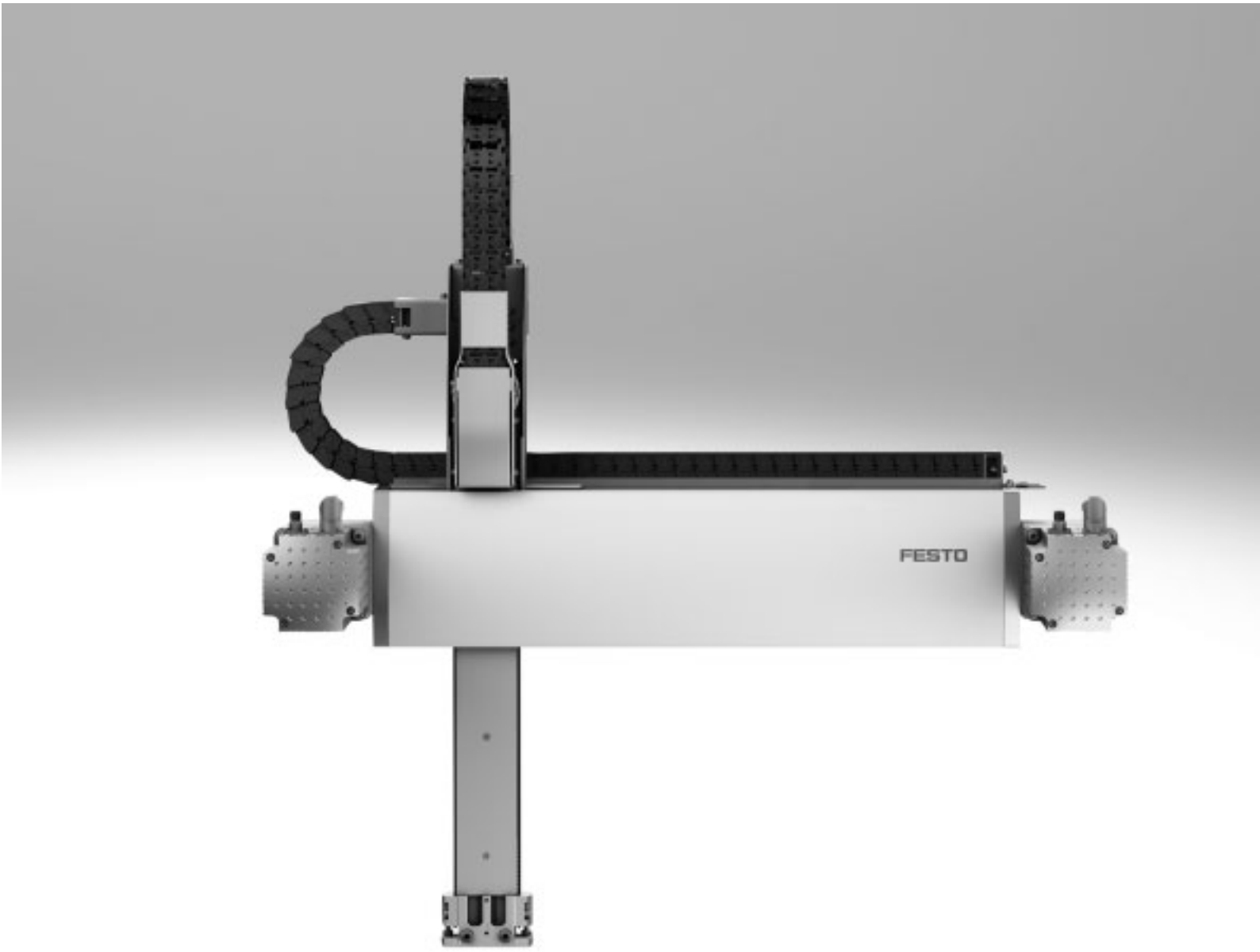
Linear gantries EXCT



Linear gantries EXCT

Key features

At a glance

General

- Optimal dynamic response when compared with other Cartesian gantry systems
- The drive concept ensures low moving dead weight
- Flat system design
- Perfectly matched drive and controller package
- High acceleration in both axial directions
- Interface for many grippers from Festo

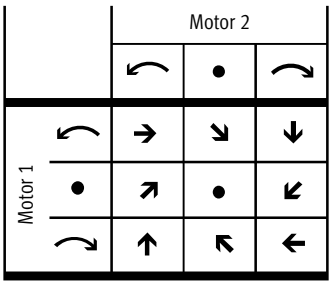
Application examples

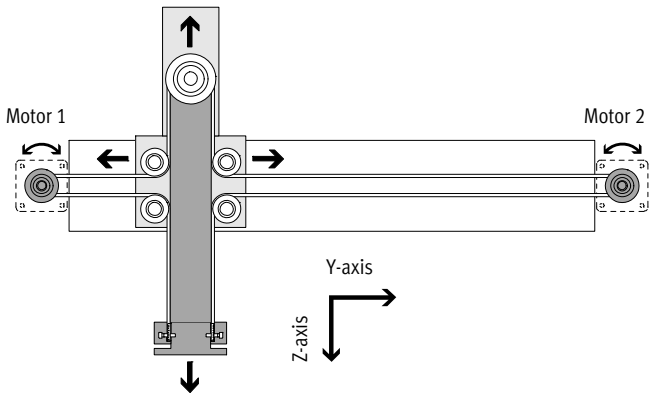
- Fast repositioning of parts and modules in a large, rectangular working space, e.g.:
  - Sorting
  - Loading and unloading
  - Gluing and cutting

Operating principle

Two fixed servo motors drive a toothed belt arranged in a T-shape.
The toothed belt moves the slide of the Y-axis and the interface on the Z-axis in a 2-dimensional space.

A controller calculates the position of the interface. The controlled interaction of the motors results in the corresponding movement of the interface.
The use of attachment components enables additional processes to be carried out.



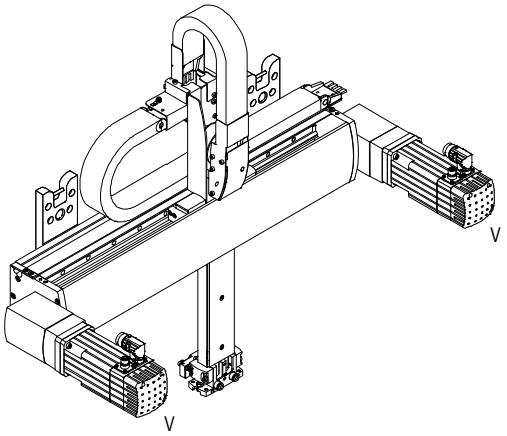


Type		EXCT-15	EXCT-30	EXCT-100
Guide		Recirculating ball bearing guide		
Stroke of the				
Y-axis	[mm]	100 … 1000	100 … 1500	100 … 2000
Z-axis	[mm]	100, 200	250, 500	250, 500, 800
Nominal load for max. dynamic response[1)]	[kg]	1.5	3	10
Repetition accuracy	[mm]	±0.1		

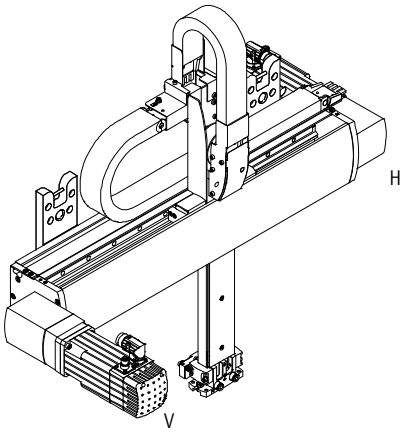
1) Nominal load = tool load (attachment component + gripper, for example) + payload

Motor attachment variants

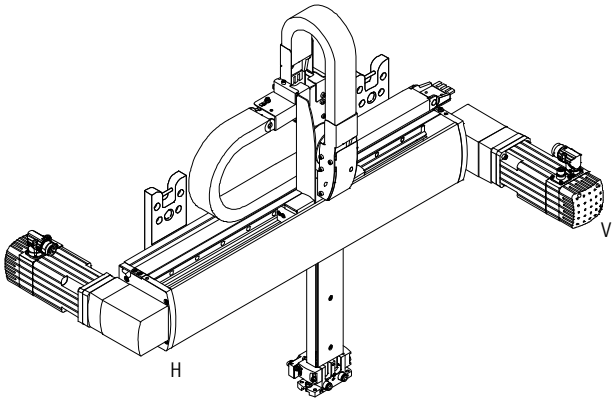
EXCT-...-VV – Motor 1 at front, motor 2 at front



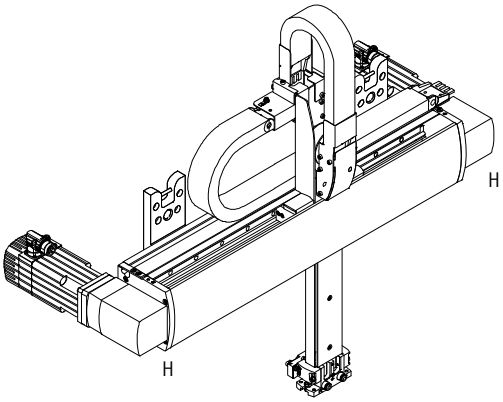
EXCT-...-VH – Motor 1 at front, motor 2 at rear



EXCT-...-HV – Motor 1 at rear, motor 2 at front

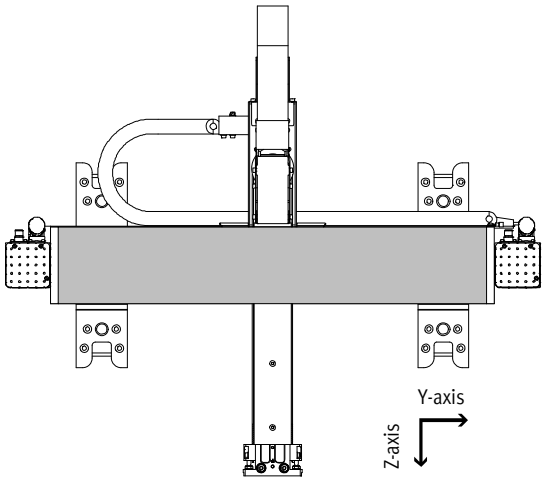


EXCT-...-HH – Motor 1 at rear, motor 2 at rear



Mounting position

The linear gantry may only be mounted and operated with a vertical Z-axis. The interface for attachment components must be positioned at the bottom.



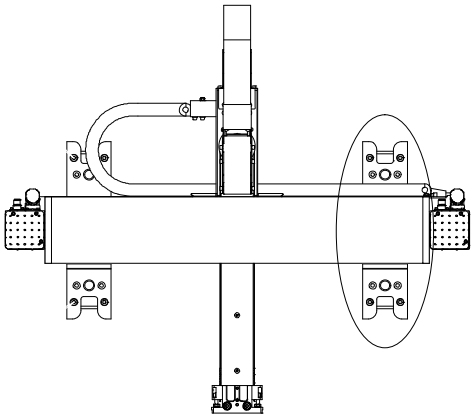
Linear gantries EXCT

Key features

Mounting options

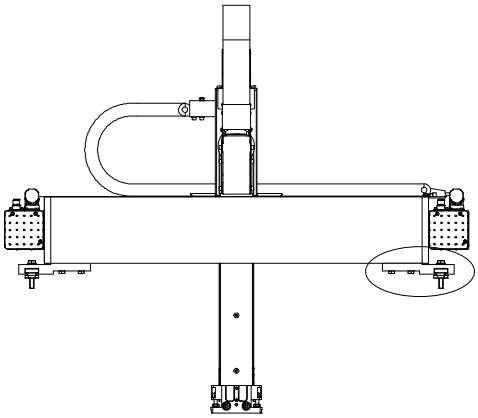
Using mounting kit EAHM-E17-K1-...

- For wall mounting
- No adjustment option after mounting



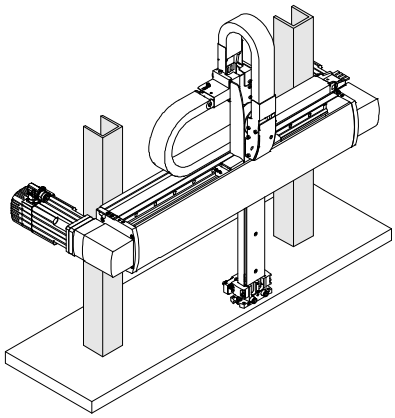
Using mounting kit EAHM-E17-K2-...

