

General

These cylinders are built according to ISO 21287 standards. New barrel profile has two sensor slots on the three sides (Ø20 and Ø25 one slot) suitable for sensors 1580., MRS., MHS. series housing, without need for adaptors. Versions with end stroke adjustable pneumatic cushioning are also available, allowing adjustments to deceleration and keeping the required overall dimensions according to ISO 21287. For fixing operation is possible to use the four threaded holes on the end covers, or screws in body holes, alternatively all the fixing devices of UNITOP RU-P/6-P/7 (Ø20 and Ø25) and ISO 15552 (from Ø32 to Ø100) series.

Construction characteristics

Body	anodised aluminium
End cap	aluminium alloy casting painted
Bearing piston rod	sintered bronze
Piston rod	from Ø20 to Ø25 stainless steel from Ø32 to Ø100 C43 chromed (on request stainless steel)
Half-piston	from Ø20 to Ø63 acetal resin, Ø80 and Ø100 aluminium (with FPM seals, aluminium piston for all diameters)
Seals	Standard: NBR Oil resistant rubber, PUR Piston rod seals (PUR or FPM seals available upon request)
Spring	stainless steel
Fixing screws	plated zinc steel

Technical characteristics

Fluid	filtered and preferably lubricated air, or non-lubricated (if air is lubricated, the lubrication must be constant)
Max. pressure	10 bar
Operating temperature	-5°C - +70°C with standard seals (magnetic or non magnetic piston)
	-30°C - +80°C with PUR seals (magnetic or non magnetic piston)
	-5°C - +80°C with FPM seals (magnetic piston)
	-5°C - +150°C with FPM seals (non magnetic piston)

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.

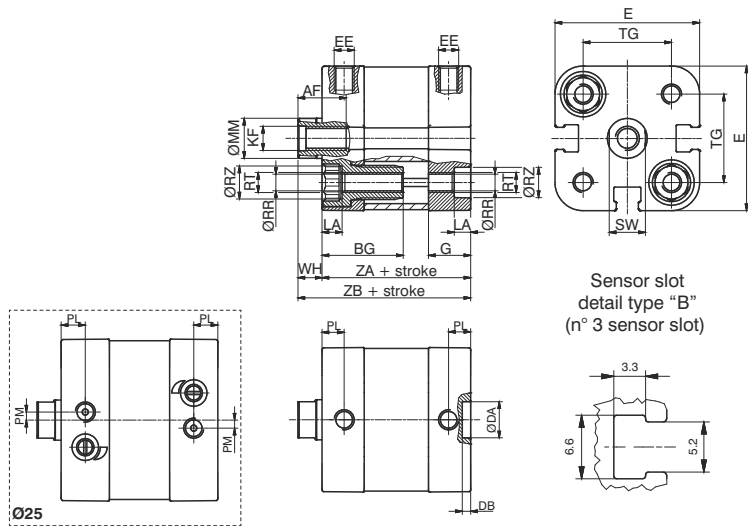
Stroke tolerance, minimum and maximum spring loads and cushioning length

Bore (mm)	Stroke tolerance (mm)	Minimum and maximum springs load (N)		Cushioning length (mm)
		min.	max.	
Ø20	+1.5 / 0 mm	10.8	19.6	/
		16.7	22.6	5
Ø32	+2 / 0 mm	19.6	25.5	6.5
		25.5	42.2	8
		44.1	96.3	7.5
Ø63	+2.5 / 0mm	44.1	96.3	7.5
		63.8	100.1	8
Ø100		107.9	193.3	12

