

### Maintenance

The speed control check is a closed system and there are no external factors that can adversely affect its function. Care however, has to be exercised not to allow the hydraulic fluid level to drop below the minimum indicated on the auxiliary tank. Should this occur, cavitation, or worse, an air pocket would result causing erratic control.

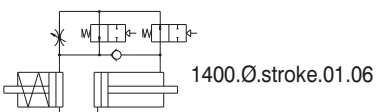
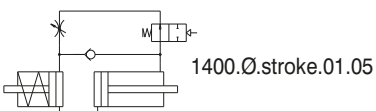
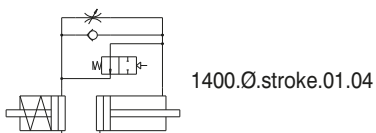
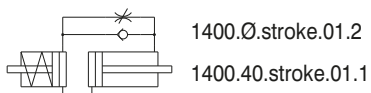
Additional fluid should be put in exclusively through a unidirectional valve by means of an appropriate syringe (such as our code number 1400.99.01). Excess fluid will be expelled through a vent into an appropriate container. It is necessary to completely disassemble the regulator and be sure to bleed the system to eliminate air pockets. We suggest that you create a vacuum before beginning to refill.

This can be done with a small unidirectional valve turned up and repeatedly loaded with a syringe.

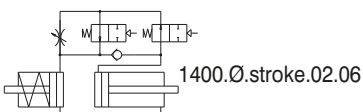
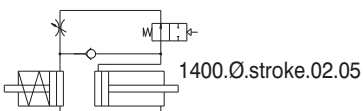
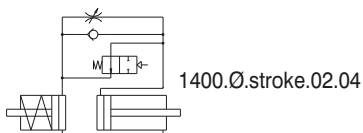
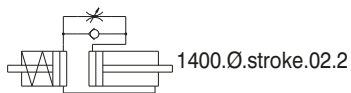
The rod must be manually actuated successively releasing air through the valve using a small and pointed instrument.

### Functional schematics

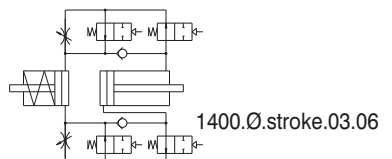
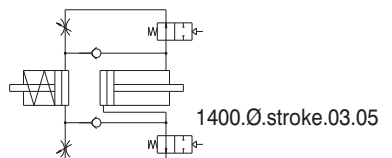
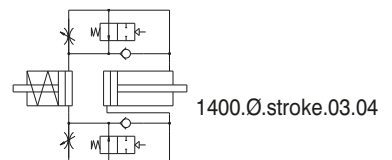
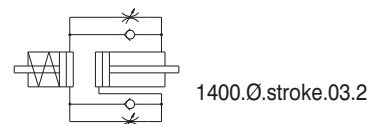
#### Outward stroke Control



#### Inward stroke Control

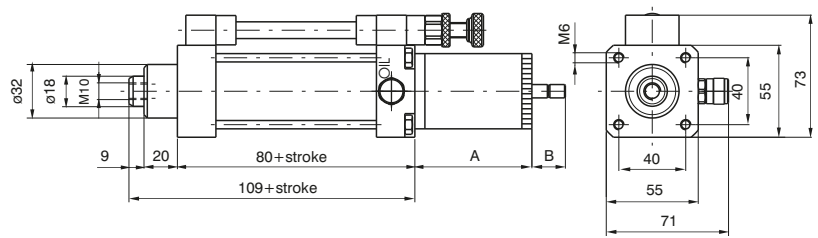


#### Inward & Outward stroke Control



► Regulation on the outward stroke - Tank in line

Ordering code  
**1400.40.stroke.01.1**

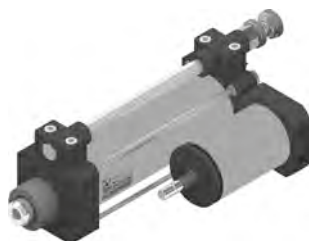
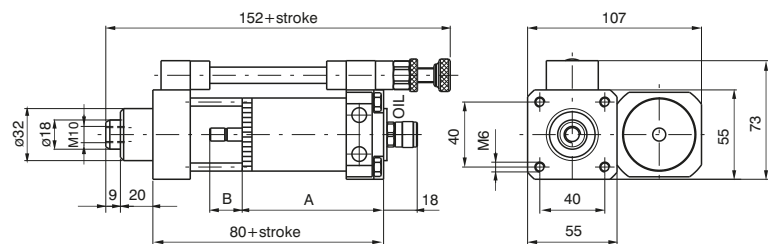


Weight g 1450 + g 300 every 50 mm. stroke

Strokes	A	B max.
< 75	78	30
75...<150	102	45
150...<250	127	60
250...<350	187	90
350...<500	202	120

► Regulation on the outward stroke – Lateral tank

Ordering code  
**1400.40.stroke.01.2**

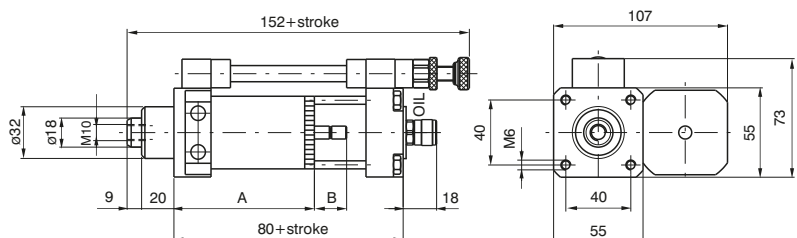


Weight g 1530 + g 300 every 50 mm. di stroke

Strokes	A	B max.
< 75	93	30
75...<150	118	45
150...<250	143	60
250...<350	183	90
350...<500	218	120

► Regulation on the inward stroke

Ordering code  
**1400.40.stroke.02.2**



Weight g 1530 + g 300 every 50 mm. di stroke

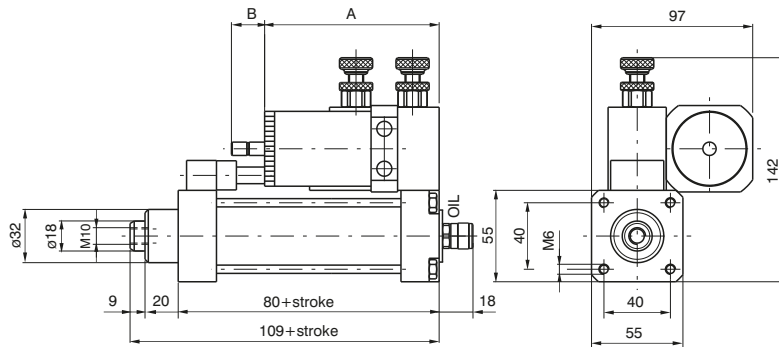
Strokes	A	B max.
< 75	93	30
75...<150	118	45
150...<250	143	60
250...<350	183	90
350...<500	218	120

