

General

This series of pneumatic cylinders is manufactured according to ISO 6431 standards adapted to VDMA 24562 and CNOMO/AFNOR 49003 that guarantee the interchangeability of the cylinders even without mounted anchoring.

It differs from the 1300 and 1303 series mainly due to the different pitch of the mounting holes on the end plates and of the barrel made of anodized and shaped aluminium; the tie rods have been eliminated for bores from 32 to 125 mm and the end covers are mounted directly on the barrel with special male/female screws, while for bore 160 and 200 mm it is still used the tie rods going through the barrel fixing holes.

The barrel is extruded on the inside to guarantee precision with low friction; oxydation hardens the sliding surface of the seals allowing work even without lubrication.

The magnetic piston can be mounted to activate the limit switch with Reed contact and all types of anchorings are available according to ISO-VDMA standards, that can be fixed to the end plates with socket head screws.

To order single acting cylinders (up to Ø 125, 50 mm maximum stroke), add to the code of the chosen cylinder abbreviation MA for the front spring and MP for the rear spring.

For example: **1320.32.50.01MA**
1320.50.25.01MP

Construction characteristics

End plates	from Ø32 to Ø125: UNI 5079 aluminium alloy casting painted black by cataphoresis from Ø160 to Ø200: UNI 3051 aluminium chilled painted black by cataphoresis
Rod	Chromed AISI 303 stainless steel or C43 chromed steel
Barrel	Aluminium alloy, anodized 25 micron Ra = 0,3÷0,5
Cushion bushings	Hardened aluminium
Rod-guide bushing	Self-lubricating sintered bronze
Piston	Vulcanized NBR 80 shore rubber monobloc on steel core with incorporated plastoferrite permanent magnet. NBR 80 shore rubber monobloc on without magnet for the non magnetic version plus rear spacer VITON® monobloc for high temperature, available on request for magnetic and non magnetic cylinder
Piston rod and cushion seals	Self-lubricating 90 shore mixing polyurethane (VITON® on request for high temperature)
Other seals	Rubber NBR 80 shore
Cushion adjustment screws	Nickel-plated steel

Technical characteristics

Fluid	filtered and preferably lubricated air
Pressure	10 bar
Operating temperature	-5°C ÷ +70°C (VITON®, 150°C)
Bore	Ø 32 - 40 - 50 - 63 - 80 - 100 - 125 - 160 - 200
Cushioning length	mm 28 - 32 - 32 - 40 - 44 - 50 - 55 - 55 - 55

"Attention: Dry air must be used for application below 0°C"

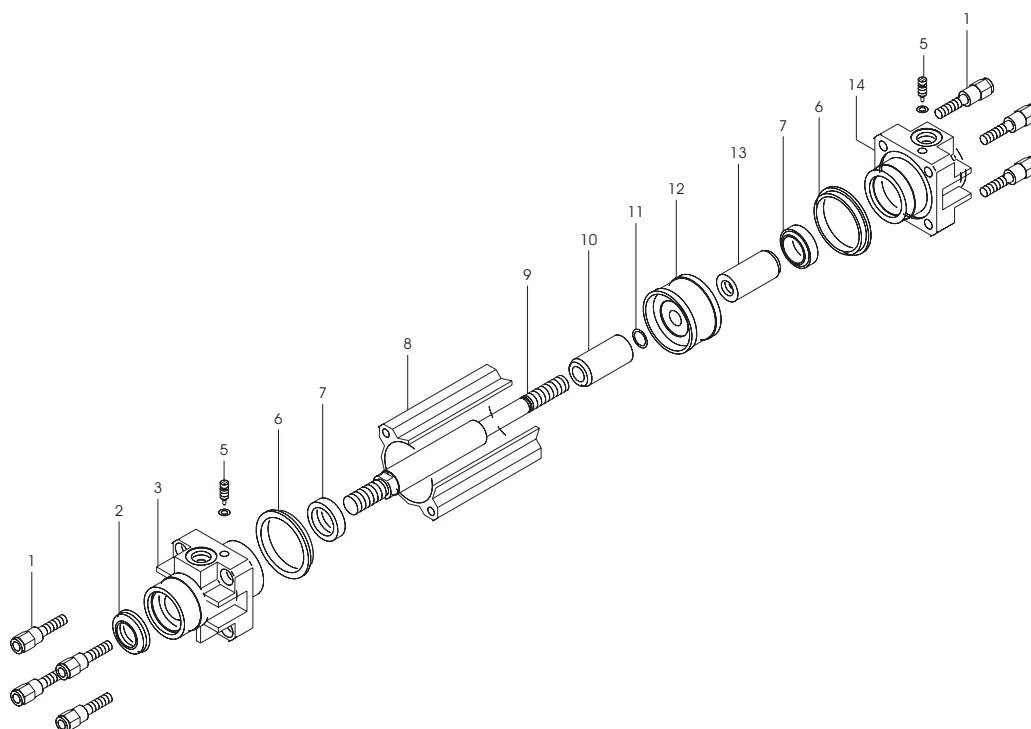
Standard strokes (for all diameters)

from 0 up to 150, every 25 mm
over 150 up to 500, every 50 mm
over 500 up to 1000, every 100 mm

