Series 1319-1320-1321

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.

Construction characteristics

End caps	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	stainless steel or C43 chromed steel
Barrel	oxidised aluminium
Cushion bushings	hardened aluminium
Rod-guide bushing	self-lubricating sintered bronze
Piston	vulcanized rubber block on steel core with incorporated plastoferrite permanent magnet, or without magnet for non magnetic version (plus rear spacer).
Seals	standard: NBR Oil resistant rubber, PUR Piston rod and cushion seals (FPM seals available upon request)
Cushion adjustment screws	brass

Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.									
Pressure	max. 10 bar									
Operating temperature	-5 °C - +70 °C with standard seals (magnetic or non magnetic piston) -5 °C - +80 °C with FPM seals for 1319 and 1320 series (magnetic piston) -5 °C - +150 °C with FPM seals for 1321 series (non magnetic piston)									
Cushioning length	Ø	32	40	50	63	80	100	125	160	200
	mm	28	32	32	40	44	50	55	55	55

Please follow the suggestions below to ensure a long life for these cylinders:
- use clean and lubricated air
- correct alignment during assembly with regard to the applied load so as to avoid radial components or bending the rod.
- avoid high speeds together with long strokes and heavy loads: this would produce kinetic energy which the cylinder cannot absorb, especially if used as a limit stop (in this case use mechanical stop device)
- evaluate the environmental characteristics of cylinder used (high temperature, hard atmosphere, dust, humidity etc.)

Please note: air must be dried for applications with lower temperature.
Use hydraulic oils H class (ISO VG32) for correct continued lubrication.
Our Technical Department will be glad to help.

Standard strokes (for all diameters)

Double acting version

from 0 to150, every 25 mm
over 150 up to 500, every 50 mm
over 500 up to 1000, every 100 mm

On request are available strokes up to 2800 mm

Single acting version

From Ø32 to Ø125, up to stroke 50 mm
On request are available strokes up to 200 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

Minimum and maximum springs load for single acting version

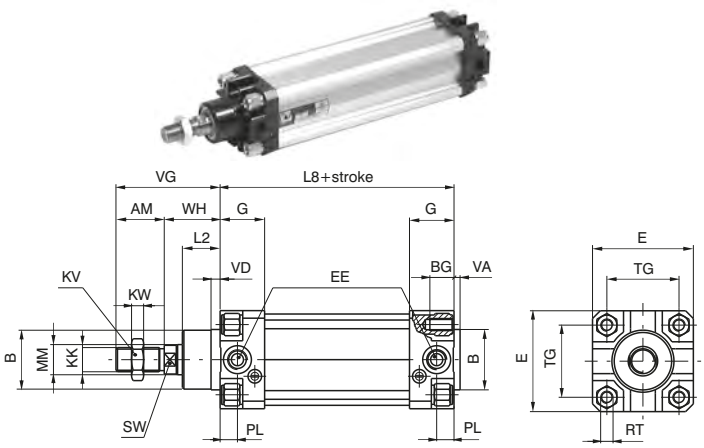
Bore	Ø32	Ø40	Ø50 - Ø63	Ø80 - Ø100	Ø125
Min. load (N)	15	25	50	100	150
Max. load (N)	40	80	115	200	250

Basic version "01"

Ordering code
1319.Ø.stroke.01 magnetic chromed rod **1320.Ø.stroke.01** magnetic stainless steel rod **1321.Ø.stroke.01** non magnetic chromed rod **13– –.Ø.stroke.01V** FPM seals **13– –.Ø.stroke.01MA** Front springs (Ø32-Ø125)* **13– –.Ø.stroke.01MP** Rear springs (Ø32-Ø125)*

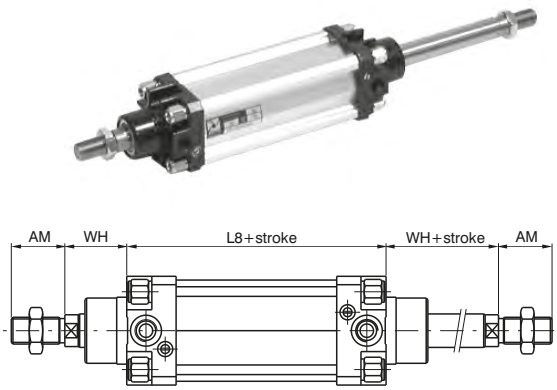
* Max. stroke 50

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 cap. For other applications see the following pages where different types of attachments are shown.