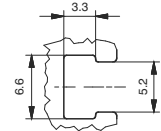
BASIC version
double and single acting



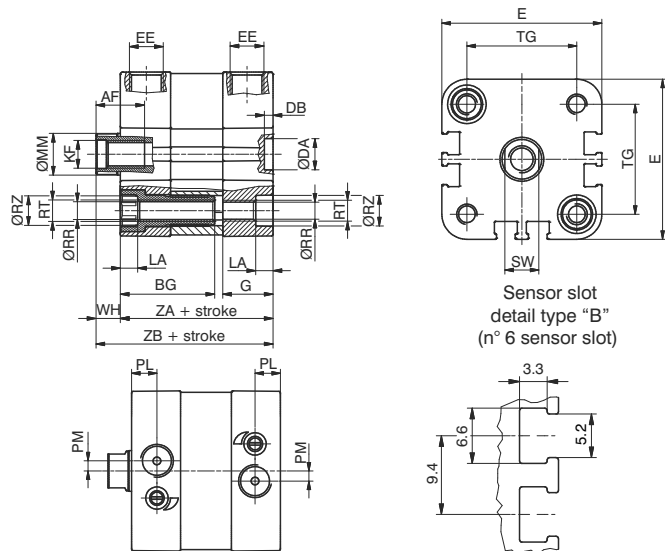
Ø20 and Ø25



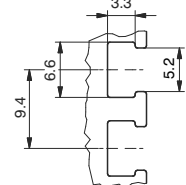
Sensor slot detail type "B" (n° 3 sensor slot)



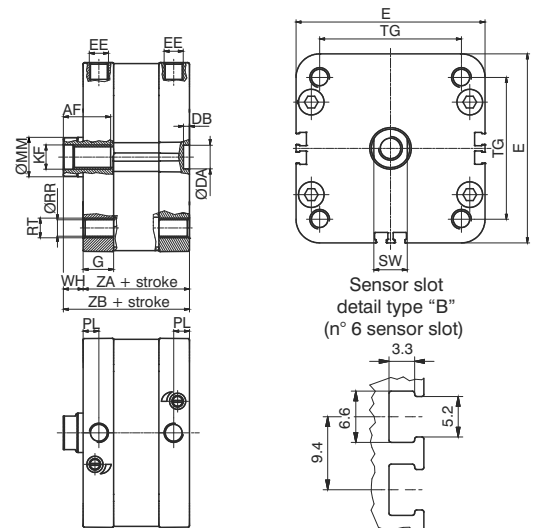
from Ø32 to Ø63



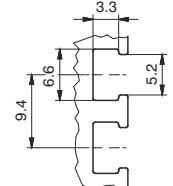
Sensor slot detail type "B" (n° 6 sensor slot)



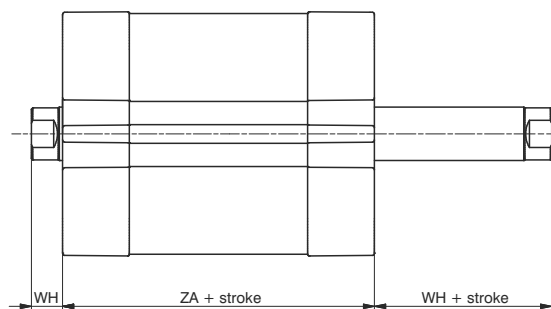
Ø80 and Ø100



Sensor slot detail type "B" (n° 6 sensor slot)