3 PNEUMATIC ACTUATION

Regulation in both directions

Ordering code

1400.40.stroke.03.2



Weight g 1870 + g 300 every 50 mm. stroke

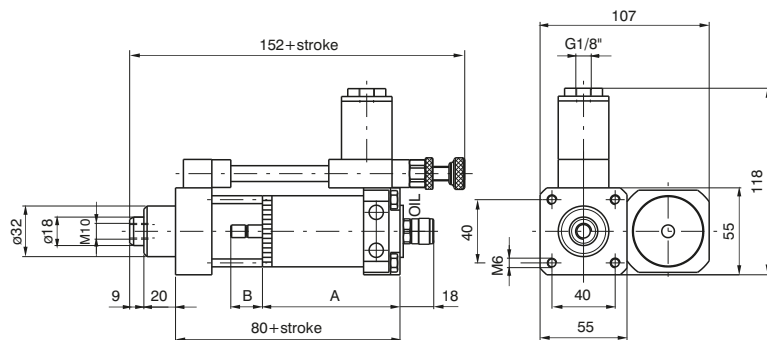
Attention: Minimum stroke=150mm when fitted in tandem (parallel or in-line) with 1319-1320-1321 cylinders series Ø80mm or Ø100mm.

Strokes	A	B max.
< 75	110	30
75...<150	135	45
150...<250	160	60
250...<350	200	90
350...<500	235	120

Regulation on the outward stroke with skip (Acceleration valve)

Ordering code

1400.40.stroke.01.04



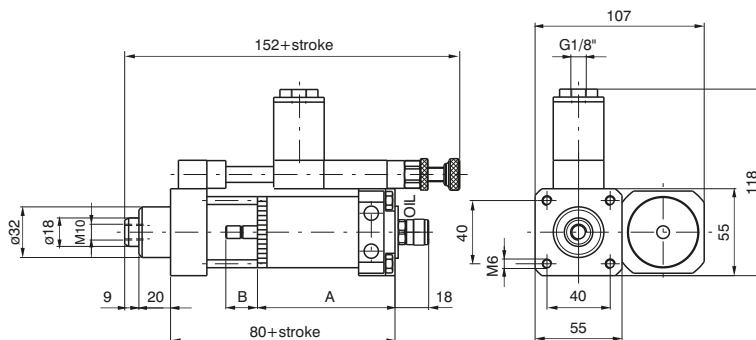
Weight g 1670 + g 300 every 50 mm. stroke

Strokes	A	B max.
< 75	93	30
75...<150	118	45
150...<250	143	60
250...<350	183	90
350...<500	218	120

Regulation on the outward stroke with stop (Stop valve)

Ordering code

1400.40.stroke.01.05



Weight g 1710 + g 300 every 50 mm. stroke

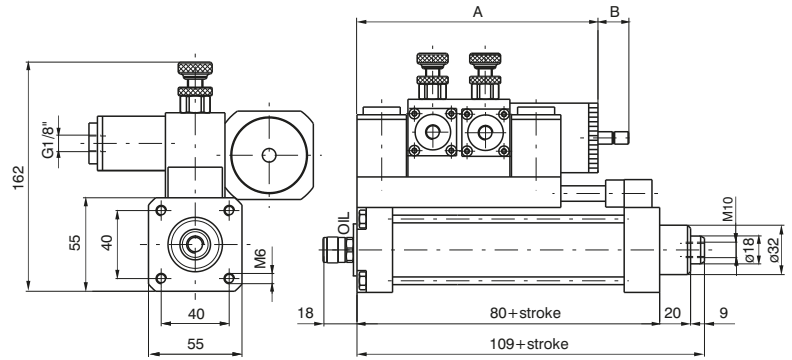
Strokes	A	B max.
< 75	93	30
75...<150	118	45
150...<250	143	60
250...<350	183	90
350...<500	218	120





► Regulation in both directions with skip and stop (Acceleration and stop valves in both

Ordering code
<b>1400.40.stroke.03.06</b>



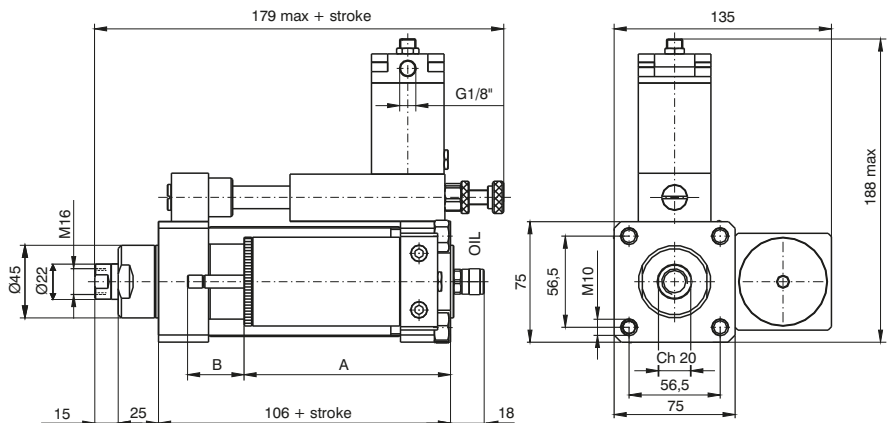
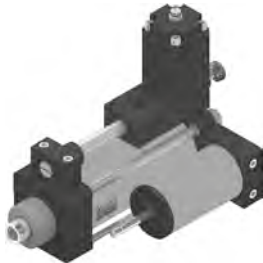
**Min. stroke 150 mm**  
Weight g 2630 + g 300 every 50 mm. stroke

Strokes	A	B max.
150 ... < 250	197	60
250 ... < 350	237	90
350 ... < 500	272	120



► Regulation on the outward stroke with skip (Acceleration valve)