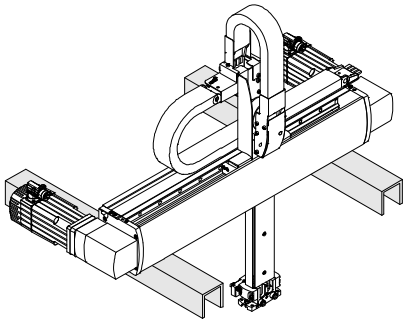
- For self-supported mounting
- Each side can be adjusted independently of each other



Mounting with slot nuts

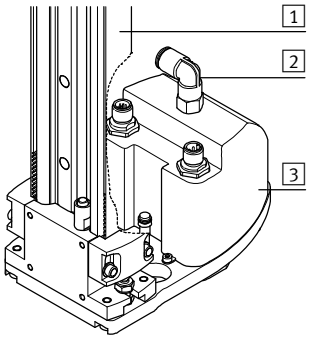
- For mounting directly on the machine frame
- No adjustment option following mounting





Attachment component for front unit

- A front unit (rotary drive) can be ordered via the modular product system or as an accessory; the front unit is mounted on the Z-axis by means of an adapter plate
- The front unit is available in two sizes (torque 0.75 Nm or 1.8 Nm)
- The front unit can optionally be selected with or without a rotary through-feed (for vacuum or excess pressure)
- When ordering via the modular product system, the front unit, connecting cables and compressed air tubing are installed and connected
- Requires motor controller CMMP-AS ➔ page 34

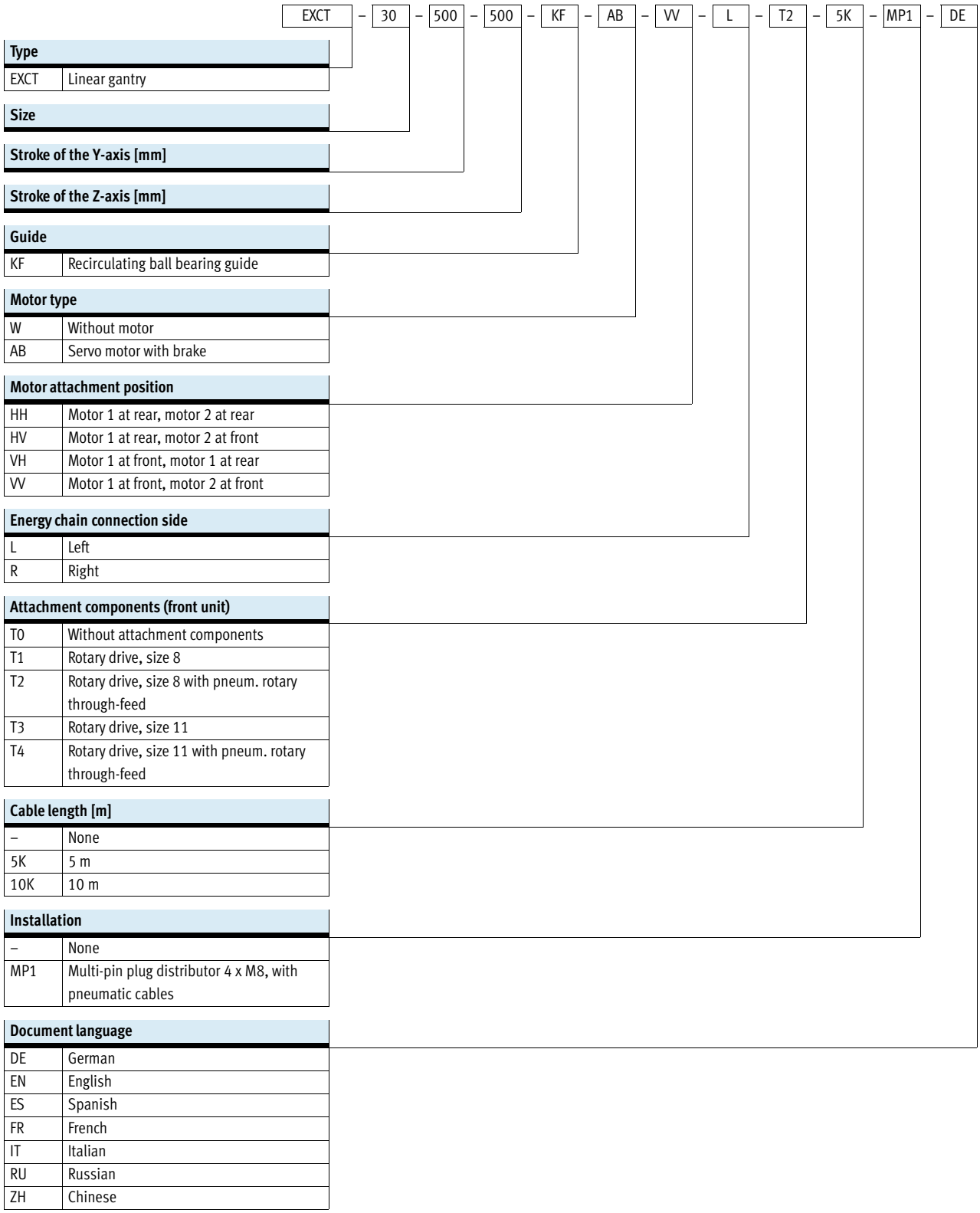


Technical data ➔ page 22

1 Linear gantry EXCT-...
2 Rotary through-feed
3 Rotary drive EXCT-...-T1 to T4

Linear gantries EXCT

Type codes



Type	
EXCT	Linear gantry

Size	

Stroke of the Y-axis [mm]	

Stroke of the Z-axis [mm]	

Guide	
KF	Recirculating ball bearing guide

Motor type	
W	Without motor
AB	Servo motor with brake

Motor attachment position	
HH	Motor 1 at rear, motor 2 at rear
HV	Motor 1 at rear, motor 2 at front
VH	Motor 1 at front, motor 1 at rear
VV	Motor 1 at front, motor 2 at front

Energy chain connection side	
L	Left
R	Right

Attachment components (front unit)	
T0	Without attachment components
T1	Rotary drive, size 8
T2	Rotary drive, size 8 with pneum. rotary through-feed
T3	Rotary drive, size 11
T4	Rotary drive, size 11 with pneum. rotary through-feed

Cable length [m]	
–	None
5K	5 m
10K	10 m

Installation	
–	None
MP1	Multi-pin plug distributor 4 x M8, with pneumatic cables

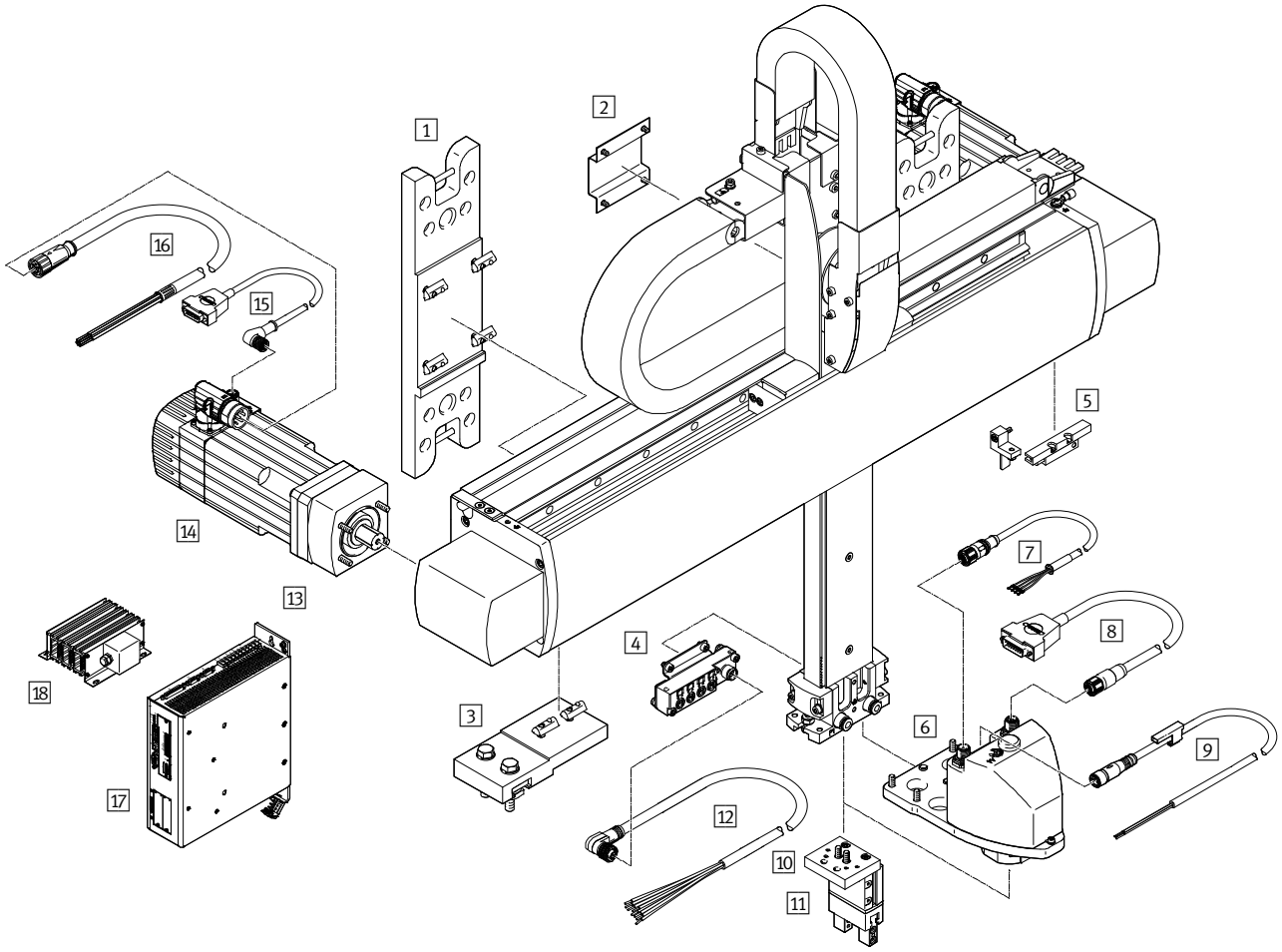
Document language	
DE	German
EN	English
ES	Spanish
FR	French
IT	Italian
RU	Russian
ZH	Chinese

Note

Ordering data ➔ page 26

Linear gantries EXCT

Peripherals overview



Attachments and accessories			
Type		Description	➔ Page/Internet
1	Mounting kit EAHM-E17-K1	• For mouting on a wall • Included in the scope of delivery of the linear gantry EXCT-...	28
2	Adapter kit EAHM-E17-U	• For mounting e.g. valves, vacuum generators etc. Mounting holes must be drilled by the customer • Not included in the scope of delivery of the linear gantry	32
3	Mounting kit EAHM-E17-K2	• Height-adjustable mounting kit • Not included in the scope of delivery of the linear gantry	29
4	Multi-pin plug set EADH-E17-MP1	• For connecting up to 4 inputs/outputs • Included in the scope of delivery of the linear gantry EXCT-...-MP1	31
5	Sensing kit EAPR-E17-S	• For position sensing on the Y-axis • Included in the scope of delivery: proximity sensor SIES-Q8B, sensor bracket, switch lug, mounting bracket and screws • Not included in the scope of delivery of the linear gantry	30
6	Front unit ERMH-...-E17	Choose from: • Without front unit (rotary drive T0) • With front unit (rotary drive T1 to T4). The connecting cables and compressed air tubing are delivered installed and connected	33
7	Motor cable NEBM-M12G4	• Connecting cable between motor for the front unit and motor controller • Included in the scope of delivery of the linear gantry EXCT-...-T...	34
8	Encoder cable NEBM-M12G12	• Connecting cable between motor for the front unit and motor controller • Included in the scope of delivery of the linear gantry EXCT-...-T...	34
9	Connecting cable NEBU	• Connecting cable between reference switch for the front unit and motor controller • Included in the scope of delivery of the linear gantry EXCT-...-T...	34
10	Adapter plate HMSV, DHAA	• For connecting linear gantry and gripper	35
11	Gripper	• A wide range of grippers is available	35
12	Plug socket with cable NEBU	• Connecting cable between multi-pin plug distributor and controller • Included in the scope of delivery of the linear gantry EXCT-...-MP1; delivered connected	33
13	Coupling housing EAMK	• For connecting third-party motors	33
14	Servo motor EMMS-AS	Motor sizes specially matched to the axis	emms-as
15	Encoder cable NEBM-M12W8	• Connecting cable between motor on the Y-axis and motor controller • Included in the scope of delivery of the linear gantry EXCT-...-AB...	34
16	Motor cable NEBM-M23G8	• Connecting cable between motor on the Y-axis and motor controller • Included in the scope of delivery of the linear gantry EXCT-...-AB...	34
17	Motor controller CMMP-AS	• For controlling the linear gantry	27
18	Braking resistor CACR	• Braking resistors are essential for operation	33

Linear gantries EXCT

Technical data

Size

15, 30, 100

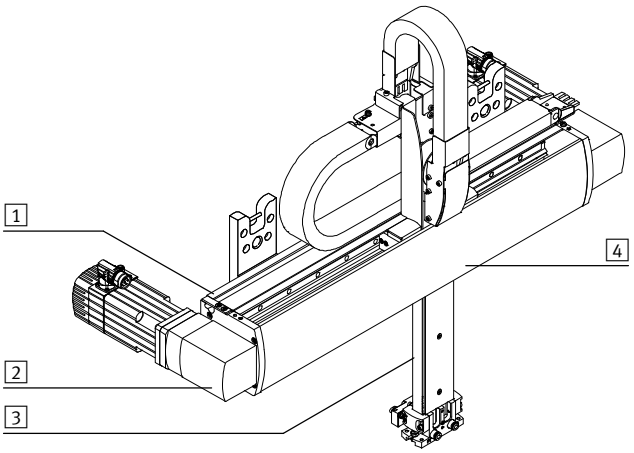
General technical data				
Size		15	30	100
Design		Linear gantry		
Guide		Recirculating ball bearing guide		
Stroke of the				
Y-axis	[mm]	100 … 1000	100 … 1500	100 … 2000
Z-axis	[mm]	100, 200	250, 500	250, 500, 800
Nominal load for max. dynamic response[1)]	[kg]	1.5	3	10
Max. process force in Z direction	[N]	100	300	500
Max. torque[2)]	[Nm]	7.75	12.5	22.1
Max. idling torque[2)3)]	[Nm]	0.51	1.28	2.56
Max. acceleration	[m/s^2]	50	50	30
Max. speed[4)]	[m/s]	4.8	5	4
Repetition accuracy	[mm]	±0.1		
Mounting position		Vertical		
Type of mounting		With mounting kit and slot nuts		

1) Nominal load = tool load (attachment component + gripper, for example) + payload
2) These values must also be complied with during installation of third-party motors
3) At v=0.2 m/s and 45° travel.
4) These data apply only under ideal conditions.
For a precise configuration please consult a sales engineer from Festo.

