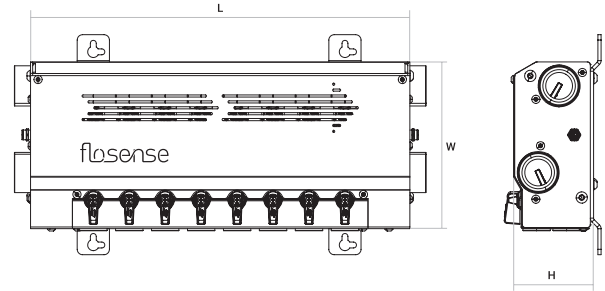
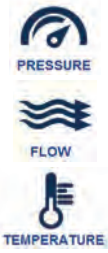
Complete unit with Pressure sensor installed on main inlet. Retrofit your existing flow regulators with FloSense today.

Material:

Flow modules: DZR Brass / nickel plated / Cover: stainless steel.

| | | |
|--------------------|---|---|
| Flow | Standard Sensor |  |
| Measuring range | 0.5-10 l/min (0.13-2.64 gpm) 1-20 l/min (0,27-5,2 gpm) 2-40 l/min (0,53-10,4 gpm) | |
| Accuracy | (± 1 o) in water, ± 1% FS | |
| Temperature | Standard Sensor |  |
| Measuring range | 0-120°C (32-248°F) 15-90°C (59-194°F) ± 0.5 K | |
| Accuracy | 0-120°C(32-248°F) ± 1 K | |
| Pressure | Standard Sensor |  |
| Measuring range | 0-10 bar (0-145 psi) | |
| Accuracy | ± 2.5% FS | |

Flosense 4.0 Manifold



| Part No. | Flow sensor range option (l/m) | | | Ports | L | W | H | Temp. |
|--------------|--------------------------------|------|------|-------|-----|-----|----|-------|
| | 0.5-10 | 1-20 | 2-40 | | | | | |
| F4M4-x-xx | • | • | • | 4 | 220 | 155 | 72 | 120°C |
| F4M4HT-x-xx | • | • | • | 4 | 220 | 155 | 72 | 160°C |
| F4M6-x-xx | • | • | • | 6 | 287 | 155 | 72 | 120°C |
| F4M6HT-x-xx | • | • | • | 6 | 287 | 155 | 72 | 160°C |
| F4M8-x-xx | • | • | • | 8 | 354 | 155 | 72 | 120°C |
| F4M8HT-x-xx | • | • | • | 8 | 354 | 155 | 72 | 160°C |
| F4M10-x-xx | • | • | • | 10 | 421 | 155 | 72 | 120°C |
| F4M10HT-x-xx | • | • | • | 10 | 421 | 155 | 72 | 160°C |
| F4M12-x-xx | • | • | • | 12 | 488 | 155 | 72 | 120°C |
| F4M12HT-x-xx | • | • | • | 12 | 488 | 155 | 72 | 160°C |




Ordering Example: Part No. + Flow sensor range (F4M4-1-20)

HT = High Temperature.

Complete unit with Pressure sensor installed on main inlet / return. Connect up to 4 manifolds to the touch screen in order to monitor up to 48 separate cooling circuits. Use the alarm limits (and output) on flow and temperature to control the process stability and part quality.

Material:

Flow modules: DZR Brass / nickel plated / Cover: stainless steel.

| Flow | Standard Sensor | HT Sensor |  |
|-----------------|---|---|---|
| Measuring range | 0.5-10 l/min (0.13-2.64 gpm) 1-20 l/min (0,27-5,2 gpm) 2-40 l/min (0,53-10,4 gpm) | 0.5-10 l/min (0.13-2.64 gpm) 1-20 l/min (0,27-5,2 gpm) 2-40 l/min (0,53-10,4 gpm) | |
| Accuracy | (± 1 o) in water, ± 1% FS | (± 1 o) in water, ± 1% FS | |
| Temperature | Standard Sensor | HT Sensor |  |
| Measuring range | 0-120°C (32-248°F) | 0-160°C (32-320°F) | |
| Accuracy | 15-90°C (59-194°F) ± 0.5 K 0-120°C(32-248°F) ± 1 K | 15-90°C (59-194°F) ± 0.5 K 0-120°C (32-248°F) ± 1 K 120-160°C (248-320°F) ± 2 K | |
| | | | |
| Pressure | Standard Sensor | HT Sensor |  |
| Measuring range | 0-10 bar (0-145 psi) | | |
| Accuracy | ± 2.5% FS | | |

Port Connector Plugs

| Part No. | Connection | Size/series | | |
|----------|------------|-----------------------|--|--|
| 09NRF | G 1/2" | 09 EURO Style | | |
| 13NRF | G 1/2" | 13 EURO Style | | |
| 20NRF | G 1/2" | 20 Int. Style | | |
| 30NRF | G 1/2" | 30 Int. Style | | |
| 08NRF | G 1/2" | French Type | | |
| F9NRF | G 1/2" | French Matic | | |
| 06NRF | G 1/2" | 06 Scandinavian Style | | |
| 10MF | G 1/2" | 10 mm Hosetail | | |
| 13MF | G 1/2" | 13 mm Hosetail | | |
| 19MF | G 1" | 19 mm Hosetail | | |
| 25MF | G 1" | 25 mm Hosetail | | |
| 38MF | G 1" | 38 mm Hosetail | | |

Extension Cable



| Part No. | Connection | Length (mm) |
|---------------|------------|-------------|
| FS-3P-EC1000 | M8/M8/3P | 1000 |
| FS-3P-EC2000 | M8/M8/3P | 2000 |
| FS-3P-EC5000 | M8/M8/3P | 5000 |
| FS-3P-EC10000 | M8/M8/3P | 10000 |

Blanking Plug



| Part No. | Connection | Seal |
|-----------|------------|------|
| SSEC1 | G 1" | FKM |
| SSEC1-1/4 | G 1/4" | FKM |
| DR1-1/2 | G 1/2" | FKM |

IQ CONCEPT



- 1 Monitoring Flow/Temp/Pressure
- 2 Pump / Temp. control OPC-UA
- 3 Pressure/ Flow control
- 4 Manuel Flow rate control



Mould



Flosense IQ Manifold
(up to 4 units)



IQ Temperature Control
(up to 4 units)



flow



temperature



pressure

FLOSENSE IQ

The Flosense IQ software continuously adjusts the speed of the pump in the temperature control units (TCU) to be aligned with the demand to reach optimal thermal properties. The ideal benchmark is the Delta-T (Temp out – Temp in) and if the Delta-T is too high or low, then the flow rate will be changed (pump speed) to optimize the heat transfer rate.

ENERGY REDUCTION

Trials show that energy consumption can be reduced by up to **85%** by using IQ controls in connection with TCU's with variable speed pump instead of using standard TCU's without pump control.

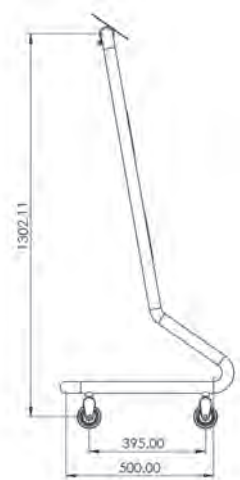
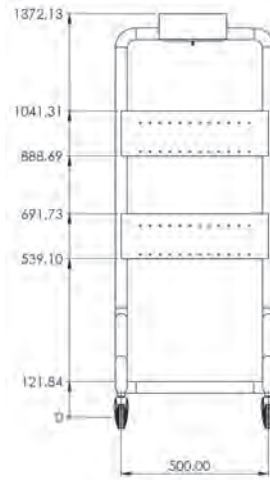
HOW IT WORKS

Flosense IQ monitor (1) the temperature and flow rates in each single circuit (up to 48) of the manifolds and calculates the demand for cooling water. This information is transferred to the temperature control unit (2), which adjust the pump speed to the required demand (3).

FINE REGULATION

Individual fine regulating valves (4) on the manifold allow the operator to adjust the individual flowrate on each circuit. This is typically required if Delta-T or flow rate vary significantly between circuits on same distribution manifold. The result is a perfectly balanced thermal process with minimum use of energy.

Flosense Cart



| Part No. | # Manifolds | # Zones | Height (mm) | Width (mm) |
|----------|-------------|---------|-------------|------------|
| FS-C-100 | 2 | 24 | 1400 | 500 |

Description

Flosense Cart ideal for flexible thermal diagnostics. Equipped with wheels for easy mobility. Material: Stainless Steel.

Note: The Cart is supplied without Flosense manifolds or Touch Screen.



DIGITAL FLOW METERS

Vortex Digital Single Zone Monitor



| Part No. | Flow capacity | Connection | Voltage |
|----------|---------------|------------|----------|
| SZ-120 | 1-20 l/m | G 1/2 | 18..30DC |
| SZ-240 | 2-40 l/m | G 1/2 | 18..30DC |
| SZ-5100 | 5-100 l/m | G 3/4 | 18..30DC |

- Integrated temperature measurement
- Flow measurement
- Limit setting of flow and temperature
- Alarm output signal
- Rotatable display
- Temperature range from -10°C to 90°C

Material: Stainless steel body and connection
 Pressure: 12 bar
 Temperature: from -10 to +90 C°
 Protection class: IP 65/IP67.

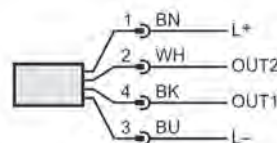
Wall Plug Power Supply



| Part No. | Voltage input | Voltage output |
|----------|---------------|----------------|
| SZ-P230 | 100-240V. | 24 V. |

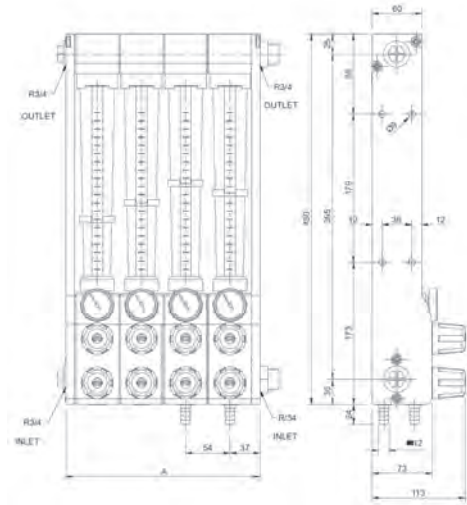
Kit including: wall plug cable, power supply and M12 Connector cable.

Power and Data Cable M12



| Part No. | Length | Connection | Voltage range |
|----------|--------|------------|---------------|
| SZC-3000 | 3 m. | M12 | 24DC |

Waterflow Regulator



| Part No. | Main Connections inlet / outlet | Max.Temp. | Zones | Zone Connection | A (mm) |
|----------|---------------------------------|-----------|-------|-----------------|--------|
| MPR02R | G 3/4" | 90°C* | 2 | G 3/8" | 126 |
| MPR04R | G 3/4" | 90°C* | 4 | G 3/8" | 231 |
| MPR06R | G 3/4" | 90°C* | 6 | G 3/8" | 339 |
| MPR08R | G 3/4" | 90°C* | 8 | G 3/8" | 444 |
| MPR10R | G 3/4" | 90°C* | 10 | G 3/8" | 552 |
| MPR12R | G 3/4" | 90°C* | 12 | G 3/8" | 659 |

* Temperature vs Pressure: 8 bar 40°C, 7 bar 60°C, 5 bar 80°C, 4 bar 90°C

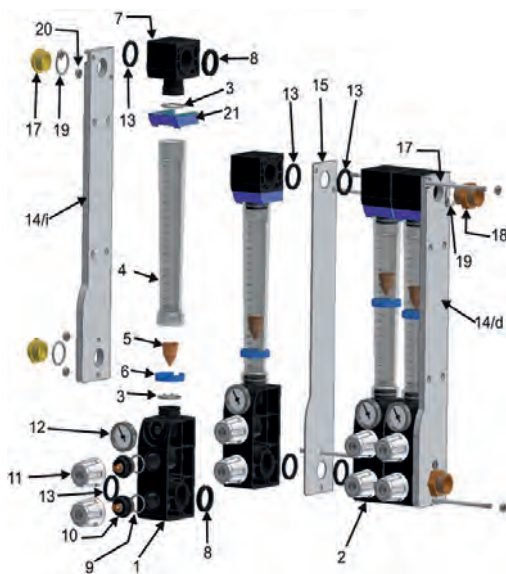
Water flow regulators are ideal for regulating the flow rate of water passing through them as well as the water outlet temperature. The high quality construction and design make the unit one of the most competitive.

Technical characteristics

- The tube is made of Polyamide (standard).
- Zone Flow Capacity 0-18 L/M
- Interior and exterior bodies are made of PA 6 with 30% fibre glass.
- Brass regulating taps.
- Thermometers (standard).
- Stainless steel interior tie-rods.
- Vitritic rubber o-rings (hardness: 70 SHA).



Spare Part List



| No | Part No. | Description |
|------|-----------|-----------------------------------|
| 1 | MPR-S-1 | Inferior body 3/8 BSP connections |
| 2 | MPR-S-2 | Inferior body with pipes |
| 3 | MPR-S-3 | Tube O-ring |
| 4 | MPR-S-4 | Polyamide tube |
| 5 | MPR-S-5 | Brass |
| 6 | MPR-S-6 | Level clip |
| 7 | MPR-S-7 | Superior body |
| 8 | MPR-S-8 | Intermediate o-ring |
| 9 | MPR-S-9 | Tap O-ring 21x3 |
| 9.1 | MPR-S-9.1 | Tap O-ring Ø6x2 |
| 10 | MPR-S-10 | Tap |
| 11 | MPR-S-11 | Knob |
| 12 | MPR-S-12 | Thermometer |
| 13 | MPR-S-13 | End O-ring / left 28x35x3,5 |
| 14 d | MPR-S-14d | Right aluminium end plate |
| 14 i | MPR-S-14i | Left aluminium end plate |
| 15 | MPR-S-15 | Intermediate plate |
| 17 | MPR-S-17 | Plastic cap |
| 18 | MPR-S-18 | 3/4" brass connector (optional) |
| 20 | MPR-S-20 | Nut |
| 21 | MPR-S-21 | Tube security clip |
| 22 | MPR-S-22 | End O-ring / right 28x35x5,5 |

ANALOGUE FLOW METERS

Flow Indicator



| Part No. | Flow Rate H ² O LPM | | Length | Ø mm | Thread | AF | Max Pressure (bar) |
|----------|--------------------------------|-----|--------|------|--------|----|--------------------|
| | Min | Max | | | | | |
| CFV1BN | 1 | 10 | 59 | 25 | G 1/4" | 19 | 10 |
| CFV2BN | 2 | 20 | 59 | 25 | G 3/8" | 24 | 8 |
| CFV3BN | 3 | 30 | 71 | 30 | G 1/2" | 24 | 8 |
| CFV4BN | 4 | 40 | 106 | 47 | G 3/4" | 40 | 5 |
| CFV5BN | 6 | 60 | 106 | 47 | G 1" | 40 | 5 |

Use:

The CFV impeller flow indicators are generally used to monitor the correct flowing and circulation of a fluid into a pipeline. They are ideal for cooling and heating circuits, water treatment, and plastics processing equipment.

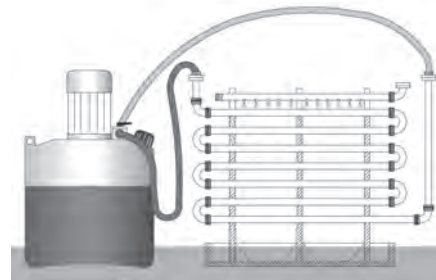
Note:

Flow rates refer to a vertical mounting with fluid inlet upwards.

Specifications:

Body: Nickel-plated brass
 Impeller: Red Hostaform
 Glass: Pyrex
 Seals: NBR
 Max temperature: 90°C

De-Scaling Pump - With Flow Reverser



| Part No. | Tank Capacity | Flow Rate | Reverse system | Fittings | HP |
|----------|---------------|-----------|----------------|----------|------|
| DP15M | 15 l. | 48 l/min. | Manual | G 1/2" | 0,2 |
| DP15A | 15 l. | 40 l/min. | Automatic | G 1/2" | 0,17 |
| DP30M | 24 l. | 90 l/min. | Manual | G 1/2" | 0,45 |
| DP30A | 24 l. | 91 l/min. | Automatic | G 1/2" | 0,45 |

Used for clearing blocked or badly corroded heating and cooling circuits on Injection Moulding Machines and Moulds. Even when not blocked a relatively thin layer of scale or corrosion can act as an insulator and have a huge impact on the efficiency of your circuit. Simply fill up the pump with the descaling fluid, connect the pump to the inlet and outlet of the circuit and turn on the pump. Regular reversal of flow direction, either manual or automatic, speeds up operation and assists in dislodging any solid matter present in pipework and cooling circuits.

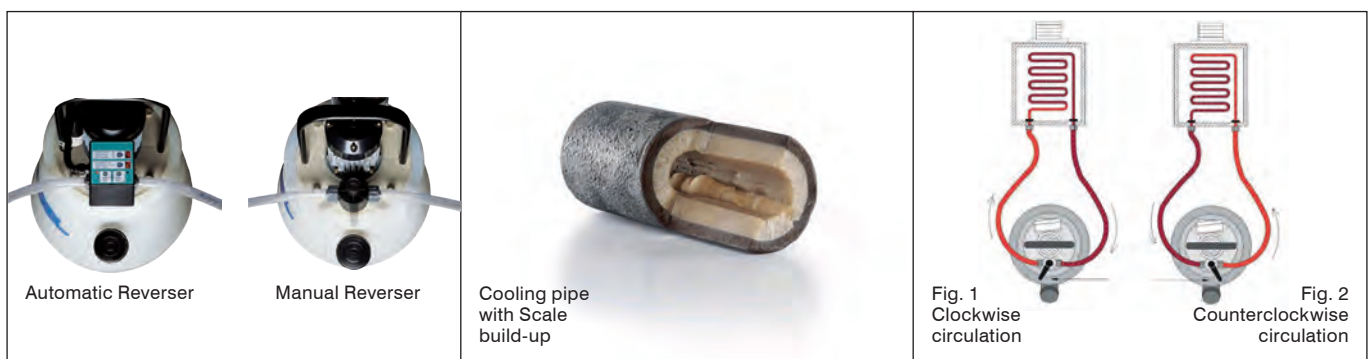
By using the pump together with the recommended range of descaling fluids to remove both rust and limescale deposits. The descaling fluid contains a colour change indicator to monitor performance; the translucent tank means that the user can see when the red colour runs clear and is no longer effective. Use the neutralising fluid to create a pH neutral fluid which can be easily disposed of.

Easy, safe and professional maintenance of mould cooling circuits and temperature controllers

- Compact and portable
- Safe and easy to use
- Flow reversing system
- Full range of cleaning products available
- 4 models available to suit your application

Mould Cooling circuits which are corroded or partly blocked by scale cause:

- Reduced flow
- Reduced efficiency
- Longer cycle times
- Temperature problems
- Increased maintenance
- Faulty parts



Automatic Reverser

Manual Reverser

Cooling pipe with Scale build-up

Fig. 1 Clockwise circulation

Fig. 2 Counterclockwise circulation

DE-SCALING

De-Scaling Solution



| Part No. | | kg | Weight | Copper | Steel | Stainless Steel | Aluminium | Brass | Tin | Light alloys | Galvanised Iron |
|-------------------------------|---------------------|----|--------|--------|-------|-----------------|-----------|-------|-----|--------------|-----------------|
| Descaling Chemicals | | | | | | | | | | | |
| RL10 | Remover Liquid | 10 | 10 kg | • | • | | | (•) | | | |
| RL10P | Remover Plus Liquid | 10 | 10 kg | • | • | | | (•) | | | |
| RP10 | Remover Plus Powder | 10 | 10 kg | | | • | • | • | • | • | |
| Neutralizing Chemicals | | | | | | | | | | | |
| NP10 | Neutralizer | 10 | 10 kg | • | • | • | • | • | • | • | • |

Remover Liquid

Concentrated descaling liquid with powerful reaction for systems and heat exchangers.

Remover Plus Liquid

Concentrated descaling liquid (non-fuming), with degreasing action, for systems and heat exchangers.

Remover Plus Powder

Concentrated descaling powder (non-corrosive, non-fuming) for systems and heat exchangers.

Neutralizer

Neutralizing powder to remove residual acidity after descaling systems and heat exchangers. Also suitable for neutralizing descaling chemicals after use, thus making it possible to drain them.

Pressure Test Unit

| Part No. | Pressure (BAR) | Connection | Weight |
|----------|----------------|------------|--------|
| MP-60 | 0-60 | G 1/2" | 5,5 kg |

Pressure test unit - for easy leakage test of Mould circuits.
Supplied with connecting hose and water tank.

WATER TREATMENT

Corrosion, Scale and Biological Inhibitors



Performance Properties

Mouldpro Inhibitors have been specially formulated with Ethylene Glycol for use as an Industrial Grade additive for use in Mould Cooling and Heating systems.



ThermaFlo DTX-25
Ethylene based

| | | |
|--------------------------|--|---|
| Optimum Flow: | Improved heat transfer characteristics, including; lower Dynamic Viscosity and higher Thermal Conductivity. | ✗ |
| Protection: | Contains synergistic corrosion inhibitors to protect metals commonly found in mould cooling systems. | ✗ |
| Biodegradable: | Mixtures are readily biodegradable (90% over ten days) and will not remain in the environment or bio-accumulate. | ✗ |
| Scale Protection: | Contains scale and biological inhibitors to help prevent fouling - thus promoting long operational life and high thermal efficiency. | ✗ |
| Non Toxic: | Has an toxicity rating: "Relatively Harmless" as confirmed by the Hodge & Sterner Scale. | ✗ |

| Part No. | Type | Temperature range | Container size |
|----------|----------|-------------------|----------------|
| DTX-25 | Ethylene | -50 to +140°C | 25 Ltr |

Refractometer



| Part No. | Scale | Ethylene Glycol | Propylene Glycol | Accuracy |
|------------|-------|-----------------|------------------|----------|
| RFM-200ATC | Brix | Yes | Yes | ±0,1% |

Includes
Ethylene Glycol: -60°C - 0°C / 0-66.6%.
Propylene Glycol: -50°C - 0°C / 0-62.4%.
Simple, accurate and repeatable measurement of concentration of glycol antifreeze with Automatic Temperature Compensation (ATC).
Includes calibration screwdriver, and case.

PH Test Paper - Alkaline Acid Indicator



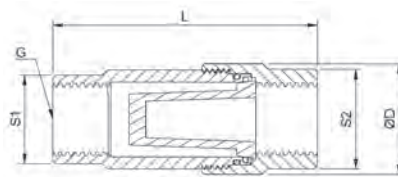
| Part No. | PH scale | Length | |
|-------------|----------|--------|---|
| DP-PH-PAPER | 1-14 | 5 m. | 1 |

Alkaline Acid Indicator Meter- Ph Test Paper.
FEATURES: With Distinct Color PH Scale for Result Comparisons. The Test Strip Color Changes Must Be Matched with the PH Scale Color Chart Within About 15 Seconds. Quick and Easy to Use. Provides Reliable and Accurate PH Readings. Easy to Carry. Appropriate for Testing Alkaline or Acid Level of Any Liquid.
Scale Reads From 0 to 14: 0 - 3 Indicates a Very Acidic Substance 4 - 6 Indicates an Acidic Substance 7 Indicates Neutral 8 - 11 Indicates Alkalinity 12 - 14 Indicates a Very High Level of Alkalinity

Inline filters specially designed for cooling channels or core cooling channels. The filter cartridge removes dirt particles, rust, or scale deposits. The temperature filter is made of stainless steel and brass. Easy maintenance of the filter:

1. Separate the 2 housing parts
2. Clean filter in an ultrasonic bath
3. Re-assemble the 2 housing parts

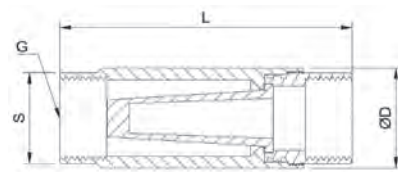
Inline Filter



| Part No. | Ø D | G | S1 | S2 | L | Filter area mm ² |
|----------|-----|--------|----|----|----|-----------------------------|
| ILF-R1/4 | 20 | G 1/4" | 16 | 18 | 48 | 660 |

Spare filter: SF-R1/4

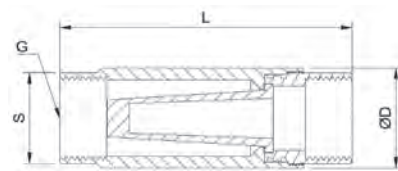
Inline Filter



| Part No. | Ø D | G | S | L | Filter area mm ² |
|----------|-----|--------|----|------|-----------------------------|
| ILF-R3/4 | 32 | G 3/4" | 29 | 93,5 | 2500 |

Spare filter: SF-R3/4

Inline Filter - with Maintenance Indicator



| Part No. | Ø D | G | S | L | Filter area mm ² |
|------------|-----|--------|----|------|-----------------------------|
| ILF-R3/4-M | 32 | G 3/4" | 29 | 93,5 | 2500 |

Spare filter: SF-R3/4
 Pressure loss: 10-15%
 Operating temperature: Max 140 degrees
 Max. Pressure: 8 bar
 Pore size (filter): 100 µm
 Material: Stainless steel
 Seals: FKM

FILTERS

Stainless Steel In-Line Filter - MPF-80-200



Dirt particles in coolants often result in blockages in small cooling channels and can render mould inserts useless. This maintenance friendly Mouldpro stainless steel in-line filter MPF-80-200 offers superior low cost protection against foreign body particles, in particular for conformal cooling channel of injection moulding tools.

The filter can be flanged to the mould or operated in conjunction with temperature control units.

Sure protection of your temperature cooling channels

High filter performance is based on a starshaped folded stainless steel sieve that prevents the ingress of all particles of $>200\ \mu\text{m}$ into the cooling channel.

Versatile use

The filter is suitable for use with water- or oil-based coolants with a flow volume of up to 80 l/min and offers versatile application possibilities within a temperature range of -10 to 260°C .

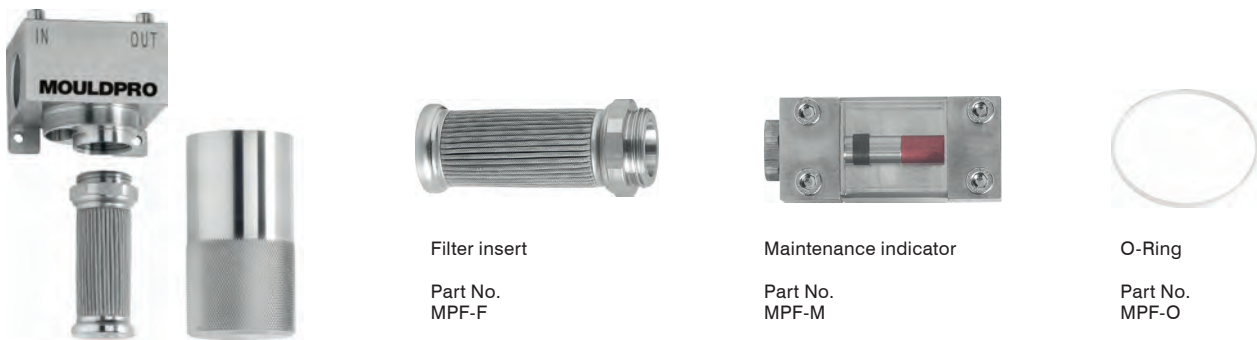
Simple maintenance

A maintenance friendly concept allow easy removal of the filter insert, which can be cleaned with compressed air, in an ultrasound bath or by means of a high pressure cleaner. The filter housing remains in the system circuit.

The MPF-80-200 can be supplied with an optional maintenance indicator.

All advantages at a glance:

- Low cost with high filter performance
- Simple maintenance and cleaning
- Suitable for high flow volumes
- Large temperature range



| Technical data | |
|-----------------------|---|
| Material | Stainless steel 1.4305 |
| Connection thread | G 3/4" |
| Coolant | Water / oil |
| Pressure range | PN 16 |
| Operating temperature | -10°C / 260°C |
| Seal | PTFE |
| Dimensions | 76 x 56 x 131 mm (L x W x H) |
| Weight | approx. 1.3 kg |

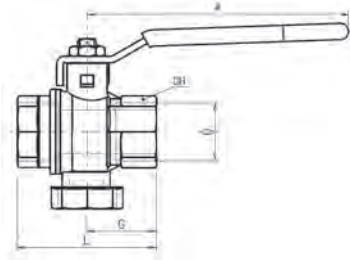
Design according to:
 Pressure Equipment Directive 97/23/EU, pressure equipment type acc. to Art. 1: container, fluid acc. to Art. 9: group 2; others acc. to Art. 3, para. 3: good engineering practice, suitable for max. 1,000 full cycle motions.

| Filter insert | |
|----------------|---|
| Material | Stainless steel 1.4305, adhesive-free, rolled |
| Mesh width | 200 μm |
| Filter surface | approx. 150 cm^2 |
| Connection | Thread connector |
| Dimensions | $\varnothing 32 \times 76$ mm |

| Maintenance indicator (optional) | |
|----------------------------------|-----------------------------------|
| Principle | Differential pressure measurement |
| Seal | PTFE O-ring |
| Dimensions | 45 x 30 x 66 mm (L x W x H) |

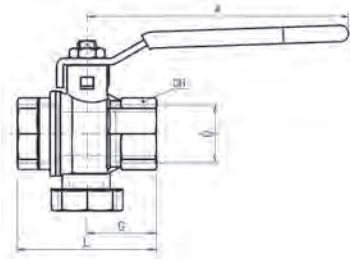
| O-Ring | |
|------------|--------------------------------|
| Material | PTFE |
| Dimensions | $\varnothing 45 \times 1.5$ mm |

Ball Valve with Integrated Filter



| Part No. | D | L | G | A | CH |
|----------|----------|------|------|-----|----|
| BVF1/2 | G 1/2" | 50,7 | 26,7 | 100 | 25 |
| BVF3/4 | G 3/4" | 61,3 | 32,3 | 100 | 31 |
| BVF1 | G 1" | 70,1 | 35,6 | 100 | 38 |
| BVF1-1/4 | G 1.1/4" | 85 | 45 | 158 | 48 |
| BVF1-1/2 | G 1.1/2" | 97,5 | 52 | 158 | 54 |
| BVF2 | G 2" | 117 | 63 | 158 | 66 |

Ball Valve with Integrated Filter and Magnet



| Part No. | D | L | G | A | CH |
|-----------|----------|------|------|-----|----|
| BVFM3/4 | G 3/4" | 61,3 | 32,3 | 100 | 31 |
| BVFM1 | G 1" | 70,1 | 35,6 | 100 | 38 |
| BVFM1-1/4 | G 1.1/4" | 85 | 45 | 158 | 48 |
| BVFM1-1/2 | G 1.1/2" | 97,5 | 52 | 158 | 54 |
| BVFM2 | G 2" | 117 | 63 | 158 | 66 |

Quality:

- Substitutes 3 different components (2 ball valves and one filter)
- Reduces leakage risks due to lower sealing points
- Cost saving due to reduced number of components
- Time saving at installation and maintenance
- Built-in vertical filter with cartridge structure in AISI304 + Nylon (filtration degree: 500 microns / 35 mesh). Size 1/2" has a central rib to ease filter extraction.
- Final test conforming with UNI EN 12266-1 points A3 / A4 (for 1.1/2" and 2" sizes: acc. to directive 2014/68/UE)
- No metal-to-metal moving parts
- Handle clearly shows ball position
- Chrome plated brass ball for longer life
- Handle stop on body to avoid stress at stem

Body

- Hot forged sand blasted, external nickel plated brass body and cap sealed with L octite® or equivalent thread sealant
- Finest brass according to EN 12165 and EN 12164 (formerly DIN 17660 and UNI 5705-65) specifications
- Bottom plug for an easy filter maintenance

Stem

- Blowout-proof unplated brass stem
- Two O-rings at the stem (FKM + NBR) for maximum safety

Sealing

- Pure PTFE seats

Threads

- ISO 228 parallel female by female threads

Flow

- Nominal port

Handle

- Zinc plated steel handle with plastic dip coating
- WARNING: do not exceed reasonable temperature and/or electrical load

Magnet

- Neodymium (12.000 gauss) NdFeB

Working pressure & temperature

- 30 Bar (450 PSI) non-shock cold working pressure for sizes 1/2" to 1", 20 Bar (290 PSI) for sizes 1.1/4" to 2"
- -20°C / +150°C (-4°F / +300°F)
- WARNING: freezing of the fluid in the installation may severely damage the valve

PED directive

- According to 2014/68/UE, 1.1/4" and superior sizes cannot be used with dangerous fluids

Cost Saving Solution

BVF Filter Valve substitutes traditional Y Strainers combined with 2 ball valves.

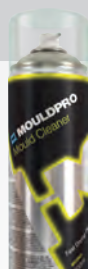
- Full port
- Low pressure drop
- Assembly space and time very limited
- Easy to be cleaned and maintained
- All impurities gather inside the filter
- Maximum pressure 30 bar (PN30)
- Increased filter quality with cartridge structure for all sizes. Filter for size 1/2" will have a central rib to ease filter extraction



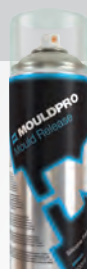
CONSUMABLES

03.

113 Mould
Cleaning



117 Mould
Release



119 Mould
Protect



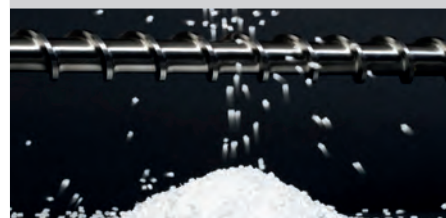
121 Mould
Lubricant



124 Nano Mold Coating



126 Purging Compound



127 Absorbents



A can of Mouldpro Mould Cleaner is the central focus, positioned in front of a complex industrial metal structure. The can is black with a prominent yellow and white logo and text. The background is a blurred industrial environment with various metal parts and bolts.

M MOULDPRO Mould Cleaner

MOULD CLEANERS

500ml 650 e e

LAL4348

MOULD CLEANING

Mould Cleaner/Degreaser



CLEAN

| Part No. | Description | Size | |
|----------|---------------------------|----------------|----|
| MCD501 | Mould Clean - Fast drying | 500 ml / 18 oz | 12 |

Cleaning agents remove plastic residue from moulds and dies including residues caused by cracking, for example. They provide for time-saving production processes, for dimensional accuracy of plastic parts and mouldings, for flawless surface structure and also preserve machine components.

Features

- Degreaser for removing oil, grease and wax residues from moulds.
- Supplied in aerosol form, all aerosols are free of fluorocarbons.

Mould Cleaner/Degreaser



CLEAN



| Part No. | Description | Size | |
|----------|---------------------------|----------------|----|
| MCD501FG | Mould Clean - Fast drying | 500 ml / 18 oz | 12 |

Cleaning agents remove plastic residue from moulds and dies including residues caused by cracking, for example. They provide for time-saving production processes, for dimensional accuracy of plastic parts and mouldings, for flawless surface structure and also preserve machine components.

Features

- Degreaser for removing oil, grease and wax residues from moulds.
- Supplied in aerosol form, all aerosols are free of fluorocarbons.

Mould Citrus Cleaner/Degreaser



CLEAN

| Part No. | Description | Size | |
|----------|--------------------------------|----------------|----|
| MCD551 | Citrus Degreaser - Slow drying | 500 ml / 18 oz | 12 |

Citrus Based Solvent Degreaser. High performance citrus based cleaning solvent. An ideal alternative to traditional chlorinated or highly volatile solvent cleaners. Slow drying which allows maximum cleaning results.

Features

- Natural based, high performance cleaner/ degreaser.
- Fully biodegradable.
- Deep penetrating action.
- Classified as non-flammable.
- Safe on metals and most plastics.
- Effective on a wide range of soiling such as oil, grease, tar, bitumen, silicones, rubber-based adhesives, oil-based paints, inks and dye.
- Pleasant orange Citrus odour.

Mould Cleaner/Polymer Remover



CLEAN

| Part No. | Description | Size | |
|----------|-----------------------------|----------------|----|
| MPR501 | Mould Clean Polymer Remover | 500 ml / 18 oz | 12 |

Cleaning agents remove plastic residue from moulds and dies including residues caused by cracking, for example. They provide for time saving production processes, for dimensional accuracy of plastic parts and mouldings, for flawless surface structure and preserve machine components.

Features

- Designed to remove polymer deposits, plastic, antisoluble resins, grease and oils.
- Water soluble.
- Highly active organic cleaner.
- Supplied in aerosol form, all aerosols are free of fluorocarbons.

Heavy Duty Polymer Remover



| Part No. | Description | Size | |
|----------|--|----------------|----|
| MPR502FG | Heavy Duty Mould Clean Polymer Remover | 500 ml / 18 oz | 12 |

Heavy Duty Cleaning agents remove plastic residue from moulds and dies including residues caused by cracking, for example. They provide for time saving production processes, for dimensional accuracy of plastic parts and mouldings, for flawless surface structure and preserve machine components.

Features

- Designed to remove polymer deposits, plastic, antisoluble resins, grease and oils.
- Water soluble.
- Highly active organic cleaner.
- Supplied in aerosol form, all aerosols are free of fluorocarbons.

Anti-Static Surface Foam Cleaner



| Part No. | Description | Size | |
|----------|--------------|----------------|----|
| MFC501 | Foam Cleaner | 500 ml / 18 oz | 12 |

Mouldpro Foam Cleaner is a unique anti-static foaming cleaner based on a blend of surfactants, solvents, inhibitors and water.

Features

- Unrivalled in performance.
- Quickly and easily removes all types of dirt, grease, stains, soiling and other contamination from hard surfaces.

Anti-Static Surface Foam Cleaner



| Part No. | Description | Size | |
|----------|--------------|----------------|----|
| MFC502FG | Foam Cleaner | 500 ml / 18 oz | 12 |

Mouldpro Foam Cleaner is a unique anti-static foaming cleaner based on a blend of surfactants, solvents, inhibitors and water.

Features

- Unrivalled in performance.
- Quickly and easily removes all types of dirt, grease, stains, soiling and other contamination from hard surfaces.

Mould Polish



| Part No. | Description | Size | |
|----------|--------------------|--------|---|
| MCP080 | Mould Polish Paste | 80 ml. | 1 |

This superior, quality Mould polish is perfect for cleaning and polishing steel moulds. It safely and easily removes oxidation, corrosion, stains, and rust. It produces a brilliant reflective luster and leaves an invisible protective coating to ensure a long-lasting shine.

Spray Can Holder



| Part No. | Number of cans | Length | |
|----------|----------------|--------|---|
| MCH02 | 2 | 170 mm | 1 |
| MCH03 | 3 | 250 mm | 1 |
| MCH04 | 4 | 330 mm | 1 |

Material: Stainless Steel

CLEANING WIPES

Mould Cleaner Wipes



| | |
|-----------------|---|
| Part No. |  |
| WMC80 | 1 |

Mould Cleaner Wipes are specifically developed for cleaning and degreasing of mould surfaces.

Features

- Ultra-low linting non-abrasive wipe.
- Leaves no residues.
- Supplied in tub of 80 wipes.

Rust Remover Wipes



| | |
|-----------------|---|
| Part No. |  |
| WRR80 | 1 |

A tough textured wipe impregnated with citric acid cleaners to remove rust and other oxides from ferrous metal surfaces. Using a non-hazardous chemical and a tough, textured wipe material the product provides an effective alternative to traditional hazardous nitrate based chemicals used for rust removal.

Features

- Supplied in tub of 80 wipes.

Multi Wipes

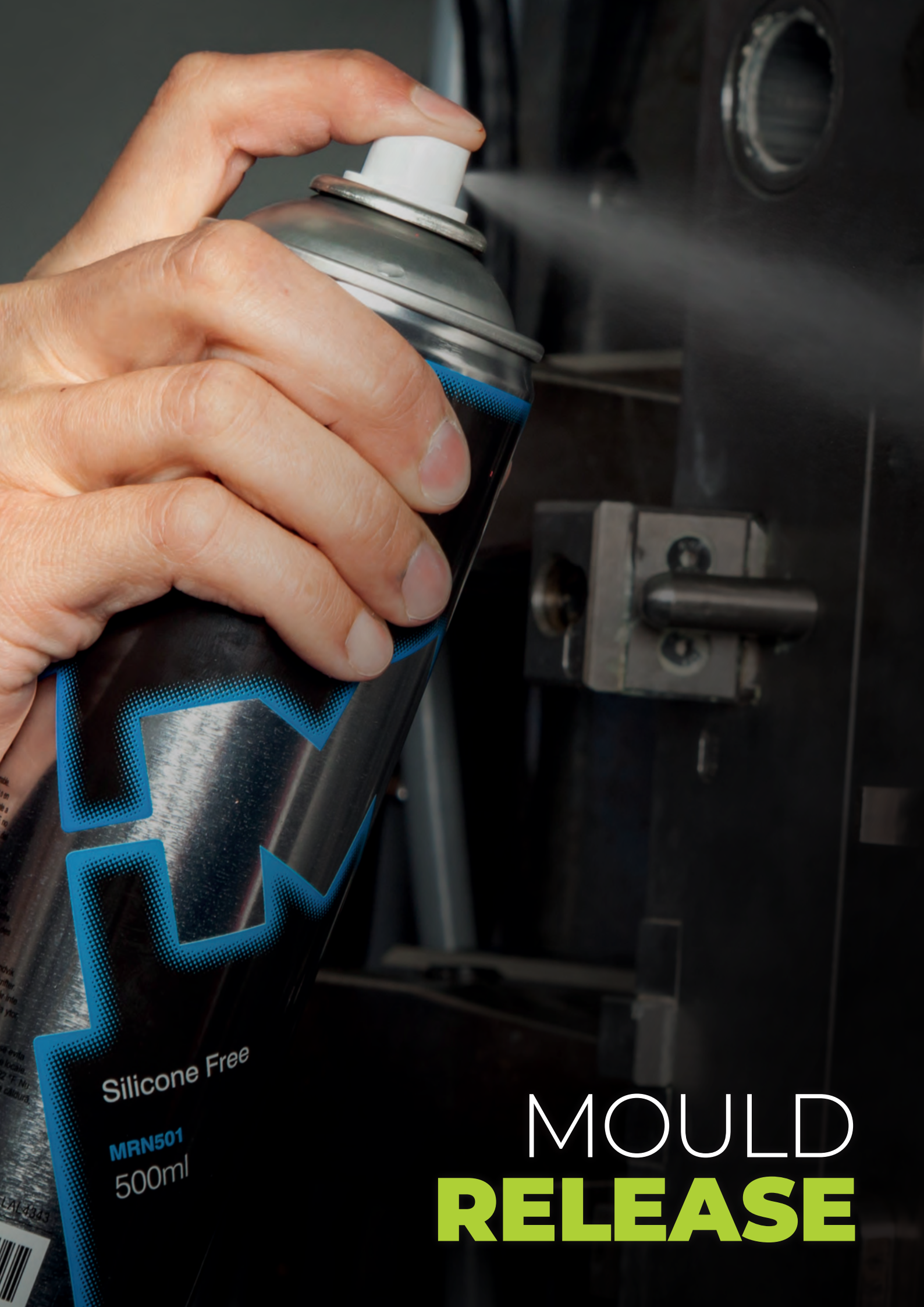


| | |
|-----------------|---|
| Part No. |  |
| WMW100 | 1 |

Ideal for the quick and easy clean-up of hands, tools and machine surfaces. The heavy duty Multi Wipe material is impregnated with a hi-tech cleaning solution that contains antibacterial properties for fast removal of dirt, oil, grease, adhesives, varnishes, scuff marks, wet paint, mastic and expanding foam. Multi Wipes combine high performance with minimal hazard to the user and the environment.

Features

- Contains no white spirits or other harmful solvents.
- Wipes contain antibacterial properties certified to BSEN1276 Standard.
- Supplied in tub of 100 wipes.



Silicone Free

MRN501
500ml

MOULD
RELEASE

MOULD RELEASE

Mould Release, Silicone Free



| Part No. | Description | Size | |
|----------|-----------------------------|----------------|----|
| MRN501 | Mould Release Silicone free | 500 ml / 18 oz | 12 |

Universal release agent on a base of synthetic oils.

Features

- A high quality proven release agent that ensures trouble free moulding.
- Saves time, shortens cycle times, reduces scrap and is gentle on dies and moulds.
- Suitable for thermoplastic or thermoset moulding.

Mould Release, Silicone



| Part No. | Description | Size | |
|----------|------------------------|----------------|----|
| MRN501 | Mould Release Silicone | 500 ml / 18 oz | 12 |

Universal release agent on a base of silicone.

Features

- A high quality proven release agent that ensures trouble free moulding.
- Saves time, shortens cycles times, reduces scrap and is gentle on dies and moulds.
- Suitable for thermoplastic or thermoset moulding.

Mould Release, Silicone Free



| Part No. | Description | Size | |
|----------|-----------------------------|----------------|----|
| MRN501FG | Mould Release Silicone free | 500 ml / 18 oz | 12 |

Universal release agent on a base of silicone.

Features

- A high quality proven release agent that ensures trouble free moulding.
- Saves time, shortens cycles times, reduces scrap and is gentle on dies and moulds.
- Suitable for thermoplastic or thermoset moulding.

Mould Release, Zinc Sterate



| Part No. | Description | Size | |
|----------|-----------------------------|----------------|----|
| MRZ501 | Mould Release, Zinc Sterate | 500 ml / 18 oz | 12 |

Dry powder based Mould Release with excellent anti-stick properties, perfect for moulded plastics and rubber parts. Marking-free, non-staining and ideal for parts to be painted or plated.

Features

- Dry Powder based.
- Anti-stick properties.
- Ideal for Rubber and Polyurethane moulding



MOULD
PROTECTION

MOULD PROTECTION

Mould Protect, Green



PROTECT

| Part No. | Description | Size |  |
|----------|---------------------|----------------|---|
| MPG501 | Mould Protect Green | 500 ml / 18 oz | 12 |

Anti-corrosion agents provide dismantled dies, moulds and parts with long-term protection against corrosion. This ensures that your mould is always ready for use, maintaining value and efficiency.

Features


- Wax-type anti-corrosion agents - it is not necessary to remove the protective film prior to use.
- This agent does not creep.
- Supplied in aerosol form, free from fluorocarbons.

Mould Protect Wax, Clear



PROTECT



| Part No. | Description | Size | NSF |  |
|----------|---------------------|----------------|-----|---|
| MPW501 | Mould Protect Clear | 500 ml / 18 oz | No | 12 |
| MPB501FG | Mould Protect Blue | 500 ml / 18 oz | Yes | 12 |

Anti-corrosion agents provide dismantled dies, moulds and parts with long-term protection against corrosion. This ensures that your mould is always ready for use, maintaining value and efficiency.

Features

- Wax-type anti-corrosion agents - it is not necessary to remove the protective film prior to use.
- This agent does not creep.
- Supplied in aerosol form, free from fluorocarbons.

Mould Protect Wax, Clear



PROTECT



| Part No. | Description | Size |  |
|----------|---------------------|----------------|---|
| MPW501FG | Mould Protect Clear | 500 ml / 18 oz | 12 |

Anti-corrosion agents provide dismantled dies, moulds and parts with long-term protection against corrosion. This ensures that your mould is always ready for use, maintaining value and efficiency.

Features

- Wax-type anti-corrosion agents - it is not necessary to remove the protective film prior to use.
- This agent does not creep.
- Supplied in aerosol form, free from fluorocarbons.

Mould Protect, Long Term with Acid Neutraliser (PVC Moulding)



PROTECT



| Part No. | Description | Size |  |
|----------|---------------------------|----------------|---|
| MPP501 | Mould Protect - Long Term | 500 ml / 18 oz | 12 |

Long Term anti-corrosion agent, for mould and dies. Sticks to the surface and is a rust preventive agent that offers protection against moisture corrosion and oxidation caused by the presence of hydrochloric acid.

Features

- Corrosion and oxidation agent
- Acid Neutraliser action
- Ideal for PVC Moulding



Lubricant

Suitable for Ejector Pins

MEL501
500ml

MOULD LUBRICANTS

MOULD LUBRICANTS

Ejector Pin Lubricant



LUBRICATE

| Part No. | Description | Size | |
|----------|-----------------------|----------------|----|
| MEL501 | Ejector Pin Lubricant | 500 ml / 18 oz | 12 |

Non-soiling lubricants that keep moving parts running smoothly and prevent damage due to breakage and seizing. For Slides and Ejector Pins.

Features

- Thin-film lubrication, long-term action, good protection from corrosion.
- Application temperature range : -30°C - +150°C.
- Supplied in aerosol or paste form, all aerosols are free of fluorocarbons.

Maintenance Lubricant



LUBRICATE

| Part No. | Description | Size | |
|----------|-----------------------|----------------|----|
| MWD501 | Maintenance Lubricant | 500 ml / 18 oz | 12 |

A multi-purpose product for lubricating, cleaning, dewatering, penetrating and corrosion protection. Can be used in endless applications on all metallic surfaces including moulds, chains, gears, tools, etc.

Features

- Long lasting lubrication moisture displacement.
- Forms a temporary anti-corrosion coating.
- Penetrates rust and corrosion.
- Contains PTFE for improved lubrication and load resistance.

Ejector Pin Lubricant



LUBRICATE



| Part No. | Description | Size | |
|----------|-----------------------|----------------|----|
| MLF501FG | Ejector Pin Lubricant | 500 ml / 18 oz | 12 |

Non-soiling lubricants that keep moving parts running smoothly and prevent damage due to breakage and seizing.

Features

- For Slides and Ejector Pins.
- Thin-film lubrication, Food Grade, long term action, good protection from corrosion.
- Operating Temperature - up to 260°C.

Ejector Pin Lubricant - General Purpose - Food Grade



LUBRICATE



| Part No. | Description | Size | |
|----------|-----------------------|--------|---|
| MEP500FG | White Mould Lubricant | 0,5 kg | 1 |

Fully synthetic food grade grease manufactured using the most advanced lubrication technology, and is designed to cover a wide range of Food Industry Applications: Including low/high temperatures, wet and saturated conditions, heavily loaded applications, and where there is the presence of dust & other contaminants.

MEP500FG is formulated with Extreme Pressure (EP) additives and PTFE to provide a high degree of anti-wear and friction reduction performance. Suitable for injection moulds in particular for use on ejector pins, guide pins, slides and moving cores, etc. This grease is suitable for all plain and anti-friction bearings as well as sliding surfaces and general Food & Non-Food Industry applications.

- Temp range -50c to + 180c
- High Load Grease 400kg weld load
- Water & Chemical Resistant
- Extends Lubrication Frequencies
- Standardisation "One Grease for Most Applications"

Ejector Pin Lubricant - Food Grade



| Part No. | Description | Size | |
|----------|--------------------|--------|---|
| MLF500FG | Ejector Pin Grease | 0,5 kg | 1 |

Non-soiling lubricants that keep moving parts running smoothly and prevent damage due to breakage and seizing. For Slides and Ejector Pins. Thin-film lubrication, Food Grade, long term action, good protection from corrosion. Operating Temperature - up to 260 C.

Ejector Pin Lubricant - Food Grade



| Part No. | Description | Size | |
|----------|--------------------|--------|---|
| MLF080FG | Ejector pin Grease | 80 ml. | 1 |

Non-soiling lubricants that keep moving parts running smoothly and prevent damage due to breakage and seizing.

Features

- For Slides and Ejector Pins.
- Thin-film lubrication, Food Grade, long term action, good protection from corrosion.
- Operating Temperature - up to 260°C.

Copper Anti-Seize Assembly Compound



| Part No. | Description | Size | |
|----------|--------------------------|--------|---|
| MCS500 | Copper Assembly Compound | 0,5 kg | 1 |

Mouldpro Copper Anti-Seize ensures rapid and easy assembly of threaded parts. It allows correct torque to be applied by eliminating thread interference. Mouldpro Copper Anti-Seize paste prevents seizing and galling and gives quick and easy breakout of threads, gaskets and packings even after long exposure to high temperature, corrosive conditions or extreme surface pressures. It also reduces wear in areas of high friction. Temperature up to 1.100°C.

Copper Anti-Seize Assembly Compound



| Part No. | Description | Size | |
|----------|--------------------------|--------|---|
| MCS080 | Copper Assembly Compound | 80 ml. | 1 |

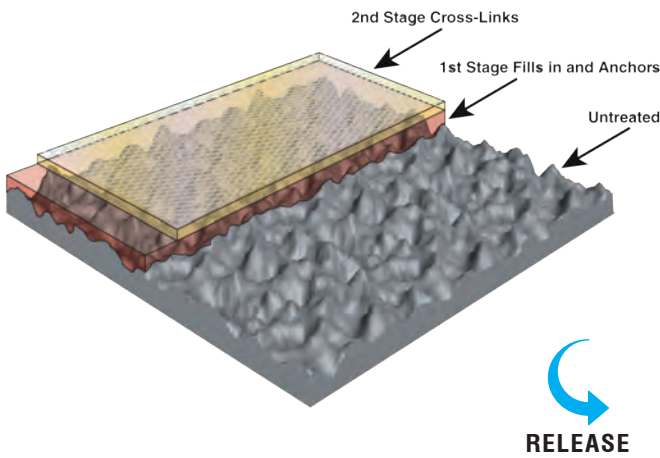
Mouldpro Copper Anti-Seize ensures rapid and easy assembly of threaded parts. It allows correct torque to be applied by eliminating thread interference.

Features

- Prevents seizing and galling.
- Gives quick and easy breakout of threads, gaskets and packings even after long exposure to high temperature, corrosive conditions or extreme surface pressures.
- Reduces wear in areas of high friction.

NANO MOULD COATING

NanoMoldcoating®



| Type | HC-Heat Cure | "HCF-Heat Cure FDA Compliant" | QC-Quick Cure | "QCru-Quick Cure Rubber" | "QCsi-Quick Cure Silicone" |
|------------------------------------|--------------|----------------------------------|---------------|-----------------------------|-------------------------------|
| Part No. | HC-5ml | HCF-5ml. | QC | QCRU | QCSI |
| Excellent Release | • | • | • | • | • |
| Thermoplastics all grades | • | • | • | | |
| Rubber | | | | • | |
| Silicone | | | | | • |
| Cure time 10-15 min. | | | • | • | • |
| Cure time 3-4 hours. | • | • | | | |
| Cured with hot air | • | • | | | |
| Cured by heating mould | | | • | • | • |
| Application on cold surface | • | • | | | |
| Application on heated surface | | | • | • | • |
| Bonds on pre-treated surfaces | | | • | • | • |
| Multiple coats are possible | • | • | • | • | • |
| Solvent Carrier | • | • | | | |
| Water Carrier | | | • | • | • |
| Polymer film | • | • | | | |
| Fluoropolymer film | | | • | • | • |
| Up to 500K Cycles | • | • | • | • | • |
| May require frequent reapplication | | | • | • | • |
| Temperatures up to 250°C | • | • | • | • | • |
| Temperatures up to 540°C | • | • | | | |
| Bottle net volume | 5ml. | 5ml. | 60ml. | 60ml. | 60ml. |

Benefits for your Production

- Up to 500,000 cycles per coating
- Reduces cycle times, increases productivity & eliminates sticking
- In-house/Self applied application
- Improves part quality
- Improves part finish by eliminated dragging and stretching
- Reduces moulding pressure and temperature
- Reduction in part weight due to lower packing pressures
- Does not migrate to part surface
- Can be used for virtually any moulded material
- Kits include everything for the application
- Non-toxic



Changing Colour?



MOULDPRO PURGING COMPOUNDS

Benefits:

Universal Application

Mouldpro offers cleaning compounds for any polymer application. Choose between Ready-to-use or pure Concentrate.

Economical and Efficient

All our cleaning compounds offer best cleaning process and lowest cleaning price.

ASK ONE OF OUR
PURGING EXPERTS
TODAY FOR MORE
INFORMATION

PURGING COMPOUND

Purging Compound



| Part No. | Product | Size | Injection Moulding | Blow Moulding | Pass filter | Hot runner suitable | NSF registered | Polyolefins | PS | SAN, ABS, ASA | PVC | PTFE, PVDF | PMMA | POM | PAG, PA66, PA610, PA11, PA12 | PC, PC/ABS | PET, PBT | PPG, PEEK, PPS, PES, PSU, LCP | CA, CAB, CP | TPU, TPE | Temperature range high 300C | Temperature range 120-300C |
|----------|-------------|-------|--------------------|---------------|-------------|---------------------|----------------|-------------|----|---------------|-----|------------|------|-----|------------------------------|------------|----------|-------------------------------|-------------|----------|-----------------------------|----------------------------|
| MC200 | MasterClean | 20 kg | • | ◻ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | ◻ |
| MP1X | MultiPurge | 1 kg | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| MP5X | MultiPurge | 5 kg | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| MP10X | MultiPurge | 10 kg | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| MP20X | MultiPurge | 20 kg | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |

Ready to use Compounds. Safe and fast cleaning of screws, cylinders and nozzles.

- Highly recommended
- ◻ Medium recommended
- ◻ Suitable

MasterClean

Ready-to-use granular purging compound for the cleaning of screws, cylinders, machine nozzles and hot runners.

Features

- Quick Colour Changes
- Quick Material Changes
- Effective removal of Carbon (Black Spots)
- Effective Shut Down Medium for Heat Sensitive Materials

Benefits

- Easy to Use – Follow the simple Instructions.
- Reduced Downtime – Fast and Effective Operation means faster changeovers.
- Non Abrasive – Our purging compound is a high grade polymer with additives containing no abrasives.
- Clean – A high quality product that generates No Smoke, Vapour or Odours during operation.
- Economical – Only a small amount of purging compound is required this combined with Fast and Effective Operation means lower downtime and increases productivity.
- NSF registered.

MultiPurge

MultiPurge is a cleaning compound concentrate in pellets, which can be mixed (10%) with any type of virgin thermoplastics, especially engineered to clean barrel, screw, nozzle and hot runners from carbon residuals, deposits, incrustations in changing colour and material.

ONE Purge Agent for ALL Polymers!

By mixing with virgin materials, the original temperature settings can be used to ensure optimized cleaning conditions.

- Temperature range: 80°C up to 420°C.
- MultiPurge is odorless, non-toxic; it doesn't contain solvents and it isn't abrasive.
- All components of MultiPurge are qualified as Generally Recognized as Safe (GRAS) by FDA.
- MultiPurge is environmentally safe.
- MultiPurge is EXTREMELY economical.
- NSF registered.

Maintenance Socks



| Part No. | Size | Pack Absorbency |  |
|----------|-------------|-----------------|---|
| MMS120 | 8cm x 120cm | 75L | 1 |

Features

- Suitable for oil and water
- Size, 8cm x 120cm
- Pack absorbency, 75l
- 15 Socks

Maintenance Roll



| Part No. | Size | Pack Absorbency |  |
|----------|------------|-----------------|---|
| MMR40 | 50cm x 40m | 76L | 1 |

Features

- Suitable for oil and water
- Size 38cm x 46m
- Pack absorbency 76l
- 1 roll

Maintenance Pads



| Part No. | Size | Pack Absorbency |  |
|----------|-------------|-----------------|---|
| MMP100 | 40cm x 50cm | 85L | 1 |

Features

- Suitable for oil and water
- Size, 40cm x 50cm
- Pack absorbency, 85l
- 100 Pads

TEMPERATURE CONTROL

04.

129 Hot Runner Controllers



132 Heater Bands



135 Thermocouples



137 Connectors



148 Cable Glands



149 Cables



151 Cable Cutter and Stripper



152 Thermometers



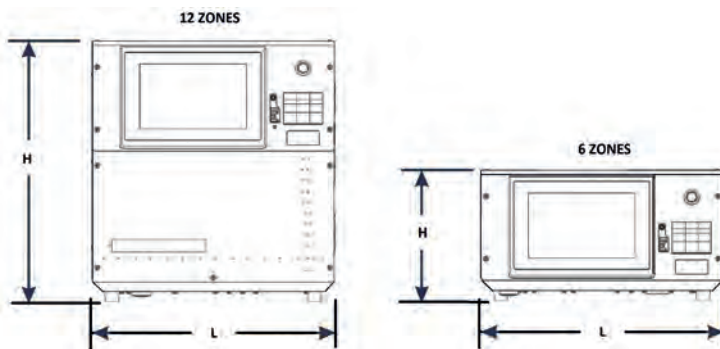
154 Thermal Cameras



Compact and smart controller for 6 or 12 zones

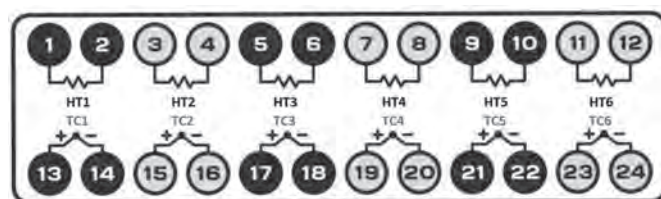
- Precise control the temperature in the hot runner system, improve production efficiency, reduce production costs, and ensure stability and quality during the injection moulding process.
- 7" LCD display with touch panel which can display real-time temperature and other control parameters, such as: mould leakage detecting, synchronous heat up and cool down, mold memory, group setup function, power balance detection and display, self diagnosis log.
- It also supports injection machine connect for I/O function and optional VNC function, achieving intelligent one-stop production control.

1. Thermocouple type: J/K
2. Temperature unit: °C/°F
3. Heating mode selectable
4. The maximum drive current is 15 ampere for each zone
5. Temperature PID control
6. Zero cross/Phase angle output trigger modes
7. Auto detect the frequency of power source
8. The current detect and display
9. The output with auto/manual setting
10. The soft-start for dehumidification
11. Boost
12. Standby
13. Output mode: Stop/Manual/Slave/continually selectable when Thermo-coupler broken
14. Overload protection for electric Overload protect for heating output
15. The protect mode of power source when wrong input
16. Auto shutdown when abnormal work on module
17. The fast fuse used to protect TRIAC



| Part No. | Zones | H | L | Power supply | Cable | Cable-Connector Type |
|----------|-------|------|------|--------------------|-------|-----------------------|
| HRC600 | 6 | 18,3 | 33,7 | 400 VAC/3Phase/N/E | 3 M | 24 x 1 - CHI24/CNEF24 |
| HRC1200 | 12 | 36,3 | 33,7 | 400 VAC/3Phase/N/E | 3 M | 24 x 2 - CHI24/CNEF24 |

Wiring Connector Assignment example (24 x 1)



HT = Heater
TC = Thermocouple

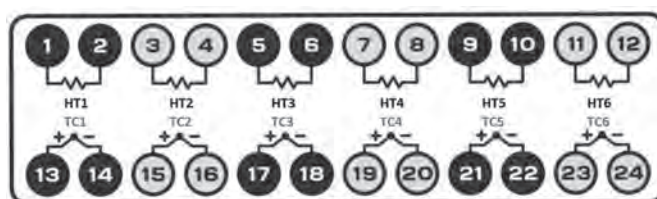
HOT RUNNER CONTROLLER

The advanced modules which include current monitoring as standard have the following features:

- Dehumidifying Soft Start
- Triple-line LED display
- Auto / Manual Output Function
- PID Auto Tune Temperature Control
- Max Current Output 15A
- Current Measurement Display
- Power Output Percentage Display
- Thermocouple J/K Type
- Temperature scale °F/°C Switchable
- Selectable Alarm Modes
- 380-400VAC/3Phase/N/Earth
- CE Marked
- Supplied Complete with 3m Cable Set
- Phase Angle Output Mode
- Zero Cross output Mode
- Fuse Failure Indicator
- Heater Break Detection
- Power Frequency Auto-Detection (50/60Hz)
- Thermocouple Failure Detection
- Thermocouple Reverse Detection
- Current Monitoring Display
- Alarm Output Option
- RS485 Output Option



Wiring Connector Assignment example (24 x 1)



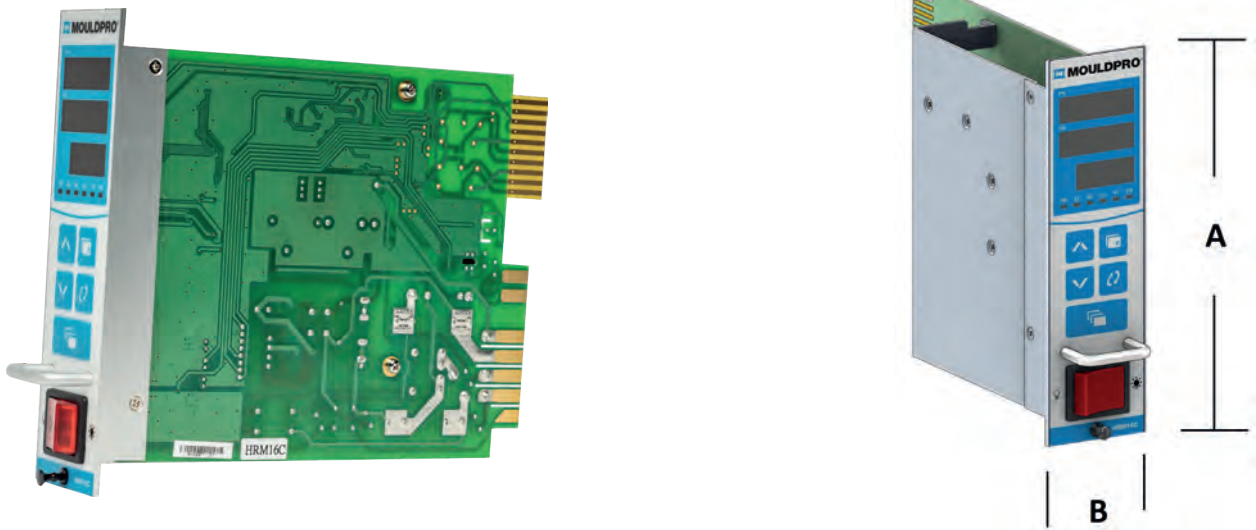
HT = Heater
TC = Thermocouple

Hot Runner Controller Units



| Part No. | Number Zones | Cabinet Dimensions | | | Cable/Connector Type |
|----------|--------------|--------------------|-----|-----|---------------------------|
| | | A | B | C | |
| HRC001 | Single Zone | 188 | 96 | 248 | 1 x 4 pin - CKAX03I/CKF04 |
| HRC002 | 2 Zones | 215 | 224 | 299 | 1 x 16 pin - CHI16/CNEF16 |
| HRC004 | 4 Zones | 215 | 325 | 299 | 1 x 16 pin - CHI16/CNEF16 |
| HRC006 | 6 Zones | 215 | 427 | 299 | 1 x 24 pin - CHI24/CNEF24 |
| HRC008 | 8 Zones | 215 | 529 | 299 | 2 x 16 pin - CHI16/CNEF16 |
| HRC012 | 12 Zones | 215 | 733 | 299 | 2 x 24 pin - CHI24/CNEF24 |

Spare Module



| Part No. | Number Zones | A | B |
|----------|--------------|-----|----|
| HRM15C | Single Zone | 176 | 50 |

HEATER BANDS

Nozzle Heater Selection Guide



Mouldpro offers two types of nozzle band heaters, for reliable and powerful heating of the nozzles on injection moulding machines. Both heater types are CE marked and made of premium quality materials.



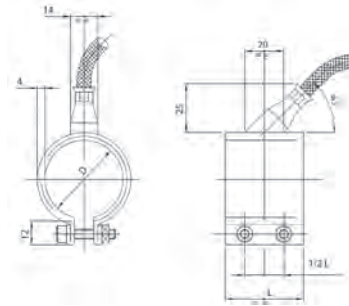
| Application | NHB Type | Z17 Type |
|--------------------------|---------------------|---------------------|
| Wattage Load | 6 W/cm ² | 8 W/cm ² |
| Working Temperatures | 370°C | 400°C |
| Standard Voltage feeding | 230 V. | 230 V. |
| Cable Type | SS-Bipolar | SS-Bipolar+ Earth |
| Cable Length | 1000 mm. | 1000 mm. |
| Cable Exit | Super Flex | 45° |
| Insulation | Mica | Mica |
| Sealed construction | No | Yes |
| Lifetime | ✓ | ✓✓✓ |

The NHB Type is normally used when space around the nozzle is limited (near gate or hotrunners) and the flexible cables allows compact installation. The electric connection between the heater and the feeding cables is integrated into the internal heating element.

The high quality Stainless Steel sealed heater is the perfect solution, when high performance and power is required. The Z17 heaters are made of Stainless Steel Tube which ensures a solid construction and is resistant to corrosive action and hermetically sealed to avoid any plastic seepage.

Stainless Steel Nozzle Heaters

STAINLESS
STEEL



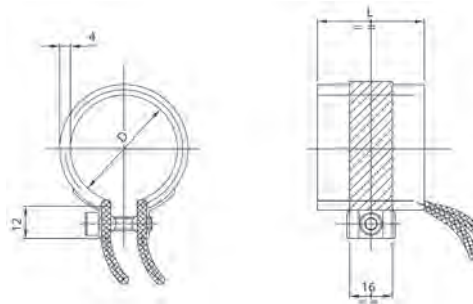
| Part No. | Ø ID | Length | Watt |
|-----------|------|--------|------|
| Z17025030 | 25 | 30 | 130 |
| Z17030020 | 30 | 20 | 100 |
| Z17030025 | 30 | 25 | 130 |
| Z17030030 | 30 | 30 | 170 |
| Z17030035 | 30 | 35 | 200 |
| Z17030040 | 30 | 40 | 230 |
| Z17035025 | 35 | 25 | 160 |
| Z17035030 | 35 | 30 | 200 |
| Z17035035 | 35 | 35 | 240 |
| Z17035040 | 35 | 40 | 270 |
| Z17035045 | 35 | 45 | 310 |
| Z17040020 | 40 | 20 | 160 |
| Z17040025 | 40 | 25 | 190 |
| Z17040030 | 40 | 30 | 230 |
| Z17040035 | 40 | 35 | 270 |
| Z17040040 | 40 | 40 | 310 |
| Z17040045 | 40 | 45 | 350 |
| Z17045025 | 45 | 25 | 210 |
| Z17045030 | 45 | 30 | 260 |
| Z17045035 | 45 | 35 | 310 |
| Z17045040 | 45 | 40 | 350 |
| Z17045045 | 45 | 45 | 400 |
| Z17045050 | 45 | 50 | 450 |
| Z17045055 | 45 | 55 | 490 |
| Z17050020 | 50 | 20 | 190 |
| Z17050025 | 50 | 25 | 240 |
| Z17050030 | 50 | 30 | 290 |
| Z17050035 | 50 | 35 | 340 |
| Z17050040 | 50 | 40 | 390 |
| Z17050050 | 50 | 50 | 500 |
| Z17050060 | 50 | 60 | 600 |
| Z17055020 | 55 | 20 | 210 |
| Z17055025 | 55 | 25 | 270 |
| Z17055030 | 55 | 30 | 320 |
| Z17055035 | 55 | 35 | 380 |
| Z17055040 | 55 | 40 | 430 |
| Z17055050 | 55 | 50 | 540 |
| Z17060020 | 60 | 20 | 230 |
| Z17060025 | 60 | 25 | 290 |
| Z17060030 | 60 | 30 | 350 |
| Z17060035 | 60 | 35 | 410 |
| Z17060040 | 60 | 40 | 470 |
| Z17060050 | 60 | 50 | 600 |
| Z17060060 | 60 | 60 | 720 |
| Z17065020 | 65 | 20 | 250 |
| Z17065025 | 65 | 25 | 320 |
| Z17065030 | 65 | 30 | 380 |
| Z17065035 | 65 | 35 | 450 |
| Z17065040 | 65 | 40 | 520 |
| Z17065050 | 65 | 50 | 650 |

| Part No. | Ø ID | Length | Watt |
|-----------|------|--------|------|
| Z17070020 | 70 | 20 | 270 |
| Z17070025 | 70 | 25 | 340 |
| Z17070030 | 70 | 30 | 410 |
| Z17070035 | 70 | 35 | 490 |
| Z17070040 | 70 | 40 | 560 |
| Z17070050 | 70 | 50 | 700 |
| Z17070060 | 70 | 60 | 840 |
| Z17075020 | 75 | 20 | 290 |
| Z17075025 | 75 | 25 | 370 |
| Z17075030 | 75 | 30 | 440 |
| Z17075035 | 75 | 35 | 520 |
| Z17075040 | 75 | 40 | 560 |
| Z17075050 | 75 | 50 | 750 |
| Z17075060 | 75 | 60 | 900 |
| Z17080020 | 80 | 20 | 310 |
| Z17080025 | 80 | 25 | 390 |
| Z17080030 | 80 | 30 | 470 |
| Z17080035 | 80 | 35 | 560 |
| Z17080040 | 80 | 40 | 640 |
| Z17080050 | 80 | 50 | 800 |
| Z17080060 | 80 | 60 | 960 |
| Z17085020 | 85 | 20 | 330 |
| Z17085025 | 85 | 25 | 420 |
| Z17085030 | 85 | 30 | 500 |
| Z17085035 | 85 | 35 | 590 |
| Z17085040 | 85 | 40 | 680 |
| Z17085050 | 85 | 50 | 850 |
| Z17085060 | 85 | 60 | 1020 |
| Z17090020 | 90 | 20 | 350 |
| Z17090025 | 90 | 25 | 440 |
| Z17090030 | 90 | 30 | 540 |
| Z17090035 | 90 | 35 | 630 |
| Z17090040 | 90 | 40 | 720 |
| Z17090050 | 90 | 50 | 900 |
| Z17090060 | 90 | 60 | 1080 |
| Z17095020 | 95 | 20 | 370 |
| Z17095025 | 95 | 25 | 470 |
| Z17095030 | 95 | 30 | 570 |
| Z17095035 | 95 | 35 | 660 |
| Z17095040 | 95 | 40 | 760 |
| Z17095050 | 95 | 50 | 950 |
| Z17095060 | 95 | 60 | 1150 |
| Z17100020 | 100 | 20 | 380 |
| Z17100025 | 100 | 25 | 500 |
| Z17100030 | 100 | 30 | 600 |
| Z17100035 | 100 | 35 | 700 |
| Z17100040 | 100 | 40 | 800 |
| Z17100050 | 100 | 50 | 1000 |
| Z17100060 | 100 | 60 | 1200 |

Sealed nozzle heater high Wattage.
 Supplied with 1000 mm Lead.
 230 V. Working Temperature max 380/400°C.

HEATER BANDS

Mica Nozzle Heaters



| Part No. | Ø ID | Length | Watt |
|----------|------|--------|------|
| NHB25x25 | 25 | 25 | 120 |
| NHB25x30 | 25 | 30 | 120 |
| NHB25x32 | 25 | 32 | 120 |
| NHB25x35 | 25 | 35 | 130 |
| NHB25x38 | 25 | 38 | 140 |
| NHB25x40 | 25 | 40 | 150 |
| NHB25x45 | 25 | 45 | 165 |
| NHB25x50 | 25 | 50 | 180 |
| NHB30x25 | 30 | 25 | 120 |
| NHB30x30 | 30 | 30 | 130 |
| NHB30x32 | 30 | 32 | 140 |
| NHB30x35 | 30 | 35 | 150 |
| NHB30x38 | 30 | 38 | 160 |
| NHB30x40 | 30 | 40 | 175 |
| NHB30x45 | 30 | 45 | 200 |
| NHB30x50 | 30 | 50 | 220 |
| NHB32x25 | 32 | 25 | 115 |
| NHB32x30 | 32 | 30 | 140 |
| NHB32x32 | 32 | 32 | 150 |
| NHB32x35 | 32 | 35 | 160 |
| NHB32x38 | 32 | 38 | 175 |
| NHB32x40 | 32 | 40 | 180 |
| NHB32x45 | 32 | 45 | 200 |
| NHB32x50 | 32 | 50 | 230 |
| NHB35x25 | 35 | 25 | 130 |
| NHB35x30 | 35 | 30 | 150 |
| NHB35x32 | 35 | 32 | 160 |
| NHB35x35 | 35 | 35 | 175 |
| NHB35x38 | 35 | 38 | 190 |
| NHB35x40 | 35 | 40 | 200 |
| NHB35x45 | 35 | 45 | 225 |
| NHB35x50 | 35 | 50 | 250 |

| Part No. | Ø ID | Length | Watt |
|----------|------|--------|------|
| NHB38x25 | 38 | 25 | 140 |
| NHB38x30 | 38 | 30 | 160 |
| NHB38x32 | 38 | 32 | 170 |
| NHB38x35 | 38 | 35 | 190 |
| NHB38x38 | 38 | 38 | 200 |
| NHB38x40 | 38 | 40 | 225 |
| NHB38x45 | 38 | 45 | 270 |
| NHB38x50 | 38 | 50 | 275 |
| NHB40x25 | 40 | 25 | 140 |
| NHB40x30 | 40 | 30 | 175 |
| NHB40x32 | 40 | 32 | 180 |
| NHB40x35 | 40 | 35 | 200 |
| NHB40x38 | 40 | 38 | 220 |
| NHB40x40 | 40 | 40 | 230 |
| NHB40x45 | 40 | 45 | 250 |
| NHB40x50 | 40 | 50 | 280 |
| NHB45x25 | 45 | 25 | 160 |
| NHB45x30 | 45 | 30 | 185 |
| NHB45x32 | 45 | 32 | 200 |
| NHB45x35 | 45 | 35 | 225 |
| NHB45x38 | 45 | 38 | 200 |
| NHB45x40 | 45 | 40 | 250 |
| NHB45x45 | 45 | 45 | 275 |
| NHB45x50 | 45 | 50 | 325 |
| NHB50x25 | 50 | 25 | 180 |
| NHB50x30 | 50 | 30 | 220 |
| NHB50x32 | 50 | 32 | 235 |
| NHB50x35 | 50 | 35 | 250 |
| NHB50x38 | 50 | 38 | 280 |
| NHB50x40 | 50 | 40 | 300 |
| NHB50x45 | 50 | 45 | 325 |
| NHB50x50 | 50 | 50 | 375 |

Mica insulated heater, Supplied with 1000 mm Lead 230 V.
Working Temperature max 350/370°C.

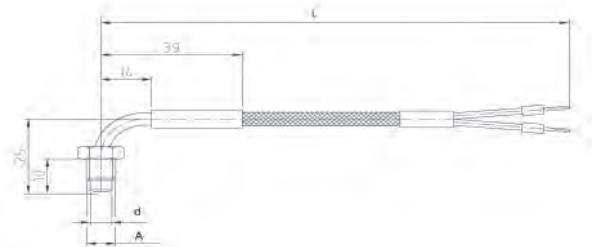
Thermocouple Leaf Type



| Part No. | Length | Width | Type | Leads |
|----------|--------|-------|------|---------|
| TLC | 20 | 10 | J | 1000 mm |

Thermocouple leaf type, ideal for nozzle bands.
Leads: 1000 mm.

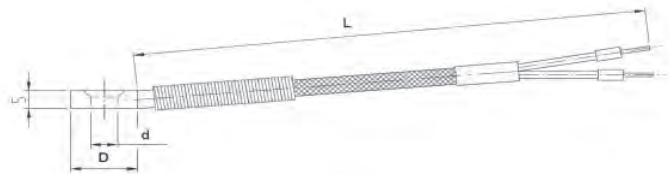
Threaded Type



| Part No. | d | D | L |
|-----------|---|------|------|
| MTT602000 | 6 | M8x1 | 2500 |

Fe-CuNi, Type J, max temperature 400°C.

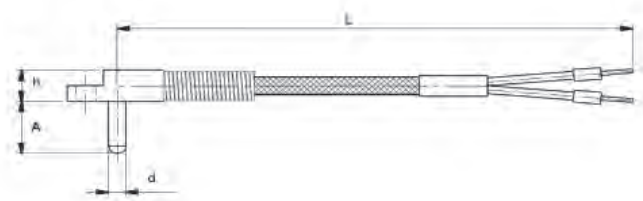
Surface Washer Type



| Part No. | d | D | L |
|-----------|-----|----|------|
| MTS602000 | 6,5 | 16 | 2500 |

Fe-CuNi, Type J, max temperature 400°C.

Pin Type

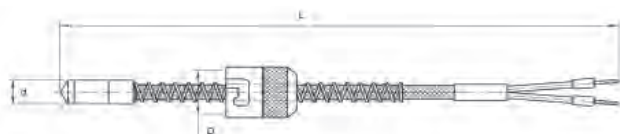


| Part No. | d | A | h | L |
|-----------|---|----|---|------|
| MTP402000 | 4 | 12 | 8 | 2500 |

Fe-CuNi, Type J, max temperature 400°C.

THERMOCOUPLES

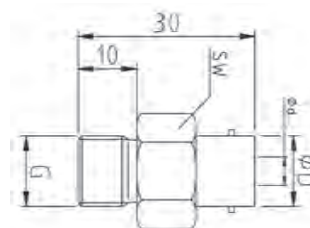
Bayonet - 2 pins



| Part No. | d | D | L |
|-------------|-----|------|------|
| MTB48102000 | 4,8 | 11 | 2500 |
| MTB60102000 | 6 | 11 | 2500 |
| MTB60122000 | 6 | 12,8 | 2500 |
| MTB60142000 | 6 | 15 | 2500 |
| MTB80122000 | 8 | 12,8 | 2500 |
| MTB80142000 | 8 | 15 | 2500 |

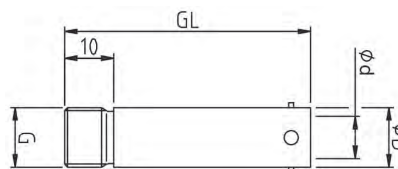
Fe-CuNi, Type J, max temperature 400°C.

Adaptors



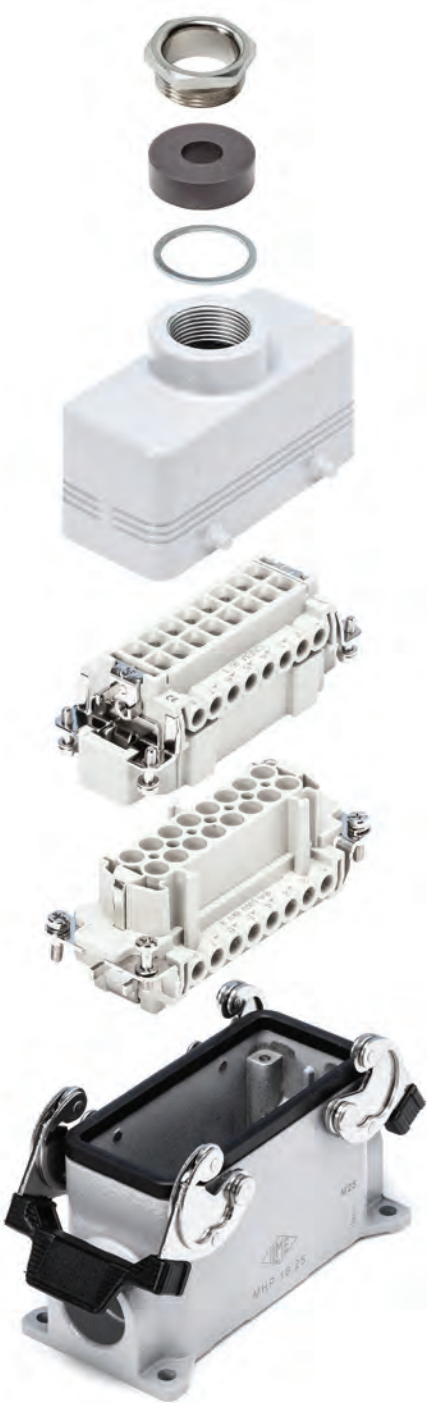
| Part No. | øD | ød | SW | G |
|---------------|----|-----|----|----------|
| MTA12M10X1 | 12 | 7,1 | 17 | M10x1 |
| MTA12M12X1 | 12 | 8,2 | 16 | M12x1 |
| MTA12M12X1,75 | 12 | 8,2 | 16 | M12x1,75 |
| MTA12M14x1,5 | 12 | 8,2 | 16 | M14x1,5 |
| MTA12G3/8 | 12 | 8,2 | 17 | G3/8 |
| MTA14M10X1 | 14 | 7,1 | 17 | M10x1 |
| MTA14M12X1 | 14 | 8,2 | 17 | M12x1 |
| MTA14M12X1,75 | 14 | 8,2 | 17 | M12x1,75 |
| MTA14M14X1,5 | 14 | 8,2 | 17 | M14x1,5 |
| MTA14G1/4 | 14 | 8,2 | 17 | G1/4 |
| MTA14G3/8 | 14 | 8,2 | 17 | G3/8 |

Extended Adaptors



| Part No. | øD | ød | G | GL |
|---------------|----|-----|----------|----|
| MTG10M10X1 | 10 | 7,1 | M10x1 | 30 |
| MTG10M10X1,5 | 10 | 7,1 | M10x1,5 | 30 |
| MTG10G1/8 | 11 | 6,3 | G1/8 | 30 |
| MTG12M10X1 | 12 | 7,1 | M10x1 | 50 |
| MTG12M10X1,5 | 12 | 7,1 | M10x1,5 | 50 |
| MTG12M12X1 | 12 | 8,2 | M12x1 | 50 |
| MTG12M12X1,75 | 12 | 8,2 | M12x1,75 | 50 |
| MTG12M14X1,5 | 12 | 8,2 | M14x1,5 | 50 |
| MTG14M12X1 | 14 | 9 | M12X1 | 50 |
| MTG14M14x1,5 | 14 | 9 | M14x1,5 | 50 |

Multipole Connectors



134 Square Connectors



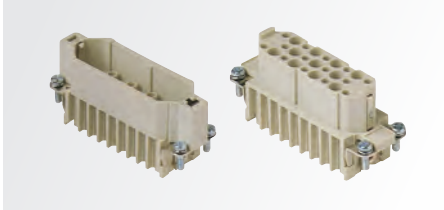
135 Narrow Connectors



138 Standard Connectors



142 High Density Connectors

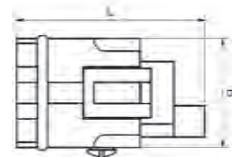
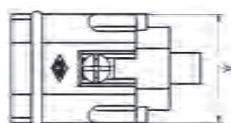


High quality connectors, compatible with Industry Standard (equivalent products from other manufacturers)

- CE marked
- UL/CSA approved
- Quality Screw terminals
- Cost efficient
- Full range
- Protection standard: IP20
- Seals: NBR
- Temperature range: 125°C (CK type only 100°C)

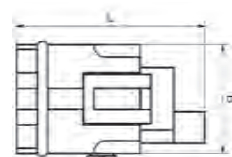
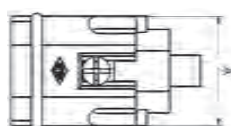
SQUARE CONNECTORS

Inserts Male



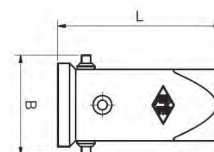
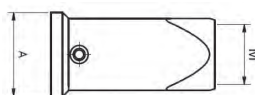
| Part No. | # Poles | A | B | L | Size |
|----------|---------|----|----|------|-------|
| CKM03 | 3+E | 21 | 21 | 30,5 | 21.21 |
| CKM04 | 4+E | 21 | 21 | 36,5 | 21.21 |

Inserts Female



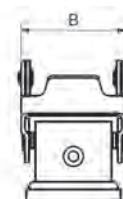
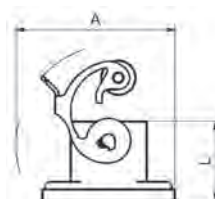
| Part No. | # Poles | A | B | L | Size |
|----------|---------|----|----|------|-------|
| CKF03 | 3+E | 21 | 21 | 30,5 | 21.21 |
| CKF04 | 4+E | 21 | 21 | 36,5 | 21.21 |

Straight Hood



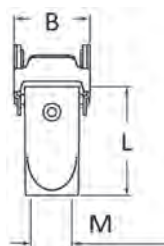
| Part No. | # Poles | Levers | A | B | L | M | Size |
|----------|---------|--------|----|------|------|-----|-------|
| MKAV20 | 3/4+E | Single | 28 | 33,5 | 60,5 | M20 | 21.21 |

Panel Mount Base



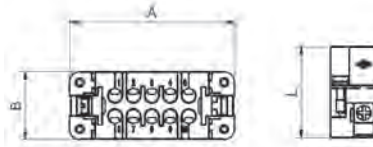
| Part No. | # Poles | Levers | A | B | L | Size |
|----------|---------|--------|------|----|----|-------|
| CKAX03I | 3/4+E | Single | 57,5 | 32 | 24 | 21.21 |

Straight Hood, Single Lever



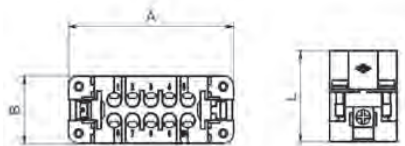
| Part No. | # Poles | Levers | A | B | L | Size |
|----------|---------|--------|----|----|------|-------|
| MKAXVG20 | 3/4+E | Single | 24 | 33 | 51,5 | 21.21 |

Inserts Male, Screw Terminals



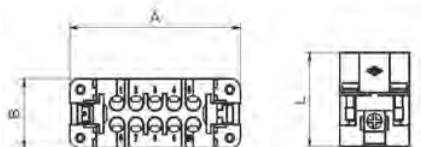
| Part No. | # Poles | A | B | L | Size |
|----------|---------|------|----|----|-------|
| CDAM10 | 10 Pole | 56,5 | 23 | 31 | 49.16 |
| CDAM16 | 16 Pole | 73 | 23 | 31 | 66.16 |

Inserts Female, Screw Terminals



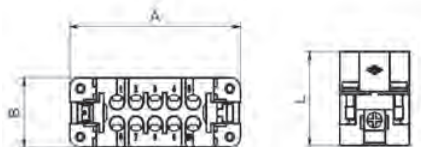
| Part No. | # Poles | A | B | L | Size |
|----------|---------|------|----|----|-------|
| CDAF10 | 10 Pole | 56,5 | 23 | 31 | 49.16 |
| CDAF16 | 16 Pole | 73 | 23 | 31 | 66.16 |

Inserts Male, Screw Terminals



| Part No. | # Poles | Pin # | A | B | L | Size |
|----------|---------|-------|----|----|----|-------|
| CDAM16 | 16 Pole | 1-16 | 73 | 23 | 31 | 66.40 |
| CDAM16N | 16 Pole | 17-32 | 73 | 23 | 31 | 66.40 |

Inserts Female, Screw Terminals



| Part No. | # Poles | Pin # | A | B | L | Size |
|----------|---------|-------|----|----|----|-------|
| CDAF16 | 16 Pole | 1-16 | 73 | 23 | 31 | 66.40 |
| CDAF16N | 16 Pole | 17-32 | 73 | 23 | 31 | 66.40 |

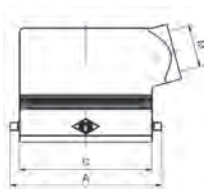
NARROW CONNECTORS

Top Entry Hood, Single Lever



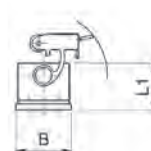
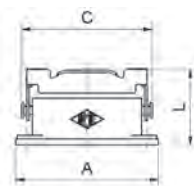
| Part No. | # Poles | Levers | A | B | C | L | L1 | M | Size |
|-----------|------------|--------|------|----|------|------|------|-----|-------|
| MZAV15L20 | 10 Pole | Single | 72 | 36 | 63 | 64,5 | 14,5 | M20 | 49.16 |
| MZAV25L20 | 16/25 Pole | Single | 88,5 | 36 | 79,5 | 70,5 | 14,5 | M20 | 66.16 |
| MZAV25L25 | 16/25 Pole | Single | 88,5 | 36 | 79,5 | 70,5 | 14,5 | M25 | 66.16 |

Side Entry Hood, Single Lever



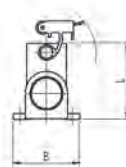
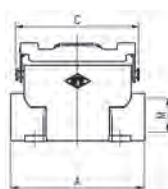
| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|----------|---------|--------|------|------|------|------|-----|-------|
| MZO15L20 | 10 Pole | Single | 72 | 29,4 | 63 | 55,9 | M20 | 49.16 |
| MZO25L25 | 16 Pole | Single | 88,5 | 29,4 | 79,5 | 55,9 | M25 | 66.16 |

Panel Mount Housing, Single Lever



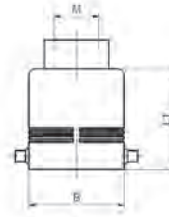
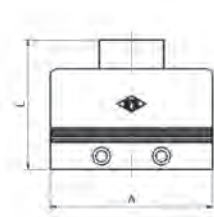
| Part No. | # Poles | Levers | A | B | C | L | Size |
|----------|------------|--------|----|----|----|----|-------|
| CZI15L | 10 Pole | Single | 83 | 32 | 76 | 44 | 49.16 |
| CZI25L | 16/25 Pole | Single | 98 | 32 | 93 | 44 | 66.16 |

Surface Mount Housing, Single Lever



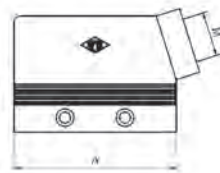
| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|-----------|------------|--------|-----|----|----|----|-----|-------|
| MZP15L25 | 10 Pole | Single | 85 | 50 | 76 | 52 | M25 | 49.16 |
| MZAP25L25 | 16/25 Pole | Single | 101 | 50 | 93 | 57 | M25 | 66.16 |

Top Entry Hood, Double Lever



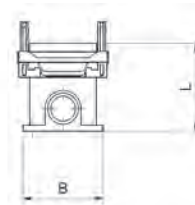
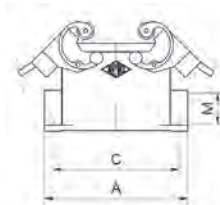
| Part No. | # Poles | Levers | A | B | L | L1 | M | Size |
|----------|---------|--------|----|----|------|----|-----|-------|
| MAV50.32 | 32 Pole | Double | 82 | 56 | 90,5 | 75 | M32 | 66.40 |

Side Entry Hood, Double Lever



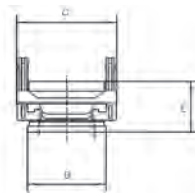
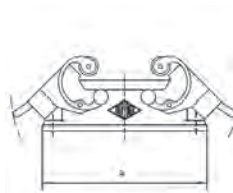
| Part No. | # Poles | Levers | A | B | L | M | Size |
|----------|---------|--------|----|----|----|-----|-------|
| MAO50.32 | 32 Pole | Double | 82 | 56 | 75 | M32 | 66.40 |

Surface Mount Base, Double Lever



| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|----------|---------|--------|-----|------|----|----|-----|-------|
| MHP50.32 | 32 Pole | Double | 106 | 57,3 | 94 | 82 | M32 | 66.40 |

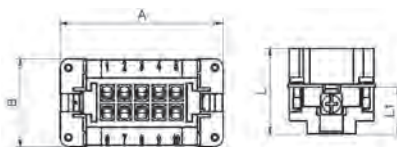
Panel Mount Base, Double Lever



| Part No. | # Poles | Levers | A | B | C | L | Size |
|----------|---------|--------|-----|------|----|----|-------|
| CHI50 | 32 Pole | Double | 104 | 58,5 | 71 | 29 | 66.40 |

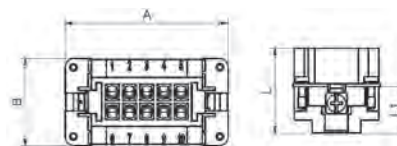
STANDARD CONNECTORS

Inserts Male



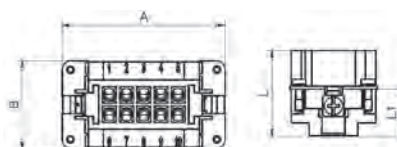
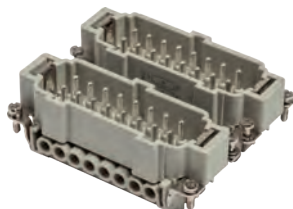
| Part No. | # Poles | A | B | L | L1 | Size |
|----------|---------|-------|----|----|----|--------|
| CNEM06T | 6 Pole | 50 | 34 | 33 | 18 | 44.27 |
| CNEM10T | 10 Pole | 63,4 | 34 | 33 | 18 | 57.27 |
| CNEM16T | 16 Pole | 83,5 | 34 | 33 | 18 | 77.27 |
| CNEM24T | 24 Pole | 110,3 | 34 | 33 | 18 | 104.27 |

Inserts Female



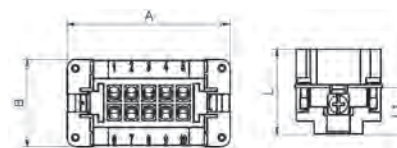
| Part No. | # Poles | A | B | L | L1 | Size |
|----------|---------|-------|----|----|----|--------|
| CNEF06T | 6 Pole | 50 | 34 | 33 | 18 | 44.27 |
| CNEF10T | 10 Pole | 63,4 | 34 | 33 | 18 | 57.27 |
| CNEF16T | 16 Pole | 83,5 | 34 | 33 | 18 | 77.27 |
| CNEF24T | 24 Pole | 110,3 | 34 | 33 | 18 | 104.27 |

Inserts Male



| Part No. | # Poles | Pin # | A | B | L | L1 | Size |
|----------|---------|-------|-------|----|----|----|--------|
| CNEM16T | 16 Pole | 1-16 | 83,5 | 34 | 33 | 18 | 77.62 |
| CNEM16TN | 16 Pole | 17-32 | 83,5 | 34 | 33 | 18 | |
| CNEM24T | 24 Pole | 1-16 | 110,3 | 34 | 33 | 18 | 104.62 |
| CNEM24TN | 24 Pole | 17-32 | 110,3 | 34 | 33 | 18 | |

Inserts Female



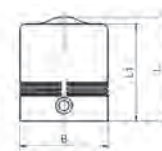
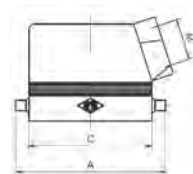
| Part No. | # Poles | Pin # | A | B | L | L1 | Size |
|----------|---------|-------|-------|----|----|----|--------|
| CNEF16T | 16 Pole | 1-16 | 83,5 | 34 | 33 | 18 | 77.62 |
| CNEF16TN | 16 Pole | 17-32 | 83,5 | 34 | 33 | 18 | |
| CNEF24T | 24 Pole | 1-24 | 110,3 | 34 | 33 | 18 | 104.62 |
| CNEF24TN | 24 Pole | 25-48 | 110,3 | 34 | 33 | 18 | |

Top Entry Hood, Single Lever



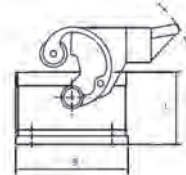
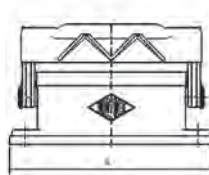
| Part No. | # Poles | Levers | A | B | C | L | L1 | M | Size |
|----------|---------|--------|-------|----|------|-----|----|-----|--------|
| MHV06L20 | 6 Pole | Single | 72 | 43 | 60 | 53 | 40 | M20 | 44.27 |
| MHV10L20 | 10 Pole | Single | 87 | 43 | 73 | 58 | 45 | M20 | 57.27 |
| MHV16L25 | 16 Pole | Single | 108 | 43 | 93,5 | 58 | 45 | M25 | 77.27 |
| MHV24L32 | 24 Pole | Single | 135 | 43 | 120 | 68 | 55 | M32 | 104.27 |
| MHV48L32 | 48 Pole | Single | 150,5 | 90 | 121 | 121 | 98 | M40 | 104.62 |

Side Entry Hood, Single Lever



| Part No. | # Poles | Levers | A | B | C | L | L1 | M | Size |
|----------|---------|--------|-------|----|------|------|-----|-----|--------|
| MHO06L20 | 6 Pole | Single | 73 | 43 | 60 | 50,4 | 47 | M20 | 44.27 |
| MHO10L20 | 10 Pole | Single | 87 | 43 | 73 | 52 | 49 | M20 | 57.27 |
| MHO16L25 | 16 Pole | Single | 108 | 43 | 93,5 | 63 | 60 | M25 | 77.27 |
| MHO24L32 | 24 Pole | Single | 135 | 43 | 120 | 63 | 60 | M32 | 104.27 |
| MHO48L32 | 48 Pole | Single | 150,5 | 90 | 121 | 98 | 118 | M40 | 104.62 |

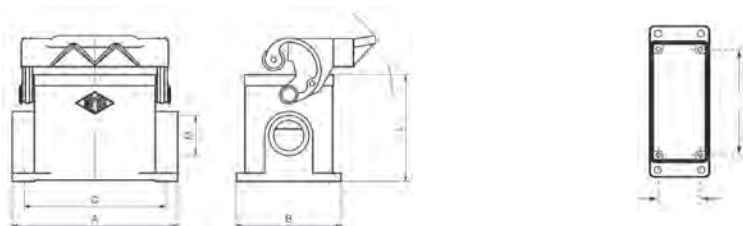
Panel Mount Base, Single Lever



| Part No. | # Poles | Levers | A | B | L | Size |
|----------|---------|--------|-------|------|----|--------|
| CHI06L | 6 Pole | Single | 82,5 | 45,5 | 29 | 44.27 |
| CHI10L | 10 Pole | Single | 95,5 | 45,5 | 29 | 57.27 |
| CHI16L | 16 Pole | Single | 115,5 | 45,5 | 29 | 77.27 |
| CHI24L | 24 Pole | Single | 142,5 | 45,5 | 29 | 104.27 |
| CHI48L | 48 Pole | Single | 167,5 | 93 | 42 | 104.62 |

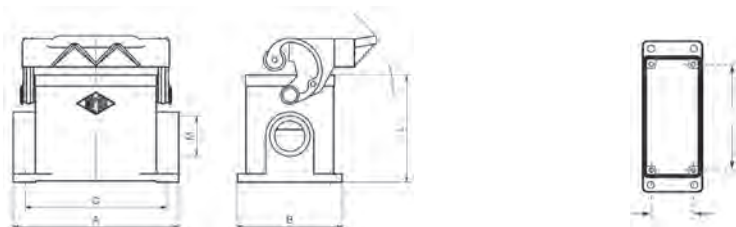
STANDARD CONNECTORS

Surface Mount Base, Single Lever



| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|----------|---------|--------|------|----|-----|----|-----|--------|
| MHP06L20 | 6 Pole | Single | 82 | 52 | 70 | 53 | M20 | 44.27 |
| MHP10L20 | 10 Pole | Single | 93,5 | 52 | 82 | 57 | M20 | 57.27 |
| MHP16L25 | 16 Pole | Single | 117 | 57 | 105 | 63 | M25 | 77.27 |
| MHP24L25 | 24 Pole | Single | 144 | 57 | 132 | 63 | M25 | 104.27 |

Surface Mount Base, Single Lever and Cover



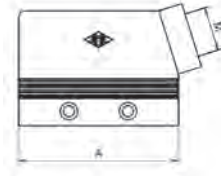
| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|-----------|---------|--------|-----|-----|-----|----|-----|--------|
| MHP48LS40 | 48 Pole | Single | 141 | 120 | 111 | 99 | M40 | 104.62 |

Top Entry Hood, Double Lever



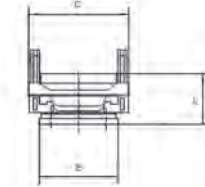
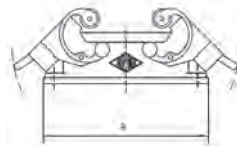
| Part No. | # Poles | Levers | A | B | L | L1 | M | Size |
|----------|---------|--------|------|------|-----|----|-----|--------|
| MHV10.20 | 10 Pole | Double | 73 | 43 | 58 | 45 | M20 | 57.27 |
| MHV16.25 | 16 Pole | Double | 93,5 | 43 | 58 | 45 | M25 | 77.27 |
| MHV24.32 | 24 Pole | Double | 120 | 43 | 68 | 55 | M32 | 104.27 |
| MHV32.32 | 32 Pole | Double | 93,5 | 82,5 | 117 | 94 | M32 | 77.62 |

Side Entry Hood, Double Lever



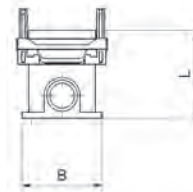
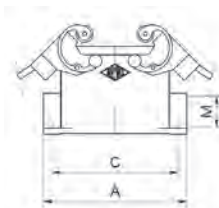
| Part No. | # Poles | Levers | A | B | L | M | Size |
|----------|---------|--------|------|------|----|-----|--------|
| MHO10.20 | 10 Pole | Double | 73 | 43 | 52 | M20 | 57.27 |
| MHO16.25 | 16 Pole | Double | 93,5 | 43 | 63 | M25 | 77.27 |
| MHO24.32 | 24 Pole | Double | 120 | 43 | 63 | M32 | 104.27 |
| MHO32.32 | 32 Pole | Double | 93,5 | 82,5 | 94 | M32 | 77.62 |

Panel Mount Base, Double Lever



| Part No. | # Poles | Levers | A | B | C | L | Size |
|----------|---------|--------|-------|------|------|----|--------|
| CHI10 | 10 Pole | Double | 95,5 | 45,5 | 58 | 29 | 57.27 |
| CHI16 | 16 Pole | Double | 115,5 | 45,5 | 58 | 29 | 77.27 |
| CHI24 | 24 Pole | Double | 142,5 | 45,5 | 58 | 29 | 104.27 |
| CHI32 | 32 Pole | Double | 126 | 45,5 | 98,5 | 35 | 77.62 |

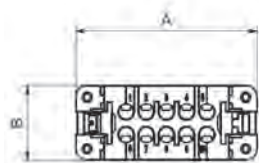
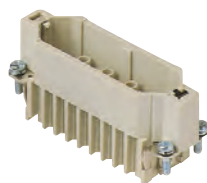
Surface Mount Base, Double Lever



| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|----------|---------|--------|------|----|-----|----|-----|--------|
| MHP10.20 | 10 Pole | Double | 93,5 | 52 | 82 | 57 | M20 | 57.27 |
| MHP16.25 | 16 Pole | Double | 117 | 57 | 105 | 63 | M25 | 77.27 |
| MHP24.25 | 24 Pole | Double | 144 | 57 | 132 | 63 | M25 | 104.27 |
| MHP32.40 | 32 Pole | Double | 125 | 84 | 112 | 90 | M40 | 77.62 |

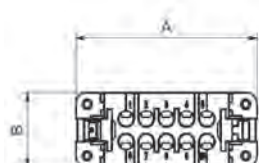
HIGH DENSITY CONNECTORS

Inserts Male, 3 Row, High Density Crimp Terminal



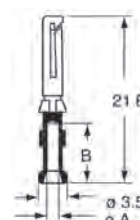
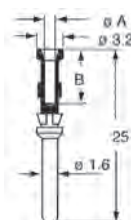
| Part No. | # Poles | A | B | L | Size |
|----------|---------|----|----|----|-------|
| CDM25 | 25 Pole | 73 | 23 | 31 | 66.16 |

Inserts Female, 3 Row, High Density Crimp Terminal



| Part No. | # Poles | A | B | L | Size |
|----------|---------|----|----|----|-------|
| CDF25 | 25 Pole | 73 | 23 | 31 | 66.16 |

Crimp Pins



| Part No. | Type | Wire Size | ø-A | ø-B |
|----------|--------|---------------------|-----|-----|
| CDMA0.5 | Male | 0,5 mm ² | 1,1 | 8 |
| CDFA0.5 | Female | 0,5 mm ² | 1,1 | 8 |
| CDMA1.5 | Male | 1,5 mm ² | 1,8 | 8 |
| CDFA1.5 | Female | 1,5 mm ² | 1,8 | 8 |

Top Entry Hood, Single Lever



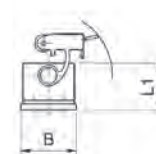
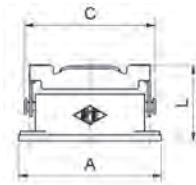
| Part No. | # Poles | Levers | A | B | C | L | L1 | M | Size |
|-----------|------------|--------|------|----|------|------|------|-----|-------|
| MZAV25L20 | 16/25 Pole | Single | 88,5 | 36 | 79,5 | 70,5 | 14,5 | M20 | 66.16 |
| MZAV25L25 | 16/25 Pole | Single | 88,5 | 36 | 79,5 | 70,5 | 14,5 | M25 | 66.16 |

Side Entry Hood, Single Lever



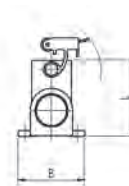
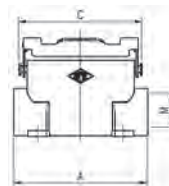
| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|----------|------------|--------|------|------|------|------|-----|-------|
| MZO25L25 | 16/25 Pole | Single | 88,5 | 29,4 | 79,5 | 55,9 | M25 | 66.16 |

Panel Mount Housing, Single Lever



| Part No. | # Poles | Levers | A | B | C | L | Size |
|----------|------------|--------|----|----|----|----|-------|
| CZI25L | 16/25 Pole | Single | 98 | 32 | 93 | 44 | 66.16 |

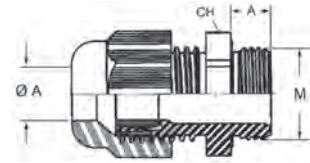
Surface Mount Housing, Single Lever



| Part No. | # Poles | Levers | A | B | C | L | M | Size |
|-----------|------------|--------|-----|----|----|----|-----|-------|
| MZAP25L25 | 16/25 Pole | Single | 101 | 50 | 93 | 57 | M25 | 66.16 |

CABLE GLANDS

Cable Glands Polyamide



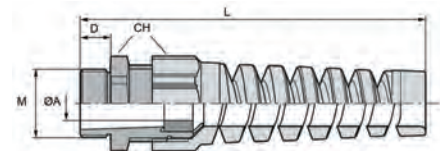
| Part No. | Ø A (mm) | M | CH | A | |
|----------|----------|-----|----|----|---|
| ASM20I | 5-12,5 | M20 | 24 | 10 | 1 |
| ASM25I | 9-18 | M25 | 33 | 10 | 1 |
| ASM32I | 14-25 | M32 | 42 | 10 | 1 |

A Polyamide based cable gland, designed for universal use.

Benefits

High oil-resistance for maximum reliability. Wide, variable clamping ranges. Permanent vibration protection. Optimum strain relief.

Cable Glands Polyamide - with Spiral Strain Relief



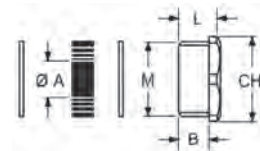
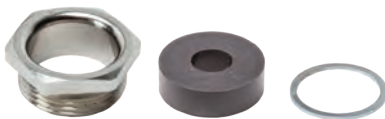
| Part No. | Ø A (mm) | M | CH | L | D | |
|----------|----------|-----|----|-----|----|---|
| CGSS20 | 7-13 | M20 | 24 | 101 | 8 | 1 |
| CGSS25 | 9-17 | M25 | 33 | 125 | 9 | 1 |
| CGSS32 | 11-22 | M32 | 42 | 149 | 10 | 1 |

Plastic cable gland with bending and anti-kink protection, to protect flexible cables, for moving machine parts.

Benefits

Reliable bending and anti-kink protection. Functional reliability. Cable conservation. To protect flexible cables.

Cable Glands



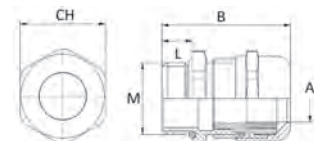
| Part No. | Ø A (mm) | M | CH | L | B | |
|----------|----------|-----|----|------|-----|---|
| AGM20T | 6-10 | M20 | 20 | 10,5 | 7,5 | 1 |
| AGM25T | 11-17 | M25 | 25 | 11,5 | 8 | 1 |
| AGM32T | 19-24 | M32 | 32 | 12 | 8 | 1 |

Metal cable gland with gasket to ensure sealed connection between cable and connector.

Benefits

IP65. Nickel plated brass gland. Galvanised steel washers. Temperature range: -25°C - +100°C. Anti-ageing rubber gaskets.