Ordering code  
**1400.63.stroke.01.04**

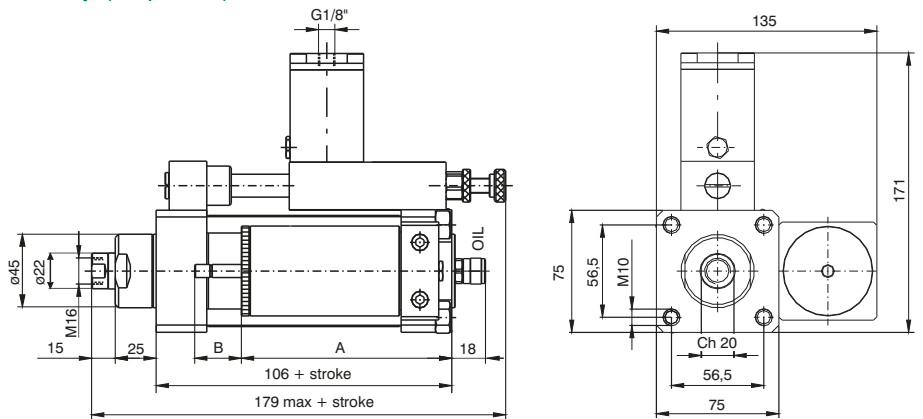
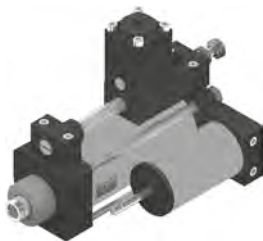


Strokes	A	B max
≥75 ... <150	128	50
≥150 ... <250	188	80
≥250 ... <350	238	100
≥350 ... <450	298	130
≥450 ... ≤600	358	160

Min. stroke 75 mm  
Weight g 3450 + g 850 every 50 mm. stroke

► Regulation on the outward stroke with stop (Stop valve)

Ordering code  
**1400.63.stroke.01.05**

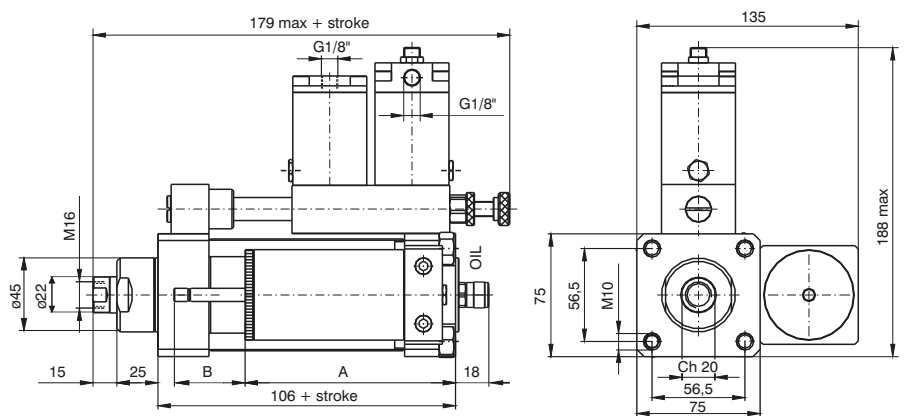


Strokes	A	B max
≥75 ... <150	128	50
≥150 ... <250	188	80
≥250 ... <350	238	100
≥350 ... <450	298	130
≥450 ... ≤600	358	160

Min. stroke 75 mm  
Weight g 3450 + g 850 every 50 mm. stroke

► Regulation on the outward stroke with skip and stop (Acceleration and stop valves)

Ordering code  
**1400.63.stroke.01.06**



Strokes	A	B max
≥75 ... <150	128	50
≥150 ... <250	188	80
≥250 ... <350	238	100
≥350 ... <450	298	130
≥450 ... ≤600	358	160

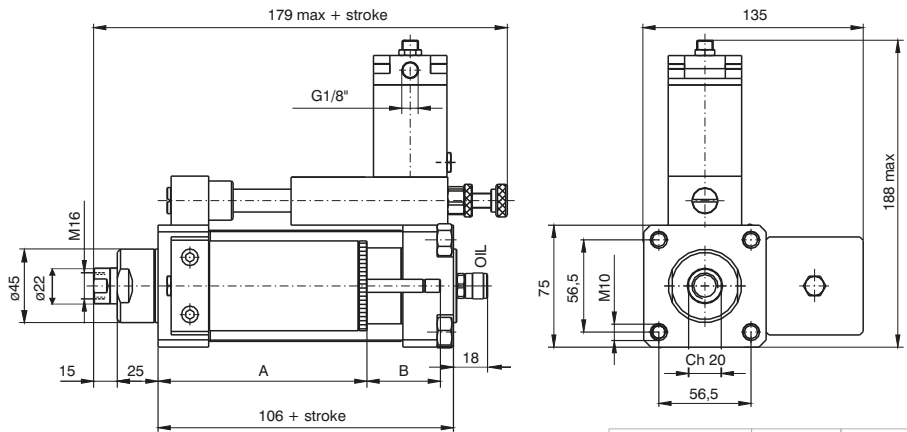
Min. stroke 75 mm  
Weight g 3700 + g 850 every 50 mm. stroke



Regulation on the inward stroke with skip (Acceleration valve)

Ordering code

1400.63.stroke.02.04



Strokes	A	B max
≥75 ... <150	128	50
≥150 ... <250	188	80
≥250 ... <350	238	100
≥350 ... <450	298	130
≥450 ... ≤600	358	160

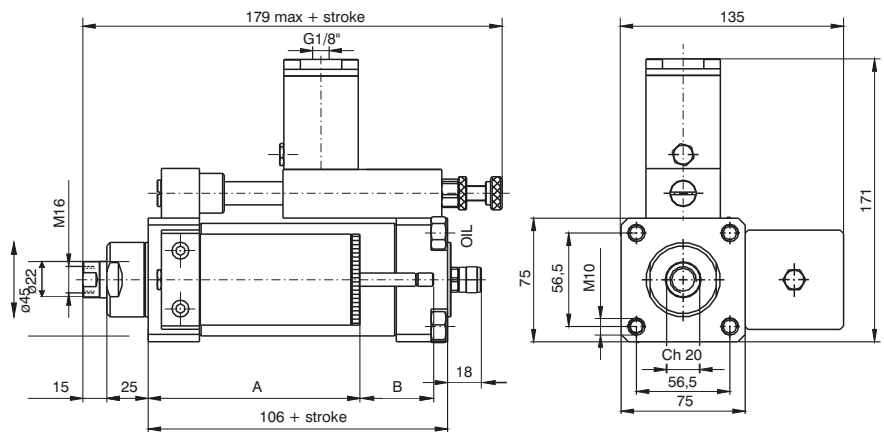
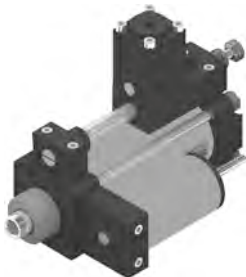
Min. stroke 75 mm

Weight g 3450 + g 850 every 50 mm. stroke

Regulation on the inward stroke with stop (Stop valves)

Ordering code

1400.63.stroke.02.05



Strokes	A	B max
≥75 ... <150	128	50
≥150 ... <250	188	80
≥250 ... <350	238	100
≥350 ... <450	298	130
≥450 ... ≤600	358	160

