

# ISO 15552 CYLINDER

Cylinders made to ISO 15552 available in various versions and with a wide range of accessories:

- Configuration with or without magnet
- Single-or double acting – single-or through-rod
- Wide choice of NBR, POLYURETHANE and FKM/FPM gaskets (for high temperatures), for LOW TEMPERATURE
- Piston rod scrapers for use in hostile environments available
- Special versions on request
- Fixing accessories, guide units and mechanical rod lock.

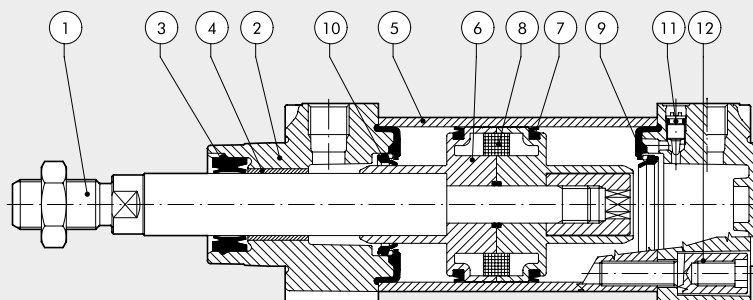
They are available in three versions, series STD, type A, series 3, which differ according to the shape of the barrel and, consequently, the type of sensors and accessories that can be mounted.



| TECHNICAL DATA                              |                              | Ø32   | Ø40       | Ø50                    | Ø63       | Ø80                                  | Ø100      | Ø125      |
|---|------------------------------|---|-----------|------------------------|-----------|--------------------------------------|-----------|-----------|
| Max operating pressure                      | bar                          |   |           |                        |           | 10                                   |           |           |
|   | MPa                          |   |           |                        |           | 1                                    |           |           |
|   | psi                          |   |           |                        |           | 145                                  |           |           |
| Temperature range                           | POLYURETHANE °C              |   |           |                        |           | -25 to +80                           |           |           |
|   | NBR °C                       |   |           |                        |           | -10 to +80                           |           |           |
|   | FKM/FPM °C                   |   |           |                        |           | -10 to +150 (non-magnetic cylinders) |           |           |
|   | Low Temperature °C           |   |           |                        |           | -40 to +80                           |           |           |
|   | Other piston rod gasket °C   |   |           |                        |           | See next page                        |           |           |
| Design                                      |                              | Heads with Tap Tite screws  |           |                        |           |                                      |           |           |
| Fluid                                       |                              | Unlubricated air. Lubrication, if used, must be continuous  |           |                        |           |                                      |           |           |
| Standard stroke †                           | single-acting mm             | 1 to 250  | 1 to 250  | 1 to 250               | 1 to 250  | -                                    | -         | -         |
|   | double-acting with spring mm | 1 to 250  | 1 to 250  | 1 to 250               | 1 to 250  | -                                    | -         | -         |
|   | double-acting mm             | 1 to 2800   | 1 to 2800 | 1 to 2800              | 1 to 2800 | 1 to 2800                            | 1 to 2600 | 1 to 2600 |
| Versions                                    |                              | Double-acting cushioned, Double-acting cushioned with spring, extended or retracted piston rod, Single-acting extended or retracted rod cushioned, Through-rod cushioned, Long cushioning, High-temperature, Protective bellows, Rod lock, Oil seal, Through-rod oil seal, Low friction, No stick-slip. |           |                        |           |                                      |           |           |
| Sensor magnet                               |                              | All versions come complete with magnet. Supplied without magnet on request.   |           |                        |           |                                      |           |           |
| Inrush pressure                             | bar                          | 0.4   | 0.4       | strokes < 1500 mm: 0.3 |           | strokes < 1500 mm: 0.2               |           |           |
|   | bar                          |   |           | strokes > 1500 mm: 0.4 |           | strokes > 1500 mm: 0.4               |           |           |
|   | for type-R gasket bar        | 1.5   | 1         | 1                      | 0.8       | 0.5                                  | 0.5       | 0.5       |
| Forces generated at 6 bar thrust/retraction |                              | See cylinder "General technical data" at the beginning of the chapter   |           |                        |           |                                      |           |           |
| Weights                                     |                              | See cylinder "General technical data" at the beginning of the chapter   |           |                        |           |                                      |           |           |
| Notes                                       |                              | <b>For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air.</b>  |           |                        |           |                                      |           |           |
|   |                              | † Maximum recommended strokes. Higher values can create operating problems  |           |                        |           |                                      |           |           |

## COMPONENTS

- PISTON ROD: C45 steel or stainless steel, thick chromed
- HEAD: die cast aluminium
- PISTON ROD GASKET: polyurethane, NBR, FKM/FPM, FKM/FPM with metal scraper
- GUIDE BUSHING: steel strip with bronze and PTFE insert
- BARREL: drawn anodized calibrated aluminium
- HALF-PISTON: self-lubricating technopolymer with built-in cushioning olives (aluminium with PTFE pad for diameters 80-100-125)
- PISTON GASKET: polyurethane, NBR or FKM/FPM
- MAGNET: plastoferrite
- BUFFER + Static O-rings: NBR or FKM/FPM
- CUSHIONING GASKET: polyurethane, NBR or FKM/FPM
- CUSHIONING NEEDLE: OT 58 with needle out movement safety system even when fully open
- SCREWS: Tap Tite for assembly



## OVERVIEW OF SEALS AND SCRAPERS

|   | Code identifier | Key feature   | Applications  | Gasket material  | Temperature range                       | Notes   |
|---|-----------------|---|---|--|---|---|
| ① | ....N           | General use.  | Standard applications, also with humidity.  | NBR  | -10 to +80 °C                           |   |
| ② | ....P           | Long life.  | Applications with long strokes or high number of cycles.  | Polyurethane   | -25 ÷ +80 °C                            |   |
| ③ | ....V           | High temperatures - chemicals.                        | Industrial applications with chemical agents and/or at high temperatures.   | FPM/FKM  | -10 to +150 °C (non magnetic cylinders) |   |
| ④ | ....B           | Low temperatures.                                     | Applications in presence of low temperature such as in cold environments.   | NBR  | -40 to +80 °C                           |   |
| ⑦ | ....C           | Dirt and dust.<br>Reference name: COMBI               | Applications in dirty and dusty environments.   | Scraper made of technopolymer, the other seals are made of NBR.                      | -10 to +80 °C                           | Maximum recommended speed: 1 m/s  |
| ⑧ | ....R           | Dirt and low temperatures.<br>Reference name: HARD PU | Medium-Heavy duty applications, with presence of dirt and low temperatures, such as in agriculture or in transport sector.        | Piston rod seal made of hard polyurethane, the other seals are made of polyurethane. | -25 to +80 °C                           | Low temperature versions for a minimum temperature of -35°C are available on request. |
| ⑨ | ....M           | Dirt and high temperature.<br>Reference name: METAL   | Heavy duty applications, in presence of hard dirt and high temperatures, like in cement plants, foundries or in transport sector. | Metal scraper, the other seals are made of FKM/FPM.                                  | -10 to +150 °C                          | Not available in Ø 32.<br>The scraper is housed in a special head.                    |

## SEALS USED IN OTHER FAMILIES OF ISO 15552 CYLINDERS

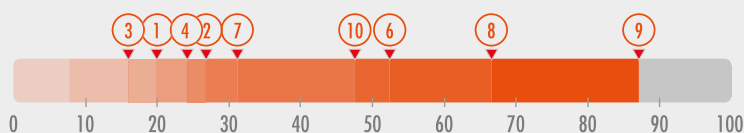
|   |                              |                                    |  |  |                |  |
|---|------------------------------|------------------------------------|--|--|----------------|--|
| ① | 123....<br>only for series 3 | Ultra low friction.                | Textile industry, dandy devices, pneumatic springs.  | NBR  | -10 to +80 °C  |  |
| ⑩ | ....BL<br>and<br>....WL      | HCR<br>(High Corrosion Resistance) | Food and Beverage sector, such as dairy industry.  | Anti-stagnation scraper made of special polyurethane, the other seals are made of NBR. | -10 to +60 °C  |  |
| ② | W184...<br>W185...           | INOX                               | Industrial applications with aggressive chemical agents.   | Polyurethane   | -20 to +80 °C  |  |
| ③ | W184V...<br>W185V...         | Stainless steel high temperature.  | Industrial applications, in presence of chemicals and high temperatures requested, such as in chemical plants. | FKM/FPM  | -10 to +150 °C |  |

## SEALS AVAILABLE ON REQUEST

|   |                 |                  |  |                               |               |  |
|---|-----------------|------------------|--|-------------------------------|---------------|--|
| ⑥ | Only on request | Self lubricated. | Applications where the lubricants in the cylinder could be removed, such as in car washing plants. | Self lubricated tecnopolymer. | -30 to +80 °C |  |
|---|-----------------|------------------|--|-------------------------------|---------------|--|

## Anti-contamination Effect Indicators

An index of protection against the dirt that settles and adheres to the piston rod is provided for each version, on a 1 to 100 scale.



## OVERVIEW OF SEALS AND SCRAPERS

|   | Code identifier | Key feature   | Applications  | Gasket material  | Temperature range                       | Notes   |
|---|-----------------|---|---|--|---|---|
| ① | ....N           | General use.  | Standard applications, also with humidity.  | NBR  | -10 to +80 °C                           |   |
| ② | ....P           | Long life.  | Applications with long strokes or high number of cycles.  | Polyurethane   | -25 ÷ +80 °C                            |   |
| ③ | ....V           | High temperatures - chemicals.                        | Industrial applications with chemical agents and/or at high temperatures.   | FPM/FKM  | -10 to +150 °C (non magnetic cylinders) |   |
| ④ | ....B           | Low temperatures.                                     | Applications in presence of low temperature such as in cold environments.   | NBR  | -40 to +80 °C                           |   |
| ⑦ | ....C           | Dirt and dust.<br>Reference name: COMBI               | Applications in dirty and dusty environments.   | Scraper made of technopolymer, the other seals are made of NBR.                      | -10 to +80 °C                           | Maximum recommended speed: 1 m/s  |
| ⑧ | ....R           | Dirt and low temperatures.<br>Reference name: HARD PU | Medium-Heavy duty applications, with presence of dirt and low temperatures, such as in agriculture or in transport sector.        | Piston rod seal made of hard polyurethane, the other seals are made of polyurethane. | -25 to +80 °C                           | Low temperature versions for a minimum temperature of -35°C are available on request. |
| ⑨ | ....M           | Dirt and high temperature.<br>Reference name: METAL   | Heavy duty applications, in presence of hard dirt and high temperatures, like in cement plants, foundries or in transport sector. | Metal scraper, the other seals are made of FKM/FPM.                                  | -10 to +150 °C                          | Not available in Ø 32.<br>The scraper is housed in a special head.                    |

## SEALS USED IN OTHER FAMILIES OF ISO 15552 CYLINDERS

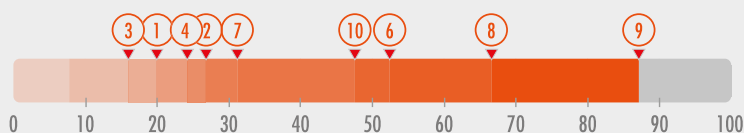
|   |                              |                                    |  |  |                |  |
|---|------------------------------|------------------------------------|--|--|----------------|--|
| ① | 123....<br>only for series 3 | Ultra low friction.                | Textile industry, dandy devices, pneumatic springs.  | NBR  | -10 to +80 °C  |  |
| ⑩ | ....BL<br>and<br>....WL      | HCR<br>(High Corrosion Resistance) | Food and Beverage sector, such as dairy industry.  | Anti-stagnation scraper made of special polyurethane, the other seals are made of NBR. | -10 to +60 °C  |  |
| ② | W184...<br>W185...           | INOX                               | Industrial applications with aggressive chemical agents.   | Polyurethane   | -20 to +80 °C  |  |
| ③ | W184V...<br>W185V...         | Stainless steel high temperature.  | Industrial applications, in presence of chemicals and high temperatures requested, such as in chemical plants. | FKM/FPM  | -10 to +150 °C |  |

## SEALS AVAILABLE ON REQUEST

|   |                 |                  |  |                               |               |  |
|---|-----------------|------------------|--|-------------------------------|---------------|--|
| ⑥ | Only on request | Self lubricated. | Applications where the lubricants in the cylinder could be removed, such as in car washing plants. | Self lubricated tecnopolymer. | -30 to +80 °C |  |
|---|-----------------|------------------|--|-------------------------------|---------------|--|

## Anti-contamination Effect Indicators

An index of protection against the dirt that settles and adheres to the piston rod is provided for each version, on a 1 to 100 scale.



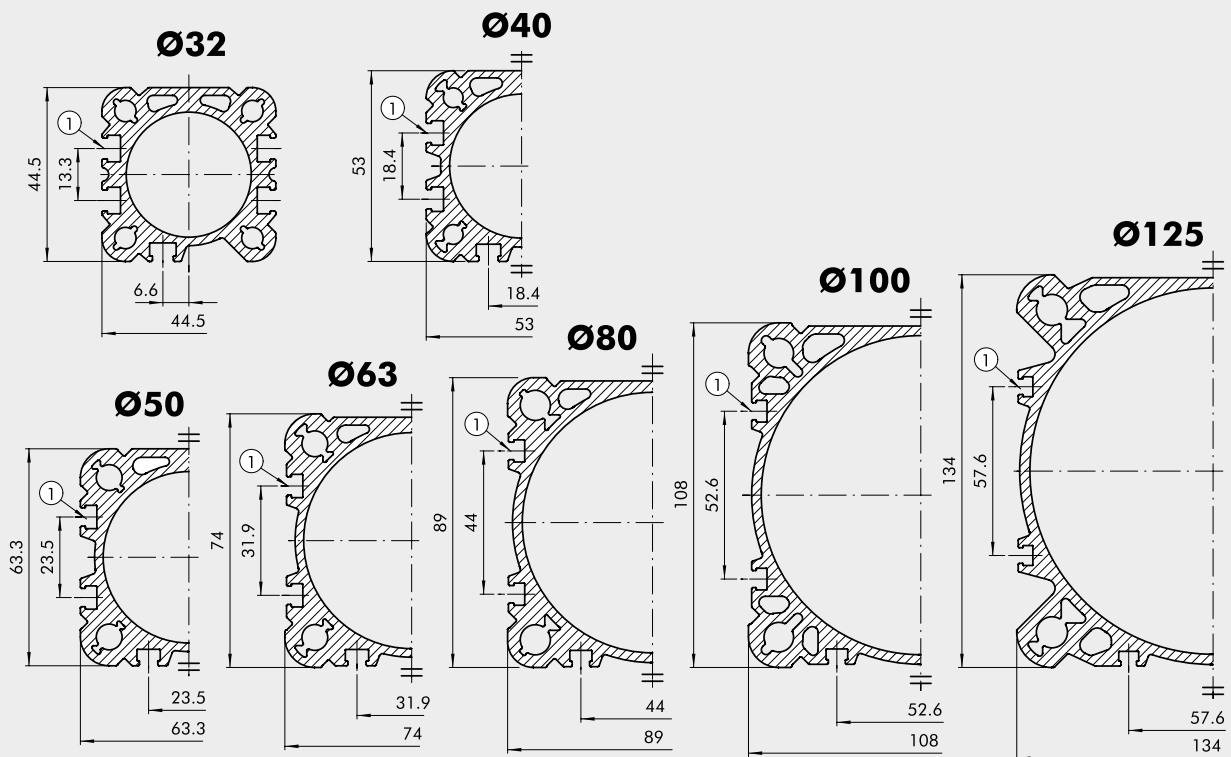
# ISO 15552 CYLINDER TYPE A

ISO 15552 cylinders, featuring a barrel with longitudinal slots on three sides for inserting and securing retractable sensors. The same slots can also be used for valves and other mechanical parts.



## BARREL CROSS SECTION

① SLOTS FOR RETRACTABLE SENSOR



KEY TO CODES

| CYL   | 1 2 1<br>TYPE                                  | A<br>VERSION      | 3 2<br>BORE | 0 0 5 0<br>STROKE                              | C<br>MATERIAL   | P<br>GASKETS                                  | E  |
|-------|--|-------------------|-------------|--|---|---|--|
|       | 121 Double-acting, cushioned                   | A Standard        | 32          | For the maximum                                | A C45 chromed piston rod, aluminium piston:   | N NBR gaskets                                 | + ▼ E Single-acting extended rod or double-acting with spring, extended piston rod |
| ●     | 122 Through-rod                                | ▲ B No stick-slip | 40          | suppliable strokes, look at the technical data | standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over | P Polyurethane gaskets                        | + ✖ R Double-acting with spring, retracted piston rod                              |
|       | 124 Double-acting, non-cushioned               | C Non-magnetic    | 50          |  | C C45 chromed piston rod, technopolymer piston:   | V FKM/FPM gaskets                             | ★ 1 + Secure Lock with manual control  |
|       | 125 Opposed                                    |                   | 63          |  | standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes                                     | ● B Low temperature "Combi" piston rod gasket | ★ 2 + Secure Lock without manual control   |
| +     | 126 Single-acting                              |                   | 80          |  | Z Stainless steel piston rod and nut aluminium piston   | ▶ R "Hard PU" piston rod gasket               |  |
| ▷     | 127 Tandem                                     |                   | A1 = Ø 100  |  | X Stainless steel piston rod and nut technopolymer piston   | ● ◻ M "Metal" piston rod gasket               |  |
| * ▷   | 134 Version suitable for rod lock              |                   | A2 = Ø 125  |  |   |   |  |
| * ▷   | 136 Version with rod lock                      |                   |             |  |   |   |  |
| * ◻ ▷ | 137 Version suitable for rod lock + guide unit |                   |             |  |   |   |  |
| * ▷ ◻ | 154 Version suitable for bellow                |                   |             |  |   |   |  |
| * ▷ ◻ | 156 Version with mounted bellow                |                   |             |  |   |   |  |

- Only available for versions with aluminium piston (A or Z)
- +
- Available until Ø 63 and only the versions with piston in aluminium (A or Z). The versions without the final "E" are to be considered with retracted piston rod.
- ◻ Not available in Ø 32
- ▼ Letter to be added only to the single acting extended piston rod version or double-acting with spring, extended piston rod
- ✖ Letter to be added only for the double-acting version with spring, retracted piston rod
- ★ Extra digit to be added only for types 136 with the "Secure Lock" device
- ◊ Maximum suppliable strokes: Ø 32 to 63: from 1 to 720 mm; Ø 80 to 125: from 1 to 840 mm
- ▲ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only.
- ◆ Available up to Ø 100
- \* Not available for gaskets V or B
- ▷ Not available for single-acting and double-acting with spring versions
- ▶ The 126 (single-action) type and the (No-stick-slip) version B are not available

KEY TO CODES VERSION LOW-FRICTION

| CYL | 1 2 3 | A<br>TYPE              | 3 2<br>BORE | 0 0 5 0<br>STROKE   | C<br>MATERIAL   | P<br>GASKETS           |
|-----|-------|------------------------|-------------|---------------------|---|------------------------|
|     |       | A Low friction, type A | 32          | Ø 32 to 80          | A C45 chromed piston rod, aluminium piston:   | N NBR gaskets          |
|     |       | B Low friction, type B | 40          | stroke 1 to 2800 mm | standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over | P Polyurethane gaskets |
|     |       | C Low friction, type C | 50          | Ø 100 to 125        | C C45 chromed piston rod, technopolymer piston:   | V FKM/FPM gaskets      |
|     |       | D Low friction, type D | 63          | stroke 1 to 2600 mm | standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes                                     |                        |
|     |       | E Low friction, type E | 80          |                     | Z Stainless steel piston rod and nut aluminium piston   |                        |
|     |       | F Low friction, type F | A1 = Ø 100  |                     | X Stainless steel piston rod and nut technopolymer piston   |                        |
|     |       |                        | A2 = Ø 125  |                     |   |                        |

KEY TO CODES VERSION LONG-CUSHIONING

| CYL | 1 3 0 | A<br>TYPE   | 3 2<br>BORE | 0 0 5 0<br>STROKE | A<br>MATERIAL   | P<br>GASKETS           |
|-----|-------|---|-------------|-------------------|---|------------------------|
|     |       | A 200 mm front/rear cushioning cone – 200 mm ext. | 32          | 1 to 2600 mm      | A C45 chromed piston rod, aluminium piston            | N NBR gaskets          |
|     |       | B 150 mm front/rear cushioning cone – 150 mm ext. | 40          |                   | for all sizes   | P Polyurethane gaskets |
|     |       | C 100 mm front/rear cushioning cone – 100 mm ext. | 50          |                   | Z Stainless steel piston rod and nut aluminium piston | * V FKM/FPM gaskets    |
|     |       | D 150 mm front/rear cushioning cone – 200 mm ext. | 63          |                   |   |                        |
|     |       | E 100 mm front/rear cushioning cone – 200 mm ext. |             |                   |   |                        |
|     |       | F 50 mm front/rear cushioning cone – 100 mm ext.  |             |                   |   |                        |
|     |       | G 100 mm front/rear cushioning cone – 150 mm ext. |             |                   |   |                        |
|     |       | H 200 mm front cushioning cone – 200 mm ext.      |             |                   |   |                        |
|     |       | I 150 mm front cushioning cone – 150 mm ext.      |             |                   |   |                        |
|     |       | L 100 mm front cushioning cone – 100 mm ext.      |             |                   |   |                        |
|     |       | M 150 mm front cushioning cone – 200 mm ext.      |             |                   |   |                        |
|     |       | N 100 mm front cushioning cone – 150 mm ext.      |             |                   |   |                        |
|     |       | O 50 mm front cushioning cone – 100 mm ext.       |             |                   |   |                        |
|     |       | Q 200 mm rear cushioning cone – 200 mm ext.       |             |                   |   |                        |
|     |       | R 150 mm rear cushioning cone – 150 mm ext.       |             |                   |   |                        |
|     |       | S 100 mm rear cushioning cone – 100 mm ext.       |             |                   |   |                        |
|     |       | T 150 mm rear cushioning cone – 200 mm ext.       |             |                   |   |                        |
|     |       | U 100 mm rear cushioning cone – 200 mm ext.       |             |                   |   |                        |
|     |       | V 50 mm rear cushioning cone – 100 mm ext.        |             |                   |   |                        |

\* Version valid only for types: Q, R, S, T, U and V.

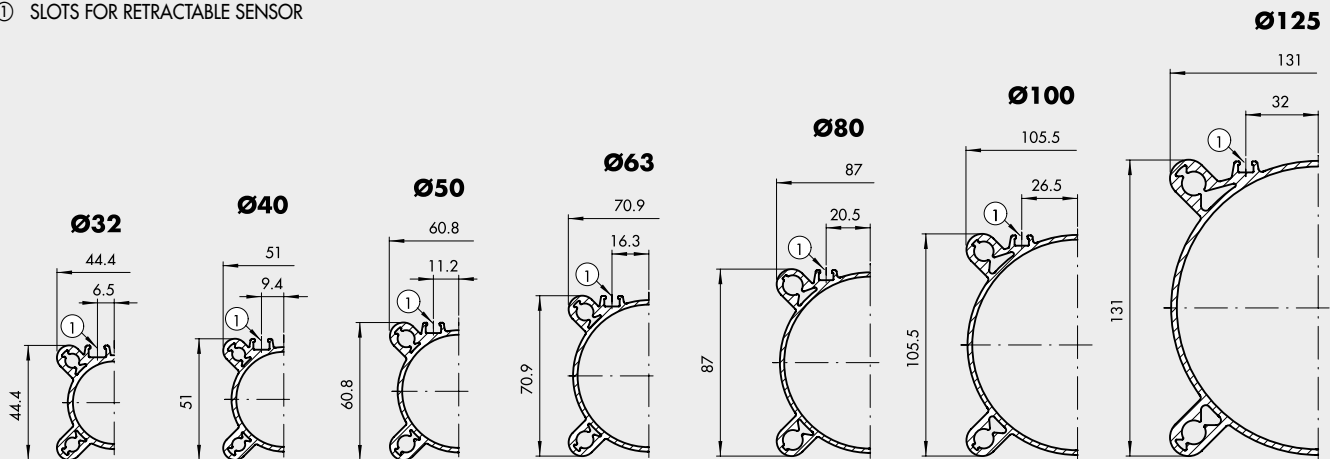
# ISO 15552 CYLINDER SERIES 3

ISO 15552 cylinders, featuring specially-shaped barrels designed to reduce weight to a minimum.  
Two T-slots on the same side as the threaded fittings can take retractable sensors.  
The other three sides of the barrel are smooth, with no slots, and hence easy to clean.