Stroke tolerance (ISO 15552)

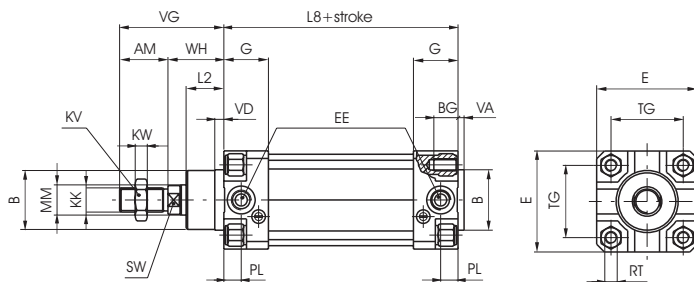
Bore	Stroke	Tolerance
32 - 40 - 50	up to 500	+2 0
	over 500 up to 1250	+3,2 0
63 - 80 - 100	up to 500	+2,5 0
	over 500 up to 1250	+4 0
125 - 160 - 200	up to 500	+4 0
	over 500 up to 1250	+5 0

Drawing



Pos.	Description	N. Pieces
1	Tie nut	8
2	Rod seal	1
3	Front cover	1
5	Cushioning adjustment screw	2
6	Cover seal	2
7	Cushion seal	2
8	Barrel	1
9	Rod	1
10	Front bushing cushion	1
11	Front bushing cushion seal	1
12	Piston	1
13	Rear bushing cushion	1
14	Rear cover	1

Basic version

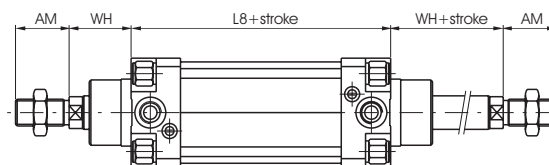


Ordering code

- 1319.Ø.stroke.01** magnetic chromed rod
- 1320.Ø.stroke.01** magnetic stainless steel chromed rod
- 1321.Ø.stroke.01** non magnetic chromed rod
- 13- -Ø.stroke.01V** VITON® seals
- 13- -Ø.stroke.01MA** Front spring
- 13- -Ø.stroke.01MP** Rear spring

This is the configuration that represents the basic cylinder according to ISO-VDMA standards. It can be directly anchored on machine parts using the four thread on the end cover. For other applications see the following pages where different types of attachments are shown.

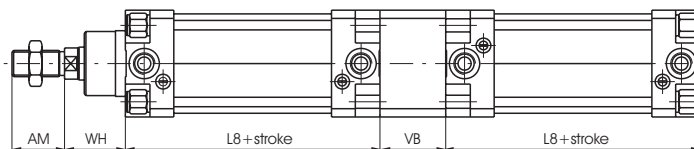
Push/Pull version



Ordering code

- 1319.Ø.stroke.02** magnetic chromed rod
- 1320.Ø.stroke.02** magnetic stainless steel chromed rod
- 1321.Ø.stroke.02** non magnetic chromed rod
- 13- -Ø.stroke.02V** VITON® seals
- 13- -Ø.stroke.02MA** Front spring
- 13- -Ø.stroke.02MP** Rear spring

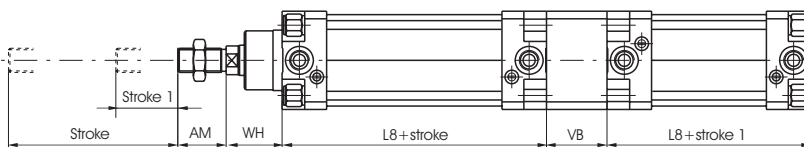
Tandem push with a common rod "G"



Ordering code

- 1319.Ø.stroke.G** magnetic chromed rod
- 1320.Ø.stroke.G** magnetic stainless steel chromed rod
- 1321.Ø.stroke.G** non magnetic stainless steel chromed rod

