Cylinders Series 60

Single and double-acting, magnetic cushioned
ø 32, 40, 50, 63, 80, 100,125 (DIN/ISO 6431)

- DIN/ISO 6431 VDMA 24562
- Rolled stainless steel rod
- Adjustable pneumatic cushioning

The Series 60 cylinders have been designed to comply with the dimensions laid down in the DIN/ISO 6431 standards. A permanent magnet is mounted on the piston in these cylinders which enables, by means of proximity switches positioned along the cylinder tube, receiving information about the piston' s position.

This cylinders series is normally equipped with adjustable end-stroke cushioning. Moreover these cylinders are equipped with a mechanical cushioning in order to reduce the impact of the piston as it reaches the end of the stroke.

GENERAL DATA

Type of construction	with tie-rods
Operation	double-acting, single-acting, tandem
Materials	aluminium end-blocks, NBR seals, PU rod, other parts see coding
Type of mounting	with tie-rods, front flange, rear flange, feet, centre trunnion, front and rear trunnion, swivel combination
Strokes min - max	10 ÷ 2500 mm
Operating temperature	0°C ÷ 80°C (with dry air - 20°C)
Special design	see coding examples
Operating pressure	1 ÷ 10 bar
Speed	10 ÷ 1000 mm/sec (No load)
Fluid	clean air, without lubrication If lubricated air is used, it is recommended to use oil ISOVG32. Once applied the lubrication should never be interrupted.

1

STANDARD STROKES FOR CYLINDERS SERIES 60

■ = Single acting
✖ = Double acting

Ø	25	50	75	100	125	150	160	200	250	300	320	400	500
32	■ ✖	■ ✖	■ ✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
40	■ ✖	■ ✖	■ ✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
50	■ ✖	■ ✖	■ ✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
63	■ ✖	■ ✖	■ ✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
80	■ ✖	■ ✖	■ ✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
100		■ ✖	■ ✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
125		✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖

CODING EXAMPLE

60	M	2	L	050	A	0200	

60	SERIES
M	VERSIONS M = magnetic N = non magnetic
2	OPERATION 1 = single-acting (front spring) 2 = double-acting (front and rear cushions) 3 = double-acting (no cushion) 4 = double-acting (rear cushion) 5 = double-acting (front cushion) 6 = double-acting (through-rod with front and rear cushions) 7 = single-acting (through-rod)
L	MATERIALS L = rolled stainless steel rod AISI 420B - anodized aluminium round tube - NBR seals nuts and tie-rods zinc-plated steel - rod seals PU T = rolled stainless steel rod AISI 420B - anodized aluminium round tube - NBR seals nut stainless steel AISI 303 - tie-rods stainless steel AISI 420B - rod seals PU
050	BORE 32 mm 40 mm 50 mm 63 mm 80 mm 100 mm 125 mm
A	CONSTRUCTION A = standard with lock nut for rod RL = cylinder with rod lock F = cylinder with centre trunnion
020	STROKE (see table)
V	= standard V = rod seal FKM N = tandem R = rod seal NBR W = all seals FKM (0 ÷130C°)

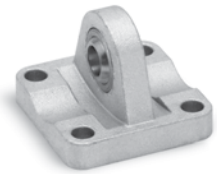
MOVEMENT

CYLINDERS ACCESSORIES SERIES 60

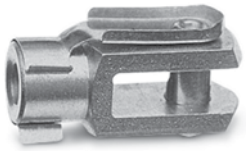
Piston rod socket joint Mod. GY

Piston rod lock nut Mod. U

Clevis pin Mod. S

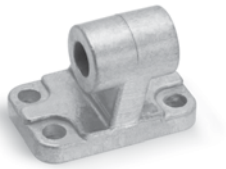


Rear trunnion ball-joint Mod. R



Rod fork end Mod. G

Swivel ball joint Mod. GA



90° male trunnion Mod. ZC

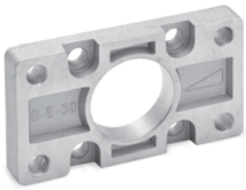
Swivel combination Mod. C+L+S

Centre trunnion Mod. F

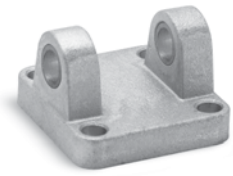
Self aligning rod Mod. GK (New)

Counter bracket for centre trunnion Mod. BF

Foot mount Mod. B



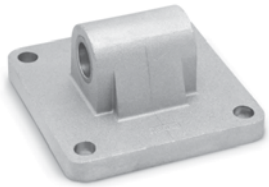
Front and rear flange Mod. D-E



Rear female trunnion Mod. C and CH

Front female trunnion Mod. H and CH

All accessories are supplied separately, except for Piston Rod Lock Nut Mod. U



Rear trunnion male, Mod. L

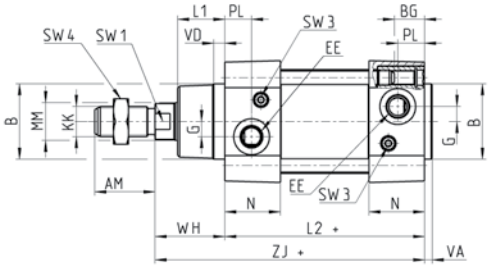
1

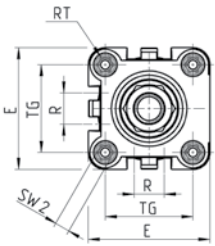
MOVEMENT

Cylinders Series 60

N.B. : the single-acting cylinders' sizes ZJ and L2 are increased by 25 mm.

