

Components for pneumatic automation

Microcylinders and cylinders Steel line series



PNEUMAX GREEN LINE: TECHNOLOGY & INNOVATION





General

The new 12X stainless steel ISO 6432 cylinders Series are designed for corrosion resistance application such as marine, pharmaceutical and food ambiances.

The pre lubrication grease used is NSF H1 certified for food application.

Specific care has been taken during the design stages and the result is a clean profile cylinder easy to clean and free from possible residue build-up areas. All parts in contact with the external environment are in Stainless steel 316L and the seals are available in three different compounds for different temperature applications:

PUR -30°C - +80°C, FPM -5°C - +150°C and NBR -5°C - +70°C.

The range starts from 16 bore up to 63 bore, double acting version standard or with through rod, magnetic or not magnetic piston available.

The end caps are crimped onto the barrel for bore sizes 16 to 25 and screwed on the barrel from 32 to 63 bore.

Depending on the type of mounting required it is possible to choose different end caps style.

The piston is aluminium and the sensor bracket, when required is in stainless steel 316 with plastic adaptor or in plastic material. The cylinder can be fixed with the wide range of stainless steel accessories.

Construction characteristics

End caps, barrel, piston rod	Stainless steel AISI 316
Piston	Aluminium
Seals	NBR (PUR piston rod seals) FPM PUR
Fixing / Accessories	AISI 316 / 304

Technical characteristics

Fluid	Filtered and preferably lubricated air
Max. pressure	10 bar
Bore	Ø 16 - 20 - 25 - 32 - 40 - 50 - 63
Cushioning lenght	mm 15 - 18 - 18 - 18 - 22 - 22 - 25

Operating temperature

Seals material	Operating temperature	Piston		Cushioning		Bores
		Magnetic	Non magnetic	Pneumatic adjustable	Pneumatic fix	
NBR	-5°C - +70°C	●	●	●	●	Ø16-Ø20-Ø25-Ø32-Ø40-Ø50-Ø63
	-5°C - +80°C	●		●	●	Ø16-Ø20-Ø25-Ø32-Ø40-Ø50-Ø63
FPM	-5°C - +150°C		●	●	●	Ø16-Ø20-Ø25-Ø32-Ø40-Ø50-Ø63
	-5°C - +70°C	●	●	●	●	Ø16-Ø20-Ø25-Ø32
PUR	-30°C - +80°C	●	●	●	●	Ø40-Ø50-Ø63
		●	●		●	Ø16-Ø20-Ø25-Ø32-Ø40-Ø50-Ø63

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.

Our Technical Department will be glad to help.

Standard strokes

Ø16 :

15 - 25 - 50 - 75 - 80 - 100 - 150 - 160 - 200 - 250 - 300 mm

Ø20 - Ø25 :

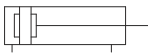
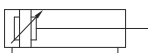
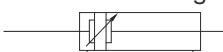
15 - 25 - 50 - 75 - 80 - 100 - 150 - 160 - 200 - 250 - 300 - 320 - 350 - 400 mm

Ø32 - Ø63 :

15 - 25 - 50 - 75 - 80 - 100 - 150 - 160 - 200 - 250 - 300 - 320 - 350 - 400 - 450 - 500 mm

Coding key

12X

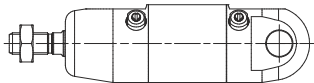
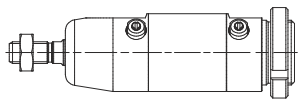
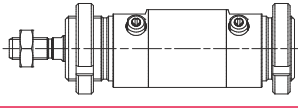
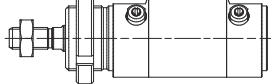
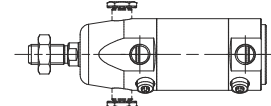
FUNCTION	
A	Double acting 
B	Double acting cushioned 
C	Double acting through rod 
D	Double acting cushioned through rod 

BORE
016
020
025
032
040
050
063

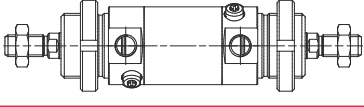
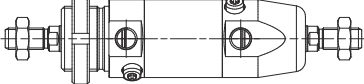
STROKE

MAGNETIC PISTON VARIANTS	
M	Magnetic piston max. temperature +80°C
N	Non magnetic piston

SEALS	
N	NBR
V	FPM
P	PUR

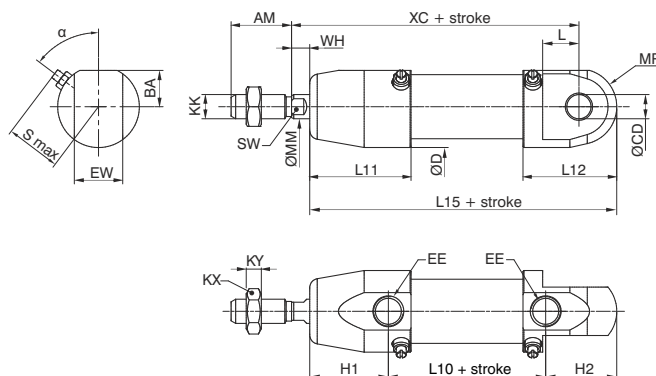
TYPE			
	FRONT END CAP	BASIC VERSION	REAR END CAP
A	CLEAN PROFILE		WITH INTEGRATED TRUNNION
B	CLEAN PROFILE		THREADED
C	THREADED		THREADED
D	THREADED		SHORT END CAP
E*	FOR PIN		SHORT END CAP

* Available only for Ø32 - Ø40 - Ø50 - Ø63

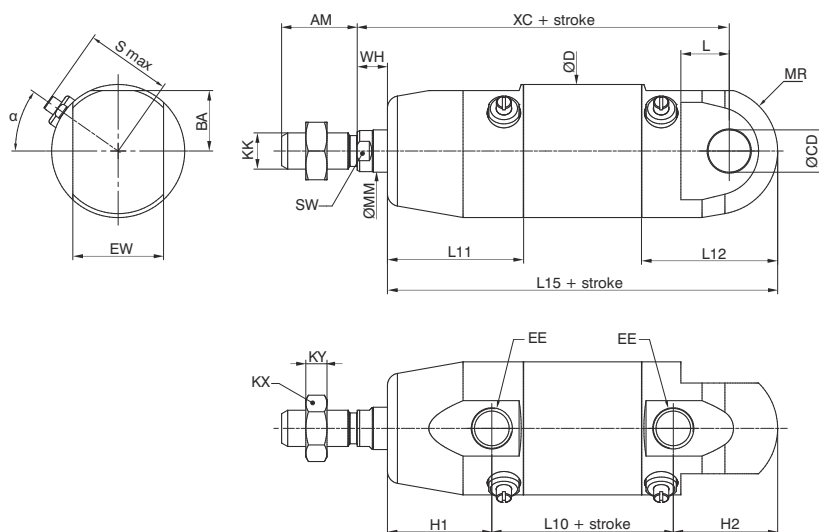
	END CAP	PUSH/PULL ROD VERSION	END CAP
S	THREADED		THREADED
T	THREADED		CLEAN PROFILE

Cylinder type "A"

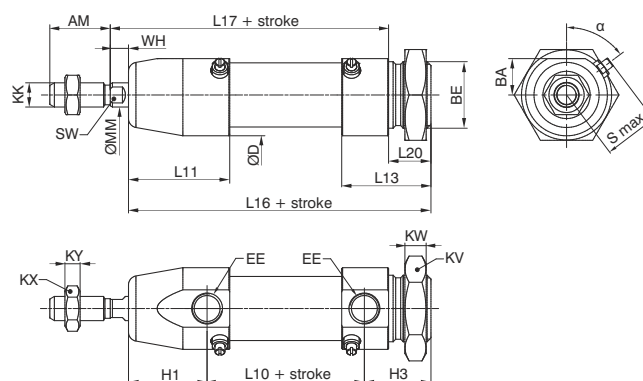
from Ø16 to Ø25



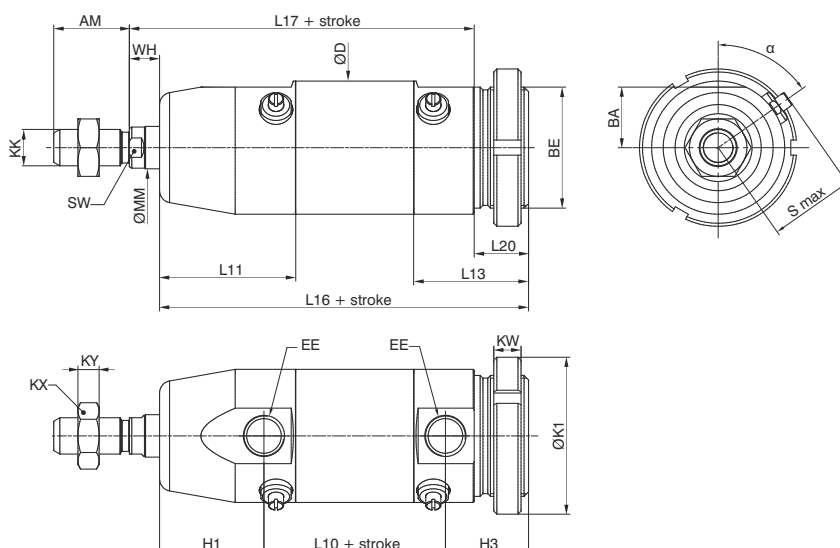
from Ø32 to Ø63

**Cylinder type "B"**

from Ø16 to Ø25



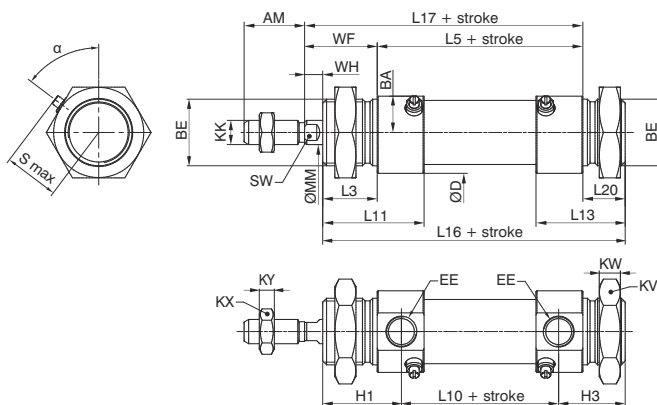
from Ø32 to Ø63



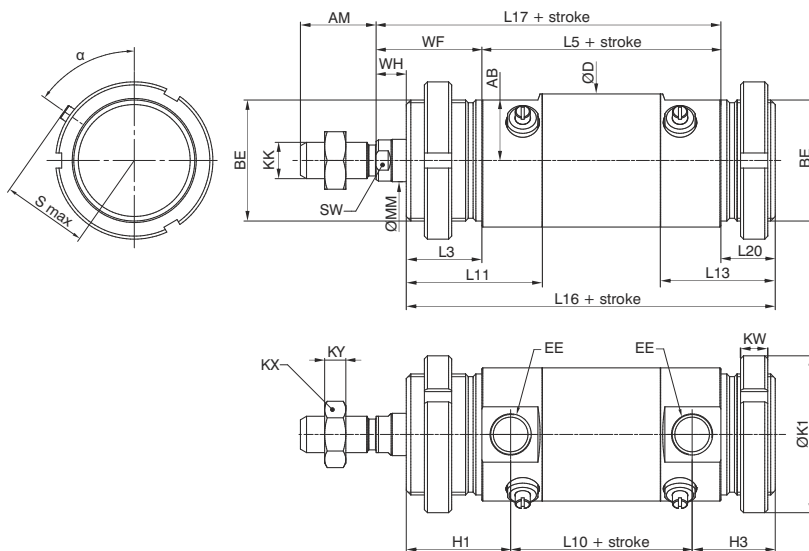
Cylinder type "C"