Cable Glands



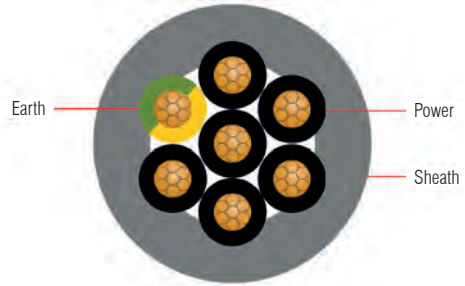
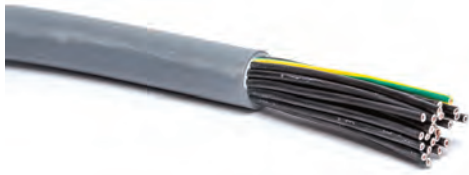
| Part No. | Ø A (mm) | M | CH | L | B | |
|----------|----------|-----|----|-----|----|---|
| ASM20P | 6-12,5 | M20 | 22 | 7 | 29 | 1 |
| ASM25P | 10-18 | M25 | 30 | 8 | 37 | 1 |
| ASM32P | 14-24 | M32 | 40 | 8,5 | 45 | 1 |

Metal cable gland with gasket to ensure sealed connection between cable and connector.

Benefits

IP65. Nickel plated brass gland. Temperature range: -25°C - +120°C. Anti-ageing rubber gaskets.

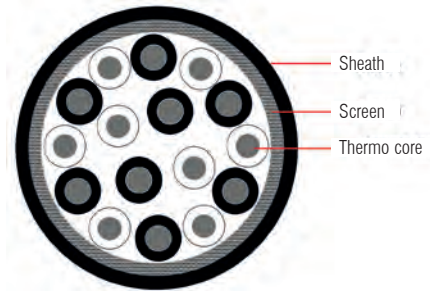
Powerflex Cable



| Part No. | Zones | Cores | Coil Length |
|----------|-------|-------|-------------|
| PF08 | 8 | 16+E | 20m |
| PF12 | 12 | 24+E | 20m |

Multicore Power Cable.
1.5mm² 16A Cable.
Numbered Cores, Green/Yellow Earth.

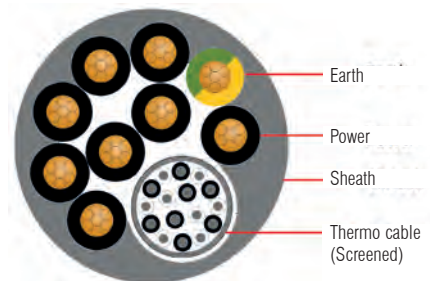
Thermoflex Cable



| Part No. | Zones | Cores | Coil Length |
|----------|-------|----------|-------------|
| TF08 | 8 | 8 Pair+E | 20m |
| TF12 | 12 | 12Pair+E | 20m |

Multi-core Thermocouple Cable.
Type J Fe/Cu-Ni, Twisted Pairs.
DIN Standard Colours (Black/White), Numbered Cores.
Screen and Earth.

Multiflex Cable

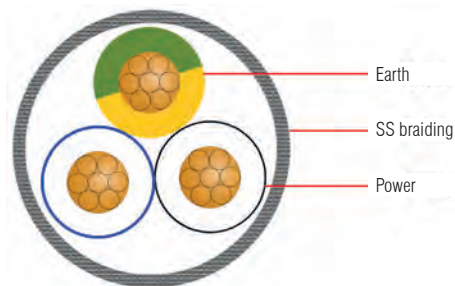


| Part No. | Zones | Cores | Coil Length |
|----------|-------|-----------------------|-------------|
| MF06 | 6 | 12+E PWR / 6 Pair T/C | 20m |

6 Zone Combination power and thermocouple cable.
Extremely Flexible.
1.5mm² 16A Power Cable.
Type J Fe/Cu-Ni Thermocouple Cable, Twisted Pairs.
DIN Standard Colours (Black/White), Numbered Cores.
Screen and Earth.

CABLES

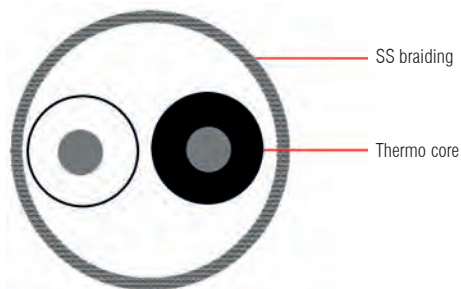
High Temperature Cable



| Part No. | Zones | Cores | Coil Length |
|----------|-------|-------|-------------|
| CAB-P325 | 1 | 2+E | 25m |

Power Cable for high temperature applications including extension of heater cables.
 3 x 0,75 mm².
 Nickel conductors, insulated with fiberglass impregnated in silicone resin.
 Galvanized steel braiding.
 Working Temperature: Max 320°C.

Thermocouple Cable Type J



| Part No. | Zones | Cores | Coil Length |
|----------|-------|-------|-------------|
| CAB-T225 | 1 | 2 | 25m |

Thermocouple Cable Type J FeCuNi.
 2 x 0,5 mm² Black/White.
 Stainless steel braiding.
 Working Temperature: Max 250°C.

Cable Cutter



| Part No. | Max Cut | Length | |
|----------|-------------------|-------------|---|
| CC-2200 | 60mm ² | 230 mm / 9" | 1 |

- Made of high carbon steel
- Can cut 60mm² copper wire
- Heavy duty cable cutter
- Easy to cut hard cable
- Precision cutting edge
- Drop forged and heat treated, easy to hold
- Can crimp terminal
- Length: 230mm

Wire Stripper



| Part No. | Max Cut | Length | |
|----------|---------|--------|---|
| WS-1020 | 0,8-2,6 | 156 mm | 1 |

- Length: 156mm
- Weight: 129g
- Material of stripper: SK7 High carbon steel
- Hardness: 48-51
- Material of handle: PVC
- For wires 0.8, 1, 1.3, 1.6, 2, 2.6 mm (AWG 20#, 18#, 16#, 14#, 12#, 10#)

THERMOMETERS

Thermometer Kit



Part No.
826-32

Temperature range
-50°C to + 1300°C

Single Input K-Type thermometers offer high accuracy and fast response times; ideal for plastics processors.
 -50° to + 1300°.
 °C / °F Selectable.
 Resolution: 0.1°C / 0.1°F.
 Sampling rate of 2.5 times per second.
 Auto Power Off.
 Supplied with carry case, rubber holster & battery.
 Kit Includes: Thermometer (Single Input), Case, Needle Point Penetration Probe, Right Angle Surface probe, Batteries.

Deluxe Thermometer Kit



Part No.
826-33

Temperature range
-50°C to + 480°C/1300°C

Dual Input K-Type thermometers offer high accuracy and fast response times; ideal for plastics processors.
 50° to 1300°.
 °C / °F Selectable.
 Resolution: 0.1°C / 0.1°F.
 Sampling rate of 2.5 times per second.
 Auto Power Off.
 Supplied with carry case, rubber holster & battery.
 Kit Includes: Thermometer (Single Input), Case, Needle Point Penetration Probe, Right Angle Surface probe, Magnetic Surface Probe, Batteries.

Thermometer



Part No.
DT6102K

Input
Dual

Temperature range
-50°C to + 1300°C

Dual Input K-Type thermometers offer high accuracy and fast response times; ideal for plastics processors.
 -50° to + 1300°.
 °C / °F Selectable.
 Resolution: 0.1°C / 0.1°F.
 Sampling rate of 2.5 times per second.
 Auto Power Off.
 Supplied with carry case, rubber holster, bead probe & battery.

Infrared and Probe Thermometer Kit



Part No.
826-31

Temperature range
-60°C to +480°C

Ideal for all temperature measurement requirements around the mouldshop this dual purpose infrared thermometer also has a Type K thermocouple input socket. The kit is supplied in a case complete with penetration probe and 90° ribbon surface probe. Ideal for measuring surface temperature of moulded parts, mould surface temperature or melt temperature.
 Range (Infrared) -60°C to +480°C.
 Range (Thermocouple) -60°C to +480°C.
 Backlit LCD display.
 Laser Pointer.
 Auto power off (60 secs).
 Adjustable Emissivity.

Handheld 90 Degree Ribbon Surface Probe



Part No.
TCP-RS90-K

Type
K

Max Temp
500°C

Lead Type
Flexible

Handheld Penetration Probe



Part No.
TCP-P-K

Type
K

Max Temp
500°C

Lead Type
Flexible

Magnetic Surface Probe



Part No.
TCP-R-M

Type
K

Max Temp
350°C

Lead Type
Flexible

THERMAL CAMERAS

Used for a multitude of temperature related applications, you can use our highly durable, fast capturing imager to help troubleshoot any possible heating and cooling problems.

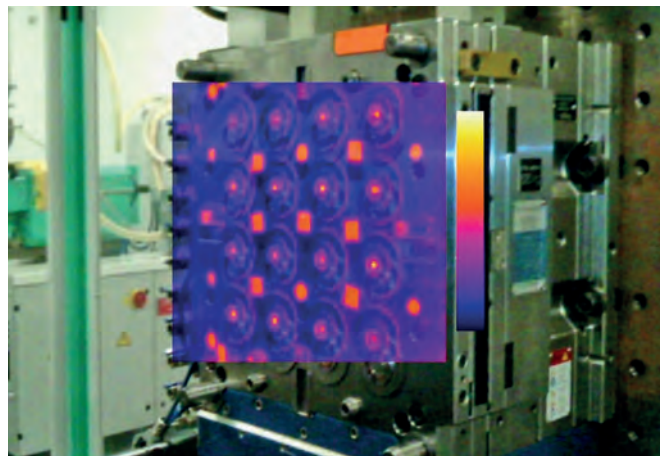
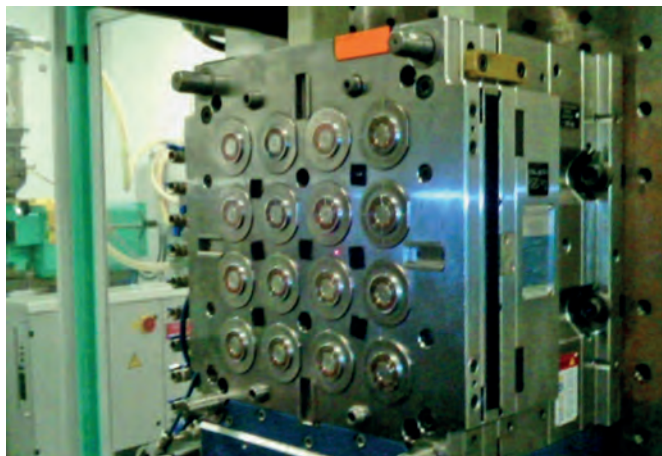
Point the camera at polymer melt to get an almost instantaneous reading or even take an image of the cooling hoses and quickly identify a 'cold' hose and a possible cooling issue.



DT-870
Bluetooth



DT-986H
Bluetooth and WiFi



| Specifications | DT-870 | DT-986H |
|--|--|---|
| Imaging and optical data | | |
| IR resolution | 80x80 pixels | 256x192 pixels |
| Focal Plane Array (FPA) / Spectral range | Uncooled microbolometer / 8–14 μm | Uncooled microbolometer / 8–14 μm |
| Focal length | 7.5mm. | 3,2mm |
| Field of View (FOV) | 21x 21° | 36x27° |
| Minimum focus distance | 0.5m | 0.5m |
| Spatial resolution | 4.53mrad | 3.75mrad |
| Thermal sensitivity/NETD | <0.1°C/100mK | <0.1°C at 30°C [86°F]/100mK |
| Image frequency | 50Hz | 25Hz |
| Focus | Focus Free | Focus Free |
| Zoom | - | 1-16x continuous, digital zoom |
| Image presentation | | |
| Display | 2" TFT LCD, 240x320 pixels | 3,5" LCD Touch, 640x480 pixels |
| Image modes | IR image | IR image, visual image, picture in picture, AUF |
| Picture in Picture | - | IR area on visual image |
| Color palettes | IRON/Rainbow/Grey/Grey Inverted | IRON, Rainbow, Grey, Grey Inverted, Brown, Blue-red, Hot-cold, Feather, Above alarm, Below alarm, Zone alarm, Vision zone |
| Measurement | | |
| Object temperature range | -20 to 150°C / 0 to 350°C / extended to -20 to 650°C | -20 to 550°C |
| Accuracy | ±2°C or ±2% of reading | ±2°C or ±2% of reading |
| Measurement analysis | | |
| Spotmeter | Center Spot | Center Spot, Auto hot or cold markers |
| Set-up | | |
| Language selection | English, Chinese, French, German, Spanish | |
| Storage of videos/images | | |
| Inside Memory / Storage media | Internal Storage | 8Gbytes Micro SD card ar 3.4GB internal EMMC |
| Video storage format | - | Standard MPEG-4 encode, 640x480 at 30fps, an memory card >60 minutes |
| Image storage format | Bitmap (BMP) | Standard JPEG.ar HIR files including measurement data, an memory card >6000 pictures |
| Digital camera | | |
| Built-in visible light digital camera | - | 2 Megapixels; FOV 65° |
| Data communication interfaces | | |
| Interfaces & Video output | USB-micro | USB-Type C |
| USB | Data | Data & Live video transform between camera and PC or smartphone |
| Bluetooth | Yes | Yes |
| WiFi | | |
| Live video between device and PC | No | Yes |
| Transfer images and data to mobile devices | (Bluetooth only) | Yes |
| Battery / Input voltage / Laser | | |
| Li-ion battery, 4 hours operating time / DC 5V / < 1mW | | |

D-870 / D-986H

Hand-held thermal imaging camera is designed to make your work easier by providing accurate, fast and reliable temperature measurement. Simple and easy to operate the camera uses point and shoot infrared technology to produce high-quality thermal images that are displayed on the TFT screen. 50/25Hz fast frame rate enables fast capture of temperature variation where critical temperature conditions are directly displayed with automatic hot/cold spot recognition. The camera has the ability for datalogging via the internal memory while Bluetooth connectivity allows the for easy transfer of data to the user's smartphone or Bluetooth device. The smart design is robust, compact and lightweight with the camera being able to withstand drops from up to 2m.

Thermal imaging cameras may be used for a multitude of temperature related applications; use the camera around the mouldshop to measure part ejection temperature, check heater-band temperatures and also troubleshoot possible cooling problems or dryer temperatures simply by measuring the hose temperature; these may not give exact readings but, are a great way to quickly identify possible problems and are an invaluable aid to process verification. The camera will quickly identify the temperature of polymer melt temperature – giving an almost instantaneous reading – in comparison a melt probe can take up to 30 seconds for the reading to stabilise.

The built-in LED flashlight is convenient when working in dark and unlit inspection environments.

8 hour battery life with the rechargeable battery and automatic shutdown.

Easy-to-use interface, this unit is ideal for monitoring process parameters, predictive maintenance, equipment troubleshooting and verification.

The compact, rugged and lightweight design allows for optimum portability and performance, even in harsh working conditions.

D-986H

2 Megapixel built-in digital camera enables the overlaying of digital and thermal images as well as the more advanced fusion mode.

3,4 Gb internal memory (Standard MPEG-4 encode, 640x480 at 30fps, an memory card >60 minutes. video using the 8GB micro SD Card, Video output via USB or HDMI.

4 hour battery life with the rechargeable battery and automatic shutdown.

Easy-to-use interface, this unit is ideal for monitoring process parameters, predictive maintenance, equipment troubleshooting and verification.

The compact, rugged and lightweight design allows for optimum portability and performance, even in harsh working conditions.

Supplied with adaptor, battery, App software, USB cable and convenient carry case.

MATERIAL HANDLING

05.

157 Loader Hoses



159 Hot Air Hoses



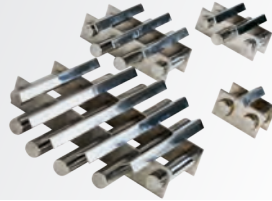
160 Hose Clamps



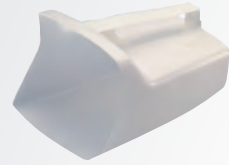
161 Camlock Couplings Aluminum



165 Hopper Magnets



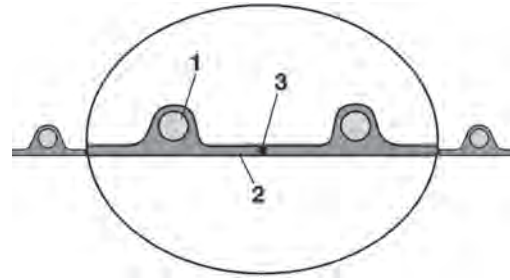
165 Material Scoops



166 Balances and Moisture Analyser



Anti-Static PU Hose/PVC Helix



| Part No. | Ø ID (mm) | Ø OD (mm) | Min Wall thickness (mm) | Bending Radius (mm) | Roll Length (m) | Wire Clip Ref |
|----------|-----------|-----------|-------------------------|---------------------|-----------------|---------------|
| PUP25 | 25 | 31 | 0.5 | 17,5 | 10 | 3030200 |
| PUP32 | 32 | 38 | 0.5 | 19 | 10 | 3030218 |
| PUP38 | 38 | 44 | 0.5 | 31,0 | 10 | 3030242 |
| PUP40 | 40 | 47 | 0.5 | 40,0 | 10 | 3030242 |
| PUP45 | 45 | 51 | 0.5 | 42,5 | 10 | 3030250 |
| PUP50 | 50 | 58 | 0.5 | 45,0 | 10 | 3030285 |
| PUP60 | 60 | 71 | 0.5 | 50,0 | 10 | 3030306 |
| PUP64 | 64 | 74 | 0.5 | 49 | 10 | 3030306 |

Applications:

Flexible hose/ ducting for abrasive granulate and powder.

Properties:

- Light weight.
- Abrasion-resistant.
- Microbe resistant.
- Good resistance to chemicals.
- Phthalate-free.
- Grounding wire for discharging of electrostatic charging.

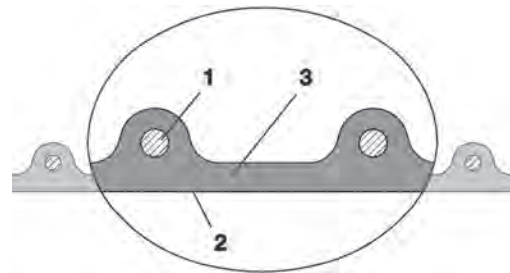
Temperature range:

-20°C to 70°C.
Short time to 80°C.

Design, Material:

1. hard plastic spiral integrated in wall, spiral: rigid PVC.
2. smooth interior, wall: permanently antistatic premium ester-polyurethane (Pre-PUR®).
3. grounding wire.

PU Hose/Steel Helix



| Part No. | Ø ID (mm) | Ø OD (mm) | Min Wall thickness (mm) | Roll Length (m) | Wire Clip Ref |
|----------|-----------|-----------|-------------------------|-----------------|---------------|
| PURH32 | 32 | 39 | 1,5 | 10 | 3030242 |
| PURH38 | 38 | 49 | 1,5 | 10 | 3030250 |
| PURH40 | 40 | 51 | 1,5 | 10 | 3030250 |
| PURH45 | 45 | 55 | 1,5 | 10 | 3030269 |
| PURH50 | 50 | 58 | 1,5 | 10 | 3030285 |
| PURH60 | 60 | 70 | 1,5 | 10 | 3030306 |
| PURH64 | 64 | 75 | 1,5 | 10 | 3030306 |

Applications:

- Flexible hose/ ducting for high throughput of abrasive powder, bulk material, granulate and for gases.
- Plastic industry, conveying of granulates and powders: granulate conveying device, vacuum hopper/ conveyor, suction conveyor, dosing system, bulk-bag (big bag)-charging and discharging, shredder, mill, extruder, injection moulding machine.

Properties:

- Heavy duty.
- Highly abrasion resistant.
- Increased pressure and vacuum resistance.
- Microbe resistant.
- Good resistance to oil, gasoline and chemicals.
- Very good low temperature flexibility.

Temperature range:

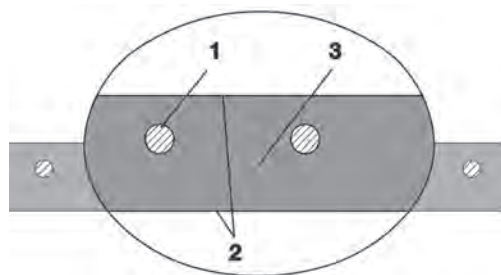
-40°C to 90°C.
short time to 125°C.

Design, Material:

1. copper coated spring steel wire firmly embedded in wall.
2. wall: permanently antistatic premium esterpolyurethane (Pre-PUR®).
3. wall thickness 1,4 - 1,5 mm approx.

LOADER HOSES

PVC Hose



| Part No. | Ø ID (mm) | Ø OD (mm) | Bending Radius | Roll Length | Clamp Ref. |
|----------|-----------|-----------|----------------|-------------|------------|
| PAPVC19 | 20 | 27 | 41 | 30 | HDC2325 |
| PAPVC25 | 25 | 33 | 73 | 30 | HDC3134 |
| PAPVC31 | 32 | 40,4 | 79,0 | 30 | HDC3740 |
| PAPVC38 | 38 | 47 | 91 | 30 | HDC4347 |
| PAPVC40 | 40 | 49 | 100 | 30 | HDC4751 |
| PAPVC45 | 45 | 54 | 118 | 30 | HDC5155 |
| PAPVC50 | 50 | 60 | 135 | 30 | HDC5963 |
| PAPVC64 | 64 | 74,8 | 228,0 | 30 | HDC7379 |
| PAPVC75 | 76 | 88,2 | 262,0 | 30 | HDC8591 |

Applications:

Plastic industry, conveying of granulates and powders: granulate conveying device, vacuum hopper/ conveyor, suction conveyor, dosing system, bulk-bag (big bag)-charging and discharging, shredder, mill, extruder, injection moulding machine.

Properties:

- Heavy duty.
- Very high pressure, vacuum and compression resistance.
- Food grade wall, complies with: EU-Directive 10/2011 and EC 1935/2004 and the latest EU-Directive 2015/174, according to FDA 21 CFR, according to FDA 21 CFR, 177.1210.
- Good resistance to alkalis and acids.
- Good resistance to chemicals.
- Phthalate-free.

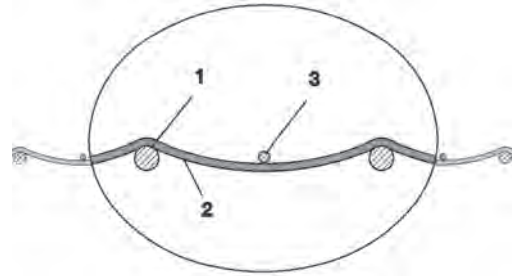
Temperature range:

-20°C to 70°C.
Short time to 80°C.

Design, Material:

1. spring steel wire spiral embedded in wall.
2. smooth interior and exterior, wall: high grade soft PVC.
3. wall thickness 3 to 8 mm approx., depending on diameter.

Silicon Dryer Hose



| Part No. | Ø ID (mm) | Ø OD (mm) | Bending Radius | Roll Length | Clamp Ref. |
|----------|-----------|-----------|----------------|-------------|------------|
| SIL132 | 32 | 35 | 19 | 4 | 3030200 |
| SIL138 | 38 | 42 | 23 | 4 | 3030226 |
| SIL141 | 41 | 45,0 | 25,0 | 4 | 3030234 |
| SIL151 | 51 | 55 | 30 | 4 | 3030269 |
| SIL160 | 63 | 67 | 36 | 4 | 3030285 |
| SIL170 | 70 | 74 | 39 | 4 | 3030306 |

Applications:

- Flexible hose/ ducting for hot and cold gases.
- Granulate/ plastic dryer, hot air dryer.
- Film blowing machine, cooling air at the extrusion tool.
- Air supply: UV dryer, IR dryer.
- Clean room ventilation, semiconductor production machine.

Properties:

- Fibre reinforced.
- Highly flexible.
- Very good heat resistance.
- Conforms to RoHS guideline.

Temperature range:

-70°C to 260°C.
short time to 280°C.

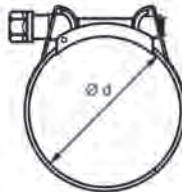
Design, Material:


- Silicon hose.
1. spring steel wire.
 2. fabric-reinforced tape, wall: Silicon coated glass fabric.
 3. cord as reinforcement.

HOSE CLAMPS

Hose Clamps Heavy Duty

STAINLESS
STEEL



| Part No. | \varnothing | e | a |  | Hose ref. |
|----------|---------------|----|----|---|------------|
| HDC2325 | 23-25 | 8 | 18 | 50 | PAPVC19 |
| HDC3134 | 31-34 | 11 | 20 | 50 | PAPVC25 |
| HDC3740 | 37-40 | 11 | 20 | 50 | PAPVC31 |
| HDC4347 | 43-47 | 11 | 20 | 50 | PAPVC38-40 |
| HDC5155 | 51-55 | 11 | 20 | 25 | PAPVC45 |
| HDC5963 | 59-63 | 11 | 20 | 25 | PAPVC50 |
| HDC7379 | 73-79 | 13 | 25 | 25 | PAPVC64 |
| HDC8591 | 85-91 | 13 | 25 | 25 | PAPVC75 |

Wire Clip with Screw - Ideal for Loader Hoses with Outer Helix



| Part No. | Size range mm |
|----------|---------------|
| 3030200 | 33-37 |
| 3030218 | 35,5-40 |
| 3030226 | 38,5-43 |
| 3030234 | 41-46 |
| 3030242 | 43,5-49 |
| 3030250 | 46,5-53 |
| 3030269 | 50,5-56 |
| 3030277 | 53,5-60 |
| 3030285 | 56,5-64 |
| 3030293 | 60-68 |
| 3030306 | 64-72 |

Wire: Steel wire
B-UNI 3823
Screw: 6.6 grade steel Cr3
zinc-plated

This clip was specially designed for use with hoses incorporating an outer helix. It is generally used when installing ventilation ducting. The double-wire construction of this clip means that it sits comfortably on either side of the helix and can then be clamped down firmly thanks to the screw-tightening system.

Camlock Couplings Aluminium

A range of Camlock couplings made according to A-A-59326, DIN 2828.

Camlock is a safe coupling for use with hoses and pipes for many different media such as dry goods, polymer granules, cooling water, chemicals etc.

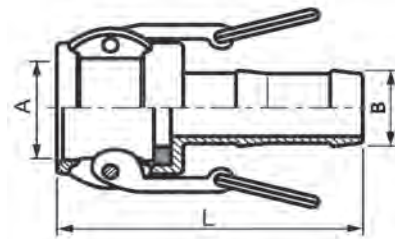
The coupling connects easily by opening the wings, inserting the male part and then closing the wings by hand.

Body material: Aluminium A356 or A104

Handle material: Brass

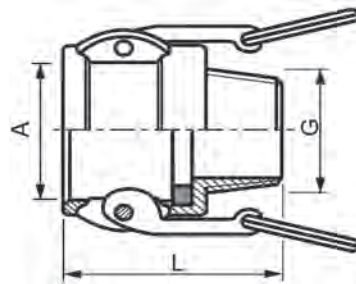
Sealing: NBR

Hose Tail Lever Coupling Type C



| Part No. | Size | B | A | L | Max pressure |
|----------|------|-----------------|------|-----|--------------|
| MPC-HC19 | 75 | 3/4" 19 mm. | 32,4 | 91 | 17 bar |
| MPC-HC25 | 100 | 1" 25 mm. | 37,2 | 105 | 17 bar |
| MPC-HC32 | 125 | 1.1/4" 32 mm. | 46 | 112 | 17 bar |
| MPC-HC38 | 150 | 1.1/2" 38 mm. | 53,9 | 118 | 17 bar |
| MPC-HC50 | 200 | 2" 50 mm. | 63,7 | 135 | 17 Bar |
| MPC-HC64 | 250 | 2.1/2" 64 mm. | 76,4 | 147 | 10 bar |
| MPC-HC75 | 300 | 3" 75 mm. | 92,1 | 162 | 8 bar |

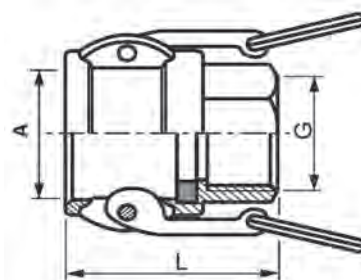
Male Threaded Lever Coupling Type B



| Part No. | Size | G | A | L | Max pressure |
|-------------|------|--------|------|----|--------------|
| MPC-MC3/4 | 75 | 3/4" | 32,4 | 47 | 17 bar |
| MPC-MC1 | 100 | 1" | 37,2 | 56 | 17 bar |
| MPC-MC1-1/4 | 125 | 1.1/4" | 46 | 64 | 17 bar |
| MPC-MC1-1/2 | 150 | 1.1/2" | 53,9 | 66 | 17 bar |
| MPC-MC2 | 200 | 2" | 63,7 | 76 | 17 Bar |
| MPC-MC2-1/2 | 250 | 2.1/2" | 76,4 | 83 | 10 bar |
| MPC-MC3 | 300 | 3" | 92,1 | 87 | 8 bar |

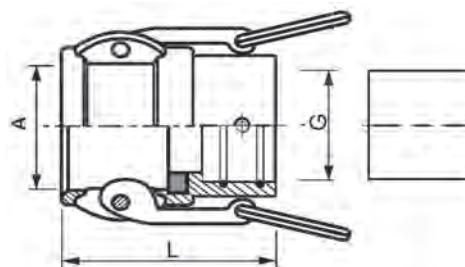
CAMLOCK COUPLINGS ALUMINIUM

Female Threaded Lever Coupling Type D



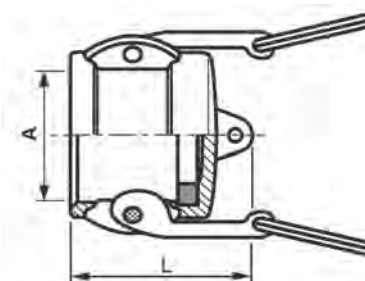
| Part No. | Size | B | A | L | Max pressure |
|-------------|------|--------|------|----|--------------|
| MPC-FC3/4 | 75 | 3/4" | 32,4 | 47 | 17 bar |
| MPC-FC1 | 100 | 1" | 37,2 | 56 | 17 bar |
| MPC-FC1-1/4 | 125 | 1.1/4" | 46 | 64 | 17 bar |
| MPC-FC1-1/2 | 150 | 1.1/2" | 53,9 | 67 | 17 bar |
| MPC-FC2 | 200 | 2" | 63,7 | 76 | 17 Bar |
| MPC-FC2-1/2 | 250 | 2.1/2" | 76,4 | 83 | 10 bar |
| MPC-FC3 | 300 | 3" | 92,1 | 87 | 8 bar |

Pipe Connection Lever Coupling Type D



| Part No. | Size | G | A | L | Max pressure |
|----------|------|----|------|----|--------------|
| MPC-FC40 | 150 | 40 | 53,9 | 67 | 17 bar |
| MPC-FC50 | 200 | 50 | 63,7 | 76 | 17 Bar |
| MPC-FC60 | 250 | 60 | 76,4 | 83 | 10 bar |

Dust Cap Lever Coupling Type DC



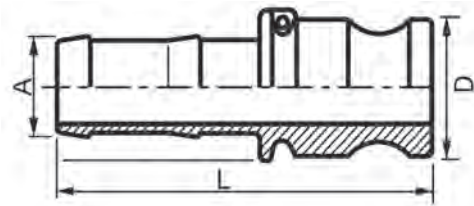
| Part No. | Size | A | L | Max pressure |
|-------------|------|------|----|--------------|
| MPC-DC3/4 | 75 | 32,4 | 32 | 17 bar |
| MPC-DC1 | 100 | 37,2 | 40 | 17 bar |
| MPC-DC1-1/4 | 125 | 46 | 46 | 17 bar |
| MPC-DC1-1/2 | 150 | 53,9 | 48 | 17 bar |
| MPC-DC2 | 200 | 63,7 | 55 | 17 Bar |
| MPC-DC2-1/2 | 250 | 76,4 | 57 | 10 bar |
| MPC-DC3 | 300 | 92,1 | 59 | 8 bar |

Gaskets for Camlock Couplers



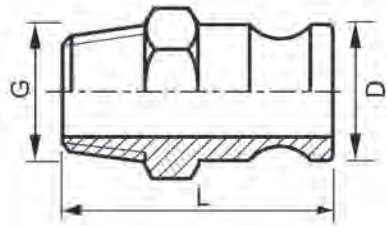
| Part No. NBR | Size | Dimension (mm) |
|--------------|--------|----------------|
| G3/4 NBR | 3/4" | 35 x 22 x 5.5 |
| G1NBR | 1" | 40 x 27 x 6.4 |
| G1-1/4NBR | 1-1/4" | 50 x 35 x 6.4 |
| G1-1/2NBR | 1-1/2" | 56 x 41 x 6.4 |
| G2NBR | 2" | 67 x 51 x 6.4 |
| G2-1/2NBR | 2-1/2" | 80 x 64 x 6.4 |
| G3NBR | 3" | 95 x 76 x 6.4 |

Hosetail Plug Type E



| Part No. | Size | A | D | L | Max pressure |
|-------------|------|-----------------|------|-----|--------------|
| MPC-HP3/4 | 75 | 3/4" 19 mm. | 32,1 | 86 | 17 bar |
| MPC-HP1 | 100 | 1" 25 mm. | 36,7 | 103 | 17 bar |
| MPC-HP1-1/4 | 125 | 1.1/4" 32 mm. | 45,5 | 107 | 17 bar |
| MPC-HP1-1/2 | 150 | 1.1/2" 38 mm. | 53,4 | 114 | 17 bar |
| MPC-HP2 | 200 | 2" 50 mm. | 63,1 | 131 | 17 Bar |
| MPC-HP2-1/2 | 250 | 2.1/2" 64 mm. | 75,8 | 142 | 10 bar |
| MPC-HP3 | 300 | 3" 75 mm. | 91,5 | 168 | 8 bar |

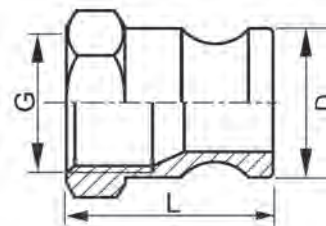
Male Threaded Plug Type F



| Part No. | Size | G | D | L | Max pressure |
|-------------|------|--------|------|-----|--------------|
| MPC-MP3/4 | 75 | 3/4" | 32,1 | 55 | 17 bar |
| MPC-MP1 | 100 | 1" | 36,7 | 67 | 17 bar |
| MPC-MP1-1/4 | 125 | 1.1/4" | 45,5 | 74 | 17 bar |
| MPC-MP1-1/2 | 150 | 1.1/2" | 53,4 | 76 | 17 bar |
| MPC-MP2 | 200 | 2" | 63,1 | 87 | 17 Bar |
| MPC-MP2-1/2 | 250 | 2.1/2" | 75,8 | 97 | 10 bar |
| MPC-MP3 | 300 | 3" | 91,5 | 100 | 8 bar |

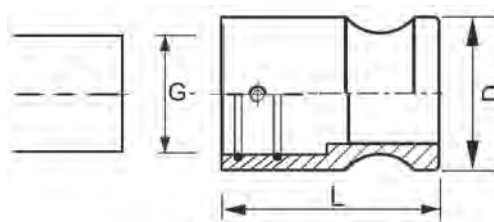
CAMLOCK COUPLINGS ALUMINIUM

Female Threaded Plug Type A



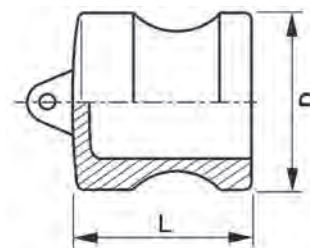
| Part No. | Size | G | D | L | Max pressure |
|-------------|------|--------|------|----|--------------|
| FPC-FP3/4 | 75 | 3/4" | 32,1 | 40 | 17 bar |
| FPC-FP1 | 100 | 1" | 36,7 | 48 | 17 bar |
| FPC-FP1-1/4 | 125 | 1.1/4" | 45,5 | 54 | 17 bar |
| FPC-FP1-1/2 | 150 | 1.1/2" | 53,4 | 56 | 17 bar |
| FPC-FP2 | 200 | 2" | 63,1 | 63 | 17 Bar |
| FPC-FP2-1/2 | 250 | 2.1/2" | 75,8 | 68 | 10 bar |
| FPC-FP3 | 300 | 3" | 91,5 | 69 | 8 bar |

Pipe Connection Plug Type A



| Part No. | Size | G | D | L | Max pressure |
|----------|------|----|------|----|--------------|
| MPC-PP40 | 150 | 40 | 53,4 | 76 | 17 bar |
| MPC-PP50 | 200 | 50 | 63,1 | 87 | 17 Bar |
| MPC-PP60 | 250 | 60 | 75,8 | 97 | 10 bar |

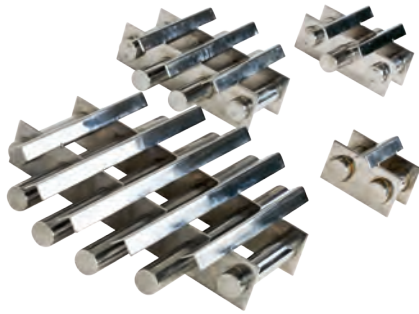
Dust Plug Type DP



| Part No. | Size | D | L | Max pressure |
|-------------|------|------|----|--------------|
| DPC-DP3/4 | 75 | 32,1 | 28 | 17 bar |
| DPC-DP1 | 100 | 36,7 | 35 | 17 bar |
| DPC-DP1-1/4 | 125 | 45,5 | 38 | 17 bar |
| DPC-DP1-1/2 | 150 | 53,4 | 40 | 17 bar |
| DPC-DP2 | 200 | 63,1 | 49 | 17 Bar |
| DPC-DP2-1/2 | 250 | 75,8 | 50 | 10 bar |
| DPC-DP3 | 300 | 91,5 | 51 | 8 bar |

Hopper Magnets

STAINLESS
STEEL



| Part No. | Dia ø | Height | # Bars | Type | Strength (Gauss) | Weight(Kg) |
|----------|-------|--------|--------|--------------|------------------|------------|
| D100 | 100 | 40 | 2 | Standard | 2500 | 0.9 |
| D100-ES | 100 | 40 | 2 | Extra Strong | 10000 | 0.9 |
| D150 | 150 | 40 | 3 | Standard | 2500 | 1.5 |
| D150-ES | 150 | 40 | 3 | Extra Strong | 10000 | 1.5 |
| D200 | 200 | 40 | 4 | Standard | 2500 | 2.5 |
| D200-ES | 200 | 40 | 4 | Extra Strong | 10000 | 2.5 |
| D250 | 250 | 40 | 5 | Standard | 2500 | 3.7 |
| D250-ES | 250 | 40 | 5 | Extra Strong | 10000 | 3.7 |
| D300 | 300 | 40 | 6 | Standard | 2500 | 5.5 |
| D300-ES | 300 | 40 | 6 | Extra Strong | 10000 | 5.5 |

Materials:
Standard: Samarium - Cobalt
Extra Strong: Neodymium Iron-Boron
Stainless Steel encased

Place direct in the Hopper to separate metal from polymers and avoid damage of nozzle and hotrunners etc.

Material Scoop



| Part No. | Size |
|----------|---------|
| 2885 | 2,0 ltr |

2,0 ltr Material Scoop.
Ideal for scooping granules and tipping into material hoppers.
Colour and design may differ.

BALANCES AND MOISTURE ANALYSER

Compact Balance



| Part No. | Capacity | Readability | Platform Size |
|----------|----------|-------------|---------------|
| MCB500 | 500 g | 0,1 g | Ø 120 mm |
| MCB2000 | 2000 g | 0,1 g | Ø 120 mm |

Compact balance for weighing parts up to 2000 g.

Features:

Backlit LCD display.
Stainless steel pan.
ShockProtect™ overload three-point protection.
Can be stacked for storage.
Lock down mounting slot for Kensington™ type lock and cable.
Dual tare keys.
Lightweight and portable.
Colour coded, sealed keypad.

Modern low profile design.
Low cost and simple to use.
External calibration.
Auto sleep / power down function to save battery life.
Auto power off.
Low battery indication.
AC Adaptor.

Applications:

Weighing.
Percentage weighing.
Parts counting.
Below balance weighing.
Weight accumulation.

Precision Balance



| Part No. | Capacity | Readability | Platform Size |
|----------|----------|-------------|---------------|
| MPB410 | 410 g | 0,001 g | Ø 120 mm |

Precision Balance for weighing parts with very accurate tolerance.

Features:

Backlit LCD display.
Colour coded keys.
Level indicator with adjustable levelling feet.
Removable draft shield supplied.
Robust metal housing.

Sealed keypad.
External calibration.
Pan lifter to easily remove samples.

Applications:

Weighing.
Net / Total.
Check weighing.
Percentage weighing.
Weight accumulation.

Parts counting.
Animal / dynamic weighing.
Density determinatio.
Below balance weighing.

Moisture Analyser



| Part No. | Capacity | Readability | Platform Size |
|----------|----------|-------------|---------------|
| MMB65 | 65 g | 0,001 g | Ø 100 mm |

The MMB Moisture Analyser makes moisture analysis of plastic granules easy for fast and accurate results.

The moisture analyzer comprises of a balance and an integrated heater.

The analyser will first weigh the material sample in a foil tray at the start of the process; it will then heat the sample up, removing the moisture, and continue heating sample until it stops losing weight. This data is then used to calculate the moisture content based on the moisture loss rate, known as a drying curve.

Features:

USB port for memory card and USB I/O interface.
RS-232 interface.
Built-in memories for storing products and settings.
3 settings for heating sample, ramp up, step and standard.
Automatic test start setting for when the lid is closed.
Pan lifter to easily remove samples.
Large backlit display with dual text prompts.

Disposable Sample Pans



| Part No. | Deep (mm) |  |
|----------|-----------|---|
| MMB-P50 | 10 mm | 50 |

Aluminum sample pans are ideal for moisture analysis testing. The disposable pans fit neatly on the MMB moisture analysers pan holder. They are 10mm deep to keep the items being weighed in place. This pack holds 50 disposable pans.

Calibration Weights



| Part No. | Weight |
|-----------|--------|
| CALW20G | 20 g |
| CALW50G | 50 g |
| CALW200G | 200 g |
| CALW1000G | 1000 g |

Ideal for calibrating Scales and moisture analyser.

Thermal Printer



| Part No. | Power Supply | Paper Width |
|----------|-----------------------|-------------|
| ATP-100 | 110/230 VAC - 8,5 VDC | 57,5 |

Mouldpro's ATP thermal printer is compact and ideally suited for use with balances and scales. Simple-to-use features combined with quick set-up makes for a truly versatile printer.

Features:

- A single positive push-button feed key and three easy-to-read LED indicators make operation simple.
- Combined with the compact design, which takes little space on the bench, this makes the ATP the right choice for any printing applications.

Spare Paper:

- No. ATP-100-1 Thermal paper.
- No. ATP-100-10 Thermal paper (10pk).

END OF ARM TOOLING

06.

170 Quick Change System



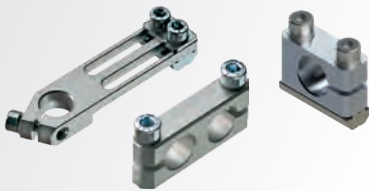
180 Profile & Channel Nuts



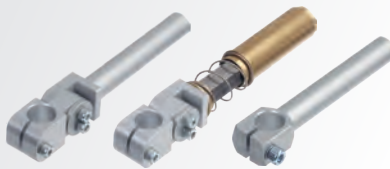
184 Profile Connectors



192 Clamps



202 Gripper Arms



208 Vacuum Cup Mounts



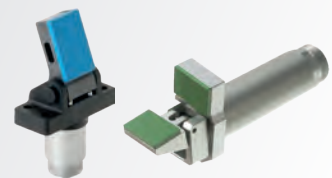
224 Vacuum Cups



238 Sprue Grippers



250 Finger Grippers



262 General Purpose Grippers



268 Speciality Grippers



276 Nippers



288 Cylinders & Slides

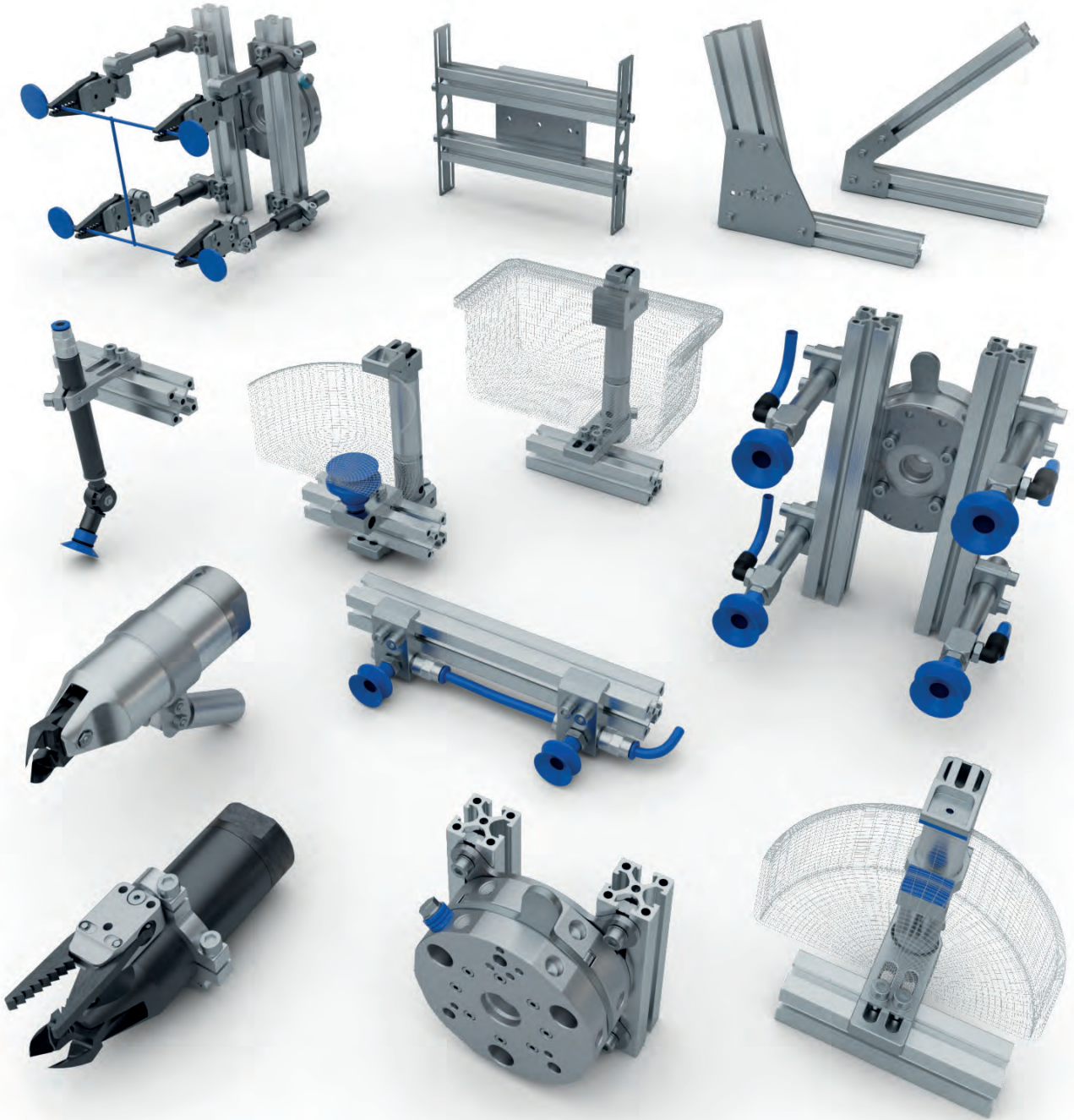


296 Fittings, Tube & Manifolds



306 Electronics & Sensors



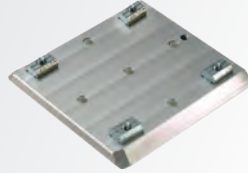


QUICK CHANGE SYSTEM

171 Dovetail Quick Changers



172 EOAT Base Plates



174 Wall Mounts – Dovetail



175 Round Quick Changers



177 Quick Changer Interfaces



178 Electrical Connectors



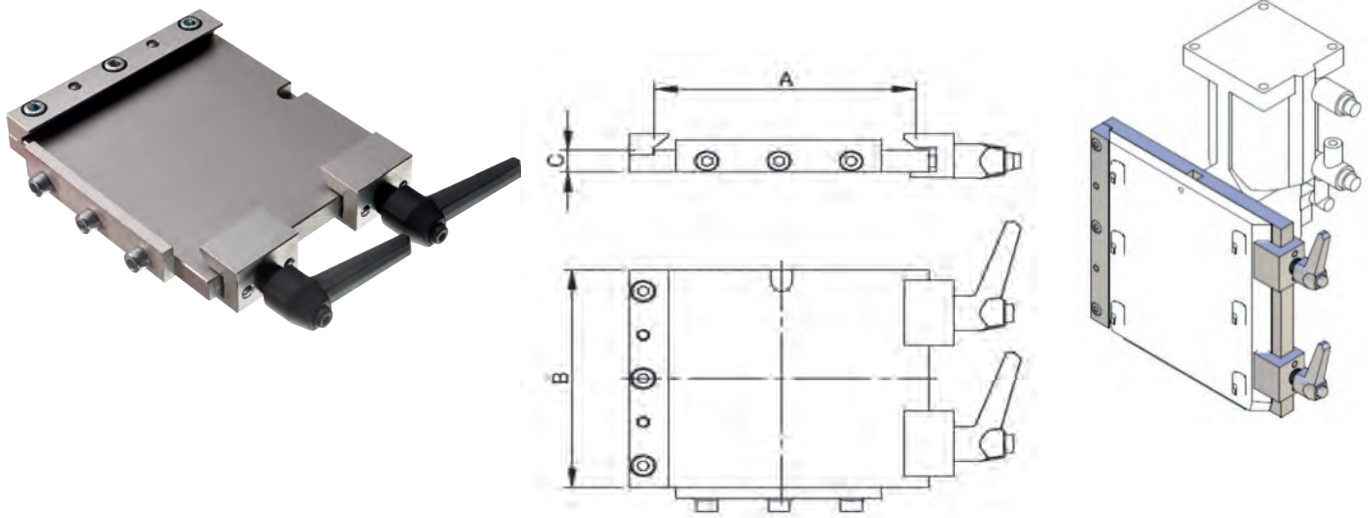
179 Wall mounts – Round



179 Locating Pin



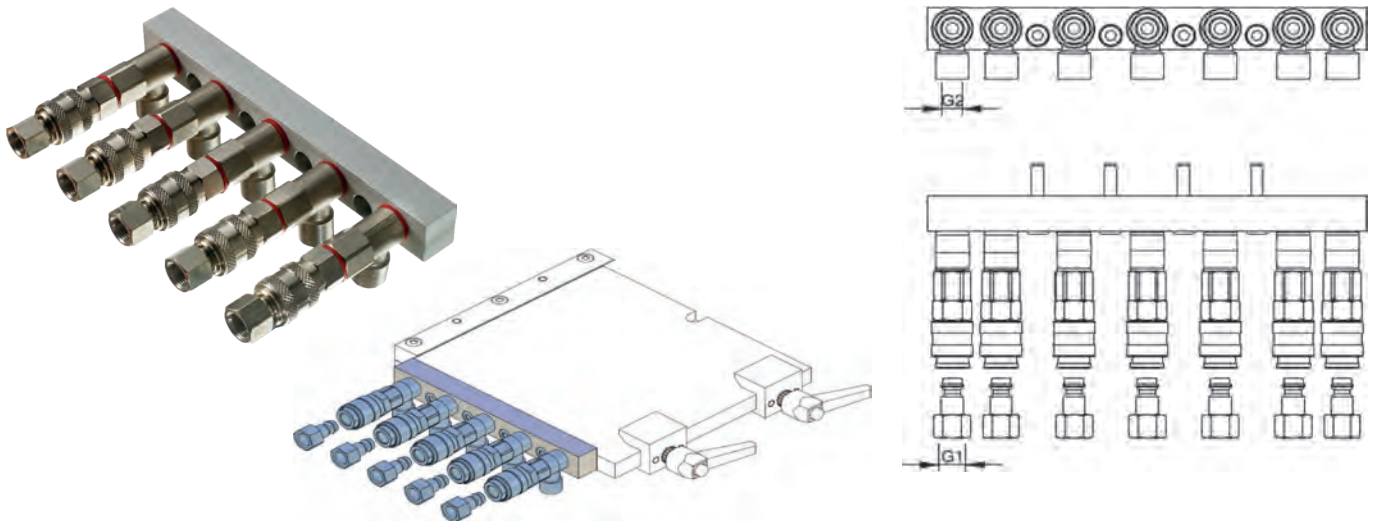
QC-RSW – Quick Changer Robot Side



| Part No. | A | B | C | Max load | Reference | Weight (g) |
|---------------|-----|-----|----|----------|------------|------------|
| QC-RSW-60-00 | 60 | 60 | 10 | 5 kg | QC-SSW-60 | 140 |
| QC-RSW-100-00 | 100 | 100 | 10 | 10 kg | QC-SSW-100 | 495 |
| QC-RSW-160-00 | 160 | 160 | 10 | 20 kg | QC-SSW-160 | 1136 |
| QC-RSW-250-00 | 250 | 250 | 10 | 40 kg | QC-SSW-250 | 3072 |

Manual interface between robot and EOAT.
Works with all profile systems.

QC.LAL – Pneumatic Connection for Quick Changer QC-RSW

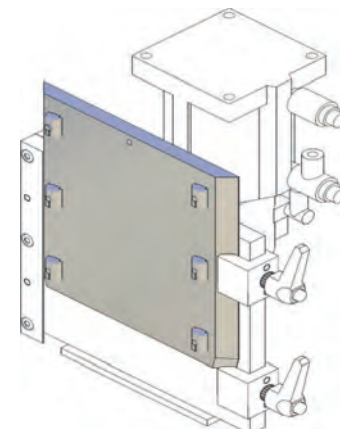
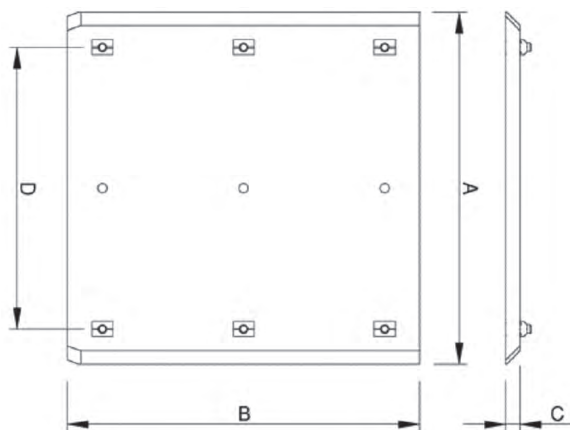
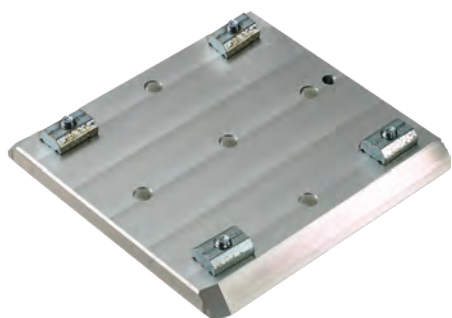


| Part No. | G1 | G2 | No. of Connections | Reference | Weight (g) |
|------------|-------|-------|--------------------|------------|------------|
| CA.LAL.1.5 | M5 | M5 | 5 | QC-RSW-100 | 154 |
| CA.LAL.1.7 | M5 | M5 | 7 | QC-RSW-100 | 225 |
| CA.LAL.2.5 | G 1/8 | G1/8 | 5 | QC-RSW-160 | 629 |
| CA.LAL.2.7 | G 1/8 | G 1/8 | 7 | QC-RSW-160 | 742 |
| CA.LAL.3.6 | G 1/4 | G 1/4 | 6 | QC-RSW-250 | 902 |
| CA.LAL.3.8 | G 1/4 | G 1/4 | 8 | QC-RSW-250 | 1503 |

Couplers are Standard "Rectus 21" series.

DOVETAIL PLATE QUICK CHANGE SYSTEM

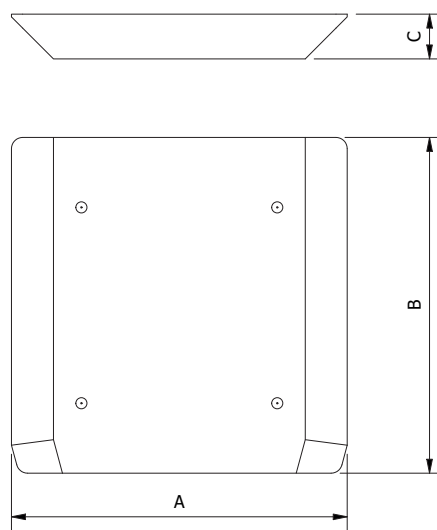
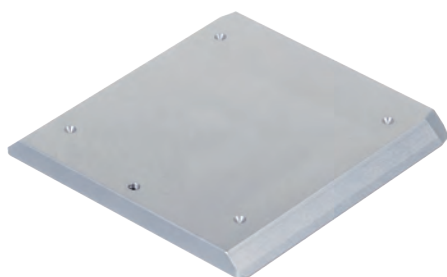
QC-SSW – EOAT Base Plate



| Part No. | A | B | C | D | Reference | Weight (g) |
|------------|-----|-----|----|-----|---------------|------------|
| QC-SSW-60 | 60 | 60 | 8 | 35 | QC-RSW-60-00 | 93 |
| QC-SSW-100 | 100 | 100 | 8 | 70 | QC-RSW-100-00 | 242 |
| QC-SSW-160 | 160 | 160 | 10 | 120 | QC-RSW-160-00 | 695 |
| QC-SSW-250 | 250 | 250 | 10 | 200 | QC-RSW-250-00 | 1641 |

Material: Aluminium.
Surface: Silver anodized.

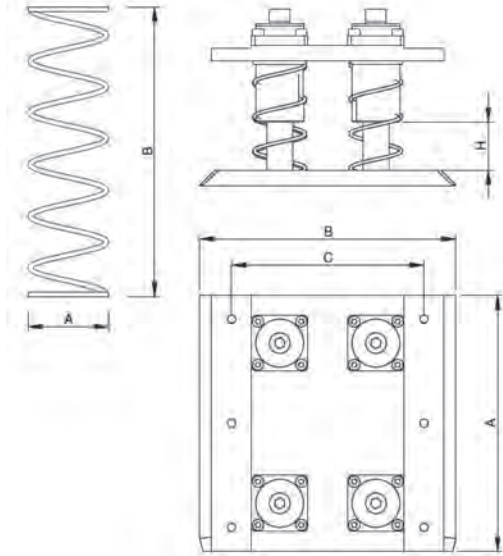
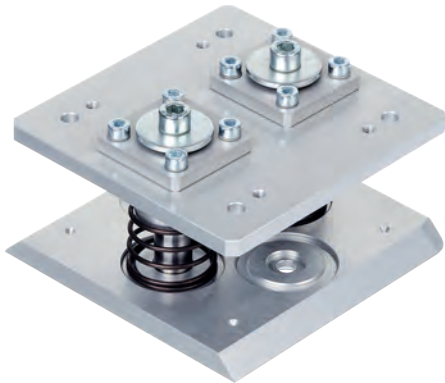
QC-SSW-CP - EOAT Base Plate - Center Punched Holes



| Part No. | A | B | C | Reference | Weight (g) |
|---------------|-----|-----|----|---------------|------------|
| QC-SSW-060-CP | 60 | 60 | 8 | QC-RSW-60-00 | 69 |
| QC-SSW-100-CP | 100 | 100 | 8 | QC-RSW-100-00 | 201 |
| QC-SSW-160-CP | 160 | 160 | 10 | QC-RSW-160-00 | 653 |
| QC-SSW-250-CP | 250 | 250 | 10 | QC-RSW-250-00 | 1613 |

Material: Aluminium.
Surface: Silver anodized.

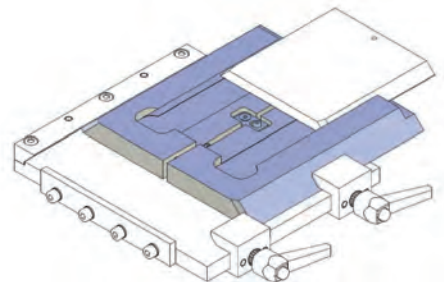
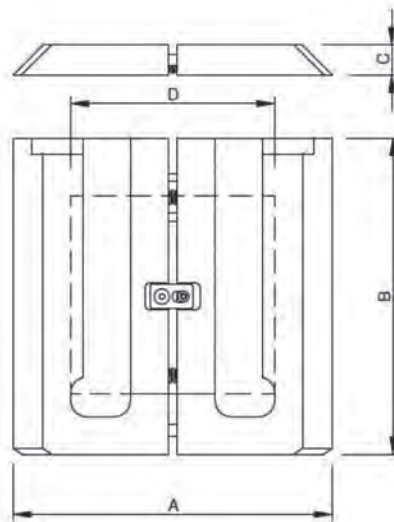
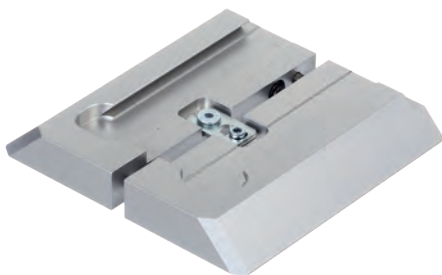
QC.SWS – EOAT Base Plate Spring Loaded



| Part No. | A | B | C | H | F(N) | Guides | Weight (g) |
|------------|-----|-----|-----|----|------|--------|------------|
| QC-SWS-100 | 100 | 100 | 70 | 22 | 36 | 2 | 486 |
| QC-SWS-160 | 160 | 160 | 120 | 30 | 50 | 4 | 1344 |

Compensates for variation in ejection stroke of IMM.

QC-SWR – EOAT Base Plate Reducer



| Part No. | A | B | C | D | REF 1 | REF 2 | Weight (g) |
|------------|-----|-----|----|-----|------------|---------------|------------|
| QC-SWR-100 | 100 | 100 | 15 | 60 | QC-SSW-60 | QC-RSW-100-00 | 263 |
| QC-SWR-160 | 160 | 160 | 15 | 100 | QC-SSW-100 | QC-RSW-160-00 | 703 |
| QC-SWR-250 | 250 | 250 | 20 | 160 | QC-SSW-160 | QC-RSW-250-00 | 2441 |

Allows mounting of EOAT's with smaller dovetail plates to a larger robot side plate.

DOVETAIL PLATE QUICK CHANGE SYSTEM

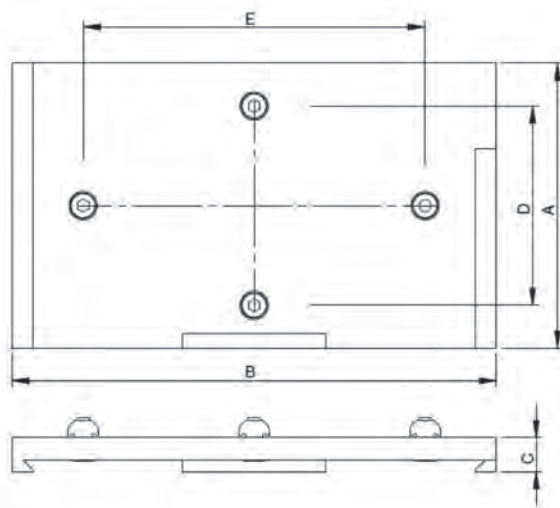
QC-SWM – EOAT Wall Mount



| Part No. | REF | Weight (g) |
|------------|------------|------------|
| QC-SWM-060 | QC-SSW-60 | 136 |
| QC-SWM-100 | QC-SSW-100 | 238 |
| QC-SWM-160 | QC-SSW-160 | 547 |

For wall mounting of EOAT's with dovetail plates

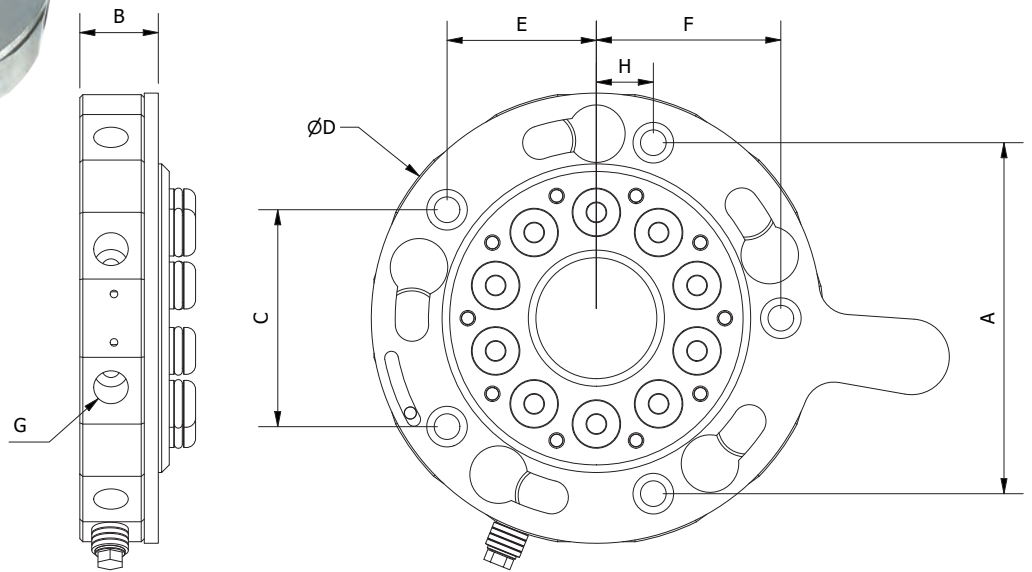
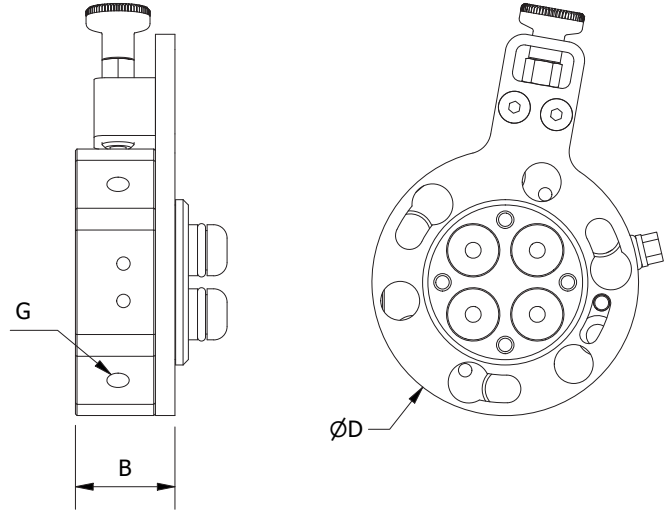
QC-SWH – EOAT Wall Mount



| Part No. | A | B | C | D | E | REF | Weight (g) |
|------------|-----|-----|----|----|-----|------------|------------|
| QC-SWH-060 | 60 | 70 | 10 | 35 | 30 | QC-SSW-60 | 128 |
| QC-SWH-100 | 60 | 110 | 10 | 35 | 70 | QC-SSW-100 | 182 |
| QC-SWH-160 | 100 | 170 | 12 | 70 | 120 | QC-SSW-160 | 412 |
| QC-SWH-250 | 120 | 270 | 15 | 90 | 220 | QC-SSW-250 | 1033 |

For wall mounted storage of EOAT's.

MRS – Quick Changer Robot Side

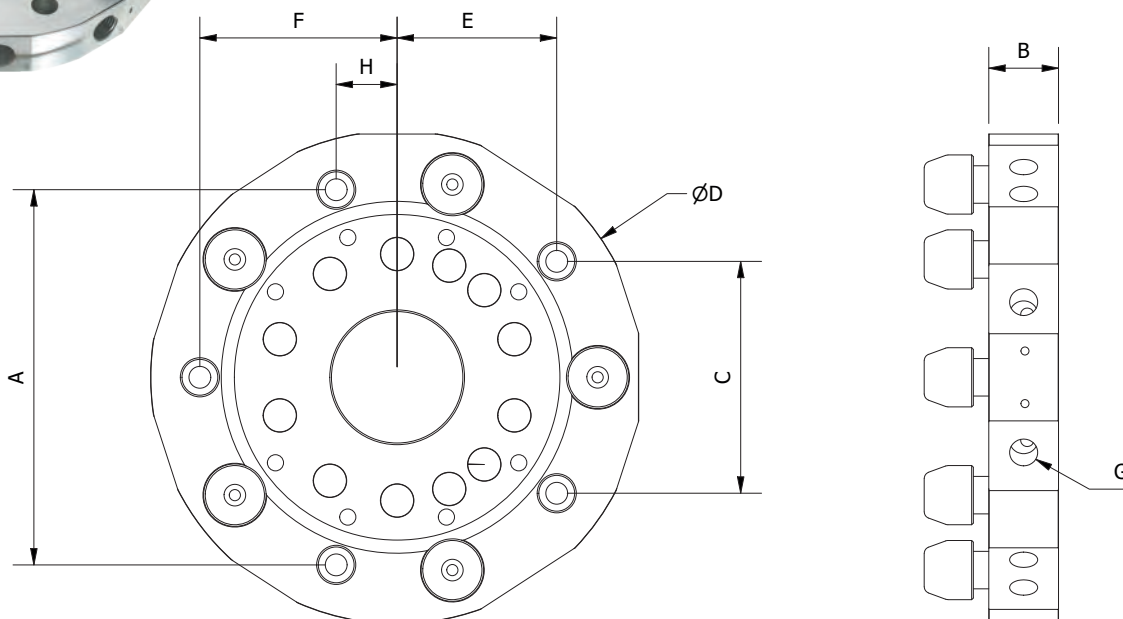


| Part No. | D | A | C | E | F | H | G | B | Weight (g) |
|----------|-----|--------|------|-------|------|-------|-------------|-------|------------|
| MRS-50 | 50 | - | - | - | - | - | M5 (4x) | 18,68 | 108 |
| MRS-90 | 90 | - | 53,6 | 22,5 | 35 | - | G 1/8 (8x) | 18,3 | 318 |
| MRS-150 | 150 | 116,03 | 71,7 | 49,35 | 61 | 18,85 | G 1/4 (10x) | 25,95 | 1158 |
| MRS-160 | 160 | 116,03 | 71,7 | 49,35 | 61 | 18,85 | G 1/8 (12X) | 25,95 | 1213 |
| MRS-200 | 200 | 175 | 87,5 | 75,8 | 75,8 | 25 | G 1/4(12X) | 30,6 | 2409 |

Quick changer for easy placement and correct alignment of EOAT on the robot.
 Avoids mistakes in pneumatic/electrical connections.
 Available with 4, 8, 10 or 12 pneumatic ports.

ROUND QUICK CHANGER SYSTEM

MGS – Quick Changer Gripper Side

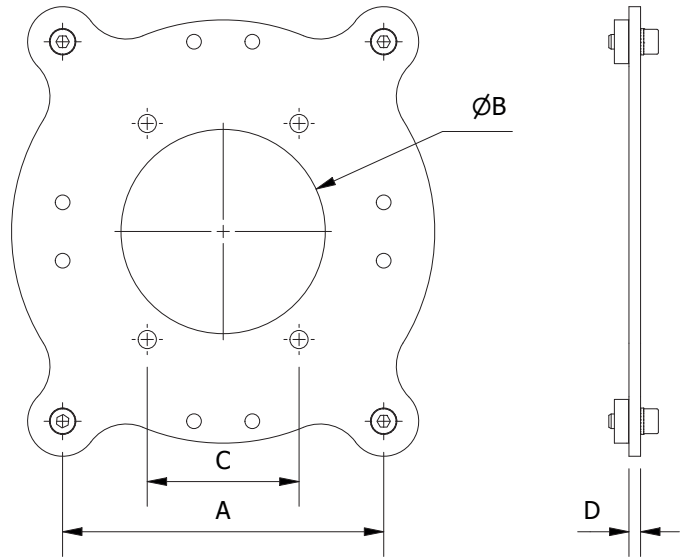


| Part No. | D | A | C | E | F | H | G | B | Weight (g) |
|----------|-----|--------|-------|-------|------|-------|-------------|------|------------|
| MGS-50 | 50 | - | - | - | - | - | M5 (4x) | 15,3 | 63 |
| MGS-90 | 90 | - | - | - | - | - | G 1/8 (8x) | 15,9 | 227 |
| MGS-150 | 150 | 114,13 | 70,53 | 48,54 | 60 | 18,54 | G 1/4 (10x) | 21,2 | 827 |
| MGS-160 | 160 | 114,13 | 70,53 | 48,54 | 60 | 18,54 | G 1/8 (12X) | 21,2 | 900 |
| MGS-200 | 200 | 175 | 87,5 | 75,8 | 75,8 | 25 | G 1/4(12X) | 25 | 1798 |

Quick changer for easy placement and correct alignment of EOAT on the robot.
 Avoids mistakes in pneumatic/electrical connections.
 Available with 4, 8, 10 or 12 pneumatic ports.

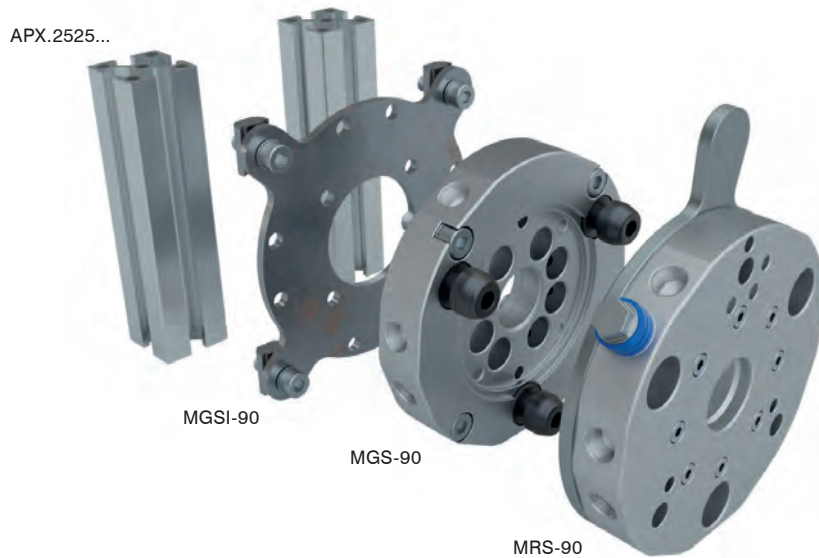


MGSI – Interface for Quick Changer



| Part No. | A | B | C | D | Reference | Weight (g) |
|----------|-----|-----|-------|---|-----------------|------------|
| MGSI-50 | 25 | 32 | 15 | 3 | MGS-50 | 63 |
| MGSI-90 | 76 | 37 | 35 | 3 | MGS-90 | 170 |
| MGSI-150 | 110 | 70 | 52 | 4 | MGS-150/MGS-160 | 497 |
| MGSI-200 | 192 | 140 | 151,6 | 8 | MGS-200 | 1439 |

Interface to mount EOAT quick changers to profiles.
Fastening set included.



ROUND QUICK CHANGER SYSTEM

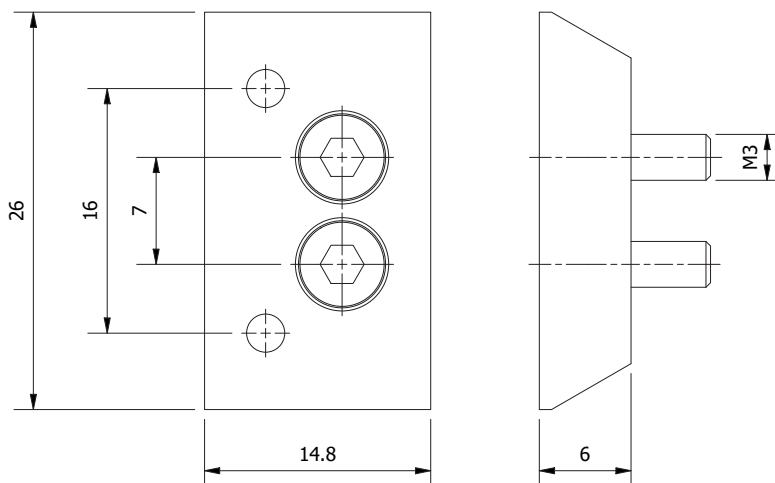
QC.M.E – Electrical Connectors



| Part No. | I/O connection type | Working Current | Break down voltage | Temperature range | Contact | Max conductor cross section | Max cable outer dia | Weight (g) |
|----------|---------------------|-----------------|--------------------|-------------------|-------------|-----------------------------|---------------------|------------|
| QC.MR.ES | 15 pin | 0,5 | 0 ÷ 250 Vac | -55°C, +105°C | Gold plated | AWG28 | 7 mm | 50 |
| QC.MG.ES | 15 pin | 0,5 | 0 ÷ 250 Vac | -55°C, +105°C | Gold plated | AWG28 | 7 mm | 50 |
| QC.MR.E | 15 pin | 3A | 0 ÷ 250 Vac | -55°C, +105°C | Gold plated | AWG28 | 7 mm | 50 |
| QC.MG.E | 15 pin | 3A | 0 ÷ 250 Vac | -55°C, +105°C | Gold plated | AWG28 | 7 mm | 50 |

Springs assist in maintaining connections.
 Spring contact design, minimises potential contact damage.
 Self-aligning.

QC.MB - Electrical Connector Spacer for MRS-50/MGS-50



| Part No. | Weight (g) |
|----------|------------|
| QC.MB.S | 6 |

For wall mounted storage of EOAT's.

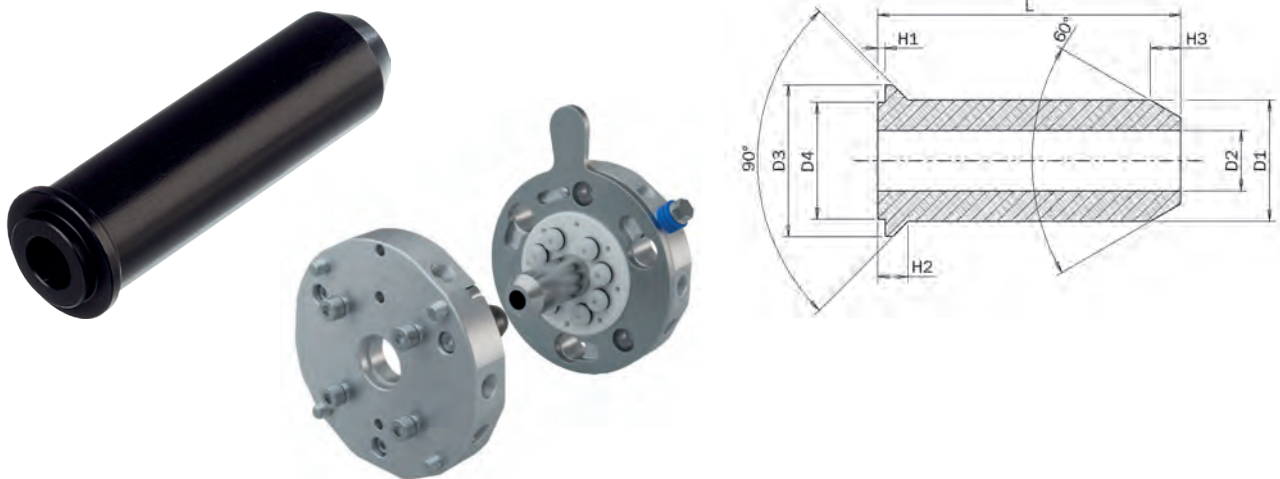
MGSH – Wall Mount for Quick Changer



| Part No. | A | REF | Weight (g) |
|----------|-----|-------------|------------|
| MGSH-050 | 50 | MGS-50 | 125 |
| MGSH-090 | 90 | MGS-90 | 440 |
| MGSH-150 | 150 | MGS-150/160 | 926 |
| MGSH-200 | 200 | MGS-200 | 1178 |

Included mounting screws.

QC-P – Locating Pin

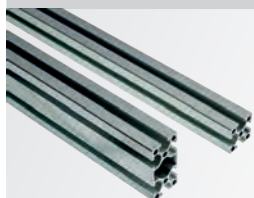


| Part No. | L | H1 | H2 | H3 | ØD1 | ØD2 | ØD3 | ØD4 | REF | Weight (g) |
|------------|-----|-----|----|----|-----|-----|-----|------|---------|------------|
| QC-P090065 | 65 | 2 | 5 | 5 | 18 | 8 | 20 | 14 | MRS-90 | 190 |
| QC-P150100 | 100 | 2,5 | 10 | 10 | 40 | 20 | 50 | 38,5 | MRS-150 | 435 |
| QC-P200120 | 120 | 3 | 11 | 15 | 50 | 25 | 60 | 43,5 | MRS-200 | 950 |

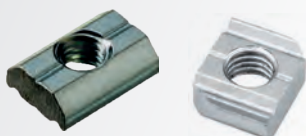
To be positioned on the robot side.
It helps the manual centering of heavy EOATs.

PROFILE & CHANNEL NUTS

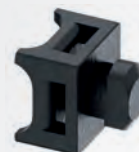
181 Aluminum Profiles



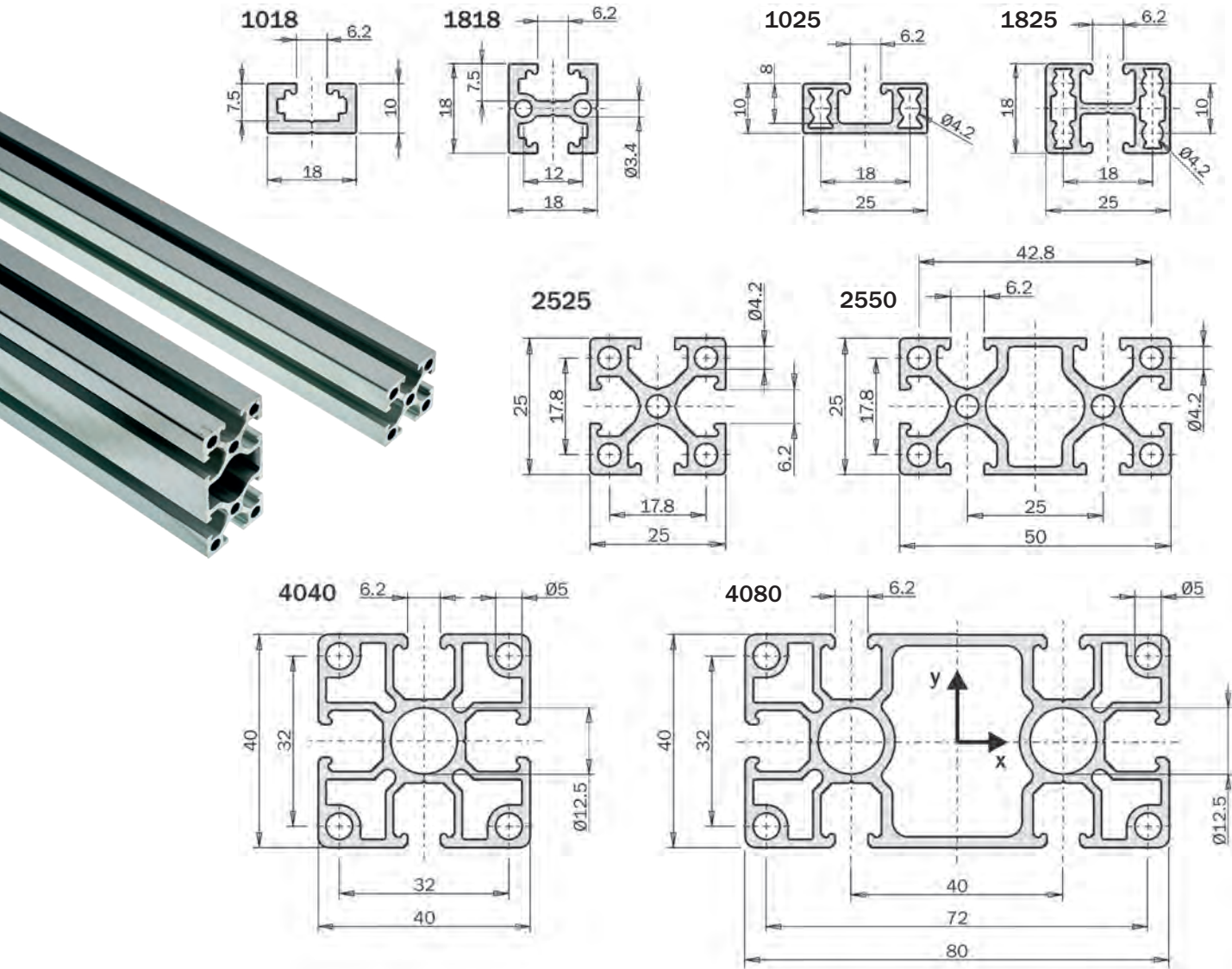
182 Channel Nuts



183 Profile Accessories



AP - Aluminum Profile

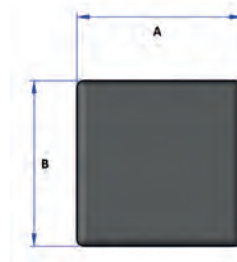
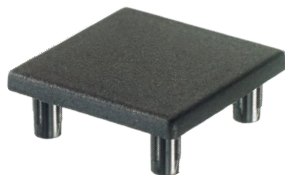


| Part No. | Length | REF | Weight (g) |
|---------------|--------|-----------|------------|
| APL.1018.1000 | 1m | MPP-10-18 | 250 |
| APL.1818.1000 | 1m | MPP-18-18 | 400 |
| APX.1025.1000 | 1m | MPP-10-25 | 280 |
| APX.1825.1000 | 1m | MPP-18-25 | 400 |
| APX.2525.1000 | 1m | MPP-25-25 | 683 |
| APX.2525.2000 | 2m | MPP-25-25 | 1365 |
| APX.2550.1000 | 1m | MPP-25-50 | 1155 |
| APX.2550.2000 | 2m | MPP-25-50 | 2311 |
| APJ.4040.1000 | 1m | MPP-40-40 | 1407 |
| APJ.4040.2000 | 2m | MPP-40-40 | 2814 |
| APJ.4080.1000 | 1m | MPP-40-80 | 2302 |
| APJ.4080.2000 | 2m | MPP-40-80 | 4603 |

Material: Aluminium.
Surface: Silver anodized.

PROFILE & CHANNEL NUTS

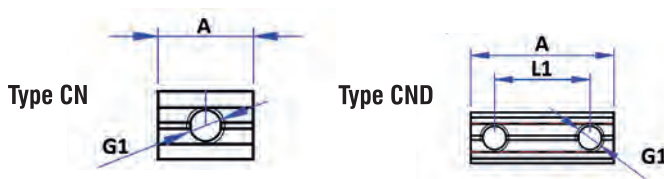
MPP – Profile End Cap



| Part No. | A | B | | Weight (g) |
|-----------|----|----|----|------------|
| MPP-10-18 | 10 | 18 | 10 | 1 |
| MPP-18-18 | 18 | 18 | 10 | 2 |
| MPP-10-25 | 10 | 25 | 10 | 2 |
| MPP-18-25 | 18 | 25 | 10 | 2 |
| MPP-25-25 | 25 | 25 | 10 | 3 |
| MPP-25-50 | 25 | 50 | 10 | 4 |
| MPP-40-40 | 40 | 40 | 10 | 7 |
| MPP-40-80 | 40 | 80 | 10 | 13 |

Provides a finished look to an EOAT.
Reduces the risk of injury by coverage of sharp edges.

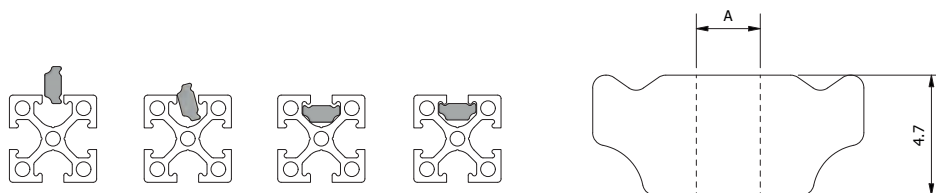
CN – Channel Nut for Profiles



| Part No. | G1 | A | L1 | Weight (g) |
|----------|----|----|----|------------|
| CN-M3 | M3 | 15 | | 6 |
| CN-M4 | M4 | 15 | | 6 |
| CN-M4-16 | M4 | 24 | 16 | 9 |
| CN-M5 | M5 | 15 | | 5 |
| CN-M5-20 | M5 | 30 | 20 | 11 |
| CN-M6 | M6 | 15 | | 5 |
| CN-M6-20 | M6 | 30 | 20 | 11 |

Suitable for L, X and J line of profiles.

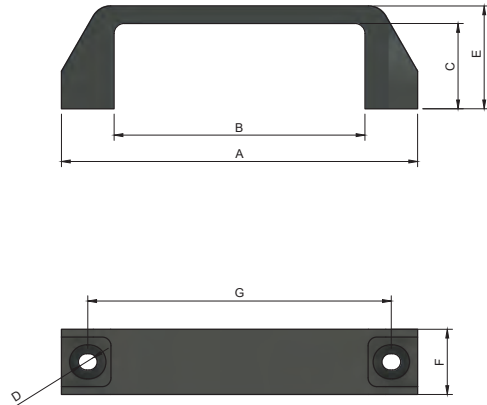
CN – Last Minute Channel Nut for Profiles



| Part No. | A | Weight (g) |
|----------|----|------------|
| CN-M4-LM | M4 | 3 |
| CN-M5-LM | M5 | 2 |
| CN-M6-LM | M6 | 2 |

Suitable for L, X and J line of profiles.

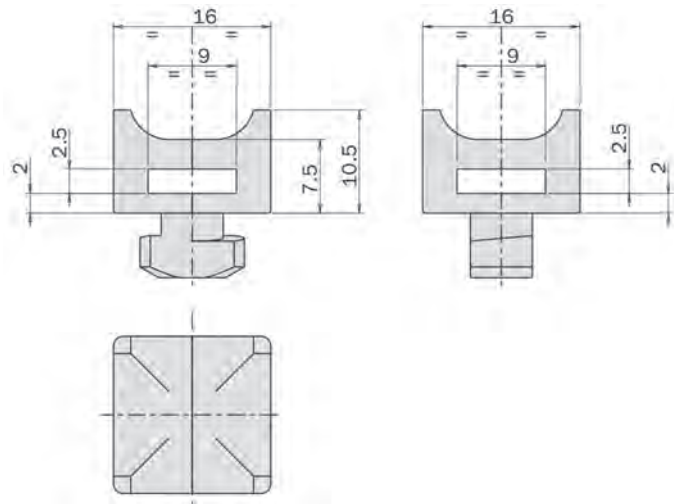
MPH – EOAT Handle



| Part No. | A | B | C | D | E | F | G | Weight (g) |
|----------|-----|-----|----|-----|----|----|-----|------------|
| MPH.142 | 142 | 100 | 34 | 6,5 | 41 | 26 | 120 | 70 |

Includes mounting screws.

CTK - Cable Tie Block



| Part No. | Weight (g) |
|----------|------------|
| CTK.01X | 20g |

Twist on cable saddle for clean pneumatic/electrical cable management.

PROFILE CONNECTORS

185 Corner Brackets



186 Cross Joint Connectors



187 Square Joint Connectors



188 End Connectors



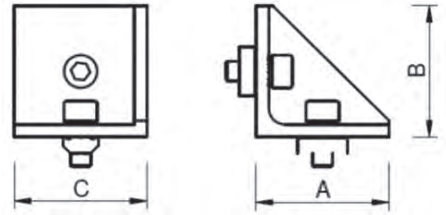
189 S, L, T Flat Connectors



190 Adjustable Connectors



MP.WIV – Profile Corner Bracket



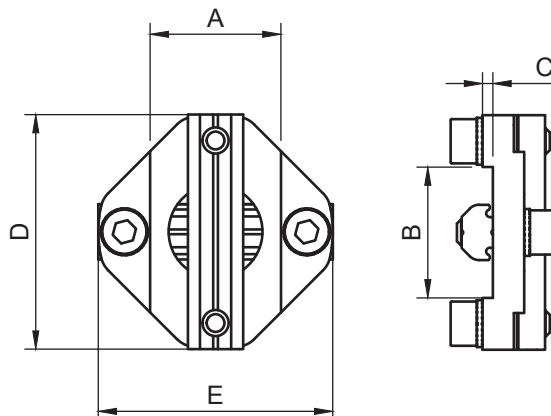
| Part No. | A | B | C | REF | Weight (g) |
|----------------|----|----|----|-----|------------|
| MP.WIV.X.25.0 | 25 | 25 | 16 | X | 28 |
| MP.WIV.X.50.25 | 51 | 51 | 16 | X | 80 |
| MP.WIV.X.25 | 25 | 25 | 19 | X | 33 |
| MP.WIV.X.50 | 50 | 50 | 19 | X | 82 |
| MP.WIV.J.40 | 40 | 40 | 40 | J | 60 |
| MP.WIV.J.80 | 78 | 78 | 37 | J | 184 |

Reinforcement of profile joints.



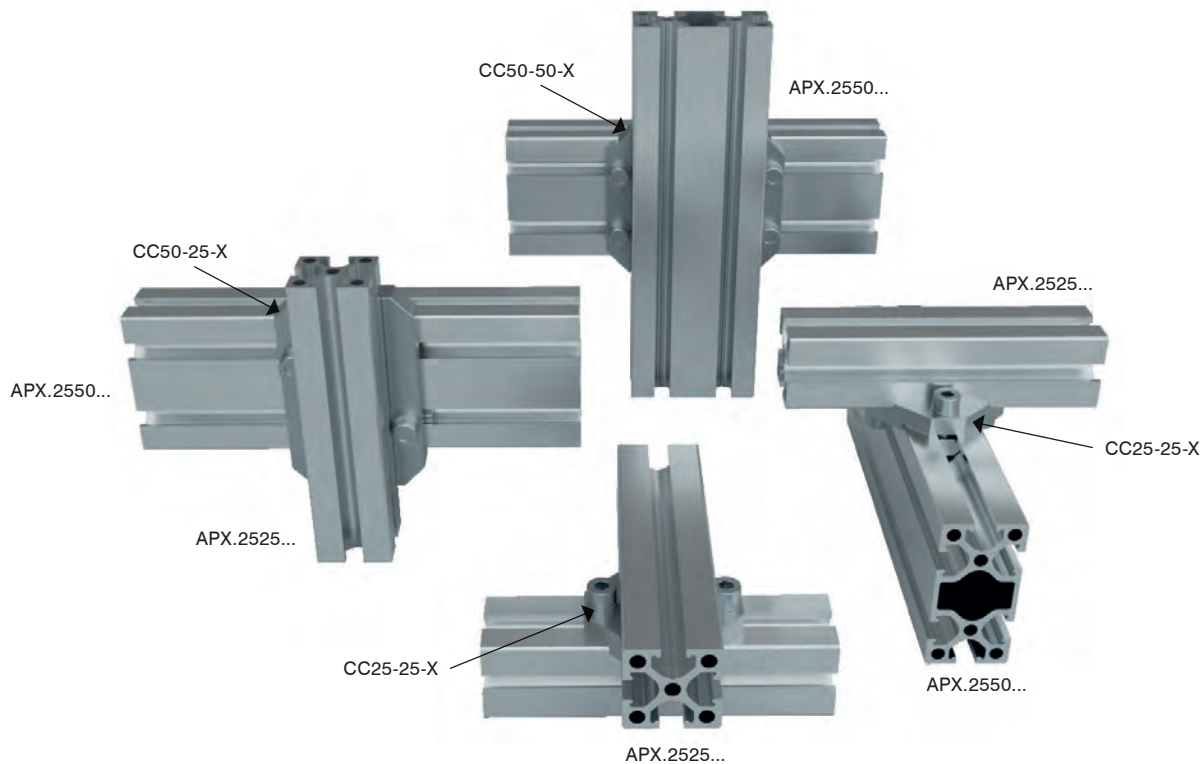
CROSS JOINT CONNECTORS

CC – Profile Cross Joint Connector

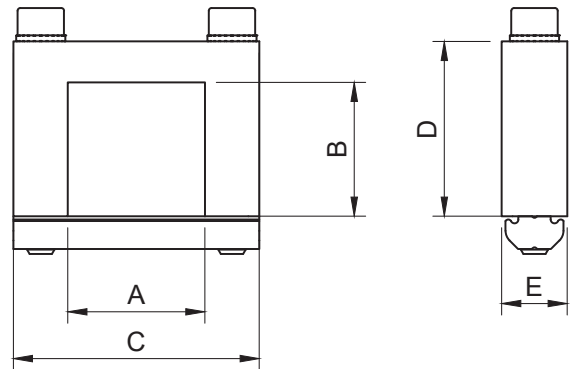


| Part No. | A | B | C | D | E | REF | Weight (g) |
|-----------|----|----|-----|-----|---|-----|------------|
| CC18-18-L | 18 | 18 | 38 | 38 | 3 | L | 40 |
| CC25-18-X | 25 | 18 | 45 | 45 | 4 | X | 60 |
| CC25-25-X | 25 | 25 | 45 | 45 | 4 | X | 67 |
| CC50-25-X | 50 | 25 | 45 | 70 | 4 | X | 76 |
| CC50-50-X | 50 | 50 | 70 | 70 | 4 | X | 192 |
| CC40-25-J | 40 | 25 | 45 | 60 | 4 | X/J | 77 |
| CC40-40-J | 40 | 40 | 65 | 65 | 4 | J | 81 |
| CC80-40-J | 80 | 40 | 100 | 60 | 4 | J | 156 |
| CC80-80-J | 80 | 80 | 100 | 100 | 4 | J | 268 |

Exact 90° connection of two profiles.
Highly rigid, connection.
Allows adjustment of both profiles.

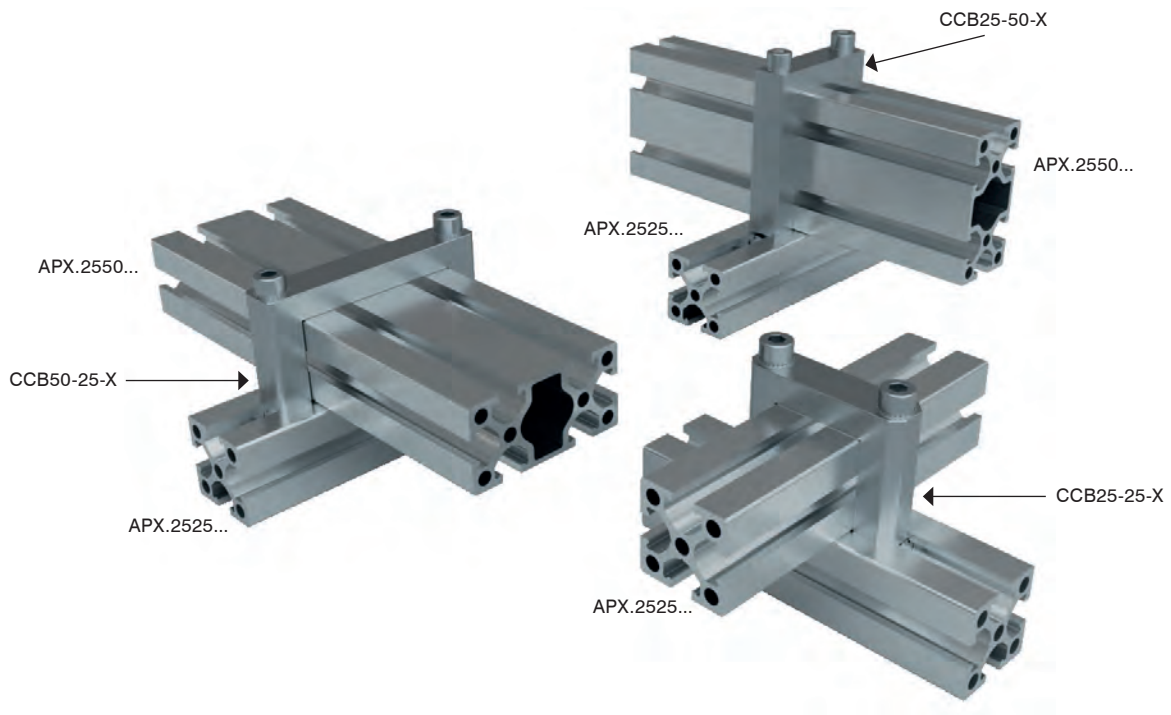


CCB - Square Joint Connectors



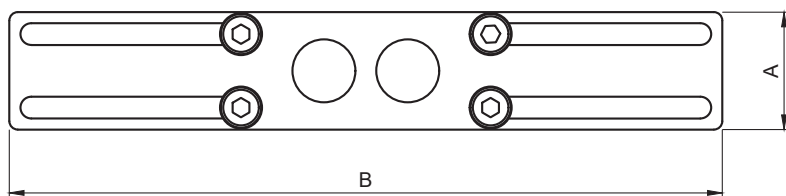
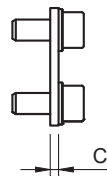
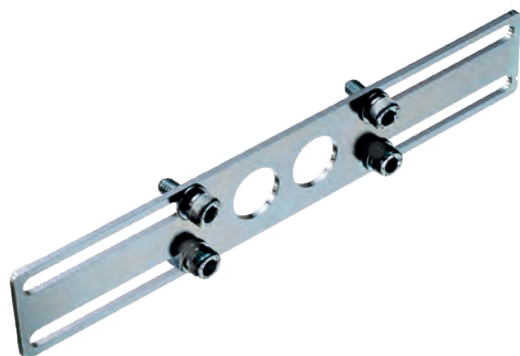
| Part No. | A | B | C | D | E | REF | Weight (g) |
|------------|----|----|-----|------|----|-----|------------|
| CBB18-18-L | 18 | 18 | 32 | 24,5 | 10 | L | 22 |
| CCB25-25-X | 25 | 25 | 45 | 30 | 15 | X | 40 |
| CCB25-50-X | 25 | 50 | 70 | 30 | 15 | X | 54 |
| CCB50-25-X | 50 | 25 | 45 | 55 | 15 | X | 57 |
| CCB40-40-J | 40 | 40 | 60 | 48,5 | 15 | J | 72 |
| CCB80-40-J | 80 | 40 | 100 | 50 | 15 | J | 107 |

For 90° connection of two profiles.
Allows adjustment of both profiles.



END CONNECTORS

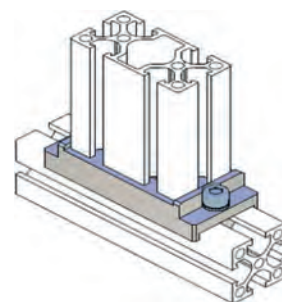
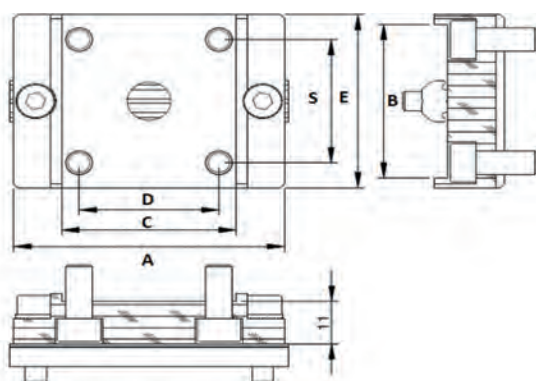
EP. – Profile End Plate



| Part No. | A | B | C | Reference | Weight (g) |
|--------------|----|-----|---|------------|------------|
| EP.25.170 | 25 | 170 | 2 | APX25-25.. | 48 |
| EP.25.220 | 25 | 220 | 2 | APX25-25.. | 60 |
| EP.25.270 | 25 | 270 | 2 | APX25-25.. | 69 |
| EP.25.320 | 25 | 320 | 2 | APX25-25.. | 85 |
| EP.50.25.170 | 50 | 170 | 2 | APX25-50.. | 100 |
| EP.50.25.220 | 50 | 220 | 2 | APX25-50.. | 130 |
| EP.50.25.270 | 50 | 270 | 2 | APX25-50.. | 162 |
| EP.50.25.320 | 50 | 320 | 2 | APX25-50.. | 192 |

End plate connection for added rigidity of framework.

PE. – Profile End Connector



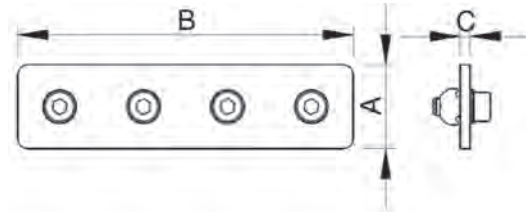
| Part No. | A | B | C | D | S | E | REF | Weight (g) |
|-----------|----|----|----|------|------|----|-------------------|------------|
| PE.25.25 | 50 | 25 | 25 | 17,5 | 17,5 | 30 | APX.2525 | 69 |
| PE.25.50 | 70 | 25 | 50 | 42,5 | 17,5 | 30 | APX.2550 | 87 |
| PED.25.50 | 55 | 50 | - | 14,5 | 17,5 | 25 | APX.2525/APX.2550 | 69 |
| PED.50.50 | 75 | 55 | - | 42,5 | 17,5 | 25 | APX.2550/APX.2550 | 87 |
| PE.40.40 | 62 | 40 | 40 | 32 | 32 | 45 | APX.4040 | 128 |

Strong 90° connection of two profiles.

End connected profile, adjustable along length of other profile.

End of profile needs to be tapped.

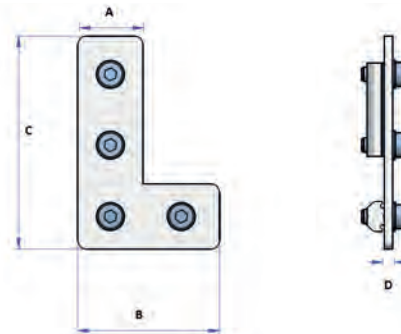
MA.VBG. – Profile Connector Straight



| Part No. | A | B | C | REF | Weight (g) |
|-----------------|----|-----|---|-----|------------|
| MA.VBG.X.25.50 | 25 | 50 | 3 | X | 47 |
| MA.VBG.X.50.50 | 50 | 50 | 3 | X | 94 |
| MA.VBG.X.25.100 | 25 | 100 | 3 | X | 99 |
| MA.VBG.J.40.80 | 40 | 80 | 3 | J | 97 |
| MA.VBG.J.40.160 | 40 | 10 | 3 | J | 215 |

Material: Steel

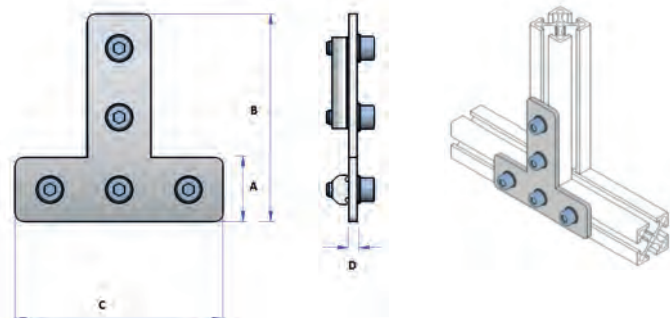
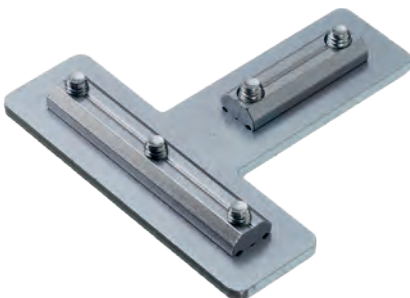
MA.VBL. – Profile Connector L-Style



| Part No. | A | B | C | D | REF | Weight (g) |
|---------------|----|----|-----|---|-----|------------|
| MA.VBL.50.50 | 23 | 50 | 50 | 3 | X | 71 |
| MA.VBL.50.75 | 23 | 50 | 75 | 3 | X | 96 |
| MA.VBL.80.80 | 40 | 80 | 80 | 3 | J | 147 |
| MA.VBL.80.120 | 40 | 80 | 120 | 3 | J | 200 |

Material: Steel

MA.VBT. – Profile Connector T-Style

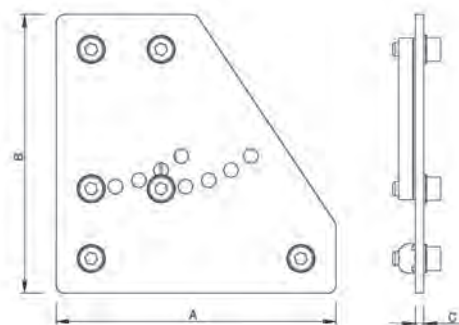
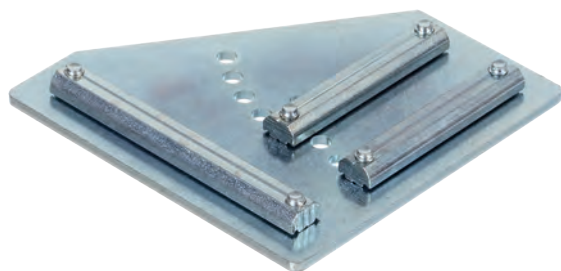


| Part No. | A | B | C | D | REF | Weight (g) |
|---------------|----|-----|-----|---|-----|------------|
| MA.VBT.50.75 | 25 | 75 | 75 | 3 | X | 123 |
| MA.VBT.75.100 | 25 | 75 | 100 | 3 | X | 149 |
| MA.VBT.120.80 | 40 | 120 | 80 | 3 | J | 264 |

Material: Steel

ADJUSTABLE CONNECTORS

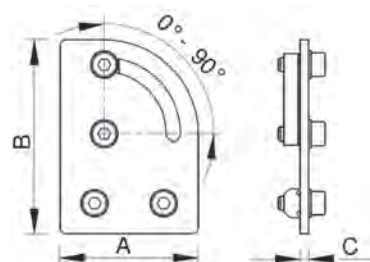
MP.EVB. – Corner Joint Plate



| Part No. | A | B | C | REF | Weight (g) |
|--------------|-----|-----|---|-----|------------|
| MP.EVB.100.X | 100 | 100 | 3 | X | 292 |
| MP.EVB.100.J | 80 | 100 | 3 | J | 206 |

Material: Steel.