## BARREL CROSS SECTION

① SLOTS FOR RETRACTABLE SENSOR



## KEY TO CODES

| CYL   | 1 2 1<br>TYPE                                  | 3<br>VERSION             | 3 2<br>BORE                                      | 0 0 5 0<br>STROKE    | C<br>MATERIAL   | P<br>GASKETS   | E  |
|-------|--|--------------------------|--|----------------------|---|--|--|
| ●     | 121 Double-acting, cushioned                   | 3 Series 3               | 32   | For the maximum      | A C45 chromed piston rod, aluminium piston: standard for all cylinders with $\geq 1000$ mm-stroke cylinders and for cylinder with $\geq 80$ mm and over | N NBR gaskets<br>P Polyurethane gaskets<br>V FKM/FPM gaskets   | + ▼ E Single-acting extended rod or double-acting with spring, extended piston rod |
| +     | 122 Through-rod                                | 4 Series 3 No stick slip | 40   | strokes, look at the | C C45 chromed piston rod, technopolymer piston: standard for cylinders of $\geq 80$ mm and over   | ● B Low temperature<br>C "Combi" piston rod gasket<br>▶ R "Hard PU" piston rod gasket<br>● □ M "Metal" piston rod gasket | + ✕ R Double-acting with spring, retracted piston rod                              |
| ▷     | 124 Double-acting, non-cushioned               | 5 Series 3 Non-magnetic  | 50   | technical data       | Z Stainless steel piston rod and nut aluminium piston   |  | ★ 1 + Secure Lock with manual control  |
| ■ ▷   | 125 Opposed                                    |                          | 63   |                      | X Stainless steel piston rod and nut technopolymer piston   |  | ★ 2 + Secure Lock without manual control   |
| ■ ▷   | 126 Single-acting                              |                          | 80   |                      |   |  |  |
| ■ ▷   | 127 Tandem                                     |                          | A1 = $\varnothing 100$<br>A2 = $\varnothing 125$ |                      |   |  |  |
| ■ ▷   | 134 Version suitable for rod lock              |                          |  |                      |   |  |  |
| ■ ▷   | 136 Version with rod lock                      |                          |  |                      |   |  |  |
| ■ * ▷ | 137 Version suitable for rod lock + guide unit |                          |  |                      |   |  |  |
| ■ ▷   | 154 Version suitable for bellow                |                          |  |                      |   |  |  |
| ■ ▷   | 156 Version with mounted bellow                |                          |  |                      |   |  |  |

- Only available for versions with aluminium piston (A or Z)
- + Available until  $\varnothing 63$  and only the versions with piston in aluminium (A or Z). The versions without the final "E" are to be considered with retracted piston rod.
- ▼ Letter to be added only to the single acting extended piston rod version or double-acting with spring, extended piston rod
- ✕ Letter to be added only for the double-acting version with spring, retracted piston rod
- ★ Extra digit to be added only for types 136 with the "Secure Lock" device
- ◇ Maximum suppliable strokes:  $\varnothing 32$  to  $63$ : from 1 to 720 mm;  $\varnothing 80$  to  $125$ : from 1 to 840 mm
- ◆ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only.
- \* Available until  $\varnothing 100$
- ▷ Not available for single-acting and double-acting with spring versions
- ▶ Not available for gasket V or B
- Not available in  $\varnothing 32$
- ▶ The 126 (single-action) type and the (No-stick-slip) version 4 are not available

# ISO 15552 LOW-FRICTION CYLINDER CODE 123 FOR SERIES STD CODE 129 FOR TYPE A



The low-friction cylinder is typically used as a dandy or tensioning cylinder since it is a single-acting cylinder without a return spring. The configurations are shown below:

- 1) The best type is A as it involves less friction.
- 2) Type B should be used when the cylinder is working under normal conditions outside the pneumatic cushioning area. Cushioning is only for emergency use. It acts as a shock absorber in the case of malfunction.
- 3) Type C differs from type A due to the presence of a piston rod gasket that prevents dirt getting in when operating in dirty environments.
- 4) Type D differs from type B due to the presence of a piston rod gasket that prevents dirt getting in when operating in dirty environments.
- 5) Type E should be used when the pressurized chamber is the front one.
- 6) For type F, see point 2.

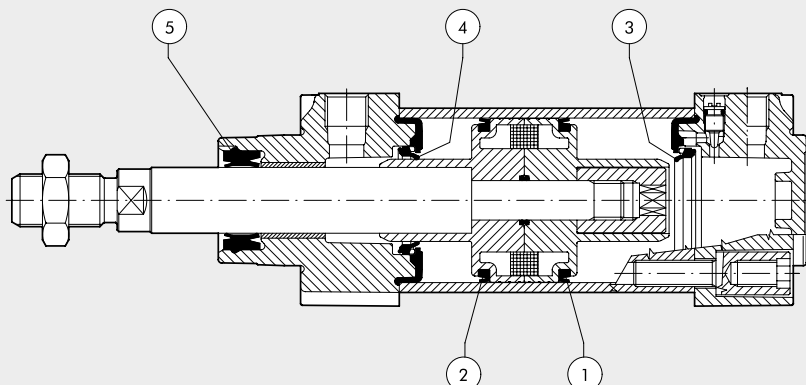


**NB. THE CYLINDER IS ALWAYS SINGLE-ACTING WITHOUT A RETURN SPRING.**

|   | TYPE | GASKETS |
|---|------|---------|
| Rear chamber pressure   | A    | 1       |
| Rear chamber pressure and cushioning in case of impact                    | B    | 1+3     |
| Rear chamber pressure and piston rod gasket                               | C    | 1+5     |
| Rear chamber pressure, cushioning in case of impact and piston rod gasket | D    | 1+3+5   |
| Front chamber pressure  | E    | 2+5     |
| Front chamber pressure and cushioning in case of impact                   | F    | 2+5+4   |

## COMPONENTS

- ① Rear chamber piston gasket made of polyurethane, NBR or FKM/FPM
- ② Front chamber piston gasket made of polyurethane, NBR or FKM/FPM
- ③ Rear chamber cushioning gasket made of polyurethane, NBR or FKM/FPM
- ④ Front chamber cushioning gasket made of polyurethane, NBR or FKM/FPM
- ⑤ Piston rod gasket made of polyurethane, NBR or FKM/FPM





# ISO 15552 ULTRA-LOW FRICTIONS CYLINDER

A typical ultra-low friction cylinder is generally used as an oscillating or tensioning cylinder. It is single acting, in the sense that compressed air is normally fed into one of the two chambers only. An external force acts on the other side. Metal Work's ultra-low friction cylinder is designed as a double-acting one, which means the compressed air can be fed into the rear or either the front chamber. They are built to comply with ISO 15552 and are available with or without a magnet. Supplied with a series 3 barrel.

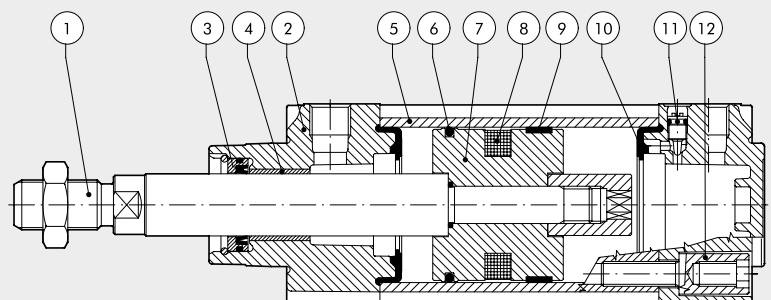
A through-rod version is not available.  
These cylinders are always non-cushioned.  
The gaskets are made of NBR.  
A full range of accessories is available.



| TECHNICAL DATA                              |     | Ø32   | Ø40  | Ø50  | Ø63  | Ø80  | Ø100 | Ø125 |
|---|-----|---|------|------|--|------|------|------|
| Max operating pressure                      | bar |   |      |      | 10   |      |      |      |
|   | MPa |   |      |      | 1  |      |      |      |
|   | psi |   |      |      | 145  |      |      |      |
| Temperature range                           | NBR |   |      |      | -10 to +80   |      |      |      |
|   | °C  |   |      |      |  |      |      |      |
| Design                                      |     |   |      |      | Heads with Tap Tite screws   |      |      |      |
| Fluid                                       |     |   |      |      | Unlubricated air   |      |      |      |
| Standard strokes                            | mm  |   |      |      | 1 to 1200  |      |      |      |
| Versions                                    |     |   |      |      | Double-acting magnetic, Double-acting non-magnetic (always "No stick-slip" cylinder) |      |      |      |
| Sensor magnet                               |     |   |      |      | Available magnetic and non-magnetic versions.  |      |      |      |
| Inrush pressure                             | bar | 0.08  | 0.06 | 0.05 | 0.04   | 0.03 | 0.03 | 0.03 |
| Forces generated at 6 bar thrust/retraction |     | See cylinder "General technical data" at the beginning of the chapter                         |      |      |  |      |      |      |
| Weights                                     |     | See cylinder "General technical data" at the beginning of the chapter                         |      |      |  |      |      |      |
| Notes                                       |     | There may be leakage between the two chambers in the presence of low pressures (up to 1 bar). |      |      |  |      |      |      |

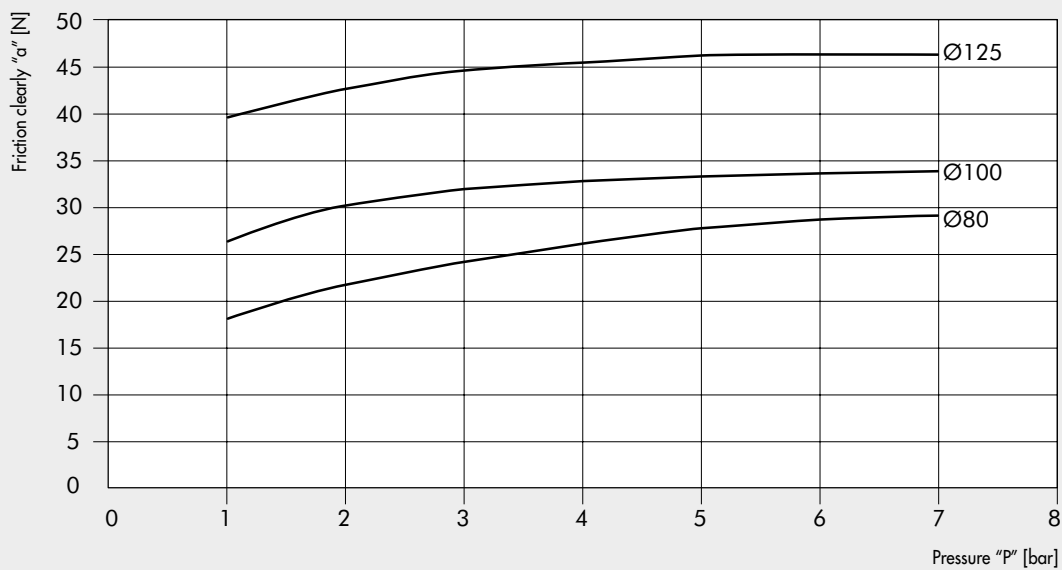
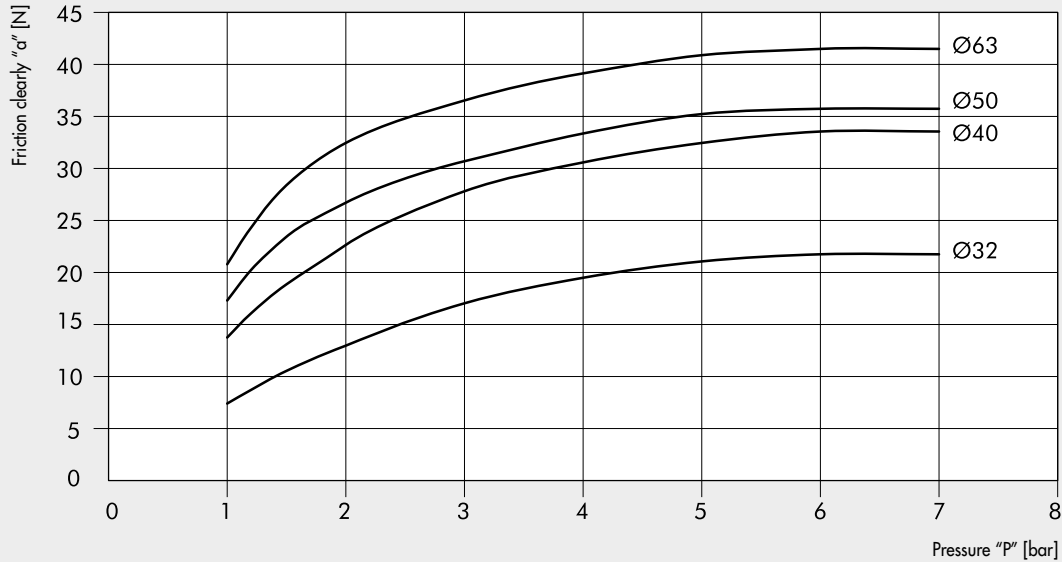
## COMPONENTS

- ① PISTON ROD: C45 steel or stainless steel, thick chromed
- ② HEAD: die cast aluminium
- ③ PISTON ROD GASKET: NBR
- ④ GUIDE BUSHING: steel strip with bronze insert
- ⑤ BARREL: drawn anodized calibrated aluminium
- ⑥ PISTON GASKET: NBR
- ⑦ HALF-PISTON: aluminium alloy
- ⑧ MAGNET: plastoferrite
- ⑨ GUIDE RING: special technopolymer
- ⑩ BUFFER + Static O-rings: NBR
- ⑪ CUSHIONING NEEDLE: OT 58 with needle out movement safety system even when fully open
- ⑫ SCREWS: Tap Tite for assembly





**DIAGRAM OF THE CLEAN FRICTIONS**



The clean friction values "α" in N have been obtained by inserting in the back chamber the pressure "P" in bars, and simultaneously by detecting the necessary force "F" in N to make the rod re-enter, applying the following formula:

$$\alpha = F - [(P \times S) \times 9.81]$$

where "S" is the thrust section in cm<sup>2</sup>

**KEY TO CODES**

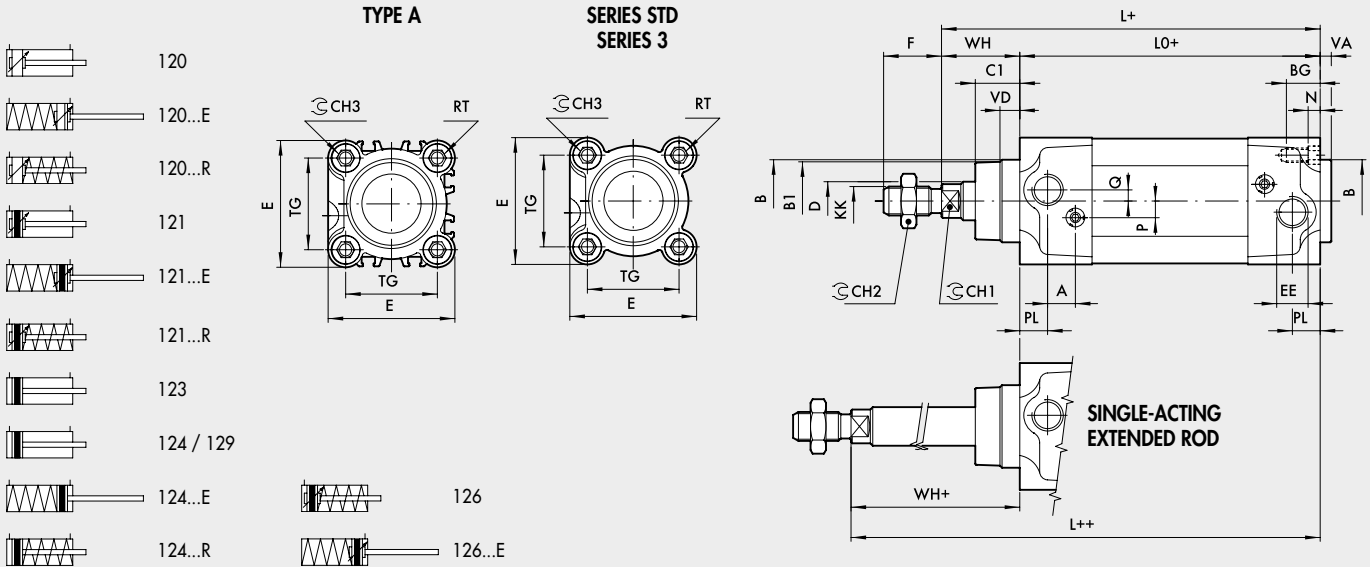
| CYL | 1 2 3<br>TYPE          | 3  | 3 2<br>BORE  | 0 1 0 0<br>STROKE | A<br>MATERIAL   | N<br>GASKETS  |
|-----|------------------------|--|--|-------------------|---|---------------|
|     | 123 Ultra-low friction | 3 Double-acting magnetic<br>5 Double-acting not magnetic | 32<br>40<br>50<br>63<br>80<br>A1 = 100<br>A2 = 125 | From 1 to 1200 mm | A C45 chromed piston rod, aluminium piston rod<br>Z Stainless steel piston rod and nut aluminium piston | N NBR gaskets |

ALL the cylinders are No stick-slip.  
ALL the cylinders are non-cushioned.  
Ultra-low friction cylinders are not available in the through-rod version.

ACTUATORS  
ISO 15552 ULTRA-LOW FRICTIONS CYLINDER

# ISO 15552 CYLINDER DIMENSIONS

## DIMENSIONS SINGLE PISTON ROD VERSIONS



+ = ADD THE STROKE  
 ++ = ADD TWICE THE STROKE

VERSION 120... / 121... (double-acting cushioned)

VERSION 123... / 124... / 129... (double-acting)

| Ø   | PL | VD  | A  | B  | B <sub>1</sub> | WH | C <sub>1</sub> | CH <sub>1</sub> | CH <sub>2</sub> | KK       | CH <sub>3</sub> | D  | TG   | VA | F  | EE   | RT  | E    | L   | L <sub>0</sub> | BG   | N   | P  | Q |
|-----|----|-----|----|----|----------------|----|----------------|-----------------|-----------------|----------|-----------------|----|------|----|----|------|-----|------|-----|----------------|------|-----|----|---|
| 32  | 10 | 6.5 | 10 | 30 | 28             | 26 | 16             | 10              | 17              | M10x1.25 | 6               | 12 | 32.5 | 4  | 22 | G1/8 | M6  | 46   | 120 | 94             | 14.5 | 4.5 | 6  | 4 |
| 40  | 12 | 8   | 10 | 35 | 33             | 30 | 20             | 13              | 19              | M12x1.25 | 6               | 16 | 38   | 4  | 24 | G1/4 | M6  | 54   | 135 | 105            | 14.5 | 4.5 | 6  | 4 |
| 50  | 14 | 13  | 10 | 40 | 38             | 37 | 25             | 17              | 24              | M16x1.5  | 8               | 20 | 46.5 | 4  | 32 | G1/4 | M8  | 64.5 | 143 | 106            | 17.5 | 5.5 | 6  | 6 |
| 63  | 16 | 14  | 10 | 45 | 40             | 37 | 25             | 17              | 24              | M16x1.5  | 8               | 20 | 56.5 | 4  | 32 | G3/8 | M8  | 75.5 | 158 | 121            | 17.5 | 5.5 | 6  | 6 |
| 80  | 18 | 12  | 12 | 45 | 43             | 46 | 33             | 22              | 30              | M20x1.5  | 10              | 25 | 72   | 4  | 40 | G3/8 | M10 | 94   | 174 | 128            | 21.5 | 5.5 | 10 | 7 |
| 100 | 20 | 14  | 12 | 55 | 49             | 51 | 38             | 22              | 30              | M20x1.5  | 10              | 25 | 89   | 4  | 40 | G1/2 | M10 | 111  | 189 | 138            | 21.5 | 5.5 | 10 | 7 |
| 125 | 25 | 20  | 10 | 60 | 54             | 65 | 45             | 27              | 41              | M27x2    | 12              | 32 | 110  | 6  | 54 | G1/2 | M12 | 135  | 225 | 160            | 25.5 | 6.5 | 12 | 8 |

VERSION 126... (single-acting cushioned retracted piston rod)

VERSION 126...E (single-acting cushioned extended piston rod)

| Stroke    | L <sub>0</sub> |         |        |         |        |         |        |         | L      |         |        |         |        |         |        |         |
|-----------|----------------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|
|           | Ø 32           |         | Ø 40   |         | Ø 50   |         | Ø 63   |         | Ø 32   |         | Ø 40   |         | Ø 50   |         | Ø 63   |         |
|           | 126...         | 126...E | 126... | 126...E | 126... | 126...E | 126... | 126...E | 126... | 126...E | 126... | 126...E | 126... | 126...E | 126... | 126...E |
| 0 - 25    | 94 •           | 94 •    | 105 •  | 105 •   | 106 •  | 106 •   | 121 •  | 121 •   | 120 •  | 120 •   | 135 •  | 135 •   | 143 •  | 143 •   | 158 •  | 158 •   |
| 26 - 50   | 94 •           | 115     | 105 •  | 129.5   | 106 •  | 130.5   | 121 •  | 145.5   | 120 •  | 141     | 135 •  | 159.5   | 143 •  | 167.5   | 158 •  | 182.5   |
| 51 - 75   | 115            | 136     | 129.5  | 154     | 130.5  | 155     | 145.5  | 170     | 141    | 162     | 159.5  | 184     | 167.5  | 192     | 182.5  | 207     |
| 76 - 100  | 136            | 157     | 154    | 178.5   | 155    | 179.5   | 170    | 194.5   | 162    | 183     | 184    | 208.5   | 192    | 216.5   | 207    | 231.5   |
| 101 - 125 | 157            | 178     | 178.5  | 203     | 179.5  | 204     | 194.5  | 219     | 183    | 204     | 208.5  | 233     | 216.5  | 241     | 231.5  | 256     |
| 126 - 150 | 178            | 199     | 203    | 227.5   | 204    | 228.5   | 219    | 243.5   | 204    | 225     | 233    | 257.5   | 241    | 265.5   | 256    | 280.5   |
| 151 - 175 | 199            | 220     | 227.5  | 252     | 228.5  | 253     | 243.5  | 268     | 225    | 246     | 257.5  | 282     | 265.5  | 290     | 280.5  | 305     |
| 176 - 200 | 220            | 241     | 252    | 276.5   | 253    | 277.5   | 268    | 292.5   | 246    | 267     | 282    | 306.5   | 290    | 314.5   | 305    | 329.5   |
| 201 - 225 | 241            | 262     | 276.5  | 301     | 277.5  | 302     | 292.5  | 317     | 267    | 288     | 306.5  | 331     | 314.5  | 339     | 329.5  | 354     |
| 226 - 250 | 262            | 283     | 301    | 325.5   | 302    | 326.5   | 317    | 341.5   | 288    | 309     | 331    | 355.5   | 339    | 363.5   | 354    | 378.5   |

• Dimensions according to ISO 15552

VERSION 12...R (double-acting with spring, retracted piston rod)

VERSION 12...E (double-acting with spring, extended piston rod)

| Stroke    | L <sub>0</sub> |        |        |        |        |        |        |        | L      |        |        |        |        |        |        |        |
|-----------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|           | Ø 32           |        | Ø 40   |        | Ø 50   |        | Ø 63   |        | Ø 32   |        | Ø 40   |        | Ø 50   |        | Ø 63   |        |
|           | 12...R         | 12...E | 12...R | 12...E | 12...R | 12...E | 12...R | 12...E | 12...R | 12...E | 12...R | 12...E | 12...R | 12...E | 12...R | 12...E |
| 0 - 25    | 104            | 104    | 117    | 117    | 106 •  | 106 •  | 121 •  | 121 •  | 130    | 130    | 147    | 147    | 143 •  | 143 •  | 158 •  | 158 •  |
| 26 - 50   | 104            | 125    | 117    | 141.5  | 106 •  | 130.5  | 121 •  | 145.5  | 130    | 151    | 147    | 171.5  | 143 •  | 167.5  | 158 •  | 182.5  |
| 51 - 75   | 125            | 146    | 141.5  | 166    | 130.5  | 155    | 145.5  | 170    | 151    | 172    | 171.5  | 196    | 167.5  | 192    | 182.5  | 207    |
| 76 - 100  | 146            | 167    | 166    | 190.5  | 155    | 179.5  | 170    | 194.5  | 172    | 193    | 196    | 220.5  | 192    | 216.5  | 207    | 231.5  |
| 101 - 125 | 167            | 188    | 190.5  | 215    | 179.5  | 204    | 194.5  | 219    | 193    | 214    | 220.5  | 245    | 216.5  | 241    | 231.5  | 256    |
| 126 - 150 | 188            | 209    | 215    | 239.5  | 204    | 228.5  | 219    | 243.5  | 214    | 235    | 245    | 269.5  | 241    | 265.5  | 256    | 280.5  |
| 151 - 175 | 209            | 230    | 239.5  | 264    | 228.5  | 253    | 243.5  | 268    | 235    | 256    | 269.5  | 294    | 265.5  | 290    | 280.5  | 305    |
| 176 - 200 | 230            | 251    | 264    | 288.5  | 253    | 277.5  | 268    | 292.5  | 256    | 277    | 294    | 318.5  | 290    | 314.5  | 305    | 329.5  |
| 201 - 225 | 251            | 272    | 288.5  | 313    | 277.5  | 302    | 292.5  | 317    | 277    | 298    | 318.5  | 343    | 314.5  | 339    | 329.5  | 354    |
| 226 - 250 | 272            | 293    | 313    | 337.5  | 302    | 326.5  | 317    | 341.5  | 298    | 319    | 343    | 367.5  | 339    | 363.5  | 354    | 378.5  |