Operating and environmental conditions				
Size		15	30	100
Degree of protection		IP40		
Operating pressure[1)]	[bar]	–0.95 … +8		
Operating medium		Compressed air to 8573-1:2010 [7:4:4]		
Note on operating and pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature[2)]	[°C]	+10 … +40		
Storage temperature	[°C]	–10 … +60		
Relative air humidity	[%]	0 … 90 (non-condensing)		
Noise level	[dB(A)]	70	78	77
Duty cycle	[%]	100		
CE marking (see declaration of conformity)		To EU EMC Directive[3)]		

1) Permissible operating pressure for connections P1 and P2
2) Note operating range of proximity sensors and motors
3) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ Certificates.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Materials



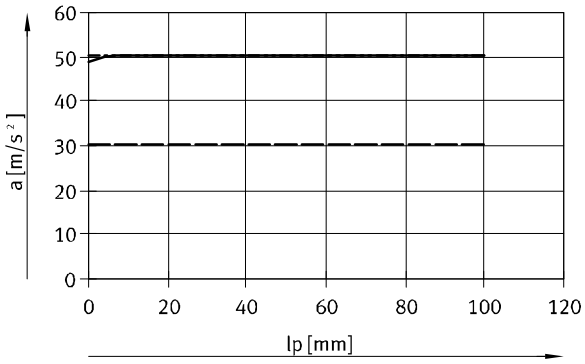
Size		15	30	100
1	Profile of the Y-axis	Anodised aluminium		
2	Drive housing	Anodised aluminium		
3	Profile of the Z-axis	Anodised aluminium		
4	Cover	Anodised aluminium		
–	Guide	High-alloy steel		
	Ball bearings	Steel		
	Toothed belt	PU with steel cord		
Note on materials		RoHS compliant		
		Contains paint-wetting impairment substances		

Weight [kg]				
Size		15	30	100
Product weight at 0 mm stroke (without nominal load, motors, axial kits, mounting kits)				
	Y/Z-axis	12.1	25.38	31.65
Additional weight per 100 mm stroke				
	Y-axis	0.95	1.48	1.86
	Z-axis	0.32	0.37	0.39
Coupling housing		0.45	1.4	1.5
Motor including flange		2.95	7.35	9.55
Attachment component				
	EXCT-...-T1	1.08	1.1	–
	EXCT-...-T2	1.08	1.1	–
	EXCT-...-T3	–	1.30	1.30
	EXCT-...-T4	–	1.30	1.30
Multi-pin plug distributor		0.1	0.1	0.1

Max. acceleration a in Y direction as a function of nominal load m_L, Z-axis stroke l and position of Z-axis lp

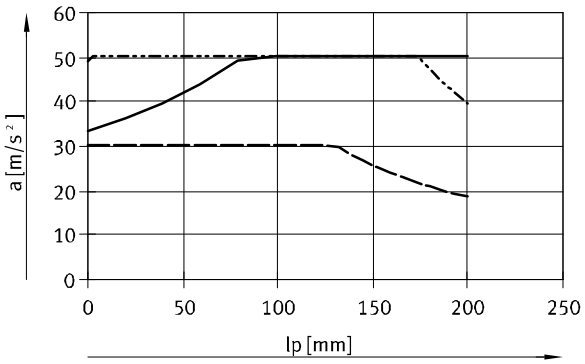
EXCT-15

Z-axis stroke l = 100 mm



Nominal load m_L = 0 kg
Nominal load m_L = 1.5 kg
Nominal load m_L = 3 kg

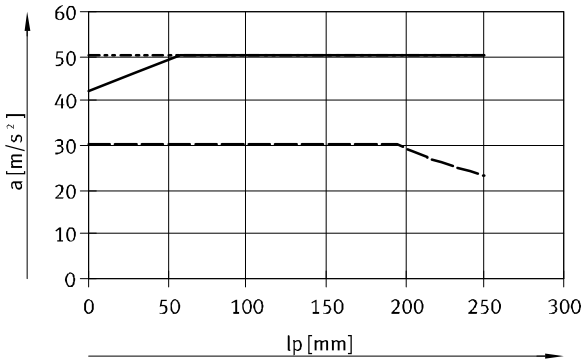
Z-axis stroke l = 200 mm



Nominal load m_L = 0 kg
Nominal load m_L = 1.5 kg
Nominal load m_L = 3 kg

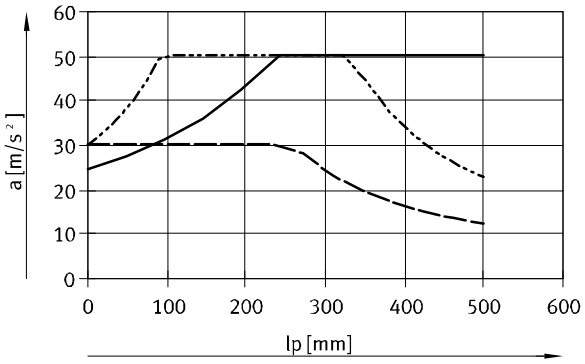
EXCT-30

Z-axis stroke l = 250 mm



Nominal load m_L = 0 kg
Nominal load m_L = 3 kg
Nominal load m_L = 6 kg

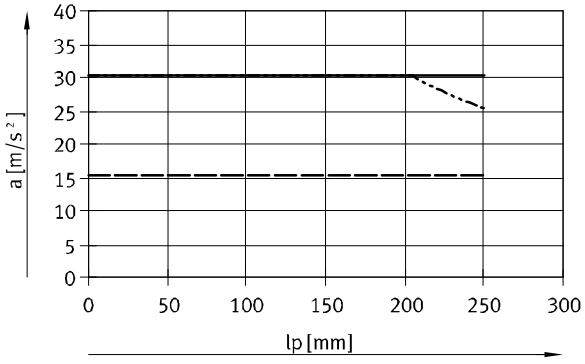
Z-axis stroke l = 500 mm



Nominal load m_L = 0 kg
Nominal load m_L = 3 kg
Nominal load m_L = 6 kg

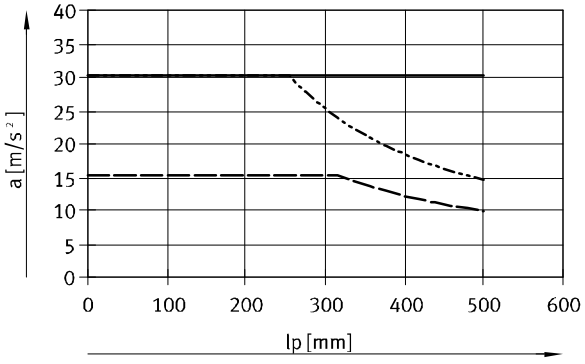
EXCT-100

Z-axis stroke l = 250 mm



Nominal load m_L = 0 kg
Nominal load m_L = 10 kg
Nominal load m_L = 15 kg

Z-axis stroke l = 500 mm

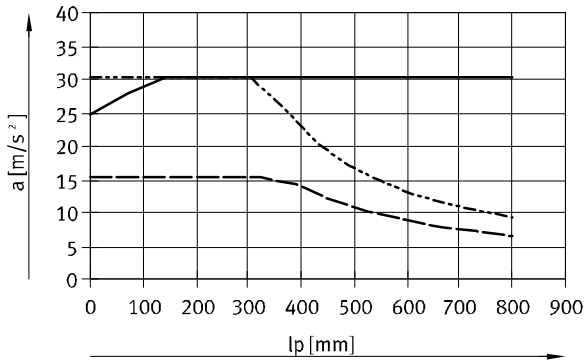


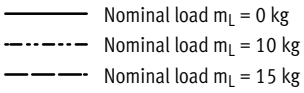
Nominal load m_L = 0 kg
Nominal load m_L = 10 kg
Nominal load m_L = 15 kg

Max. acceleration a in Y direction as a function of nominal load m_L, Z-axis stroke l and position of Z-axis lp

EXCT-100

Z-axis stroke l = 800 mm



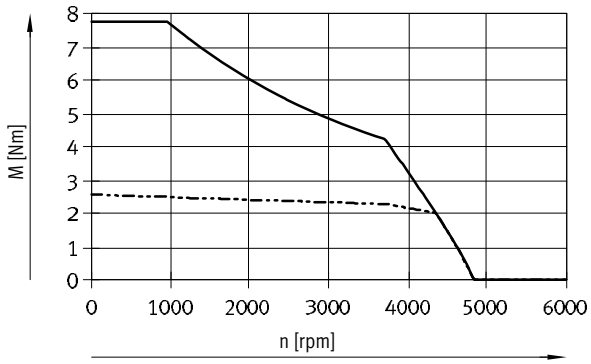


Torque M as a function of rotational speed n

Typical motor characteristic curve with nominal voltage and optimal motor controller.
The torque may briefly exceed the nominal torque. The rms value of the torque for the respective positioning cycle must remain below the nominal torque.

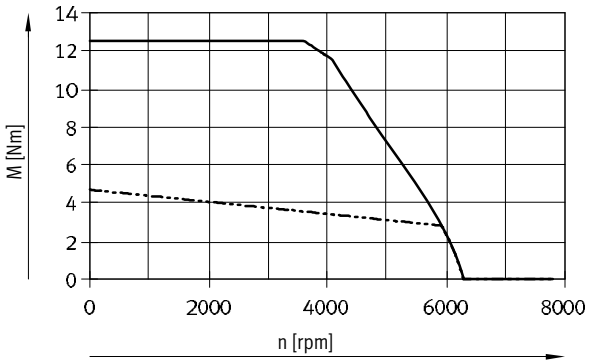
EXCT-15

In conjunction with:
EMMS-AS-70-M-LS-RMB and CMMP-AS-C5-3A



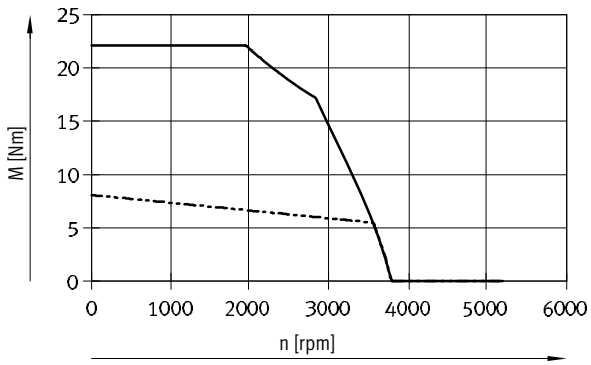
EXCT-30

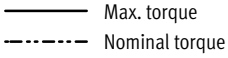
In conjunction with:
EMMS-AS-100-S-HS-RMB and CMMP-AS-C5-11A



EXCT-100

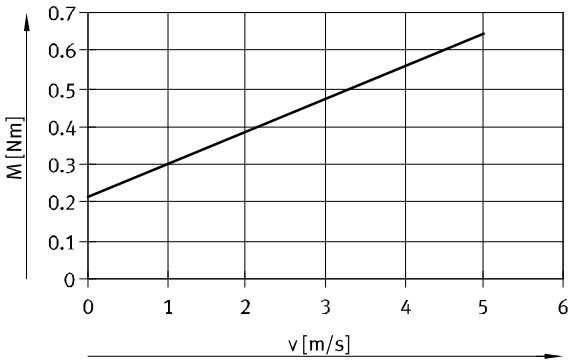
In conjunction with:
EMMS-AS-100-M-HS-RMB and CMMP-AS-C5-11A



