

Series 6E electromechanical cylinders ISO 15552

Sizes 32, 40, 50 and 63



The Series 6E cylinders are mechanical linear actuators with rod, in which the rotary movement, generated by a motor, is converted into a linear movement by means of a recirculating ball screw. Available in 4 sizes, 32, 40, 50 and 63, the Series 6E has dimensions based on the ISO 15552 standard and it is therefore possible to use the mounting accessories of the pneumatic cylinders.

The cylinders are equipped with a magnet that makes it possible to use external magnetic proximity switches (Series CST and CSH), allowing operations like homing or extra-stroke readings to be performed. The Series 6E is supplied with specific interface kits, which make it possible to connect the motor, both in line and parallel. High precision and easy mounting make the Series 6E the ideal solution for different applications, especially for multi-position systems.

- » Compatible with the ISO 15552 standard
- » Multi-position system with transmission of the movement by means of a recirculating ball screw
- » Possibility to connect the motor in line or parallel
- » Large range of motor interfaces
- » Permanent pre-lubrication (maintenance free)
- » High positioning repeatability
- » Reduced axial backlash
- » Possibility to use magnetic sensors
- » No stick-slip effects
- » Integrated anti-rotation system of the rod
- » IP 40
- » Wide range of fixing accessories

GENERAL DATA

Construction	electromechanical cylinder with recirculating ball screw
Design	profile with thread rolling screws based on the ISO 15552 standard
Operation	multi-position actuator with high precision linear movement
Sizes	32, 40, 50, 63
Strokes (min - max)	100 ÷ 1200 mm
Anti-rotation function	with anti-friction pads in technopolymer
Mounting	front/rear flange, with feet, with front/rear /swivel /intermediate trunnion
Mounting motor	in line and parallel
Operating temperature	0°C ÷ 50°C
Storage temperature	-20°C ÷ 80°C
Protection class	IP 40
Lubrication	Not necessary. A pre-lubrication is performed on the cylinder.
Max. Reversing backlash	0.02 mm
Repeatability	± 0.02
Duty cycle	100%
Max rotation play	± 0.4°
Use with external sensors	slots on three sides for sensors model CSH and CST

STANDARD STROKES

STANDARD STROKES

Size	100	200	300	400	500	600	700	800	900	1000	1100	1200
32												
40												
50												
63												

CODING EXAMPLE

6E	032	BS	0200	P05	A
-----------	------------	-----------	-------------	------------	----------

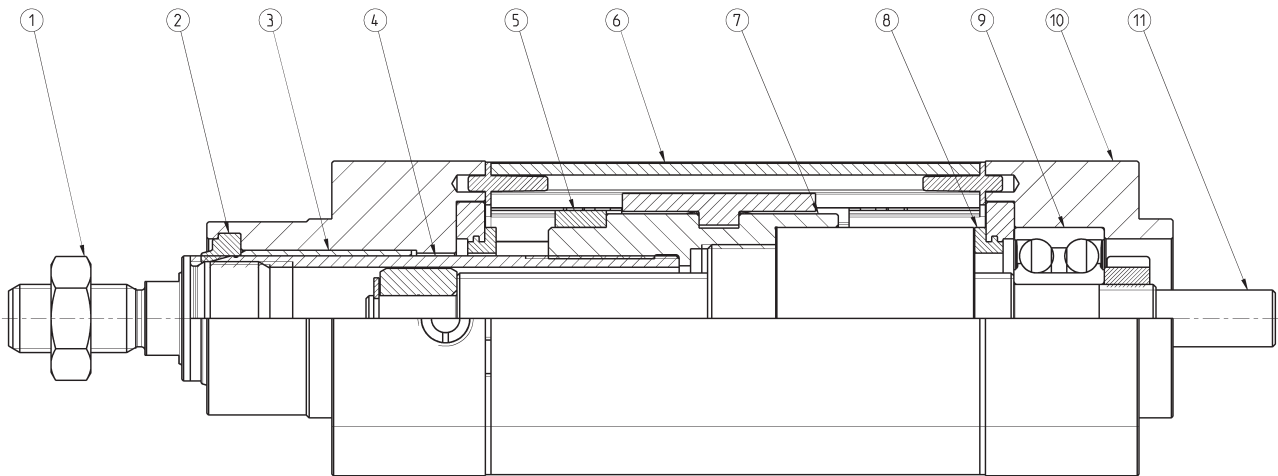
6E	SERIES
032	SIZE: 032 = 32 040 = 40 050 = 50 063 = 63
BS	DESIGN: BS = recirculating ball screw
0200	STROKE: 100 ÷ 1200 mm
P05	SCREW PITCH: P05 = 5 mm P10 = 10 mm P16 = 16 mm (for size 40 only) P20 = 20 mm (for size 50 only) P25 = 25 mm (for size 63 only)
A	CONSTRUCTION: A = standard with rod nut
	VERSION: = standard (_ _ _) = extended piston rod _ _ _ mm

MECHANICAL CHARACTERISTICS

MECHANICAL CHARACTERISTICS

Size		32	32	40	40	40	50	50	50	63	63	63
BS screw diameter	[mm]	12	12	16	16	16	20	20	20	25	25	25
BS screw pitch (p)	[mm]	5	10	5	10	16	5	10	20	5	10	25
Dynamic load coefficient (C)	[N]	6600	4400	12000	8500	9150	14900	11300	7800	17700	20500	11300
Max applicable torque	[Nm]	2.50	2.80	5.50	6.50	8.20	9.10	10.90	13.60	16.60	19.90	24.90
Max linear speed	[m/s]	0.56	1.12	0.42	0.84	1.33	0.33	0.67	1.33	0.27	0.53	1.33
Max rotational speed	[rpm]	6670	6670	5000	5000	5000	4000	4000	4000	3200	3200	3200
Max acceleration	[m/s ²]	25	25	25	25	25	25	25	25	25	25	25

SERIES 6E MATERIALS



LIST OF COMPONENTS

PARTS	MATERIALS
1. Rod nut	Zinc-plated steel
2. Rod seal	PU
3. Bushing	Technopolymer
4. Rod	Stainless steel
5. Magnet	Plastoferrite
6. Extrusion profile	Anodized aluminium
7. Guiding element BS screw	Aluminium
8. End stroke seals	NBR
9. Bearing	Steel
10. Rear endcap	Anodized aluminium
11. BS ball screw	Steel

ACCESSORIES FOR SERIES 6E CYLINDERS



Piston rod socket joint
Mod. GY



Piston rod lock nut
Mod. U



Clevis pin Mod. S



Rear trunnion ball-joint
Mod. R



Coupling piece
Mod. GKF



Swivel ball joint Mod. GA



90° male trunnion
Mod. ZC



Swivel Combination
Mod. C+L+S



Front fange
Mod. D-E



Self aligning rod
Mod. GK



Foot mount Mod. B-6E



Rear female trunnion
Mod. C and C-H



Rod fork end Mod. G



Rear trunnion male
Mod. L



Side clamping bracket
Mod. BG



All accessories are supplied separately, except for piston rod lock nut Mod. U

HOW TO CALCULATE THE LIFE OF THE CYLINDER

To perform a correct dimensioning of the Series 6E cylinder, you need to consider some facts.

Among these, the most important are:

- Dynamics of the system
- Operation and pause cyclicity
- Work environment
- General performance requirements: repeatability, accuracy, precision, etc.

CALCULATE THE LIFE IN ROTATIONS

where:

$$L_r = \left(\frac{C}{F_m \cdot f_w} \right)^3 \cdot 10^6$$

L_r = Life of the cylinder in number of rotations of the RDS ball screw

C = Dynamic load of the cylinder [N]

F_m = Average axial force applied [N]

f_w = Safety coefficient according to the working conditions

CALCULATION OF LIFE IN km

where:

$$L_{km} = \frac{L_r \cdot p}{10^6}$$

L_{km} = Life of the cylinder in km [km]

p = pitch of the RDS ball screw [mm]

CALCULATION OF THE LIFE IN HOURS

where:

$$L_h = \frac{L_r}{n_m \cdot 60}$$

L_h = Life of the cylinder in hours

n_m = average number of revolutions of the RDS ball screw [rpm]

APPLICATION	ACCELERATION [m/s ²]	SPEED [m/s]	DUTY CYCLE	f _w COEFFICIENT
light	< 5.0	< 0.5	< 35%	1.0 ÷ 1.25
normal	5.0 ÷ 15.0	0.5 ÷ 1.0	35% ÷ 65%	1.25 ÷ 1.5
heavy	> 15.0	> 1.0	> 65%	1.5 ÷ 3.0

ANALYSIS OF THE DUTY CYCLE AND OF SYSTEM PAUSES

The analysis of the duty cycle and of the pauses of the system is essential to calculate the average F_m axial loads and the number of average revolutions n_m that act on the cylinder.