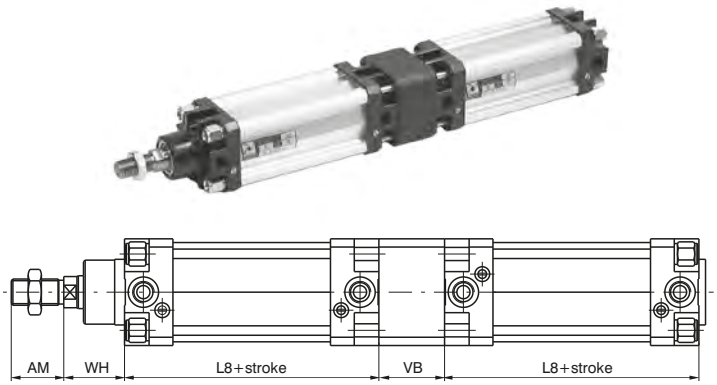
Through rod cylinder version "02"

Ordering code
1319.Ø.stroke.02 magnetic chromed rod **1320.Ø.stroke.02** magnetic stainless steel rod **1321.Ø.stroke.02** non magnetic chromed rod **13– –.Ø.stroke.02V** FPM seals



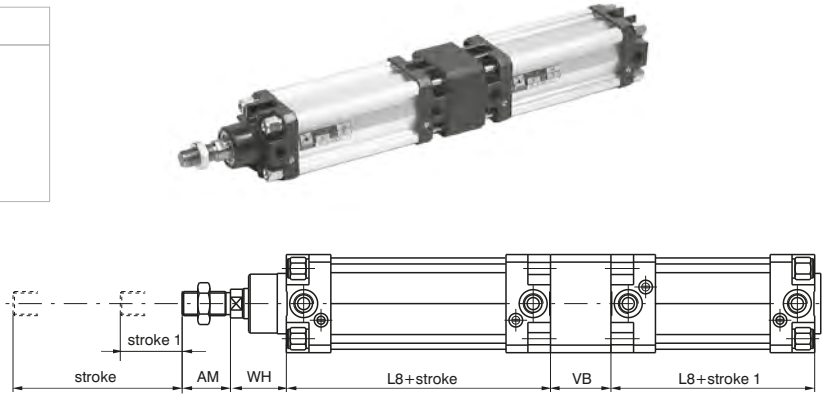
Tandem push with a common rods “G”

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



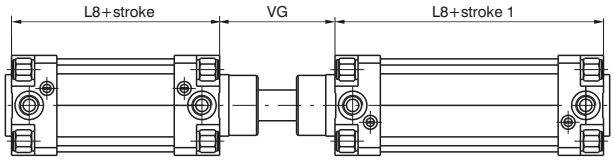
Tandem push with independent rods”F”

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



Opposed tandem with common rod "D"

Ordering code
1319.Ø.stroke.stroke1.D magnetic chromed rod **1320.Ø.stroke.stroke1.D** magnetic stainless steel 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 rod **1321.Ø.stroke.stroke1.E** non magnetic chromed rod

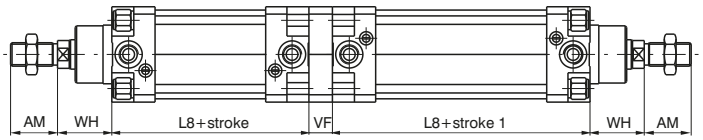


Table of dimensions

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		14	14	16	16	21	21	23	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
L2		16	20	25	25	32	35	45	50	60
L8*		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	Stroke 0	480	730	1150	1600	2800	3600	7800	15000	21500
g	every 10 mm	25	32	56	60	90	100	140	265	325

* For strokes over 50mm, the length does not increase proportionally to the stroke, and allowance must be made for adequate spring allocation (see table of L8 dimensions).

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

Bore	32	40	50	63	80	100	125
L8 (Stroke 51 ÷ 100)	134	150	151	166	183	193	230
L8 (Stroke 101 ÷ 150)	174	195	196	211	238	248	300
L8 (Stroke 151 ÷ 200)	214	240	241	256	293	303	370

Series 1348-1349-1350, Non rotating cylinders

Construction characteristics

End caps	UNI 5079 aluminium alloy casting painted black by cataphoresis
Rod	C43 chromed steel Ra = 0.2
Barrel	UNI 9006/1 aluminium alloy square section, hardened 30 micron oxidate
Cushion bushings	2011 UNI 9002/5 hardened alloy aluminium
Piston	polyacetal resin, self-lubricated and anti-wear, with plastoferrite rings in magnetic version
Piston seals	NBR oil-resistant rubber, PUR Piston rod and cushion seals
Cushioning adjustement screw	brass