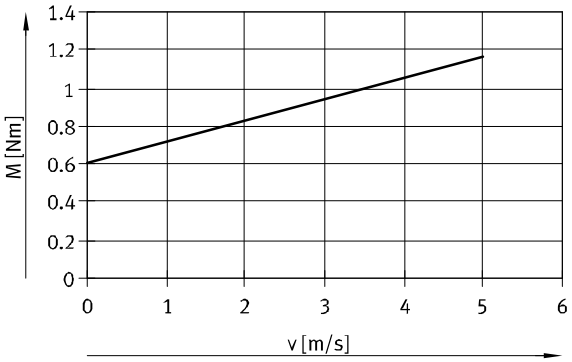


Friction torque M as a function of speed v

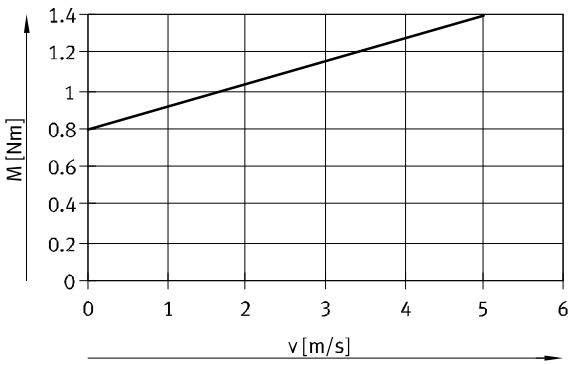
EXCT-15



EXCT-30



EXCT-100



Characteristic load values

The system is subject to the greatest load in the case of 45° travel.
The following data apply in this case:

Formula for calculating the required torque M and the required nominal rotary speed n

For EXCT-15:

$n_{45°} = 942.8 \times v$

and Z-axis stroke = 100 mm:
$M_{45°} = a \times (10.1 \times m_L + 9.87 \times J_m + 44.4) \times 10^{-3} + 0.07 \times (2.3 + m_L) + M_R$
and Z-axis stroke = 200 mm:
$M_{45°} = a \times (10.1 \times m_L + 9.87 \times J_m + 47.5) \times 10^{-3} + 0.07 \times (2.6 + m_L) + M_R$

For EXCT-30:

$n_{45°} = 848.5 \times v$

and Z-axis stroke = 250 mm:
$M_{45°} = a \times (11.3 \times m_L + 8.89 \times J_m + 99.1) \times 10^{-3} + 0.08 \times (4.7 + m_L) + M_R$
and Z-axis stroke = 500 mm:
$M_{45°} = a \times (11.3 \times m_L + 8.89 \times J_m + 108.1) \times 10^{-3} + 0.08 \times (5.5 + m_L) + M_R$

For EXCT-100:

$n_{45°} = 678.8 \times v$

and Z-axis stroke = 250 mm:
$M_{45°} = a \times (14.1 \times m_L + 7.11 \times J_m + 164.2) \times 10^{-3} + 0.098 \times (6 + m_L) + M_R$
and Z-axis stroke = 500 mm:
$M_{45°} = a \times (14.1 \times m_L + 7.11 \times J_m + 178.3) \times 10^{-3} + 0.098 \times (7 + m_L) + M_R$
and Z-axis stroke = 800 mm:
$M_{45°} = a \times (14.1 \times m_L + 7.11 \times J_m + 193.8) \times 10^{-3} + 0.098 \times (8.1 + m_L) + M_R$

a = acceleration [m/s²]
v = speed [m/s]
m_L = attachment component (Z-axis) [kg] with payload
J_m = moment of inertia of motor [kgcm²] ➔ table below
M_R = friction torque [Nm] ➔ page 12
$n_{45°}$ = nominal speed at 45° travel [rpm]

Allocation of linear gantry – servo motor – motor controller

Linear gantry	Servo motor	Moment of inertia of motor [kgcm²]
EXCT-15	EMMS-AS-70-M-LS-RMB	0.680
EXCT-30	EMMS-AS-100-S-HS-RMB	3.085
EXCT-100	EMMS-AS-100-M-HS-RMB	5.285

Sample calculation

1. What is the max. load permitted by the mechanical system?

Given:

EXCT-15-500-200-KF-AB-VV-...
with attached motor
EMMS-AS-70-M-LS-RMB

$a_{max.}$ = 20 m/s^2
$v_{max.}$ = 2 m/s
Nominal load m_L = 3 kg (gripper + workpiece)
Position of Z-axis = 70 mm (at max. acceleration in Y-direction)

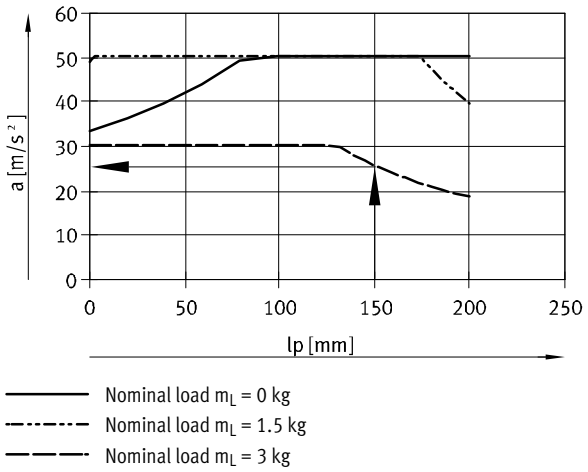
Calculation:

1. What is the max. acceleration permitted by the mechanical system?

Nominal load m_L = 3 kg
Z-axis stroke = 200 mm
Position of Z-axis = 150 mm

From the graph:

a = ca. 26 m/s^2



Result:

With a moving mass of 3 kg and a position of the Z-axis of 150 mm, the max. permissible acceleration in the Y-direction is 26 m/s^2.
The required acceleration of 20 ms/s^2 is thus permissible.

Sample calculation

2. Is the envisaged motor sufficient for this load?

Given:

$a_{max.} = 20\ m/s^2$
$v_{max.} = 2\ m/s$
Nominal load $m_L = 3$ kg (gripper + workpiece)
$J_m = 0.680\ kgcm^2$

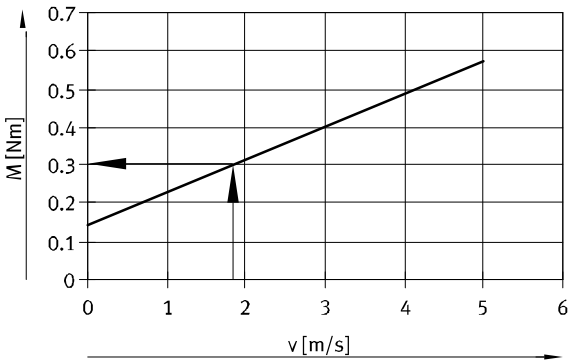
$$M_{45°} = a \times (10.1 \times m_L + 9.87 \times J_m + 39.2) \times 10^{-3} + 0.07 \times (2.14 + m_L) + M_R$$

$$n_{45°} = 942.7 \times v$$

a = acceleration [m/s^2]
v = speed [m/s]
m_L = attachment component (Z-axis) [kg] with payload
J_m = moment of inertia of motor [$kgcm^2$] ➔ table below
M_R = friction torque [Nm] ➔ page 12
$n_{45°}$ = nominal speed at 45° travel [rpm]

Determining $M_{45°}$:

$$n_{45°} = 942.7 \times 2\ m/s = 1885.4\ 1/min$$

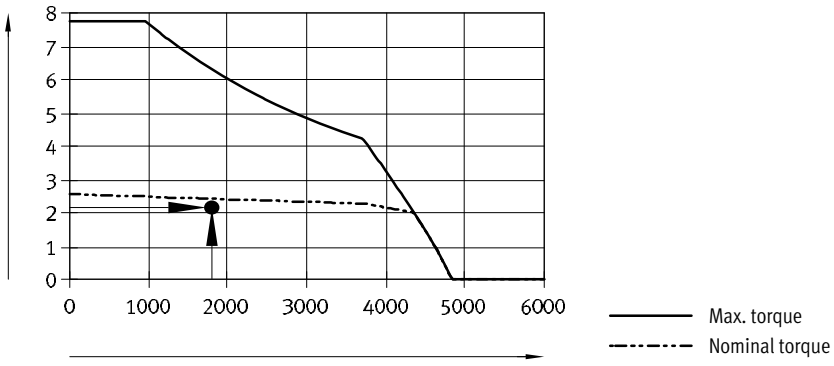


$M_R = 0.3$ Nm

$$M_{45°} = a \times (10.1 \times m_L + 9.87 \times J_m + 39.2) \times 10^{-3} + 0.07 \times (2.14 + m_L) + M_R$$

$$M_{45°} = 20\ m/s^2 \times (10.1 \times 3\ kg + 9.87 \times 0.680\ kgcm^2 + 39.2) \times 10^{-3} + 0.07 \times (2.14 + 3\ kg) + 0.3\ Nm = 2.18\ Nm$$

Result:

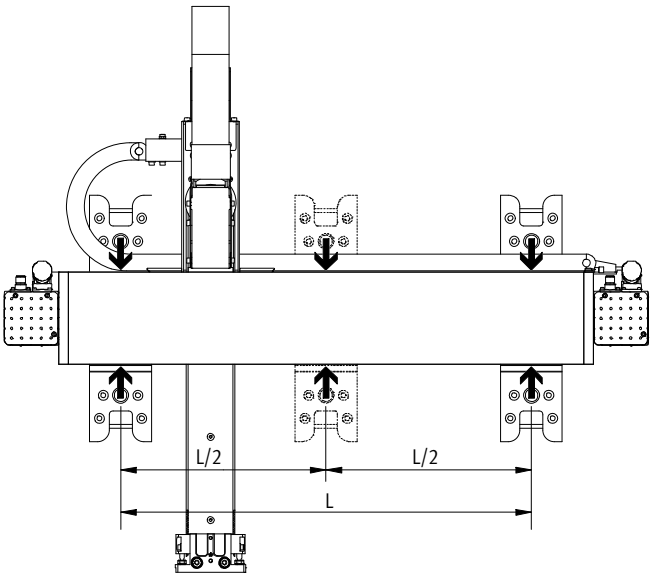


Result:

The value for the torque is just below the nominal torque.
This torque is only required in the acceleration phases.
The design is therefore fine.

Maximum permissible support spacing

In order to limit deflection in the case of large stroke lengths, the axis may need to be supported. An additional mounting kit is therefore required for strokes greater than L = 1500 mm.



Recommended deflection limits

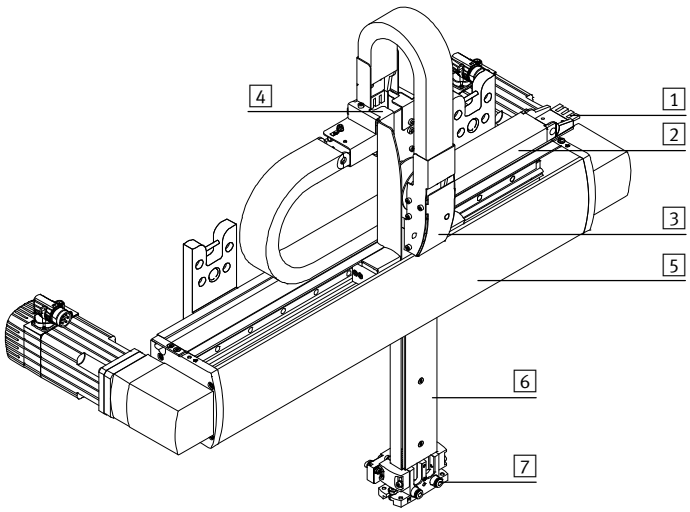
To avoid impairing the functionality of the gantry, we recommend that the following deflection limits are observed. Deformations greater than these may lead to increased friction, increased wear and reduced service life.

Size	15	30	100
Dynamic deflection (load is moving)	0.03% [1]	0.03% [1]	0.03% [1]
	Max. 0.3 mm	Max. 0.45 mm	Max. 0.6 mm
Static deflection (stationary load)	0.05% [1]	0.05% [1]	0.05% [1]

1) Of the length of the axis

Energy chain

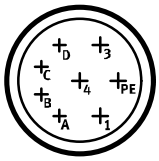
- The cable routing from the cable outlet to the Z-axis uses energy chains 2
- When ordering the linear gantry it is possible to select whether the cable outlet to the control cabinet 1 should be to the left or the right
- The cables are routed within the Z-axis 6 as far as the interface. At the interface, there are two permanent air connections 7.
- 2 cable lengths (5 m or 10 m) can be selected via the modular product system ➔ page 26. This specifies the length of the motor and encoder cables for the drive motors.
  The tubing and cables that project from the output of the energy chain at the Y-axis 5 are at least 10 m in length.



