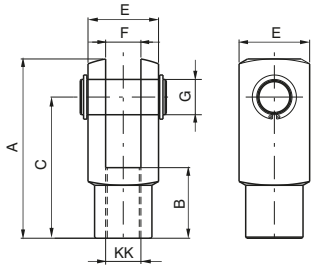
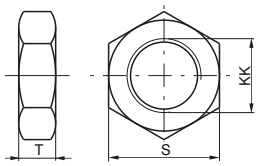
## Rod fork and nuts

| Ordering code |
|---|
| **1393.Ø.13F** |
| **1393.Ø.18F** |



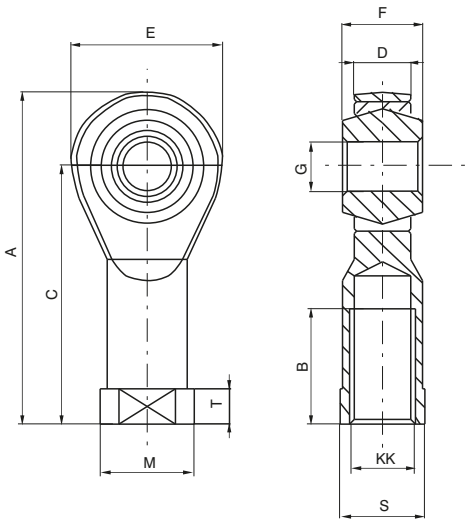




*Fork:*
Element that when screwed to the rod consents a regular functioning even when there are significant lateral forces as the connection point.
Made of stainless steel AISI 303.
*Nut:*
Used to block the position of the fork.
Made of stainless steel AISI 316.

| Bore | | 32 | 40 | 50 | 63 | 80 | 100 |
|---|---|---|---|---|---|---|---|
| A | | 52 | 62 | 83 | 83 | 105 | 105 |
| B | | 20 | 24 | 32 | 32 | 40 | 40 |
| C | | 40 | 48 | 64 | 64 | 80 | 80 |
| E | | 20 | 24 | 32 | 32 | 40 | 40 |
| F(B13) | | 10 | 12 | 16 | 16 | 20 | 20 |
| G | | 10 | 12 | 16 | 16 | 20 | 20 |
| S | | 17 | 19 | 24 | 24 | 30 | 30 |
| T | | 6 | 7 | 8 | 8 | 9 | 9 |
| KK | | M10X1,25 | M12X1,25 | M16X1,5 | M16X1,5 | M20X1,5 | M20X1,5 |
| Weight g | fork | 100 | 140 | 340 | 340 | 680 | 680 |
| | Nut | 15 | 20 | 20 | 20 | 40 | 40 |

## Ball joint

| Ordering code |
|---|
| **1393.Ø.32F** |




Ball joint:
Mounted on the rod thread, assures a regular operation even in the presence of significant forces to the linked element.
Made of stainless steel AISI 304 and 420.

| Bore | 32 | 40 | 50 | 63 | 80 | 100 |
|---|---|---|---|---|---|---|
| A | 57 | 66 | 85 | 85 | 102 | 102 |
| B | 20 | 22 | 28 | 28 | 33 | 33 |
| C | 43 | 50 | 64 | 64 | 77 | 77 |
| D | 10,5 | 12 | 15 | 15 | 18 | 18 |
| E | 28 | 32 | 42 | 42 | 50 | 50 |
| F | 14 | 16 | 21 | 21 | 25 | 25 |
| G (H 7) | 10 | 12 | 16 | 16 | 20 | 20 |
| KK | M10x1,25 | M12x1,25 | M16x1,5 | M16x1,5 | M20x1,5 | M20x1,5 |
| M | 19 | 22 | 27 | 27 | 34 | 34 |
| S | 17 | 19 | 22 | 22 | 30 | 30 |
| T | 6,5 | 6,5 | 8 | 8 | 10 | 10 |
| Weight g | 75 | 110 | 220 | 220 | 410 | 410 |

# Series 1450 - 1463 - Hydro-pneumatic speed control cylinders (Ø50 - Ø63)

## General

Pneumatic cylinder ISO 15552 handling and controlling movement by means of internal hydraulic circuit.
All ISO fixing devices can be used except for:

- Cylinder Ø63 front clevis code 1463.63.08F
- Cylinder Ø63 front flange code 1463.63.03F
- Cylinder Ø63 foot code 1463.63.05/1F

## Ordering key

14_.stroke._._ . _

| Ø50 Ø63 | Regulation | STOP function | SKIP function |
|---|---|---|---|
| | A = Regulation on extraction | 0 = None | 0 = None |
| | B = Regulation on compression | A = Stop N.C. extraction | A = Skip N.C. extraction |
| | D = Double regulation | B = Stop N.C. compression | B = Skip N.C. compression |
| | | C = Double Stop N.C. | C = Double Skip N.C. |
| | | D = Stop N.O. extraction | D = Skip N.O. extraction |
| | | E = Stop N.O. compression | E = Skip N.O. compression |
| | | F = Double Stop N.O. | F = Double Skip N.O. |

## Construction characteristics

| | |
|---|---|
| End cap | aluminium black anodised |
| Piston Rod | steel tube externally chrome plated |
| Barrel | aluminium alloy anodised |
| Magnetic piston | aluminium |
| Cushion screw | nickel plated steel |
| Oil tank | aluminium |
| Pneumatic piston seal (pneumatic side) | oil resitant NBR rubber |
| Rod and cushion seal | PUR |
| Hydraulic piston seal (hydraulic side) | PUR |

## Technical characteristics

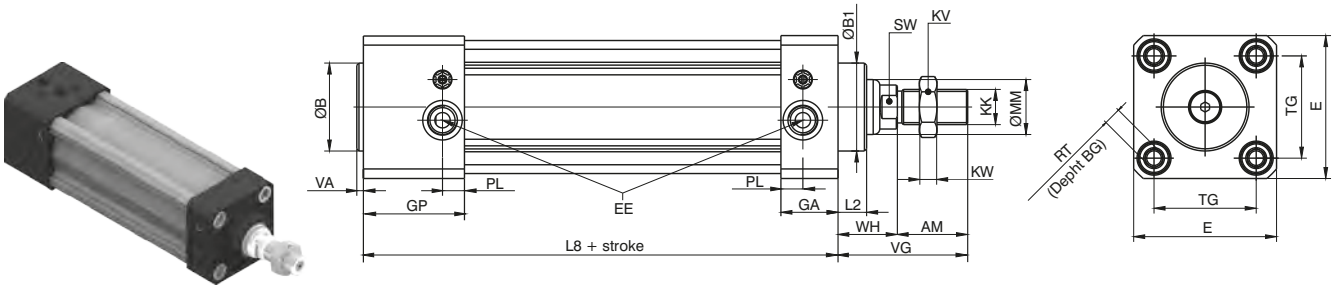
| | |
|---|---|
| Pneumatic media | filtered and lubricated air |
| Hydraulic media | filtered 1$\mu$ hydraulic oil |
| Maximum pressure | 8 bar |
| Skip & Stop valve minimum operating pressure | 3 bar |
| Environment temperature | -5°C +70°C |
| Minimum regulated speed | 40 mm/min. |
| Maximum regulated speed | 6000 mm/min. * |
| Speed with SKIP | 150 mm/sec. * |
| Free speed (without regulation) | 300 mm/sec. * |
| Cushion speed | 20 mm * |
| Standard stroke | from 50 to 450 steps 50 mm |
| Possibility of rear regulation (on request) | |