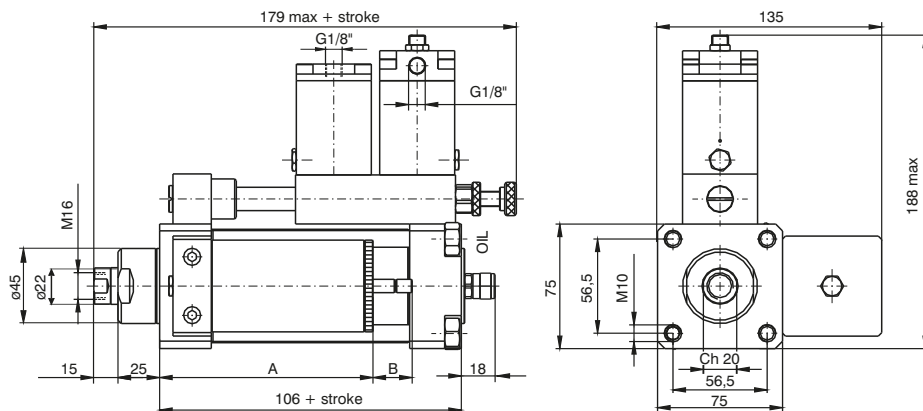
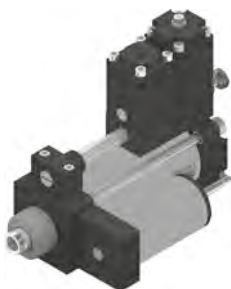
Min. stroke 75 mm

Weight g 3450 + g 850 every 50 mm. stroke

Regulation on the inward stroke with skip and stop (Acceleration and stop valve)

Ordering code

1400.63.stroke.02.06



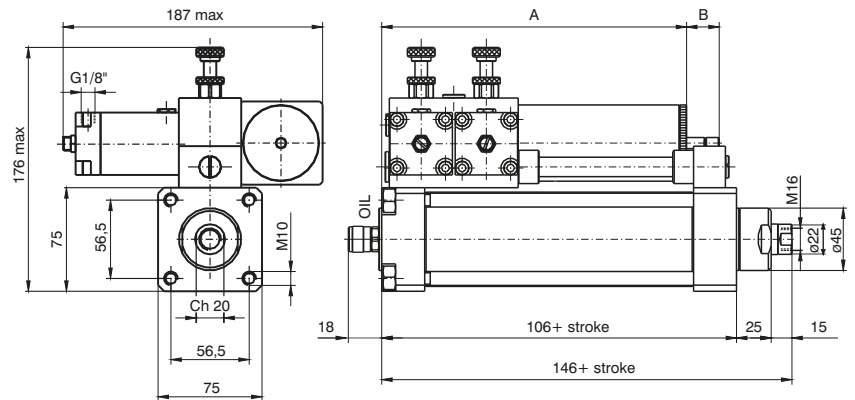
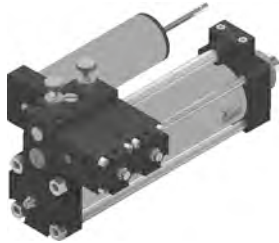
Strokes	A	B max
≥75 ... <150	128	50
≥150 ... <250	188	80
≥250 ... <350	238	100
≥350 ... <450	298	130
≥450 ... ≤600	358	160

Min. stroke 75 mm

Weight g 3700 + g 850 every 50 mm. stroke

► Regulation in both direction with skip (Accelerations valve in two directions)

Ordering code  
**1400.63.stroke.03.04**

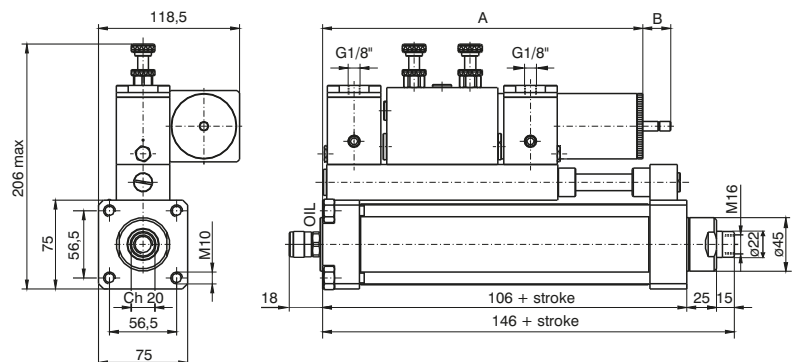


Strokes	A	B max
≥100 ... <150	160	50
≥150 ... <250	220	80
≥250 ... <350	270	100
≥350 ... <450	330	130
≥450 ... ≤600	390	160

Min. stroke 100 mm  
Weight g 4100 + g 850 every 50 mm. stroke

► Regulation in both direction with stop (Stop valves in two directions)

Ordering code  
**1400.63.stroke.03.05**

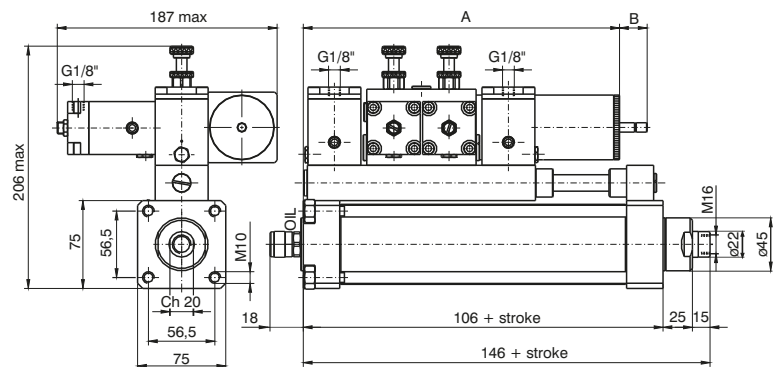
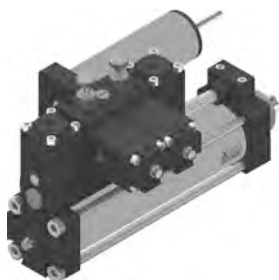


Strokes	A	B max
≥200 ... <250	269	80
≥250 ... <350	319	100
≥350 ... <450	379	130
≥450 ... ≤600	439	160

Min. stroke 200 mm  
Weight g 4850 + g 850 every 50 mm. stroke

► Regulation in both direction with skip and stop (Acceleration and stop valves in two directions)