1 Cable outlet to the control cabinet
2 Energy chain
3 Transfer to the Z-axis
4 Transfer of the two energy chains
5 Y-axis
6 Z-axis
7 Interface with air connections

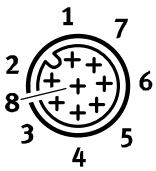
Pin allocations
Motors for the Y-axis

Motor (M23, pins)



PIN	Function		Colour
1	U	Phase U	BK (1)
PE	PE	Protective earth	GNYE
3	W	Phase W	BK (3)
4	V	Phase V	BK (2)
A	M_{T+}	Temperature sensor	WH
B	M_{T-}	Temperature sensor	BN
C	BR+	Brake	GN
D	BR–	Brake	YE

Encoder (M12, pins)



PIN	Function
1	–SENS
2	+SENS
3	DATA
4	DATA/
5	0 V
6	CLOCK/
7	CLOCK
8	UP

Allocation of linear gantry – servo motor – motor controller

Linear gantry	Servo motor	Motor controller
EXCT-15	EMMS-AS-70-M-LS-RMB	CMMP-AS-C5-3A
EXCT-30	EMMS-AS-100-S-HS-RMB	CMMP-AS-C5-11A-P3
EXCT-100	EMMS-AS-100-M-HS-RMB	CMMP-AS-C5-11A-P3

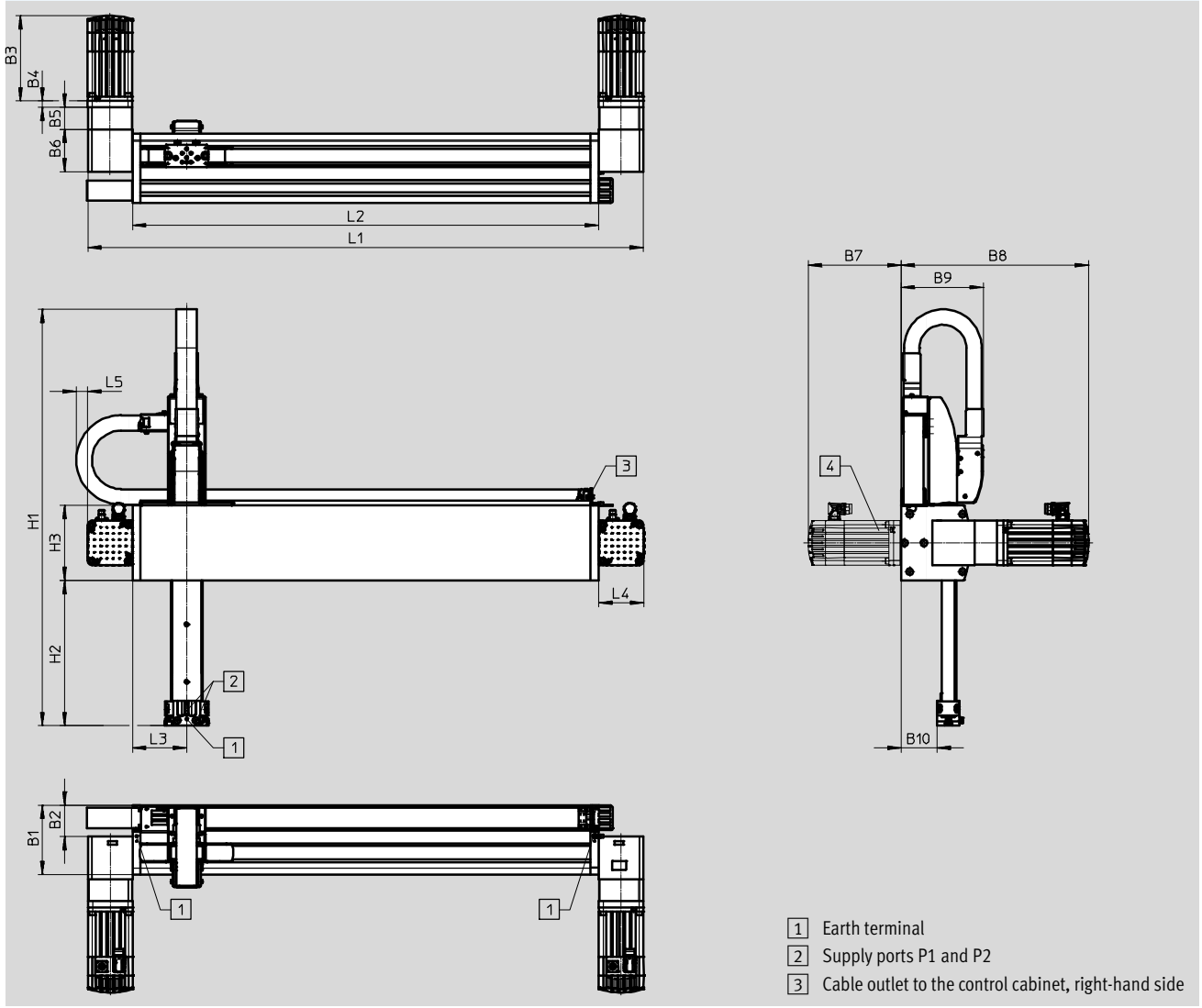
Note

Third-party motors that have an overly high drive torque may damage the linear gantry. When selecting the motors, please observe the limits specified in the technical data.

During commissioning, the motor brake must be released for safety purposes. We recommend the teach pendant CDSA (➔ modular product system) for this purpose.

Dimensions Download CAD data ➔ **www.festo.com**

Linear gantry



1 Earth terminal
2 Supply ports P1 and P2
3 Cable outlet to the control cabinet, right-hand side

Size	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	H3	L4	L5
15	121	57.6	187.3	12.2	29.2	89	202	375	138.1	66	120	71	25
30	157	71	192.3	14.5	49.5	96	209	423	186	81.5	170	102	25
100	184	94	243.3	14.5	49	123	260	524	211	106.5	200	102	25

Stroke-dependent dimensions

Size	Y-axis stroke	L1	L2	L3
15	100 ... 1000	336+stroke	194+stroke	94+software end positions
30	100 ... 1500	456+stroke	252+stroke	122+software end positions
100	100 ... 2000	468+stroke	264+stroke	128+software end positions

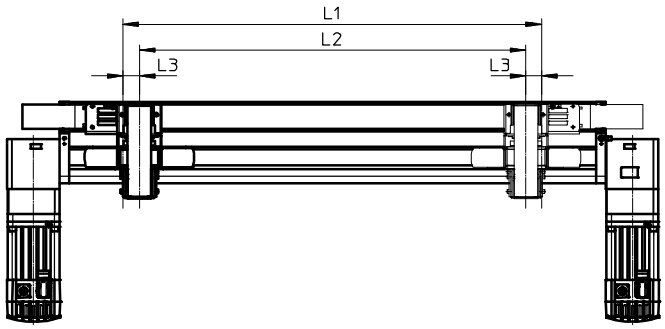
Size	Z-axis stroke	H1	H2
15	100	636	170
	200	736	270
	Stroke	536+stroke	70+stroke
30	250	942	328
	500	1192	578
	Stroke	692+stroke	78+stroke
100	250	991	336
	500	1241	586
	800	1541	886
	Stroke	741+stroke	86+stroke

Note

Requirements for the evenness of the support surface and for the attachments ➔ www.festo.com/sp User documentation

Factoring in software end positions

When selecting the strokes for the Y- and Z-axis, the dimension L3 for the software end positions must be factored into the working stroke L2. This dimension is freely selectable. Adjustment pieces with L3 = 30 mm are included in the scope of delivery of the linear gantry.

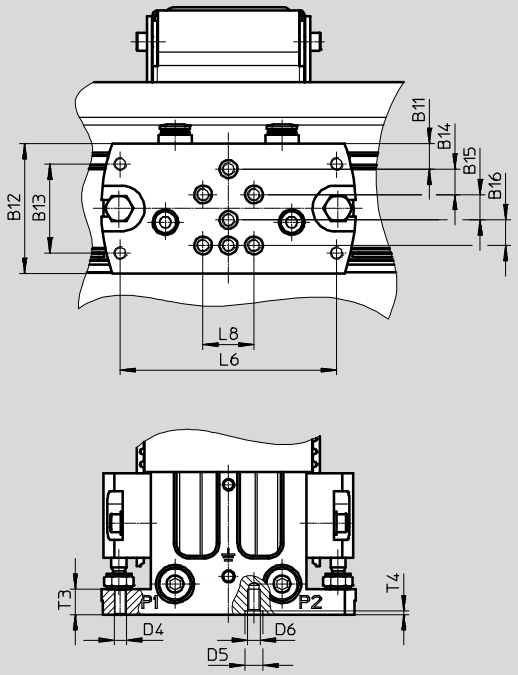


Stroke L1 = working stroke L2 + 2x software end position L3

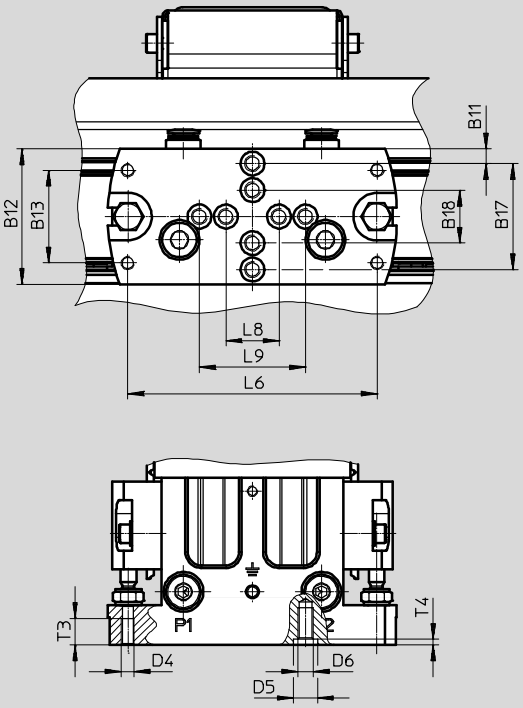
Dimensions Download CAD data ➔ **www.festo.com**

Interface of attachment component with air connections P1 and P2

EXCT-15/-30



EXCT-100



Note

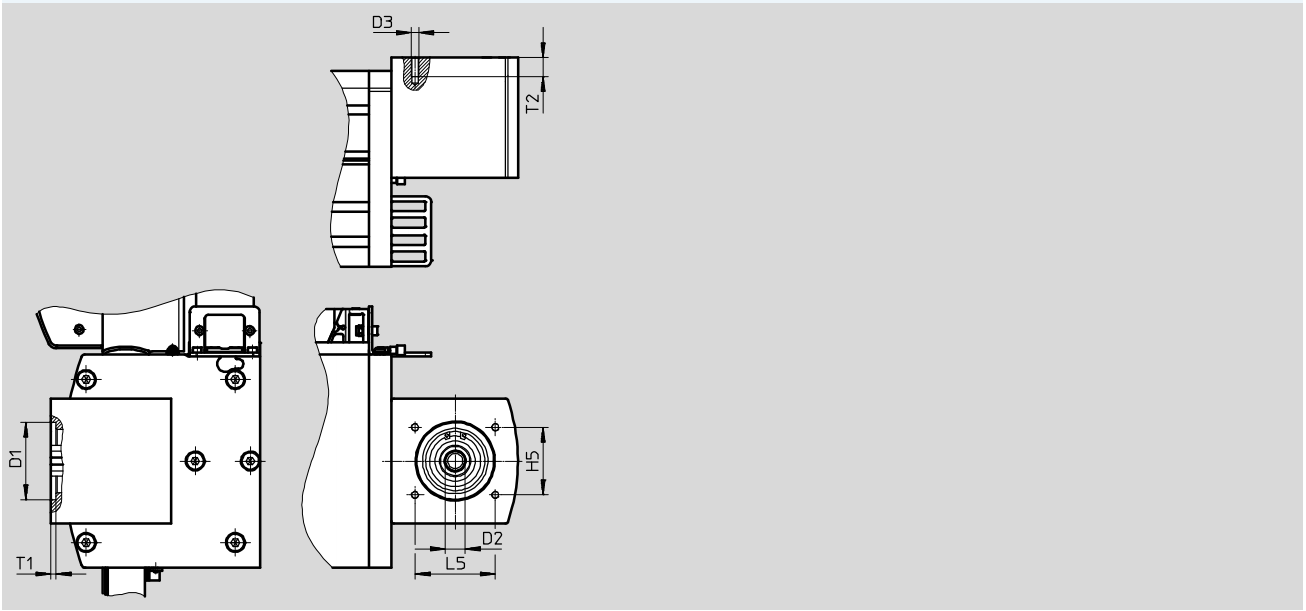
Tubing with outside diameter of 6 mm can be connected to ports P1 and P2.

For size	B11	B12	B13	B14	B15	B16	B17	B18
15	5	41	31	10	10	10	–	–
30	10	51	35	10	10	10	–	–
100	5.5	51	35	–	–	–	40	20

For size	D4	D5 ∅ H7	D6	L6	L8	L9	T3	T4 +0.1
15	M5	7	M5	76	20	–	10	1.6
30	M5	7	M5	85	20	–	10	1.6
100	M5	9	M6	94	20	40	15	2.1

Dimensions Download CAD data ➔ **www.festo.com**

Motor interface

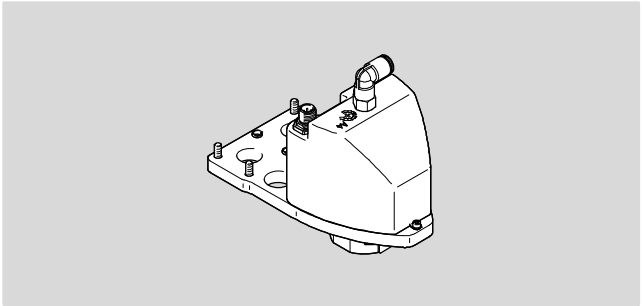


For size	D1 ∅ +0.05	D2 ∅ H7	D3	H5	L5	T1	T2
15	48	16	M5	35	46	4	15
30	62	16	M6	54	64	4	15
100	72	23	M6	54	64	4	15

Technical data – Front unit
EXCT-...-T...