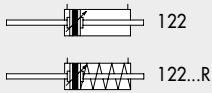
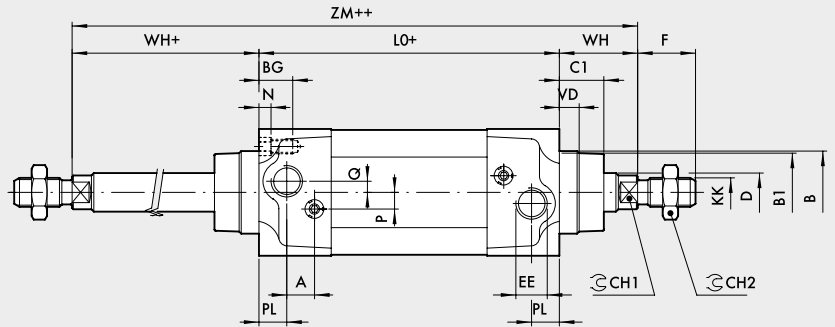
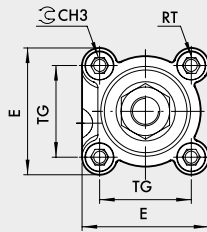
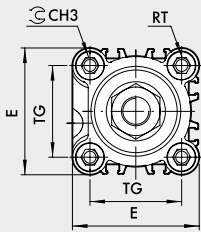
• Dimensions according to ISO 15552

**DIMENSIONS THROUGH-ROD VERSIONS**

+ = ADD THE STROKE  
 ++ = ADD TWICE THE STROKE

**TYPE A**

**SERIES STD  
 SERIES 3**



**VERSION 122... (double-acting cushioned)**

| Ø   | PL | VD  | A  | B  | B <sub>1</sub> | WH | C <sub>1</sub> | CH <sub>1</sub> | CH <sub>2</sub> | CH <sub>3</sub> | KK       | D  | TG   | VA | F  | EE   | RT  | E    | L   | L <sub>0</sub> | ZM  | BG   | N   | P  | Q |
|-----|----|-----|----|----|----------------|----|----------------|-----------------|-----------------|-----------------|----------|----|------|----|----|------|-----|------|-----|----------------|-----|------|-----|----|---|
| 32  | 10 | 6.5 | 10 | 30 | 28             | 26 | 16             | 10              | 17              | 6               | M10x1.25 | 12 | 32.5 | 4  | 22 | G1/8 | M6  | 46   | 120 | 94             | 146 | 14.5 | 4.5 | 6  | 4 |
| 40  | 12 | 8   | 10 | 35 | 33             | 30 | 20             | 13              | 19              | 6               | M12x1.25 | 16 | 38   | 4  | 24 | G1/4 | M6  | 54   | 135 | 105            | 165 | 14.5 | 4.5 | 6  | 4 |
| 50  | 14 | 13  | 10 | 40 | 38             | 37 | 25             | 17              | 24              | 8               | M16x1.5  | 20 | 46.5 | 4  | 32 | G1/4 | M8  | 64.5 | 143 | 106            | 180 | 17.5 | 5.5 | 6  | 6 |
| 63  | 16 | 14  | 10 | 45 | 40             | 37 | 25             | 17              | 24              | 8               | M16x1.5  | 20 | 56.5 | 4  | 32 | G3/8 | M8  | 75.5 | 158 | 121            | 195 | 17.5 | 5.5 | 6  | 6 |
| 80  | 18 | 12  | 12 | 45 | 43             | 46 | 33             | 22              | 30              | 10              | M20x1.5  | 25 | 72   | 4  | 40 | G3/8 | M10 | 94   | 174 | 128            | 220 | 21.5 | 5.5 | 10 | 7 |
| 100 | 20 | 14  | 12 | 55 | 49             | 51 | 38             | 22              | 30              | 10              | M20x1.5  | 25 | 89   | 4  | 40 | G1/2 | M10 | 111  | 189 | 138            | 240 | 21.5 | 5.5 | 10 | 7 |
| 125 | 25 | 20  | 10 | 60 | 54             | 65 | 45             | 27              | 41              | 12              | M27x2    | 32 | 110  | 6  | 54 | G1/2 | M12 | 135  | 225 | 160            | 290 | 25.5 | 6.5 | 12 | 8 |

**VERSION 122...R (double-acting cushioned with spring, retracted piston rod)**

| Stroke    | L0   |       |       |       | ZM   |       |       |       |
|-----------|------|-------|-------|-------|------|-------|-------|-------|
|           | Ø 32 | Ø 40  | Ø 50  | Ø 63  | Ø 32 | Ø 40  | Ø 50  | Ø 63  |
| 0 - 25    | 104  | 117   | 106 • | 121 • | 156  | 177   | 180   | 195   |
| 26 - 50   | 104  | 117   | 106 • | 121 • | 156  | 177   | 180   | 195   |
| 51 - 75   | 125  | 141.5 | 130.5 | 145.5 | 177  | 201.5 | 204.5 | 219.5 |
| 76 - 100  | 146  | 166   | 155   | 170   | 198  | 226   | 229   | 244   |
| 101 - 125 | 167  | 190.5 | 179.5 | 194.5 | 219  | 250.5 | 253.5 | 268.5 |
| 126 - 150 | 188  | 215   | 204   | 219   | 240  | 275   | 278   | 293   |
| 151 - 175 | 209  | 239.5 | 228.5 | 243.5 | 261  | 299.5 | 302.5 | 317.5 |
| 176 - 200 | 230  | 264   | 253   | 268   | 282  | 324   | 327   | 342   |
| 201 - 225 | 251  | 288.5 | 277.5 | 292.5 | 303  | 348.5 | 351.5 | 366.5 |
| 226 - 250 | 272  | 313   | 302   | 317   | 324  | 373   | 376   | 391   |

\* Dimensions according to ISO 15552

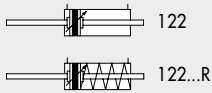
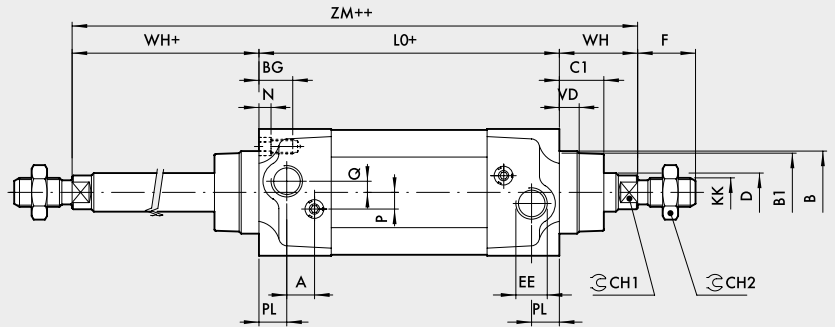
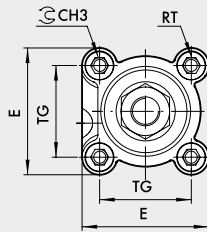
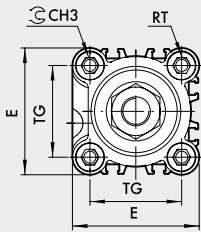
**NOTES**

**DIMENSIONS THROUGH-ROD VERSIONS**

+ = ADD THE STROKE  
 ++ = ADD TWICE THE STROKE

**TYPE A**

**SERIES STD  
 SERIES 3**



**VERSION 122... (double-acting cushioned)**

| Ø   | PL | VD  | A  | B  | B <sub>1</sub> | WH | C <sub>1</sub> | CH <sub>1</sub> | CH <sub>2</sub> | CH <sub>3</sub> | KK       | D  | TG   | VA | F  | EE   | RT  | E    | L   | L <sub>0</sub> | ZM  | BG   | N   | P  | Q |
|-----|----|-----|----|----|----------------|----|----------------|-----------------|-----------------|-----------------|----------|----|------|----|----|------|-----|------|-----|----------------|-----|------|-----|----|---|
| 32  | 10 | 6.5 | 10 | 30 | 28             | 26 | 16             | 10              | 17              | 6               | M10x1.25 | 12 | 32.5 | 4  | 22 | G1/8 | M6  | 46   | 120 | 94             | 146 | 14.5 | 4.5 | 6  | 4 |
| 40  | 12 | 8   | 10 | 35 | 33             | 30 | 20             | 13              | 19              | 6               | M12x1.25 | 16 | 38   | 4  | 24 | G1/4 | M6  | 54   | 135 | 105            | 165 | 14.5 | 4.5 | 6  | 4 |
| 50  | 14 | 13  | 10 | 40 | 38             | 37 | 25             | 17              | 24              | 8               | M16x1.5  | 20 | 46.5 | 4  | 32 | G1/4 | M8  | 64.5 | 143 | 106            | 180 | 17.5 | 5.5 | 6  | 6 |
| 63  | 16 | 14  | 10 | 45 | 40             | 37 | 25             | 17              | 24              | 8               | M16x1.5  | 20 | 56.5 | 4  | 32 | G3/8 | M8  | 75.5 | 158 | 121            | 195 | 17.5 | 5.5 | 6  | 6 |
| 80  | 18 | 12  | 12 | 45 | 43             | 46 | 33             | 22              | 30              | 10              | M20x1.5  | 25 | 72   | 4  | 40 | G3/8 | M10 | 94   | 174 | 128            | 220 | 21.5 | 5.5 | 10 | 7 |
| 100 | 20 | 14  | 12 | 55 | 49             | 51 | 38             | 22              | 30              | 10              | M20x1.5  | 25 | 89   | 4  | 40 | G1/2 | M10 | 111  | 189 | 138            | 240 | 21.5 | 5.5 | 10 | 7 |
| 125 | 25 | 20  | 10 | 60 | 54             | 65 | 45             | 27              | 41              | 12              | M27x2    | 32 | 110  | 6  | 54 | G1/2 | M12 | 135  | 225 | 160            | 290 | 25.5 | 6.5 | 12 | 8 |

**VERSION 122...R (double-acting cushioned with spring, retracted piston rod)**

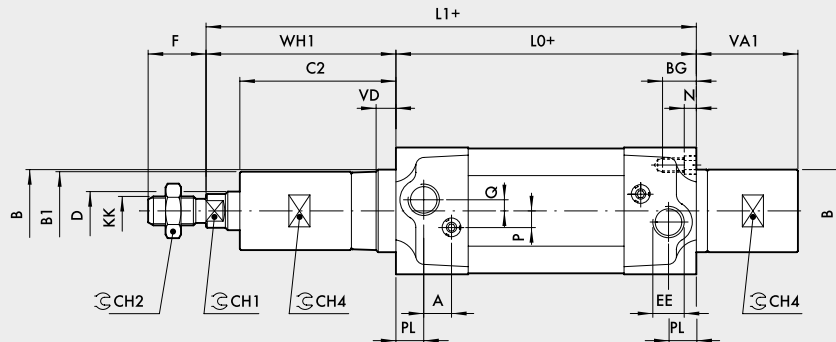
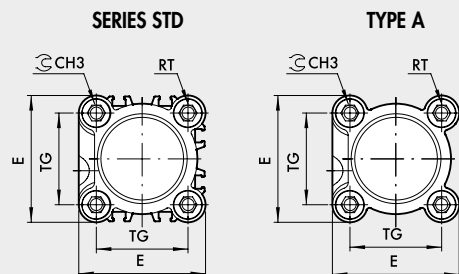
| Stroke    | L0   |       |       |       | ZM   |       |       |       |
|-----------|------|-------|-------|-------|------|-------|-------|-------|
|           | Ø 32 | Ø 40  | Ø 50  | Ø 63  | Ø 32 | Ø 40  | Ø 50  | Ø 63  |
| 0 - 25    | 104  | 117   | 106 • | 121 • | 156  | 177   | 180   | 195   |
| 26 - 50   | 104  | 117   | 106 • | 121 • | 156  | 177   | 180   | 195   |
| 51 - 75   | 125  | 141.5 | 130.5 | 145.5 | 177  | 201.5 | 204.5 | 219.5 |
| 76 - 100  | 146  | 166   | 155   | 170   | 198  | 226   | 229   | 244   |
| 101 - 125 | 167  | 190.5 | 179.5 | 194.5 | 219  | 250.5 | 253.5 | 268.5 |
| 126 - 150 | 188  | 215   | 204   | 219   | 240  | 275   | 278   | 293   |
| 151 - 175 | 209  | 239.5 | 228.5 | 243.5 | 261  | 299.5 | 302.5 | 317.5 |
| 176 - 200 | 230  | 264   | 253   | 268   | 282  | 324   | 327   | 342   |
| 201 - 225 | 251  | 288.5 | 277.5 | 292.5 | 303  | 348.5 | 351.5 | 366.5 |
| 226 - 250 | 272  | 313   | 302   | 317   | 324  | 373   | 376   | 391   |

\* Dimensions according to ISO 15552

**NOTES**

**DIMENSIONS LONG-CUSHIONING VERSION**

+ = ADD THE STROKE



| Ø  | PL | VD  | A  | B  | B <sub>1</sub> | CH <sub>1</sub> | CH <sub>2</sub> | CH <sub>3</sub> | CH <sub>4</sub> | KK       | D  | TG   | F  | EE   | RT | E    | L <sub>0</sub> | BG   | N   | P | Q |
|----|----|-----|----|----|----------------|-----------------|-----------------|-----------------|-----------------|----------|----|------|----|------|----|------|----------------|------|-----|---|---|
| 32 | 10 | 6.5 | 10 | 30 | 29             | 10              | 17              | 6               | 27              | M10x1.25 | 12 | 32.5 | 22 | G1/8 | M6 | 46   | 94             | 14.5 | 4.5 | 6 | 4 |
| 40 | 12 | 8   | 10 | 35 | 34             | 13              | 19              | 6               | 30              | M12x1.25 | 16 | 38   | 24 | G1/4 | M6 | 54   | 105            | 14.5 | 4.5 | 6 | 4 |
| 50 | 14 | 13  | 10 | 40 | 38             | 17              | 24              | 8               | 35              | M16x1.5  | 20 | 46.5 | 32 | G1/4 | M8 | 64.5 | 106            | 17.5 | 5.5 | 6 | 6 |
| 63 | 16 | 14  | 10 | 45 | 38             | 17              | 24              | 8               | 35              | M16x1.5  | 20 | 56.5 | 32 | G3/8 | M8 | 75.5 | 121            | 17.5 | 5.5 | 6 | 6 |

**100 mm LONG-CUSHIONING**

| Ø  | WH <sub>1</sub> | C <sub>2</sub> | VA <sub>1</sub> | L <sub>1</sub> |
|----|-----------------|----------------|-----------------|----------------|
| 32 | 106             | 96             | 79              | 200            |
| 40 | 107             | 97             | 76.5            | 212            |
| 50 | 113.5           | 101.5          | 76.5            | 219.5          |
| 63 | 113.5           | 101.5          | 76.5            | 234.5          |

**150 mm LONG-CUSHIONING**

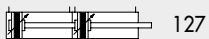
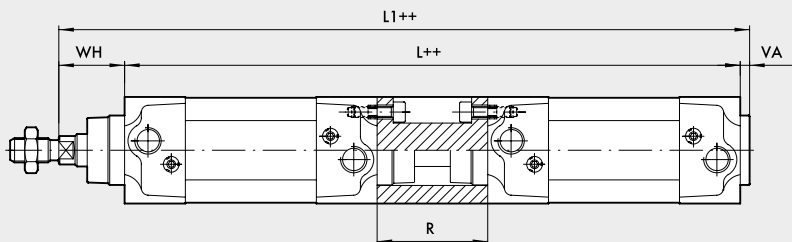
| Ø  | WH <sub>1</sub> | C <sub>2</sub> | VA <sub>1</sub> | L <sub>1</sub> |
|----|-----------------|----------------|-----------------|----------------|
| 32 | 156             | 146            | 129             | 250            |
| 40 | 157             | 147            | 121.5           | 262            |
| 50 | 162.5           | 150.5          | 119.5           | 268.5          |
| 63 | 162.5           | 150.5          | 123.5           | 283.5          |

**200 mm LONG-CUSHIONING**

| Ø  | WH <sub>1</sub> | C <sub>2</sub> | VA <sub>1</sub> | L <sub>1</sub> |
|----|-----------------|----------------|-----------------|----------------|
| 32 | 206             | 196            | 179             | 300            |
| 40 | 207             | 197            | 176.5           | 312            |
| 50 | 213.5           | 201.5          | 176.5           | 319.5          |
| 63 | 213.5           | 201.5          | 176.5           | 334.5          |

**DIMENSIONS TANDEM VERSION**

++ = ADD TWICE THE STROKE

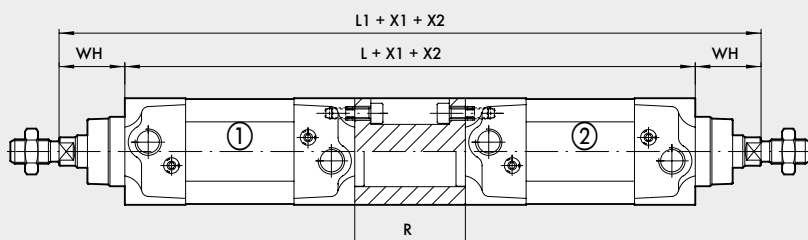


| Ø   | WH | VA | R   | L   | L <sub>1</sub> |
|-----|----|----|-----|-----|----------------|
| 32  | 26 | 4  | 55  | 243 | 273            |
| 40  | 30 | 4  | 55  | 265 | 299            |
| 50  | 37 | 4  | 68  | 280 | 321            |
| 63  | 37 | 4  | 68  | 310 | 351            |
| 80  | 46 | 4  | 92  | 348 | 398            |
| 100 | 51 | 4  | 92  | 368 | 423            |
| 125 | 65 | 6  | 120 | 440 | 511            |

Refer to standard cylinders for other values.

**DIMENSIONS OPPOSED VERSION**

X1 = STROKE CYLINDER 1  
X2 = STROKE CYLINDER 2



| Ø   | WH | R   | L   | L <sub>1</sub> |
|-----|----|-----|-----|----------------|
| 32  | 26 | 55  | 243 | 295            |
| 40  | 30 | 55  | 265 | 325            |
| 50  | 37 | 68  | 280 | 354            |
| 63  | 37 | 68  | 310 | 384            |
| 80  | 46 | 92  | 348 | 440            |
| 100 | 51 | 92  | 368 | 470            |
| 125 | 65 | 120 | 440 | 570            |

Refer to standard cylinders for other values.

# ISO 15552 TWO-FLAT CYLINDER



ACTUATORS  
ISO 15552 TWO-FLAT CYLINDER

This version of cylinder is used to keep the parts fixed to the piston rod at an angle and to apply torques within the specified limits. The piston rod of the Two-Flat has two opposing longitudinal surfaces; it is made of stainless steel. The front cylinder head includes a sintered bronze bush that matches the profile of the piston rod and prevents it from rotating on its own axis. A special polyurethane gasket ensures pneumatic seal and prevents the accumulation of dirt. This technical solution is more reliable and gives a better pneumatic seal than with square or hexagonal piston rods. Supplied in series STD, with a smooth barrel, and type A or series 3, with a barrel with slots for retractable sensors. They are available in several versions and with a wide range of accessories:



- with or without magnet
- double acting, single piston rod
- double acting, through rod; one piston rod is Two-Flat, the other cylindrical
- fixing accessories.

| TECHNICAL DATA                              |                 | Ø32    | Ø40    | Ø50   | Ø63 |
|---|-----------------|--------|--------|---|-----|
| Max operating pressure                      | bar             |        |        | 10  |     |
|   | MPa             |        |        | 1   |     |
|   | psi             |        |        | 145   |     |
| Temperature range                           | POLYURETHANE °C |        |        | -25 to +80  |     |
| Design                                      |                 |        |        | Heads with Tap Tite screws  |     |
| Fluid                                       |                 |        |        | Unlubricated air. Lubrication, if used, must be continuous  |     |
| Maximum stroke                              | mm              | 300    | 400    | 500   |     |
| Versions                                    |                 |        |        | Double-acting cushioned, Through-rod cushioned, No stick-slip   |     |
| Sensor magnet                               |                 |        |        | Available magnetic and non-magnetic versions.   |     |
| Inrush pressure                             | bar             | 0.4    | 0.4    | 0.3   | 0.3 |
| Max torque on piston rod                    | Nm              | 0.2    | 0.4    | 1   | 1   |
| Maximum rotation on the rod                 | degrees         | 1° 30' | 1° 30' | 1°  | 1°  |
| Forces generated at 6 bar thrust/retraction |                 |        |        | See cylinder "General technical data" at the beginning of the chapter                                   |     |
| Weights                                     |                 |        |        | See cylinder "General technical data" at the beginning of the chapter                                   |     |
| Notes                                       |                 |        |        | For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air. |     |

## KEY TO CODES FOR ISO 15552 TWO-FLAT STD CYLINDERS

| CYL | 1 2 1<br>TYPE                              | 0                            | 3 2<br>BORE          | 0 0 5 0<br>STROKE   | F<br>MATERIAL  | P<br>GASKETS           |
|-----|--|------------------------------|----------------------|---|--|------------------------|
|     | 120 Double-acting, cushioned, non-magnetic | 0 Diameter<br>S Non-magnetic | 32<br>40<br>50<br>63 | + Ø 32 stroke 1 to 300 mm<br>+ Ø 40 stroke 1 to 400 mm<br>+ Ø 50 to 63 stroke 1 to 500 mm | F "Two-Flat" piston rod<br>AISI 303, stainless steel<br>nut, technopolymer<br>piston | P Polyurethane gaskets |
|     | 121 Double-acting, cushioned               | ▲ G No stick-slip            |                      |   |  |                        |
|     | ● 122 Through-rod                          |                              |                      |   |  |                        |

- Supplied with aluminium piston
- ▲ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only
- + Maximum recommended strokes. Higher values can create operating problems

## KEY TO CODES FOR ISO 15552 TWO-FLAT TYPE A CYLINDERS

| CYL | 1 2 1<br>TYPE                | A                               | 3 2<br>BORE          | 0 0 5 0<br>STROKE   | F<br>MATERIAL  | P<br>GASKETS           |
|-----|------------------------------|---------------------------------|----------------------|---|--|------------------------|
|     | 121 Double-acting, cushioned | A Standard<br>▲ B No stick-slip | 32<br>40<br>50<br>63 | + Ø 32 stroke 1 to 300 mm<br>+ Ø 40 stroke 1 to 400 mm<br>+ Ø 50 to 63 stroke 1 to 500 mm | F "Two-Flat" piston rod<br>AISI 303, stainless steel<br>nut, technopolymer<br>piston | P Polyurethane gaskets |
|     | ● 122 Through-rod            | C Non-magnetic                  |                      |   |  |                        |

- Supplied with aluminium piston
- ▲ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only
- + Maximum recommended strokes. Higher values can create operating problems

KEY TO CODES FOR ISO 15552 TWO-FLAT SERIES 3 CYLINDERS

| CYL | 1 2 1<br>TYPE               | 3   | 3 2<br>BORE    | 0 0 5 0<br>STROKE  | F<br>MATERIAL  | P<br>GASKETS           |
|-----|-----------------------------|---|----------------|--|--|------------------------|
|     | 121 Double-acting cushioned | 3 Series 3  | 32             | + Ø 32 stroke 1 to 300 mm                                    | F "Two-Flat" piston rod<br>AISI 303, stainless steel | P Polyurethane gaskets |
| ●   | 122 Through-rod             | ▲ 4 Series 3 No stick-slip<br>5 Series 3 Non-magnetic | 40<br>50<br>63 | + Ø 40 stroke 1 to 400 mm<br>+ Ø 50 to 63 stroke 1 to 500 mm | nut, technopolymer piston                            |                        |

● Supplied with aluminium piston

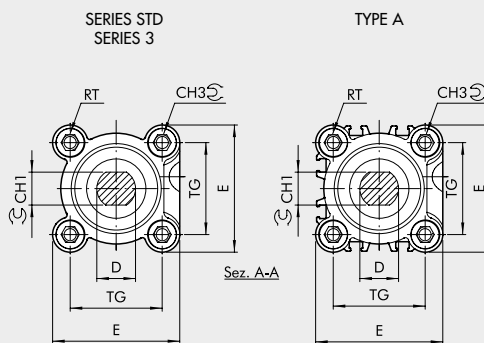
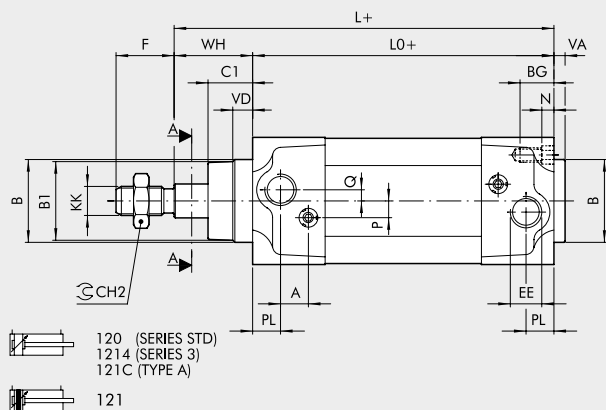
+ Maximum recommended strokes. Higher values can create operating problems