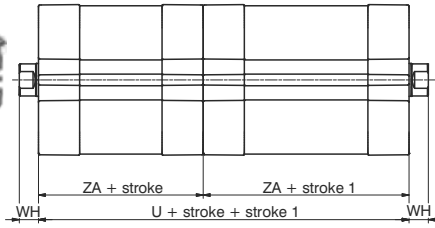


PUSH/PULL rod version
double and single acting

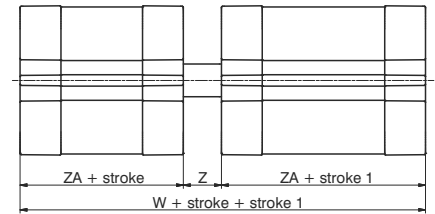




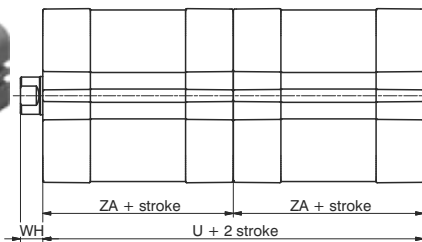
TANDEM version



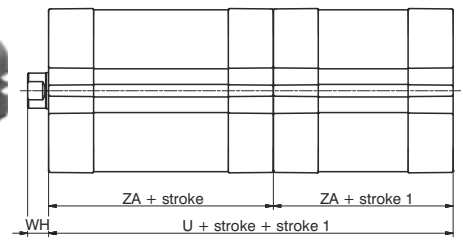
Tandem with opposed rods



Opposed tandem with common rods



Tandem push with common rod



Tandem push with independent rod

Ordering code

Basic and push/pull version

15 . Ø . stroke .

- 1 = magnetic piston, Double acting
 - 2 = magnetic piston, Single acting with front spring
 - 3 = magnetic piston, Single acting with rear spring
 - 4 = non magnetic piston, Double acting
 - 5 = non magnetic piston, Single acting with front spring
 - 6 = non magnetic piston, Single acting with rear spring
 - 01 = Base, female threaded rod
 - 02 = Base, male threaded rod
 - 03 = through rod, female threaded rod
 - 04 = through rod, male threaded rod
 - 05 = through rod, bored female threaded rod
 - 06 = through rod, bored male threaded rod
 - 07 = With non-rotating device
 - 08 = through rod, female threaded rod, with non-rotating device on one side
 - 09 = through rod, male threaded rod, with non-rotating device on one side
 - 0 = NBR seals and C43 chromed plated rod *
 - 1 = NBR seals and stainless steel rod (starting from bore Ø32)
 - 4 = PUR seals and C43 chromed plated rod *
 - 5 = PUR seals and stainless steel rod (starting from bore Ø32)
 - 6 = FPM seals and C43 chromed plated rod *
 - 7 = FPM seals and stainless steel rod (starting from bore Ø32)
- * (Ø20 and Ø25 stainless steel)
- 4 = Non-cushioned version (mechanical cushioning only)
 - 5 = Versions with adjustable end of stroke cushioning system (from Ø25)

TANDEM version (magnetic pistons)

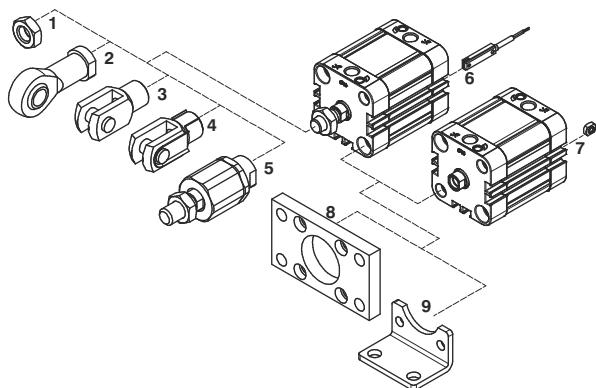
15 . Ø . stroke . (stroke 1) .

- C = female threaded rod
 - G = male threaded rod
 - H = with through rod and female threaded rod
 - R = with through rod and male threaded rod
 - N = with non-rotating device
 - B = female threaded rod
 - F = male threaded rod
 - M = with non-rotating device
 - P = with through rod and female threaded rod
 - Q = with through rod and male threaded rod
 - D = **Opposed tandem with common rod**
 - A = female threaded rod
 - E = male threaded rod
 - L = with non-rotating device on both ends
- Tandem push with common rods**
- Tandem push with independent rods**
- Tandem with opposite rods**
- 0 = NBR seals and C43 chromed plated rod *
 - 1 = NBR seals and stainless steel rod (starting from bore Ø32)
 - 4 = PUR seals and C43 chromed plated rod *
 - 5 = PUR seals and stainless steel rod (starting from bore Ø32)
 - 6 = FPM seals and C43 chromed plated rod *
 - 7 = FPM seals and stainless steel rod (starting from bore Ø32)
- * (Ø20 and Ø25 stainless steel)
- 4 = Non-cushioned version (mechanical cushioning only)
 - 5 = Versions with adjustable end of stroke cushioning system (from Ø25)

