



Series 1500 Ecompact

These cylinders are built according to ISO 21287 standards. New barrel profile has two sensor slots on the three sides ($\varnothing 20$ and $\varnothing 25$ 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 ($\varnothing 20$ and $\varnothing 25$) and ISO 15552 (from $\varnothing 32$ to $\varnothing 100$) series.

Construction characteristics

Body	anodized aluminium
Piston rod bushings	sintered bronze
Seals	standard: NBR Oil resistant rubber, PUR Piston rod seals (PUR or FPM on request)
Springs	stainless steel
Pistons	from $\varnothing 20$ to $\varnothing 40$ acetal resin (aluminium on request), $\varnothing 50$ and $\varnothing 100$ aluminium (with FPM seals, aluminium piston for all standard diameters)
Piston rod	from $\varnothing 20$ to $\varnothing 25$ stainless steel from $\varnothing 32$ to $\varnothing 100$ C43 chromed (on request stainless steel)
End caps	aluminium alloy casting painted
Fixing screws	zinc plated steel

Operational characteristics

Fluid	filtered and preferably lubricated air or not (if lubricated the lubrication must be continuous)
Max. pressure	10 bar
Working 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.

Stroke tolerance, minimum and maximum spring loads and cushioning length

Bore (mm)	Stroke tolerance (mm)	Minimum springs load (N)	Maximum springs load (N)	Cushioning length (mm)
$\varnothing 20$	+ 1,5 / 0 mm	10,8	19,6	/
$\varnothing 25$		16,7	22,6	5
$\varnothing 32$		19,6	25,5	6,5
$\varnothing 40$	+ 2 / 0 mm	25,5	42,2	8
$\varnothing 50$		44,1	96,3	7,5
$\varnothing 63$		44,1	96,3	7,5
$\varnothing 80$	+ 2,5 / 0 mm	63,8	100,1	8
$\varnothing 100$		107,9	193,3	12

Standard strokes

DOUBLE ACTING BASIC version and THROUGH ROD CYLINDER version

Cylinders with longer strokes than those in the chart are also available.

The end user is responsible for the load applied on the product and for its correct use.

For special applications, please get in touch with our sales rep.

		Stroke																													
		5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 100 125 150 160 200 250 300 320 350 400 450 500																													
Bore		WITHOUT CUSHIONING DEVICE																										Maximum suggested strokes			
Ø20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø50	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø63	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø80	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Bore		WITH CUSHIONING DEVICE																										Maximum suggested strokes			
Ø20																															
Ø25					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø32					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø40					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø50					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø63					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø80					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Ø100					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

DOUBLE ACTING THROUGH ROD CYLINDER BORED version

Cylinders with longer strokes than those in the chart are also available.

The end user is responsible for the load applied on the product and for its correct use.

For special applications, please get in touch with our sales rep.

		Stroke																												
		5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 25 30 35 40 45 50 55 60 65 70 75 80																												
Bore		WITHOUT CUSHIONING DEVICE																										Maximum suggested strokes		
Ø20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø50	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø63	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø80	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



DOUBLE ACTING version WITH NON-ROTATING DEVICE

Cylinders with longer strokes than those in the chart are also available, exceptionally for applications without twisting moments and/or radial loads on the anti-rotation device.

Bore	Stroke																												
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	25	30	35	40	45	50	55	60	65	70	75	80	
WITHOUT CUSHIONING DEVICE																													
Ø20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø50	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø63	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø80	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SINGLE ACTING version

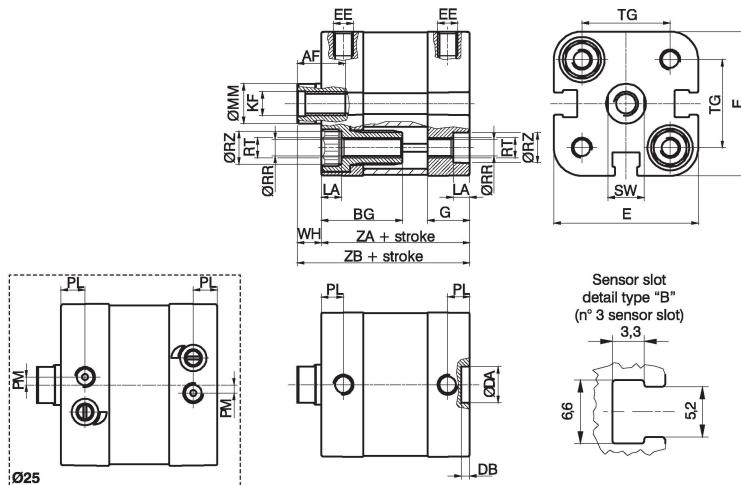
Please get in touch with our sales rep. for dimensions over 25 mm stroke.