▲ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only

DIMENSIONS

STANDARD VERSION

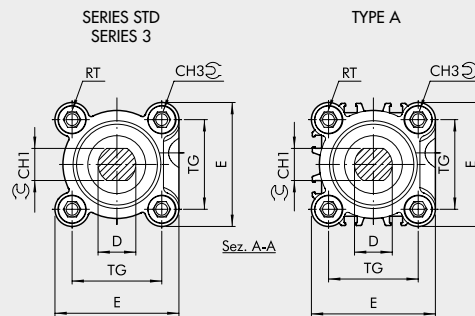
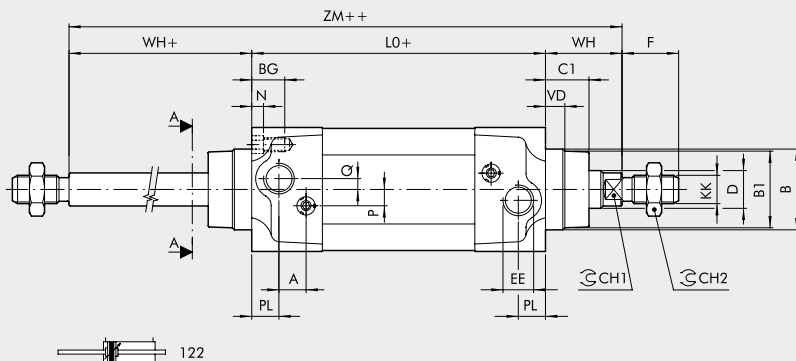
+ = ADD THE STROKE



THROUGH-ROD VERSION

+ = ADD THE STROKE

++ = ADD TWICE THE STROKE



| Ø  | PL | VD  | A  | B  | B <sub>1</sub> | WH | C <sub>1</sub> | CH <sub>1</sub> | CH <sub>2</sub> | CH <sub>3</sub> | KK       | D  | TG   | VA | F  | EE   | RT | E    | L   | L <sub>0</sub> | ZM  | BG   | N   | P | Q |
|----|----|-----|----|----|----------------|----|----------------|-----------------|-----------------|-----------------|----------|----|------|----|----|------|----|------|-----|----------------|-----|------|-----|---|---|
| 32 | 10 | 6.5 | 10 | 30 | 28             | 26 | 16             | 10              | 17              | 6               | M10x1.25 | 12 | 32.5 | 4  | 22 | G1/8 | M6 | 46   | 120 | 94             | 146 | 14.5 | 4.5 | 6 | 4 |
| 40 | 12 | 8   | 10 | 35 | 33             | 30 | 20             | 13              | 19              | 6               | M12x1.25 | 16 | 38   | 4  | 24 | G1/4 | M6 | 54   | 135 | 105            | 165 | 14.5 | 4.5 | 6 | 4 |
| 50 | 14 | 13  | 10 | 40 | 38             | 37 | 25             | 17              | 24              | 8               | M16x1.5  | 20 | 46.5 | 4  | 32 | G1/4 | M8 | 64.5 | 143 | 106            | 180 | 17.5 | 5.5 | 6 | 6 |
| 63 | 16 | 14  | 10 | 45 | 40             | 37 | 25             | 17              | 24              | 8               | M16x1.5  | 20 | 56.5 | 4  | 32 | G3/8 | M8 | 75.5 | 158 | 121            | 195 | 17.5 | 5.5 | 6 | 6 |



# ISO 15552 CYLINDER WITH END-OF-STROKE STOP



The cylinders in this series are designed with a unit that mechanically locks the piston rod at the end of stroke. When extended, the piston rod can be locked at the front head; when retracted, it is locked either at the rear head or in both positions. With the cylinder pneumatically powered, the locking unit releases automatically, so no additional piloting is required. The locking unit can be released manually by inserting a screw into a thread. This cylinder complies with ISO 15552, except for the length, which is greater than the standard.



| TECHNICAL DATA   |                 | Ø32   | Ø40   | Ø50   | Ø63        | Ø80   | Ø100       |             |  |
|--|-----------------|---|-------|-------|------------|-------|------------|-------------|--|
| Max operating pressure   | bar             |   |       |       |            |       | 10         |             |  |
|  | MPa             |   |       |       |            |       | 1          |             |  |
|  | psi             |   |       |       |            |       | 145        |             |  |
| Temperature range  | POLYURETHANE    | °C  |       |       |            |       |            | -25 to +80  |  |
|  |                 | °C  |       |       |            |       |            | -10 to +80  |  |
|  | NBR             | °C  |       |       |            |       |            | -10 to +80  |  |
|  |                 | °C  |       |       |            |       |            | -10 to +150 |  |
| FKM/FPM  | °C              |   |       |       |            |       | -40 to +80 |             |  |
|  | Low Temperature |   |       |       |            |       | °C         |             |  |
| Design   |                 | Heads with Tap Tite screws  |       |       |            |       |            |             |  |
| Fluid  |                 | Unlubricated air. Lubrication, if used, must be continuous  |       |       |            |       |            |             |  |
| Standard stroke +  | mm              | 30 to 2800  |       |       | 35 to 2600 |       |            |             |  |
| Versions   |                 | Double-acting cushioned, Through-rod cushioned, No stick-slip.  |       |       |            |       |            |             |  |
| Sensor magnet  |                 | YES   |       |       |            |       |            |             |  |
| Static retention force   | N               | 500   | 500   | 2000  | 2000       | 5000  | 5000       |             |  |
| Maximum axial clearance in the lock position                     | mm              | 1.5   | 1.5   | 1.5   | 1.5        | 1.5   | 1.5        |             |  |
| Minimum release pressure   | bar             | ≥ 2.5   | ≥ 2.5 | ≥ 2.5 | ≥ 2.5      | ≥ 2   | ≥ 2        |             |  |
| Maximum locking pressure   | bar             | ≤ 0.5   |       |       |            |       |            |             |  |
| Forces generated at 6 bar thrust/retraction                      |                 | See cylinder "General technical data" at the beginning of the chapter                                   |       |       |            |       |            |             |  |
| Weights  |                 |   |       |       |            |       |            |             |  |
| Only one stop, with piston rod extended or retracted, stroke = 0 | g               | 573   | 860   | 1367  | 1793       | 3515  | 5197       |             |  |
| Stops either with piston rod extended or retracted, stroke = 0   | g               | 713   | 1060  | 1647  | 2143       | 4215  | 6497       |             |  |
| Every mm of stroke, cylinder with piston rod cylinder            | g               | 2.20  | 2.15  | 4.57  | 5.03       | 7.49  | 8.79       |             |  |
| Every mm of stroke, through-rod cylinder                         | g               | 3.09  | 4.73  | 7.04  | 7.44       | 10.16 | 12.33      |             |  |
| Notes  |                 | For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air. |       |       |            |       |            |             |  |
|  |                 | + Maximum recommended strokes. Higher values can create operating problems                              |       |       |            |       |            |             |  |

## FUNCTIONING DIAGRAM

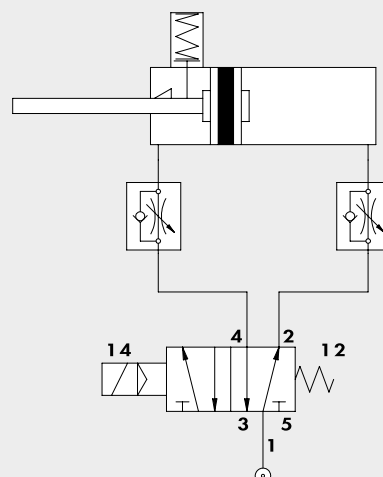
### LOCKED VERSION WITH EXTENDED PISTON ROD

When the piston rod extends at the end of stroke, the spring-actuated locking piston enters the slot of the coupling bushing. When the piston rod retracts, the pressure inside the front chamber overcomes the force of the spring and causes the locking piston to move away; the piston rod can now move freely and retracts.

**N.B.:** The rear chamber must be pressurized before activating piston rod retraction, otherwise the locking unit will not be disengaged. When the control valve is switched over, by the time the rear chamber relieves, sufficient pressure is created in the front chamber to release the locking unit before the piston rod starts retracting.

The version with locking with piston rod retracted works in the same way.

**Precautions:** Do not use 3-position solenoid valves. Use MRF flow regulators that choke the output (type C). Do not use with multiple cylinders moving in a synchronized sequence. Pneumatic cushioning must be adjusted properly; it must not be closed, neither fully nor partially.

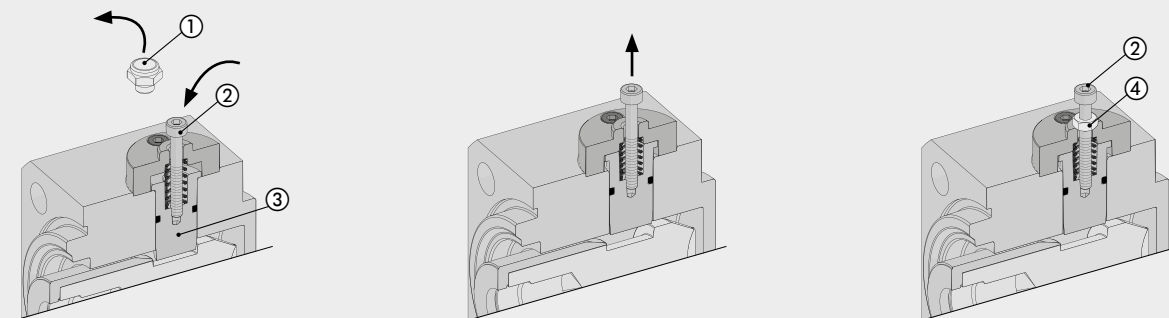
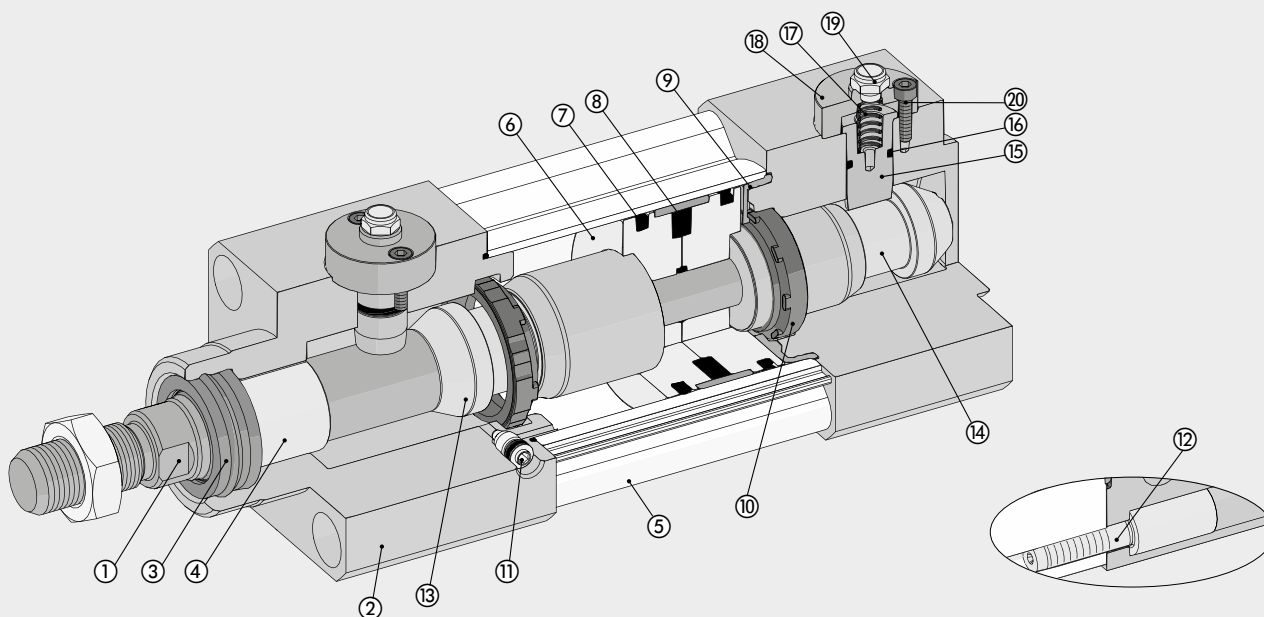


**MANUAL RELEASE (WITH NO PRESSURE)**

Remove the silencer ①. Tighten one of the screws ② into the locking piston ③.

Pull it upwards to release the locking piston.

You can disengage the locking unit permanently by fitting a nut ④ to the screw ② and tightening it until the piston is disengaged.

**COMPONENTS**

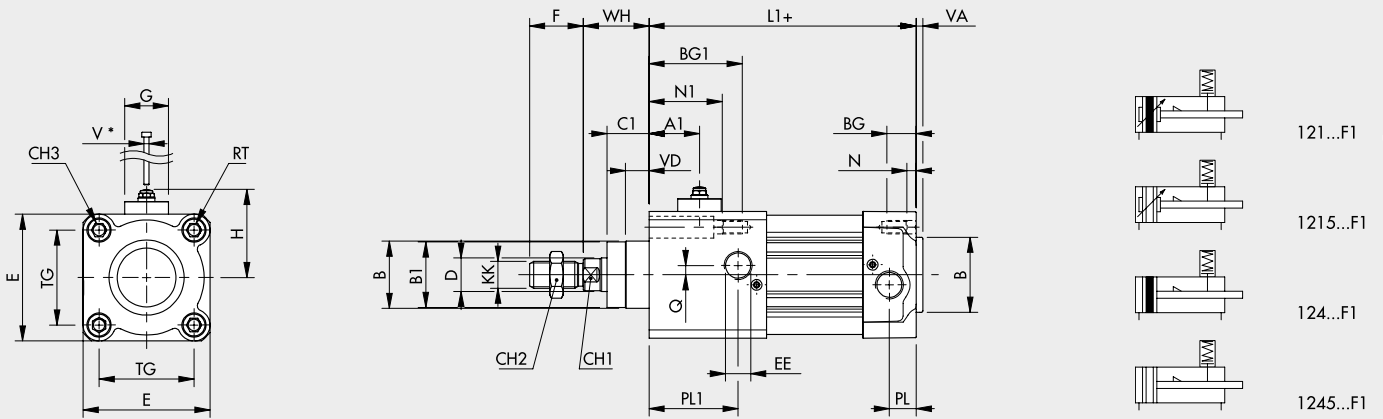
- ① PISTON ROD: C45 steel or stainless steel, thick chromed
- ② HEAD: aluminium
- ③ PISTON ROD GASKET: polyurethane, NBR or FKM/FPM
- ④ GUIDE BUSHING: steel strip with bronze and PTFE insert
- ⑤ BARREL: drawn anodized calibrated aluminium
- ⑥ SEMI-PISTON: made of self-lubricating technopolymer with built-in cushioning olives or in aluminium
- ⑦ PISTON GASKET: polyurethane, NBR or FKM/FPM
- ⑧ MAGNET: plastoferrite
- ⑨ BUFFER + Static O-rings: NBR or FKM/FPM
- ⑩ CUSHIONING GASKET: polyurethane, NBR or FKM/FPM

- ⑪ CUSHIONING NEEDLE: OT 58 with needle out movement safety system even when fully open
- ⑫ SCREWS: Tap Tite for assembly
- ⑬ FRONT COUPLING BUSHING: hardened alloy steel
- ⑭ REAR COUPLING BUSHING: hardened alloy steel
- ⑮ LOCKING PISTON: tempered and chromed alloy steel
- ⑯ GASKET: NBR or FKM/FPM
- ⑰ SPRING: stainless steel
- ⑱ COVER: anodized aluminium
- ⑲ SILENCER: nickel-plated brass with stainless steel wire
- ⑳ SCREWS: zinc-plated steel

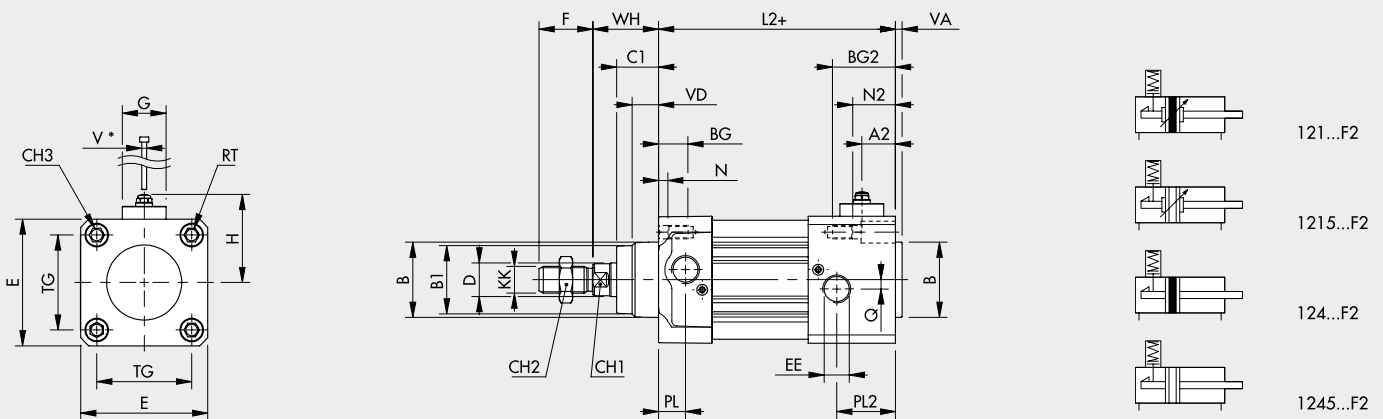
**DIMENSIONS OF SINGLE PISTON ROD VERSIONS**

**LOCKING WITH EXTENDED PISTON ROD**

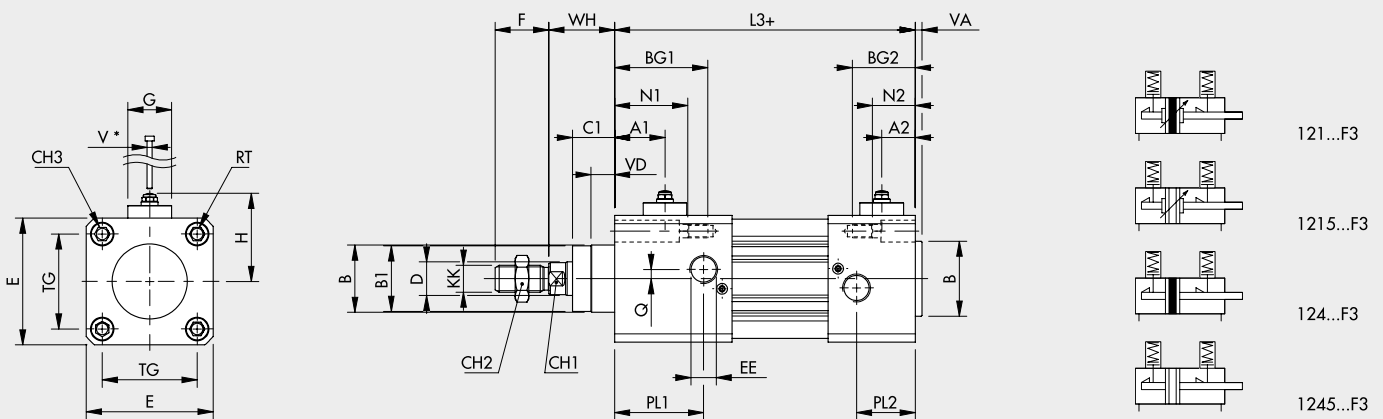
\* = THREADING FOR MANUAL RELEASE SCREW  
+ = ADD STROKE



**LOCKING WITH RETRACTED PISTON ROD**



**LOCKING WITH EXTENDED AND RETRACTED PISTON ROD**

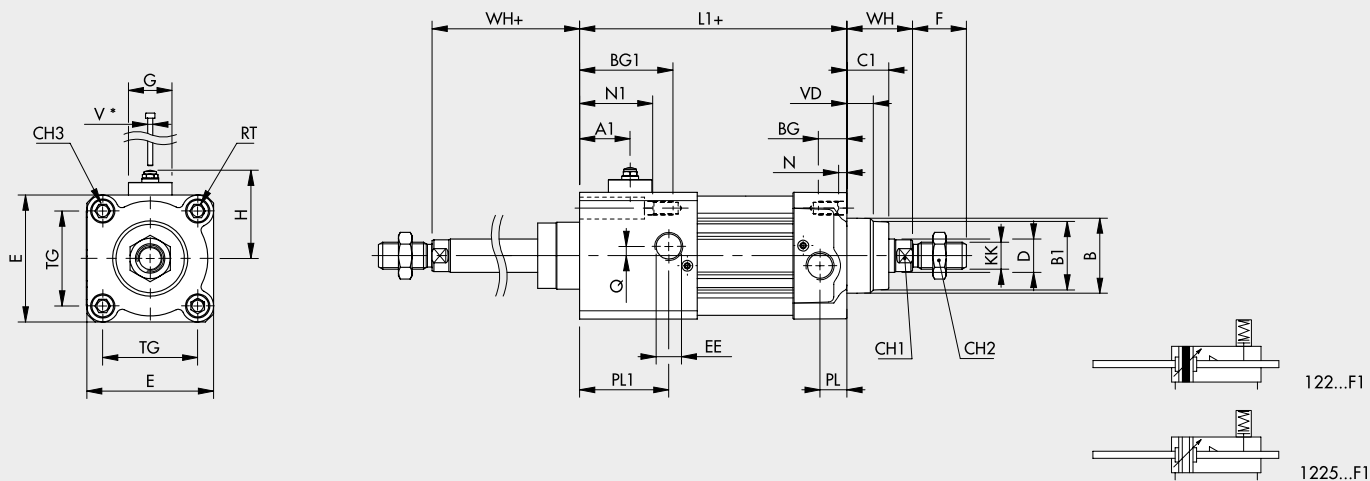


| Ø   | A1 | A2 | B  | B1 | BG   | BG1  | BG2  | C1 | CH1 | CH2 | CH3 | D  | E    | EE  | F  | G  | H  | KK       | L1  | L2  | L3  | N   | N1   | N2   | PL | PL1 | PL2 | Q | RT  | TG   | V* | VA | VD  | WH |
|-----|----|----|----|----|------|------|------|----|-----|-----|-----|----|------|-----|----|----|----|----------|-----|-----|-----|-----|------|------|----|-----|-----|---|-----|------|----|----|-----|----|
| 32  | 24 | 15 | 30 | 28 | 14.5 | 25.5 | 25.5 | 16 | 10  | 17  | 6   | 12 | 46   | 1/8 | 22 | 24 | 40 | M10x1.25 | 105 | 105 | 116 | 4.5 | 15.5 | 15.5 | 10 | 21  | 21  | 4 | M6  | 32.5 | M3 | 4  | 6.5 | 26 |
| 40  | 28 | 16 | 35 | 33 | 14.5 | 39.5 | 28.5 | 20 | 13  | 19  | 6   | 16 | 54   | 1/4 | 24 | 24 | 45 | M12x1.25 | 130 | 119 | 144 | 4.5 | 29.5 | 18.5 | 12 | 35  | 26  | 4 | M6  | 38   | M3 | 4  | 8   | 30 |
| 50  | 28 | 20 | 40 | 38 | 17.5 | 44.5 | 35.5 | 25 | 17  | 24  | 8   | 20 | 64.5 | 1/4 | 32 | 26 | 48 | M16x1.5  | 133 | 124 | 151 | 5.5 | 32.5 | 23.5 | 14 | 41  | 32  | 6 | M8  | 46.5 | M3 | 4  | 13  | 37 |
| 63  | 28 | 21 | 45 | 40 | 17.5 | 43.5 | 36.5 | 25 | 17  | 24  | 8   | 20 | 75.5 | 3/8 | 32 | 26 | 55 | M16x1.5  | 147 | 140 | 166 | 5.5 | 31.5 | 24.5 | 16 | 41  | 34  | 6 | M8  | 56.5 | M3 | 4  | 14  | 37 |
| 80  | 30 | 25 | 45 | 43 | 21.5 | 50.5 | 45.5 | 33 | 22  | 30  | 10  | 25 | 94   | 3/8 | 40 | 29 | 63 | M20x1.5  | 157 | 152 | 181 | 5.5 | 34.5 | 29.5 | 18 | 47  | 42  | 7 | M10 | 72   | M3 | 4  | 12  | 46 |
| 100 | 33 | 27 | 55 | 49 | 21.5 | 58.5 | 46.5 | 38 | 22  | 30  | 10  | 25 | 111  | 1/2 | 40 | 29 | 72 | M20x1.5  | 175 | 163 | 200 | 5.5 | 42.5 | 30.5 | 20 | 50  | 45  | 7 | M10 | 89   | M3 | 4  | 14  | 51 |

