

# Series 5E electromechanical axis

Sizes 50, 65, 80

Available versions: standard axis, support axis, reinforced axis



Series 5E axes are mechanical linear actuators in which the rotary movement generated by a motor is converted into a linear movement by means of a toothed belt.

The Series 5E, available in 3 sizes, 50, 65 and 80, is realized by means of a special self-supporting square profile, in which the components have been completely integrated, assuring compactness and light weight.

The presence of a recirculating ball guide grants high stiffness and resistance to external loads.

To protect the internal elements from potential contaminants from the external environment, the profile has been closed with a stainless steel plate. The axis is equipped with a magnet that makes it possible to use external proximity switches (Series CSH), allowing operations like homing or extra-stroke readings to be performed. Moreover, these actuators also have accessories in order to be used with inductive sensors. The Series 5E is equipped with specific interface kits making it possible to connect the motor on 4 sides. The use with high dynamics and the possibility to realize multi-axis systems, make the Series 5E particularly suitable for the packaging and assembly sectors.

- » Multiposition system with transmission of the movement with toothed belt
- » Suitable for high dynamics
- » Possibility to connect the motor on 4 sides
- » Large range of motor interfaces
- » Possibility to use magnetic proximity switches and/or inductive sensors
- » IP 40
- » Max stroke 6 meters
- » Plates to realize multi-axis systems
- » Presence of internal channels for re-lubrication
- » Large range of axis mounting accessories
- » Sliders available: standard, long, double

## GENERAL DATA

Construction	electromechanical axis with toothed belt
Design	open profile with protection plate
Operation	multi-position actuator
Sizes	50, 65, 80
Strokes	50 ÷ 4000 mm for size 50; 50 ÷ 6000 mm for sizes 65 and 80
Type of guide	internal, with recirculating balls (cage type)
Fixing	by means of slots on the profile and special clamps
Mounting motor	on all 4 sides
Operating temperature	-10°C ÷ +50°C
Storage temperature	-20°C ÷ +80°C
Protection class	IP 40 (available for versions A and D only)
Lubrication	centralized lubrication by means of internal channels
Repeatability	± 0.05 mm
Duty cycle	100%
Use with external sensors	Series CSH magnetic switches in special slots or inductives by means of supports

**CODING EXAMPLE**

<b>5E</b>	<b>S</b>	<b>050</b>	<b>TBL</b>	<b>0200</b>	<b>A</b>	<b>S</b>	<b>2(500)</b>
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<b>5E</b>	SERIES
<b>S</b>	PROFILE: S = square section
<b>050</b>	FRAME SIZE: 050 = 50x50 mm 065 = 65x65 mm 080 = 80x80 mm
<b>TBL</b>	TRANSMISSION: TBL = toothed belt
<b>0200</b>	STROKE [C]: 0050 ÷ 4000 mm for size 050 0050 ÷ 6000 mm for sizes 065 and 080
<b>A</b>	VERSIONS: A = standard axis D = support axis H = reinforced axis (for sizes 65 and 80 only)
<b>S</b>	TYPE OF SLIDER: S = standard L = long - only for standard axis (A version)
<b>2(500)</b>	NUMBER OF SLIDERS: 1 = 1 slider 2(____) = 2 sliders at (____) mm step - only for standard axis (A) with standard slider (S)

SERIES 5E ELECTROMECHANICAL AXIS

**MECHANICAL CHARACTERISTICS**

(A) Value refers to a covered distance of 2000 Km with fully supported system.  
 (B) The "suggested" speed is not the mechanical limit of the unit but represents the best compromise between high load applied and high dynamics.  
 In case of particular requirements, please contact our technical assistance (service@camozzi.com).

		Size 50	Size 50	Size 50	Size 65	Size 65	Size 65	Size 65	Size 80	Size 80	Size 80	Size 80
<b>RECIRCULATING BALL GUIDE (CAGE TYPE)</b>												
Version		A	A	D	A	A	D	H	A	A	D	H
Type of slider		S	L	S	S	L	S	S	S	L	S	S
Number of guides		1	1	1	1	1	1	2	1	1	1	2
Number of RDS blocks	pcs	2	3	2	2	3	2	4	2	3	2	4
Dynamic load of RDS blocks (C)	N	11640	17460	11640	28400	42600	28400	56800	44600	66900	44600	89200
Max admissible load (Cmax z, Cmax y)	N	3100(A)	5100(A)	3100(A)	8300(A)	12450(A)	8300(A)	16600(A)	13100(A)	19600(A)	13100(A)	26080(A)
Max admissible moment (Mmax x)	Nm	22.44	31.23	22.44	96.00	144.00	96.00	380(A)	216.60	324.9	216.6	740(A)
Max admissible moment (Mmax y, Mmax z)	Nm	45.30	96.76	45.3	269.40	612.64	269.4	530(A)	525.00	1193.17	525.00	1200(A)
Max linear speed of mechanics (Vmax)	m/s	5	2.5(B)	5	5	2.5(B)	5	2.5(B)	5	2.5(B)	5	2.5(B)
Max linear acceleration of mechanics (amax)	m/s <sup>2</sup>	50	20(B)	50	50	20(B)	50	20(B)	50	20(B)	50	20(B)
<b>PROFILE</b>												
Moment of surface inertia ly	mm <sup>4</sup>	1.89 · 10 <sup>5</sup>	1.89 · 10 <sup>5</sup>	1.89 · 10 <sup>5</sup>	4.94 · 10 <sup>5</sup>	4.94 · 10 <sup>5</sup>	4.94 · 10 <sup>5</sup>	4.94 · 10 <sup>5</sup>	1.23 · 10 <sup>6</sup>	1.23 · 10 <sup>6</sup>	1.23 · 10 <sup>6</sup>	1.23 · 10 <sup>6</sup>
Moment of surface inertia lz	mm <sup>4</sup>	2.48 · 10 <sup>5</sup>	2.48 · 10 <sup>5</sup>	2.48 · 10 <sup>5</sup>	6.97 · 10 <sup>5</sup>	6.97 · 10 <sup>5</sup>	6.97 · 10 <sup>5</sup>	6.97 · 10 <sup>5</sup>	1.68 · 10 <sup>6</sup>	1.68 · 10 <sup>6</sup>	1.68 · 10 <sup>6</sup>	1.68 · 10 <sup>6</sup>
<b>TOOTHED BELT</b>												
Type		20 AT 5 HP	20 AT 5 HP	-	32 AT 5 HP	32 AT 5 HP	-	32 AT 5 HP	32 AT 5 HP	32 AT 5 HP	-	32 AT 5 HP
Pitch	mm	5	5	-	5	5	-	5	10	10	-	10
Max transmittable load	N	See the diagram	See the diagram	-	See the diagram	See the diagram	-	See the diagram	See the diagram	See the diagram	-	See the diagram
<b>PULLEY</b>												
Effective diameter of the pulley	mm	31.83	31.83	-	47.75	47.75	-	47.75	63.66	63.66	-	63.66
Number of teeth	z	20	20	-	30	30	-	30	20	20	-	20
Linear movement per pulley round	mm/round	100	100	-	150	150	-	150	200	200	-	200
<b>NOTE: check the nominal admissible torque of the used motion transmission devices.</b>												

## SERIES 5E STROKE

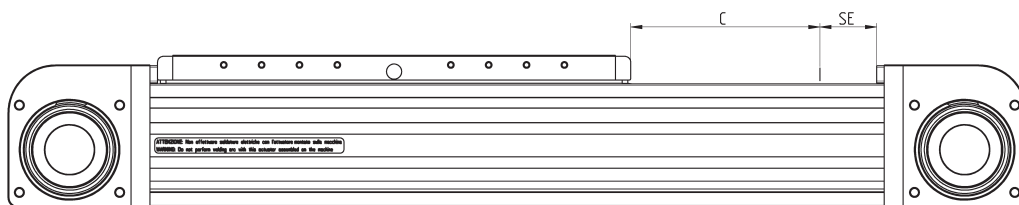
### LEGEND:

C = Stroke

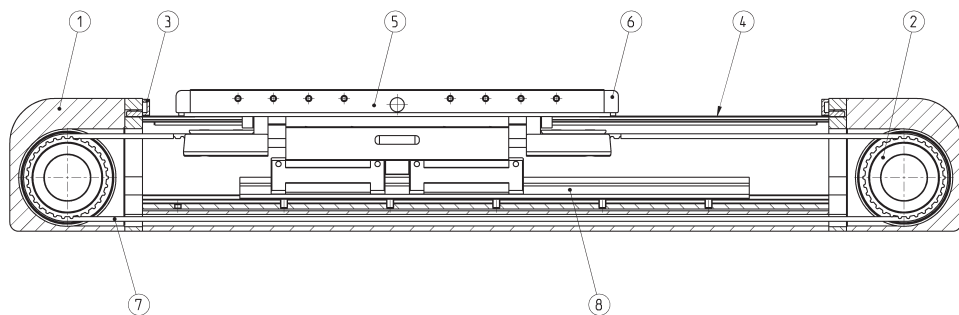
SE = Standard extra-stroke [ 5ES050.. = 30mm ]  
 [ 5ES065.. = 30mm ]  
 [ 5ES080.. = 30mm ]

### NOTES:

- Should an additional extra-stroke be required, it must be foreseen by the client.
- The slider should never work in stop on the header.



## SERIES 5E MATERIALS



COMPONENTS	MATERIALS
1. End cap	Aluminium alloy
2. Pulley	Steel
3. End cap bumper	Technopolymer
4. Protection plate	Steel
5. Slider	Aluminium alloy
6. Bumper	Technopolymer
7. Toothed belt	PU + Steel
8. Recirculating ball guide	Steel

## How to calculate the life of the axis 5E

The correct dimensioning of the axis 5E, used individually or in a cartesian system with several axes, you need to consider some facts, both static and dynamic. Among these, the most important are described on the following pages.

### CALCULATION OF LIFE [km]

$$L_{eq} = \left( \frac{C_{ma}}{C_{eq} \cdot f_w} \right)^3 \cdot 2000$$

$L_{eq}$  = Life of the axis 5E [km]

$C_{ma}$  = Maximum admissible load [N]

$C_{eq}$  = Equivalent load [N]

$f_w$  = safety coefficient according to the working conditions

### CALCULATION OF EQUIVALENT LOAD

$$C_{eq} = |F_y| + |F_z| + C_{ma} \cdot \left| \frac{M_x}{M_{x,ma}} \right| + C_{ma} \cdot \left| \frac{M_y}{M_{y,ma}} \right| + C_{ma} \cdot \left| \frac{M_z}{M_{z,ma}} \right|$$

When compression/traction and side loads as well as bending or torque moments act on the system, you need to calculate the equivalent load acting on the system.

$C_{eq}$  = Equivalent load [N]

$F_y$  = Force acting along the Y-axis [N]

$F_z$  = Force acting along the Z-axis [N]

$C_{ma}$  = Max admissible load [N]

$M_x$  = Moment along X-axis [Nm]

$M_y$  = Moment along Y-axis [Nm]

$M_z$  = Moment along Z-axis [Nm]

$M(x,ma)$  = Max admissible moment along X-axis [Nm]

$M(y,ma)$  = Max admissible moment along Y-axis [Nm]

$M(z,ma)$  = Max admissible moment along Z-axis [Nm]

## How to calculate max deflection and verify distance between supports

The electromechanical axis 5E is a self-supporting system and can also be used between 2 or more supports without the need of a continuous contact surface.

The maximum value of the deflection generated by the deformation of the system must never exceed the following calculation:

$f_{max}$  = Maximum admissible deflection [mm]

$c_{max}$  = Maximum stroke of axis 5E [mm]

$$f_{max} = c_{max} \cdot 5 \cdot 10^{-4}$$

NOTE: for a quicker choice, please see the graphs on the following pages.