Stroke	Bore							
	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
5	●	●	●	●	●	●	●	●
10	●	●	●	●	●	●	●	●
15	●	●	●	●	●	●	●	●
20	●	●	●	●	●	●	●	●
25	●	●	●	●	●	●	●	●
Maximum suggested strokes								

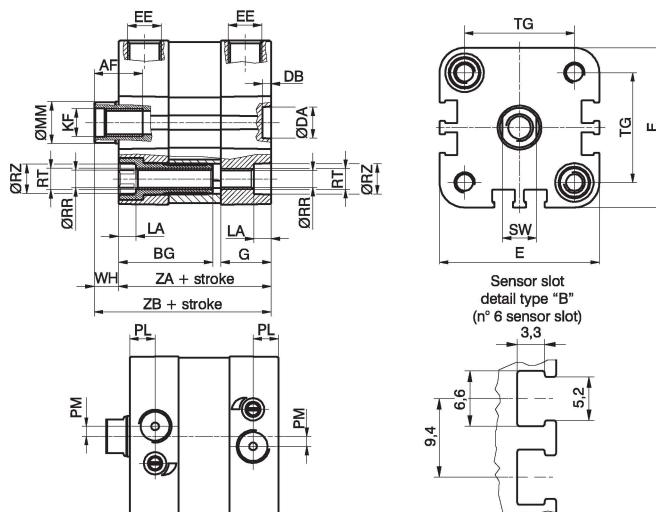
► **BASIC version double and single acting**



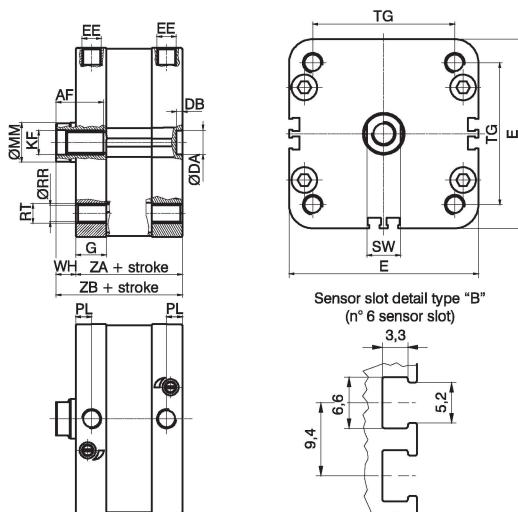
Ø20 and Ø25



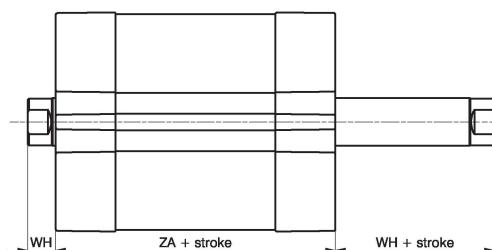
from Ø32 to Ø63



Ø80 and Ø100

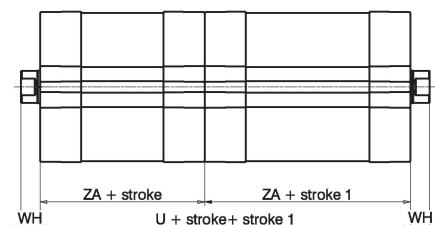


► **THROUGH ROD CYLINDER version, double and single acting**

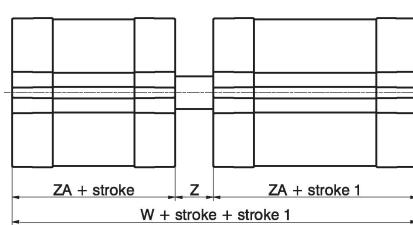




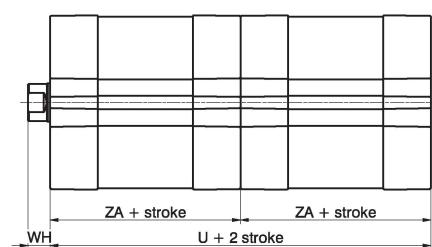
► TANDEM version with opposed rods



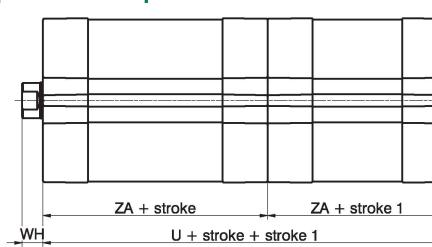
► TANDEM version opposed common rod



► TANDEM version push with common rods



► TANDEM version push with independent rods



Ordering code

Basic and Through rod cylinder 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= Basic, female threaded rod
- 02= Basic, 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-rot. device on one side ***
- 09= through rod, male threaded rod, with non-rot. 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 versions (mechanical cushioning only)
- 5=Versions with adjustable end of stroke cushioning system (from Ø25)

** It is possible to order the Ø20, Ø25, Ø32 and Ø40 cylinders with an aluminium piston by replacing the '0' with 'K' in the ordering code.
Example: 1540.20.10.01.1 (Acetyl Resin Piston)
1540.20.10.K1.1 (Aluminium Piston version)

*** for single acting version, the spring is on the anti-rotation side

TANDEM version (magnetic pistons)

15 _ _ _ Ø . stroke. (stroke 1) . _ _ _ .

