



## Series 1319-1320-1321

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

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

### Operational characteristics

Fluid	filtered and lubricated air
Pressure	max. 10 bar
Working 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 lenght	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.

### Standard strokes (for all diameters)

#### Double acting version

from 0 to 150, 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 32 to 125, 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 mm	+2 0
	over 500 up to 1000	+3,2 0
63-80-100	up to 500 mm	+2,5 0
	over 500 up to 1000	+4 0
125-160-200	up to 500 mm	+4 0
	over 500 up to 1000	+5 0

### Minimum and maximum springs load (stroke 0 ... 50mm)

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

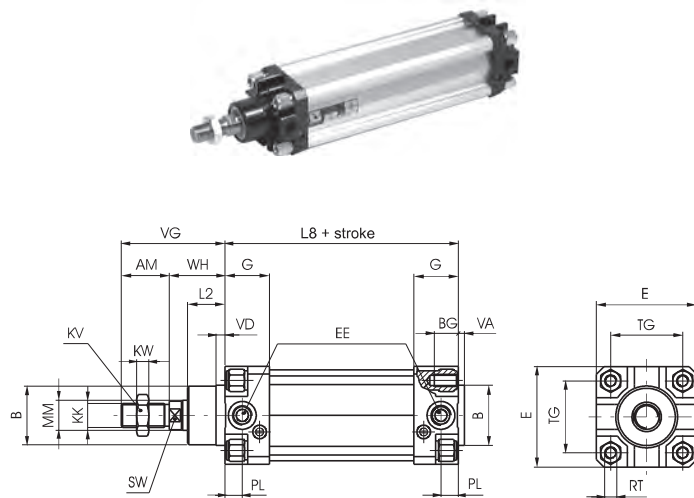
**Basic version "01"**

Coding: 13V.Ø.stroke.01G<sup>Ⓜ</sup>

V	VERSION
	19 = Magnetic chromed rod
	20 = Magnetic stainless steel rod
	21 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	... 200 = Ø200
G	SEALS
	= Standard seals V = FPM seals
M	SPRING
	= Double acting MA = Front springs (Ø32 ... Ø125)* MP = Rear springs (Ø32 ... Ø125)*

\* max. stroke 50

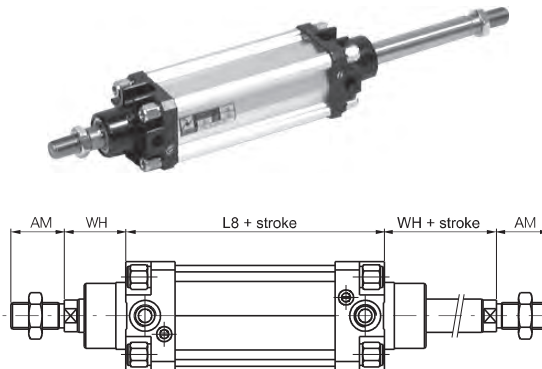
This is the configuration that represents the basic cylinder according to ISO-VDMA standards. It can be directly anchored on machine parts using the four thread on the end cap. For other applications see the following pages where different types of attachments are shown.



**Through rod cylinder version "02"**

Coding: 13V.Ø.stroke.02G

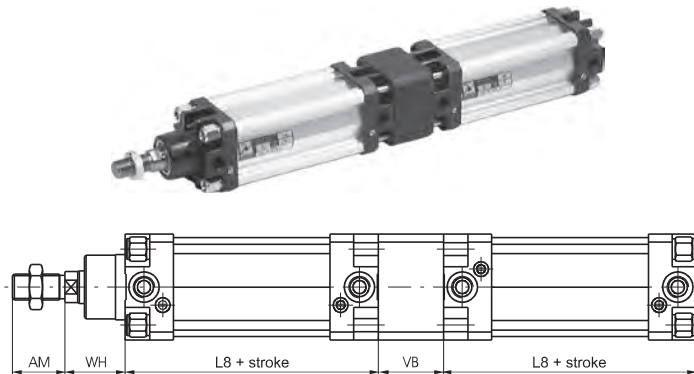
V	VERSION
	19 = Magnetic chromed rod
	20 = Magnetic stainless steel rod
	21 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	... 200 = Ø200
G	SEALS
	= Standard seals V = FPM seals



**Tandem push with a common rods "G"**

Coding: 13V.Ø.stroke.G

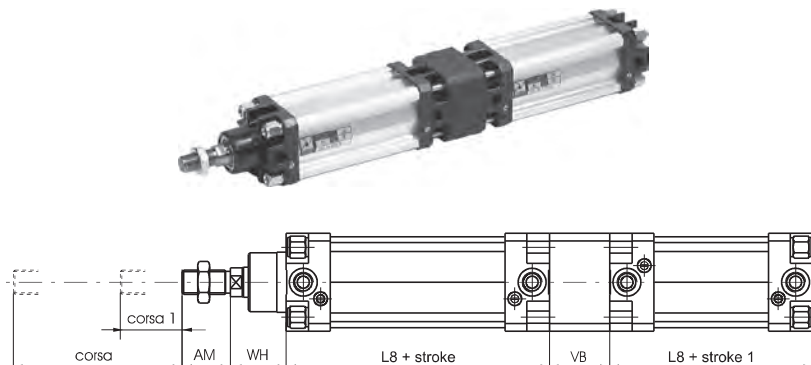
V	VERSION
	19 = Magnetic chromed rod
	20 = Magnetic stainless steel rod
	21 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	... 200 = Ø200



**Tandem push with independent rods "F"**

Coding: 13V.Ø.stroke.stroke1.F

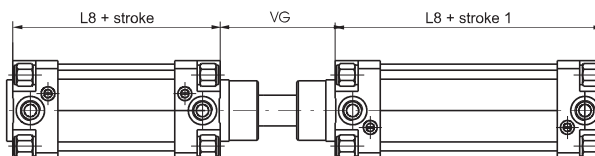
V	VERSION
	19 = Magnetic chromed rod
	20 = Magnetic stainless steel rod
	21 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	... 200 = Ø200



► **Opposed tandem with common rod "D"**

Coding: 13V.Ø.stroke.stroke1.D

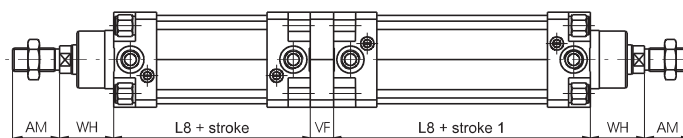
V	VERSION
	19 = Magnetic chromed rod
	20 = Magnetic stainless steel rod
	21 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	...
	200 = Ø200



► **Tandem with opposed rods "E"**

Coding: 13V.Ø.stroke.stroke1.E

V	VERSION
	19 = Magnetic chromed rod
	20 = Magnetic stainless steel rod
	21 = Non magnetic chromed rod
Ø	BORE
	32 = Ø32
	40 = Ø40
	...
	200 = Ø200



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PNEUMATIC ACTUATION

**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 g	Stroke 0	480	730	1150	1600	2800	3600	7800	15000	21500
	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