+ = add the stroke





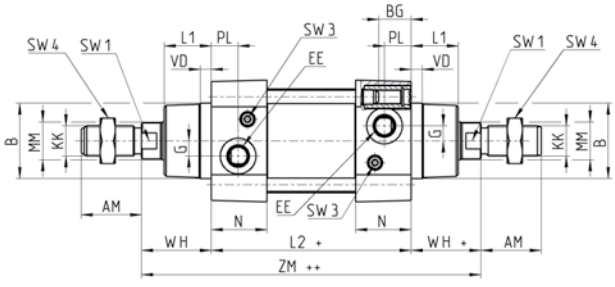
DIMENSIONS

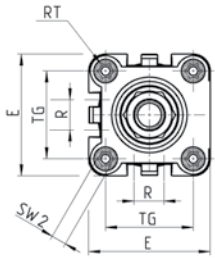
Ø	MM	KK	B	PL	L1	AM	VA	EE	WH	L2+	ZJ+	VD	N	BG	RT	G	TG	R	E	SW1	SW2	SW3	SW4	Front/rear cushion stroke
32	12	M10x1,25	30	14	18	22	4	G1/8	26	94	120	5	26	16	M6	5	32,5	13	46	10	6	2	17	17 / 12
40	16	M12x1,25	35	15	21	24	4	G1/4	30	105	135	5	29	16	M6	5	38	13,5	55	13	6	2	19	20 / 17
50	20	M16x1,5	40	15	25	32	4	G1/4	37	106	143	6	29,5	16	M8	8	46,5	16	64,5	17	8	3	24	15 / 14
63	20	M16x1,5	45	21	26	32	4	G3/8	37	121	158	6	36,5	16	M8	8	56,5	28	75	17	8	3	24	17 / 16
80	25	M20x1,5	45	21	30	40	4	G3/8	46	128	174	7	36	19	M10	8	72	30	93	22	10	5	30	20 / 20
100	25	M20x1,5	55	23	35	40	4	G1/2	51	138	189	7	38,5	19,5	M10	8	89	40	110	22	10	5	30	21 / 19
125	32	M27x2	60	23,5	42	54	6	G1/2	65	160	225	8	43	23	M12	10,5	110	50	135	27	12	4	41	26 / 25

Cylinders Series 60

Through rod
N.B. : the single-acting cylinders' sizes ZJ and L2 are increased by 25 mm.

+ = add the stroke
++ = add the stroke two times



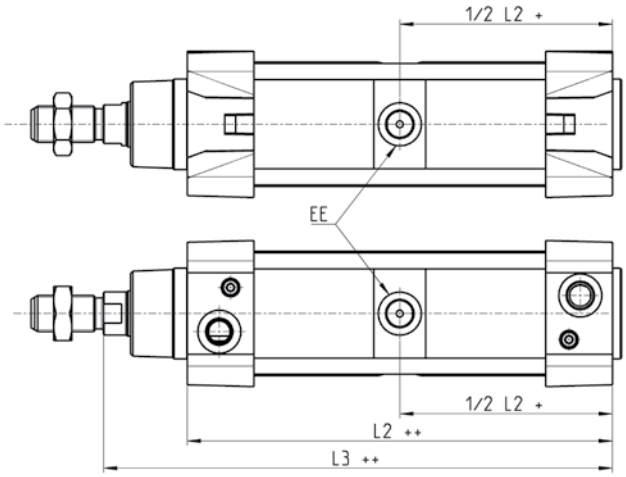


DIMENSIONS

Ø	MM	KK	B	PL	L1	AM	EE	WH	L2+	ZM++	VD	N	RT	BG	G	TG	R	E	SW1	SW2	SW3	SW4	Front/rear cushion stroke
32	12	M10x1,25	30	14	18	22	G1/8	26	94	146	5	26	M6	16	5	32,5	13	46	10	6	2	17	17 / 12
40	16	M12x1,25	35	15	21	24	G1/4	30	105	165	5	29	M6	16	5	38	13,5	55	13	6	2	19	20 / 17
50	20	M16x1,5	40	15	25	32	G1/4	37	106	180	6	29,5	M8	16	8	46,5	16	64,5	17	8	3	24	15 / 14
63	20	M16x1,5	45	21	26	32	G3/8	37	121	195	6	36,5	M8	16	8	56,5	28	75	17	8	3	24	17 / 16
80	25	M20x1,5	45	21	30	40	G3/8	46	128	220	7	36	M10	19	8	72	30	93	22	10	5	30	20 / 20
100	25	M20x1,5	55	23	35	40	G1/2	51	138	240	7	38,5	M10	19,5	8	89	40	110	22	10	5	30	21 / 19
125	32	M27x2	60	23,5	42	54	G1/2	65	160	290	8	43	M12	23	10,5	110	50	135	27	12	4	41	26 / 25