Normally, the duty cycle is composed by phases and for each single phase, we can have an acceleration, constant speed or deceleration.

CALCULATION OF THE AVERAGE AXIAL FORCE

$$F_m = \left\{ \frac{(F_{a1}^3 \cdot n_{a1} \cdot t_{a1}) + (F_{vc1}^3 \cdot n_{vc1} \cdot t_{vc1}) + (F_{d1}^3 \cdot n_{d1} \cdot t_{d1}) + \dots + (F_{an}^3 \cdot n_{an} \cdot t_{an}) + (F_{vcn}^3 \cdot n_{vcn} \cdot t_{vcn}) + (F_{dn}^3 \cdot n_{dn} \cdot t_{dn})}{(n_{a1} \cdot t_{a1}) + (n_{vc1} \cdot t_{vc1}) + (n_{d1} \cdot t_{d1}) + \dots + (n_{an} \cdot t_{an}) + (n_{vcn} \cdot t_{vcn}) + (n_{dn} \cdot t_{dn})} \right\}^{\frac{1}{3}}$$

CALCULATION OF THE AVERAGE NUMBER OF REVOLUTIONS

$$n_m = \left\{ \frac{(n_{a1} \cdot t_{a1}) + (n_{vc1} \cdot t_{vc1}) + (n_{d1} \cdot t_{d1}) + \dots + (n_{an} \cdot t_{an}) + (n_{vcn} \cdot t_{vcn}) + (n_{dn} \cdot t_{dn})}{t_{a1} + t_{vc1} + t_{d1} + \dots + t_{an} + t_{vcn} + t_{dn}} \right\}$$

The table shown below reports the values of acceleration, speed and deceleration for each phase.

		F [N]			n [rpm]			time %		
PHASE 1	Acceleration	Fa1	na1	ta1						
	Constant speed	Fvc1	nvc1	tc1						
	Deceleration	Fd1	nd1	td1						
PHASE 2	Acceleration	Fa2	na2	ta2						
	Constant speed	Fvc2	nvc2	tc2						
	Deceleration	Fd2	nd2	td2						
PHASE "n -1"	Acceleration	Fan-1	nan-1	tan-1						
	Constant speed	Fvcn-1	nvcn-1	tcn-1						
	Deceleration	Fdn-1	ndn-1	tdn-1						
PHASE "n"	Acceleration	Fan	nan	tan						
	Constant speed	Fvcn	nvcn	tcn						
	Deceleration	Fdn	ndn	tdn						
TOTAL								100%		

MECHANICAL DIMENSIONING

CALCULATION OF THE DRIVING TORQUE AT CONSTANT SPEED [Nm]

$$C_{m1} = \frac{F_a \cdot p}{2\pi \cdot \eta \cdot 1000}$$

TOTAL FORCE ACTING ON THE SYSTEM [N]

$$F_a = F + \mu \cdot m \cdot g$$

where:

F = Force to be applied in axial direction [N]

m = Mass of the body to move [kg]

g = Gravitational acceleration (9,81 m/s²)

p = Pitch of the ball screw [mm]

= Output of the Series 6E cylinders

μ = Friction coefficient of the support guide = 0,9

CALCULATION OF THE DRIVING TORQUE AT CONSTANT ACCELERATION [Nm]

$$C_{m2} = C_{m1} + J_{tot} \cdot \frac{\dot{\omega}}{\eta}$$

ANGULAR ACCELERATION [rad/s²]

$$\dot{\omega} = \frac{a \cdot 2\pi \cdot 1000}{p}$$

where:

a = Linear acceleration of the ball screw [m/s²]

p = Pitch of the screw [mm]

MOMENT OF TOTAL INERTIA OF THE CYLINDER [kg·m²]

$$J_{tot} = J_{frb} + J_{vrb}$$

MOMENT OF TOTAL INERTIA OF THE 6E COMPONENTS AT FIXED LENGTH [kg·m²]

$$J_{frb} = (J_{c1} \cdot 10^{-6}) + m_{c1} \cdot \left(\frac{p}{2\pi \cdot 1000}\right)^2$$

where:

Jc1 = Moment of inertia of 6E rotating components [kg·m²]

mc1 = Mass of the 6E components to move [kg]

MOMENT OF TOTAL INERTIA OF THE 6E COMPONENTS AT VARIABLE LENGTH [kg·m²]

$$J_{vrb} = \left[(J_{c2} \cdot 10^{-6}) + m_{c2} \cdot \left(\frac{p}{2\pi \cdot 1000}\right)^2 \right] \cdot \frac{c}{1000}$$

where:

Jc2 = Moment of inertia of the 6E rotating components [kg·m²]

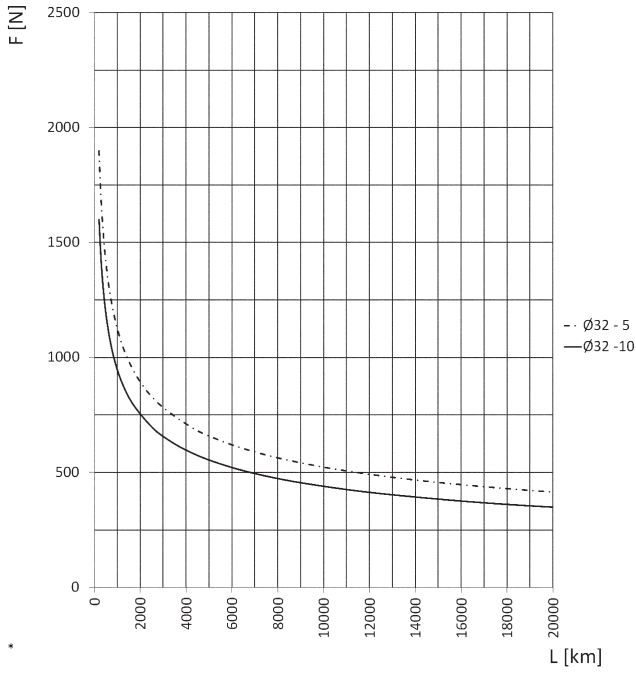
mc2 = Mass of the 6E components to move [kg]

c = rod stroke [mm]

Values of masses and fixed and rotating inertia moments of 6E components

Size	Pitch	m _{c1}	m _{c2}	J _{c1}	J _{c2}
32	5	0.151 Kg	0.0008 Kg	12.38 kg mm ²	1.59 kg mm ²
	10	0.151 Kg	0.0008 Kg	12.38 kg mm ²	1.59 kg mm ²
40	5	0.428 Kg	0.0010 Kg	35.55 kg mm ²	5.02 kg mm ²
	10	0.428 Kg	0.0010 Kg	35.55 kg mm ²	5.02 kg mm ²
	16	0.428 Kg	0.0010 Kg	35.55 kg mm ²	5.02 kg mm ²
50	5	0.399 Kg	0.0011 Kg	54.96 kg mm ²	12.33 kg mm ²
	10	0.399 Kg	0.0011 Kg	85.94 kg mm ²	12.33 kg mm ²
	20	0.399 Kg	0.0011 Kg	83.25 kg mm ²	12.33 kg mm ²
63	5	0.576 Kg	0.0014 Kg	207.53 kg mm ²	30.07 kg mm ²
	10	0.576 Kg	0.0014 Kg	230.82 kg mm ²	30.07 kg mm ²
	25	0.576 Kg	0.0014 Kg	219.55 kg mm ²	30.07 kg mm ²