APPLICATION	ACCELERATION [ m/s <sup>2</sup> ]	SPEED [ m/s ]	DUTY CYCLE	$f_w$
light	< 10	< 1.5	< 35%	1 ÷ 1.25
normal	10 ÷ 25	1.5 ÷ 2.5	35% ÷ 65%	1.25 ÷ 1.5
heavy	> 25	> 2.5	> 65%	1.5 ÷ 3

## HOW TO CALCULATE THE DRIVING TORQUE [Nm]

FA = Total force acting from outside [N]  
 FE = Force to be applied externally [N]  
 g = Gravitational acceleration [9.81 m/s<sup>2</sup>]  
 mE = Mass of the body to move [kg]  
 DP = Pulley pitch diameter [mm]  
 CM1 = Driving torque due to external agents [Nm]

$$C_{TOT} = C_{M1} + C_{M2} + C_{M3}$$

$$F_A = F_E + m_E \cdot a$$

$$C_{M1} = \frac{F_A \cdot D_P}{2}$$

JTOT = Moment of inertia of rotating components [kg·m<sup>2</sup>]  
 ω = Angular acceleration [rad/s<sup>2</sup>]  
 a = Axis linear acceleration [m/s<sup>2</sup>]  
 CM2 = Driving torque due to rotating components [Nm]

$$\dot{\omega} = \frac{2 \cdot a}{D_P}$$

$$C_{M2} = J_{TOT} \cdot \dot{\omega}$$

FTT = Force needed to move translating components [N]  
 FTF = Force needed to move fixed-length  
 translating components [N]  
 FTV = Force needed to move variable-length  
 translating components [N]  
 mC1 = Mass of fixed-length translating components [kg]  
 KTV = Mass coefficient of variable-length  
 translating components [kg/mm]  
 CM3 = Driving torque due to translating components [Nm]

$$F_{TT} = F_{TF} + F_{TV}$$

$$F_{TF} = m_{C1} \cdot a$$

$$F_{TV} = K_{TV} \cdot C \cdot a$$

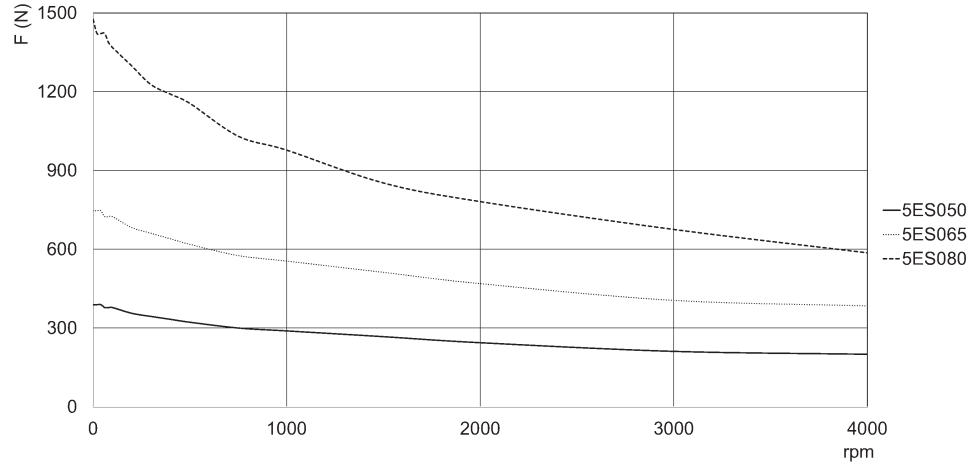
$$C_{M3} = \frac{F_{TT} \cdot D_P}{2}$$

Values of masses and fixed and rotating inertia moments of 5E components

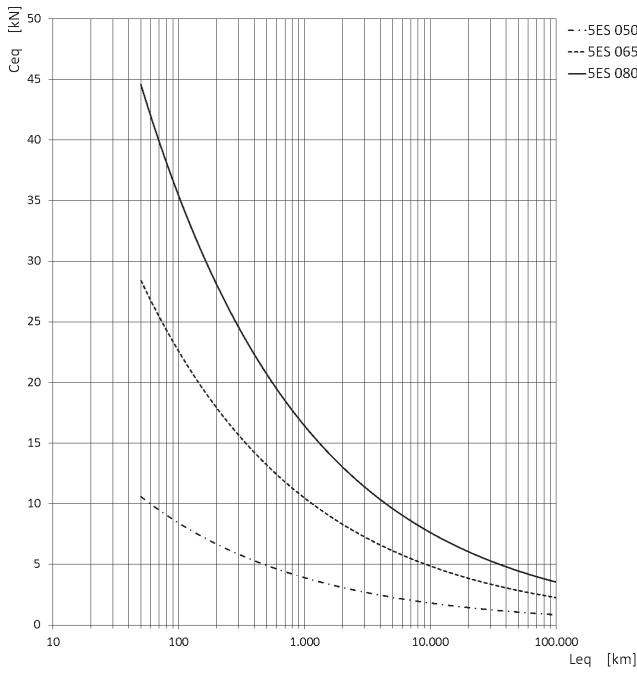
Mod.	JTOT [ Kg·mm <sup>2</sup> ]	mC1 [ kg ]	KTV [ Kg·m ]
5E050...AS1	48.76	0.51	0.14
5E050...AL1	48.76	0.80	0.14
5E050...AS2	48.76	1.01	0.14
5E050...DS1	0.00	0.40	0.00
5E065...AS1	372.07	1.27	0.21
5E065...AL1	372.07	1.83	0.21
5E065...AS2	372.07	2.53	0.21
5E065...DS1	0.00	1.01	0.00
5E065...HS1	372.07	2.84	0.21
5E080...AS1	1130.28	2.69	0.34
5E080...AL1	1130.28	3.84	0.34
5E080...AS2	1130.28	5.38	0.34
5E080...DS1	0.00	2.15	0.00
5E080...HS1	1130.28	5.61	0.34

## TRANSMISSIBLE FORCE

According to axis size and speeds chosen, force that can be transmitted from the toothed belt has these limits.

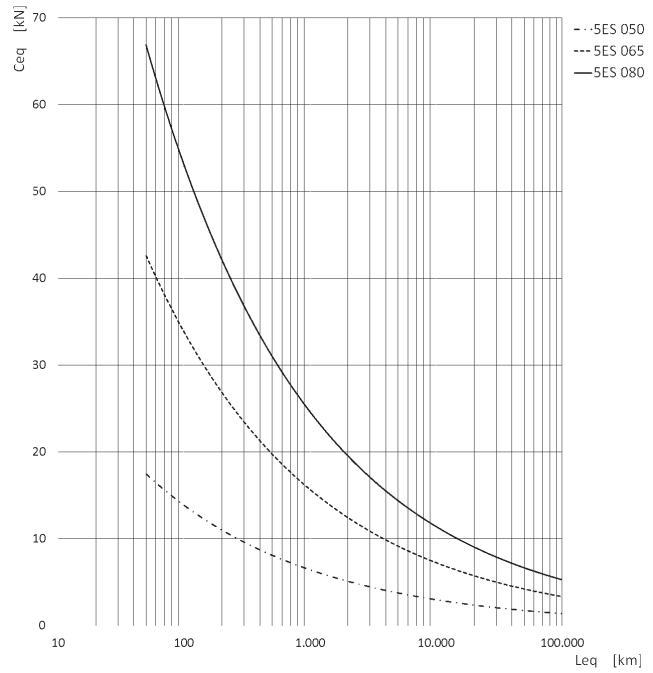


**LIFE OF THE SERIES 5E AXIS ACCORDING TO THE EQUIVALENT LOAD**



TYPE OF SLIDER: S

Curves calculated with  $f_w = 1$   
 Ceq = Equivalent load applied on the axis 5E [kN]  
 Leq = Life of the axis 5E [km]



TYPE OF SLIDER: L

Curves calculated with  $f_w = 1$   
 Ceq = Equivalent load applied on the axis 5E [kN]  
 Leq = Life of the axis 5E [km]

**EQUIVALENT LOAD**

To determine the moment acting on the axis x,  $M_x$ , in an accurate way, refer to the following formula:

$$M_x = F_y \cdot (h + h_1)$$

where:

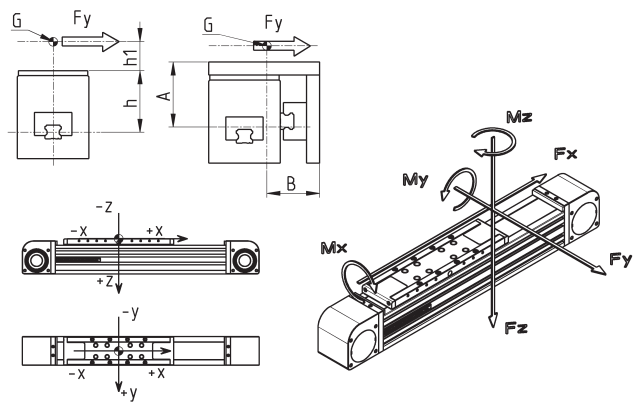
- $M_x$  = Moment along X-axis [Nm]
- $F_y$  = Force acting along the Y-axis [N]
- $h$  = fixed distance for axis 5E [mm]
- $h_1$  = application arm [mm]
- $G_1$  = origin of the system of 5E axis coordinates
- $G_2$  = barycentre of application of acting forces

NOTE: here below, valid for A version, the "h" values:

- $h = 45.5$  mm (5ES050)
- $h = 56.0$  mm (5ES065)
- $h = 69.5$  mm (5ES080)

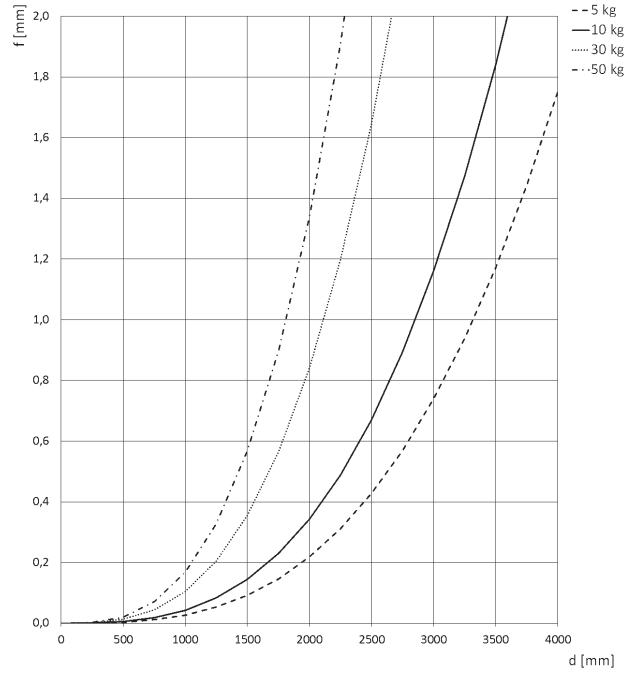
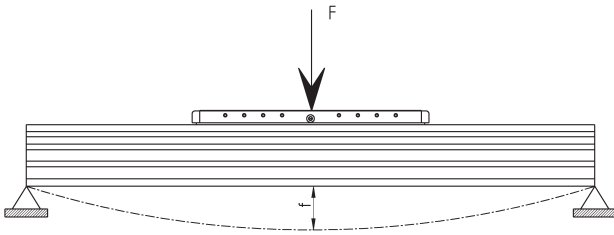
Valid for H version, "A" and "B" version:

- "A" = 56.0 mm "B" 32.9 mm (5ES050)
- "A" = 57.0 mm "B" 45.0 mm (5ES065)
- "A" = 71.6 mm "B" 51.6 mm (5ES080)