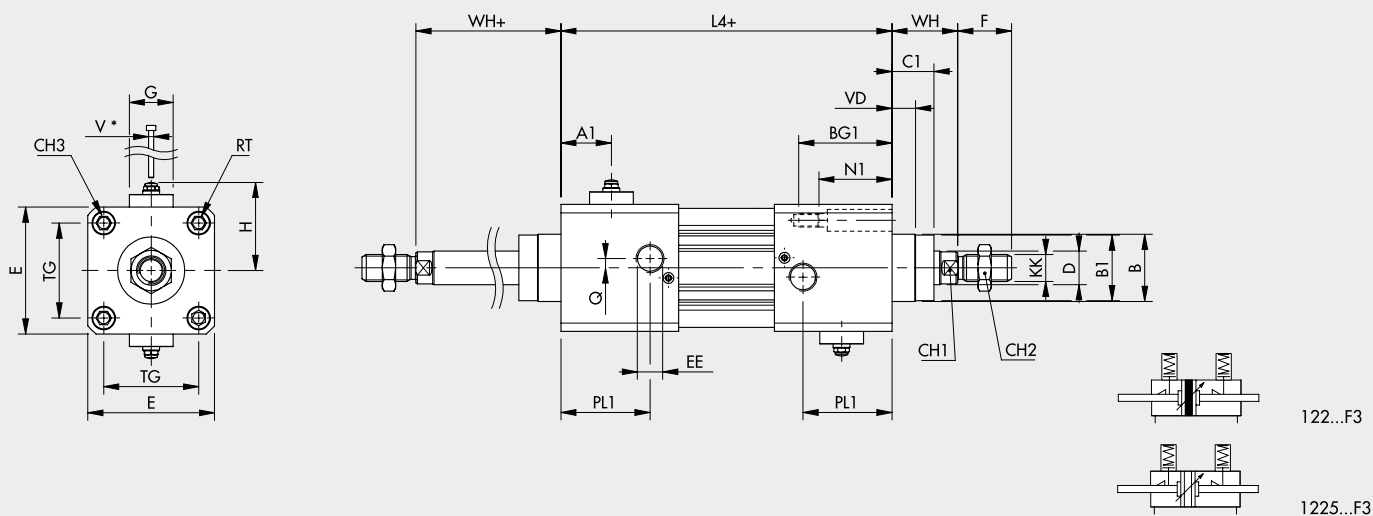
**DIMENSIONS OF THROUGH-ROD VERSIONS**

**LOCKING ON ONE SIDE ONLY**

\* = THREADING FOR MANUAL RELEASE SCREW  
 + = ADD STROKE



**LOCKING WITH EXTENDED AND RETRACTED PISTON ROD**



| Ø   | A1 | B  | B1 | BG   | BG1  | C1 | CH1 | CH2 | CH3 | D  | E    | EE  | F  | G  | H  | KK       | L1  | L4  | N   | N1   | PL | PL1 | Q | RT  | TG   | V* | VD  | WH |
|-----|----|----|----|------|------|----|-----|-----|-----|----|------|-----|----|----|----|----------|-----|-----|-----|------|----|-----|---|-----|------|----|-----|----|
| 32  | 24 | 30 | 28 | 14.5 | 25.5 | 16 | 10  | 17  | 6   | 12 | 46   | 1/8 | 22 | 24 | 40 | M10x1.25 | 105 | 116 | 4.5 | 15.5 | 10 | 21  | 4 | M6  | 32.5 | M3 | 6.5 | 26 |
| 40  | 28 | 35 | 33 | 14.5 | 39.5 | 20 | 13  | 19  | 6   | 16 | 54   | 1/4 | 24 | 24 | 45 | M12x1.25 | 130 | 155 | 4.5 | 29.5 | 12 | 35  | 4 | M6  | 38   | M3 | 8   | 30 |
| 50  | 28 | 40 | 38 | 17.5 | 44.5 | 25 | 17  | 24  | 8   | 20 | 64.5 | 1/4 | 32 | 26 | 48 | M16x1.5  | 133 | 160 | 5.5 | 32.5 | 14 | 41  | 6 | M8  | 46.5 | M3 | 13  | 37 |
| 63  | 28 | 45 | 40 | 17.5 | 43.5 | 25 | 17  | 24  | 8   | 20 | 75.5 | 3/8 | 32 | 26 | 55 | M16x1.5  | 147 | 173 | 5.5 | 31.5 | 16 | 41  | 6 | M8  | 56.5 | M3 | 14  | 37 |
| 80  | 30 | 45 | 43 | 21.5 | 50.5 | 33 | 22  | 30  | 10  | 25 | 94   | 3/8 | 40 | 29 | 63 | M20x1.5  | 157 | 186 | 5.5 | 34.5 | 18 | 47  | 7 | M10 | 72   | M3 | 12  | 46 |
| 100 | 33 | 55 | 49 | 21.5 | 58.5 | 38 | 22  | 30  | 10  | 25 | 111  | 1/2 | 40 | 29 | 72 | M20x1.5  | 175 | 212 | 5.5 | 42.5 | 20 | 50  | 7 | M10 | 89   | M3 | 14  | 51 |

## KEY TO CODES

| CYL | 1 2 1  | 3   | 3 2   | 0 0 5 0  | C  | P   | F1   |
|-----|--|---|---|--|--|---|--|
|     | TYPE   |   | BORE  | STROKE   | MATERIAL   | GASKETS   | END-OF-STROKE STOP   |
|     | 121 Double-acting cushioned<br>● 122 Through-rod<br>124 Double-acting, non-cushioned | 3 Series 3<br>◆ 4 Series 3 No stick-slip<br>5 Series 3 Non-magnetic | ▲ 32 = Ø 32<br>40 = Ø 40<br>50 = Ø 50<br>63 = Ø 63<br>80 = Ø 80<br>A1 = Ø 100 | For the maximum suppliable strokes, look at the technical data | A C45 chromed piston rod, aluminium piston: standard for all cylinders with ≥ 1000 mm-stroke cylinders and for cylinder with Ø 80 mm and over<br>C C45 chromed piston rod, technopolymer piston: standard for cylinders of Ø 32 to 63 mm with <1000 mm strokes<br>Z Stainless steel piston rod and nut aluminium piston<br>X Stainless steel piston rod and nut technopolymer piston | N NBR gaskets<br>P Polyurethane gaskets<br>V FKM/FPM gaskets<br>● B Low temperature | ● F1 Extended piston rod<br>F2 Retracting piston rod<br>● F3 Retracting piston rod and extended piston rod |

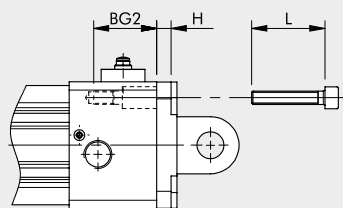
- Only available for versions with aluminium piston (A or Z)
- ◆ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only

- ▲ Regarding the Ø32 cylinders, the heads with end-of-stroke stop hasn't the pneumatic cushioning

## ACCESSORIES

All the accessories of ISO 15552 cylinders (page A1.46) can be used, **except for the guide units (GDS, GDH, GDM)** since the protrusion of the locking piston interferes with the guide unit.

**NB:** The screws used to secure the accessory to the heads fitted with a stop must be longer than those supplied together with the accessories. The screw length is calculated by summing up the catalogue-specified thickness of the accessory flange and the BG1 dimension, rounding down to -3 mm.



$$L = BG2 + H - (0 - 3) \text{ mm}$$

## NOTES

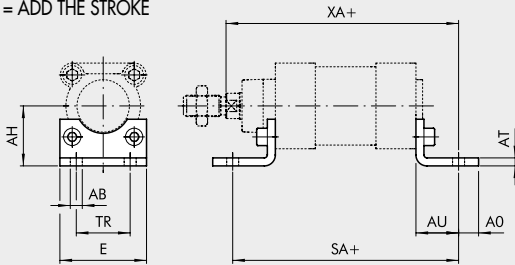
# ACCESSORIES FOR ISO 15552 STD, TYPE A, SERIES 3, TWO-FLAT:



## FIXINGS

### FOOT - MODEL A

+ = ADD THE STROKE

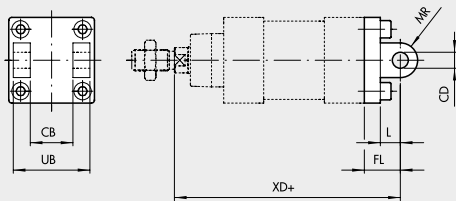


| Code        | Ø   | Ø AB | AH | AO | AT | AU | TR | E   | XA  | SA  | Weight [g] |
|-------------|-----|------|----|----|----|----|----|-----|-----|-----|------------|
| W0950322001 | 32  | 7    | 32 | 11 | 4  | 24 | 32 | 45  | 144 | 142 | 76         |
| W0950402001 | 40  | 9    | 36 | 15 | 4  | 28 | 36 | 52  | 163 | 161 | 100        |
| W0950502001 | 50  | 9    | 45 | 15 | 5  | 32 | 45 | 65  | 175 | 170 | 162        |
| W0950632001 | 63  | 9    | 50 | 15 | 5  | 32 | 50 | 75  | 190 | 185 | 266        |
| W0950802001 | 80  | 12   | 63 | 20 | 6  | 41 | 63 | 95  | 215 | 210 | 456        |
| W0951002001 | 100 | 14   | 71 | 25 | 6  | 41 | 75 | 115 | 230 | 220 | 572        |
| W0951252001 | 125 | 16   | 90 | 15 | 8  | 45 | 90 | 140 | 270 | 250 | 1130       |

Note: Individually packed with 2 screws

### FEMALE HINGE - MODEL B

+ = ADD THE STROKE

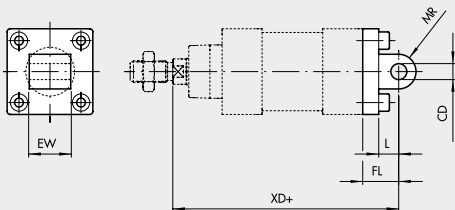


| Code        | Ø   | UB  | CB <sup>H14</sup> | FL | CD <sup>H9</sup> | XD  | MR | L  | Weight [g] |
|-------------|-----|-----|-------------------|----|------------------|-----|----|----|------------|
| W0950322003 | 32  | 45  | 26                | 22 | 10               | 142 | 10 | 12 | 116        |
| W0950402003 | 40  | 52  | 28                | 25 | 12               | 160 | 12 | 15 | 160        |
| W0950502003 | 50  | 60  | 32                | 27 | 12               | 170 | 12 | 15 | 252        |
| W0950632003 | 63  | 70  | 40                | 32 | 16               | 190 | 16 | 20 | 394        |
| W0950802003 | 80  | 90  | 50                | 36 | 16               | 210 | 16 | 20 | 670        |
| W0951002003 | 100 | 110 | 60                | 41 | 20               | 230 | 20 | 25 | 1085       |
| W0951252003 | 125 | 130 | 70                | 50 | 25               | 275 | 25 | 30 | 2000       |

Note: Supplied with 4 screws, 4 washers, 2 snap-rings, 1 pin

### MALE HINGE - MODEL BA

+ = ADD THE STROKE

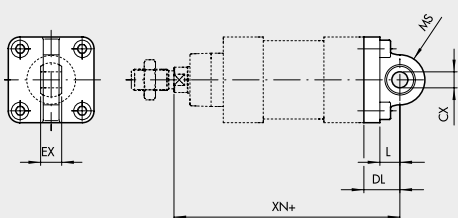


| Code        | Ø   | EW | FL | MR | CD <sup>H9</sup> | L  | XD  | Weight [g] |
|-------------|-----|----|----|----|------------------|----|-----|------------|
| W0950322004 | 32  | 26 | 22 | 10 | 10               | 13 | 142 | 94         |
| W0950402004 | 40  | 28 | 25 | 12 | 12               | 16 | 160 | 124        |
| W0950502004 | 50  | 32 | 27 | 12 | 12               | 16 | 170 | 220        |
| W0950632004 | 63  | 40 | 32 | 16 | 16               | 22 | 190 | 316        |
| W0950802004 | 80  | 50 | 36 | 16 | 16               | 22 | 210 | 578        |
| W0951002004 | 100 | 60 | 41 | 20 | 20               | 27 | 230 | 850        |
| W0951252004 | 125 | 70 | 50 | 25 | 25               | 30 | 275 | 1590       |

Note: Supplied with 4 screws

### ARTICULATED MALE HINGE - MODEL BAS

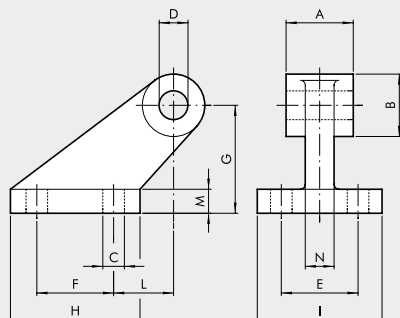
+ = ADD THE STROKE



| Code        | Ø   | DL | MS | L  | XN  | CX <sup>H9</sup> | EX | Weight [g] |
|-------------|-----|----|----|----|-----|------------------|----|------------|
| W0950322006 | 32  | 22 | 16 | 12 | 142 | 10               | 14 | 106        |
| W0950402006 | 40  | 25 | 18 | 15 | 160 | 12               | 16 | 142        |
| W0950502006 | 50  | 27 | 21 | 15 | 170 | 12               | 16 | 236        |
| W0950632006 | 63  | 32 | 23 | 20 | 190 | 16               | 21 | 336        |
| W0950802006 | 80  | 36 | 28 | 20 | 210 | 16               | 21 | 572        |
| W0951002006 | 100 | 41 | 30 | 25 | 230 | 20               | 25 | 840        |
| W0951252006 | 125 | 50 | 40 | 30 | 275 | 25               | 31 | 1520       |

Note: Supplied with 4 screws

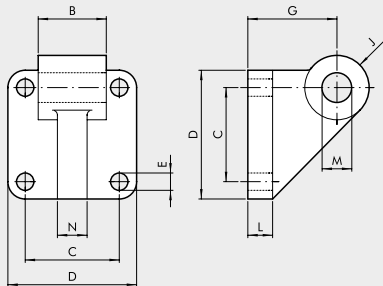
### CETOP HINGE FOR MODEL B - MODEL GI



| Code        | Ø   | A  | B  | C  | D  | E  | F  | G  | H   | I  | L  | M  | N  | Weight [g] |
|-------------|-----|----|----|----|----|----|----|----|-----|----|----|----|----|------------|
| W0950322008 | 32  | 26 | 19 | 7  | 10 | 25 | 20 | 32 | 37  | 41 | 18 | 8  | 10 | 96         |
| W0950402008 | 40  | 28 | 26 | 9  | 12 | 32 | 32 | 45 | 54  | 52 | 25 | 10 | 12 | 216        |
| W0950502008 | 50  | 32 | 26 | 9  | 12 | 32 | 32 | 45 | 54  | 52 | 25 | 10 | 12 | 212        |
| W0950632008 | 63  | 40 | 33 | 11 | 16 | 40 | 50 | 63 | 75  | 63 | 32 | 12 | 15 | 440        |
| W0950802008 | 80  | 50 | 33 | 11 | 16 | 40 | 50 | 63 | 75  | 63 | 32 | 12 | 15 | 464        |
| W0951002008 | 100 | 60 | 44 | 14 | 20 | 50 | 70 | 90 | 103 | 80 | 40 | 16 | 22 | 985        |
| W0951252008 | 125 | 70 | 44 | 14 | 25 | 50 | 70 | 90 | 103 | 80 | 40 | 16 | 22 | 1000       |

Note: Supplied with 4 screws, 4 washers

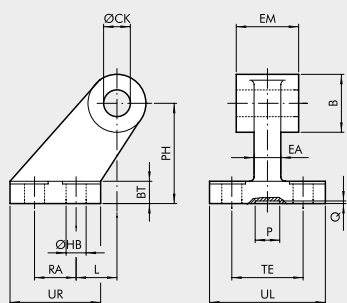
COUNTER-HINGE FOR MODEL B - MODEL GS



| Code        | Ø   | B  | C    | D   | E  | G  | J  | L  | M  | N  | Weight [g] |
|-------------|-----|----|------|-----|----|----|----|----|----|----|------------|
| W0950322108 | 32  | 26 | 32.5 | 45  | 7  | 32 | 11 | 10 | 10 | 10 | 106        |
| W0950402108 | 40  | 28 | 38   | 52  | 7  | 36 | 13 | 10 | 12 | 12 | 138        |
| W0950502108 | 50  | 32 | 46.5 | 65  | 9  | 45 | 13 | 12 | 12 | 12 | 252        |
| W0950632108 | 63  | 40 | 56.5 | 75  | 9  | 50 | 17 | 12 | 16 | 15 | 350        |
| W0950802108 | 80  | 50 | 72   | 95  | 11 | 63 | 17 | 16 | 16 | 15 | 655        |
| W0951002108 | 100 | 60 | 89   | 115 | 11 | 73 | 21 | 16 | 20 | 22 | 980        |

Note: Supplied with 4 screws, 4 washers

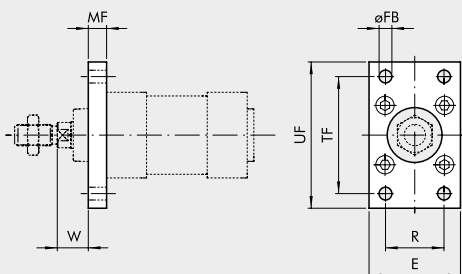
ISO 15552 COUNTER-HINGE FOR MODEL B - MODEL AB7



| Code        | Ø   | EM | B  | ØHB | ØCK | TE | RA | PH | UR | UL  | L  | BT  | EA  | P  | Q | Weight [g] |
|-------------|-----|----|----|-----|-----|----|----|----|----|-----|----|-----|-----|----|---|------------|
| W0950322017 | 32  | 26 | 20 | 6.6 | 10  | 38 | 18 | 32 | 31 | 51  | 3  | 8   | 10  | 21 | 3 | 60         |
| W0950402017 | 40  | 28 | 22 | 6.6 | 12  | 41 | 22 | 36 | 35 | 54  | 2  | 10  | 15* | 21 | 3 | 85         |
| W0950502017 | 50  | 32 | 26 | 9   | 12  | 50 | 30 | 45 | 45 | 65  | 3  | 12  | 16  | 21 | 3 | 162        |
| W0950632017 | 63  | 40 | 30 | 9   | 16  | 52 | 35 | 50 | 50 | 67  | 2  | 14* | 16  | 21 | 3 | 191        |
| W0950802017 | 80  | 50 | 30 | 11  | 16  | 66 | 40 | 63 | 60 | 86  | 7  | 14  | 20  | 21 | 3 | 332        |
| W0951002017 | 100 | 60 | 38 | 11  | 20  | 76 | 50 | 71 | 70 | 96  | 5  | 17* | 20  | 11 | 3 | 522        |
| W0951252017 | 125 | 70 | 45 | 14  | 25  | 94 | 60 | 90 | 90 | 124 | 10 | 20  | 30  | 21 | 3 | 960        |

\* Dimensions not to ISO 15552

FRONT FLANGE - MODEL C

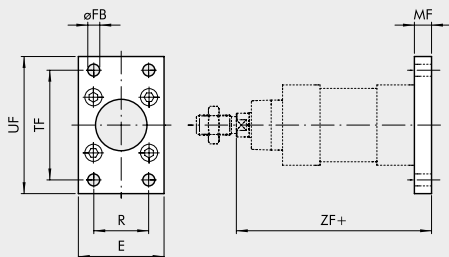


| Code        | Ø   | TF  | UF  | E   | MF | R  | øFB | W  | Weight [g] |
|-------------|-----|-----|-----|-----|----|----|-----|----|------------|
| W0950322002 | 32  | 64  | 80  | 50  | 10 | 32 | 7   | 16 | 246        |
| W0950402002 | 40  | 72  | 90  | 55  | 10 | 36 | 9   | 20 | 290        |
| W0950502002 | 50  | 90  | 110 | 65  | 12 | 45 | 9   | 25 | 522        |
| W0950632002 | 63  | 100 | 120 | 75  | 12 | 50 | 9   | 25 | 670        |
| W0950802002 | 80  | 126 | 150 | 95  | 15 | 63 | 12  | 30 | 1420       |
| W0951002002 | 100 | 150 | 178 | 115 | 15 | 75 | 14  | 35 | 2040       |
| W0951252002 | 125 | 180 | 220 | 140 | 20 | 90 | 16  | 45 | 4300       |

Note: Supplied with 4 screws

REAR FLANGE - MODEL C

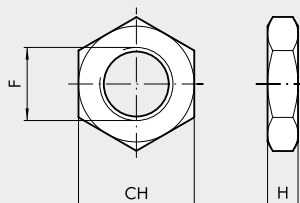
+ = ADD THE STROKE



| Code        | Ø   | TF  | UF  | E   | MF | R  | øFB | ZF  | Weight [g] |
|-------------|-----|-----|-----|-----|----|----|-----|-----|------------|
| W0950322002 | 32  | 64  | 80  | 50  | 10 | 32 | 7   | 130 | 246        |
| W0950402002 | 40  | 72  | 90  | 55  | 10 | 36 | 9   | 145 | 290        |
| W0950502002 | 50  | 90  | 110 | 65  | 12 | 45 | 9   | 155 | 522        |
| W0950632002 | 63  | 100 | 120 | 75  | 12 | 50 | 9   | 170 | 670        |
| W0950802002 | 80  | 126 | 150 | 95  | 15 | 63 | 12  | 190 | 1420       |
| W0951002002 | 100 | 150 | 178 | 115 | 15 | 75 | 14  | 205 | 2040       |
| W0951252002 | 125 | 180 | 220 | 140 | 20 | 90 | 16  | 245 | 4300       |

Note: Supplied with 4 screws.

