



General

This series of cylinders is available in two versions with different threaded fixing holes.

The first one includes cylinders from Ø 32 to Ø 100 called "ISO" with fixing holes same as cylinders ISO 6431 - VDMA 24562. Cylinders from Ø 20 to Ø 100 called "UNITOP", parts of second series, are mainly according to standard UNITOP RU - P/6 - P/7. Cylinders Ø 12 and Ø 16 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 Ø 12, Ø 16 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	anodised aluminium
Heads	from Ø12 to Ø25 aluminium alloy UNI 9006/1 anodised from Ø32 to Ø100 UNI 5076 aluminium die-casting and painted (cataphoresis)
Piston rod bushing	sintered bronze
Piston rod	from Ø12 to Ø25 stainless steel from Ø32 to Ø100 C43 chromed (on request stainless steel for all bores)
Piston	from Ø12 to Ø25 plated zinc steel from Ø32 to Ø100 aluminium alloy 2011 UNI 9002/5
Seals	PUR (on request HNBR)
Spring	zinc plated steel for springs
Fixing screws	zinc plated steel

Technical characteristics

Fluid	filtered and lubricated air or not
Maximum 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.

Our Technical Department will be glad to help.

Standard strokes for single acting cylinders

Ø12	10mm max.
from Ø16 to Ø100	25mm max.

Maximum suggested strokes

Ø12 and Ø16	100mm
Ø20 and Ø25	200mm
Ø32 and Ø40	300mm
Ø50 and Ø63	400mm
Ø80 and Ø100	500mm

Longer strokes may be utilised if there is no radial loads on piston rod considering there isn't adjustable cushioning system.

Standard strokes for double acting cylinders

Ø12 and Ø16	from 5 to 40mm every 5mm
Ø20 and Ø25	from 5 to 50mm every 5mm
Ø32 - Ø100	from 5 to 80mm every 5mm

Maximum suggested strokes with non-rotating device

from Ø12 to Ø25	40mm
from Ø32 to Ø100	80mm

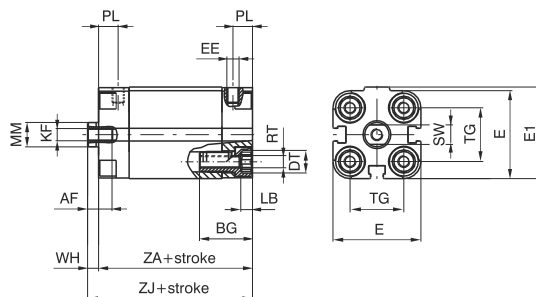
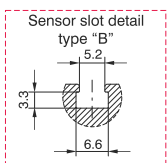
Minimum and maximum springs load

Bore	12	16	20	25	32	40	50	63	80	100
Min. load (N)	3.9	4.4	4.9	9.8	12.3	16.7	27.5	37.3	59.4	101.3
Max. load (N)	9.3	17.7	18.1	25.5	34.3	44.1	51.0	63.8	99.4	141.9

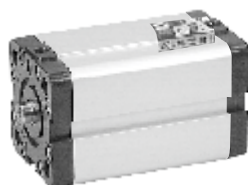
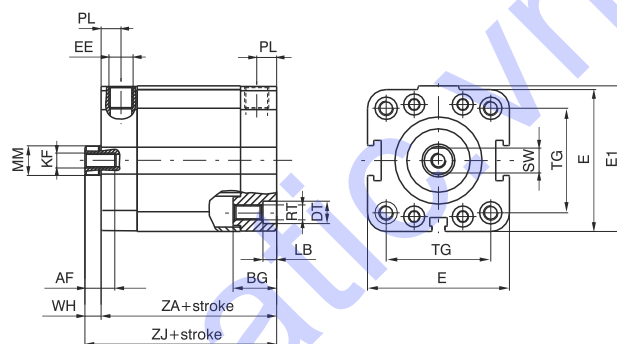
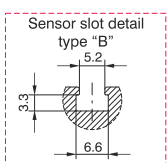
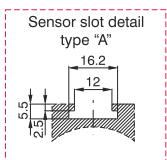
BASIC version double and single acting