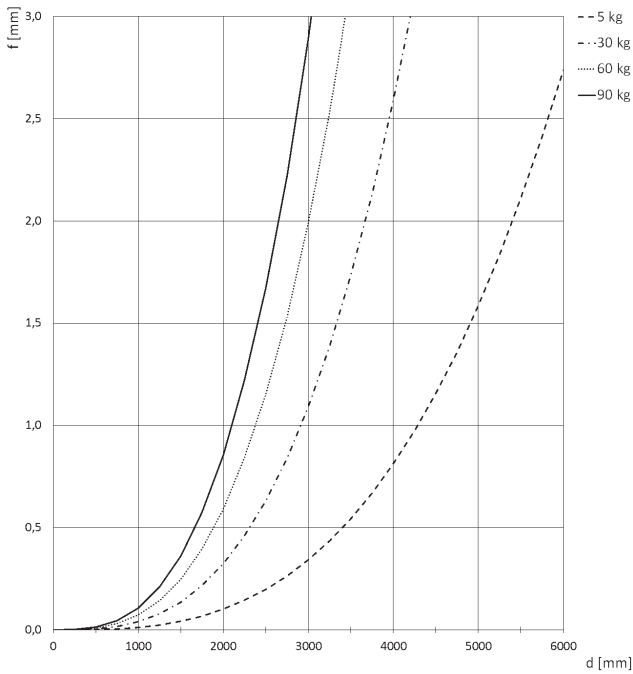
**Deflection according to the distance of the supports - A version**

SERIES 5E ELECTROMECHANICAL AXIS



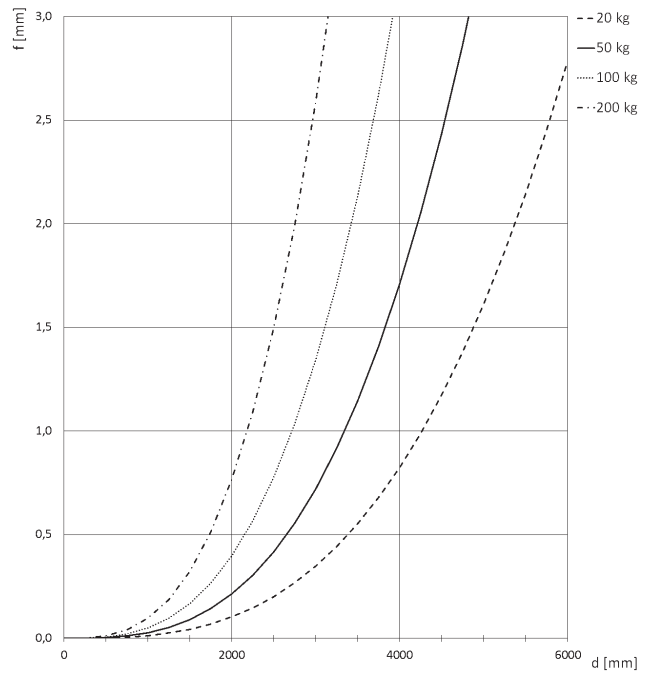
Size 050

f = deflection generated between the supports [mm]  
d = distance between the supports [mm]



Size 065

f = deflection generated between the supports [mm]  
d = distance between the supports [mm]

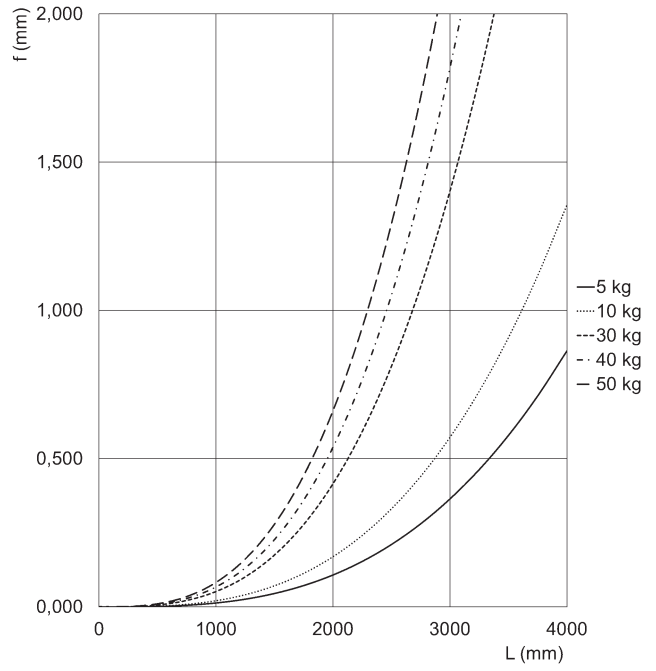
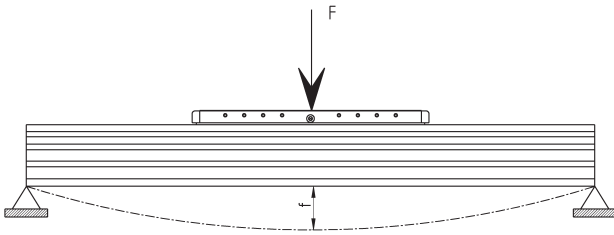


Size 080

f = deflection generated between the supports [mm]  
d = distance between the supports [mm]

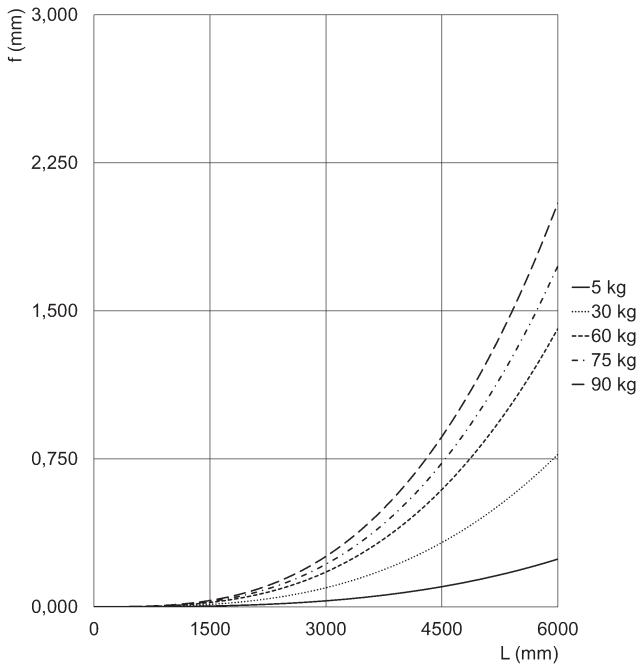


**Deflection according to the distance of the supports - H version**



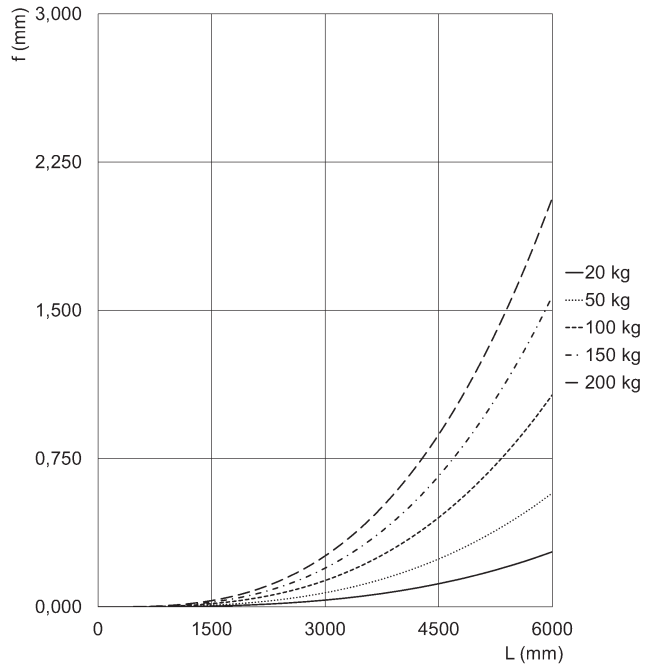
Size 050

f = deflection generated between the supports [mm]  
 d = distance between the supports [mm]



Size 065

f = deflection generated between the supports [mm]  
 d = distance between the supports [mm]



Size 080

f = deflection generated between the supports [mm]  
 d = distance between the supports [mm]

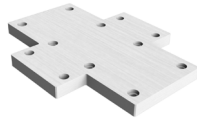
**ACCESSORIES FOR SERIES 5E**



Side clamping bracket  
Mod. BGS



Perforated side clamping  
bracket Mod. BGA



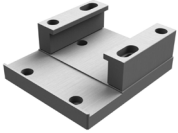
Interface plate - slider on  
slider



Interface plate - profile  
on slider



Interface plate - profile on  
slider - long arm



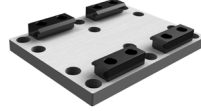
Interface plate - Series 6E  
cylinder on slider



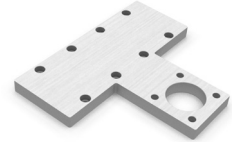
Interface plate - profile  
side on slider, left pos.



Interf. plate - profile side  
on slider, right pos.



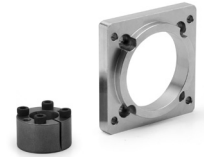
Fixed interface plate



Interface plate -  
Guide S. 45 / Cyl. S. 6E



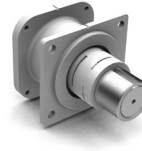
Kit to fix the inductive  
sensor



Kit to connect the  
gearbox GB Mod. FR



Kit to connect the  
gearbox, enhanced series



Direct connection kit for  
Stepper motor



Parallel connection kit



Nuts for slots



5E/5V connection flange



Centering ring  
Mod. TR-CG

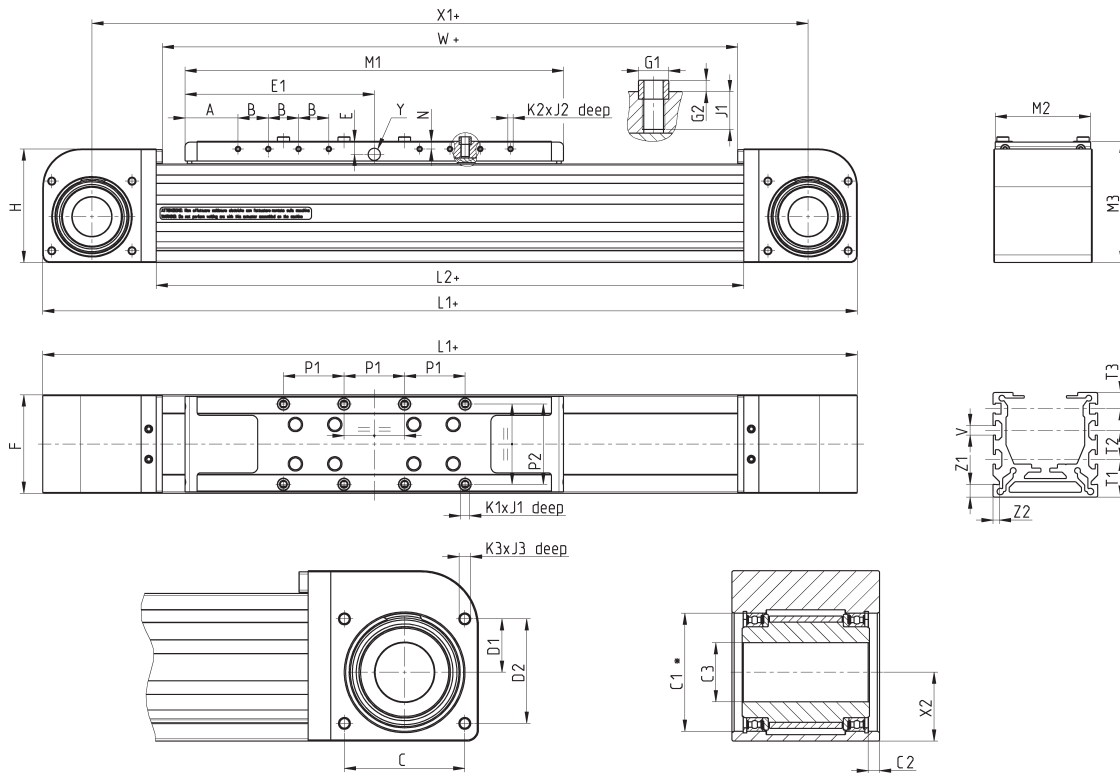


All accessories are supplied separately from the axis.  
Together with the axis, a kit is supplied containing:  
- covers to close the holes on the endcap  
- centering bushings for the slider  
- nipples for greasing

# Electromechanical axis Mod. 5E...AS1



+ = add the stroke



**NOTE:**

- \* We recommend a coupling with a shaft of tolerance h8.
- Dimension T2 in size 50 is not indicated because there is only one slot.
- Dimension Y indicates the hole for centralized lubrication by means of grease.