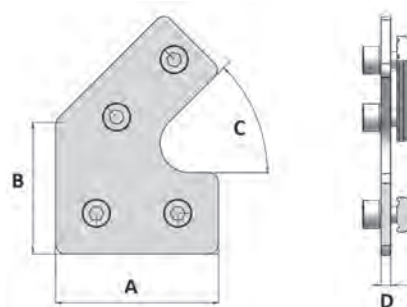
MP.VBW. – Adjustable Profile Connector 0-90°



| Part No. | A | B | C | Weight (g) |
|---------------|----|-----|---|------------|
| MP.VBW.X.0.90 | 50 | 70 | 3 | 112 |
| MP.VBW.J.0.90 | 80 | 120 | 3 | 249 |

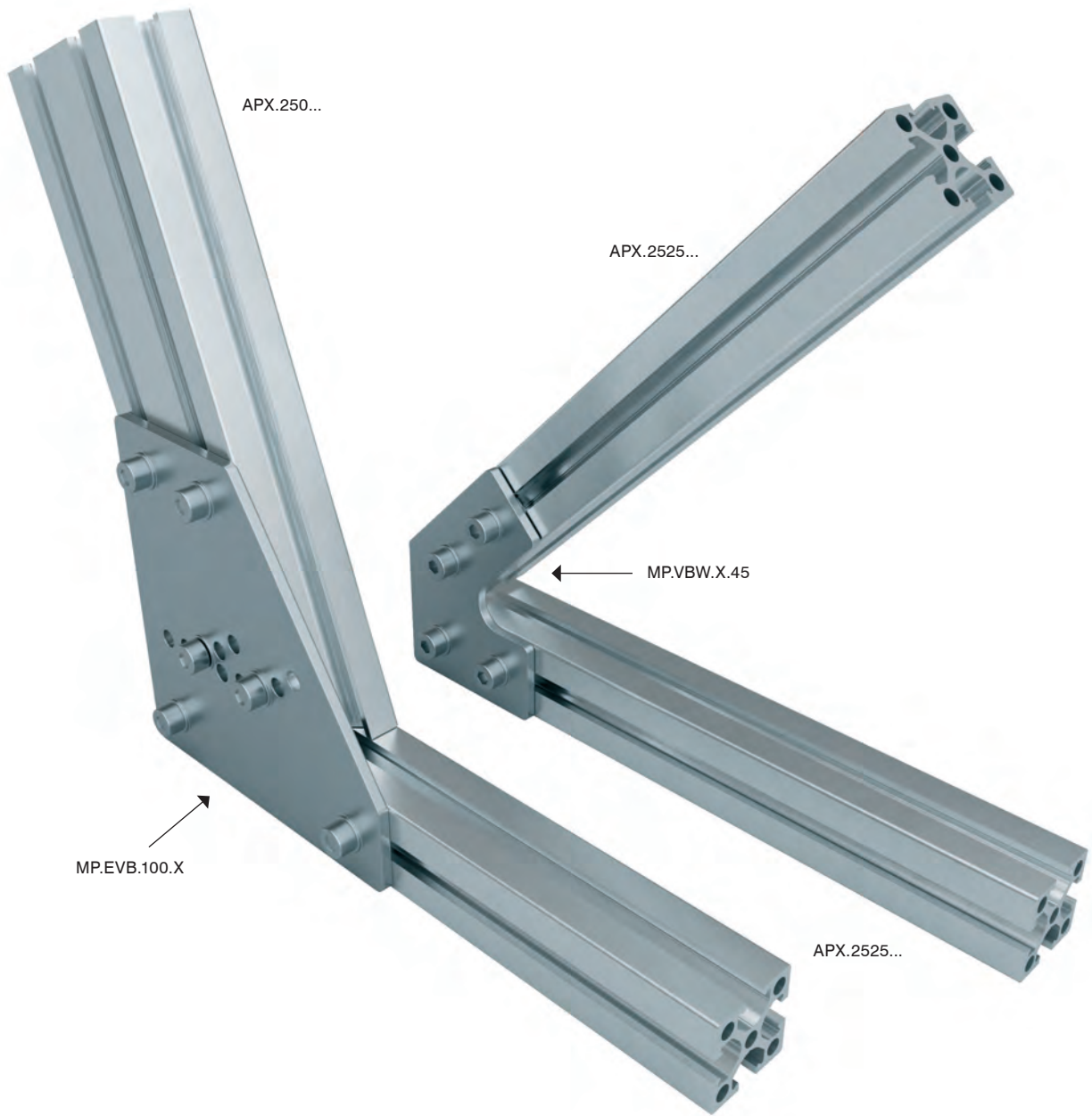
Material: Steel.

MP.VBW. – Profile Connector 45°



| Part No. | A | B | C | D | REF | Weight (g) |
|-------------|-----|-----|-----|---|-----|------------|
| MP.VBW.X.45 | 50 | 77 | 45° | 3 | X | 104 |
| MP.VBW.J.45 | 130 | 147 | 45° | 3 | J | 372 |

Material: Steel.

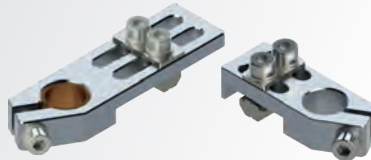


CLAMPS

193 Cross Clamps



194 Angle Clamps



197 Angle Clamps With Ball Joint



198 Angle Clamps With Swivel Head



199 Slotted Mounting Brackets



200 Threaded Mounting Brackets



201 Cross Tube Connector



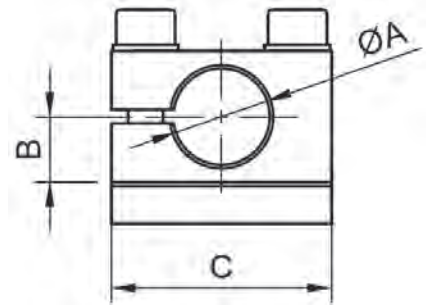
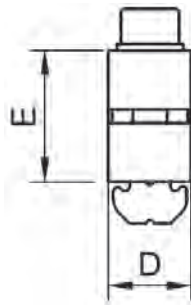
201 Parallel Tube Connector



201 Reducer



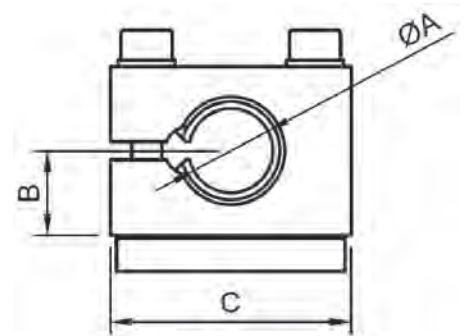
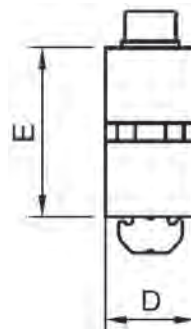
CCR. – Cross Connector - Round



| Part No. | A | B | C | D | E | Weight (g) |
|----------|----|-----|----|----|----|------------|
| CCR.10.X | 10 | 7 | 25 | 10 | 14 | 22 |
| CCR.14.X | 14 | 9,5 | 32 | 12 | 19 | 36 |
| CCR.20.X | 20 | 14 | 40 | 15 | 28 | 58 |
| CCR.20.J | 20 | 14 | 40 | 20 | 28 | 75 |
| CCR.30.J | 30 | 18 | 50 | 20 | 36 | 97 |

Connects tubular components to profiles at 90°.
Adjustment of componets without lose of clamp position.

CCRB. – Cross Connector - Round With Ball Joint

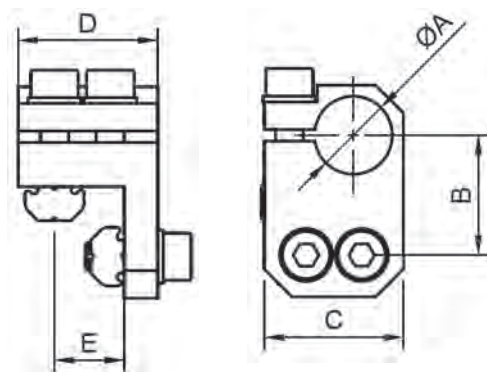
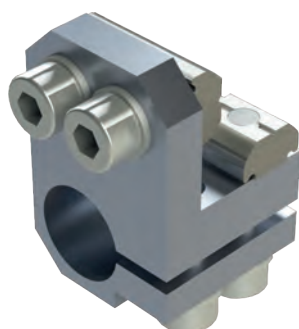


| Part No. | A | B | C | D | E | Weight (g) |
|-----------|----|----|----|----|----|------------|
| CCRB.10.X | 10 | 12 | 35 | 12 | 24 | 51 |
| CCRB.14.X | 14 | 14 | 40 | 15 | 28 | 68 |
| CCRB.20.X | 20 | 18 | 50 | 20 | 36 | 135 |
| CCRB.20.J | 20 | 18 | 55 | 20 | 36 | 156 |

Flexibility of positioning of components.
Adjustment of componets without lose of clamp position.

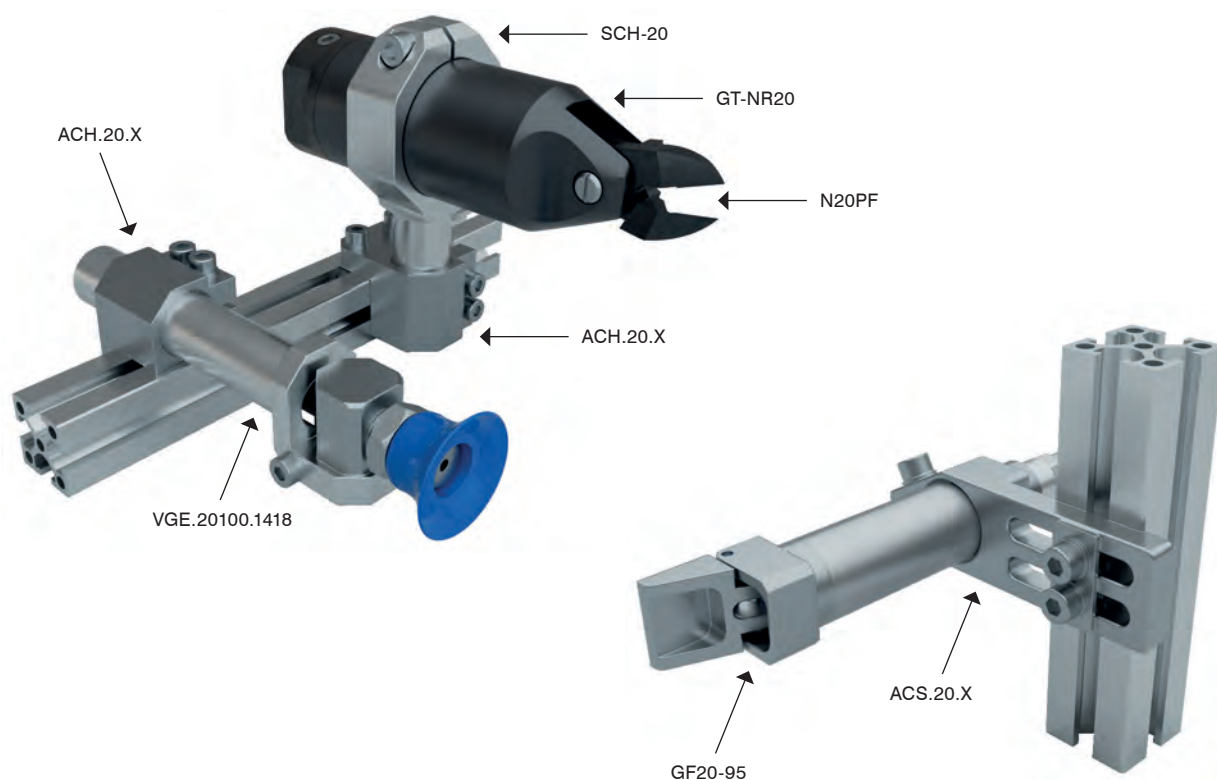
CLAMPS - PROFILE TO COMPONENT

ACH. – Angle Clamp - Heavy Duty

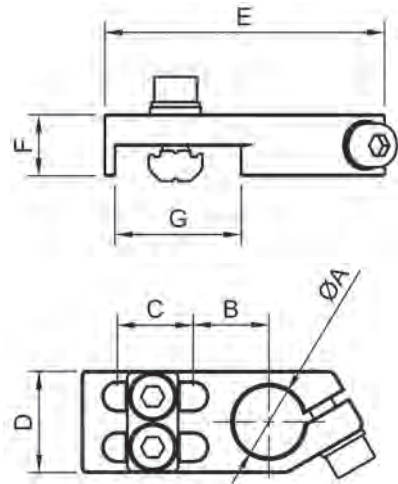


| Part No. | A | B | C | D | E | Weight (g) |
|----------|----|------|----|----|------|------------|
| ACH.10.L | 10 | 16 | 20 | 20 | 18 | 25 |
| ACH.10.X | 10 | 19,5 | 25 | 25 | 12,5 | 50 |
| ACH.14.X | 14 | 21,5 | 25 | 25 | 12,5 | 51 |
| ACH.20.X | 20 | 24,5 | 32 | 30 | 12,5 | 77 |
| ACH.20.J | 20 | 33 | 35 | 40 | 20 | 105 |
| ACH.30.J | 30 | 39 | 45 | 45 | 20 | 162 |

Heavy duty clamp.
Minimises deflection due to wrap around connection.



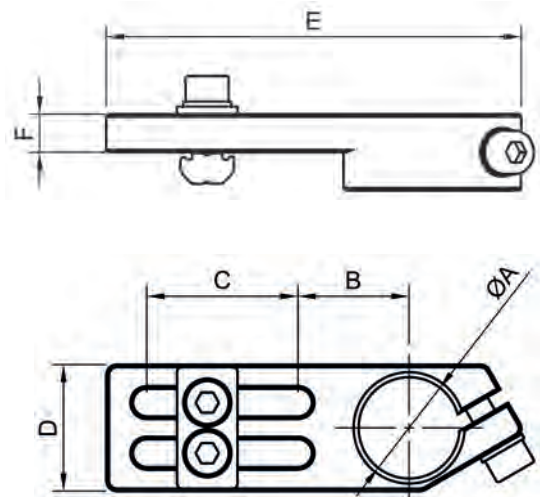
ACS. – Short Angle Clamp



| Part No. | A | B | C | D | E | F | G | Weight (g) |
|----------|----|------|----|----|------|----|----|------------|
| ACS.10.L | 10 | 12,2 | 9 | 16 | 42 | 8 | 18 | 21 |
| ACS.10.X | 10 | 12,2 | 15 | 16 | 49 | 8 | 25 | 22 |
| ACS.14.X | 14 | 15 | 15 | 20 | 55 | 12 | 25 | 37 |
| ACS.20.X | 20 | 18 | 15 | 25 | 63 | 15 | 25 | 50 |
| ACS.20.J | 20 | 18 | 30 | 25 | 78 | 15 | 40 | 54 |
| ACS.30.X | 30 | 23,5 | 15 | 35 | 75,5 | 20 | 25 | 82 |
| ACS.30.J | 30 | 23,5 | 29 | 35 | 90,5 | 20 | 40 | 92 |

Material: Aluminium.
ACS clamps allow for mounting flexibility.
Kit with screws.

ACM. – Medium Angle Clamp

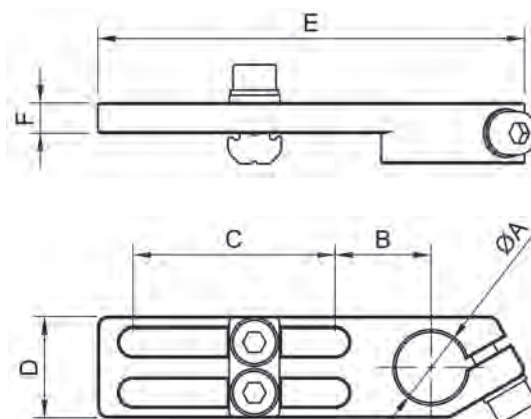
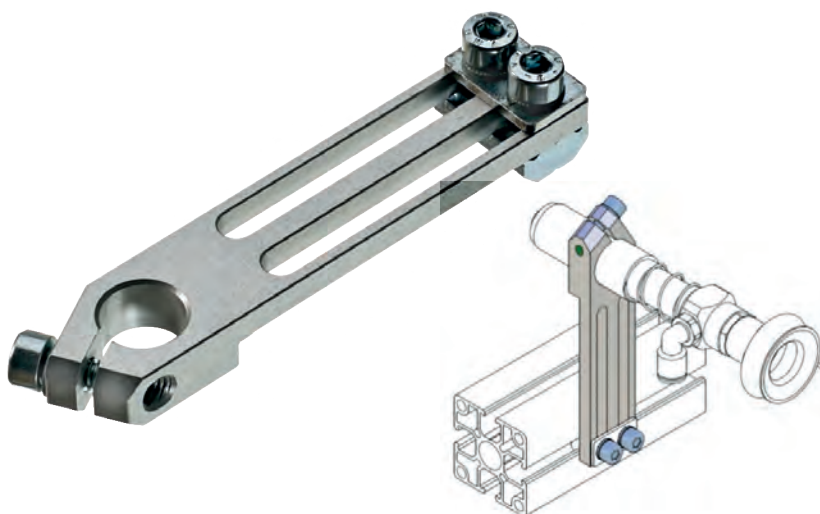


| Part No. | A | B | C | D | E | F | Weight (g) |
|------------|----|------|----|----|----|-----|------------|
| ACM.1020.L | 10 | 16,5 | 20 | 16 | 56 | 4 | 23 |
| ACM.1425.X | 14 | 19 | 25 | 20 | 70 | 6 | 36 |
| ACM.2035.X | 20 | 22 | 35 | 25 | 82 | 7,5 | 55 |
| ACM.3035.X | 30 | 28,5 | 35 | 35 | 96 | 10 | 94 |

Material: Aluminium.
ACM clamps allow for mounting flexibility.
Kit with screws.

CLAMPS - PROFILE TO COMPONENT

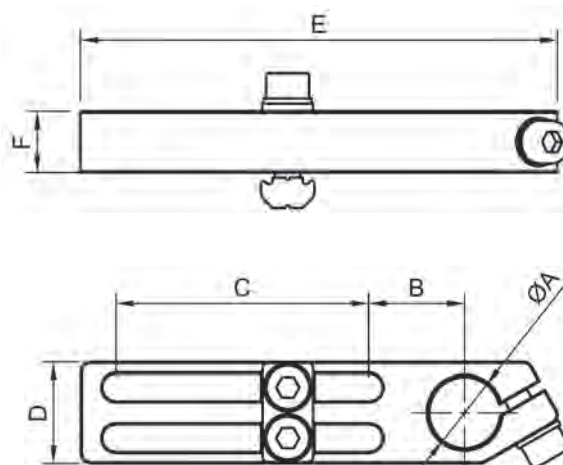
ACL. – Long Angle Clamp - Universal



| Part No. | A | B | C | D | E | F | Weight (g) |
|------------|----|------|----|----|-----|-----|------------|
| ACL.1040.L | 10 | 16,5 | 40 | 16 | 76 | 4 | 24 |
| ACL.1040.X | 10 | 16,5 | 40 | 16 | 76 | 4 | 24 |
| ACL.1440.X | 14 | 19 | 40 | 20 | 85 | 6 | 39 |
| ACL.1450.X | 14 | 19 | 50 | 20 | 95 | 6 | 42 |
| ACL.2060.X | 20 | 22 | 60 | 25 | 112 | 7,5 | 62 |
| ACL.2070.J | 20 | 22 | 70 | 28 | 123 | 7,5 | 77 |
| ACL.3060.X | 30 | 28,5 | 60 | 35 | 126 | 10 | 113 |
| ACL.3070.J | 30 | 28,5 | 70 | 35 | 136 | 10 | 130 |

Material: Aluminium.
 ACL clamps allow for mounting flexibility.
 Kit with screws.

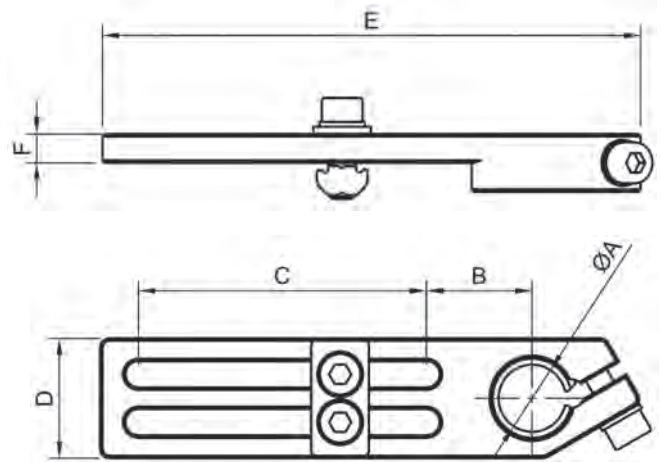
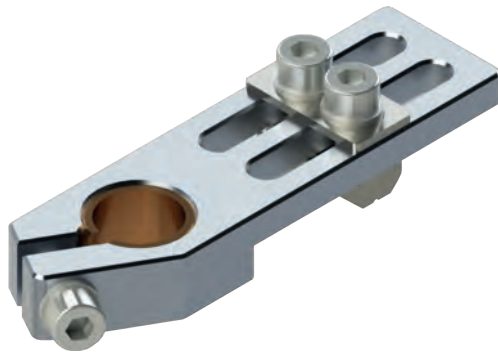
ACLH. – Long Angle Clamp - Heavy Duty



| Part No. | A | B | C | D | E | F | Weight (g) |
|-------------|----|------|----|----|-----|----|------------|
| ACLH.1040.X | 10 | 16,5 | 40 | 16 | 76 | 8 | 30 |
| ACLH.1450.X | 14 | 19 | 50 | 20 | 95 | 12 | 57 |
| ACLH.2060.X | 20 | 22 | 60 | 25 | 112 | 15 | 90 |
| ACLH.2070.X | 20 | 22 | 70 | 28 | 123 | 15 | 112 |
| ACLH.3070.J | 30 | 28,5 | 70 | 35 | 136 | 20 | 185 |

Material: Aluminium.
 ACLH Heavy duty clamps allow for mounting flexibility with higher loads.
 Kit with screws.

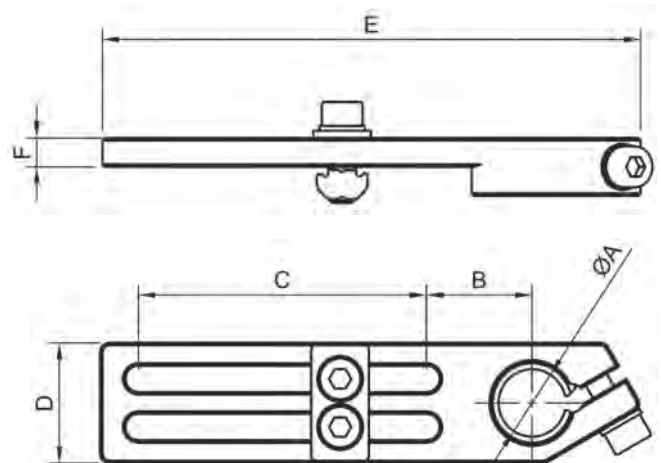
ACMB- – Medium Angle Clamp - with Ball Joint



| Part No. | A | B | C | D | E | F | Weight (g) |
|-------------|----|------|----|----|-----|----|------------|
| ACMB.1020.L | 10 | 19 | 20 | 20 | 65 | 6 | 52 |
| ACMB.1425.X | 14 | 22 | 35 | 25 | 87 | 6 | 60 |
| ACMB.2035.X | 20 | 28,5 | 35 | 35 | 102 | 10 | 150 |

Material: Aluminium
 ACMB clamps feature an integrated ball joint for rotational adjustemnt.
 Kit with Screws

ACLB. – Long Angle Clamp With Ball Joint

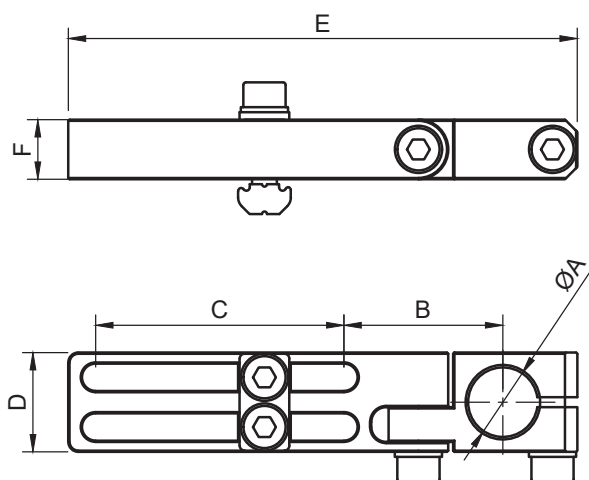


| Part No. | A | B | C | D | E | F | Weight (g) |
|-------------|----|------|----|----|-----|----|------------|
| ACLB.1050.X | 10 | 19 | 50 | 20 | 95 | 6 | 56 |
| ACLB.1460.X | 14 | 22 | 60 | 25 | 112 | 6 | 66 |
| ACLB.2060.X | 20 | 28,5 | 60 | 35 | 127 | 10 | 166 |

Material: Aluminium.
 ACLB clamps feature an integrated ball joint for rotational adjustment.
 Kit with screws.

CLAMPS - PROFILE TO COMPONENT

ACLS. – Long Angle Clamp - Swivel Head



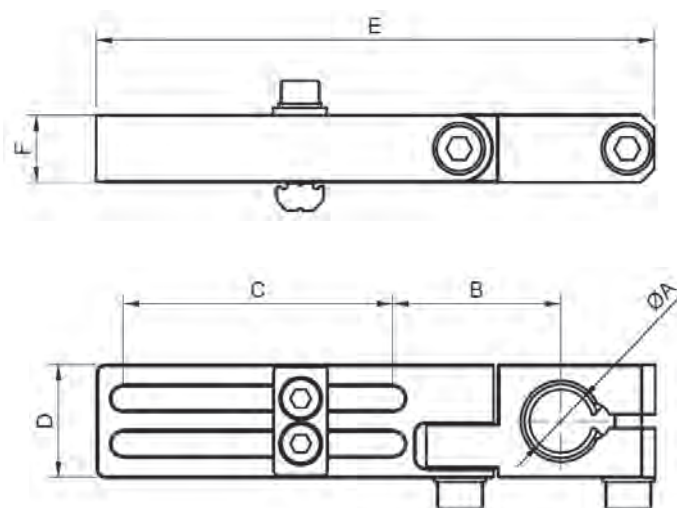
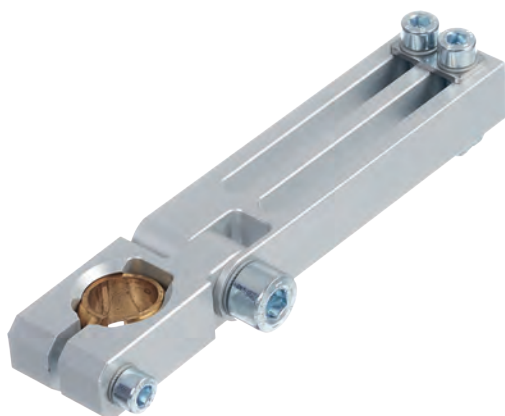
| Part No. | A | B | C | D | E | F | Weight (g) |
|-------------|----|------|----|----|-------|----|------------|
| ACLS.1040.X | 10 | 27,5 | 40 | 20 | 86 | 10 | 55 |
| ACLS.1450.X | 14 | 32 | 50 | 20 | 102,5 | 12 | 67 |
| ACLS.2060.X | 20 | 37,5 | 60 | 25 | 124,5 | 15 | 115 |
| ACLS.3080.X | 30 | 50 | 80 | 35 | 166,5 | 20 | 254 |

Material: Aluminium.

Increased flexibility in component positioning.

Heavy duty design ensures component stability.

ACLSB. – Long Angle Clamp - Swivel Head and Ball Joint

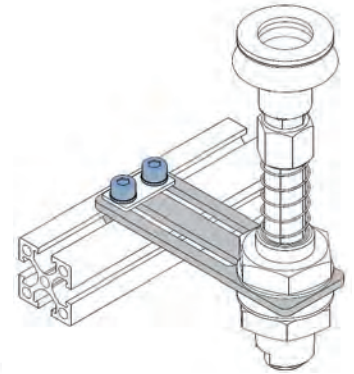
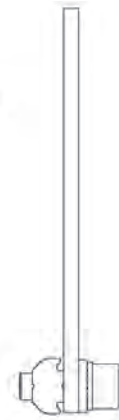
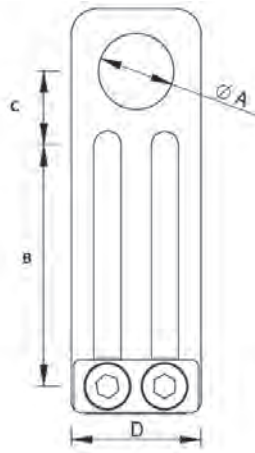


| Part No. | A | B | C | D | E | F | Weight (g) |
|--------------|----|------|----|----|-------|----|------------|
| ACLSB.1050.X | 10 | 32 | 50 | 20 | 102,5 | 12 | 74 |
| ACLSB.1460.X | 14 | 37,5 | 60 | 25 | 124,5 | 15 | 126 |
| ACLSB.2080.X | 20 | 50 | 80 | 35 | 166,5 | 20 | 304 |

Maximum flexibility in component positioning.

Heavy duty design ensures component stability.

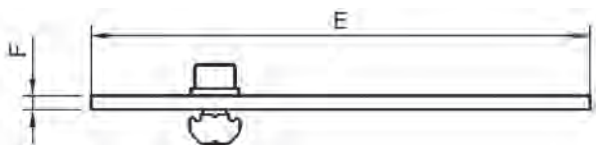
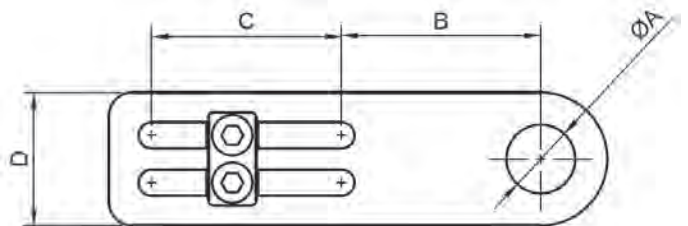
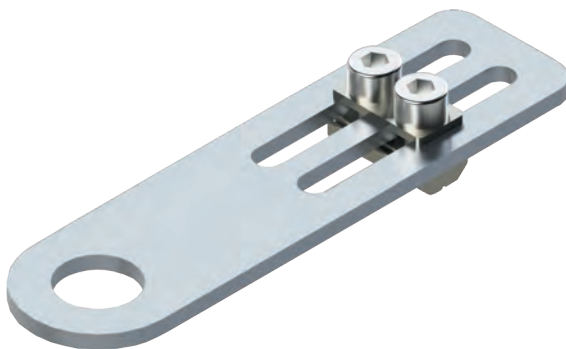
MB.04. – Mounting Bracket



| Part No. | A | B | C | D | Weight (g) |
|---------------|----|----|----|----|------------|
| MB.04.20.10.X | 10 | 40 | 11 | 20 | 35 g |
| MB.04.20.14.X | 14 | 46 | 14 | 25 | 45 g |

Material: Aluminum.
Surface: Silver anodized.

MBS. – Slotted Mounting Bracket

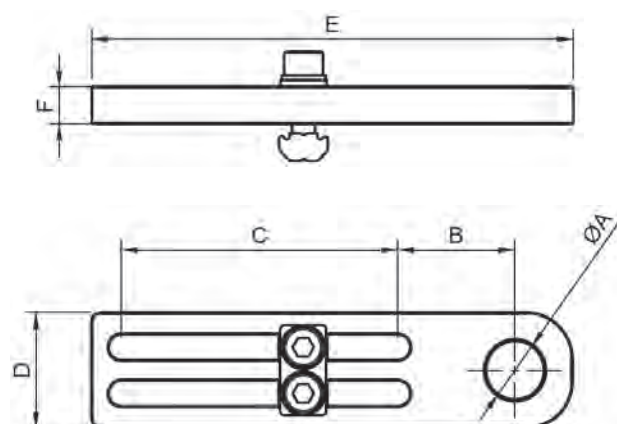


| Part No. | A | B | C | D | E | F | Weight (g) |
|------------|------|----|----|----|-----|---|------------|
| MBS.1040.X | 10,5 | 42 | 40 | 28 | 105 | 3 | 69 |
| MBS.1240.X | 12,5 | 42 | 40 | 28 | 105 | 3 | 69 |
| MBS.1440.X | 14,5 | 42 | 40 | 28 | 105 | 3 | 68 |
| MBS.1640.X | 16,5 | 42 | 40 | 28 | 105 | 3 | 67 |
| MBS.2040.X | 20,5 | 42 | 40 | 28 | 105 | 3 | 65 |

Material: Steel.
Economy mounting of threaded suspensions.

CLAMPS - PROFILE TO COMPONENT

MBT. – Threaded Mounting Bracket



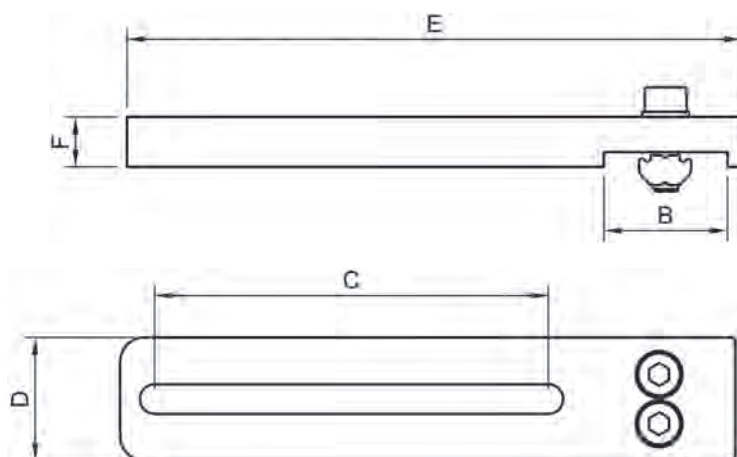
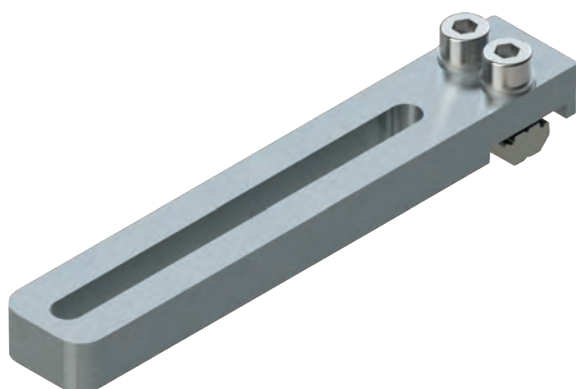
| Part No. | A | B | C | D | E | F | Weight (g) |
|------------|---------|------|----|----|-------|---|------------|
| MBT.G840.X | G1/8 | 18,5 | 40 | 20 | 75 | 8 | 40 |
| MBT.1040.X | M10x1 | 18,5 | 40 | 25 | 75 | 8 | 40 |
| MBT.1260.X | M12x1 | 25,5 | 60 | 25 | 104,5 | 8 | 57 |
| MBT.1460.X | M14x1.5 | 25,5 | 60 | 25 | 104,5 | 8 | 56 |
| MBT.1660.X | M16x1 | 25,5 | 60 | 25 | 104,5 | 8 | 55 |
| MBT.2060.X | M20x1.5 | 25,5 | 60 | 25 | 104,5 | 8 | 55 |
| MBT.2560.X | M25x1.5 | 33,5 | 60 | 30 | 104,5 | 8 | 71 |
| MBTS.60.X | Solid | 25,5 | 60 | 25 | 104,5 | 8 | 59 |

Material: Aluminium.

Simplified mounting of threaded suspensions.

Kit with screws.

MPW. – Clamp Extension Arm



| Part No. | A | B | C | D | E | F | Weight (g) |
|------------|---|----|----|----|-----|----|------------|
| MPW.1818.X | | 18 | 80 | 20 | 118 | 10 | 62 |
| MPW.2580.X | | 25 | 80 | 25 | 125 | 10 | 81 |
| MPW.4080.X | | 40 | 80 | 25 | 140 | 10 | 88 |

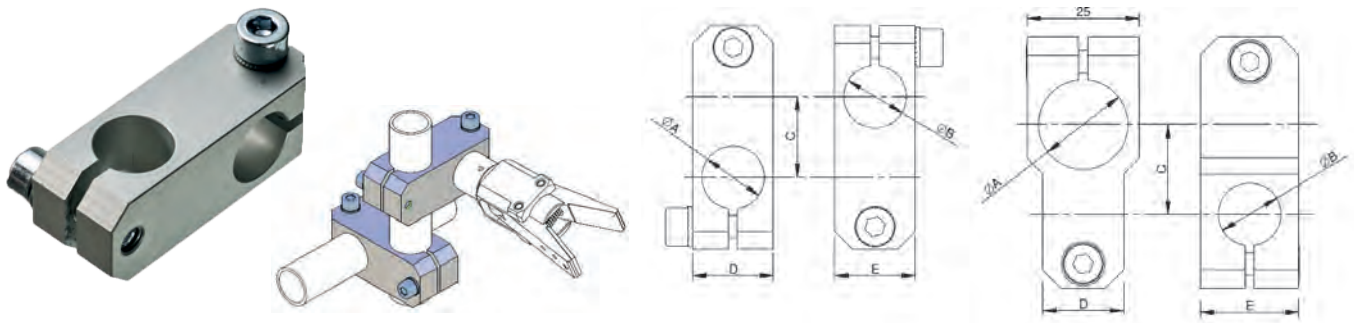
Material: Aluminium

MPW extension arms allow for greater flexibility in the mounting of clamps.

Reduces the amount of hardware required, saving weight and cost.

Kit with screws

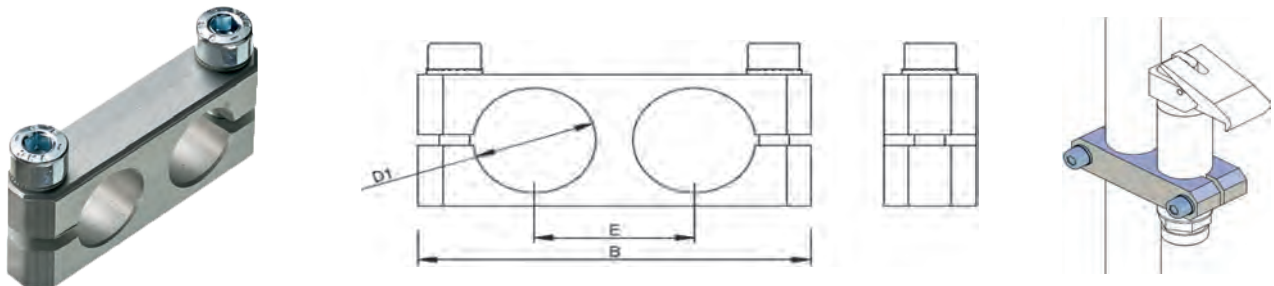
CCT. – Cross Tube Connector



| Part No. | A | B | C | D | E | Weight (g) |
|-----------|----|----|----|----|----|------------|
| CCT.10.10 | 10 | 10 | 16 | 14 | 14 | 17 |
| CCT.14.14 | 14 | 14 | 18 | 18 | 18 | 35 |
| CCT.20.20 | 20 | 20 | 26 | 25 | 25 | 71 |
| CCT.20.10 | 20 | 10 | 20 | 14 | 20 | 41 |
| CCT.20.14 | 20 | 14 | 20 | 18 | 22 | 48 |

90° Connection of two components with one clamp.

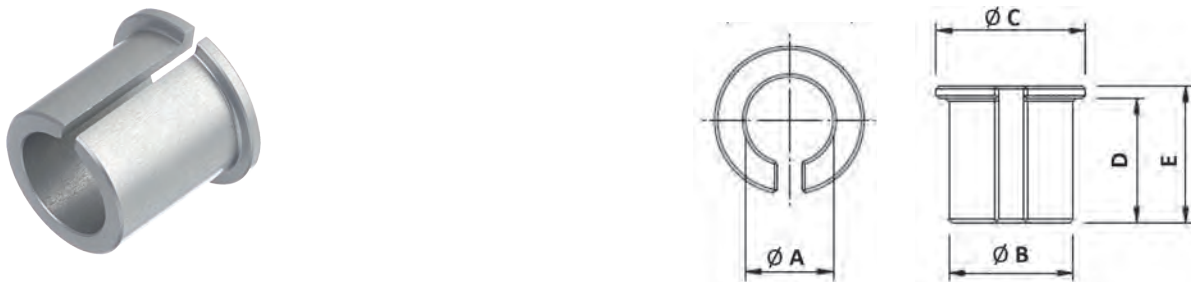
CA. – Parallel Tube Connector



| Part No. | D1 | B | E | Weight (g) |
|------------|----|----|----|------------|
| CA.1010.15 | 10 | 38 | 15 | 12 |
| CA.1414.20 | 14 | 52 | 20 | 27 |
| CA.2020.26 | 20 | 64 | 26 | 47 |
| CA.3030.38 | 30 | 88 | 38 | 104 |

Parallel connection of two components with one clamp.

RID. – Reducer

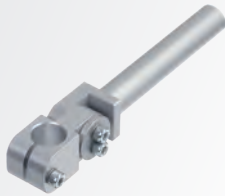


| Part No. | A | B | C | D | E | Weight (g) |
|----------|----|----|----|----|----|------------|
| RID.1410 | 10 | 14 | 18 | 14 | 16 | 4 |
| RID.2014 | 14 | 20 | 24 | 20 | 22 | 9 |
| RID.3020 | 20 | 30 | 30 | 30 | 30 | 30 |

Enables the use of smaller diameter shafts in a larger clamp.

GRIPPER ARMS

203 Heavy Duty Elbow Arms



203 Elbow Arms



204 Angle Arms



205 Centering Pin



205 Extension Tubes



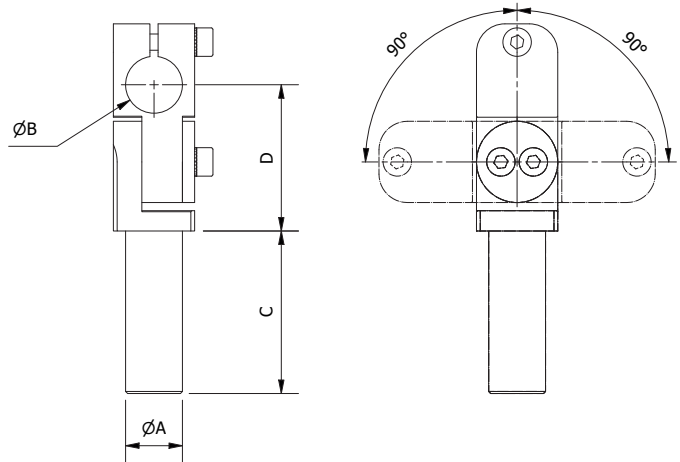
206 Gripper Suspension – Swivel Head



206 Spring Loaded Elbow Arm – Swivel Head



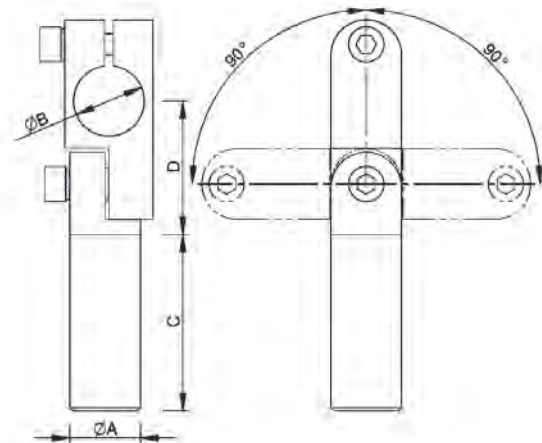
MA.GLH. – Gripper Elbow Arm Heavy Duty



| Part No. | A | B | C | D | Weight (g) |
|-----------------|----|----|-----|------|------------|
| MA.GLH.1010.030 | 10 | 10 | 30 | 30 | 27 |
| MA.GLH.1010.060 | 10 | 10 | 60 | 30 | 31 |
| MA.GLH.1010.090 | 10 | 10 | 90 | 30 | 37 |
| MA.GLH.1414.040 | 14 | 14 | 40 | 36 | 56 |
| MA.GLH.1414.080 | 14 | 14 | 80 | 36 | 66 |
| MA.GLH.1414.120 | 14 | 14 | 120 | 36 | 83 |
| MA.GLH.2020.050 | 20 | 20 | 50 | 45,5 | 111 |
| MA.GLH.2020.100 | 20 | 20 | 100 | 45,5 | 127 |
| MA.GLH.2020.150 | 20 | 20 | 150 | 45,5 | 169 |
| MA.GLH.3030.080 | 30 | 30 | 80 | 60 | 302 |
| MA.GLH.3030.140 | 30 | 30 | 140 | 60 | 394 |
| MA.GLH.3030.200 | 30 | 30 | 200 | 60 | 509 |

Secure clamping for high loads.

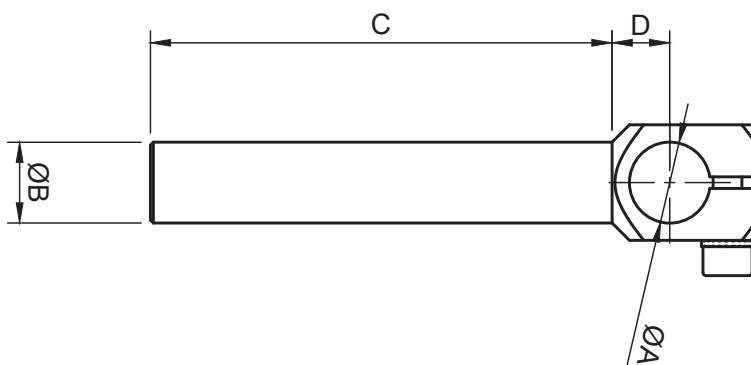
MA.GLA. – Gripper Elbow Arm



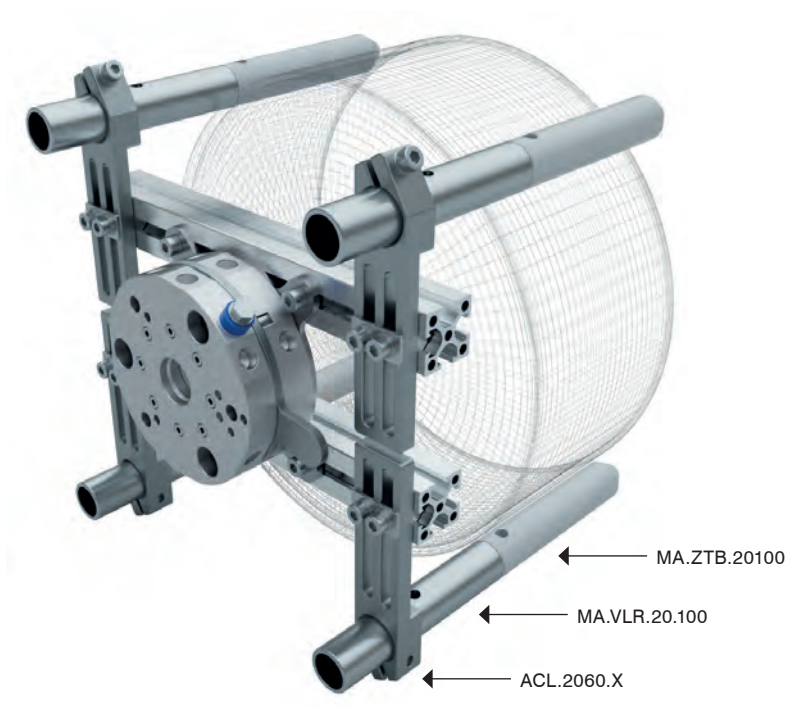
| Part No. | A | B | C | D | Weight (g) |
|-----------------|----|----|-----|------|------------|
| MA.GLA.1010.30 | 10 | 10 | 30 | 22 | 17 |
| MA.GLA.1010.60 | 10 | 10 | 60 | 22 | 21 |
| MA.GLA.1010.90 | 10 | 10 | 90 | 22 | 28 |
| MA.GLA.1414.40 | 14 | 14 | 40 | 30 | 43 |
| MA.GLA.1414.80 | 14 | 14 | 80 | 30 | 51 |
| MA.GLA.1414.120 | 14 | 14 | 120 | 30 | 70 |
| MA.GLA.2020.50 | 20 | 20 | 50 | 38 | 99 |
| MA.GLA.2020.100 | 20 | 20 | 100 | 38 | 106 |
| MA.GLA.2020.150 | 20 | 20 | 150 | 38 | 165 |
| MA.GLA.2030.100 | 20 | 30 | 100 | 47 | 315 |
| MA.GLA.3030.100 | 30 | 30 | 100 | 52,5 | 315 |

RIGID GRIPPER ARMS

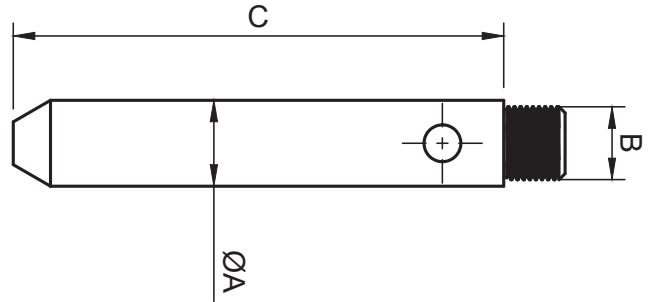
MA.WKA. – Angle Gripper Arm



| Part No. | A | B | C | D | Weight (g) |
|-----------------|----|----|-----|----|------------|
| MA.WKA.1010.30 | 10 | 10 | 30 | 8 | 13 |
| MA.WKA.1010.60 | 10 | 10 | 60 | 8 | 17 |
| MA.WKA.1010.90 | 10 | 10 | 90 | 8 | 22 |
| MA.WKA.1414.40 | 14 | 14 | 40 | 10 | 22 |
| MA.WKA.1414.80 | 14 | 14 | 80 | 10 | 35 |
| MA.WKA.1414.120 | 14 | 14 | 120 | 10 | 48 |
| MA.WKA.2020.50 | 20 | 20 | 50 | 12 | 47 |
| MA.WKA.2020.100 | 20 | 20 | 100 | 12 | 78 |
| MA.WKA.2020.150 | 20 | 20 | 150 | 12 | 96 |
| MA.WKA.3030.80 | 30 | 30 | 80 | 17 | 136 |
| MA.WKA.3030.140 | 30 | 30 | 140 | 17 | 178 |
| MA.WKA.3030.200 | 30 | 30 | 200 | 17 | 278 |

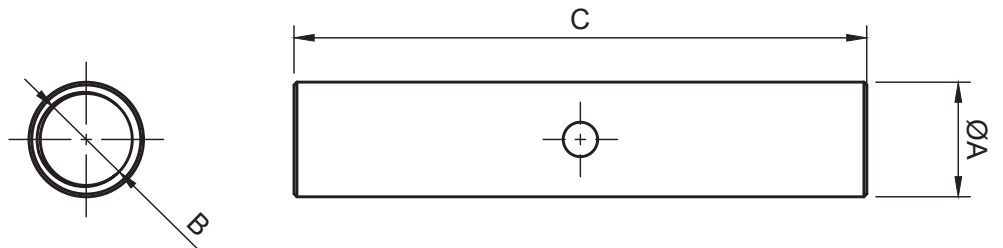


MA.ZTB. – Centering Pin



| Part No. | A | B | C | REF | Weight (g) |
|--------------|----|-------|-----|-----------|------------|
| MA.ZTB.1060 | 10 | M8x1 | 60 | MA.VLR.10 | 7 |
| MA.ZTB.1480 | 14 | M12x1 | 80 | MA.VLR.14 | 18 |
| MA.ZTB.20100 | 20 | M17x1 | 100 | MA.VLR.20 | 47 |
| MA.ZTB.30100 | 30 | M27x1 | 100 | MA.VLR.30 | 104 |

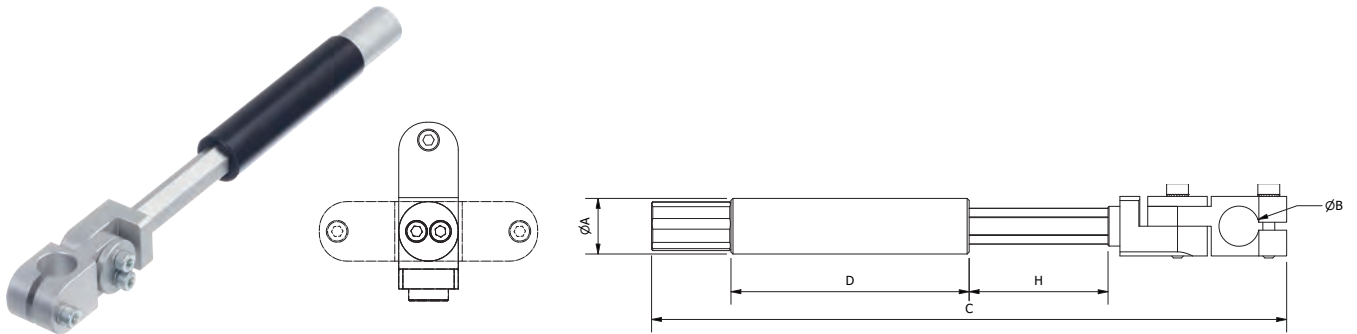
MA.VLR. – Extension Tube



| Part No. | A | B | C | Weight (g) |
|---------------|----|-------|-----|------------|
| MA.VLR.10.30 | 10 | M8x1 | 30 | 3 |
| MA.VLR.10.60 | 10 | M8x1 | 60 | 6 |
| MA.VLR.10.90 | 10 | M8x1 | 90 | 10 |
| MA.VLR.14.40 | 14 | M12x1 | 40 | 6 |
| MA.VLR.14.80 | 14 | M12x1 | 80 | 13 |
| MA.VLR.14.120 | 14 | M12x1 | 120 | 19 |
| MA.VLR.20.050 | 20 | M17x1 | 50 | 15 |
| MA.VLR.20.100 | 20 | M17x1 | 100 | 31 |
| MA.VLR.20.150 | 20 | M17x1 | 150 | 46 |
| MA.VLR.30.80 | 30 | M27x1 | 80 | 38 |
| MA.VLR.30.140 | 30 | M27x1 | 140 | 67 |

SUSPENSIONS FOR GRIPPERS

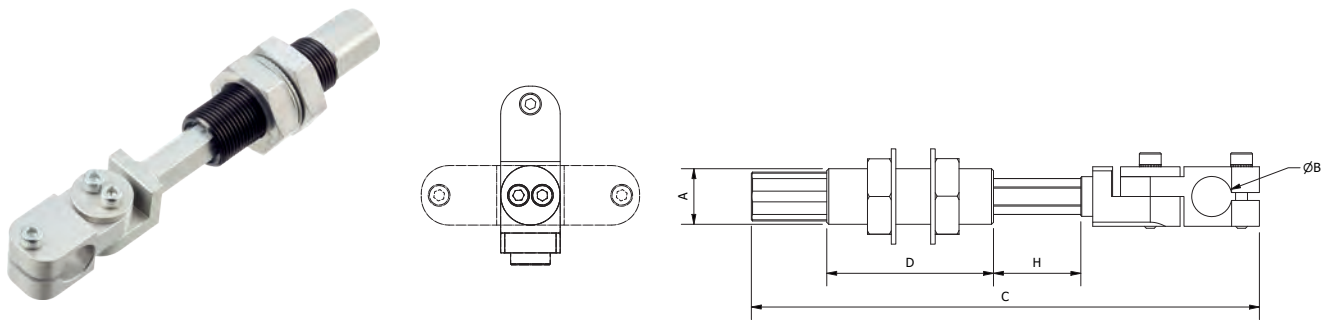
SXPC. – Gripper Suspension Smooth Body (Non-rotative) Adjustable Clamp



| Part No. | A | B | C | D | H | F(N) | Weight (g) |
|--------------|----|----|-----|----|----|------|------------|
| SXPC.1420.10 | 14 | 10 | 128 | 42 | 20 | 8,9 | 43 |
| SXPC.1435.10 | 14 | 10 | 160 | 60 | 35 | 9,5 | 50 |
| SXPC.2025.14 | 20 | 14 | 153 | 55 | 25 | 11 | 95 |
| SXPC.2025.20 | 20 | 20 | 166 | 55 | 25 | 11 | 111 |

Clamp angle adjustable between 0° and 90°.

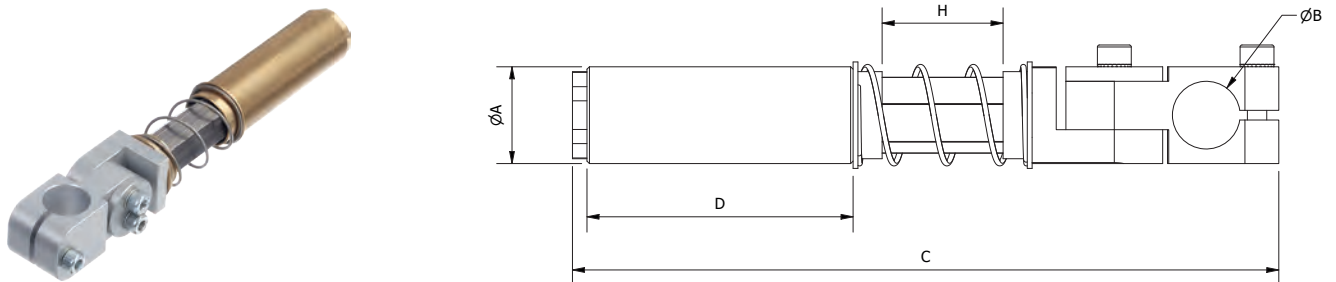
SXPCT. – Gripper Suspension Threaded Body (Non-rotative) Adjustable Clamp



| Part No. | A | B | C | D | H | F(N) | Weight (g) |
|---------------|---------|----|-----|----|----|------|------------|
| SXPCT.1420.10 | M14x1.5 | 10 | 128 | 42 | 20 | 8,9 | 55 |
| SXPCT.2025.14 | M20x1.5 | 14 | 153 | 55 | 25 | 11 | 130 |

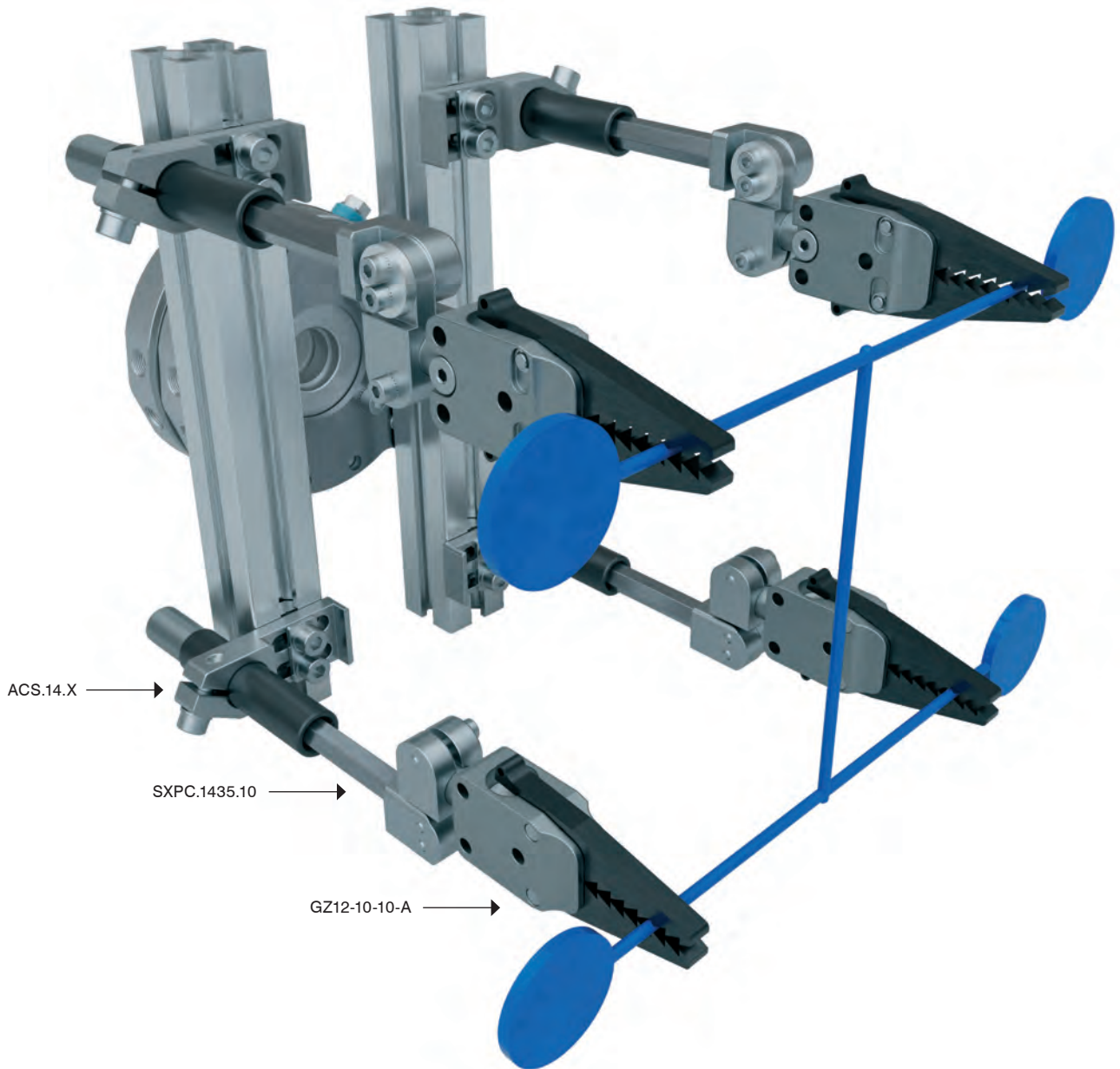
Clamp angle adjustable between 0° and 90°.

SVPC. – Spring Loaded Elbow Arm Smooth Body (Non-rotative) Swivel Head



| Part No. | A | B | C | D | H | Weight (g) |
|--------------|----|----|-----|----|----|------------|
| SVPC.1415.10 | 14 | 10 | 106 | 32 | 15 | 58 |
| SVPC.2025.14 | 20 | 14 | 144 | 55 | 25 | 149 |
| SVPC.2025.20 | 20 | 20 | 157 | 55 | 25 | 164 |

Clamp angle adjustable between 0° and 90°.



VACUUM CUP MOUNTS

209 Rigid Vacuum Cup Arms



211 Vacuum Cup Mounts



212 Vacuum Cup Mounts – Long



214 Suspensions Rotative



215 Suspensions Non-Rotative



216 Suspensions Non-Rotative Swivel Head



218 Spring Loaded Vacuum Cup Arm Rotative



219 Spring Loaded Vacuum Cup Arm Non-Rotative



220 Spring Loaded Vacuum Cup Arm Non-Rotative Swivel Head



221 Level Compensators Non-Rotative



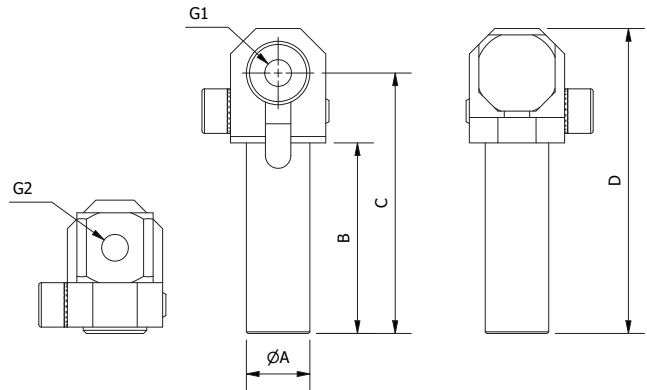
222 Telescopic Self-Retracting Suspensions



223 Spring Rod



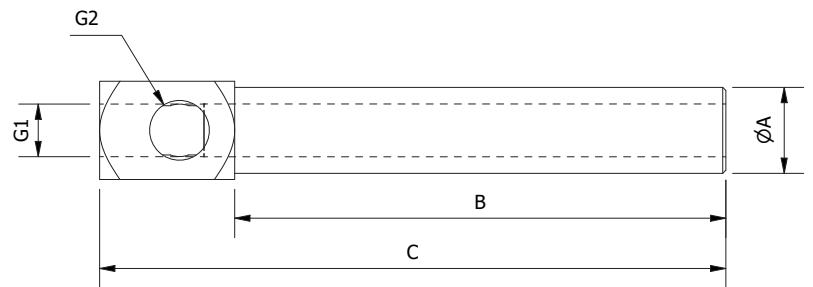
VGE. – Elbow Arm for Vacuum Cups



| Part No. | A | B | C | D | G1 | G2 | Weight (g) |
|----------------|----|-----|-----|-----|-------|-------|------------|
| VGE.10030.0505 | 10 | 30 | 41 | 48 | M5 | M5 | 14 |
| VGE.10060.0505 | 10 | 60 | 71 | 78 | M5 | M5 | 17 |
| VGE.10090.0505 | 10 | 90 | 101 | 108 | M5 | M5 | 20 |
| VGE.14040.1818 | 14 | 40 | 56 | 65 | G 1/8 | G 1/8 | 29 |
| VGE.14080.1818 | 14 | 80 | 96 | 105 | G 1/8 | G 1/8 | 38 |
| VGE.14120.1818 | 14 | 120 | 136 | 145 | G 1/8 | G 1/8 | 45 |
| VGE.20050.1418 | 20 | 50 | 68 | 80 | G 1/8 | G 1/4 | 56 |
| VGE.20100.1418 | 20 | 100 | 118 | 130 | G 1/8 | G 1/4 | 70 |
| VGE.20150.1418 | 20 | 150 | 168 | 180 | G 1/8 | G 1/4 | 87 |
| VGE.20050.1414 | 20 | 50 | 68 | 80 | G 1/4 | G 1/4 | 55 |
| VGE.20100.1414 | 20 | 100 | 118 | 130 | G 1/4 | G 1/4 | 69 |
| VGE.20150.1414 | 20 | 150 | 168 | 180 | G 1/4 | G 1/4 | 86 |

Allows optimal positioning of vacuum to part contour.
 Angle adjustable between 0° and 90°.
 Side vacuum port.

VGA. – Gripper Arm for Vacuum Cups

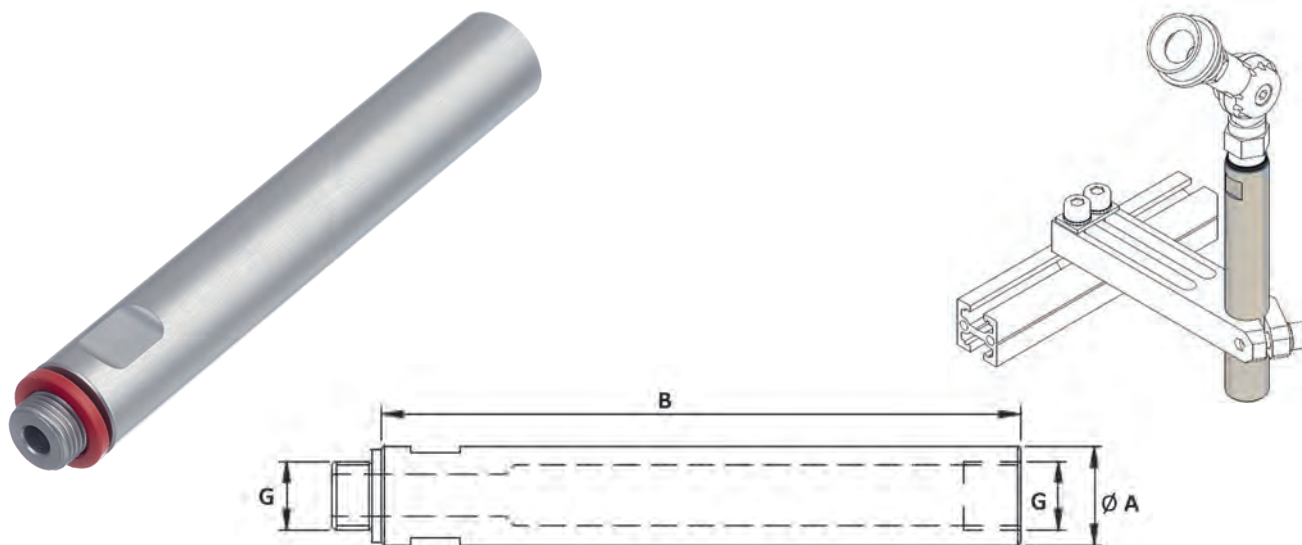


| Part No. | A | B | C | G1 | G2 | Weight (g) |
|----------------|----|-----|-----|-------|------|------------|
| VGA.10030.0505 | 10 | 30 | 46 | M5 | M5 | 9 |
| VGA.10060.0505 | 10 | 60 | 76 | M5 | M5 | 15 |
| VGA.10090.0505 | 10 | 90 | 106 | M5 | M5 | 24 |
| VGA.10030.1805 | 10 | 30 | 52 | G 1/8 | M5 | 15 |
| VGA.10060.1805 | 10 | 60 | 82 | G 1/8 | M5 | 18 |
| VGA.10090.1805 | 10 | 90 | 112 | G 1/8 | M5 | 25 |
| VGA.14040.1818 | 14 | 40 | 62 | G 1/8 | G1/8 | 18 |
| VGA.14080.1818 | 14 | 80 | 102 | G 1/8 | G1/8 | 30 |
| VGA.14120.1818 | 14 | 120 | 142 | G 1/8 | G1/8 | 43 |
| VGA.20050.1418 | 20 | 50 | 73 | G 1/4 | G1/8 | 44 |
| VGA.20100.1418 | 20 | 100 | 123 | G 1/4 | G1/8 | 63 |
| VGA.20150.1418 | 20 | 150 | 173 | G 1/4 | G1/8 | 78 |

To optimise position of a vacuum cup.
 Side vacuum port.

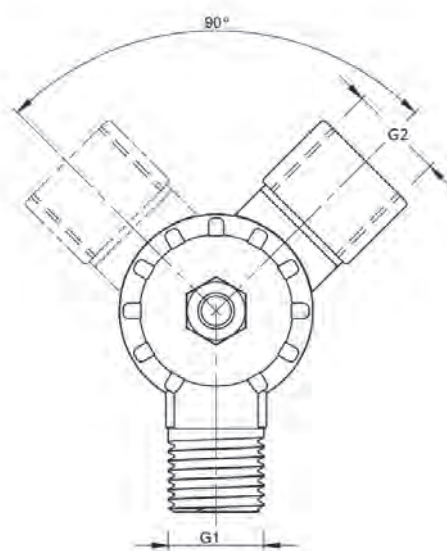
RIGID VACUUM CUP MOUNTS

VTE. – Vacuum Extension Tube



| Part No. | A | B | G1 | Weight (g) |
|-------------|----|----|-------|------------|
| VTE.1030.05 | 10 | 30 | M5 | 6 |
| VTE.1045.05 | 10 | 45 | M5 | 9 |
| VTE.1090.05 | 10 | 90 | M5 | 16 |
| VTE.1445.18 | 14 | 45 | G 1/8 | 14 |
| VTE.1490.18 | 14 | 90 | G 1/8 | 26 |
| VTE.2045.14 | 20 | 45 | G 1/4 | 30 |
| VTE.2090.14 | 20 | 90 | G 1/4 | 58 |

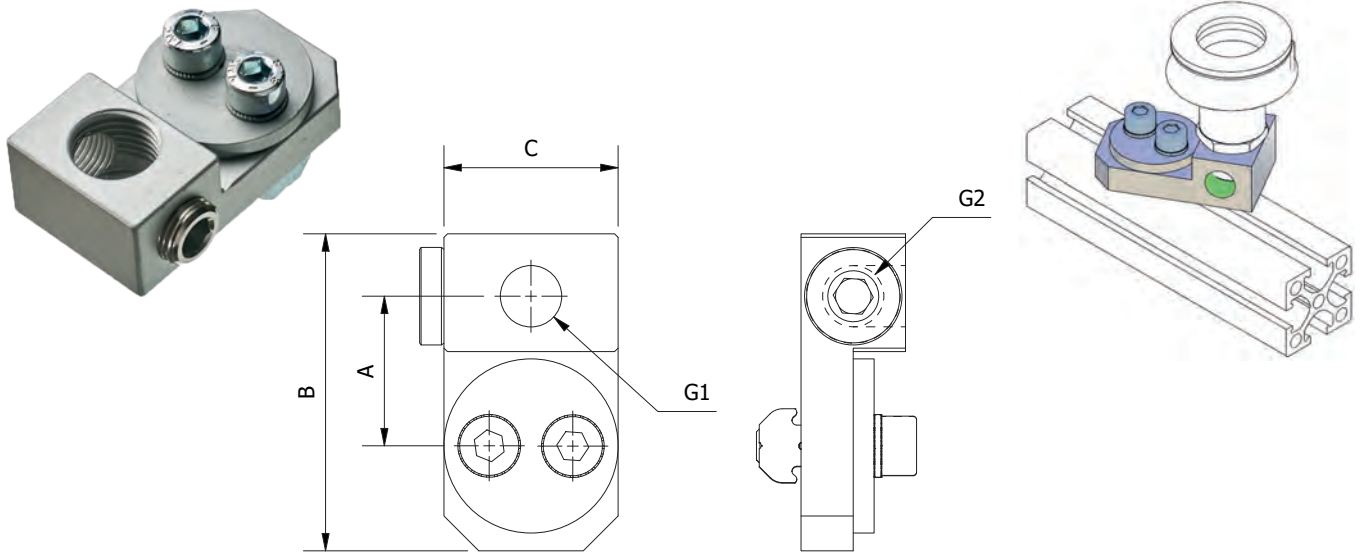
VSE. – Vacuum Elbow - Adjustable



| Part No. | G1 | G2 | Weight (g) |
|------------|------|-------|------------|
| VSE.18F18M | G1/8 | G 1/8 | 7 |
| VSE.14F14M | G1/4 | G 1/4 | 15 |

For vacuum only.
Angle of vacuum cup adjustable between 0° and 90°.

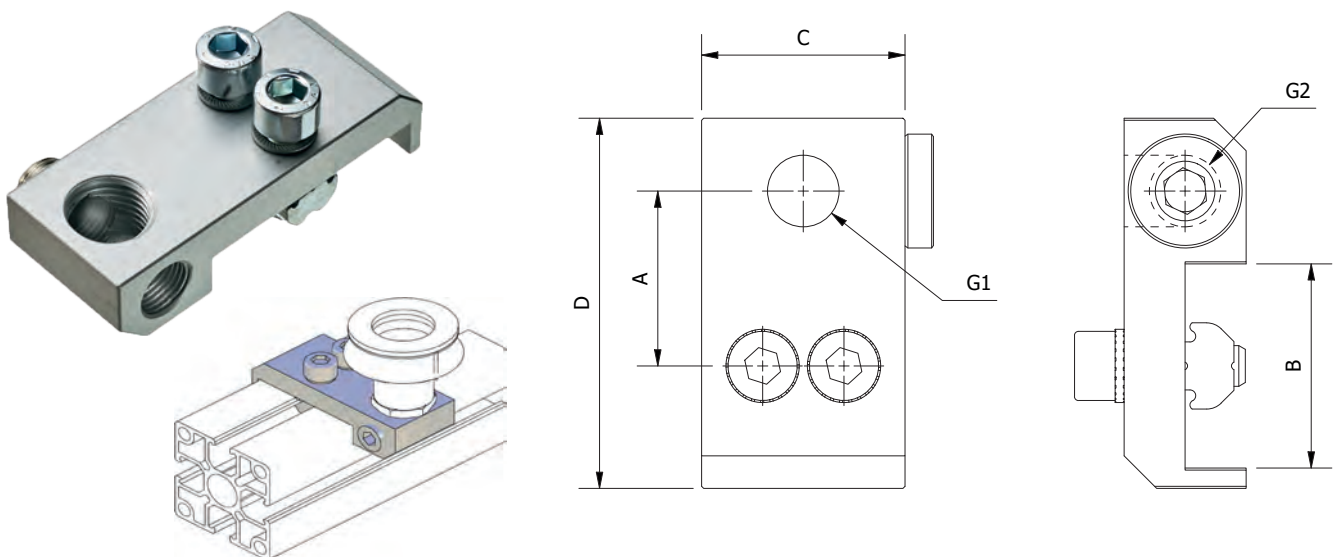
VMA. – Vacuum Cup Mounting Bracket - Adjustable



| Part No. | A | B | C | G1 | G2 | Weight (g) |
|------------|----|----|----|-------|-------|------------|
| VMA.0505.L | 14 | 28 | 16 | M5 | M5 | 19 |
| VMA.1818.X | 21 | 46 | 25 | G 1/8 | G 1/8 | 44 |
| VMA.1418.X | 21 | 46 | 25 | G 1/4 | G 1/8 | 44 |

Vacuum connection with adjustable 360° rotation.

VMF. – Vacuum Cup Mounting Bracket - Fixed

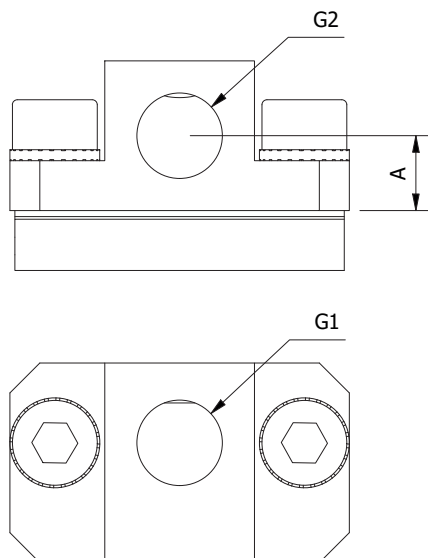


| Part No. | A | B | C | D | G1 | G2 | Weight (g) |
|------------|----|----|----|----|-------|-------|------------|
| VMF.0505.L | 17 | 18 | 16 | 32 | M5 | M5 | 18 |
| VMF.1818.X | 22 | 25 | 25 | 46 | G 1/8 | G 1/8 | 46 |
| VMF.1418.X | 22 | 25 | 25 | 46 | G 1/4 | G 1/8 | 49 |
| VMF.1418.J | 29 | 40 | 25 | 60 | G 1/4 | G 1/8 | |

Vacuum connection for use where space is limited.

RIGID VACUUM CUP MOUNTS

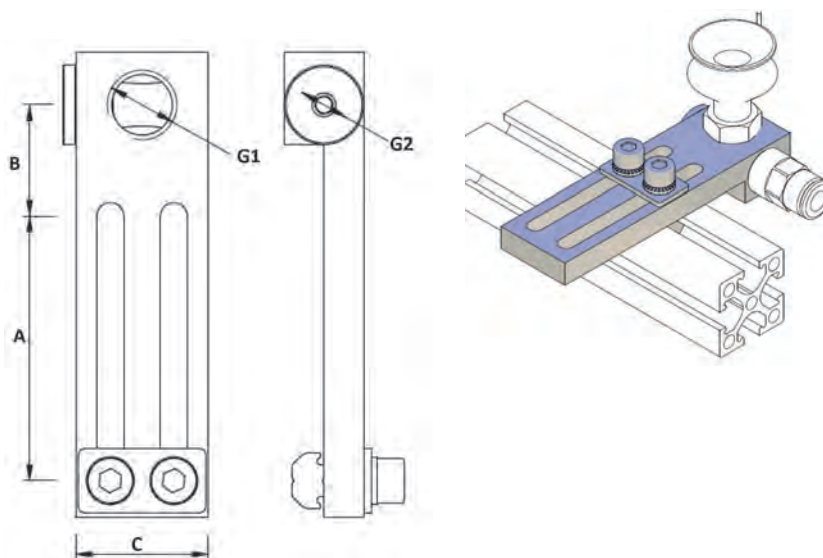
VMB. – Vacuum Cup Mounting Bracket



| Part No. | A | G1 | G2 | Weight (g) |
|------------|-----|-------|-------|------------|
| VMB.0505.X | 4 | M5 | M5 | 27 |
| VMB.1818.X | 7,5 | G 1/8 | G 1/8 | 35 |
| VMB.1414.X | 10 | G 1/4 | G 1/4 | 39 |

Vacuum connection for use where space is limited.

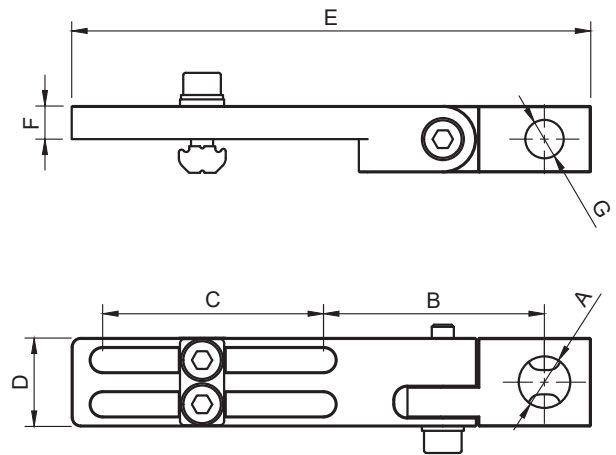
VML. – Vacuum Cup Mounting Bracket - Long



| Part No. | A | B | C | G1 | G2 | Weight (g) |
|---------------|----|----|----|-------|-------|------------|
| VML.0505.40.L | 40 | 14 | 16 | M5 | M5 | 24 |
| VML.1818.50.X | 50 | 21 | 25 | G 1/8 | G 1/8 | 65 |
| VML.1418.50.X | 50 | 21 | 25 | G 1/4 | G 1/8 | 65 |
| VML.1414.50.J | 50 | 23 | 25 | G 1/4 | G 1/4 | 73 |

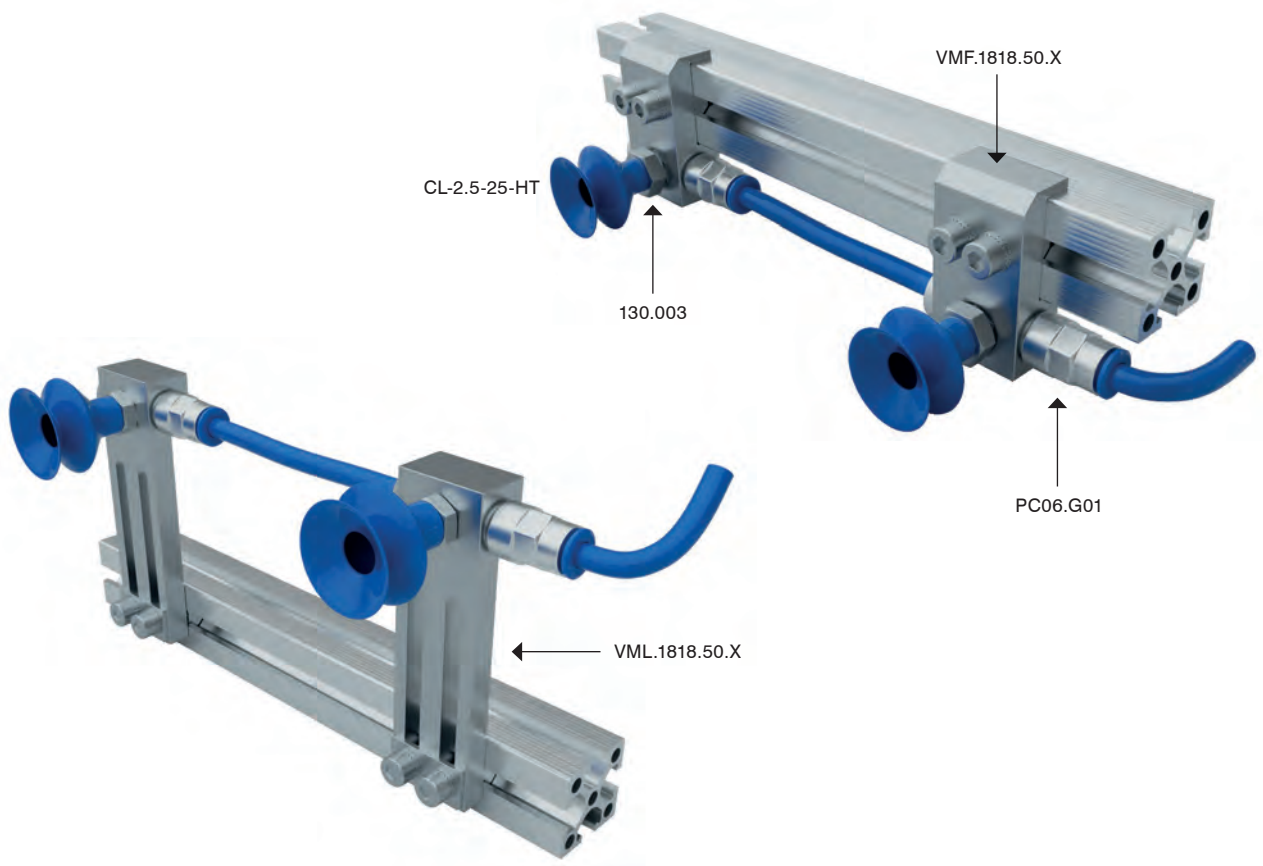
Allows inline adjustment of vacuum cup position.

VMS. – Vacuum Cup Mounting Bracket - Long, Swivel Head



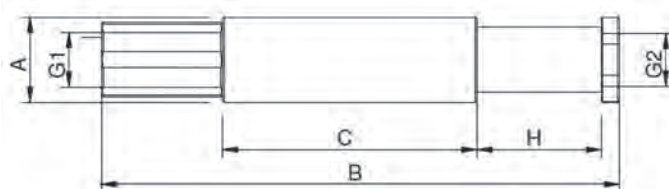
| Part No. | A | B | C | D | E | F | G | Weight (g) |
|---------------|--------|----|----|----|-------|-----|-------|------------|
| VMS.1418.50.X | G1 / 4 | 50 | 50 | 20 | 117.5 | 7.5 | G 1/8 | 72 |

Allows inline and radial adjustment of vacuum cup position.



SUSPENSIONS FOR VACUUM CUPS

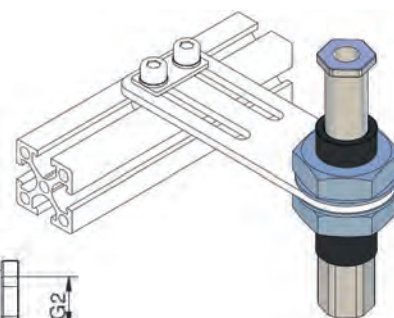
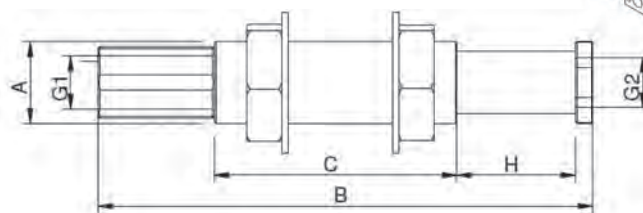
MP.SDR. – Telescopic Suspension Smooth Body (Rotative)



| Part No. | A | B | C | G1 | G2 | H | F(N) | Weight (g) |
|----------------|----|-----|----|-------|-------|----|------|------------|
| MP.SDR.1010 | 10 | 51 | 20 | M5 | M5 | 10 | 3,6 | 7 |
| MP.SDR.1025 | 10 | 86 | 40 | M5 | M5 | 25 | 3,7 | 11 |
| MP.SDR.1420 | 14 | 85 | 42 | G 1/8 | G 1/8 | 20 | 8,9 | 19 |
| MP.SDR.1435 | 14 | 120 | 62 | G 1/8 | G 1/8 | 35 | 9,5 | 26 |
| MP.SDR.2025 | 20 | 97 | 47 | G 1/8 | G 1/8 | 25 | 11 | 56 |
| MP.SDR.2050 | 20 | 147 | 72 | G 1/8 | M10 | 50 | 11,4 | 76 |
| MP.SDR.2025.14 | 20 | 107 | 47 | G 1/4 | G 1/4 | 25 | 11 | 54 |
| MP.SDR.2050.14 | 20 | 157 | 72 | G 1/4 | G 1/4 | 50 | 11,4 | 74 |

Body and rod made of aluminium - anodized.

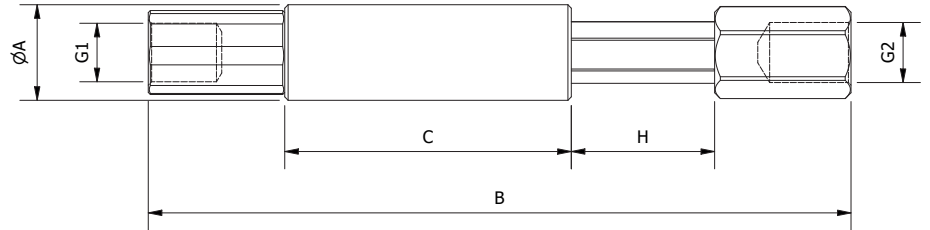
MP.SDRG. – Telescopic Suspension Threaded Body (Rotative)



| Part No. | A | B | C | G1 | G2 | H | F(N) | Weight (g) |
|--------------|---------|-----|----|-------|-------|----|------|------------|
| MP.SDRG.1010 | M10x1 | 51 | 20 | M5 | M5 | 10 | 3,6 | 12 |
| MP.SDRG.1025 | M10x1 | 86 | 40 | M5 | M5 | 25 | 3,7 | 16 |
| MP.SDRG.1420 | M14x1.5 | 85 | 42 | G 1/8 | G 1/8 | 20 | 8,9 | 30 |
| MP.SDRG.1435 | M14x1.5 | 120 | 62 | G 1/8 | G 1/8 | 35 | 9,5 | 37 |
| MP.SDRG.1620 | M16x1 | 85 | 42 | G 1/8 | G 1/8 | 20 | 8,9 | 37 |
| MP.SDRG.2025 | M20x1.5 | 97 | 47 | G 1/8 | G 1/8 | 25 | 11 | 88 |
| MP.SDRG.2050 | M20x1.5 | 147 | 72 | G 1/8 | G 1/8 | 50 | 11,4 | 108 |

Body and rod made of aluminium - anodized.

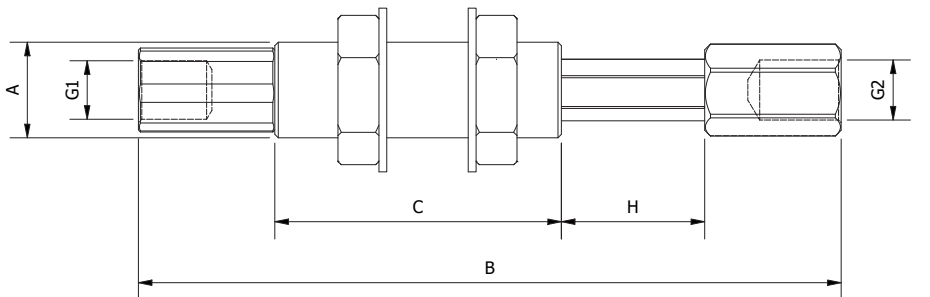
MP.SDN. – Telescopic Suspension Smooth Body (Non-rotative)



| Part No. | A | B | C | G1 | G2 | H | F(N) | Weight (g) |
|----------------|----|-----|----|-------|-------|----|------|------------|
| MP.SDN.1010 | 10 | 61 | 26 | M5 | M5 | 10 | 3,6 | 8 |
| MP.SDN.1025 | 10 | 91 | 41 | M5 | M5 | 25 | 3,7 | 11 |
| MP.SDN.1420 | 14 | 103 | 42 | G 1/8 | G 1/8 | 20 | 8,9 | 25 |
| MP.SDN.1435 | 14 | 135 | 60 | G 1/8 | G 1/8 | 35 | 9,5 | 32 |
| MP.SDN.2025 | 20 | 114 | 55 | G 1/8 | G 1/8 | 25 | 11 | 63 |
| MP.SDN.2050 | 20 | 167 | 82 | G 1/8 | G 1/8 | 50 | 11,4 | 81 |
| MP.SDN.2025.14 | 20 | 114 | 55 | G 1/4 | G 1/4 | 25 | 11 | 59 |
| MP.SDN.2050.14 | 20 | 161 | 82 | G 1/4 | G 1/4 | 50 | 11,4 | 77 |

Body and rod made of aluminium - anodized.
Non Rotative.

MP.SDNG. – Telescopic Suspension Threaded Body (Non-rotative)

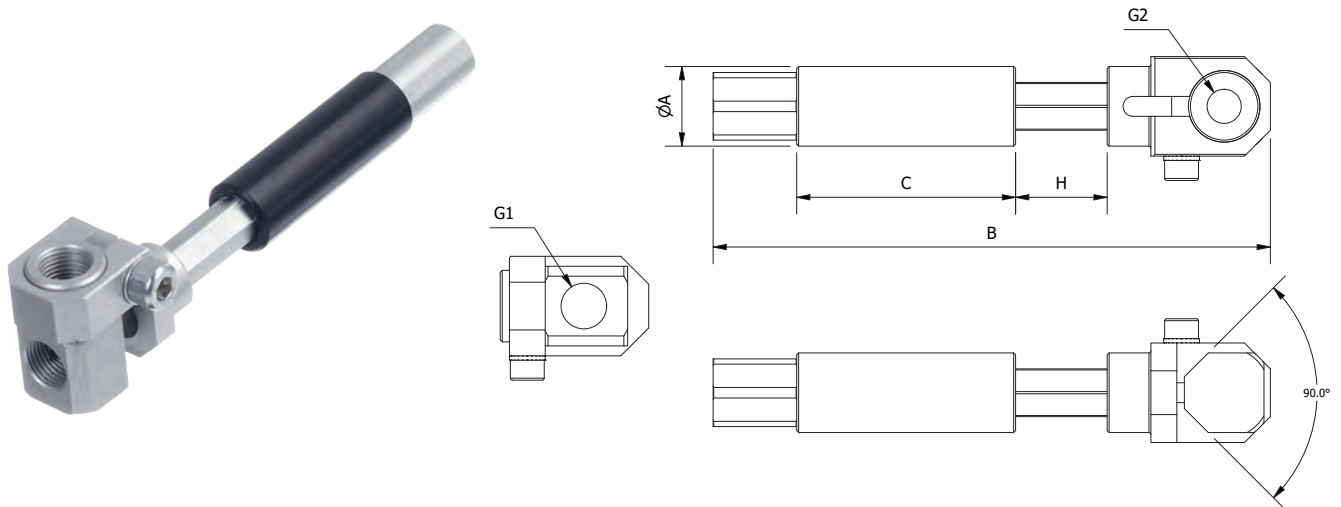


| Part No. | A | B | C | G1 | G2 | H | F(N) | Weight (g) |
|-----------------|---------|-----|----|-------|-------|----|------|------------|
| MP.SDNG.1010 | M10x1 | 61 | 26 | M5 | M5 | 10 | 3,6 | 13 |
| MP.SDNG.1025 | M10x1 | 91 | 41 | M5 | M5 | 25 | 3,7 | 16 |
| MP.SDNG.1420 | M14x1.5 | 103 | 42 | G 1/8 | G 1/8 | 20 | 8,9 | 36 |
| MP.SDNG.1435 | M14x1.5 | 135 | 60 | G 1/8 | G 1/8 | 35 | 9,5 | 42 |
| MP.SDNG.2025 | M20x1.5 | 114 | 55 | G 1/8 | G 1/8 | 25 | 11 | 96 |
| MP.SDNG.2050 | M20x1.5 | 174 | 82 | G 1/8 | G 1/8 | 50 | 11,4 | 115 |
| MP.SDNG.2025.14 | M20x1.5 | 114 | 55 | G 1/4 | G 1/4 | 25 | 11 | 92 |
| MP.SDNG.2050.14 | M20x1.5 | 167 | 82 | G 1/4 | G 1/4 | 50 | 11,4 | 111 |

Body and rod made of aluminium - anodized.
Non Rotative.

SUSPENSIONS FOR VACUUM CUPS

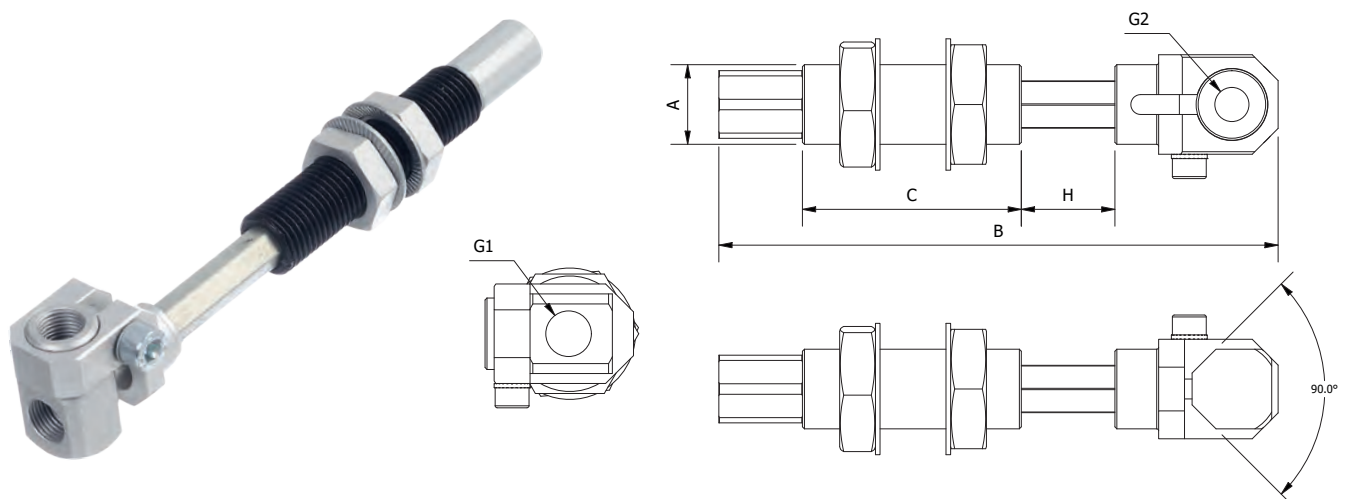
MP.SSN. – Telescopic Suspension Smooth Body (Non-rotative) Swivel Head



| Part No. | A | B | C | G1 | G2 | H | F(N) | Weight (g) |
|-----------------|----|-----|----|-------|-------|----|------|------------|
| MP.SSN.10100505 | 10 | 78 | 26 | M5 | M5 | 10 | 3,6 | 20 |
| MP.SSN.10250505 | 10 | 108 | 41 | M5 | M5 | 25 | 3,7 | 23 |
| MP.SSN.14201818 | 14 | 116 | 42 | G 1/8 | G 1/8 | 20 | 8,9 | 45 |
| MP.SSN.14351818 | 14 | 148 | 60 | G 1/8 | G 1/8 | 35 | 9,5 | 51 |
| MP.SSN.20251418 | 20 | 140 | 55 | G 1/4 | G 1/8 | 25 | 11 | 102 |
| MP.SSN.20501418 | 20 | 193 | 82 | G 1/4 | G 1/8 | 50 | 11,4 | 121 |

Body and rod made of aluminium - anodized.
 Angle of vacuum cup adjustable between 0° and 90°.
 Non Rotative.

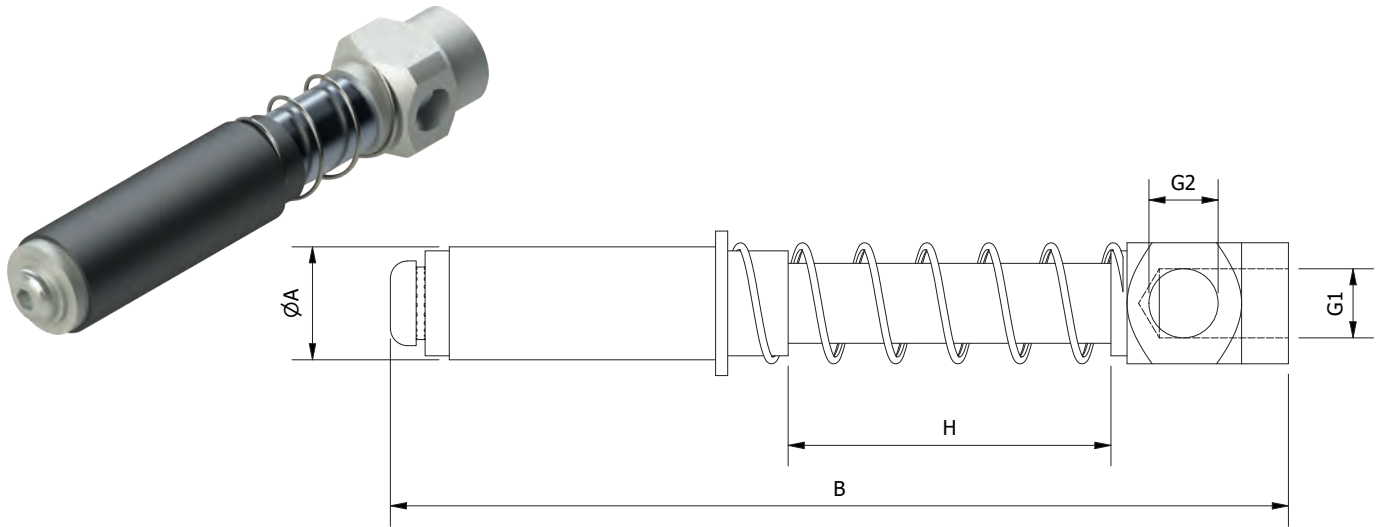
MP.SSNG. – Telescopic Suspension Threaded Body (Non-rotative) Swivel Head



| Part No. | A | B | C | G1 | G2 | H | F(N) | Weight (g) |
|------------------|---------|-----|----|-------|-------|----|------|------------|
| MP.SSNG.10100505 | M10x1 | 78 | 26 | M5 | M5 | 10 | 3,6 | 13 |
| MP.SSNG.10250505 | M10x1 | 108 | 41 | M5 | M5 | 25 | 3,7 | 16 |
| MP.SSNG.14201818 | M14x1.5 | 116 | 42 | G 1/8 | G 1/8 | 20 | 8,9 | 36 |
| MP.SSNG.14351818 | M14x1.5 | 148 | 60 | G 1/8 | G 1/8 | 35 | 9,5 | 42 |
| MP.SSNG.20251418 | M20x1.5 | 140 | 55 | G 1/4 | G 1/8 | 25 | 11 | 96 |
| MP.SSNG.20501418 | M20x1.5 | 193 | 82 | G 1/4 | G 1/8 | 50 | 11,4 | 115 |

Body and rod made of aluminium - anodized.
 Angle of vacuum cup adjustable between 0° and 90°.
 Non Rotative.

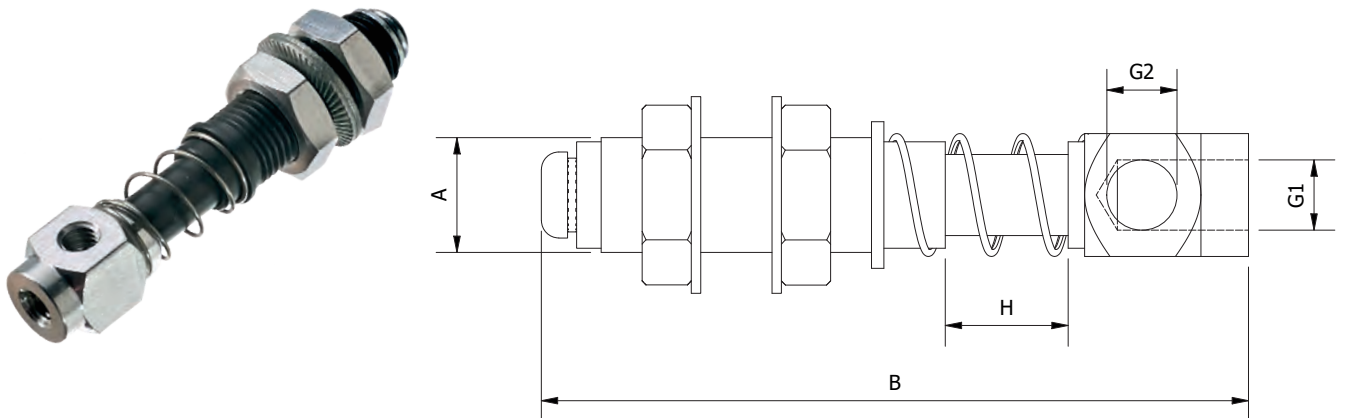
MA.GGD. – Spring Loaded Vacuum Cup Arm Smooth Body (Rotative)



| Part No. | A | B | G1 | G2 | H | F(N) | Weight (g) |
|-----------------|----|-----|-------|-------|----|------|------------|
| MA.GGD.10050510 | 10 | 59 | M5 | M5 | 10 | 8 | 11 |
| MA.GGD.10050530 | 10 | 85 | M5 | M5 | 30 | 11 | 15 |
| MA.GGD.14181815 | 14 | 84 | G 1/8 | G 1/8 | 15 | 9 | 33 |
| MA.GGD.14181840 | 14 | 109 | G 1/8 | G 1/8 | 40 | 14,6 | 38 |
| MA.GGD.20141820 | 20 | 109 | G 1/4 | G 1/8 | 20 | 11,7 | 76 |
| MA.GGD.20141850 | 20 | 147 | G 1/4 | G 1/8 | 50 | 16,8 | 92 |

For use with round vacuum cups only.

MA.GGDG. – Spring Loaded Vacuum Cup Arm Threaded Body (Rotative)

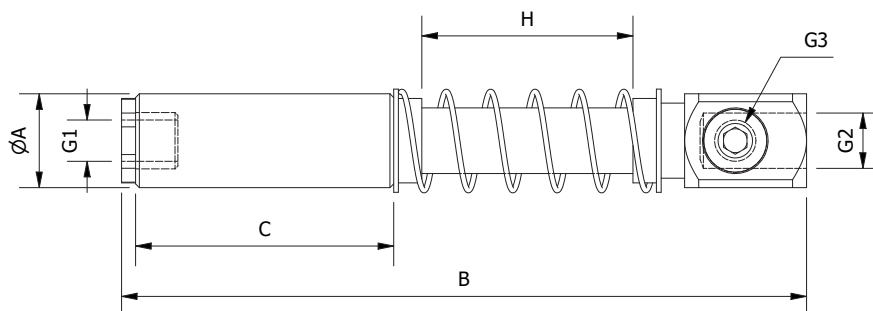


| Part No. | A | B | G1 | G2 | H | F(N) | Weight (g) |
|------------------|---------|-----|-------|-------|----|------|------------|
| MA.GGDG.10050510 | M10x1 | 59 | M5 | M5 | 10 | 8 | 17 |
| MA.GGDG.10050530 | M10x1 | 85 | M5 | M5 | 30 | 11 | 20 |
| MA.GGDG.14181815 | M14x1.5 | 86 | G 1/8 | G 1/8 | 15 | 9 | 41 |
| MA.GGDG.14181840 | M14x1.5 | 111 | G 1/8 | G 1/8 | 40 | 14.6 | 45 |
| MA.GGDG.20141820 | M20x1.5 | 109 | G 1/4 | G 1/8 | 20 | 11.7 | 99 |
| MA.GGDG.20141850 | M20x1.5 | 147 | G 1/4 | G 1/8 | 50 | 16.8 | 118 |

For use with round vacuum cups only.

SUSPENSIONS FOR VACUUM CUPS

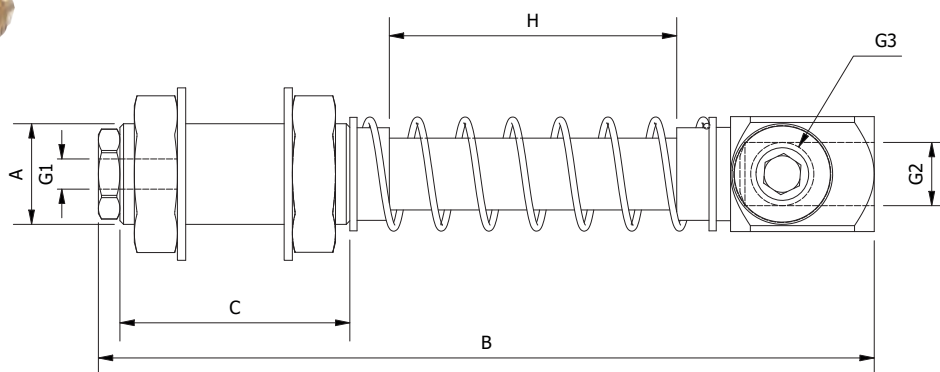
SZR. – Spring Loaded Vacuum Cup Arm Smooth Body (Rotative)



| Part No. | A | B | C | G1 | G2 | G3 | H | Weight (g) |
|---------------|----|-----|----|-------|-------|-------|----|------------|
| SZR.1010.0505 | 10 | 59 | 25 | M5 | M5 | | 10 | 28 |
| SZR.1030.0505 | 10 | 79 | 25 | M5 | M5 | | 30 | 31 |
| SZR.1415.1818 | 14 | 83 | 32 | M5 | G 1/8 | G 1/8 | 15 | 55 |
| SZR.1440.1818 | 14 | 108 | 32 | M5 | G 1/8 | G 1/8 | 40 | 60 |
| SZR.2025.1418 | 20 | 121 | 55 | G 1/8 | G 1/4 | G 1/8 | 25 | 137 |
| SZR.2050.1418 | 20 | 146 | 55 | G 1/8 | G 1/4 | G 1/8 | 50 | 144 |

For use with round vacuum cups only.

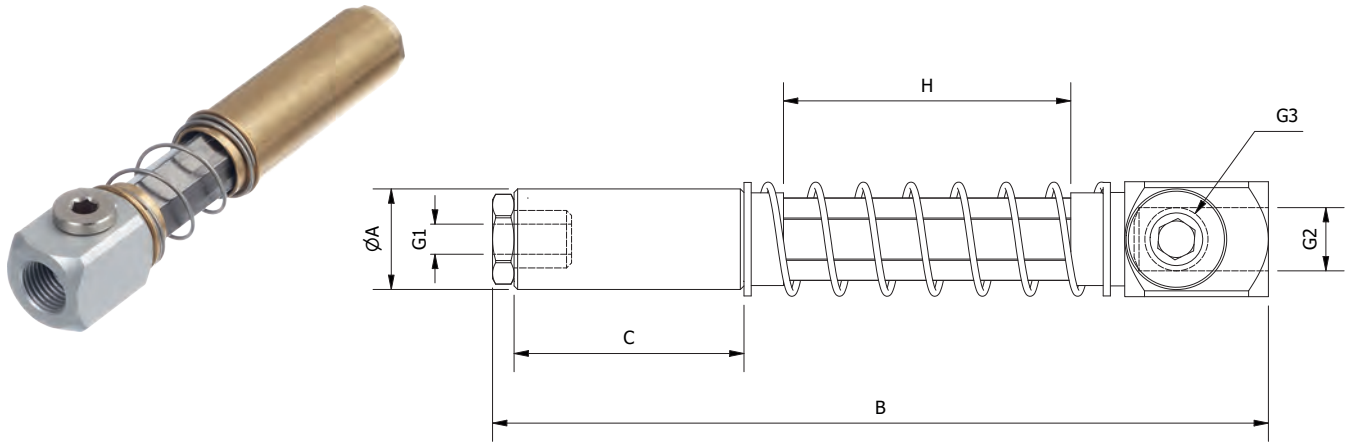
SZRG. – Spring Loaded Vacuum Cup Arm Threaded Body (Rotative)



| Part No. | A | B | C | G1 | G2 | G3 | H | Weight (g) |
|----------------|---------|-----|----|-------|-------|-------|----|------------|
| SZRG.1010.0505 | M10x1 | 59 | 25 | M5 | M5 | | 10 | 32 |
| SZRG.1030.0505 | M10x1 | 79 | 25 | M5 | M5 | | 30 | 35 |
| SZRG.1415.1818 | M14x1.5 | 83 | 32 | M5 | G 1/8 | G 1/8 | 15 | 67 |
| SZRG.1440.1818 | M14x1.5 | 108 | 32 | M5 | G 1/8 | G 1/8 | 40 | 72 |
| SZRG.2025.1418 | M20x1.5 | 121 | 55 | G 1/8 | G 1/4 | G 1/8 | 25 | 171 |
| SZRG.2050.1418 | M20x1.5 | 146 | 55 | G 1/8 | G 1/4 | G 1/8 | 50 | 187 |

For use with round vacuum cups only.