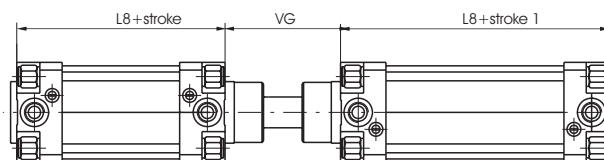
Tandem push with independent rods "F"



Ordering code

- 1319.Ø.stroke.stroke1.F** magnetic chromed rod
- 1320.Ø.stroke.stroke1.F** magnetic stainless steel chromed rod
- 1321.Ø.stroke.stroke1.F** non magnetic stainless steel chromed rod

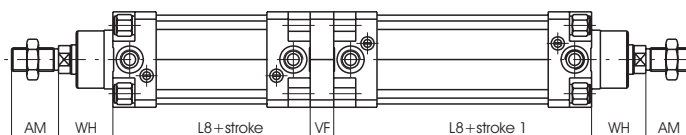
Opposed tandem with common rods "D"



Ordering code

1319.Ø.stroke.stroke1.D magnetic chromed rod
1320.Ø.stroke.stroke1.D magnetic stainless steel chromed rod
1321.Ø.stroke.stroke1.D non magnetic chromed rod

Tandem with opposed rods "E"



Ordering code

1319.Ø.stroke.stroke1.E magnetic chromed rod
1320.Ø.stroke.stroke1.E magnetic stainless steel chromed rod
1321.Ø.stroke.stroke1.E non magnetic chromed rod

Table of dimensions

Bore	32	40	50	63	80	100	125	160	200	
AM	22	24	32	32	40	40	54	72	72	
B (d 11)	30	35	40	45	45	55	60	65	75	
BG	12	12	16	16	20	20	20	24	24	
E	46	52	65	75	95	115	140	180	220	
EE	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 1/2"	G 1/2"	G 3/4"	G 3/4"	
G	25	29	29,5	36	36	40	45	49	49	
KK	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5	M27x2	M36x2	M36x2	
KV	17	19	24	24	30	30	41	55	55	
KW	6	7	8	8	9	9	12	18	18	
L 2	16	20	25	25	32	35	45	50	60	
L 8 *	94	105	106	121	128	138	160	180	180	
MM	12	16	20	20	25	25	32	40	40	
PL	9	11,5	13	14	16	18	19	24	25	
RT	M6	M6	M8	M8	M10	M10	M12	M16	M16	
SW	10	13	17	17	22	22	27	32	32	
TG	32,5	38	46,5	56,5	72	89	110	140	175	
VA	4	4	4	4	4	4	6	5	5	
VB	25	30	40	40	50	50	75	70	75	
VD	5	6	6	6	10	10	12	10	10	
VF	12	12	16	16	20	20	25	30	30	
VG	48	54	69	69	86	91	119	152	167	
WH	26	30	37	37	46	51	65	80	95	
Weight gr.	stroke 0	480	730	1150	1600	2800	3600	7800	15000	21500
	every 10 mm	25	32	56	60	90	100	140	265	325

"L8" dimensions for "rear spring" and "front spring"

Bore	32	40	50	63	80	100	125
L 8 (Stroke 51 ÷ 100)	134	150	151	166	183	193	230
L 8 (Stroke 101 ÷ 150)	174	195	196	211	238	248	300
L 8 (Stroke 151 ÷ 200)	214	240	241	256	293	303	370

General

These units are designed to automatically operate once started. They comprise a pneumatic cylinder 1319 series and a control valve. The control valve is fitted with two end-of-stroke pneumatic switches which are actuated by two flanges fitted onto a rod linked to the cylinder piston rod. The position of the two flanges, which can be moved in any position along the rod, determine the stroke of the actuator. The speed at which the unit travels can be adjusted via two flow regulators fitted onto the valve exhaust ports. Cylinders diameter 32 40 & 50 are fitted with 1/8" valves; cylinders diameter 63 80 & 100 are fitted with 1/4" valves.

The valves technical features are the same as the standard valves 228.52.11.11 for the 1/8" version and to 224/2.52.11.11 for the 1/4" version.

The end of stroke switches are derived from the 105.32.01. These units represent a complete system for the actuation of positive-displacement pumps for glue and paints.