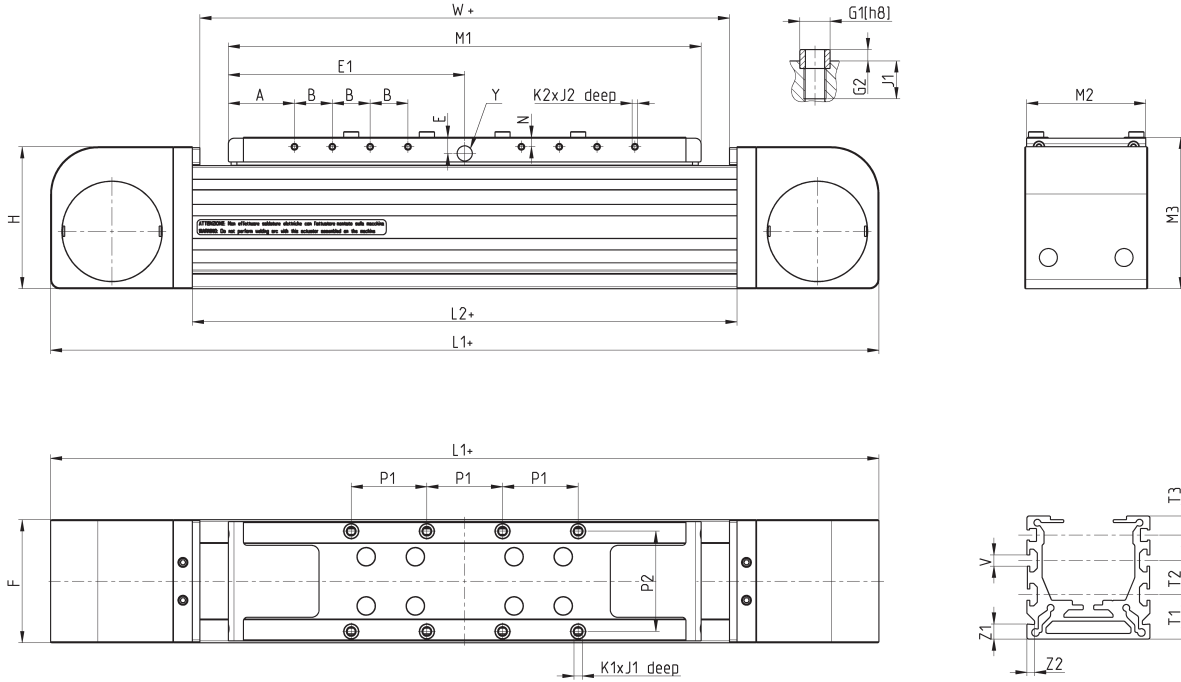
Size	A	B	C	C1	C2	C3 <sup>(H8)</sup>	D1	D2	E	E1	F	G1 <sup>(H8)</sup>	G2	H	L1	L2	M1	M2	M3	N	P1	P2	K1	J1	K2	J2	K3	J3	T1	T2	T3	V	Y	X1	X2	W	Z1	Z2
50	32.5	15	37	37	4.5	20	17	32	8.5	100	50	6	2	60	354	238	200	48	65	5	30	40	M4	7	M3	5	M4	8	20	■	10	6	●	304	21.8	230	8	4
65	35	20	53	52	5	26	23.5	46	8.5	125	65	8	3	75	438	288	250	63	80	5	40	53	M5	8	M3	6	M5	10	23.5	18	10	6	●	373	30.5	280	8	4
80	35	30	68	68	6.5	38	30.5	60.5	11.5	165	80	10	3	95	548	368	330	78	100	8	55	64	M6	12	M4	8.5	M5	10	25	25	10	8	●	468	40.5	360	8	4

Size	WEIGHT STROKE ZERO [kg]	STROKE WEIGHT PER METER [kg/m]
50	2.15	3.35
65	4.6	5.4
80	8.9	5.9

**Electromechanical axis Mod. 5E...DS1**



+ = add the stroke



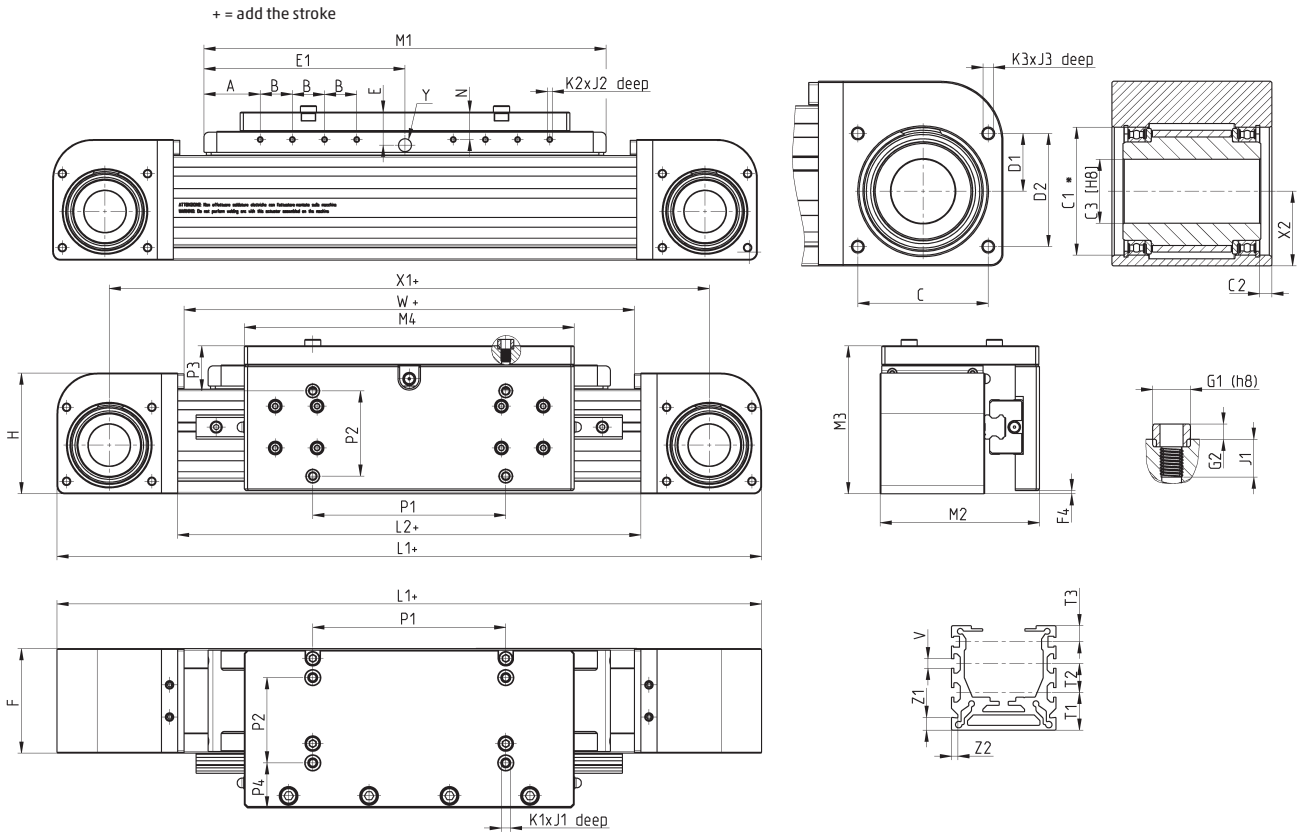
**NOTE:**

- \* We recommend a coupling with a shaft of tolerance h8.
- Dimension T2 in size 50 is not indicated because there is only one slot.
- Dimension Y indicates the hole for centralized lubrication by means of grease.

Size	A	B	E	E1	F	G1	G2	H	L1	L2	M1	M2	M3	N	P1	P2	K1	J1	K2	J2	T1	T2	T3	V	Y	W	Z1	Z2
50	32.5	15	8.5	100	50	6	2	60	354	238	200	48	65	5	30	40	M4	7	M3	5	20	■	10	6	●	230	8	4
65	35	20	8.5	125	65	8	3	75	438	288	250	63	80	5	40	53	M5	8	M3	6	23.5	18	10	6	●	280	8	4
80	35	30	11.5	165	80	10	3	95	548	368	330	78	100	8	55	64	M6	12	M4	8.5	25	25	10	8	●	360	8	4

Size	WEIGHT STROKE ZERO [kg]	STROKE WEIGHT PER METER [kg/m]
50	1.81	3.00
65	3.58	4.88
80	7.05	5.31

**Electromechanical axis Mod. 5E...HS1**



NOTE:  
 \* We recommend a coupling with a shaft of tolerance h8.  
 • Dimension Y indicates the hole for centralized lubrication by means of grease.

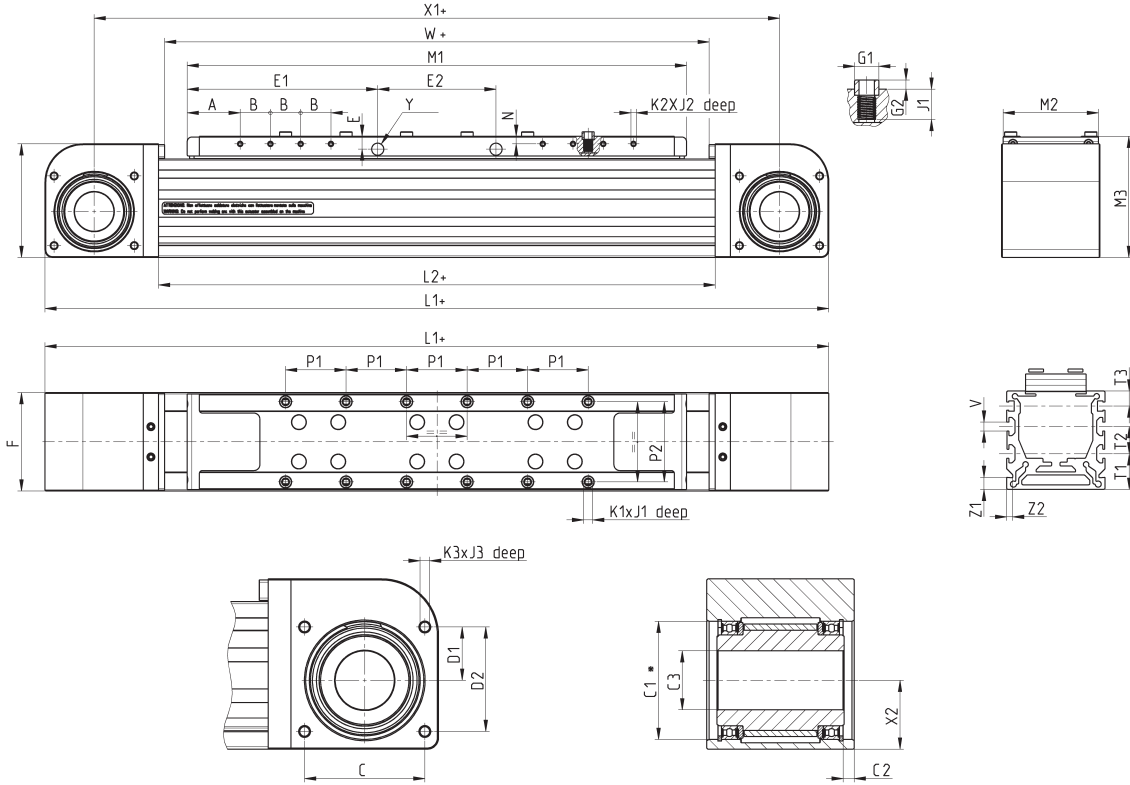
Size	A	B	C	C1	C2	C3	D1	D2	E	E1	F	F4	G1	G2	H	L1	L2	M1	M2	M3	N	P1	P2	P3	P4	K1	J1	K2	J2	K3	J3	T1	T2	T3	V	Y	X1	X2	W	Z1	Z2
65	35	20	53	52	5	26	23.5	46	20.5	125	65	2	8	3	75	438	288	250	99	92	17	120	53	28	28	M5	8	M3	6	M5	10	23.5	18	10	6	•	373	30.5	280	8	4
80	35	30	68	68	6.5	38	30.5	60.5	26.5	165	80	1	10	3	95	548	368	330	119	115	23	165	64	31	33.5	M5	12	M4	8.5	M5	10	25	25	10	8	•	468	40.5	360	8	4