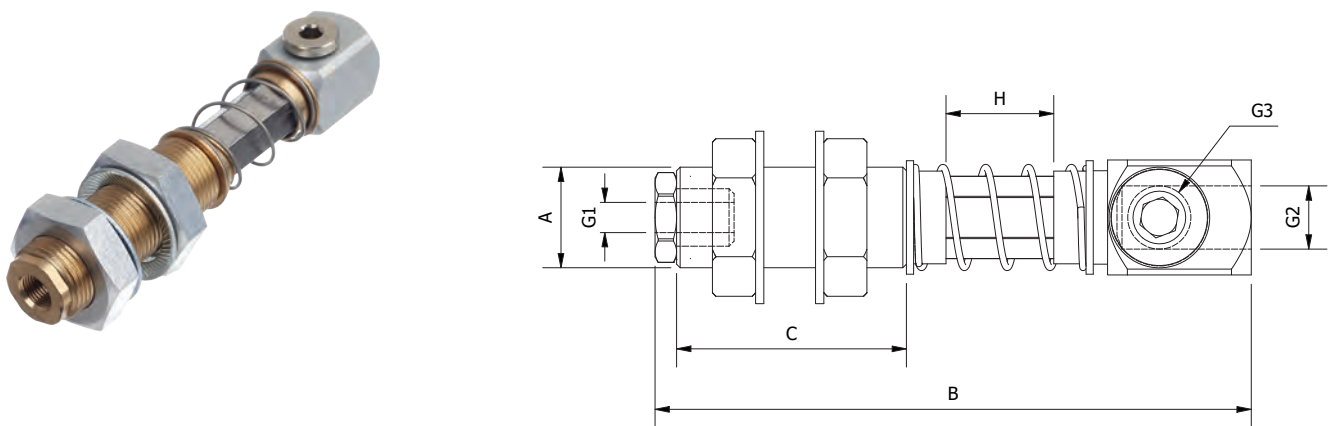
SZN. – Spring Loaded Vacuum Cup Arm Smooth Body (Non-rotative)



| Part No. | A | B | C | G1 | G2 | G3 | H | Weight (g) |
|---------------|----|-----|----|-------|-------|-------|----|------------|
| SZN.1010.0505 | 10 | 59 | 25 | M5 | M5 | | 10 | 25 |
| SZN.1030.0505 | 10 | 79 | 25 | M5 | M5 | | 30 | 27 |
| SZN.1415.1818 | 14 | 83 | 32 | M5 | G 1/8 | G 1/8 | 15 | 52 |
| SZN.1440.1818 | 14 | 108 | 32 | M5 | G 1/8 | G 1/8 | 40 | 55 |
| SZN.2025.1418 | 20 | 121 | 55 | G 1/8 | G 1/4 | G 1/8 | 25 | 137 |
| SZN.2050.1418 | 20 | 146 | 55 | G 1/8 | G 1/4 | G 1/8 | 50 | 140 |

For use with round and oval vacuum cups.
Non Rotative.

SZNG. – Spring Loaded Vacuum Cup Arm Threaded Body (Non-rotative)

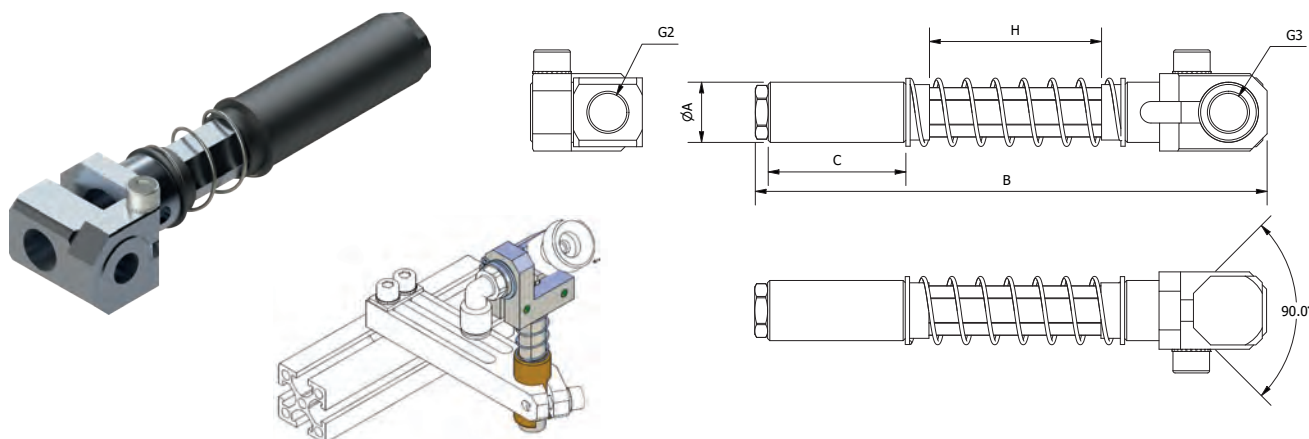


| Part No. | A | B | C | G1 | G2 | G3 | H | Weight (g) |
|----------------|---------|-----|----|-------|-------|-------|----|------------|
| SZNG.1010.0505 | M10x1 | 59 | 25 | M5 | M5 | - | 10 | 30 |
| SZNG.1030.0505 | M10x1 | 79 | 25 | M5 | M5 | - | 30 | 32 |
| SZNG.1415.1818 | M14x1.5 | 83 | 32 | M5 | G 1/8 | G 1/8 | 15 | 63 |
| SZNG.1440.1818 | M14x1.5 | 108 | 32 | M5 | G 1/8 | G 1/8 | 40 | 65 |
| SZNG.2025.1418 | M20x1.5 | 121 | 55 | G 1/8 | G 1/4 | G 1/8 | 25 | 170 |
| SZNG.2050.1418 | M20x1.5 | 146 | 55 | G 1/8 | G 1/4 | G 1/8 | 50 | 173 |

For use with round and oval vacuum cups.
Non Rotative.

SUSPENSIONS FOR VACUUM CUPS

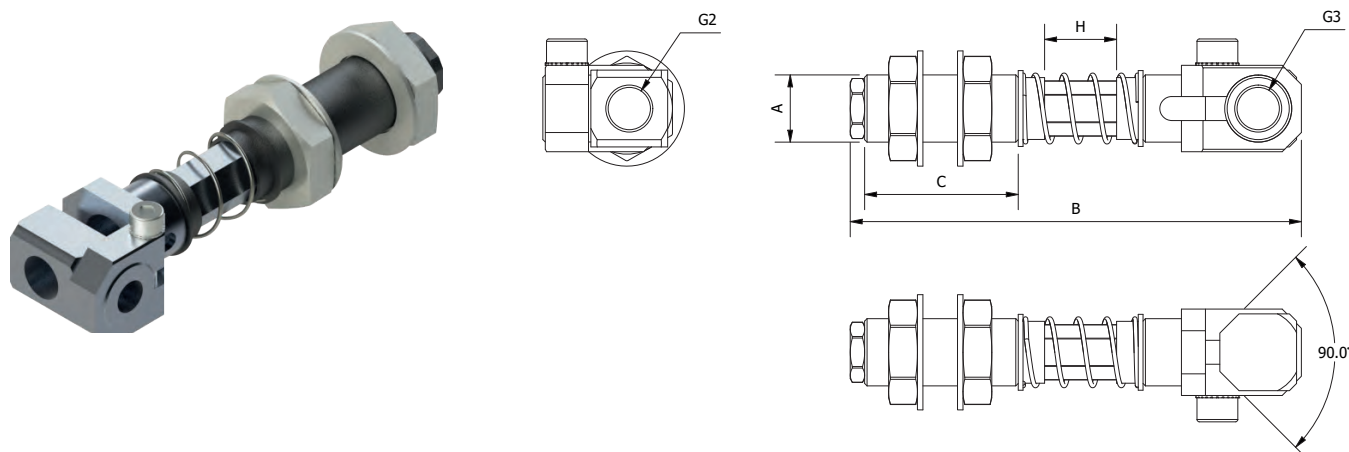
SZP. – Spring Loaded Vacuum Cup Arm Smooth Body (Non-rotative) Swivel Head



| Part No. | A | B | C | G2 | G3 | H | Weight (g) |
|---------------|----|-----|----|-------|-------|----|------------|
| SZP.1010.0505 | 10 | 76 | 25 | M5 | | 10 | 32 |
| SZP.1030.0505 | 10 | 96 | 25 | M5 | | 30 | 35 |
| SZP.1415.1818 | 14 | 94 | 32 | G 1/8 | G 1/8 | 15 | 67 |
| SZP.1440.1818 | 14 | 119 | 32 | G 1/8 | G 1/8 | 40 | 72 |
| SZP.2025.1418 | 20 | 131 | 55 | G 1/4 | G 1/8 | 25 | 171 |
| SZP.2050.1418 | 20 | 156 | 55 | G 1/4 | G 1/8 | 50 | 187 |

For use with round and oval vacuum cups .
 Angle of vacuum cup adjustable between 0°and 90°.
 Non Rotative.

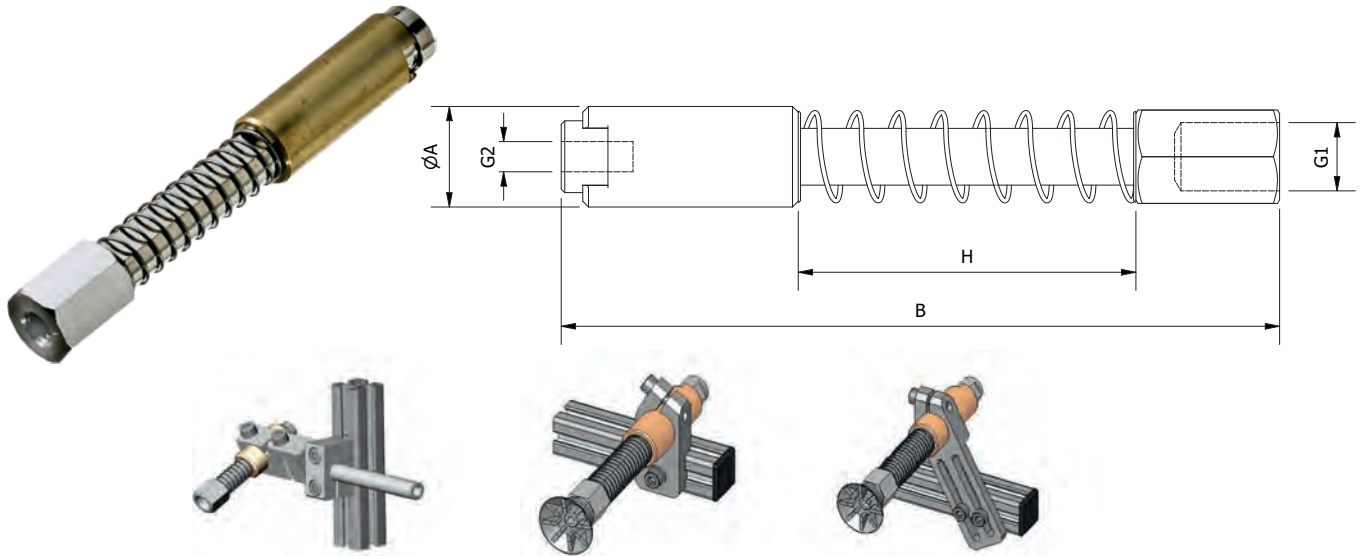
SZPG. – Spring Loaded Vacuum Cup Arm Threaded Body (Non-rotative) Swivel Head



| Part No. | A | B | C | G2 | G3 | H | Weight (g) |
|----------------|---------|-----|----|-------|-------|----|------------|
| SZPG.1010.0505 | M10x1 | 76 | 25 | M5 | - | 10 | 39 |
| SZPG.1030.0505 | M10x1 | 96 | 25 | M5 | - | 30 | 44 |
| SZPG.1415.1818 | M14x1.5 | 94 | 32 | G 1/8 | G 1/8 | 15 | 70 |
| SZPG.1440.1818 | M14x1.5 | 119 | 32 | G 1/8 | G 1/8 | 40 | 90 |
| SZPG.2025.1418 | M20x1.5 | 131 | 55 | G 1/4 | G 1/8 | 25 | 188 |

For use with round and oval vacuum cups.
 Angle of vacuum cup adjustable between 0°and 90°.
 Non Rotative.

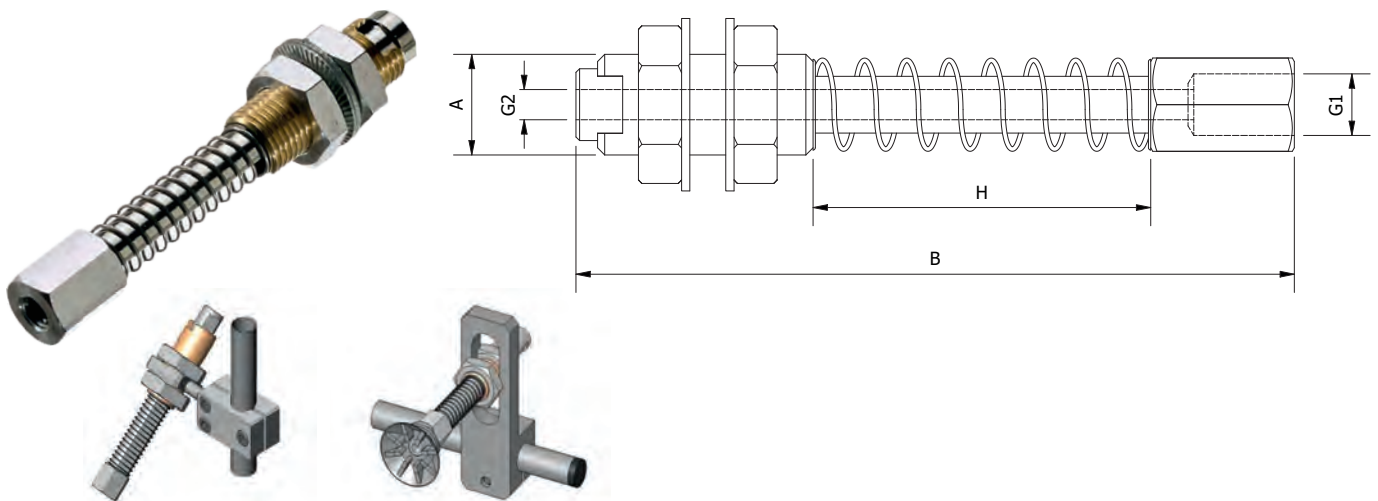
LC. – Level Compensator Smooth Body (Non-rotative)



| Part No. | A | B | G1 | G2 | H | F(N) | Weight (g) |
|----------|----|-----|-------|-------|----|------|------------|
| LC.10.20 | 10 | 69 | M5 | M5 | 20 | 3,4 | 26 |
| LC.12.20 | 12 | 69 | M5 | M5 | 20 | 18,4 | 33 |
| LC.14.38 | 14 | 100 | G 1/8 | M5 | 38 | 23,3 | 63 |
| LC.20.48 | 20 | 125 | G 1/4 | G 1/8 | 48 | 16,6 | 155 |

Spring: Steel.
 Sliding Parts: Chrome-plated Brass.
 Terminal Parts: Anodized Aluminium.

LC.M. – Level Compensator Threaded Body (Non-rotative)

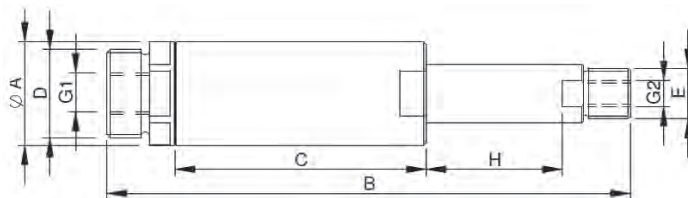


| Part No. | A | B | G1 | G2 | H | F(N) | Weight (g) |
|-----------|----------|-----|-------|-------|----|------|------------|
| LC.M10.20 | M10x1 | 70 | M5 | M5 | 20 | 3,4 | 36 |
| LC.M12.20 | M12x1.25 | 77 | G 1/8 | M5 | 20 | 6 | 40 |
| LC.M14.38 | M14x1.5 | 100 | G 1/8 | M5 | 38 | 23,2 | 71 |
| LC.M20.48 | M20x1.5 | 125 | G 1/4 | G 1/8 | 48 | 16,7 | 189 |

Spring: Steel.
 Sliding Parts: Chrome-plated Brass.
 Terminal Parts: Anodized Aluminium.

SUSPENSIONS FOR VACUUM CUPS

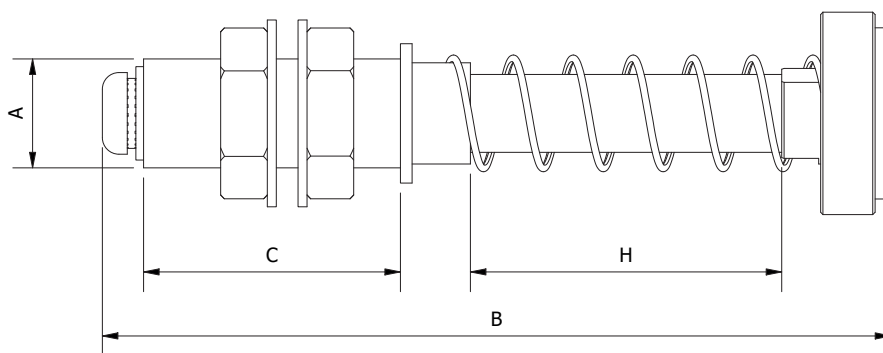
MPTSS – Telescopic Self-Retracting Suspension



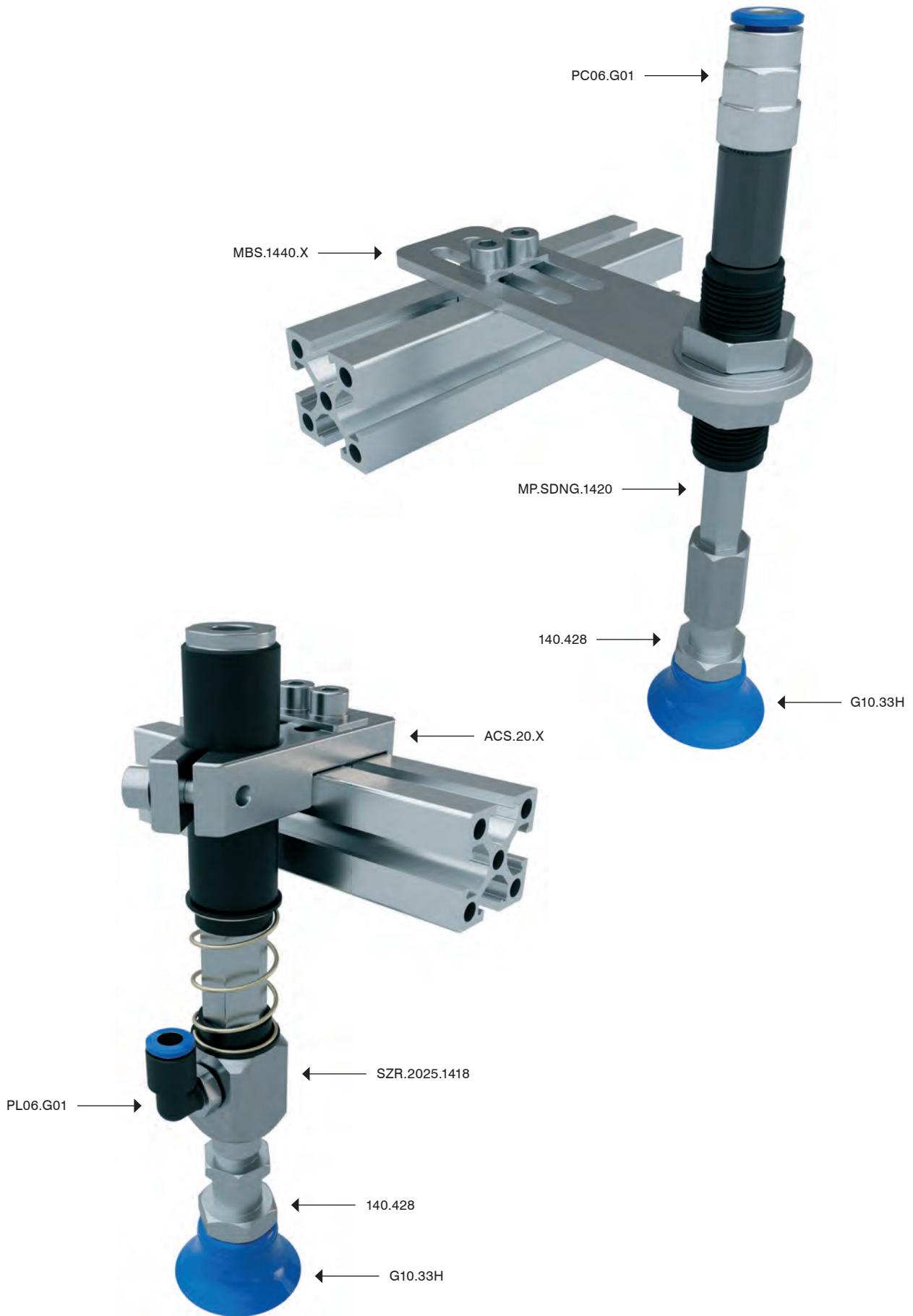
| Part No. | A | B | C | D | E | G1 | G2 | H | F(N) | Weight (g) |
|-----------|----|-----|----|-------|-------|-------|----|----|------|------------|
| MPTSS2025 | 20 | 100 | 48 | M17x1 | G 1/8 | G 1/8 | M5 | 25 | 3,6 | 42 |
| MPTSS2050 | 20 | 150 | 73 | M17x1 | G 1/8 | G 1/8 | M5 | 50 | 4,2 | 68 |

Automatic retraction of vacuum cup once vacuum is established.
Reset on part release.

SR. – Spring Rod



| Part No. | A | B | C | H | Weight (g) |
|----------|---------|-----|----|----|------------|
| SRR.1440 | M14x1.5 | 101 | 42 | 40 | 47 |

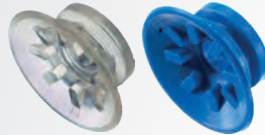


VACUUM CUPS

226 G Series,
Flat Cups



227 F Series,
Flat Cups with Cleats



228 B Series,
1.5 Bellow Cups



229 CM Series,
1.5 Bellow Cups



230 CL Series,
1.5 Bellow Cups



231 CL Series,
2.5 Bellow Cups



232 G Series, 1.5 Bellow Cups
with Foam Ring



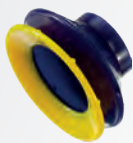
233 G Series, 2.5 Bellow Cups
with Foam Ring



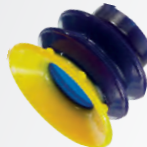
234 Fittings for
G Series Cups



235 Multiflex,
1.5 Bellow Cups



236 Multiflex,
2.5 Bellow Cups



Type Selection Guide

Type

Flat Cups

The flat suction cups provide accuracy in load gripping and speeds up the cycle process. Flat cups are used for flat and slightly curved surfaces.



1,5 Bellow Cups

The 1,5 bellow cups combine the advantages of the flat suction cups (precision and positioning) with the freedom of belows (angle and flexibility). They provide flexibility, precision and low internal volume suitable for high-speed applications.

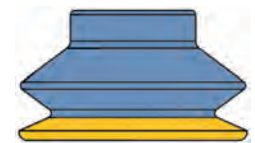
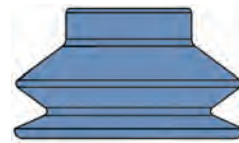
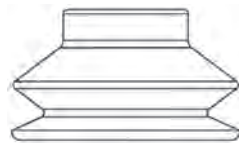


2,5 Bellow Cups

The suction cups with 2,5 bellow are recommended for gripping products with un-even surfaces (large deflection). The 2,5 bellow allow objects to be gripped from an angle (ball-joint effect).



Material Properties



| Application | Silicone | FlexTemp HT | Multiflex |
|----------------------------------|----------------|----------------|---------------|
| Ozone resistance | ✓✓✓ | ✓✓ | ✓✓✓ |
| Oil resistance | ✓ | ✓✓✓ | ✓✓ |
| Wear resistance | ✓✓ | ✓✓ | ✓✓✓ |
| Tensile strength (lifting force) | ✓ | ✓ | ✓✓✓ |
| Leaves marks on products | ✓ | ✓✓ | ✓✓✓ |
| Temperature resistance | -70 to + 200°C | -40 to + 160°C | -20 to + 80°C |
| Shore hardness | 30-60° | 60° | 30-60° |

The holding force of the suction cups increases proportionally with the difference between the ambient pressure and the pressure inside the cup.

The holding force of a suction pad is calculated with the formula:

$F = \Delta p \times A$

F = Holding force.

Δp = Difference between ambient pressure and pressure of the system.

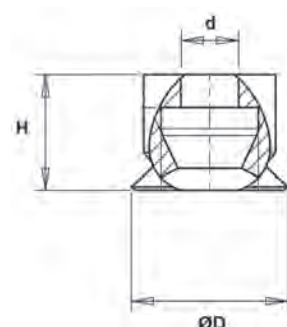
A = Effective suction area (the effective area of a suction pad under vacuum).


This means the holding force is proportional to the pressure difference and the suction area. The greater the difference between ambient pressure and pressure in the suction cup or the larger the effective suction area, the greater the holding force.

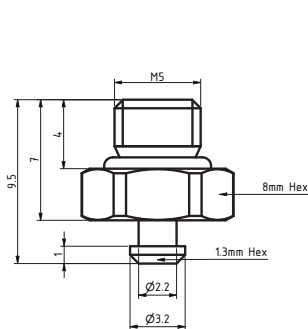
The force can vary depending on a change of the pressure difference and area parameters.

VACUUM CUPS

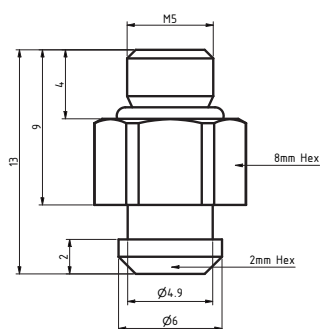
G Series, Flat Vacuum Cups



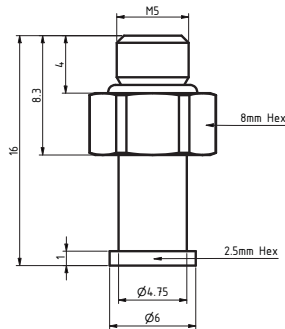
| Part No. Silicone | Part No. TempFlex HT | ØD | d | H |  | Fitting | Fitting | Weight (g) |
|-------------------|----------------------|------|-----|------|---|---------|---------|------------|
| G10.06F | G10.06H | 6 | 2,0 | 4,5 | 0,3 | | 140.005 | 0,06 |
| G10.09F | G10.09H | 9,5 | 3,5 | 7 | 0,5 | | 140.405 | 0,21 |
| G10.11F | G10.11H | 11,0 | 3,5 | 10,0 | 0,5 | 140.410 | 140.414 | 0,5 |
| G10.16F | G10.16H | 16,2 | 3,5 | 10,5 | 1,5 | 140.410 | 140.414 | 0,62 |
| G10.22F | G10.22H | 22,0 | 8,0 | 11,5 | 2,5 | 140.428 | 140.432 | 1,1 |
| G10.33F | G10.33H | 32,0 | 8,0 | 12,5 | 3,5 | 140.428 | 140.432 | 2 |
| G10.42F | G10.42H | 41,0 | 8,0 | 15,5 | 4,5 | 140.428 | 140.432 | 4 |
| G10.53F | G10.53H | 51,5 | 8,0 | 20,0 | 6,0 | 140.428 | 140.432 | 8 |



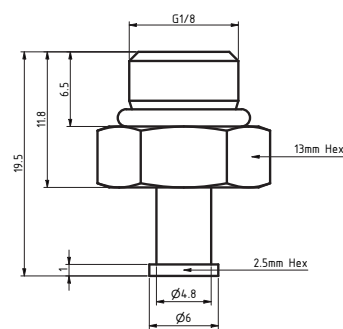
140.005



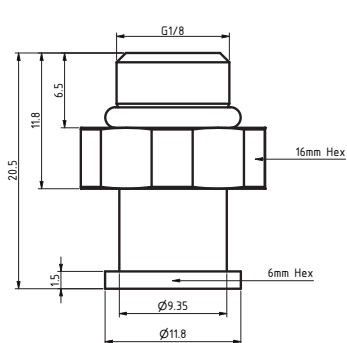
140.405



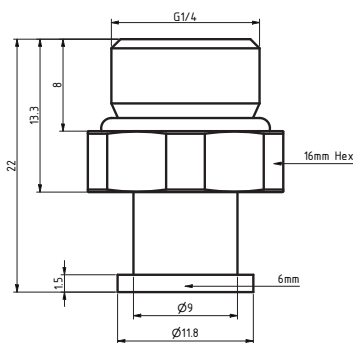
140.410



140.414



140.428



140.432

For gripping flat, smooth and slightly curved products.

HNBR - Suitable for handling plastic parts.

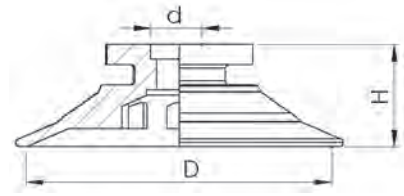
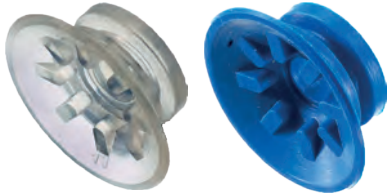
HNBR - PWIS free.


HNBR: Temperature range, -25 to +150°C.

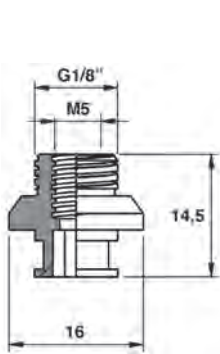
Food grade silicone (FDA approved).

Silicone: Temperature range, -70 to +200°C.

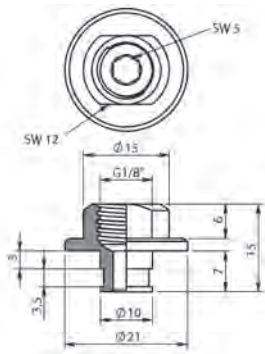
F Series, Flat Vacuum Cups with Cleats



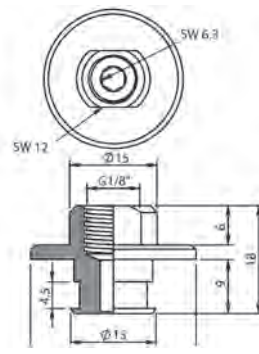
| Part No. Silicone | Part No. TempFlex HT | ØD | H |  | Fitting | Fitting | Fitting | Weight (g) |
|-------------------|----------------------|----|------|---|---------|---------|---------|------------|
| F20S | F20HT | 22 | 8 | 0,5 | F250 | | | |
| F25S | F25HT | 28 | 9 | 1 | F250 | | | |
| F30S | F30HT | 32 | 10 | 1,5 | F250 | | | |
| F40S | F40HT | 42 | 13 | 2 | | F251 | | |
| F50S | F50HT | 53 | 17,5 | 3 | | | F252 | |



F250



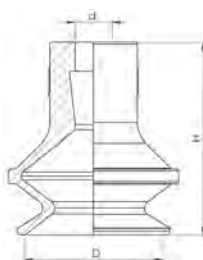
F251



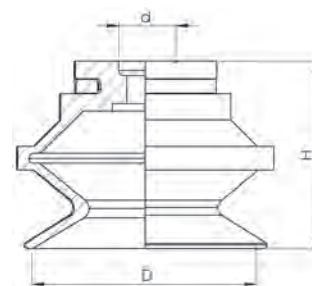
F252

VACUUM CUPS


B Series, 1.5 Bellow Vacuum Cups

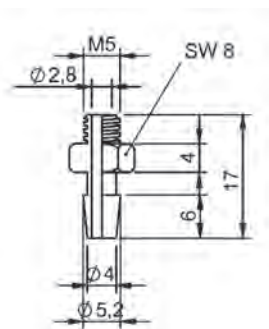


Ø5 - Ø16

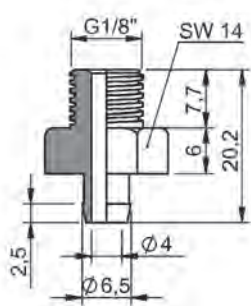


Ø20 - Ø50

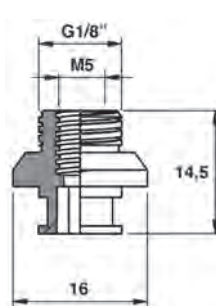
| Part No. Silicone | Part No. TempFlex HT | ØD | D1 | d | H |  | Fitting | Fitting | Weight (g) |
|-------------------|----------------------|------|------|------|-----|--|---------|---------|------------|
| B05S | B05HT | 5 | | 2,6 | 9,5 | 2 | | 130.591 | 0,12 |
| B08S | B08HT | 8,8 | | 2 | 12 | 2 | | 130.591 | 0,2 |
| B11S | B11HT | 11,0 | | 4 | 17 | 5 | F134 | 130.003 | 1,0 |
| B16S | B16HT | 16,0 | | 4 | 19 | 7 | F134 | 130.003 | 1,4 |
| B20S | B20HT | 21,5 | 24,0 | 4,8 | 20 | 9 | F250 | | 2,5 |
| B30S | B30HT | 33,0 | 36,0 | 6 | 26 | 9 | F250 | | 6,5 |
| B40S | B40HT | 42,0 | 46,0 | 7 | 28 | 9 | F251 | | 10 |
| B50S | B50HT | 52,0 | 58,0 | 10,5 | 35 | 12 | F252 | | 22 |



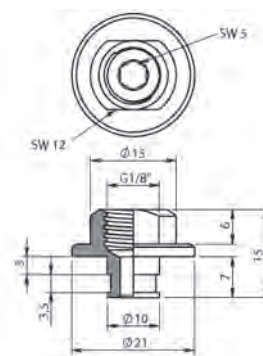
F134



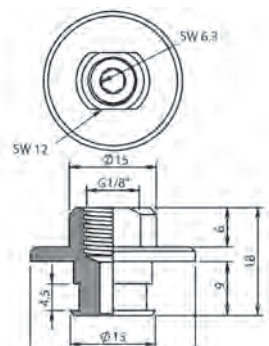
130.003



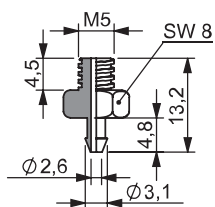
F250



F251

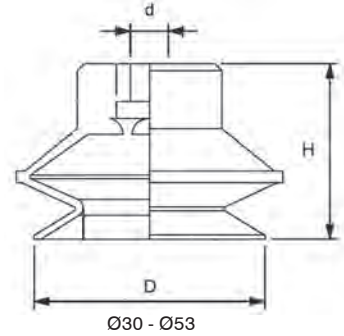
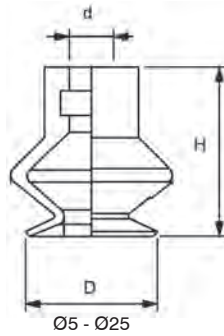



F252

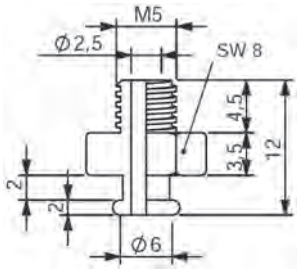


130.591

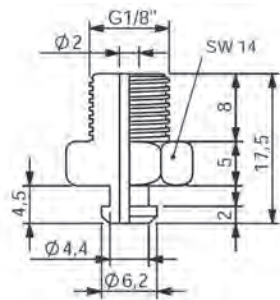
CM Series, 1.5 Bellow Vacuum Cups



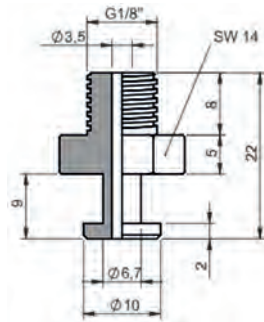
| Part No. Silicone | Part No. TempFlex HT | ØD | d | H |  | Fitting | Fitting | Weight (g) |
|-------------------|----------------------|----|---|------|---|---------|---------|------------|
| CM-1.5-10-S | CM-1.5-10-HT | 10 | 2 | 13,5 | 4 | 130.301 | 130.009 | 0,7 |
| CM-1.5-15-S | CM-1.5-15-HT | 15 | 4 | 16 | 5 | 130.301 | 130.009 | 0,7 |
| CM-1.5-20-S | CM-1.5-20-HT | 20 | 5 | 20 | 8 | 130.030 | 130.274 | 2,4 |
| CM-1.5-30-S | CM-1.5-30-HT | 32 | 6 | 30,5 | 9 | 130.030 | 130.274 | 9 |
| CM-1.5-40-S | CM-1.5-40-HT | 40 | 6 | 30,5 | 10 | 130.030 | 130.274 | 12 |



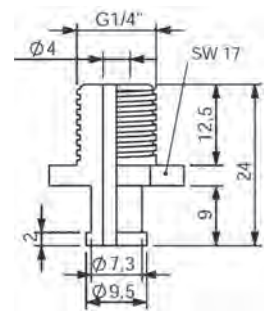
130,301



130,009



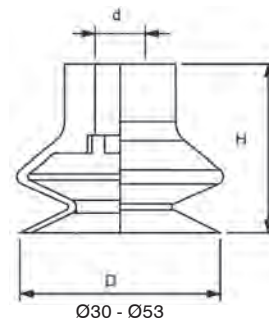
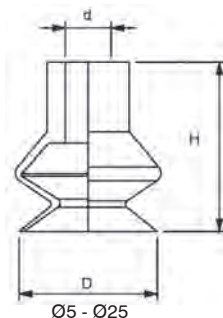
130,030



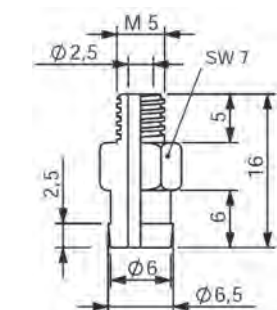
130,274

VACUUM CUPS

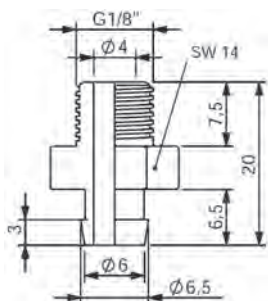
CL Series, 1.5 Bellow Vacuum Cups



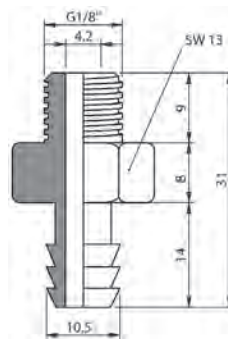
| Part No. Silicone | Part No. TempFlex HT | ØD | d | H | | Fitting | Fitting | Weight (g) |
|-------------------|----------------------|----|----|----|-----|---------|---------|------------|
| CL-1.5-06-S | CL-1.5-06-HT | 6 | 4 | 9 | 5 | 130.301 | 130.009 | 0,2 |
| CL-1.5-11-S | CL-1.5-11-HT | 11 | 5 | 16 | 4,5 | 130.013 | 130.003 | 1 |
| CL-1.5-14-S | CL-1.5-14-HT | 14 | 5 | 15 | 4 | 130.013 | 130.003 | 1 |
| CL-1.5-16-S | CL-1.5-16-HT | 16 | 5 | 19 | 6 | 130.013 | 130.003 | 1,2 |
| CL-1.5-20-S | CL-1.5-20-HT | 20 | 4 | 16 | 4 | 130.013 | 130.003 | 1,7 |
| CL-1.5-25-S | CL-1.5-25-HT | 25 | 4 | 23 | 9 | 130.013 | 130.003 | 2,4 |
| CL-1.5-30-S | CL-1.5-30-HT | 33 | 8 | 28 | 12 | 130.132 | 130.190 | 7 |
| CL-1.5-43-S | CL-1.5-43-HT | 43 | 8 | 28 | 12 | 130.132 | 130.190 | 10 |
| CL-1.5-53-S | CL-1.5-53-HT | 53 | 8 | 34 | 11 | 130.132 | 130.190 | 19 |
| CL-1.5-63-S | CL-1.5-63-HT | 63 | 8 | 34 | 15 | 130.132 | 130.190 | 28 |
| CL-1.5-78-S | CL-1.5-78-HT | 78 | 12 | 47 | 14 | 130.622 | | 55 |



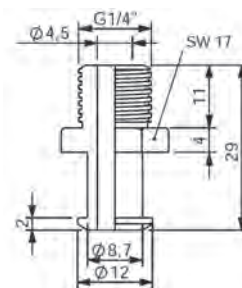
130.013



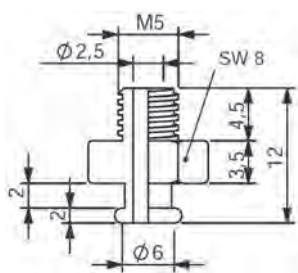
130.003



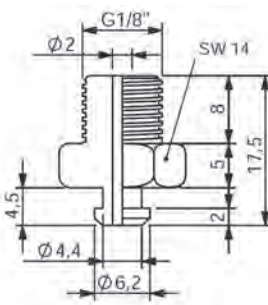
130.132



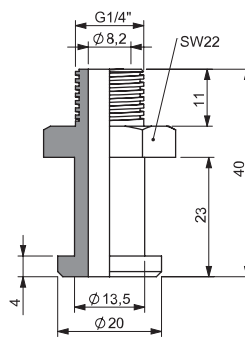
130.190



130.301

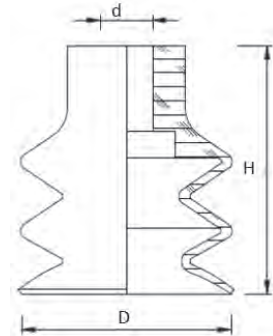


130.009

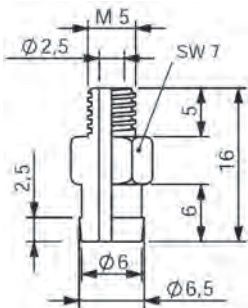


130.622

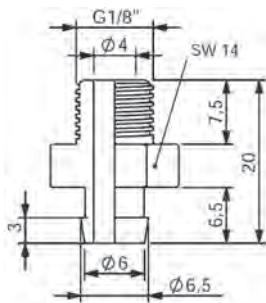
CL Series, 2.5 Bellow Vacuum Cups



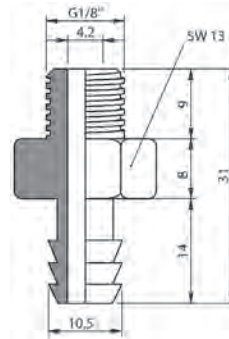
| Part No. Silicone | Part No. TempFlex HT | ØD | d | H | | Fitting | Fitting | Weight (g) |
|-------------------|----------------------|----|-----|----|-----|---------|---------|------------|
| CL-2.5-5 | CL-2.5-5-HT | 5 | 4 | 14 | 3 | 130.013 | 130.003 | 0,3 |
| CL-2.5-7 | CL-2.5-7-HT | 7 | 3,8 | 14 | 3 | 130.013 | 130.003 | 0,5 |
| CL-2.5-9 | CL-2.5-9-HT | 9 | 4 | 15 | 2 | 130.013 | 130.003 | 0,6 |
| CL-2.5-12 | CL-2.5-12-HT | 12 | 5 | 21 | 8,5 | 130.013 | 130.003 | 1,0 |
| CL-2.5-14 | CL-2.5-14-HT | 14 | 4 | 22 | 11 | 130.013 | 130.003 | 1,3 |
| CL-2.5-20 | CL-2.5-20-HT | 20 | 4,5 | 23 | 8 | 130.013 | 130.003 | 2,1 |
| CL-2.5-25 | CL-2.5-25-HT | 25 | 4 | 34 | 19 | 130.013 | 130.003 | 3,5 |
| CL-2.5-32 | CL-2.5-32-HT | 32 | 8 | 37 | 13 | 130.132 | 130.190 | 8,3 |
| CL-2.5-42 | CL-2.5-42-HT | 42 | 8 | 46 | 19 | 130.132 | 130.190 | 18,0 |
| CL-2.5-52 | CL-2.5-52-HT | 52 | 8 | 49 | 27 | 130.132 | 130.190 | 24,2 |
| CL-2.5-62 | CL-2.5-62-HT | 62 | 9 | 53 | 25 | 130.093 | 130.281 | 45,7 |



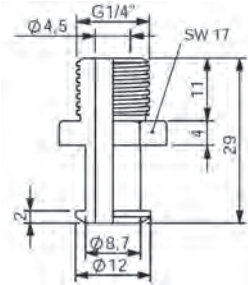
130.013



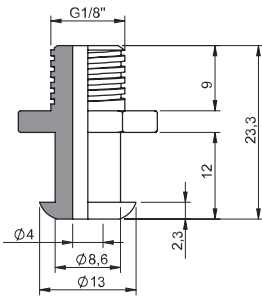
130.003



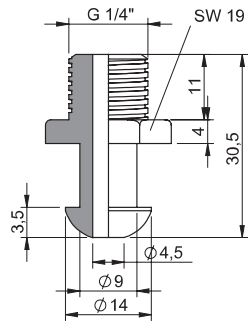
130.132



130.190



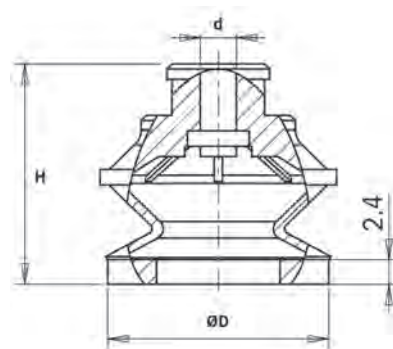
130.093




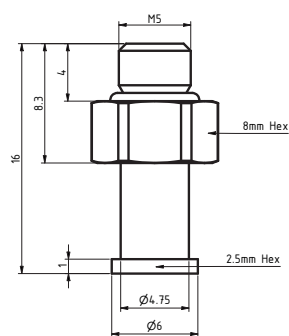
130.281

VACUUM CUPS

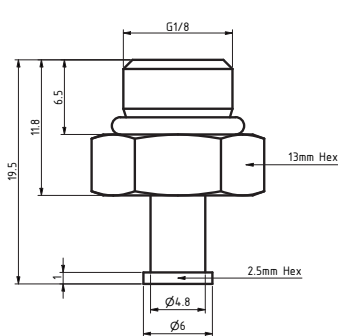
G Series, Suction Cups, 1.5 Bellow with Silicone Foam Ring



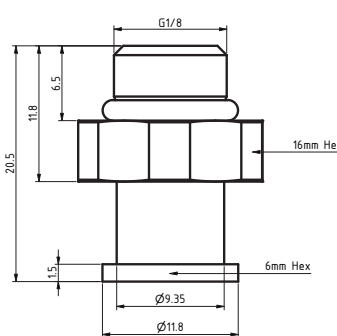
| Part No. | ØD | d | H |  | Fitting | Fitting | Weight (g) |
|------------|-------|-----|------|---|---------|---------|------------|
| G15.16F.SF | 15,50 | 3,4 | 21,2 | 7,5 | 140.410 | 140.414 | 2,2 |
| G15.22F.SF | 21,5 | 3,5 | 21,4 | 11 | 140.410 | 140.414 | 2,0 |
| G15.33F.SF | 32,5 | 8 | 28,4 | 16 | 140.428 | 140.432 | 6,2 |
| G15.42F.SF | 41,5 | 8 | 30,6 | 13 | 140.428 | 140.432 | 9,3 |
| G15.53F.SF | 52,5 | 8 | 37,4 | 20 | 140.428 | 140.432 | 16,0 |



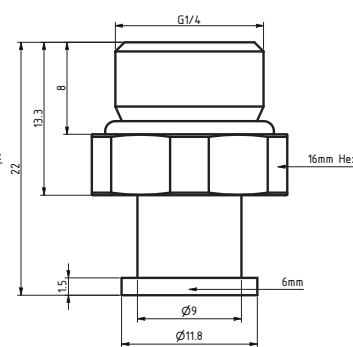
140.410



140.414



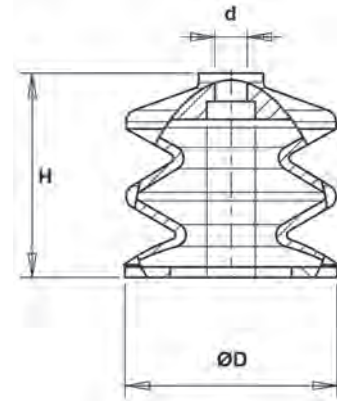
140.428



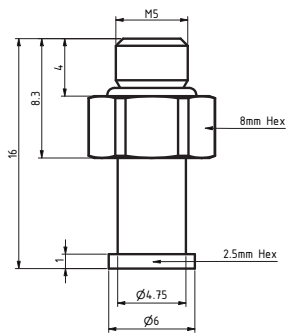
140.432

Ideal to handle uneven, textured and porous surfaces.
 Ring in mark-free silicone foam.
 Transparent Silicone - 50 Shore.
 Temperature range -55 to +200°C.

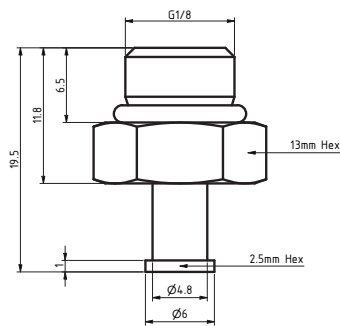
G Series, Suction Cups 2.5 Bellow with Silicone Foam Ring



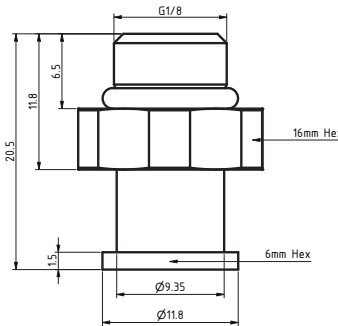
| Part No. | ØD | d | H | | Fitting | Fitting | Weight (g) |
|------------|----|-----|------|----|---------|---------|------------|
| G25.16F.SF | 16 | 3,5 | 24 | 10 | 140.410 | 140.414 | 1,2 |
| G25.22F.SF | 22 | 3,5 | 24 | 19 | 140.410 | 140.414 | 2,2 |
| G25.33F.SF | 33 | 8 | 32,6 | 16 | 140.428 | 140.432 | 7,2 |
| G25.42F.SF | 42 | 8 | 43,5 | 21 | 140.428 | 140.432 | 16 |
| G25.53F.SF | 53 | 8 | 50,5 | 26 | 140.428 | 140.432 | 27 |



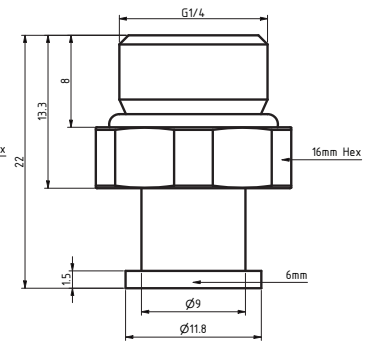
140.410



140.414



140.428

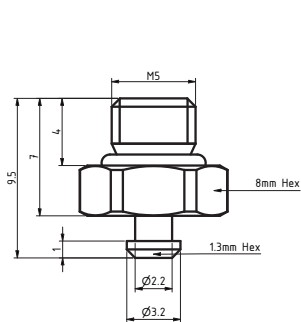


140.432

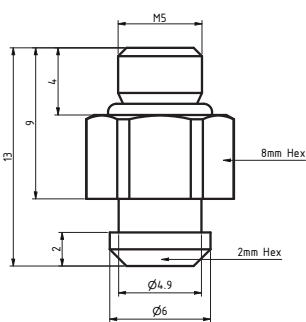
Ideal to handle uneven, textured and porous surfaces.
 Ring in mark-free silicone foam.
 Enable to compensate for differences in height.
 Transparent Silicone - 50 Shore.
 Temperature range -70 to +200°C.

VACUUM CUPS

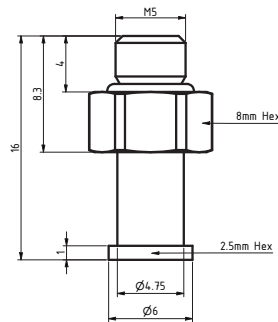
Fittings for G Series Vacuum Cups



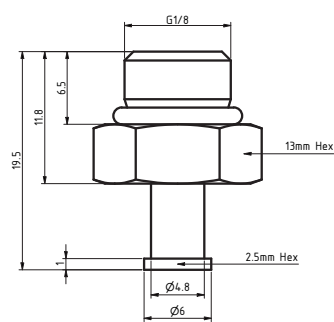
140.005



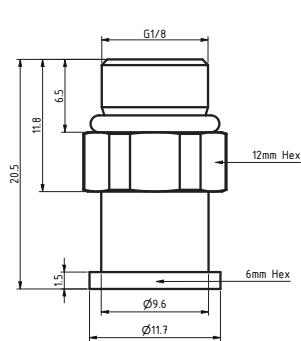
140.405



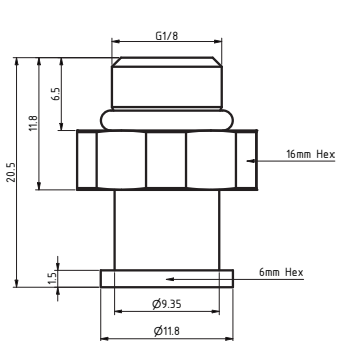
140.410



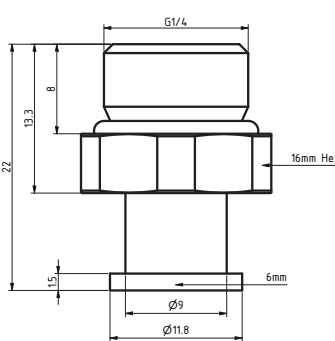
140.414



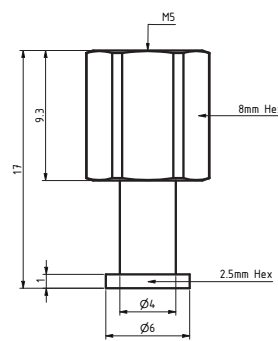
140.424



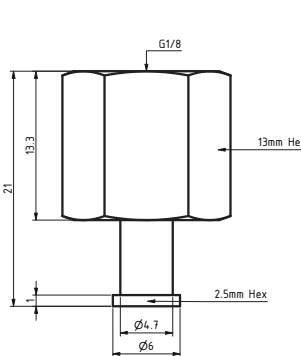
140.428



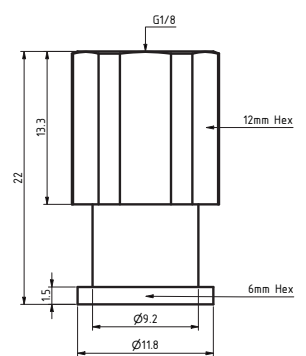
140.432



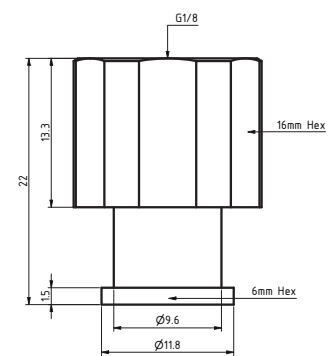
140.408



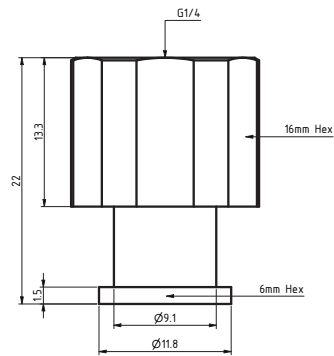
140.412



140.422



140.426



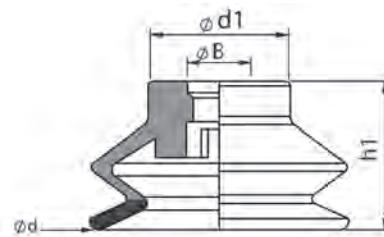
140.430



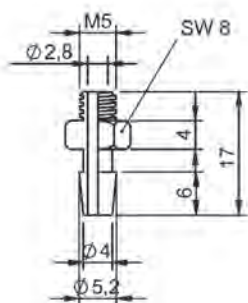
Mouldpro Multiflex vacuum cups offer outstanding advantages

- Extremely high wear resistance
- Very high lifting force
- Best static friction qualities
- No sticking tendency
- Elasticity remains unchanged for minus temperatures
- Working temperatures from -20°C to + 80°C
- Antimarking

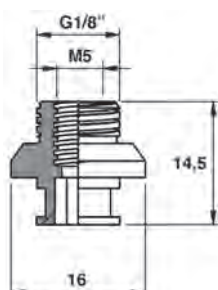
B Series, Multiflex, 1.5 Bellow Vacuum Cups



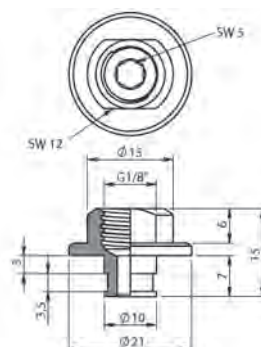
| Part No. | d | B | d1 | h1 | Hardness | 5 | Fitting | Fitting | Fitting | Fitting | Weight (g) |
|----------|----|------|------|------|----------|------|---------|---------|---------|---------|------------|
| B15-10MF | 10 | 3,9 | 9 | 16,5 | 40 | 5,5 | F134 | | | | |
| B15-16MF | 16 | 3,9 | 9 | 19 | 30/60 | 5,5 | F134 | | | | |
| B15-20MF | 21 | 5,2 | 12 | 18 | 30/60 | 7,6 | | F250 | | | |
| B15-30MF | 31 | 6,5 | 16,8 | 17 | 30/60 | 7,5 | | | F251 | | |
| B15-40MF | 41 | 6,3 | 22,4 | 22,4 | 30/60 | 9,3 | | | F251 | | |
| B15-50MF | 51 | 10,5 | 28 | 29,2 | 30/60 | 14,4 | | | | F252 | |



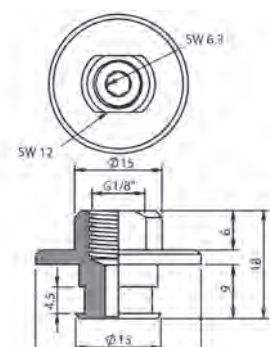
F134



F250



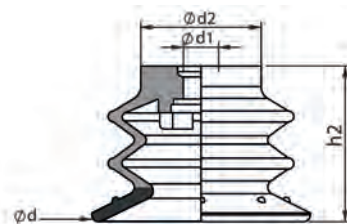
F251



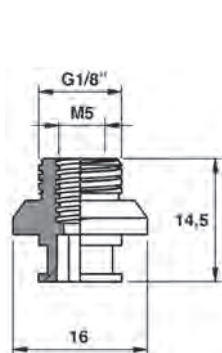
F252

VACUUM CUPS

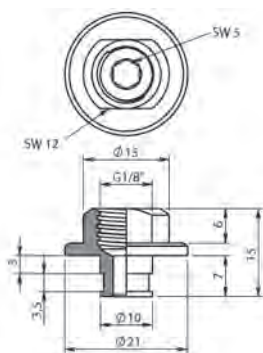
B Series, Multiflex, 2.5 Bellow Vacuum Cups



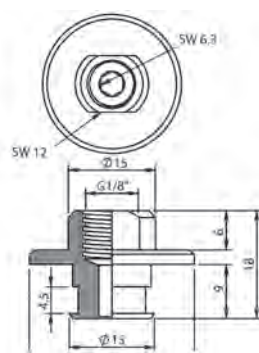
| Part No. | d | d1 | d2 | h2 | Hardness | | Fitting | Fitting | Fitting | Weight (g) |
|----------|------|------|------|-------|----------|------|---------|---------|---------|------------|
| B25-20MF | 20,5 | 5 | 12 | 14,8 | 30/60 | 6,5 | F250 | | | |
| B25-25MF | 26 | 5 | 15,4 | 18,9 | 30/60 | 8 | F250 | | | |
| B25-30MF | 30 | 5 | 16,5 | 21,3 | 30/60 | 11 | F250 | | | |
| B25-35MF | 35 | 6,5 | 21 | 25,63 | 30/60 | 11 | | F251 | | |
| B25-40MF | 40 | 6,5 | 22 | 28,4 | 30/60 | 14,7 | | F251 | | |
| B25-50MF | 50 | 10,5 | 27,5 | 35,5 | 30/60 | 20 | | | F252 | |



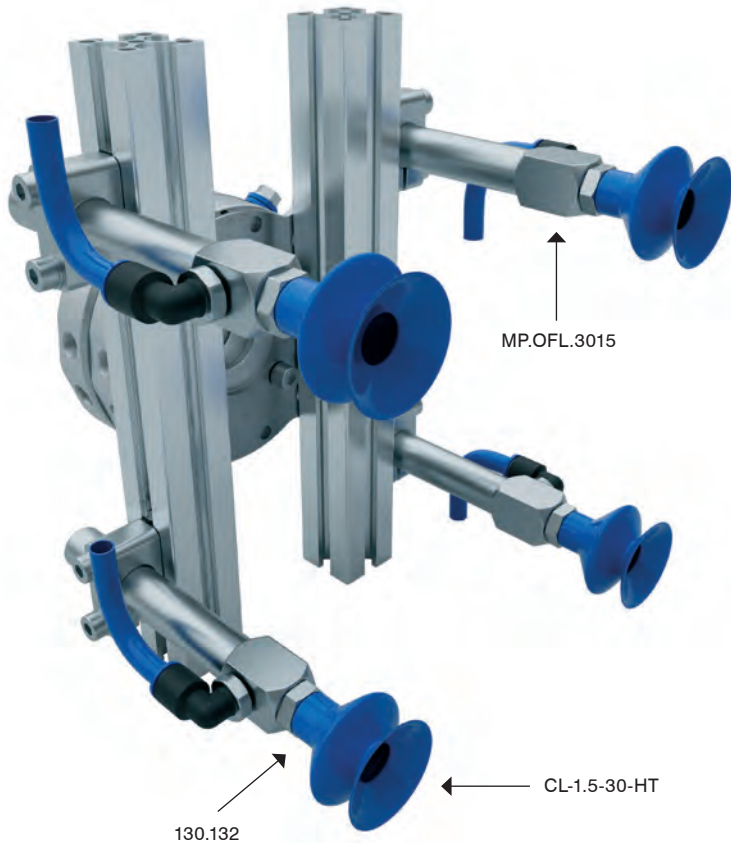
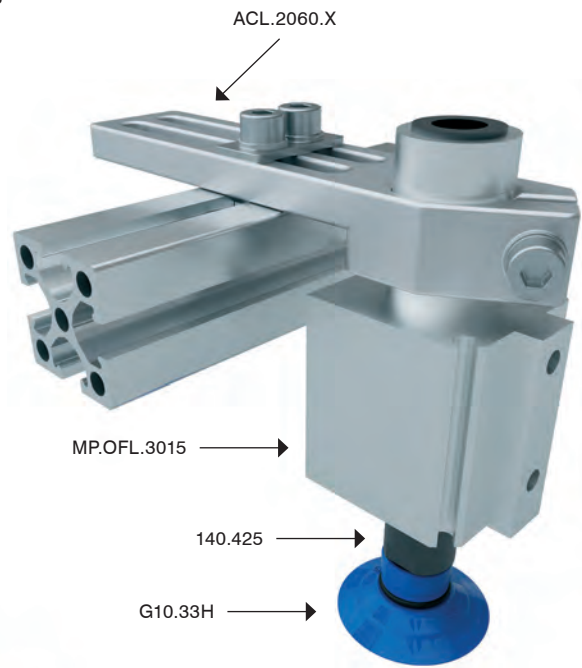
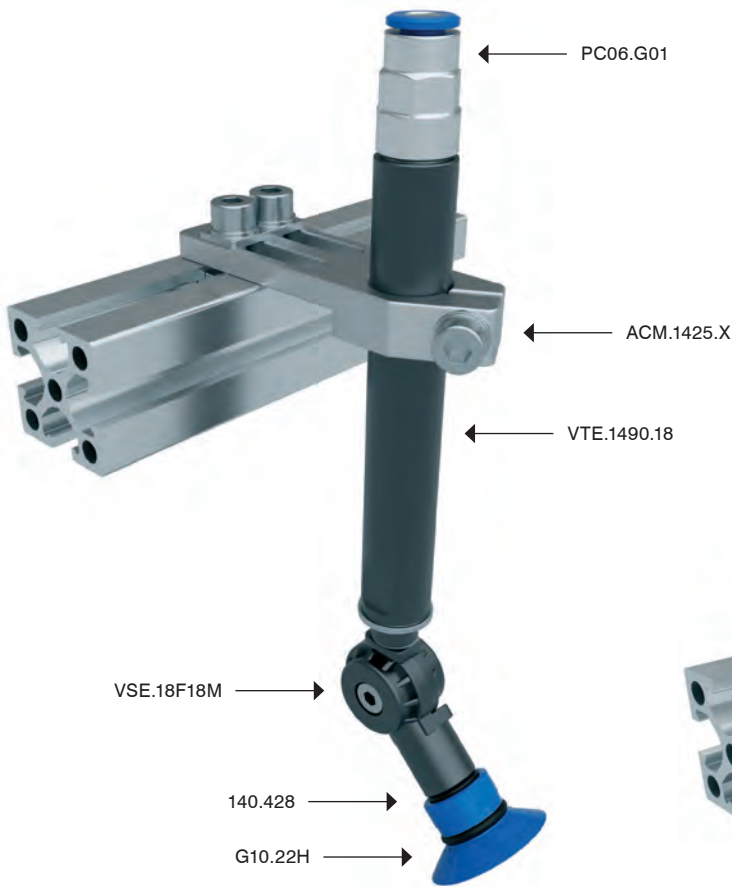
F250



F251



F252



SPRUE GRIPPERS

239 M Series,
Sprue Grippers



240 Mini Sprue Grippers



241 Small Sprue Grippers



243 Compact Sprue Grippers
– 2016



246 Compact Sprue Grippers
– GZ.AA



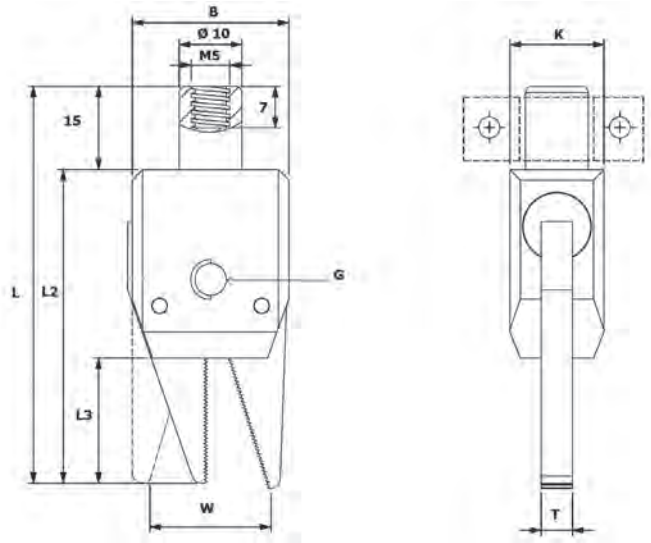
247 Large Sprue Grippers



248 Power Grippers



MSG. – Sprue Grippers M Series

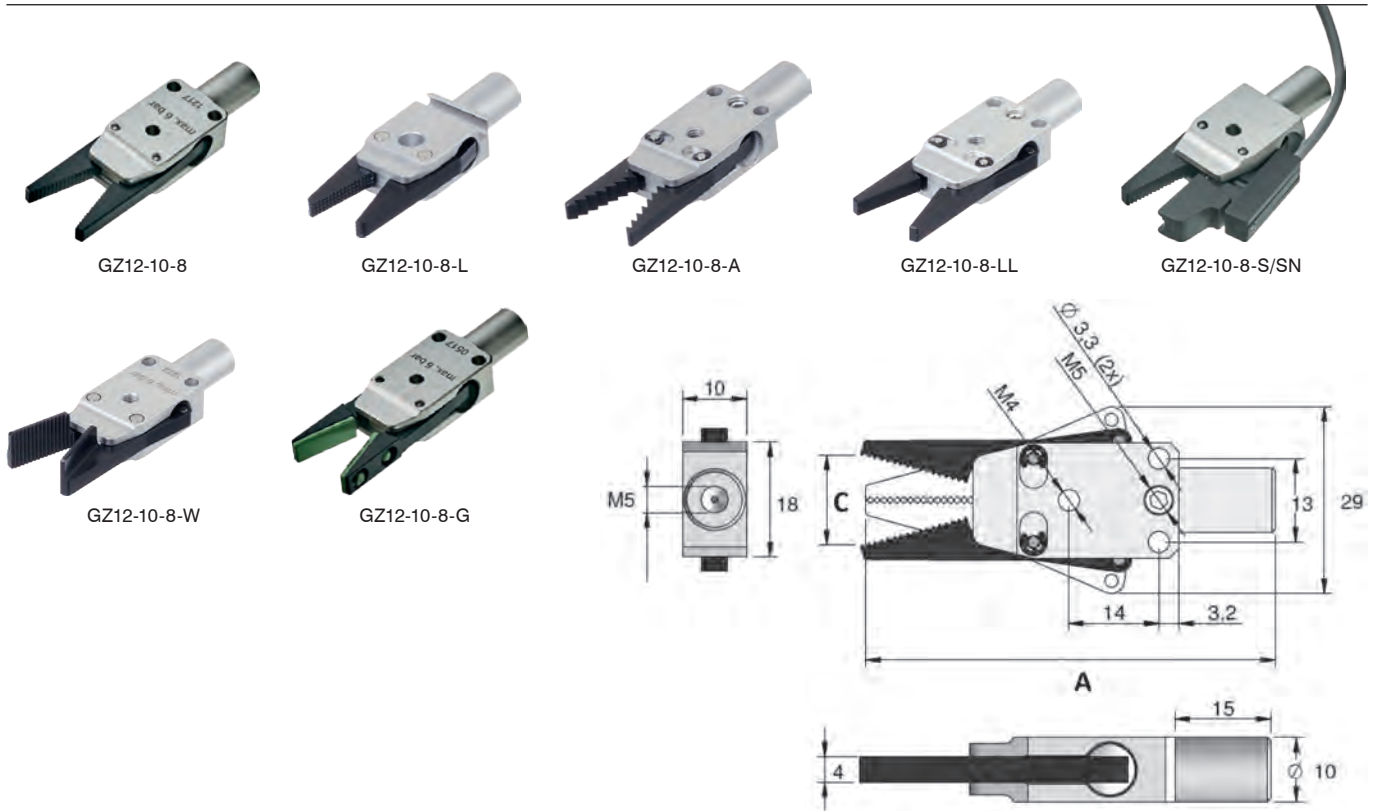


| Part No. | W | T | L3 | L2 | G | L | K | Grip Force | B | Weight (g) |
|----------|------|---|----|----|----|----|----|------------|----|------------|
| MSG30 | 6,0 | 3 | 12 | 30 | M4 | 45 | 8 | 10 N | 15 | |
| MSG40 | 9,4 | 4 | 16 | 40 | M6 | 55 | 10 | 15 N | 20 | |
| MSG50 | 14,0 | 5 | 20 | 50 | M6 | 66 | 12 | 23 N | 25 | |
| MSG60 | 16,3 | 6 | 24 | 60 | M6 | 76 | 14 | 31 N | 30 | |

Compressed air supply: max. 6 bar.
 Operating Temperature : 5° to 70°C

MINI SPRUE GRIPPERS

GZ12-10-8 - Sprue Grippers - Short Series



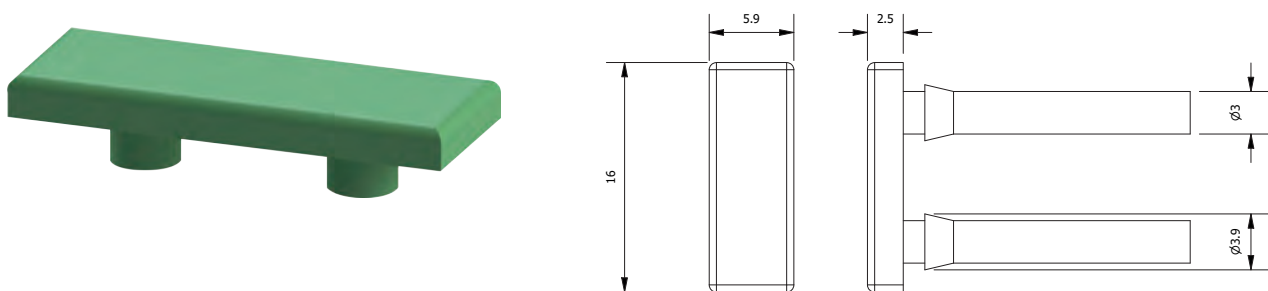
| Part No. | C | A | Jaw Type | Sensor | Closing Force (6 bar) | Weight (g) |
|--------------|----|------|------------------|--------|-----------------------|------------|
| GZ12-10-8 | 14 | 63,9 | Serrated | - | 19N | 30 |
| GZ12-10-8-L | 11 | 59 | Diamond Pattern | - | 19N | 32 |
| GZ12-10-8-A | 13 | 64 | Saw tooth | - | 19N | 30 |
| GZ12-10-8-LL | 14 | 64 | Smooth | - | 19N | 30 |
| GZ12-10-8-W | 14 | 64,1 | Extra Wide | - | 19N | 30 |
| GZ12-10-8-G | 14 | 63,9 | Viton rubber Pad | - | 19N | 30 |
| GZ12-10-8-S | 11 | 61,8 | Serrated | PNP | 19N | 30 |
| GZ12-10-8-SN | 11 | 61,8 | Serrated | NPN | 19N | 30 |

Compressed air in compliance with ISO 8573-1:2010 [7:4:4].
Maximum Operating Pressure 8 bar.

GZ-SCP – Last Minute Sensor for GZ-10-8

| Part No. | Output | Sensor Type | Sensing Distance | Connector | Weight (g) |
|-------------|--------|-------------|------------------|-----------|------------|
| GZ-SCP-10-8 | PNP | Magnetic | 0-50mm | M8 4pin | 65 |

GZ-VIT – Insert Pad, Viton



| Part No. | Material | REF | Weight (g) |
|----------|----------|-------------|------------|
| GZ-VIT-4 | FKM | GZ12-10-8-G | |

GZ12-10-10 - Sprue Grippers - Standard Series



GZ12-10-10-M



GZ12-10-10-C



GZ12-10-10-CKP/CKN



GZ12-10-10-MC



GZ12-10-10-W



GZ12-10-10-B



GZ12-10-10-L



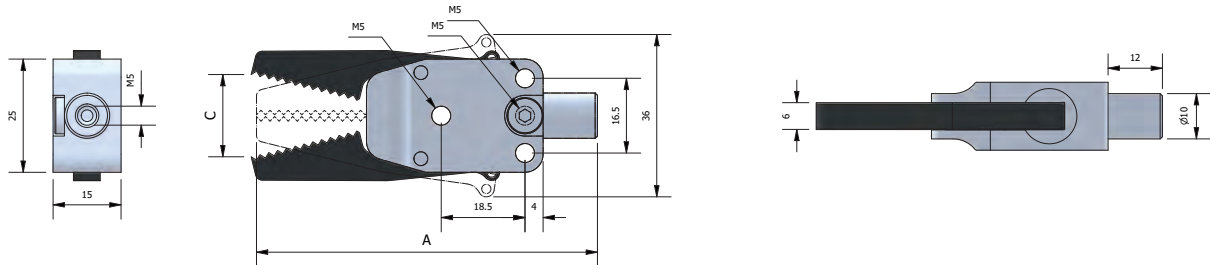
GZ12-10-10-L90



GZ12-10-10-LL



GZ12-10-10-MF



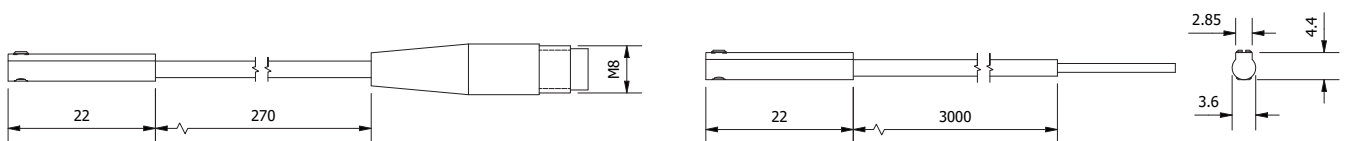
| Part No. | C | A | Jaw Type | Sensor | Closing Force (6 bar) | Weight (g) |
|----------------|------|------|-----------------------|--------|-----------------------|------------|
| GZ12-10-10-M | 19,5 | 75 | Serrated | | 30N | 40 |
| GZ12-10-10-C | 17,9 | 75 | Curved | | 30N | 36 |
| GZ12-10-10-CKP | 19 | 76 | Curved | PNP | 30N | 45 |
| GZ12-10-10-CKN | 19 | 76 | Curved | NPN | 30N | 45 |
| GZ12-10-10-MC | 19 | 75 | 1 Serrated/1 Curved | | 30N | 37 |
| GZ12-10-10-W | 20 | 75,3 | Wide | | 30N | 39 |
| GZ12-10-10-B | 13 | 59,3 | Custom | | 30N | 32 |
| GZ12-10-10-L | 20 | 76,5 | Diamond Pattern | | 30N | 36 |
| GZ12-10-10-L90 | 19,3 | 76 | Diamond Pattern - 90° | | 30N | 43 |
| GZ12-10-10-LL | 19,8 | 75,3 | Smooth | | 30N | 40 |
| GZ12-10-10-MF | 19,6 | 76,5 | Serrated Steel | | 30N | 58 |

Compressed air in compliance with ISO 8573-1:2010 [7:4:4].
Maximum Operating Pressure 8 bar.

GZ-SCP – Last Minute Sensor for GZ-12-10

| Part No. | Output | Sensor Type | Sensing Distance | Connector | Weight (g) |
|--------------|--------|-------------|------------------|-----------|------------|
| GZ-SCP-12-10 | PNP | Magnetic | 0-50mm | M8 4pin | 65 |

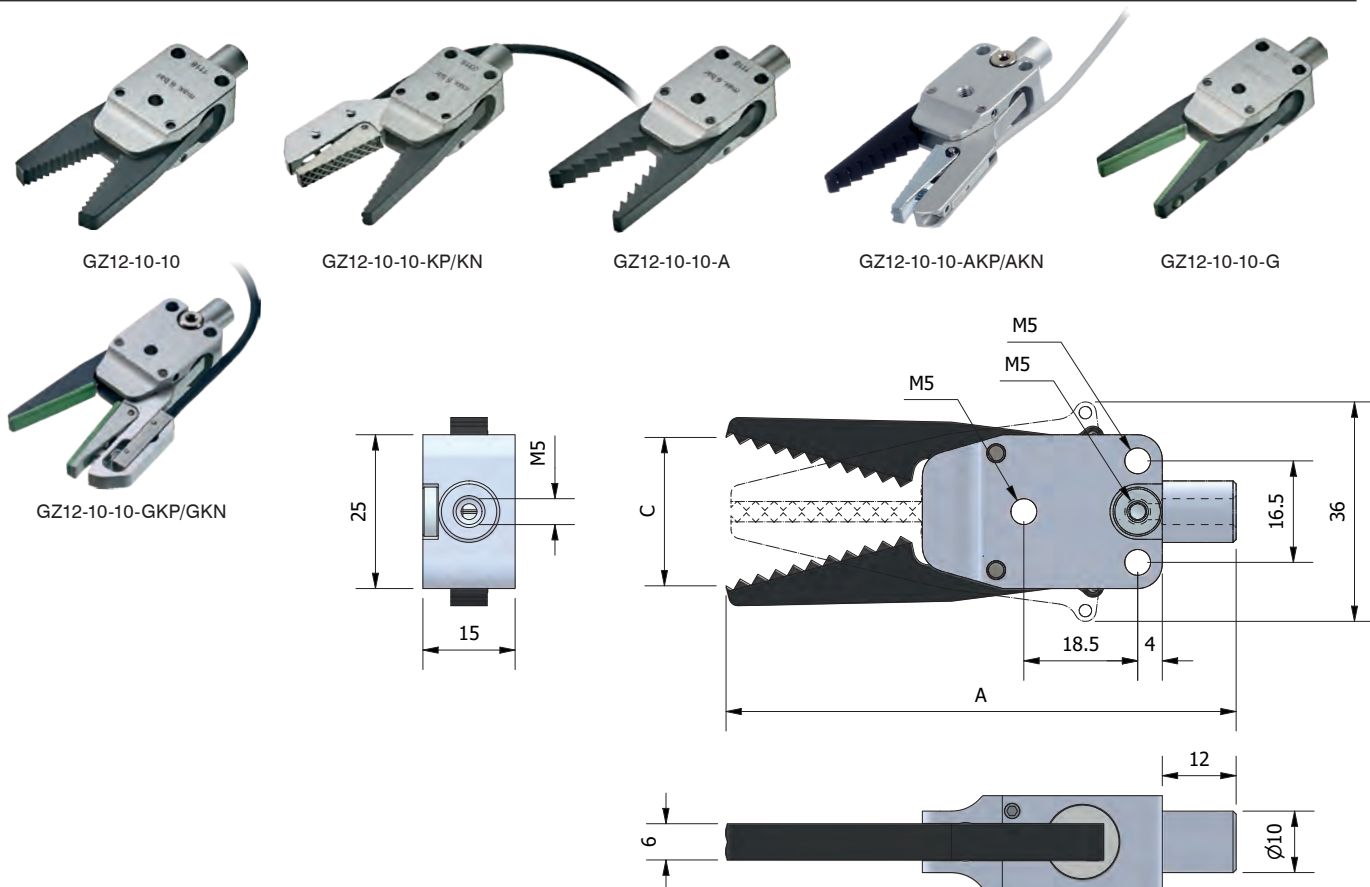
SN. – C-Slot Sensor



| Part No. | Output | Sensor type | Connector | Lead - m | Weight (g) |
|------------|--------|-------------|-----------|----------|------------|
| SN.K5P.M8 | PNP | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5N.M8 | NPN | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5P.3MW | PNP | Electronic | - | 3 | 4 |
| SN.K5N.3MW | NPN | Electronic | - | 3 | 4 |

SMALL SPRUE GRIPPERS

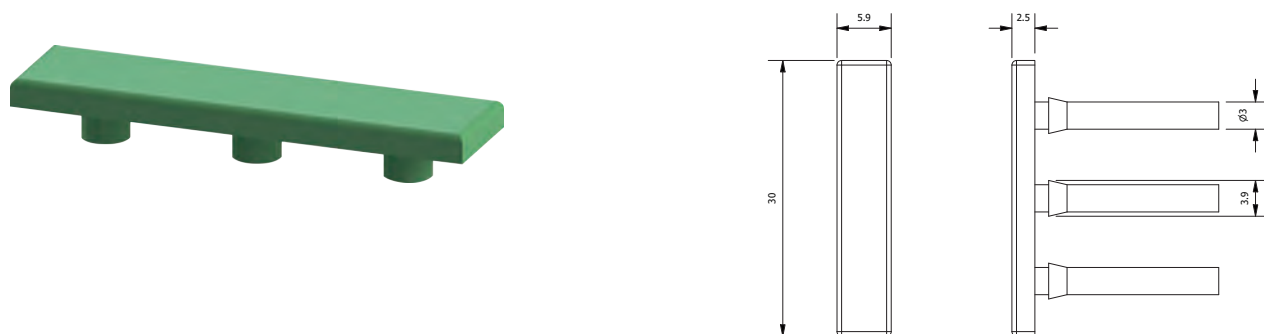
GZ12-10-10 - Sprue Grippers - Long Series



| Part No. | C | A | Jaw Type | Sensor | Closing Force (6 bar) | Weight (g) |
|----------------|------|----|------------------|--------|-----------------------|------------|
| GZ12-10-10 | 24 | 83 | Diamond Pattern | | 30N | 40 |
| GZ12-10-10-KP | 23 | 83 | Diamond Pattern | PNP | 30N | 51 |
| GZ12-10-10-KN | 23 | 83 | Diamond Pattern | NPN | 30N | 51 |
| GZ12-10-10-A | 21,3 | 82 | Saw Tooth | | 30N | 38 |
| GZ12-10-10-AKP | 23 | 83 | Saw Tooth | PNP | 30N | 51 |
| GZ12-10-10-AKN | 23 | 83 | Saw Tooth | NPN | 30N | 51 |
| GZ12-10-10-G | 22,3 | 82 | Viton Rubber Pad | | 30N | 37 |
| GZ12-10-10-GKP | 22 | 83 | Viton Rubber Pad | PNP | 30N | 48 |
| GZ12-10-10-GKN | 22 | 83 | Viton Rubber Pad | NPN | 30N | 48 |

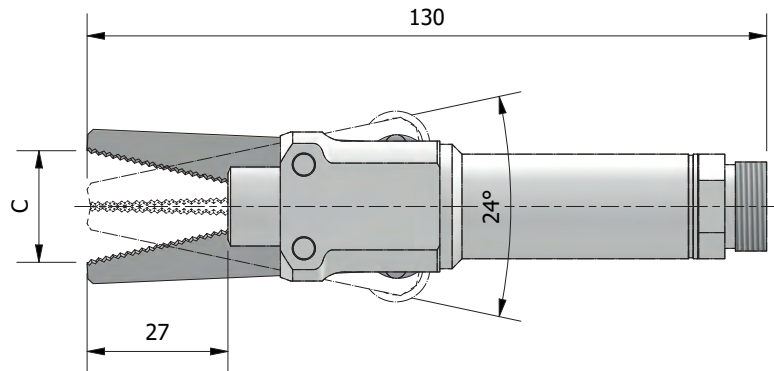
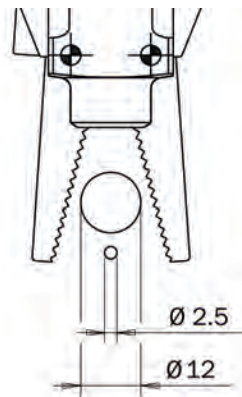
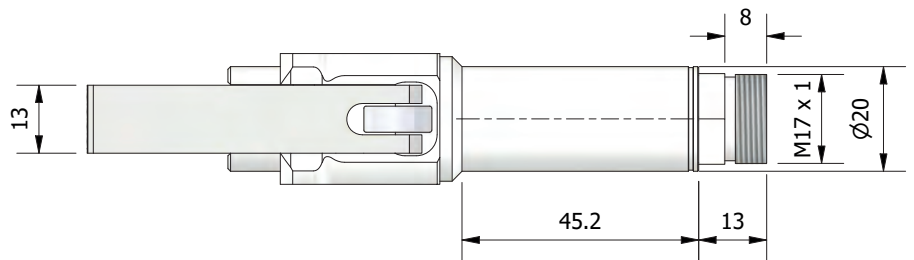
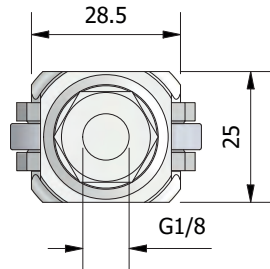
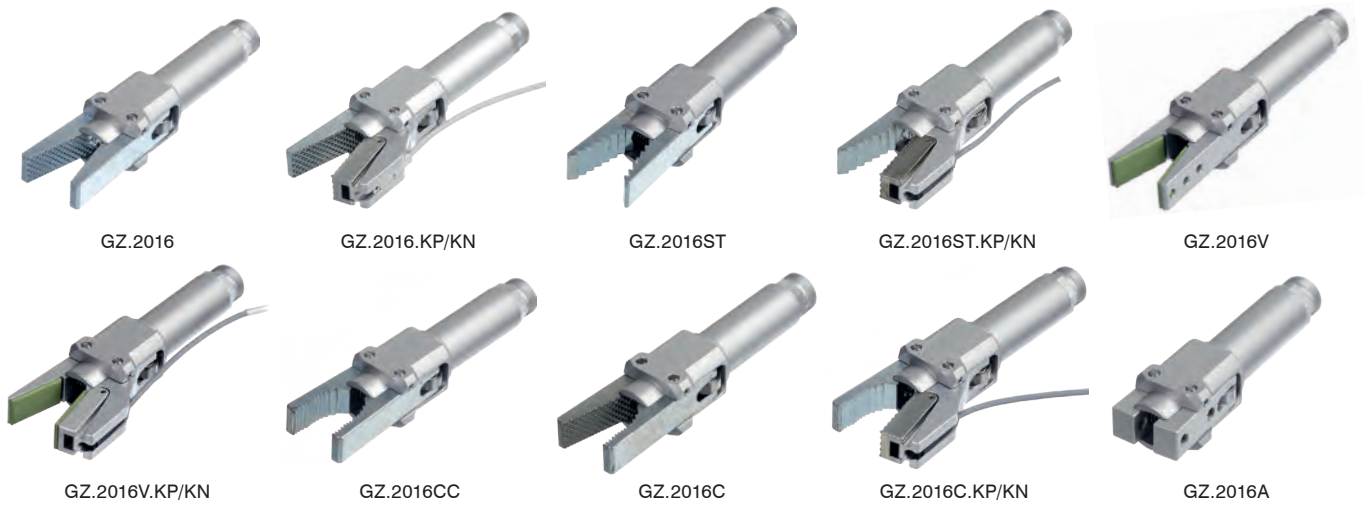
Compressed air in compliance with ISO 8573-1:2010 [7:4:4].
Maximum Operating Pressure 8 bar.

GZ-VIT – Jaw Insert Pad - Viton



| Part No. | Material | REF | Weight (g) |
|----------|----------|------------|------------|
| GZ-VIT-6 | FKM | GZ-12-10-G | 4 |

GZ.2016. – Sprue Gripper 20-16, Series

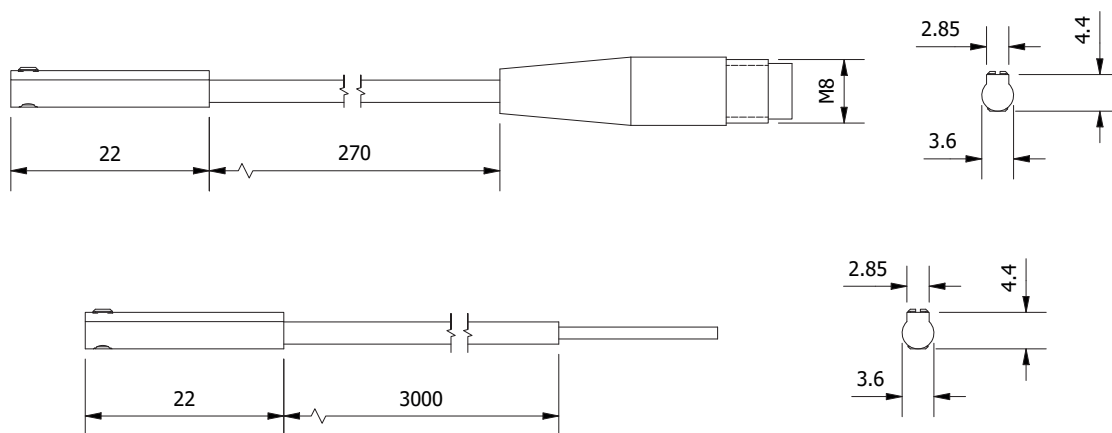


| Part No. | Jaw Type | C | Sensor | Closing Force (6 bar) | Weight (g) |
|--------------|----------------------------|----|--------|-----------------------|------------|
| GZ.2016 | Diamond Pattern | 20 | | 65N | 163 |
| GZ.2016.KP | Diamond Pattern | 22 | PNP | 65N | 160 |
| GZ.2016.KN | Diamond Pattern | 22 | NPN | 65N | 160 |
| GZ.2016ST | Saw Tooth | 24 | | 65N | 157 |
| GZ.2016ST.KP | Saw Tooth | 21 | PNP | 65N | 154 |
| GZ.2016ST.KN | Saw Tooth | 21 | NPN | 65N | 154 |
| GZ.2016V | Viton Rubber Pads | 20 | | 65N | 109 |
| GZ.2016V.KP | Viton Rubber Pads | 21 | PNP | 65N | 117 |
| GZ.2016V.KN | Viton Rubber Pads | 21 | NPN | 65N | 117 |
| GZ.2016CC | Curved | 19 | | 65N | 163 |
| GZ.2016C | 1 Curved/1 Diamond Pattern | 19 | | 65N | 163 |
| GZ.2016C.KP | 1 Curved/1 Diamond Pattern | 21 | PNP | 65N | 170 |
| GZ.2016C.KN | 1 Curved/1 Diamond Pattern | 21 | NPN | 65N | 170 |
| GZ.2016A | Custom | | | 65N | 135 |

Compressed air in compliance with ISO 8573-1:2010 [7:4:4].
Maximum Operating Pressure 8 bar.

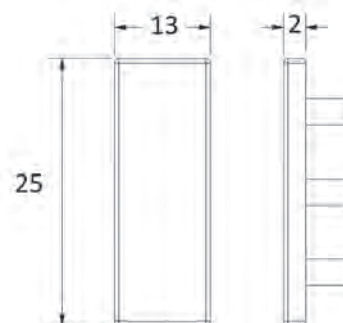
COMPACT SPRUE GRIPPERS

SN. – Sensor



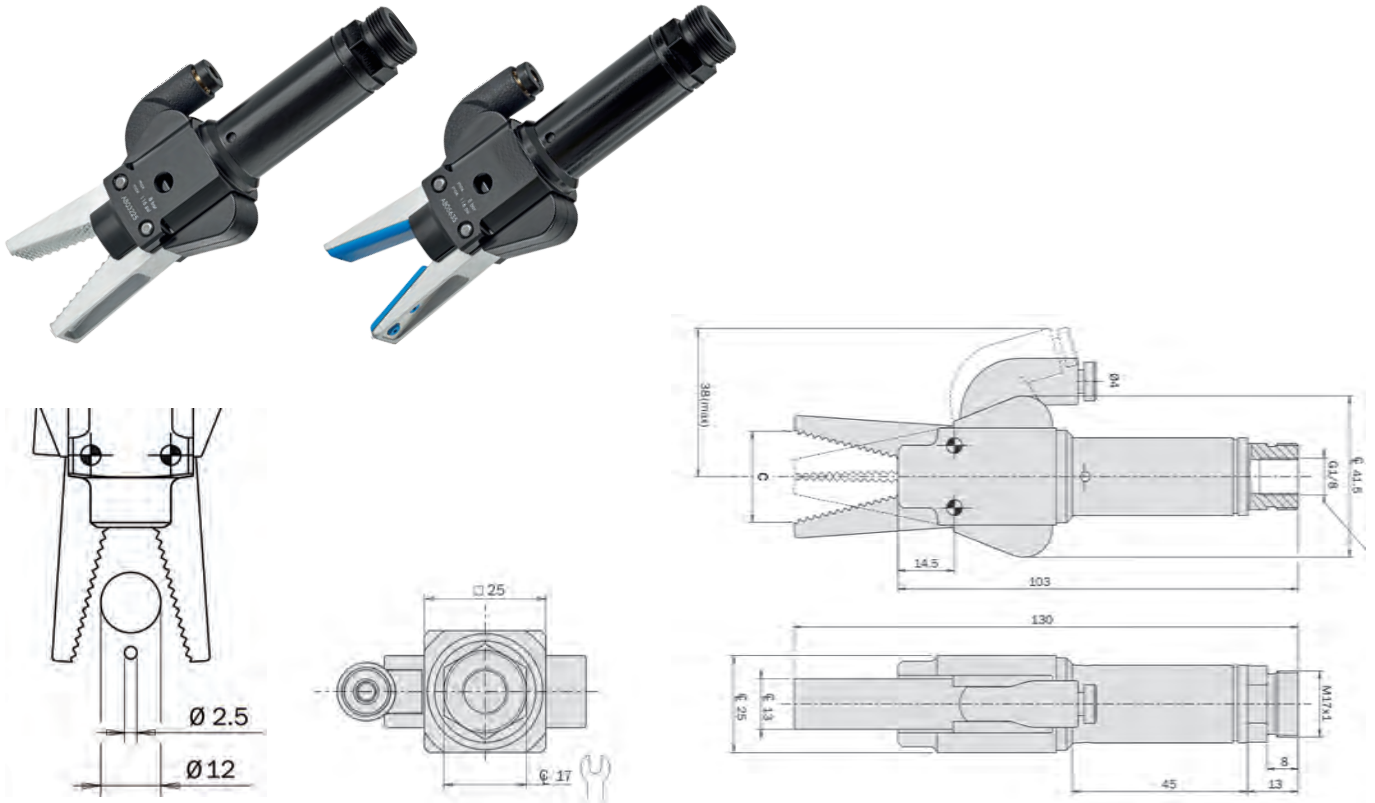
| Part No. | Output | Sensor type | Connector | Lead - m | Weight (g) |
|------------|--------|-------------|-----------|----------|------------|
| SN.K5P.M8 | PNP | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5N.M8 | NPN | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5P.3MW | PNP | Electronic | - | 3 | 4 |
| SN.K5N.3MW | NPN | Electronic | - | 3 | 4 |

GZ-VIT-8 - Insert Pad, Viton



| Part No. | Material | REF | Weight (g) |
|----------|----------|----------|------------|
| GZ-VIT-8 | FKM | GZ.2016V | 4 |

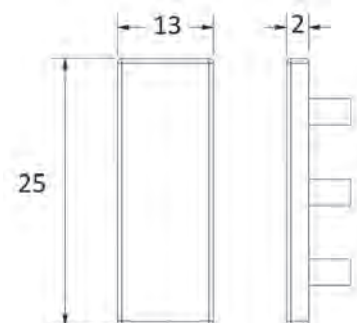
GZ2016- – Compact Sprue Gripper



| Part No. | Jaw Type | C | Sensor | Closing Force (6 bar) | Weight (g) |
|------------|-----------------|------|--------|-----------------------|------------|
| GZ.2016.LV | HNBR Pads | 20,9 | Vacuum | 60N | 116 |
| GZ.2016.MV | Diamond Pattern | 23,5 | Vacuum | 60N | 119 |

Single Acting.
 Gripper has G1/8 air por.
 Compressed air in compliance with ISO 8573-1:2010 (7:4:4).
 Maximum Operating pressure: 8 bar.
 Temperature Range: 5 ÷ 60°C.

GZ-HNBR-8 - Insert Pad, HNBR



| Part No. | Material | Ref | Weight (g) |
|-----------|----------|------------|------------|
| GZ-HNBR-8 | HNBR | GZ.2016.LV | 4 |

COMPACT SPRUE GRIPPERS

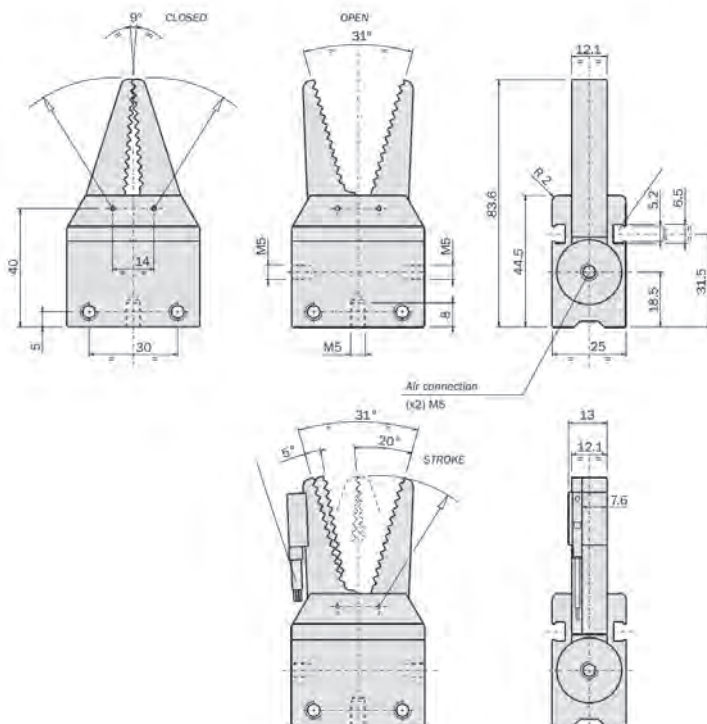
GZ.AA. – Self-Centering Sprue Gripper



GZ.AA24



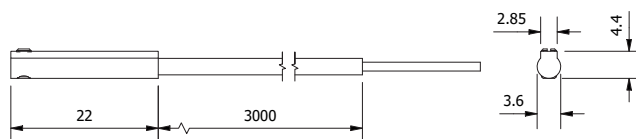
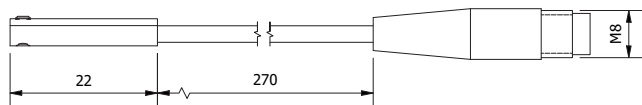
GZ.AA24.1N/NP



| Part No. | Jaw Type | Operation | Sensor | Weight (g) |
|------------|----------|---------------|--------|------------|
| GZ.AA24 | Serrated | Double Acting | | 115 |
| GZ.AA24.1N | Serrated | Normally Open | NPN | 151 |
| GZ.AA24.1P | Serrated | Normally Open | PNP | 151 |

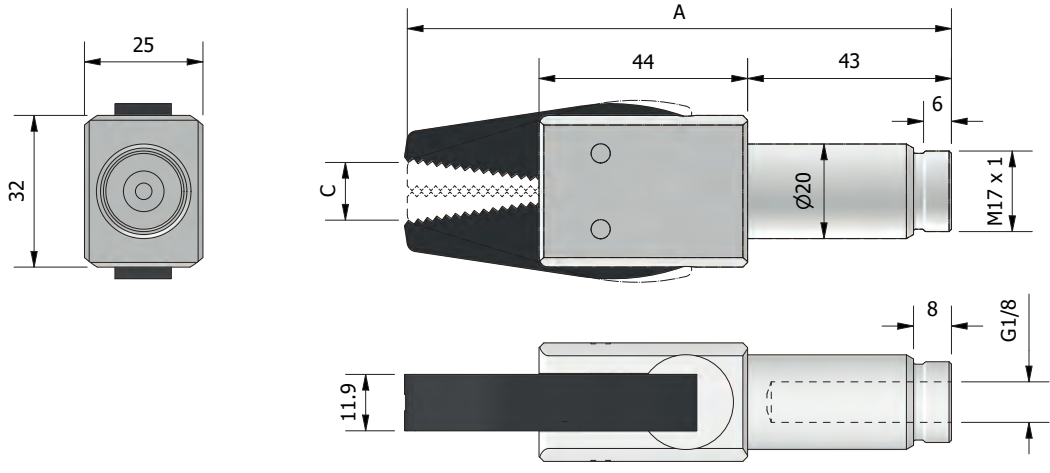
Compressed air in compliance with ISO 8573-1:2010 [7:4:4].
Maximum Operating Pressure 8 bar.

SN. – C-Slot Sensor



| Part No. | Output | Sensor type | Connector | Lead - m | Weight (g) |
|------------|--------|-------------|-----------|----------|------------|
| SN.K5P.M8 | PNP | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5N.M8 | NPN | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5P.3MW | PNP | Electronic | - | 3 | 4 |
| SN.K5N.3MW | NPN | Electronic | - | 3 | 4 |

GZ20 – Sprue Grippers GZ20 Series



| Part No. | Jaw Type | A | C | Sensor Type | Closing Force (6 bar) | Weight (g) |
|---------------|--------------|-----|----|-------------|-----------------------|------------|
| GZ20-10-A | Custom | 100 | 15 | | 90N | 114 |
| GZ20-10-E | Curved | 115 | 21 | | 90N | 117 |
| GZ20-10-L | Curve-Smooth | 115 | 23 | | 90N | 120 |
| GZ20-10-10 | Serrated | 115 | 21 | | 90N | 121 |
| GZ20-10-10-S | Serrated | 115 | 21 | PNP | 90N | 127 |
| GZ20-10-10-SN | Serrated | 115 | 21 | NPN | 90N | 127 |
| GZ20-10-W-S | Curved | 115 | 21 | PNP | 90N | 123 |
| GZ20-10-W-SN | Curved | 115 | 21 | NPN | 90N | 123 |

Work principle: Single acting.
 Working pressure: 6 bar clean and dry air.
 Material: Jaws made of hard-coated Aluminium. Body made of anodized Aluminium.

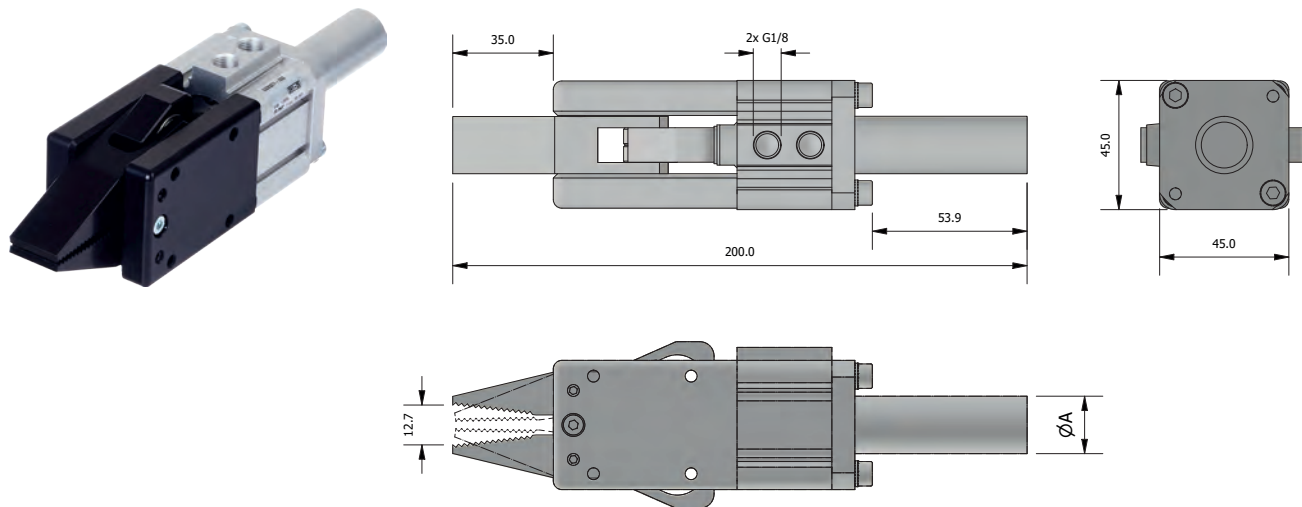
GZ. – Sensor



| Part No. | Type | Cable length | Connection |
|--------------|------|--------------|------------|
| GZ20.SM8.PNP | PNP | 300 | M8 |
| GZ20.SM8.NPN | NPN | 300 | M8 |

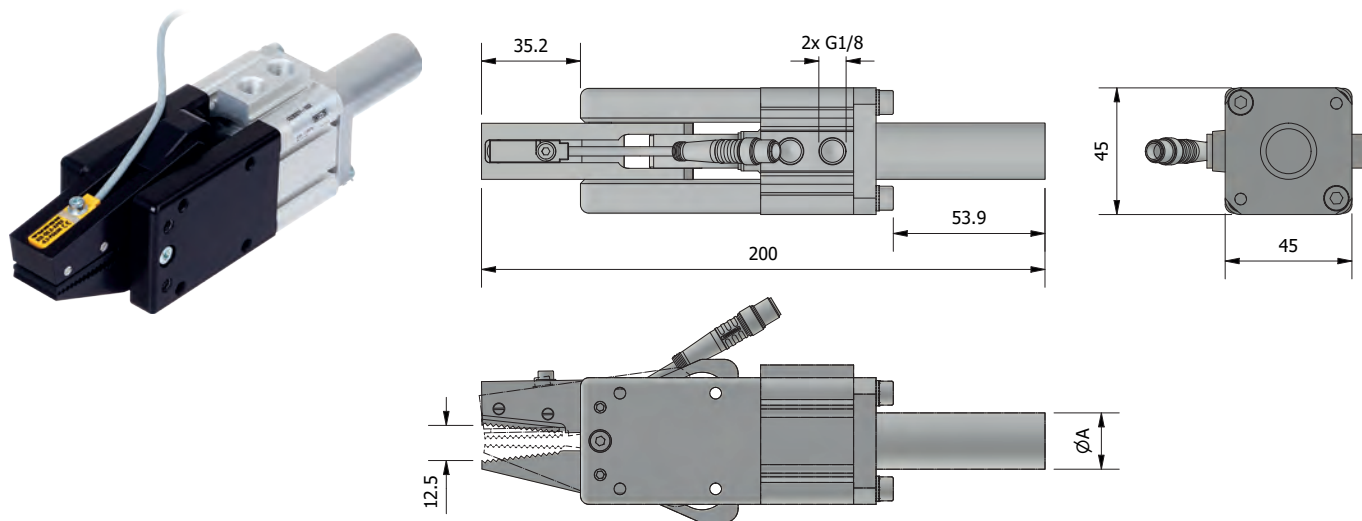
POWER GRIPPERS

GSZ.32. – Power Grippers GSZ.32 Series



| Part No. | A | Jaw Opening - mm | Closing Force (6 bar) | Weight (g) |
|----------|----|------------------|-----------------------|------------|
| GSZ.3220 | 20 | 12,5 | 350N | 563 |

GSZ.32. – Power Grippers GSZ.32 Series



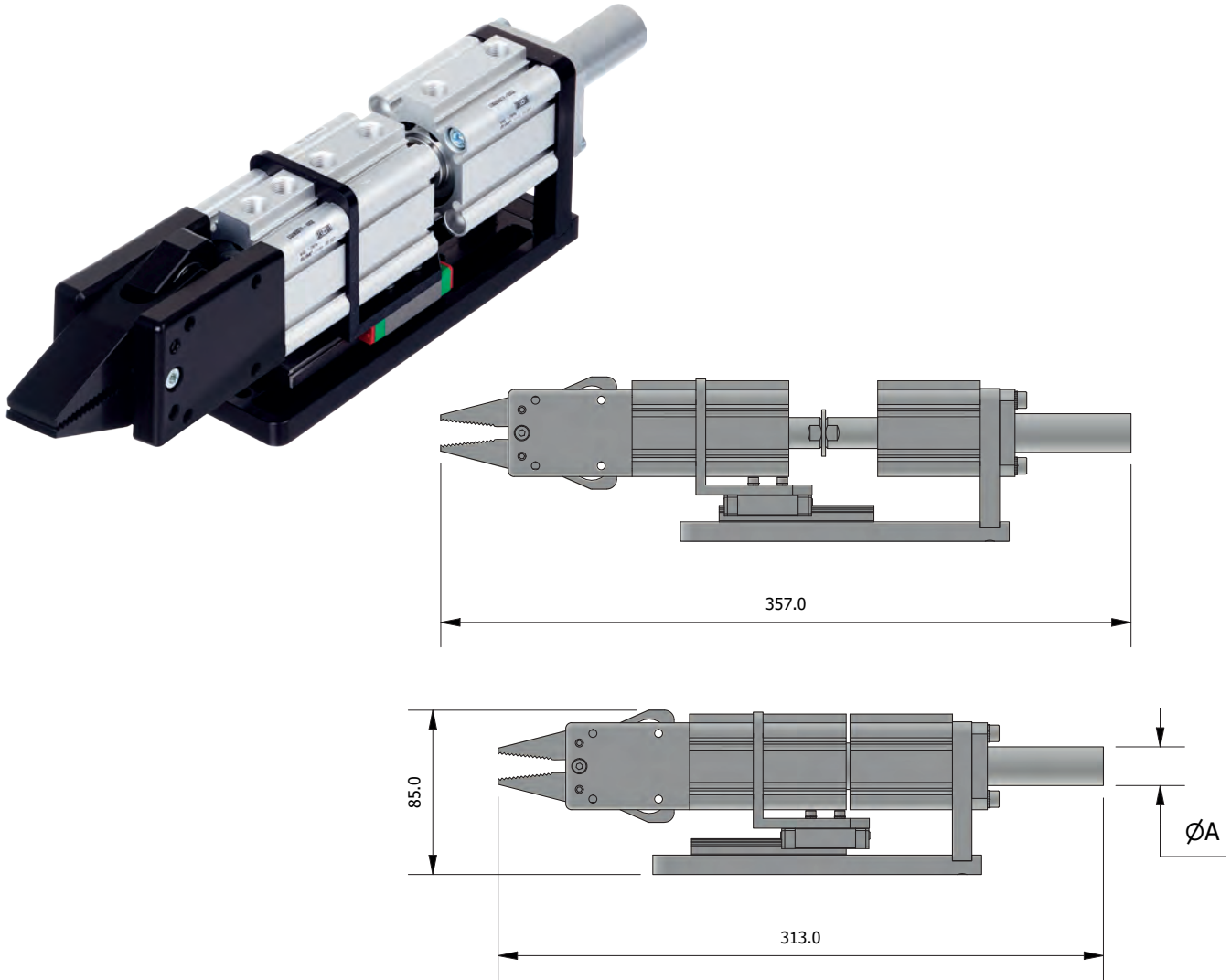
| Part No. | A | Jaw Opening - mm | Closing Force (6 bar) | Weight (g) |
|-------------|----|------------------|-----------------------|------------|
| GSZ.3220-1P | 20 | 12,5 | 350N | 563 |

GZ. – Sensor



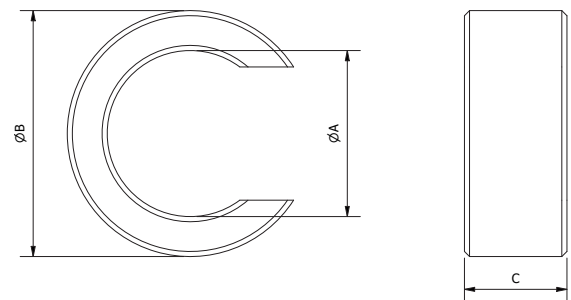
| Part No. | Type | Cable length | Connection |
|--------------|------|--------------|------------|
| GZ20.SM8.PNP | PNP | 300 | M8 |
| GZ20.SM8.NPN | NPN | 300 | M8 |

GSZ.32 - Power Grippers GSZ.32 Series - Double Stroke



| Part No. | A | Jaw Opening - mm | Closing Force (6 bar) | Weight (g) |
|---------------|----|------------------|-----------------------|------------|
| GSZ.3220.2010 | 20 | 12,5 | 350N | 1455 |

SRB. – Stroke Reducer



| Part No. | A | B | C | Cylinder | Weight (g) |
|-----------|----|----|----|----------|------------|
| SRB.05.32 | 16 | 24 | 5 | 32 | 1 |
| SRB.10.32 | 16 | 24 | 10 | 32 | 2 |
| SRB.15.32 | 16 | 24 | 15 | 32 | 3 |

FINGER GRIPPERS

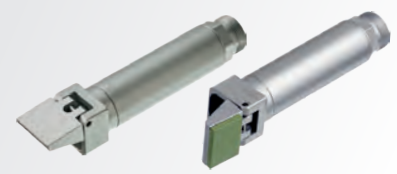
251 Finger Grippers
21°



252 Finger Grippers
21°, 25°



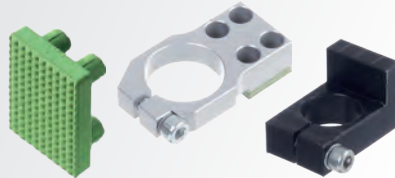
253 Finger Grippers
35°, 90°, 95°



254 Finger Grippers with Stops



256 Stops, Guides & Spares



258 Sensor & Sensor Mounting
Brackets



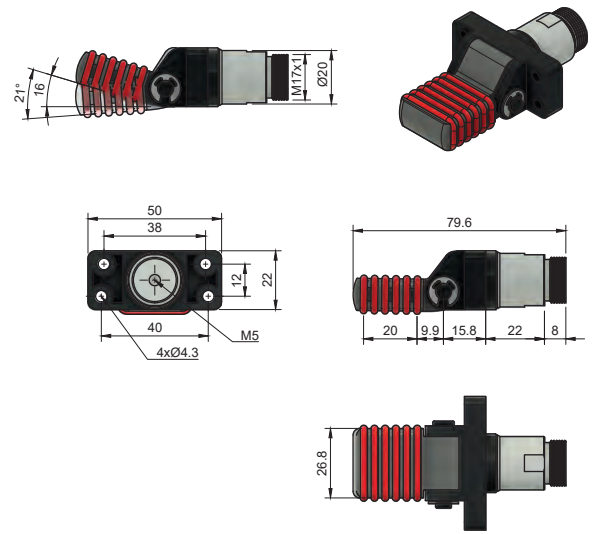
259 Pneumatic Tilt Units



260 Perpendicular
Finger Grippers



GFM. - Finger Grippers 21° Direct Mounting



| Part No. | Style | Stroke | Max temp of Rings/Pads | Weight (g) |
|------------|----------------|--------|------------------------|------------|
| GFM.2020.H | HNBR Pad | 21° | 150°C | 39 |
| GFM.2022.N | Nitrile rings | 21° | 100°C | 42 |
| GFM.2022.S | Silicone Rings | 21° | 200°C | 42 |

Single-acting.
Soft contact HNBR pads or O-rings in Silicone, NBR.
FDA-H1 food-grade grease.