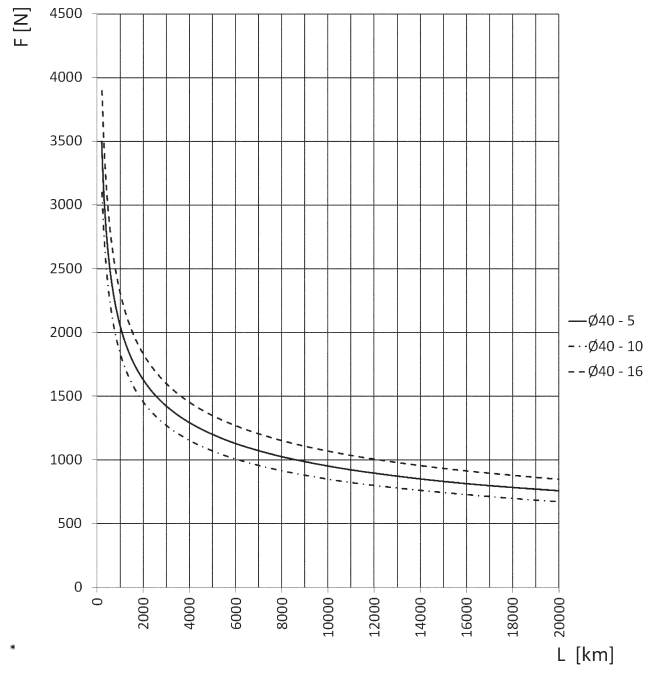
Life of the cylinder according to the average axial force applied



Size 32

F = Axial Force [N]
L = life [km]

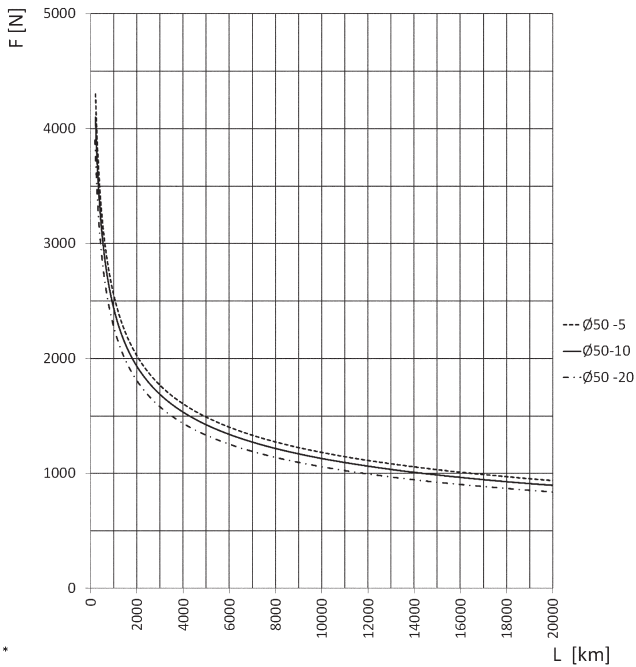
* Curves calculated with $f_w = 1$ (see page 1/11.01.05)



Size 40

F = Axial Force [N]
L = life [km]

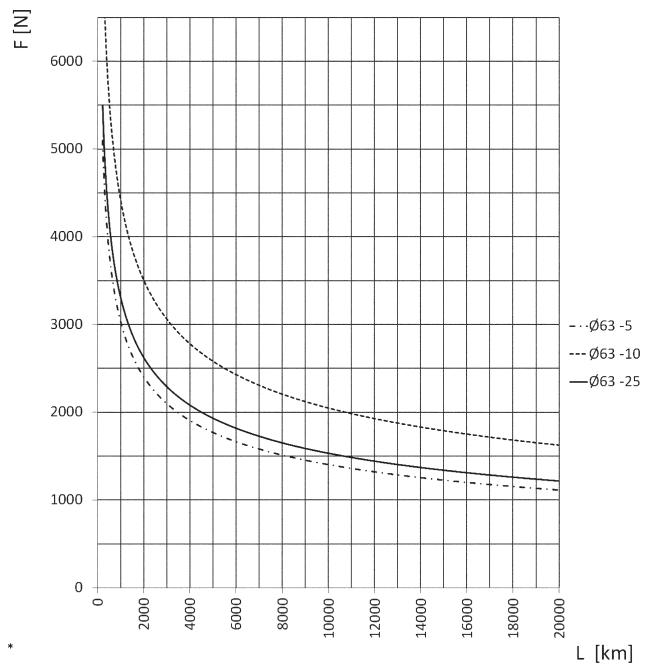
* Curves calculated with $f_w = 1$ (see page 1/11.01.05)



Size 50

F = Axial Force [N]
L = life [km]

* Curves calculated with $f_w = 1$ (see page 1/11.01.05)

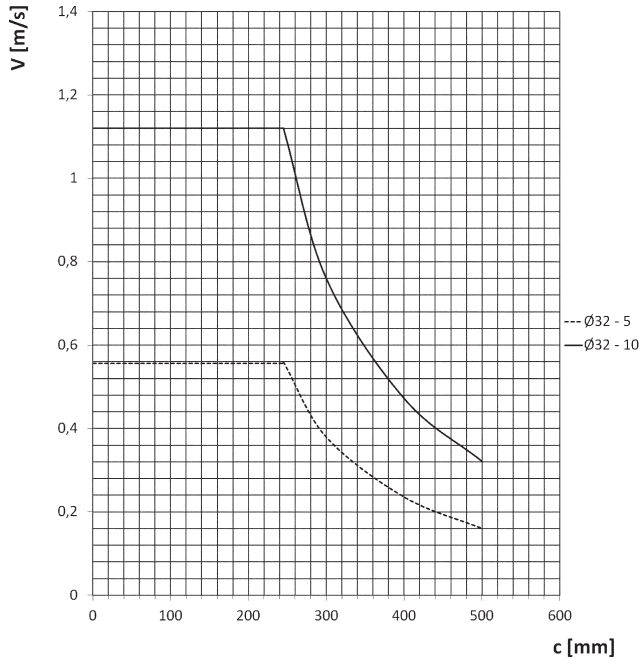


Size 63

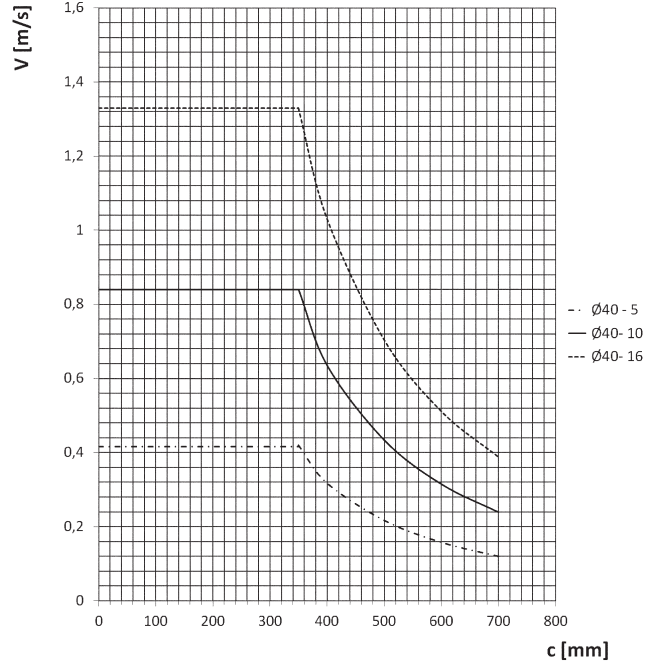
F = Axial Force [N]
L = life [km]

* Curves calculated with $f_w = 1$ (see page 1/11.01.05)