*** Attenction:** speed recorded with cylinder on horizontal position fed at 8 bar without load on piston rod.

## Force (N)

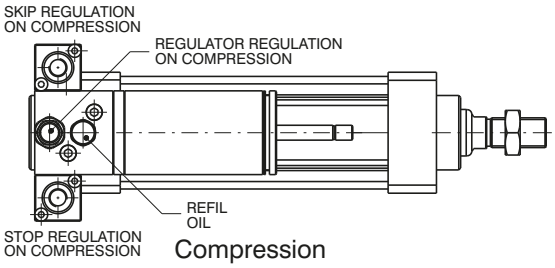
| BORE | FORCE | PRESSURE (bar) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 50 | Extraction | 181.4 | 362.9 | 544.3 | 725.7 | 907.2 | 1088.6 | 1270 | 1451.5 | 1632.9 | 1814.3 |
| | Compression | 144.4 | 288.8 | 433.2 | 577.6 | 722 | 866.3 | 1010.7 | 1155.1 | 1299.5 | 1443.9 |
| 63 | Extraction | 294.6 | 589.1 | 883.7 | 1178.2 | 1472.8 | 1767.3 | 2061.9 | 2356.5 | 2651 | 2945.6 |
| | Compression | 211.3 | 422.6 | 633.9 | 845.2 | 1056.6 | 1267.9 | 1479.2 | 1690.5 | 1901.8 | 2113.1 |

## Base cylinder dimensions

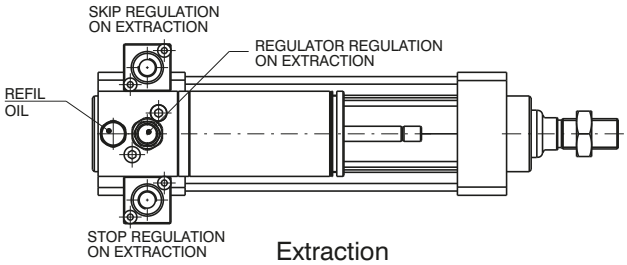



| Bore | AM | B (d11) | B1 (d11) | BG | E | EE | GA | GP | KK | KV | KW | L2 | L8 | MM | PL | RT | SW | TG | VA | VG | WH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | 32 | 40 | 40 | 16 | 65 | G1/4" | 26 | 46 | M16x1,5 | 24 | 8 | 13 | 116 | 25 | 10 | M8 | 17 | 46,5 | 3 | 59 | 27 |
| 63 | | 45 | 50 | | 75 | G3/8" | | | M16x1,5 | | | 20 | 121 | 35 | 12 | | | 56,5 | 4 | 69 | 37 |

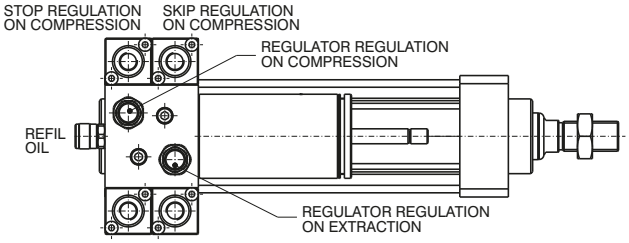
## Function valves and regulators position for the different versions




Compression

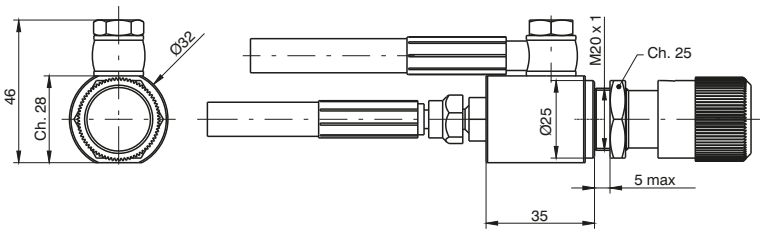



Extraction

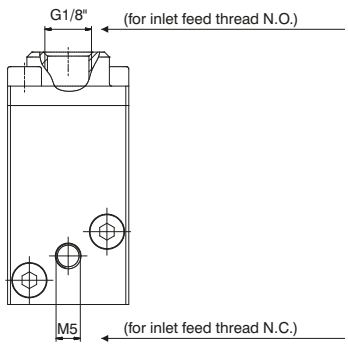



Double regulation

## Rear regulator dimensions



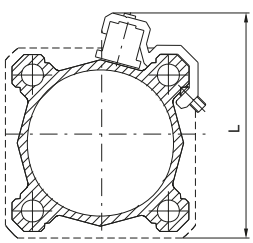

## SKIP and STOP valves inlet feed position




## Sensor brackets codes 1500._, RS._, HS._

**Dimensions**

| Bore | L |
|---|---|
| Ø50 | 77 |
| Ø63 | 87 |

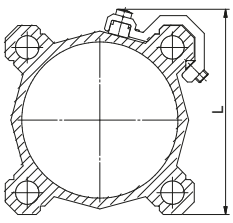



| Ordering code | |
|---|---|
| **1320.B** | Brackets for cylinder sensors Ø50 - Ø63 |