ROD NUT - MODEL S

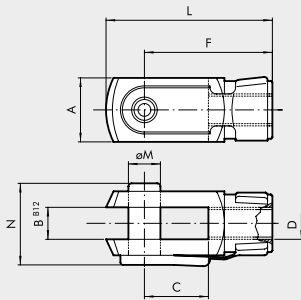


| Code       | Ø      | F        | H  | CH | Weight [g] |
|------------|--------|----------|----|----|------------|
| 0950322010 | 32     | M10x1.25 | 6  | 17 | 6          |
| 0950402010 | 40     | M12x1.25 | 7  | 19 | 12         |
| 0950502010 | 50/63  | M16x1.5  | 8  | 24 | 20         |
| 0950802010 | 80/100 | M20x1.5  | 9  | 30 | 32         |
| 0951252010 | 125    | M27x2    | 12 | 41 | 74         |

Note: Individually packed



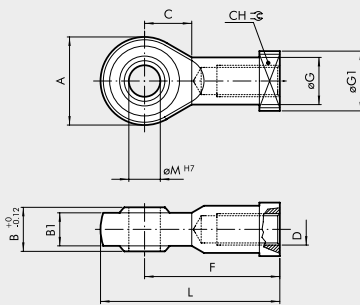
**FORK MODEL GK-M**



| Code        | Ø   | øM | C  | B  | A  | L   | F   | D        | N  | Weight [g] |
|-------------|-----|----|----|----|----|-----|-----|----------|----|------------|
| W0950322020 | 32  | 10 | 20 | 10 | 20 | 52  | 40  | M10x1.25 | 26 | 92         |
| W0950402020 | 40  | 12 | 24 | 12 | 24 | 62  | 48  | M12x1.25 | 32 | 148        |
| W0950502020 | 50  | 16 | 32 | 16 | 32 | 83  | 64  | M16x1.5  | 40 | 340        |
| W0950502020 | 63  | 16 | 32 | 16 | 32 | 83  | 64  | M16x1.5  | 40 | 340        |
| W0950802020 | 80  | 20 | 40 | 20 | 40 | 105 | 80  | M20x1.5  | 48 | 690        |
| W0950802020 | 100 | 20 | 40 | 20 | 40 | 105 | 80  | M20x1.5  | 48 | 690        |
| W0951252020 | 125 | 30 | 54 | 30 | 55 | 148 | 110 | M27x2    | 65 | 1835       |

Note: Ø32÷100 Supplied complete with 1 pin and 1 clip; Ø125 Supplied complete with 1 pin and 2 seeger

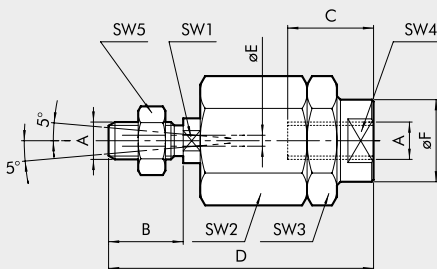
**ROD EYE - MODEL GA-M**



| Code        | Ø   | øM | C  | B1   | B  | A  | L   | F   | D        | øG   | CH | øG1 | Weight [g] |
|-------------|-----|----|----|------|----|----|-----|-----|----------|------|----|-----|------------|
| W0950322025 | 32  | 10 | 15 | 10.5 | 14 | 28 | 57  | 43  | M10x1.25 | 15   | 17 | 19  | 78         |
| W0950402025 | 40  | 12 | 17 | 12   | 16 | 32 | 66  | 50  | M12x1.25 | 17.5 | 19 | 19  | 116        |
| W0950502025 | 50  | 16 | 22 | 15   | 21 | 42 | 85  | 64  | M16x1.5  | 22   | 22 | 22  | 226        |
| W0950502025 | 63  | 16 | 22 | 15   | 21 | 42 | 85  | 64  | M16x1.5  | 22   | 22 | 22  | 226        |
| W0950802025 | 80  | 20 | 26 | 18   | 25 | 50 | 102 | 77  | M20x1.5  | 27.5 | 30 | 27  | 404        |
| W0950802025 | 100 | 20 | 26 | 18   | 25 | 50 | 102 | 77  | M20x1.5  | 27.5 | 30 | 27  | 404        |
| W0951252025 | 125 | 30 | 36 | 25   | 37 | 70 | 145 | 110 | M27x2    | 40   | 41 | 50  | 1190       |

Note: Individually packed

**SELF ALIGNING ROD COUPLER - MODEL GA-K**



| Code        | Ø   | A        | B  | C  | D   | øF | øE | SW <sub>1</sub> | SW <sub>2</sub> | SW <sub>3</sub> | SW <sub>4</sub> | SW <sub>5</sub> | Weight [g] |
|-------------|-----|----------|----|----|-----|----|----|-----------------|-----------------|-----------------|-----------------|-----------------|------------|
| W0950322030 | 32  | M10x1.25 | 20 | 20 | 71  | 22 | 4  | 12              | 30              | 30              | 19              | 17              | 216        |
| W0950402030 | 40  | M12x1.25 | 24 | 20 | 75  | 22 | 4  | 12              | 30              | 30              | 19              | 19              | 220        |
| W0950502030 | 50  | M16x1.5  | 32 | 32 | 103 | 32 | 4  | 20              | 41              | 41              | 30              | 24              | 620        |
| W0950502030 | 63  | M16x1.5  | 32 | 32 | 103 | 32 | 4  | 20              | 41              | 41              | 30              | 24              | 620        |
| W0950802030 | 80  | M20x1.5  | 40 | 40 | 119 | 32 | 4  | 20              | 41              | 41              | 30              | 30              | 680        |
| W0950802030 | 100 | M20x1.5  | 40 | 40 | 119 | 32 | 4  | 20              | 41              | 41              | 30              | 30              | 680        |

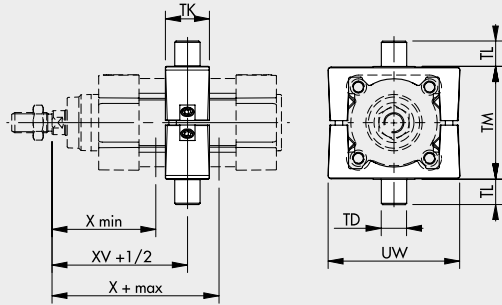
Note: Individually packed

**NOTES**

## ACCESSORIES FOR ISO 1552 CYLINDERS: INTERMEDIATE HINGE

### INTERMEDIATE HINGE - MODEL EN, FOR STD AND STD TWO-FLAT SERIES

+ = ADD THE STROKE  
+ 1/2 = ADD HALF THE STROKE

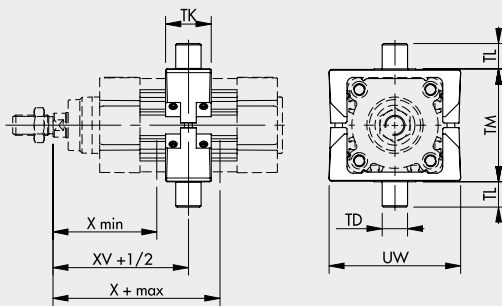


| Code       | Ø   | X <sub>(min)</sub> | XV   | X <sub>(max)</sub> | TM  | TL | TD <sub>e9</sub> | TK | UW  | Weight [g] | T [Nm] ♦ |
|------------|-----|--------------------|------|--------------------|-----|----|------------------|----|-----|------------|----------|
| 0950322007 | 32  | 63                 | 73   | 83                 | 50  | 12 | 12               | 22 | 65  | 282        | 4        |
| 0950402007 | 40  | 72                 | 82.5 | 93                 | 63  | 16 | 16               | 28 | 75  | 582        | 10       |
| 0950502007 | 50  | 83                 | 90   | 97                 | 75  | 16 | 16               | 32 | 95  | 870        | 15       |
| 0950632007 | 63  | 86.5               | 97.5 | 108.5              | 90  | 20 | 20               | 35 | 105 | 1192       | 20       |
| 0950802007 | 80  | 104                | 110  | 116                | 110 | 20 | 20               | 40 | 130 | 1950       | 20       |
| 0951002007 | 100 | 113.5              | 120  | 126.5              | 132 | 25 | 25               | 45 | 145 | 2690       | 25       |
| 0951252007 | 125 | 135                | 145  | 155                | 160 | 25 | 25               | 50 | 175 | 3927       | 30       |

Note: Supplied with 4 grub screws, 2 pins  
♦ Recommended tightening torque of grub screws

### INTERMEDIATE HINGE - MODEL EN, FOR TYPE A AND TYPE A TWO-FLAT SERIES

+ = ADD THE STROKE  
+ 1/2 = ADD HALF THE STROKE

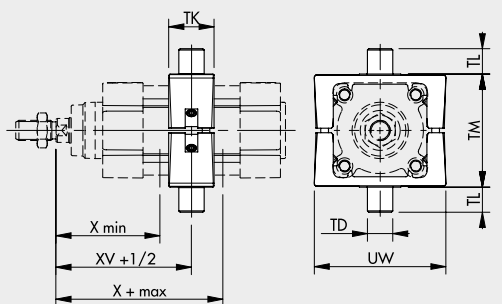


| Code       | Ø   | X <sub>(min)</sub> | XV   | X <sub>(max)</sub> | TM  | TL | TD <sub>e9</sub> | TK | UW  | Weight [g] | T [Nm] ♦ |
|------------|-----|--------------------|------|--------------------|-----|----|------------------|----|-----|------------|----------|
| 0950322107 | 32  | 63                 | 73   | 83                 | 50  | 12 | 12               | 22 | 65  | 170        | 2        |
| 0950402107 | 40  | 72                 | 82.5 | 93                 | 63  | 16 | 16               | 28 | 75  | 360        | 5        |
| 0950502107 | 50  | 83                 | 90   | 97                 | 75  | 16 | 16               | 28 | 95  | 595        | 6        |
| 0950632107 | 63  | 86.5               | 97.5 | 108.5              | 90  | 20 | 20               | 36 | 105 | 960        | 10       |
| 0950802107 | 80  | 104                | 110  | 116                | 110 | 20 | 20               | 36 | 130 | 1530       | 10       |
| 0951002107 | 100 | 113.5              | 120  | 126.5              | 132 | 25 | 25               | 45 | 145 | 2417       | 20       |
| 0951252107 | 125 | 135                | 145  | 155                | 160 | 25 | 25               | 50 | 175 | 3480       | 25       |

Note: Supplied with 8 grub screws, 2 pins  
♦ Recommended tightening torque of grub screws

### INTERMEDIATE HINGE - MODEL EN, FOR SERIES 3 AND TWO-FLAT SERIES 3

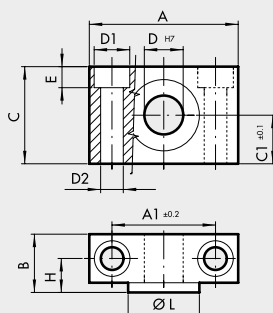
+ = ADD THE STROKE  
+ 1/2 = ADD HALF THE STROKE



| Code       | Ø   | X <sub>(min)</sub> | XV   | X <sub>(max)</sub> | TM  | TL | TD <sub>e9</sub> | TK | UW  | Weight [g] | T [Nm] ♦ |
|------------|-----|--------------------|------|--------------------|-----|----|------------------|----|-----|------------|----------|
| 0950322207 | 32  | 63                 | 73   | 83                 | 50  | 12 | 12               | 22 | 65  | 212        | 3        |
| 0950402207 | 40  | 72                 | 82.5 | 93                 | 63  | 16 | 16               | 28 | 75  | 440        | 8        |
| 0950502207 | 50  | 83                 | 90   | 97                 | 75  | 16 | 16               | 28 | 95  | 644        | 15       |
| 0950632207 | 63  | 86.5               | 97.5 | 108.5              | 90  | 20 | 20               | 36 | 105 | 1080       | 15       |
| 0950802207 | 80  | 104                | 110  | 116                | 110 | 20 | 20               | 36 | 130 | 1654       | 15       |
| 0951002207 | 100 | 113.5              | 120  | 126.5              | 132 | 25 | 25               | 45 | 145 | 2550       | 20       |
| 0951252207 | 125 | 135                | 145  | 155                | 160 | 25 | 25               | 50 | 175 | 3726       | 20       |

Note: Supplied with 4 grub screws, 2 pins  
♦ Recommended tightening torque of grub screws

### COUNTER-HINGE FOR MODEL EN - MODEL EL



| Code        | Ø   | A  | A <sub>1</sub> | B    | C  | C <sub>1</sub> | D <sub>1</sub> | D <sub>2</sub> | D  | E    | H    | øL | Weight [g] |
|-------------|-----|----|----------------|------|----|----------------|----------------|----------------|----|------|------|----|------------|
| W0950322009 | 32  | 46 | 32             | 18   | 30 | 15             | 11             | 7              | 12 | 6.5  | 10.5 | 22 | 162        |
| W0950402009 | 40  | 55 | 36             | 21   | 36 | 18             | 15             | 9              | 16 | 8.5  | 12   | 28 | 278        |
| W0950402009 | 50  | 55 | 36             | 21   | 36 | 18             | 15             | 9              | 16 | 8.5  | 12   | 28 | 278        |
| W0950632009 | 63  | 65 | 42             | 23   | 40 | 20             | 18             | 11             | 20 | 10.5 | 13   | 35 | 414        |
| W0950632009 | 80  | 65 | 42             | 23   | 40 | 20             | 18             | 11             | 20 | 10.5 | 13   | 35 | 414        |
| W0951002009 | 100 | 75 | 50             | 28.5 | 50 | 25             | 20             | 13             | 25 | 12.5 | 16   | 40 | 715        |
| W0951002009 | 125 | 75 | 50             | 28.5 | 50 | 25             | 20             | 13             | 25 | 12.5 | 16   | 40 | 715        |

Note: 2-pieces pack with 4 screws

## ACCESSORIES FOR ISO 15552 CYLINDERS: PROTECTIVE BELLOWS

The protective bellows is designed to prevent the piston rod and gasket from coming into contact with external agents in applications characterised by the presence of pollutants such as dust, oils or other contaminants. The design and material chosen (NBR) ensure a long service life of the bellows, compatibly with the operating conditions.

In addition to the bellows as such, other elements are also included in the supply to ensure correct assembly on the cylinder and a tight fit.

Depending on the cylinder size and stroke, three versions are available:

- single, consisting of one collar for the standard cylinder head, one collar for the piston rod (which must be special) and bellows;
- double, which in addition to the collars, includes two bellows and one gasket;
- triple made up of three bellows and two gaskets.

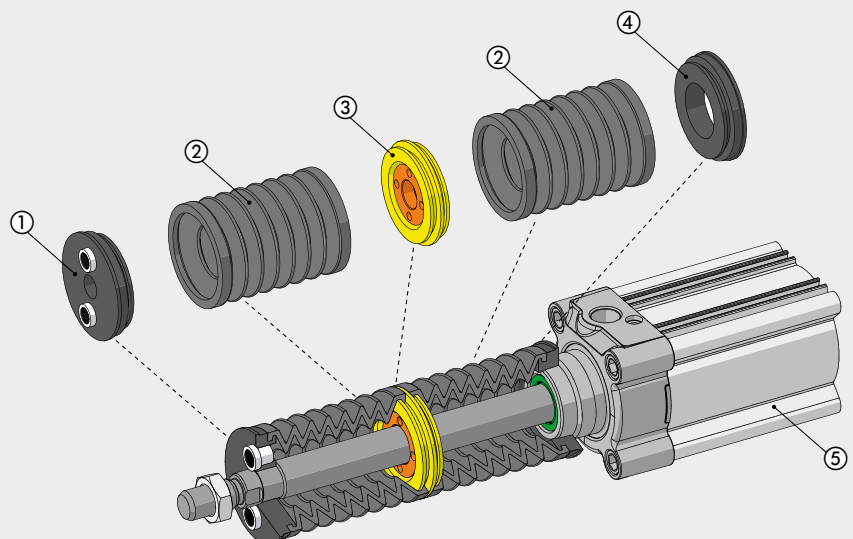
The range offered includes two sizes that cover all ISO 15552 Metal Work cylinders, with Ø32 to Ø125 bores, in versions with a suitably designed piston rod.



| TECHNICAL DATA              |  |     | SIZE 60    |            |            | SIZE 83  |            |            |
|-----------------------------|--|-----|------------|------------|------------|----------|------------|------------|
|                             |  |     | SINGLE     | DOUBLE     | TRIPLE     | SINGLE   | DOUBLE     | TRIPLE     |
| Continuous duty temperature |  | °C  | -10 to +50 |            |            |          |            |            |
| Cylinder strokes †          | Ø32 to 63  | mm  | 1 to 230   | 231 to 475 | 476 to 720 | -        | -          | -          |
|                             | Ø80 to 125   | mm  | -          | -          | -          | 1 to 270 | 271 to 555 | 556 to 840 |
| Maximum recommended speed   |  | m/s | 1          |            |            |          |            |            |
| Weights                     |  | g   | 120        | 210        | 300        | 850      | 1020       | 1190       |
| Notes                       | Can only be fitted to predisposed cylinders, code 154... to be purchased separately<br>It's possible to order cylinder code 156... with already mounted bellows. |     |            |            |            |          |            |            |
|                             | † For higher stroke values, please contact our sales department.   |     |            |            |            |          |            |            |

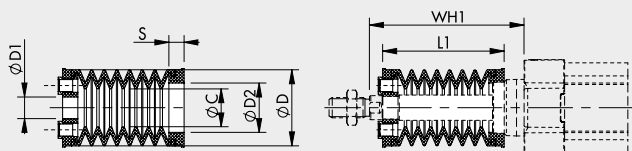
### COMPONENTS

- ① ROD COLLAR: NBR with stainless steel filter
- ② BELLOWS: NBR
- ③ JUNCTION: NBR with a POM core (only for double or triple kit)
- ④ HEAD COLLAR: NBR
- ⑤ ISO 15552 CYLINDER DESIGNED FOR BELLOWS



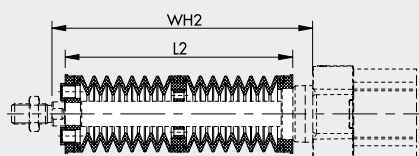
## BELLOWS OVERALL DIMENSIONS AND ORDERING CODES

### SINGLE



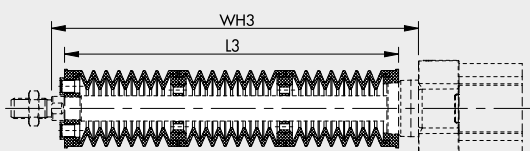
| Code       | $\varnothing$ | Cylinder |                 |                 |    |                  |                  | L1     |      | WH1 |
|------------|---------------|----------|-----------------|-----------------|----|------------------|------------------|--------|------|-----|
|            |               | stroke   | $\varnothing D$ | $\varnothing C$ | S  | $\varnothing D1$ | $\varnothing D2$ | closed | open |     |
| 0950322103 | 32            | 1 to 230 | 60              | 30              | 12 | 10               | 27               | 70     | 300  | 86  |
| 0950402103 | 40            | 1 to 230 | 60              | 30              | 12 | 13               | 32               | 70     | 300  | 86  |
| 0950502103 | 50            | 1 to 230 | 60              | 30              | 12 | 17               | 37               | 70     | 300  | 93  |
| 0950632103 | 63            | 1 to 230 | 60              | 30              | 12 | 17               | 39               | 70     | 300  | 94  |
| 0950802103 | 80            | 1 to 270 | 83              | 50              | 12 | 22               | 42               | 80     | 350  | 103 |
| 0951002103 | 100           | 1 to 270 | 83              | 50              | 12 | 22               | 48               | 80     | 350  | 105 |
| 0951252103 | 125           | 1 to 270 | 83              | 50              | 12 | 29               | 53               | 80     | 350  | 117 |

### DOUBLE



| Code       | $\varnothing$ | Cylinder   |                 |                 |    |                  |                  | L2     |      | WH2 |
|------------|---------------|------------|-----------------|-----------------|----|------------------|------------------|--------|------|-----|
|            |               | stroke     | $\varnothing D$ | $\varnothing C$ | S  | $\varnothing D1$ | $\varnothing D2$ | closed | open |     |
| 0950322203 | 32            | 231 to 475 | 60              | 30              | 12 | 10               | 27               | 125    | 600  | 141 |
| 0950402203 | 40            | 231 to 475 | 60              | 30              | 12 | 13               | 32               | 125    | 600  | 141 |
| 0950502203 | 50            | 231 to 475 | 60              | 30              | 12 | 17               | 37               | 125    | 600  | 148 |
| 0950632203 | 63            | 231 to 475 | 60              | 30              | 12 | 17               | 39               | 125    | 600  | 149 |
| 0950802203 | 80            | 271 to 555 | 83              | 50              | 12 | 22               | 42               | 145    | 700  | 168 |
| 0951002203 | 100           | 271 to 555 | 83              | 50              | 12 | 22               | 48               | 145    | 700  | 170 |
| 0951252203 | 125           | 271 to 555 | 83              | 50              | 12 | 29               | 53               | 145    | 700  | 182 |

### TRIPLE



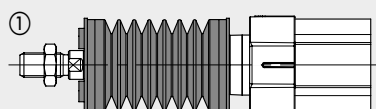
| Code       | $\varnothing$ | Cylinder   |                 |                 |    |                  |                  | L3     |      | WH3 |
|------------|---------------|------------|-----------------|-----------------|----|------------------|------------------|--------|------|-----|
|            |               | stroke     | $\varnothing D$ | $\varnothing C$ | S  | $\varnothing D1$ | $\varnothing D2$ | closed | open |     |
| 0950322303 | 32            | 476 to 720 | 60              | 30              | 12 | 10               | 27               | 180    | 900  | 196 |
| 0950402303 | 40            | 476 to 720 | 60              | 30              | 12 | 13               | 32               | 180    | 900  | 196 |
| 0950502303 | 50            | 476 to 720 | 60              | 30              | 12 | 17               | 37               | 180    | 900  | 203 |
| 0950632303 | 63            | 476 to 720 | 60              | 30              | 12 | 17               | 39               | 180    | 900  | 204 |
| 0950802303 | 80            | 556 to 840 | 83              | 50              | 12 | 22               | 42               | 210    | 1050 | 233 |
| 0951002303 | 100           | 556 to 840 | 83              | 50              | 12 | 22               | 48               | 210    | 1050 | 235 |
| 0951252303 | 125           | 556 to 840 | 83              | 50              | 12 | 29               | 53               | 210    | 1050 | 247 |

Refer to standard cylinders for other values.

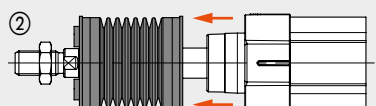
N.B.: Also order the cylinder designed for protective bellows (code 154...)

## ASSEMBLY ONTO CYLINDERS $\varnothing 32 - \varnothing 40 - \varnothing 50$

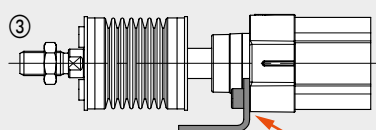
For fixing the cylinder through the front head, in case of bores 32, 40 and 50 the bellows can be mounted **only after having fixed the cylinder**.  
For versions 156... with mounted bellows:



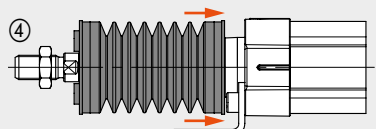
① Cylinder supplied with already mounted bellows.



② Remove the bellows from the front head, acting on the head collar.

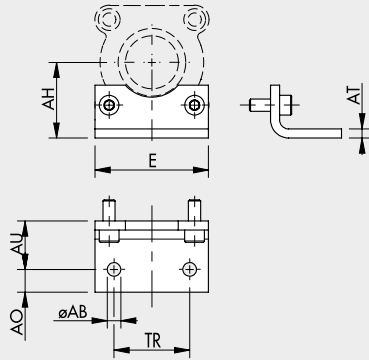


③ Fix the cylinder to the machine (for example with foot model A).



④ Reinsert the bellows on the front head, by pressing the head collar on the conical surface of the front cylinder head until it reaches the shoulder.

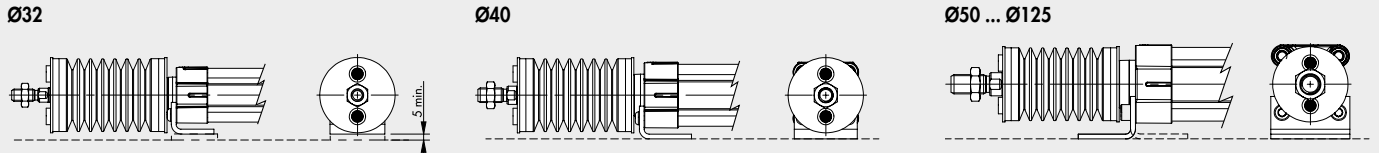
**FOOT MODEL A**



| Code          | Ø   | Ø AB | AH | AO | AT | AU | TR | E   | Weight [g] |
|---------------|-----|------|----|----|----|----|----|-----|------------|
| W0950322507 * | 32  | 7    | 32 | 11 | 4  | 24 | 32 | 45  | 76         |
| W0950402507 * | 40  | 9    | 36 | 15 | 4  | 28 | 36 | 52  | 100        |
| W0950502001   | 50  | 9    | 45 | 15 | 5  | 32 | 45 | 65  | 162        |
| W0950632001   | 63  | 9    | 50 | 15 | 5  | 32 | 50 | 75  | 266        |
| W0950802001   | 80  | 12   | 63 | 20 | 6  | 41 | 63 | 95  | 456        |
| W0951002001   | 100 | 14   | 71 | 25 | 6  | 41 | 75 | 115 | 572        |
| W0951252001   | 125 | 16   | 90 | 15 | 8  | 45 | 90 | 140 | 1130       |

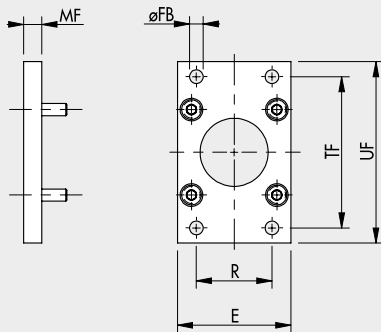
\* Version with button head screws to be used in place of standard feet codes W0950322001 and W0950402001. They can be mounted only inwards.

Note: Individually packed with 2 screws



In the case of the Ø32 bore, the foot must be raised to avoid rubbing the bellows on the support surface.

**FRONT FLANGE - MODEL C**



| Code        | Ø   | TF  | UF  | E   | MF | R  | øFB | Weight [g] |
|-------------|-----|-----|-----|-----|----|----|-----|------------|
| W0950502002 | 50  | 90  | 110 | 65  | 12 | 45 | 9   | 522        |
| W0950632002 | 63  | 100 | 120 | 75  | 12 | 50 | 9   | 670        |
| W0950802002 | 80  | 126 | 150 | 95  | 15 | 63 | 12  | 1420       |
| W0951002002 | 100 | 150 | 178 | 115 | 15 | 75 | 14  | 2040       |
| W0951252002 | 125 | 180 | 220 | 140 | 20 | 90 | 16  | 4300       |

Note: Supplied with 4 screws

For bores Ø32 and Ø40 it's not possible to use the front flanges codes W0950322002 and W0950402002 because they prevent effective assembly of the collar on the cylinder head.

**NOTES**

Refer to ISO 15552 cylinders for other accessories.

## ACCESSORIES FOR ISO 15552 CYLINDERS: "SECURE LOCK" ROD LOCK

A new series of in-line locking devices by Metal Work with superior characteristics. Performances are guaranteed by a system of springs and conical sliding and ball bearings which, combined with carefully selected materials, ensure reliable and accurate locking of the system, which can be released by supplying air through the relevant inlet. A version with manual release is also available.

When "Secure Lock" devices are fitted to ISO 15552 cylinders, the piston rod can be locked in position when the system is turned off or an emergency stop occurs.

"Secure Lock" can withstand occasional situations of dynamic locking. It locks the rod and prevents it from moving. Since negligible play is created, it is ideal for high-precision applications.