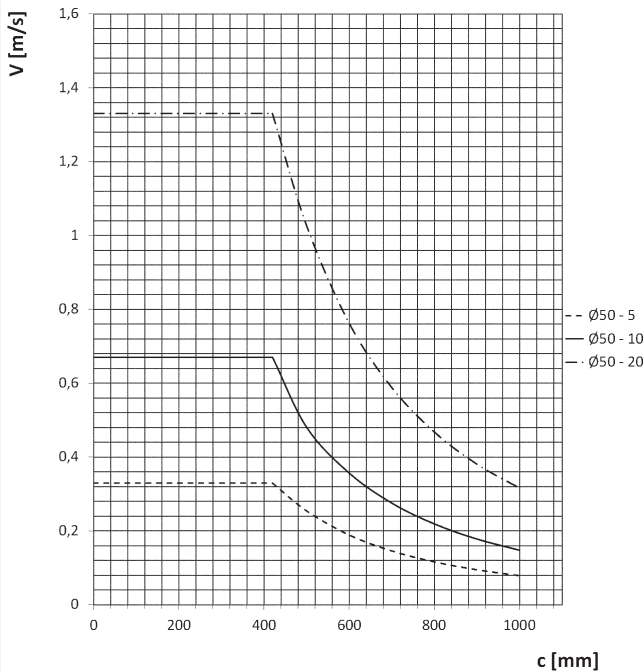
Maximum speed of the cylinder according to its stroke

 1
MOVEMENT


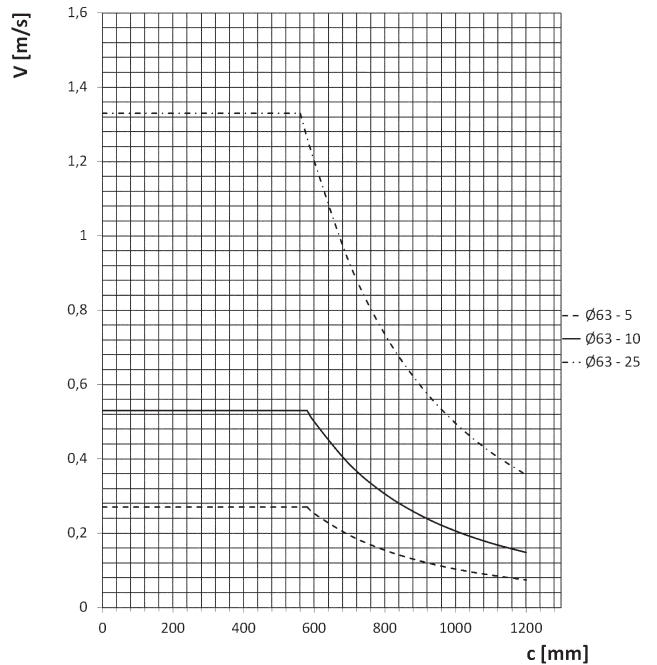
Size 32

 V = speed [m/s]
c = stroke [mm]


Size 40

 V = speed [m/s]
c = stroke [mm]


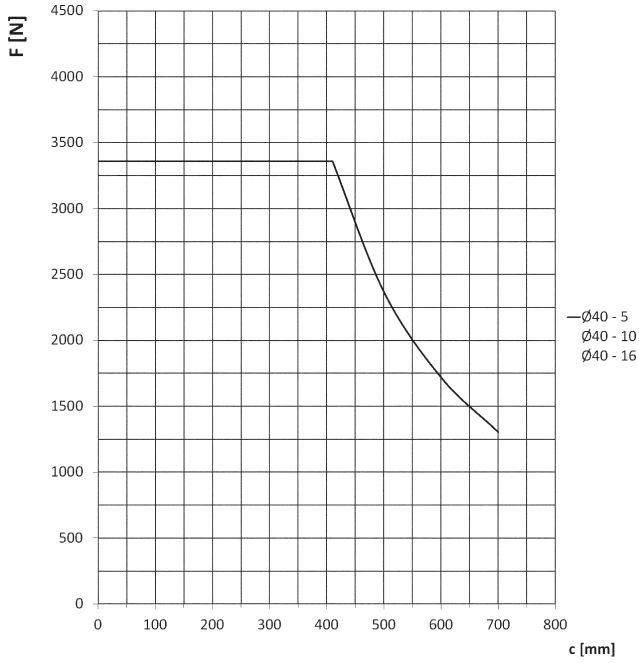
Size 50

 V = speed [m/s]
c = stroke [mm]


Size 63

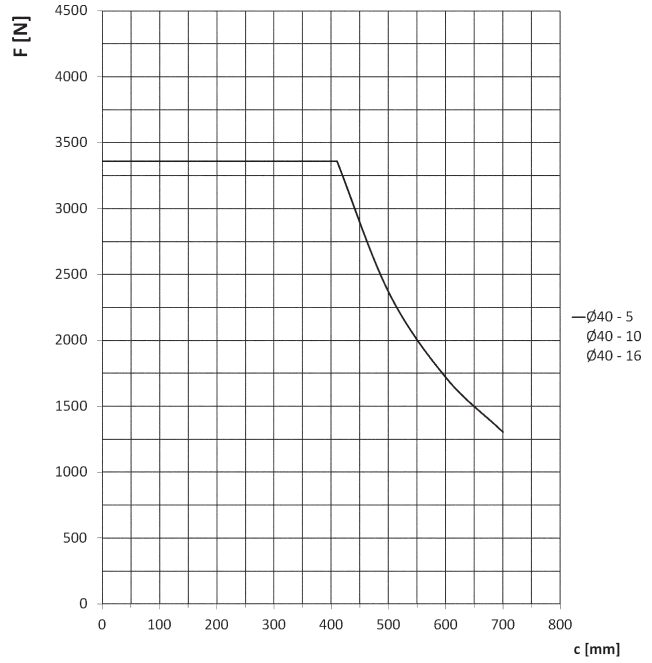
 V = speed [m/s]
c = stroke [mm]

Maximum force of the cylinder according to its stroke



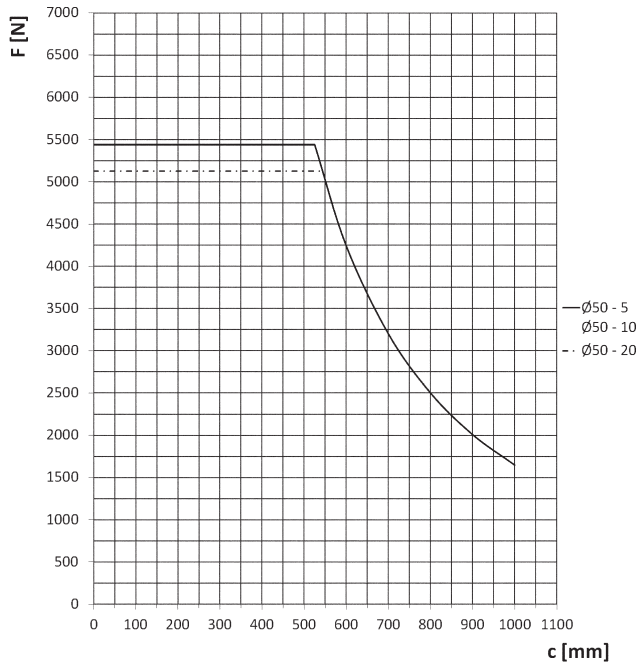
Size 32

F = static axial Force [N]
c = stroke [mm]



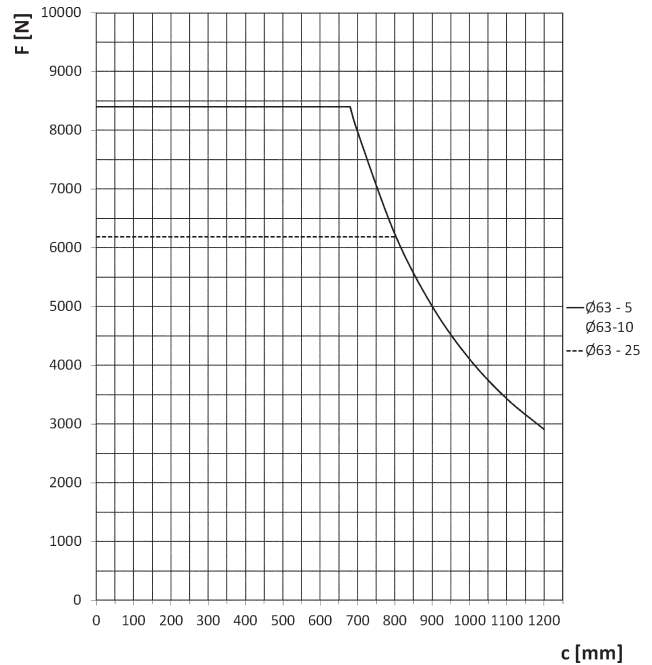
Size 40

F = static axial Force [N]
c = stroke [mm]