Size	WEIGHT STROKE ZERO [kg]	STROKE WEIGHT PER METER [kg/m]
65	7.08	6.86
80	14.86	8.34

**Electromechanical axis Mod. 5E...AL1**



+ = add the stroke



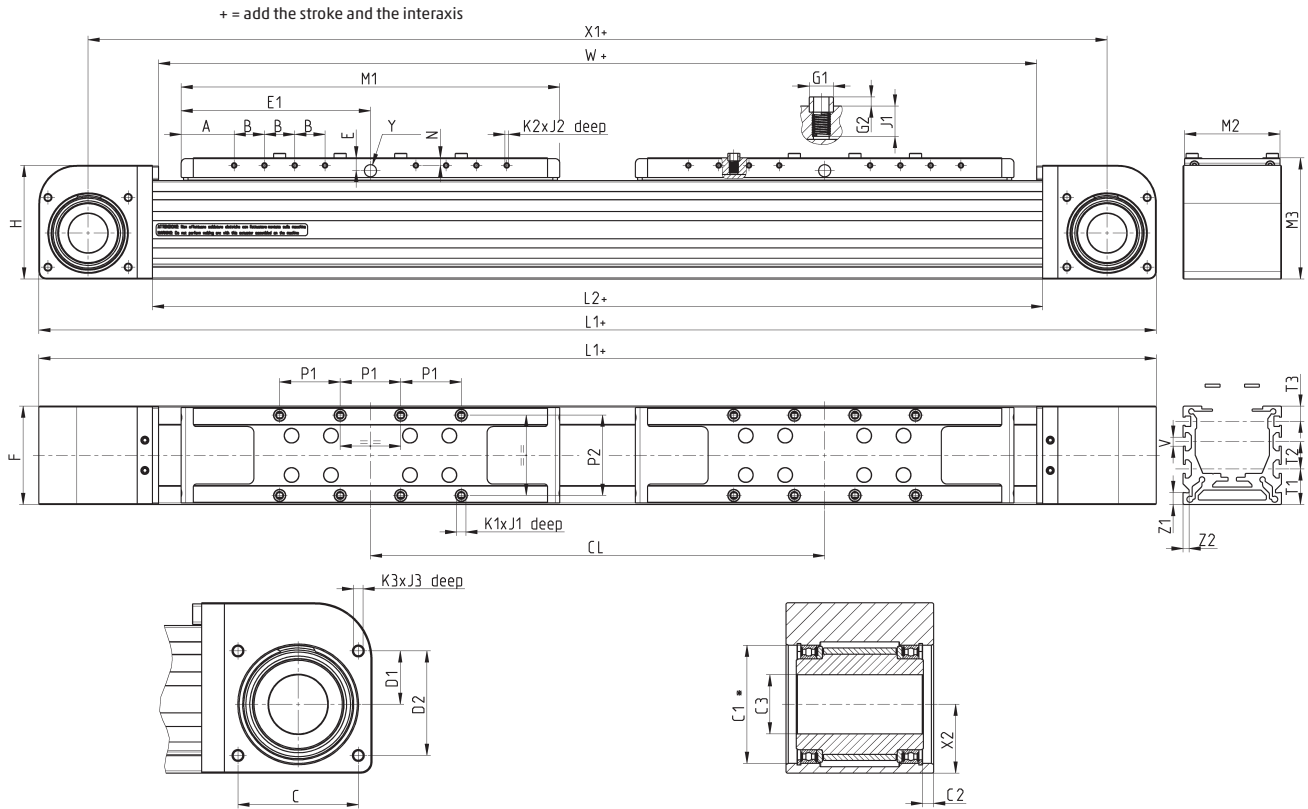
**NOTE:**

- \* We recommend a coupling with a shaft of tolerance h8.
- Dimension T2 in size 50 is not indicated because there is only one slot.
- Dimension Y indicates the hole for centralized lubrication by means of grease.

Size	A	B	C	C1	C2	C3 <sup>(H8)</sup>	D1	D2	E	E1	E2	F	G1 <sup>(H8)</sup>	G2	H	L1	L2	M1	M2	M3	N	P1	P2	K1	J1	K2	J2	K3	J3	T1	T2	T3	V	Y	X1	X2	W	Z1	Z2
50	32.5	15	37	37	4.5	20	17	32	8.5	101.5	62	50	6	2	60	419	303	265	48	65	5	30	40	M4	7	M3	5	M4	8	20.0	■	10	6	●	369	21.8	295	8	4
65	35.0	20	53	52	5	26	23.5	46	8.5	126.0	78	65	8	3	75	518	368	330	63	80	5	40	53	M5	8	M3	6	M5	10	23.5	18	10	6	●	453	30.5	360	8	4
80	37.5	30	68	68	6.5	38	30.5	60.5	11.5	167.5	110	80	10	3	95	663	483	445	78	100	8	55	64	M6	12	M4	8.5	M5	10	25.0	25	10	8	●	583	40.5	475	8	4

Size	WEIGHT STROKE ZERO [kg]	STROKE WEIGHT PER METER [kg/m]
50	2.58	3.35
65	5.56	5.4
80	11.10	5.9

# Electromechanical axis Mod. 5E...AS2



**NOTE:**

- \* We recommend a coupling with a shaft of tolerance h8.
- Dimension T2 in size 50 is not indicated because there is only one slot.
- Dimension Y indicates the hole for centralized lubrication by means of grease.

Size	A	B	C	C1	C2	C3 <sup>(H8)</sup>	D1	D2	E	E1	F	G1 <sup>(H8)</sup>	G2	H	L1	L2	M1	M2	M3	N	P1	P2	Q1	Q2	R1	R2	S1	S2	T1	T2	T3	V	Y	X1	X2	W	Z1	Z2
50	32.5	15	37	37	4.5	20	17	32	8.5	100	50	6	2	60	354	238	200	48	65	5	30	40	M4	7	M3	5	M4	8	20	■	10	6	●	304	21.8	230	8	4
65	35	20	53	52	5	26	23.5	46	8.5	125	65	8	3	75	438	288	250	63	80	5	40	53	M5	8	M3	6	M5	10	23.5	18	10	6	●	373	30.5	280	8	4
80	35	30	68	68	6.5	38	30.5	60.5	11.5	165	80	10	3	95	548	368	330	78	100	8	55	64	M6	12	M4	8.5	M5	10	25	25	10	8	●	468	40.5	360	8	4

Size	CL min	CL max	Max applicable stroke	WEIGHT STROKE ZERO [kg]	WEIGHT PER METER [kg/m] (valid for stroke and interaxis increases)
50	250	2000	Smax = 4262 - CL	3.49	3.35
65	300	2000	Smax = 6212 - CL	7.35	5.4
80	400	2000	Smax = 6132 - CL	14.68	5.9

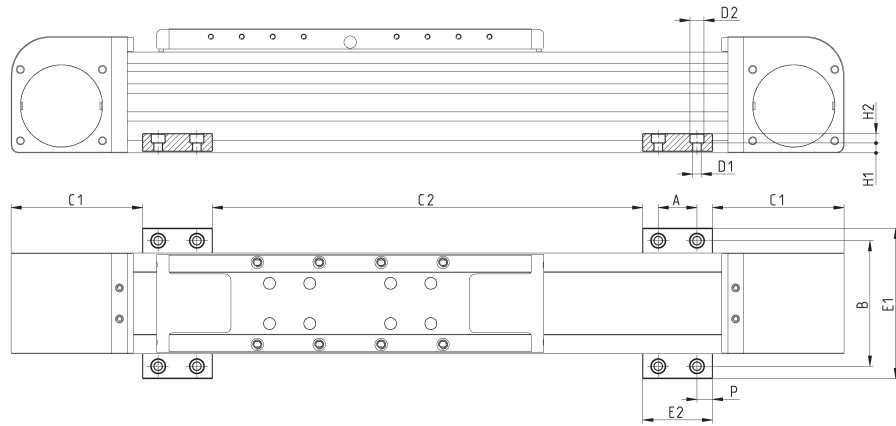
## Side clamping bracket Mod. BGS

Material: Aluminium



Supplied with:  
2x clamps

TABLE NOTE:  
\* according to the span  
(max admissible deflection)  
recommended value 500  
mm



Mod.	Size	A	B	C1	C2	∅D1	∅D2	E1	E2	H1	H2	P	Weight (g)
BGS-5E-M5	50	25	66	68	*	5.5	9	82	45	6.4	6	10	45
BGS-5E-M5	65	25	81	85	*	5.5	9	97	45	6.4	6	10	45
BGS-5E-M5	80	25	96	100	*	5.5	9	112	45	6.4	6	10	45
BGS-5E-M6	50	25	66	68	*	6.5	10.5	82	45	5.4	7	10	40
BGS-5E-M6	65	25	81	85	*	6.5	10.5	97	45	5.4	7	10	40
BGS-5E-M6	80	25	96	100	*	6.5	10.5	112	45	5.4	7	10	40

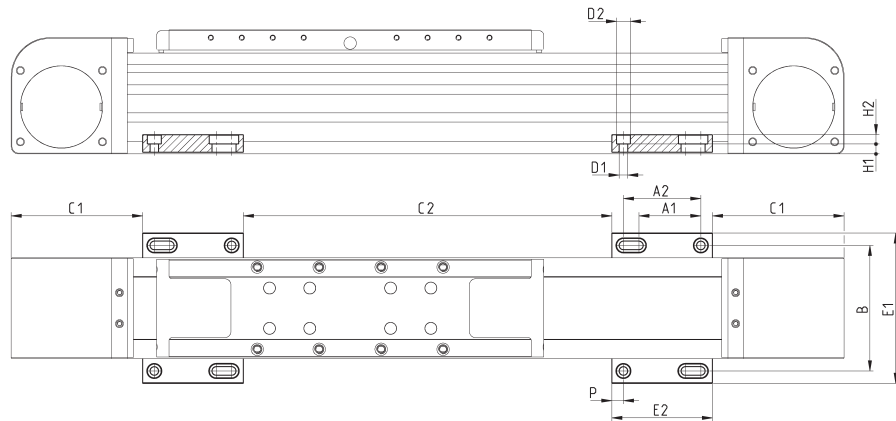
## Perforated side clamping bracket Mod. BGA

Material: Aluminium



Supplied with:  
2x clamps with perforation

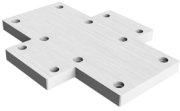
TABLE NOTE:  
\* according to the span  
(max admissible deflection)  
recommended value 500  
mm



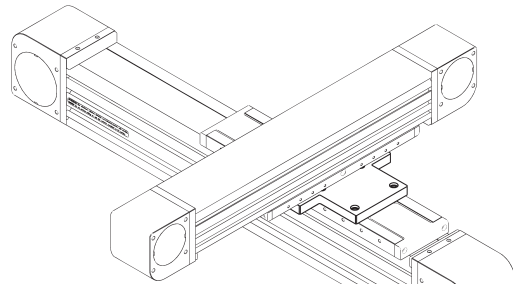
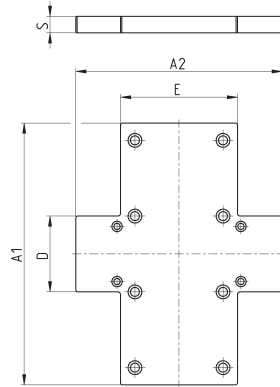
Mod.	Size	A1	A2	B	C1	C2	∅D1	∅D2	E1	E2	H1	H2	P	Weight (g)
BGA-5E-M5	50	40	50	66	68	*	5.5	9	82	65	6.4	6	7.5	60
BGA-5E-M5	65	40	50	81	85	*	5.5	9	97	65	6.4	6	7.5	60
BGA-5E-M5	80	40	50	96	100	*	5.5	9	112	65	6.4	6	7.5	60
BGA-5E-M6	50	40	50	66	68	*	6.5	10.5	82	65	5.4	7	7.5	55
BGA-5E-M6	65	40	50	81	85	*	6.5	10.5	97	65	5.4	7	7.5	55
BGA-5E-M6	80	40	50	96	100	*	6.5	10.5	112	65	5.4	7	7.5	55