C= female threaded rod	Tandem push with common rods
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	Tandem push with independent rods
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	Tandem with opposite rods
E= male threaded rod	
L= with non-rotating device on both ends	

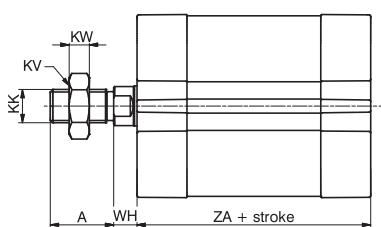
0=NBR seals and C43 chromed plated rod*
1=NBR seals and stainless steel rod (starting from bore Ø32)
4=PUR seals and C43 chromed plated rod *
5=PUR seals and stainless steel rod (starting from bore Ø32)
6=FPM seals and C43 chromed plated rod*
7=FPM seals and stainless steel rod (starting from bore Ø32)

* (Ø20 and Ø25 stainless steel)
4= Non-cushioned version (mechanical cushioning only)
5= Versions with adjustable end of stroke cushioning system (from Ø25)

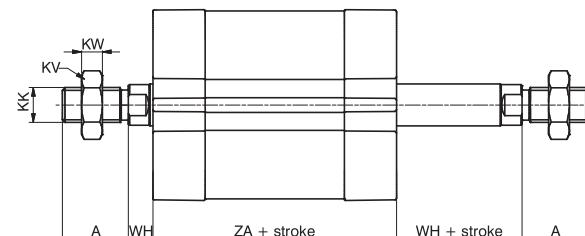
Seals compounds scheme: NBR oil resistant nitrilic rubber
PUR: polyurethane seals FPM: fluoropolymer rubber seals

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)	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 (f7)	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)	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)	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 (g)	stroke	105	110	200	270	420	550	760
	every 5mm	10	10,5	13	17	23,5	27	37

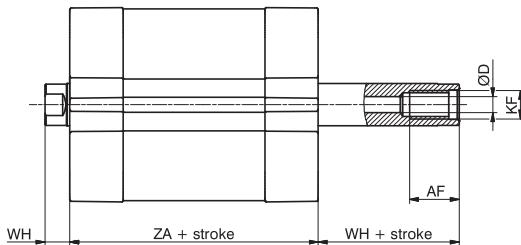
► Basic version male piston rod



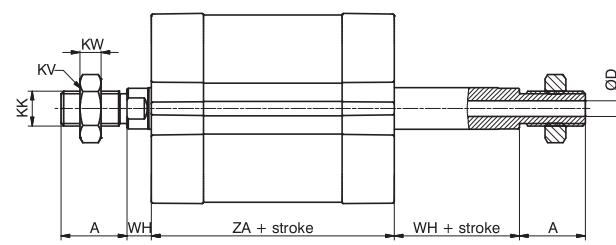
► Through rod cylinder version male rod



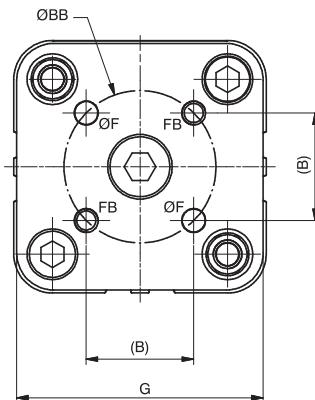
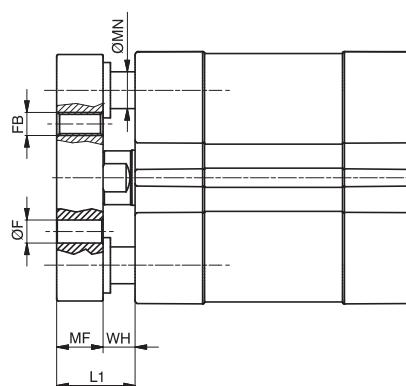
► Through rod cylinder version bored female piston rod



► Through rod cylinder version bored male piston rod



► Non-rotating version



Bore	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
A (0/-0,5)	16	16	19	19	22	22	28	28
AF (min)	12	12	14	14	18	18	24	24
B	12	15,6	19,8	23,3	29,7	35,4	46	56,6
BB ($\pm 0,1$)	17	22	28	33	42	50	65	80
D	3	3,8	4,5	4,5	6	6	8	10
F (+0,1/0)	4	5	5	5	6	6	8	10
FB	M4	M5	M5	M5	M6	M6	M8	M10
G	35	39,5	45	52	65	75	95	115
KF	M6	M6	M8	M8	M10	M10	M12	M12
KK	M8x1,25	M8x1,25	M10x1,25	M10x1,25	M12x1,25	M12x1,25	M16x1,5	M16x1,5
KV	13	13	17	17	19	19	24	24
KW	5	5	6	6	7	7	8	8
L1	14	14	17	17	20	20	24	24
MF (+0,1/0)	8	8	10	10	12	12	14	14
MN (f7)	6	6	8	8	10	10	12	12
WH (± 1)	6	6	7	7	8	8	10	10
ZA ($\pm 0,5$)	37	39	44	45	45	49	54	67