Ordering code  
**1400.63.stroke.03.06**

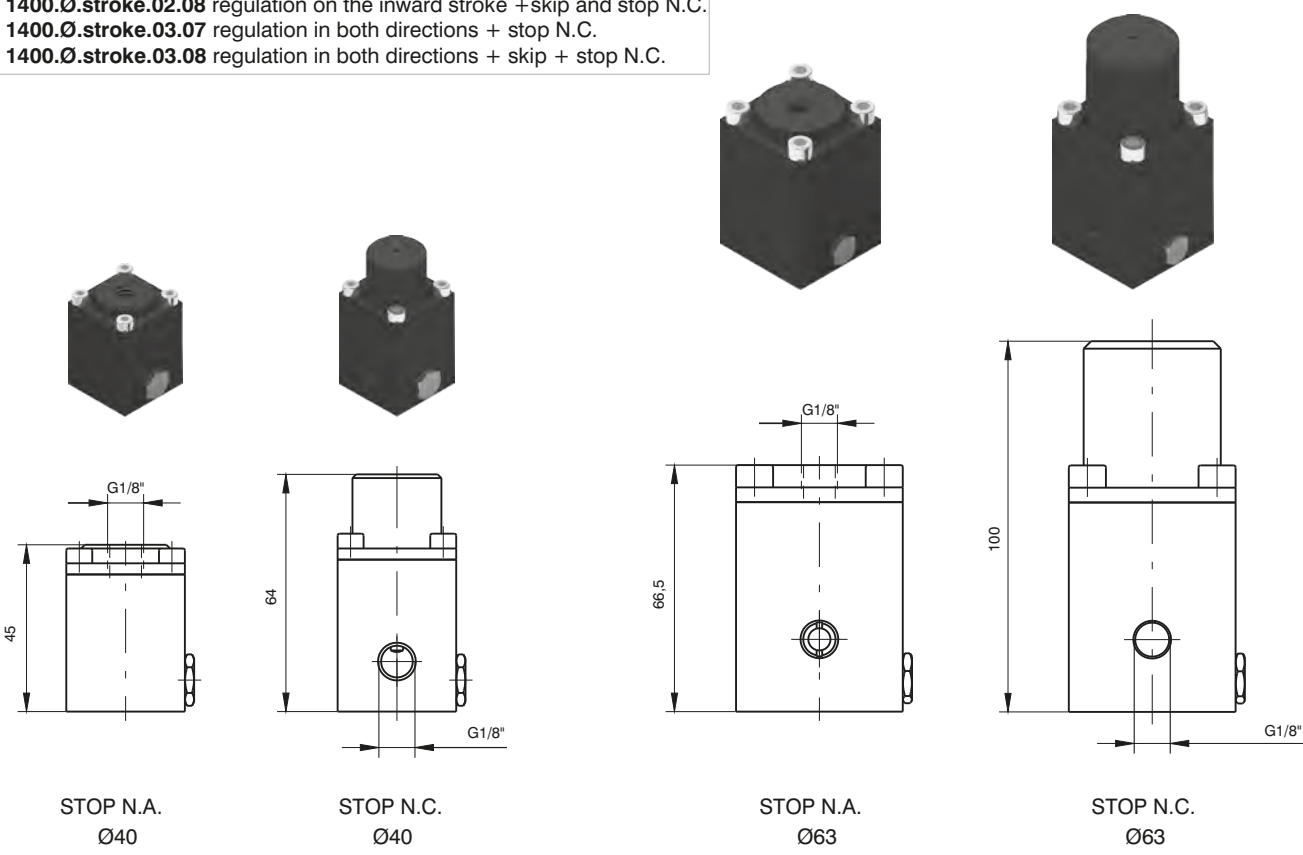


Strokes	A	B max
≥200 ... <250	269	80
≥250 ... <350	319	100
≥350 ... <450	379	130
≥450 ... ≤600	439	160

Min. stroke 200 mm  
Weight g 5400 + g 850 every 50 mm. stroke

**Dimensional releases and power supply positions with N.C. stop valves**

Ordering code
<b>1400.Ø.stroke.01.07</b> regulation on the outward stroke + stop N.C.
<b>1400.Ø.stroke.01.08</b> regulation on the outward stroke + skip + stop N.C.
<b>1400.Ø.stroke.02.07</b> regulation on the inward stroke + stop N.C.
<b>1400.Ø.stroke.02.08</b> regulation on the inward stroke + skip and stop N.C.
<b>1400.Ø.stroke.03.07</b> regulation in both directions + stop N.C.
<b>1400.Ø.stroke.03.08</b> regulation in both directions + skip + stop N.C.

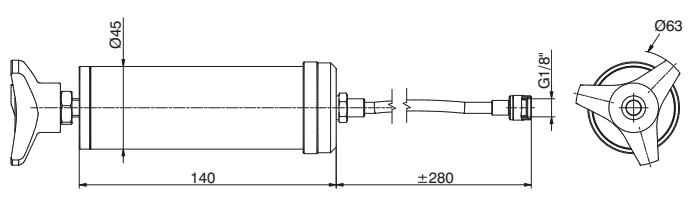


**Hydraulic fluid refill syringe**

Ordering code
<b>1400.99.02</b>



Weight g 420



**Oil for hydraulic and pneumatic circuits**

Ordering code
<b>PNEUMOIL 01</b> (1 litre bottles)



This oil is suitable to lubricate pneumatic circuits and also to refill hydraulic speed control tanks. It is completely compatible with our seals.

## 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

- A = Regulation on extraction
- B = Regulation on compression
- D = Double regulation

#### STOP function

- 0 = None
- A = Stop N.C. extraction
- B = Stop N.C. compression
- C = Double Stop N.C.
- D = Stop N.O. extraction
- E = Stop N.O. compression
- F = Double Stop N.O.

#### SKIP function

- 0 = None
- A = Skip N.C. extraction
- B = Skip N.C. compression
- C = Double Skip N.C.
- D = Skip N.O. extraction
- E = Skip N.O. compression
- 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

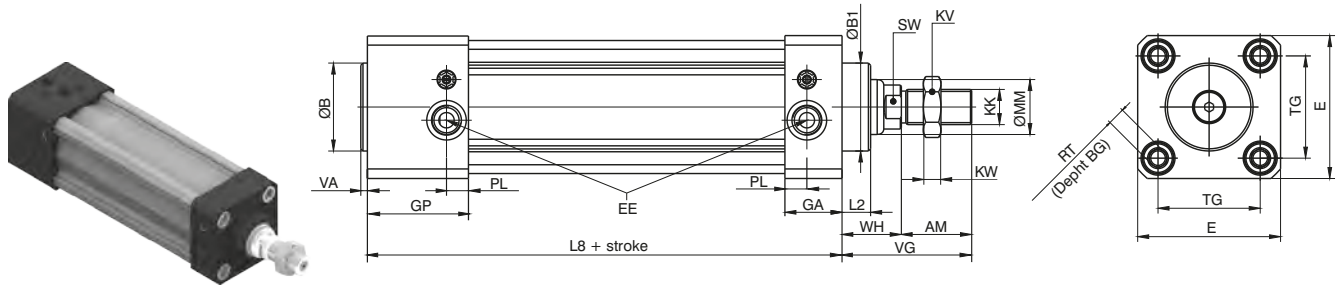
Pneumatic media	filtered and lubricated air
Hydraulic media	filtered 1µ hydraulic oil
Maximum pressure	8 bar
Skip & Stop valve minimum operating pressure	3 bar
Environment temperature	-5°C +70°C
Minimum regulated speed	40 mm/min.
Maximum regulated speed	6000 mm/min. *
Speed with SKIP	150 mm/sec. *
Free 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)	