PAD. – Replacement Pads

KIT-GF. – Replacement O - Rings



PAD.H.20152.5



KIT-GF20N



PAD.H.30223



KIT-GF20S

| Part No. | Material | Dimensions mm | Max temp °C |
|---------------|----------|---------------|-------------|
| PAD.H.20152.5 | HNBR | 20x15x2.5 | 150° |
| PAD.H.30223 | HNBR | 30x22x3 | 150° |

| Part No. | Material | Max temp °C |
|-----------|----------|-------------|
| KIT-GF20N | Nitrile | 100° |
| KIT-GF20S | Silicon | 200° |

21° - 25° FINGER GRIPPERS

GF. - Finger Grippers 21° - 25°



GF.1425.H



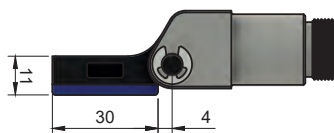
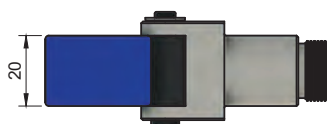
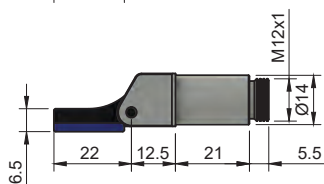
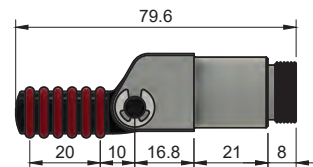
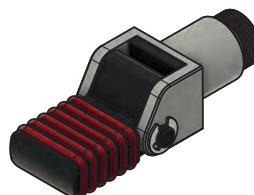
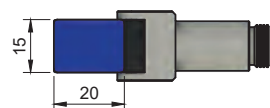
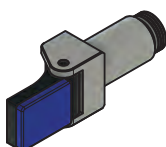
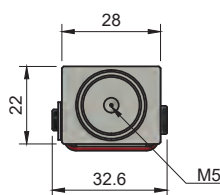
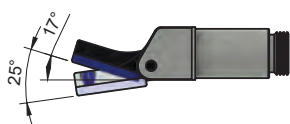
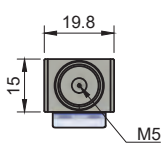
GF.2021.H



GF.2021.N



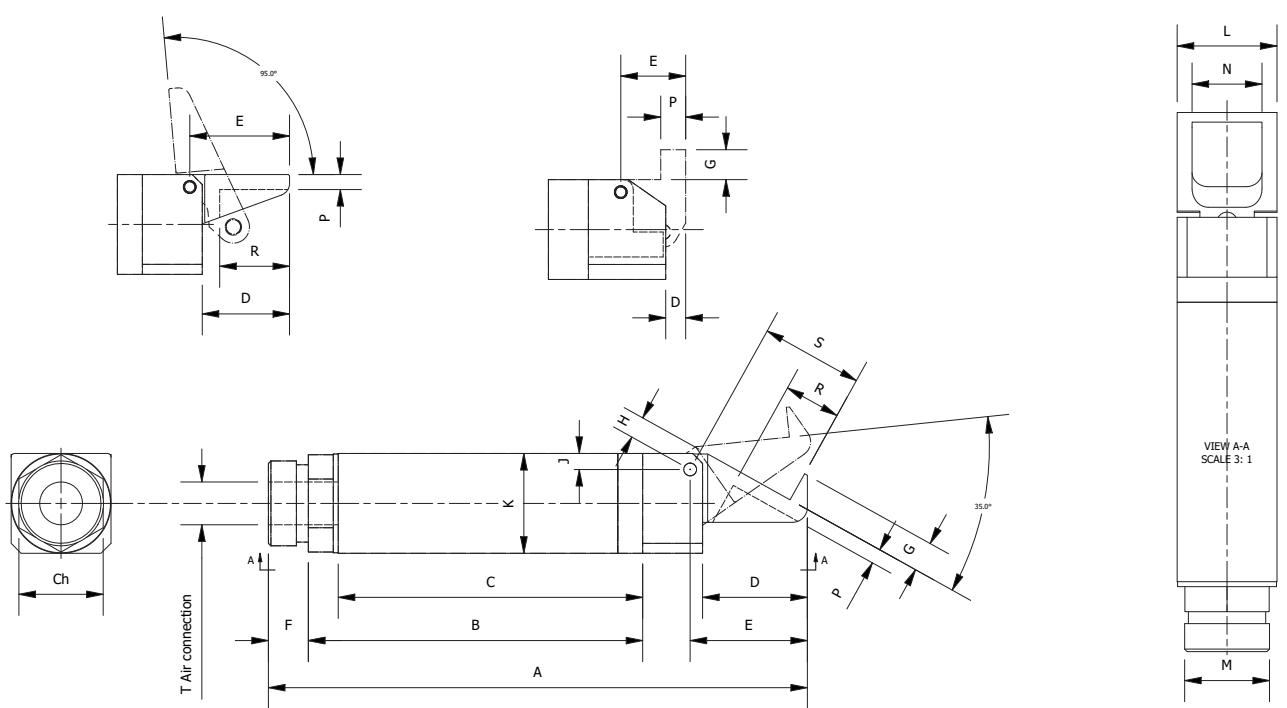
GF.2021.S



| Part No. | Style | Stroke | Max temp of Rings/Pads | Weight (g) |
|-----------|----------------|--------|------------------------|------------|
| GF.1425.H | HNBR Pads | 25° | 150°C | 17 |
| GF.2021.H | HNBR Pads | 21° | 150°C | 41 |
| GF.2021.N | Nitrile Rings | 21° | 100°C | 45 |
| GF.2021.S | Silicone Rings | 21° | 200°C | 45 |

Single-acting.
Soft contact HNBR pads or O-rings in Silicone, NBR FDA-H1 food-grade grease.

GF. – Finger Gripper

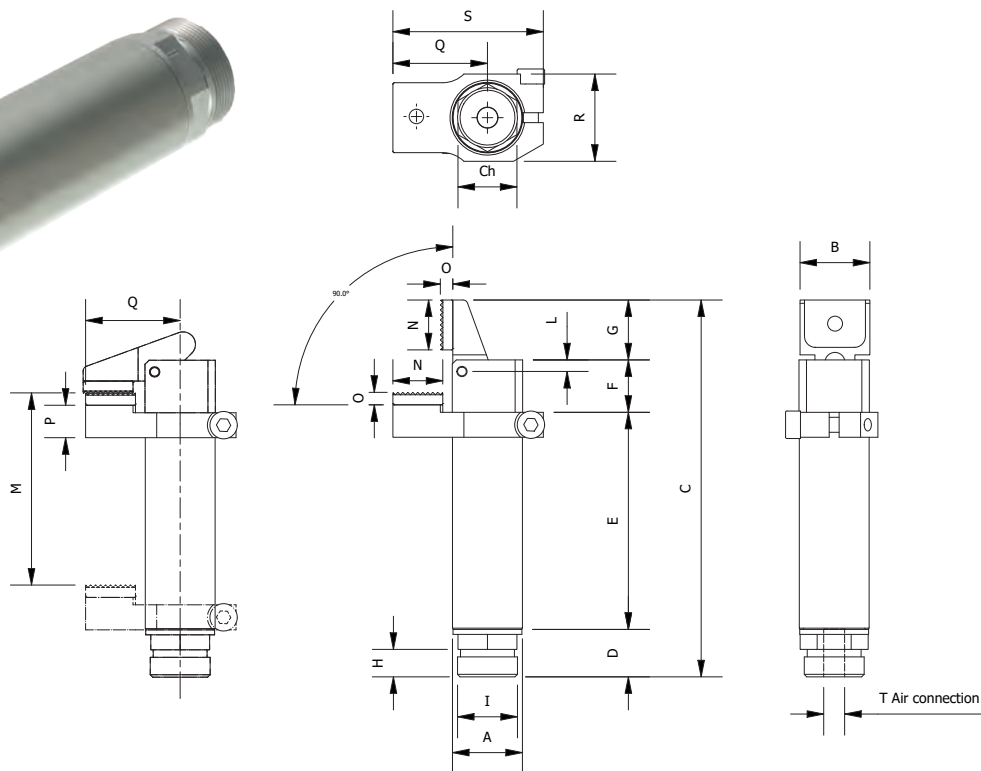
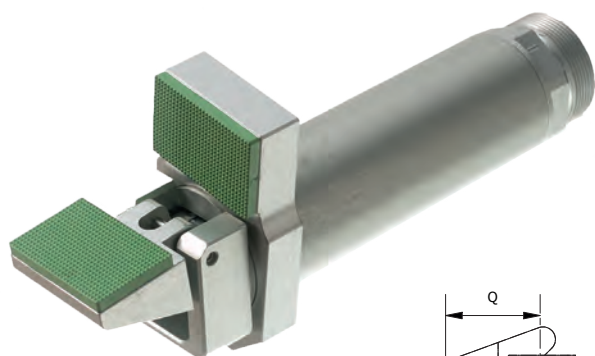


| Part No. | Stroke | Grip Force (6 bar) | Dimensions (mm) | | | | | | | | | | | | | | | | | |
|----------|--------|-----------------------|-----------------|------|------|------|------|-----|-----|-----|-----|-----|----|-------|----|---|------|------|------|----|
| | | | A | B | C | D | E | F | G | H | J | K | L | M | N | P | R | S | T | CH |
| GF14-35 | 35° | 26 N | 77 | 47,5 | 43,5 | 14 | 16 | 5,5 | 4,5 | 3,4 | 2 | Ø14 | 14 | M1xX1 | 10 | 2 | 6 | 13,5 | M5 | 12 |
| GF20-35 | 35° | 100 N | 107 | 66 | 60 | 21 | 23,5 | 8 | 6 | 3,8 | 2,5 | Ø20 | 20 | M17x1 | 14 | 3 | 11,5 | 20,7 | G1/8 | 17 |
| GF30-35 | 35° | 430 N | 156 | 100 | 92 | 30 | 34 | 11 | 8 | 6 | 4 | Ø30 | 30 | M27x1 | 22 | 5 | 17 | 30,8 | G1/8 | 27 |
| GF14-90 | 90° | 19 N | 69 | 45,5 | 41,5 | 2 | 8 | 5,5 | | | 2 | Ø14 | 14 | M1xX1 | 10 | 4 | | | M5 | 12 |
| GF20-90 | 90° | 70 N | 92,5 | 61 | 55 | 2 | 13 | 8 | | | 2,5 | Ø20 | 20 | M17x1 | 14 | 5 | | | G1/8 | 17 |
| GF30-90 | 90° | 300 N | 135 | 91 | 83 | 2 | 20 | 11 | | | 4 | Ø30 | 30 | M27x1 | 22 | 6 | | | G1/8 | 27 |
| GF14-95 | 95° | 19 N | 75,5 | 47,5 | 43,5 | 12 | 14 | 5,5 | | | 2 | Ø14 | 14 | M1xX1 | 10 | 2 | 9 | | M5 | 12 |
| GF20-95 | 95° | 70 N | 103,5 | 66 | 60 | 17,5 | 20 | 8 | | | 2,5 | Ø20 | 20 | M17x1 | 14 | 3 | 14 | | G1/8 | 17 |
| GF30-95 | 95° | 300 N | 148 | 100 | 90 | 25 | 29 | 11 | | | 4 | Ø30 | 30 | M27x1 | 22 | 5 | 21 | | G1/8 | 27 |
| GF14-95V | 95° | 19 N | 75,5 | 47,5 | 43,5 | 12 | 14 | 5,5 | | | 2 | Ø14 | 14 | M1xX1 | 10 | 2 | 9 | | M5 | 12 |
| GF20-95V | 95° | 70 N | 103,5 | 66 | 60 | 17,5 | 20 | 8 | | | 2,5 | Ø20 | 20 | M17x1 | 14 | 3 | 14 | | G1/8 | 17 |
| GF30-95V | 95° | 300 N | 148 | 100 | 90 | 25 | 29 | 11 | | | 4 | Ø30 | 30 | M27x1 | 22 | 5 | 21 | | G1/8 | 27 |

Working Principle: Single acting.
 Working pressure: 6 bar clean, dry air.
 Material: Silver anodised Aluminium.

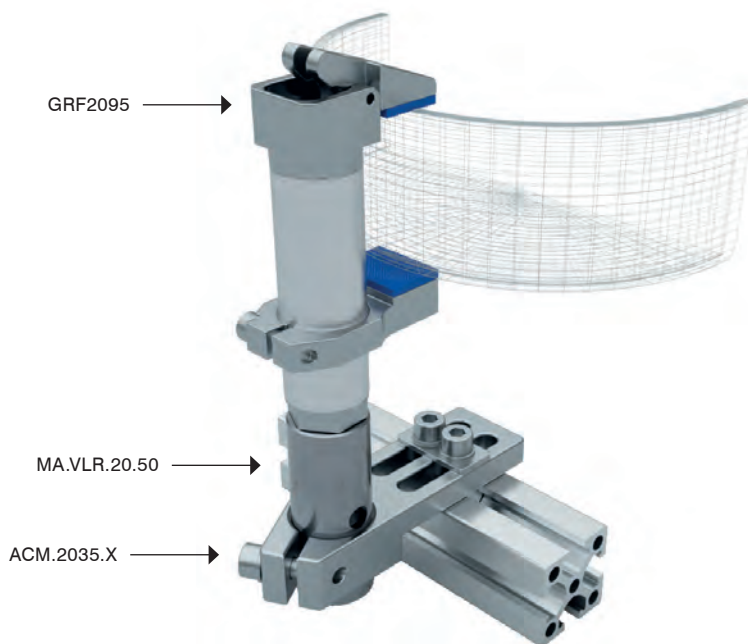
95° FINGER GRIPPERS

GFR-95 – 95° Finger Grippers with Stop

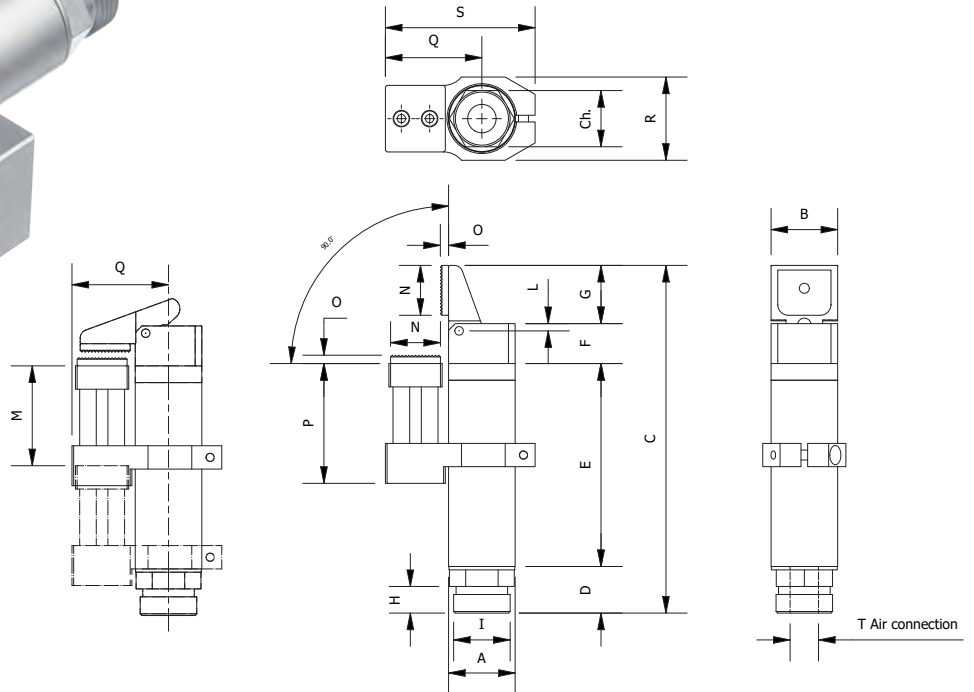
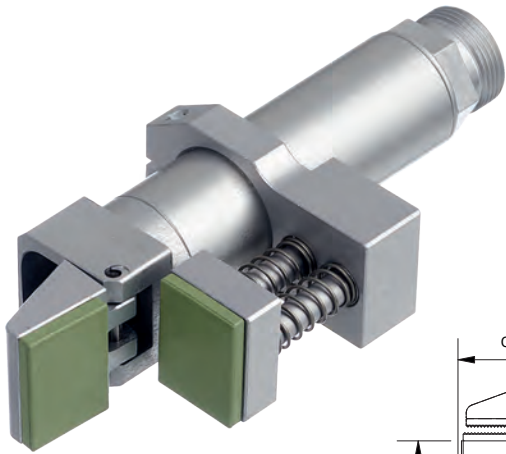


| Part No. | Grip force | A | B | C | D | E | F | G | H | I | L | M | N | O | P | Q | R | S | T | CH |
|----------|------------|------|----|-------|-----|------|------|------|-----|-------|-----|------|----|-----|-----|------|------|------|-------|----|
| GFR1495 | 19 N | Ø 14 | 14 | 75,5 | 9,5 | 43,5 | 10,5 | 12 | 5,5 | M12X1 | 2 | 38,5 | 10 | 2,5 | 6,5 | 19 | 17,5 | 30 | M5 | 12 |
| GFR2095 | 70 N | Ø 20 | 20 | 103,5 | 14 | 60 | 12 | 17,5 | 8 | M17X1 | 2,5 | 52,5 | 15 | 2,5 | 10 | 27,5 | 25 | 43,5 | G 1/8 | 17 |
| GFR3095 | 300 N | Ø 30 | 30 | 148 | 20 | 90 | 15 | 25 | 11 | M27X1 | 4 | 81 | 20 | 3 | 9 | 40 | 37 | 60 | G 1/8 | 27 |

Work principle: Single acting.
 Working pressure: 6 bar clean and dry air.
 Material: Silver anodized Aluminium Viton Pads.



GFRX-95V – 95° Finger Grippers with Stop

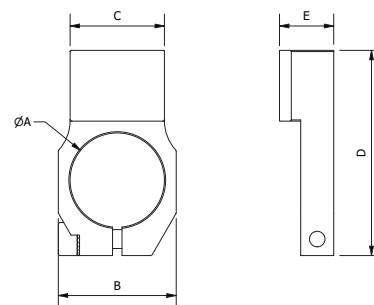


| Part No. | Stroke | Grip Force (6 bar) | A | B | C | D | E | F | G | H | I | L | M | N | O | P | Q | R | S | T |
|------------|--------|--------------------|-----|----|-------|-----|------|------|------|-----|-------|-----|------|----|-----|-----|----|------|----|------|
| GFRX14-95V | 95° | 19N | Ø14 | 14 | 75,5 | 9,5 | 43,5 | 10,5 | 12 | 5,5 | M12x1 | 2 | 16,5 | 10 | 2,5 | 6,5 | 19 | 17,5 | 30 | M5 |
| GFRX20-95V | 95° | 70N | Ø20 | 20 | 104,5 | 14 | 61 | 12 | 17,5 | 8 | M17x1 | 2,5 | 41,5 | 25 | 2,5 | 36 | 29 | 25 | 45 | G1/8 |
| GFRX30-95V | 95° | 300N | Ø30 | 30 | 148 | 20 | 90 | 15 | 25 | 11 | M27x1 | 4 | 53 | 20 | 3 | 9 | 40 | 37 | 60 | G1/8 |

Working Principle: Single acting.
 Working pressure: 6 bar clean, dry air.
 Material: Silver anodised Aluminium Viton Pads.

ACCESSORIES FOR FINGER GRIPPERS

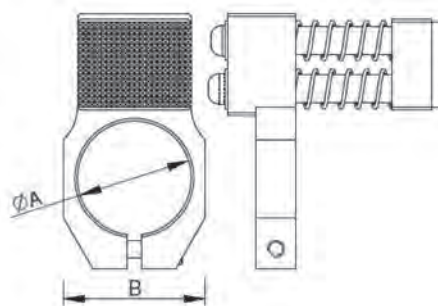
MP.ANF. – Stoppers for Finger Grippers with Soft Pad



| Part No. | A | B | C | D | E | REF | Weight (g) |
|------------|-----|------|----|------|------|--------|------------|
| MP.ANF.14V | Ø14 | 17.5 | 14 | 30.2 | 9 | GF14.. | 5 |
| MP.ANF.20V | Ø20 | 25 | 20 | 43.5 | 11.5 | GF20.. | 14 |
| MP.ANF.30V | Ø30 | 36 | 30 | 63 | 14 | GF30.. | 33 |

Viton Pad.
Low marking

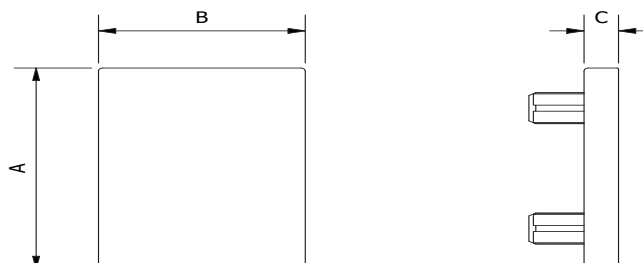
MP.ANF.VSX – Stoppers for Finger Grippers



| Part No. | A | B | REF | Weight (g) |
|---------------|-----|----|--------|------------|
| MP.ANF.14.VSX | Ø14 | 20 | GF14.. | 15 |
| MP.ANF.20.VSX | Ø20 | 25 | GF20.. | 20 |
| MP.ANF.30.VSX | Ø30 | 37 | GF30.. | 50 |

Viton Pad.
Low marking.

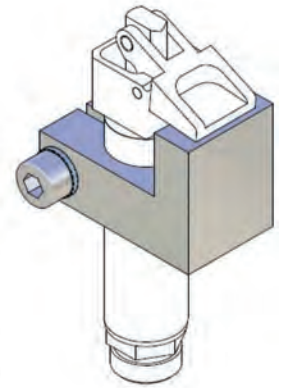
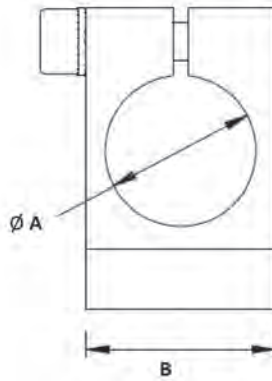
GFR. – Insert Pad Viton



| Part No. | A | B | C | REF | Weight (g) |
|------------|----|----|-----|--------|------------|
| GFR149508V | 14 | 10 | 2.5 | GF14.. | 1 |
| GFR209508V | 20 | 15 | 2.5 | GF20.. | 2 |
| GFR309508V | 30 | 20 | 3 | GF30.. | 3 |

Low marking.
UV resistant.
Maximum Temp: 210° (<30 sec.).

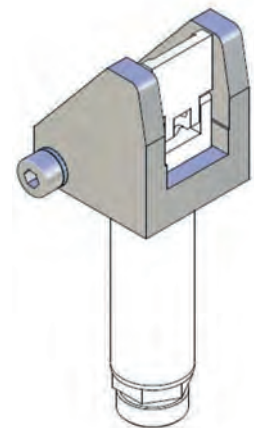
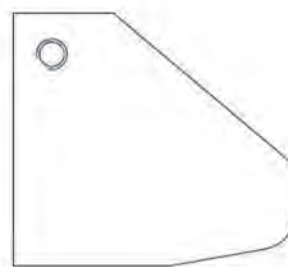
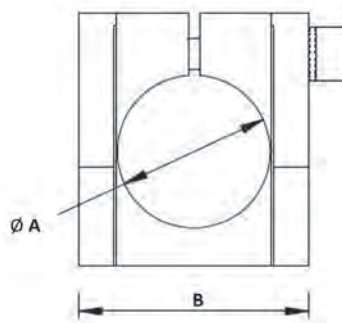
MP.ANS. – Stoppers for Finger Grippers



| Part No. | A | B | REF | Weight (g) |
|-----------|-----|----|--------|------------|
| MP.ANS.14 | Ø14 | 20 | GF14.. | 17 |
| MP.ANS.20 | Ø20 | 25 | GF20.. | 21 |
| MP.ANS.30 | Ø30 | 35 | GF30.. | 30 |

Material: POM

MP.ZTS. – Finger Gripper Guide

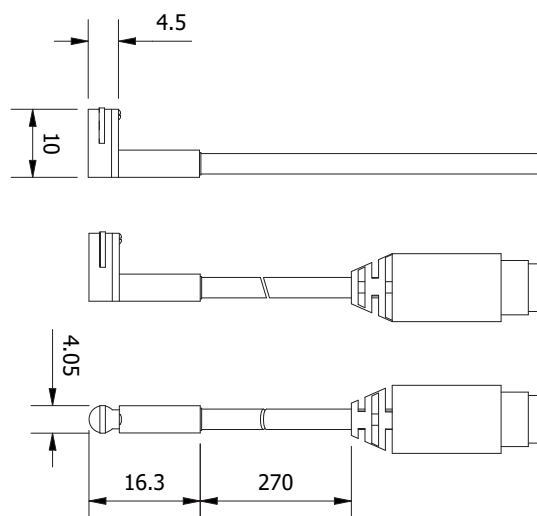


| Part No. | A | B | REF | Weight (g) |
|-----------|-----|----|--------|------------|
| MP.ZTS.14 | Ø14 | 20 | GF14.. | 15 |
| MP.ZTS.20 | Ø20 | 25 | GF20.. | 20 |
| MP.ZTS.30 | Ø30 | 35 | GF30.. | 60 |

Material: POM

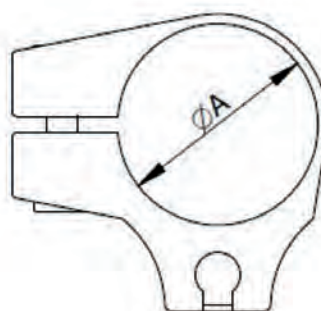
ACCESSORIES FOR FINGER GRIPPERS

SN. – C-Slot Sensor



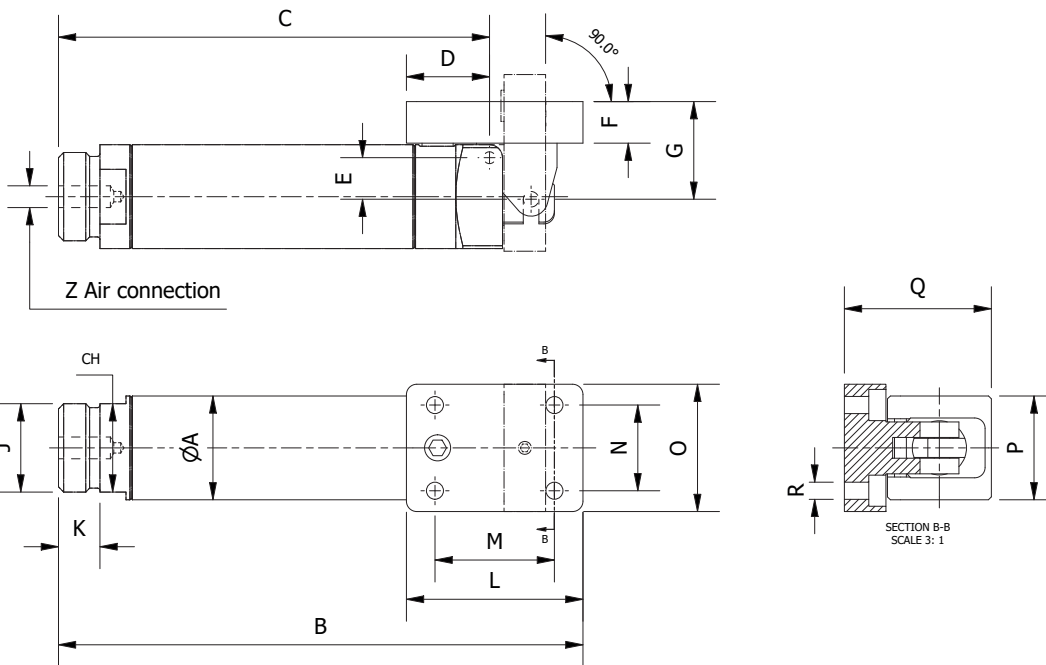
| Part No. | Output | Sensor type | Connector | Lead - m | Weight (g) |
|------------|--------|-------------|-----------|----------|------------|
| SN.K3P.M8 | PNP | Electronic | M8 3pin | 0,3 | 4 |
| SN.K3N.M8 | NPN | Electronic | M8 3pin | 0,3 | 4 |
| SN.K3P.3MW | PNP | Electronic | M8 3pin | 3 | 4 |
| SN.K3N.3MW | NPN | Electronic | M8 3pin | 3 | 4 |

SMB. – Sensor Mounting Brackets



| Part No. | A | REF | Sensor | Weight (g) |
|----------|-----|--------|--------|------------|
| SMB.14 | Ø14 | GF14.. | SN.K3 | |
| SMB.20 | Ø20 | GF20.. | SN.K3 | |
| SMB.30 | Ø30 | GF30.. | SN.K3 | |
| SMB.14.P | Ø14 | GF14.. | SN.K3 | |
| SMB.20.P | Ø20 | GF20.. | SN.K3 | |
| SMB.30.P | Ø30 | GF30.. | SN.K3 | |
| SMB.14.L | Ø14 | GF14.. | SN.K3 | |
| SMB.20.L | Ø20 | GF20.. | SN.K3 | |
| SMB.30.L | Ø30 | GF30.. | SN.K3 | |

GFT. – Pnuematic Tilt Unit

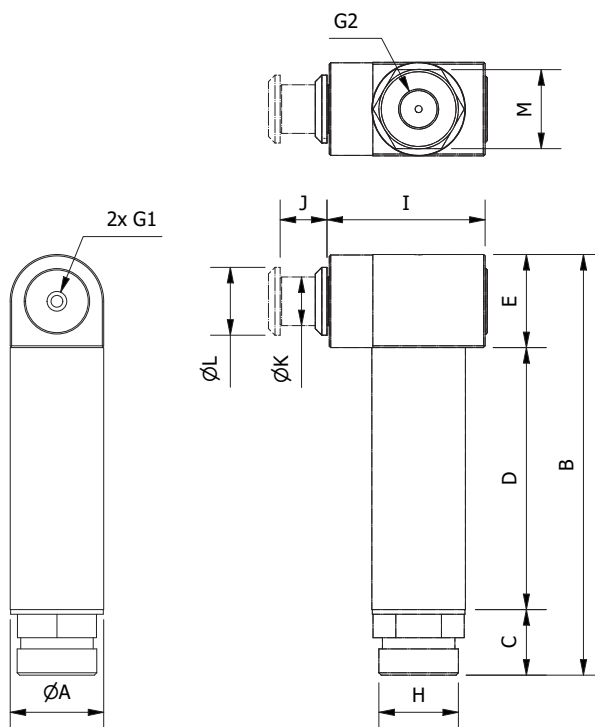


| Part No. | A | B | C | D | E | F | G | J | K | L | M | N | O | P | Q | R | CH | Z | Weight (g) |
|----------|----|-------|-----|------|----|----|------|-------|----|----|----|------|------|----|------|-----|----|------|------------|
| GFT.2090 | 20 | 101 | 83 | 16 | 8 | 8 | 18.8 | M17x1 | 8 | 34 | 23 | 16.5 | 24.5 | 20 | 28.3 | 3.3 | 17 | M5 | 75 |
| GFT.3090 | 30 | 146.5 | 119 | 21.6 | 11 | 10 | 25.5 | M27x1 | 11 | 49 | 25 | 25 | 37 | 30 | 40.3 | 5.3 | 27 | G1/8 | 270 |

Single-acting.
Tilt angle: 90°.
Pressure range: 2.5-8 bar.

PERPENDICULAR FINGER GRIPPERS

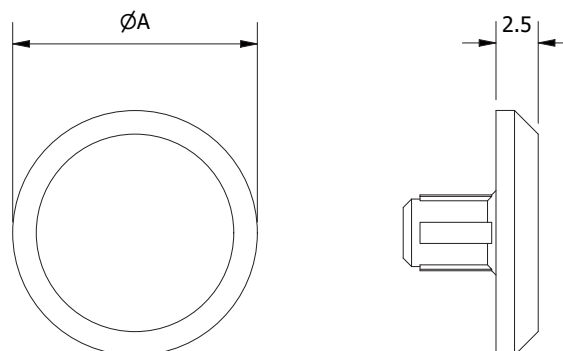
GFP. – Perpendicular Finger Gripper



| Part No. | A | Stroke | B | C | D | E | G1 | G2 | H | I | J | K | L | M | Grip force | Weight |
|----------|----|--------|------|-----|------|----|------|------|-------|------|----|------|------|------|------------|--------|
| GFP.1406 | 14 | 6mm | 65 | 9.5 | 41.5 | 14 | M5 | M5 | M12X1 | 31.5 | 6 | 8 | 10 | CH12 | 63N | 47 |
| GFP.2010 | 20 | 10mm | 89.5 | 14 | 56 | 20 | M5 | G1/8 | M17X1 | 34 | 10 | 10.5 | 14.5 | CH17 | 115N | 115 |
| GFP.3015 | 30 | 15mm | 131 | 19 | 82 | 30 | G1/8 | G1/8 | M27X1 | 49 | 15 | 14 | 20 | CH27 | 230N | 380 |

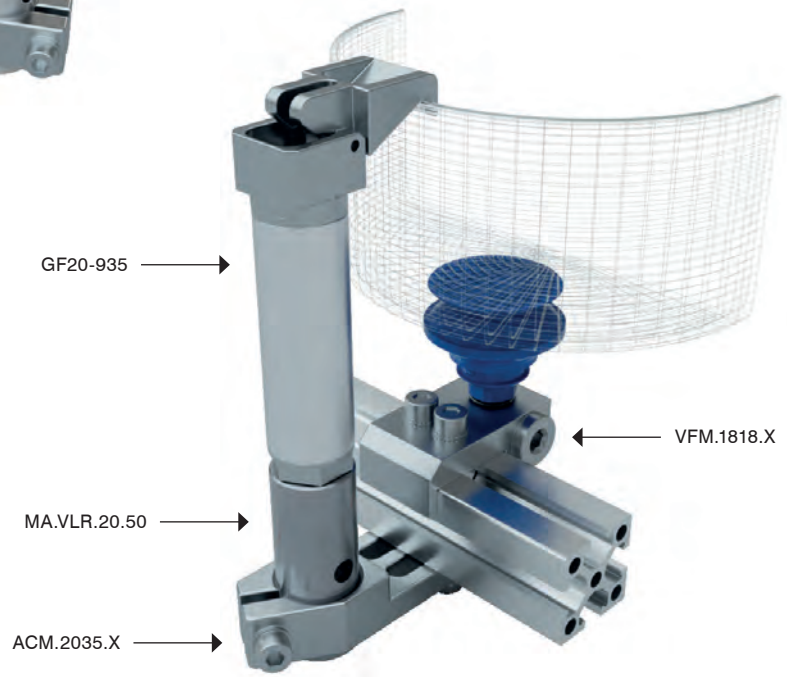
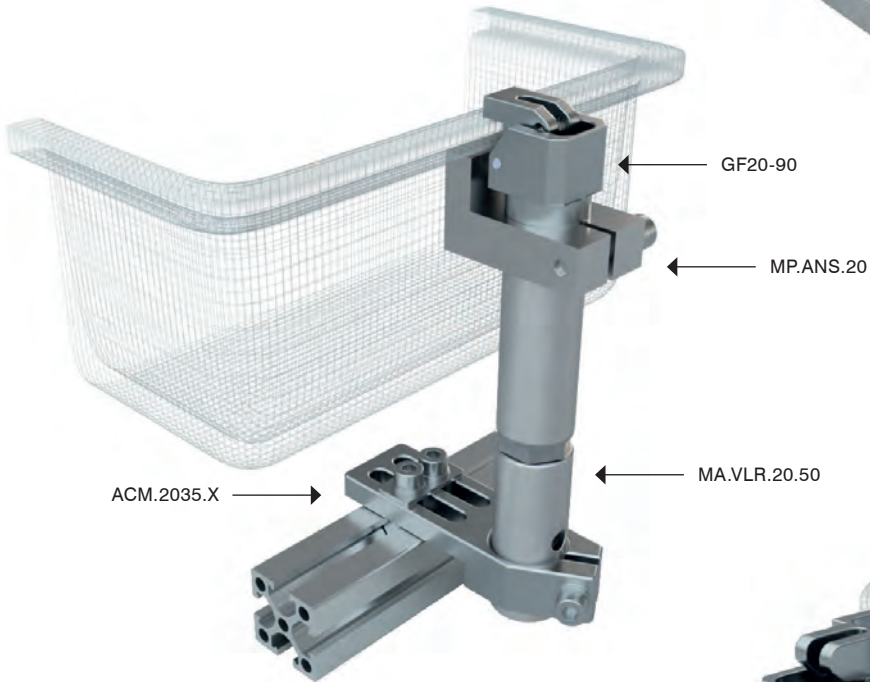
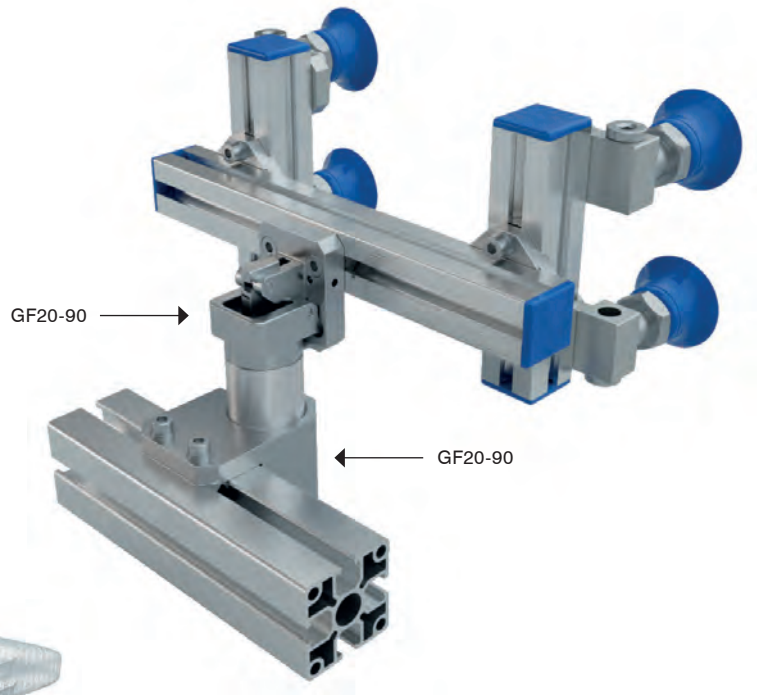
Working Principle: Single acting.
 Working pressure: 6 bar clean, dry air.
 Material: Silver anodised Aluminium.
 Through hole for vacuum to a cup.
 Viton pad for soft contact.

PAD.V. – Viton Pad for Perpendicular Finger Gripper



| Part No. | A | REF | Weight (g) |
|-----------------|------|----------|------------|
| PAD.V.D9.5X2.5 | 10 | GPF.1406 | 1 |
| PAD.V.D14.5X2.5 | 14,5 | GPF.2010 | 1 |
| PAD.V.D19.5X3.0 | 20 | GPF.3015 | 4 |

Viton Pad.
 Low marking.



GENERAL PURPOSE GRIPPERS

263 Compact Parallel Grippers



XX Parallel Grippers



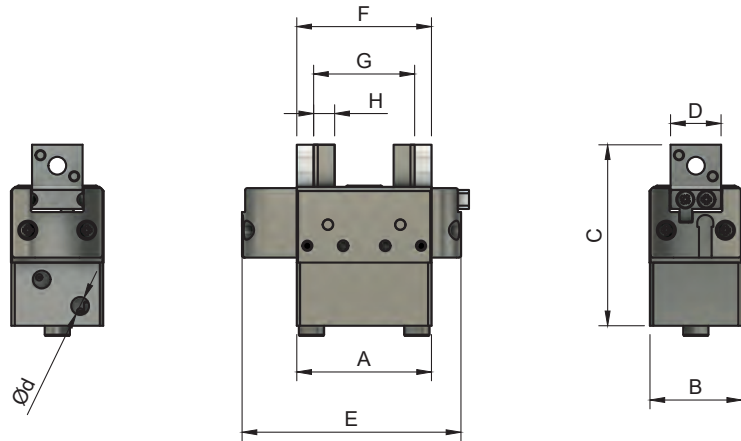
XX Jaws for Parallel Grippers



XX Angular Grippers



MP.SGP - Compact Parallel Gripper



| Part No. | Stroke | Closing force at 6 bar | Opening force at 6 bar | Weight (g) |
|------------|--------|------------------------|------------------------|------------|
| MP.SGP-20S | 4mm | 40N | 46N | 33 |
| MP.SGP-25S | 6mm | 94N | 104N | 43 |
| MP.SGP-32S | 8mm | 120N | 134N | 86 |
| MP.SGP-40S | 12mm | 146N | 160N | 170 |

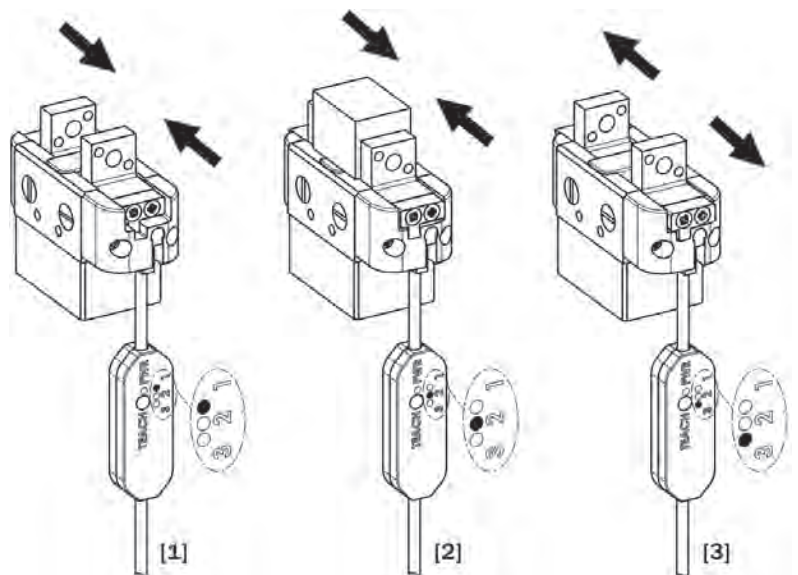
| Part No. | A | B | C | D | Ød | E | F | G | H |
|------------|----|------|----|----|----|------|----|----|-----|
| MP.SGP-20S | 20 | 15,8 | 32 | 9 | M3 | 36,5 | 20 | 16 | 3,5 |
| MP.SGP-25S | 26 | 17,8 | 34 | 10 | M3 | 42,5 | 25 | 19 | 4 |
| MP.SGP-32S | 32 | 21,8 | 43 | 12 | M3 | 52 | 32 | 24 | 5 |
| MP.SGP-40S | 40 | 25,8 | 51 | 16 | M3 | 62 | 40 | 28 | 6 |

Double Acting.
 Compact Size.
 Maximum Operating pressure: 8 bar.
 Temperature Range: 5 ÷ 60°C.

The operating position can be checked by one 3 - outputs programmable sensor (not included), detecting the position of the magnet on the right jaw.

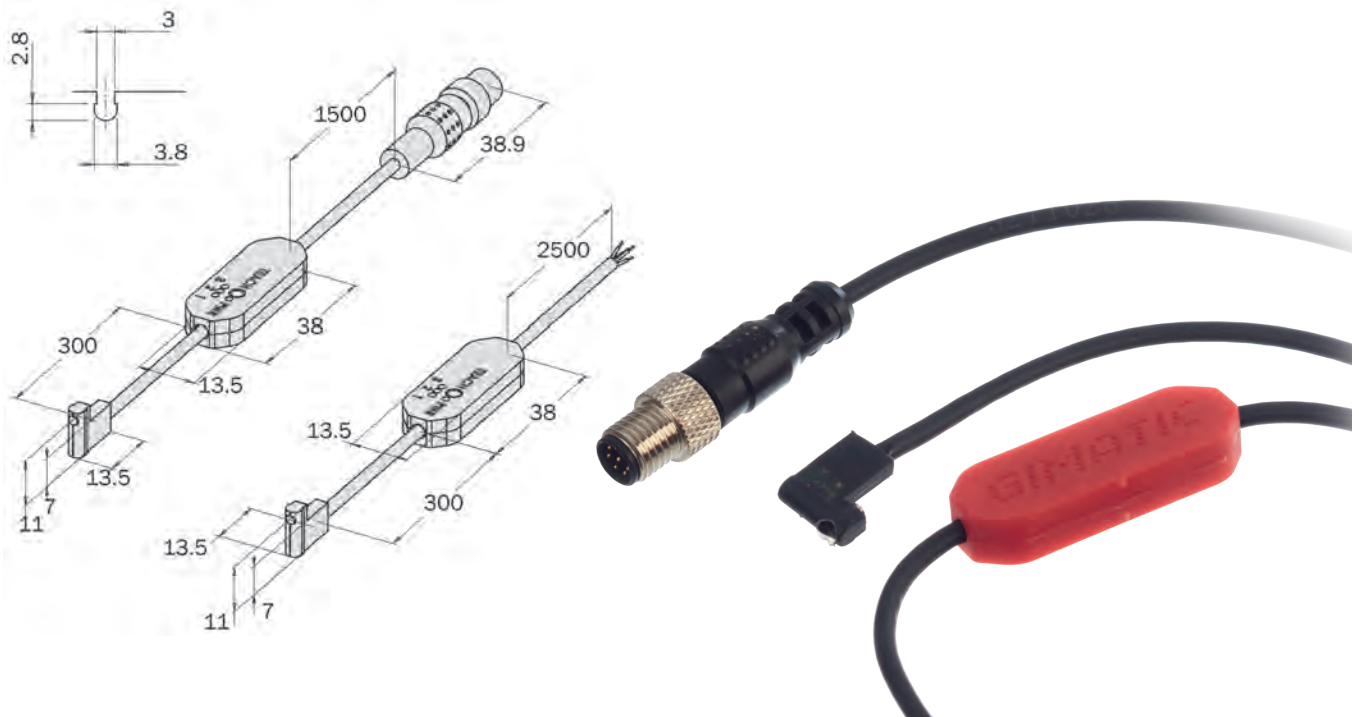
The Detected positions can be adjusted by a teaching procedure, so that 3 digital outputs can be:

- Output 1 - totally closed gripper (1)
- Output 2 - gripped part intermediate position (2)
- Output 3 - totally open gripper (3)



COMAPCT PARALLEL GRIPPER

PRO.SN-HS – Programmable Magnetic Sensor for MP.SGP-



| Part No. | Output | Sensor Type | Connector Lead - m | Ref. | Weight (g) | |
|-----------------|--------|-------------------------|--------------------|------|------------|----|
| PRO.SN3N215HS-G | PNP | Magneto-resistive NO/NC | M8 -3 pin | 0,3 | MP.SGP | 70 |
| PRO.SN3M215HS-G | NPN | Magneto-resistive NO/NC | M8 -3 pin | 0,3 | MP.SGP | 70 |
| PRO.SN4N225HS-G | PNP | Magneto-resistive NO/NC | | 2,5 | MP.SGP | 70 |
| PRO.SN4M225HS-G | NPN | Magneto-resistive NO/NC | | 2,5 | MP.SGP | 70 |

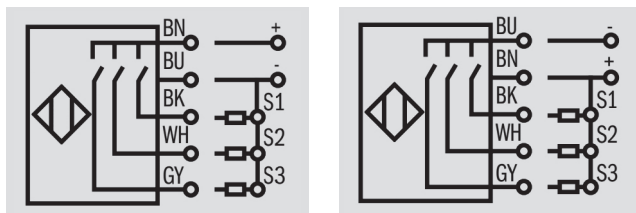
Programmable GMP magneto-resistive sensors.
3 independent digital outputs.
Each programmable output in NO or NC logic.

The sensor's remote programming circuit has a button for the configuration and programming of outputs. Following a simple procedure, the user can configure each output as normally open (NO - yellow LED) or normally closed (NC - green LED) and store the switching point (separate for each output).

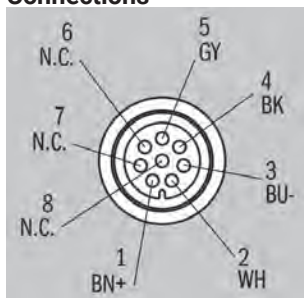
Wiring Diagram

PNP

NPN

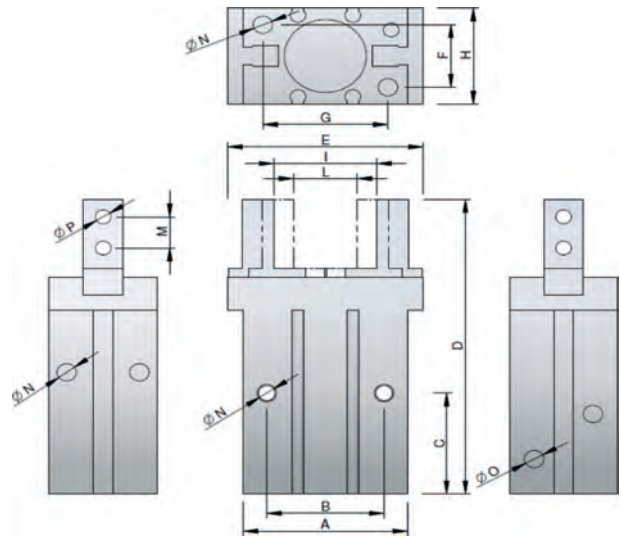


Connections



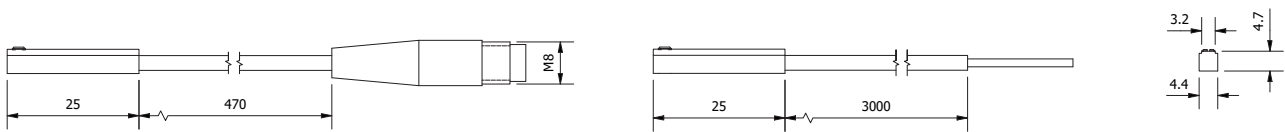
Brown (BN +); Blue (BU -); Black (BK OUT1)
White (WH OUT 2); Grey (GY OUT 3); Not connected N.C.

PG. – Parallel Gripper



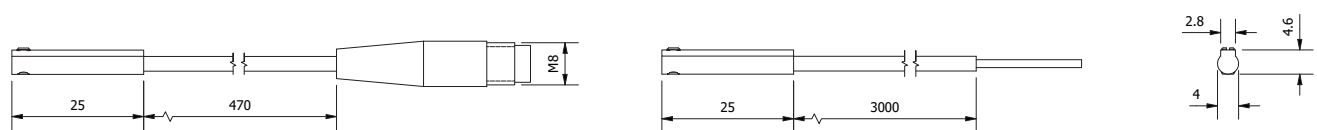
| Part No. | Bore Size | A | B | C | D | E | F | G | H | I open | L closed | Stroke | M | N | O | P | Force (N) Open/Close | Weight (g) |
|----------|-----------|------|----|------|------|-----|----|----|------|--------|----------|--------|-----|----|----|------|----------------------|------------|
| PG-10 | 10 | 23 | 16 | 23 | 57 | 30 | 12 | 18 | 16,5 | 15,5 | 11,5 | 4 | 5,7 | M3 | M3 | M2.5 | 22/34 | 56 |
| PG-10NO | 10 | 23 | 16 | 23 | 57 | 30 | 12 | 18 | 16,5 | 15,5 | 11,5 | 4 | 5,7 | M3 | M3 | M2.5 | 14/ | 57 |
| PG-10L | 10 | 23 | 16 | 25 | 57 | 35 | 12 | 18 | 16,5 | 20,3 | 11 | 8 | 5,7 | M3 | M3 | M2.5 | 22/34 | 64 |
| PG-16 | 16 | 30,5 | 24 | 24,5 | 67,3 | 39 | 15 | 22 | 23,5 | 21 | 15 | 6 | 7 | M4 | M5 | M3 | 68/90 | 124 |
| PG-16NO | 16 | 30,5 | 24 | 24,5 | 67,3 | 39 | 15 | 22 | 23,5 | 21 | 15 | 6 | 7 | M4 | M5 | M3 | 54/ | 125 |
| PG-16L | 16 | 30,5 | 24 | 31 | 70 | 47 | 15 | 22 | 23,5 | 28 | 14,7 | 12 | 7 | M4 | M5 | M3 | 68/90 | 146 |
| PG-20 | 20 | 42 | 30 | 29 | 85 | 53 | 18 | 32 | 27,5 | 26,5 | 16,5 | 10 | 9 | M5 | M5 | M4 | 90/132 | 236 |
| PG-20NO | 20 | 42 | 30 | 29 | 85 | 53 | 18 | 32 | 27,5 | 26,5 | 16,5 | 10 | 9 | M5 | M5 | M4 | 70/ | 238 |
| PG-20L | 20 | 42 | 30 | 36 | 90 | 62 | 18 | 32 | 27,5 | 33,5 | 16,1 | 18 | 9 | M5 | M5 | M4 | 84/132 | 273 |
| PG-25 | 25 | 52 | 36 | 30 | 103 | 71 | 22 | 40 | 33,5 | 33,5 | 19,5 | 14 | 12 | M6 | M5 | M5 | 138/204 | 428 |
| PG-25NO | 25 | 52 | 36 | 30 | 103 | 71 | 22 | 40 | 33,5 | 33,5 | 19,5 | 14 | 12 | M6 | M5 | M5 | 110/ | 430 |
| PG-25L | 25 | 52 | 36 | 40 | 106 | 75 | 22 | 40 | 33,5 | 42,6 | 19,3 | 22 | 12 | M6 | M5 | M5 | 130/208 | 489 |
| PG-32 | 32 | 60 | 46 | 49 | 113 | 106 | 26 | 46 | 40 | 48 | 26 | 22 | 14 | M6 | M5 | M6 | 320/390 | 729 |

SN.DMSG. – T-Slot Sensor



| Part No. | Output | Sensor type | Connector | Lead m | REF | Weight (g) |
|-------------|--------|-------------|-----------|--------|-----------------|------------|
| SN.DMSGP.M8 | PNP | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.M8 | NPN | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGP.3M | PNP | Magnetic | | 3 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.3M | NPN | Magnetic | | 3 | PG/AG/CCTQ/CCAQ | 4 |

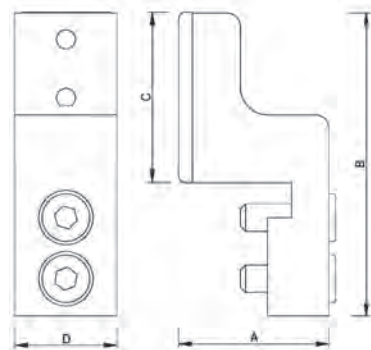
SN.DMSH. – C-Slot Sensor



| Part No. | Output | Sensor type | Connector | Lead m | REF | Weight (g) |
|------------|--------|-------------|-----------|--------|-----|------------|
| SN.DMSHPM8 | PNP | Electronic | M8 3pin | 0.5 | PG | 4 |
| SN.DMSHNM8 | NPN | Electronic | M8 3pin | 0.5 | PG | 4 |
| SN.DMSHP3M | PNP | Electronic | | 3 | PG | 4 |
| SN.DMSHN3M | NPN | Electronic | | 3 | PG | 4 |

JAWS FOR PARALLEL GRIPPERS

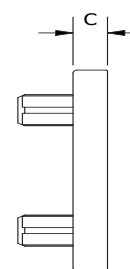
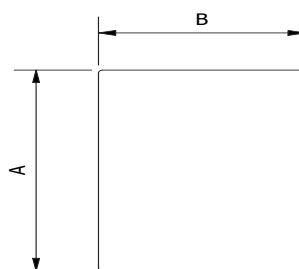
MA.KB. – Jaws for Parallel Gripper PG (complete)



| Part No. | Insert | A | B | C | D | Gripper Ref. | Weight (g) |
|----------|--------|------|------|------|----|--------------|------------|
| MA.KB.10 | FKM-10 | 15,5 | 27 | 14 | 10 | PG-10 | 14 |
| MA.KB.16 | FKM-16 | 18,5 | 35 | 20 | 15 | PG-16 | 28 |
| MA.KB.20 | FKM-20 | 22 | 44,5 | 25 | 15 | PG-20 | 41 |
| MA.KB.25 | FKM-25 | 29 | 55 | 25 | 20 | PG-25 | 73 |
| MA.KB.32 | FKM-32 | 36 | 65,5 | 36,5 | 25 | PG-32 | 166 |

Extremely light weight (Material Aluminium).

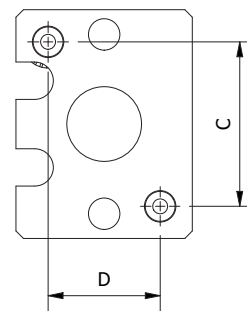
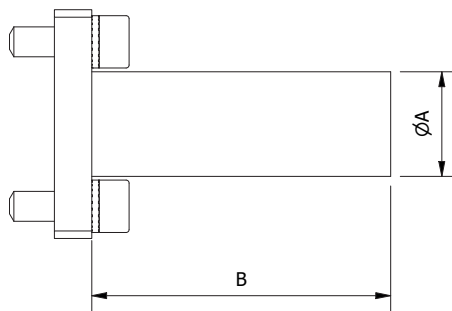
FKM – Insert Pad Viton



| Part No. | Colour | A | B | C | Jaw Ref. | Weight (g) |
|----------|--------|----|----|-----|----------|------------|
| FKM-10 | Green | 14 | 10 | 2,5 | PG-10 | 1 |
| FKM-16 | Green | 20 | 15 | 2,5 | PG-16 | 2 |
| FKM-20 | Green | 25 | 13 | 2 | PG-20 | 1 |
| FKM-25 | Green | 25 | 13 | 2 | PG-25 | 1 |
| FKM-32 | Green | 30 | 20 | 3 | PG-32 | 3 |

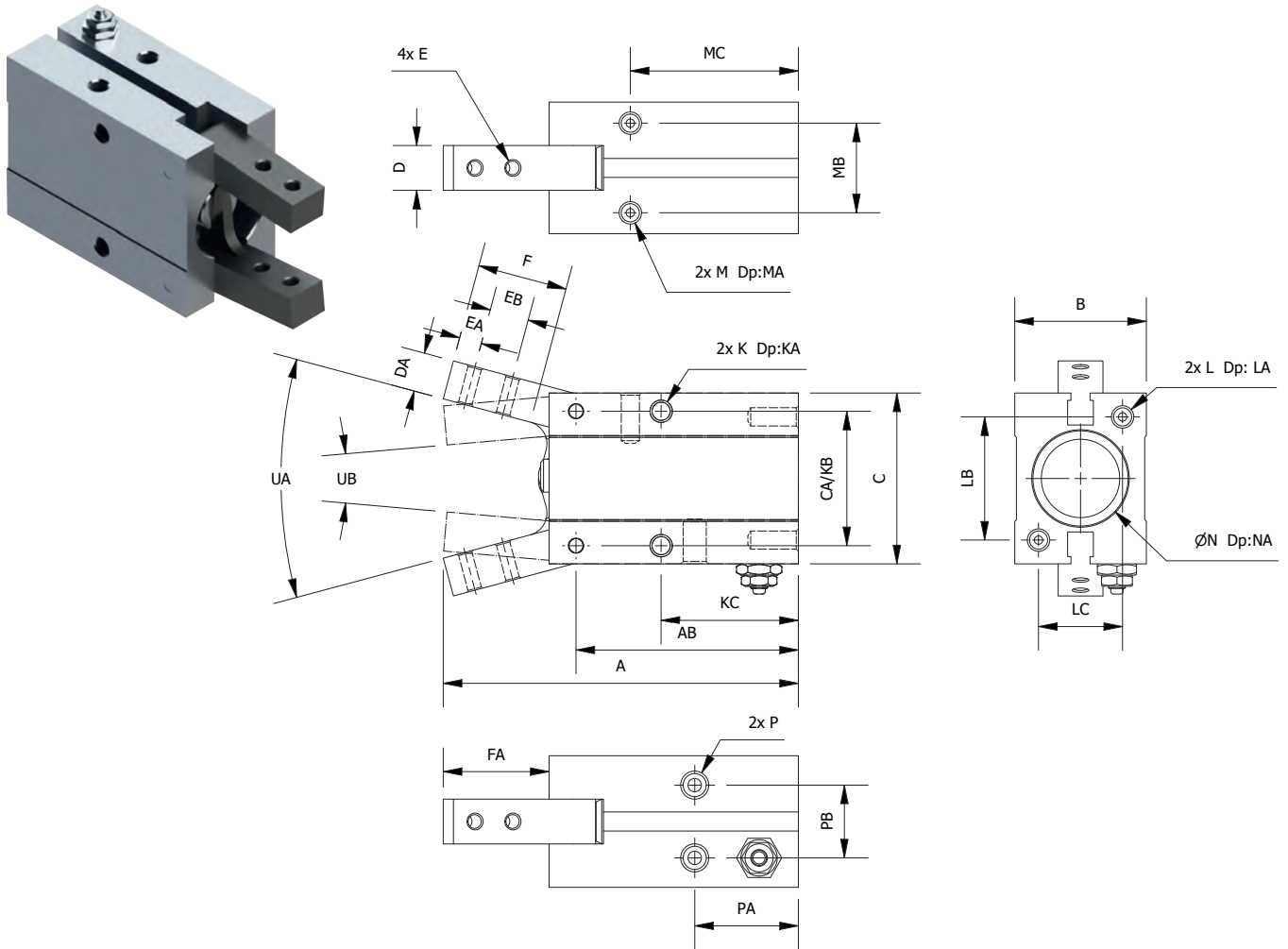
FKM = Viton (flur=oroelastomer).

GA – Mounting Bracket for Grippers PG, AG



| Part No. | A | B | C | D | REF | Weight (g) |
|----------|----|----|----|----|-------|------------|
| GA-10 | 10 | 30 | 18 | 12 | PG-10 | 11 |
| GA-16 | 14 | 40 | 22 | 15 | PG-16 | 21 |
| GA-20 | 20 | 50 | 32 | 18 | PG-20 | 38 |
| GA-25 | 20 | 50 | 40 | 22 | PG-25 | 55 |
| GA-32 | 20 | 50 | 46 | 26 | PG-32 | 102 |

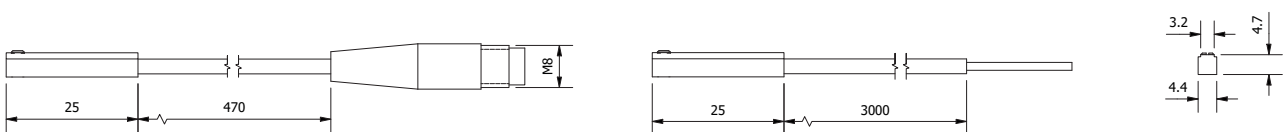
AG – Angular Gripper



| Part No. | Bore Size | A | AB | B | C | CA | D | DA | E | EA | EB | F | FA | K | KA | KB | KC | L |
|----------|-----------|------|------|------|------|----|-----|----|------|----|-----|----|------|--------|----|----|------|--------|
| AG-10-D | 10 | 52,5 | 38,5 | 16,5 | 23 | 14 | 6,4 | 4 | M2.5 | 3 | 5,7 | 12 | 14,5 | M3x0.5 | 5 | 16 | 23 | M3x0.5 |
| AG-16-D | 16 | 62,5 | 44,5 | 23,5 | 30,5 | 24 | 8 | 7 | M3 | 4 | 7 | 16 | 19 | M4x0.7 | 7 | 24 | 24,5 | M4x0.7 |
| AG-20-D | 20 | 78 | 55 | 27,5 | 42 | 30 | 10 | 8 | M4 | 5 | 9 | 20 | 23,5 | M5x0.8 | 8 | 30 | 29 | M5x0.8 |
| AG-25-D | 25 | 92 | 60,5 | 33,5 | 52 | 36 | 12 | 10 | M5 | 8 | 12 | 27 | 33 | M6x1.0 | 10 | 36 | 30 | M6x1.0 |
| AG-32-D | 32 | 96,5 | 68 | 44,0 | 60 | 42 | 18 | 10 | M6 | 6 | 14 | 27 | 29,5 | M6x1.0 | 10 | 44 | 37,5 | M6x1.0 |

| Part No. | Bore Size | LA | LB | LC | M | MA | MB | MC | N | NA | P | PA | PB | UA(Open) | UB(Closed) | Weight (g) |
|----------|-----------|----|----|----|--------|----|------|------|----|-----|--------|------|----|----------|------------|------------|
| AG-10-D | 10 | 6 | 18 | 12 | M3x0.5 | 6 | 11,5 | 27 | 11 | 1,5 | M3x0.5 | 19 | 10 | 30° | 10° | 36 |
| AG-16-D | 16 | 8 | 22 | 15 | M4x0.7 | 8 | 16 | 30 | 17 | 1,5 | M5x0.8 | 10,5 | 13 | 30° | 10° | 59 |
| AG-20-D | 20 | 10 | 32 | 18 | M5x0.8 | 10 | 18,5 | 35 | 21 | 1,5 | M5x0.8 | 22 | 15 | 30° | 10° | 64 |
| AG-25-D | 25 | 12 | 40 | 22 | M6x1.0 | 10 | 22 | 36,5 | 26 | 1,5 | M5x0.8 | 23,5 | 20 | 30° | 10° | 155 |
| AG-32-D | 32 | 12 | 46 | 26 | M6x1.0 | 10 | 26 | 30 | 34 | 2 | M5x0.8 | 31 | 24 | 30° | 10° | 161 |

SN.DMSG. – T-Slot Sensor



| Part No. | Output | Sensor type | Connector | Lead m | REF | Weight (g) |
|-------------|--------|-------------|-----------|--------|-----------------|------------|
| SN.DMSGP.M8 | PNP | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.M8 | NPN | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGP.3M | PNP | Magnetic | | 3 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.3M | NPN | Magnetic | | 3 | PG/AG/CCTQ/CCAQ | 4 |

SPECIALITY GRIPPERS

269 Expansion Grippers

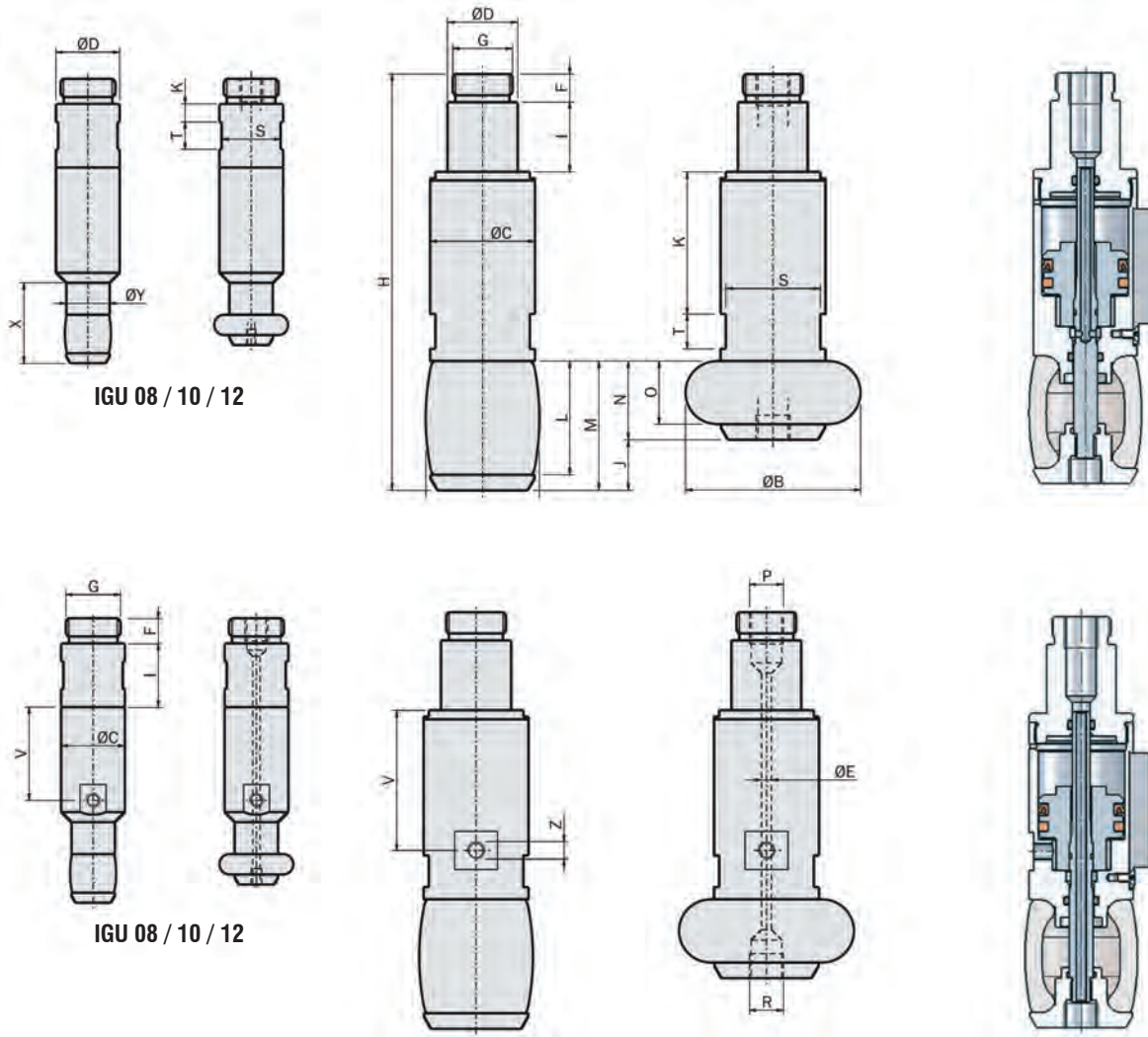


273 Dock & Lock Grippers



IGU - Expansion Grippers

Dimensions (mm)



| Part No. | ØA | ØB | ØC | ØD | ØE | F | G | H | I | J | K | L | M | N | O | P | R | S | T | V | Z | X | ØY | Weight (g) |
|----------|------|------|------|----|-----|-----|-------|------|----|------|------|------|------|------|-----|------|------|----|----|------|------|------|------|------------|
| IGU08E | 8 | 11 | 14 | 14 | 1,1 | 5,5 | M12x1 | 61,5 | 14 | 3,5 | 4 | 7 | 9,2 | 5,7 | 3,5 | M5 | M2 | 13 | 6 | 20 | M3 | 16,3 | 7,6 | 16 |
| IGU10E | 10,5 | 13,5 | 14 | 14 | 1,1 | 5,5 | M12x1 | 62,5 | 14 | 4 | 4 | 8,5 | 10,7 | 6,7 | 4,5 | M5 | M2 | 13 | 6 | 20,5 | M3 | 17,7 | 9,5 | 17 |
| IGU12E | 13 | 17 | 14 | 14 | 1,3 | 5,5 | M12x1 | 65 | 14 | 5,5 | 4 | 10,5 | 13 | 7,5 | 5 | M5 | M3 | 13 | 6 | 21,5 | M3 | 20 | 11,8 | 18 |
| IGU14E | 15 | 19,5 | 14 | 14 | 1,3 | 5,5 | M12x1 | 68,5 | 14 | 7 | 24,2 | 13 | 15,8 | 8,8 | 6 | M5 | M3 | 13 | 6 | 23,2 | M3 | | | 20 |
| IGU16E | 18 | 21,5 | 14 | 14 | 1,3 | 5,5 | M12x1 | 68,5 | 14 | 7 | 24,2 | 13 | 15,8 | 8,8 | 6 | M5 | M3 | 13 | 6 | 23,2 | M3 | | | 20 |
| IGU18E | 19,5 | 24,5 | 18 | 14 | 1,3 | 5,5 | M12x1 | 78 | 14 | 7,5 | 29 | 16,5 | 19,5 | 12 | 9 | M5 | M3 | 16 | 7 | 28 | M5 | | | 35 |
| IGU20E | 22,5 | 26,5 | 18 | 14 | 1,3 | 5,5 | M12x1 | 78 | 14 | 7,5 | 29 | 16,5 | 19,5 | 12 | 9 | M5 | M3 | 16 | 7 | 28 | M5 | | | 35 |
| IGU22E | 24 | 31,5 | 21,5 | 14 | 1,8 | 5,5 | M12x1 | 86,5 | 14 | 10 | 31,8 | 21 | 24,2 | 14,2 | 11 | M5 | M3 | 20 | 8 | 31,5 | M5 | | | 50 |
| IGU27E | 28 | 36 | 25 | 20 | 2,5 | 8 | M17x1 | 108 | 20 | 12 | 37,5 | 26 | 30 | 18 | 14 | M5 | M5 | 22 | 9 | 37 | M5 | | | 100 |
| IGU33E | 34 | 44 | 30 | 20 | 2,8 | 8 | M17x1 | 119 | 20 | 14,5 | 40,5 | 32,5 | 37 | 22,5 | 18 | G1/8 | G1/8 | 28 | 10 | 40 | M5 | | | 130 |
| IGU41E | 42 | 54 | 40 | 30 | 4,5 | 11 | M27x1 | 147 | 30 | 15,5 | 45 | 39,5 | 45 | 29,5 | 24 | G1/8 | G1/8 | 36 | 12 | 45 | M5 | | | 30 |
| IGU47E | 50 | 58 | 40 | 30 | 4,5 | 11 | M27x1 | 147 | 30 | 15,5 | 45 | 39,5 | 45 | 29,5 | 24 | G1/8 | G1/8 | 36 | 12 | 45 | M5 | | | 300 |
| IGU51E | 54 | 68 | 50 | 30 | 5 | 11 | M27x1 | 169 | 30 | 18 | 54 | 48 | 55 | 37 | 30 | G1/8 | G1/8 | 45 | 14 | 56,5 | G1/8 | | | 500 |
| IGU63E | 66 | 84 | 60 | 30 | 5 | 11 | M27x1 | 194 | 30 | 25 | 62 | 61 | 70 | 45 | 36 | G1/8 | G1/8 | 54 | 16 | 64,5 | G1/8 | | | 785 |

Downward movement (IGD - on request), or upward movement (IGU).

The elastic part can be in Silicone or EPDM.

Grip diameters from 8 to 85 mm.

Optional proximity magnetic sensors.

Use standard Ø14, 20 and 30mm clamps.

Has a central through hole which can be used to blow compressed air, or to provide vacuum, with the purpose of cooling a part, or checking sealing.

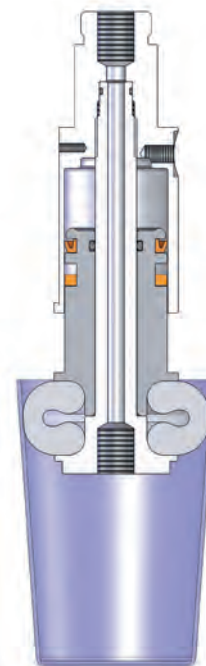
EXPANSION GRIPPERS

IGU - Expansion Grippers



ID expansion grippers series IGU

- New concept for innovative air hand.s
- Upward movement.
- Central trough holefor compressed airor vacuum.
- The elastic part can be in Silicone or EPDM.
- Grip diameters from 8mm to 85mm.
- Optional nose cone for centering.
- Optional proximity magnetic sensors.
- Several mounting accessories.



Grip diameters

- The gripper size is indicated in the gripper code with nominal diameter of the elastic part.
- Each model can work in a diameter range between a minium and maximum valve.

| | Diameter (mm) | | | | | | | |
|----|---------------|------|------|----|----|----|----|----|
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 08 | 8 | 11 | | | | | | |
| 10 | 10.5 | 13.5 | | | | | | |
| 12 | | 13 | 17 | | | | | |
| 14 | | 15 | 19.5 | | | | | |
| 16 | | 18 | 21.5 | | | | | |
| 18 | | 19.5 | 24.5 | | | | | |
| 20 | | 22.5 | 26.5 | | | | | |
| 22 | | 24 | 31.5 | | | | | |
| 27 | | | 28 | 36 | | | | |
| 33 | | | 34 | 44 | | | | |
| 41 | | | | 42 | 54 | | | |
| 47 | | | | | 50 | 58 | | |
| 51 | | | | | 54 | | 68 | |
| 63 | | | | | | 66 | | 84 |

IF-E & IF-S – Spare Silicone Elastomers for IGD/IGU Expansion Grippers



EPDM



Silicone

| Part No. EPDM | Part No. Silicone | Ref | Weight (g) |
|---------------|-------------------|--------|------------|
| IF08E02 | IF08S01 | IGU08E | 1 |
| IF10E02 | IF10S01 | IGU10E | 1 |
| IF12E02U | IF12S01U | IGU12E | 2 |
| IF14E02U | IF14S01U | IGU14E | 3 |
| IF16E02U | IF16S01U | IGU16E | 3 |
| IF18E02 | IF18S01 | IGU18E | 4 |
| IF20E02 | IF20S01 | IGU20E | 3,3 |
| IF22E02 | IF22S01 | IGU22E | 7 |
| IF27E02 | IF27S01 | IGU27E | 10 |
| IF33E02 | IF33S01 | IGU33E | 20 |
| IF41E02 | IF41S01 | IGU41E | 33 |
| IF47E02 | IF47S01 | IGU47E | 60 |
| IF51E02 | IF51S01 | IGU51E | 65 |
| IF63E02 | IF63S01 | IGU63E | 130 |

EPDM temperature range (-50°C to +140°C).

EPDM is mark-free and provides a higher coefficient of friction.

The expected medium life time of the elastic part in EPDM is about 0.5 million cycles.

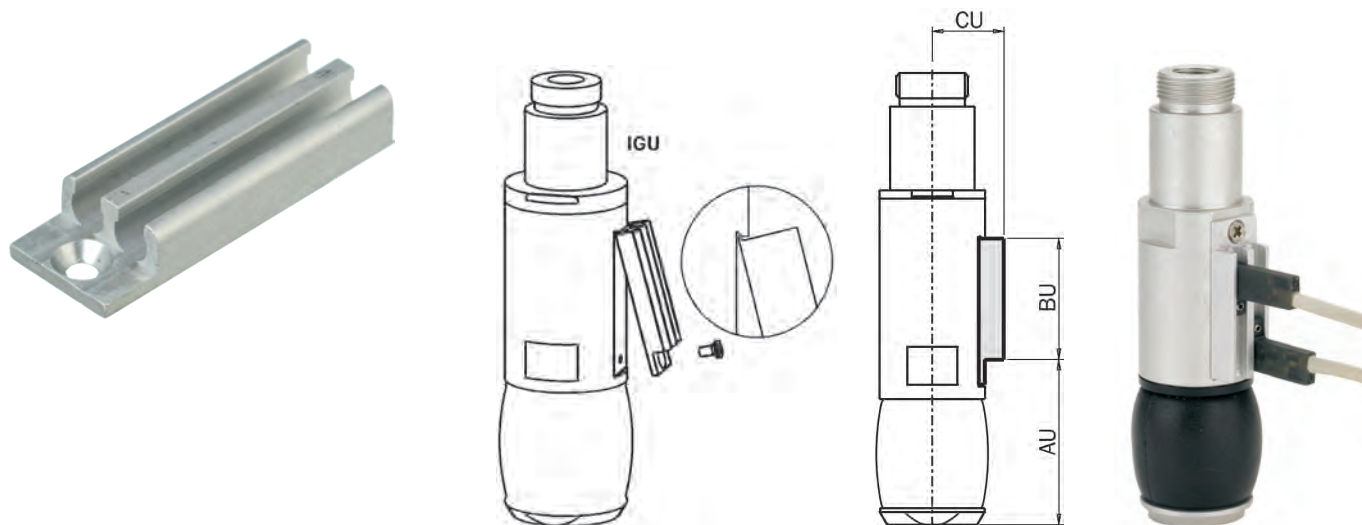
Silicone temperature range (-70°C to +200°C).

The expected medium life time of the elastic part in Silicone is about 1 million cycles.

Not suitable in some industries, due to residue left after contact with silicone.

EXPANSION GRIPPERS

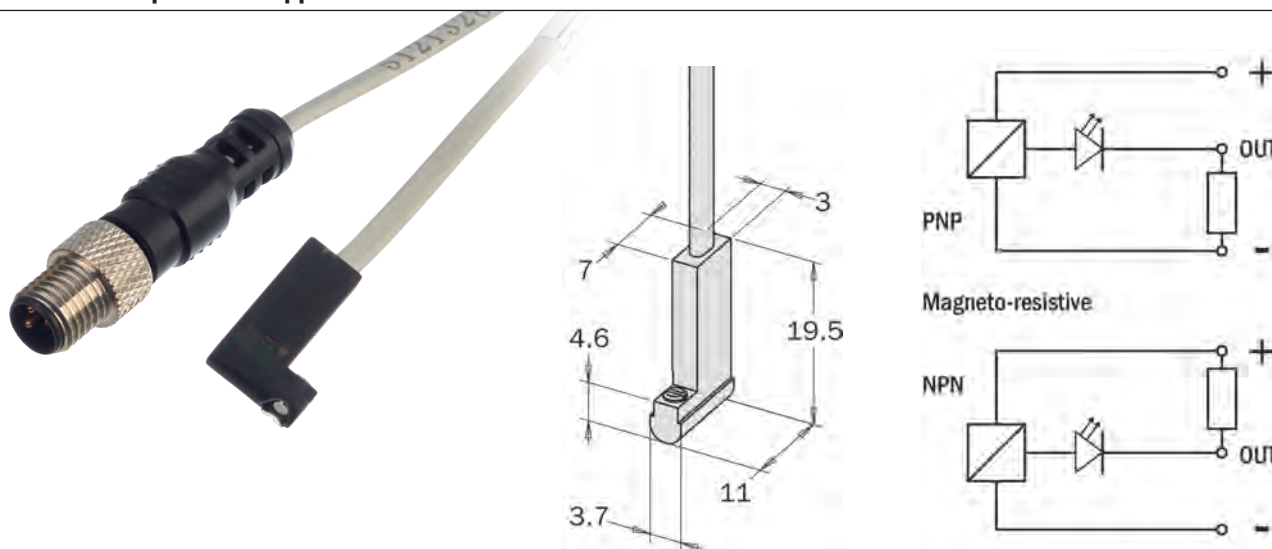
IGU-SB Sensor Holder



| Part No. | AU mm | BU mm | CU mm | Ref IGU | Weight (g) |
|----------|-------|-------|-------|---------|------------|
| IGU27-SB | 39,5 | 29 | 17 | Ø27 | 4 |
| IGU33-SB | 46,5 | 33 | 19,8 | Ø33 | 5 |
| IGU41-SB | 55,5 | 36,5 | 23,8 | Ø41,Ø47 | 5 |
| IGU51-SB | 71,5 | 39 | 28,5 | Ø51 | 5 |
| IGU63-SB | 87,5 | 45 | 33,5 | Ø63 | 7 |

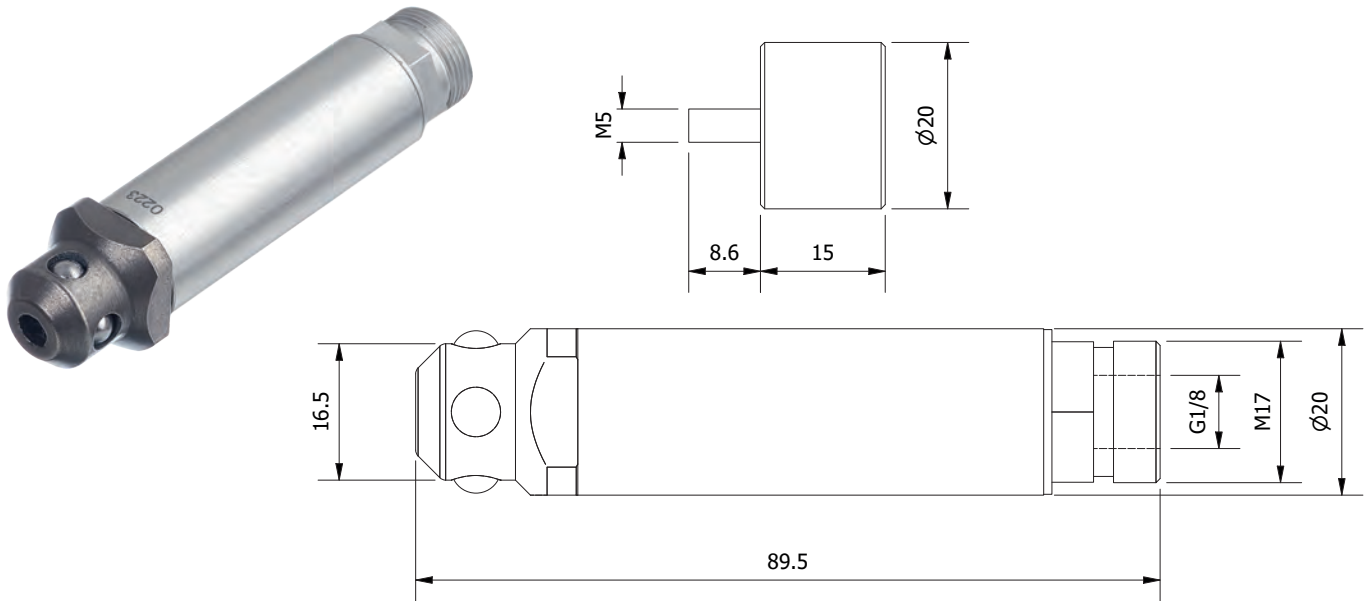
Expansion grippers sizes 27 to 63, have magnets integrated into their pistons.
 This sensor mounting bracket allows sensors to be equipped in order to detect magnet position.
 One or two sensors can be fitted on a gripper.

SN – Sensor for Expansion Grippers IGD & IGU



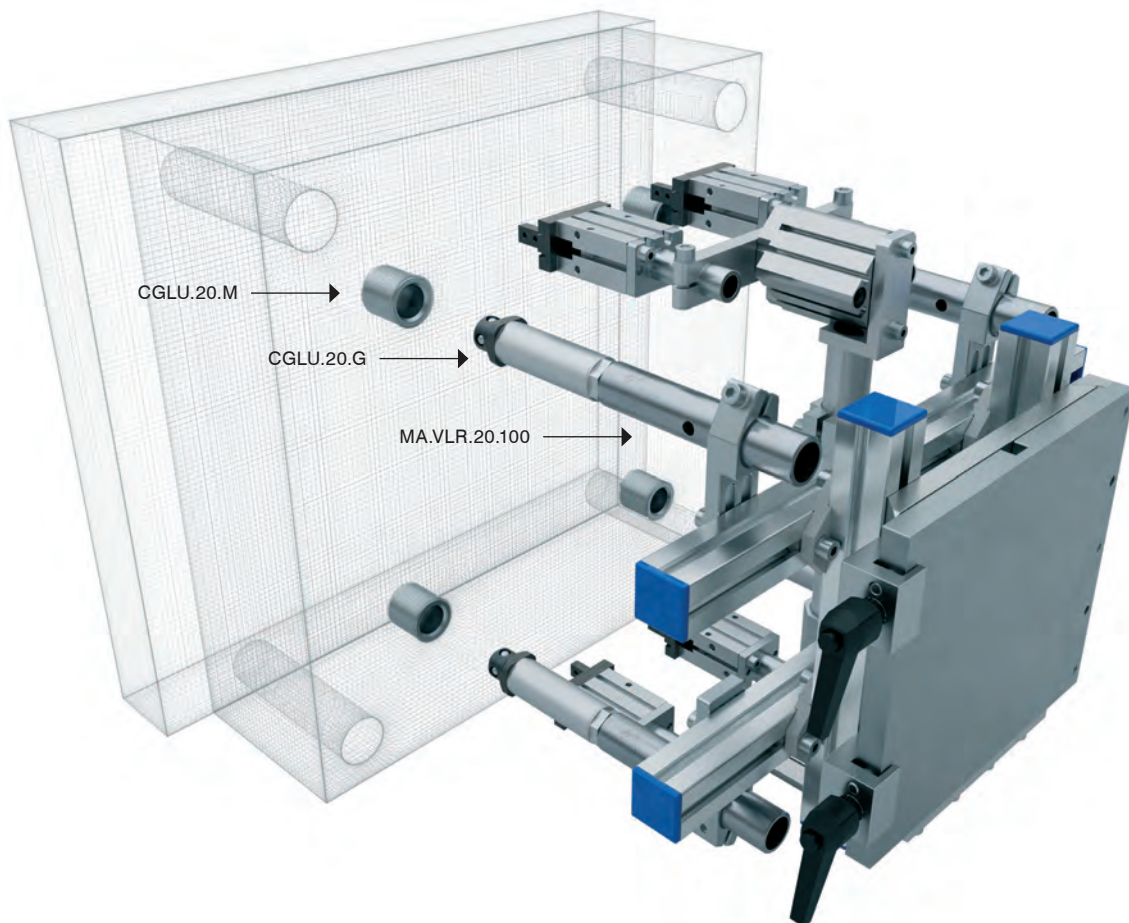
| Part No. | Output | Sensor Type | Connector Lead - m | Ref. | Weight (g) |
|------------|--------|----------------------|--------------------|---------|------------|
| SN.3N203-G | PNP | Magneto-resistive NO | M8 -3 pin | IGD/IGU | 4 |
| SN.3M203-G | NPN | Magneto-resistive NO | M8 -3 pin | IGD/IGU | 4 |
| SN.4N225-G | PNP | Magneto-resistive NO | 2,5 | IGD/IGU | 22 |
| SN.4M225-G | NPN | Magneto-resistive NO | 2,5 | IGD/IGU | 22 |

GCLU. – Centering Locking Unit



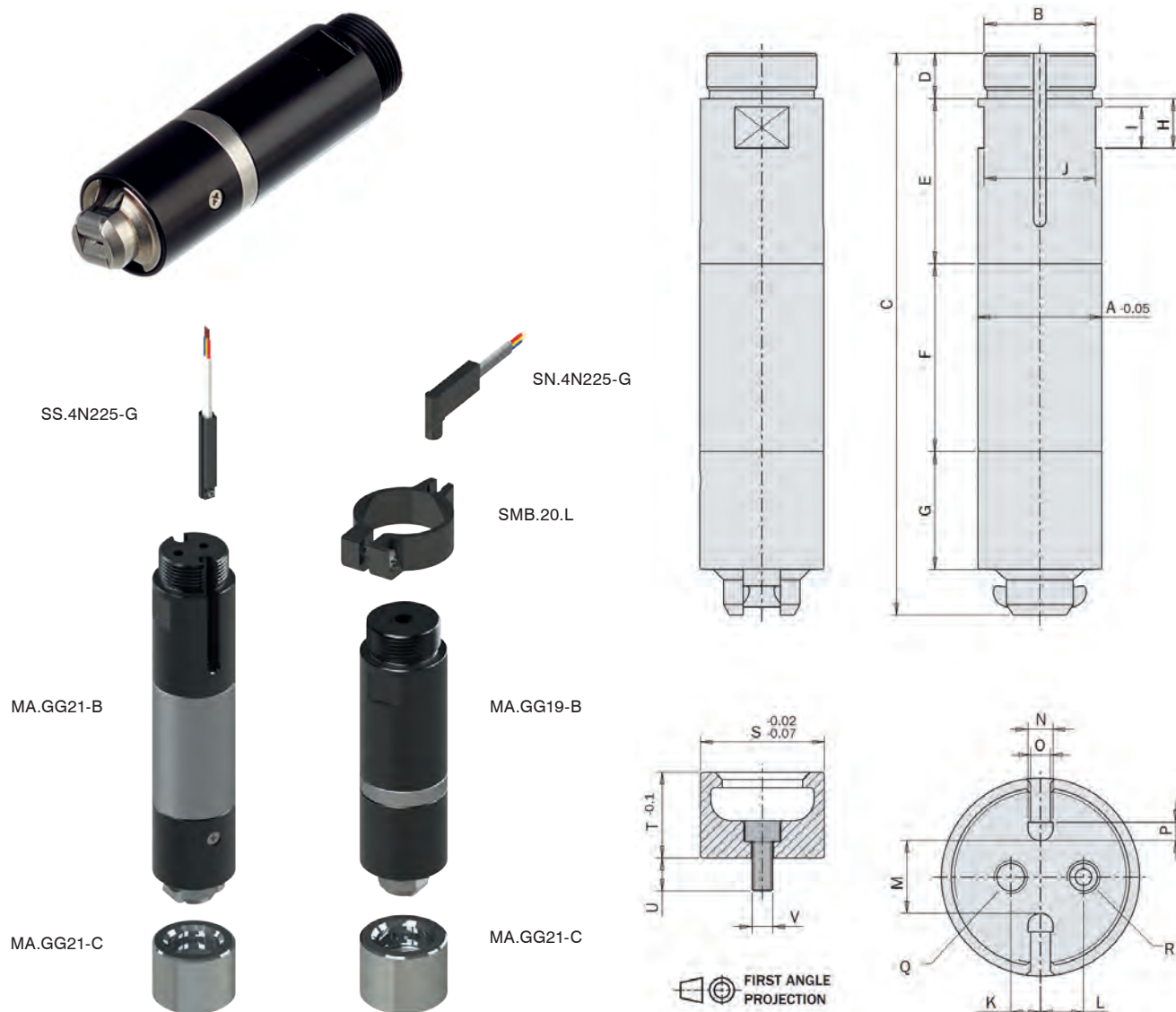
| Part No. | | Closing force (6 bar) | Weight (g) |
|-----------|--------------|-----------------------|------------|
| GCLU.20.G | Gripper side | 750N | 93 |
| GCLU.20.M | Mould side | | 60 |

Single acting.
 High gripping force.
 ISO H7 tolerance is used for positioning.



DOCK AND LOCK GRIPPERS

MA.AGG – Engagement Gripper



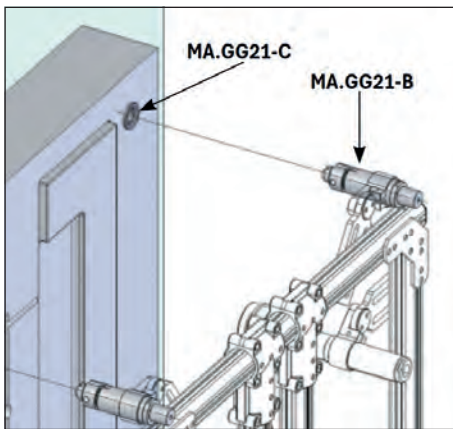
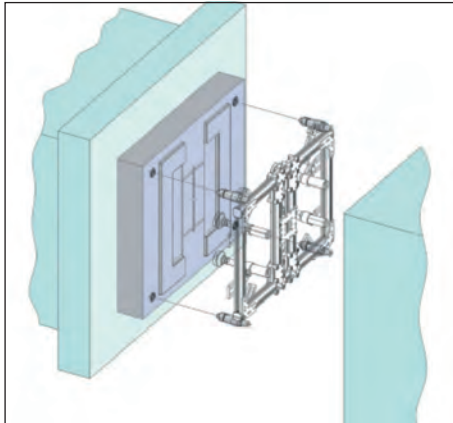
| Part No. | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | Weight (g) |
|-----------|-----|-------|------|---|----|----|------|----|---|----|-----|-----|---|-----|---|-----|----|----|------------|
| MA.GG19-B | Ø20 | M17x1 | 70,5 | 8 | 32 | 4 | 19,5 | 10 | 8 | 18 | 0 | | | | | | | | 85 |
| MA.GG21-B | Ø20 | M17x1 | 96,5 | 8 | 28 | 34 | 19,5 | 10 | 8 | 18 | 2,8 | 4,6 | 6 | 3,8 | 3 | 2,8 | M3 | M3 | 115 |

The MA.GG is used to provide a precise centering between the robot and the mould.
 MA.GG...B is fitted to the Robot, MA.GG...C is fitted to the mould.
 Ideal for insert loading.
 MA.GG19-B: Single acting, spring return (NO).
 MA.GG21-B: Double acting, with safety spring (NC).
 Maximum operating pressure: 8 bar.
 Operating temperature range: 5° to 60°C.

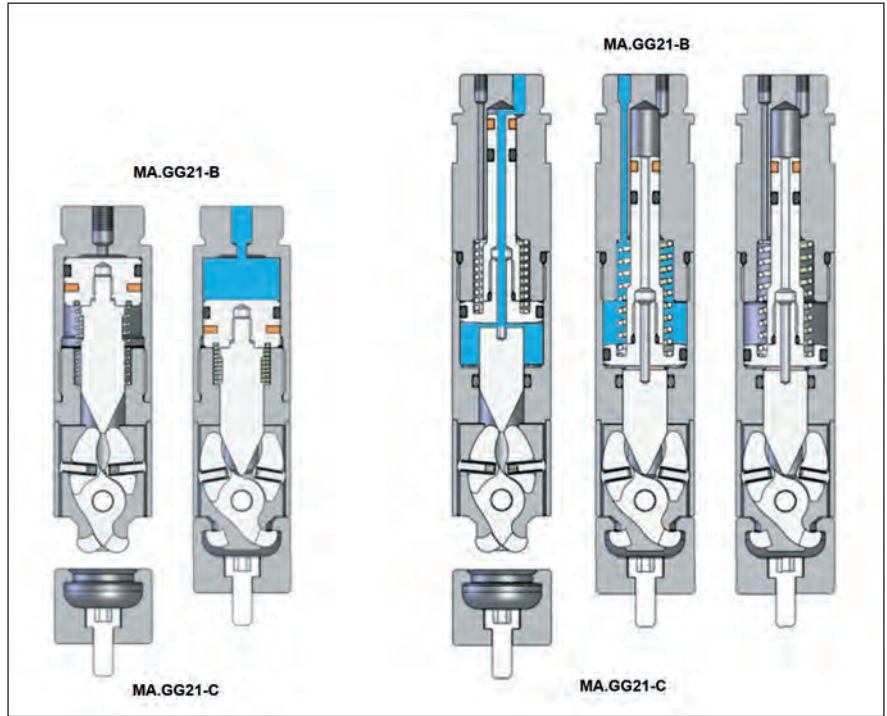


| Part No. | S | T | U | V | Weight (g) |
|-----------|-----|------|-----|----|------------|
| MA.GG21-C | Ø20 | 15,3 | 6,7 | M4 | 25 |

MA.GG – Engagement Gripper

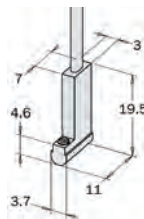


| | MA.GG19-B | MA.GG21-B |
|--|----------------|----------------|
| Maximum axial load without compressed air before releasing | 0 N | 600 N |
| Maximum axial load with compressed air before releasing | 2000 N | 2000 N |
| Pressure range | 2 - 8 bar (NO) | 4 - 8 bar (NC) |
| Temperature range | 5° - 60°C. | 5° - 60°C. |



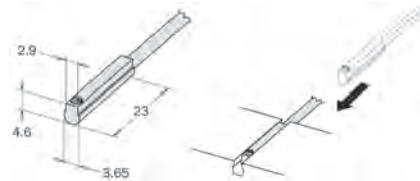
SN – Sensor for Grippers MA.GG19-B

Sensor Mounting Bracket Ø20 – SMB.20.L



| Part No. | Output | Sensor Type | Connector | Lead - m | Ref. | Weight (g) |
|------------|--------|----------------------|-----------|----------|-----------|------------|
| SN.3N203-G | PNP | Magneto-resistive NO | M8 -3 pin | 0,3 | MA.GG19-B | 4 |
| SN.3M203-G | NPN | Magneto-resistive NO | M8 -3 pin | 0,3 | MA.GG19-B | 4 |
| SN.4N225-G | PNP | Magneto-resistive NO | | 2,5 | MA.GG19-B | 4 |
| SN.4M225-G | NPN | Magneto-resistive NO | | 2,5 | MA.GG19-B | 4 |

SS – Sensor for Grippers MA.GG21-B



| Part No. | Output | Sensor Type | Connector | Lead - m | Ref. | Weight (g) |
|------------|--------|----------------------|-----------|----------|-----------|------------|
| SS.3N203-G | PNP | Magneto-resistive NO | M8 -3 pin | 0,3 | MA.GG21-B | 4 |
| SS.3M203-G | NPN | Magneto-resistive NO | M8 -3 pin | 0,3 | MA.GG21-B | 4 |
| SS.4N225-G | PNP | Magneto-resistive NO | | 2,5 | MA.GG21-B | 22 |
| SS.4M225-G | NPN | Magneto-resistive NO | | 2,5 | MA.GG21-B | 22 |

NIPPERS

277 Nipper Bodies
– Round



278 N. Series
Nipper Blades



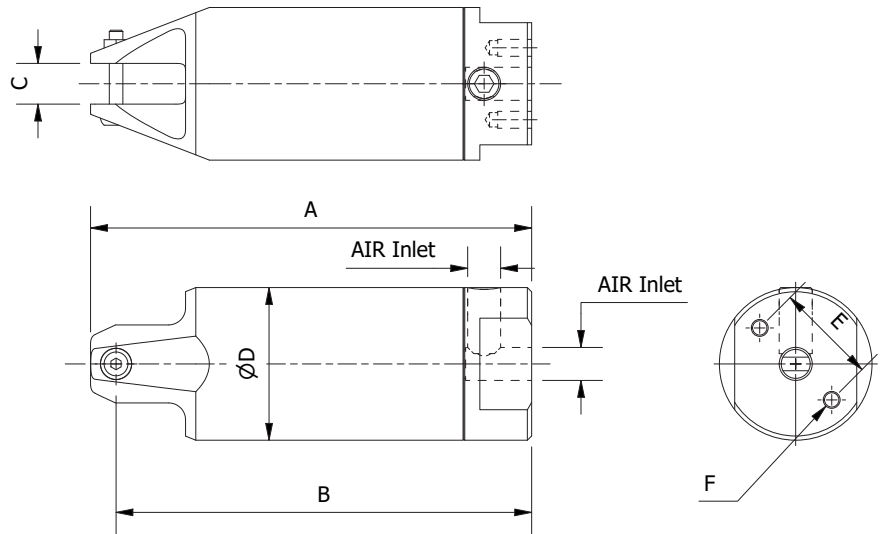
281 GPT Series
Nipper Blades



284 Nipper Mounting
Brackets

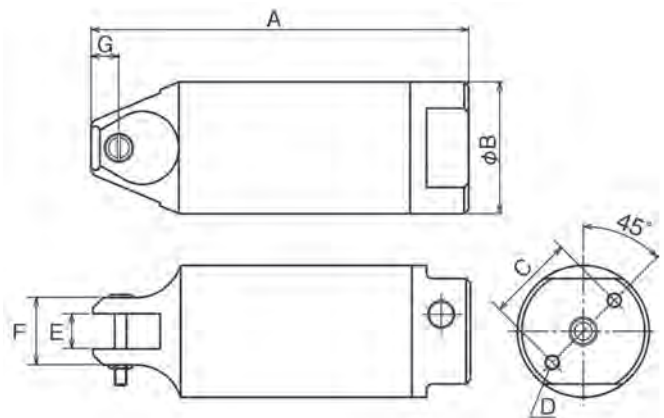


SPT. – Air Nipper Bodies S - Series



| Part No. | Sprue Ø Cut | A | ØD | B | C | E | F | Cutting Pressure | Working Air Pressure | Air Port | Weight (g) |
|----------|-------------|-----|----|-----|----|----|-------|------------------|----------------------|----------|------------|
| SPT-20R | 7mm | 130 | 45 | 126 | 12 | 30 | M5x12 | 140 kg | 5-6 Bar | G 1/8" | 272 |
| SPT-30R | 10mm | 166 | 56 | 163 | 17 | 40 | M6x12 | 280 kg | 5-6 Bar | G 1/8" | 508 |

GT – Air Nipper Bodies GT - Series - Round

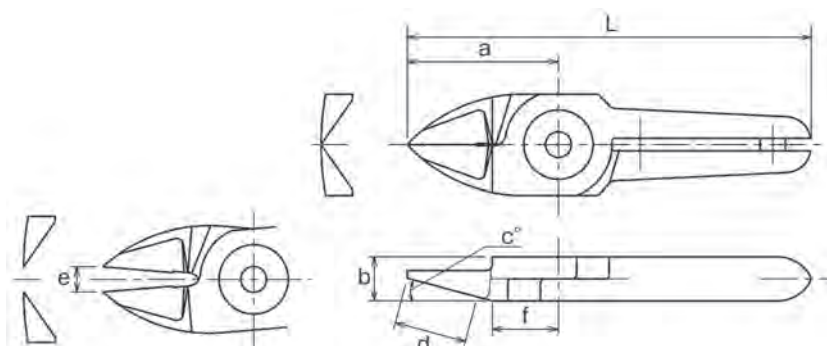


| Part No. | Sprue Ø Cut | A | B | C | D | E | F | G | Cuting pressure | Working Pressure | Air Port | Weight (g) |
|----------|-------------|-----|----|----|-------|------|----|------|-----------------|------------------|----------|------------|
| GT-NR5 | 2mm | 94 | 30 | 20 | M4x10 | 7 | 17 | 7 | 40Kg | 4-5 Bar | R1/8 | 110 |
| GT-NR10L | 4mm | 113 | 36 | 24 | M4x10 | 12 | 20 | 7 | 60Kg | 5-6 Bar | R1/8 | 215 |
| GT-NR20 | 7mm | 129 | 45 | 30 | M5x12 | 12 | 23 | 9,5 | 140Kg | 5-6 Bar | R1/8 | 280 |
| GT-NR30 | 10mm | 165 | 56 | 40 | M6x12 | 17 | 30 | 10,5 | 280kg | 5-6 Bar | R1/8 | 505 |
| GT-NR50 | 12mm | 222 | 75 | 50 | M8x12 | 25,2 | 43 | 15 | 480Kg | 5-6 Bar | R1/4 | 1190 |

High quality and reliable performance.
Two air intakes provided.