## Interface plate - slider on slider



The kit includes:  
 1x interface plate  
 8x screws + 8x lock washers  
 to connect the plate on the  
 slider of the main axis  
 4x screws + 4x lock washers  
 to connect the plate on the  
 slider of the secondary axis

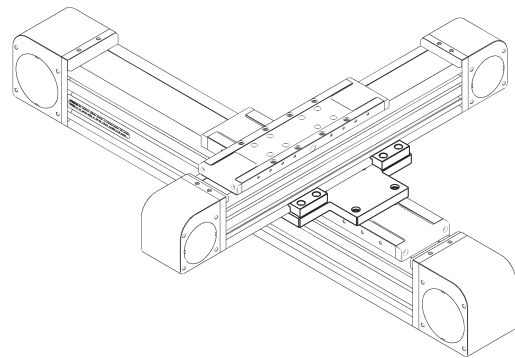
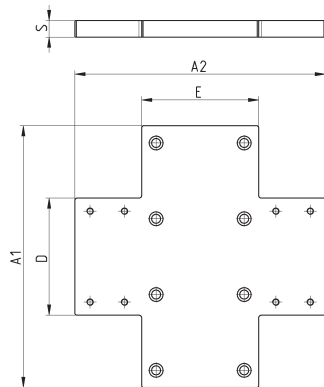


Mod.	Size	A1	A2	D	E	S	Weight (g)
XY-S65-S50	65	150	150	55	70	12	515
XY-S80-S50	80	190	150	55	85	12	690
XY-S80-S65	80	190	150	70	85	12	720

## Interface plate - profile on slider



The kit includes:  
 1x interface plate  
 8x screws + 8x lock washers  
 to connect the plate on the  
 slider of the main axis  
 4x clamps  
 8x screws + 8x lock washers  
 to connect the secondary  
 axis on the plate by means  
 of clamps

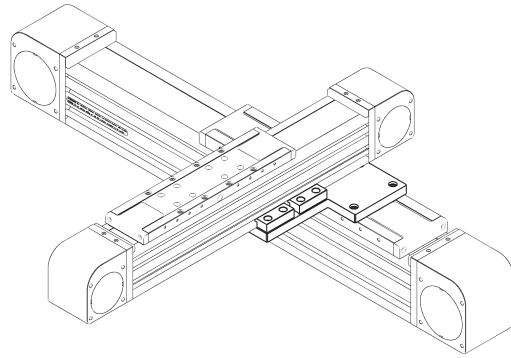
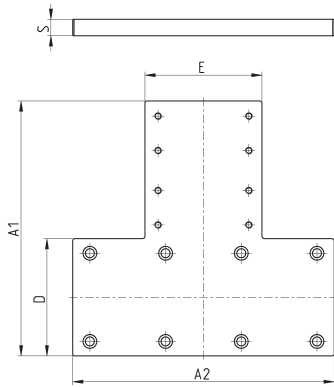


Mod.	Size	A1	A2	D	E	S	Weight (g)
XY-S65-P50	65	150	162	85	70	12	730
XY-S80-P50	80	190	182	85	85	12	945
XY-S80-P65	80	190	185	100	85	12	1000

### Interface plate - profile on slider - long arm

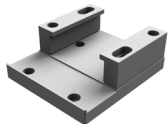


The kit includes:  
1x interface plate  
8x screws + 8x lock washers  
to connect plate on the slider  
of the main axis  
4x clamps  
8x screws + 8x lock washers  
to connect plate on the slider  
of the secondary axis by  
means of clamps

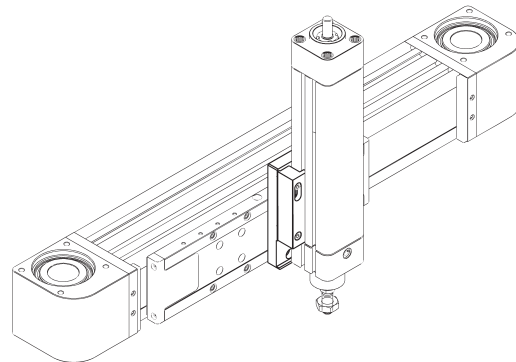
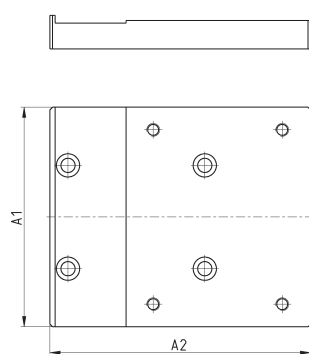


Mod.	Size	A1	A2	D	E	S	Weight (g)
XY-S50-P50-T	50	162	130	50	85	12	600
XY-S65-P50-T	65	170	150	65	85	12	750
XY-S65-P65-T	65	185	170	65	100	12	800
XY-S80-P50-T	80	185	190	85	85	12	960
XY-S80-P65-T	80	185	190	85	100	12	1010
XY-S80-P80-T	80	200	190	85	120	12	1100

### Interface plate - Series 6E cylinder on slider



The kit includes:  
1x interface plate  
4x screws + 4x lock washers  
to connect the plate on the  
slider of the axis  
2x clamps  
4x screws + 4x lock washers  
to fix the Series 6E cylinder  
by means of clamps

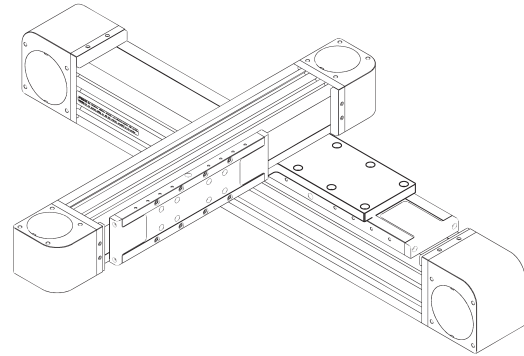
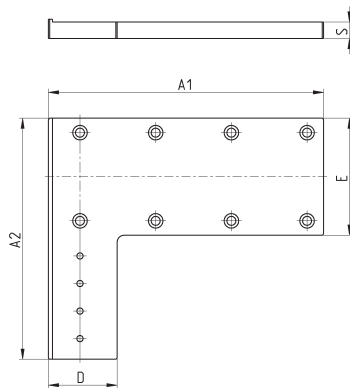


Mod.	Size	A1	A2	S	Weight (g)
XY S50-6E32	50	72	101	11	315
XY-S65-6E32	65	72	101	11	315
XY-S65-6E40	65	85	101	11	350
XY S65-6E50	65	95	110	12	510
XY-S80-6E32	80	75	101	12	385
XY-S80-6E40	80	85	101	12	410
XY-S80-6E50	80	95	110	12	510
XY S80-6E63	80	106	110	12	560

## Interface plate - profile side on slider - left position



The kit includes:  
1x interface plate  
8x screws + 8x lock washers  
to connect the plate on the  
slider of the main axis,  
screws and nuts for slot  
to connect the plate on the  
slider of the secondary axis

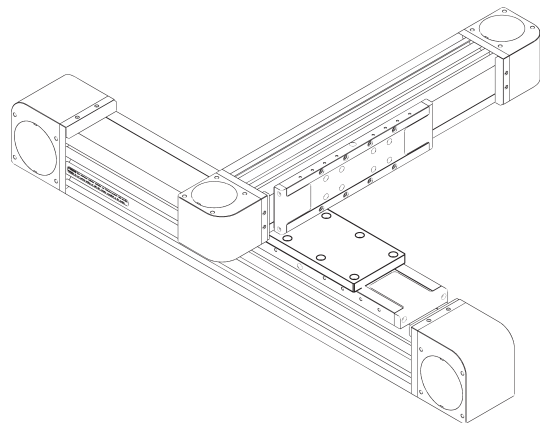
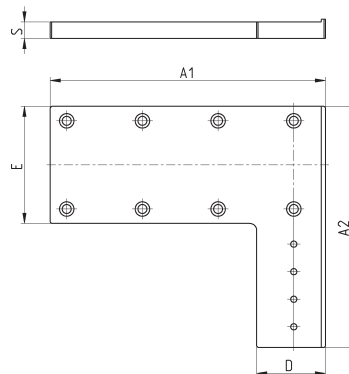


Mod.	Size	A1	A2	D	E	S	Nr of holes	Weight (g)
XY-S50-LL50	50	130	145	50	55	11	4	450
XY-S65-LL50	65	160	160	50	70	11	4	500
XY-S65-LL65	65	170	180	65	70	12	8	550
XY-S80-LL50	80	200	175	50	85	12	4	750
XY-S80-LL65	80	210	195	65	85	12	8	870
XY-S80-LL80	80	210	195	80	85	12	8	900

## Interface plate - profile side on slider - right position



The kit includes:  
1x interface plate  
8x screws + 8x lock washers  
to connect the plate on the  
slider of the main axis,  
screws and nuts for slot  
to connect the plate on the  
slider of the secondary axis

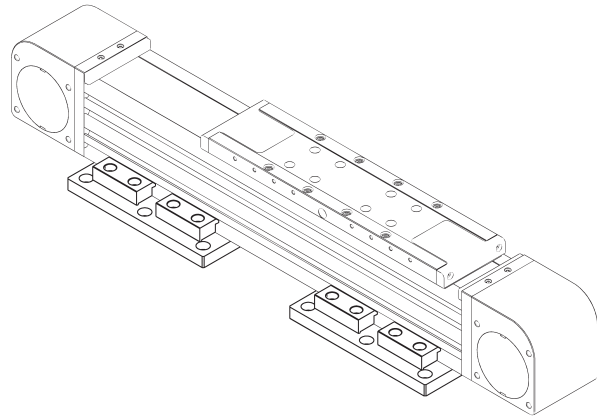
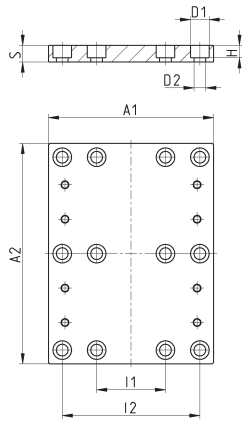


Mod.	Size	A1	A2	D	E	S	Nr of holes	Weight (g)
XY-S50-LR50	50	130	145	50	55	11	4	450
XY-S65-LR50	65	160	160	50	70	11	4	500
XY-S65-LR65	65	170	180	65	70	12	8	550
XY-S80-LR50	80	200	175	50	85	12	4	750
XY-S80-LR65	80	210	195	65	85	12	8	870
XY-S80-LR80	80	210	195	80	85	12	8	900

## Fixed interface plate

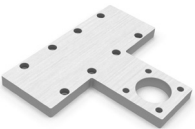


The kit includes:  
1x interface plate  
4x clamps  
8x screws to connect the clamps on the plate

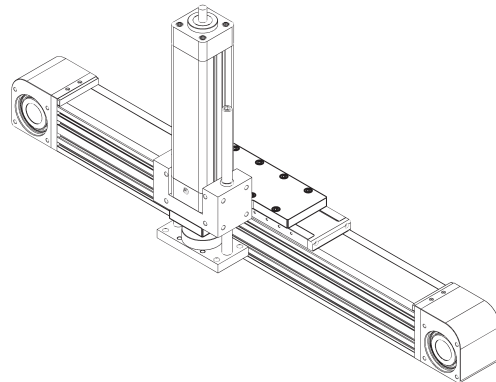
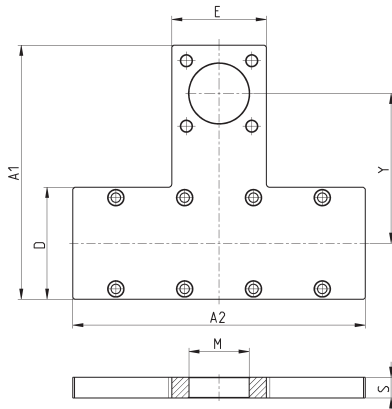