Can be ordered via:
Modular product system ➔ page 26
Or accessories ➔ page 33

Requires motor controller CMMP-AS
➔ page 34



Technical data						
Type		EXCT-...-				
		T1	T2	T3	T4	
Design		Electromechanical rotary drive				
		–	With rotary through-feed	–	With rotary through-feed	
Motor type		Servo motor				
Size		8		11		
Rotation angle		Infinite				
Pneumatic connection		–	G1/8	–	G1/8	
Nominal width	[mm]	–	4	–	4	
Standard flow rate	[l/min]	–	350	–	350	
Gear ratio		30:1				
Repetition accuracy	[°]	±0.01				
Max. output speed	[rpm]	200				
Nominal torque	[Nm]	0.75		1.8		
Peak torque	[Nm]	1.8		4.5		
Max. axial force	[N]	200		300		
Max. pull-out torque, static	[Nm]	15		40		

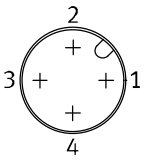
Electrical data						
Type		EXCT-...-				
		T1	T2	T3	T4	
Nominal voltage	[V AC]	230				
Nominal current	[A]	0.31	0.31	0.74	0.74	
Peak current	[A]	0.61	0.61	1.5	1.5	
Rated output	[W]	9.2	9.2	22.1	22.1	
Duty cycle	[%]	100				
Measuring system[1)]		Encoder				

1) Homing required

Operating and environmental conditions					
Type		EXCT-...			
		T1	T2	T3	T4
Operating pressure	[bar]	–	–0.9 ... +8	–	–0.9 ... +8
Ambient temperature	[°C]	0 ... 40			
Storage temperature	[°C]	–10 ... +60			
Degree of protection		IP40			
Note on materials		RoHS compliant			

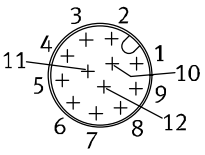
Front unit motor

Motor



PIN	Function
1	Operating voltage U
2	Operating voltage V
3	Operating voltage W
4	Protective earth conductor PE

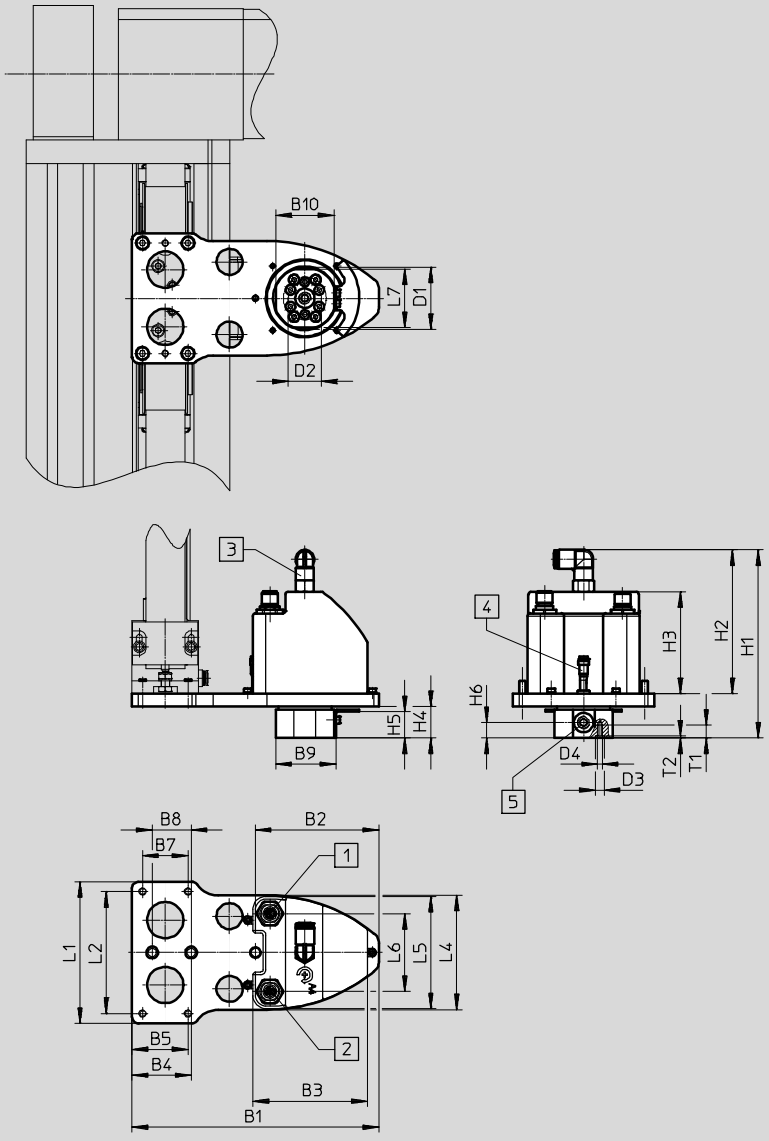
Encoder



PIN	Function
1	Signal trace A
2	Signal trace A\
3	Signal trace B
4	Signal trace B\
5	Signal trace Z
6	Signal trace Z\
7	Signal trace U
8	Signal trace V
9	Signal trace W
10	GND encoder
11	Power supply 5V
12	Screening

Dimensions Download CAD data ➔ **www.festo.com**

Front unit



1 Connection for encoder cable
2 Connection for motor cable
3 Supply port for rotary through-feed (tubing outside diameter 6 mm)
4 Proximity sensor for reference point
5 Supply port for outlet

Linear gantries EXCT

Technical data

For linear gantry	Type	B1	B2	B3	B4	B5	B7	B8	B9	B10
EXCT-15-...-T1	ERMH-8-E17-15	170	95	88	36	36	31	30	46.5	45
EXCT-15-...-T2	ERMH-8-P-E17-15	170	95	88	36	36	31	30	46.5	45
EXCT-30-...-T1	ERMH-8-E17-30	190	95	88	41	43	35	30	46.5	45
EXCT-30-...-T2	ERMH-8-P-E17-30	190	95	88	41	43	35	30	46.5	45
EXCT-30-...-T3	ERMH-11-E17-30	190	95	88	41	43	35	30	46.5	45
EXCT-30-...-T4	ERMH-11-P-E17-30	190	95	88	41	43	35	30	46.5	45
EXCT-100-...-T3	ERMH-11-E17-100	190	95	88	45.5	43	35	30	46.5	45
EXCT-100-...-T4	ERMH-11-P-E17-100	190	95	88	45.5	43	35	30	46.5	45

For linear gantry	Type	D1 ∅	D2 ∅	D3 ∅ H7	D4	H1	H2	H3	H4	H5	H6
EXCT-15-...-T1	ERMH-8-E17-15	48	25	7	M4	116.4	83.8	78.4	22.6	20.5	12
EXCT-15-...-T2	ERMH-8-P-E17-15	48	25	7	M4	141	106.7	78.4	22.6	20.5	12
EXCT-30-...-T1	ERMH-8-E17-30	48	25	7	M4	116.4	83.8	78.4	22.6	20.5	12
EXCT-30-...-T2	ERMH-8-P-E17-30	48	25	7	M4	141	106.7	78.4	22.6	20.5	12
EXCT-30-...-T3	ERMH-11-E17-30	48	25	7	M4	116.4	83.8	78.4	24.3	20.5	12
EXCT-30-...-T4	ERMH-11-P-E17-30	48	25	7	M4	141	106.7	78.4	24.3	20.5	12
EXCT-100-...-T3	ERMH-11-E17-100	48	25	7	M4	116.4	83.8	78.4	24.3	20.5	12
EXCT-100-...-T4	ERMH-11-P-E17-100	48	25	7	M4	141	106.7	78.4	24.3	20.5	12

For linear gantry	Type	L1	L2	L4	L5	L6	L7	T1	T2
EXCT-15-...-T1	ERMH-8-E17-15	92	76	88	86.3	60	45	10	1.6
EXCT-15-...-T2	ERMH-8-P-E17-15	92	76	88	86.3	60	45	10	1.6
EXCT-30-...-T1	ERMH-8-E17-30	100	85	88	86.3	60	45	10	1.6
EXCT-30-...-T2	ERMH-8-P-E17-30	100	85	88	86.3	60	45	10	1.6
EXCT-30-...-T3	ERMH-11-E17-30	100	85	88	86.3	60	45	10	1.6
EXCT-30-...-T4	ERMH-11-P-E17-30	100	85	88	86.3	60	45	10	1.6
EXCT-100-...-T3	ERMH-11-E17-100	109	94	88	86.3	60	45	10	1.6
EXCT-100-...-T4	ERMH-11-P-E17-100	109	94	88	86.3	60	45	10	1.6

Linear gantries EXCT

Ordering data – Modular product system

Ordering table

	Size		15	30	100	Condi-tions	Code		Entry code
M	Module no.		**8026575**	**8026576**	**8026577**				
	Product type		T series				**EXCT**		EXCT
	Size		15	30	100		**-...**		
	Y-axis stroke	[mm]	100 ... 1000	100 ... 1500	100 ... 2000		**-...**		
	Z-axis stroke	[mm]	100, 200	250, 500	250, 500, 800		**-...**		
	Guide		Recirculating ball bearing guide				**-KF**		-KF
	Motor type		Without motor			1	**-W**		
			Servo motor with brake				**-AB**		
	Motor attachment position		Motor 1 at rear, motor 2 at rear				**-HH**		
			Motor 1 at rear, motor 2 at front				**-HV**		
			Motor 1 at front, motor 2 at rear				**-VH**		
			Motor 1 at front, motor 2 at front				**-VV**		
	Energy chain connection side		Left-hand				**-L**		
			Right-hand				**-R**		
	Attachment components (front unit)		None				**-T0**		
			Rotary drive, size 8		–		**-T1**		
			Rotary drive, size 8 with pneum. rotary through-feed		–		**-T2**		
			–	Rotary drive, size 11			**-T3**		
			–	Rotary drive, size 11 with pneum. rotary through-feed			**-T4**		

1 **W** Not in combination with 5K, 10K, MP1

M Mandatory data
O Options

Transfer order code

	EXCT	–		–		–		–	**KF**	–		–		–		–		–	

Ordering table

Size		15	30	100	Condi-tions	Code		Entry code
O	Line length	None						
		5 m				**-5K**		
		10 m				**-10K**		
	Installation	None						
		Multi-pin plug distributor 4 x M8, with pneumatic cables				**-MP1**		
M	Document language	German				**-DE**		
		English				**-EN**		
		Spanish				**-ES**		
		French				**-FR**		
		Italian				**-IT**		
		Russian				**-RU**		
		Chinese				**-ZH**		

Combinations of attachment components for motor controller

Linear gantry	Attachment components for Z-axis	Motor controller
EXCT-15-...	T0	2x CMMP-AS-C5-3A
	One attachment component (T1, T2)	2x CMMP-AS-C5-3A, 1x CMMP-AS-C2-3A
	Two attachment components (T1, T2 and electric gripper)	2x CMMP-AS-C5-3A, 2x CMMP-AS-C2-3A
EXCT-30-...	T0	2x CMMP-AS-C5-11A-P3
	One attachment component (T1, T2, T3, T4)	2x CMMP-AS-C5-11A-P3, 1x CMMP-AS-C2-3A
	Two attachment components (T1, T2, T3, T4 and electric gripper)	2x CMMP-AS-C5-11A-P3, 2x CMMP-AS-C2-3A
EXCT-100-...	T0	2x CMMP-AS-C5-11A-P3
	One attachment component (T3, T4)	2x CMMP-AS-C5-11A-P3, 1x CMMP-AS-C2-3A
	Two attachment components (T3, T4 and electric gripper)	2x CMMP-AS-C5-11A-P3, 2x CMMP-AS-C2-3A

Note

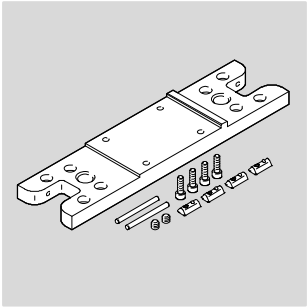
The motor controller must be ordered separately as an accessory ➔ page 34.
Control system on request.