Cylinders Series 60 tandem version

+ = add the stroke
++ = add the stroke two times

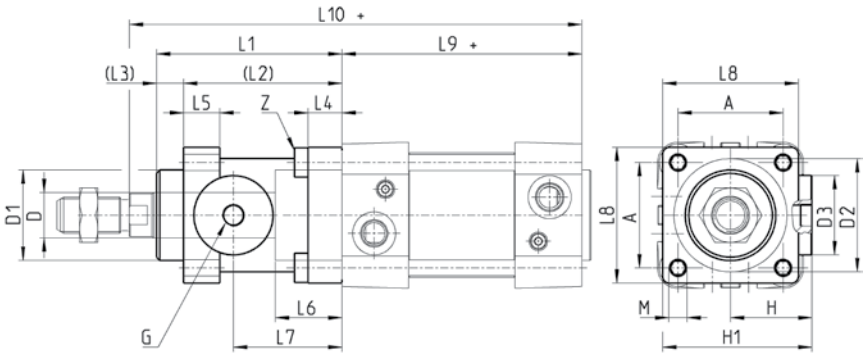


DIMENSIONS

Ø	EE	L2	L3
32	G1/8	171,5	197,5
40	G1/4	191,5	221,5
50	G1/4	188	225
63	G3/8	204	230
80	G3/8	225,5	271,5
100	G1/2	231	282
125	G1/2	264	329

Cylinders Series 60 with rod lock

+ = add the stroke

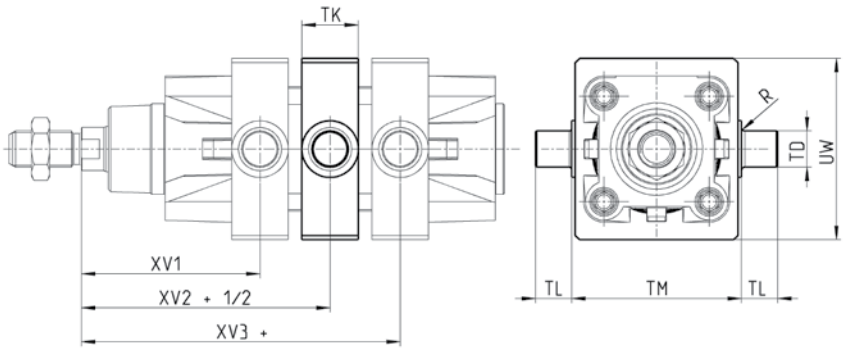


DIMENSIONS

Ø	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	ØD	ØD1	ØD2	ØD3	A	G	H	H1	M	Z
32	58	48	10	8	13	20,5	34	45	94	160	12	30,5	35	25	32,5	M5	25,5	46,5	M6	M6X20
40	65	55	10	8	13	22,5	38	50	105	178	16	35	40	28	38	G1/8	30	53	M6	M6X20
50	82	70	12	15	16	29,5	48	60	106	200	20	40	50	35	46,5	G1/8	36	64	M8	M8X30
63	82	70	12	15	16	29,5	49,5	70	121	215	20	45	60	38	56,5	G1/8	40	75	M8	M8X30
80	110	90	20	18	20	35	61	90	128	254	25	45	80	48	72	G1/8	50	95	M10	M10X35
100	115	100	15	18	20	39	69	105	138	269	25	55	100	58	89	G1/8	58	110,5	M10	M10X35
125	167	122	45	22	30	51	86,5	140	160	350	32	60	130	65	110	G1/8	80	150	M12	M12X40

Cylinders Series 60 with centre trunnion Mod F. mounted

+ = add the stroke



DIMENSIONS

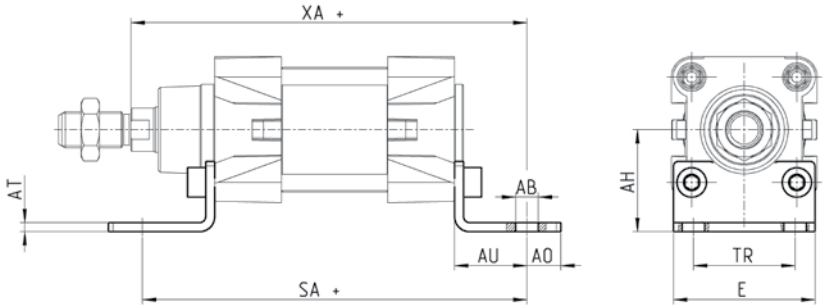
Ø	XV1	XV2	XV3	TM	TK	TD	TL	UW	R
32	62	73	84	50	20	12	12	65	0,1
40	71,5	82,5	93,5	63	25	16	16	74	0,15
50	79	90	101	75	25	16	16	85	0,15
63	88,5	97,5	106,5	90	30	20	20	100	0,15
80	97	110	123	110	30	20	20	120	0,15
100	104,5	120	135,5	132	30	25	25	135	0,2
125	123	145	167	162	30	25	25	160	0,2