Size 50

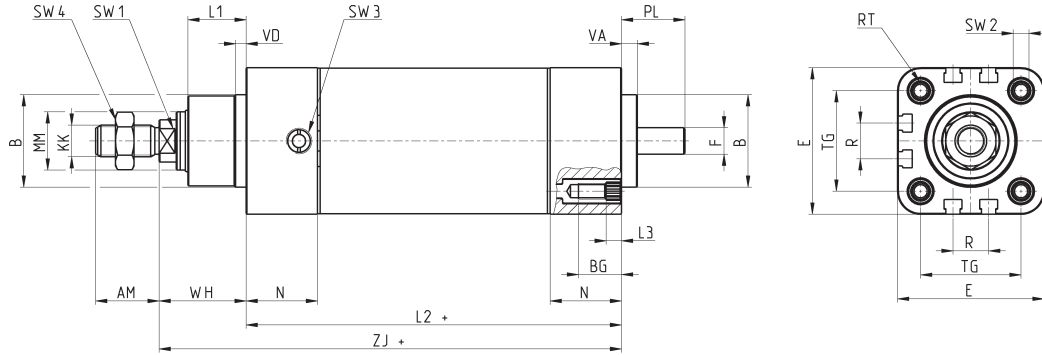
F = static axial Force [N]
c = stroke [mm]



Size 63

F = static axial Force [N]
c = stroke [mm]

Series 6E cylinders

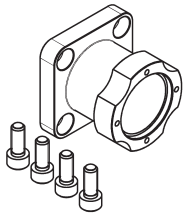
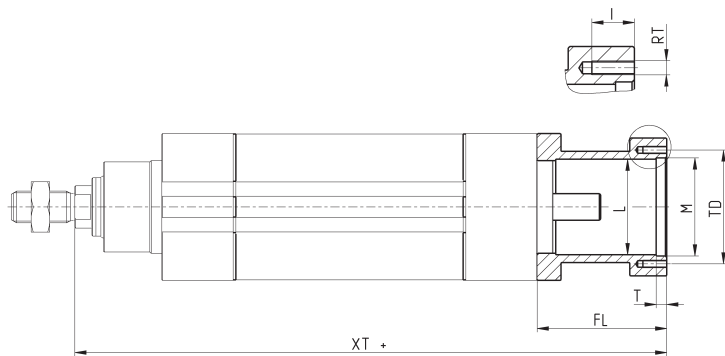
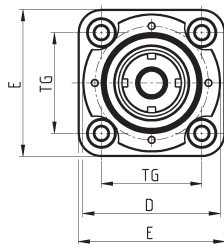


+ = add the stroke

Size	AM	B	BG	E	F	KK	L1	L2+	L3	MM	N	R	RT	PL	SW1	SW2	SW3	SW4	TG	VA	VD	WH	ZJ+	weight stroke zero [g]	weight stroke [g/100mm]
32	22	30	16	46.5	8	M10x1.25	20	125	5.5	18	26	13	M6	21	10	6	G1/8	17	32.5	6	4	30	155	1175	377
40	24	35	16	55.4	10	M12x1.25	22	142	5.5	22	27	13.5	M6	24	13	6	G1/8	19	38	6	4	33	175	1395	530
50	32	40	16	64.9	12	M16x1.5	26	173	5.5	25	36	16	M8	30	17	8	G1/8	24	46.5	7	4	38	211	2280	603
63	32	45	16	75	15	M16x1.5	29	201	5.5	30	36	28	M8	38	17	8	G1/8	24	56.5	7	4	42	242.5	3500	977

Series 6E cylinders - housing for axial connection

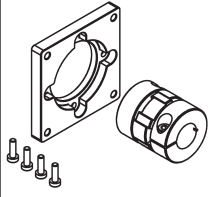
Material: anodized aluminium


 Supplied with:
1x housing
4x screws


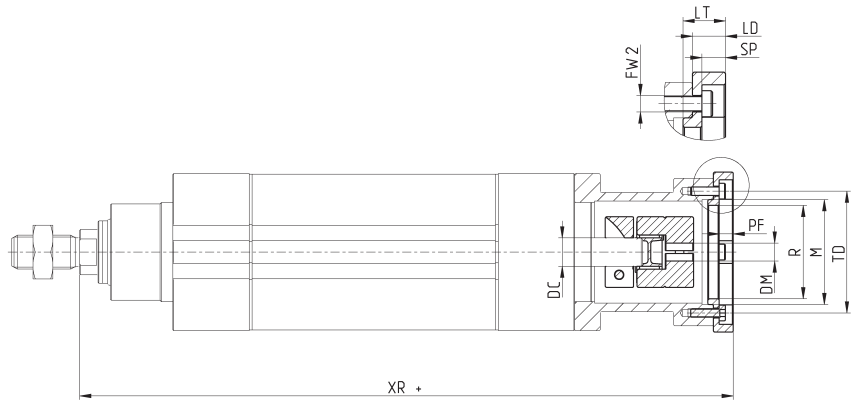
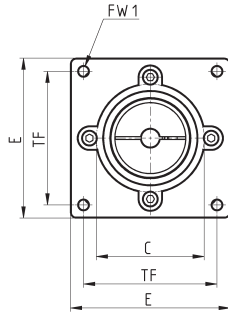
Mod.	Size	XT	E	∅D	TG	FL	∅L	∅M [H7]	T	TD	RT	I	Weight (g)
CM-6E-32	32	201	46.5	42	32.5	46	29	32	4	37	M3	9	100
CM-6E-40	40	224	55.4	52	38	49	36	37	4	43	M3	9	150
CM-6E-50	50	267	64.9	58	46.5	56	39	42	4	49	M4	9	225
CM-6E-63	63	306.5	75	60.5	56.5	64	48	47	4	54	M4	9	280

Series 6E cylinders - fange for axial connection

Material: anodized aluminium

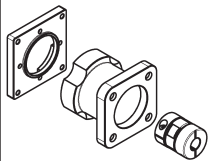


Supplied with:
1x fange
1x flexible coupling
4x screws

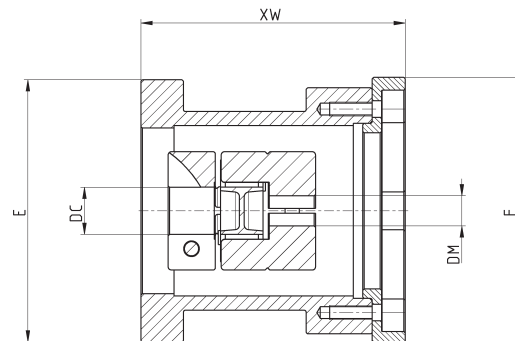
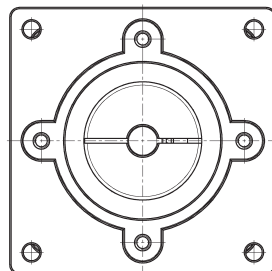


Mod.	Size	Housing	Motor	XR	ϕ_C [h7]	PF	LT	LD	ϕ_M [H7]	E	ϕ_R	TF	FW1	ϕ_{TD}	SP	ϕ_{FW2}	ϕ_{DC}	ϕ_{DM}	Weight (g)
FM-6E-032-0100	32	CM-6E-32	Brushless 100W	210	30	6	11	9	32	40	29	31.8	M3	37	6	3.5	8	8	65
FM-6E-032-0023	32	CM-6E-32	Stepper NEMA23	208	38.1	5	9	7	32	56.4	29	47.1	M4	37	5	3.5	8	6.35	140
FM-6E-040-0400	40	CM-6E-40	Brushless 400W	242	50	3.5	20	18	37	60	33	49.5	M5	43	3.5	3.5	10	14	140
FM-6E-040-0023	40	CM-6E-40	Stepper NEMA23	231	38.1	5	9	7	37	56.4	33	47.1	M4	43	5	3.5	10	6.35	215
FM-6E-050-0400	50	CM-6E-50	Brushless 400W	284	50	6	19	17	42	60	37	49.5	M5	49	14	4.5	12	14	210
FM-6E-050-0024	50	CM-6E-50	Stepper NEMA24	274	38.1	3	9	7	42	58	37	47.1	M4	49	4	4.5	12	8	190
FM-6E-063-0750	63	CM-6E-63	Brushless 750W	332.5	70	6	28	26	47	80	43	63.6	M6	54	24	4.5	15	19	565
FM-6E-063-0024	63	CM-6E-63	Stepper NEMA24	313.5	38.1	5	9	7	47	60.5	43	47.1	M4	54	5	4.5	15	8	200

