

Series 1500 Europe

This series of cylinders is available in two versions with different threaded fixing holes. The first one includes cylinders from Ø32 to Ø100 called "ISO" with fixing holes same as cylinders ISO 6431 - VDMA 24562. Cylinders from Ø20 to Ø100 called "UNITOP", parts of second series, are mainly according to standard UNITOP RU - P/6 - P/7. Cylinders Ø12 and Ø16 non standard, are interchangeable with similar products available on the market. The ISO version uses all fixing devices of series 1320 with exception of intermediate trunnion, while for cylinders Ø12, Ø16 and for "UNITOP" version are available fixing devices as flanges, foot, male and female clevis made with aluminium or steel. For use of magnetic sensors see directions on next page.

Construction characteristics

Body	anodized aluminium
Piston rod bushings	sintered bronze
Seals	PUR (on request HNBR)
Springs	zinc plated steel for springs
Pistons	from Ø12 to Ø25 brass from Ø32 from Ø100 aluminium alloy 2011 UNI 9002/5
Piston rod	from Ø12 to Ø25 stainless steel from Ø32 to Ø100 C43 chromed (on request stainless steel for all bores)
End caps	from Ø12 to Ø25 aluminium alloy UNI 9006/1 anodised from Ø32 to Ø100 UNI 5076 aluminium die-casting and painted (cataphoresis)
Fixing screws	zinc plated steel

Operational characteristics

Fluid	Filtered and lubricated air or non
Max. working pressure	10 bar
Working temperature	-30°C ... +80°C with standard seals (magnetic or non magnetic piston) -5°C ... +80°C with HNBR seals (magnetic piston) -5°C ... +120°C with HNBR 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.

Standard strokes

VERSION	DOUBLE ACTING				SINGLE ACTING	
Base	●				●	
Through rod	●				●	
Bored through rod		●			●	
Non-rotating device			●		●	
Through rod and non-rotating device			●		●	
BORE	Standard strokes	*Maximum suggested strokes	Max. stroke	**Standard strokes	Standard strokes	Maximum suggested strokes (please get in touch with our sales rep. for the dimensions)
12	from 5 to 40 mm every 5 mm	150	65	40	5-10	20
16		250	100			
20	from 5 to 50 mm every 5 mm	450	110	80		
25			125			
32	from 5 to 80 mm every 5 mm	650	150			
40			200			
50						
63						
80						
100						

*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.

**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.

Minimum and maximum springs load

Bore	Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
Min. load (N)	3,9	7,2	7,8	9,8	12,3	16,7	27,5	37,3	59,4	101,3
Max. load (N)	12,7	37,2	20,6	25,5	34,3	44,1	51,0	63,8	99,4	141,9

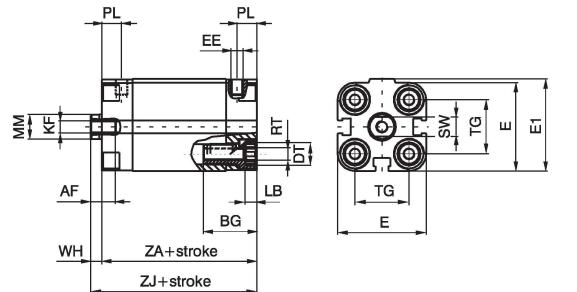
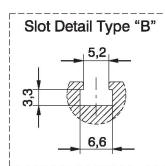


Compact cylinders Series 1500 Europe

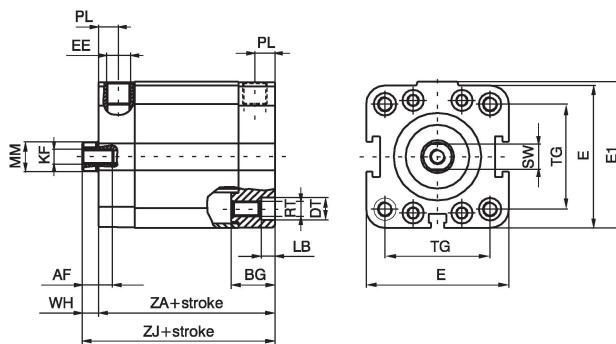
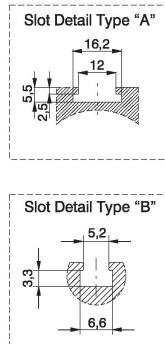
► BASIC version double and single acting