Foot mount Mod. B

Material: zinc-plated steel

Supplied wth:
2x feet
4x screws

+ = add the stroke

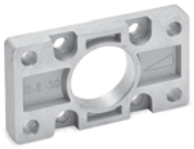


DIMENSIONS

Mod.	Ø	AT	SA+	XA+	TR	E	AB	AH	AO	AU	torque force
B-41-32	32	4	142	144	32	45	7	32	11	24	6 Nm
B-41-40	40	4	161	163	36	53,5	10	36	15	28	6 Nm
B-41-50	50	4	170	175	45	62,5	10	45	15	32	13 Nm
B-41-63	63	5	185	190	50	73	10	50	15	32	13 Nm
B-41-80	80	6	210	216	63	92	12	63	20	41	19 Nm
B-41-100	100	6	220	230	75	108,5	14,5	71	25	41	22 Nm
B-41-125	125	7	250	270	90	132	16,5	90	25	45	26 Nm

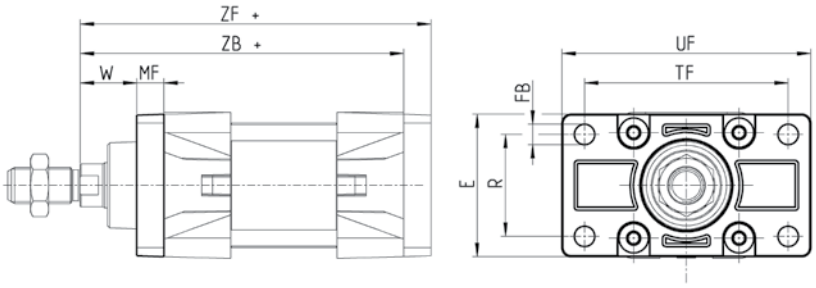
Front and rear flange Mod. D-E

Material aluminium



Supplied with:
1x flange
4x screws

+ = add the stroke



DIMENSIONS

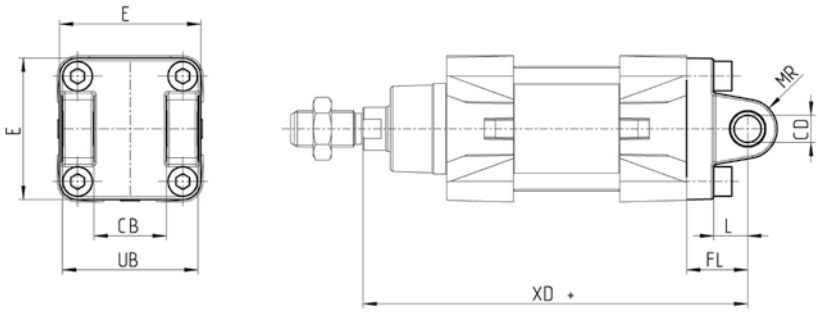
Mod.	Ø	W	MF	ZB	TF	R	UF	E	FB	ZF	torque force
D-E-41-32	32	16	10	120	64	32	86	45	7	130	6 Nm
D-E-41-40	40	20	10	135	72	36	88	52	9	145	6 Nm
D-E-41-50	50	25	12	143	90	45	110	63	9	155	13 Nm
D-E-41-63	63	25	12	158	100	50	116	73	9	170	13 Nm
D-E-41-80	80	30	16	174	126	63	148	95	12	190	19 Nm
D-E-41-100	100	35	16	189	150	75	176	115	14	205	22 Nm
D-E-41-125	125	45	20	225	180	90	224	135	16	245	26 Nm

Rear trunnion, female Mod. C and CH

Material: aluminium

Supplied with:
1x female trunnion
4x screws

+ = add the stroke



DIMENSIONS

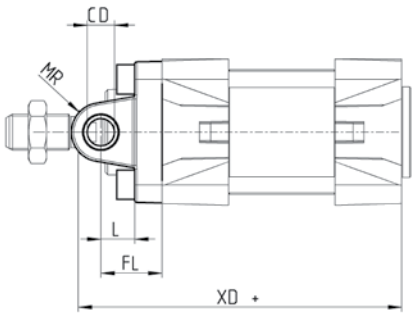
Mod.	Ø	CD	L	FL	XD+	MR	E	CB	UB	torque force
C-41-32	32	10	12	22	142	10	45	26	45	6 Nm
C-41-40	40	12	15	25	160	13	52	28	52	6 Nm
C-41-50	50	12	15	27	170	13	63	32	60	13 Nm
C-H-41-63	63	16	20	32	190	15	73	40	70	13 Nm
C-H-41-80	80	16	24	36	210	15	95	50	90	19 Nm
C-H-41-100	100	20	29	41	230	18	115	60	110	22 Nm
C-H-41-125	125	25	30	50	275	25	135	70	130	26 Nm