Mod.	Size	A1	A2	$\varnothing$ D1	$\varnothing$ D2	H	I1	I2	S	Weight (g)
X-P50	50	95	140	9	5.5	6	45	80	8	275
X-P65	65	120	140	10.5	6.5	7	50	100	10	430
X-P80	80	120	160	13.5	8.5	9	50	100	12	570

## Interface plate - Anti-rotation guides S. 45 / Cylinders S. 6E on slider

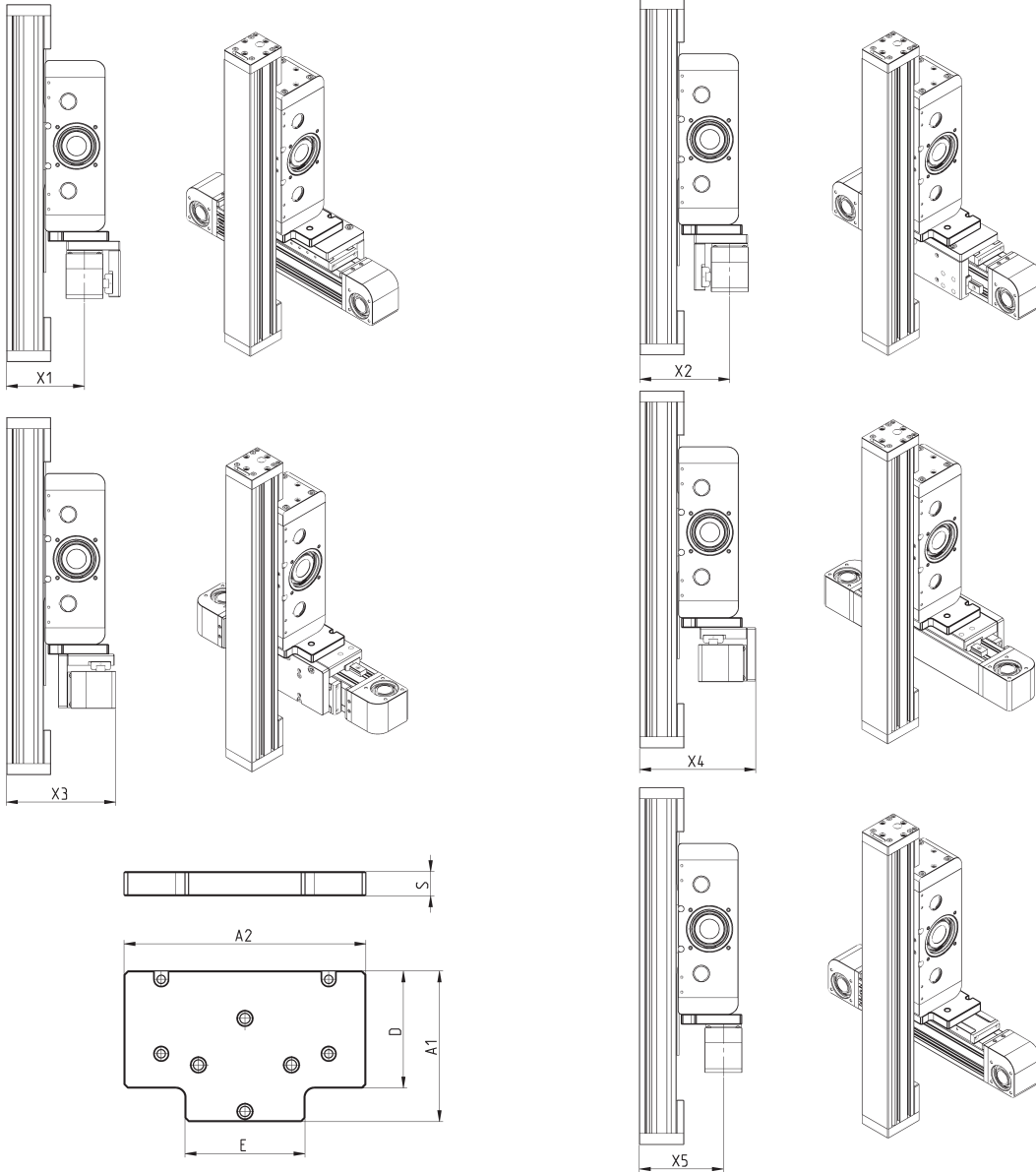


The kit includes:  
1x interface plate  
8x screws + 8x lock washers to connect the plate on the slider  
4x screws to connect the cylinder



Mod.	Size	A1	A2	D	E	S	$\varnothing$ M <sup>(H10)</sup>	Y	Weight (g)
XY-S50-45N32	50	124	130	50	49	12	30	75	350
XY-S65-45N32	65	139	170	65	49	12	30	82.5	480
XY-S65-45N40	65	147.5	170	65	55	12	35	87	500
XY-S65-45N50	65	157	170	65	66.5	12	40	91.5	530
XY-S80-45N40	80	167.5	190	85	55	12	35	97	660
XY-S80-45N50	80	177	190	85	65	12	40	101.5	690
XY-S80-45N63	80	190.5	190	85	75	12	45	110	740

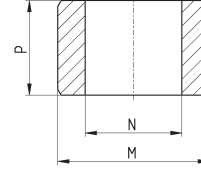
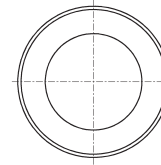
**5E/5V connection flange**



Mod.	Size	X1	X2	X3	X4	X5	A1	A2	E	D	S	Weight (g)
YZ-50-5V50	50	105	121	147	79	-	81	130	64.5	63	13	335
YZ-65-5V50	65	112.5	136.5	16	87	124.5	99.5	140	64.5	76.5	13	445
YZ-65-5V65	65	130	154	179.5	104.5	-	101.5	140	84.5	76.5	13	460
YZ-80-5V50	80	120.5	146.5	185.5	81.5	133.5	118	190	64.5	78	13	635
YZ-80-5V65	80	137.5	163.5	202.5	98.5	150.5	118	190	84.5	78	15	770
YZ-80-5V80	80	141	183.5	222.5	118.5	-	120	190	99.5	78	15	825

### Centering ring Mod. TR-CG

Supplied with:  
2x centering rings in steel

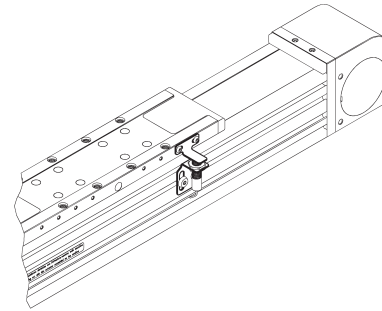
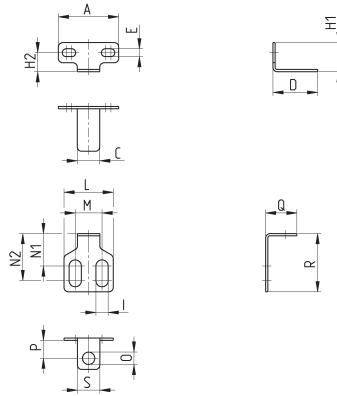


Mod.	M (h8)	N	P
TR-CG-04	Ø4	Ø2.6	2.5
TR-CG-05	Ø5	Ø3.1	3
TR-CG-06	Ø6	Ø4.1	4
TR-CG-08	Ø8	Ø5.1	5
TR-CG-10	Ø10	Ø6.1	6
TR-CG-12	Ø12	Ø8.1	6

### Kit to fix the inductive sensor

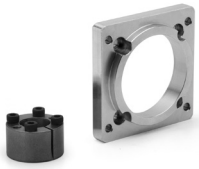


The kit includes:  
1x sensor dog  
2x screws to fix the sensor dog  
1x sensor supporting plate  
2x screws to connect the sensor supporting plate  
2x nuts for the slot

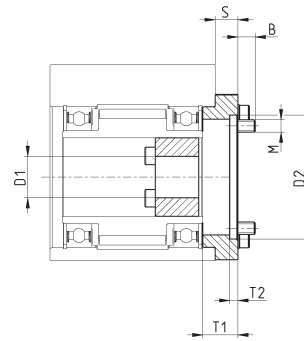
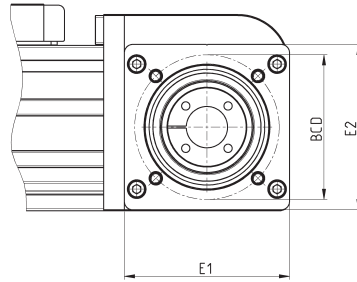


Mod.	Size	A	C	D	E	H1	H2	I	L	M	N1	N2	ØO	P	Q	R	S	Weight (g)
SIS-M5-50/65	50-65	27	10	20	3.5	13	8.5	5.5	22	12	14.5	21	5.5	8	14	26	10	10
SIS-M8-65	65	27	10	20	3.5	13	8.5	5.5	25	15	10.5	24	8.5	10	18.5	30	15	10
SIS-M5-80	80	45	15	20	4.5	16	10.5	5.5	22	12	14.5	21	5.5	8	14	26	10	15
SIS-M8-80	80	45	15	20	4.5	16	10.5	5.5	25	15	10.5	24	8.5	10	18.5	30	15	15

## Kit to connect the Series GB gearbox



The kit includes:  
 1x connection flange  
 4x screws + 4x lock washers  
 to connect the flange  
 1x locking set  
 4x screws + 4x lock washers  
 to connect the gearbox

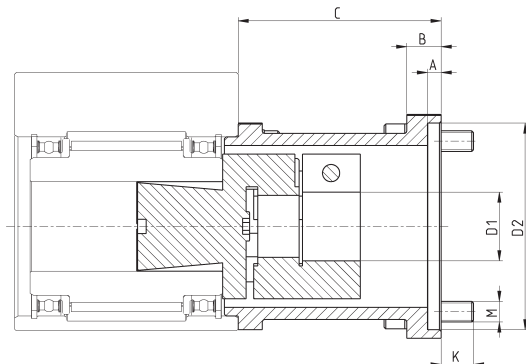
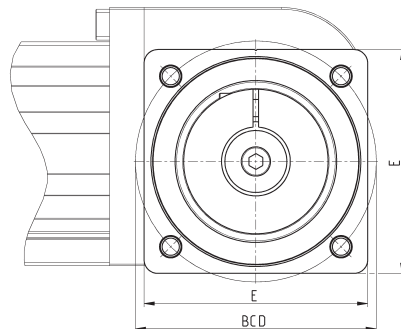


Mod.	Size	Gearbox	E1	E2	S	$\varnothing D1$	$\varnothing D2^{(M7)}$	T1	T2	M	B	Weight (g)
FR-5E-50	50	GB-040	48	43	6	10	26	10	10	4	5.5	85
FR-5E-65	65	GB-060	63	60	7	14	40	11	11	5	7.4	140
FR-5E-80	80	GB-080	80	80	11	20	60	17	4	6	8.4	325

## Kit to connect the gearbox - enhanced series (sizes 50, 65)



The kit includes:  
 1x connection flange  
 4x screws + 4x lock washers  
 to connect the flange  
 1x expansion coupling  
 4x screws + 4x lock washers  
 to connect the gearbox

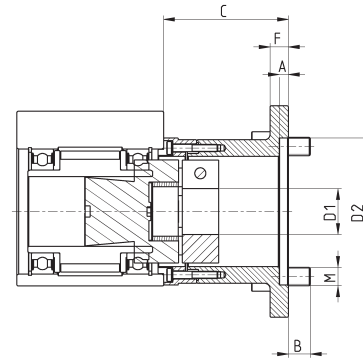
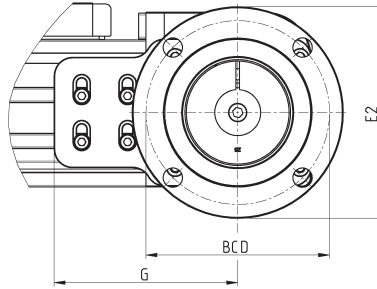