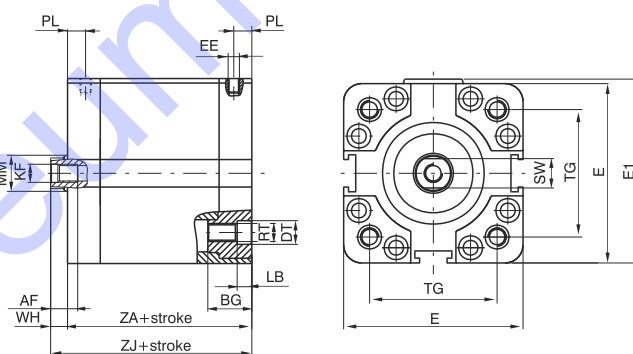
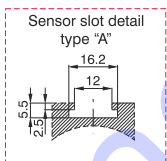
for bores from $\varnothing 12$ to $\varnothing 25$
use sensors codes
1580._, MHS._, MRS._ only



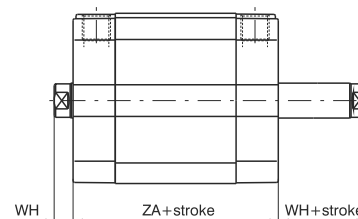
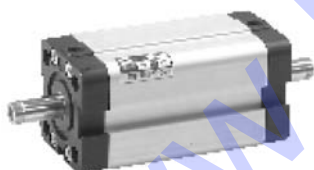
for bores from $\varnothing 32$ to $\varnothing 50$
use sensors codes
1500._, RS._, HS._ (slot A)
1580._, MHS._, MRS._
(slot B and slot A with adapter code 1380.01F)



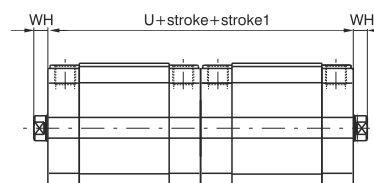
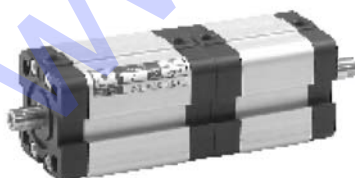
for bores from $\varnothing 63$ to $\varnothing 100$
use sensors codes
1500._, RS._, HS._ and
1580._, MHS._, MRS._
(with adapter code 1380.01F)



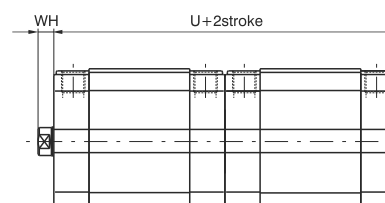
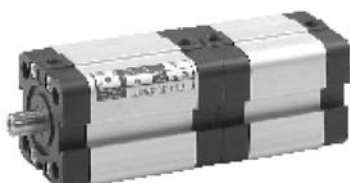
PUSH/PULL rod version double and single acting



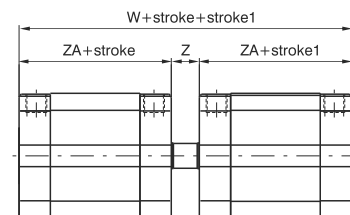
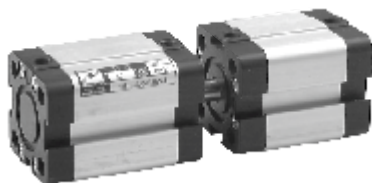
Tandem with opposite rods