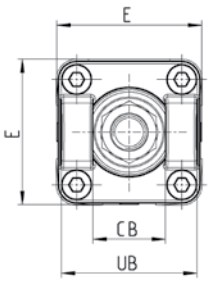
Front trunnion female Mod. H and C-H

Material: aluminium

Supplied with:
1x trunnion
4x screws

+ = add the stroke





DIMENSIONS

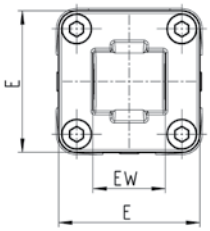
Mod.	CB	UB	E	XD+	FL	L	CD	MR	torque force
H-41-32	26	45	45	120	22	12	10	10	6 Nm
H-41-40	28	52	52	135	25	15	12	13	6 Nm
H-41-50	32	60	63	143	27	15	12	13	13 Nm
H-60-63	40	70	73	158	32	20	16	15	13 Nm
C-H-41-80	50	90	95	174	36	24	16	15	19 Nm
C-H-41-100	60	110	115	189	41	29	20	18	22 Nm
C-H-41-125	70	130	135	225	50	30	25	25	22 Nm

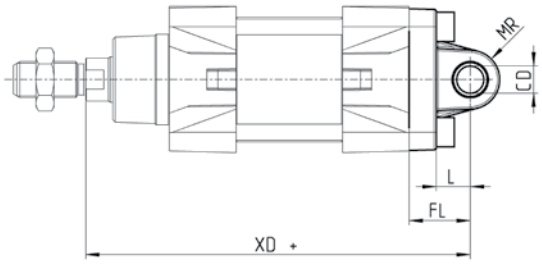
Rear trunnion, male Mod. L

Material: aluminium

Supplied with:
2x male trunnions
4x screws

+ = add the stroke





DIMENSIONS

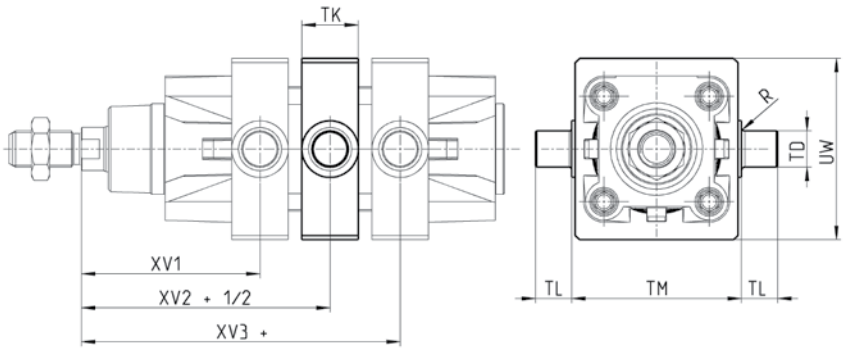
Mod.	Ø	CD	L	FL	XD+	MR	E	EW	torque force
L-41-32	32	10	12	22	142	9	45	26	6 Nm
L-41-40	40	12	15	25	160	13	52	28	6 Nm
L-41-50	50	12	15	27	170	13	63	32	13 Nm
L-41-63	63	16	20	32	190	15	73	40	13 Nm
L-41-80	80	16	24	36	210	15	95	50	19 Nm
L-41-100	100	20	29	41	230	18	115	60	22 Nm
L-41-125	125	25	30	50	275	25	135	70	26 Nm

Centre trunnion Mod. F

Material: zinc-plated steel

Supplied with:
1x intermediate trunnion
4x clamping elements
4x locking screws

+ = add the stroke

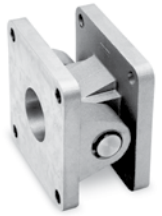


DIMENSIONS

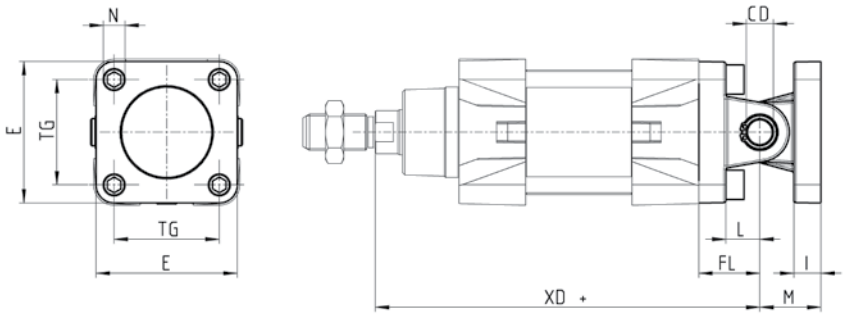
Mod.	Ø	XV1	XV2	XV3	TM	TK	TD	TL	UW	R
F-32	32	62	73	84	50	20	12	12	65	0,1
F-40	40	71,5	82,5	93,5	63	25	16	16	74	0,15
F-50	50	79	90	101	75	25	16	16	85	0,15
F-63	63	88,5	97,5	106,5	90	30	20	20	100	0,15
F-80	80	97	110	123	110	30	20	20	120	0,15
F-100	100	104,5	120	135,5	132	30	25	25	135	0,2
F-125	125	123	145	167	160	30	25	25	160	0,2