from Ø16 to Ø25



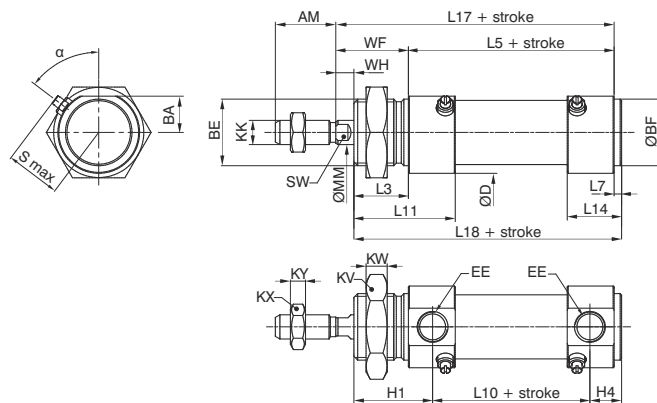
from Ø32 to Ø63



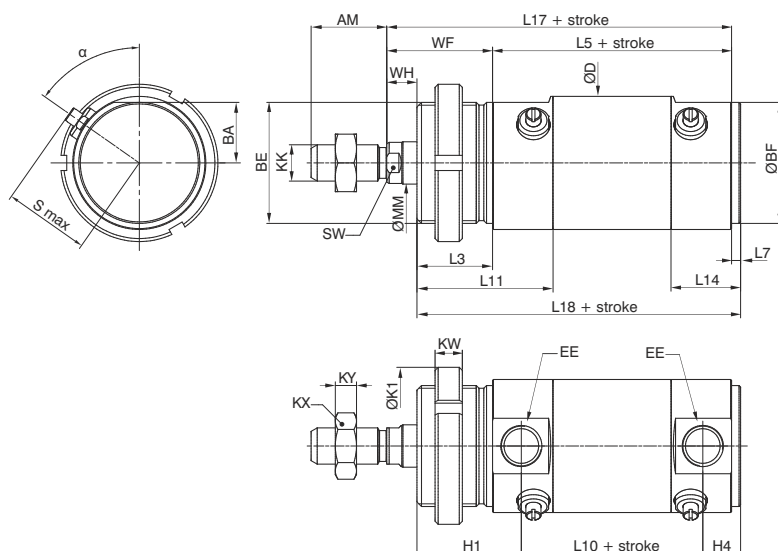
Cylinder type "D"

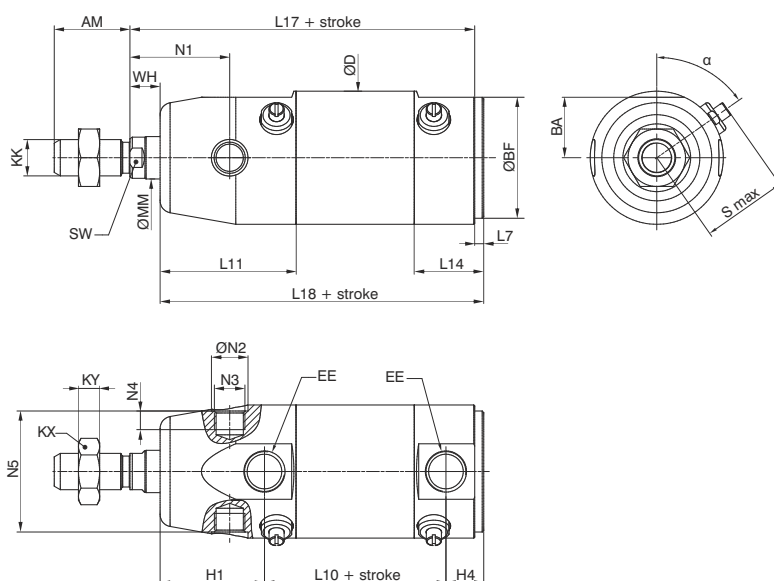


from Ø16 to Ø25

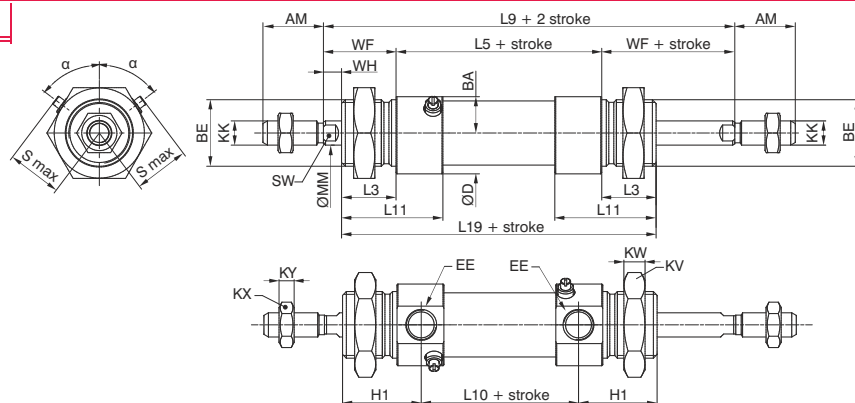


from Ø32 to Ø63

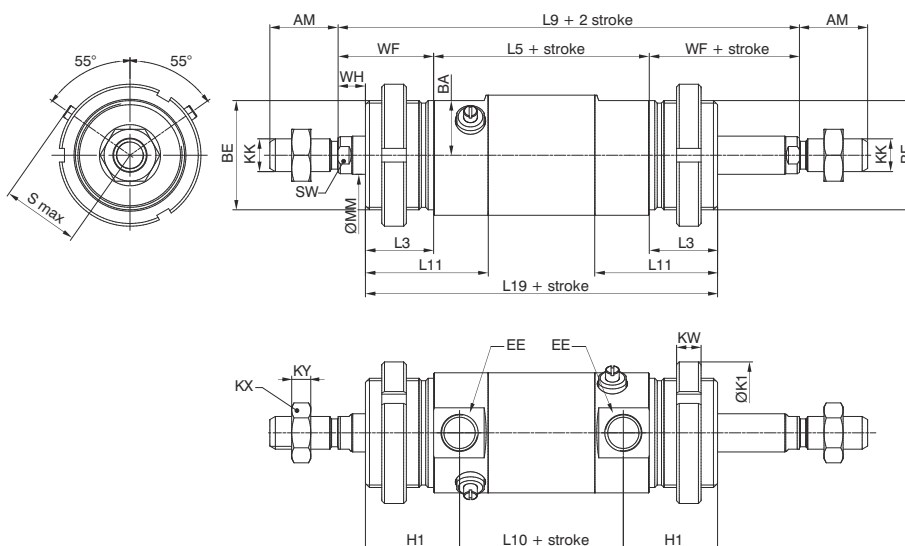


Cylinder type "E"

from Ø32 to Ø63

Cylinder type "S"

from Ø16 to Ø25

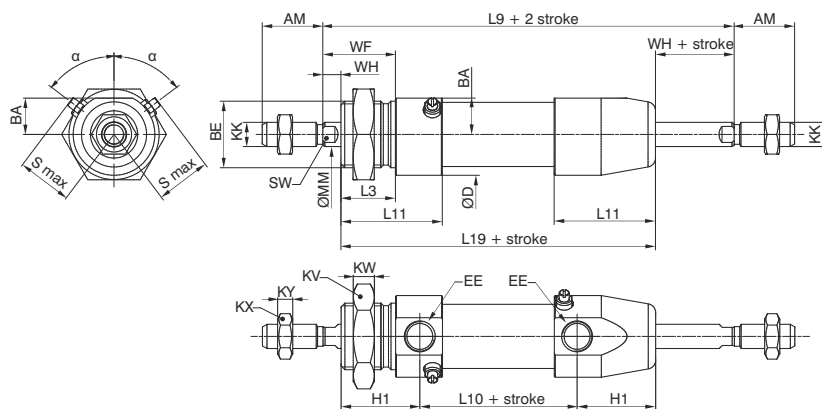


from Ø32 to Ø63

Cylinder type "T"