## Sensor brackets codes 1580._, MRS._, MHS._

**Dimensions**

| Bore | L |
|---|---|
| Ø50 | 66 |
| Ø63 | 76 |

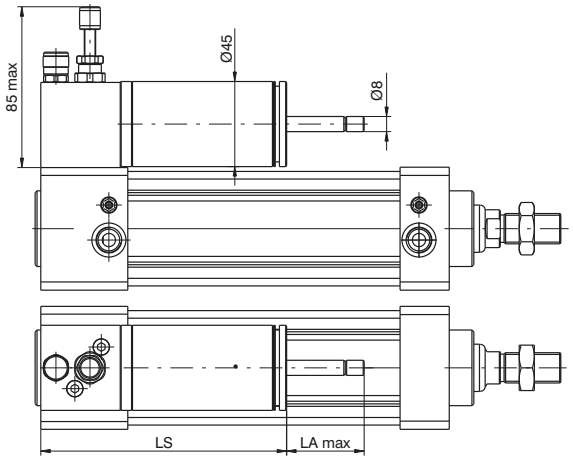



| Ordering code | |
|---|---|
| **1320.BS** | Brackets for cylinder sensors Ø50 - Ø63 |

**Sensor for cylinder**
For technical characteristics and code see “Magnetic sensor” section

## Regulation on the outward stroke

| Ordering code |
|---|
| **14Ø.stroke.A.0.0** |

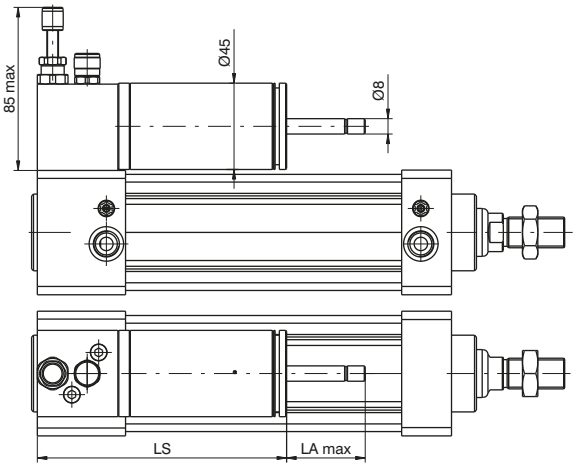



Ø50 Weight g 1970 + g 200 every 50 mm. stroke
Ø63 Weight g 2591 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation on the inward stroke

| Ordering code |
|---|
| **14Ø.stroke.B.0.0** |

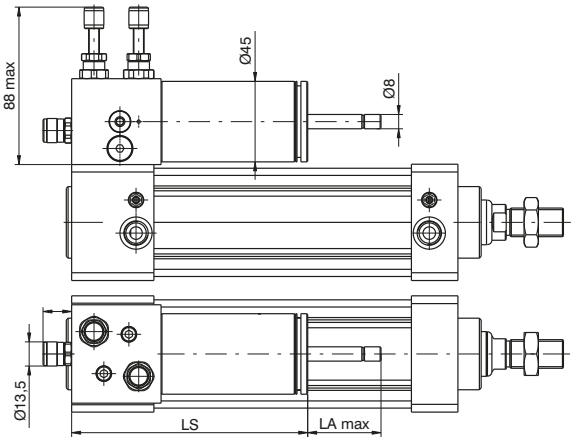



Ø50 Weight g 1970 + g 200 every 50 mm. stroke
Ø63 Weight g 2591 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation in both directions