Accessory combination Mod. C+L+S

Material: aluminium



+ = add the stroke



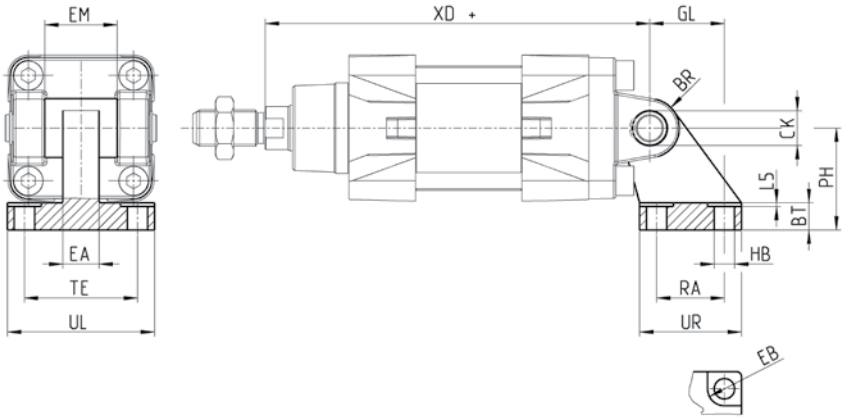
DIMENSIONS

Mod.	Ø	CD	L	FL	XD+	TG	E	I	M	N	torque force
C+L+S	32	10	12	22	142	32,5	45	10	22	6,5	6 Nm
C+L+S	40	12	15	25	160	38	52	10	25	6,5	6 Nm
C+L+S	50	12	15	27	170	46,5	63	12	27	9	13 Nm
C+L+S	63	16	20	32	190	56,5	73	12	32	9	13 Nm
C+L+S	80	16	24	36	210	72	95	12	36	11	19 Nm
C+L+S	100	20	29	41	230	89	115	12	41	11	22 Nm
C+L+S	125	25	30	50	275	110	135	20	50	13	26 Nm

90° male trunnion Mod. ZC

CETOP RP 107P
Material: aluminium

Supplied with:
1x male trunnion

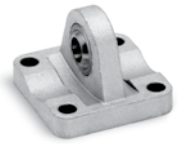


DIMENSIONS

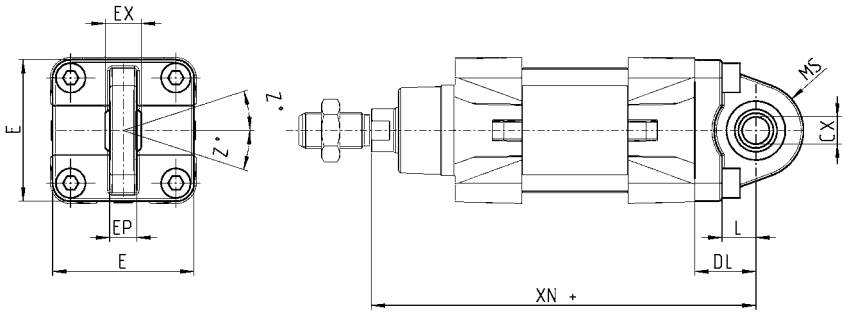
Mod.	Ø	EB	⌀CK	HB	XD+	TE	UL	EA	GL	L5	RA	EM	UR	PH	BT	BR
ZC-32	32	11	10	6,6	142	38	51	10	21	1,6	18	26	31	32	8	10
ZC-40	40	11	12	6,6	160	41	54	15	24	1,6	22	28	35	36	10	11
ZC-50	50	15	12	9	170	50	65	16	33	1,6	30	32	45	45	12	13
ZC-63	63	15	16	9	190	52	67	16	37	1,6	35	40	50	50	12	15
ZC-80	80	18	16	11	210	66	86	20	47	2,5	40	50	60	63	14	15
ZC-100	100	18	20	11	230	76	96	20	55	2,5	50	60	70	71	15	19
ZC-125	125	20	25	14	275	94	124	30	70	3,2	60	70	90	90	20	22,5

Rear trunnion ball-joint Mod. R

Material: aluminium



Supplied with:
1x trunnion ball joint
4x screws
* not according to standard
+ = add the stroke