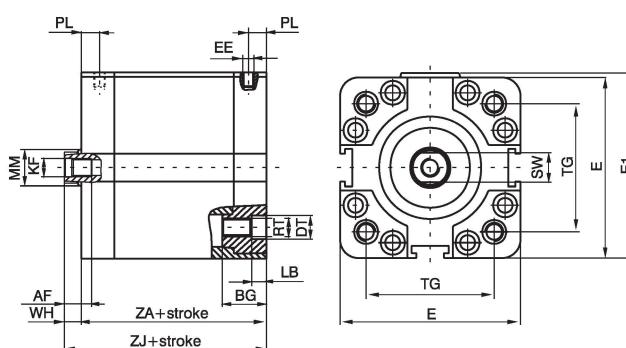
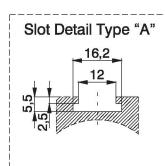
for bores from Ø12 to Ø25 use sensors codes
1580_-, MHS_-, MRS_ only



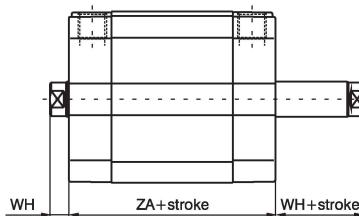
for bores from Ø32 to Ø50 use sensors codes
1500_-, RS_-, HS_ (slot A) 1580_-, MHS_-, MRS_ (slot B and slot A with adapter code 1380.01F)



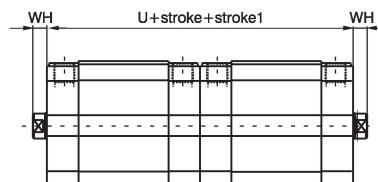
for bores from Ø63 to Ø100 use sensors codes
1500_-, RS_-, HS_ and 1580_-, MHS_-, MRS_ (with adapter code 1380.01F)



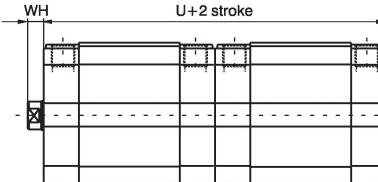
► Through rod cylinder version, double and single acting



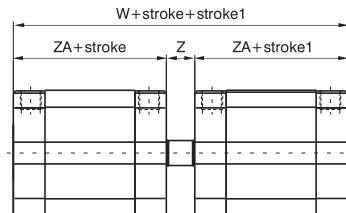
► Tandem with opposed rods



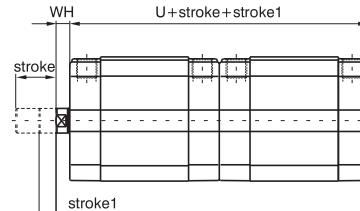
► Tandem push with common rods



Opposed tandem with common rods



Tandem push with independent rods



Ordering code

Basic version push/pull

15 . Ø . stroke . . .

- 1= Double acting (magnetic)
- 2= Front spring (magnetic)
- 3= Rear spring (magnetic)
- 4= Double acting (non magnetic)
- 5= Front spring (non magnetic)
- 6= Rear spring (non magnetic)

- 01= Basic version - female piston rod
- 02= Basic version - male piston rod
- 03= Push / pull version - female piston rod
- 04= Push / pull version - male piston rod
- 05= Push / pull version - bored male piston rod
- 06= Push / pull version - bored female piston rod
- 07= Non - rotating version
- 08= Push / pull version with non rotating device on one side - female piston rod *
- 09= Push / pull version with non rotating device on one side - male piston rod *

1= Chromed rod C43 (from Ø12 to Ø25 stainless steel)
2= Stainless steel rod (from Ø32 to Ø100)

- 6= ISO (Ø32 ... Ø100)
- 7= ISO HNBR (Ø32 ... Ø100)
- 8= UNITOP (Ø12 ... Ø100)
- 9= UNITOP HNBR (Ø12 ... Ø100)

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

Tandem version

15 . Ø . stroke . (stroke1) . . .