| Ordering code |
|---|
| **14Ø.stroke.D.0.0** |

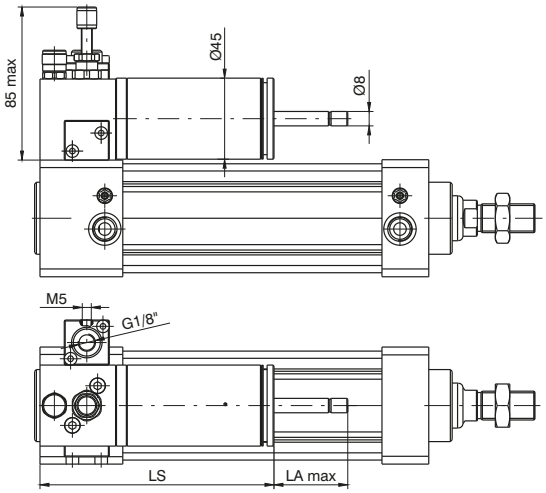



Ø50 Weight g 2128 + g 200 every 50 mm. stroke
Ø63 Weight g 2749 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 132 | 41 |
| 151 ... 350 | 187 | 66 |
| 351 ... 450 | 257 | 106 |

## Regulation on the outward stroke with Skip N.O.

| Ordering code |
|---|
| **14Ø.stroke.A.0.D** |

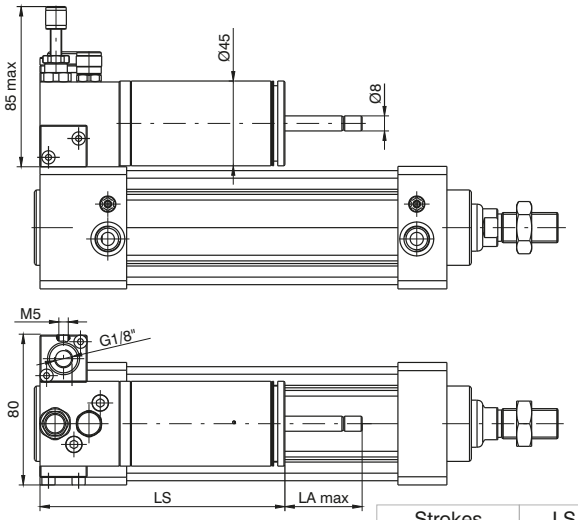



Ø50 Weight g 2059 + g 200 every 50 mm. stroke
Ø63 Weight g 2928 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation on the inward stroke with Skip N.O.

| Ordering code |
|---|
| **14Ø.stroke.B.0.E** |

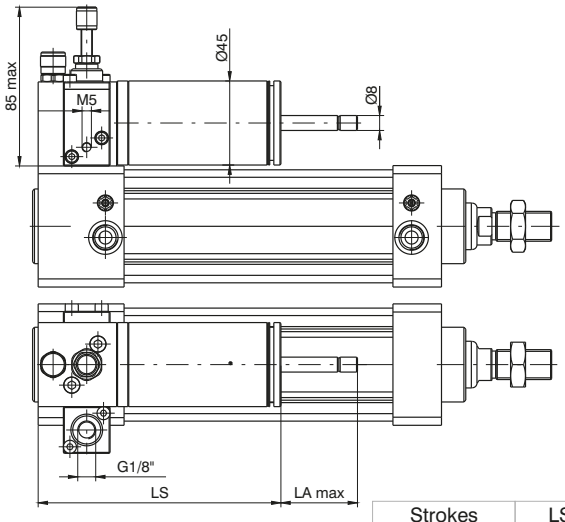



Ø50 Weight g 2059 + g 200 every 50 mm. stroke
Ø63 Weight g 2928 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation on the outward stroke with Stop N.O.

| Ordering code |
|---|
| **14Ø.stroke.A.D.0** |

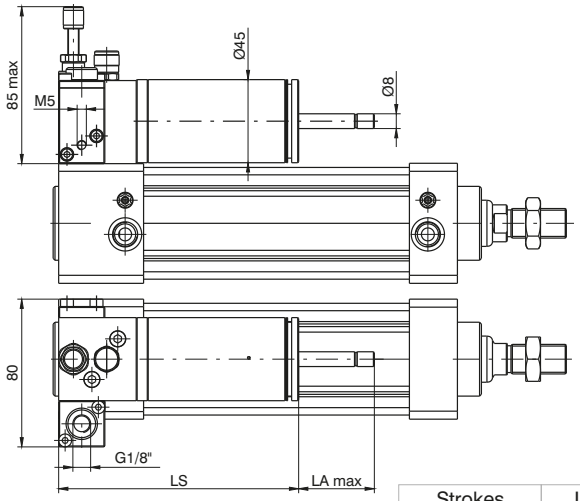



Ø50 Weight g 2059 + g 200 every 50 mm. stroke
Ø63 Weight g 2928 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation on the inward stroke with Stop N.O.