from Ø16 to Ø25



from Ø32 to Ø63

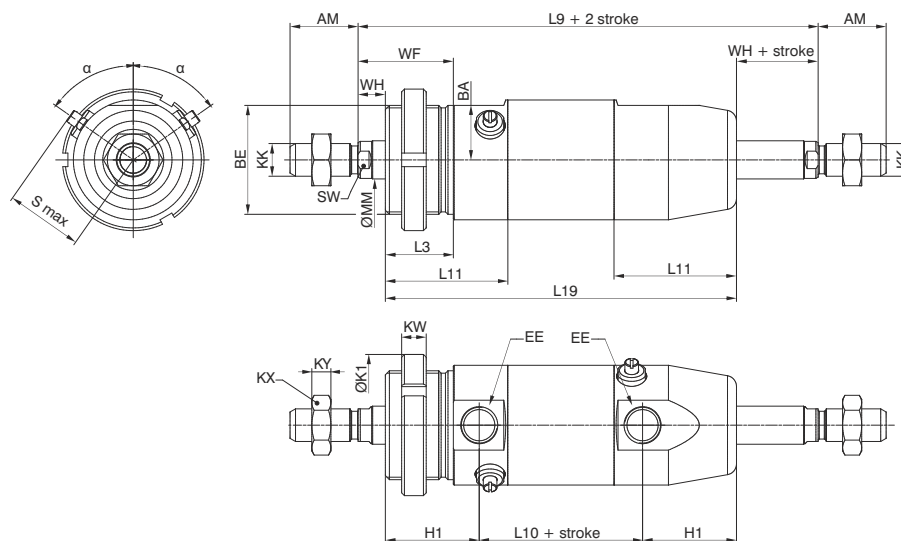
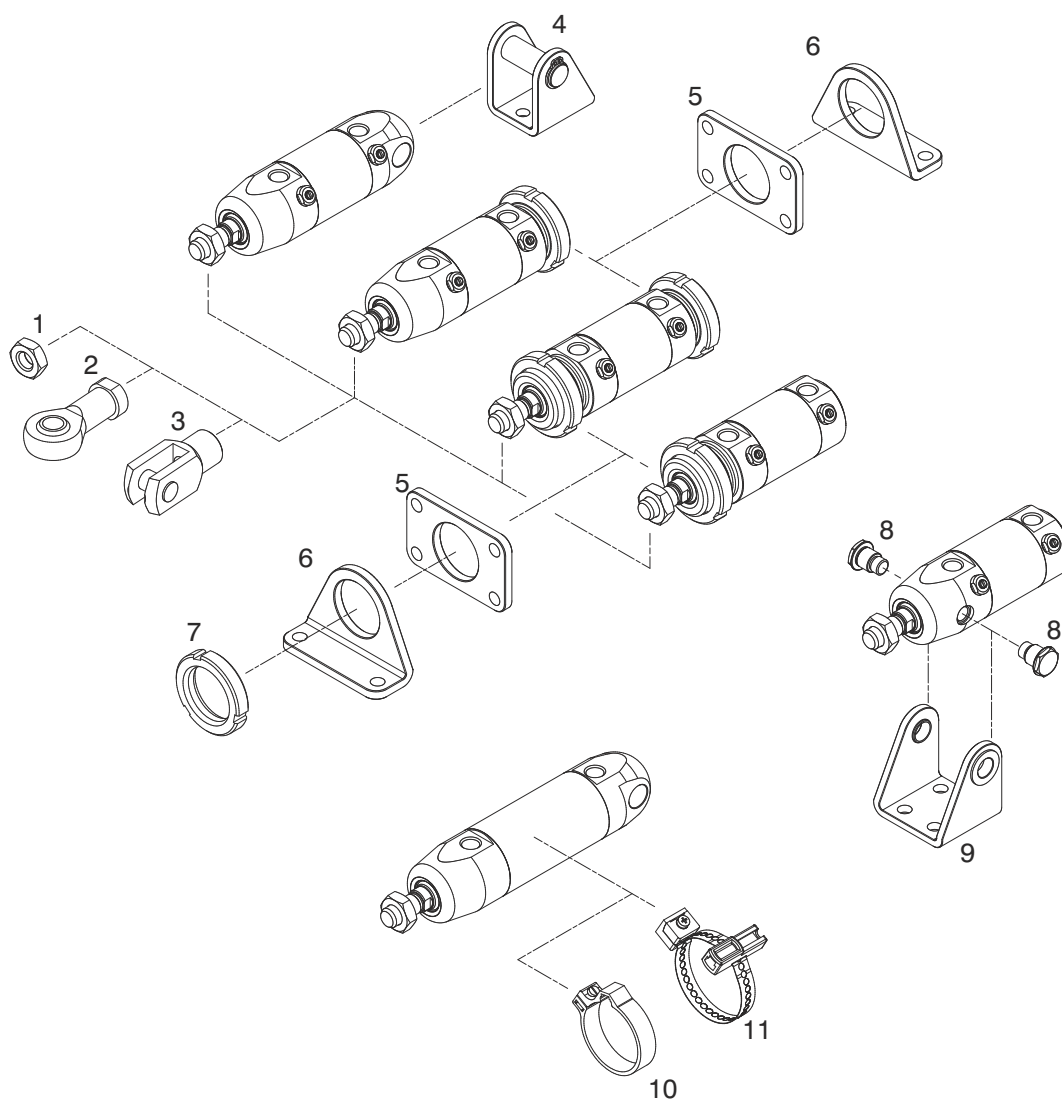




Table of dimensions

Bore	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
α	53°	53°	53°	55°	55°	55°	55°
AM	16	20	22	20	25	25	32
BA	9	12	13,5	16	20	25	31
BE	M16x1,5	M22x1,5	M22x1,5	M30x1,5	M40x1,5	M40x1,5	M45x1,5
ØBF	16	22	22	30	40	40	45
EE	M5	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8
EW	12	16	16	26	30	30	40
ØCD ^{H9}	6	8	8	12	14	14	16
ØD	21	27	30	36	44	54	68
H1	22,5	26	30	30	34,5	34,5	40
H2	17,5	23,5	27,5	30	34,5	34,5	40
H3	16,5	22	22	23	27,5	27,5	30
H4	7,5	10,5	10,5	10,5	12,5	12,5	16
ØK1	/	/	/	/	52	52	60
KK	M6x1	M8x1,25	M10x1,25	M10x1,25	M12x1,75	M12x1,75	M16x1,5
KX	10	13	17	17	19	19	24
KY	4	5	6	6	7	7	8
KV	22	30	30	42	/	/	/
KW	6	7	7	8	9	9	10
L	9	12	14	13	16	16	22
L3	17	18	22	22	25	25	28
L5	56	68	69	69	79	82	106
L7	2	2,5	2,5	2,5	3	3	4
L9	100	116	125	125	149	152	180
L10	45	52	53	53	60	63	82
L11	28	33,5	37	38,5	45	45	54
L12	23	31	34,5	38,5	45	45	54
L13	22	29,5	29	31,5	38	38	44
L14	12,8	18	17,5	19	23	23	30
L15	85	101,5	110,5	113	129	132	162
L16	84	100	105	106	122	125	152
L17	78	92	97	97	114	117	143
L18	75	88,5	93,5	93,5	107	110	138
L19	90	104	113	113	129	132	162
L20	11	14	14	15	18	18	18
ØMM	6	8	10	12	14	16	20
MR	8	12,5	12,5	17	21	26	34,5
N1	/	/	/	27	33	40	45
ØN2 ^{+0/-0,05}	/	/	/	10,1	12,1	14,1	16,1
N3	/	/	/	M8x0,75	M10x1	M12x1	M14x1
N4	/	/	/	5,5	6	8,7	11,7
N5 ^{+0,1/-0}	/	/	/	32	40	50	64
Smax	15,5	18,5	19,5	25	28,5	33,5	40
SW	5	6	8	10	12	12	17
WF	22	24	28	28	35	35	37
WH	5	6	6	6	10	10	9
XC	82	95	104	105	123	126	154



Position	Description	Ordering code	Materials
1	Rod lock nut	12X.Ø.11	Stainless steel AISI 316
2	Ball joint	12X.Ø.10	Stainless steel
3	Fork	12X.Ø.04	Stainless steel
4	Rear clevis	12X.Ø.03	Stainless steel
5	Flange	12X.Ø.02	Stainless steel AISI 316
6	Foot	12X.Ø.01	Stainless steel AISI 316
7	Nut or lock nut for the endcaps	12X.Ø.05	Stainless steel AISI 316
8	Pin for front clevis (Ø32 - Ø63)	12X.Ø.09	Stainless steel AISI 316
9	Front clevis (Ø32 - Ø63)	12X.Ø.08	Stainless steel AISI 316
10	Sensor clamp (Ø16 - Ø50)	12X.Ø.FS	Technopolymer
11	Sensor clamp (Ø16 - Ø63)	12X.Ø.FSX	Stainless steel Technopolymer

Sensor clamps cod. 1580._, MRS._, MHS._

Ordering code

12X.Ø.FS

The kit comprises:
n° 1 clamp (Technopolymer)
n° 1 screw (AISI 304)
n° 1 nut (AISI 304)

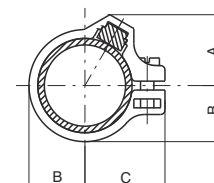
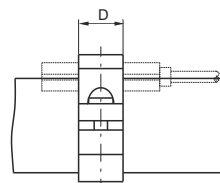


Table of dimensions

Bore	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50
A	14,5	16	17,5	20,5	22	29
B	10,5	12,5	15,3	20	24	29
C	16	18	20,5	26	30	35
D	10	10	10	10	10	10
Weight (gr.)	3	5	7	8	10	11

Sensor clamps cod. 1580._, MRS._, MHS._

Ordering code

12X.Ø.FSX

The kit comprises:
n° 1 clamp (AISI 304)
n° 1 switch bracket + support (Technopolymer)
n° 1 screw (AISI 304)
n° 1 nut (AISI 304)

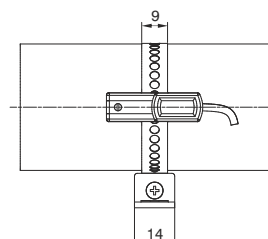
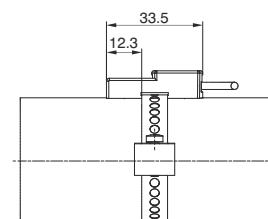
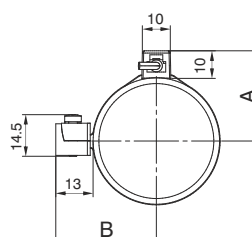


Table of dimensions

Bore	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
A	19	21	23	28	32	37	44
B	22	24	26	31	35	40	47

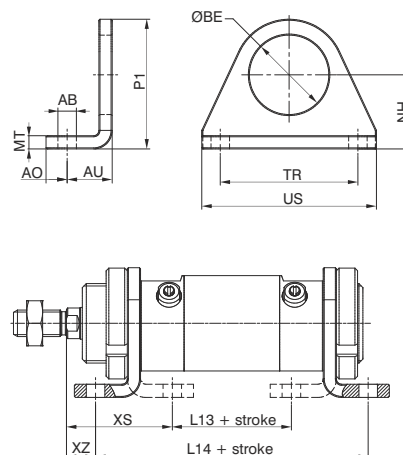
Foot

Ordering code

12X.Ø.01

The kit comprises:
n° 1 foot (AISI 316)


Used to mount the cylinder on the mounting plane with the rod parallel to said plane. Use one for short strokes and two for long strokes. It is made stamped stainless steel AISI 316.