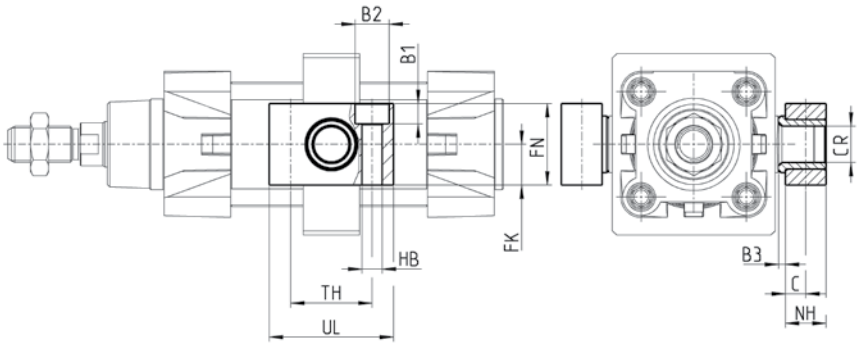
DIMENSIONS

Mod.	Ø	⌀CX	L	DL	XN+	MS	E	EX	EP	Z	torque force
R-41-32	32	10	12	22	142	16	45	14	10,5	4	6 Nm
R-41-40	40	12	15	25	160	20	52	16	12	4	6 Nm
R-41-50	50	12	15	27	170	20	63	16	12	4	13 Nm
R-41-63	63	16	20	32	190	24	73	21	15	4	13 Nm
R-41-80	80	16	24	36	210	24	95	21	15	4	19 Nm
R-41-100	100	20	29	41	230	30	115	25	18	4	22 Nm
R-41-125	125	30	30	50	275	40	140	37	25	4	26 Nm

Counter bracket for centre trunnion Mod. BF

Material: aluminium

Supplied with:
2x supports

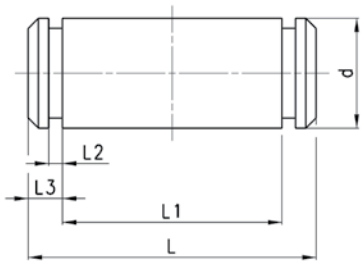


DIMENSIONS

Mod.	CR	NH	C	b3	TH	UL	FK	FN	B1	B2	HB
BF-32	12	15	7,5	3	32	46	15	30	6,8	11	6,6
BF-40-50	16	18	9	3	36	55	18	36	9	15	9
BF-63-80	20	20	10	3	42	65	20	40	11	18	11
BF-100-125	25	25	12,5	3,5	50	75	25	50	13	20	14

Clevis pin Mod. S

Suppied with:
1x clevis pin (stainless steel 303)
2x Seeger (steel)



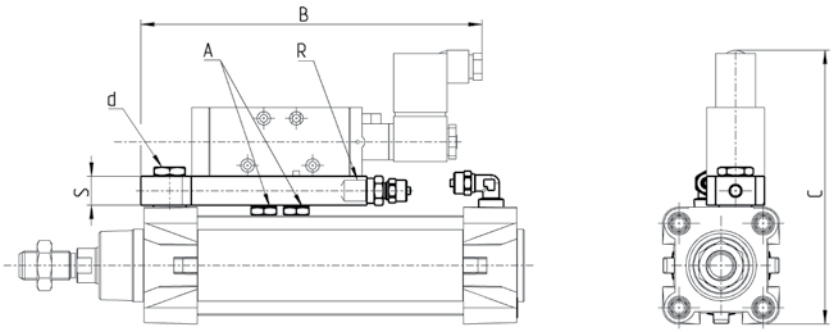
DIMENSIONS

Mod.	Ø	d	L	L1	L2	L3
S-32	32	10	52	46	1,1	3
S-40	40	12	59	53	1,1	3
S-50	50	12	67	61	1,1	3
S-63	63	16	77	71	1,1	3
S-80	80	16	97	91	1,1	3
S-100	100	20	121	111	1,3	5
S-125	125	25	140,5	132	1,3	4,25

Accessory for mounting valves on the cylinder

The mountings Mod. PCV, enable the valve to be mounted directly on the cylinder. The subbase is fixed on the cylinder using screws Mod. 1635 or flow controllers, Mod. SCU. The other end of the plate has a threaded port.

d* = mounting on the cylinder using Mod. 1635 or Mod. SCU.
Note: the minimum possible stroke is 100mm.

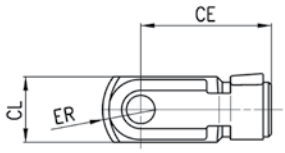


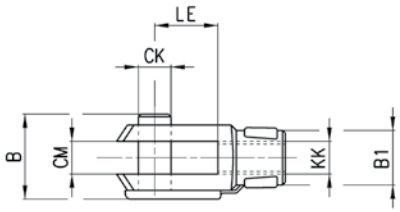
DIMENSIONS

Mod.	Ø	A	B	C	R	S	d*
PCV-32	32	G1/8	185	131,5	G1/8	16	G1/8
PCV-40-50	40	G1/8	188,5	140,5	G1/4	16	G1/4
PCV-40-50	50	G1/8	188,5	150	G1/4	16	G1/4
PCV-63-80	63	G1/4	215	167	G1/4	16	G3/8
PCV-63-80	80	G1/4	215	185	G1/4	16	G3/8

Rod fork end Mod. G

ISO 8140
Material: zinc-plated steel



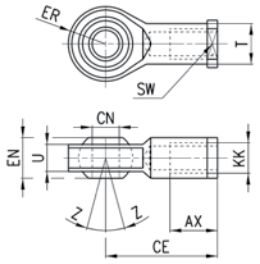


DIMENSIONS

	CK	LE	CM	CL	ER	CE	KK	B	B1
G-25-32	10	20	10	20	12	40	M10X1,25	26	18
G-40	12	24	12	24	14	48	M12X1,25	32	20
G-50-63	16	32	16	32	19	64	M16X1,5	40	26
G-80-100	20	40	20	40	25	80	M20X1,5	48	34
G-41-125	30	55	30	55	38	110	M27X2	74	48

Swivel ball joint Mod. GA

ISO 8139.
Material: zinc-plated steel.