- A= Tandem with opposite rods female thread
- E= Tandem with opposite rods male thread
- L= Tandem opposite rods with non rotating device on both sides
- C= Tandem push with common rods female thread
- G= Tandem push with common rods male thread
- H= Tandem push with common rods, push-pull version rod female threads
- N= Tandem push with common rods with non rotating device
- D= Opposed tandem with common rod
- B= Tandem push with independent rods female thread
- F= Tandem push with independent rods male thread
- M= Tandem push with independent rods with non rotating device
- P= Tandem push/pull with independent rods - female thread
- Q= Tandem push/pull with independent rods - male thread

1= Chromed rod C43 (from Ø12 to Ø25 stainless steel)
2= Stainless steel rod (from Ø32 to Ø100)

6= ISO (Ø32 ... Ø100)
7= ISO HNBR (Ø32 ... Ø100)
8= UNITOP (Ø12 ... Ø100)
9= UNITOP HNBR (Ø12 ... Ø100)

Table of dimensions

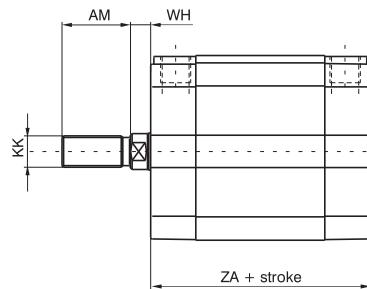
Bore	12	16	20	25	32	40	50	63	80	100
AF	6	8	10	10	12	12	12	12	16	20
BG	19	19	20	20	17,5	17,5	19,5	19,5	23,5	24,5
DT	6	6	8	8	10	9	10,5	10,5	14	14
E	29	29	36	40	48	57	67	80	102	122
E1	30	30	37,5	41,5	49,5	58,5	69	82	105	125
EE	M 5	M 5	M 5	M 5	G 1/8"	G 1/4"				
KF	M 3	M 4	M 5	M 5	M 6	M 6	M 8	M 8	M 10	M 12
LB	3,5	3,5	4,8	4,8	5,5	5,5	6,5	6,5	8,5	8,5
MM	6	8	10	10	12	12	16	16	20	25
PL	8	8	8	8	8	8	8	8	8,5	10,5
RT	M 4	M 4	M 5	M 5	M 6	M 6	M 8	M 8	M 10	M 10
SW	5	7	8	8	10	10	13	13	17	22
TG ISO	/	/	/	/	32,5	38	46,5	56,5	72	89
TG UNITOP	18	18	22	26	32	42	50	62	82	103
U	76	76	76	79	89	91	91	100	112	133
W	85	85	85	90	101	104	106	115	128	153
WH	4,5	4,5	4,5	5,5	6	6,5	7,5	7,5	8	10
Z	9	9	9	11	12	13	15	15	16	20
ZA *	38	38	38	39,5	44,5	45,5	45,5	50	56	66,5
ZJ *	42,5	42,5	42,5	45	50,5	52	53	57,5	64	76,5
Weight (g)	Stroke 0	88	90	140	170	210	320	460	690	1390
	every 5 mm	8	8	12	13	15	19	25	31	50
										66

Dimensions marked with * increase of 10 mm for cylinders Ø12 front spring version