Bore	16	20	25	32	40	50	63
AB (H13)	5,5	6,5	6,5	6,5	9	9	9
AO	6	8	8	8	10	10	10
AU	14	17	17	17	20	20	20
ØBE	16	22	22	30	40	40	45
L13 (±1)	36	44	44	45	49	52	78
L14 (±1)	84	102	102	103	119	122	146
MT	4	5	5	5	5	5	6
NH (±0.3)	20	25	25	28	40	40	50
P1	33	45	45	50	66,5	66,5	80
TR (Js14)	32	40	40	52	70	70	70
US	42	54	54	66	90	90	90
XS (±1.4)	32	36	40	40	50	50	51
XZ (±1.4)	8	7	11	11	15	15	17
Weight gr.	45	90	90	110	210	210	262

Flange

Ordering code

12X.Ø.02

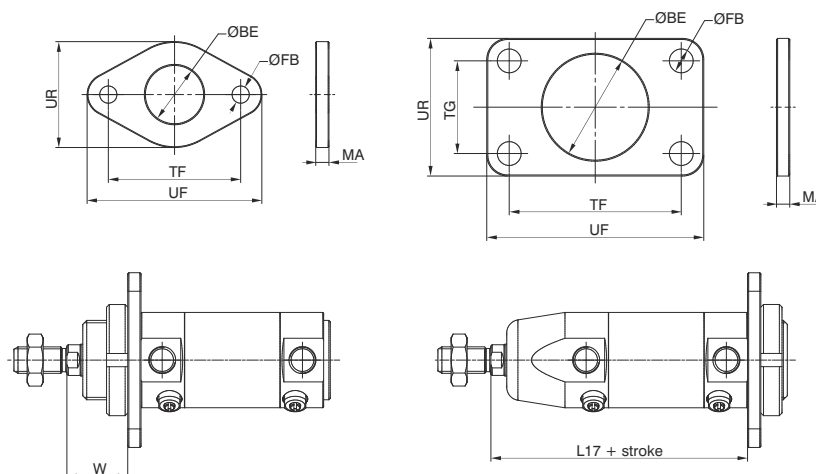
The kit comprises:
n° 1 flange (AISI 316)


(For Ø16 - Ø20 - Ø25)



(For Ø32 - Ø40 - Ø50 - Ø63)

Use to mount the microcylinder at a right angle to the mounting plane.
Made of stainless steel AISI 316.



Bore	16	20	25	32	40	50	63
ØBE	16	22	22	30	40	40	45
ØFB (H13)	5,5	6,5	6,5	6,5	9	9	9
UF	53	66	66	68	82	82	96
UR	30	40	40	50	52	52	70
MA	4	5	5	5	5	5	6
TF (JS14)	40	50	50	52	65	65	76
TG	/	/	/	/	35	35	50
W (±1.4)	18	19	23	23	30	30	31
L17	78	92	97	97	114	117	143
Weight gr.	40	85	85	100	105	105	225

Rear clevis

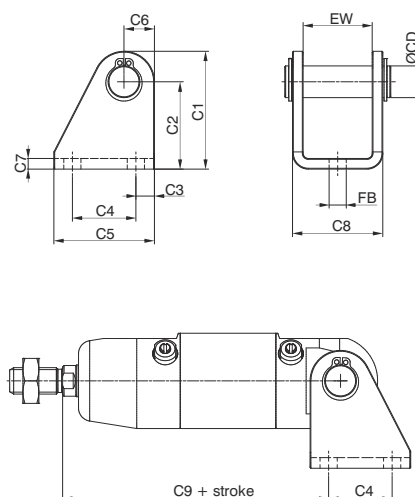
Ordering code

12X.Ø.03

The kit comprises:
n° 1 clevis (AISI 316)
n° 1 pin (AISI 316)
n° 2 circlips (AISI 420)



Used to mount by using the rear end cover to mount either parallel or at a right angle to the mounting plane. Allows the cylinder to oscillate and self-align with the linked element to the rod. Necessary to use when the rod may be subject to lateral forces during travel. Made of stamped stainless steel.



Bore	16	20	25	32	40	50	63
ØCD	6	8	8	12	14	14	16
C1	33,5	39,5	39,5	44,5	53,5	53,5	64
C2 (±0.3)	27	30	30	33	40	40	50
C3	5	6	6	7	10	10	8
C4	15	20	20	24	28	28	34
C5	25	32	32	38	45	45	50
C6	6,5	9,5	9,5	11,5	13,5	13,5	14
C7	3	4	4	4	4	4	6
C8	18	24	24	34	38	38	52
C9 (±0.4)	80,5	91,5	100,5	100,5	119,5	122,5	148
EW	12,1	16,1	16,1	26,1	30,5	30,5	40,5
FB (H13)	5,5	6,5	6,5	6,5	8,5	8,5	9
Weight gr.	35	75	75	135	138	138	284

Rod lock nut / Nut or lock nut for the end cap

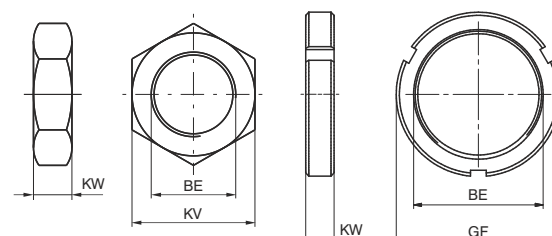
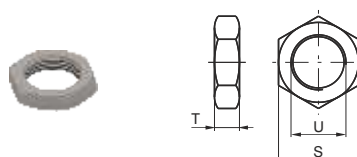
Ordering code

Rod lock nut
12X.Ø.11

The kit comprises:
n° 1 rod lock nut (AISI 316)

Nut / Lock nut
for the end cap
12X.Ø.05

The kit comprises:
n° 1 nut / lock nut
for the end cap (AISI 316)



Rod lock nut:

Mounted on the rod thread.
Made of stainless steel AISI 316.

Nut / Lock nut for the end cap:

Used to fasten flanges or feet to the endcaps of the microcylinder. The nuts are mounted on diameters that go from Ø16 to Ø25, the lock nuts from Ø32 to Ø63. Both are supplied with the microcylinders.

Bore	S	T	U	Rod lock nut weight (gr.)	BE	KV	GF	KW	Nut / Lock nut for the end caps weight (gr.)
16	10	4	M6X1	3	M16X1,5	22	-	6	16
20	13	5	M8X1,25	4	M22X1,5	30	-	7	25
25	17	6	M10X1,25	9	M22X1,5	30	-	7	25
32	17	6	M10X1,25	9	M30X1,5	-	42	8	42
40	19	7	M12X1,75	12	M40X1,5	-	52	9	62
50	19	7	M12X1,75	12	M40X1,5	-	52	9	62
63	24	8	M16X1,5	21	M45X1,5	-	60	10	100

Front clevis

Ordering code

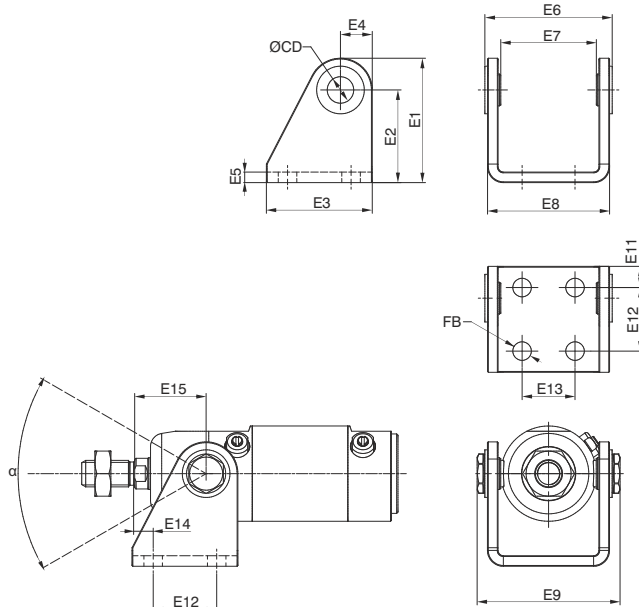
12X.Ø.08

The kit comprises:
n° 1 clevis (AISI 316)
n° 2 bushings (Technopolymer)



Used to mount by using the front end cap to mount parallel to the mounting plane. Allows the cylinder to oscillate and self-align with the linked element to the rod. Necessary to use when the rod may be subject to lateral forces during travel.

Made of stamped stainless steel AISI 316.



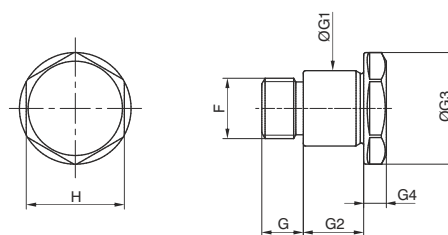
Bore	E1	E2 (±0,2)	E3	E4	E5	E6	E7	E8	E9	E11	E12	E13	E14	E15	FB (H13)	ØCD	α	Weight (gr.)
32	47	35	40	12	4	48	36	46	54	8	24	20	7	27	7	10	50°	121
40	53	40	50	13	4	60	49	58	68	10	30	28	6	33	9	12	50°	175
50	59	45	54	14	6	74	54	72	84	10	34	36	10	40	9	14	50°	330
63	65	50	65	16	6	88	72	86	98	15	35	42	11	45	9	16	40°	458

Pin for front clevis

Ordering code

12X.Ø.09

The kit comprises:
n° 1 pin (AISI 316)



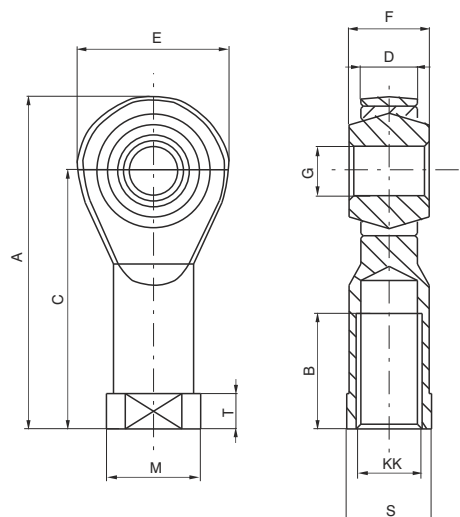
Bore	32	40	50	63
G	5,5	6	8,5	11
G1 (h7)	10	12	14	16
G2	8	10	12	12
G3	15	17	19	24
G4	3	4	5	5
F	M8X0,75	M10X1	M12X1	M14X1
H	13	15	17	21

Ball joint

Ordering code

12X.Ø.10

The kit comprises:
n° 1 ball joint (AISI 304 and 420)



Mounted on the rod thread, assures a regular operation even in the presence of significant forces to the linked element. Made of stainless steel AISI 304 and 420.