Technical characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Pressure	10 bar
Operating temperature	-5°C - +70°C

Please follow the suggestions below to ensure a long life for these cylinders:
- use clean and lubricated air
- correct alignment during assembly with regard to the applied load so as to avoid radial components or bending the rod.
- avoid high speeds together with long strokes and heavy loads: this would produce kinetic energy which the cylinder cannot absorb, especially if used as a limit stop (in this case use mechanical stop device)
- evaluate the environmental characteristics of cylinder used (high temperature, hard atmosphere, dust, humidity etc.)

Please note: air must be dried for applications with lower temperature.
Use hydraulic oils H class (ISO VG32) for correct continued lubrication.
Our Technical Department will be glad to help.

Bore	Usable surface (square profile) cm^2	Max couple on the rod (max torque) Nm	Grade precision (rest rod, without load) anti-rotation	Cushion length mm.
32	8.31	0.5	12'	22
40	12.41	0.8	12'	27
50	18.41	1.1	12'	27
63	29.67	1.5	12'	32

Standard strokes (for all diameters)

from 0 to 150, every 25 mm
Other stroke for these following bores:
Ø 32 80 mm **Ø 40** 80 - 160 mm **Ø 50** 80 - 160 - 200 - 250 mm **Ø 63** 80 - 160 - 200 - 300 - 320 mm

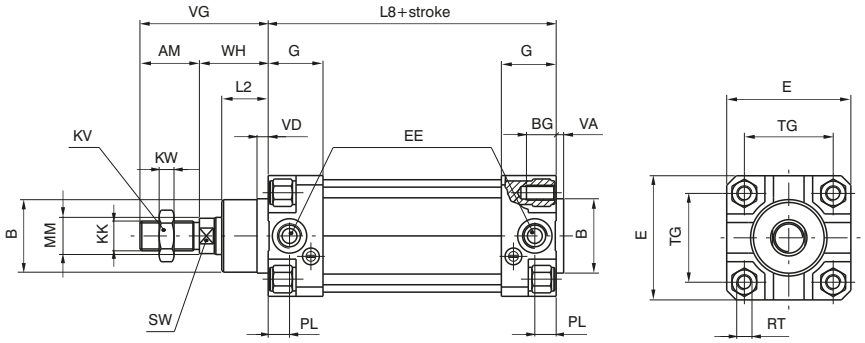
On request are available strokes up to 1000 mm

Stroke Tolerance (ISO 15552)

Bore	Stroke	Tolerance
32 - 40 - 50 - 63	up to 500	$^{+2}_{0}$

Basic version

Ordering code
1348.Ø.stroke.01 magnetic chromed rod **1349.Ø.stroke.01** magnetic stainless steel rod **1350.Ø.stroke.01** non-magnetic chromed rod

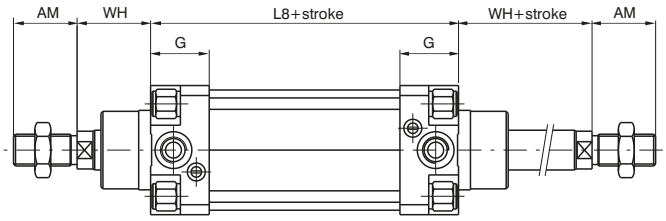


Bore		32	40	50	63
AM		22	24	32	32
B (d 11)		30	35	40	45
BG		12	12	16	16
E		46	52	65	75
EE		G 1/8"	G 1/4"	G 1/4"	G 3/8"
G		25	29	29,5	36
KK		M10x1,25	M12x1,25	M16x1,5	M16x1,5
KV		17	19	24	24
KW		6	7	8	8
L 2		16	20	25	25
L 8		94	105	106	121
MM		12	16	20	20
PL		9	11,5	13	14
RT		M6	M6	M8	M8
SW		10	13	17	17
TG		32,5	38	46,5	56,5
VA		4	4	4	4
VD		5	6	6	6
VG		48	54	69	69
WH		26	30	37	37
Weight	stroke 0	505	705	1320	1710
g	every 10 mm	24	33	53	58

This is the configuartion that represents the basic cylinder according to ISO standards. It can be directly anchored on machine parts using the four threads on the end cap. For other applications see the following pages where different types of attachments shown.