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

### Force (N)

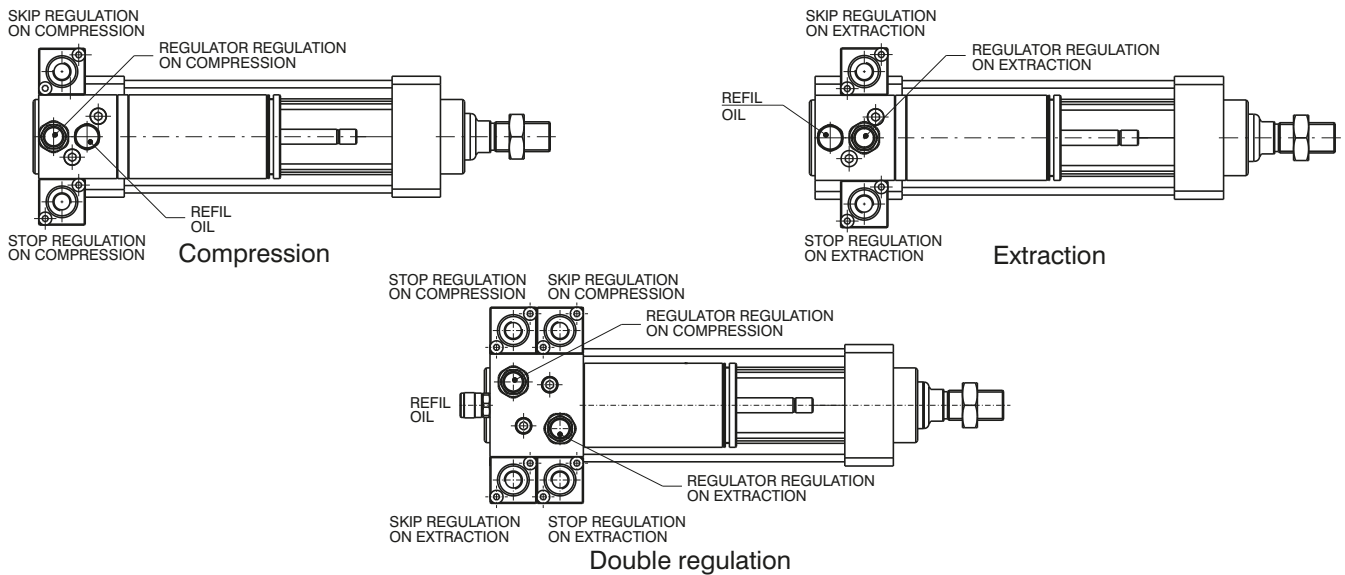
BORE	FORCE	PRESSURE (bar)									
		1	2	3	4	5	6	7	8	9	10
50	Extraction	181.4	362.9	544.3	725.7	907.2	1088.6	1270	1451.5	1632.9	1814.3
	Compression	144.4	288.8	433.2	577.6	722	866.3	1010.7	1155.1	1299.5	1443.9
63	Extraction	294.6	589.1	883.7	1178.2	1472.8	1767.3	2061.9	2356.5	2651	2945.6
	Compression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

► Base cylinder dimensions

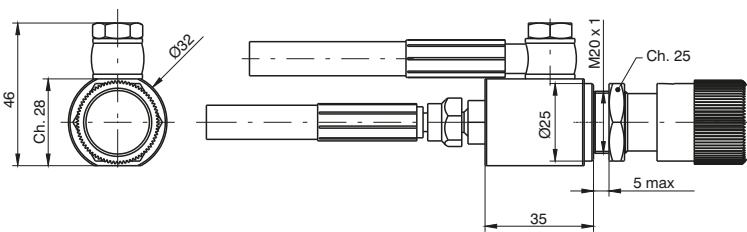


Bore	AM	B (d11)	B1 (d11)	BG	E	EE	GA	GP	KK	KV	KW	L2	L8	MM	PL	RT	SW	TG	VA	VG	WH
50	32	40	40	16	65	G1/4"	26	46	M16x1,5	24	8	13	116	25	10	M8	17	46,5	3	59	27
63		45	50		75	G3/8"			M16x1,5			20	121	35	12			56,5	4	69	37

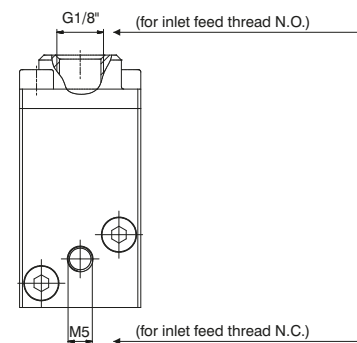
Function valves and regulators position for the different versions



Rear regulator dimensions



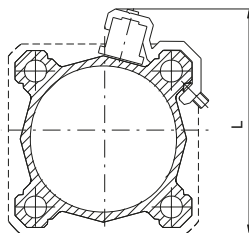
SKIP and STOP valves inlet feed position



► Sensor brackets codes 1500., RS., HS.

Dimensions

Bore	L
Ø50	77
Ø63	87



Ordering code

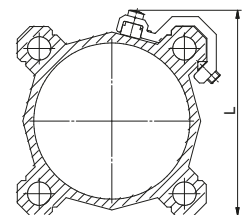
**1320.B**

Brackets for cylinder sensors Ø50 - Ø63

► Sensor brackets codes 1580., MRS., MHS.