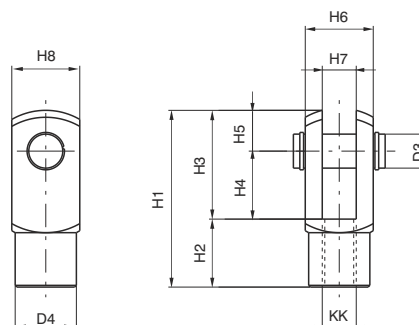
Bore	16	20	25	32	40	50	63
A	40	48	57	57	66	66	85
B	12	16	20	20	22	22	28
C	30	36	43	43	50	50	64
D	6,75	9	10,5	10,5	12	12	15
E	20	24	28	28	32	32	42
F	9	12	14	14	16	16	21
G (H 7)	6	8	10	10	12	12	16
KK	M6	M8	M10X1,25	M10X1,25	M12X1,75	M12X1,75	M16X1,5
M	13	16	19	19	22	22	27
S	11	14	17	17	19	19	22
T	5	5	6,5	6,5	6,5	6,5	8
Weight gr.	25	25	75	75	112	112	222

Cylinder rod fork

Ordering code

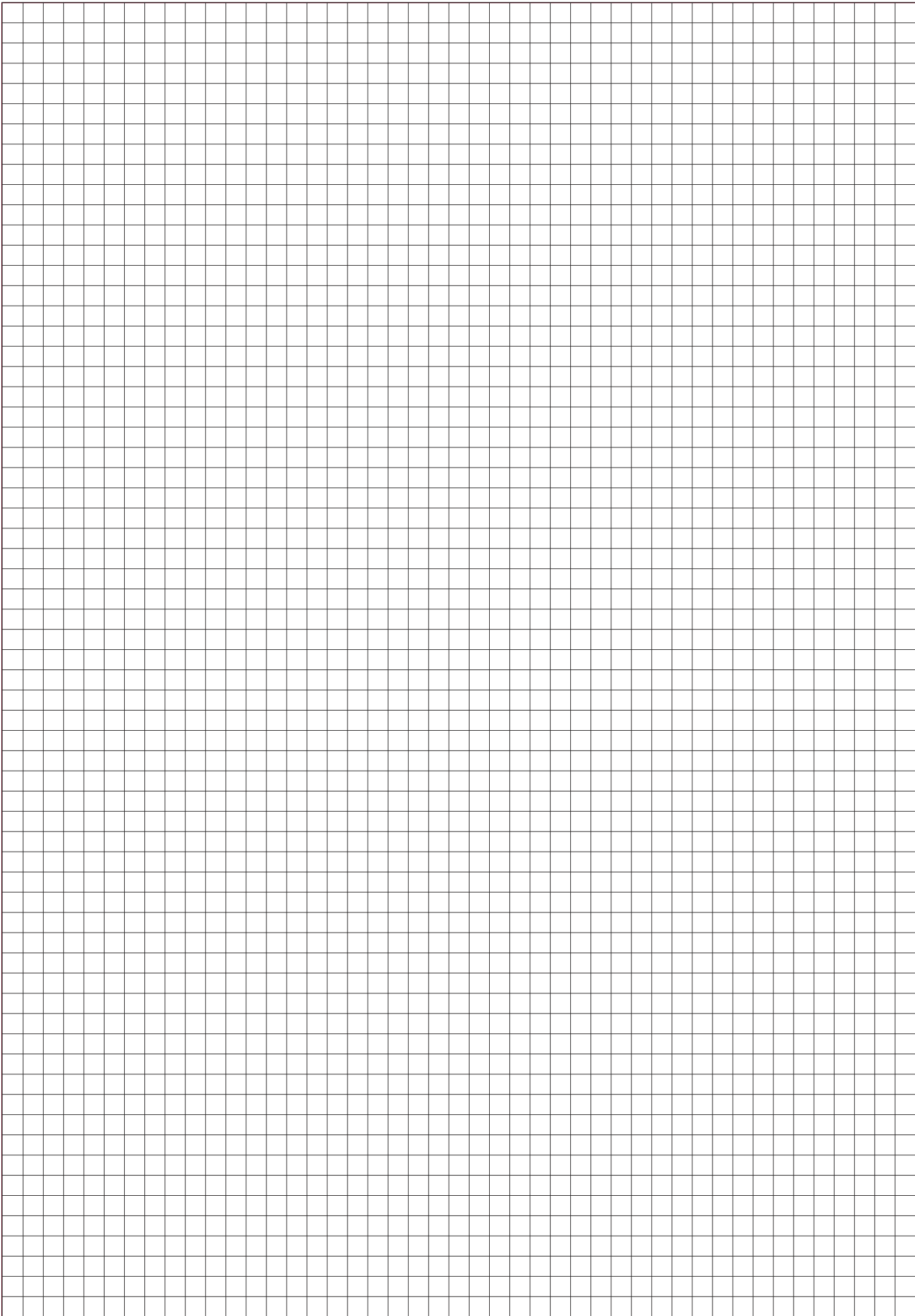
12X.Ø.04

The kit comprises:
n° 1 fork (AISI 303)
n° 1 pin (AISI 303)
n° 2 circlips (AISI 420)



Mounted on the rod thread, assures a regular operation even in the presence of significant forces to the linked element. Made of stainless steel.

Bore	D3	D4	H1	H2	H3	H4	H5	H6	H7 (B12)	H8	KK	Weight gr.
16	6	10	31	12	19	12	7	12	6	12	M6X1	20
20	8	14	42	16	26	16	10	16	8	16	M8X1.25	45
25	10	18	52	20	32	20	12	20	10	20	M10X1.25	90
32	10	18	52	20	32	20	12	20	10	20	M10X1.25	90
40	12	20	62	18	44	24	14	24	12	24	M12X1.75	121
50	12	20	62	18	44	24	14	24	12	24	M12X1.75	121
63	16	26	83	32	51	32	19	32	16	32	M16X1.5	340





General

The new 1393-1394 stainless steel ISO 15552 cylinders series are designed for corrosion resistance application such as marine, pharmaceutical and food ambiances.

The pre lubrication grease used is NSF H1 certified for food application.

Specific care has been taken during the design stages and the result is a clean profile cylinder easy to clean and free from possible residue build-up areas.

All parts in contact with the external environment are in Stainless steel 316L and the seals are available in two different compounds for different temperature applications: PUR -30°C - +80°C and FPM -5°C - +150°C.

The range starts from 32 bore up to 100 bore, round barrel and tie rods design. Double acting version standard or with through rod, magnetic or not magnetic piston available.

The piston is aluminium and the sensor bracket, when required is in stainless steel 316.

The cylinder can be fixed via the threaded holes in the tie rod nuts or with the wide range of stainless steel accessories.

Construction characteristics

End caps, piston rod, barrel, cushion screws	Stainless steel AISI 316
Rod-guide bushings	Stainless steel AISI 316 with P.T.F.E. coat
Half-pistons	Aluminium
Seals	PUR or FPM on request
Lubricating grease	NSF-H1 certified grease for incidental contact with food

Technical characteristics

Fluid	Filtered and preferably lubricated air or not (if lubricated the lubrication must be continuous)
Max. pressure	10 bar
Operating temperature	-30° C - +80°C with PUR seals -5° C - +150°C with FPM seals and non magnetic piston -5° C - +80°C with FPM seals and magnetic piston
Bore	Ø 32 - 40 - 50 - 63 - 80 - 100
Cushioning lenght	mm 20 - 20 - 22 - 22 - 32 - 32

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.

Our Technical Department will be glad to help.

Standard strokes (for all diameters)

from 0 to 150, every 25 mm
over 150 up to 500, every 50 mm
over 500 up to 1000, every 100

Stroke tolerance (ISO 15552)

Bore	Stroke	Tolerance
32 - 40 - 50	up to 500	+2 0
	over 500 up to 1250	+3.2 0
63 - 80 - 100	up to 500	+2.5 0
	over 500 up to 1250	+4 0

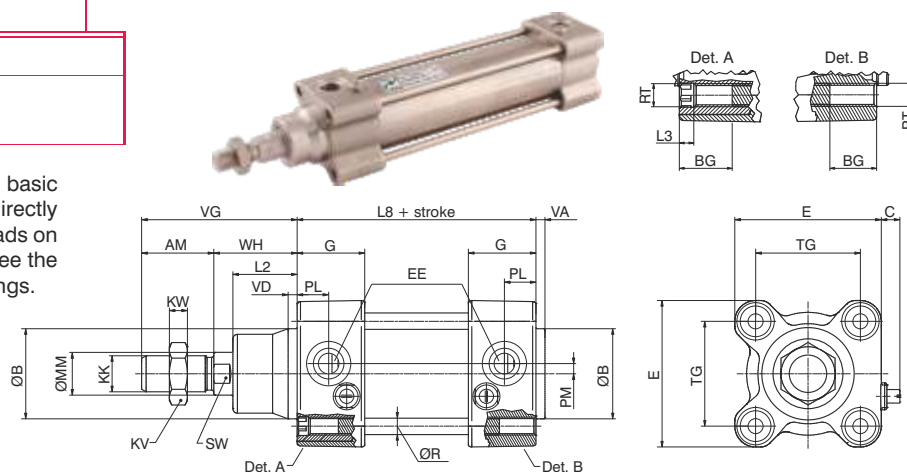
Basic version "01"

Ordering code

1393.Ø.stroke.01 Magnetic

1394.Ø.stroke.01 Non magnetic

This is the configuration representing the basic cylinder according to ISO standards. It can be directly anchored on machine parts using the four threads on the end cover screws. For other applications see the pages about different types of stainless steel fixings.