M Mandatory data
O Options

Transfer order code

– [ ] – [ ] – [ ]

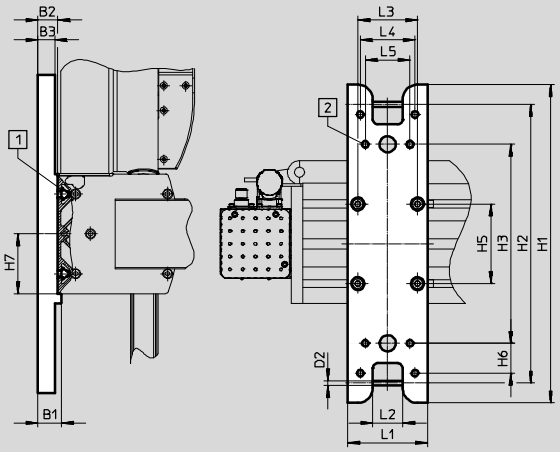
Mounting kit
EAHM-E17-K1



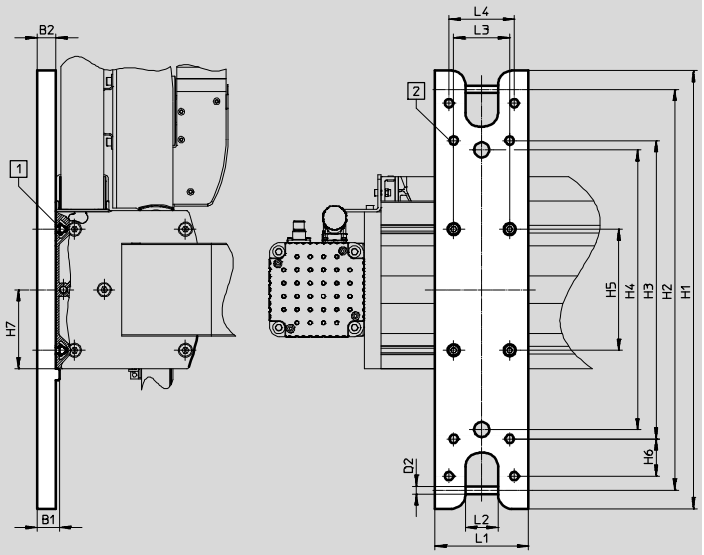
For wall mounting

Materials:
Wrought aluminium alloy

EXCT-15



EXCT-30/-100



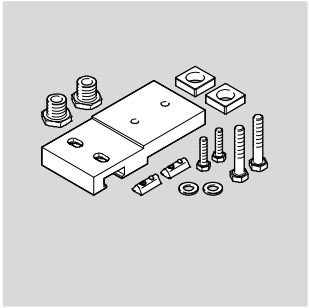
1 Screw ISO 4762 M6x20
2 EXCT-15 for screw ISO 4762 M6
EXCT-30/-100 for screw ISO 4762 M8

Dimensions and ordering data

For size	B1	B2	B3	D2 ∅	H1	H2	H3	H4	H5	H6	H7
15	24	20	17	5	320	280	200	–	80	30	60
30	24	20	–	8	470	430	320	300	130	40	85
100	24	20	–	8	470	430	320	300	160	40	100

For size	L1	L2	L3	L4	L5	Weight [g]	Part No.	Type
15	80	30	60	55	45	1150	**3995047**	**EAHM-E17-K1-15**
30	100	35	60	70	–	2350	**3823208**	**EAHM-E17-K1-30**
100	100	35	60	70	–	2350	**4055845**	**EAHM-E17-K1-100**

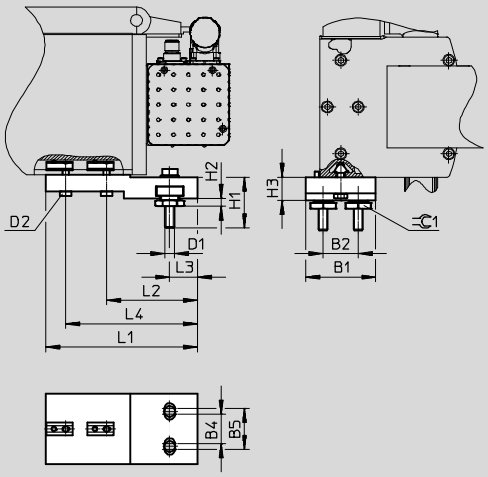
Mounting kit
EAHM-E17-K2



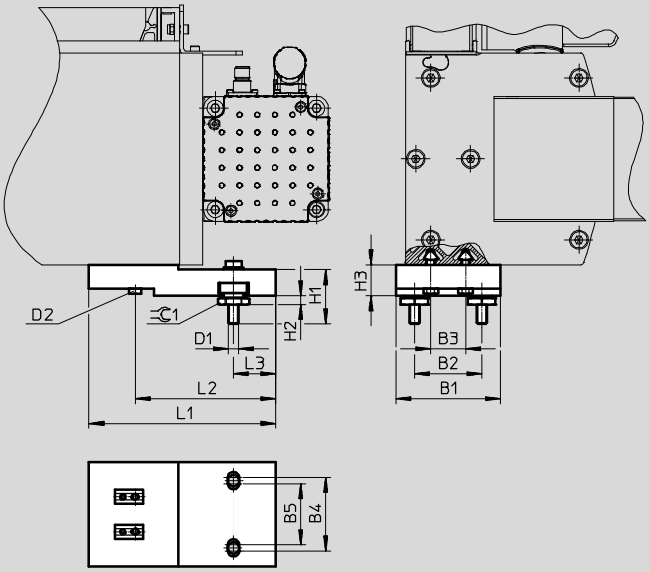
For mounting and aligning on a bearing surface.
The kit is height-adjustable

Materials:
Galvanised steel

EXCT-15



EXCT-30/-100

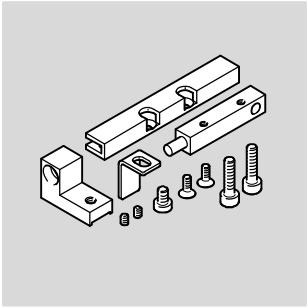


Dimensions and ordering data

For size	B1	B2	B3	B4	B5	D1	D2	H1	H2 +3	H3
15	60	30	–	25	35	M8	M6	43.4	6.8	20
30	84	54	28	49	59	M8	M6	43.4	6.8	25
100	110	70	50	65	75	M8	M6	43.4	6.8	25

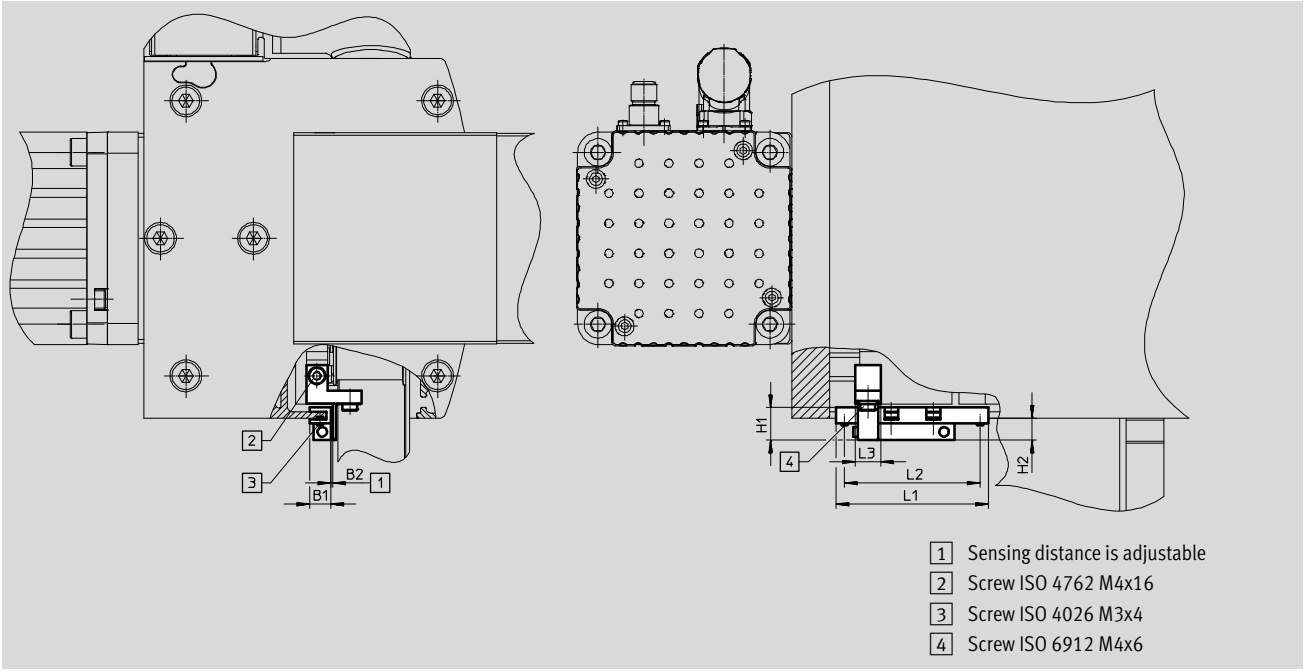
For size	L1	L2	L3	L4	⌯1	Weight [g]	Part No.	Type
15	130	78	24	113	22	1015	**3838164**	**EAHM-E17-K2-15**
30	150	113	34	–	22	2050	**3838337**	**EAHM-E17-K2-30**
100	170	133	29	–	22	3000	**3838404**	**EAHM-E17-K2-100**

Sensing kit
EAPR-E17-S



Included in the scope of delivery:
proximity sensor SIES-Q8B, sensor bracket, switch lug, mounting bracket and screws

Materials:
Switch lug: Steel
Sensor bracket: Wrought aluminium alloy

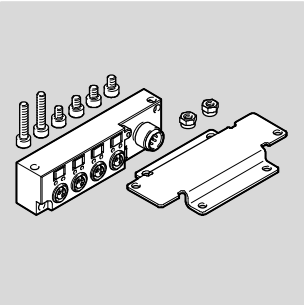


1 Sensing distance is adjustable
2 Screw ISO 4762 M4x16
3 Screw ISO 4026 M3x4
4 Screw ISO 6912 M4x6

Dimensions and ordering data

For size	B1	B2	H1	H2	L1	L2	L3	Weight [g]	Part No.	Type
15, 30, 100	10	1	15.5	10.5	72	64	12	30	**2478427**	**EAPR-E17-S**

Multi-pin plug set
EADH-E17



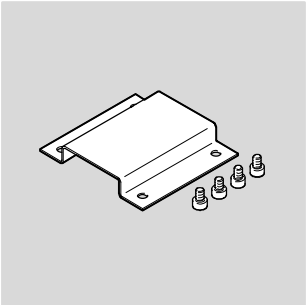
For connecting up to 4 inputs/outputs

Materials:
Housing: PBT reinforced
Bracket: aluminium

Dimensions and ordering data

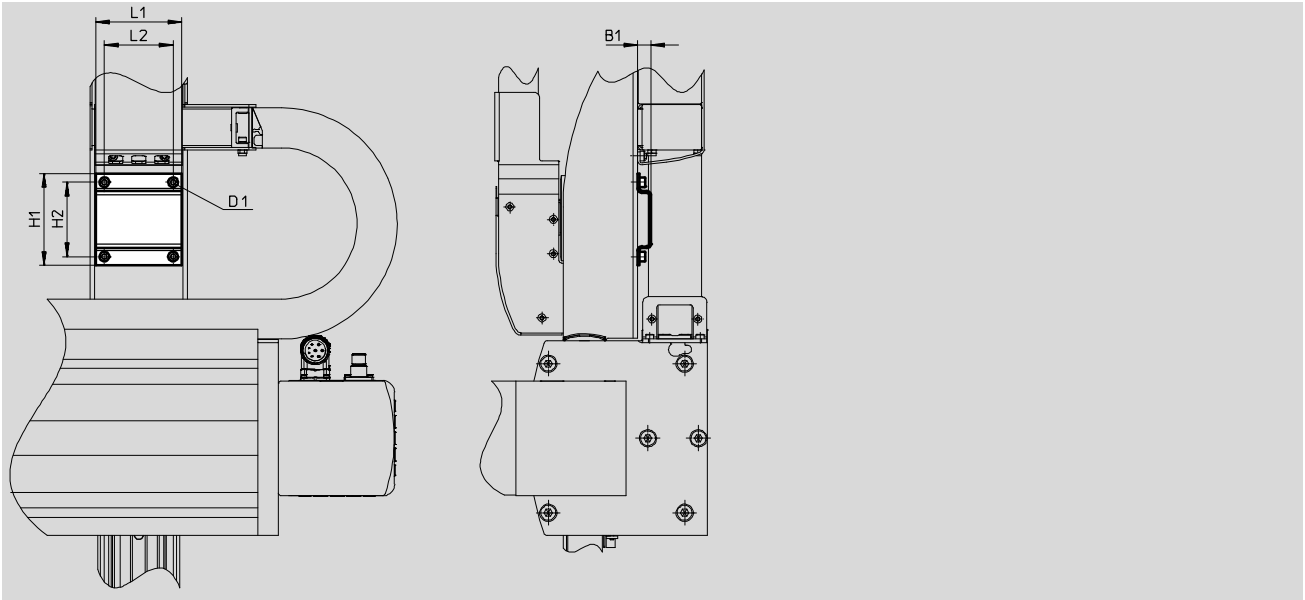
For size	B1	D1	D2	H1	H2	H3	L1	L2	L3	Weight [g]	Part No.	Type
15, 30, 100	31.5	M12	M8	47	38	24	87	53	44	70	**2972137**	**EADH-E17-MP1**

Adapter kit
EAHM-E17



For mounting e.g. valves, vacuum generators etc. on the Z-axis

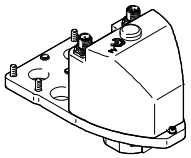
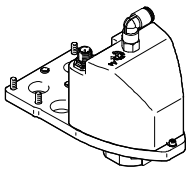
Materials:
Stainless steel