Dimensions

Bore	L
Ø50	66
Ø63	76



Ordering code

**1320.BS**

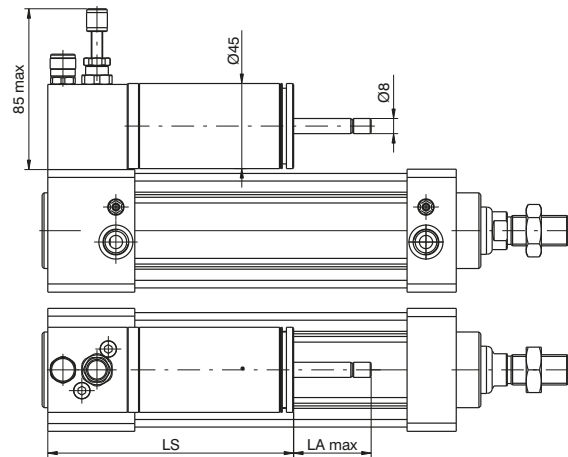
Brackets for cylinder sensors Ø50 - Ø63

Sensor for cylinder

For technical characteristics and code see "Magnetic sensor" section

► Regulation on the outward stroke

Ordering code
<b>14Ø.stroke.A.0.0</b>

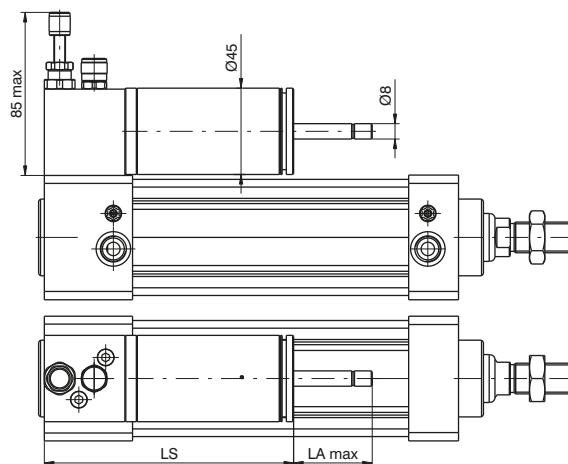


Ø50 Weight g 1970 + g 200 every 50 mm. stroke  
Ø63 Weight g 2591 + g 280 every 50 mm. stroke

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

► Regulation on the inward stroke

Ordering code
<b>14Ø.stroke.B.0.0</b>

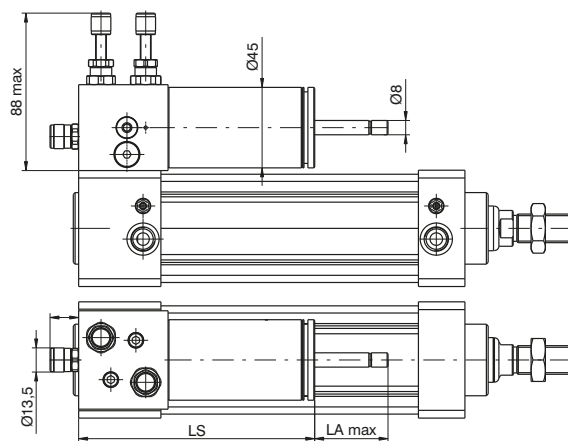


Ø50 Weight g 1970 + g 200 every 50 mm. stroke  
Ø63 Weight g 2591 + g 280 every 50 mm. stroke

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

► Regulation in both directions

Ordering code
<b>14Ø.stroke.D.0.0</b>

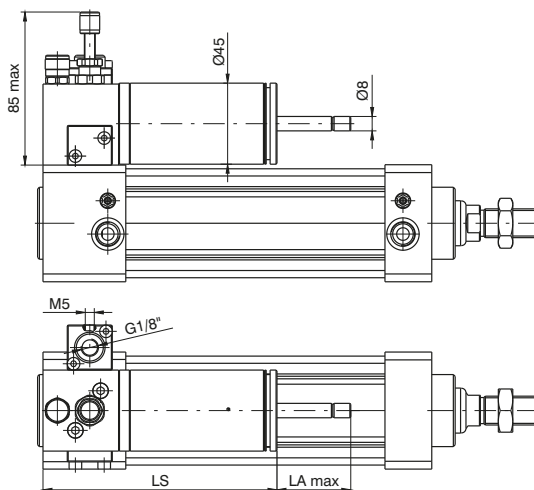


Ø50 Weight g 2128 + g 200 every 50 mm. stroke  
Ø63 Weight g 2749 + g 280 every 50 mm. stroke

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**

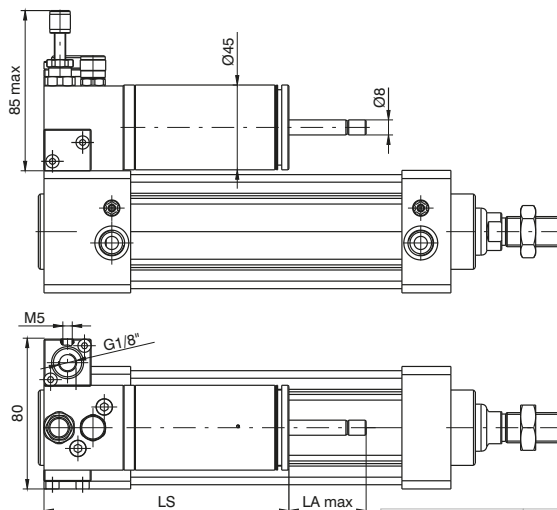


Ø50 Weight g 2059 + g 200 every 50 mm. stroke  
Ø63 Weight g 2928 + g 280 every 50 mm. stroke

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**

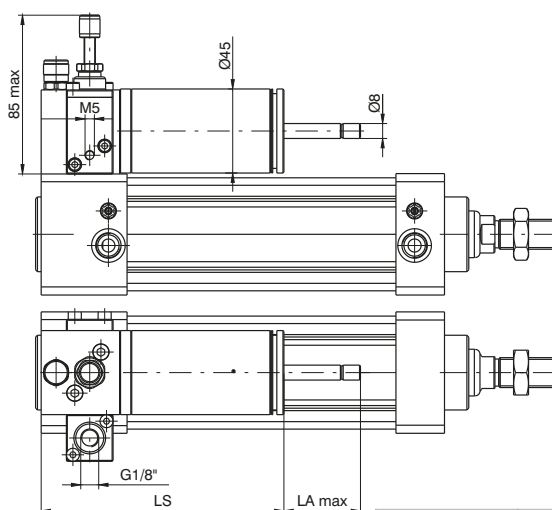


Ø50 Weight g 2059 + g 200 every 50 mm. stroke  
Ø63 Weight g 2928 + g 280 every 50 mm. stroke

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

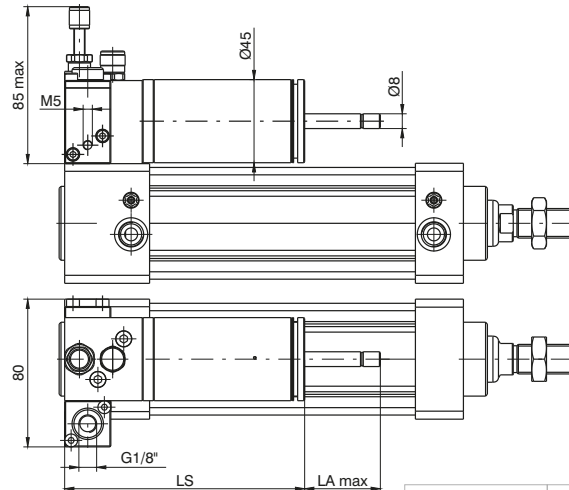
Strokes	LS	LA max
0 ... 150	130	41
151 ... 350	185	66
351 ... 450	255	106