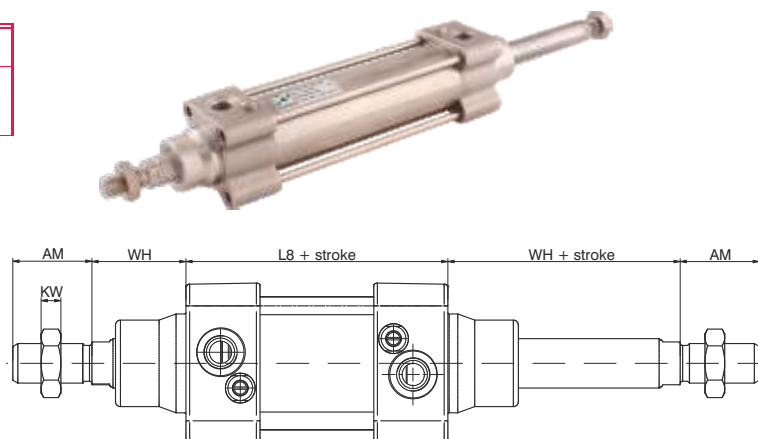


Push/pull version - "02"

Ordering code

1393.Ø.stroke.02 Magnetic

1394.Ø.stroke.02 Non magnetic



Variants

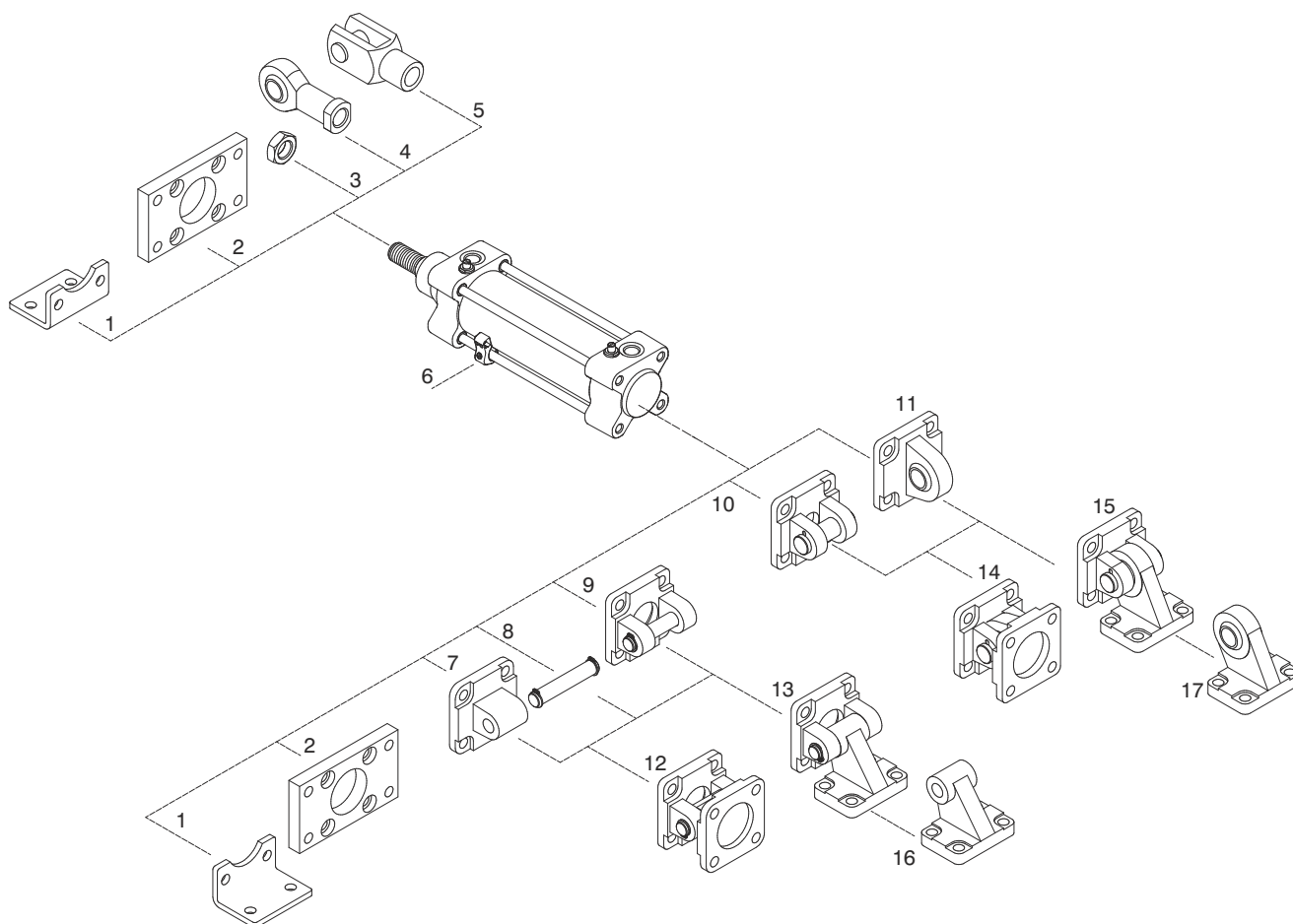
Version with FPM seals

Ordering code

139_(93.94) Ø.stroke._ _ V

Table of dimensions

Bore	32	40	50	63	80	100
AM	22	24	32	32	40	40
ØB (d 11)	30	35	40	45	45	55
BG min.	16	16	16	16	18	17
C	min.	4	4	4	3,5	3,5
	max.	7,5	7,5	8,5	8,5	9
E	47	52	65	76	95	113
EE	G1/8"	G1/4"	G1/4"	G3/8"	G3/8"	G1/2"
G	29	31	30	34	36	40,5
KK	M10X1,25	M12X1,25	M16X1,5	M16X1,5	M20x1,5	M20X1,5
KV	17	19	24	24	30	30
KW	16	7	8	8	9	9
L2	20	22	28,5	29	35	36
L3	4,5	4,5	5	5	6	6
L8	94	105	106	121	128	138
ØMM	12	16	20	20	25	25
PL	13	14	14	16	16	18
PM	3	3,5	4,5	7	8	8
ØR	Ø5,2	Ø5,2	Ø7,1	Ø7,1	Ø8,9	Ø8,9
RT	M6	M6	M8	M8	M10	M10
SW	10	13	17	17	22	22
TG	32,5	38	46,5	56,5	72	89
VA	4	4	4	4	4	4
VB	41	45	58	59	71	73
VD	4	4	4	4	4	4
VF	10	10	10	10	10	10
VG	48	54	69	69	86	91
WH	26	30	37	37	46	51
Weight gr.	stroke 0	1000	1430	2150	3000	4400
	every 10 mm	35	45	63	80	120
						135



Position	Description	Ordering code	Materials
1	Short mounting foot brackets (MS1)	1393.0.05/1F	Stainless steel AISI 316
2	Flange (MF1-MF2)	1393.0.03F	Stainless steel AISI 316
3	Rod nut	1393.0.18F	Stainless steel AISI 316
4	Ball joint	1393.0.32F	Stainless steel
5	Fork	1393.0.13F	Stainless steel
6	Sensor bracket	1393._	Stainless steel AISI 316
7	Rear male clevis (MP4)	1393.0.09/1F	Stainless steel AISI 316
8	Pin (AA4) with circlips for rear clevis (MP2) (pos. 9)	1393.0.37F	Stainless steel AISI 316
9	Rear female clevis (MP2)	1393.0.09F	Stainless steel AISI 316
10	Rear narrow clevis (AB6)	1393.0.30F	Stainless steel AISI 316
11	Rear male clevis (with jointed head - MP6)	1393.0.15F	Stainless steel AISI 316
12	Standard complete trunnion (pos. 7 + pos. 9)	1393.0.22F	Stainless steel AISI 316
13	Square angle trunnion (pos. 9 + pos. 16)	1393.0.35F	Stainless steel AISI 316
14	Standard complete trunnion with jointed head (pos. 10 + pos.11)	1393.0.36F	Stainless steel AISI 316
15	Complete square angle trunnion (pos. 10 + pos.17)	1393.0.27F	Stainless steel AISI 316
16	Simple square counter clevis (AB7) (pos. 13)	1393.0.11/2F	Stainless steel AISI 316
17	Simple square counter clevis (pos. 15)	1393.0.28F	Stainless steel AISI 316

Sensor bracket

Ordering code

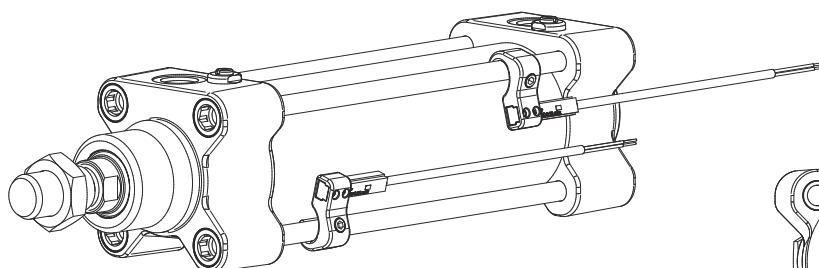
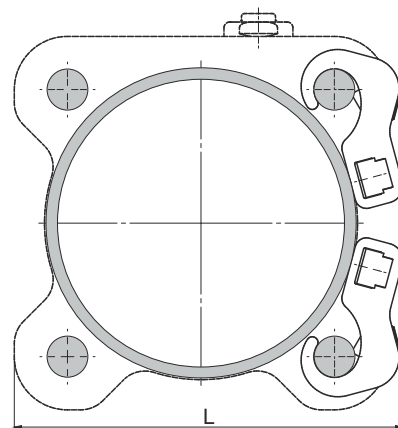
1393.A (Ø32 - Ø40)
1393.B (Ø50 - Ø63)
1393.C (Ø80 - Ø100)

Fixing bracket made of stainless steel AISI 316 for sensor mounting on cylinders.

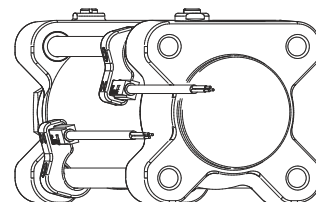
Sensors code **1580.**
MRS.
MHS.



Bore	L
Ø32	51
Ø40	57
Ø50	67
Ø63	79
Ø80	98
Ø100	115



To mount the brackets on the tie rods use the dedicated stainless steel grub screw.