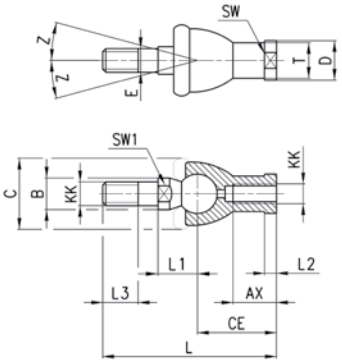


DIMENSIONS

Mod.	Ø	⌀CN(H7)	U	EN	ER	AX	CE	KK	T	Z	SW
GA-32	32	10	10,5	14	14	20	43	M10X1,25	15	6,5	17
GA-40	40	12	12	16	16	22	50	M12X1,25	17,5	6,5	19
GA-50-63	50-63	16	15	21	21	28	64	M16X1,5	22	7,5	22
GA-80-100	80-100	20	18	25	25	33	77	M20x1,5	27,5	7	30
GA-41-125	125	30	25	37	35	51	110	M27x2	40	7,5	41

Piston rod socket joint Mod.GY

Material: zama and zinc-plated steel.

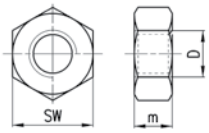


DIMENSIONS

Mod.	Ø	KK	L	CE	L2	AX	SW	L1	L3	⌀T	⌀D	E	⌀B	⌀C	Z
GY-32	32	M10X1,25	74	35	6,5	18	17	19,5	15	15	19	10	14	28	15
GY-40	40	M12X1,25	84	40	6,5	20	19	22	17	17,5	22	12	19	32	15
GY-50-63	50-63	M16X1,5	112	50	8	27	22	27,5	23	22	27	16	22	40	11
GY-80-100	80-100	M20x1,5	133	63	10	38	30	31,5	25	27,5	34	20	29	45	7,5

Piston rod lock nut Mod. U

UNI EN ISO 4035
Material: zinc-plated steel

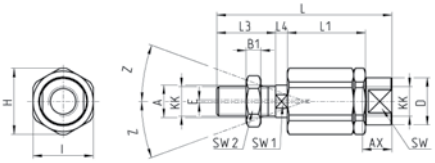


DIMENSIONS

Mod.	Ø	KK	m	SW
U-25-32	32	M10X1,25	6	17
U-40	40	M12X1,25	7	19
U-50-63	50-63	M16X1,5	8	24
U-80-100	80-100	M20X1,5	9	30
U-41-125	125	M27X2	12	41

Self aligning rod Mod. GK

New

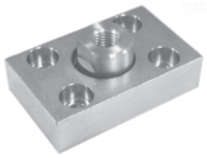


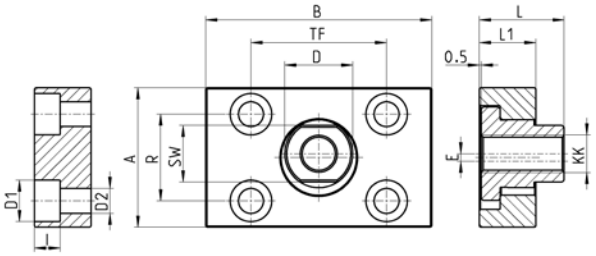
DIMENSIONS

Mod.	Ø	KK	L	L1	L3	L4	⌀A	⌀D	H	I	SW	SW1	SW2	B1	AX	Z	E
GK-25-32	32	M10X1,25	71,5	35	20	7,5	14	22	32	30	19	12	17	5	22	4	2
GK-40	40	M12X1,25	75,5	35	24	7,5	14	22	32	30	19	12	19	6	22	4	2
GK-50-63	50-63	M16X1,5	104	53	32	10	22	32	45	41	27	20	24	8	30	3	2
GK-80-100	80-100	M20x1,5	119	53	40	10	22	32	45	41	27	20	30	10	37	3	2

Coupling piece Mod. GKF

New





DIMENSIONS

Mod.	Ø	KK	A	B	R	TF	L	L1	I	Ø D	Ø D1	Ø D2	SW	E
GKF-25-32	32	M10x1,25	37	60	23	36	22,5	15	6,8	18	11	6,6	15	2
GKF-40	40	M12x1,25	56	60	38	42	22,5	15	9	20	15	9	15	2,5
GKF-50-63	50-63	M16x1,5	80	80	58	58	26,5	15	10,5	25	18	11	22	2,5
GKF-80-100	80-100	M20x1,5	90	90	65	65	32,5	20	13	30,5	20	14	27	2,5
GKF-125	125	M27x2	90	90	65	65	35,5	20	13	40	20	14	36	4