| Ordering code |
|---|
| **14Ø.stroke.B.E.0** |

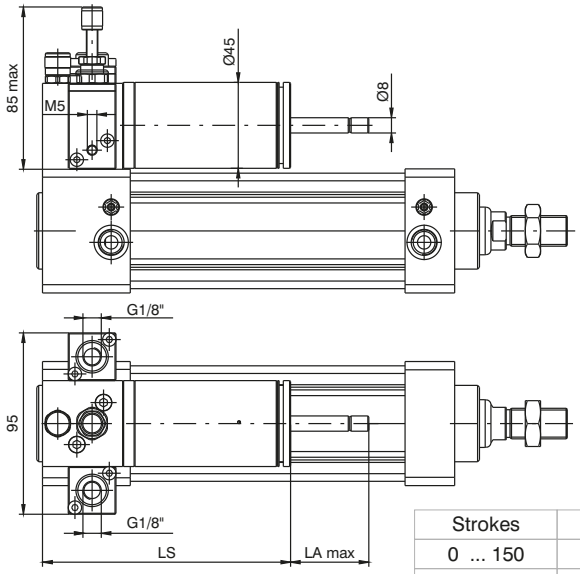



Ø50 Weight g 2059 + g 200 every 50 mm. stroke
Ø63 Weight g 2928 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation on the outward stroke with Skip N.O. - Stop N.O.

| Ordering code |
|---|
| **14Ø.stroke.A.D.D** |

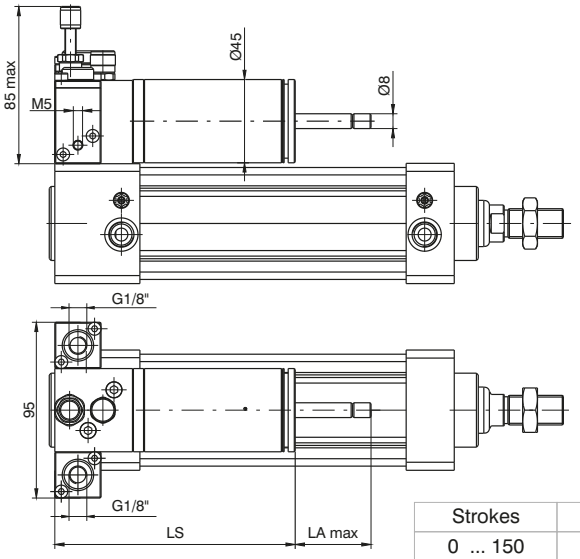



Ø50 Weight g 2140 + g 200 every 50 mm. stroke
Ø63 Weight g 2761 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation on the inward stroke with Skip N.O. - Stop N.O.

| Ordering code |
|---|
| **14Ø.stroke.B.E.E** |

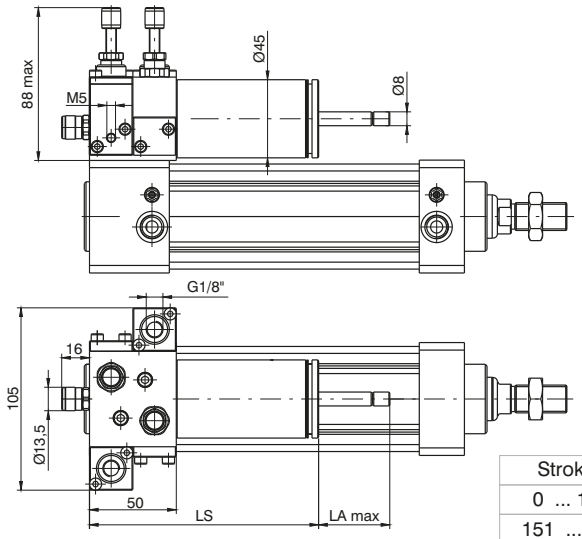



Ø50 Weight g 2140 + g 200 every 50 mm. stroke
Ø63 Weight g 2761 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 130 | 41 |
| 151 ... 350 | 185 | 66 |
| 351 ... 450 | 255 | 106 |