Through rod cylinder version

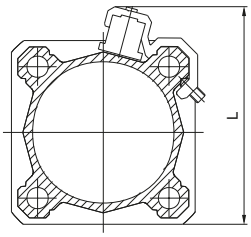
Ordering code
1348.Ø.stroke.02 magnetic chromed rod **1349.Ø.stroke.02** magnetic stainless steel rod **1350.Ø.stroke.02** non-magnetic chromed rod



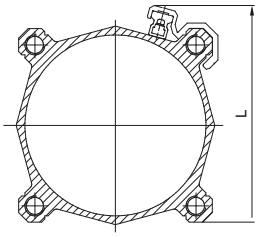
Sensor brackets

Sensor brackets codes 1500._, RS._, HS._	Sensor brackets codes 1595.HAP	Bore	L
Code	Code		
1320.A	1320.ASC	Ø32	60
		Ø40	65
1320.B	1320.BSC	Ø50	77
		Ø63	87
1320.C	1320.CSC	Ø80	105
		Ø100	125
1320.D	1320.DSC	Ø125	145
1320.E	1320.ESC	Ø160	184
1320.F	1320.FSC	Ø200	222

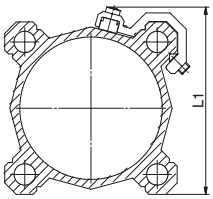
Sensor brackets codes 1580._, MRS._, MHS._		
Code	Bore	L1
1320.AS	Ø32	48
	Ø40	54
1320.BS	Ø50	66
	Ø63	76
1320.CS	Ø80	96
	Ø100	112
1320.DSC	Ø125	145
1320.ESC	Ø160	184
1320.FSC	Ø200	222



Sensors 1500._,RS._,HS._



Sensors 1595.HAP

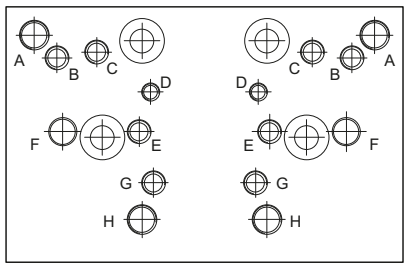


Sensors 1580._, MRS._, MHS._

Sensors for microbore cylinders: for technical characteristics and ordering codes see "Magnetic sensors" section

Solenoid valves supports

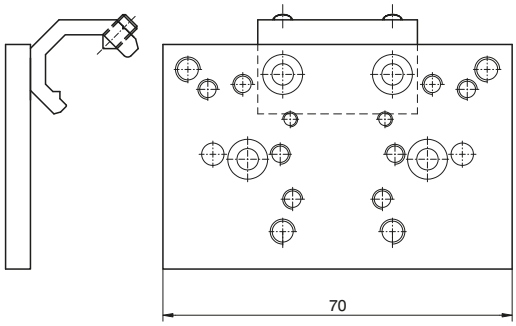
This accessory permits to mount a valve or an electrovalve on a side of the cylinder. The plate can be fitted on the cylinder profiled barrel, and, on it, can be mounted either a threaded distributor or a base on whic can be mounted an ISO distributor. Once installed the connections must be done with fittings and pipes. All of the threaded holes on the support plate are dedicated to different valves series as per attached drawing.



Fixing holes for valves series:

A = 414/2
B = 824
C = 828, T488, 488, 484
D = 2400
E = 2600
F = Bases for ISO distributors
G = 858/2
H = T424

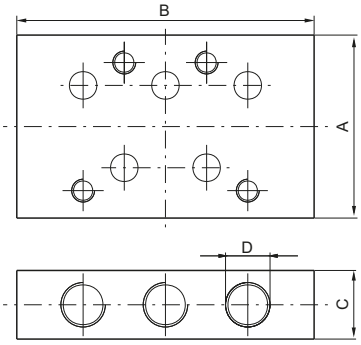
Ordering code
1320.15 (Ø32 - Ø40)
1320.16 (Ø50 - Ø63)
1320.17 (Ø80 - Ø100)
1320.18 (Ø125)
1320.19 (Ø160)
1320.20 (Ø200)



Bases for ISO solenoid valves

Ordering code

1320.21	bases for ISO 1 solenoid valves
1320.22	bases for ISO 2 solenoid valves



		Dimensions			
		A	B	C	D
1320.21	bases for ISO 1 solenoid valves	40	75	15	G 1/8"
1320.22	bases for ISO 2 solenoid valves	50	95	20	G 1/4"