N. SERIES NIPPER BLADES

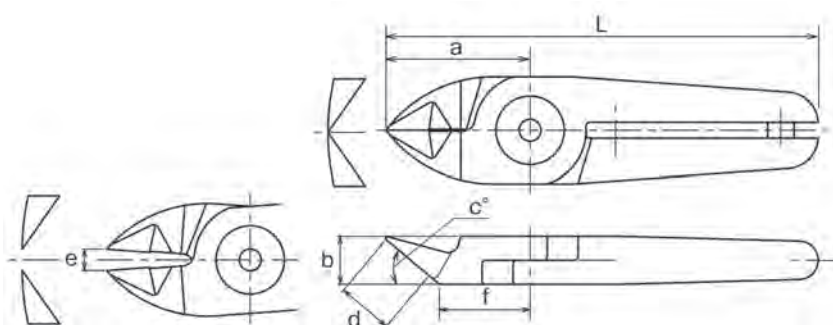
N.AP – Standard Blades, 15°



| Part No. | a | b | c(°) | d: Effective Length | e: Blade Oppening | f | L | Weight (g) |
|-----------|----|----|------|---------------------|-------------------|------|-----|------------|
| N5AP | 24 | 7 | 15 | 11,5 | 4 | 10,5 | 64 | 40 |
| N10LAB152 | 61 | 12 | 15 | 35 | 10 | | 115 | 165 |
| N10LAP | 35 | 12 | 15 | 16 | 5 | 15 | 89 | 85 |
| N20AP | 35 | 12 | 15 | 16 | 11 | 15 | 95 | 125 |
| N30AP | 66 | 17 | 15 | 38 | 16 | 24 | 150 | 380 |

Material: Special Alloy Steel

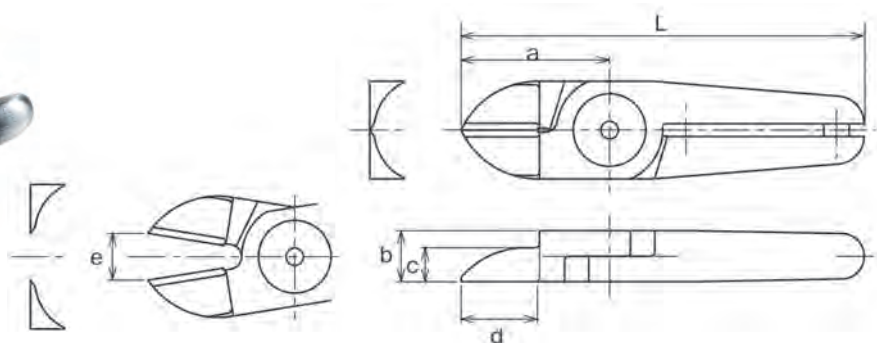
N.PF – Deep Angle Blades, 30°/40°



| Part No. | a | b | c(°) | d: Effective Length | e: Blade Oppening | f | L | Weight (g) |
|----------|----|----|------|---------------------|-------------------|----|-----|------------|
| N10LPF | 35 | 12 | 40 | 13,5 | 5 | 21 | 89 | 120 |
| N20PF | 35 | 12 | 40 | 13,5 | 11 | 21 | 95 | 130 |
| N30PF | 58 | 17 | 30 | 25 | 15 | 33 | 142 | 390 |
| N30AA114 | 76 | 17 | 30 | 50 | 20 | | 160 | 385 |

Material: Special Alloy Steel

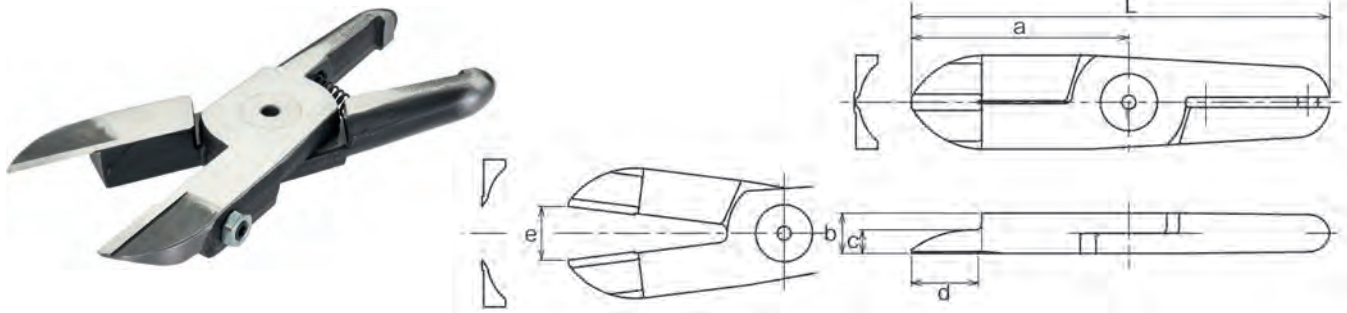
N.AJ – Straight Blades



| Part No. | a | b | c(°) | d: Effective Length | e: Blade Oppening | L | Weight (g) |
|----------|----|----|------|---------------------|-------------------|-----|------------|
| N20AJ | 35 | 12 | 8 | 18 | 11 | 95 | 125 |
| N30AJ | 52 | 17 | 8 | 28 | 11 | 136 | 370 |

Material: Special Alloy Steel

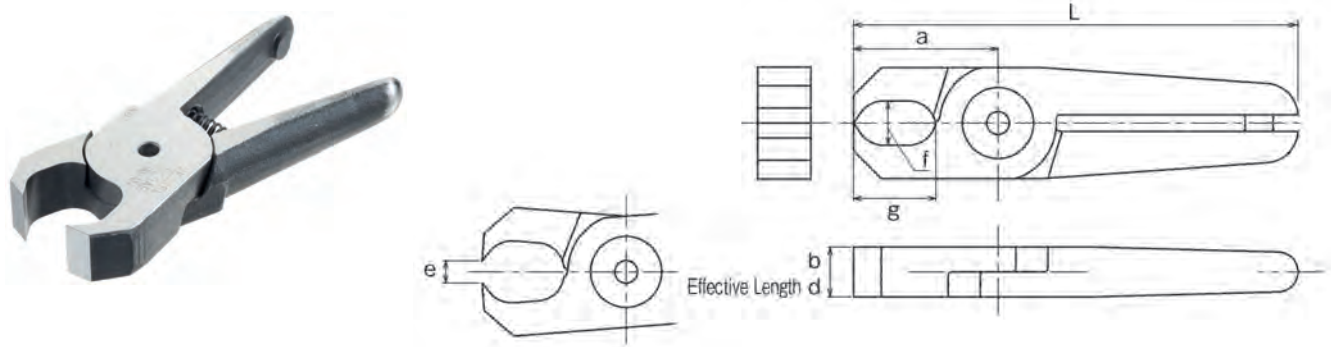
N.AJL – Long Straight Blades



| Part No. | a | b | c(°) | d: Effective Length | e: Blade Opening | L | Weight (g) |
|----------|----|----|------|---------------------|------------------|-----|------------|
| N10LAJ | 61 | 12 | 7 | 34 | 10 | 115 | 165 |
| N20AJL | 65 | 12 | 7 | 20 | 16 | 125 | 230 |
| N30AJL | 75 | 17 | 8 | 25 | 19 | 159 | 470 |

Material: Special Alloy Steel

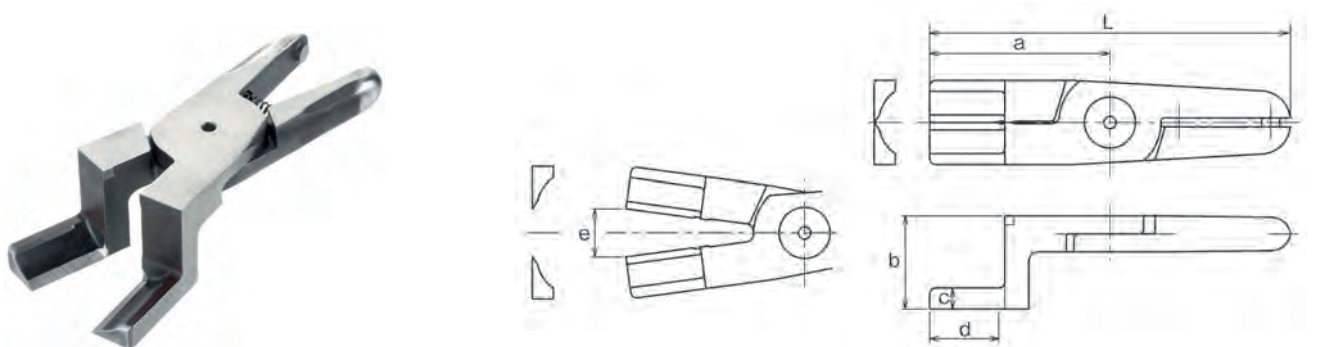
N.AE – Perpendicular End Cut Blades



| Part No. | a | b | c(°) | d: Effective Length | e: Blade Opening | L | Weight (g) |
|----------|----|----|---------|---------------------|------------------|-----|------------|
| N20AE | 28 | 12 | 10x15.5 | 12 | 8 | 88 | 135 |
| N30AE | 35 | 17 | 13x28 | 17 | 12 | 129 | 395 |

Material: Special Alloy Steel

N.AH – Offset Blades

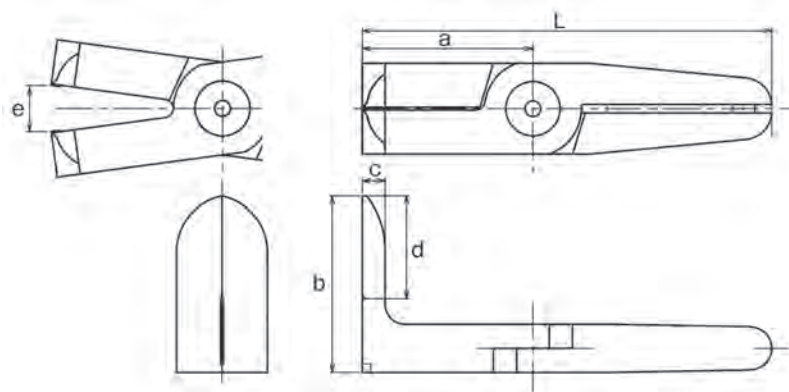


| Part No. | a | b | c(°) | d: Effective Length | e: Blade Opening | L | Weight (g) |
|----------|----|----|------|---------------------|------------------|-----|------------|
| N20AH | 60 | 31 | 7 | 23 | 16 | 120 | 240 |

Material: Special Alloy Steel

N. SERIES NIPPER BLADES

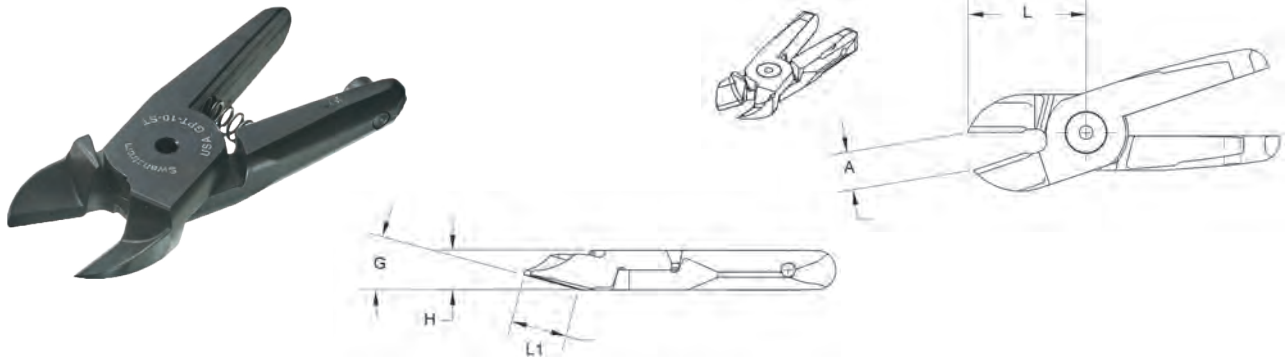
N.AL – L Blade



| Part No. | a | b | c(°) | d: Effective Length | e: Blade Opening | L | Weight (g) |
|----------|----|----|------|---------------------|------------------|-----|------------|
| N30AL525 | 60 | 62 | | 36 | 16 | 144 | 520 |

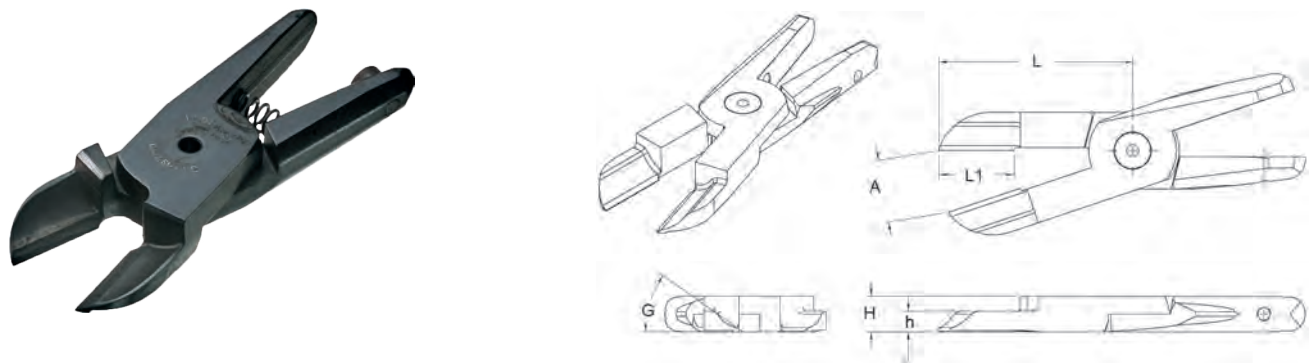
Material: Special Alloy Steel

GPT.ST – Standard Blade 15°



| Part No. | Size | A | L | L1 | H | G |
|-----------|------|----|----|----|----|-----|
| GPT-20-ST | 20 | 11 | 36 | 17 | 12 | 15° |
| GPT-30-ST | 30 | 18 | 63 | 36 | 17 | 15° |

GPT.LI – Inline Straight Blade

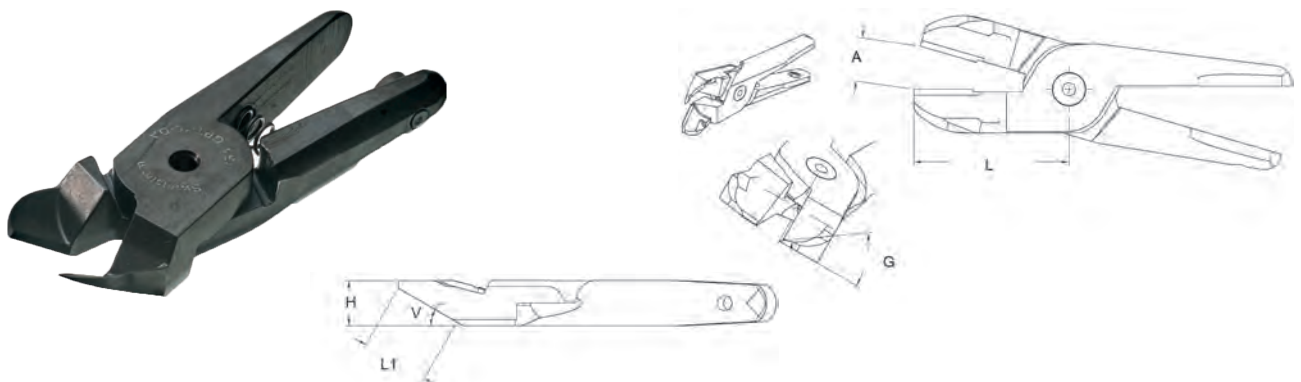


| Part No. | Size | A | L | L1 | H | h | G |
|-----------|------|----|----|----|----|---|-----|
| GPT-20-LI | 20 | 21 | 66 | 25 | 12 | 7 | 35° |
| GPT-30-LI | 30 | 22 | 77 | 29 | 17 | 8 | 35° |

| Part No. | a | b | c (°) | d: Effective Length | e: Blade Oppening | L | Weight (g) |
|----------|----|----|-------|---------------------|-------------------|-----|------------|
| N30AL525 | 60 | 62 | | 36 | 16 | 144 | 520 |

Material: Special Alloy Steel

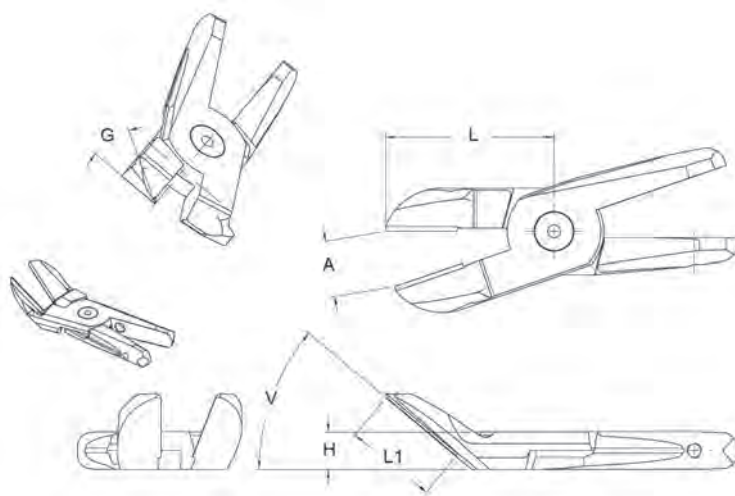
GPT.DA – Deep Angle



| Part No. | Size | A | L | L1 | H | V | G |
|-----------|------|----|----|----|----|-----|-----|
| GPT-20-DA | 20 | 11 | 36 | 15 | 12 | 40° | 35° |
| GPT-30-DA | 30 | 16 | 58 | 25 | 17 | 30° | 35° |

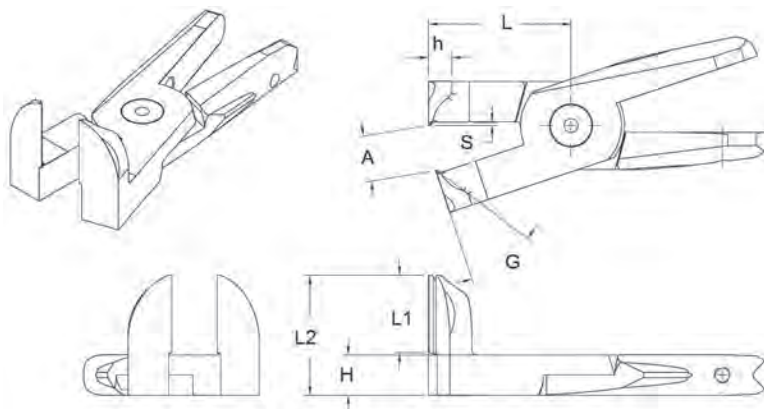
GPT. SERIES NIPPER BLADES

GPT.LA – Long Angle Blade



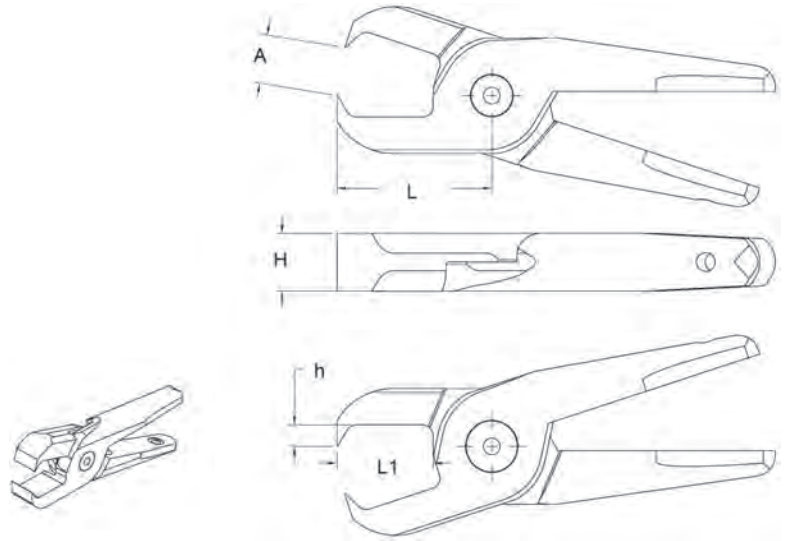
| Part No. | Size | A | L | L1 | H | V | G |
|-----------|------|----|----|----|----|-----|-----|
| GPT-20-LA | 20 | 17 | 53 | 29 | 12 | 40° | 30° |
| GPT-30-LA | 30 | 23 | 83 | 53 | 17 | 30° | 30° |

GPT.DA90 – Long 90° Angle Blade



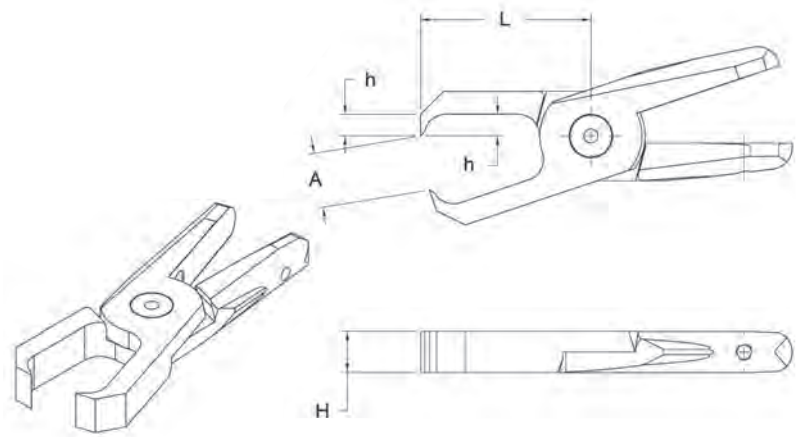
| Part No. | Size | A | L | L1 | L2 | G | H | h | S |
|-------------|------|----|----|----|----|-----|----|---|---|
| GPT-20-DA90 | 20 | 13 | 42 | 23 | 35 | 35° | 12 | 7 | 1 |
| GPT-30-DA90 | 30 | 11 | 39 | 33 | 52 | 35° | 17 | 8 | 2 |

GPT.PE – Perpendicular End Cut Blade



| Part No. | Size | A | L | L1 | H | h |
|-----------|------|----|----|----|----|---|
| GPT-20-PE | 20 | 9 | 28 | 12 | 12 | 4 |
| GPT-30-PE | 30 | 14 | 46 | 28 | 17 | 6 |

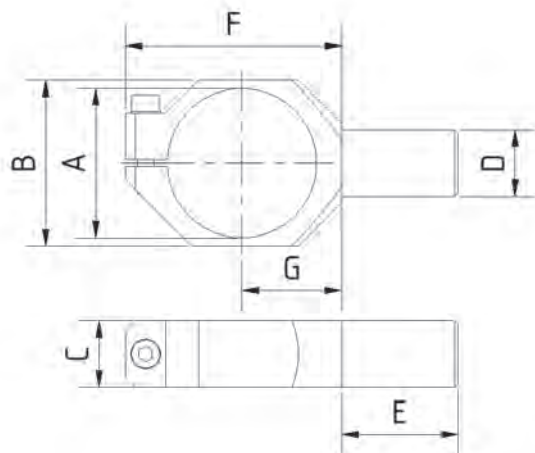
GPT.LA – Long Angle Blade



| Part No. | Size | A | L | H | h |
|---------------|------|----|----|----|---|
| GPT-20-PELA49 | 20 | 16 | 49 | 12 | 6 |

NIPPER MOUNTING BRACKETS

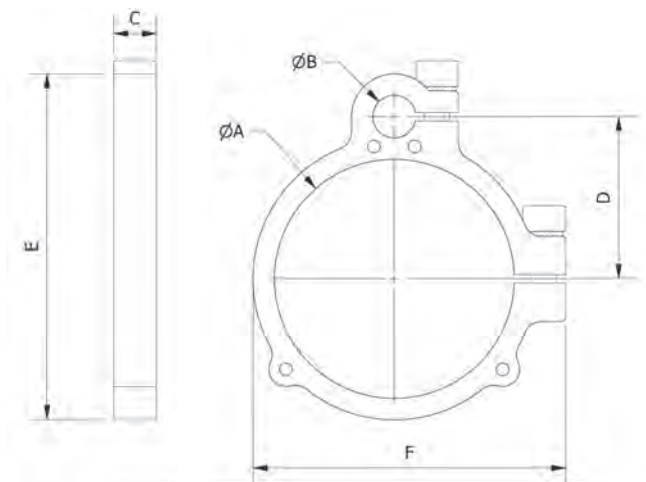
SCH – Mounting Brackets for Air Nippers



| Part No. | A | B | C | D | E | F | G | REF | Weight (g) |
|----------|----|----|----|----|----|----|----|-----------------|------------|
| SCH-05 | 30 | 38 | 20 | 20 | 48 | 54 | 25 | GT-NR5 | 91 |
| SCH-10 | 36 | 43 | 20 | 20 | 48 | 60 | 28 | GT-NR10L | 95 |
| SCH-20 | 45 | 52 | 20 | 20 | 48 | 68 | 33 | GT-NR20/SPT-20R | 102 |
| SCH-30 | 56 | 54 | 20 | 20 | 48 | 80 | 38 | GT-NR30/SPT-30R | 117 |
| SCH-50 | 75 | 83 | 30 | 30 | 50 | 96 | 47 | GT-NR50 | 275 |

Material: Aluminium
Surface: Silver anodized.

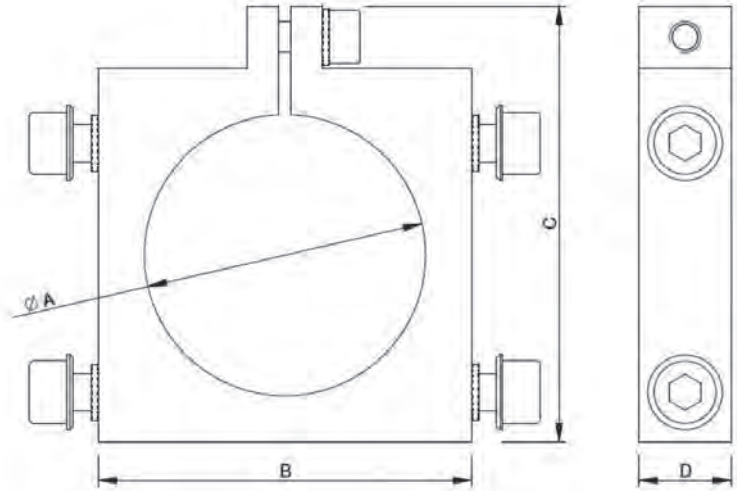
NGC. – Nipper / Gripper Combination Clamp



| Part No. | A | B | C | D | E | F | REF | Weight (g) |
|----------|----|----|----|------|------|------|-----------------|------------|
| NGC.1010 | 36 | 10 | 10 | 28 | 62,8 | 53 | GT-NR10L | 27 |
| NGC.2010 | 45 | 10 | 10 | 32,5 | 70 | 62 | GT-NR20/SPT-20R | 30 |
| NGC.3010 | 56 | 10 | 10 | 38 | 81 | 73 | GT-NR30/SPT-30R | 43 |
| NGC.5010 | 75 | 10 | 10 | 47,5 | 100 | 92,5 | GT-NR50 | 43 |

Material: Aluminium.
Surface: Silver anodized.

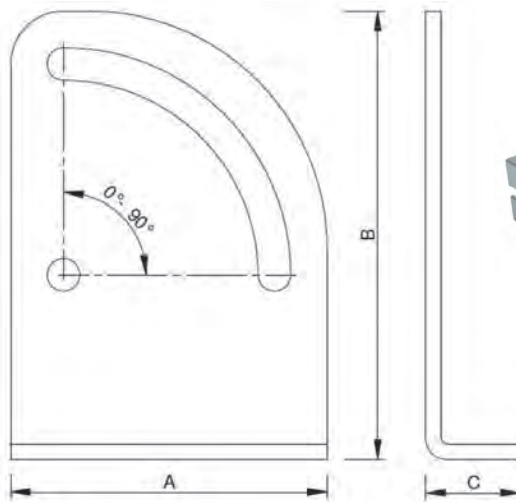
NSB.A – Swivel Mounting Bracket for Air Nippers - Part A



| Part No. | A | B | C | D | REF | Weight (g) |
|----------|----|----|-----|----|-----------------|------------|
| NSB.30A | 30 | 45 | 55 | 15 | GT-NR5 | 87 |
| NSB.36A | 36 | 50 | 62 | 15 | GT-NR10L | 97 |
| NSB.45A | 45 | 60 | 70 | 15 | GT-NR20/SPT-20R | 115 |
| NSB.56A | 56 | 70 | 85 | 15 | GT-NR30/SPT-30R | 136 |
| NSB.75A | 75 | 90 | 105 | 15 | GT-NR50 | 188 |

Material: Aluminium
Surface: Silver anodized.

NSB.B – Swivel Mounting Bracket for Air Nippers - Part B

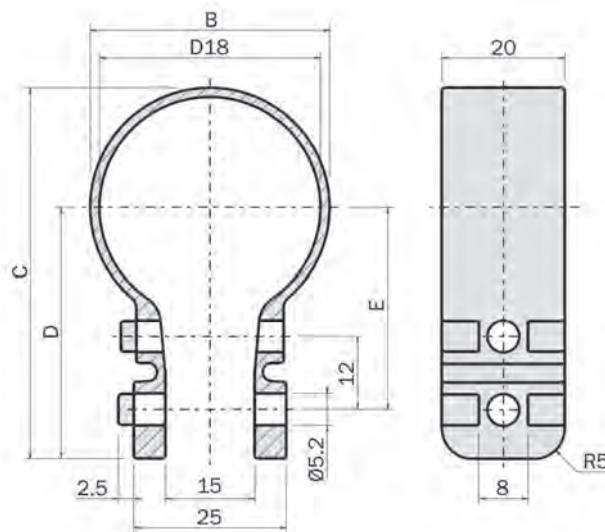


| Part No. | A | B | C | REF | Weight (g) | F |
|----------|----|-----|----|-----------------|------------|----|
| NSB.30B | 50 | 75 | 18 | GT-NR5 | 84 | 54 |
| NSB.36B | 55 | 80 | 18 | GT-NR10L | 100 | 60 |
| NSB.45B | 60 | 85 | 18 | GT-NR20/SPT-20R | 116 | 68 |
| NSB.56B | 65 | 90 | 18 | GT-NR30/SPT-30R | 134 | 80 |
| NSB.75B | 85 | 122 | 28 | GT-NR50 | 246 | 96 |

Material: Zinc plated steel.

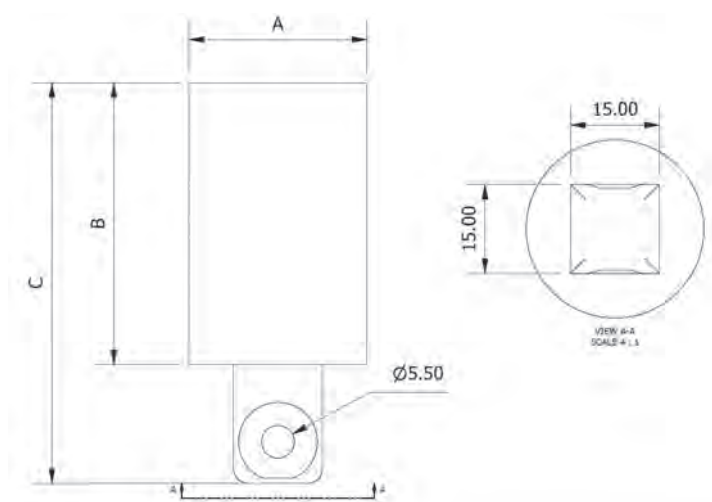
NIPPER MOUNTING BRACKETS

NMBS. – Mounting Brackets Steel for Air Nippers



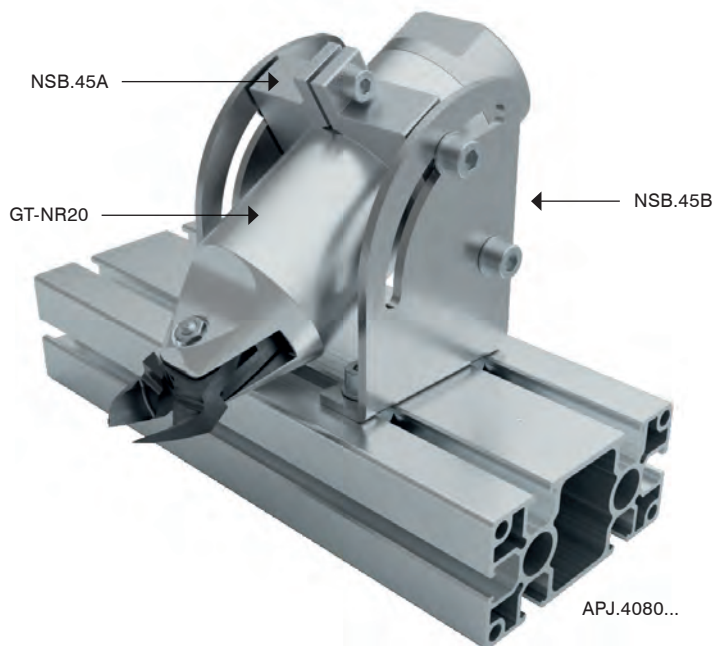
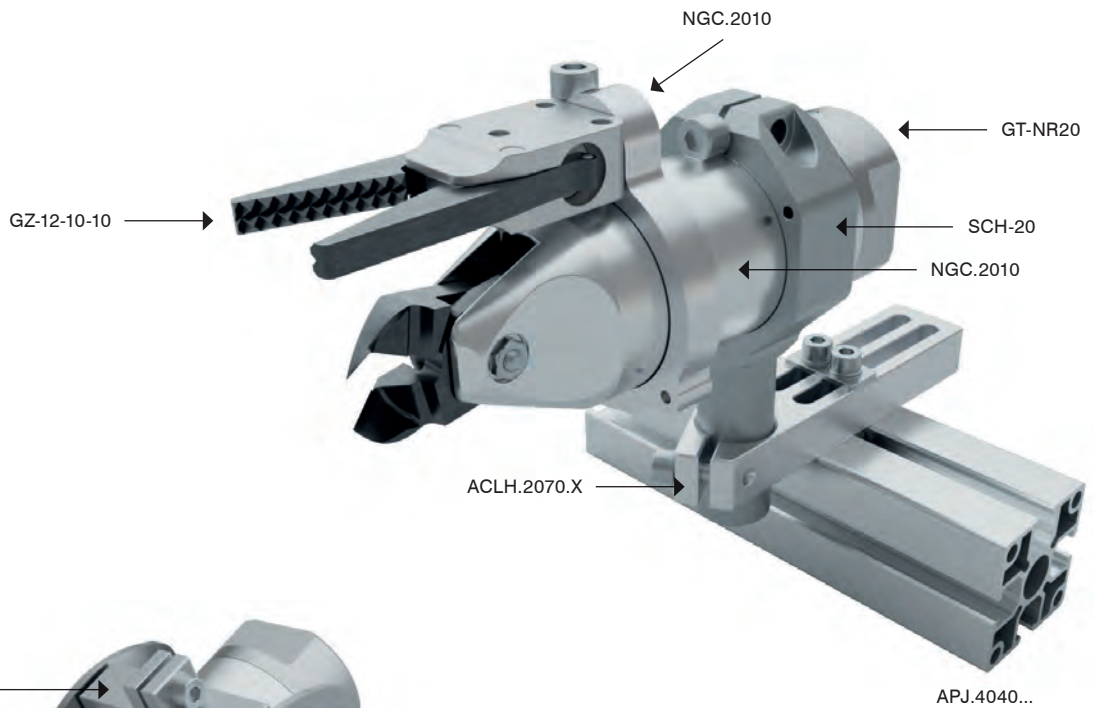
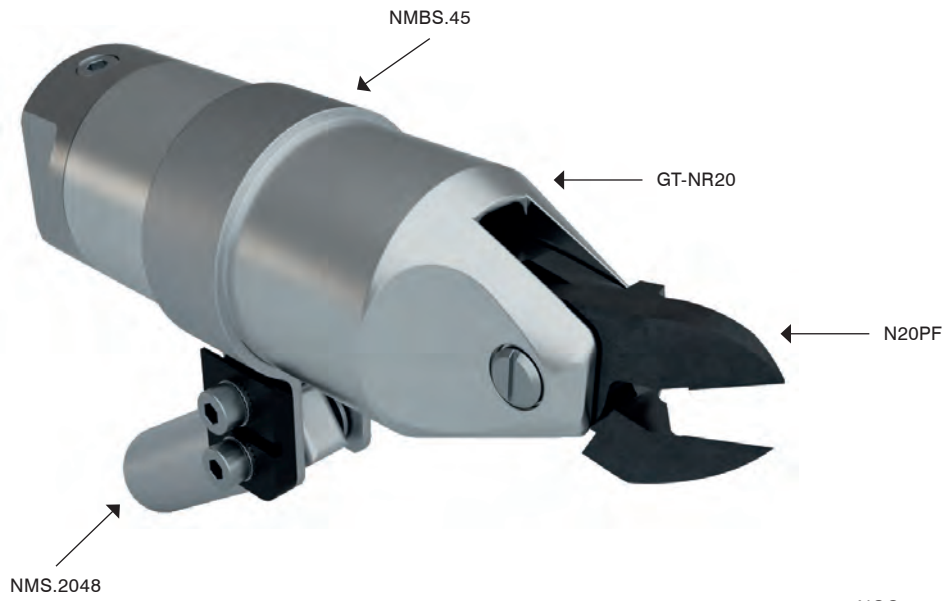
| Part No. | D18 | B | C | D | E | Weight (g) |
|----------|-----|----|------|------|------|------------|
| NMBS.30 | 30 | 33 | 55 | 38,5 | 30,5 | 69 |
| NMBS.36 | 36 | 39 | 60,5 | 41 | 33 | 75 |
| NMBS.45 | 45 | 48 | 70 | 46 | 38 | 80 |
| NMBS.56 | 56 | 60 | 83,5 | 53,5 | 45,5 | 102 |

NMS. – Nipper Mounting Bracket Shaft



| Part No. | A | B | C | Weight (g) |
|----------|----|----|------|------------|
| NMS.2048 | 20 | 48 | 67,5 | 56 |
| NMS.3048 | 30 | 48 | 67,5 | 82 |

Material: Aluminium.
Surface: Silver anodized.



CYLINDERS AND SLIDES

289 Compact Cylinders with Guide Rod



290 Compact Cylinders



291 Mounts & Accessories



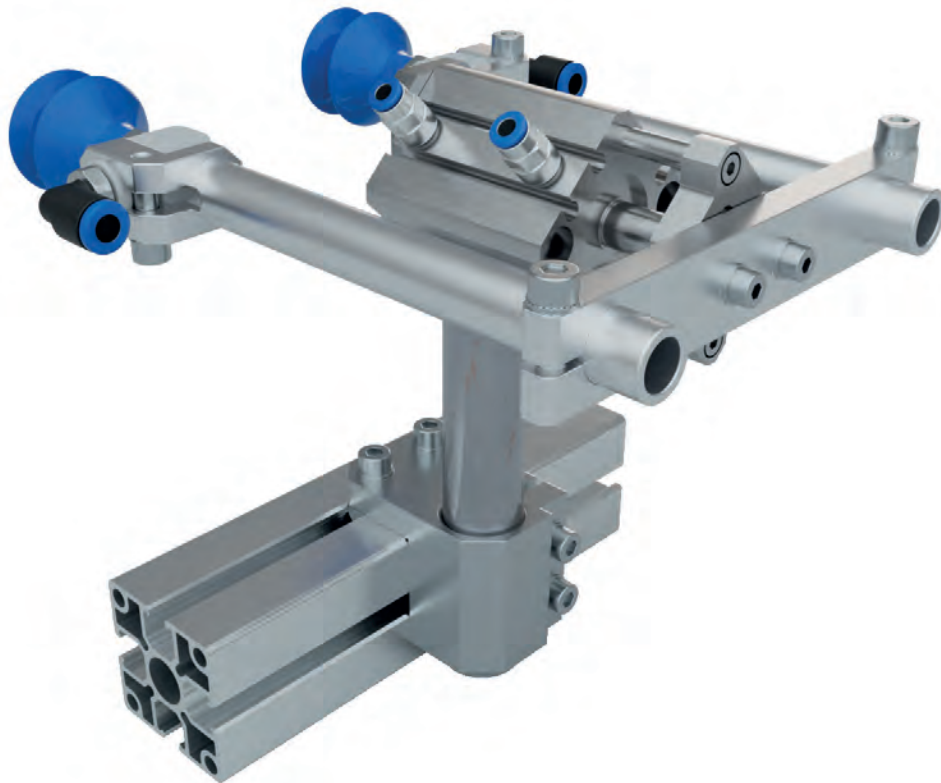
293 Vacuum Cylinders



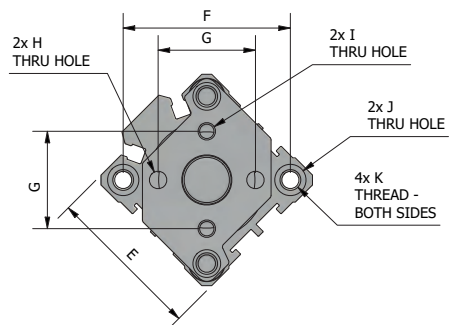
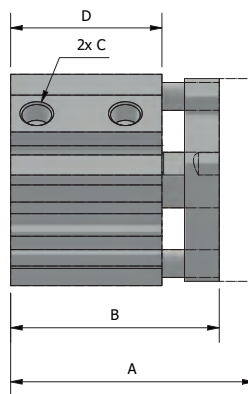
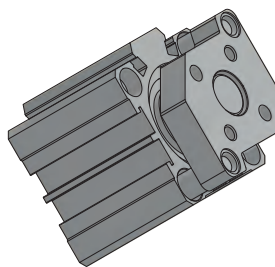
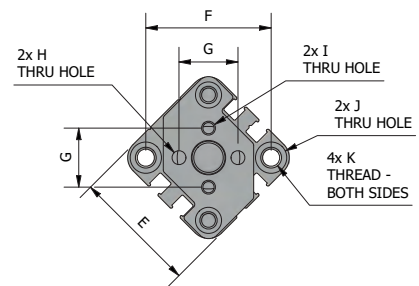
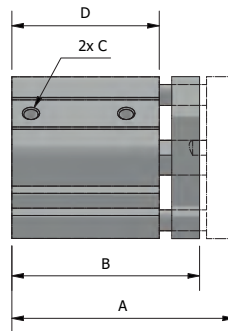
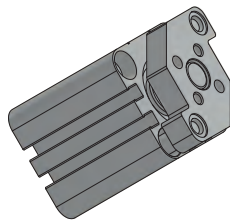
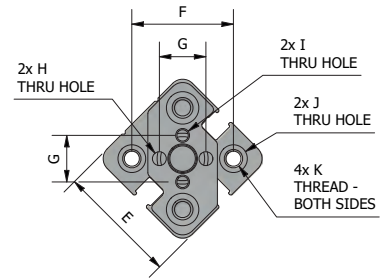
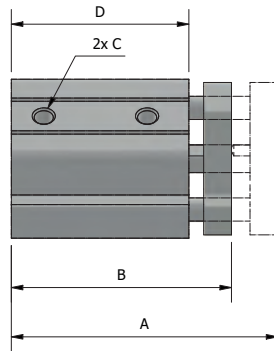
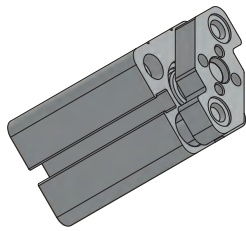
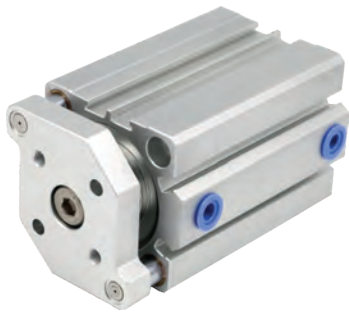
294 Mini Cylinders



295 Accessories



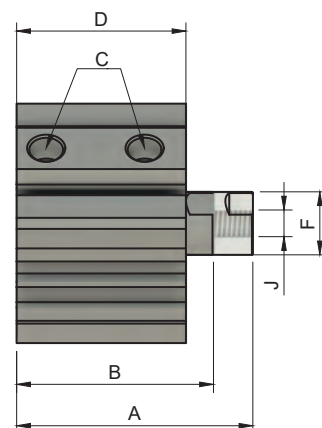
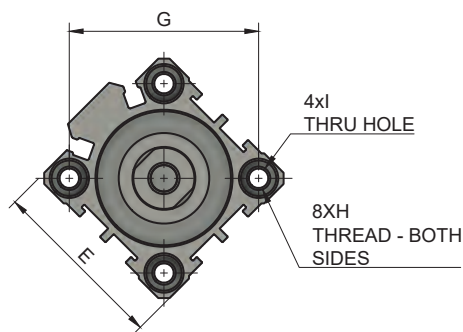
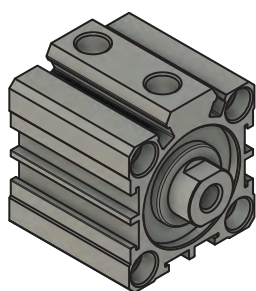
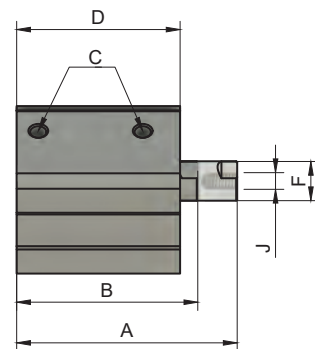
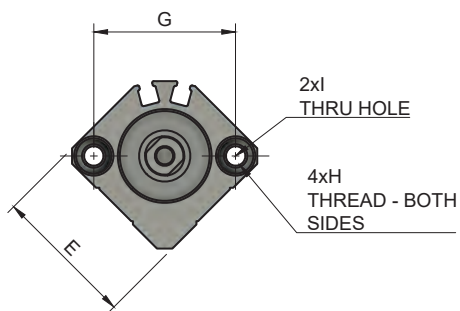
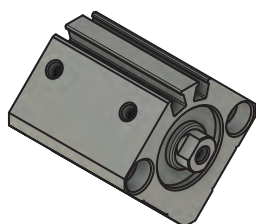
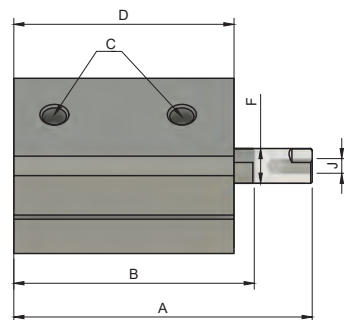
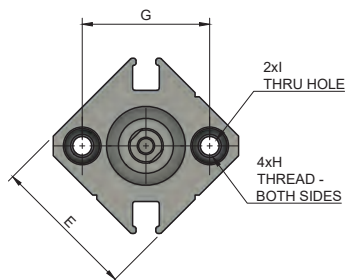
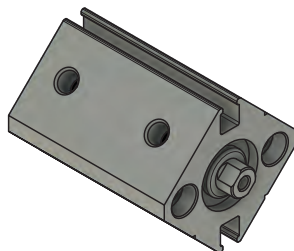
CCTQ. – Compact Cylinder, Guide Rod Type



| Part No. | Piston bore | Stroke | A | B | C | D | E | F | G | H | I | J | K | Weight (g) |
|-----------|-------------|--------|------|------|--------|------|----|----|----|--------|----|------|--------|------------|
| CCTQ.1210 | 12 | 10 | 57,5 | 47,5 | M5X0.8 | 38,3 | 26 | 22 | 10 | M3X0.5 | Ø3 | Ø3.4 | M4X0.7 | 59 |
| CCTQ.1220 | 12 | 20 | 77,5 | 57,5 | M5X0.8 | 48,3 | 26 | 22 | 10 | M3X0.5 | Ø3 | Ø3.4 | M4X0.7 | 77 |
| CCTQ.1230 | 12 | 30 | 97,5 | 67,5 | M5X0.8 | 58,3 | 26 | 22 | 10 | M3X0.5 | Ø3 | Ø3.4 | M4X0.7 | 93 |
| CCTQ.2010 | 20 | 10 | 64 | 54 | M5X0.8 | 42,5 | 36 | 36 | 17 | M4X0.7 | Ø4 | Ø5.2 | M6X1.0 | 138 |
| CCTQ.2020 | 20 | 20 | 84 | 64 | M5X0.8 | 52,5 | 36 | 36 | 17 | M4X0.7 | Ø4 | Ø5.2 | M6X1.0 | 168 |
| CCTQ.2030 | 20 | 30 | 104 | 74 | M5X0.8 | 62,5 | 36 | 36 | 17 | M4X0.7 | Ø4 | Ø5.2 | M6X1.0 | 197 |
| CCTQ.3210 | 32 | 10 | 70 | 60 | G 1/8 | 43,5 | 45 | 48 | 28 | M5X0.8 | Ø5 | Ø5.2 | M6X1.0 | 264 |
| CCTQ.3220 | 32 | 20 | 90 | 70 | G 1/8 | 53,5 | 45 | 48 | 28 | M5X0.8 | Ø5 | Ø5.2 | M6X1.0 | 309 |
| CCTQ.3230 | 32 | 30 | 110 | 80 | G 1/8 | 63,5 | 45 | 48 | 28 | M5X0.8 | Ø5 | Ø5.2 | M6X1.0 | 356 |

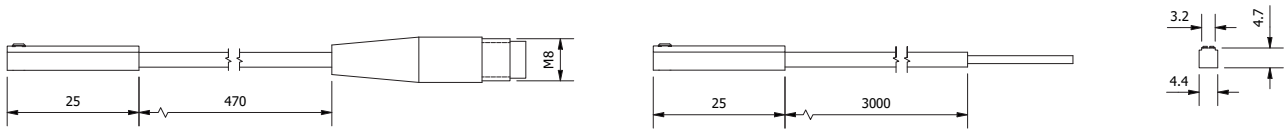
COMPACT CYLINDERS

CCAQ. – Compact Cylinder



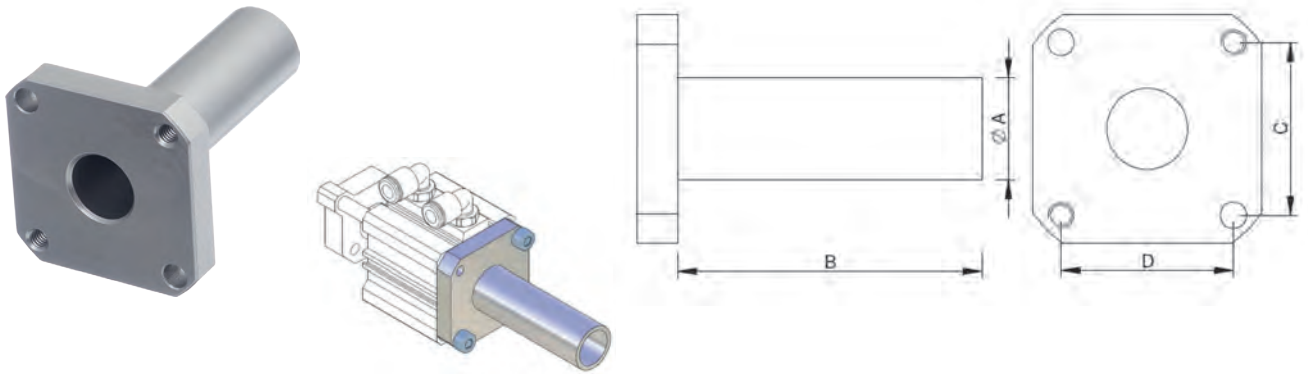
| Part No. | Piston bore | Stroke | A | B | C | D | E | F | G | H | I | J | Weight (g) |
|-----------|-------------|--------|------|------|--------|------|----|----|----|--------|------|---------|------------|
| CCAQ.1210 | 12 | 10 | 51,5 | 41,5 | M5X0.8 | 38 | 25 | 6 | 22 | M4X0.7 | Ø3.4 | M3X0.5 | 44 |
| CCAQ.1220 | 12 | 20 | 71,5 | 51,5 | M5X0.8 | 48 | 25 | 6 | 22 | M4X0.7 | Ø3.4 | M3X0.5 | 69 |
| CCAQ.1230 | 12 | 30 | 91,5 | 61,5 | M5X0.8 | 58 | 25 | 6 | 22 | M4X0.7 | Ø3.4 | M3X0.5 | 81 |
| CCAQ.2010 | 20 | 10 | 56 | 46 | M5X0.8 | 41,5 | 36 | 10 | 36 | M6X1.0 | Ø5.2 | M5X0.8 | 106 |
| CCAQ.2020 | 20 | 20 | 76 | 56 | M5X0.8 | 51,5 | 36 | 10 | 36 | M6X1.0 | Ø5.2 | M5X0.8 | 138 |
| CCAQ.2030 | 20 | 30 | 96 | 66 | M5X0.8 | 61,5 | 36 | 10 | 36 | M6X1.0 | Ø5.2 | M5X0.8 | 158 |
| CCAQ.3210 | 32 | 10 | 60 | 50 | G 1/8 | 43 | 45 | 16 | 48 | M6X1.0 | Ø5.2 | M8X1.25 | 186 |
| CCAQ.3220 | 32 | 20 | 80 | 60 | G 1/8 | 53 | 45 | 16 | 48 | M6X1.0 | Ø5.2 | M8X1.25 | 231 |
| CCAQ.3230 | 32 | 30 | 100 | 70 | G 1/8 | 63 | 45 | 16 | 48 | M6X1.0 | Ø5.2 | M8X1.25 | 281 |

SN.DMSG. – T-Slot Sensor



| Part No. | Output | Sensor type | Connector | Lead m | REF | Weight (g) |
|-------------|--------|-------------|-----------|--------|-----------------|------------|
| SN.DMSGP.M8 | PNP | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.M8 | NPN | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGP.3M | PNP | Magnetic | | 3 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.3M | NPN | Magnetic | | 3 | PG/AG/CCTQ/CCAQ | 4 |

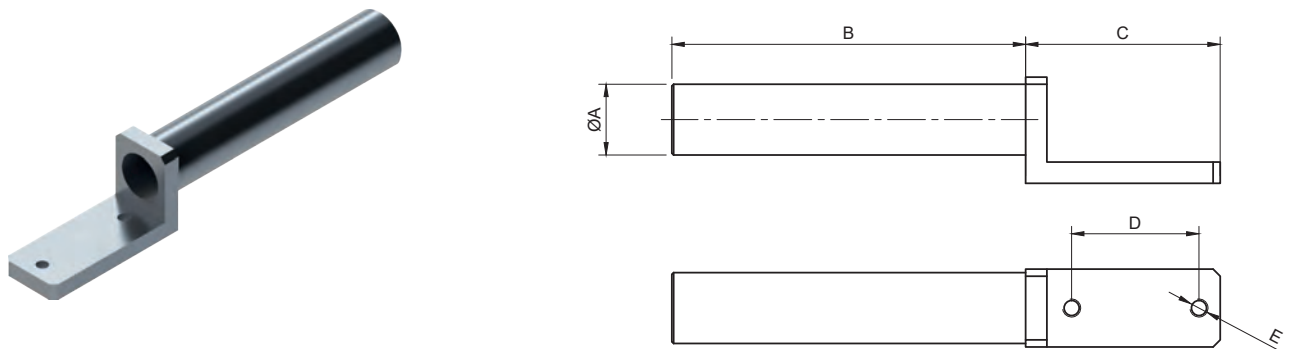
MB.CC. – Mounting Bracket for Compact Cylinder



| Part No. | A | B | C | D | REF | Weight (g) |
|--------------|----|----|------|------|-----|------------|
| MB.CC12.1430 | 14 | 30 | 15,5 | 15,5 | Ø12 | 19 |
| MB.CC20.1440 | 14 | 40 | 25,5 | 25,5 | Ø20 | 32 |
| MB.CC32.2060 | 20 | 60 | 34 | 34 | Ø32 | 55 |
| MB.CC32.2090 | 20 | 90 | 34 | 34 | Ø32 | 74 |

Material: Aluminium.
 Surface: Silver anodized.
 REF: Suitable for cylinders CCAQ and CCTQ.

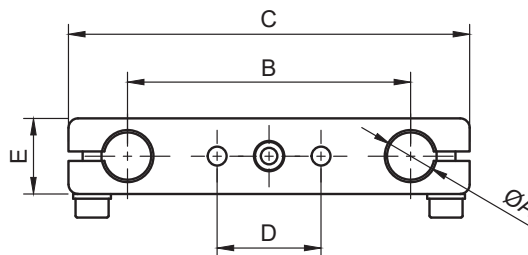
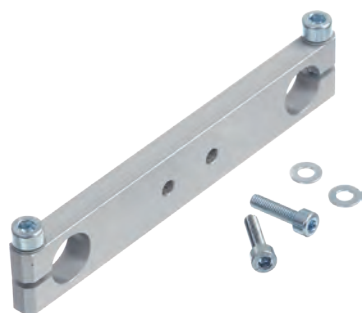
MB.ZC. – Mounting Bracket for Compact Cylinder



| Part No. | A | B | C | D | E | Weight (g) |
|---------------|----|-----|----|----|----|------------|
| MB.ZC12.1060 | 10 | 60 | 38 | 22 | M3 | 14 |
| MB.ZC20.2080 | 20 | 80 | 55 | 36 | M5 | 55 |
| MB.ZC32.20100 | 20 | 100 | 68 | 48 | M5 | 58 |

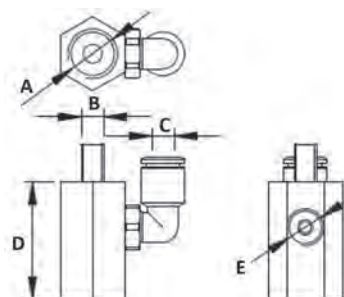
MOUNTS & ACCESSORIES

MCC. – Clamp Brackets for Cylinders



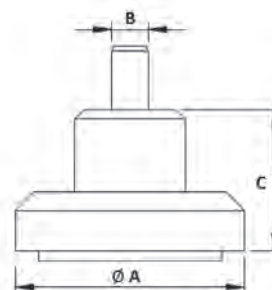
| Part No. | A | B | C | D | E | Weight (g) |
|--------------|----|-----|-----|----|----|------------|
| MCC.12.1060 | 10 | 60 | 85 | 10 | 16 | 29 |
| MCC.20.1480 | 14 | 80 | 140 | 17 | 20 | 67 |
| MCC.32.20120 | 20 | 120 | 160 | 28 | 25 | 135 |

VCA. – Adapters for Vacuum Cups



| Part No. | A | B | C | D | E | REF | Weight (g) |
|-----------|-------|----|---|------|------|-----|------------|
| VCA.M4.18 | G 1/8 | M4 | 4 | 24,5 | M5 | Ø12 | 13 |
| VCA.M6.18 | G 1/8 | M5 | 4 | 24,5 | M5 | Ø16 | 15 |
| VCA.M6.14 | G 1/4 | M6 | 6 | 31 | G1/8 | Ø25 | 24 |
| VCA.M5.18 | G 1/8 | M6 | 4 | 34,5 | M5 | Ø20 | 21 |
| VCA.M8.14 | G 1/4 | M8 | 6 | 31 | G1/8 | Ø32 | 22 |

CPP. – Cylinder Pressure Plate



| Part No. | A | B | C | REF | Weight (g) |
|-----------|----|-------|----|-----|------------|
| CPP.20.03 | 20 | M3 | 14 | Ø12 | 5 |
| CPP.25.04 | 25 | M4 | 15 | Ø16 | 10 |
| CPP.30.05 | 30 | M5 | 18 | Ø20 | 17 |
| CPP.40.08 | 40 | M8 | 20 | Ø32 | 46 |
| CPP.40.18 | 40 | G 1/8 | 20 | | 40 |

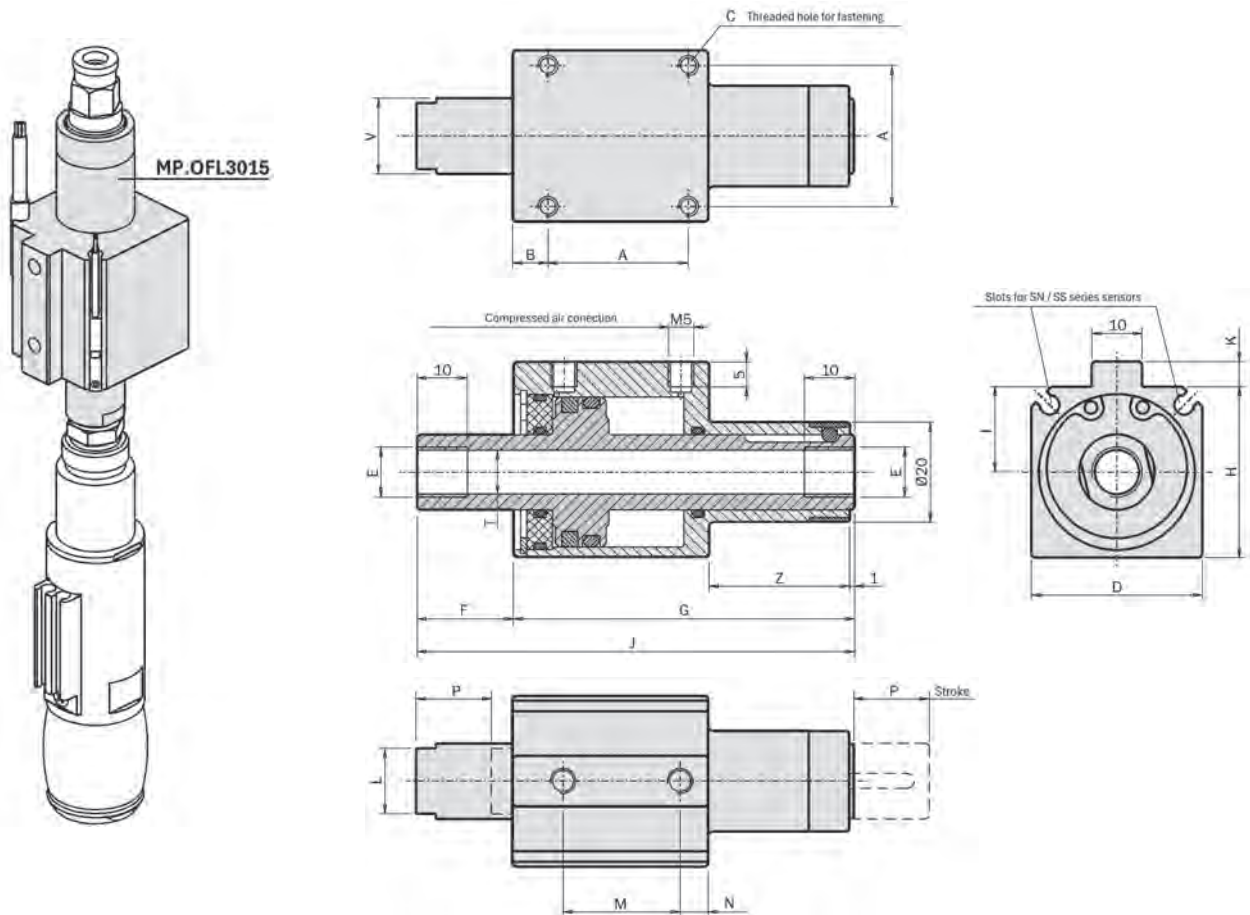
Material: Aluminium.
Surface: Silver anodized.

MP.OFL – Short Stroke Pneumatic Cylinder



| Part No. | Stroke | Piston Bore | Closing force at 6 bar | Weight (g) |
|------------|--------|-------------|------------------------|------------|
| MP.OFL2010 | 10mm | 20mm | 130N | 60 |
| MP.OFL3015 | 15mm | 30mm | 300N | 110 |
| MP.OFL3030 | 30mm | 30mm | 300N | 140 |

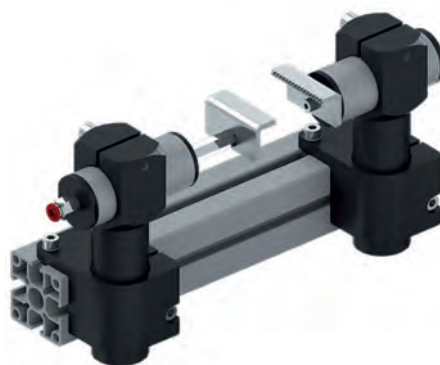
Double Acting and Non rotating.
 Through hole for vacuum cup mounting - M5 or G1/8.
 Ø20mm Clampable shaft.
 Maximum operating pressure: 8 bar.
 Operating temperature range: 5° to 60°C.
 Optional magnetic sensors.



| Part No. | A | B | C | D | E | F | G | H | I | J | K | L | M | N | P | T | V | Z |
|------------|----|---|------|----|------|------|----|----|----|-------|---|----|------|-----|----|------|-----|----|
| MP.OFL2010 | 19 | 9 | M3x4 | 24 | M5 | 14,2 | 59 | 25 | 13 | 74,2 | 4 | 8 | 16 | 5 | 10 | Ø4.2 | Ø10 | 28 |
| MP.OFL3015 | 28 | 7 | M4x6 | 34 | G1/8 | 19,2 | 68 | 34 | 17 | 87,2 | 5 | 13 | 23,3 | 5,6 | 15 | Ø8.8 | Ø15 | 28 |
| MP.OFL3030 | 28 | 7 | M4x6 | 34 | G1/8 | 34,2 | 91 | 34 | 17 | 125,2 | 5 | 13 | 38,3 | 5,6 | 30 | Ø8.8 | Ø15 | 36 |

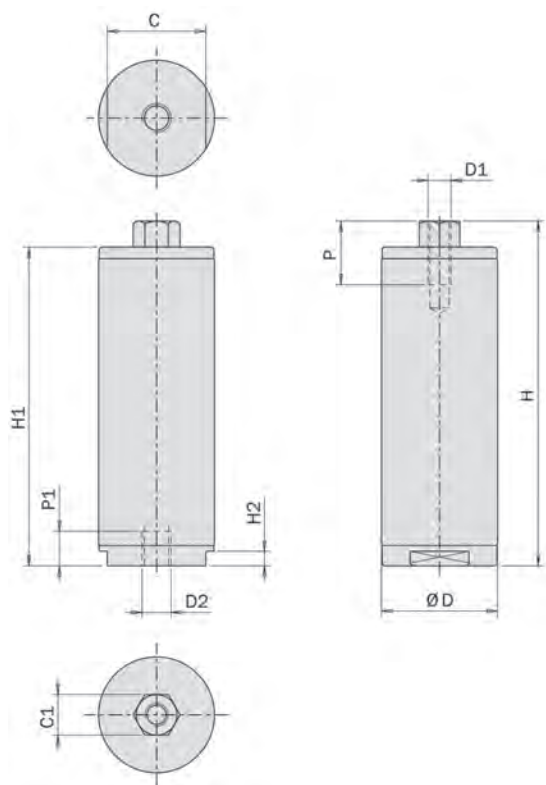
MINI CYLINDERS

MP.OFC – Non-rotative Mini-Cylinder



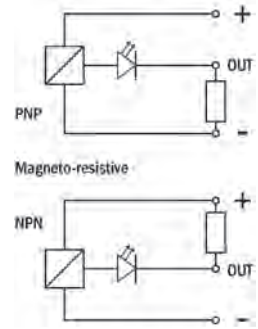
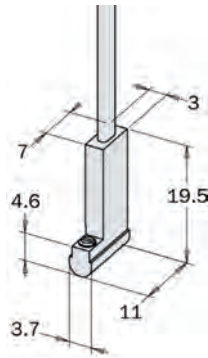
| Part No. | Body Ø | Stroke | Piston Bore | Opening force at 6 bar | Weight (g) |
|------------|--------|--------|-------------|------------------------|------------|
| MP.OFC1410 | 14mm | 10mm | 20mm | 43N | 20 |
| MP.OFC2020 | 20mm | 15mm | 30mm | 113N | 40 |
| MP.OFC3030 | 30mm | 30mm | 30mm | 271N | 85 |

Single Acting and Non rotating.
 Clampable body.
 Maximum operating pressure: 8 bar.
 Operating temperature range: 5° to 60°C.
 Optional magnetic sensors.



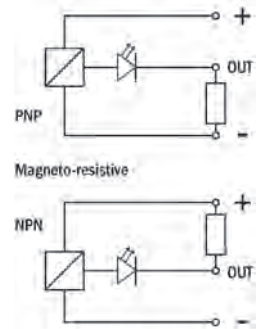
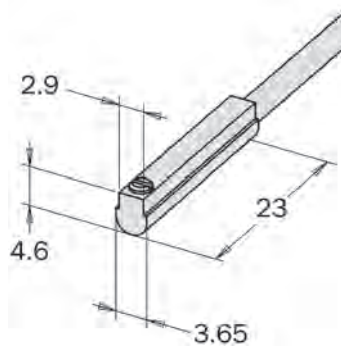
| Part No. | C | C1 | D | D1 | D2 | H | H1 | H2 | P | P1 |
|------------|----|-----|-----|----|----|------|------|-----|---|----|
| MP.OFC1410 | 12 | 5,5 | Ø14 | M3 | M5 | 50 | 45,5 | 2,5 | 7 | 6 |
| MP.OFC2020 | 17 | 7 | Ø20 | M4 | M5 | 59,5 | 55 | 2,5 | 8 | 6 |
| MP.OFC3030 | 27 | 7 | Ø30 | M4 | M5 | 75 | 70,5 | 2,5 | 9 | 6 |

SN – Sensor for Short Stroke & Mini Cylinders



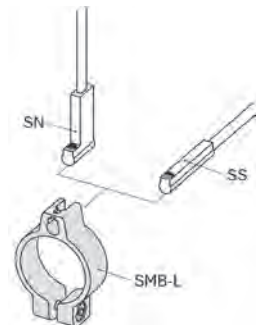
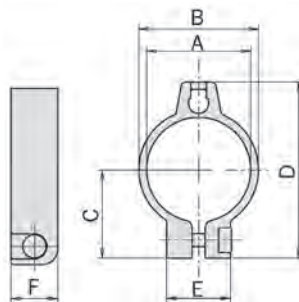
| Part No. | Output | Sensor Type | Connector Lead - m | Weight (g) |
|------------|--------|---------------------|--------------------|------------|
| SN.3N203-G | PNP | Magnetoresistive NO | M8 -3 pin | 0,3 |
| SN.3M203-G | NPN | Magnetoresistive NO | M8 -3 pin | 0,3 |
| SN.4N225-G | PNP | Magnetoresistive NO | 2,5 | 22 |
| SN.4M225-G | NPN | Magnetoresistive NO | 2,5 | 22 |

SS – Sensor for Short Stroke & Mini Cylinders



| Part No. | Output | Sensor Type | Connector Lead - m | Weight (g) |
|------------|--------|---------------------|--------------------|------------|
| SS.3N203-G | PNP | Magnetoresistive NO | M8 -3 pin | 0,3 |
| SS.3M203-G | NPN | Magnetoresistive NO | M8 -3 pin | 0,3 |
| SS.4N225-G | PNP | Magnetoresistive NO | 2,5 | 22 |
| SS.4M225-G | NPN | Magnetoresistive NO | 2,5 | 22 |

SMB.L – Sensor Mounting Bracket



| Part No. | A mm | B mm | C mm | D mm | E mm | F mm | Ref | Weight (g) |
|----------|------|------|------|------|------|------|----------|------------|
| SMB.14.L | Ø14 | 16,8 | 13,5 | 27,3 | 12,3 | 9 | MP.OF 14 | 2 |
| SMB.20.L | Ø20 | 23 | 17 | 33,8 | 12,3 | 9 | MP.OF 20 | 2,5 |
| SMB.30.L | Ø30 | 33,2 | 23 | 44,8 | 12,3 | 9 | MP.OF 30 | 3 |

FITTINGS, TUBES & MANIFOLDS

297 Manifolds



299 Fittings
– G Thread with O-Ring



301 Push to Connect Fittings



303 Fitting – R Thread



304 Male Elbow
Flow Controller



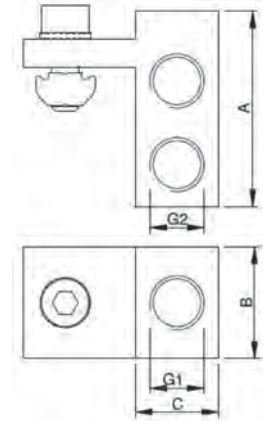
304 Inline Flow Controller



305 Tubes



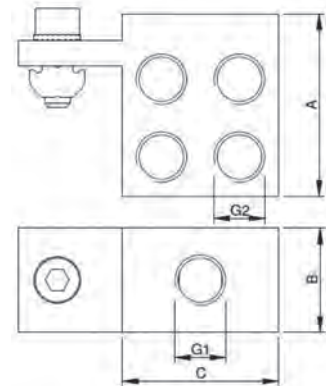
VMB. – Air/Vacuum Manifold 1 - 4



| Part No. | A | B | C | G1 | G2 | REF | Weight (g) |
|---------------|----|----|----|-------|-------|-----|------------|
| VMB.14.1818.X | 35 | 20 | 15 | G 1/8 | G 1/8 | X | 35 |
| VMB.14.1818.J | 35 | 20 | 15 | G 1/8 | G 1/8 | J | 37 |

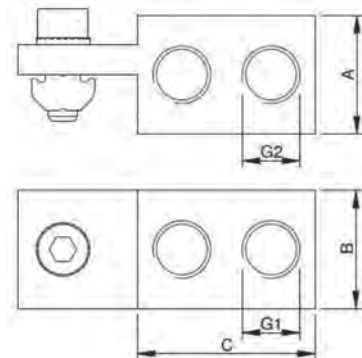
Material: Aluminium.
Surface: Silver anodized.

VMB. – Air/Vacuum Manifold 1 - 8



| Part No. | A | B | C | G1 | G2 | REF | Weight (g) |
|---------------|----|----|----|-------|-------|-----|------------|
| VMB.18.1818.X | 35 | 20 | 30 | G 1/8 | G 1/8 | X | 55 |
| VMB.18.1818.J | 35 | 20 | 30 | G 1/8 | G 1/8 | J | 58 |

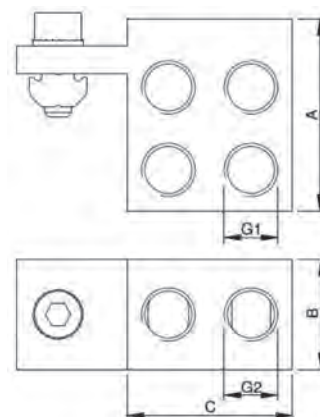
VMB. – Air vacuum Manifold 2 - 4



| Part No. | A | B | C | G1 | G2 | REF | Weight (g) |
|---------------|----|----|----|-------|-------|-----|------------|
| VMB.24.1818.X | 20 | 20 | 30 | G 1/8 | G 1/8 | X | 39 |
| VMB.24.1818.J | 40 | 20 | 30 | G 1/8 | G 1/8 | J | 41 |

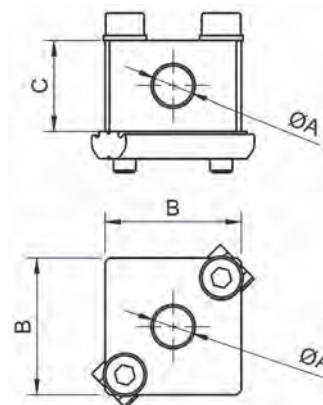
MANIFOLDS

VMB. – Air vacuum Manifold 2 - 8



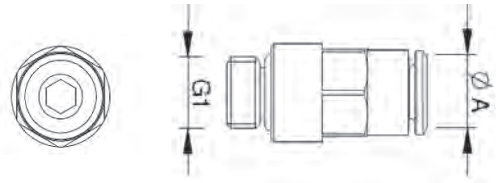
| Part No. | A | B | C | G1 | G2 | REF | Weight (g) |
|---------------|----|----|----|-------|-------|-----|------------|
| VMB.28.1818.X | 35 | 20 | 30 | G 1/8 | G 1/8 | X | 54 |
| VMB.28.1818.J | 35 | 20 | 30 | G 1/8 | G 1/8 | J | 57 |

VML. – Manifold Block 1 - 4



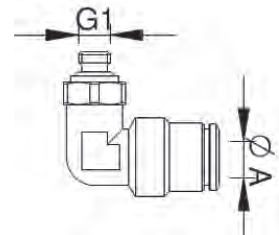
| Part No. | A | B | C | REF | Weight (g) |
|-------------|-------|----|----|-----|------------|
| VML.X.14.18 | G 1/8 | 30 | 20 | X | 60 |
| VML.X.14.14 | G 1/4 | 40 | 20 | X | 85 |

PC - Push In Male Threaded Stud



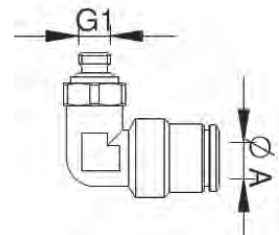
| Part No. | Ø A | G1 | | Weight (g) |
|----------|-----|------|----|------------|
| PC04-M5 | 4 | M5 | 10 | 6 |
| PC04-G01 | 4 | G1/8 | 10 | 7,4 |
| PC06-M5 | 6 | M5 | 10 | 8 |
| PC06-G01 | 6 | G1/8 | 10 | 8,2 |
| PC06-G02 | 6 | G1/4 | 10 | 15 |
| PC08-G02 | 8 | G1/4 | 10 | 14 |

PL - Push In Male Threaded Elbow



| Part No. | Ø A | G1 | | Weight (g) |
|----------|-----|------|----|------------|
| PL04-M5 | 4 | M5 | 10 | 6 |
| PL04-G01 | 4 | G1/8 | 10 | 10 |
| PL06-M5 | 6 | M5 | 10 | 9 |
| PL06-G01 | 6 | G1/8 | 10 | 11 |
| PL06-G02 | 6 | G1/4 | 10 | 19 |
| PL08-G02 | 8 | G1/4 | 10 | 20 |

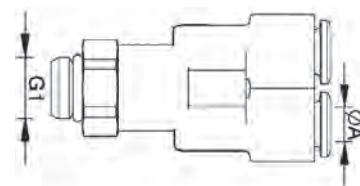
PLL - Push In Male Threaded Extended Elbow



| Part No. | Ø A | G1 | | Weight (g) |
|-----------|-----|------|----|------------|
| PLL04-G01 | 4 | G1/8 | 10 | 11 |
| PLL06-G01 | 6 | G1/8 | 10 | 13 |

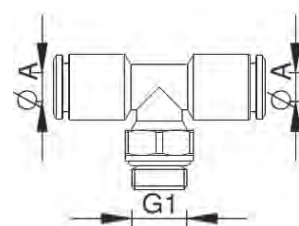
FITTINGS - G THREAD WITH O-RING

PX - Push In Male Threaded Y



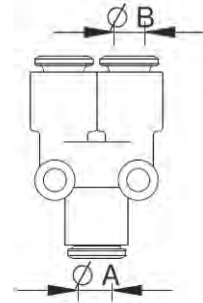
| Part No. | Ø A | G1 | | Weight (g) |
|----------|-----|------|----|------------|
| PX04-G01 | 4 | G1/8 | 10 | |
| PX06-G01 | 6 | G1/8 | 10 | |
| PX06-G02 | 6 | G1/4 | 10 | |


PB - Push In Male Threaded Branch T



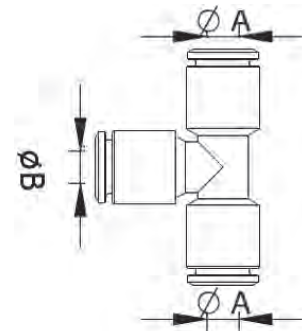
| Part No. | Ø A | G1 | | Weight (g) |
|----------|-----|------|----|------------|
| PB04-M5 | 4 | M5 | 10 | 8 |
| PB04-G01 | 4 | G1/8 | 10 | 13 |
| PB06-M5 | 6 | M5 | 10 | 12 |
| PB06-G01 | 6 | G1/8 | 10 | 14 |
| PB06-G02 | 6 | G1/4 | 10 | 22 |
| PB08-G02 | 8 | G1/4 | 10 | 25 |


MSY - Push in Union Y



| Part No. | Ø A | Ø B |  |
|----------|-----|-----|---|
| MSY04 | 4 | 4 | 10 |
| MSY06 | 6 | 6 | 10 |
| MSY08 | 8 | 8 | 10 |

MST - Push in Union T



| Part No. | Ø A | Ø B |  |
|----------|-----|-----|---|
| MST04 | 4 | 4 | 10 |
| MST06 | 6 | 6 | 10 |
| MST08 | 8 | 8 | 10 |

PU - Push in Union Straight



| Part No. | Ø A | Ø B |  | Weight (g) |
|----------|-----|-----|---|------------|
| PU 06 | 6 | 6 | 10 | 6,5 |

FITTINGS – PUSH IN UNION

PG. – Push In Union Straight-Reducer



| Part No. | Ø A | Ø B | | Weight (g) |
|----------|-----|-----|----|------------|
| PG 06-04 | 6 | 4 | 10 | 6,5 |
| PG 08-06 | 8 | 6 | 10 | 9 |

PZ. – Push In Union Cross



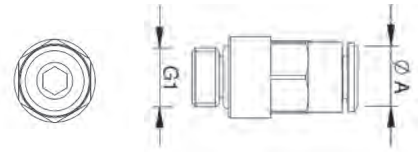
| Part No. | Ø A | Ø B | | Weight (g) |
|----------|-----|-----|----|------------|
| PZA 06 | 6 | 6 | 10 | 18 |

PP. – Push In Blanking Plug



| Part No. | Ø A | | Weight (g) |
|----------|-----|----|------------|
| PP 04 | 4 | 10 | 0,3 |
| PP 06 | 6 | 10 | 0,6 |

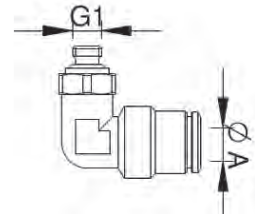
MSM-R - Push in Male Threaded Stud



| Part No. | Ø A | G1 | | Weight (g) |
|-----------|-----|------|----|------------|
| MSM04R1/8 | 4 | R1/8 | 10 | 7,5 |
| MSM06R1/8 | 6 | R1/8 | 10 | 8 |
| MSM06R1/4 | 6 | R1/4 | 10 | 15 |
| MSM08R1/4 | 8 | R1/4 | 10 | 14 |

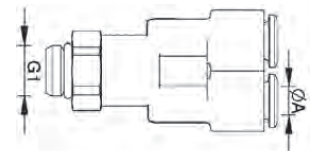
Material: Technopolymer / Brass (Nickel Plated).
 Pressure: Max 10 bar.
 Temperature: 0°C to +60°C.

MSW-R - Push in Male Threaded Elbow



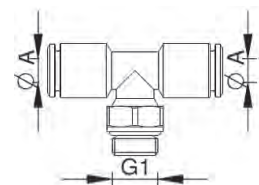
| Part No. | Ø A | G1 | | Weight (g) |
|-----------|-----|------|----|------------|
| MSW04R1/8 | 4 | R1/8 | 10 | 10 |
| MSW06R1/8 | 6 | R1/8 | 10 | 11 |
| MSW06R1/4 | 6 | R1/4 | 10 | 19 |
| MSW08R1/4 | 8 | R1/4 | 10 | 20 |

MSTY-R - Push in Male Threaded Y



| Part No. | Ø A | G1 | | Weight (g) |
|------------|-----|------|----|------------|
| MSTY04G1/8 | 4 | R1/8 | 10 | 13 |
| MSTY06G1/8 | 6 | R1/8 | 10 | 15 |
| MSTY06G1/4 | 6 | R1/4 | 10 | 22 |

MSA-R - Push in Male Threaded Branch T



| Part No. | Ø A | G1 | | Weight (g) |
|-----------|-----|------|----|------------|
| MSA04R1/8 | 4 | R1/8 | 10 | 13 |
| MSA06R1/8 | 6 | R1/8 | 10 | 14 |
| MSA06R1/4 | 6 | R1/4 | 10 | 22 |
| MSA08R1/4 | 8 | R1/4 | 10 | 25 |

FLOW CONTROL VALVES

JSC-B - Push in Male Elbow Flow Control - in Valve



| Part No. | ØA | Thread | Control | | Weight (g) |
|------------|----|--------|---------|----|------------|
| JSCM5-G04B | 4 | M5 | Supply | 10 | 9 |
| JSCM5-G06B | 6 | M5 | Supply | 10 | 10 |
| JSC06-G01B | 6 | G1/8 | Supply | 10 | 20 |

JSC - Push in Male Elbow Flow Control - out Valve



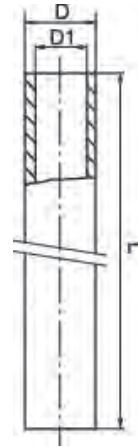
| Part No. | ØA | Thread | Control | | Weight (g) |
|------------|----|--------|---------|----|------------|
| JSC M5-G04 | 4 | M5 | Exhaust | 10 | 9 |
| JSC M5-G06 | 6 | M5 | Exhaust | 10 | 10 |
| JSC 06-G01 | 6 | G1/8 | Exhaust | 10 | 20 |

PA - Push in inline Flow Controller



| Part No. | ØA | Contol | | Weight (g) |
|----------|----|---------|----|------------|
| PA 04 | 4 | In-line | 10 | 12 |
| PA 06 | 6 | In-line | 10 | 33 |

PPU - Tubing



| Part No. | D (mm) | D1 (mm) | Working pressure | Bend radius | Coil Length L |
|----------|--------|---------|------------------|-------------|---------------|
| PPU4B | 4 | 2,5 | Max 10 bar | 20 mm. | 30 m. |
| PPU6B | 6 | 4 | Max 10 bar | 30 mm. | 30 m. |
| PPU8B | 8 | 6 | Max 10 bar | 31 mm. | 30 m. |

ELECTRONICS & SENSORS

307 Cable Connectors



308 Magnetic Sensors for C Slots



310 Magnetic Sensors for T Slots



311 Programmable Sensors for C Slots



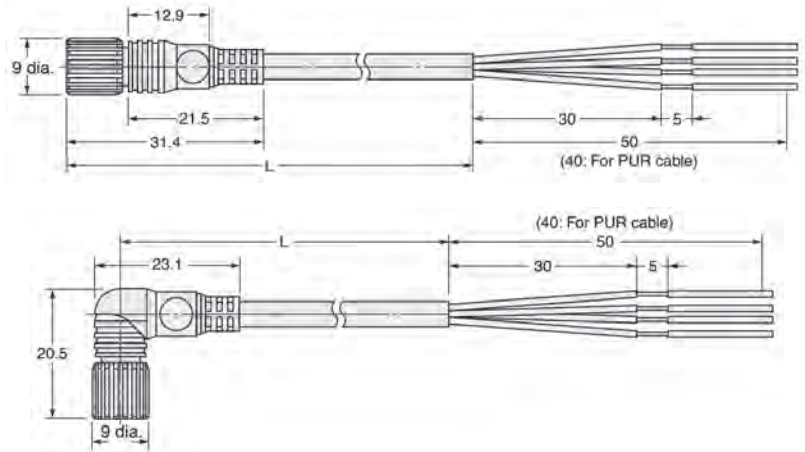
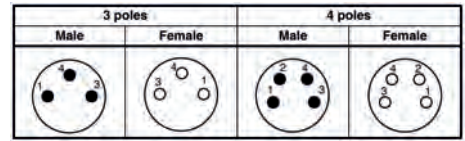
312 Inductive Sensors



313 Sensor Boxes



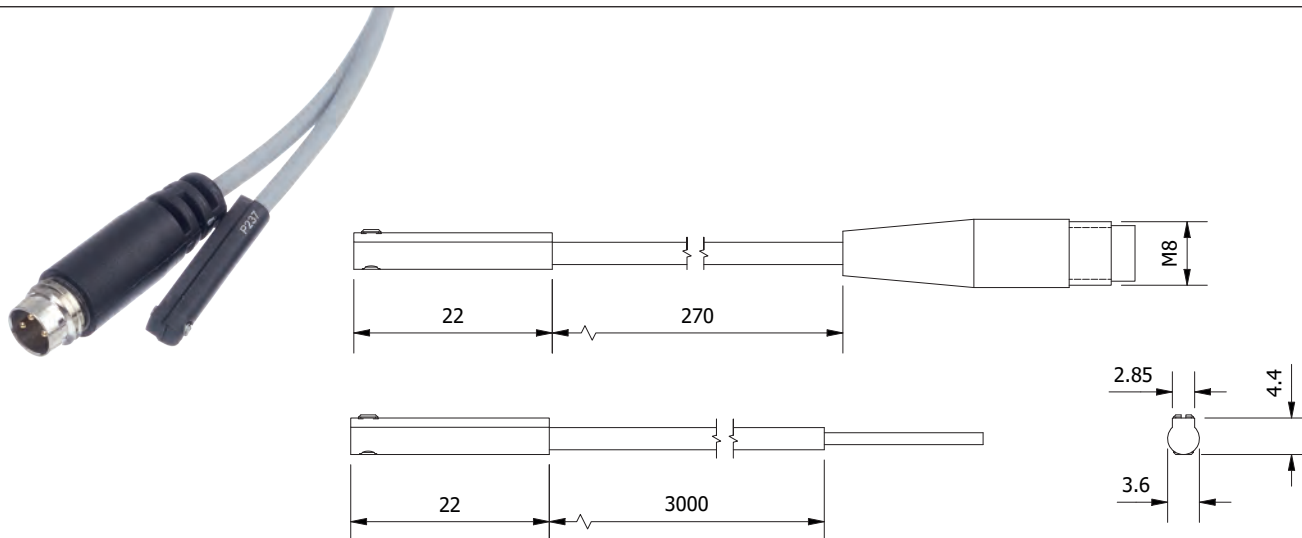
CB. – M8 Screw-on Cable Connectors



| Part No. | Connector Type | Size | No. of Cable Cores. | Cable Length |
|----------------|----------------|------|---------------------|--------------|
| CB.XS3F.M83S5M | Straight | M8 | 3 - wire | 5 |
| CB.XS3F.M83E5M | Elbow | M8 | 3 - wire | 5 |
| CB.XS3F.M84S5M | Straight | M8 | 4 - wire | 5 |
| CB.XS3F.M84E5M | Elbow | M8 | 4 - wire | 5 |

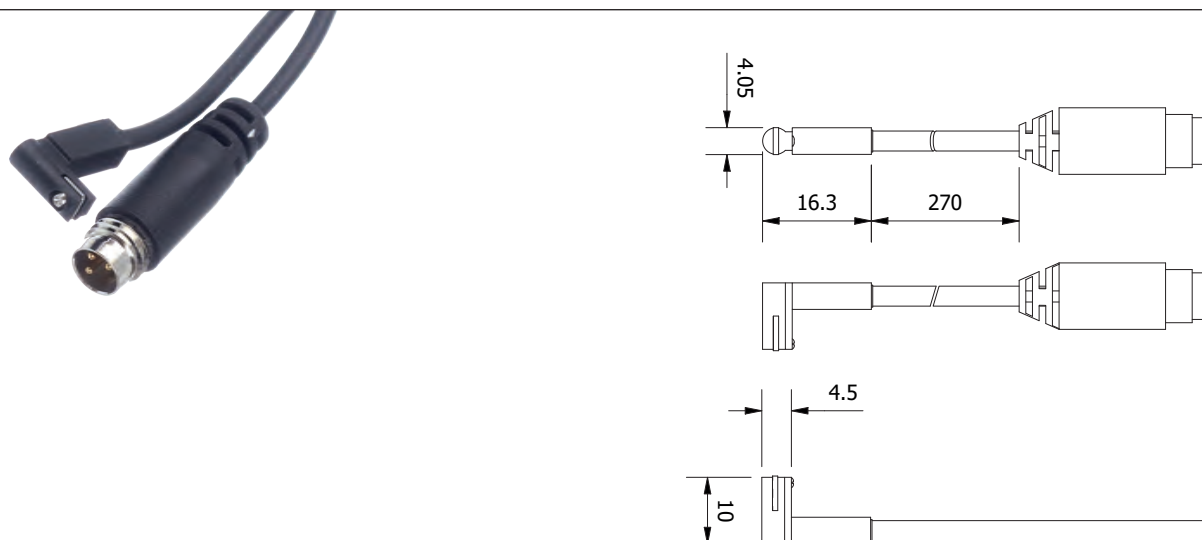
SENSORS

SN. – Sensor for GZ12-10, GZ.AA, GZ.2016, CC.

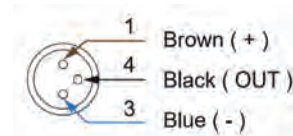
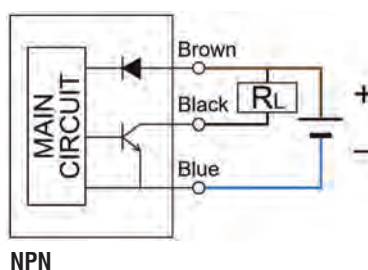
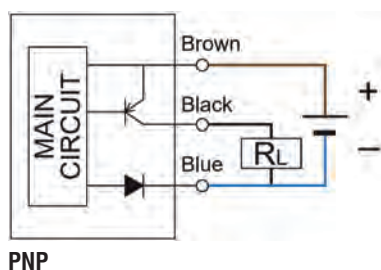


| Part No. | Output | Sensor type | Connector | Lead - m | Weight (g) |
|------------|--------|-------------|-----------|----------|------------|
| SN.K5P.M8 | PNP | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5N.M8 | NPN | Electronic | M8 3pin | 0,3 | 4 |
| SN.K5P.3MW | PNP | Electronic | | 3 | 4 |
| SN.K5N.3MW | NPN | Electronic | | 3 | 4 |

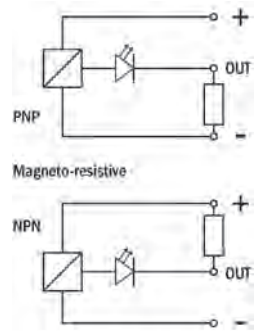
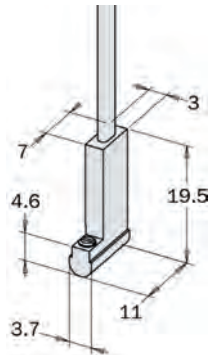
SN. – Sensor for GF.



| Part No. | Output | Sensor type | Connector | Lead - m | Weight (g) |
|------------|--------|-------------|-----------|----------|------------|
| SN.K3P.M8 | PNP | Electronic | M8 3pin | 0,3 | 4 |
| SN.K3N.M8 | NPN | Electronic | M8 3pin | 0,3 | 4 |
| SN.K3P.3MW | PNP | Electronic | | 3 | 4 |
| SN.K3N.3MW | NPN | Electronic | | 3 | 4 |

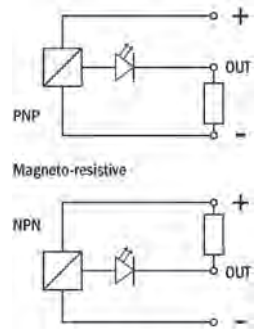
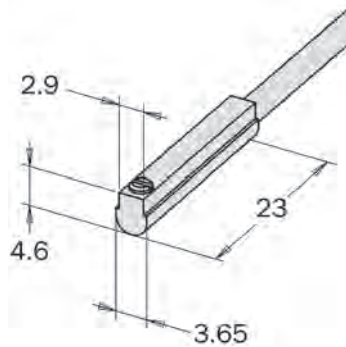


SN – Sensor for Short Stroke & Mini Cylinders



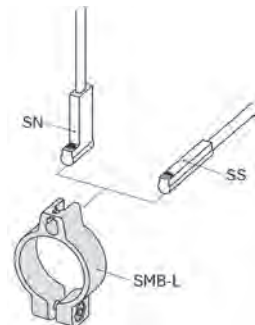
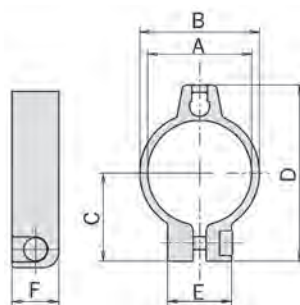
| Part No. | Output | Sensor Type | Connector Lead - m | Weight (g) |
|------------|--------|----------------------|--------------------|------------|
| SN.3N203-G | PNP | Magneto-resistive NO | M8 -3 pin | 0,3 |
| SN.3M203-G | NPN | Magneto-resistive NO | M8 -3 pin | 0,3 |
| SN.4N225-G | PNP | Magneto-resistive NO | 2,5 | 22 |
| SN.4M225-G | NPN | Magneto-resistive NO | 2,5 | 22 |

SS – Sensor for Short Stroke & Mini Cylinders



| Part No. | Output | Sensor Type | Connector Lead - m | Weight (g) |
|------------|--------|----------------------|--------------------|------------|
| SS.3N203-G | PNP | Magneto-resistive NO | M8 -3 pin | 0,3 |
| SS.3M203-G | NPN | Magneto-resistive NO | M8 -3 pin | 0,3 |
| SS.4N225-G | PNP | Magneto-resistive NO | 2,5 | 22 |
| SS.4M225-G | NPN | Magneto-resistive NO | 2,5 | 22 |

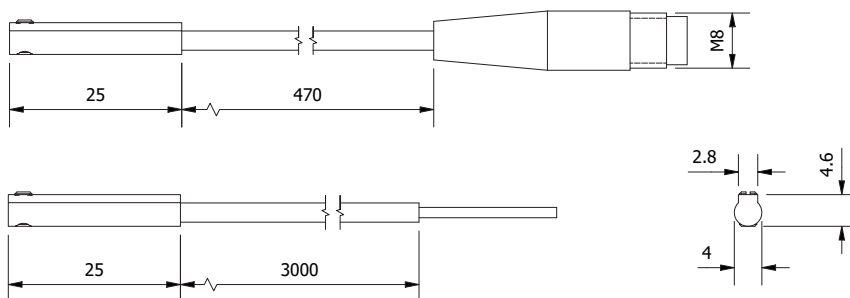
SMB.L – Sensor Mounting Bracket



| Part No. | A mm | B mm | C mm | D mm | E mm | F mm | Ref | Weight (g) |
|----------|------|------|------|------|------|------|----------|------------|
| SMB.14.L | Ø14 | 16,8 | 13,5 | 27,3 | 12,3 | 9 | MP.OF 14 | 2 |
| SMB.20.L | Ø20 | 23 | 17 | 33,8 | 12,3 | 9 | MP.OF 20 | 2,5 |
| SMB.30.L | Ø30 | 33,2 | 23 | 44,8 | 12,3 | 9 | MP.OF 30 | 3 |

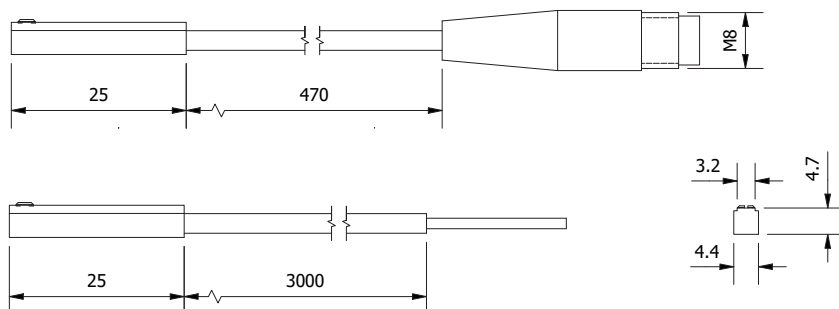
SENSORS

SN.DMSH – C-Slot Sensors



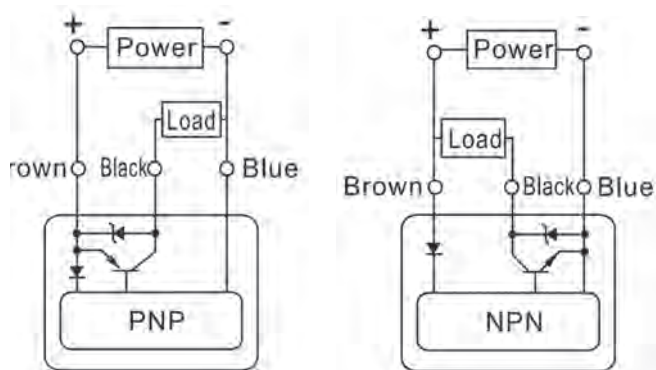
| Part No. | Output | Sensor type | Connector | Lead m | REF | Weight (g) |
|------------|--------|-------------|-----------|--------|-----|------------|
| SN.DMSHPM8 | PNP | Electronic | M8 3pin | 0.5 | PG | 4 |
| SN.DMSHNM8 | NPN | Electronic | M8 3pin | 0.5 | PG | 4 |
| SN.DMSHP3M | PNP | Electronic | M8 3pin | 3 | PG | 4 |
| SN.DMSHN3M | NPN | Electronic | M8 3pin | 3 | PG | 4 |

SN.DMSG. – T-Slot Sensors

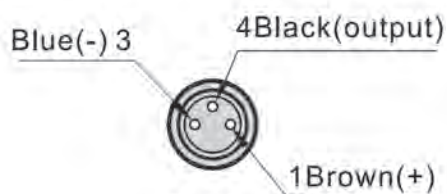


| Part No. | Output | Sensor type | Connector | Lead m | REF | Weight (g) |
|-------------|--------|-------------|-----------|--------|-----------------|------------|
| SN.DMSGP.M8 | PNP | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.M8 | NPN | Magnetic | M8 3pin | 0.5 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGP.3M | PNP | Magnetic | M8 3pin | 3 | PG/AG/CCTQ/CCAQ | 4 |
| SN.DMSGN.3M | NPN | Magnetic | M8 3pin | 3 | PG/AG/CCTQ/CCAQ | 4 |

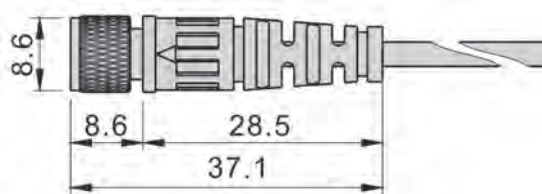
General connection - 3 Wire



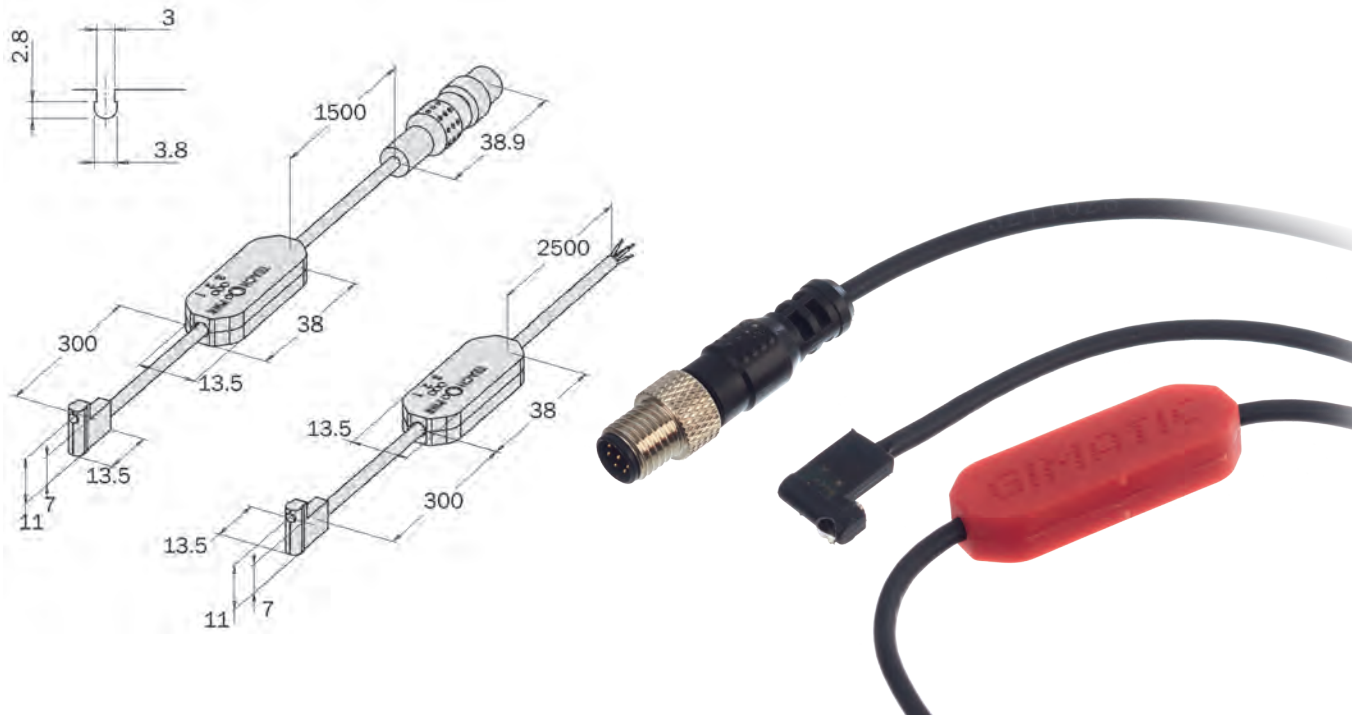
M8 socket



3-wire



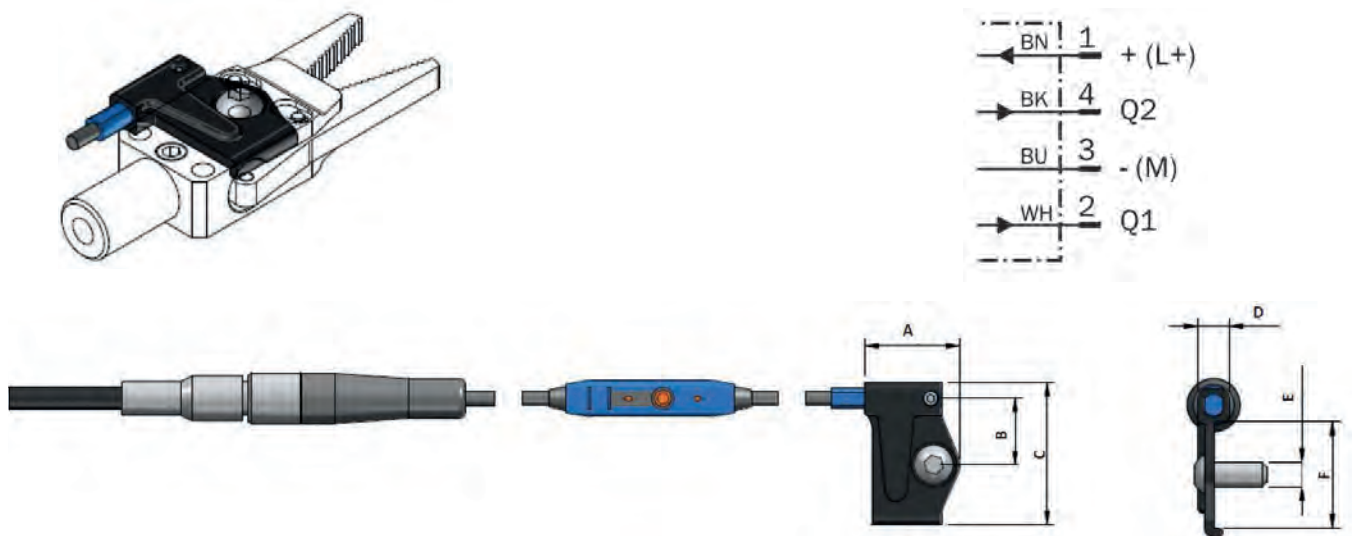
PRO.SN-HS – Programmable Magnetic Sensor for MP.SGP-



| Part No. | Output | Sensor Type | Connector | Lead - m | Ref. | Weight (g) |
|-----------------|--------|-------------------------|-----------|----------|--------|------------|
| PRO.SN3N215HS-G | PNP | Magneto-resistive NO/NC | M8 -3 pin | 0,3 | MP.SGP | 70 |
| PRO.SN3M215HS-G | NPN | Magneto-resistive NO/NC | M8 -3 pin | 0,3 | MP.SGP | 70 |
| PRO.SN4N225HS-G | PNP | Magneto-resistive NO/NC | | 2,5 | MP.SGP | 70 |
| PRO.SN4M225HS-G | NPN | Magneto-resistive NO/NC | | 2,5 | MP.SGP | 70 |

Programmable GMP magneto-resistive sensors.
 3 independent digital outputs.
 Each programmable output in NO or NC logic.

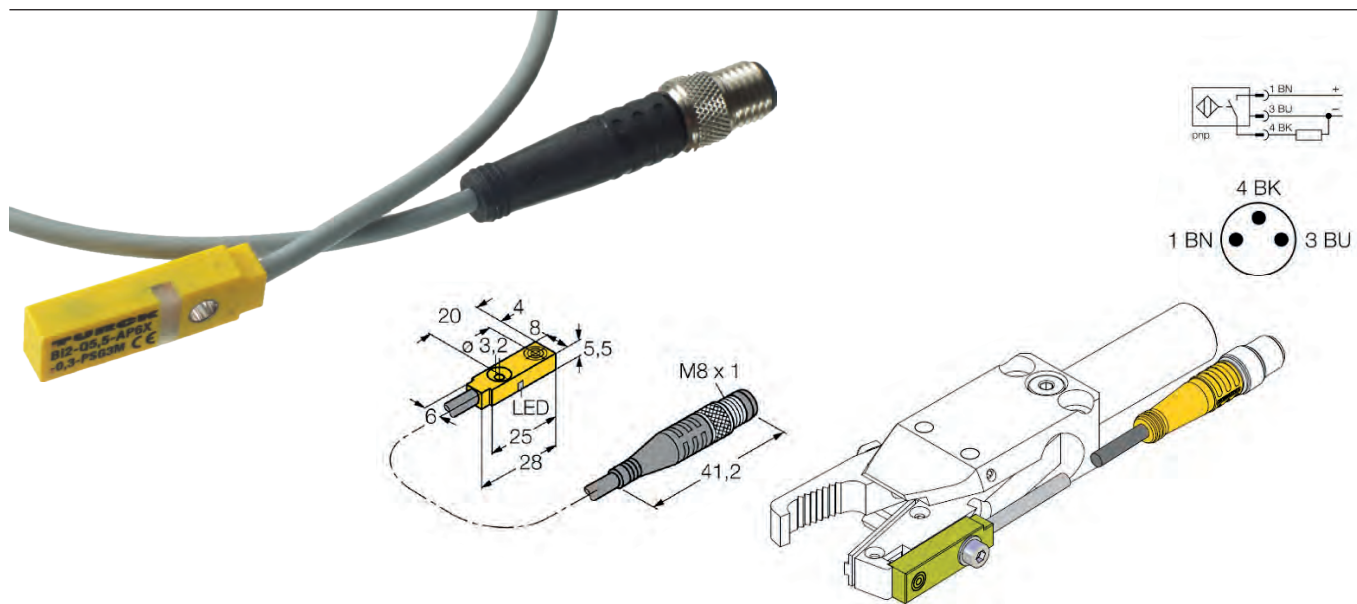
GZ-SCP – Sensor for GZ-10-8, 12-10



| Part No. | Output | Sensor Type | Sensing Distance | Connector | Weight (g) |
|--------------|--------|-------------|------------------|-----------|------------|
| GZ-SCP-10-8 | PNP | Magnetic | 0-50mm | M8 4pin | 65 |
| GZ-SCP-12-10 | PNP | Magnetic | 0-50mm | M8 4pin | 65 |

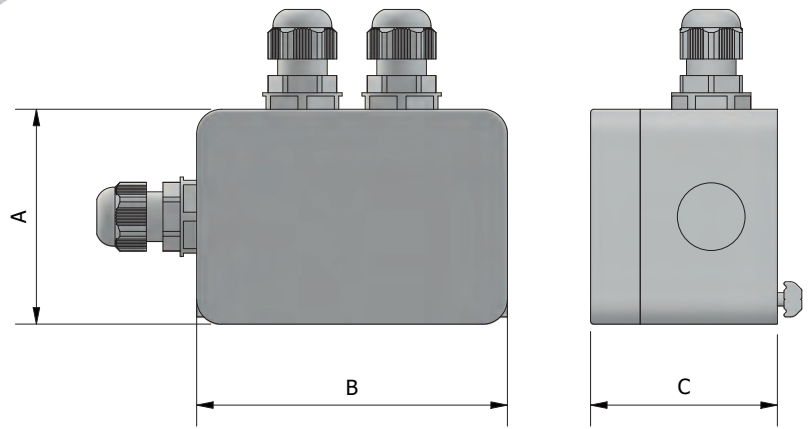
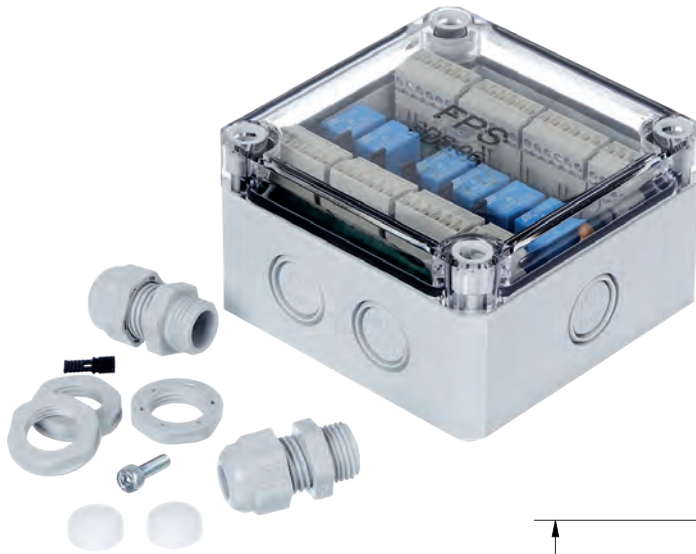
SENSORS

GZ20. – Inductive Sensor for GZ 20



| Part No. | Type | Cable length | Connection |
|--------------|------|--------------|------------|
| GZ20.SM8.PNP | PNP | 300 | M8 |
| GZ20.SM8.NPN | NPN | 300 | M8 |

SNB. – Sensor Box



| Part No. | Power supply | Max. # of Sensors | A | B | C |
|----------|------------------|-------------------|----|-----|----|
| SNB.02C | 24V dc (+/- 10%) | 2 | 45 | 100 | 45 |
| SNB.04C | " | 4 | 65 | 94 | 57 |
| SNB.06C | " | 6 | 94 | 94 | 57 |
| SNB.08C | " | 8 | 94 | 130 | 57 |
| SNB.12C | " | 12 | 94 | 180 | 57 |

- Used for sensor wiring on an EOAT
- PNP and NPN signals can be converted.
- I/O can be current sourcing (PNP), sinking (NPN) or dry contact.
- Sensor boxes can be connected in series.
- LED indicators allow for easy trouble shooting.
- Programming method - jump wire.
- Provided with strain reliefs and fastening set.