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

Ordering code
<b>14Ø.stroke.B.E.0</b>



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



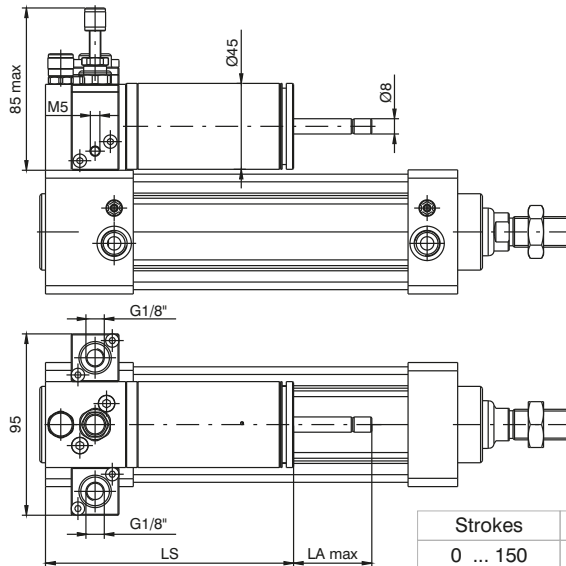
Strokes	LS	LA max
0 ... 150	130	41
151 ... 350	185	66
351 ... 450	255	106

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

Ordering code
<b>14Ø.stroke.A.D.D</b>



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



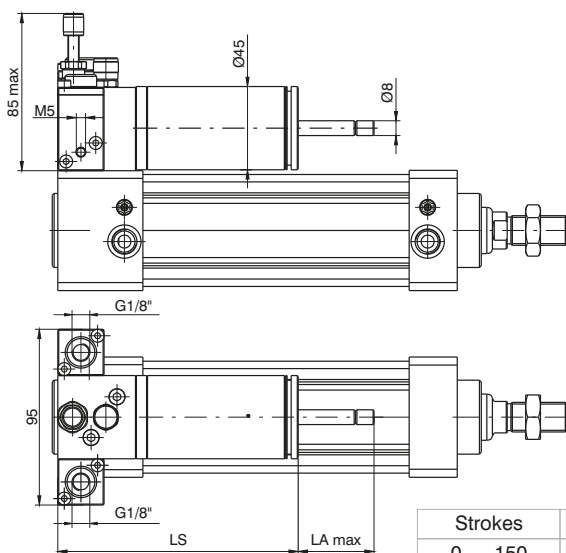
Strokes	LS	LA max
0 ... 150	130	41
151 ... 350	185	66
351 ... 450	255	106

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

Ordering code
<b>14Ø.stroke.B.E.E</b>



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



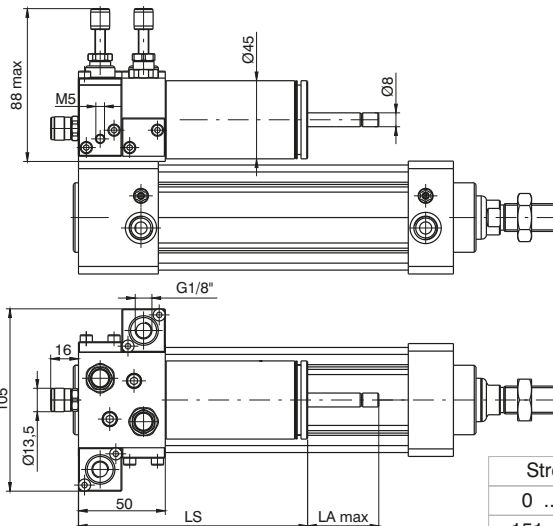
Strokes	LS	LA max
0 ... 150	130	41
151 ... 350	185	66
351 ... 450	255	106

3 PNEUMATIC ACTUATION



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

Ordering code  
**14Ø.stroke.D.0.F**

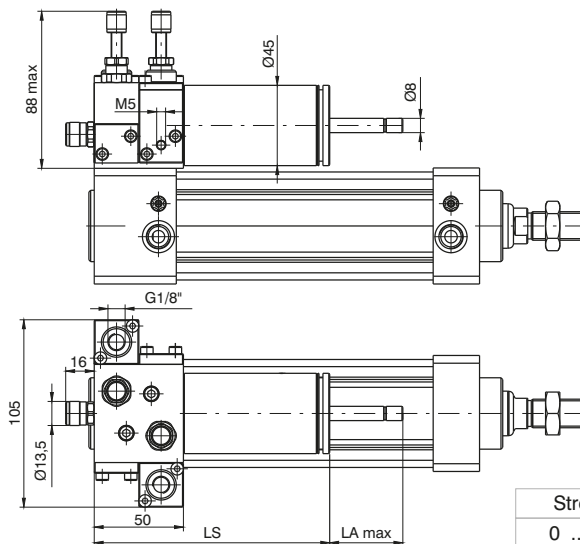


Strokes	LS	LA max
0 ... 150	132	41
151 ... 350	187	66
351 ... 450	257	106

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

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

Ordering code  
**14Ø.stroke.D.F.0**

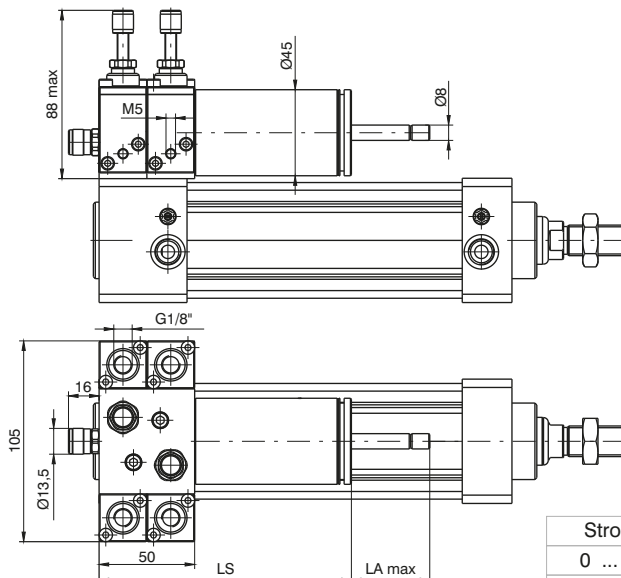


Strokes	LS	LA max
0 ... 150	132	41
151 ... 350	187	66
351 ... 450	257	106

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

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

Ordering code  
**14Ø.stroke.D.F.F**



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

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