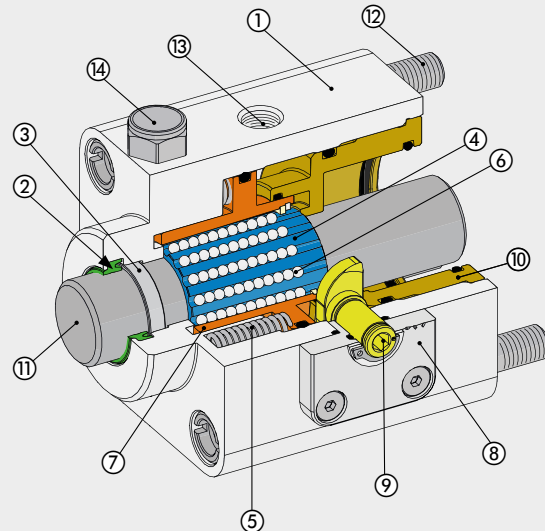
With the optional cam-operated manual release function, the rod lock can be disengaged mechanically merely by rotating a pin using a standard Allen wrench. When the pin is released, it automatically returns to the "rod locked" position.



| TECHNICAL DATA    |     | Ø32 | Ø40  | Ø50  | Ø63  | Ø80  | Ø100 | Ø125   |
|-------------------|-----|-----|------|------|------|------|------|--|
| Pilot pressure    | bar |     |      |      |      |      |      | 5 to 10  |
|                   | MPa |     |      |      |      |      |      | 0.5 to 1   |
|                   | psi |     |      |      |      |      |      | 72.5 to 145  |
| Temperature range | °C  |     |      |      |      |      |      | -10 to +80   |
| Operation         |     |     |      |      |      |      |      | NC - Bidirectional   |
| Mechanics         |     |     |      |      |      |      |      | Locking gripper controlled by a bearing ball piston.                               |
| Locking force     | N   | 650 | 1100 | 1600 | 2500 | 4000 | 6300 | 8700   |
| Notes             |     |     |      |      |      |      |      | The piston rod must be clean and dry.  |
|                   |     |     |      |      |      |      |      | During assembly, do not rotate the piston rod if the Secure Lock device is locked. |

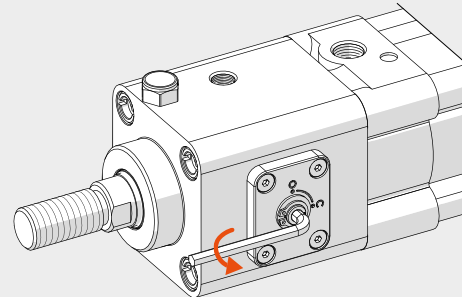
### COMPONENTS

- ① BODY: anodized aluminium
- ② WIPER RING: polyurethane
- ③ GUIDE RING: technopolymer
- ④ GRIPPER: hardened steel
- ⑤ SPRINGS: spring steel
- ⑥ BALLS: hardened steel
- ⑦ PISTON: hardened steel
- ⑧ MANUAL RELEASE PLATE: treated aluminium
- ⑨ MANUAL RELEASE PIN: hardened steel
- ⑩ PLUG: anodized aluminium
- ⑪ FALSE ROD: steel
- ⑫ TIE RODS: stainless steel
- ⑬ AIR SUPPLY FOR RELEASE
- ⑭ SILENCER: nickel-plated brass with stainless steel wire



**MANUAL RELEASE**

In the versions equipped with manual control it is possible to use an hex key to temporarily unlock the device.  
 The hex key must be inserted in the hexagonal seat of the pin for the manual control (component 9 in the list of components) and used for the rotation of the same as shown in the figure.  
 Once released, the pin will automatically return to its initial position.

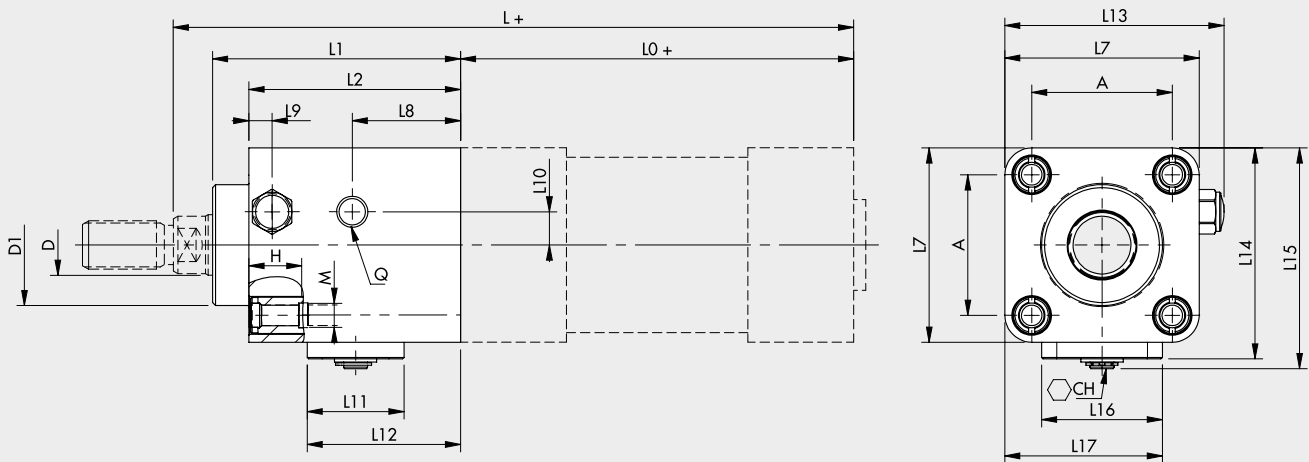


ACTUATORS

ACCESSORIES FOR ISO 15552 CYLINDERS

**DIMENSIONS**

+ = ADD STROKE



**VERSION WITH MANUAL CONTROL**

| Code        | Ø   | L1  | L2  | L7   | L8   | L9   | L10  | L11 | L12  | L13   | L14  | L15   | L16 | L17   | D  | D1 | A    | H    | M   | Q    | CH  | L0  | L   | Weight [g] ♦ |
|-------------|-----|-----|-----|------|------|------|------|-----|------|-------|------|-------|-----|-------|----|----|------|------|-----|------|-----|-----|-----|--------------|
| W5010010102 | 32  | 58  | 48  | 46   | 25.2 | 9.5  | 8    | 30  | 41.2 | 50.7  | 51.5 | 54.3  | 28  | 37    | 12 | 30 | 32.5 | 14.5 | M6  | M5   | 2.5 | 94  | 162 | 295          |
| W5010010103 | 40  | 65  | 55  | 54   | 26.9 | 6    | 8.5  | 32  | 43.9 | 58.7  | 59.5 | 63    | 33  | 43.5  | 16 | 35 | 38   | 14.5 | M6  | G1/8 | 4   | 105 | 180 | 444          |
| W5010010104 | 50  | 82  | 70  | 64.3 | 35.8 | 7.7  | 11   | 32  | 50.7 | 72.5  | 69.8 | 73    | 40  | 52.2  | 20 | 40 | 46.5 | 17.5 | M8  | G1/8 | 4   | 106 | 200 | 826          |
| W5010010105 | 63  | 82  | 70  | 76   | 34.6 | 8.7  | 16.3 | 32  | 50.5 | 84.2  | 81.5 | 84.7  | 40  | 58    | 20 | 45 | 56.5 | 17.5 | M8  | G1/8 | 4   | 121 | 215 | 1060         |
| W5010010106 | 80  | 110 | 90  | 94   | 41.3 | 14.7 | 20.5 | 47  | 66.1 | 102.2 | 103  | 106.3 | 65  | 79.5  | 25 | 45 | 72   | 21.5 | M10 | G1/8 | 6   | 128 | 251 | 2272         |
| W5010010107 | 100 | 115 | 100 | 111  | 49.8 | 18.2 | 25   | 47  | 73.6 | 119.2 | 120  | 123.3 | 65  | 88.5  | 25 | 55 | 89   | 21.5 | M10 | G1/8 | 6   | 138 | 266 | 3410         |
| W5010010108 | 125 | 167 | 122 | 135  | 67.5 | 23   | 30   | 54  | 90.2 | 143.2 | 148  | 151.8 | 84  | 109.5 | 32 | 60 | 110  | 25.5 | M12 | G1/8 | 10  | 160 | 347 | 6328         |

♦ Weight of the rod lock without the false rod

**VERSION WITHOUT MANUAL CONTROL**

| Code        | Ø   | L1  | L2  | L7   | L8   | L9   | L10  | L11 | L12  | L13   | L14  | L15 | L16 | L17   | D  | D1 | A    | H    | M   | Q    | CH | L0  | L   | Weight [g] ♦ |
|-------------|-----|-----|-----|------|------|------|------|-----|------|-------|------|-----|-----|-------|----|----|------|------|-----|------|----|-----|-----|--------------|
| W5010020102 | 32  | 58  | 48  | 46   | 25.2 | 9.5  | 8    | 30  | 41.2 | 50.7  | 51.5 | -   | 28  | 37    | 12 | 30 | 32.5 | 14.5 | M6  | M5   | -  | 94  | 162 | 290          |
| W5010020103 | 40  | 65  | 55  | 54   | 26.9 | 6    | 8.5  | 32  | 43.9 | 58.7  | 59.5 | -   | 33  | 43.5  | 16 | 35 | 38   | 14.5 | M6  | G1/8 | -  | 105 | 180 | 432          |
| W5010020104 | 50  | 82  | 70  | 64.3 | 35.8 | 7.7  | 11   | 32  | 50.7 | 72.5  | 69.8 | -   | 40  | 52.2  | 20 | 40 | 46.5 | 17.5 | M8  | G1/8 | -  | 106 | 200 | 814          |
| W5010020105 | 63  | 82  | 70  | 76   | 34.6 | 8.7  | 16.3 | 32  | 50.5 | 84.2  | 81.5 | -   | 40  | 58    | 20 | 45 | 56.5 | 17.5 | M8  | G1/8 | -  | 121 | 215 | 1044         |
| W5010020106 | 80  | 110 | 90  | 94   | 41.3 | 14.7 | 20.5 | 47  | 66.1 | 102.2 | 103  | -   | 65  | 79.5  | 25 | 45 | 72   | 21.5 | M10 | G1/8 | -  | 128 | 251 | 2220         |
| W5010020107 | 100 | 115 | 100 | 111  | 49.8 | 18.2 | 25   | 47  | 73.6 | 119.2 | 120  | -   | 65  | 88.5  | 25 | 55 | 89   | 21.5 | M10 | G1/8 | -  | 138 | 266 | 3350         |
| W5010020108 | 125 | 167 | 122 | 135  | 67.5 | 23   | 30   | 54  | 90.2 | 143.2 | 148  | -   | 84  | 109.5 | 32 | 60 | 110  | 25.5 | M12 | G1/8 | -  | 160 | 347 | 6120         |

♦ Weight of the rod lock without the false rod



# ACCESSORIES FOR ISO 15552 CYLINDERS: MECHANICAL ROD LOCK SERIES RL

ACTUATORS

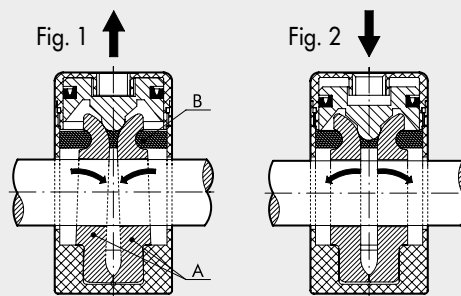
ACCESSORIES FOR ISO 15552 CYLINDERS

| TECHNICAL DATA    |     | Ø32                                   | Ø40  | Ø50  | Ø63  | Ø80  | Ø100 | Ø125 |
|-------------------|-----|---------------------------------------|------|------|------|------|------|------|
| Pilot pressure    | bar | 4 to 8                                |      |      |      |      |      |      |
|                   | MPa | 0.4 to 0.8                            |      |      |      |      |      |      |
|                   | psi | 58 to 118                             |      |      |      |      |      |      |
| Temperature range | °C  | -10 to +80                            |      |      |      |      |      |      |
| Operation         |     | NC - Bidirectional                    |      |      |      |      |      |      |
| Mechanics         |     | Double pad with mechanical lock       |      |      |      |      |      |      |
|                   |     | Mechanical stick-slip                 |      |      |      |      |      |      |
| Locking force     | N   | 650                                   | 1100 | 1600 | 2500 | 4000 | 6300 | 8700 |
| <b>MATERIAL</b>   |     |                                       |      |      |      |      |      |      |
| body              |     | Aluminium                             |      |      |      |      |      |      |
| pad               |     | Brass                                 |      |      |      |      |      |      |
| spring            |     | NBR                                   |      |      |      |      |      |      |
| piston            |     | Synthetic material with added Teflon® |      |      |      |      |      |      |
| gasket            |     | NBR                                   |      |      |      |      |      |      |
| pilot port        |     | M5 o 1/8"                             |      |      |      |      |      |      |



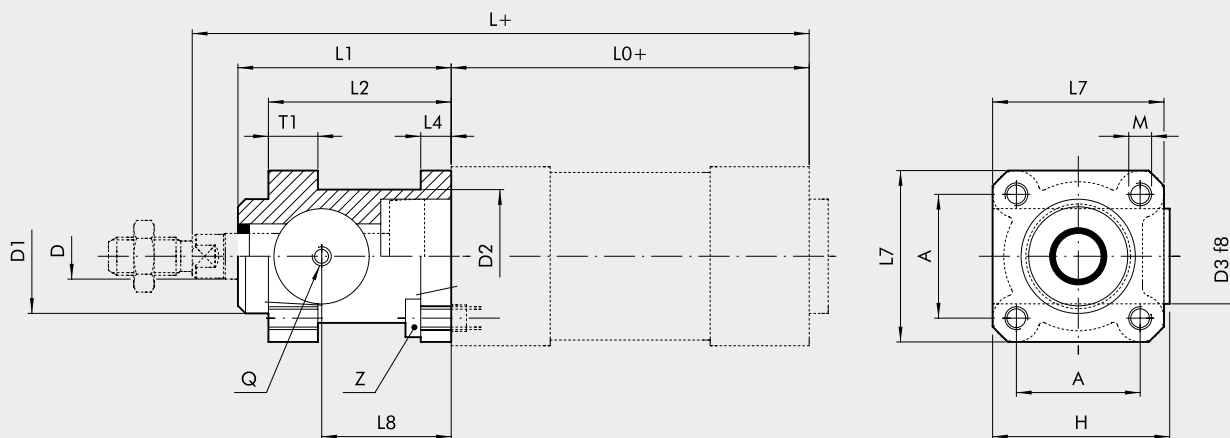
## OPERATING PRINCIPLE

The mechanical rod lock series RL is a normally-closed mechanism. In the absence of pneumatic piloting, the two pads (A) lock the cylinder rod in both directions (Fig. 1). With pneumatic piloting, the piston rod guide forces the pads to come right up to each other and overcome the counter spring (B) force and the piston rod can slide (Fig. 2). It is important to remember that the mechanical rod lock is a static type, which means that it is necessary to stop the cylinder piston rod pneumatically before locking the part mechanically.



## DIMENSIONS

+ = ADD THE STROKE



| Code        | Ø   | L <sub>1</sub> | L <sub>2</sub> | L <sub>4</sub> | L <sub>7</sub> | L <sub>8</sub> | D  | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> | H     | A    | T <sub>1</sub> | M   | Z      | Q    | L <sub>0</sub> | L   | Weight [g] |
|-------------|-----|----------------|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|-------|------|----------------|-----|--------|------|----------------|-----|------------|
| W5010001102 | 32  | 58             | 48             | 8              | 45             | 34             | 12 | 30             | 35             | 25             | 46.5  | 32.5 | 13             | M6  | M6x20  | M5   | 94             | 162 | 150        |
| W5010001103 | 40  | 65             | 55             | 8              | 50             | 38             | 16 | 35             | 40             | 28             | 53    | 38   | 13             | M6  | M6x20  | G1/8 | 105            | 180 | 200        |
| W5010001104 | 50  | 82             | 70             | 15             | 60             | 48             | 20 | 40             | 50             | 35             | 64    | 46.5 | 16             | M8  | M8x30  | G1/8 | 106            | 200 | 500        |
| W5010001109 | 63  | 82             | 70             | 15             | 70             | 49.5           | 20 | 45             | 60             | 38             | 75    | 56.5 | 16             | M8  | M8x30  | G1/8 | 121            | 215 | 700        |
| W5010001106 | 80  | 110            | 90             | 18             | 90             | 61             | 25 | 45             | 80             | 48             | 95    | 72   | 20             | M10 | M10x35 | G1/8 | 128            | 251 | 1700       |
| W5010001107 | 100 | 115            | 100            | 18             | 105            | 68             | 25 | 55             | 100            | 58             | 110.5 | 89   | 20             | M10 | M10x35 | G1/8 | 138            | 266 | 2700       |
| W5010001108 | 125 | 167            | 122            | 22             | 140            | 86.5           | 32 | 60             | 130            | 65             | 150   | 110  | 30             | M12 | M12x40 | G1/8 | 160            | 347 | 5600       |

## ACCESSORIES FOR ISO 15552 CYLINDERS: GUIDE UNITS

Guide units series DS-DH-DM ensure optimal alignment and anti-rotation effect of the pneumatic cylinder connected to it. The guide units can be used separately or combined in order to get complete handling units, in which case the guide units can be coupled using the type A and C anchorage (pin and flange).

The guide units can be coupled to ISO 15552 cylinders (Ø 32 to 100).

The following versions are available:

U PROFILE (GDS)\*: for limited loads and speeds

H PROFILE (GDH)\*: for high loads

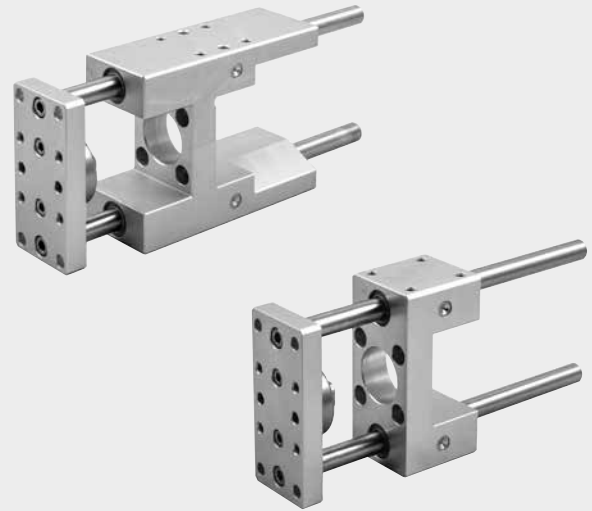
H PROFILE (GDM)\*\*: for high speeds

\* With bronze guide bushing

\*\* With ball guide bushing

**STANDARD STROKES:** 50 - 100 - 150 - 200 - 250 - 320 - 400 - 500

For weights, see cylinder **"General technical data"** at the beginning of the chapter.

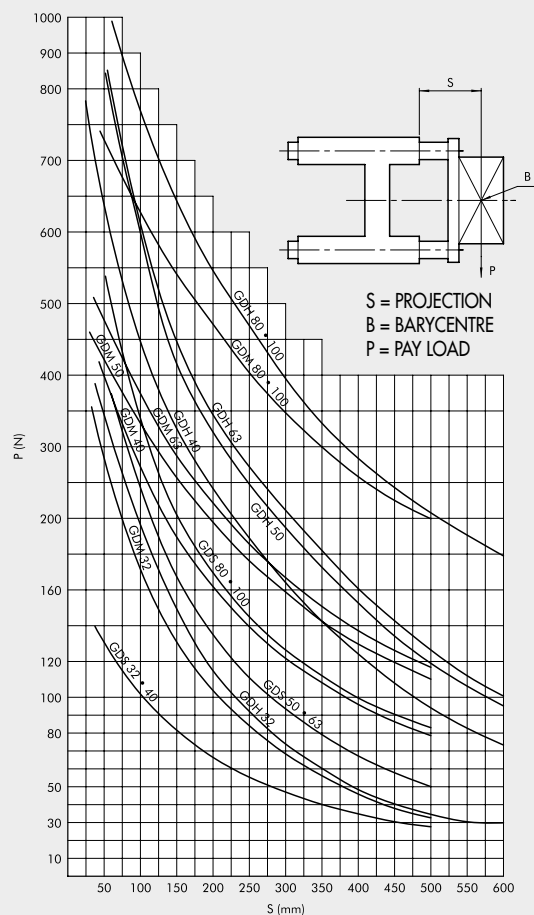


### COMPONENTS

|                       |                |  |
|-----------------------|----------------|--|
| <b>SERIES GDS-GDH</b> | Body:          | aluminium alloy                                  |
|                       | Guide bushing: | self-lubricating sintered bronze and wiper rings |
|                       | Piston rod:    | grinded chromed steel                            |

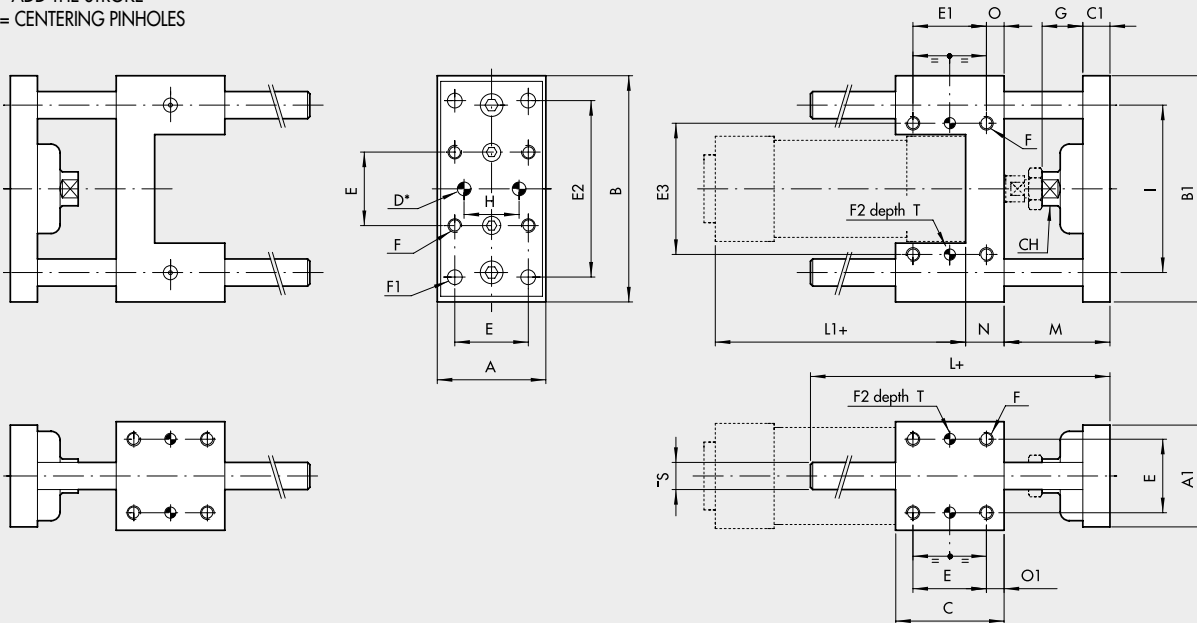
|                   |                |                                       |
|-------------------|----------------|---------------------------------------|
| <b>SERIES GDM</b> | Body:          | aluminium alloy                       |
|                   | Guide bushing: | ball linear bearings and scraper ring |
|                   | Piston rod:    | hardened, chromed and grinded steel   |