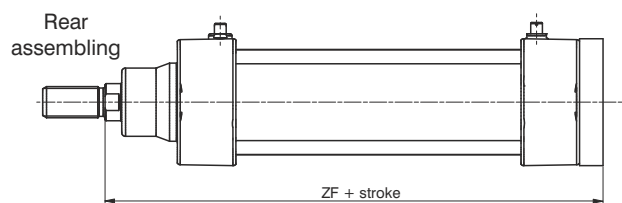
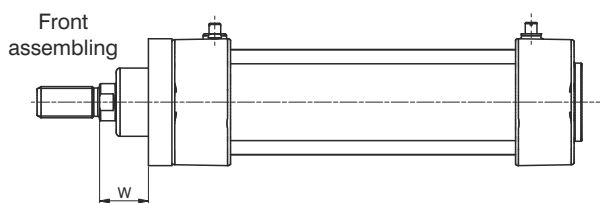
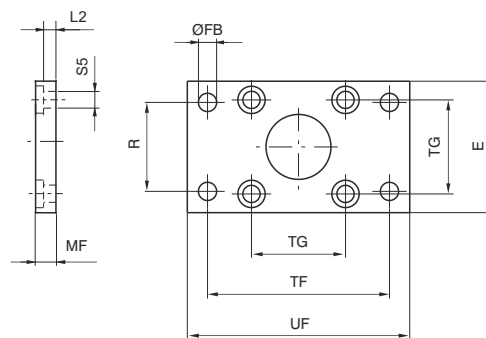


Front and rear flanges (MF1 - MF2)

Ordering code

1393.Ø.03F

Plate in stainless steel AISI 316 which allows anchorage of the cylinder at a right angle to the plane.



Bore	E	ØFB (H 13)	MF (JS 14)	R (JS 14)	TF (JS 14)	TG	UF	ZF	W	L2	ØS5	Weight (gr.)
32	45	7	10	32	64	32,5	80	130	16	5	6,6	190
40	52	9	10	36	72	38	90	145	20	5	6,6	250
50	65	9	12	45	90	46,5	110	155	25	6,5	9	480
63	75	9	12	50	100	56,5	120	170	25	6,5	9	620
80	95	12	15	63	126	72	150	189	31	7	11	1430
100	115	14	15	75	150	89	170	204	36	7	11	1990

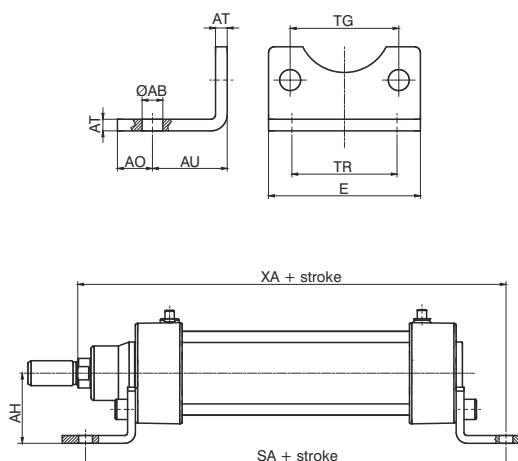
Short mounting foot brackets (MS1)

Ordering code

1393.Ø.05/1F



Elements used to anchor the cylinder parallel to the mounting plane. They are made of stainless steel AISI 316.



Bore	32	40	50	63	80	100
ØAB (H 14)	7	9	9	9	12	14
AH	32	36	45	50	63	71
AU (± 0.2)	24	28	32	32	41	41
AO	11	8	15	13	14	16
E	45	52	65	75	95	115
AT	4	4	5	5	6	6
SA	142	161	170	185	210	220
TG	32,5	38	46,5	56,5	72	89
TR (JS 14)	32	36	45	50	63	75
XA	144	163	175	190	215	230
Weight gr.	60	70	160	180	370	430

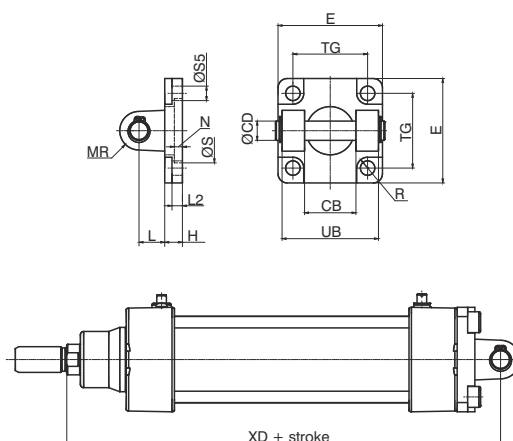
Rear clevis (MP2)

Ordering code

1393.Ø.09F



This type of mounting allows anchorage of the cylinder either parallel or right angle to plane; the cylinder rod can oscillate and self-align as necessary when under load. Made of stainless steel AISI 316.



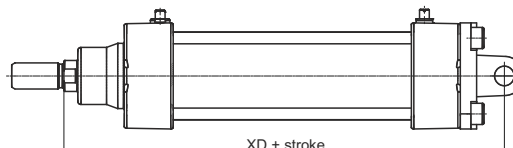
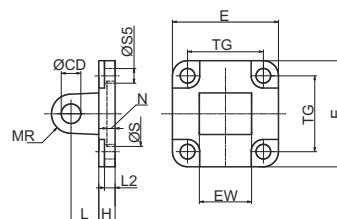
Bore	32	40	50	63	80	100
CB (H 14)	26	28	32	40	50	60
ØCD	10	12	12	16	16	20
E	45	55	65	75	95	115
ØS (H11)	30	35	40	45	45	55
N	5	5	5	5	/	/
R (H13)	5,5	5,5	7,5	7,5	9	9
H	10	10	10	12	14	16
L	12	15	17	20	22	25
MR	10	12	12	16	16	20
TG	32,5	38	46,5	56,5	72	89
UB (h14)	45	52	60	70	90	110
XD	142	160	170	190	210	230
L2 (±0,5)	5,5	5,5	6,5	6,5	10	10
S5 (H13)	6,6	6,6	9	9	11	11
Weight gr.	140	230	370	540	1000	1700

Rear male clevis (MP4)

Ordering code

1393.Ø.09/1F

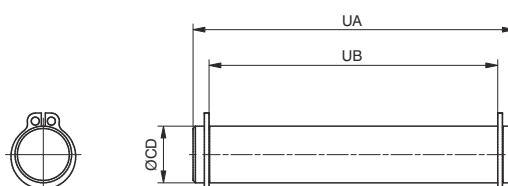

Similar to 09 clevis except for the connection, which is male rather than female. Used to mount the cylinder either parallel or at a right angle to the plane; the cylinder rod can oscillate and self-align as necessary when under load. Made of stainless steel AISI 316.



Bore	32	40	50	63	80	100
CD (H 9)	10	12	12	16	16	20
E	45	55	65	75	95	115
EW ^(-0,2) _(-0,6)	26	28	32	40	50	60
H	10	10	10	12	14	16
L	12	15	17	20	22	25
ØS (H11)	30	35	40	45	45	55
N	5	5	5	5	/	/
R (H13)	5,5	5,5	7,5	7,5	9	9
MR	10	12	12	16	16	20
TG	32,5	38	46,5	56,5	72	89
XD	142	160	170	190	210	230
L2 (±0,5)	5,5	5,5	6,5	6,5	10	10
S5 (H13)	6,6	6,6	9	9	11	11
Weight gr.	180	280	370	680	1200	2100

Pin with circlips for rear clevis (MP4 and MP2)

Ordering code

1393.Ø.37F


Stainless steel AISI 316 pin, complete with stainless steel circlips, which can be used with clevis code 1393.Ø.09/1F and 1393.Ø.09F

Bore	32	40	50	63	80	100
CD (e8)	10	12	12	16	16	20
UA	53	60	68	78	98	118
UB ^(-0,5) ₍₋₀₎	46	53	61	71	91	111
Weight gr.	35	50	60	120	150	290

Standard complete trunnion

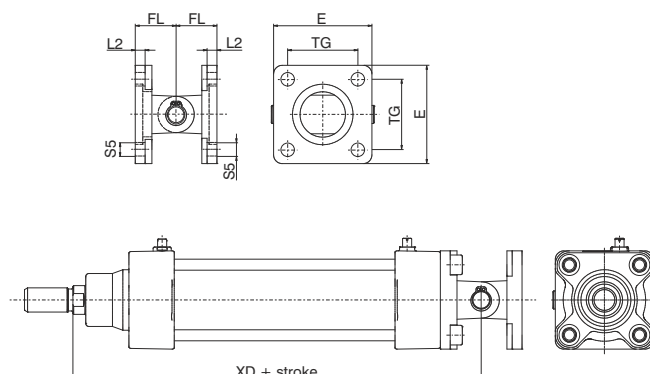
Ordering code

1393.Ø.22F

Mounting consists of rear clevis code 1380.Ø09F
+ rear male clevis code 1380.Ø.09/1F
(ordering separately)



Made of stainless steel AISI 316.



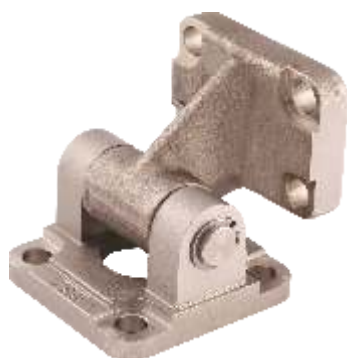
Bore	32	40	50	63	80	100
CD	10	12	12	16	16	20
E	45	55	65	75	95	115
FL	22	25	27	32	36	41
L 2 (±0,5)	5,5	5,5	6,5	6,5	10	10
S 5	6,6	6,6	9	9	11	11
TG	32,5	38	46,5	56,5	72	89
XD	142	160	170	190	210	230
Weight gr.	360	580	780	1370	2370	4110

Square angle trunnion (AB7)

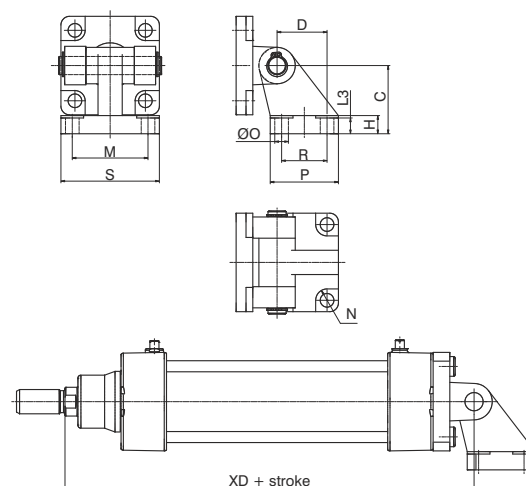
Ordering code

1393.Ø.35F

Counter clevis can be ordered
separately with code 1393.Ø.11/2F



Made of stainless steel AISI 316.