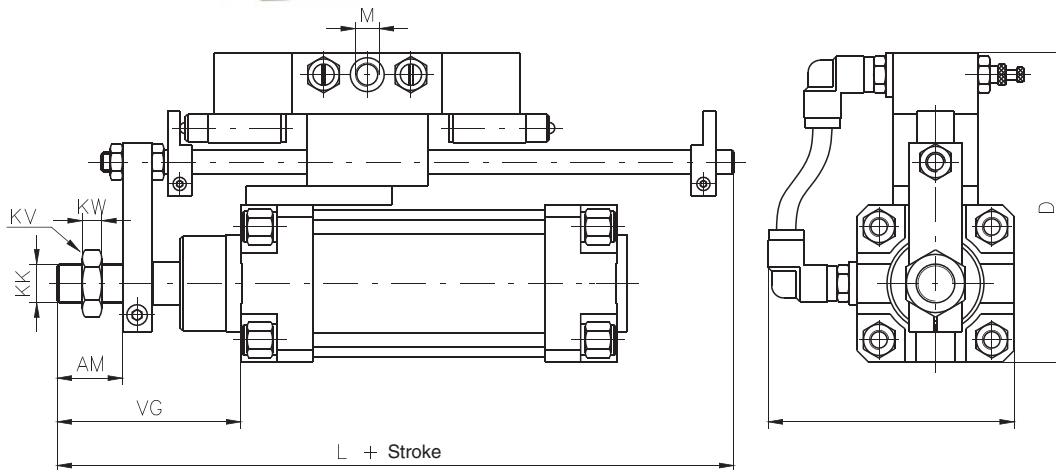


Table of dimension

Ordering code	Bore	AM	C	D	KK	KV	L	M	VG
1318.Ø.stroke.01	Ø32	22	83	108	M10x1,25	17	215	G1/8	57
	Ø40	24	90	115	M12x1,25	19	219		61
	Ø50	32	105	128	M16x1,5	24	232		73
	Ø63	32	120	138	M16x1,5	24	255	G1/4	76
	Ø80	40	140	158	M20x1,5	30	268		91
	Ø100	40	175	178	M20x1,5	30	278		96

Technical characteristics

Fluid	filtered and preferably lubricated air
Pressure	10 bar
Operating temperature	-5°C ÷ +70°MITON® +150°C)
Bore	Ø 32 - 40 - 50 - 63 - 80 - 100 - 125 - 160 - 200
Cushioning length	mm 28 - 32 - 32 - 40 - 44 - 50 - 55 - 55 - 55

For cylinder see pag. 4.57

Spare parts	Code
Valve G 1/8"	228.52.110.110
Valve G 1/4"	214/2.52.110.110

Cylinder with locking device

Ordering code

1337.Ø.stroke.01
magnetic chromed rod

1338.Ø.stroke.01
magnetic stainless steel
chromed rod

1339.Ø.stroke.01
non magnetic
chromed rod



General

This cylinder, with integral locking device combines the standard ISO 1319-1320-1321 cylinder and a new locking system which allows the rod to be stopped in any position along the stroke.

The rod lock is based upon an eccentric mechanism, operated by a spring, which can be unlocked pneumatically. This design assures almost zero backlash and application of the rod lock in the event of a pressure drop.

This unit can not be considered a safety device.

The locking force is higher than that generated by the cylinder at 6 bar. However, we recommend that the cylinder speed is reduced before applying the lock and that the pressure either side of the cylinder piston is equal while the cylinder is locked.

This device only prevents linear movement and will not prevent rotation of the rod.