## Regulation and Skip in both directions (N.O. Skip valves in both directions)

| Ordering code |
|---|
| **14Ø.stroke.D.0.F** |

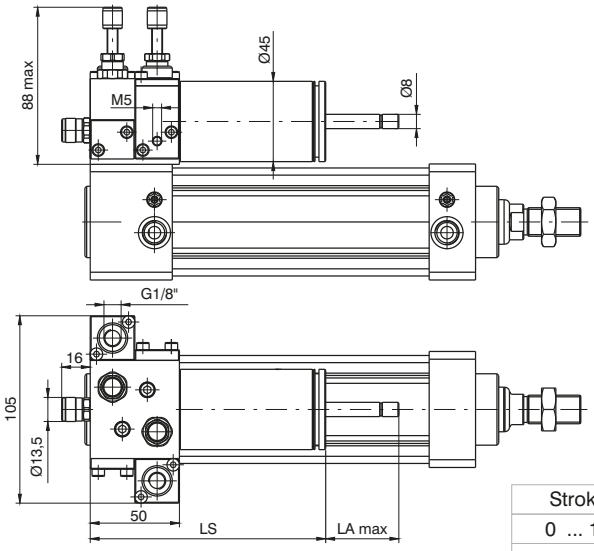



Ø50 Weight g 2311 + g 200 every 50 mm. stroke
Ø63 Weight g 2932 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 132 | 41 |
| 151 ... 350 | 187 | 66 |
| 351 ... 450 | 257 | 106 |

## Regulation and Stop in both directions (N.O. Stop valves in both directions)

| Ordering code |
|---|
| **14Ø.stroke.D.F.0** |

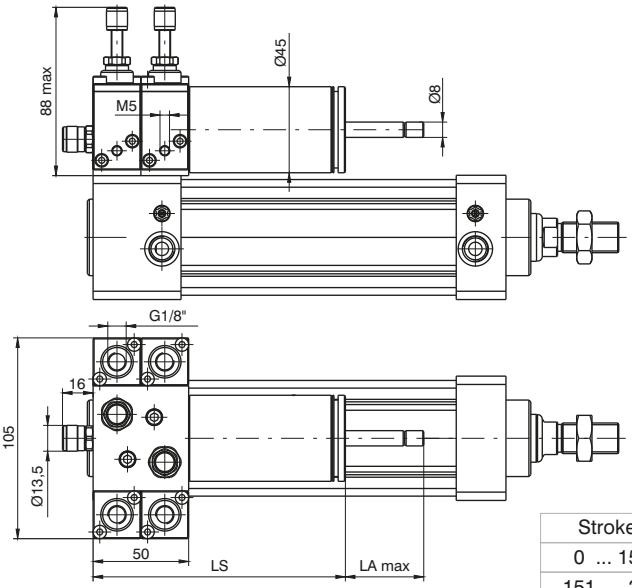



Ø50 Weight g 2311 + g 200 every 50 mm. stroke
Ø63 Weight g 2932 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 132 | 41 |
| 151 ... 350 | 187 | 66 |
| 351 ... 450 | 257 | 106 |

## Regulation with Skip and Stop in both directions (N.O. Skip and Stop valves in both directions)

| Ordering code |
|---|
| **14Ø.stroke.D.F.F** |




Ø50 Weight g 2473 + g 200 every 50 mm. stroke
Ø63 Weight g 3094 + g 280 every 50 mm. stroke

| Strokes | LS | LA max |
|---|---|---|
| 0 ... 150 | 132 | 41 |
| 151 ... 350 | 187 | 66 |
| 351 ... 450 | 257 | 106 |