END OF BARREL

07.

315 OEM Nozzle Tips



316 Removable Nozzle Tips



317 Screw Tips



318 Tip Spanner



319 Nozzle Body Adaptors



General Purpose Type

Nylon Type



| Part Number | Part Number | Length | Thread | Radius | Orifice | |
|---------------|--------------|--------|---------|--------|---------|------|
| AGP1-12,7-1,5 | | 50 | M24x1,5 | 12,7 | 1,5 | |
| AGP1-12,7-2,5 | | | | | 2,5 | |
| AGP1-12,7-3 | ARNT1-12,7-3 | | | | 3 | |
| AGP1-12,7-4 | ARNT1-12,7-4 | | | | 4 | |
| AGP1-12,7-5 | ARNT1-12,7-5 | | | | 5 | |
| AGP1-12,7-6 | ARNT1-12,7-6 | | | | 6 | |
| AGP1-12,7-8 | | | | | 8 | |
| AGP1-15-1,5 | | | | | 15 | 12,7 |
| AGP1-15-2,5 | | | | 2,5 | | |
| AGP1-15-3 | ARNT1-15-3 | | | 3 | | |
| AGP1-15-4 | ARNT1-15-4 | | | 4 | | |
| AGP1-15-5 | ARNT1-15-5 | | | 5 | | |
| AGP1-15-6 | ARNT1-15-6 | | | 6 | | |
| AGP1-19-1,5 | | | | 19 | 12,7 | 1,5 |
| AGP1-19-2,5 | | | | | | 2,5 |
| AGP1-19-3 | ARNT1-19-3 | | | | | 3 |
| AGP1-19-4 | ARNT1-19-4 | 4 | | | | |
| AGP1-19-6 | ARNT1-19-6 | 6 | | | | |
| AGP2-12,7-1,5 | | 75 | M24x1,5 | | | 1,5 |
| AGP2-12,7-2,5 | | | | 2,5 | | |
| AGP2-12,7-3 | ARNT2-12,7-3 | | | 3 | | |
| AGP2-12,7-4 | ARNT2-12,7-4 | | | 4 | | |
| AGP2-12,7-5 | ARNT2-12,7-5 | | | 5 | | |
| AGP2-12,7-6 | ARNT2-12,7-6 | | | 6 | | |
| AGP2-12,7-8 | ARNT2-12,7-8 | | | 8 | | |
| AGP2-15-1,5 | | | | 15 | 12,7 | 1,5 |
| AGP2-15-2,5 | | | | | | 2,5 |
| AGP2-15-3 | ARNT2-15-3 | | | | | 3 |
| AGP2-15-4 | ARNT2-15-4 | | | | | 4 |
| AGP2-15-5 | | | | | | 5 |
| AGP2-15-6 | ARNT2-15-6 | | | | | 6 |
| AGP2-19-1,5 | | | | 17 | 12,7 | 1,5 |
| AGP2-19-2,5 | | | | | | 2,5 |
| AGP2-19-3 | ARNT2-19-3 | | | | | 3 |
| AGP2-19-4 | | 4 | | | | |
| AGP2-19-5 | | 5 | | | | |
| AGP2-19-6 | | 6 | | | | |
| AGP3-12,7-1,5 | | 95 | M24x1,5 | 1,5 | | |
| AGP3-12,7-2,5 | | | | 2,5 | | |
| AGP3-12,7-3 | ARNT3-12,7-3 | | | 3 | | |
| AGP3-12,7-4 | ARNT3-12,7-4 | | | 4 | | |
| AGP3-12,7-5 | ARNT3-12,7-5 | | | 5 | | |
| AGP3-12,7-6 | | | | 6 | | |
| AGP3-15-1,5 | | | | 15 | 12,7 | 1,5 |
| AGP3-15-2,5 | | | | | | 2,5 |
| AGP3-15-3 | ARNT3-15-3 | | | | | 3 |
| AGP3-15-4 | ARNT3-15-4 | | | | | 4 |
| AGP3-15-5 | ARNT3-15-5 | | | | | 5 |
| AGP3-19-1,5 | | | | | | 19 |
| AGP3-19-2,5 | | | | 2,5 | | |
| AGP3-19-3 | ARNT3-19-3 | | | 3 | | |
| AGP3-19-6 | | | | 6 | | |

OEM Tips fully compatible with original tips. The tips are available in different lengths, with different tip radius and orifice.

Features:

- High Quality
- Hardened tool steel
- All standard sizes in stock

REMOVABLE NOZZLE TIPS

The MOULDPRO Removable Nozzle Tip System saves Time and Money!

The Quick Change nozzle tip system was developed to offer a fast and economical solution for injection moulders to adapt their moulding machines to different tools and materials.

By replacing the manufacturer's nozzle body with the MOULDPRO replaceable tip design the moulder can benefit from using MOULDPRO standard 'quick change' replaceable tips.

The tips are available in different lengths, with different tip radius and orifice; the tips are available as General Purpose / Nylon Reverse Taper or ABS Full Taper.

- High Quality
- Hardened Tool Steel
- All Standard Sizes in Stock
- Standardise your factory and Save Money
- Standardise Size of Nozzle Heater Bands
- Custom designs available

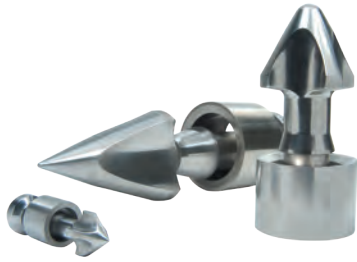


Removable Nozzle Tips

| General Purpose Type | | | Nylon Type | | | Full Taper | | | | | | |
|----------------------|----------------|---------------|-------------|--------------|--------|------------|------|--|--|--|--|--|
| Part Number | Part Number | Part Number | Thread Type | Total Length | Radius | Orifice Ø | | | | | | |
| GP1-R12.7-1.5 | | | 7/8" UNF | 38 | 12,7 | 1,5 | | | | | | |
| GP1-R12.7-2 | | | | | | 2 | | | | | | |
| GP1-R12.7-2.5 | | | | | | 2,5 | | | | | | |
| GP1-R12.7-3 | NRT1-R12.7-3 | FT1-R12.7-3 | | | | 3 | | | | | | |
| GP1-R12.7-4 | NRT1-R12.7-4 | FT1-R12.7-4 | | | | 4 | | | | | | |
| GP1-R12.7-5 | NRT1-R12.7-5 | FT1-R12.7-5 | | | | 5 | | | | | | |
| GP1-R12.7-6.5 | NRT1-R12.7-6.5 | FT1-R12.7-6.5 | | | | 6,5 | | | | | | |
| GP1-R12.7-8 | NRT1-R12.7-8 | FT1-R12.7-8 | | | | 8 | | | | | | |
| GP1-R15-1.5 | | | | | 1,5 | | | | | | | |
| GP1-R15-2.5 | | | | | 2,5 | | | | | | | |
| GP1-R15-3 | NRT1-R15-3 | FT1-R15-3 | | | 3 | | | | | | | |
| GP1-R15-4 | NRT1-R15-4 | FT1-R15-4 | | | 4 | | | | | | | |
| GP1-R15-5 | NRT1-R15-5 | FT1-R15-5 | | | 5 | | | | | | | |
| GP1-R15-5.5 | NRT1-R15-5.5 | FT1-R15-5.5 | | | 5,5 | | | | | | | |
| GP1-R15-6.5 | NRT1-R15-6.5 | FT1-R15-6.5 | | | 6,5 | | | | | | | |
| GP1-R15-7 | NRT1-R15-7 | FT1-R15-7 | | | 7 | | | | | | | |
| GP1-R15-8 | NRT1-R15-8 | FT1-R15-8 | | | 8 | | | | | | | |
| GP1-R15-9.5 | NRT1-R15-9.5 | FT1-R15-9.5 | | | 9,5 | | | | | | | |
| GP1-R19-3 | NRT1-R19-3 | FT1-R19-3 | | | 3 | | | | | | | |
| GP1-R19-4 | NRT1-R19-4 | FT1-R19-4 | | | 4 | | | | | | | |
| GP1-R19-5.5 | NRT1-R19-5.5 | FT1-R19-5.5 | | | 5,5 | | | | | | | |
| GP1-R30-3 | NRT1-R30-3 | FT1-R30-3 | | | 3 | | | | | | | |
| GP1-R30-7 | NRT1-R30-7 | FT1-R30-7 | | | 7 | | | | | | | |
| GP2-R12.7-3 | NRT2-R12.7-3 | | | | 3 | 70 | 12,7 | | | | | |
| GP2-R19-3 | NRT2-R19-3 | | | 3 | 19 | | | | | | | |
| GP3-R12.7-3 | NRT3-R12.7-3 | | | 3 | 95 | | 12,7 | | | | | |
| GP4-R12.7-3 | NRT4-R12.7-3 | | | 3 | | | 127 | | | | | |

Removeable Nozzle tips, Heat Treated Tool Steel, Polished Radius and Bore.

Screw Tip Assembly



| Part No. | Diameter |
|----------|----------|
| STA-18 | 18mm |
| STA-20 | 20mm |
| STA-22 | 22mm |
| STA-25 | 25mm |
| STA-27 | 27mm |
| STA-28 | 28mm |
| STA-30 | 30mm |
| STA-32 | 32mm |
| STA-33 | 33mm |
| STA-35 | 35mm |
| STA-37 | 37mm |
| STA-38 | 38mm |
| STA-40 | 40mm |
| STA-42 | 42mm |
| STA-43 | 43mm |
| STA-45 | 45mm |
| STA-47 | 47mm |
| STA-48 | 48mm |
| STA-50 | 50mm |
| STA-52 | 52mm |
| STA-55 | 55mm |
| STA-60 | 60mm |
| STA-62 | 62mm |
| STA-65 | 65mm |

| Part No. | Diameter |
|----------|----------|
| STA-67 | 67mm |
| STA-70 | 70mm |
| STA-72 | 72mm |
| STA-75 | 75mm |
| STA-78 | 78mm |
| STA-80 | 80mm |
| STA-85 | 85mm |
| STA-90 | 90mm |
| STA-95 | 95mm |
| STA-100 | 100mm |
| STA-105 | 105mm |
| STA-110 | 110mm |
| STA-120 | 120mm |
| STA-125 | 125mm |
| STA-130 | 130mm |
| STA-135 | 135mm |
| STA-140 | 140mm |
| STA-150 | 150mm |
| STA-155 | 155mm |
| STA-160 | 160mm |
| STA-170 | 170mm |
| STA-180 | 180mm |
| STA-190 | 190mm |
| STA-200 | 200mm |

For all popular makes of moulding machine.
 Complete nitrided screw tip assembly including Screw Tip, Check Ring and Pressure Ring.
 Please advise machine make / model / tonnage and screw size when ordering.

TIP SPANNER

Screw Tip Spanner



Part No.
123894

Screw tip Size
Max 75 mm

Tip spanner, ideal for fast and safe Screw tip replacement.
Adjustable for Screw Tips up to 75mm, 3, 4, 5 Flute.
Foam Grip.

Leather Gloves



Part No.
WG08/R8

Size
MULTI

Ideal for handling hot machine parts.
Rated up to 200°C EN-407.

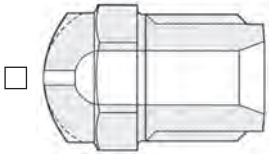
CUSTOM NOZZLE TIP FORM

SPECIFY

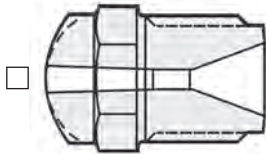
1. External Style of Nozzle Tip:

Standard Flat Face*

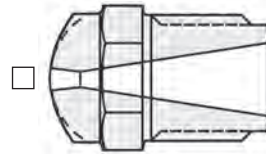
2. Internal Design of Nozzle Tip:



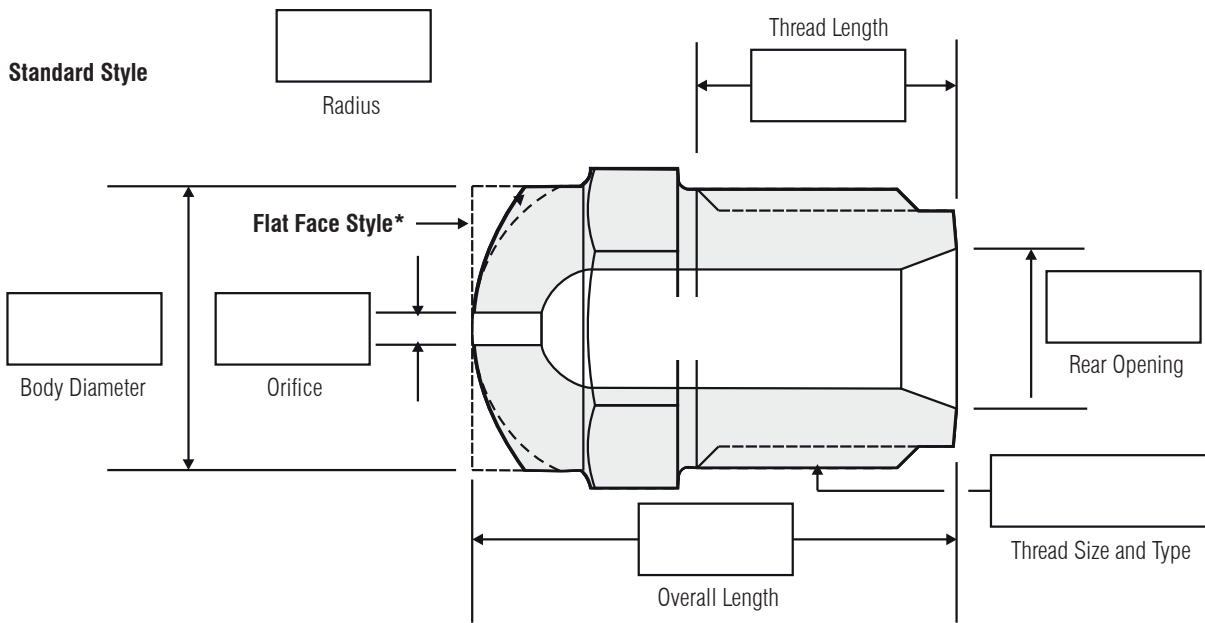
General Purpose Internal Design



Nylon Internal Design



Full Taper Internal Design



Date: _____ Quantity: _____ Phone: _____

Name _____ Title _____

Company _____ Email _____

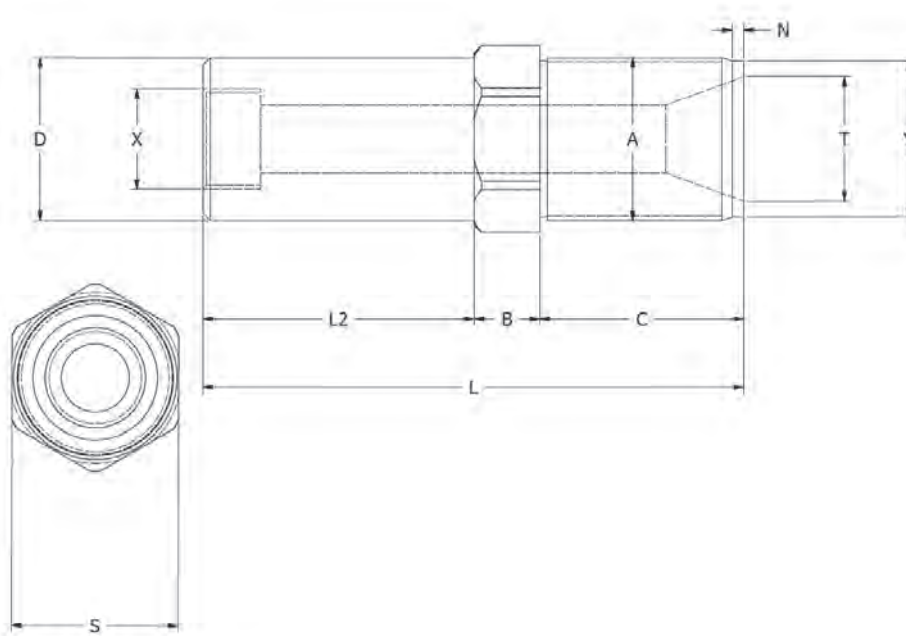
Address _____

City _____ Zip _____

Country _____

ORDER FORM

Nozzle Body



| L | L2 | B | C | D | X | T | Y | A | N | S |
|---|----|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

Metric only (mm)

Machine/Model _____

Company _____

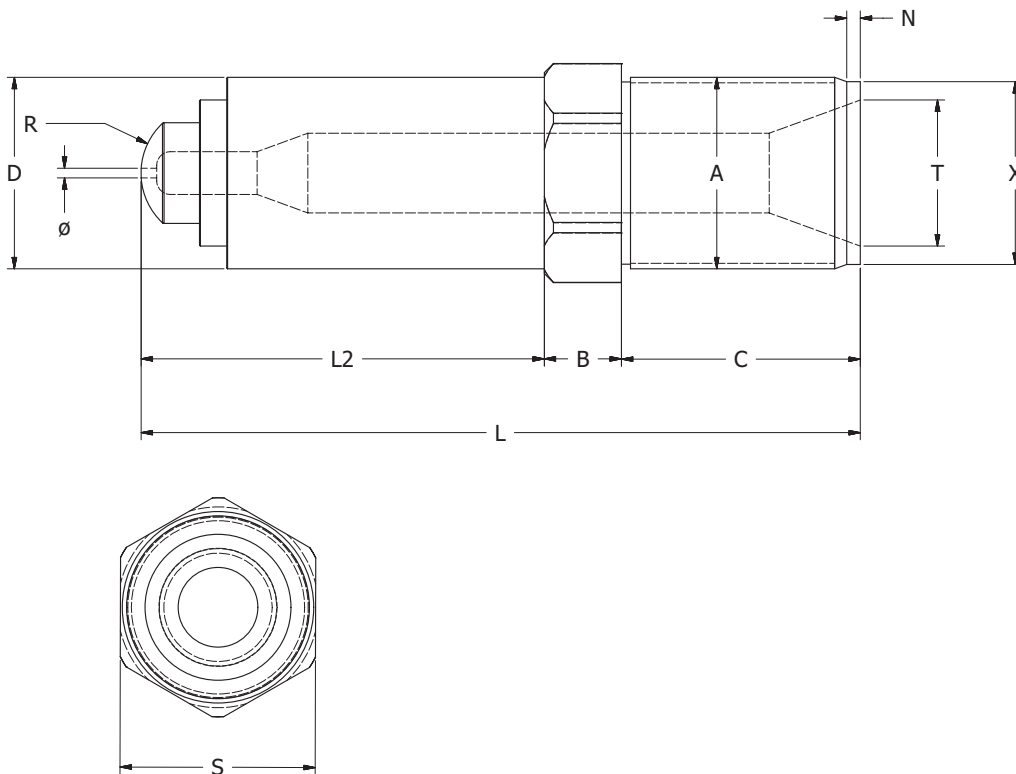
Contact _____

Telephone _____

Contact e-mail _____

ORDER FORM

Solid Nozzle



| L | L2 | B | C | D | X | R | Ø | T | A | N | S |
|---|----|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

Metric only (mm)

Machine/Model _____

Company _____

Contact _____

Telephone _____

Contact e-mail _____

TOOLS & ACCESSORIES

08.

323 Gate Cutters



326 Deburring Tools



327 Soft Tools



329 Pry Bars



330 Accessories



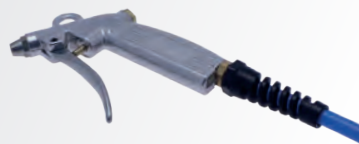
333 Polishing & Abrasives



350 Brushes



354 Compressed Air Blow Guns



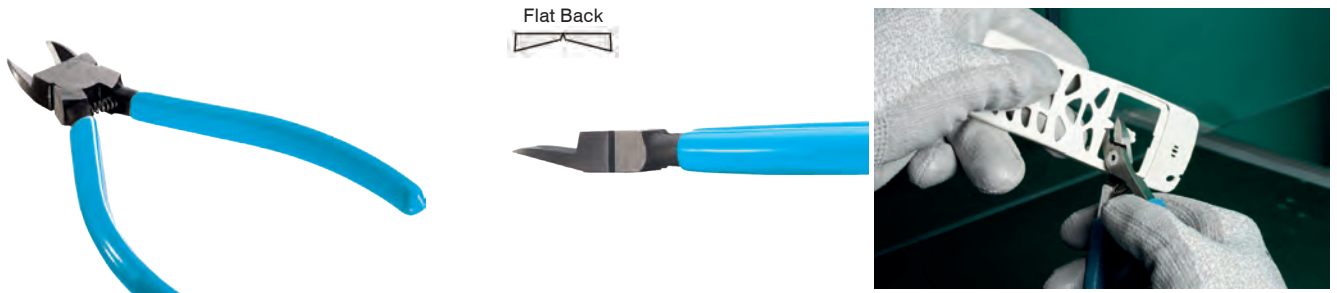
355 Measuring Tools



357 Magnifying Glasses

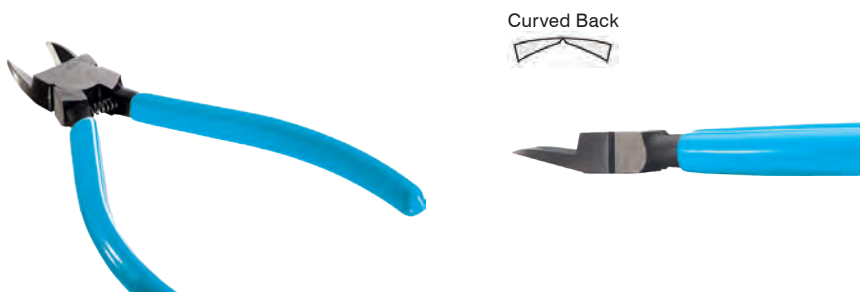


Gatecutter 15° Flush Cut



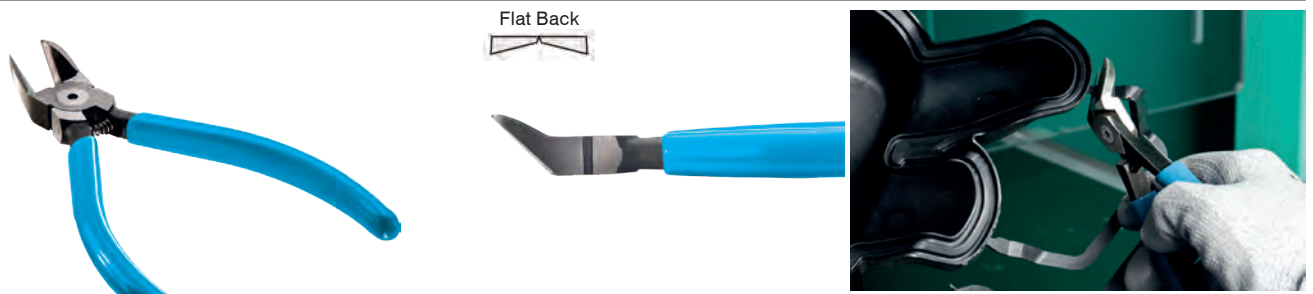
| Part No. | Cut Type | Size | Handle Type |
|----------|-----------------|-------------|--------------|
| P40 | 15° - flush cut | 4" / 100 mm | Plastic Grip |
| P50 | 15° - flush cut | 5" / 125 mm | Plastic Grip |
| P60 | 15° - flush cut | 6" / 150 mm | Plastic Grip |
| P70 | 15° - flush cut | 7" / 175 mm | Plastic Grip |

Gatecutter 15° Flush Cut



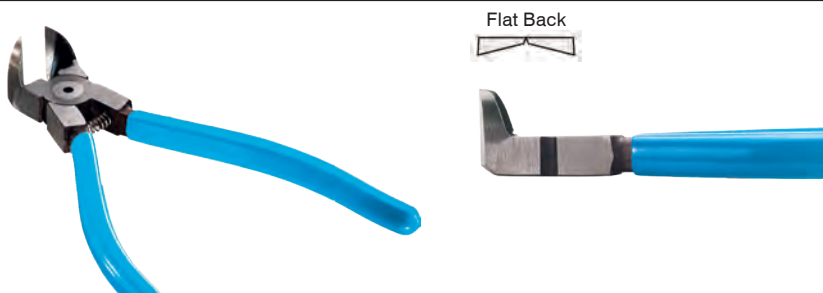
| Part No. | Cut Type | Size | Handle Type |
|----------|-----------------|-------------|--------------|
| P55 | 15° - flush cut | 5" / 125 mm | Plastic Grip |
| P65 | 15° - flush cut | 6" / 150 mm | Plastic Grip |

Gatecutter 40° Flush Cut



| Part No. | Cut Type | Size | Handle Type |
|----------|-----------------|-------------|--------------|
| P60-40 | 40° - flush cut | 6" / 150 mm | Plastic Grip |

Gatecutter 90° Flush Cut

















| Part No. | Cut Type | Size | Handle Type |
|----------|-----------------|-------------|--------------|
| P60-90 | 90° - flush cut | 6" / 150 mm | Plastic Grip |

High quality alloy steel.
 Coil spring return provides fast smooth action and improves productivity.
 Induction hardened cutting edge.
 Black oxide, anti-glare finish reduces visual fatigue and corrosion.

GATE CUTTERS

Heated Gate Cutters



| Part No. | Back | Blade Length (mm) | Blade Type | Blade Angle | Size (mm) | Cut capacity (mm) | Weight | |
|----------|--|-------------------|-----------------------|-------------|-----------|-------------------|--------|---|
| HT-120 | Flat Back  | 10 | End Cut | – | 150 | ø 4 | 270 g |  |
| HT-130 | Flat Back  | 27 | Long | 10° | 165 | ø 4 | 270 g |  |
| HT-140 | Flat Back  | 22 | Flat | – | 160 | ø 4 | 265 g |  |
| HT-160 | Curved Back  | 16 | Narrow | 10° | 150 | ø 4 | 240 g |  |
| HT-170 | Flat Back  | 22 | Angle | 40° | 150 | ø 4 | 250 g |  |
| HT-180 | Curved Back  | 16 | Standard | 25° | 190 | ø 4 | 250 g |  |
| HT-200 | Curved Back  | 23 | Heavy Duty 29 Watt | 16° | 190 | ø 7 | 375 g |  |

Transformer for Heated Gate Cutters



| Part No. | Power Input | Voltage output | Size (mm) |
|----------|-------------|----------------|------------|
| MHN-PS01 | 110-240V. | 24 V. | 45x110x165 |

Spare Heating Element



| Part No. | Power input | Heat Effect |
|----------|-------------|-------------|
| W-19 | 24 V | 19 Watt |
| W-29 | 24 V | 29 Watt |



PREMIUM
TOOLS FOR
PROFESSIONALS

DEBURRING TOOLS

Ceramic Knife

Ideal for curved and complicated shapes;
Excels on ultra-hard resins like Glass-fiber, carbon-fiber and talc filled plastics.

Also it can be used on soft metals like aluminum, copper and brass.

- Space age ceramics make safe deburring possible because of Workfinisher's unique non-blade like edge. (No sharp edge).
- Deburrs hard plastics effortlessly without the fear of cutting your hand or fingers in the process. (Very safe knife).
- Can be used for surface finishing the plastics moulding parts, very small, very confined areas, narrow, concave area or complex portion.



Ceramic Knife



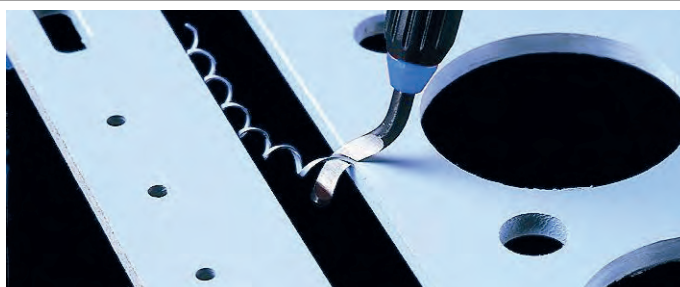
| Part No. | Blade material | Length | Blade dimension | Blade Profile |  |
|----------|-----------------|--------|-----------------|---------------|---|
| MWF133 | Ceramic 1250 HV | 133 mm | 25 x 5 mm | Convexed | 1 |

Ceramic Knife



| Part No. | Blade material | Length | Blade dimension | Blade Profile |  |
|----------|-----------------|--------|-----------------|---------------|---|
| MWF175 | Ceramic 1250 HV | 175 mm | 40 x 14 mm | Convexed | 1 |

De-burring Tool



| Part No. | Type | Blade Material | No. of blades | Blade size \varnothing |  |
|----------|--------------------|----------------|---------------|--------------------------|---|
| E02000 | Handle | Steel | 1 | 3,2 | 1 |
| BS1010 | Replacement blades | Steel | 10 | 3,2 | 1 |

Bronze Pliers Angled, Short



| Part No. | Description | Size | |
|----------|-----------------|-------------|---|
| BC60 | 60° Needle Nose | 6" / 150 mm |  1 |

Bronze Pliers Angled, Long



| Part No. | Description | Size | |
|----------|-----------------|-------------|---|
| BC90 | 60° Needle Nose | 9" / 230 mm |  1 |

Bronze Pliers Straight, Short



| Part No. | Description | Size | |
|----------|----------------------|-------------|---|
| BL60 | Straight Needle Nose | 6" / 150 mm |  1 |

Bronze Pliers Straight, Long



| Part No. | Description | Size | |
|----------|----------------------|-------------|---|
| BL90 | Straight Needle Nose | 9" / 230 mm |  1 |

Bronze Side Cutter



| Part No. | Description | Size | |
|----------|-------------|-------------|---|
| BD60 | Side Cutter | 6" / 150 mm |  1 |

High quality Bronze Pliers, reduce risk of damaging the mould.

SOFT TOOLS

Bevelled Blade Scraper



| Part No. | Blade Width | Blade Length | Total Length | Material | |
|----------|-------------|--------------|--------------|----------|---|
| BSC125L | 25 mm | 177 mm | 273 mm | Brass | 1 |
| BSC125 | 32 mm | 100 mm | 200 mm | Brass | 1 |
| BSC200 | 50 mm | 100 mm | 200 mm | Brass | 1 |

Angled Scraper no Bevel



| Part No. | Blade Width | Material | |
|----------|-------------|----------|---|
| BSC125A | 32 mm | Brass | 1 |

Knock Out Bar



| Part No. | Description | Size | |
|----------|-----------------|------|---|
| 704-31 | Knock out Bar | ø 8 | 1 |
| 705-31 | Replacement Bar | ø 8 | 1 |

Simple but effective tool that combines a tough steel rod with threaded brass replaceable tips that prevent damage to the mould surface. The quickly replaced threaded brass tip ensures that the rod never gets too short or wears out and minimises the risk of burning. The steel rod never wears out and the end will not 'mushroom' like a solid brass rod.

- Steel Rod has an anti-rust finish.
- Steel Rod has 10mm Flat for simple removal of used tips.
- Brass Tip is machined to fine point.
- Supplied complete with one replacement tip.

Steel Rod: 13mm dia. / 420mm length.
Brass Tip: 8mm dia. / 105mm length.

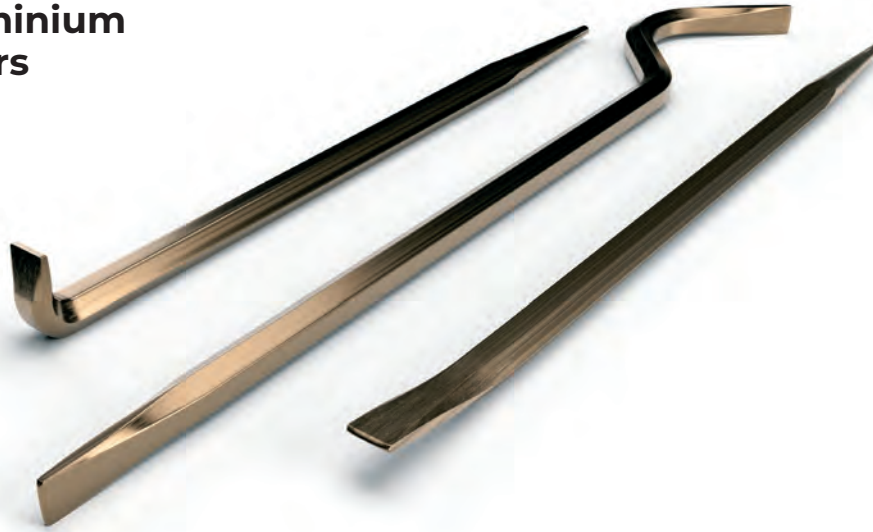
Brass Tools



| Part No. | Description | Length | |
|----------|--------------------------------------|--------|---|
| BRT5 | 5mm Diameter | 350mm | 1 |
| BRT5/90 | 5mm Diameter / 90 Degree | 350mm | 1 |
| BRT8 | 8mm Diameter | 400mm | 1 |
| BRTK | Kit Comprising BRT5 / BRT5/90 / BRT8 | | 1 |

A range of brass hand tools manufactured from high grade brass for safely working on mould tools without damaging the mould surface; ideal for removing frozen sprues or stuck parts. The tips are supplied blunt and may be shaped to suit specific requirements.

Premium Aluminium Bronze Pry Bars



Pry Bar, Radius Head



| Part No. | Length | Hex | Weight (kg) |  |
|----------|---------------|------|-------------|---|
| MPB-500 | 18" - 460 mm. | 5/8" | 0,8 | 1 |

Pry Bar, Rolling Head



| Part No. | Length | Hex | Weight (kg) |  |
|----------|---------------|------|-------------|---|
| MPB-600 | 18" - 460 mm. | 5/8" | 0,75 | 1 |

Pry Bar, Angle Head



| Part No. | Length | Hex | Weight (kg) |  |
|----------|---------------|------|-------------|---|
| MPB-700 | 18" - 460 mm. | 5/8" | 0,7 | 1 |

Description

Premium Alu-Bronze Alloy Pry Bars ideal for alignment and assemble/disassemble mould bases without risk of surface damages or scratches.

ACCESSORIES

Hot Tip Sprue Cleaner-Automatic

| Part No. | Watt | Temp. Range | Power | |
|-----------|------|-------------|-------|---|
| PS6-5AUTO | 200 | 350°C | 230V. | 1 |

The Hot Tip Sprue Cleaner is a quick heating flexible tool for melting thermoplastics from plugged sprues and nozzles. When you squeeze the trigger the powerful heater immediately heats the tip to 350°C.


- 3 Copper Tips included.
- Flexible Arm.
- 2,5 meter cord.
- Automatic timer: The integrated timer heats up the tip for approx. 10 seconds and then wait 50 seconds before next cycle is possible. A light will indicate heating action (green) and pause (red).

Replacement Tips for Sprue Cleaner

| Part No. | Number | Description | Material |
|----------|--------|------------------------|----------|
| PS6-8 | 8 | Straight Cone | Copper |
| PS6-9 | 9 | Straight Blade | |
| PS6-10 | 10 | 90° Cone | |
| PS6-11 | 11 | Straight Cylinder | |
| PS6-12 | 12 | 45° Cone | |
| PS6-13 | 13 | 45° Blade | |
| PS6-14 | 14 | Straight Cylinder Slim | |

Copper and Rawhide Mallet




| Part No. | Size | Ø | Weight | Length |  |
|----------|------|-------|--------|--------|---|
| THO208 | A | 25 mm | 355 g | 230 mm | 1 |
| THO210 | 1 | 32 mm | 710 g | 270 mm | 1 |
| THO212 | 2 | 38 mm | 1070 g | 305 mm | 1 |
| THO214 | 3 | 44 mm | 1600 g | 305 mm | 1 |
| THO216 | 4 | 50 mm | 2380 g | 355 mm | 1 |

Malleable-iron head fitted with one face of pure copper, the other highly compressed buffalo rawhide.
Wooden Handle.

Nylon Hammer




| Part No. | Face diameter | Weight | Length |  |
|----------|---------------|--------|--------|---|
| THO710 | 32 mm | 445 g | 280 mm | 1 |
| THO712 | 38 mm | 650 g | 305 mm | 1 |
| THO714 | 44 mm | 850 g | 305 mm | 1 |
| THO716 | 50 mm | 1230 g | 305 mm | 1 |

- Worn faces can be quickly replaced BY HAND providing minimum down time.
- All faces are one piece mouldings.
- There are no metal pegs or inserts which can damage the workpiece when worn.
- Serrations in the metal head prevent faces loosening in use.
- Faces have a shoulder for extra strength and to prevent fracture from misdirected blows.
- To suit a wide range of hammering applications 5 alternative hardness of screw-in faces are available – colour coded for easy identification.

Dead Blow Nylon Hammer




| Part No. | Face diameter | Weight | Length |  |
|----------|---------------|--------|--------|---|
| THO1010 | 32 mm | 550 g | 275 mm | 1 |
| THO1212 | 38 mm | 700 g | 305 mm | 1 |
| THO1414 | 44 mm | 900 g | 310 mm | 1 |
| THO1616 | 50 mm | 1150 g | 325 mm | 1 |
| THO2020 | 63 mm | 1850 g | 370 mm | 1 |

Thorace dead blow hammers are a coated die-cast head and handle of aluminium alloy with shock absorbent rubber grip.
The hollow head is partially filled with steel shot which adds to the weight, prevents rebound and delivers 'dead' blows of maximum impact.

ACCESSORIES


Spare Faces



| Face Diameter |  | Soft Grey Shore A 63-73 | Medium Red Shore D 45-55 | Tough Brown PU Shore D 58-62 | Hard White Nylon Shore D 57-61 | Extra Hard Yellow Rockwell R103 |
|---------------|---|----------------------------|-----------------------------|---------------------------------|-----------------------------------|------------------------------------|
| 32 | 10 | THO-SG10 | THO-MR10 | THO-TB10 | THO-HW10 | THO-HY10 |
| 38 | 10 | THO-SG12 | THO-MR12 | THO-TB12 | THO-HW12 | THO-HY12 |
| 44 | 10 | THO-SG14 | THO-MR14 | THO-TB14 | THO-HW14 | THO-HY14 |
| 50 | 10 | THO-SG16 | THO-MR16 | THO-TB16 | THO-HW16 | THO-HY16 |
| 63 | 10 | - | - | THO-TB20 | THO-HW20 | - |

Ballpoint L-Hex Key Sets



| Part No. | Pieces in set | Sizes | Type |  |
|----------|---------------|---|----------|---|
| BLX9 | 9 | 1.5-2-2.5-3-4-5-6-8-10 mm. | Metric | 1 |
| BLX13 | 13 | 3/64-1/16-5/64-3/32-7/64-1/8-5/32-9/64-3/16-7/32-1/4-5/16-3/8 | Imperial | 1 |

Protanium® steel and are up to 20% stronger than competitor tools.
 BriteGuard premium chrome-like finish is attractive, professional quality, and easy to clean.

Mini Grinding Machine



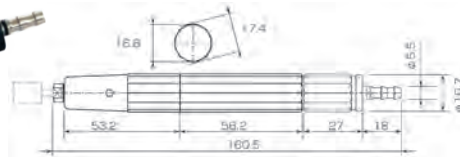
| Part No. | Speed | Voltage | Collet | Foot Control | |
|----------|--------------|------------|--------|--------------|---|
| PP35SET | 0-35.000 rpm | 115/230 V. | 3 mm | Yes | 1 |

Spare Collets



| Part No. | Collet | |
|-----------|----------|---|
| PP35C235 | 2,35 mm | 1 |
| PP35C300 | 3,00 mm | 1 |
| PP35C3175 | 3,175 mm | 1 |

Straight Air Micro Grinder

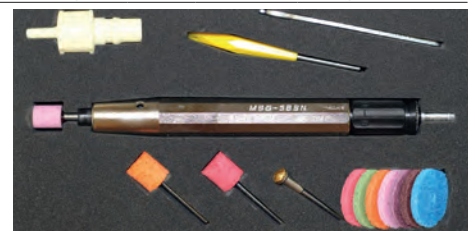


| Part No. | RPM | Collet size | Weight nt. | Weight Gross |
|----------|--------|-------------|------------|--------------|
| MSG-3BSN | 65.000 | ø 3,0 mm | 130 g | 340 g |

Outstanding accuracy and durability.
Low air consumption at 0.4 Mpa.

Set of Package

- Air hose 1.5m.
- Hose band 2 pcs.
- Quick joint.
- Over hose set pin.
- Wrench.
- Ø 10 Mounted point.
- Ø13 Mounted NSL 2 pcs.
- Lap shaft.
- Ø 25 disk type NSL 7 pcs.



POLISHING & ABRASIVES

Linear Air Polisher



| Part No. | Collet | Strokes /min | Linear Stroke | Noise level | Weight nt. | Weight Gross |
|----------|----------------------|--------------|---------------|-------------|------------|--------------|
| TLL-07 | Ø3 / 0,5-3 x 4-10 mm | 22-25.000 | 0,7 mm. | 64 dB (A) | 180 g | 340 g |

Linear reciprocating stroke filing for polishing narrow areas and corners of precision parts.
Ideal for Mould Finishing Super Stones.

Set of Package

- Turbolap (Body).
- Air hose 1.5m.
- Quick joint.
- TL Wrench.
- Super collet.
- Hose band 2 pcs.
- Over hose.
- Ceramic stone 1pc.

Carbide Burrs Set



| Part No. | Cut type | Shank |  |
|----------|------------|-------|---|
| CB10S | Double cut | 3 mm | 1 (set of 10 pcs) |

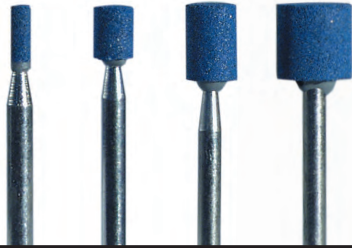
Diamond Needle File Set




| Part No. | Description | Size | Grit Size |  |
|----------|----------------------|--------|-----------|---|
| DIAZ-5 | Diamond Needle files | 140 mm | D126 | 1 |

Quality Diamond File Set, useful for working with steel, hardened steel, carbide and ceramic/glass materials.


Blue Stones Grinding Points, Shank Ø 3 x 40 mm - Cylinder



| Part No. | Head Dimensions | Hardness | Grit size | Shank dimensions | Cutting speed max. |  |
|----------|-----------------|----------|-----------|------------------|--------------------|---|
| M-15210 | Ø 2 x 5 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15212 | Ø 3 x 6 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15214 | Ø 4 x 8 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15216 | Ø 5 x 6 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15218 | Ø 5 x 10 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15220 | Ø 6 x 10 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15222 | Ø 8 x 10 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15224 | Ø 10 x 10 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |

Blue Stones Grinding Points, Shank Ø 3 x 40 mm - Cylinder



| Part No. | Head Dimensions | Hardness | Grit size | Shank dimensions | Cutting speed max. |  |
|----------|-----------------|----------|-----------|------------------|--------------------|---|
| M-15226 | Ø 3 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15228 | Ø 5 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |
| M-15230 | Ø 6 mm | QU | 120 | Ø 3 x 40 mm | 50 m/s | 10 |

Set of grinding points Blue Stones – Content: 19 Pieces



| Part No. | Grit size |  |
|----------|-----------|---|
| M-15232 | K 120 | 1 |

POLISHING & ABRASIVES

Rubber-bonded polishing points

Soft rubber bonding

Rubber-bonded polishing points

The special features of the soft rubber bond is an extremely soft cut, high surface quality and very low stock removal of the corundum grit. The outstanding elasticity of the soft rubber bond results in a relatively low cutting speed for the vibration-free operation. **Cutting speed Vmax: 15 m/s.**

Rubber-Bonded Polishing Points – Sphere



| Part No. | Head Dimensions | Grit Size | Colour | Shank Dimensions | |
|----------|-----------------|-----------|--------|------------------|----|
| M-15274 | Ø 5 mm | 120 | Red | Ø 3 x 30 mm | 10 |
| M-15240 | Ø 5 mm | 120 | Red | Ø 3 x 60 mm | 10 |
| M-15276 | Ø 8 mm | 120 | Red | Ø 3 x 30 mm | 10 |
| M-15238 | Ø 8 mm | 120 | Red | Ø 3 x 60 mm | 10 |
| M-15278 | Ø 10 mm | 120 | Red | Ø 3 x 30 mm | 10 |
| M-15236 | Ø 10 mm | 120 | Red | Ø 3 x 60 mm | 10 |
| M-15234 | Ø 13 mm | 120 | Red | Ø 3 x 30 mm | 10 |


Rubber-Bonded Polishing Points – Cylinder



| Part No. | Head Dimensions | Grit Size | Colour | Shank Dimensions | |
|----------|-----------------|-----------|--------|------------------|----|
| M-15242 | Ø 4 x 8 mm | 80 | grey | Ø 3 x 60 mm | 10 |
| M-15258 | Ø 4 x 8 mm | 120 | red | Ø 3 x 30 mm | 10 |
| M-15280 | Ø 4 x 8 mm | 220 | brown | Ø 3 x 60 mm | 10 |
| M-15296 | Ø 4 x 8 mm | 280 | green | Ø 3 x 30 mm | 10 |
| M-15244 | Ø 5 x 10 mm | 80 | grey | Ø 3 x 60 mm | 10 |
| M-15260 | Ø 5 x 10 mm | 120 | red | Ø 3 x 30 mm | 10 |
| M-15282 | Ø 5 x 10 mm | 220 | brown | Ø 3 x 60 mm | 10 |
| M-15298 | Ø 5 x 10 mm | 280 | green | Ø 3 x 30 mm | 10 |
| M-15246 | Ø 6 x 10 mm | 80 | grey | Ø 3 x 60 mm | 10 |
| M-15262 | Ø 6 x 10 mm | 120 | red | Ø 3 x 30 mm | 10 |
| M-15284 | Ø 6 x 10 mm | 220 | brown | Ø 3 x 60 mm | 10 |
| M-15300 | Ø 6 x 10 mm | 280 | green | Ø 3 x 30 mm | 10 |
| M-15248 | Ø 8 x 10 mm | 80 | grey | Ø 3 x 60 mm | 10 |
| M-15264 | Ø 8 x 10 mm | 120 | red | Ø 3 x 30 mm | 10 |
| M-15286 | Ø 8 x 10 mm | 220 | brown | Ø 3 x 60 mm | 10 |
| M-15302 | Ø 8 x 10 mm | 280 | green | Ø 3 x 30 mm | 10 |
| M-15250 | Ø 10 x 10 mm | 80 | grey | Ø 3 x 60 mm | 10 |
| M-15266 | Ø 10 x 10 mm | 120 | red | Ø 3 x 30 mm | 10 |
| M-15288 | Ø 10 x 10 mm | 220 | brown | Ø 3 x 60 mm | 10 |
| M-15304 | Ø 10 x 10 mm | 280 | green | Ø 3 x 30 mm | 10 |
| M-15252 | Ø 13 x 13 mm | 80 | grey | Ø 3 x 60 mm | 10 |
| M-15268 | Ø 13 x 13 mm | 120 | red | Ø 3 x 30 mm | 10 |
| M-15290 | Ø 13 x 13 mm | 220 | brown | Ø 3 x 60 mm | 10 |
| M-15306 | Ø 13 x 13 mm | 280 | green | Ø 3 x 30 mm | 10 |
| M-15254 | Ø 13 x 16 mm | 80 | grey | Ø 3 x 60 mm | 10 |
| M-15270 | Ø 13 x 16 mm | 120 | red | Ø 3 x 60 mm | 10 |
| M-15292 | Ø 13 x 16 mm | 220 | brown | Ø 3 x 60 mm | 10 |
| M-15308 | Ø 13 x 16 mm | 280 | green | Ø 3 x 60 mm | 10 |

Polishing Grinding Discs, Shank Ø 3 x 40 mm – Corundum



| Part No. | Polish | Head dimensions | Grit Size | Colour | Shank dimensions | Recommended speed |  |
|----------|--------------|-----------------|-----------|--------|------------------|-------------------|---|
| M-15056 | Extra Coarse | Ø 25 x 4 mm | P 36 | Brown | Ø 3 x 37 mm | 5,000 1/min | 10 |
| M-15058 | Very Coarse | Ø 25 x 4 mm | P 50 | Green | Ø 3 x 37 mm | 5,000 1/min | 10 |
| M-15050 | Medium | Ø 25 x 4 mm | P 120 | White | Ø 3 x 37 mm | 5,000 1/min | 10 |
| M-15060 | Standard | Ø 25 x 4 mm | P 220 | Red | Ø 3 x 37 mm | 5,000 1/min | 10 |
| M-15052 | Standard | Ø 25 x 4 mm | P 220 | Red | Ø 3 x 37 mm | 5,000 1/min | 10 |

Polishing Grinding Discs, Shank Ø 3 x 40 mm – Extra Fine High-Grade Corundum



| Part No. | Polish | Head dimensions | Grit Size | Colour | Shank dimensions | Recommended speed |  |
|----------|--------|-----------------|-----------|--------|------------------|-------------------|---|
| M-15054 | Fine | Ø 25 x 4 mm | P 400 | Blue | Ø 3 x 37 mm | 5,000 1/min | |

POLISHING & ABRASIVES

Polishing Brushes



| Part No. | Material | Head Dimensions | Material | Shank Dimensions | |
|----------|--------------------------------|-----------------|---------------------------|------------------|----|
| M-15092 | Polishing Brush, Wheel | Ø 5.5 X 11 mm | Goat Hair, White | Ø 3 x 37 mm | 10 |
| M-15094 | Polishing Brush, Wheel | Ø 5.5 X 11 mm | Brass, Corrugated | Ø 3 x 37 mm | 10 |
| M-15096 | Polishing Brush, Small Brush | Ø 12 X 8 mm | Brass, Corrugated | Ø 3 x 30 mm | 10 |
| M-15098 | Polishing Brush, Small Brush | Ø 12 X 8 mm | V2a Wire, Corrugated | Ø 3 x 30 mm | 10 |
| M-15100 | Polishing Brush, Cup, Bristles | Ø 8 X 4 mm | Black, Bevelled | Ø 3 x 30 mm | 10 |
| M-15102 | Polishing Brush, Cup | Ø 12 X 8 mm | Goat Hair White, Bevelled | Ø 3 x 30 mm | 10 |
| M-15104 | Polishing Brush, Cup | Ø 16 X 1 mm | Bristles, Black, Bevelled | Ø 3 x 30 mm | 10 |
| M-15106 | Polishing Brush, Cup | Ø 22 X 1 mm | Bristles, Black, Straight | Ø 3 x 30 mm | 10 |
| M-15108 | Polishing Brush, Wheel | Ø 22 X 2 mm | Goat Hair, White | Ø 3 x 37 mm | 10 |
| M-15110 | Polishing Buff, Wheel | Ø 22 X 6 mm | Fine Cotton | Ø 3 x 37 mm | 10 |

Abrasive Discs Corundum, Self-Adhesive



| Part No. | Dimensions | Grit Size | Type | |
|----------|------------|-----------|------|----|
| M-15112 | Ø 20 mm | 60 | R 1 | 50 |
| M-15114 | Ø 20 mm | 80 | R 1 | 50 |
| M-15116 | Ø 20 mm | 120 | R 1 | 50 |
| M-15118 | Ø 20 mm | 150 | R 1 | 50 |
| M-15120 | Ø 20 mm | 180 | R 1 | 50 |
| M-15122 | Ø 20 mm | 240 | R 1 | 50 |
| M-15124 | Ø 20 mm | 320 | R 1 | 50 |
| M-15126 | Ø 20 mm | 400 | R 1 | 50 |
| M-15128 | Ø 20 mm | 600 | R 1 | 50 |

Rubber Holders



| Part No. | Dimensions | Shank Dimensions | Type | |
|----------|------------|------------------|------|---|
| M-15130 | Ø 18 mm | Ø 3 x 26 mm | R 1 | 1 |

Abrasive Fleece, Shank Ø 3 mm, Triple-Layer



| | Part No. | Head dimensions | Grit Size | Shank dimensions | Rotation speed max. | |
|---|----------|-----------------|-----------|------------------|---------------------|-----------|
| Ideally suited for all metals. High stock removal on aluminium, gold and silver. • very coarse grade | M-15082 | Ø 22 x 13 mm | K 60 | Ø 3 x 40 mm | 10000 1/min | 10 pieces |
| | M-15062 | Ø 30 x 17 mm | K 60 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| | M-15072 | Ø 40 x 22 mm | K 60 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| For processing all materials, ideal for removing small scratches, for deburring etc. | M-15084 | Ø 22 x 13 mm | K 80 | Ø 3 x 40 mm | 10000 1/min | 10 pieces |
| | M-15064 | Ø 30 x 17 mm | K 80 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| | M-15074 | Ø 40 x 22 mm | K 80 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| Very well suited for processing aluminium and stainless steel. • very firm grade. | M-15086 | Ø 22 x 13 mm | K 180 | Ø 3 x 40 mm | 10000 1/min | 10 pieces |
| | M-15066 | Ø 30 x 17 mm | K 180 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| | M-15076 | Ø 40 x 22 mm | K 180 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| For processing all metals, highly versatile | M-15088 | Ø 22 x 13 mm | K 240 | Ø 3 x 40 mm | 10000 1/min | 10 pieces |
| | M-15068 | Ø 30 x 17 mm | K 240 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| | M-15078 | Ø 40 x 22 mm | K 240 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |
| Using this grinding fleece results in a slight shine. Ideal for aluminium, stainless steels, etc. | M-25100 | Ø 22 x 13 mm | K 400 | Ø 3 x 40 mm | 10000 1/min | 10 pieces |
| | M-25105 | Ø 25 x 17 mm | K 400 | Ø 3 x 40 mm | 10000 1/min | 10 pieces |
| | M-25110 | Ø 30 x 17 mm | K 400 | Ø 3 x 40 mm | 8000 1/min | 10 pieces |

Grit Fleece

Very Coarse = K 60, Coarse = K 80, Medium = K 180, Fine = K 240, Very Fine = K 400, Ultra Fine = K 1000

POLISHING & ABRASIVES

Diamond compounds

Oil and alcohol soluble

Our best-selling diamond compound.

Specially designed for the new types of steel that tools are manufactured in. To be used neat or with just two drops of diamond fluid. Normally, diamond compounds must be used with a large amount of fluid. Using a large amount of fluid, however, has the effect of making the diamond compound runny, so that a lot of it is simply projected away during polishing. Mouldpro diamond compound effectively creates a precisely calibrated, blocky diamond grit, which guarantees top-quality polishing. The result is an incomparably high level of removal on all materials: From soft aluminium to the hardest ceramics as well as for unlimited use on all grades of steel and tungsten carbides.

Diamond Compounds, Oil and Alcohol Soluble



| Part No. | Content | Grit Size | Concentration | Colour | |
|----------|---------|-----------|---------------|----------|--|
| MPD1 | 5 g | 1 µm | Extra Strong | Blue | |
| MPD3 | 5 g | 3 µm | Extra Strong | Yellow | |
| MPD6 | 5 g | 6 µm | Extra Strong | Green | |
| MPD8 | 5 g | 9 µm | Extra Strong | Red | |
| MPD14 | 5 g | 14 µm | Extra Strong | Brown | |
| MPD25 | 5 g | 25 µm | Extra Strong | Mahogany | |

Diamond Compounds, Oil and Alcohol Soluble




| Part No. | Content | Grit Size | Concentration | Colour | |
|----------|---------|-----------|---------------|----------|--|
| MPD1-10 | 10 g | 1 µm | Extra Strong | Blue | |
| MPD3-10 | 10 g | 3 µm | Extra Strong | Yellow | |
| MPD6-10 | 10 g | 6 µm | Extra Strong | Green | |
| MPD8-10 | 10 g | 9 µm | Extra Strong | Red | |
| MPD14-10 | 10 g | 14 µm | Extra Strong | Brown | |
| MPD25-10 | 10 g | 25 µm | Extra Strong | Mahogany | |

Polycrystalline diamond compounds

Polycrystalline diamond compound consists of a low-viscosity, easily spreadable oil-soluble carrier with hard synthetic diamonds (PKD). The polycrystalline diamond is significantly stronger than the cheaper monocrystalline diamond. Owing to the high stock removal rates, this compound is particularly suitable for hard materials such as ceramic, carbide, cobalt, titanium or nickel.

Polycrystalline Diamond Compound, Oil Soluble



| Part No. | Content | Grit Size | Concentration | Colour |  |
|----------|---------|-----------|---------------|------------------|---|
| PKD1 | 5 g | 1 µm | Extra Strong | 1 my / Blue | 1 |
| PKD3 | 5 g | 3 µm | Extra Strong | 3 my / Green | 1 |
| PKD6 | 5 g | 6 µm | Extra Strong | 6 my / Yellow | 1 |
| PKD9 | 5 g | 9 µm | Extra Strong | 9 my / Red | 1 |
| PKD15 | 5 g | 15 µm | Extra Strong | 15 my / Brown | 1 |
| PKD25 | 5 g | 25 µm | Extra Strong | 25 my / Mahogany | 1 |


Diamond Fluids

Diamond fluid, oil soluble

Specially for diamond compounds, with 100% corrosion protection.

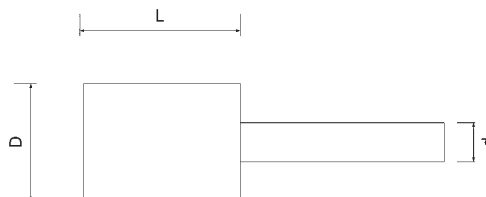
Diamond fluid, Oil Soluble




| Part No. | Content |  |
|----------|---------|---|
| M-15440 | 0.5 L | 1 |
| M-15442 | 2.5 L | 1 |

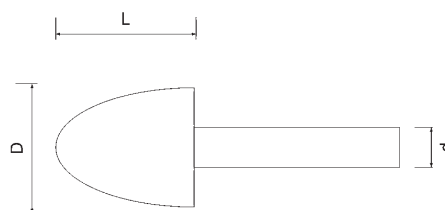
POLISHING & ABRASIVES


Felt Bobs - Cylindrical



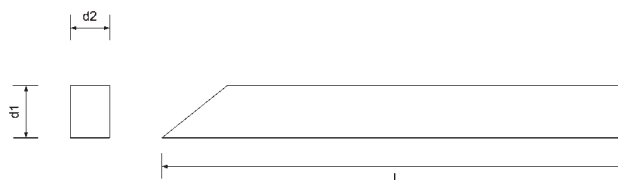
| Part No. | D | L | d1 |  |
|----------|----|----|----|---|
| FIL612C | 6 | 12 | 3 | 1 (bag of 10 pcs) |
| FIL1012C | 10 | 12 | 3 | 1 (bag of 10 pcs) |
| FIL1219C | 12 | 19 | 3 | 1 (bag of 10 pcs) |
| FIL1632C | 16 | 32 | 3 | 1 (bag of 10 pcs) |
| FIL1932C | 19 | 32 | 6 | 1 (bag of 10 pcs) |
| FIL3238C | 32 | 38 | 6 | 1 (bag of 10 pcs) |


Felt Bobs - Cone Shape



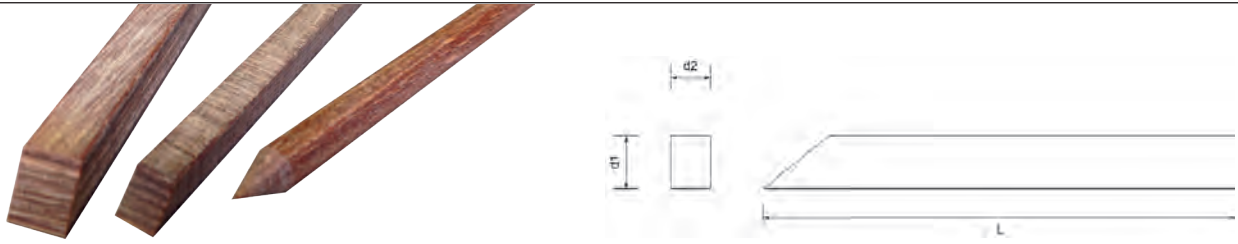
| Part No. | D | L | d1 |  |
|----------|----|----|----|---|
| FIL616K | 6 | 16 | 3 | 1 (bag of 10 pcs) |
| FIL1012K | 10 | 12 | 3 | 1 (bag of 10 pcs) |
| FIL1219K | 12 | 19 | 3 | 1 (bag of 10 pcs) |
| FIL1625K | 16 | 25 | 3 | 1 (bag of 10 pcs) |
| FIL1925K | 19 | 25 | 6 | 1 (bag of 10 pcs) |


Felt Sticks - Hardened



| Part No. | d1 | d2 | L |  |
|------------|----|----|-----|---|
| FIL66100 | 6 | 6 | 100 | 1 (bag of 10 pcs) |
| FIL1010150 | 10 | 10 | 150 | 1 (bag of 10 pcs) |


Hard Wood Lapping Sticks



| Part No. | Shape | d1 | d2 | L |  |
|----------|-------------|----|-----|-----|---|
| LS3 | Rectangular | 3 | 4,5 | 150 | 1 (bag of 10 pcs) |
| LS6 | Rectangular | 6 | 4,5 | 150 | 1 (bag of 10 pcs) |
| LSS3 | Square | 3 | 3 | 150 | 1 (bag of 10 pcs) |
| LSS6 | Square | 6 | 6 | 150 | 1 (bag of 10 pcs) |
| LSR3 | Round | ø3 | ø3 | 150 | 1 (bag of 10 pcs) |
| LSR6 | Round | ø6 | ø6 | 150 | 1 (bag of 10 pcs) |

Handpads



| Part No. | Size | Grade | Colour |  |
|----------|------------|------------|------------|---|
| NHP021 | 155x225 mm | Fine | Green | 1 (Bags of 10 pcs) |
| NHP006 | 155x225 mm | Very Fine | Maroon | 1 (Bags of 10 pcs) |
| NHP008 | 155x225 mm | Ultra Fine | Light Grey | 1 (Bags of 10 pcs) |

A range of general purpose handpads designed for cleaning and finishing applications.

Copper Gauze



| Part No. | Width | Length |  |
|----------|-------|--------|---|
| CG30 | 130 | 30m. | 1 |

Knitted Copper, Reversible Soft Copper perfect for cleaning Screws etc.

POLISHING & ABRASIVES

Mould Finishing Super Stones

New SuperStone offers an improved cutting ability, longer life and an increased heat resistance of approximately 45% over the conventional type. New SuperStone can be used in ultrasonic polishing machines, electric micro grinders, reciprocating profilers, or by hand use with holder.

SuperStone can also be used on soft metals such as aluminium, copper and brass.

- Incredible strength and flexibility. It will offer excellent polishing ability even under every strenuous condition.
- Non-clogging. Beautiful polishing result on all types of metals in small and detailed areas.
- Available in any dimensions in flat/round profiles upon your demand.
- Available in grit 80 to 1200. Easy to identify by colour-coding.



Flat Type



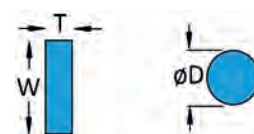
| Size (mm) T x W x L | VIOLET (#80) | EMERALD (#120) | GOLD (#180) | L.BROWN (#300) | ORANGE (#400) | BROWN (#600) | BLUE (#800) | WHITE (#1000) | RED (#1200) | |
|------------------------|-----------------|-------------------|----------------|-------------------|------------------|-----------------|----------------|------------------|----------------|---|
| 0.8 x 4 x 100 | NSV084 | NSE084 | NSG084 | NSL084 | NSO084 | NSP084 | NSB084 | NSW084 | NSR084 | 1 |
| 0.8 x 4 x 150 | NSV084L | NSE084L | NSG084L | NSL084L | NSO084L | NSP084L | NSB084L | NSW084L | NSR084L | 1 |
| 0.8 x 6 x 100 | NSV086 | NSE086 | NSG086 | NSL086 | NSO086 | NSP086 | NSB086 | NSW086 | NSR086 | 1 |
| 0.8 x 6 x 150 | NSV086L | NSE086L | NSG086L | NSL086L | NSO086L | NSP086L | NSB086L | NSW086L | NSR086L | 1 |
| 1.0 x 4 x 100 | NSV104 | NSE104 | NSG104 | NSL104 | NSO104 | NSP104 | NSB104 | NSW104 | NSR104 | 1 |
| 1.0 x 4 x 150 | NSV104L | NSE104L | NSG104L | NSL104L | NSO104L | NSP104L | NSB104L | NSW104L | NSR104L | 1 |
| 1.0 x 6 x 100 | NSV106 | NSE106 | NSG106 | NSL106 | NSO106 | NSP106 | NSB106 | NSW106 | NSR106 | 1 |
| 1.0 x 6 x 150 | NSV106L | NSE106L | NSG106L | NSL106L | NSO106L | NSP106L | NSB106L | NSW106L | NSR106L | 1 |
| 1.5 x 4 x 100 | NSV154 | NSE154 | NSG154 | NSL154 | NSO154 | NSP154 | NSB154 | NSW154 | NSR154 | 1 |
| 1.5 x 4 x 150 | NSV154L | NSE154L | NSG154L | NSL154L | NSO154L | NSP154L | NSB154L | NSW154L | NSR154L | 1 |
| 1.5 x 6 x 100 | NSV156 | NSE156 | NSG156 | NSL156 | NSO156 | NSP156 | NSB156 | NSW156 | NSR156 | 1 |
| 1.5 x 6 x 150 | NSV156L | NSE156L | NSG156L | NSL156L | NSO156L | NSP156L | NSB156L | NSW156L | NSR156L | 1 |

Round Type



| Size (mm) D x L | VIOLET (#80) | EMERALD (#120) | GOLD (#180) | L.BROWN (#300) | ORANGE (#400) | BROWN (#600) | BLUE (#800) | WHITE (#1000) | RED (#1200) | |
|--------------------|-----------------|-------------------|----------------|-------------------|------------------|-----------------|----------------|------------------|----------------|---|
| 3,0 x 100 | NSVD3B | NSED3B | NSGD3B | NSLD3B | NSOD3B | NSPD3B | NSBD3B | NSWD3B | NSRD3B | 1 |
| 3,0 x 150 | NSVD3BL | NSED3BL | NSGD3BL | NSLD3BL | NSOD3BL | NSPD3BL | NSBD3BL | NSWD3BL | NSRD3BL | 1 |

Stone Holders



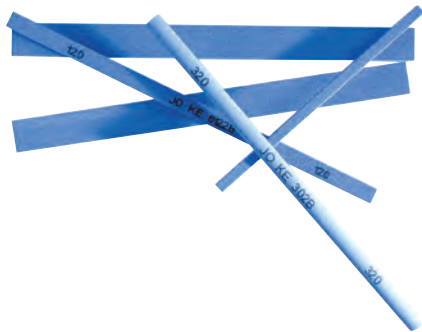
| Part No. | W (mm) | T (mm) | D (mm) | |
|----------|--------|---------|--------|---|
| SSH-4 | 4 | 0,5 - 3 | - | 1 |
| SSH-6 | 6 | 0,5 - 3 | - | 1 |
| SNH-30 | - | - | ø3 | 1 |


Grinding and polishing stones

Gesswein® EDM BLUE

Premium aluminium oxide stones. The hardest Gesswein® stones. Ideal for use with hand-filing machines and ultrasonic polishing systems. As these stones are a lot harder than the EDM series, they are better suited for the quick removal of hard erosion skin. Optimum results in conjunction with fluid.

Grinding and Polishing Stones Gesswein® EDM BLUE



| | Part No. | Dimensions | Grit size | Type |  |
|--------------------|--------------|-----------------|--------------|---------------|---|
| Square | M-15312 | 4 x 4 x 100 mm | 120 | EDM BLUE 61 | 12 |
| | M-15314 | 4 x 4 x 100 mm | 180 | EDM BLUE 62 | 12 |
| | M-15316 | 4 x 4 x 100 mm | 220 | EDM BLUE 622 | 12 |
| | M-15318 | 4 x 4 x 100 mm | 320 | EDM BLUE 63 | 12 |
| | M-15320 | 4 x 4 x 100 mm | 400 | EDM BLUE 64 | 12 |
| | M-15322 | 4 x 4 x 100 mm | 600 | EDM BLUE 66 | 12 |
| | M-15324 | 6 x 6 x 150 mm | 120 | EDM BLUE 6122 | 12 |
| | M-15326 | 6 x 6 x 150 mm | 180 | EDM BLUE 6182 | 12 |
| | M-15328 | 6 x 6 x 150 mm | 220 | EDM BLUE 6202 | 12 |
| | M-15330 | 6 x 6 x 150 mm | 320 | EDM BLUE 6302 | 12 |
| | M-15332 | 6 x 6 x 150 mm | 400 | EDM BLUE 6402 | 12 |
| | M-15334 | 6 x 6 x 150 mm | 600 | EDM BLUE 6602 | 12 |
| | Round | M-15348 | Ø 6 x 150 mm | 120 | EDM BLUE E122 |
| M-15350 | | Ø 6 x 150 mm | 180 | EDM BLUE E182 | 12 |
| M-15352 | | Ø 6 x 150 mm | 320 | EDM BLUE E302 | 12 |
| Rectangular | M-15336 | 13 x 6 x 150 mm | 120 | EDM BLUE 6124 | 12 |
| | M-15338 | 13 x 6 x 150 mm | 180 | EDM BLUE 6184 | 12 |
| | M-15340 | 13 x 6 x 150 mm | 220 | EDM BLUE 6204 | 12 |
| | M-15342 | 13 x 6 x 150 mm | 320 | EDM BLUE 6304 | 12 |
| | M-15344 | 13 x 6 x 150 mm | 400 | EDM BLUE 6404 | 12 |
| | M-15346 | 13 x 6 x 150 mm | 600 | EDM BLUE 6604 | 12 |



Bonding



Stock removal



Wear



Application



POLISHING & ABRASIVES

Grinding and polishing stones

Gesswein® DIEMAKER

The original "diemaker stones". Medium hard aluminium oxide combined with a semi-soft bond results in a DF stone quality with high dimensional stability and existing contours are therefore easily rectified. They are mainly used for cutting and punching tools, but are also very suitable for mould and tool making.

Grinding and Polishing Stones Gesswein® EDM



| | Part No. | Dimensions | Grit size | Type | |
|---------------|------------------|------------------|---------------|---------------|----|
| Square | M-15354 | 4 x 4 x 100 mm | 220 | DIEMAKER 2 | 14 |
| | M-15356 | 4 x 4 x 100 mm | 320 | DIEMAKER 3 | 14 |
| | M-15358 | 4 x 4 x 100 mm | 400 | DIEMAKER 4 | 14 |
| | M-15360 | 4 x 4 x 100 mm | 600 | DIEMAKER 6 | 14 |
| | M-15362 | 4 x 4 x 100 mm | 800 | DIEMAKER 8 | 14 |
| | M-15364 | 4 x 6 x 150 mm | 900 | DIEMAKER 9 | 14 |
| | M-15365 | 6 x 6 x 150 mm | 150 | DIEMAKER 2102 | 14 |
| | M-15366 | 6 x 6 x 150 mm | 220 | DIEMAKER 2202 | 14 |
| | M-15368 | 6 x 6 x 150 mm | 320 | DIEMAKER 2302 | 14 |
| | M-15370 | 6 x 6 x 150 mm | 400 | DIEMAKER 2402 | 14 |
| | M-15372 | 6 x 6 x 150 mm | 600 | DIEMAKER 2602 | 14 |
| | M-15374 | 6 x 6 x 150 mm | 900 | DIEMAKER 2902 | 14 |
| | M-15375 | 10 x 10 x 150 mm | 150 | DIEMAKER 2108 | 14 |
| | M-15376 | 10 x 10 x 150 mm | 220 | DIEMAKER 2208 | 14 |
| | M-15378 | 10 x 10 x 150 mm | 320 | DIEMAKER 2308 | 14 |
| | M-15380 | 10 x 10 x 150 mm | 400 | DIEMAKER 2408 | 14 |
| | M-15382 | 10 x 10 x 150 mm | 600 | DIEMAKER 2608 | 14 |
| | M-15384 | 10 x 10 x 150 mm | 900 | DIEMAKER 2908 | 14 |
| | M-15385 | 13 x 13 x 150 mm | 150 | DIEMAKER 2105 | 14 |
| | M-15386 | 13 x 13 x 150 mm | 220 | DIEMAKER 2205 | 14 |
| M-15388 | 13 x 13 x 150 mm | 320 | DIEMAKER 2305 | 14 | |
| M-15390 | 13 x 13 x 150 mm | 400 | DIEMAKER 2405 | 14 | |
| Round | M-15396 | Ø 6 x 150 mm | 220 | DIEMAKER 3202 | 14 |
| | M-15398 | Ø 6 x 150 mm | 320 | DIEMAKER 3302 | 14 |
| | M-15400 | Ø 6 x 150 mm | 400 | DIEMAKER 3402 | 14 |
| | M-15402 | Ø 6 x 150 mm | 600 | DIEMAKER 3602 | 14 |
| | M-15404 | Ø 6 x 150 mm | 900 | DIEMAKER 3902 | 14 |
| | M-15406 | Ø 10 x 150 mm | 220 | DIEMAKER 3208 | 14 |
| | M-15408 | Ø 10 x 150 mm | 320 | DIEMAKER 3308 | 14 |
| | M-15410 | Ø 10 x 150 mm | 400 | DIEMAKER 3408 | 14 |
| | M-15412 | Ø 10 x 150 mm | 600 | DIEMAKER 3608 | 14 |



Bonding



Wear



Stock removal



Application

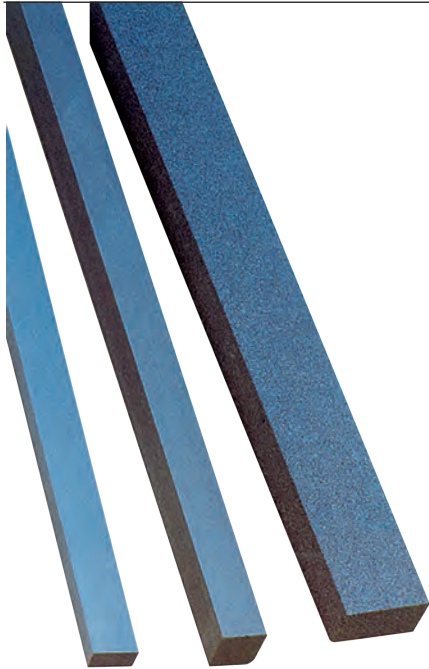


Grinding and polishing stones

Gesswein® MOLDMAKER / MOLDMAKER PLUS

These stones produce a semi-gloss surface. As abrasive for these stones, silicon carbide or Premium silicon carbide is used. The soft bonding results in fast cutting action and largely prevents clogging. Since these stones easily adapt to the required profile, they are ideal for outlines and radii.

Grinding and Polishing Stones Gesswein® MOLDMAKER



| | Part No. | Dimensions | Grit size | Type | |
|--------------------|----------|-----------------|-----------|----------------|----|
| Square | M-15424 | 6 x 6 x 150 mm | 220 | MOLDMAKER 1202 | 12 |
| | M-15426 | 6 x 6 x 150 mm | 320 | MOLDMAKER 1302 | 12 |
| | M-15428 | 6 x 6 x 150 mm | 400 | MOLDMAKER 1402 | 12 |
| | M-15430 | 6 x 6 x 150 mm | 600 | MOLDMAKER 1602 | 12 |
| Rectangular | M-15432 | 13 x 6 x 150 mm | 220 | MOLDMAKER 1204 | 12 |
| | M-15434 | 13 x 6 x 150 mm | 320 | MOLDMAKER 1304 | 12 |
| | M-15436 | 13 x 6 x 150 mm | 400 | MOLDMAKER 1404 | 12 |
| | M-15438 | 13 x 6 x 150 mm | 600 | MOLDMAKER 1604 | 12 |



Bonding



Stock removal



Wear



Application



POLISHING & ABRASIVES

Economy Abrasive Coth Rolls Premium Corundum

Premium abrasive cloth delivered – on 50 m rolls. Likewise very flexible, yet with high edge stability and easy to tear to the desired size.

Premium Economy Abrasive Cloth Roll, 50 M, VSM, KK 114 F



| Part No. | With | Grit Size | Design | |
|----------|-------|-----------|----------|---|
| M-15138 | 25 mm | 80 | KK 114 F | 1 |
| M-15132 | 25 mm | 120 | KK 114 F | 1 |
| M-15140 | 25 mm | 150 | KK 114 F | 1 |
| M-15142 | 25 mm | 180 | KK 114 F | 1 |
| M-15144 | 25 mm | 240 | KK 114 F | 1 |
| M-15146 | 25 mm | 320 | KK 114 F | 1 |
| M-15148 | 25 mm | 400 | KK 114 F | 1 |
| M-15150 | 40 mm | 80 | KK 114 F | 1 |
| M-15134 | 40 mm | 120 | KK 114 F | 1 |
| M-15152 | 40 mm | 150 | KK 114 F | 1 |
| M-15154 | 40 mm | 180 | KK 114 F | 1 |
| M-15156 | 40 mm | 240 | KK 114 F | 1 |
| M-15158 | 40 mm | 320 | KK 114 F | 1 |
| M-15160 | 40 mm | 400 | KK 114 F | 1 |
| M-15162 | 50 mm | 80 | KK 114 F | 1 |
| M-15136 | 50 mm | 120 | KK 114 F | 1 |
| M-15164 | 50 mm | 150 | KK 114 F | 1 |
| M-15166 | 50 mm | 180 | KK 114 F | 1 |
| M-15168 | 50 mm | 240 | KK 114 F | 1 |
| M-15170 | 50 mm | 320 | KK 114 F | 1 |
| M-15172 | 50 mm | 400 | KK 114 F | 1 |

Practical:

The grit sizes 60 to 400 are supplied in a cardboard dispenser with a cutting edge.



Use with or without
coolant/lubricant!

Abrasive paper Silicon carbide

The well-known wet abrasive paper. Owing to the very fine grit size, suitable up to the polishing stage. Use wet and dry on all steels and nonferrous metals. An insider's tip for aluminium!

Silicon Carbide Abrasive Paper



| Part No. | Dimensions | Grit Size | Type |  |
|----------|--------------|-----------|-------|---|
| M-15174 | 230 x 280 mm | 150 | 991 C | 50 |
| M-15176 | 230 x 280 mm | 180 | 991 C | 50 |
| M-15178 | 230 x 280 mm | 220 | 991 C | 50 |
| M-15180 | 230 x 280 mm | 240 | 991 C | 50 |
| M-15182 | 230 x 280 mm | 280 | 991 C | 50 |
| M-15184 | 230 x 280 mm | 320 | 991 C | 50 |
| M-15186 | 230 x 280 mm | 400 | 991 C | 50 |
| M-15188 | 230 x 280 mm | 500 | 991 C | 50 |
| M-15190 | 230 x 280 mm | 600 | 991 C | 50 |
| M-15192 | 230 x 280 mm | 800 | 991 C | 50 |
| M-15194 | 230 x 280 mm | 1000 | 991 C | 50 |
| M-15196 | 230 x 280 mm | 1200 | 991 C | 50 |
| M-15198 | 230 x 280 mm | 2000 | 991 A | 50 |
| M-15200 | 230 x 280 mm | 2500 | 991 A | 50 |
| M-15202 | 230 x 280 mm | 3000 | 991 A | 50 |
| M-15204 | 230 x 280 mm | 5000 | 991 A | 50 |
| M-15206 | 230 x 280 mm | 1500 | 991 A | 50 |
| M-15208 | 230 x 280 mm | 7000 | 991 A | 50 |

Difference between A and C grades?

The A and C grade wet abrasive papers differ in the specific weight of the base:

- A ≤ 115 g/m²
- C > 115 g/m²




Use with or without
coolant/lubricant!

BRUSHES


Small Bore Cleaning Brush (Brass / Nylon) With Loop Handle



| Part No. Brass | Part No. Nylon | Diameter | Brush Length | Total length |  |
|----------------|----------------|----------|--------------|--------------|---|
| - | SN2 | 2 | 100 | 300 | 1 |
| SB3 | SN3 | 3 | 100 | 300 | 1 |
| SB4 | SN4 | 4 | 100 | 300 | 1 |
| SB5 | SN5 | 5 | 100 | 300 | 1 |
| SB6 | SN6 | 6 | 100 | 300 | 1 |
| SB8 | SN8 | 8 | 100 | 300 | 1 |
| SB10 | SN10 | 10 | 100 | 300 | 1 |
| SB12 | SN12 | 12 | 100 | 300 | 1 |
| SB15 | SN15 | 15 | 100 | 300 | 1 |
| SB20 | SN20 | 20 | 100 | 300 | 1 |
| SB25 | SN25 | 25 | 100 | 300 | 1 |

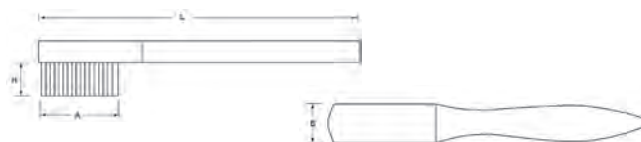
Condenser Brush




| Part No. Brass | Part No. Nylon | Diameter mm | Thread | Brush Length | Total Length |  |
|----------------|----------------|-------------|--------|--------------|--------------|---|
| CBB6 | CBN6 | 6 | M4 | 80 | 115 | 1 |
| CBB8 | CBN8 | 8 | M6 | 80 | 115 | 1 |
| CBB10 | CBN10 | 10 | M6 | 80 | 115 | 1 |
| CBB12 | CBN12 | 12 | M6 | 80 | 115 | 1 |
| CBB14 | CBN14 | 14 | M6 | 80 | 115 | 1 |
| CBB16 | CBN16 | 16 | M6 | 80 | 115 | 1 |
| CBB18 | CBN18 | 18 | M6 | 80 | 115 | 1 |
| CBB20 | CBN20 | 20 | M6 | 80 | 115 | 1 |

Single Spiral Brush with thread, ideal for cleaning inside bores.

Hand Brush



| Part No. | Material | Rows | L | B | A | H |  |
|----------|----------|--------|-----|----|-----|----|---|
| HBM3-5 | Brass | 3 x 5 | 150 | 15 | 35 | 15 | 1 |
| HBM5-10 | Brass | 5 x 10 | 190 | 24 | 55 | 12 | 1 |
| HBM4-15 | Brass | 4 x 15 | 290 | 40 | 140 | 25 | 1 |

Allround brushes with wooden handle. Perfect for cleaning surfaces without damaging the Mould parts.

Pipe brushes Nylon with silicon carbide

Pipe brushes


Pipe brushes are ideally suited for deburring and cleaning work in crossways drillings and insertions. The flexible trimming made of nylon prevents breakage of the material even with the highest stress and deformation.

The pipe brushes are available in two different versions:

- nylon standard with silicon carbide
- nylon standard with corundum

Nylon Silicon Carbide Pipe Brushes - SiC




| Part No. | Abrasive | Head dimensions | Grit size | Shank dimensions | Total length | Rotation speed max. |  |
|----------|----------|-----------------|-----------|------------------|--------------|---------------------|---|
| M-15000 | SiC | Ø 0.7 x 12 mm | K 1000 | Ø 0.42 mm | 100 mm | 700 1/min | 1 |
| M-15002 | SiC | Ø 1.2 x 12 mm | K 1000 | Ø 0.47 mm | 100 mm | 700 1/min | 1 |
| M-15004 | SiC | Ø 1.9 x 18 mm | K 1000 | Ø 0.74 mm | 100 mm | 700 1/min | 1 |
| M-15006 | SiC | Ø 2.2 x 18 mm | K 1000 | Ø 0.94 mm | 100 mm | 700 1/min | 1 |
| M-15008 | SiC | Ø 2.6 x 25 mm | K 1000 | Ø 1.08 mm | 100 mm | 700 1/min | 1 |
| M-15010 | SiC | Ø 3.2 x 25 mm | K 1000 | Ø 1.66 mm | 100 mm | 700 1/min | 1 |
| M-15012 | SiC | Ø 3.5 x 25 mm | K 1000 | Ø 1.66 mm | 100 mm | 700 1/min | 1 |

Using nylon pipe brushes smooths the surface and positively influences the latter for subsequent use. The twisted wire is zinc-coated. Linear use by hand and clockwise in machines.

Nylon-Corundum Pipe Brushes - Corundum

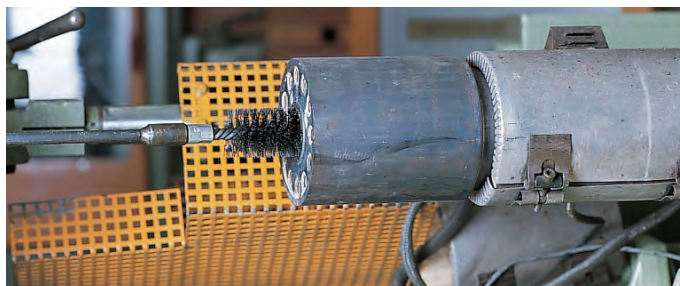



| Part No. | Abrasive | Head dimensions | Grit size | Shank dimensions | Total length | Rotation speed max. |  |
|----------|----------|-----------------|-----------|------------------|--------------|---------------------|---|
| M-15014 | Corundum | Ø 4.2 x 25 mm | K 600 | Ø 2.2 mm | 125 mm | 700 1/min | 1 |
| M-15016 | Corundum | Ø 4.8 x 25 mm | K 600 | Ø 2.2 mm | 125 mm | 700 1/min | 1 |
| M-15018 | Corundum | Ø 5.5 x 25 mm | K 600 | Ø 2.2 mm | 125 mm | 700 1/min | 1 |
| M-15020 | Corundum | Ø 6.6 x 25 mm | K 600 | Ø 3 mm | 125 mm | 700 1/min | 1 |
| M-15022 | Corundum | Ø 8.2 x 25 mm | K 600 | Ø 3 mm | 125 mm | 700 1/min | 1 |
| M-15024 | Corundum | Ø 9.8 x 25 mm | K 600 | Ø 3.4 mm | 125 mm | 700 1/min | 1 |
| M-15026 | Corundum | Ø 11.5 x 25 mm | K 600 | Ø 3.4 mm | 125 mm | 700 1/min | 1 |
| M-15028 | Corundum | Ø 13.0 x 25 mm | K 600 | Ø 4.2 mm | 125 mm | 700 1/min | 1 |
| M-15030 | Corundum | Ø 16.0 x 25 mm | K 600 | Ø 4.2 mm | 125 mm | 700 1/min | 1 |
| M-15032 | Corundum | Ø 17.5 x 25 mm | K 600 | Ø 4.2 mm | 125 mm | 700 1/min | 1 |
| M-15034 | Corundum | Ø 19.4 x 25 mm | K 600 | Ø 5.6 mm | 125 mm | 700 1/min | 1 |
| M-15036 | Corundum | Ø 22.6 x 25 mm | K 600 | Ø 5.6 mm | 125 mm | 700 1/min | 1 |
| M-15038 | Corundum | Ø 25.8 x 25 mm | K 600 | Ø 6.2 mm | 125 mm | 700 1/min | 1 |

Using nylon pipe brushes smooths the surface and positively influences the latter for subsequent use. The twisted wire is zinc-coated. Linear use by hand and clockwise in machines.

BRUSHES

Barrel Cleaning Brushes




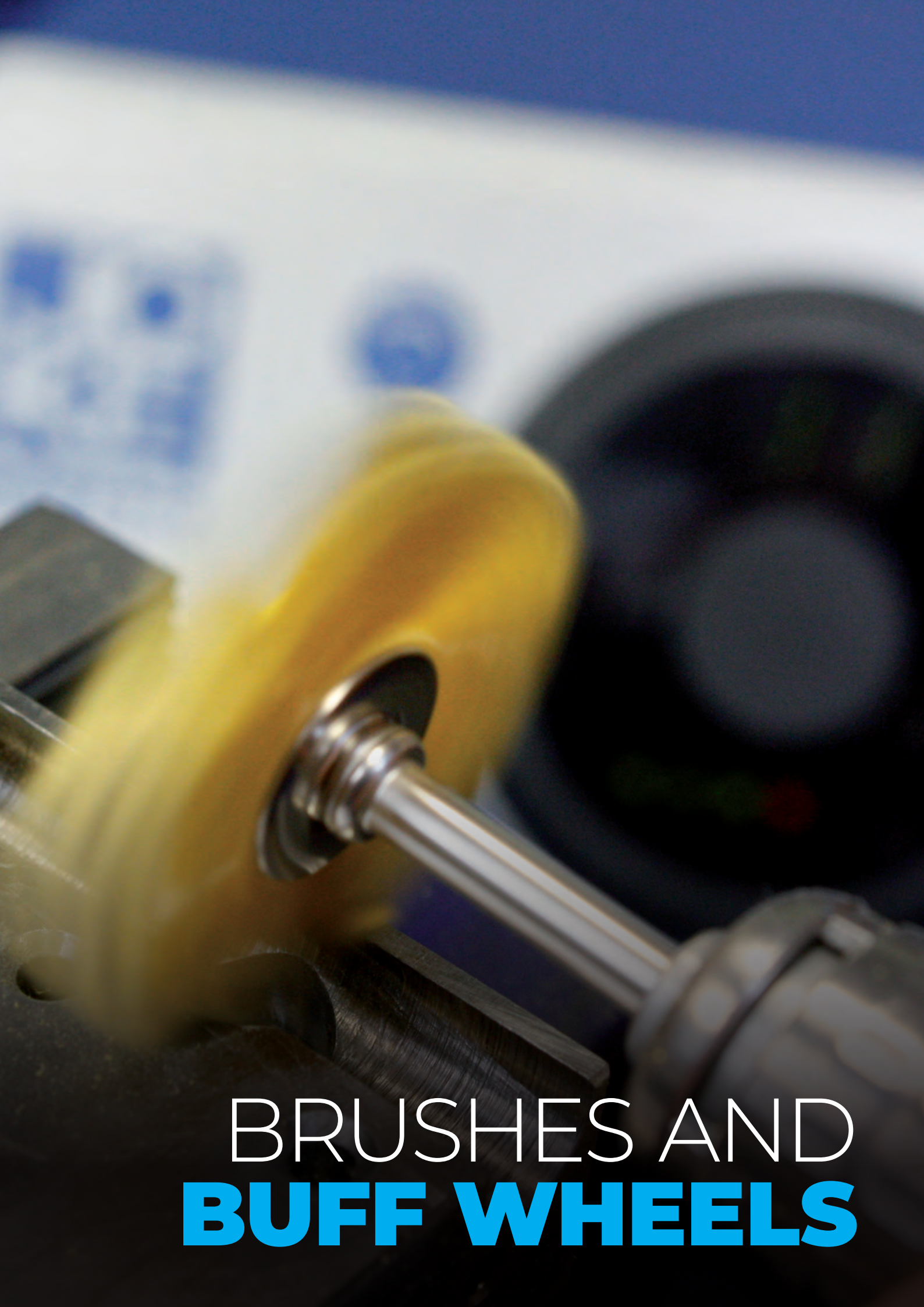
| Part No. | Diameter mm | Diameter Inch | Thread | Brush Length | Total Length |  |
|----------|-------------|---------------|--------|--------------|--------------|---|
| BC20 | 20 | 3/4" | W 3/8" | 100 | 150 | 1 |
| BC22 | 22 | 7/8" | W 3/8" | 100 | 150 | 1 |
| BC25 | 25 | 1" | W 3/8" | 100 | 150 | 1 |
| BC28 | 28 | 1-1/8" | W 3/8" | 100 | 150 | 1 |
| BC30 | 30 | 1-1/4" | W 1/2" | 100 | 160 | 1 |
| BC35 | 35 | 1-1/4" | W 1/2" | 100 | 160 | 1 |
| BC40 | 40 | 1-1/2" | W 1/2" | 100 | 160 | 1 |
| BC44 | 44 | 1-1/4" | W 1/2" | 100 | 160 | 1 |
| BC50 | 50 | 2" | W 1/2" | 100 | 160 | 1 |
| BC57 | 57 | 2-1/4" | W 1/2" | 100 | 160 | 1 |
| BC63 | 63 | 2-1/2" | W 1/2" | 100 | 160 | 1 |
| BC69 | 69 | 2-3/4" | W 1/2" | 100 | 160 | 1 |
| BC75 | 75 | 3" | W 1/2" | 100 | 160 | 1 |
| BC82 | 82 | 3-1/4" | W 1/2" | 100 | 160 | 1 |
| BC88 | 88 | 3-3/8" | W 1/2" | 100 | 160 | 1 |
| BC94 | 94 | 3-5/8" | W 1/2" | 100 | 160 | 1 |
| BC101 | 101 | 4" | W 1/2" | 100 | 160 | 1 |
| BC125 | 125 | 5" | W 1/2" | 100 | 160 | 1 |
| BC150* | 150 | 6" | W 1/2" | 100 | 160 | 1 |
| BC200* | 200 | 8" | W 1/2" | 100 | 160 | 1 |

* Single Spiral.
Heavy Duty Double Spiral Steel Brush ideal for cleaning Barrel Cylinders of Injection Moulding Machines.

Handles and Extensions



| Part No. | Thread | Type | Length |  |
|----------|--------|-----------|---------|---|
| HD1000 | M4 | Handle | 1000 mm | 1 |
| ED1000 | M4 | Extension | 1000 mm | 1 |
| HC1000 | M6 | Handle | 1000 mm | 1 |
| EC1000 | M6 | Extension | 1000 mm | 1 |
| HA1000 | W 3/8" | Handle | 1000 mm | 1 |
| EA1000 | W 3/8" | Extension | 1000 mm | 1 |
| HB1000 | W 1/2" | Handle | 1000 mm | 1 |
| EB1000 | W 1/2" | Extension | 1000 mm | 1 |



BRUSHES AND
BUFF WHEELS

COMPRESSED AIR BLOW GUNS

Blow Gun in Forged Aluminium



| Part No. | Working Pressure | Tube size | Tube Extended Length | Tube Block Length | Connection |  |
|----------|------------------|-----------|----------------------|-------------------|------------|---|
| MBG-S | 15 Bar | 6,5x10 | 6 m. | 490 mm | R 1/4" | 1 |

- Blow gun sets with Polyurethane Spiral Hose.
- Polyamide bend - and scratch protection.
- High quality, robust and handy design.
- Useful for all applications.

Blow Gun in Plastic



| Part No. | Working Pressure | Tube size | Tube Extended Length | Tube Block Length | Connection |  |
|----------|------------------|-----------|----------------------|-------------------|------------|---|
| MBG-P | 15 Bar | 6,5x10 | 6 m. | 490 mm | R 1/4" | 1 |

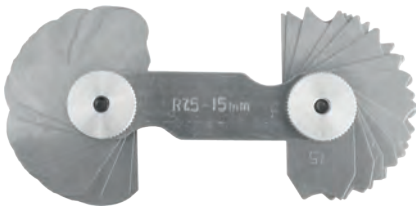
- Blow gun sets with Polyurethane Spiral Hose.
- Polyamide bend - and scratch protection.
- High quality, robust and handy design.
- Useful for all applications.

Digital Caliper 0-150 mm



| Part No. | Range (mm) | Resolution | Battery | |
|----------|------------|------------|---------------|---|
| DC150 | 0-150 | 0,01 mm | 1,55V (SR44W) | 1 |

Radius Gauge - Concave and Convex Form



| Part No. | Range (mm) | # Blades | |
|----------|------------|----------|---|
| RG17 | 1,0-7,0 | 17 | 1 |
| RG715 | 7,5-15,0 | 16 | 1 |
| RG1525 | 15,5-25,0 | 15 | 1 |
| RG2550 | 25,0-50,0 | 20 | 1 |

Thread Pitch Gauge - Metric, Whitworth, Pipe Thread



| Part No. | Metric 60° Pitch/mm | Whitworth 55° Pitch/Inch | Pipe Thread 55° Pitch/Inch | # Blades | |
|----------|---------------------|--------------------------|----------------------------|----------|---|
| SPG58 | 0,25-6,00 | 62-4 | 28RG-8RG | 58 | 1 |

MEASURING TOOLS

Steel Ruler 300x30x1,0 mm/Inch - Chrome Plated



| Part No. | Length (mm) | Width (mm) | Thickness (mm) |  |
|----------|-------------|------------|----------------|---|
| SR300 | 300 | 30 | 1 | 1 |

Mouldpro Tape Measure



| Part No. | Coil length (m) | Width (mm) |  |
|----------|-----------------|------------|---|
| MPT5 | 5 | 19 | 1 |
| MPT8 | 8 | 25 | 1 |

Professional Quality Tape Measure with chrome plated tough ABS plastic case and integrated thumb lock.
 High visibility anti-glare blade with polymer coating to extend blade life. Class 2 Blade 19mm (5m) / 25mm (8m) Wide Blade Metric / Imperial Scale. Compact & Durable Case.
 3-Rivet True-Zero End Hook Belt Clip.

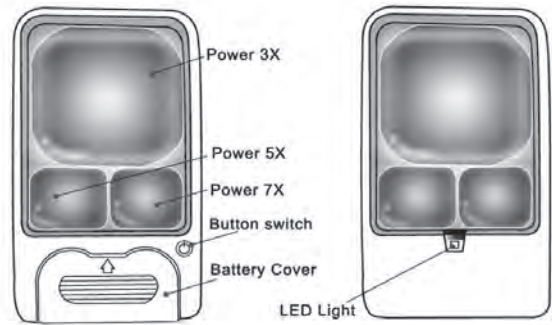
Handheld Magnifier 2,5x Ø90 mm - Glass Lens and 12 x Leds



| Part No. | Magnification | Lens diameter | # LED lights | dimensions | |
|----------|---------------|---------------|--------------|-------------------|---|
| HM90 | 2,5 X | Ø 90 mm | 12 pcs. | 241 x 110 x 14 mm | 1 |

Material (lens): Glass.
 Material (body): Metal (Zinc alloy).
 Battery: 2 x AA 1,5 V (NOT included).
 Packing: Black padded case.

Handheld Magnifier 3X/5X/7X - with LED Light



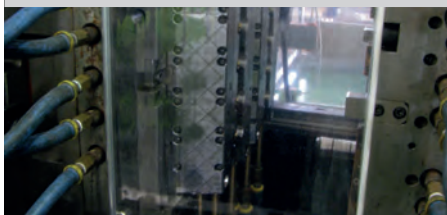
| Part No. | Magnification | Lens diameter | # LED lights | dimensions | |
|----------|---------------|---------------|--------------|-------------|---|
| HM50 | 3X/5X/7X | 50x50/20x25 | 1 | 117x61x9 mm | 1 |

Material (body): ABS plastic.
 Battery: 2 x CR2032 (included).
 Battery life: Approx. 40-50 hours.

MACHINE ACCESSORIES

09.

359 Mould Screens



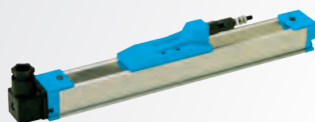
360 Ejector Couplings



364 Machine Mounts



365 Linear Transducer




367 Hydraulic Iso Couplers



Mould Screens

Tested up to 3 million cycles



| Part No. | Mould Height | Max Width |  |
|----------|--------------|-----------|---|
| SG-1 | 200 mm | 550 mm | 1 (set of 2 pcs) |
| SG-2 | 300 mm | 550 mm | 1 (set of 2 pcs) |
| SG-3 | 400 mm | 550 mm | 1 (set of 2 pcs) |
| SG-4 | 500 mm | 550 mm | 1 (set of 2 pcs) |
| SG-5 | 600 mm | 550 mm | 1 (set of 2 pcs) |

Prevent Plastic Parts scattering around the moulding machine with Scatterguard. The patented new design contains the Ejected Parts within the Mould Area whilst the roller blind action allows a completely unrestricted view of the Mould Face. Scatterguard allows easy access to the mould with the Ultra Low Profile Design meaning that the mould screens can be installed even when there are lots of water connectors on the side of the mould. Supplied as a kit Scatterguard is simply installed with Magnetic Anchors and is easily movable to other Moulding Machines.

- Ultra Low Profile Design.
- Crystal Clear Mould Screen.
- Reduce Scrap by Eliminating Contamination and Increase Profits.
- Ideal for Cleanroom Applications.

EJECTOR COUPLINGS

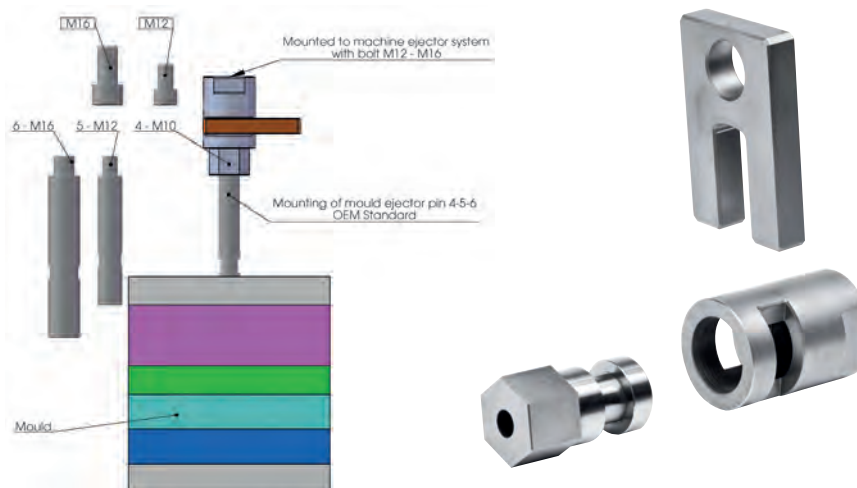
Description

The UKM is a mechanical ejector coupling for plastic injection moulding machines. Its function is to lock the ejector bars of the injection moulding tool.

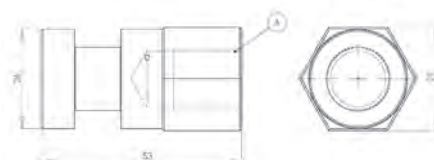
- The coupling process "locking or unlocking" takes place in only seconds.
- Simple construction - easy to install
- Available with M10 – M12 and M16 thread.


Material:

Steel Type: 1.2510

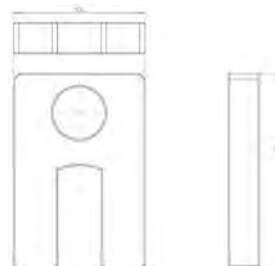


Connector Nipple



| Part No. | A |  |
|----------|-----|---|
| UKM10HAN | M10 | 1 |
| UKM12HAN | M12 | 1 |
| UKM16HAN | M16 | 1 |


Locking Slide



| Part No. | SIZE |  |
|----------|----------|---|
| UKK1E | ONE SIZE | 1 |

Coupling



| Part No. | A |  |
|----------|----|---|
| UKM12HUN | 12 | 1 |
| UKM16HUN | 16 | 1 |



Ideal for use with: Quick Mould Change systems and Two-stage Ejection

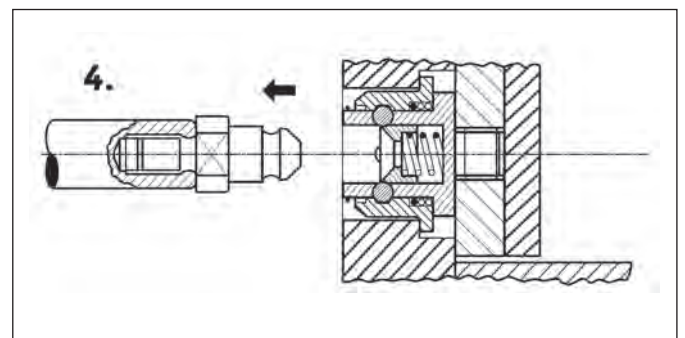
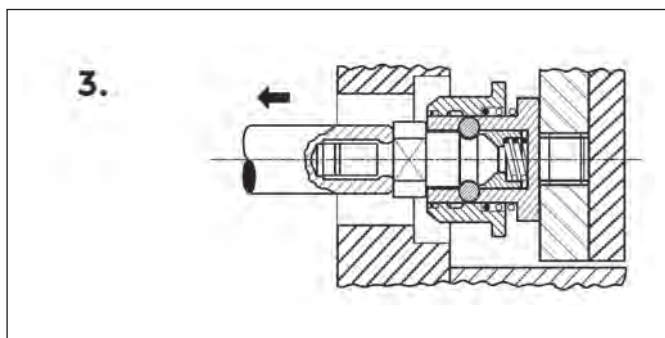
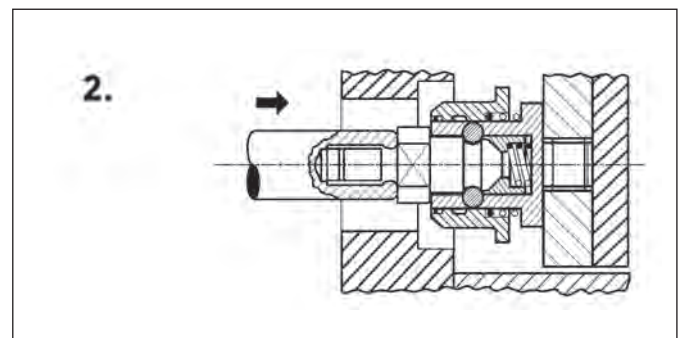
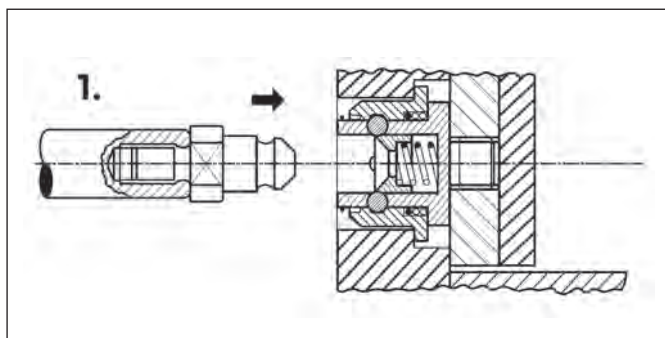
Designed to provide a quick method of attaching the ejector plate in your mould to the ejection system in your moulding machine. Provides positive ejector plate return while greatly reducing set-up time.

Perfectly suited for those moulding machines where the ejector plate on the machine is difficult to reach. Ideal when center ejection is desired, but impossible to "tie-in". Works with either hydraulic or mechanical ejection.

Uses and Advantages

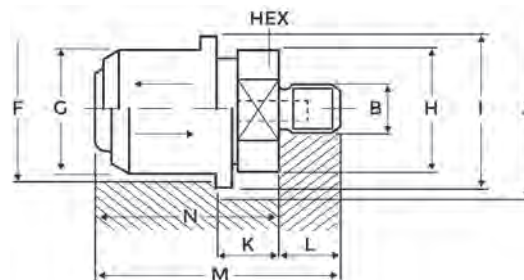
- Quick and easy installation (even on existing moulds). Return of the ejector plate is assured.
- Part ejector plate is assured.
- Coupling is obtained in any position, disconnecting is after the ejector plate is fully returned.
- Fast acting up to 30 strokes/minute. No wearing parts.
- Can be used on all injection machines equipped with hydraulic or mechanical ejection.
- Set-up time can be greatly reduced.
- Reduce noise on machines with mechanical knockouts. Especially suited for injection machines that do not have easy access to the ejector plate.
- Allows for center ejection to be tied in.
- No Grease should be applied to these Products.


Sequence of operation



EJECTOR COUPLINGS

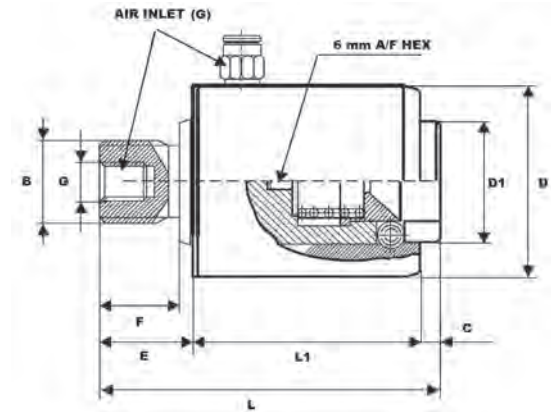
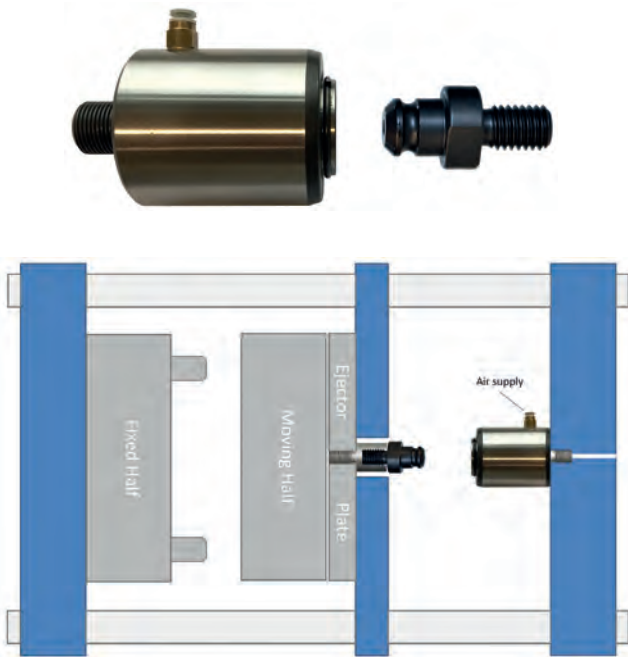
Ejector Coupling



| Part No. | B | F | G | H | I | J | K | L | M | Pull Force | Size |  |
|-----------|----------|----|----|----|----|----|----|----|------|------------|------|---|
| EJC-F-1-1 | M12X1,75 | 34 | 34 | 32 | 39 | 43 | 9 | 15 | 42,5 | 1500 kg | 1 | 1 |
| EJC-F-1-2 | M16X1,5 | 34 | 34 | 32 | 39 | 43 | 9 | 15 | 42,5 | 1500 kg | 1 | 1 |
| EJC-F-1-3 | M16X2 | 34 | 34 | 32 | 39 | 43 | 9 | 15 | 42,5 | 1500 kg | 1 | 1 |
| EJC-F-2-1 | M16X1,5 | 40 | 40 | 38 | 48 | 53 | 13 | 15 | 52 | 2400 kg | 2 | 1 |
| EJC-F-2-2 | M16X2 | 40 | 40 | 38 | 48 | 53 | 13 | 15 | 52 | 2400 kg | 2 | 1 |
| EJC-F-3-1 | M16X1,5 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |
| EJC-F-3-2 | M16X2 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |
| EJC-F-3-3 | M18X1,5 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |
| EJC-F-3-4 | M20X1,5 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |
| EJC-F-3-5 | M20X2,5 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |
| EJC-F-3-6 | M24X1,5 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |
| EJC-F-3-7 | M27X1,5 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |
| EJC-F-3-8 | M30X1,5 | 58 | 58 | 56 | 65 | 70 | 17 | 18 | 68 | 3200 kg | 3 | 1 |

Material: 1.7147 - 60 HRC.