Series 6E cylinders - axial connection kit motor

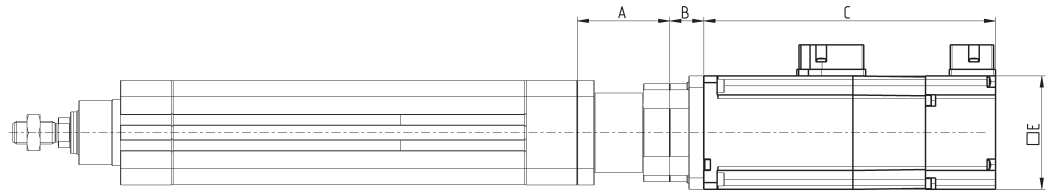


Supplied with:
1x housing
1x fange
1x flexible coupling
4x screws to connect on the cylinder's side
4x screws to connect on the motor's side



Mod.	Size	Motor	ϕ_{DC}	ϕ_{DM}	E	F	XW	Weight (g)
AM-6E-32-0100	32	Brushless 100W	8	8	46.5	40	55	165
AM-6E-32-0023	32	Stepper Nema 23	8	6.35	46.5	56.4	53	240
AM-6E-40-0400	40	Brushless 400W	10	14	55.4	60	67	290
AM-6E-40-0023	40	Stepper Nema 23	10	6.35	55.4	56.4	56	365
AM-6E-50-0400	50	Brushless 400W	12	14	64.9	60	73	435
AM-6E-50-0024	50	Stepper Nema 24	12	6.35	64.9	58	63	415
AM-6E-63-0750	63	Brushless 750W	15	19	75	80	90	845
AM-6E-63-0024	63	Stepper Nema 24	15	6.35	75	60.5	71	480

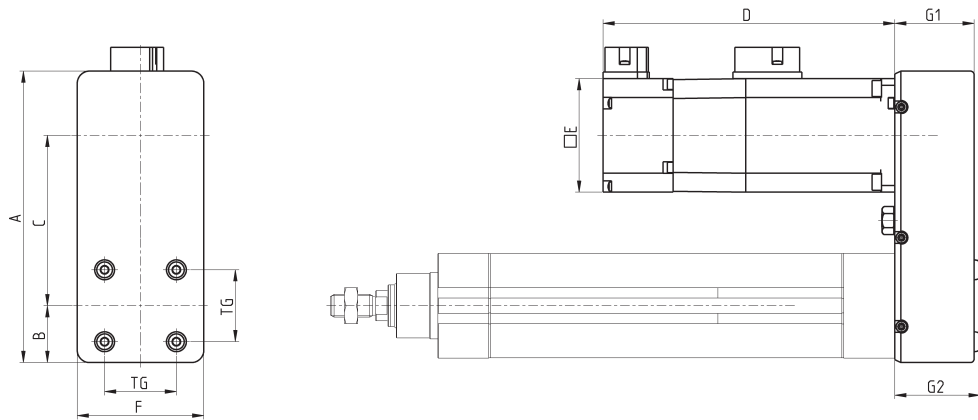
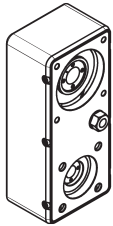
Series 6E cylinders - in line motor configuration



Size	Motor	A	B	C (with brake)	C (without brake)	E
32	Stepper NEMA 23	46	7	-	41	56.4
32	Brushless 100 W	46	9	139	110.5	42
40	Stepper NEMA 23	49	7	-	41	56.4
40	Brushless 400 W	49	18	154.5	121.5	60
50	Stepper NEMA 24	56	7	-	85	60.5
50	Brushless 400 W	56	17	154.5	121.5	60
63	Stepper NEMA 24	64	7	-	85	60.5
63	Brushless 750 W	64	26	176	140	80

Series 6E cylinders - kit to connect the motor in parallel

The kit includes: fange to connect the motor to the cylinder, cover, 2 pulleys, 2 locking sets, toothed belt, belt traction unit, 4 fixing screws, 4 screws for cylinder's side, 4 screws rear cover, 6 cover fixing screws.



Mod.	Size	Motor	E	D (with brake)	D (without brake)	A	F	G1	G2	B	C	TG	Weight (g)
PM-6E-32-0100	32	Brushless 100W	42	139	110.5	122	50	35	39.2	26.5	65	32.5	400
PM-6E-40-0400	40	Brushless 400W	60	154.5	121.5	154	67	46	49.2	30	90	38	900
PM-6E-50-0400	50	Brushless 400W	60	154.5	121.5	174	77	48	52.4	34.5	105.5	46.5	1250
PM-6E-63-0750	63	Brushless 750W	80	176	140	192	87	50	54.4	41	107	56.5	1500

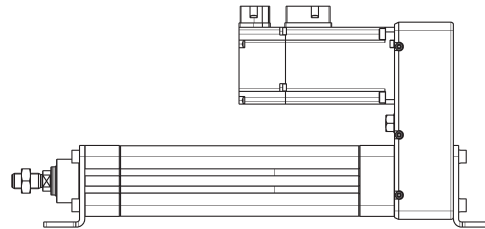
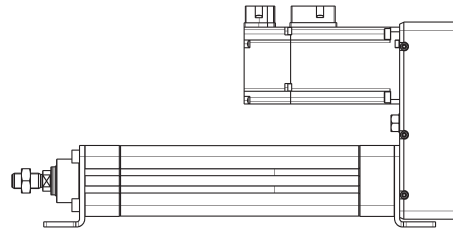
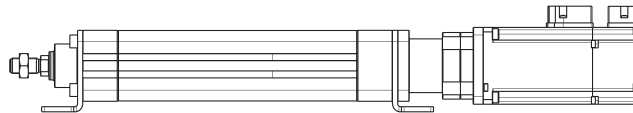
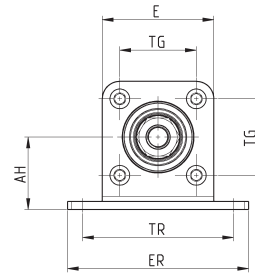
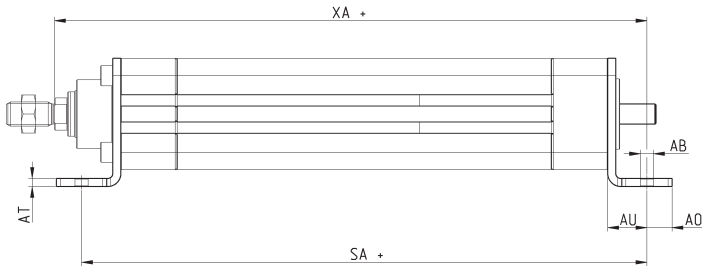
Foot bracket Mod. B-6E

Material: zinc-plated steel



Supplied with:

- 2x feet
- 8x screws



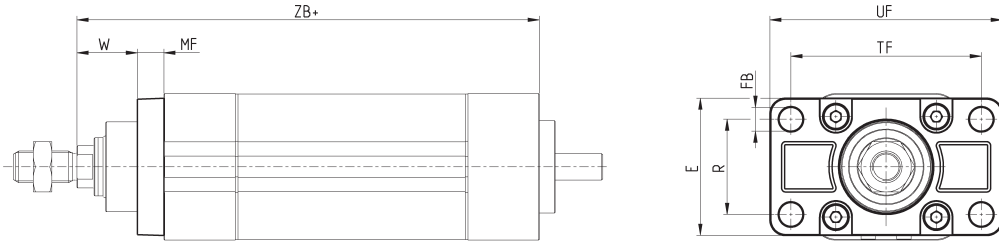
Mod.	Size	SA	XA	AH	TG	TR	AT	AU	AO	AB	ER	E	Weight (g)
B-6E-32	32	164	174.5	32	32.5	65	4	19.5	12.5	6.6	79	46.5	275
B-6E-40	40	181	194.5	36	38	75	4	19.5	12.5	6.6	90	55.4	340
B-6E-50	50	223	236	45	46.5	90	5	25	15	9	110	64.9	635
B-6E-63	63	251	267.5	50	56.5	100	5	25	15	9	120	75	755