DIMENSIONS												
Mod.	Size	Gearbox	$\varnothing D1$	$\varnothing D2^{(M7)}$	A	BCD	B	C	E	M	K	Weight (g)
FRH-5E-50	50	GB-060	14	40	4	52	8	51	50	5	7.4	170
FRH-5E-65	65	GB-080	20	60	4	70	10	59	65	6	9.4	530

### Kit to connect the gearbox - enhanced series (size 80)

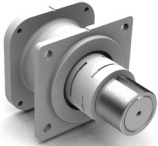


The kit includes:  
 2x connection flanges  
 4x screws + 4x lock washers  
 1x expansion coupling  
 4x screws + 4x lock washers to fix the axis  
 4x screws + 4x lock washers to fix the profile  
 4x nuts + 4x screws to fix the gearbox

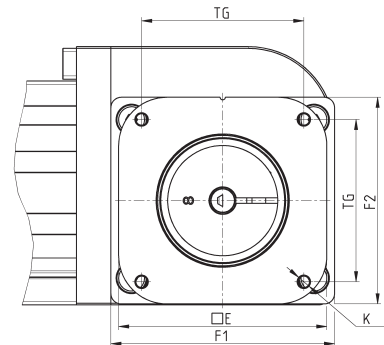
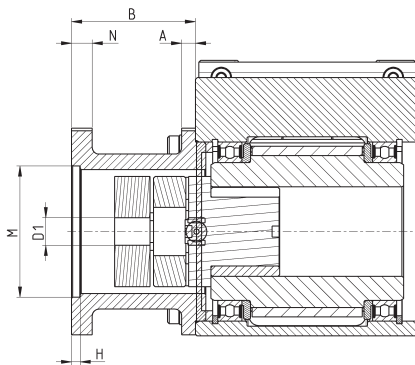


Mod.	Size	Gearbox	$\varnothing_{D1}^{(H7)}$	A	$\varnothing_{D2}$	$\varnothing_{D3}$	B	C	$\varnothing_E$	F	G	Weight (g)
FRH-5E-80	80	GB-120	80	5	100	10.5	10	68	115	60	100	1000

### Direct connection kit for Stepper motor



The kit includes:  
 1x MTS-24 connection flange  
 4x screws + 4 lock washers  
 1x expansion coupling  
 1x bushing (not present in FS-5E-50-0024)

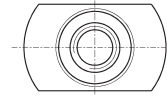
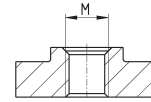


Mod.	Size	Motor	$\varnothing_{D1}$	A	B	F1	F2	E	TG	K	$\varnothing_M$	H	N	Weight (g)
FS-5E-50-0024	50	MTS-24-...	8	4	37	47	45	60.5	47.1	M4	38.1	2.5	2.5	125
FS-5E-65-0024	65	MTS-24-...	8	4	36	65	60	60.5	47.1	M4	38.1	2.5	2.5	200



## Slot nut for sensor CSH

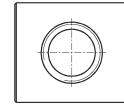
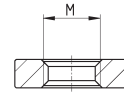
Material: steel

Supplied with:  
2x nuts

Mod.	Size	M
PCV-5E-CS-M3	50 - 65 - 80	M3
PCV-5E-CS-M4	50 - 65 - 80	M4

## Slot nut 6 - rectangular type

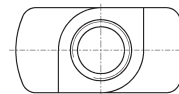
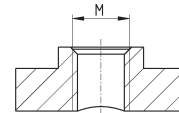
Material: steel

Supplied with:  
2x nuts

Mod.	Size	M
PCV-5E-C6-M4Q	50 - 65	M4

## Slot nut 6 for front insertion

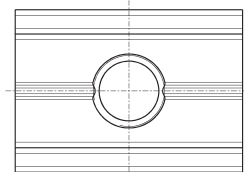
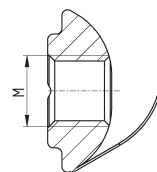
Material: steel

Supplied with:  
2x nuts

Mod.	Size	M
PCV-5E-C6-M4R	50 - 65	M4

## Slot nut 8 with flexible flap

Material: steel

Supplied with:  
2x nuts

Mod.	Size	M
PCV-5E-C8-M5	80	M5
PCV-5E-C8-M6	80	M6

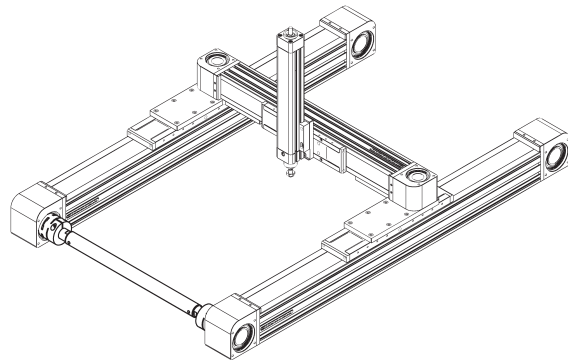
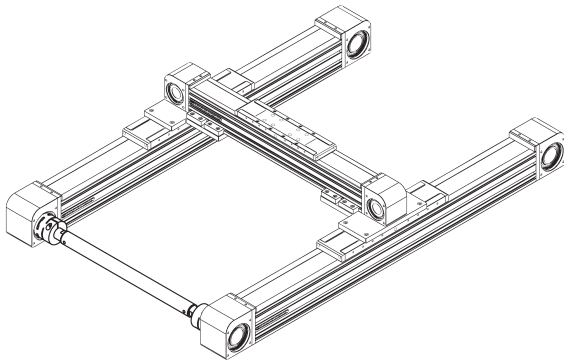
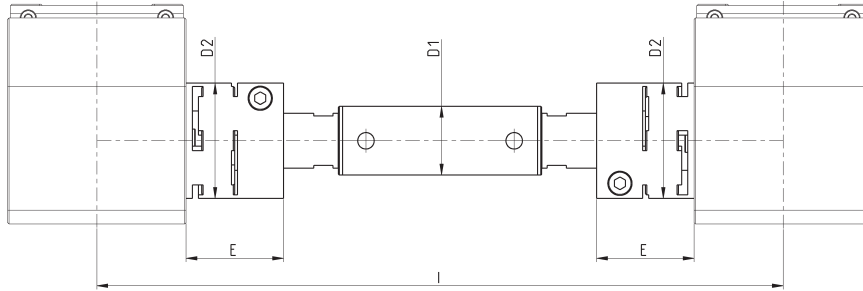
## Parallel connection kit

The kit includes:  
1x parallel shaft  
2x expansion couplings



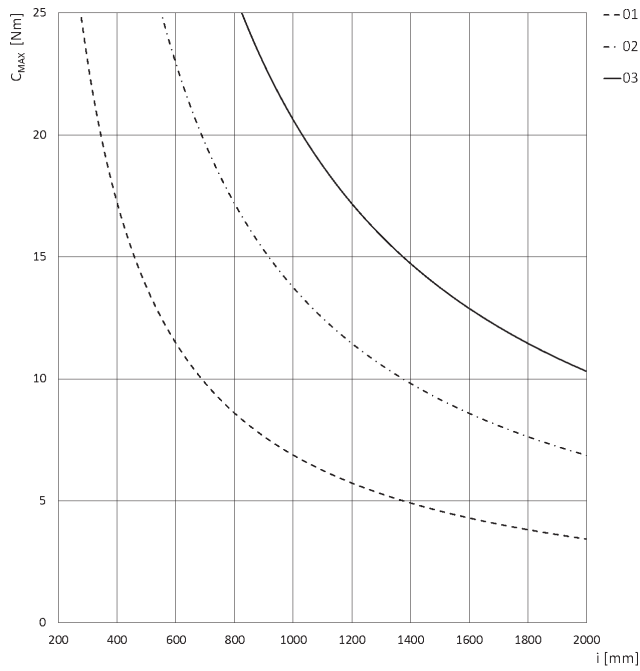
EXAMPLE:

PS-5E-65-1400 corresponds to a parallel connection for axes positioned at interaxis  $l = 1400\text{mm}$



Mod.	Size	l min	l max	$\varnothing D1$	$\varnothing D2$	E	Transmission torque
PS-5E-50-0000	50	200	2000	22	32	26	see graph
PS-5E-65-0000	65	250	2000	25	42	35.5	see graph
PS-5E-80-0000	80	300	2000	30	56	40	see graph

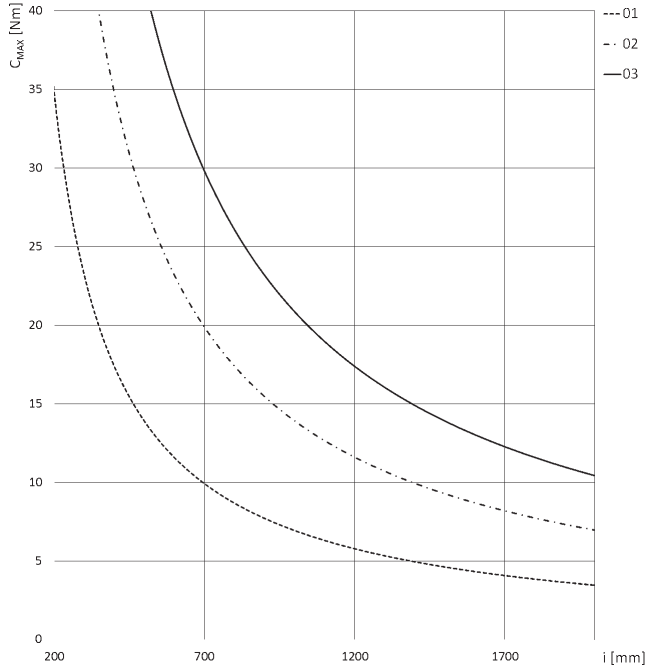
**INTERAXIS ACCORDING TO THE MAXIMUM ADMISSIBLE TORQUE**



Size 50x50

C<sub>max</sub> = max applicable torque  
i = interaxis between the two 5E axes

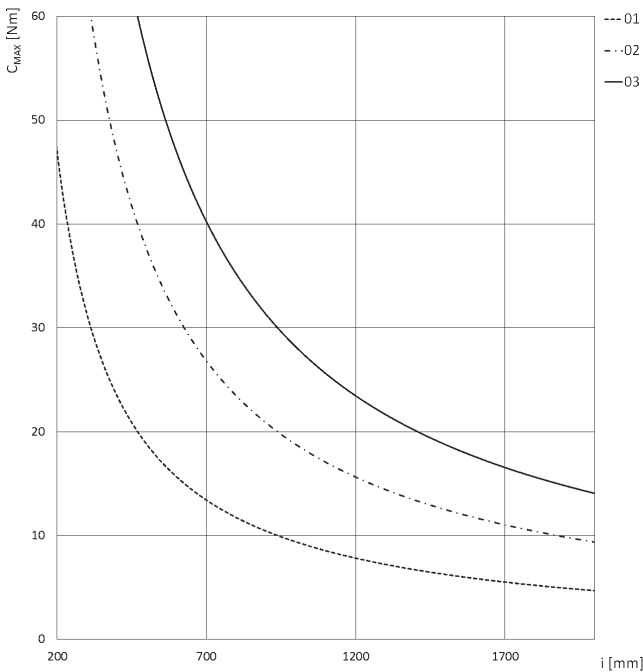
- 01 = lag error 0.1 mm
- 02 = lag error 0.2 mm
- 03 = lag error 0.3 mm



Size 65x65

C<sub>max</sub> = max applicable torque  
i = interaxis between the two 5E axes

- 01 = lag error 0.1 mm
- 02 = lag error 0.2 mm
- 03 = lag error 0.3 mm



Size 80x80

C<sub>max</sub> = max applicable torque  
i = interaxis between the two 5E axes

- 01 = lag error 0.1 mm
- 02 = lag error 0.2 mm
- 03 = lag error 0.3 mm