Bore	32	40	50	63	80	100
D (JS 15)	21	24	33	37	47	55
C (JS 15)	32	36	45	50	63	71
H	8	10	12	12	14	15
N (H 13)	5,5	5,5	7,5	7,5	9	9
L3	6,5	8,5	10,5	10,5	11,5	12,5
R (JS 14)	18	22	30	35	40	50
P	31	35	45	50	60	70
O (H 13)	6,6	6,6	9	9	11	11
S	51	54	65	67	86	96
M (JS 14)	38	41	50	52	66	76
XD	142	160	170	190	210	230
Weight gr.	330	520	810	1200	2200	4710

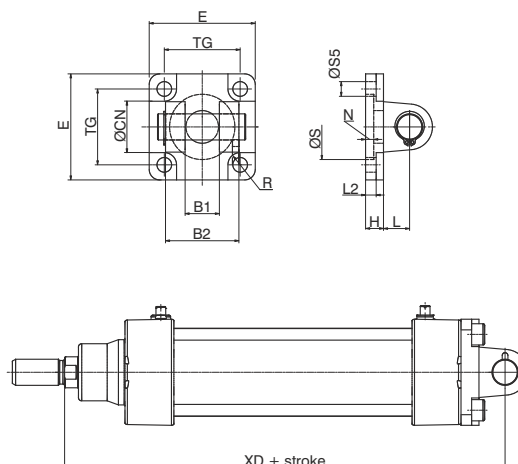
Rear narrow clevis (AB6)

Ordering code

1393.Ø.30F



Utilised with clevis 1393.Ø.15F allows the cylinder to oscillate in all directions (see standard complete trunnion 1393.Ø.36F)
Made of stainless steel AISI 316.



Bore	32	40	50	63	80	100
B1 (H 14)	14	16	21	21	25	25
B2 (h 14)	34	40	45	51	65	75
ØCN	10	12	16	16	20	20
E	45	55	65	75	95	115
H	10	10	10	12	14	16
L	12	15	17	20	22	25
L2 (±0,5)	5,5	5,5	6,5	6,5	10	10
S5 (H 13)	6,6	6,6	9	9	11	11
TG	32,5	38	46,5	56,5	72	89
XD	142	160	170	190	210	230
ØS (H 12)	30	35	40	45	45	55
R (H 13)	5,5	5,5	7,5	7,5	9	9
N	5	5	5	5	5	5
Weight gr.	170	270	420	650	1380	2050

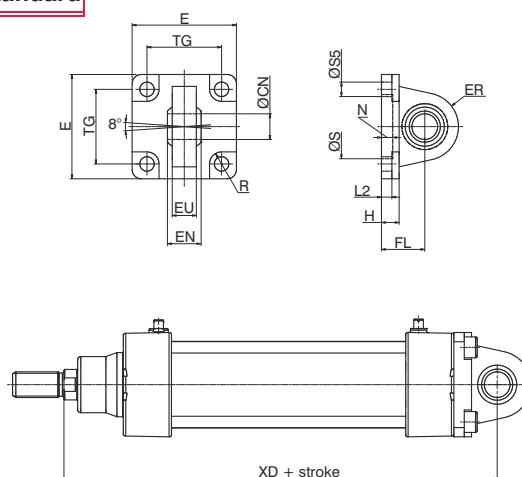
Rear male clevis (MP6) with jointed head according to DIN 648K standard

Ordering code

1393.Ø.15F



Utilised with clevis 1393.Ø.30F allows the cylinder to oscillate in all directions.
Made of stainless steel AISI 316.



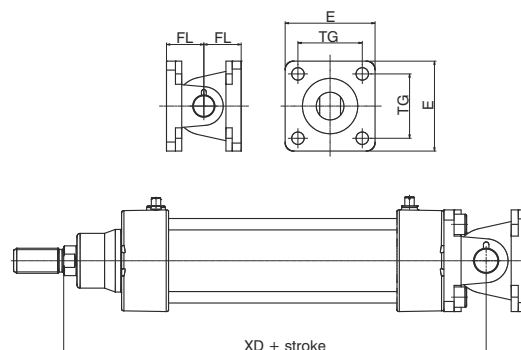
Bore	32	40	50	63	80	100
ØCN (H 7)	10	12	16	16	20	20
E	45	55	65	75	95	115
EN (-0.1)	14	16	21	21	25	25
ER	15	18	20	23	27	30
EU	10,5	12	15	15	18	18
FL (JS 15)	22	25	27	32	36	41
H	10	10	10	12	14	16
L2	5,5	5,5	6,5	6,5	10	10
S5 (H 13)	6,6	6,6	9	9	11	11
TG	32,5	38	46,5	56,5	72	89
XD	142	160	170	190	210	230
ØS (H 11)	30	35	40	45	45	55
R (H 13)	5,5	5,5	7,5	7,5	9	9
N	5	5	5	5	5	5
Weight gr.	150	260	370	600	1130	1800

Standard complete trunnion with jointed head according to DIN 648K standard

Ordering code

1393.Ø.36F

Mounting consists of rear narrow clevis code 1393.Ø.30F
with rear male clevis code 1393.Ø.15F



Made of stainless steel AISI 316.

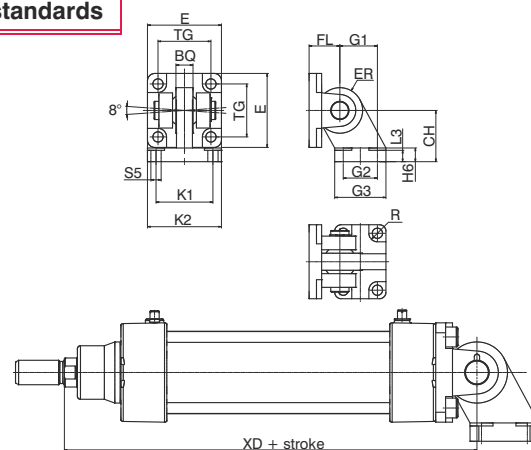
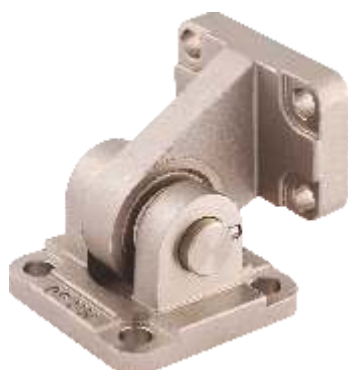
Bore	32	40	50	63	80	100
E	45	55	65	75	95	115
FL (JS 15)	22	25	27	32	36	41
TG	32,5	38	46,5	56,5	72	89
XD	142	160	170	190	210	230
Weight gr.	320	530	790	1250	2510	3850

Complete square angle trunnion with jointed head acc. to DIN 648K standards

Ordering code

1393.Ø.27F

Mounting consist of rear narrow clevis cod. 1393.Ø.30F
with Simple square counter clevis cod. 1393.Ø.28F
(ordering separately)



Made of stainless steel AISI 316.

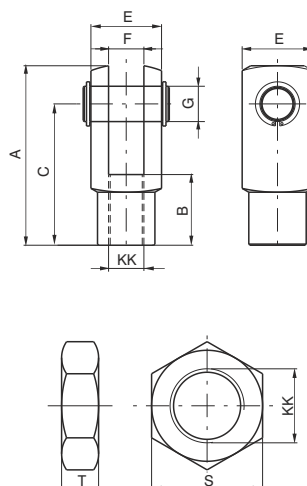
Bore	32	40	50	63	80	100
CH (JS 15)	32	36	45	50	63	71
E	45	55	65	75	95	115
FL	22	25	27	32	36	41
G1 (JS 15)	21	24	33	37	47	55
G2 (JS 14)	18	22	30	35	40	50
G3	31	35	45	50	60	70
H6	10	10	12	12	14	15
K1 (JS 14)	38	41	50	52	66	76
K2	51	54	65	67	86	96
L3 (+0,5/-0)	8,5	8,5	10,5	10,5	11,5	12,5
S5 (H13)	6,6	6,6	9	9	11	11
TG	32,5	38	46,5	56,5	72	89
XD	142	160	170	190	210	230
BQ	10,5	12	15	15	18	18
ER	15	18	20	23	27	30
R (H 13)	5,5	5,5	7,5	7,5	9	9
Weight gr.	350	540	880	1200	2350	3380

Rod fork and nuts

Ordering code

1393.Ø.13F

1393.Ø.18F



Fork:

Element that when screwed to the rod consents a regular functioning even when there are significant lateral forces as the connection point.

Made of stainless steel AISI 303.

Nut:

Used to block the position of the fork.

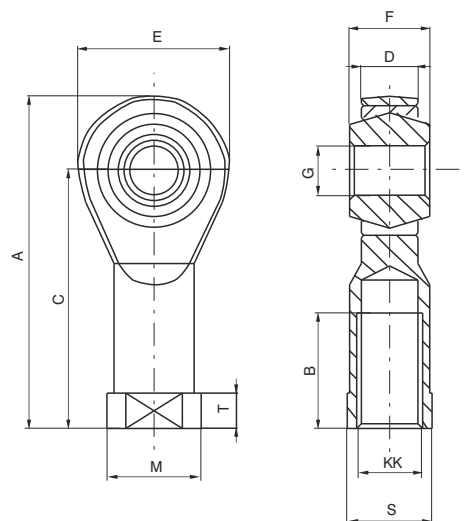
Made of stainless steel AISI 316.

Bore	32	40	50	63	80	100
A	52	62	83	83	105	105
B	20	24	32	32	40	40
C	40	48	64	64	80	80
E	20	24	32	32	40	40
F(B13)	10	12	16	16	20	20
G	10	12	16	16	20	20
S	17	19	24	24	30	30
T	6	7	8	8	9	9
KK	M10X1,25	M12X1,25	M16X1,5	M16X1,5	M20X1,5	M20X1,5
Weight gr.	fork 100	140	340	340	680	680
	nut 15	20	20	20	40	40

Ball joint

Ordering code

1393.Ø.32F



Ball joint:

Mounted on the rod thread, assures a regular operation even in the presence of significant forces to the linked element.

Made of stainless steel AISI 304 and 420.

Bore	32	40	50	63	80	100
A	57	66	85	85	102	102
B	20	22	28	28	33	33
C	43	50	64	64	77	77
D	10,5	12	15	15	18	18
E	28	32	42	42	50	50
F	14	16	21	21	25	25
G (H 7)	10	12	16	16	20	20
KK	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
M	19	22	27	27	34	34
S	17	19	22	22	30	30
T	6,5	6,5	8	8	10	10
Weight gr.	75	110	220	220	410	410

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D. NW. 76/GB - 04/2015
PRINTED IN ITALY - 04/2015