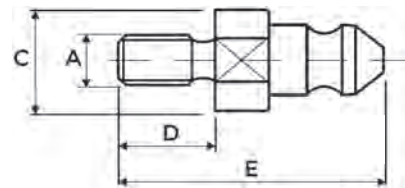
Pneumatic Ejector Coupling



| Part No. | D | D1 | L | L1 | E | F | B | G 4-6 Bar | Pull Force | Size | |
|------------|----|----|----|------|------|----|---------|-----------|------------|------|---|
| EJC-FP-200 | 48 | 39 | 68 | 28,5 | 21 | 15 | M16x2 | R1/8" | 2700 kg | 2 | 1 |
| EJC-FP-205 | 48 | 39 | 68 | 28,5 | 21 | 15 | M18x1,5 | R1/8" | 2700 kg | 2 | 1 |
| EJC-FP-300 | 58 | 36 | 94 | 66 | 22,5 | 20 | M20X1,5 | R1/8" | 3400 kg | 3 | 1 |
| EJC-FP-305 | 58 | 36 | 94 | 66 | 22,5 | 20 | M20X2,5 | R1/8" | 3400 kg | 3 | 1 |

Ejector Coupling to ensure rapid and safe mould changes designed to fit with standard EJC-M connectors.
 The EJC-FP coupling is air operated. The coupling connects mechanical to the plug EJC-M, and disconnected using air in one of the 2 ports.
 The Unit EJC-FP is installed on the machine and the plug EJC-M is installed on the mould/rod.

Ejector Nipple



| Part No. | A | C | D | E | Pull Force | Size | |
|-----------|----------|------|----|------|------------|------|---|
| EJC-M-1-1 | M10X1,5 | 22,8 | 20 | 45,5 | 1500 kg | 1 | 1 |
| EJC-M-1-2 | M12X1,75 | 22,8 | 20 | 45,5 | 1500 kg | 1 | 1 |
| EJC-M-1-3 | M14X2 | 22,8 | 20 | 45,5 | 1500 kg | 1 | 1 |
| EJC-M-1-4 | M16X2 | 22,8 | 20 | 45,5 | 1500 kg | 1 | 1 |
| EJC-M-2-1 | M10X1,5 | 25,8 | 20 | 55 | 2400 kg | 2 | 1 |
| EJC-M-2-2 | M12X1,75 | 25,8 | 20 | 55 | 2400 kg | 2 | 1 |
| EJC-M-2-3 | M14X2 | 25,8 | 20 | 55 | 2400 kg | 2 | 1 |
| EJC-M-2-4 | M16X2 | 25,8 | 20 | 55 | 2400 kg | 2 | 1 |
| EJC-M-3-1 | M16X2 | 35 | 25 | 68 | 3200 kg | 3 | 1 |
| EJC-M-3-2 | M18X2,5 | 35 | 25 | 68 | 3200 kg | 3 | 1 |
| EJC-M-3-3 | M20X2,5 | 35 | 25 | 68 | 3200 kg | 3 | 1 |
| EJC-M-3-4 | M24X3 | 35 | 25 | 68 | 3200 kg | 3 | 1 |
| EJC-M-3-5 | M27X3 | 35 | 25 | 68 | 3200 kg | 3 | 1 |
| EJC-M-3-6 | M30X3,5 | 35 | 25 | 68 | 3200 kg | 3 | 1 |

Material: 1.7147 - 60 HRC.

MACHINE MOUNTS

Standard Machine Mounts - Supplied with Adjusting Screws



| Part No. | Diameter | Load (kg) | Adjusting Screw | Height | |
|----------|----------|-----------|-----------------|---------|---|
| SMM01 | 80mm | 200 kg | M12x1.25x120 | 38-50mm | 1 |
| SMM02 | 120mm | 400 kg | M16x1.5x120 | 46-59mm | 1 |
| SMM03 | 160mm | 1000 kg | M20x1.5x170 | 53-68mm | 1 |
| SMM04 | 160mm | 2500 kg | M20x1.5x170 | 54-69mm | 1 |
| SMM05 | 200mm | 3800 kg | M20x1.5x170 | 56-71mm | 1 |

Up to 15 mm Adjustment.

Galvanised Steel Finish.

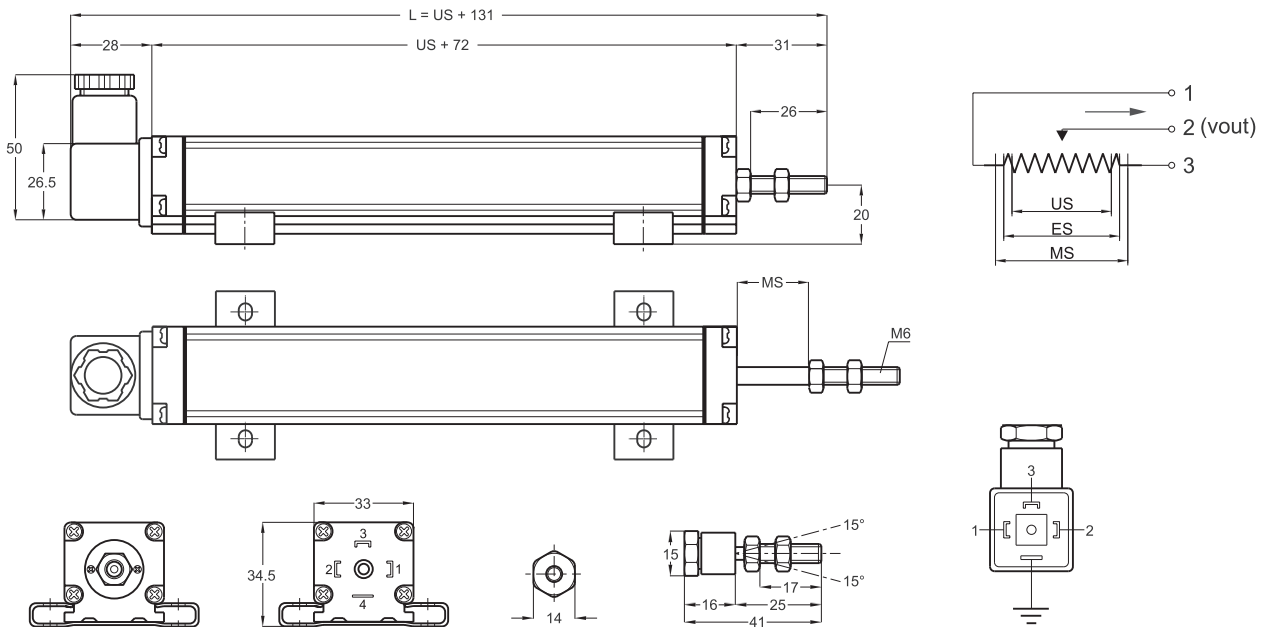
Supplied Complete with Adjusting Screw.


Transducer with Rod



Technical data

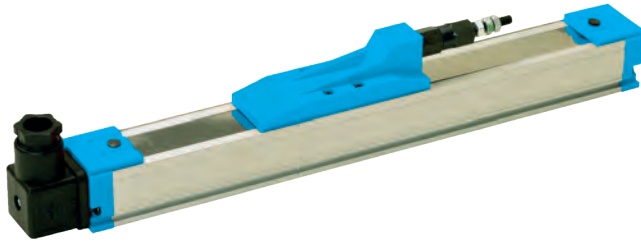
| | |
|-----------------------------|---------------------------------|
| Measurement Stroke | 30 to 1250 mm |
| Linearity | ± %0,05 |
| Repeatability | < 0,01 mm |
| Resolution | Infinite |
| Resistance | 5 kOhm |
| Resistance Tolerance | ±%20 |
| Load Resistance | 100 kOhm min. |
| Recommended Cursor Current | < 1 µA |
| Permissible Applied Voltage | 28VDC max. |
| Electrical Connections | 4 pole hydraulic type connector |
| Displacement Speed | <5 m/s |
| Mechanical Life | 100 million cycles |
| Case Dimensions | 33 mm x 33 mm |
| Case Material | Anodized aluminium |
| Rod Material | Stainless Steel |
| Rod Diameter | Ø 6 mm |
| Mechanical Fixing | Variable brackets |
| IP Degree | IP 65 |
| Operating Temperature | -20°C ... +80°C |
| Storage Temperature | -30°C ... +90°C |



| Part No. | US (usefull stroke) | MS (Mechanical stroke) | L (total length) |  |
|----------|---------------------|------------------------|------------------|---|
| MPT100 | 100 | 103 | 231 | 1 |
| MPT150 | 150 | 153 | 281 | 1 |
| MPT175 | 175 | 178 | 306 | 1 |
| MPT200 | 200 | 203 | 331 | 1 |
| MPT300 | 300 | 303 | 431 | 1 |
| MPT400 | 400 | 403 | 531 | 1 |
| MPT500 | 500 | 503 | 631 | 1 |

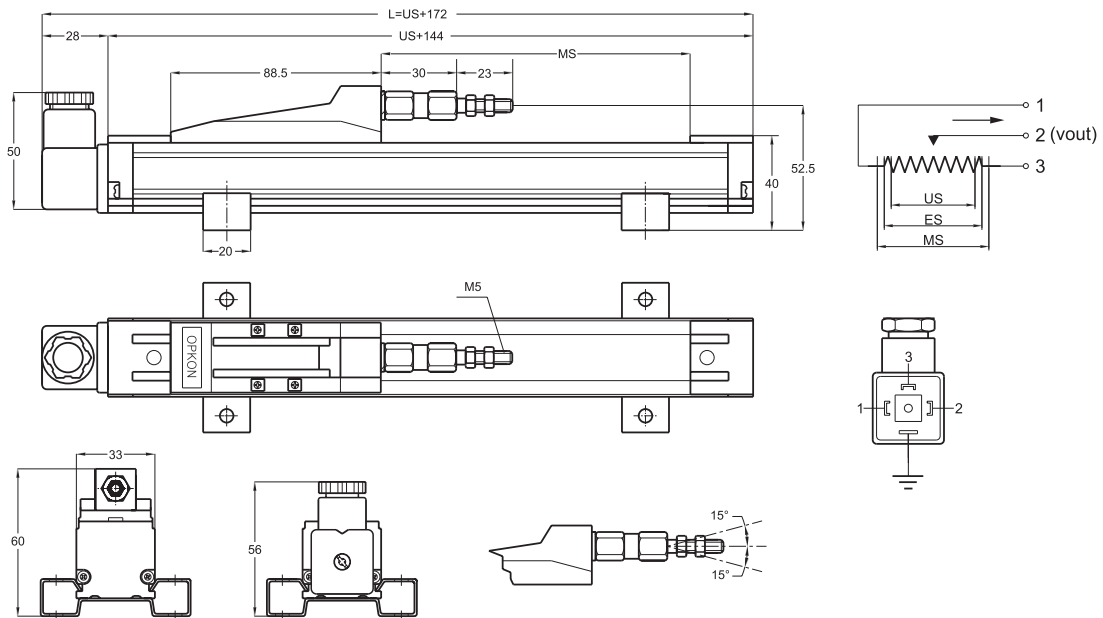
LINEAR TRANSDUCERS

Transducer without Rod

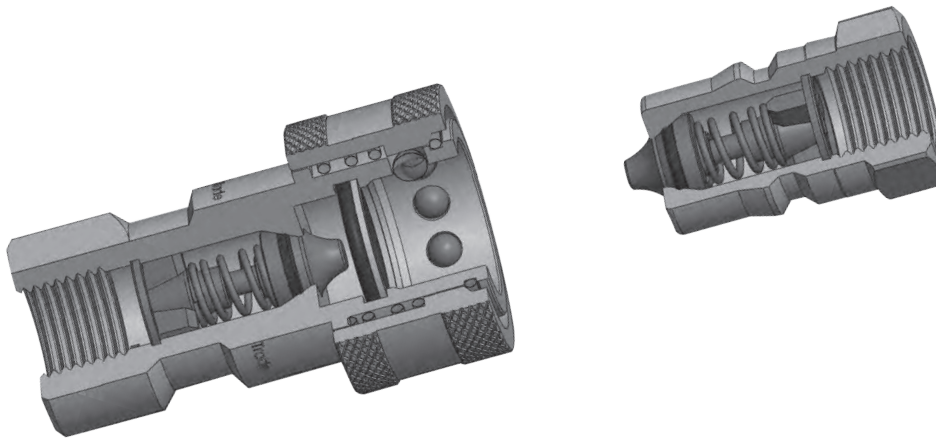


Technical data

| | |
|-----------------------------|-------------------------------------|
| Measurement Stroke | 100 to 1500 mm |
| Linearity | ± %0,05 |
| Repeatability | < 0,01 mm |
| Resolution | Infinite |
| Resistance | 5 kOhm |
| Resistance Tolerance | ±%20 |
| Load Resistance | 100 kOhm min. |
| Recommended Cursor Current | < 1 μA |
| Permissible Applied Voltage | 28VDC max. |
| Electrical Connections | 4 pole hydraulic type connector |
| Displacement Speed | <1,5 m/s |
| Mechanical Life | 100 million cycles |
| Case Dimensions | 33 mm x 33 mm |
| Case Material | Anodized aluminium |
| Mechanical Fixing | Variable brackets |
| IP Degree | IP 40 /If mounted upside down IP 53 |
| Operating Temperature | -20°C ... +80°C |
| Storage Temperature | -30°C ... +90°C |




| Part No. | US (usefull stroke) | MS (Mechanical stroke) | L (total length) | |
|----------|---------------------|------------------------|------------------|---|
| MPH150 | 150 | 154 | 322 | 1 |
| MPH200 | 200 | 204 | 372 | 1 |
| MPH225 | 225 | 229 | 397 | 1 |
| MPH300 | 300 | 304 | 472 | 1 |
| MPH400 | 400 | 404 | 572 | 1 |
| MPH500 | 500 | 504 | 672 | 1 |



ISO A Couplers




| Part No. | Thread size | Pressure Bar |  |
|--------------|-------------|--------------|---|
| FISO-A14BSP | 1/4" BSP | 350 | 1 |
| FISO-A38BSP | 3/8" BSP | 300 | 1 |
| FISO-A12BSP | 1/2" BSP | 250 | 1 |
| FISO-A34BSP | 3/4" BSP | 250 | 1 |
| FISO-A100BSP | 1" BSP | 230 | 1 |

Material:
Steel (plated).


ISO A Plugs



| Part No. | Thread size | Pressure Bar |  |
|--------------|-------------|--------------|---|
| MISO-A14BSP | 1/4" BSP | 350 | 1 |
| MISO-A38BSP | 3/8" BSP | 300 | 1 |
| MISO-A12BSP | 1/2" BSP | 250 | 1 |
| MISO-A34BSP | 3/4" BSP | 250 | 1 |
| MISO-A100BSP | 1" BSP | 230 | 1 |

ISO B Couplers




| Part No. | Thread size | Pressure Bar |  |
|-------------|-------------|--------------|---|
| FISO-B14BSP | 1/4" BSP | 350 | 1 |
| FISO-B38BSP | 3/8" BSP | 300 | 1 |
| FISO-B12BSP | 1/2" BSP | 250 | 1 |

Material:
Steel (plated).

ISO B Plugs



| Part No. | Thread size | Pressure Bar |  |
|-------------|-------------|--------------|---|
| MISO-B14BSP | 1/4" BSP | 350 | 1 |
| MISO-B38BSP | 3/8" BSP | 300 | 1 |
| MISO-B12BSP | 1/2" BSP | 250 | 1 |

MOULD CLAMPING

10.

369 Power Clamps



371 Mechanical Clamps



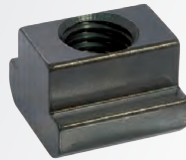
373 Nuts & Washers



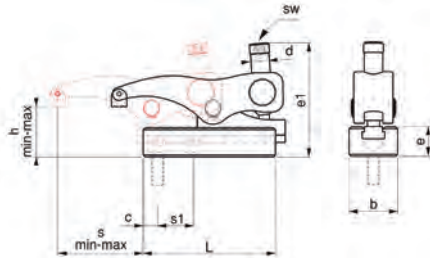
374 Straight Studs




375 T-Nuts



Power Sliding Clamp – Supplied without Inbus Bolt



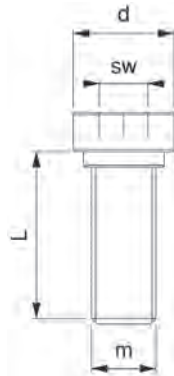
| Part No. | Inbus Bolt Size (m) (not included) | h-Min | h-Max | s | e1 | d | sw | L | e | b | c | "Clamping force Kgf" |  |
|----------|---------------------------------------|-------|-------|-------|-----|-----|----|-----|------|----|----|----------------------|---|
| SC-100 | M10-M12 | 0 | 50 | 12-66 | 100 | M14 | 8 | 104 | 35,5 | 38 | 13 | 1600 | 1 |
| SC-200 | M12-M16 | 0 | 60 | 15-83 | 113 | M18 | 10 | 128 | 38 | 48 | 16 | 2000 | 1 |
| SC-250 | M16-M20 | 0 | 65 | 18-96 | 125 | M20 | 12 | 140 | 42 | 55 | 18 | 2500 | 1 |
| SC-300 | M20-M24 | 20 | 80 | 22-95 | 175 | M24 | 12 | 178 | 55 | 74 | 24 | 5500 | 1 |

Used to facilitate quicker mould changes the Power Sliding Clamp offers an incredibly cost effective solution.

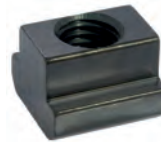
Features:


- Can accommodate a range of different back-plate sizes and thicknesses
- Perfect for clamping of injection moulds
- Use in threaded platens or t-slot platens
- Clamp slides by virtue of Integral t-slot

Inbus Bolt For Power Clamps




T-Nut For Inbus Bolt

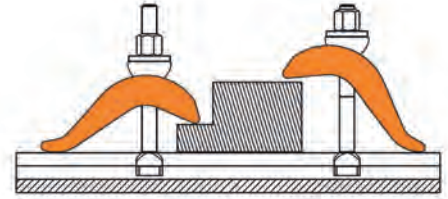
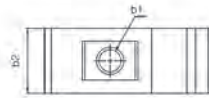
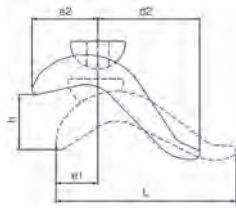


| Part No. | m | L | d | SW | Clamp Ref |  |
|----------|-----|----|------|----|-----------|---|
| 1120-310 | M10 | 29 | 16,5 | 8 | SC-100 | 1 |
| 1120-312 | M12 | 29 | 16,5 | 8 | SC-100 | 1 |
| 1130-412 | M12 | 30 | 20,5 | 10 | SC-200 | 1 |
| 1130-416 | M16 | 34 | 20,5 | 10 | SC-200 | 1 |
| 1150-516 | M16 | 34 | 24,5 | 12 | SC-250 | 1 |
| 1150-518 | M18 | 38 | 24,5 | 12 | SC-250 | 1 |
| 1150-520 | M20 | 38 | 24,5 | 12 | SC-250 | 1 |
| 1160-620 | M20 | 45 | 34 | 12 | SC-300 | 1 |
| 1160-624 | M24 | 45 | 34 | 12 | SC-300 | 1 |
| 1160-724 | M24 | 55 | 34 | 12 | SC-300 | 1 |

Material: 41 Cr 4 DIN
 Quality: 10.9
 Surface: Black Coating

| Part No. | D x Nut | a | e | h | k |  |
|-----------|---------|------|----|----|----|---|
| 508-10x12 | M10X12 | 11,7 | 18 | 14 | 7 | 1 |
| 508-12x14 | M12X14 | 13,7 | 22 | 16 | 8 | 1 |
| 508-12x16 | M12X16 | 15,7 | 25 | 18 | 9 | 1 |
| 508-12x18 | M12X18 | 17,7 | 28 | 20 | 10 | 1 |
| 508-16x20 | M16X20 | 19,7 | 32 | 24 | 12 | 1 |
| 508-16x22 | M16X22 | 21,7 | 35 | 28 | 14 | 1 |
| 508-16x24 | M16X24 | 23,7 | 40 | 32 | 16 | 1 |
| 508-16x28 | M16X28 | 27,7 | 44 | 36 | 18 | 1 |
| 508-20x22 | M20X22 | 21,7 | 35 | 28 | 14 | 1 |
| 508-20x24 | M20X24 | 23,7 | 40 | 32 | 16 | 1 |
| 508-24x28 | M24X28 | 27,7 | 44 | 36 | 18 | 1 |
| 508-24x36 | M24X36 | 35,6 | 54 | 44 | 22 | 1 |

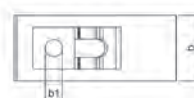
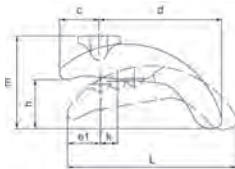
S-Clamp



| Part No. | b1 | For Clamp Screw | b2xL | d | e1 | e2 | h | Weight (g) | |
|----------|----|-----------------|--------|----|----|----|----|------------|---|
| S200-17 | 17 | M12-M16 | 50x140 | 60 | 30 | 55 | 75 | 900 | 1 |
| S200-21 | 21 | M20 | 60x175 | 80 | 40 | 70 | 85 | 1600 | 1 |

Materials:
Forged Steel, Hardened, Zinc Coated

Stepped Clamp

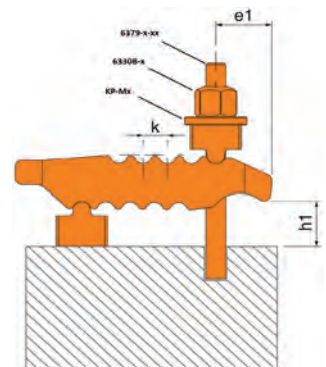
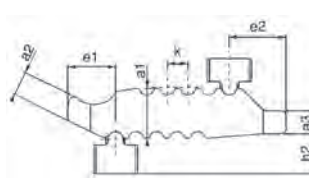
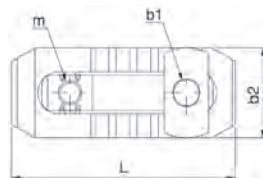


| Part No. | b1 | For Clamp Screw | m | h | b x L | c | d | e1 | k x3 | Weight (Kg) | |
|----------|----|-----------------|-------|-------|--------|----|-----|----|------|-------------|---|
| SP200-17 | 17 | M16 | 93 | 15-50 | 65x165 | 39 | 128 | 30 | 17 | 2,1 | 1 |
| SP200-21 | 21 | M20 | 111 | 20-65 | 75x189 | 43 | 146 | 33 | 19 | 3,2 | 1 |
| SP200-25 | 25 | M24 | 126 | 20-75 | 85x213 | 49 | 164 | 39 | 21 | 4,5 | 1 |
| SP200-31 | 31 | M30 | 143,5 | 20-85 | 95x238 | 56 | 182 | 46 | 23 | 6,3 | 1 |

Supportless Clamp for clamping heights 15-85 mm.

Materials:
Forged Steel, Hardened, Zinc Coated

"Crocodile" Clamp - Double Sided

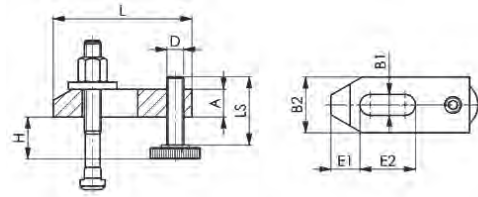
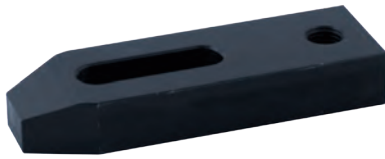



| Part No. | b1 | For Clamping Screw | M | a1 | a2 | a3 | h2 | k | b2 | L | b3 | h1 | e1 | e2 | kgf (force) | Weight (g) | |
|----------|----|--------------------|-----|----|------|----|------|----|----|-----|----|-------|----|----|-------------|------------|---|
| C200-13 | 13 | M10-M12 | M12 | 27 | 12,5 | 12 | 21 | 11 | 44 | 115 | 30 | 0-55 | 25 | 30 | 3000 | 506 | 1 |
| C200-17 | 17 | M12-M16 | M16 | 36 | 18 | 17 | 23 | 12 | 55 | 150 | 41 | 0-70 | 35 | 36 | 4000 | 1382 | 1 |
| C200-21 | 21 | M16-M20 | M20 | 42 | 25 | 20 | 32,5 | 14 | 63 | 187 | 30 | 0-80 | 44 | 44 | 6000 | 2241 | 1 |
| C200-25 | 25 | M20-M24 | M20 | 51 | 36,5 | 24 | 34 | 17 | 70 | 235 | 30 | 0-100 | 60 | 47 | 7500 | 3550 | 1 |

Materials:
Forged Steel, Hardened, Black Coating

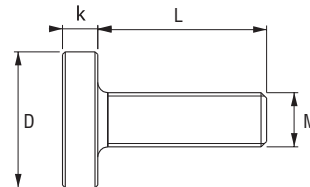
MECHANICAL CLAMPS


Straight Clamp with Support Hole - Supplied without Adjusting Screw



| Part No. | Nut | DIN6314 B1xL | D | A | B2 | E1 | E2 |  |
|-------------|-------|--------------|-----|----|-----|-----|-----|---|
| 1330-11x80 | 10 | 11x80 | M10 | 15 | 30 | 15 | 30 | 1 |
| 1330-14x100 | 12+14 | 14x100 | M12 | 20 | 40 | 21 | 40 | 1 |
| 1330-14x125 | 12+14 | 14x125 | M12 | 20 | 40 | 21 | 50 | 1 |
| 1330-18x125 | 16+18 | 18x125 | M16 | 25 | 50 | 26 | 45 | 1 |
| 1330-18x160 | 16+18 | 18x160 | M16 | 25 | 50 | 26 | 65 | 1 |
| 1330-22x160 | 20+22 | 22x160 | M20 | 30 | 60 | 30 | 60 | 1 |
| 1330-22x200 | 20+22 | 22x200 | M20 | 30 | 60 | 30 | 80 | 1 |
| 1330-26x160 | 24+26 | 26x160 | M24 | 30 | 70 | 35 | 60 | 1 |
| 1330-26x200 | 24+26 | 26x200 | M24 | 35 | 70 | 35 | 80 | 1 |
| 1330-26x250 | 24+26 | 26x250 | M24 | 35 | 70 | 35 | 100 | 1 |
| 1330-26x315 | 24+26 | 26x315 | M24 | 40 | 70 | 35 | 100 | 1 |
| 1330-33x315 | 30+33 | 33x315 | M24 | 50 | 80 | 45 | 130 | 1 |
| 1330-43x400 | 36+43 | 43x400 | M30 | 60 | 100 | 100 | 150 | 1 |

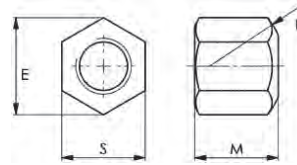
Adjusting Screw




| Part No. | M | L | D | K |  |
|-------------|-----|-----|----|----|---|
| 1490-10x42 | M10 | 42 | 30 | 8 | 1 |
| 1490-12x50 | M12 | 50 | 36 | 10 | 1 |
| 1490-12x95 | M12 | 95 | 36 | 10 | 1 |
| 1490-16x62 | M16 | 62 | 45 | 13 | 1 |
| 1490-16x97 | M16 | 97 | 45 | 13 | 1 |
| 1490-16x117 | M16 | 117 | 45 | 13 | 1 |
| 1490-20x62 | M20 | 62 | 50 | 13 | 1 |
| 1490-20x97 | M20 | 97 | 50 | 13 | 1 |
| 1490-20x117 | M20 | 117 | 50 | 13 | 1 |
| 1490-24x81 | M24 | 81 | 50 | 14 | 1 |
| 1490-24x116 | M24 | 116 | 50 | 14 | 1 |
| 1490-30x180 | M30 | 18 | 70 | 24 | 1 |

Material: Ck45 DIN.
Black Coating.

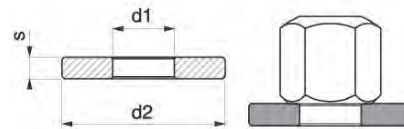
Hexagon Nut




| Part No. | Size | E | M | R | S |  |
|----------|------|------|----|----|----|---|
| 6330B-6 | M6 | 11,5 | 9 | 9 | 10 | 1 |
| 6330B-8 | M8 | 15 | 12 | 12 | 13 | 1 |
| 6330B-10 | M10 | 19,6 | 15 | 15 | 17 | 1 |
| 6330B-12 | M12 | 21,9 | 18 | 17 | 19 | 1 |
| 6330B-14 | M14 | 25,4 | 21 | 20 | 22 | 1 |
| 6330B-16 | M16 | 27,7 | 24 | 22 | 24 | 1 |
| 6330B-18 | M18 | 31,2 | 27 | 24 | 27 | 1 |
| 6330B-20 | M20 | 34,6 | 30 | 27 | 30 | 1 |
| 6330B-22 | M22 | 36,9 | 33 | 30 | 32 | 1 |
| 6330B-24 | M24 | 41,5 | 36 | 32 | 36 | 1 |
| 6330B-30 | M30 | 53,1 | 45 | 41 | 46 | 1 |
| 6330B-36 | M36 | 63,5 | 54 | 50 | 55 | 1 |

Hexagon Nut DIN 6330B.
 Material: Ck45 DIN.
 Hardness: 30-32 HRC.
 Black Coating.

Thick Washer

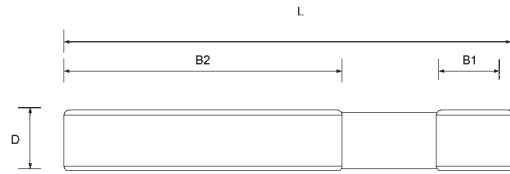


| Part No. | d1 | Thread to fit | d2 | s |  |
|----------|------|---------------|----|----|---|
| KP-M6 | 6,4 | M6 | 17 | 3 | 1 |
| KP-M8 | 8,4 | M8 | 23 | 4 | 1 |
| KP-M10 | 10,5 | M10 | 28 | 4 | 1 |
| KP-M12 | 13 | M12 | 35 | 5 | 1 |
| KP-M14 | 15 | M14 | 40 | 5 | 1 |
| KP-M16 | 17 | M16 | 45 | 6 | 1 |
| KP-M18 | 19 | M18 | 45 | 6 | 1 |
| KP-M20 | 21 | M20 | 50 | 6 | 1 |
| KP-M22 | 23 | M22 | 50 | 8 | 1 |
| KP-M24 | 25 | M24 | 60 | 8 | 1 |
| KP-M30 | 31 | M30 | 68 | 10 | 1 |

Ideal for Mould Clamping.

STRAIGHT STUDS

Straight Stud

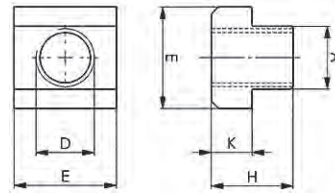



| Part No. | D x L | B1 | B2 | |
|-------------|---------|----|-----|---|
| 6379-8x40 | M 8x 40 | 11 | 20 | 1 |
| 6379-8x63 | M 8x 63 | 11 | 40 | 1 |
| 6379-8x80 | M 8x 80 | 11 | 50 | 1 |
| 6379-8x100 | M 8x100 | 11 | 63 | 1 |
| 6379-8x125 | M 8x125 | 11 | 75 | 1 |
| 6379-8x160 | M 8x160 | 11 | 100 | 1 |
| 6379-10x50 | M10x 50 | 13 | 25 | 1 |
| 6379-10x80 | M10x 80 | 13 | 50 | 1 |
| 6379-10x100 | M10x100 | 13 | 75 | 1 |
| 6379-10x125 | M10x125 | 13 | 75 | 1 |
| 6379-10x160 | M10x160 | 13 | 100 | 1 |
| 6379-10x200 | M10x200 | 13 | 125 | 1 |
| 6379-12x50 | M12x 50 | 15 | 25 | 1 |
| 6379-12x63 | M12x 63 | 15 | 32 | 1 |
| 6379-12x80 | M12x 80 | 15 | 50 | 1 |
| 6379-12x100 | M12x100 | 15 | 63 | 1 |
| 6379-12x125 | M12x125 | 15 | 75 | 1 |
| 6379-12x160 | M12x160 | 15 | 100 | 1 |
| 6379-12x200 | M12x200 | 15 | 125 | 1 |
| 6379-14x63 | M14x 63 | 17 | 32 | 1 |
| 6379-14x80 | M14x80 | 17 | 50 | 1 |
| 6379-14x100 | M14x100 | 17 | 63 | 1 |
| 6379-14x125 | M14x125 | 17 | 75 | 1 |
| 6379-14x160 | M14x160 | 17 | 100 | 1 |
| 6379-14x200 | M14x200 | 17 | 125 | 1 |
| 6379-14x250 | M14x250 | 17 | 160 | 1 |
| 6379-16x63 | M16x 63 | 19 | 32 | 1 |
| 6379-16x80 | M16x 80 | 19 | 50 | 1 |
| 6379-16x100 | M16x100 | 19 | 63 | 1 |
| 6379-16x125 | M16x125 | 19 | 75 | 1 |
| 6379-16x160 | M16x160 | 19 | 100 | 1 |
| 6379-16x200 | M16x200 | 19 | 125 | 1 |
| 6379-16x250 | M16x250 | 19 | 160 | 1 |
| 6379-16x315 | M16x315 | 19 | 180 | 1 |
| 6379-16x500 | M16x500 | 19 | 315 | 1 |
| 6379-18x80 | M18x 80 | 23 | 50 | 1 |
| 6379-18x125 | M18x125 | 23 | 75 | 1 |
| 6379-18x160 | M18x160 | 23 | 100 | 1 |
| 6379-18x200 | M18x200 | 23 | 125 | 1 |
| 6379-18x250 | M18x250 | 23 | 150 | 1 |

| Part No. | D x L | B1 | B2 | |
|--------------|----------|----|-----|---|
| 6379-18x315 | M18x315 | 23 | 180 | 1 |
| 6379-20x80 | M20x 80 | 27 | 32 | 1 |
| 6379-20x125 | M20x125 | 27 | 70 | 1 |
| 6379-20x160 | M20x160 | 27 | 100 | 1 |
| 6379-20x200 | M20x200 | 27 | 125 | 1 |
| 6379-20x250 | M20x250 | 27 | 160 | 1 |
| 6379-20x315 | M20x315 | 27 | 200 | 1 |
| 6379-20x400 | M20x400 | 27 | 250 | 1 |
| 6379-20x500 | M20x500 | 27 | 315 | 1 |
| 6379-22x100 | M22x100 | 31 | 45 | 1 |
| 6379-22x160 | M22x160 | 31 | 100 | 1 |
| 6379-22x200 | M22x200 | 31 | 125 | 1 |
| 6379-22x250 | M22x250 | 31 | 160 | 1 |
| 6379-22x315 | M22x315 | 31 | 180 | 1 |
| 6379-22x400 | M22x400 | 31 | 250 | 1 |
| 6379-24x100 | M24x100 | 35 | 45 | 1 |
| 6379-24x125 | M24x125 | 35 | 70 | 1 |
| 6379-24x160 | M24x160 | 35 | 100 | 1 |
| 6379-24x200 | M24x200 | 35 | 125 | 1 |
| 6379-24x250 | M24x250 | 35 | 160 | 1 |
| 6379-24x315 | M24x315 | 35 | 200 | 1 |
| 6379-24x400 | M24x400 | 35 | 250 | 1 |
| 6379-24x500 | M24x500 | 35 | 315 | 1 |
| 6379-24x630 | M24x630 | 35 | 315 | 1 |
| 6379-30x125 | M30x125 | 43 | 56 | 1 |
| 6379-30x200 | M30x200 | 43 | 125 | 1 |
| 6379-30x315 | M30x315 | 43 | 200 | 1 |
| 6379-30x500 | M30x500 | 43 | 315 | 1 |
| 6379-30x700 | M30x700 | 43 | 400 | 1 |
| 6379-30x1000 | M30x1000 | 43 | 400 | 1 |
| 6379-36x160 | M36x160 | 51 | 80 | 1 |
| 6379-36x200 | M36x200 | 51 | 125 | 1 |
| 6379-36x250 | M36x250 | 51 | 160 | 1 |
| 6379-36x315 | M36x315 | 51 | 200 | 1 |
| 6379-36x400 | M36x400 | 51 | 250 | 1 |
| 6379-36x500 | M36x500 | 51 | 315 | 1 |
| 6379-36x700 | M36x700 | 51 | 400 | 1 |
| 6379-42x315 | M42x315 | 59 | 200 | 1 |
| 6379-42x400 | M42x400 | 59 | 250 | 1 |
| 6379-42x500 | M42x500 | 59 | 315 | 1 |

Material: 41 Cr 4 DIN.
 Quality 10.9.
 Black Coating.

T-Nut



| Part No. | D x Nut | A | E | H | K |  |
|-----------|---------|------|----|----|----|---|
| 508-6x8 | M 6x 8 | 7,7 | 13 | 10 | 6 | 1 |
| 508-8x10 | M 8x10 | 9,7 | 15 | 12 | 6 | 1 |
| 508-8x12 | M 8x12 | 11,7 | 18 | 14 | 7 | 1 |
| 508-10x12 | M10x12 | 11,7 | 18 | 14 | 7 | 1 |
| 508-8x14 | M 8x14 | 13,7 | 22 | 16 | 8 | 1 |
| 508-10x14 | M10x14 | 13,7 | 22 | 16 | 8 | 1 |
| 508-12x14 | M12x14 | 13,7 | 22 | 16 | 8 | 1 |
| 508-8x16 | M 8x16 | 15,7 | 25 | 18 | 9 | 1 |
| 508-10x16 | M10x16 | 15,7 | 25 | 18 | 9 | 1 |
| 508-12x16 | M12x16 | 15,7 | 25 | 18 | 9 | 1 |
| 508-14x16 | M14x16 | 15,7 | 25 | 18 | 9 | 1 |
| 508-8x18 | M 8x18 | 17,7 | 28 | 20 | 10 | 1 |
| 508-10x18 | M10x18 | 17,7 | 28 | 20 | 10 | 1 |
| 508-12x18 | M12x18 | 17,7 | 28 | 20 | 10 | 1 |
| 508-14x18 | M14x18 | 17,7 | 28 | 20 | 10 | 1 |
| 508-16x18 | M16x18 | 17,7 | 28 | 20 | 10 | 1 |
| 508-16x20 | M16x20 | 19,7 | 32 | 24 | 12 | 1 |
| 508-18x20 | M18x20 | 19,7 | 32 | 24 | 12 | 1 |
| 508-16x22 | M16x22 | 21,7 | 35 | 28 | 14 | 1 |
| 508-18x22 | M18x22 | 21,7 | 35 | 28 | 14 | 1 |
| 508-20x22 | M20x22 | 21,7 | 35 | 28 | 14 | 1 |
| 508-16x24 | M16x24 | 23,7 | 40 | 32 | 16 | 1 |
| 508-20x24 | M20x24 | 23,7 | 40 | 32 | 16 | 1 |
| 508-22x24 | M22x24 | 23,7 | 40 | 32 | 16 | 1 |
| 508-16x28 | M16x28 | 27,7 | 44 | 36 | 18 | 1 |
| 508-20x28 | M20x28 | 27,7 | 44 | 36 | 18 | 1 |
| 508-22x28 | M22x28 | 27,7 | 44 | 36 | 18 | 1 |
| 508-24x28 | M24x28 | 27,7 | 44 | 36 | 18 | 1 |
| 508-24x36 | M24x36 | 35,6 | 54 | 44 | 22 | 1 |
| 508-30x36 | M30x36 | 35,6 | 54 | 44 | 22 | 1 |

T-Clamp DIN 508.
 Material: Ck45 DIN.
 Hardness: 30-32 HRC.
 Black Coating.

LIFTING

11.

377 Lifting Points



378 Super Lifting Points



379 Eye Bolts and Shackles



381 Lifting Chain Slings



Now with NFC Inspection Chip

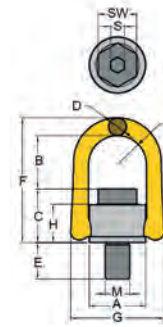
The SAP, SLP and KEP lifting points are equipped with NFC/RFID inspection Chip.

Access and update safety inspection procedures with your Smart-Phone. Scan the Chip on the lifting point and get all relevant data to ensure safety inspection compliance.

Free APP for iPhone and Android.



Swivel Anchor Point SAP



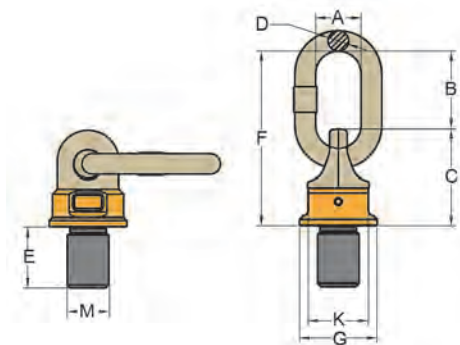
| Part No. | W.L.L. (t) | Thread | | | Dimensions | | | | | | | | | | Torque in Nm | Weight Kg. |
|----------|------------|--------|--------|-------------|------------|-----|-----|----|-----|-----|----|----|----|----|--------------|------------|
| | | M(mm) | E (mm) | Pich(DIN13) | A | B | C | D | F | G | H | R | S | SW | | |
| SAP-M8 | 0.5 | M8 | 12 | 1.25 | 33 | 42 | 28 | 11 | 80 | 58 | 23 | 17 | 6 | 13 | 30 | 0.3 |
| SAP-M10 | 0.7 | M10 | 15 | 1.5 | 33 | 41 | 29 | 11 | 80 | 58 | 23 | 17 | 6 | 17 | 60 | 0.3 |
| SAP-M12 | 1.0 | M12 | 20 | 1.75 | 33 | 40 | 31 | 11 | 80 | 58 | 23 | 17 | 8 | 19 | 100 | 0.3 |
| SAP-M16 | 2.0 | M16 | 24 | 2 | 50 | 54 | 46 | 17 | 117 | 90 | 36 | 27 | 10 | 24 | 150 | 0.9 |
| SAP-M20 | 3.0 | M20 | 30 | 2.5 | 50 | 52 | 49 | 17 | 117 | 90 | 36 | 27 | 12 | 30 | 250 | 1.0 |
| SAP-M24 | 5.0 | M24 | 36 | 3 | 72 | 81 | 59 | 25 | 163 | 125 | 44 | 37 | 14 | 36 | 400 | 2.6 |
| SAP-M27 | 5.6 | M27 | 38 | 3 | 87 | 86 | 79 | 30 | 204 | 148 | 62 | 46 | 17 | 41 | 400 | 4.9 |
| SAP-M30 | 7.8 | M30 | 48 | 3.5 | 87 | 94 | 81 | 30 | 204 | 148 | 62 | 46 | 17 | 46 | 500 | 5.0 |
| SAP-M36 | 12.5 | M36 | 54 | 4 | 110 | 112 | 98 | 36 | 247 | 188 | 75 | 57 | 22 | 55 | 1000 | 9.6 |
| SAP-M42 | 15.6 | M42 | 63 | 4.5 | 110 | 101 | 108 | 36 | 247 | 188 | 83 | 57 | 24 | 65 | 1500 | 10.9 |
| SAP-M48 | 20.0 | M48 | 72 | 5 | 110 | 97 | 113 | 36 | 248 | 188 | 83 | 57 | 27 | 75 | 2000 | 11.6 |
| SAP-M56 | 22.0 | M56 | 84 | 5.5 | 123 | 116 | 121 | 36 | 274 | 202 | 91 | 64 | 27 | 85 | 2100 | 15.0 |
| SAP-M64 | 22.5 | M64 | 100 | 6 | 123 | 111 | 126 | 36 | 274 | 202 | 91 | 64 | 32 | 95 | 2200 | 16.3 |

- Rotates through 360° and pivots 180°, and simultaneously allows lifting from any direction.
- Manufactured from forged alloy steel, quenched and tempered.
- Manufactured and tested in accordance with EN1677-1.
- Load rated parts are 100% magnaflux crack detected.
- Individual forged parts and cap screw are traceable to Test Certification.
- Bolts are Metric thread (ASME / ANSI B18.3.1M), specification is alloy socket head screw per DIN EN ISO 4762.
- Proof tested to 2.5 times the WLL.
- Fatigue rated to 20,000 cycles at 1.5 times the WLL.
- All YOKE Lifting points meet or exceed all the requirements of ASME B30.26.
- Quick and simple assembly, just a tapped hole is required.



SUPER LIFTING POINTS

Swivel Lifting Point SLP

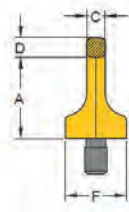
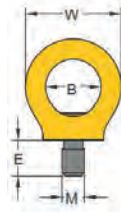
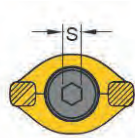


| Part No. | Working Load Tonnes | Thread | | | Dimensions | | | | | | | | Torque in Nm | Weight Kg. |
|----------|---------------------|--------|--------|-------------|------------|-----|----|-----|----|-----|----|---------|--------------|------------|
| | | M(mm) | E (mm) | Pich(DIN13) | G | C | K | F | D | B | A | | | |
| SLP-M8 | 0.3 | M8 | 12 | 1.25 | 36.5 | 48 | 34 | 101 | 13 | 53 | 35 | 10-40 | 0.3 | |
| SLP-M10 | 0.5 | M10 | 18 | 1.5 | 36.5 | 48 | 34 | 101 | 13 | 53 | 35 | 10-40 | 0.4 | |
| SLP-M12 | 0.7 | M12 | 18 | 1.75 | 36.5 | 48 | 34 | 101 | 13 | 53 | 35 | 15-40 | 0.4 | |
| SLP-M16 | 1.4 | M16 | 20 | 2 | 36.5 | 48 | 34 | 101 | 13 | 53 | 35 | 45-130 | 0.44 | |
| SLP-M20 | 2.5 | M20 | 30 | 2.5 | 52 | 68 | 46 | 127 | 16 | 59 | 35 | 100-170 | 1.0 | |
| SLP-M24 | 4.0 | M24 | 30 | 3 | 57 | 75 | 50 | 148 | 19 | 73 | 40 | 190-280 | 1.5 | |
| SLP-M30 | 6.7 | M30 | 35 | 3.5 | 70 | 95 | 65 | 163 | 19 | 68 | 40 | 230-400 | 2.4 | |
| SLP-M36 | 10.0 | M36 | 50 | 4 | 81 | 106 | 75 | 201 | 22 | 95 | 50 | 270-600 | 3.8 | |
| SLP-M42 | 12.5 | M42 | 50 | 4.5 | 81 | 106 | 75 | 201 | 22 | 95 | 50 | 270-700 | 3.9 | |
| SLP-M48 | 12.5 | M48 | 72 | 5 | 81 | 106 | 75 | 201 | 22 | 95 | 50 | 270-700 | 4.4 | |
| SLP-M56 | 18 | M56 | 78 | 5.5 | 104 | 127 | 95 | 256 | 32 | 129 | 70 | 350-900 | 8.1 | |
| SLP-M64 | 20 | M64 | 110 | 6 | 104 | 127 | 95 | 256 | 32 | 129 | 70 | 350-900 | 9.3 | |

- Pivots to 230°, rotates through 360° due to its unique ball bearing design. Design factor 4:1 in all directions.
- Manufactured from forged alloy steel, quenched and tempered.
- Manufactured and tested in accordance with EN1677-1.
- Certified by DGVV GS-OA-15-04.
- Load rated parts are 100% magnaflux crack detected.
- Individual forged parts and batch code links to Test Certificate sheet.
- Bolt are Metric thread (ASME / ANSI B18.3.1M).
- Proof tested to 2.5 times the WLL.
- Fatigue rated to 1.5 times the WLL.
- All YOKE Super points meet or exceed all the requirements of ASME B30.26.
- Easy to attach or dismantle due to the forged hexagon shaped body of the Super Point.
- Capable of rotating under load. Do not turn continuously in 90 degree direction at full load.



Key Eye Point KEP



Load directions

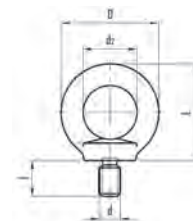



| Part No. | W.L.L. (t) x (z) | Bolt Size | A | B | C | D | E | F | W | S | Mass Kg |
|----------|------------------|------------|-----|-----|----|----|----|-----|-----|----|---------|
| KEP-M8 | 0.40 (1) | M8 X 1.5 | 36 | 25 | 8 | 9 | 12 | 25 | 44 | 6 | 0.1 |
| KEP-M10 | 0.40 (1) | M10 x 1.50 | 36 | 25 | 8 | 9 | 15 | 25 | 44 | 6 | 0.1 |
| KEP-M12 | 0.75 (2) | M12 x 1.75 | 45 | 30 | 10 | 11 | 18 | 33 | 52 | 8 | 0.2 |
| KEP-M16 | 1.50 (4) | M16 x 2.00 | 52 | 35 | 14 | 13 | 24 | 35 | 61 | 10 | 0.3 |
| KEP-M20 | 2.30 (6) | M20 x 2.00 | 60 | 40 | 16 | 15 | 30 | 44 | 70 | 12 | 0.6 |
| KEP-M24 | 3.20 (8) | M24 x 3.00 | 72 | 48 | 19 | 18 | 36 | 52 | 84 | 14 | 1.0 |
| KEP-M30 | 4.50 (12) | M30 x 3.50 | 90 | 60 | 24 | 22 | 45 | 60 | 105 | 17 | 1.8 |
| KEP-M36 | 7.00 (16) | M36 x 4.00 | 109 | 72 | 29 | 27 | 54 | 76 | 126 | 22 | 3.2 |
| KEP-M42 | 9.00 (24) | M42 x 4.50 | 123 | 82 | 34 | 32 | 63 | 88 | 147 | 24 | 5.0 |
| KEP-M48 | 12.00 (32) | M48 x 5.00 | 144 | 94 | 38 | 37 | 72 | 104 | 168 | 27 | 7.6 |
| KEP-M56 | 16.00 (34) | M56 x 5.50 | 147 | 102 | 40 | 43 | 84 | 124 | 178 | 27 | 9.2 |
| KEP-M64 | 18.00 (36) | M64 X 6.00 | 147 | 102 | 40 | 43 | 95 | 130 | 178 | 27 | 10.0 |

- Rotates through 360° adjustable in the direction of the load.
- Manufactured from alloy steel, quenched and tempered.
- Manufactured and tested in accordance with EN1677-1.
- Load rated parts are 100% magnaflux crack detected.
- Individual forged parts and cap screw are traceable to Test Certification.
- Bolts are Metric thread (ASME / ANSI B18.3.1M), specification is alloy socket head screw per DIN EN ISO 4762.
- Proof tested to 2.5 times the WLL.
- Fatigue rated to 20,000 cycles at 1.5 times theWLL.
- All YOKE Lifting points meet or exceed all the requirements of ASME B30.26.
- Quick and simple assembly, just a tapped hole is required.



Lifting Eyebolts - Zinc Electroplated DIN 580



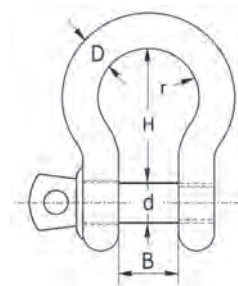
| Part No. | d | l | D | d2 | L | WLL |  |
|----------|-----|----|-----|----|-----|--------|---|
| EBGM8 | M8 | 13 | 36 | 20 | 36 | 140kg | 1 |
| EBGM10 | M10 | 17 | 45 | 25 | 45 | 230kg | 1 |
| EBGM12 | M12 | 20 | 54 | 30 | 53 | 340kg | 1 |
| EBGM16 | M16 | 27 | 63 | 35 | 62 | 700kg | 1 |
| EBGM20 | M20 | 30 | 72 | 40 | 71 | 1200kg | 1 |
| EBGM24 | M24 | 36 | 90 | 50 | 90 | 1800kg | 1 |
| EBGM30 | M30 | 45 | 108 | 60 | 109 | 3600kg | 1 |
| EBGM36 | M36 | 54 | 126 | 70 | 128 | 5100kg | 1 |
| EBGM42 | M42 | 63 | 144 | 80 | 147 | 7000kg | 1 |
| EBGM48 | M48 | 68 | 160 | 90 | 168 | 8600kg | 1 |


Eyebolts/eyenuts to this standard are intended as permanent attachments on equipment.
 Material: Steel C15.
 Marking: According to standard, WLL, manufacturer C15, thread, CE.
 Finish: Electro galvanized.
 Standard: DIN 580.

Note: The lifting eyes shall be screwed tight against the surface. When two lifting eyes are used their mutual position shall result in the two eyes at the same level. Larger angle between the slings than 90° are not tolerated. Lifting eyes can not be assembled against a surface that differs essentially from a surface perpendicular to the direction of the lift.
 Safety factor: 6:1.

SHACKLES

Alloy Steel Bow Shackles - Galvanised



| Part No. | Dim | B | d | H | r | WLL |  |
|----------|-----------------|------|------|-------|------|---------|---|
| ASBSG11 | 3/8" x 7/16" | 17mm | 11mm | 37mm | 26mm | 1000kg | 1 |
| ASBSG13 | 7/16" x 1/2" | 18mm | 13mm | 43mm | 29mm | 1500kg | 1 |
| ASBSG16 | 1/2" x 5/8" | 21mm | 16mm | 48mm | 33mm | 2000kg | 1 |
| ASBSG19 | 5/8" x 3/4" | 27mm | 19mm | 60mm | 43mm | 3250kg | 1 |
| ASBSG22 | 3/4" x 7/8" | 32mm | 22mm | 71mm | 51mm | 4750kg | 1 |
| ASBSG25 | 7/8" x 1" | 37mm | 25mm | 84mm | 58mm | 6500kg | 1 |
| ASBSG28 | 1" x 1 1/8" | 43mm | 28mm | 95mm | 68mm | 8500kg | 1 |
| ASBSG32 | 1 1/8" x 1 1/4" | 46mm | 32mm | 104mm | 75mm | 9500kg | 1 |
| ASBSG35 | 1 1/4" x 1 3/8" | 52mm | 36mm | 119mm | 82mm | 12000kg | 1 |

Mouldpro bow type shackle is a high quality shackle intended for use in demanding environments.

It is supplied with a screw pin for quick and easy opening.

Material: Forged alloy steel, supplied with alloy screw pin.

Marking: According to standard, CE-marked, WLL, size and grade

Temperature range: -20°C up to +200°C.

Finish: All parts hot dip galvanized. Bolt additional powder painted.

Standard: EN 13889.

Safety factor: 6:1.

Grade: 6.



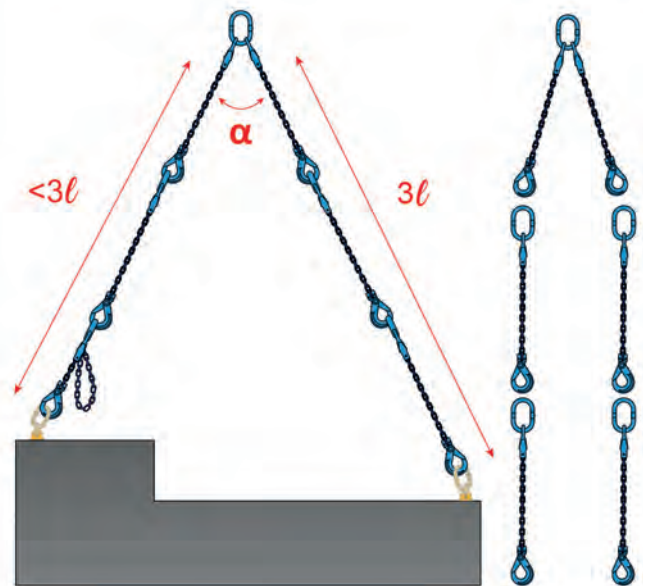
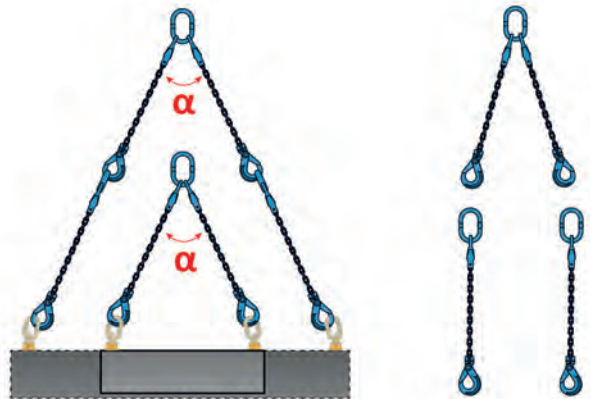
Lifting Chain Slings

Features

Mouldpro offers best solutions which can adjust the length of Chain Sling serving for unsymmetric lengths with convenience and functionality. Also with following features.

Light weight but heavy duty system, extreme wear resistance and longer life than traditional components.

- Cost effective compared to conventional slings using multiple components.
- Product designed according to EN1677 and PAS 1061, tested according to GS-OA-15-05.
- Each component is Proof Load tested at 2.5 times the WLL with certification for each sling.
- Each component is Fatigue Rated to 20,000 cycles at 1.5 times the WLL.
- Each component is marked with batch number that links to the test certificate with full traceability to raw material.
- Fully integrated shortening clutch and master link.
- No reduction in WLL when shortening chain.
- Replacement parts available worldwide.
- Equipped with NFC/RFID Inspection Chip



LIFTING CHAIN SLINGS

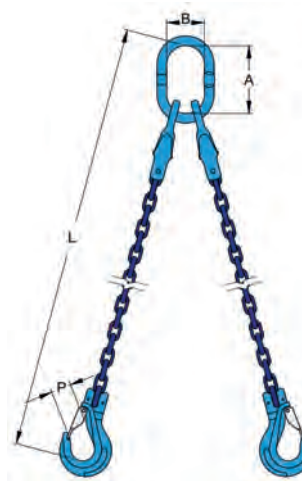
Sling with 1 Chain



| Part No. | WLL Tonnes* | Chain Size | Dimensions (mm) | | | L (M) | N.W. KG |
|----------|-------------|------------|-----------------|-----|----|-------|---------|
| | | | A | B | P | | |
| LCS-1-08 | 2.5 | 8 | 160 | 95 | 27 | 3 | 10.8 |
| LCS-1-10 | 4.0 | 10 | 170 | 105 | 34 | 3 | 18.0 |

* Design factor 4:1 for components in accordance with PAS1061.

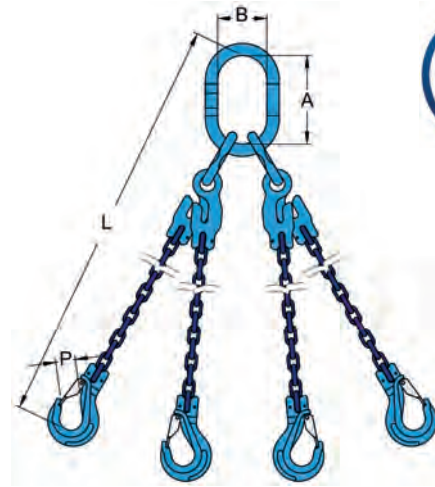
Sling with 2 Chains



| Part No. | Working Load Tonnes | | Chain Size | Dimensions (mm) | | | L (M) | N.W. KG |
|----------|---------------------------------|------------------------------------|------------|-----------------|-----|-----|-------|---------|
| | β 0-45° α 0-90° | β 45-60° α 90-120° | | A | B | P | | |
| | LCS-2-08 | 3.5 | | 2.5 | 8 | 160 | | |
| LCS-2-10 | 5.6 | 4.0 | 10 | 170 | 105 | 34 | 3 | 18.0 |

* Design factor 4:1 for components in accordance with PAS1061.

Sling with 4 Chains



| Part No. | Working Load Tonnes | | Chain Size | Dimensions (mm) | | | L (M) | N.W. KG |
|----------|---------------------------------|------------------------------------|------------|-----------------|-----|----|-------|---------|
| | β 0-45° α 0-90° | β 45-60° α 90-120° | | A | B | P | | |
| LCS-4-08 | 5.3 | 3.8 | 8 | 160 | 95 | 27 | 3 | 21.5 |
| LCS-4-10 | 8.4 | 6.0 | 10 | 170 | 105 | 34 | 3 | 35.6 |

* Design factor 4:1 for components in accordance with PAS1061.

MOULD COMPONENTS

12.

385 Ejector Pins



390 Sleeve Ejectors



391 Flat Ejectors



392 Core Pins



393 Dowel Pins



395 Angle Guide Pins



396 Socket Head Cap Screws



397 Shoulder Screws



398 Spring Plungers



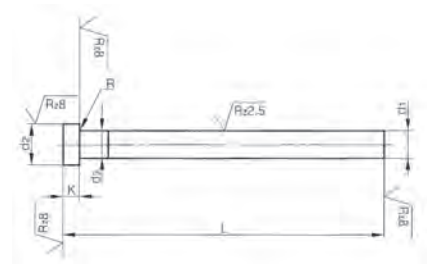
399 Iso Springs



402 Mould Cycle Counter



Ejector Pins, DIN 1530, Type AH - Hardened



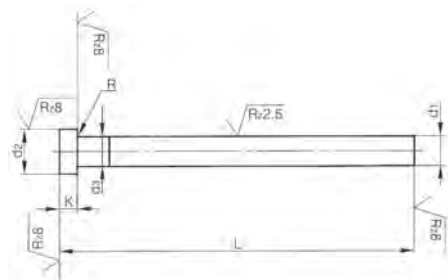
| d1 g6 | d2 0 -0,2 | k 0 -0,05 | R +0,2 0 | d3 | L 0/+2 | | | | | | |
|-------|-----------|-----------|----------|-----------|--------|-----|-----|-----|-----|-----|-----|
| | | | | | 100 | 125 | 160 | 200 | 250 | 315 | 400 |
| 1,5 | 3 | 1,5 | 0,2 | d1 + 0,03 | • | • | • | • | | | |
| 1,6 | | | | | • | • | • | • | | | |
| 2,0 | 4 | 2 | | | • | • | • | • | • | • | |
| 2,2 | | | | | • | • | • | • | • | • | |
| 2,5 | 5 | | 0,3 | | • | • | • | • | • | • | |
| 2,7 | | | | | • | • | • | • | • | • | |
| 3,0 | 6 | 3 | | | • | • | • | • | • | • | • |
| 3,2 | | | | | • | • | • | • | • | • | |
| 3,5 | 7 | | | | • | • | • | • | • | • | |
| 3,7 | | | | | • | • | • | • | • | • | |
| 4,0 | 8 | | | | • | • | • | • | • | • | • |
| 4,2 | | | | | • | • | • | • | • | • | • |
| 4,5 | | | | | • | • | • | • | • | • | • |
| 5,0 | 10 | | | | • | • | • | • | • | • | • |
| 5,2 | | | | | • | • | • | • | • | • | • |
| 5,5 | | | | | • | • | • | • | • | • | • |
| 6,0 | 12 | 5 | 0,5 | | • | • | • | • | • | • | • |
| 6,2 | | | | | • | • | • | • | • | • | • |
| 6,5 | | | | | • | • | • | • | • | • | • |
| 7,0 | | | | | • | • | • | • | • | • | • |
| 8,0 | 14 | | | | • | • | • | • | • | • | • |
| 8,2 | | | | d1 + 0,04 | • | • | • | • | • | • | • |
| 8,5 | | | | | • | • | • | • | • | • | • |
| 9,0 | | | | | • | • | • | • | • | • | • |
| 10,0 | | | | | • | • | • | • | • | • | • |
| 10,2 | | | | | • | • | • | • | • | • | • |
| 10,5 | | | | | • | • | • | • | • | • | • |
| 11,0 | | | | | • | • | • | • | • | • | • |
| 12,0 | 20 | 7 | 0,8 | | • | • | • | • | • | • | • |
| 12,2 | | | | | • | • | • | • | • | • | • |
| 12,5 | | | | | • | • | • | • | • | • | • |
| 14,0 | 22 | | | | • | • | • | • | • | • | • |
| 16,0 | | | | | • | • | • | • | • | • | • |
| 18,0 | 24 | | | d1 + 0,07 | • | • | • | • | • | • | • |
| 20,0 | 26 | 8 | 1,0 | | • | • | • | • | • | • | • |

Surface: Hardened and Polished.
 Material: 1.2516.
 Hardness: 60 ± 2 HRC. Head 45 ± 5 HRC.

Order example
 UDSAH+d1+L ex. UDSAH4160 (4x160 mm).

EJECTOR PINS

Ejector Pins, DIN 6751, Type AB - Nitrided



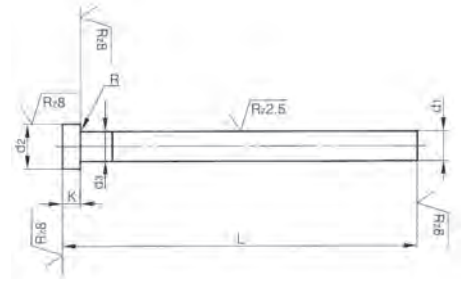
| d1 g6 | d2 -0,2 | k -0,05 | R | d3 | L 0/+2 | | | | | | | | | | | |
|-------|---------|---------|-----|-----------------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|
| | | | | | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | |
| 1,5 | 3 | 1,5 | 0,2 | d ₁ + 0,03 | • | • | • | • | • | | | | | | | |
| 2,0 | 4 | 2 | | | • | • | • | • | • | | | | | | | |
| 2,2 | | | 0,3 | | • | • | • | • | • | | | | | | | |
| 2,5 | 5 | 3 | | | • | • | • | • | • | • | | | | | | |
| 3,0 | 6 | | | | • | • | • | • | • | • | | | | | | |
| 3,2 | | | | | • | • | • | • | • | • | | | | | | |
| 3,5 | 7 | | | | • | • | • | • | • | • | | | | | | |
| 3,7 | | | | | • | • | • | • | • | • | | | | | | |
| 4,0 | 8 | | | | • | • | • | • | • | • | | | | | | |
| 4,2 | | | | | • | • | • | • | • | • | | | | | | |
| 4,5 | | | | | • | • | • | • | • | • | | | | | | |
| 5,0 | 10 | | | | • | • | • | • | • | • | | | | | | |
| 5,2 | | | | | • | • | • | • | • | • | | | | | | |
| 6,0 | 12 | 5 | 0,5 | | • | • | • | • | • | • | | | | | | |
| 6,2 | | | | | • | • | • | • | • | • | | | | | | |
| 8,0 | 14 | | | | • | • | • | • | • | • | | | | | | |
| 8,2 | | | | d ₁ + 0,04 | • | • | • | • | • | • | | | | | | |
| 10,0 | 16 | | | | • | • | • | • | • | • | | | | | | |
| 10,2 | | | | | • | • | • | • | • | • | | | | | | |
| 11,0 | | | | | • | • | • | • | • | • | | | | | | |
| 12,0 | 20 | 7 | 0,8 | | • | • | • | • | • | • | | | | | | |
| 12,2 | | | | | • | • | • | • | • | • | | | | | | |
| 12,5 | | | | | • | • | • | • | • | • | | | | | | |
| 14,0 | 22 | | | | • | • | • | • | • | • | | | | | | |
| 16,0 | | | | | • | • | • | • | • | • | | | | | | |
| 20,0 | 26 | 8 | 1 | d ₁ + 0,1 | | • | • | • | • | • | | | | | | |
| 25,0 | 32 | 10 | | | | | • | • | • | • | | | | | | |
| 32,0 | 40 | | | | | | | • | • | • | | | | | | |

Surface: Nitrided and Polished.
 Material: 1.2344.
 Hardness: 65 ± 2 HRC. Head 45 ± 5 HRC.

Order example

UDSAB+d1+L ex. UDSAB4160 (4x160 mm).

Ejector Pins, DIN 1530, Type AN - Nitrided



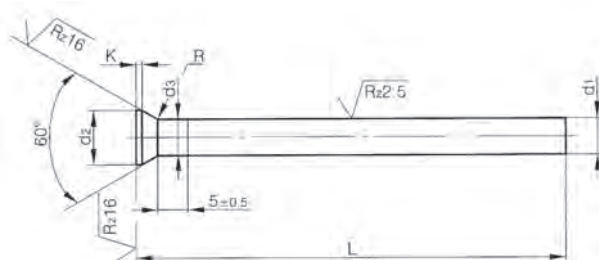
| d1 g6 | d2 -0,2 | k -0,05 | R | d3 | L 0/+2 | | | | | | | | | | | |
|-------|---------|---------|-----|-----------------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|
| | | | | | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | |
| 1,5 | 3 | 1,5 | 0,2 | d ₁ + 0,03 | • | • | • | • | • | | | | | | | |
| 2,0 | 4 | 2 | | | • | • | • | • | • | | | | | | | |
| 2,2 | | | 0,3 | | • | • | • | • | • | | | | | | | |
| 2,5 | 5 | 3 | | | • | • | • | • | • | • | | | | | | |
| 3,0 | 6 | | | | • | • | • | • | • | • | | | | | | |
| 3,2 | | | | | • | • | • | • | • | • | | | | | | |
| 3,5 | 7 | | | | • | • | • | • | • | • | | | | | | |
| 3,7 | | | | | • | • | • | • | • | • | | | | | | |
| 4,0 | 8 | | | | • | • | • | • | • | • | | | | | | |
| 4,2 | | | | | • | • | • | • | • | • | | | | | | |
| 4,5 | | | | | • | • | • | • | • | • | | | | | | |
| 5,0 | 10 | | | | • | • | • | • | • | • | | | | | | |
| 5,2 | | | | | • | • | • | • | • | • | | | | | | |
| 6,0 | 12 | 5 | 0,5 | | • | • | • | • | • | • | | | | | | |
| 6,2 | | | | | • | • | • | • | • | • | | | | | | |
| 8,0 | 14 | | | | • | • | • | • | • | • | | | | | | |
| 8,2 | | | | d ₁ + 0,04 | • | • | • | • | • | • | | | | | | |
| 10,0 | 16 | | | | • | • | • | • | • | • | | | | | | |
| 10,2 | | | | | • | • | • | • | • | • | | | | | | |
| 11,0 | | | | | • | • | • | • | • | • | | | | | | |
| 12,0 | 20 | 7 | 0,8 | | • | • | • | • | • | • | | | | | | |
| 12,2 | | | | | • | • | • | • | • | • | | | | | | |
| 12,5 | | | | | • | • | • | • | • | • | | | | | | |
| 14,0 | 22 | | | | • | • | • | • | • | • | | | | | | |
| 16,0 | | | | | • | • | • | • | • | • | | | | | | |
| 20,0 | 26 | 8 | 1 | d ₁ + 0,1 | | • | • | • | • | • | | | | | | |
| 25,0 | 32 | 10 | | | | | • | • | • | • | | | | | | |
| 32,0 | 40 | | | | | | | • | • | • | | | | | | |

Surface: Bath Nitrided.
 Material: 1.2344.
 Hardness: 65 ± 2 HRC. Head 45 ± 5 HRC.

Order example
 UDSAN+d1+L ex. UDSAN4160 (4x160 mm).

EJECTOR PINS

Ejector Pins, DIN 1530, Type D - Hardened



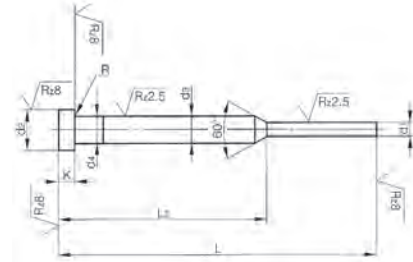
| d1 g6 | d2-0,2 | k -0,05 | R 0/+0,2 | d3 | L 0/+2 | | | | |
|-------|--------|---------|----------|-----------------------|--------|-----|-----|-----|-----|
| | | | | | 100 | 125 | 160 | 200 | 250 |
| 1 | 1,8 | 0,3 | 0,3 | d ₁ + 0,03 | • | • | • | • | • |
| 1,2 | 2 | | | | • | • | • | • | • |
| 1,5 | 2,2 | | | | • | • | • | • | • |
| 2 | 3 | | | | • | • | • | • | • |
| 2,2 | 3,2 | | | | • | • | • | • | • |
| 2,5 | 3,5 | | | | • | • | • | • | • |
| 3 | 4,5 | | | | • | • | • | • | • |
| 3,5 | 5 | | | | • | • | • | • | • |
| 4 | 5,5 | | | | • | • | • | • | • |
| 4,5 | 6 | | | | • | • | • | • | • |
| 5 | 6,5 | | | | • | • | • | • | • |
| 5,5 | 7 | | 0,5 | | • | • | • | • | • |
| 6 | 8 | 0,5 | | | • | • | • | • | • |
| 6,5 | 9 | | | | • | • | • | • | • |
| 7 | | | | | • | • | • | • | • |
| 7,5 | 10 | | | | • | • | • | • | • |
| 8 | | | | | • | • | • | • | • |
| 10 | 12 | | | | • | • | • | • | • |
| 12 | 14 | | | | • | • | • | • | • |
| 14 | 16 | 0,8 | 0,8 | d ₁ + 0,04 | • | • | • | • | • |
| 16 | 18 | | | | • | • | • | • | • |

Surface: Hardened and Polished.
 Material: 1.2516.
 Hardness: 60 ± 2 HRC. Head 45 ± 5 HRC.

Order example

UDSD+d1+L ex. UDSD4160 (4x160 mm).

Ejector Pins, DIN 1530, Type CH - Hardened



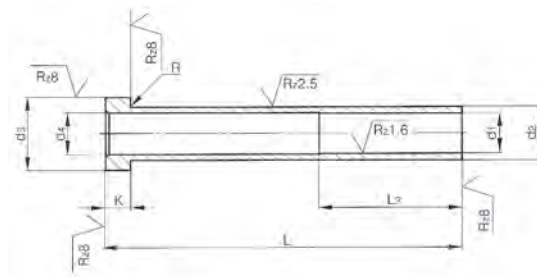
| d1 g6 | d2 0-0,2 | d3 g6 | k 0-0,05 | R -0,05 | L1 | 100 | 125 | 160 | 200 |
|-------|----------|-------|----------|---------|----|-----|-----|-----|-----|
| 0,8 | 4 | 2 | 2 | 0,2 | L2 | 50 | 50 | 75 | 75 |
| 0,9 | 4 | 2 | 2 | 0,2 | | • | • | • | • |
| 1,0 | 4 | 2 | 2 | 0,2 | | • | • | • | • |
| 1,1 | 4 | 2 | 2 | 0,2 | | • | • | • | • |
| 1,2 | 4 | 2 | 2 | 0,2 | | • | • | • | • |
| 1,3 | 4 | 2 | 2 | 0,2 | | • | • | • | • |
| 1,4 | 4 | 2 | 2 | 0,2 | | • | • | • | • |
| 1,5 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 1,6 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 1,7 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 1,8 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 1,9 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 2,0 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 2,1 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 2,2 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 2,3 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 2,4 | 6 | 3 | 3 | 0,3 | | • | • | • | • |
| 2,5 | 6 | 3 | 3 | 0,3 | | • | • | • | • |

Surface: Hardened and Polished.
 Material: 1.2516.
 Hardness: 60 ± 2 HRC. Head 45 ± 5 HRC.

Order example
 UDSCH+d1+L ex. UDSCH2160 (2x160 mm).

SLEEVE EJECTORS

Sleeve Ejectors - Hardened



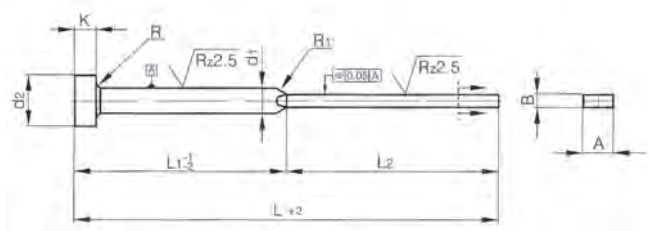
| d2 g6 | d1 H5 | d4 | d3 0 -0,2 | k 0 -0,05 | R +0,2 0 | l2 +2 0 | L 0/+2 | | | | | | | |
|-------|-------|------|-----------|-----------|----------|---------|--------|-----|-----|-----|-----|-----|-----|-----|
| | | | | | | | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
| 4 | 2 | 2,4 | | | | | • | • | • | • | • | | | |
| | 2,2 | 2,6 | 8 | | | | • | • | • | • | | | | |
| 5 | 2,5 | 2,9 | | | | 35 | • | • | • | • | • | | | |
| | 2,7 | 3 | | 3 | 0,3 | | • | • | • | • | • | | | |
| | 3 | 3,4 | 10 | | | | • | • | • | • | • | | | |
| 6 | 3,2 | 3,6 | | | | | • | • | • | • | • | | | |
| | 3,5 | 3,9 | | | | | • | • | • | • | • | | | |
| | 3,7 | 4 | | | | | • | • | • | • | • | | | |
| 8 | 4 | 4,4 | 12 | | | | • | • | • | • | • | | | |
| | 4,2 | 4,6 | | | | | • | • | • | • | • | | | |
| | 5 | 5,4 | | 5 | 0,5 | | • | • | • | • | • | | | |
| 10 | 5,2 | 5,6 | 14 | | | 45 | • | • | • | • | • | | | |
| | 6 | 6,4 | | | | | • | • | • | • | • | | | |
| | 6,2 | 6,6 | | | | | • | • | • | • | • | • | • | • |
| 12 | 8 | 8,4 | 16 | | | | • | • | • | • | • | • | • | • |
| | 8,2 | 8,6 | | | | | • | • | • | • | • | • | • | • |
| 14 | 10 | 10,4 | 20 | 7 | 0,7 | | • | • | • | • | • | • | • | • |
| | 16 | 12,4 | | | | | • | • | • | • | • | • | • | • |

Surface: Hardened and Polished.
 Material: 1.2516.
 Hardness: 60 ± 2 HRC. Head 45 ± 5 HRC.

Order example

RUD(+d2+d1+L)H ex. RUD64125H (6x4x125mm).

Flat Ejectors - Hardened



| d1 g6 | A +0 -0,015 | B +0 -0,015 | d2 +0 -0,2 | K -0,05 | L | 100 | 125 | 160 | 200 |
|-------|-------------|-------------|------------|---------|----|-----|-----|-----|-----|
| | | | | | L1 | 50 | 65 | 80 | 100 |
| | | | | | L2 | 50 | 60 | 80 | 100 |
| 4 | 3,5 | 1 | 8 | 3 | | • | • | | |
| 4,2 | 3,8 | 1 | 8 | 3 | | • | • | • | |
| 4,2 | 3,8 | 1,2 | 8 | 3 | | • | • | • | |
| 6 | 5,5 | 1,2 | 12 | 5 | | • | • | • | • |
| 6 | 5,5 | 1,5 | 12 | 5 | | • | • | • | • |
| 6 | 5,5 | 2 | 12 | 5 | | • | • | • | • |
| 8 | 7,5 | 1,2 | 14 | 5 | | • | • | • | • |
| 8 | 7,5 | 1,5 | 14 | 5 | | • | • | • | • |
| 8 | 7,5 | 2 | 14 | 5 | | • | • | • | • |

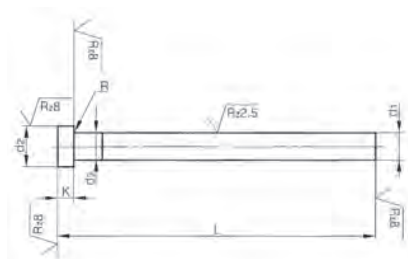
Surface: Hardened and Polished/Grinded.
 Material: 1.2516.
 Hardness: Skaft 60 ± 2 HRC. Head 45 ± 5 HRC.

Order example

FLU(+B+A+L)H ex. FLU25,5125H (2x5,5x125mm).

CORE PINS

Core Pins ISO 6751 Non Hardened (Soft)



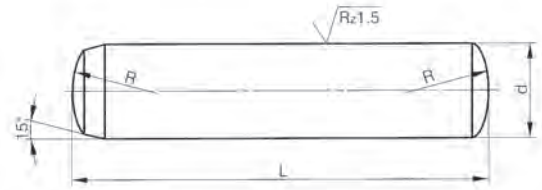
| d1 g6 | d2-0,2 | k-0,05 | R | d3 | 100 | 125 | 160 | 200 | 250 | 315 |
|-------|--------|--------|-----|-----------------------|-----|-----|-----|-----|-----|-----|
| 2 | 4 | 2 | 0,2 | d ₁ + 0,03 | • | • | • | • | | |
| 2,2 | | | 0,3 | | • | • | • | | | |
| 2,5 | 5 | 3 | | | • | • | • | | | |
| 3 | 6 | | | | • | • | • | • | | |
| 3,2 | | | | | • | • | • | • | | |
| 3,5 | 7 | | | | • | • | • | • | | |
| 4 | 8 | | | | • | • | • | • | | |
| 4,2 | | | | | • | • | • | • | | |
| 4,5 | | | | | • | • | • | • | | |
| 5 | 10 | | | | • | • | • | • | • | |
| 5,2 | | | | | • | • | • | • | | |
| 5,5 | | | | | • | • | • | • | | |
| 6 | 12 | 5 | 0,5 | | • | • | • | • | • | |
| 6,2 | | | | | • | • | • | • | • | |
| 6,5 | | | | | • | • | • | • | • | |
| 7 | | | | | • | • | • | • | • | |
| 8 | 14 | | | | • | • | • | • | • | • |
| 10 | | | | d ₁ + 0,04 | • | • | • | • | • | • |
| 12 | 20 | 7 | | | • | • | • | • | • | |
| 16 | | | | | • | • | • | • | • | • |

Surface: Nitrided and Polished.
 Material: 1.2344.
 Hardness: 40 ± 2 HRC. Head 45 ± 5 HRC.

Order example

UDSAC+d1+L ex. UDSAC4160 (4X160 mm).

Dowel Pins, DIN 6325



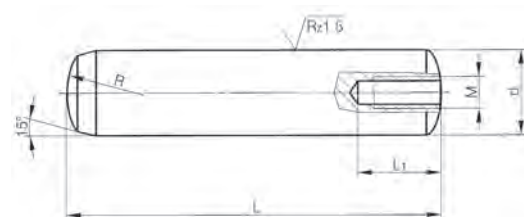
| L \ d | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 20 |
|-------|---|---|---|---|---|---|----|----|----|----|----|
| 6 | • | • | | | | | | | | | |
| 8 | • | • | • | • | | | | | | | |
| 10 | • | • | • | • | • | | | | | | |
| 12 | • | • | • | • | • | | | | | | |
| 14 | • | • | • | • | • | | | | | | |
| 16 | • | • | • | • | • | • | • | | | | |
| 18 | • | • | • | • | • | • | • | • | | | |
| 20 | • | • | • | • | • | • | • | • | • | | |
| 24 | • | • | • | • | • | • | • | • | • | | |
| 28 | • | • | • | • | • | • | • | • | • | | |
| 32 | • | • | • | • | • | • | • | • | • | • | |
| 36 | | • | • | • | • | • | • | • | • | • | |
| 40 | | | • | • | • | • | • | • | • | • | • |
| 45 | | | • | • | • | • | • | • | • | • | • |
| 50 | | | • | • | • | • | • | • | • | • | • |
| 55 | | | • | • | • | • | • | • | • | • | • |
| 60 | | | • | • | • | • | • | • | • | • | • |
| 70 | | | | • | • | • | • | • | • | • | • |
| 80 | | | | • | • | • | • | • | • | • | • |
| 90 | | | | | • | • | • | • | • | • | • |
| 100 | | | | | • | • | • | • | • | • | • |
| 120 | | | | | | • | • | • | • | • | • |
| 130 | | | | | | | | | | • | • |
| 140 | | | | | | | | | | • | • |
| 150 | | | | | | | | | | • | • |

Surface: Hardened and Polished.
 Material: 1.3505.
 Tolerance: m6.
 Hardness: 60 ± 2 HRC.

Order example
 CYL+d+L ex. CYL532 (5x32mm).

DOWEL PINS

Dowel Pins - Threaded - DIN 7979



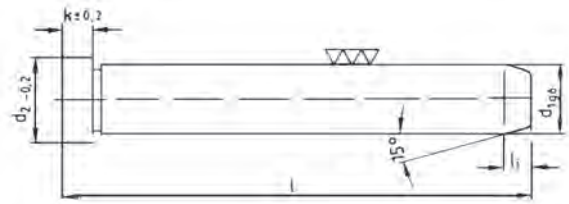
| L | L1 | 10 | | 12 | | 16 | | 16 | | 20 | | 20 | | 25 | |
|-----|----|-----|----|-----|----|------|----|------|----|------|----|------|----|------|-----|
| d | | Ø 6 | M4 | Ø 8 | M5 | Ø 10 | M6 | Ø 12 | M6 | Ø 14 | M8 | Ø 16 | M8 | Ø 20 | M10 |
| 16 | | • | | • | | | | | | | | | | | |
| 18 | | • | | • | | | | | | | | | | | |
| 20 | | • | | • | | • | | • | | | | | | | |
| 24 | | • | | • | | • | | • | | | | | | | |
| 28 | | • | | • | | • | | • | | | | | | | |
| 32 | | • | | • | | • | | • | | • | | • | | | |
| 36 | | • | | • | | • | | • | | • | | • | | | |
| 40 | | • | | • | | • | | • | | • | | • | | | • |
| 45 | | • | | • | | • | | • | | • | | • | | | • |
| 50 | | • | | • | | • | | • | | • | | • | | | • |
| 55 | | • | | • | | • | | • | | • | | • | | | • |
| 60 | | • | | • | | • | | • | | • | | • | | | • |
| 70 | | • | | • | | • | | • | | • | | • | | | • |
| 80 | | • | | • | | • | | • | | • | | • | | | • |
| 90 | | • | | • | | • | | • | | • | | • | | | • |
| 100 | | • | | • | | • | | • | | • | | • | | | • |
| 110 | | • | | • | | • | | • | | • | | • | | | • |
| 120 | | • | | • | | • | | • | | • | | • | | | • |

Surface: Hardened and Polished.
 Material: 1.3505.
 Tolerance: m6.
 Hardness: 60 ± 2 HRC.

Order example

CYLG+d+L ex. CYLG832 (8x32mm).

Angle Guide Pin

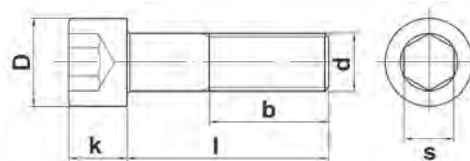


| Part No. | d1 x l | d2 | l1 | k |
|----------|----------|----|----|----|
| EOC1040 | 10 x 40 | 12 | 4 | 3 |
| EOC1060 | 10 x 60 | 12 | 4 | 3 |
| EOC1080 | 10 x 80 | 12 | 4 | 3 |
| EOC10100 | 10 x 100 | 12 | 4 | 3 |
| EOC10120 | 10 x 120 | 12 | 4 | 3 |
| EOC1260 | 12 x 60 | 16 | 7 | 6 |
| EOC1280 | 12 x 80 | 16 | 7 | 6 |
| EOC12100 | 12 x 100 | 16 | 7 | 6 |
| EOC12120 | 12 x 120 | 16 | 7 | 6 |
| EOC12140 | 12 x 140 | 16 | 7 | 6 |
| EOC1460 | 14 x 60 | 18 | 7 | 8 |
| EOC1480 | 14 x 80 | 18 | 7 | 8 |
| EOC14100 | 14 x 100 | 18 | 7 | 8 |
| EOC14120 | 14 x 120 | 18 | 7 | 8 |
| EOC14140 | 14 x 140 | 18 | 7 | 8 |
| EOC14160 | 14 x 160 | 18 | 7 | 8 |
| EOC1680 | 16 x 80 | 20 | 7 | 8 |
| EOC16100 | 16 x 100 | 20 | 7 | 8 |
| EOC16120 | 16 x 120 | 20 | 7 | 8 |
| EOC16140 | 16 x 140 | 20 | 7 | 8 |
| EOC16160 | 16 x 160 | 20 | 7 | 8 |
| EOC16180 | 16 x 180 | 20 | 7 | 8 |
| EOC1860 | 18 x 60 | 22 | 7 | 8 |
| EOC1880 | 18 x 80 | 22 | 7 | 8 |
| EOC18100 | 18 x 100 | 22 | 7 | 8 |
| EOC18120 | 18 x 120 | 22 | 7 | 8 |
| EOC18140 | 18 x 140 | 22 | 7 | 8 |
| EOC18160 | 18 x 160 | 22 | 7 | 8 |
| EOC18200 | 18 x 200 | 22 | 7 | 8 |
| EOC18240 | 18 x 240 | 22 | 7 | 8 |
| EOC20100 | 20 x 100 | 24 | 7 | 8 |
| EOC20120 | 20 x 120 | 24 | 7 | 8 |
| EOC20160 | 20 x 160 | 24 | 7 | 8 |
| EOC20200 | 20 x 200 | 24 | 7 | 8 |
| EOC20240 | 20 x 240 | 24 | 7 | 8 |
| EOC24100 | 24 x 100 | 28 | 7 | 15 |
| EOC24120 | 24 x 120 | 28 | 7 | 15 |
| EOC24140 | 24 x 140 | 28 | 7 | 15 |
| EOC24160 | 24 x 160 | 28 | 7 | 15 |
| EOC24200 | 24 x 200 | 28 | 7 | 15 |
| EOC24240 | 24 x 240 | 28 | 7 | 15 |

Surface: Hardened and Polished.
 Material: 1.7262.
 Tolerance: g6.
 Hardness: 60 ± 2 HRC.

SOCKET HEAD CAP SCREWS

Socket Head Cap Screws



| d | M1,6 | M2 | M2,5 | M3 | M4 | M5 | M6 | M8 | M10 | M12 | M14 | M16 | M18 | M20 | M24 |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Thread-pitch | 0,35 | 0,40 | 0,45 | 0,50 | 0,70 | 0,80 | 1,00 | 1,25 | 1,50 | 1,75 | 2,00 | 2,00 | 2,50 | 2,50 | 3,00 |
| D | 3 | 3,8 | 4,5 | 5,5 | 7 | 8,5 | 10 | 13 | 16 | 18 | 21 | 24 | 27 | 30 | 36 |
| k | 1,6 | 2 | 2,5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
| b | 15 | 16 | 17 | 18 | 20 | 22 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | 60 |
| s | 1,5 | 1,5 | 2 | 2,5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 14 | 17 | 19 |

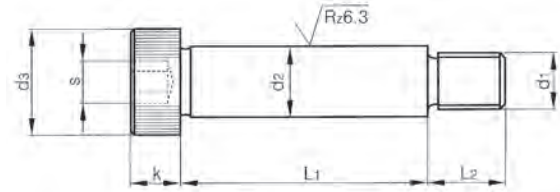
| Length | Thread Size Metric | | | | | | | | | | | | | | |
|--------|--------------------|---|-----|---|---|---|---|---|----|----|----|----|----|----|----|
| | 1,6 | 2 | 2,5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
| 3 | | • | | | | | | | | | | | | | |
| 4 | • | • | | | | | | | | | | | | | |
| 5 | | • | • | • | • | | | | | | | | | | |
| 6 | • | • | • | • | • | • | | | | | | | | | |
| 8 | | • | • | • | • | • | • | | | | | | | | |
| 10 | | • | • | • | • | • | • | • | • | | | | | | |
| 12 | | • | • | • | • | • | • | • | • | • | | | | | |
| 14 | | | | • | • | • | • | • | • | • | • | | | | |
| 15 | | | | | • | • | • | • | • | • | • | • | | | |
| 16 | | | | | • | • | • | • | • | • | • | • | • | | |
| 18 | | | | | | • | • | • | • | • | • | • | • | | |
| 20 | | | | • | • | • | • | • | • | • | • | • | • | | |
| 22 | | | | | • | • | • | • | • | • | • | • | • | | |
| 25 | | | | | | • | • | • | • | • | • | • | • | • | |
| 30 | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 35 | | | | | • | • | • | • | • | • | • | • | • | • | • |
| 40 | | | | | | • | • | • | • | • | • | • | • | • | • |
| 45 | | | | | | • | • | • | • | • | • | • | • | • | • |
| 50 | | | | | | | • | • | • | • | • | • | • | • | • |
| 55 | | | | | | | | • | • | • | • | • | • | • | • |
| 60 | | | | | | | | | • | • | • | • | • | • | • |
| 65 | | | | | | | | | | • | • | • | • | • | • |
| 70 | | | | | | | | | | | • | • | • | • | • |
| 75 | | | | | | | | | | | | • | • | • | • |
| 80 | | | | | | | | | | | | | • | • | • |
| 90 | | | | | | | | | | | | | | • | • |
| 100 | | | | | | | | | | | | | | | • |
| 110 | | | | | | | | | | | | | | | |
| 120 | | | | | | | | | | | | | | | |
| 130 | | | | | | | | | | | | | | | |
| 140 | | | | | | | | | | | | | | | |
| 150 | | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | | |
| 180 | | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | | |

Material: High tensile strength (12.9).
DIN 912/ISO 4762.

Order example

HCS-(Thread Size + (-) + Length) ex. HCS-16-35 (M16x35mm).

Shoulder Screws, ISO 7379



| d2h8 | 6 | 8 | 10 | 12 | 16 | 20 | 24 |
|-------|---------|-------|----------|----------|-----------|--------|----------|
| d1 | 5 X 0,8 | 6 X 1 | 8 X 1,25 | 10 X 1,5 | 12 X 1,75 | 16 X 2 | 20 X 2,5 |
| d3 | 10 | 13 | 16 | 18 | 24 | 30 | 36 |
| K | 4,5 | 5,5 | 7 | 8 | 10 | 14 | 16 |
| L2 | 9,5 | 11 | 13 | 16 | 18 | 22 | 27 |
| S | 3 | 4 | 5 | 6 | 8 | 10 | 12 |
| Kg/mm | 0,68 | 1,15 | 3 | 6 | 11 | 28 | 55 |

| L1 | L1 h11 | | | | | | |
|-----|--------|---|---|---|---|---|---|
| 10 | . | | | | | | |
| 12 | . | . | | | | | |
| 16 | . | . | . | | | | |
| 20 | . | . | . | . | | | |
| 25 | . | . | . | . | . | | |
| 30 | . | . | . | . | . | . | |
| 35 | . | . | . | . | . | . | |
| 40 | . | . | . | . | . | . | . |
| 45 | . | . | . | . | . | . | . |
| 50 | . | . | . | . | . | . | . |
| 55 | . | . | . | . | . | . | . |
| 60 | | . | . | . | . | . | . |
| 65 | | . | . | . | . | . | . |
| 70 | | . | . | . | . | . | . |
| 80 | | | . | . | . | . | . |
| 90 | | | . | . | . | . | . |
| 100 | | | . | . | . | . | . |
| 120 | | | . | . | . | . | . |

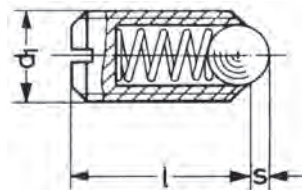
Material: High tensile strength (12.9).
ISO 7379.

Order example

UNBH+d2+L1 ex. UNBH610 (6 x 10 mm).

SPRING PLUNGERS

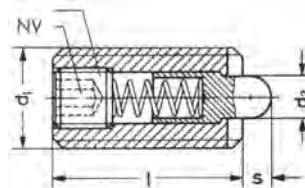
Spring Plunger, Ball Type



| Part No. | d1 | l | S | Ball Ø |
|-----------|-----|----|-----|--------|
| WZ8087M3 | M3 | 7 | 0,5 | 1,5 |
| WZ8087M4 | M4 | 9 | 0,8 | 2,5 |
| WZ8087M5 | M5 | 12 | 0,9 | 3 |
| WZ8087M6 | M6 | 14 | 1,0 | 3,5 |
| WZ8087M8 | M8 | 16 | 1,5 | 5 |
| WZ8087M10 | M10 | 19 | 2,0 | 6 |
| WZ8087M12 | M12 | 22 | 2,5 | 8 |
| WZ8087M16 | M16 | 24 | 3,5 | 10 |

Material: 1.0718.

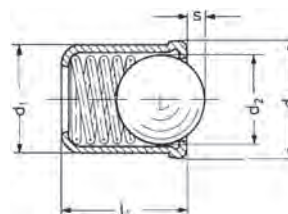
Spring Plunger, Pin Type



| Part No. | d1 | l | S | d2 | NV |
|-----------|-----|----|-----|-----|-----|
| WZ8090M3 | M3 | 12 | 1 | 1 | 0,7 |
| WZ8090M4 | M4 | 15 | 1,5 | 1,5 | 1,3 |
| WZ8090M5 | M5 | 18 | 2,3 | 2,4 | 1,5 |
| WZ8090M6 | M6 | 20 | 2,5 | 2,7 | 2 |
| WZ8090M8 | M8 | 22 | 3 | 3,5 | 2,5 |
| WZ8090M10 | M10 | 22 | 3 | 4 | 3 |
| WZ8090M12 | M12 | 28 | 4 | 6 | 4 |
| WZ8090M16 | M16 | 32 | 5 | 7,5 | 5 |

Material: 1.0718.

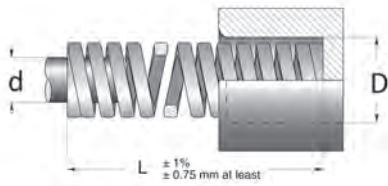
Spring Plunger, Straight



| Part No. | d1 | l1 | S | d2 | d3 |
|----------|----|----|-----|-----|-----|
| WZ80934 | 4 | 5 | 0,7 | 3 | 4,6 |
| WZ80935 | 5 | 6 | 1 | 4 | 5,6 |
| WZ80936 | 6 | 7 | 1,5 | 5 | 6,5 |
| WZ80938 | 8 | 9 | 1,8 | 6,5 | 8,5 |

Material: 1.4303.

Die springs ISO 10243 - Steel



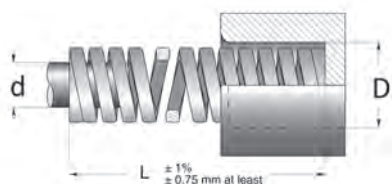
| D x L | d | Type V Green | Type B Blue | Type R Red | Type G Yellow |
|----------|-----|--------------|-------------|------------|---------------|
| 10 x 38 | 5 | • | • | • | • |
| 10 x 44 | 5 | • | • | • | • |
| 10 x 51 | 5 | • | • | • | • |
| 10 x 64 | 5 | • | • | • | • |
| 10 x 76 | 5 | • | • | • | • |
| 10 x 305 | 5 | • | • | • | • |
| | | | | | |
| 13 x 25 | 6,3 | • | • | • | • |
| 13 x 32 | 6,3 | • | • | • | • |
| 13 x 38 | 6,3 | • | • | • | • |
| 13 x 44 | 6,3 | • | • | • | • |
| 13 x 51 | 6,3 | • | • | • | • |
| 13 x 64 | 6,3 | • | • | • | • |
| 13 x 76 | 6,3 | • | • | • | • |
| 13 x 89 | 6,3 | • | • | • | • |
| 13 x 102 | 6,3 | • | • | • | • |
| 13 x 305 | 6,3 | • | • | • | • |
| | | | | | |
| 16 x 25 | 8 | • | • | • | • |
| 16 x 32 | 8 | • | • | • | • |
| 16 x 38 | 8 | • | • | • | • |
| 16 x 44 | 8 | • | • | • | • |
| 16 x 51 | 8 | • | • | • | • |
| 16 x 64 | 8 | • | • | • | • |
| 16 x 76 | 8 | • | • | • | • |
| 16 x 89 | 8 | • | • | • | • |
| 16 x 102 | 8 | • | • | • | • |
| 16 x 115 | 8 | • | • | • | • |
| 16 x 305 | 8 | • | • | • | • |
| | | | | | |
| 20 x 25 | 10 | • | • | • | • |
| 20 x 32 | 10 | • | • | • | • |
| 20 x 38 | 10 | • | • | • | • |
| 20 x 44 | 10 | • | • | • | • |
| 20 x 51 | 10 | • | • | • | • |
| 20 x 64 | 10 | • | • | • | • |
| 20 x 76 | 10 | • | • | • | • |
| 20 x 89 | 10 | • | • | • | • |
| 20 x 102 | 10 | • | • | • | • |
| 20 x 115 | 10 | • | • | • | • |
| 20 x 127 | 10 | • | • | • | • |
| 20 x 139 | 10 | • | • | • | • |
| 20 x 152 | 10 | • | • | • | • |
| 20 x 305 | 10 | • | • | • | • |

Order example

Type+Dimension+Length: V10076 (Green \varnothing 10 x 76 mm).
V10305 (Green \varnothing 10 x 305 mm).

ISO SPRINGS

Die springs ISO 10243 - Steel

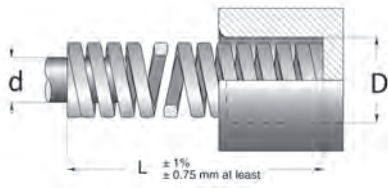


| D x L | d | Type V Green | Type B Blue | Type R Red | Type G Yellow |
|----------|------|--------------|-------------|------------|---------------|
| 25 x 25 | 12,5 | • | • | • | • |
| 25 x 32 | 12,5 | • | • | • | • |
| 25 x 38 | 12,5 | • | • | • | • |
| 25 x 44 | 12,5 | • | • | • | • |
| 25 x 51 | 12,5 | • | • | • | • |
| 25 x 64 | 12,5 | • | • | • | • |
| 25 x 76 | 12,5 | • | • | • | • |
| 25 x 89 | 12,5 | • | • | • | • |
| 25 x 102 | 12,5 | • | • | • | • |
| 25 x 115 | 12,5 | • | • | • | • |
| 25 x 127 | 12,5 | • | • | • | • |
| 25 x 139 | 12,5 | • | • | • | • |
| 25 x 152 | 12,5 | • | • | • | • |
| 25 x 178 | 12,5 | • | • | • | • |
| 25 x 203 | 12,5 | • | • | • | • |
| 25 x 305 | 12,5 | • | • | • | • |
| | | | | | |
| 32 x 38 | 16 | • | • | • | • |
| 32 x 44 | 16 | • | • | • | • |
| 32 x 51 | 16 | • | • | • | • |
| 32 x 64 | 16 | • | • | • | • |
| 32 x 76 | 16 | • | • | • | • |
| 32 x 89 | 16 | • | • | • | • |
| 32 x 102 | 16 | • | • | • | • |
| 32 x 115 | 16 | • | • | • | • |
| 32 x 127 | 16 | • | • | • | • |
| 32 x 139 | 16 | • | • | • | • |
| 32 x 152 | 16 | • | • | • | • |
| 32 x 178 | 16 | • | • | • | • |
| 32 x 203 | 16 | • | • | • | • |
| 32 x 254 | 16 | • | • | • | • |
| 32 x 305 | 16 | • | • | • | • |

Order example

Type+ Dimension+Length: V10076 (Green ø 10 x 76 mm).
 V10305 (Green ø 10 x 305 mm).

Die springs ISO 10243 - Steel



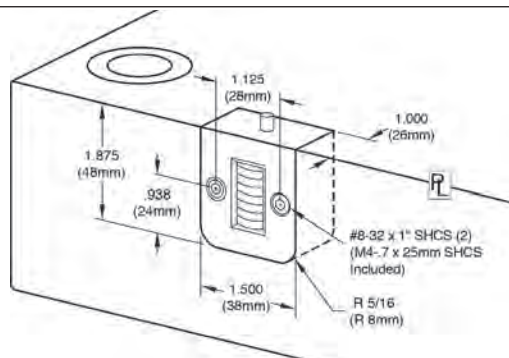
| D x L | d | Type V Green | Type B Blue | Type R Red | Type G Yellow |
|----------|----|--------------|-------------|------------|---------------|
| 40 x 51 | 20 | • | • | • | • |
| 40 x 64 | 20 | • | • | • | • |
| 40 x 76 | 20 | • | • | • | • |
| 40 x 89 | 20 | • | • | • | • |
| 40 x 102 | 20 | • | • | • | • |
| 40 x 115 | 20 | • | • | • | • |
| 40 x 127 | 20 | • | • | • | • |
| 40 x 139 | 20 | • | • | • | • |
| 40 x 152 | 20 | • | • | • | • |
| 40 x 178 | 20 | • | • | • | • |
| 40 x 203 | 20 | • | • | • | • |
| 40 x 254 | 20 | • | • | • | • |
| 40 x 305 | 20 | • | • | • | • |
| | | | | | |
| 50 x 64 | 25 | • | • | • | • |
| 50 x 76 | 25 | • | • | • | • |
| 50 x 89 | 25 | • | • | • | • |
| 50 x 102 | 25 | • | • | • | • |
| 50 x 115 | 25 | • | • | • | • |
| 50 x 127 | 25 | • | • | • | • |
| 50 x 139 | 25 | • | • | • | • |
| 50 x 152 | 25 | • | • | • | • |
| 50 x 178 | 25 | • | • | • | • |
| 50 x 203 | 25 | • | • | • | • |
| 50 x 229 | 25 | - | • | - | - |
| 50 x 254 | 25 | • | • | • | • |
| 50 x 305 | 25 | • | • | • | • |
| | | | | | |
| 63 x 76 | 38 | • | • | • | • |
| 63 x 89 | 38 | • | • | • | • |
| 63 x 102 | 38 | • | • | • | • |
| 63 x 115 | 38 | • | • | • | • |
| 63 x 127 | 38 | • | • | • | • |
| 63 x 152 | 38 | • | • | • | • |
| 63 x 178 | 38 | • | • | • | • |
| 63 x 203 | 38 | • | • | • | • |
| 63 x 229 | 38 | - | • | - | - |
| 63 x 254 | 38 | • | • | • | • |
| 63 x 305 | 38 | • | • | • | • |

Order example

Type + Dimension + Length: V10076 (Green ø 10 x 76 mm).
 V10305 (Green ø 10 x 305 mm).

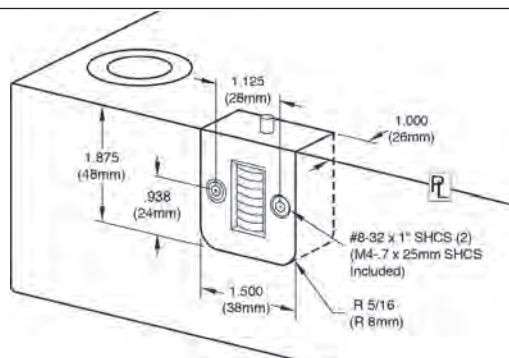
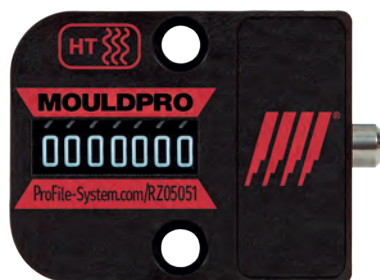
MOULD CYCLE COUNTER

Mould Cycle Counter – Right



| Part No. | Orientation | # digits | Colour | Temp range |
|-------------|---------------------|----------|-----------|------------|
| CC-200-R-HT | Right (moving half) | 7 | Black/Red | 190°C |

Mould Cycle Counter – Left



| Part No. | Orientation | # digits | Colour | Temp range |
|-------------|-------------------|----------|-----------|------------|
| CC-200-L-HT | Left (fixed half) | 7 | Black/Red | 190°C |

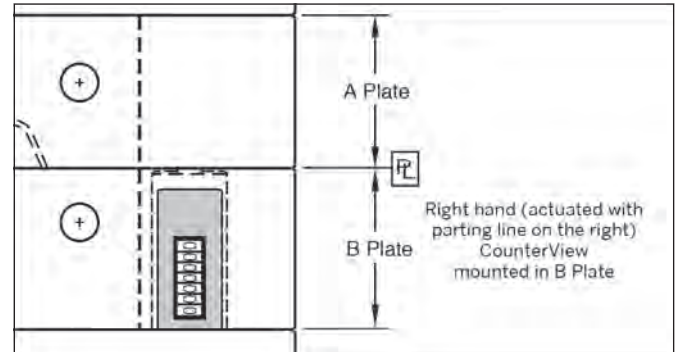
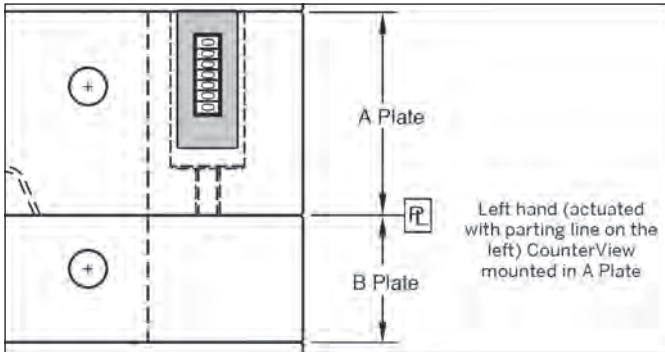
Mouldpro Cycle Counter positively monitors mold activity, validates process monitoring data, and assists mold maintenance procedures.

- Maximum operating temperature is 190°
- Counter: Non-resettable mechanical, 7-digit
- High Temp housing
- Reliable and tested quality
- Specified worldwide by leading OEM's
- Supplied with serial Number
- Socket head cap screws are included

Round Counter - Right Hand

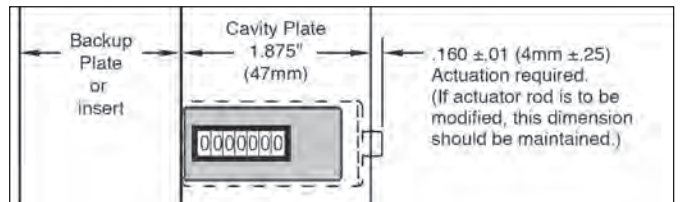
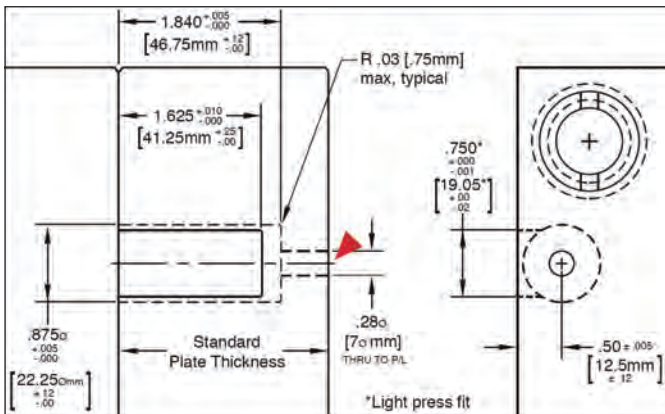


Round Counter - Left Hand



| Part No. | Direction | # Digit | Colour | Temp. Range |
|----------|------------|---------|--------|-------------|
| CR100 | Right hand | 7 | Black | 120°C |
| CL100 | Left hand | 7 | Black | 120°C |

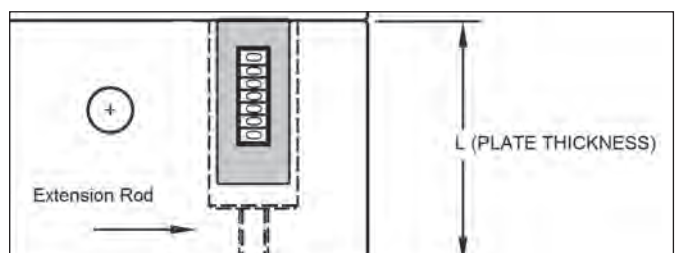
The Round counters can be installed in the A or B plates with a minimum thickness of 1.875" (47mm). Larger plates utilize a threaded rod (included with each) that is pre-machined to the appropriate length for standard plate thicknesses to provide consistent actuation.



Extension Rods

| Part No. | L |
|----------|-----|
| CER-56 | 56 |
| CER-66 | 66 |
| CER-76 | 76 |
| CER-96 | 96 |
| CER-116 | 116 |
| CER-196 | 196 |

L=Length to make plate thickness.



EXPLANATION OF SYMBOLS



Water



Oil



Temperature max.



Only in combination with Push-Lock hose and Push-Lock hosetail



TS Safety coupling



Optional colour clips see page 31

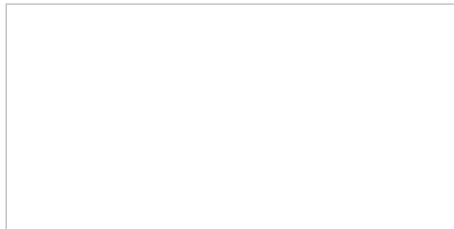


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DISTRIBUTOR



www.mouldpro.com