Front fange Mod. D-E

Material: Aluminium


 Supplied with:
 1x fange
 4x screws

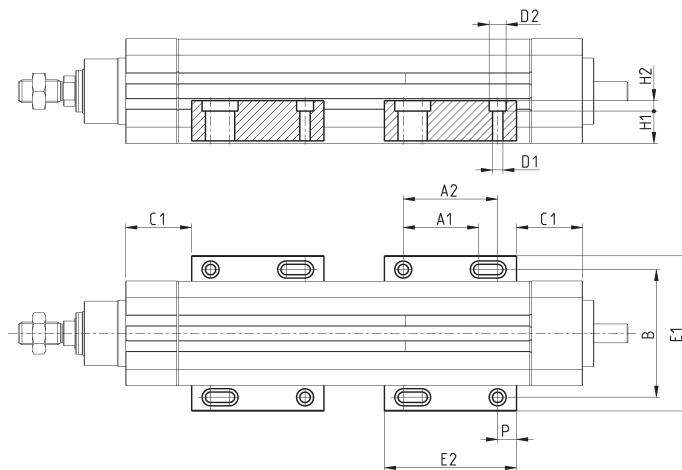
+ = add the stroke



Mod.	Size	W	MF	ZB+	TF	R	UF	E	FB	torque force
D-E-41-32	32	20	10	155	64	32	86	45	7	6 Nm
D-E-41-40	40	23	10	175	72	36	88	52	9	6 Nm
D-E-41-50	50	26.5	12	211.5	90	43	110	63	9	13 Nm
D-E-41-63	63	30	12	242.5	100	50	116	73	9	13 Nm

Side clamping bracket Mod. BG

Material: Aluminium


 Supplied with:
 2x clamps


Mod.	Size	C1	E1	E2	P	A1	A2	B	Screw	∅D1	∅D2	H1	H2	Weight (g)
BG-6E-32	32	35	71	70	10	40	50	58.5	M4x...	4.5	7.5	13.5	4.5	80
BG-6E-40	40	35	82	70	10	40	50	67.5	M5x...	5.5	9	16.9	5.5	105
BG-6E-50	50	35	93	70	10	40	50	76.5	M6x...	6.5	10.5	19.4	6.5	125
BG-6E-63	63	35	103.5	70	10	40	50	87	M6x...	6.5	10.5	18.9	6.5	125

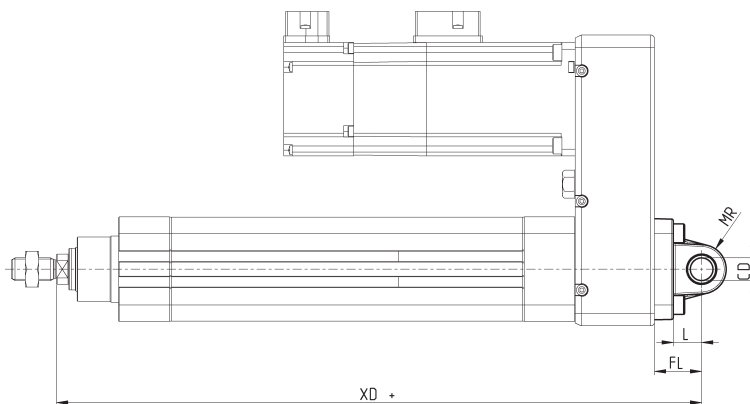
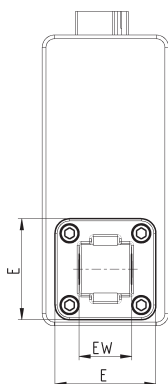
Rear male trunnion Mod. L

Material: Aluminium



Supplied with:
1x male trunnion
4x screws

+ = add the stroke



Mod.	Size	\varnothing_{CD}	L	FL	XD+	MR	E	EW	torque force
L-41-32	32	10	12	22	212	10	45	26	6 Nm
L-41-40	40	12	15	25	246	13	53.5	28	6 Nm
L-41-50	50	12	15	27	286	13	62.5	32	13 Nm
L-41-63	63	16	20	32	324.5	17	73	40	13 Nm

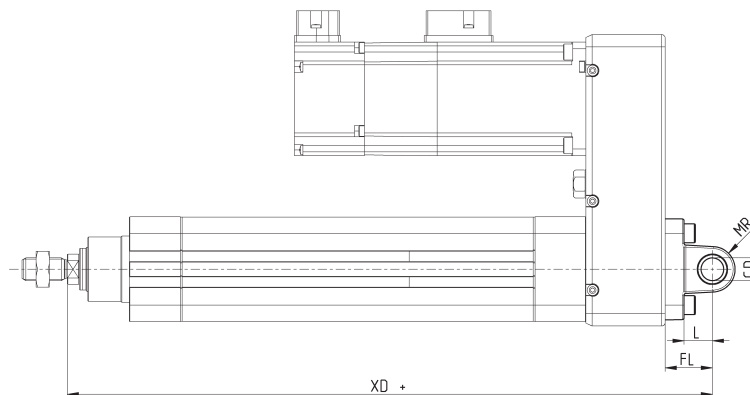
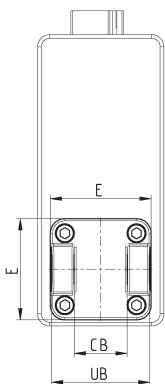
Rear female trunnion Mod. C and C-H

Material: Aluminium



Supplied with:
1x female trunnion
4x screws

+ = add the stroke



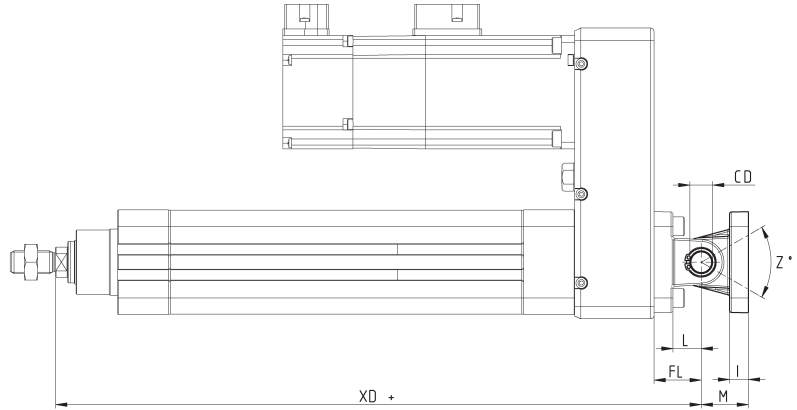
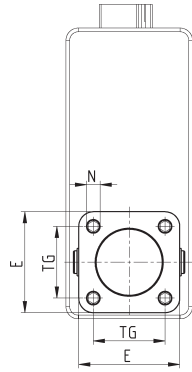
Mod.	Size	\varnothing_{CD}	L	FL	XD+	MR	E	CB	UB	torque force
C-41-32	32	10	12	22	212	10	45	26	45	6 Nm
C-41-40	40	12	15	25	246	12	53.5	28	52	6 Nm
C-41-50	50	12	15	27	286	13	62.5	32	60	13 Nm
C-H-41-63	63	16	20	32	324.5	17	73	40	70	13 Nm