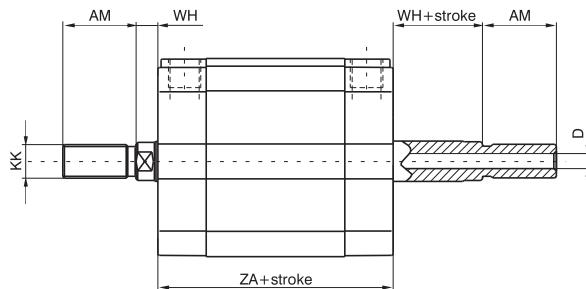
Tabular weights above refer to BASIC version; the weights of TANDEM versions are approximately double those shown



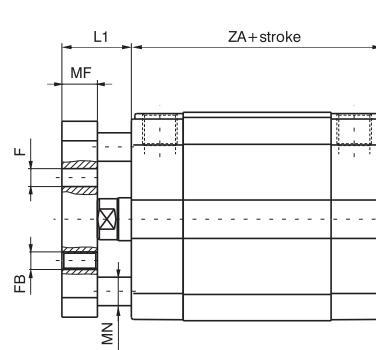
► **Basic version male piston rod**



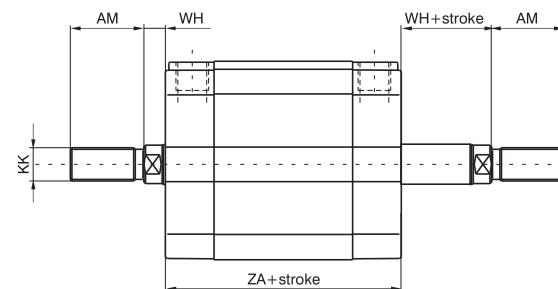
► **Through rod cylinder version bored male piston rod**



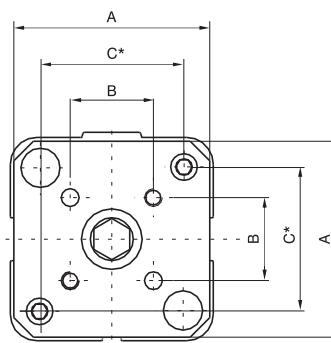
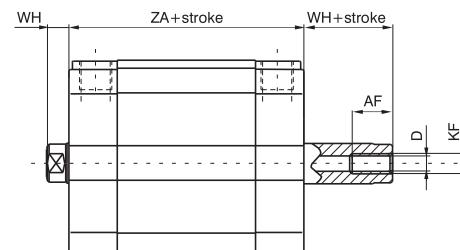
► **Non-rotating version**



► **Through rod cylinder version male rod**



► **Through rod cylinder version bored female piston rod**



* = distance between rods centres

Bore	12	16	20	25	32	40	50	63	80	100
A	28,5	28,5	35,5	39,5	45	55	65	80	100	120
AF	6	8	10	10	12	12	12	12	16	20
AM	16	20	22	22	22	22	24	24	32	40
B	9,9	9,9	12	15,6	19,8	23,3	29,7	35,4	46	56,6
C	18	18	22	26	34	40,5	49	59,5	77	94
D	2,3	3,2	3,8	3,8	4,5	4,5	6	6	8	10
F	3	3	4	5	5	5	6	6	8	10
FB	M 3	M 3	M 4	M 5	M 5	M 5	M 6	M 6	M 8	M 10
KF	M 3	M 4	M 5	M 5	M 6	M 6	M 8	M 8	M 10	M 12
KK	M 6X1	M 8X1,25	M 10X1,25	M 10X1,25	M 10X1,25	M 10X1,25	M 12X1,25	M 12X1,25	M 16X1,5	M 20X1,5
L1	10,5	10,5	12,5	13,5	16	16,5	19,5	19,5	22	24
MF	6	6	8	8	10	10	12	12	14	14
MN	5	5	6	6	8	8	10	10	12	12
WH	4,5	4,5	4,5	5,5	6	6,5	7,5	7,5	8	10
ZA	38	38	38	39,5	44,5	45,5	45,5	50	56	66,5