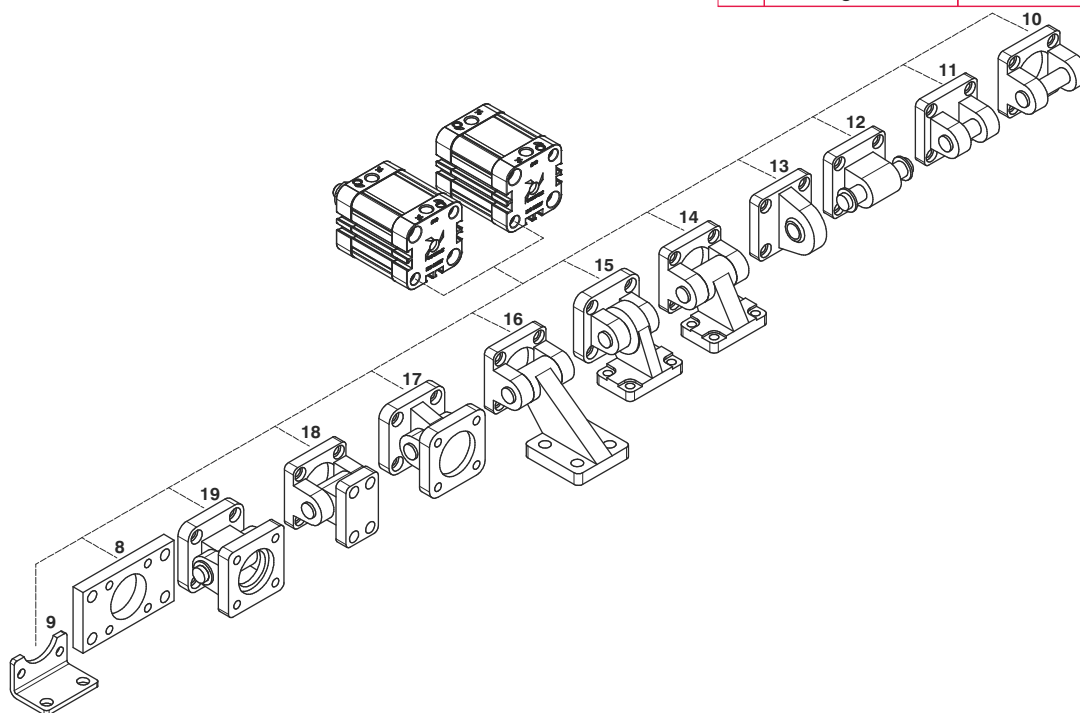
Seals compounds scheme: **NBR** oil resistant nitrilic rubber
PUR: polyurethane seals **FPM**: fluoropolymer rubber seals

Table of dimensions

	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
Bore	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
AF (min)	12	12	14	14	18	18	24	24
BG	20	20	16	16	16	16	/	/
DA (H9) Ø	9	9	9	9	12	12	12	12
DB (+0.1/0)	2.1	2.1	2.5	2.5	2.6	2.6	3	3
E (max)	36	40.5	47.5	55	66	78	96	116
EE	M5	M5	G1/8	G1/8	G1/8	G1/8	G1/8	G1/8
G	10.5	12	14.5	15	15	15	15.5	18.5
KF	M6	M6	M8	M8	M10	M10	M12	M12
LA (0/-0.1)	4.1	4.1	5	5	5	5	/	/
MM (f 7) Ø	10	10	12	12	16	16	20	25
PL (+0.1/0)	5.5	6	7.5	8	8	8	8	8
PM	/	2	3	/	/	/	/	/
RR (min) Ø	4.1	4.1	5.1	5.1	6.6	6.6	8.4	8.4
RT	M5	M5	M6	M6	M8	M8	M10	M10
RZ (min) Ø	7.5	7.5	8.5	8.5	10.5	10.5	/	/
SW (0/-0.1)	9	9	10	10	13	13	17	22
TG (±0.2)	22	26	32.5	38	46.5	56.5	72	89
U	74	78	88	90	90	98	108	134
W	83	89	100	103	105	113	124	154
WH (±1)	6	6	7	7	8	8	10	10
Z	9	11	12	13	15	15	16	20
ZA (±0.5)	37	39	44	45	45	49	54	67
ZB (+1/0)	43	45	51	52	53	57	64	77
Weight stroke	105	110	200	270	420	550	760	1400
gr. every 5mm	10	10.5	13	17	23.5	27	37	51