Dimensions and ordering data

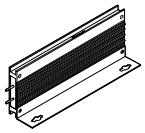
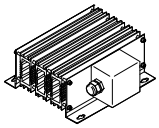
For size	B1	D1	H1	H2	L1	L2	Weight [g]	Part No.	Type
15	11.5	M4x6	70	55	65	50	50	**3018429**	**EAHM-E17-U-15**
30	11.5	M5x8	80	65	75	60	95	**3018428**	**EAHM-E17-U-30**
100	11.5	M5x8	80	65	85	60	110	**3018426**	**EAHM-E17-U-100**

Ordering data – Front unit (rotary drive)[1)] Download CAD data ➔ **www.festo.com**

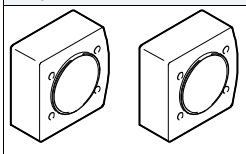
	Description	For size	Order code	Part No.	Type
	Without pneumatic rotary through-feed	15	T1	**3383157**	**ERMH-8-E17-15**
		30	T1	**3385151**	**ERMH-8-E17-30**
		30	T3	**3385153**	**ERMH-11-E17-30**
		100	T3	**3383152**	**ERMH-11-E17-100**
	With pneumatic rotary through-feed	15	T2	**3383151**	**ERMH-8-P-E17-15**
		30	T2	**3385152**	**ERMH-8-P-E17-30**
		30	T4	**3385154**	**ERMH-11-P-E17-30**
		100	T4	**3383156**	**ERMH-11-P-E17-100**

1) Included in the scope of delivery: motor cable, encoder cable and reference switch

Ordering data – Braking resistor

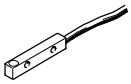
	For size	Resistance value [Ω]	Nominal power [W]	Weight [g]	Part No.	Type
	15	50	200	550	**2882342**	**CACR-LE2-50-W500**
	30, 100	40	800	2400	**2882343**	**CACR-KL2-40-W2000**

Ordering data

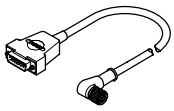
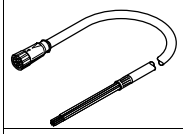
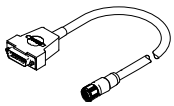
	Description	For size	Possible screws	Tightening torque [Nm]	Part No.	Type	PU[1)]
Plug socket with cable NEBU for multi-pin plug set EADH							
	–	15, 30, 100	–	–	**8048086**	**NEBU-M12W8-K-15-N-LE8**	1
Coupling housing EAMK-A-E17[2)]							
	For connecting third-party motors	15	ISO 4762-M5xn[3)]	6	**3780303**	**EAMK-A-E17-15**	2
		30	ISO 4762-M6xn[3)]	8.5	**3780304**	**EAMK-A-E17-30**	
		100	ISO 4762-M6xn[3)]	8.5	**3780305**	**EAMK-A-E17-100**	

1) Packaging unit quantity
2) Mounting screws are not included in the scope of delivery
3) The length n must be determined as a function of the motor flange used

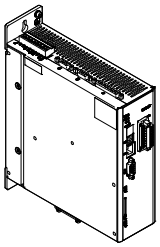
Ordering data

	Switching output	Switching element function	Cable length [m]	Part No.	Type
Proximity sensor for sensing kit EAPR-E17					
	PNP	N/O contact	2.5	**178294**	**SIES-Q8B-PS-K-L**

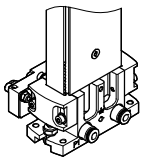
Ordering data – Cables

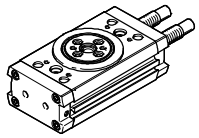
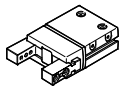
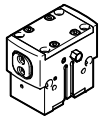
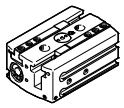
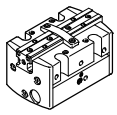
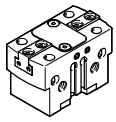
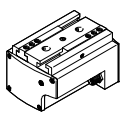
	Cable length [m]	Part No.	Type
For Y-axis			
	Motor cable NEBM		
	5	**550310**	**NEBM-M23G8-E-5-Q9N-LE8**
	10	**550311**	**NEBM-M23G8-E-10-Q9N-LE8**
	15	**550312**	**NEBM-M23G8-E-15-Q9N-LE8**
	Encoder cable NEBM		
	5	**550318**	**NEBM-M12W8-E-5-N-S1G15**
	10	**550319**	**NEBM-M12W8-E-10-N-S1G15**
	15	**550320**	**NEBM-M12W8-E-15-N-S1G15**
For front unit			
	Motor cable NEBM		
	15	**571907**	**NEBM-M12G4-RS-15-N-LE4**
	Encoder cable NEBM		
	15	**571915**	**NEBM-M12G12-RS-15-N-S1G15**
For reference switch for front unit			
	Connecting cable NEBU		
	15	**575986**	**NEBU-M8G3-K-15-LE3**

Ordering data – Motor controller

	For size	Output voltage [V AC]	Nominal output current [A]	Nominal power [VA]	Part No.	Type
	For linear gantry					
	15	3x 0 ... 270	5	1000	**1622902**	**CMMP-AS-C5-3A-M0**
	30, 100	3x 0 ... 360	5	3000	**1622903**	**CMMP-AS-C5-11A-P3-M0**
	For attachment components					
	15, 30, 100	3x 0 ... 270	2.5	500	**1622901**	**CMMP-AS-C2-3A-M0**

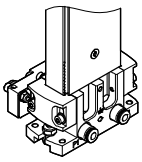
Permissible combinations without front unit Download CAD data ➔ **www.festo.com**

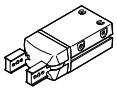
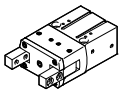
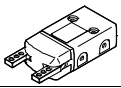
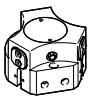


Combination with	Linear gantry	Drive/gripper	Adapter kit		
	Size	Size	CRC[1]	Part No.	Type
Semi-rotary drive					
DRRD	EXCT	DRRD	DHAA		
	15	10	2	**2728486**	**DHAA-D-E8-45-Q11-10**
	15, 30	12		**2715152**	**DHAA-D-E8-45/55-Q11-12**
	30	16		**1926914**	**DHAA-D-E8-55-Q11-16**
	100	16		**1928306**	**DHAA-D-E8-75-Q11-16**
	100	20		**1930038**	**DHAA-D-E8-75-Q11-20**
Parallel gripper					
DHPS	EXCT	DHPS	HMSV		
	15, 30	16	2	**548785**	**HMSV-55**
	100	20, 25		**548786**	**HMSV-56**
HGPD, sealed	EXCT	HGPD	DHAA, HAPG		
	15, 30	25	2	**564952**	**DHAA-G-G6-16-B8-25**
	100	25, 35		**537175**	**HAPG-79**
	100	40		**564951**	**DHAA-G-G6-20-B8-40**
HGPL, heavy-duty with long stroke	EXCT	HGPL	DHAA/HAPG		
	15, 30	14-20	2	**2406159**	**DHAA-G-G6-16-B6-14**
	100	14-20		**2410181**	**DHAA-G-G6-20-B6-14**
	15, 30	14-40, 14-60, 14-80		**538055**	**HAPG-89**
	100	14-40, 14-60, 14-80		**539274**	**HAPG-90**
	100	25		**539274**	**HAPG-90**
HGPP, precision	EXCT	HGPP	HAPG, HMSV		
	15, 30	10	2	**529018**	**HAPG-58**
	15, 30	12		**191266**	**HAPG-48**
	100	12		**191267**	**HAPG-49**
	100	16		**191269**	**HAPG-51**
HGPT-B, heavy-duty	EXCT	HGPT-B	DHAA, HAPG		
	15, 30	25	2	**564952**	**DHAA-G-G6-16-B8-25**
	100	40		**564951**	**DHAA-G-G6-20-B8-40**
	100	25, 35		**537175**	**HAPG-79**
HGPLE, electric	EXCT	HGPLE	DHAA		
	15, 30	14	2	**2519367**	**DHAA-G-G6-16-B17-14**
	100	14		**2515219**	**DHAA-G-G6-20-B17-14**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

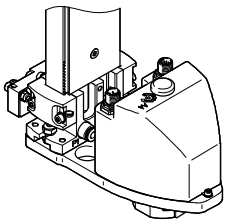
Permissible combinations without front unit Download CAD data ➔ **www.festo.com**

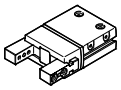
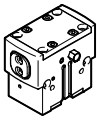
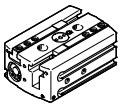
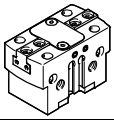
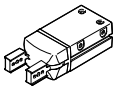
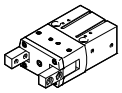


Combination with	Linear gantry	Drive/gripper	Adapter kit		
	Size	Size	CRC[1]	Part No.	Type
Radial gripper					
DHRS	EXCT	DHRS	HMSV		
	15, 30	16	2	**548785**	**HMSV-55**
	100	25, 32		**548786**	**HMSV-56**
HGRT, heavy-duty	EXCT	HGRT	DHAA		
	15, 30	20	2	**1278364**	**DHAA-G-G6-12-B11-20**
	15, 30	25		**1279418**	**DHAA-G-E8-45-B11-25**
	100	25		**1468307**	**DHAA-G-G6-20-B11-25**
	100	32		**1280494**	**DHAA-G-G6-25-B11-32**
Angle gripper					
DHWS	EXCT	DHWS	HMSV		
	15, 30	16	2	**548785**	**HMSV-55**
	100	25, 32		**548786**	**HMSV-56**
Three-point gripper					
HGDD, sealed	EXCT	HGDD	DHAA		
	15, 30, 100	35	2	**2371422**	**DHAA-G-G3-20-B13-35**
	100	40		**2373773**	**DHAA-G-H2-16-B13-40**
	100	50		**2377625**	**DHAA-G-H2-20-B13-50**
	EXCT	HGDD-G1/G2	DHAA/HAPG		
	15, 30, 100	35	2	**542436**	**HAPG-94**
	100	40		**542437**	**HAPG-95**
	100	50		**2378415**	**DHAA-G-H2-20-B13G-50**
HGDT, heavy-duty	EXCT	HGDT	HAPG		
	15, 30	25	2	**542439**	**HAPG-SD2-32**
	15, 30, 100	35		**542436**	**HAPG-94**
	100	40		**542437**	**HAPG-95**
	100	50		**542443**	**HAPG-SD2-36**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

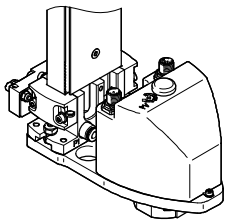
Permissible combinations with front unit (EXCT-...-T1/T2/T3/T4) Download CAD data ➔ **www.festo.com**

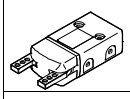
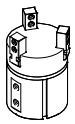


Combination with	Linear gantry	Drive/gripper	Adapter kit		
	Size	Size	CRC[1]	Part No.	Type
Parallel gripper					
DHPS	EXCT with ERMH	DHPS	HMSV		
	15, 30, 100	6	2	**187566**	**HAPG-SD2-12**
		10		**184477**	**HAPG-SD2-1**
		16		**184478**	**HAPG-SD2-2**
HGPD, sealed	EXCT with ERMH	HGPD	DHAA, HAPG		
	15, 30, 100	16, 20	2	**564959**	**DHAA-G-Q5-16-B8-16**
		25		**544642**	**HAPG-SD2-48**
HGPL, heavy-duty with long stroke	EXCT with ERMH	HGPL	DHAA/HAPG		
	15, 30, 100	14	2	**544644**	**HAPG-SD2-45**
HGPT-B, heavy-duty	EXCT with ERMH	HGPT-B	DHAA, HAPG		
	15, 30, 100	16, 20	2	**564959**	**DHAA-G-Q5-16-B8-16**
		25		**544642**	**HAPG-SD2-48**
Radial gripper					
DHRS	EXCT with ERMH	DHRS	HMSV		
	15, 30, 100	10	2	**187566**	**HAPG-SD2-12**
		16		**184477**	**HAPG-SD2-1**
		25		**184478**	**HAPG-SD2-2**
HGRT, heavy-duty	EXCT with ERMH	HGRT	DHAA		
	15, 30, 100	16	2	**1273999**	**DHAA-G-Q5-16-B11-16**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Permissible combinations with front unit (EXCT-...-T1/T2/T3/T4) Download CAD data ➔ **www.festo.com**



Combination with	Linear gantry	Drive/gripper	Adapter kit		
	Size	Size	CRC[1]	Part No.	Type
Angle gripper					
DHWS	EXCT with ERMH	DHWS	HMSV		
	15, 30, 100	10	2	**187566**	**HAPG-SD2-12**
		16		**184477**	**HAPG-SD2-1**
		25		**184478**	**HAPG-SD2-2**
Three-point gripper					
DHDS	EXCT with ERMH	DHDS	HAPG		
	15, 30, 100	16	2	**187567**	**HAPG-SD2-13**
HGDT, heavy-duty	EXCT with ERMH	HGDT	HAPG		
	15, 30, 100	25	2	**542439**	**HAPG-SD2-32**

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.