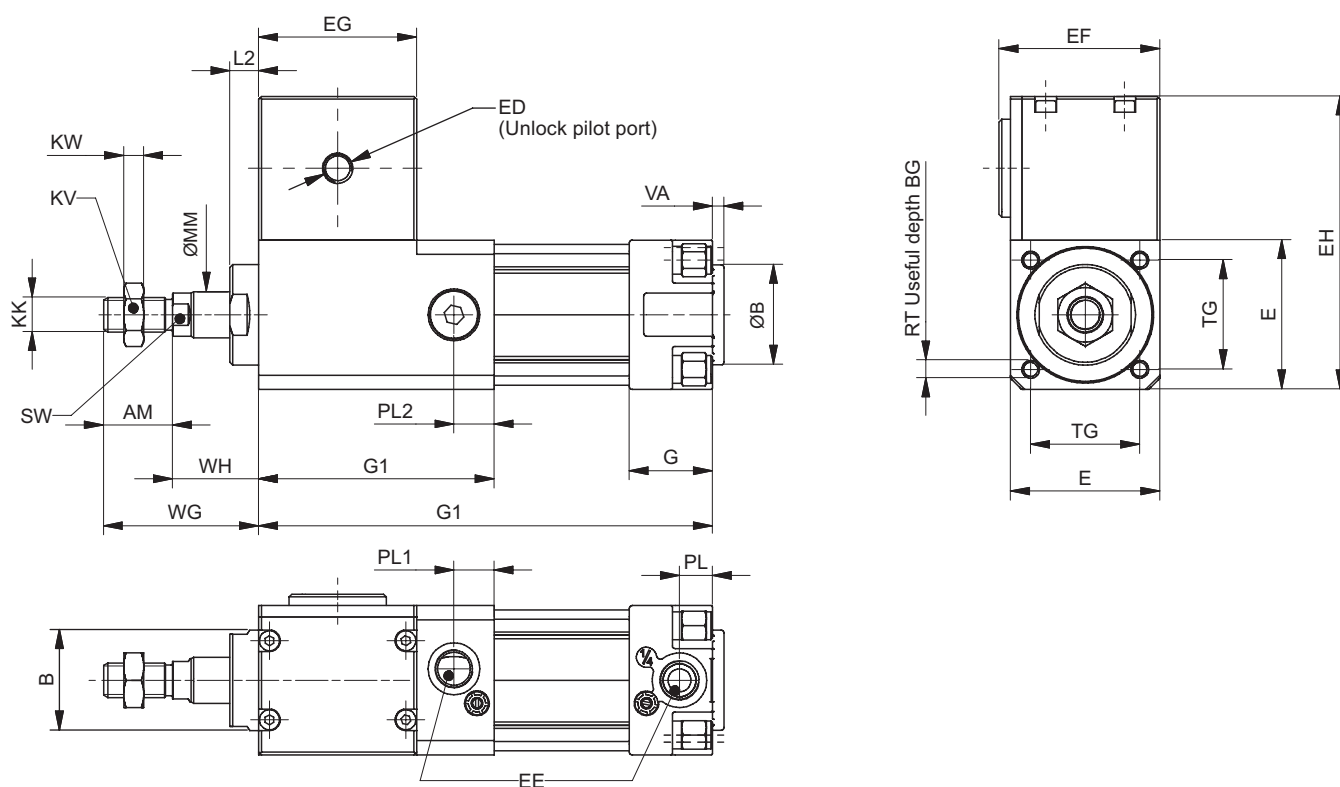
Technical characteristics

Fluid	filtered and lubricated air
Working temperature	-5°C ÷ +70°C
Locking	spring or pneumatic plus spring (in the rest condition the lock is normally closed)
Pneumatic unlocking	Ø 32 - 40 - 50 - 63 - 80
P. min. (bar)	bar 3,5 - 4 - 5,5
Clamping force	Ø 32 - 40 - 50 - 63 - 80 (N) 600 - 1000 - 1400 - 2300 - 4400

Construction characteristics

Cover and block body	anodized aluminium
Rear cover	aluminium alloy casting UNI 5079
Rod	C43 chromed steel AISI 303 stainless steel chromed
Barrel	anodized aluminium
Bushing cushion	hard aluminium
Bearing Piston rod	bronze
Eccentric	bronze
Piston cylinder	vulcanized NBR 80 shore rubber monobloc on steel core with incorporated plastoferrite permanent magnet for the non magnetic version vulcanized NBR 80 shore rubber monobloc on steel core plus rear spacer
Block piston	acetal resin
Rod seal and cushion seal	self-lubricating 90 Shore hardness polyurethane
Others seals	rubber NBR 80 Shore
Cushioning adjustment screws	brass

Dimensions



Pneumatic drawing

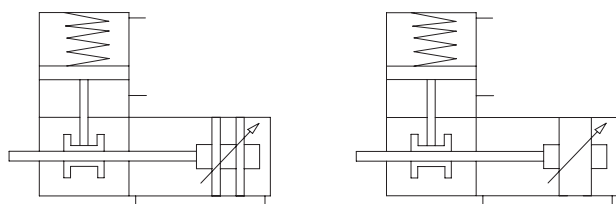


Table of dimensions

Bore	32	40	50	63	80
AM	22	24	32	32	40
B(e11)	30	35	40	45	45
BG	12	12	16	16	20
E	46	52	65	75	95
EE	G1/8"	G1/4"	G1/4"	G3/8"	G3/8"
EF	47	56	65	65	95
EG	45	55	55	55	70
EH	91	102	115	125	155
G	25	29	29,5	36	36
G1	73	82	99,5	106	126
KK	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5
KV	17	19	24	24	30
L2	10	10	12	12	20
L8	142	158	176	191	218
MM	12	16	20	20	25
PL	9	11,5	13	14	16
PI1	10	14	14	14	20
PI2	10	14	14	14	20
RT	M6	M6	M8	M8	M10
SW	10	13	17	17	22
TG	32,5	38	46,5	56,5	72
VA	4	4	4	4	4
VG	48	54	69	69	76
WH	26	30	37	37	36