Accessory combination Mod. C+L+S

Material: aluminium



+ = add the stroke



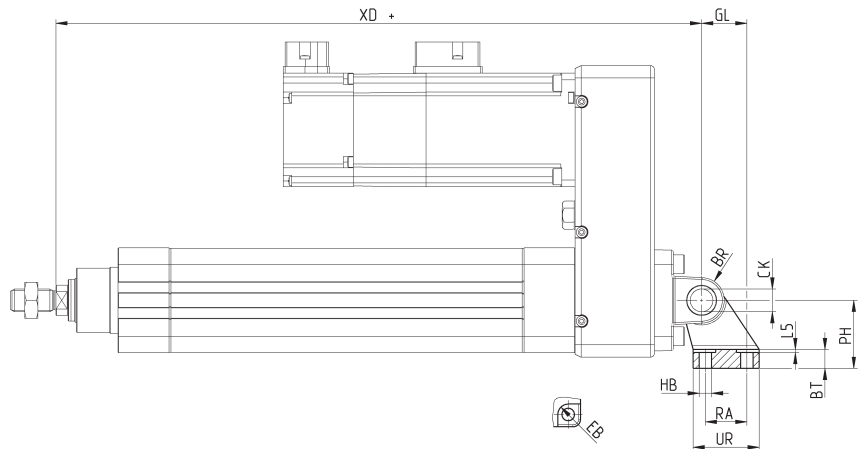
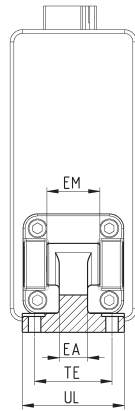
Mod.	Size	E	TG	ϕ_N	XD+	ϕ_{CD}	L	FL	I	M	Z° (max)	torque force
C+L+S	32	45	32.5	6.5	142	10	12	22	10	22	30	6 Nm
C+L+S	40	53.5	38	6.5	160	12	15	25	10	25	40	6 Nm
C+L+S	50	62.5	46.5	9	170	12	15	27	12	27	25	13 Nm
C+L+S	63	73	56.5	9	190	16	20	32	12	32	36	13 Nm

90° male trunnion Mod. ZC

 CETOP RP 107P
 Material: Aluminium

 Supplied with:
 1x male support

+ = add the stroke



Mod.	Size	ϕ_{EB}	ϕ_{CK}	ϕ_{HB}	XD+	TE	UL	EA	GL	L5	RA	EM	UR	PH	BT	BR
ZC-32	32	11	10	6.6	212	38	51	10	21	1.6	18	26	31	32	8	10
ZC-40	40	11	12	6.6	246	41	54	15	24	1.6	22	28	35	36	10	11
ZC-50	50	15	12	9	286	50	65	16	33	1.6	30	32	45	45	12	13
ZC-63	63	15	16	9	324.5	52	67	16	37	1.6	35	40	50	50	14	15

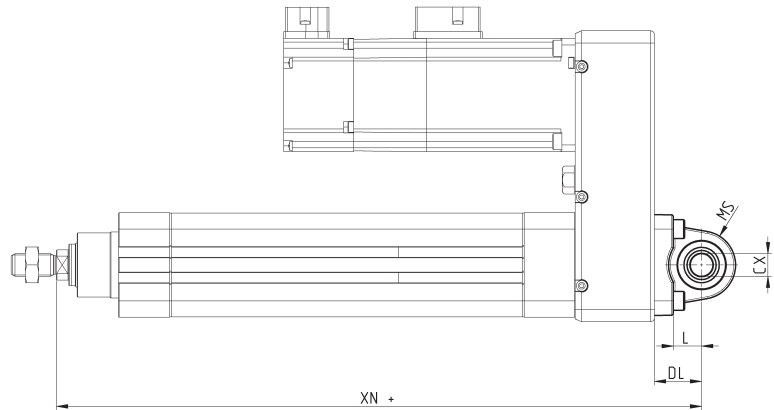
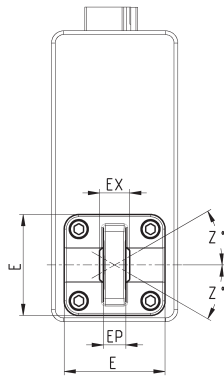
Trunnion ball-joint Mod. R

This trunnion doesn't comply with the ISO 15552 standard
Material: Aluminium



Supplied with:
1x trunnion ball joint
4x screws

+ = add the stroke

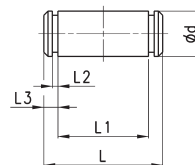


Mod.	Size	∅CX	L	DL	XN+	MS	E	EX	RP	Z	torque force
R-41-32	32	10	12	22	212	18	45	14	10.5	4°	6 Nm
R-41-40	40	12	15	25	246	18	53.5	16	12	4°	6 Nm
R-41-50	50	12	15	27	286	21	62.5	16	12	4°	13 Nm
R-41-63	63	16	20	32	324.5	23	73	21	15	4°	13 Nm

Clevis pin Mod. S

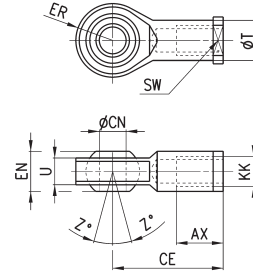


Supplied with:
1x clevis pin in stainless steel 303
2x Seeger in steel



Mod.	Size	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

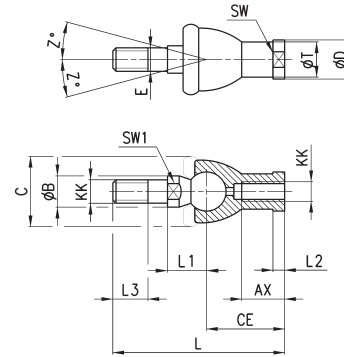
Swivel ball joint Mod. GA

 ISO 8139.
 Material: zinc-plated steel.


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

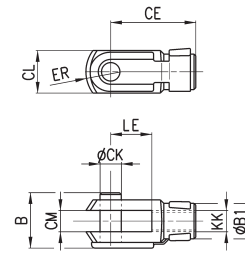
Piston rod socket joint Mod. GY

Material: zama and zinc-plated steel.



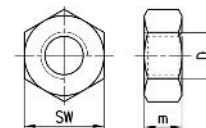
Mod.	Size	KK	AX	CE	E	L	L1	L2	L3	SW	SW1	øB	øC	øD	øT	Z
GY-32	32	M10X1,25	18	35	10	74	19,5	6,5	15	17	11	14	28	19	15	15
GY-40	40	M12X1,25	20	40	12	84	21	6,5	17	19	17	19	32	22	17,5	15
GY-50-63	50-63	M16X1,5	27	50	16	112	27,5	8	23	22	19	22	40	27	22	11

Rod fork end Mod. G

 ISO 8140
 Material: zinc-plated steel


Mod.	øCK	LE	CM	CL	ER	CE	KK	B	B1
G-25-32	10	20	10	20	12	40	M10 X 1.25	26	18
G-40	12	24	12	24	14	48	M12 X 1.25	32	20
G-50-63	16	32	16	32	19	64	M16 X 1.5	40	26

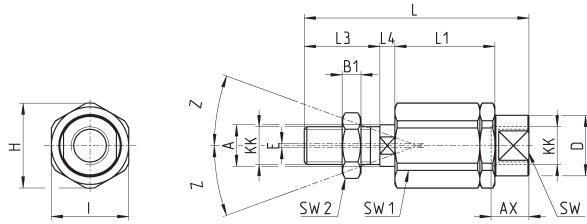
Piston rod lock nut Mod. U

 ISO 4035
 Material: zinc-plated steel.


Mod.	D	m	SW
U-25-32	M10X1,25	6	17
U-40	M12X1,25	7	19
U-50-63	M16X1,5	8	24

Self aligning rod Mod. GK

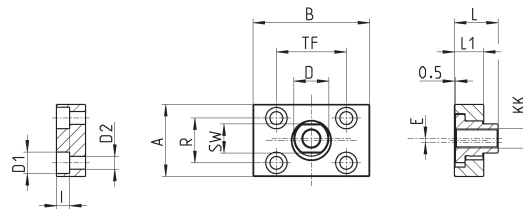
Material: zinc-plated steel.



Mod.	Size	KK	L	L1	L3	L4	øA	øD	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

Coupling piece Mod. GKF

Material: zinc-plated steel.



Mod.	Size	KK	A	B	R	TF	L	L1	I	øD	øD1	øD2	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