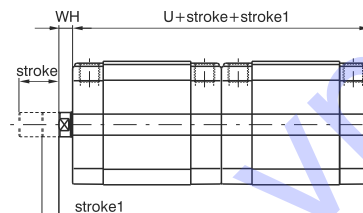
Tandem push with common rods



Opposed tandem with common rod



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)

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)

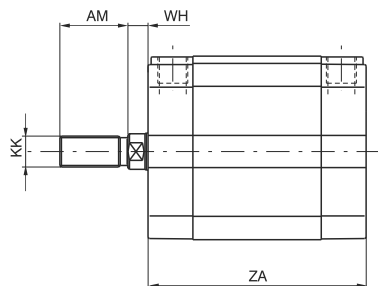
Table of dimensions

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 1/8"	G 1/8"	G 1/8"	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	stroke 0	88	90	140	170	210	320	460	690	1390
gr.	every 5 mm	8	8	12	13	15	19	25	31	50

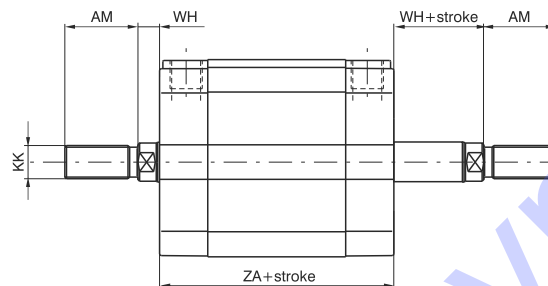
* These dimensions increase of 10 mm for cylinders ø 12 front spring version.

Tabular weights above refer to Basic Versions. The weights of Tandem versions are approximately double those shown.

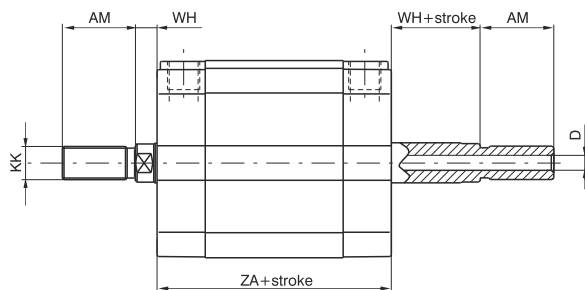
Basic version male piston rod



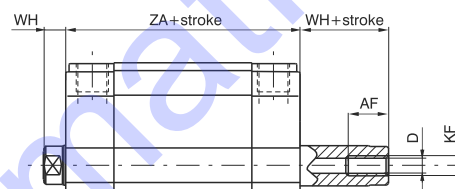
Push - pull version male rod



Push - pull version bored male piston rod

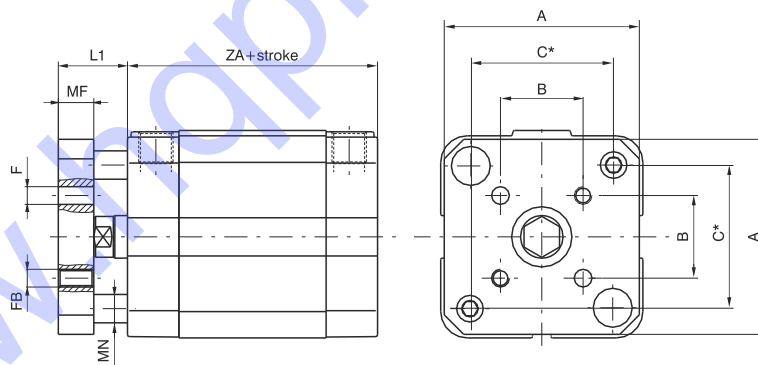


Push - pull version bored female piston rod



Maximum allowed stroke = ZB (see table)

Non-rotating version



* = 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	M6X1	M8X1.25	M10X1.25	M10X1.25	M10X1.25	M10X1.25	M12X1.25	M12X1.25	M16X1.5	M20X1.5
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
ZB	20	25	50	50	50	50	75	75	80	80