Sensor and piston rod accessories

Pos.	Description	Ordering code	
1	Rod lock nut	1200.20.06	(Ø20-Ø25)
		1320.32.18F	(Ø32-Ø40)
		1320.40.18F	(Ø50-Ø63)
		1320.50.18F	(Ø80-Ø100)
2	Ball joint	1200.20.32F	(Ø20-Ø25)
		1320.32.32F	(Ø32-Ø40)
		1320.40.32F	(Ø50-Ø63)
		1320.50.32F	(Ø80-Ø100)
3	Fork	1200.20.04	(Ø20-Ø25)
		1320.32.13F	(Ø32-Ø40)
		1320.40.13F	(Ø50-Ø63)
		1320.50.13F	(Ø80-Ø100)
4	Fork with clips	1200.20.04/1	(Ø20-Ø25)
		1320.32.13/1F	(Ø32-Ø40)
		1320.40.13/1F	(Ø50-Ø63)
		1320.50.13/1F	(Ø80-Ø100)
5	Self-aligning joint	1200.20.33F	(Ø20-Ø25)
		1320.32.33F	(Ø32-Ø40)
		1320.40.33F	(Ø50-Ø63)
		1320.50.33F	(Ø80-Ø100)
6	Sensors	(See chapter 6 magnetic sensors)	
7	Valves direct mounting bolt	1500.20F	(Ø20 - Ø100)


Fixing

Pos.	Description	Ordering code	
		Aluminium	Steel
8	Flange (Mp2)	/	1540.Ø.03F (Ø20 - Ø25) 1380.Ø.03F (Ø32 - Ø100)
9	Foot (MS1)	/	1540.Ø.05/1F (Ø20 - Ø100)
10	Rear female clevis (MP2)	1380.Ø.09F (Ø32 - Ø100)	1320.Ø.20F (Ø32 - Ø100)
11	Narrow rear female trunnion (AB6)	1380.Ø.30F (Ø32 - Ø100)	1320.Ø.29F (Ø32 - Ø100)
		1580.Ø.09/1F (Ø20 - Ø25) 1380.Ø.09/1F (Ø32 - Ø100)	1580.Ø.09/2F (Ø20 - Ø25) 1320.Ø.21F (Ø32 - Ø100)
12	Rear male clevis (MP4)	1380.Ø.15F (Ø32 - Ø100)	1320.Ø.25F (Ø32 - Ø100)
13	Rear male clevis (with jointed head - MP6)	1380.Ø.15F (Ø32 - Ø100)	1320.Ø.25F (Ø32 - Ø100)
14	Square angle trunnion (AB7)	1380.Ø.35F (Ø32 - Ø100)	1320.Ø.23F (Ø32 - Ø100)
15	Square angle trunnion (with jointed head)		1320.Ø.27F (Ø32 - Ø100)
16	Square angle trunnion (not specified by ISO 15552)	1380.Ø.11F (Ø32 - Ø100)	/
17	Standard trunnion (with jointed head)	1380.Ø.36F (Ø32 - Ø100)	1320.Ø.26F (Ø32 - Ø100)
18	Standard trunnion (not specified by ISO 15552)	1380.Ø.10F (Ø32 - Ø100)	/
19	Complete standard trunnion	/	1320.Ø.22F (Ø32 - Ø100)