### GRAPH OF GUIDE UNIT LOADS



**DIMENSIONS TYPE GDS**

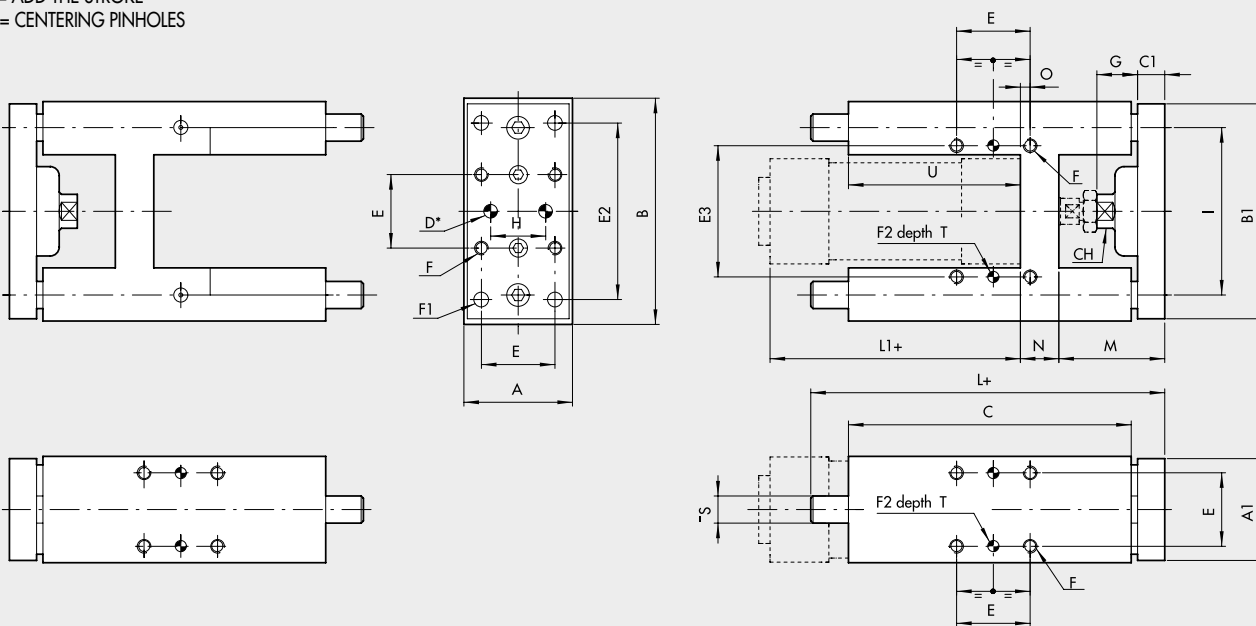
+ = ADD THE STROKE  
\* = CENTERING PINHOLES



| Ø   | A   | A <sub>1</sub> | B   | B <sub>1</sub> | C   | C <sub>1</sub> | D <sup>H7</sup> | E    | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> | F   | F <sub>1</sub> | F <sub>2</sub> <sup>H7</sup> | G  | H  | I   | L   | L <sub>1</sub> | M  | N  | O   | O <sub>1</sub> | ØS | CH | T  |   |
|-----|-----|----------------|-----|----------------|-----|----------------|-----------------|------|----------------|----------------|----------------|-----|----------------|------------------------------|----|----|-----|-----|----------------|----|----|-----|----------------|----|----|----|---|
| 32  | 48  | 45             | 100 | 95             | 48  | 12             | 6               | 32.5 | 32.5           | 78             | 58             | M6  | 6.5            | 6                            | 18 | 31 | 74  | 108 | 94             | 46 | 17 | 7.8 | 7.8            | 12 | 15 | 7  |   |
| 40  | 56  | 53             | 106 | 101            | 58  | 15             | 6               | 38   | 38             | 84             | 64             | M6  | 6.5            | 6                            | 21 | 36 | 80  | 120 | 105            | 52 | 21 | 10  | 10             | 10 | 12 | 15 | 7 |
| 50  | 66  | 63             | 125 | 120            | 59  | 15             | 6               | 46.5 | 46.5           | 100            | 80             | M8  | 8.5            | 6                            | 24 | 45 | 96  | 130 | 106            | 65 | 25 | 6.3 | 6.3            | 16 | 22 | 7  |   |
| 63  | 76  | 73             | 132 | 127            | 76  | 15             | 6               | 56.5 | 56.5           | 105            | 95             | M8  | 8.5            | 6                            | 24 | 45 | 104 | 145 | 121            | 65 | 25 | 9.8 | 9.8            | 16 | 22 | 7  |   |
| 80  | 98  | 95             | 165 | 160            | 90  | 16             | 6               | 72   | 50             | 130            | 130            | M10 | 11             | 6                            | 31 | 56 | 130 | 170 | 128            | 71 | 34 | 20  | 9              | 20 | 27 | 10 |   |
| 100 | 118 | 115            | 185 | 180            | 110 | 16             | 6               | 89   | 70             | 150            | 150            | M10 | 11             | 6                            | 31 | 56 | 152 | 190 | 138            | 71 | 39 | 20  | 10.5           | 20 | 27 | 10 |   |

**DIMENSIONS TYPE GDH-GDM**

+ = ADD THE STROKE  
\* = CENTERING PINHOLES



| Ø   | A   | A <sub>1</sub> | B   | B <sub>1</sub> | C   | C <sub>1</sub> | CH | D <sup>H7</sup> | E    | E <sub>2</sub> | E <sub>3</sub> | F   | F <sub>1</sub> | F <sub>2</sub> <sup>H7</sup> | G  | H  | I   | L   | L <sub>1</sub> | M  | N  | O    | ØS | U   | T  |
|-----|-----|----------------|-----|----------------|-----|----------------|----|-----------------|------|----------------|----------------|-----|----------------|------------------------------|----|----|-----|-----|----------------|----|----|------|----|-----|----|
| 32  | 49  | 45             | 97  | 90             | 125 | 12             | 13 | 6               | 32.5 | 78             | 61             | M6  | 6.5            | 6                            | 18 | 31 | 74  | 177 | 94             | 48 | 17 | 4.3  | 12 | 76  | 7  |
| 40  | 58  | 54             | 115 | 110            | 139 | 15             | 15 | 6               | 38   | 84             | 69             | M6  | 6.5            | 6                            | 21 | 36 | 87  | 192 | 105            | 53 | 21 | 11   | 16 | 81  | 7  |
| 50  | 69  | 63             | 137 | 130            | 148 | 15             | 22 | 6               | 46.5 | 100            | 85             | M8  | 8.5            | 6                            | 24 | 45 | 104 | 205 | 106            | 63 | 26 | 18.5 | 20 | 78  | 7  |
| 63  | 85  | 79             | 152 | 145            | 182 | 15             | 22 | 6               | 56.5 | 105            | 100            | M8  | 8.5            | 6                            | 24 | 45 | 119 | 237 | 121            | 62 | 26 | 15.3 | 20 | 111 | 7  |
| 80  | 105 | 99             | 189 | 180            | 215 | 20             | 27 | 6               | 72   | 130            | 130            | M10 | 11             | 6                            | 31 | 56 | 148 | 280 | 128            | 76 | 34 | 21   | 25 | 128 | 10 |
| 100 | 129 | 120            | 213 | 200            | 220 | 20             | 27 | 6               | 89   | 150            | 150            | M10 | 11             | 6                            | 31 | 56 | 172 | 280 | 138            | 76 | 39 | 24.5 | 25 | 128 | 10 |

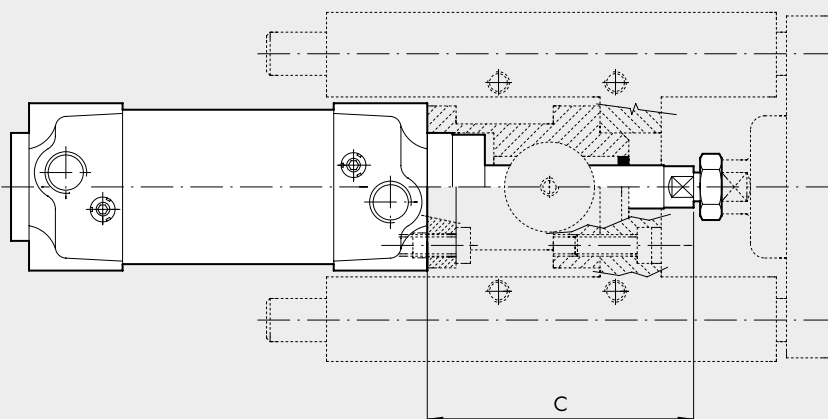
## ORDER CODE GUIDE UNIT

| Version  | Code         | Bore | Type              |
|--|--------------|------|-------------------|
| Sliding on bronze bushings (GDS)                             | W0700321...  | 32   | UNIT MW DS 032... |
|  | W0700401...  | 40   | UNIT MW DS 040... |
|  | W0700501...  | 50   | UNIT MW DS 050... |
|  | W0700631...  | 63   | UNIT MW DS 063... |
|  | W0700801...  | 80   | UNIT MW DS 080... |
|  | W0701001...  | 100  | UNIT MW DS 100... |
| Sliding on bronze bushings (GDH)                             | W0700322...* | 32   | UNIT MW DH 032... |
|  | W0700402...* | 40   | UNIT MW DH 040... |
|  | W0700502...  | 50   | UNIT MW DH 050... |
|  | W0700632...  | 63   | UNIT MW DH 063... |
|  | W0700802...  | 80   | UNIT MW DH 080... |
|  | W0701002...  | 100  | UNIT MW DH 100... |
| * Also available in V-Lock version (see <b>chapter A3</b> ). |              |      |                   |
| Sliding on ball bearing (GDM)                                | W0700323...* | 32   | UNIT MW DM 032... |
|  | W0700403...* | 40   | UNIT MW DM 040... |
|  | W0700503...  | 50   | UNIT MW DM 050... |
|  | W0700633...  | 63   | UNIT MW DM 063... |
|  | W0700803...  | 80   | UNIT MW DM 080... |
|  | W0701003...  | 100  | UNIT MW DM 100... |
| * Also available in V-Lock version (see <b>chapter A3</b> ). |              |      |                   |

Note: To complete the type and code, add the 3-digit stroke (e.g. 50=050)


## DIMENSIONS ROD LOCK + GUIDE UNIT COD. 137

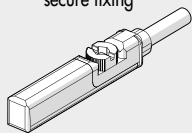
| Ø   | C   |
|-----|-----|
| 32  | 74  |
| 40  | 85  |
| 50  | 107 |
| 63  | 107 |
| 80  | 136 |
| 100 | 143 |



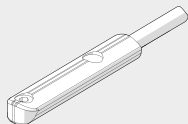
# ACCESSORIES FOR ISO 15552 CYLINDERS: MAGNETIC SENSORS AND POSITION SENSOR

## RETRACTABLE SENSOR

**A** SENSOR, SQUARE TYPE   
Latest generation,  
secure fixing



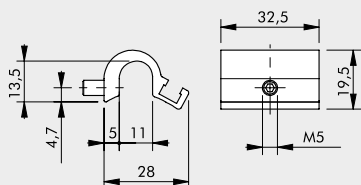
**B** SENSOR, OVAL TYPE   
Traditional



For codes and technical data, see **chapter A6**.

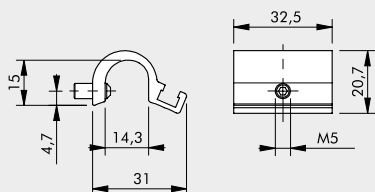
## D SENSOR SUPPORT BRACKETS FOR SENSORS SQUARE TYPE AND OVAL TYPE

Ø 32 to 40



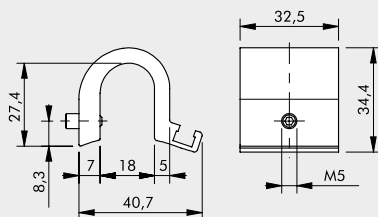
**Code** W0950001711  
**Description** Bracket D.32-40

Ø 50 to 63



**Code** W0950001712  
**Description** Bracket D.50-63

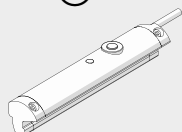
Ø 80 to 125



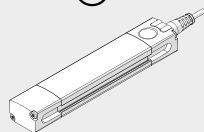
**Code** W0950001713  
**Description** Bracket D.80-100-125

## POSITION SENSOR

**G** LTS 



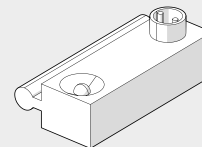
**H** LTL 



**Model** For ISO 15552 cylinders  
**LTS** type A - series 3  
**LTL** type A

For technical data and usage strokes see **chapter A6**.

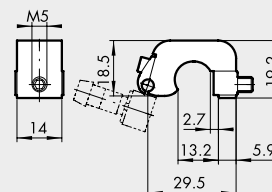
## C SENSOR SERIES DSM



Can be used on ISO 15552 cylinders in the STD series and series 3.  
For codes and technical data, see **chapter A6**.

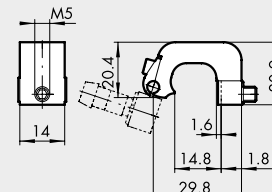
## E SENSOR SUPPORT BRACKETS FOR SENSORS DSM

Ø 32 to 40



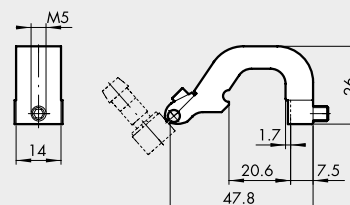
**Code** W0950000711  
**Description** Bracket D.32-40 DST 80

Ø 50 to 63



**Code** W0950000712  
**Description** Bracket Bracket D.50-63 DST 81

Ø 80 to 125

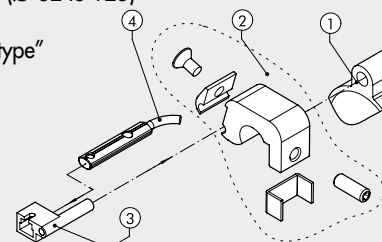


**Code** W0950000713  
**Description** Bracket D.80-100-125 DST 82

## F ADAPTER FOR OVAL TYPE RETRACTABLE SENSORS

### ASSEMBLY DIAGRAM

- ① ISO 15552 cylinder with serie STD or serie 3 barrel
- ② Sensor bracket mod. DST (Ø 32 to 125)
- ③ Adaptor
- ④ Retractable sensor "oval type"



**Code** W0950001001  
**Description** Adaptor DSS005 for DST/ST brackets

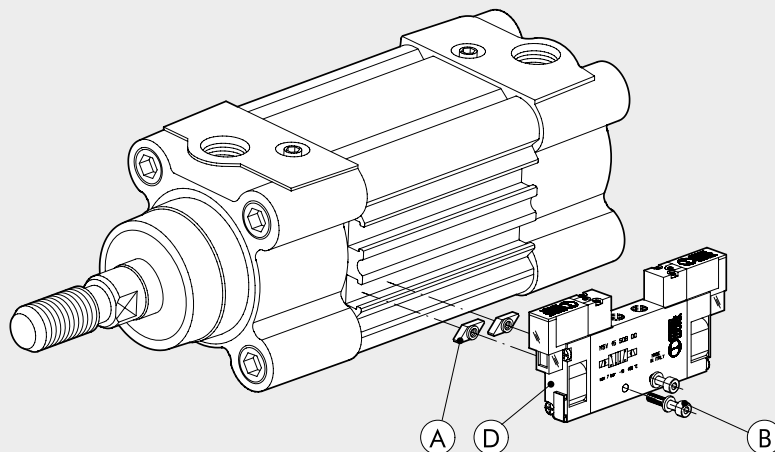


### VALVE ASSEMBLY ON CYLINDER FOR TYPE A AND SERIES 3 CYLINDERS

With this type of cylinder, the valves (D) can be mounted directly using the retracting sensor slot, without requiring the use of intermediate brackets.

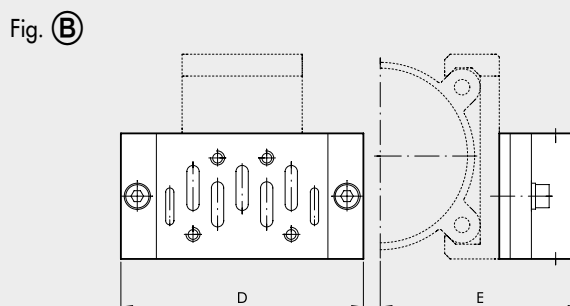
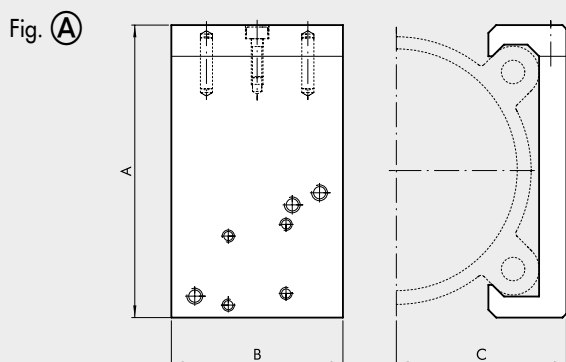
This can be done using the special plates (A), which come with both the M3 and M4 threads, and screws (B) of the size, type and quantity shown in the table below.

For ISO 1 and ISO 2 valves, the kit on which the valve is to be mounted (codes shown in the tables) will be fitted to the cylinder using the special plates (A) and the screws (B) listed in the table.



| Type of valve to mount (D) | M3 fixing plate (A) code 0950003002 | M4 fixing plate (A) code 0950003001 | Screw (B) for connection to cylinder (one per plate) | Washer (B) (one per screw) | Valve assembly kit |
|----------------------------|-------------------------------------|-------------------------------------|--|----------------------------|--------------------|
| MINIMACH                   | n° 2                                | -                                   | M3x16 UNI 5931 (DIN 912)                             | A3.2 UNI 1751 (DIN 127A)   | -                  |
| MACH 11                    | n° 2                                | -                                   | M3x16 UNI 5931 (DIN 912)                             | A3.2 UNI 1751 (DIN 127A)   | -                  |
| SERIE 70 1/8               | -                                   | n° 2                                | M4x25 UNI 5931 (DIN 912)                             | -                          | -                  |
| SERIE 70 1/4               | -                                   | n° 2                                | M4x30 UNI 5931 (DIN 912)                             | A4.3 UNI 1751 (DIN 127A)   | -                  |
| SERIE 70 1/2               | -                                   | n° 2                                | M4x45 UNI 5931 (DIN 912)                             | A4.3 UNI 1751 (DIN 127A)   | -                  |
| ISO 1                      | -                                   | n° 2                                | M4x8 UNI 7688 (DIN 965A)                             | -                          | 0950002001         |
| ISO 2                      | -                                   | n° 2                                | M4x8 UNI 7688 (DIN 965A)                             | -                          | 0950002002         |

### FIXING BRACKET SERIES KCV FOR TYPE STD AND SERIES 3 CYLINDERS



#### VALVE FIXING BRACKET - CYLINDER (Fig. A)

| Code       | Ø   | A     | B  | C    | D   | ISO 1 |     | ISO 2 |   | Applicable valves | Weight [g] |
|------------|-----|-------|----|------|-----|-------|-----|-------|---|-------------------|------------|
|            |     |       |    |      |     | E     | D   | E     |   |                   |            |
| 0950322090 | 32  | 54    | 40 | 29.5 | 110 | 64.5  | 124 | 70.5  | MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2 | 80                |            |
| 0950402090 | 40  | 59.5  | 40 | 32.2 | 110 | 67.2  | 124 | 73.2  | MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2 | 86                |            |
| 0950502090 | 50  | 71.5  | 40 | 37   | 110 | 72    | 124 | 78    | MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2 | 93                |            |
| 0950632090 | 63  | 81.5  | 40 | 42   | 110 | 77    | 124 | 83    | MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2 | 101               |            |
| 0950802090 | 80  | 99    | 60 | 53.5 | 110 | 88.5  | 124 | 94.5  | Series 70 1/8-1/4-1/2 ISO 1 - ISO 2     | 222               |            |
| 0951002090 | 100 | 119.5 | 60 | 63.5 | 110 | 98.5  | 124 | 104.5 | Series 70 1/8-1/4-1/2 ISO 1 - ISO 2     | 258               |            |
| 0951252090 | 125 | 148   | 60 | 76.5 | 110 | 111.5 | 124 | 117.9 | Series 70 1/8-1/4-1/2 ISO 1 - ISO 2     | 298               |            |

#### KIT FOR FIXING VALVES TO BRACKETS, FOR SERIES KCV BRACKETS

| Code       | Valve kit         | Composition  | Weight [g] |
|------------|-------------------|--|------------|
| 0950002003 | MACH 16           | 2 hex. screws M3x25 with washer                      | 4          |
| 0950002004 | Series 70 1/8-1/4 | 2 hex. screws M4x30 with washer                      | 8          |
| 0950002006 | Series 70 1/2     | 2 hex. screws M5x50 with washer                      | 20         |
| 0950002001 | ISO 1             | Adaptor + ISO 1 BASE SIDE + screws + washers (Fig.B) | 230        |
| 0950002002 | ISO 2             | Adaptor + ISO 2 BASE SIDE + screws + washers (Fig.B) | 350        |

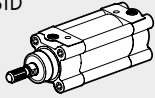




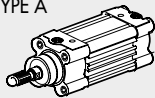
## SPARE PARTS

### CYLINDERS ISO 15552

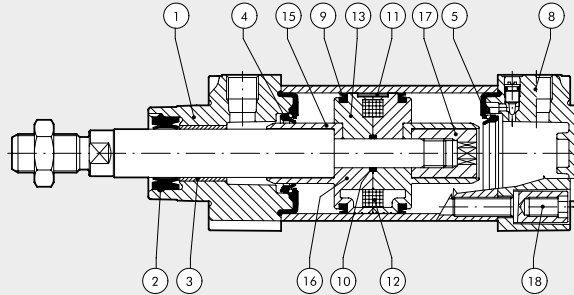
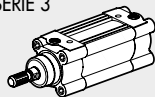
STD



TYPE A



SERIE 3



| Code          | Bore        | Type   | Parts                           |
|---------------|-------------|--|---------------------------------|
| 009 ... 0101  | Ø 32 to 125 | Complete set of polyurethane gaskets                 | 2-4-5-9-10                      |
| 009 ... 0103  | Ø 32 to 125 | Complete set of (high temperature) FKM/FPM gaskets   | 2-4-5-9-10                      |
| 009 ... 0502  | Ø 32 to 125 | Complete set of NBR gaskets                          | 2-4-5-9-10                      |
| 009 ... 1651  | Ø 32 to 125 | Polyurethane piston rod gasket kit                   | 2                               |
| 009 ... 1652  | Ø 32 to 125 | NBR piston rod gasket kit + seeger                   | 2                               |
| 009 ... 1653  | Ø 32 to 125 | FKM/FPM piston rod gasket kit + seeger               | 2                               |
| 009 ... 0110N | Ø 32 to 125 | Complete polyurethane front head kit                 | 1-2-3-4-5-18                    |
| 009 ... 0304N | Ø 32 to 125 | Complete NBR front head kit                          | 1-2-3-4-5-18                    |
| 009 ... 0122N | Ø 32 to 125 | Complete R front head kit                            | 1-2-3-4-5-18                    |
| 009 ... 0120N | Ø 40 to 125 | Complete M front head kit                            | 1-2-3-4-5-18                    |
| 009 ... 0111N | Ø 32 to 125 | Complete polyurethane rear head kit                  | 4-5-8-18                        |
| 009 ... 0305N | Ø 32 to 125 | Complete NBR rear head kit                           | 4-5-8-18                        |
| 009 ... 0604  | Ø 32 to 63  | Complete polyurethane piston kit                     | 9-10-16-17                      |
| 009 ... 0604  | Ø 80 to 125 | Complete polyurethane piston kit                     | 9-10-11-13-15-17                |
| 009 ... 0602  | Ø 32 to 63  | Complete NBR piston kit                              | 9-10-16-17                      |
| 009 ... 0602  | Ø 80 to 125 | Complete NBR piston kit                              | 9-10-11-13-15-17                |
| 009 ... 0704N | Ø 32 to 63  | Complete polyurethane head front + rear + piston kit | 1-2-3-4-5-8-9-10-16-17-18       |
| 009 ... 0704N | Ø 80 to 125 | Complete polyurethane head front + rear + piston kit | 1-2-3-4-5-8-9-10-11-13-15-17-18 |
| 009 ... 0702N | Ø 32 to 63  | Complete NBR head front + rear + piston kit          | 1-2-3-4-5-8-9-10-16-17-18       |
| 009 ... 0702N | Ø 80 to 125 | Complete NBR head front + rear + piston kit          | 1-2-3-4-5-8-9-10-11-13-15-17-18 |
| 009 ... 0800  | Ø 32 to 125 | Magnet   | 12                              |

**Notes**

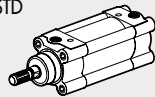
Cylinders in the R and M versions do not come with the single piston rod gasket.

When replacing all the gaskets in the R version cylinders, use the complete set of the R front head, code 009...0122N and the complete set of polyurethane gaskets code 009...0101 (the front head gaskets are in excess).

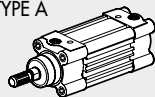
When replacing all the gaskets in the M version cylinders, use the complete set of the M front head, code 009...0120N and the complete set of FKM/FPM, code 009...0103 (the front head gaskets are in excess).

### CYLINDERS ISO 15552 TWO-FLAT

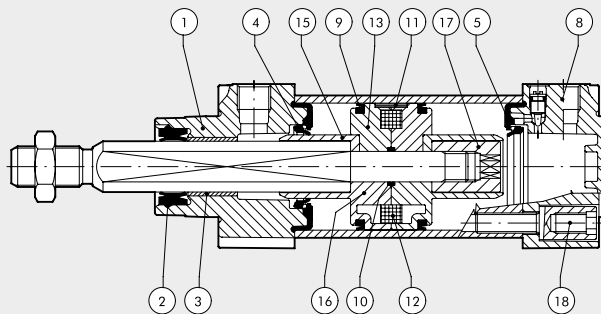
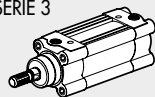
STD



TYPE A



SERIE 3



| Code           | Bore       | Type   | Parts                     |
|----------------|------------|--|---------------------------|
| 009 ... 0101F  | Ø 32 to 63 | Set of polyurethane gaskets                      | 4-5-9-10                  |
| 009 ... 0110FN | Ø 32 to 63 | Complete polyurethane front head kit             | 1-2-3-4-5-18              |
| 009 ... 0111N  | Ø 32 to 63 | Complete polyurethane rear head kit              | 4-5-8-18                  |
| 009 ... 0604   | Ø 32 to 63 | Complete polyurethane piston kit                 | 9-10-16-17                |
| 009 ... 0704FN | Ø 32 to 63 | Complete polyurethane head front+rear+piston kit | 1-2-3-4-5-8-9-10-16-17-18 |
| 009 ... 0800   | Ø 32 to 63 | Magnet   | 12                        |