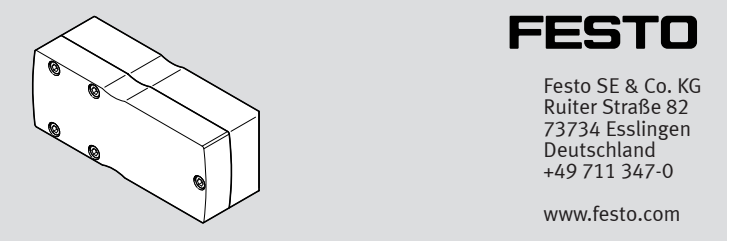


EAMM-U-...-S...-...A/P/R-1
Parallel kit



Assembly instructions

8155981
2022-02g
[8155983]



Translation of the original instructions

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1 Applicable documents

All available documents for the product → www.festo.com/sp.

Document	Product
Operating instructions	Motor
Operating instructions	Axis

Tab. 1: Applicable documents

2 Safety

2.1 Safety instructions

- Only mount the product on components that are in a condition to be safely operated.
- Clean the shafts. The clamping sleeves only grip without slipping on dry and grease-free shaft journals.
- If the motor is loosened or turned, homing must be carried out on the axis.
- Select required mounting components. The kit contains all the mounting components that may be required.
- Observe the tightening torques. Unless otherwise specified, the tolerance is ± 20%.

2.2 Intended use

2.2.1 Use

The parallel kit connects an axis to a motor in a parallel configuration.

2.2.2 Permissible axes and motors

NOTICE

Overloading can cause malfunction and material damage.
The motor's output variables must not exceed the permissible values of the components used.
Permissible values → www.festo.com/catalogue.
• Limit the motor's output variables accordingly.

- Take the axis and the motor from the interface codes.

Example: EAMM-U-60-S38-55A

S38: axis interface

55A: motor interface

Axis interface	Axis
S38	EGC-70-BS, EGC-HD-125-BS, ELGA-BS-70
S48	EGC-80-BS, EGC-HD-160-BS, ELGA-BS-80
S62	EGC-120-BS, EGC-HD-220-BS, ELGA-BS-120
S95	EGC-185-BS

Tab. 2: Permissible axes

Motor interface	Motor
40A	EMMS-AS-40
40P	EMMB-/EMME-AS-40
40R	Third-party motor
42A	EMCS-/EMMS-ST-42, third-party motor
55A	EMMS-AS-55, third-party motor
57A	EMCS-/EMMS-ST-57, third-party motor
60P	EMMB-/EMME-/EMMT-AS-60, third-party motor
60R	Third-party motor

Motor interface	Motor
67A	EMCA-EC-67
70A	EMMS-AS-70, third-party motor
80P	EMMB-/EMME-/EMMT-AS-80, third-party motor
87A	EMMS-ST-87
88A	Third-party motor
100A	EMME-/EMMS-/EMMT-AS-100, third-party motor
140A	EMMS-AS-140
150A	EMMS-AS-140, EMMT-AS-150

Tab. 3: Permissible motors

It is the responsibility of users to qualify third-party motors with the matching mechanical interface for the combination.
To find out which third-party motors are suitable, consult your regional Festo contact or → www.festo.com/sp.

2.3 Training of qualified personnel

Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers. Personnel must have the relevant mechanical training.

3 Additional information

- Contact the regional Festo contact if you have technical problems
- Accessories → www.festo.com/catalogue.
- Spare parts and accessories → www.festo.com/spareparts.

4 Product Range Overview

4.1 Scope of delivery

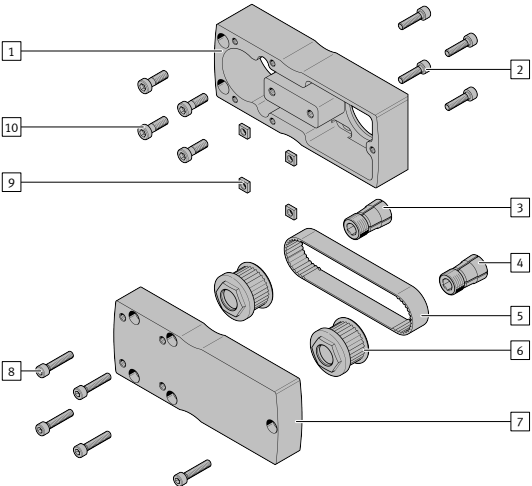


Fig. 1: Basic scope of delivery

1	Housing (1x)	6	Toothed belt pulley (2x)
2	Screw (4x)	7	Cover (1x)
3	Axis clamping sleeve (1x)	8	Screw (5x)
4	Motor clamping sleeve (1x)	9	Square nut (4x)
5	Toothed belt (1x)	10	Screw (4x)

With EAMM-U-...-S: clamping sleeve [31] replaces clamping sleeve [3]. Mount the counter bearing [32] on the axis side.
With EAMM-U-...-42A: the square nut [9] is not required.

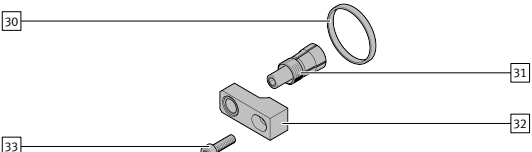


Fig. 2: Addendum with EAMM-U-...-S

30	Centring ring (1x)	32	Counter bearing (1x)
31	Axis clamping sleeve (1x)	33	Screw (1x/2x)

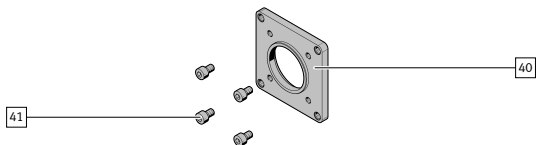


Fig. 3: Addendum with EAMM-U-...-67A

40 Adapter plate (1x)

41 Screw (4x)



Fig. 4: Addendum with EAMM-U-110/-145

50 Sealing plug (1x/2x)

4.2 Not in scope of delivery

Fig. 5: Accessories

60 Lubricating grease (1x)
LUB-KC1 (silicone-free)

Fig. 6: Tools

61 Clamping element EADT-E-
U1-110 (1x)



The clamping element [61] is recommended from size 110.

5 Assembly

5.1 Assembly

5.1.1 Mounting the housing

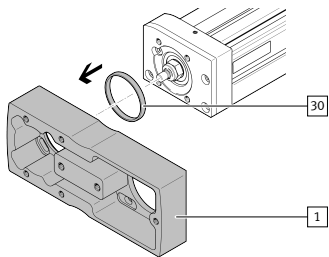


Fig. 7: Place centring ring

- Press the centring ring [30] into the drilled hole in the housing [1].

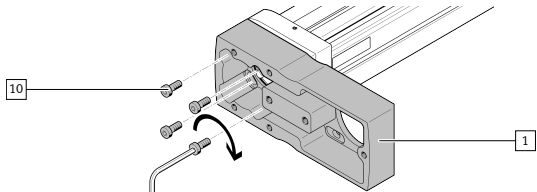


Fig. 8: Fasten axis

- Fasten axis to the housing [1] with the screws [10].

Without adapter plate [40]

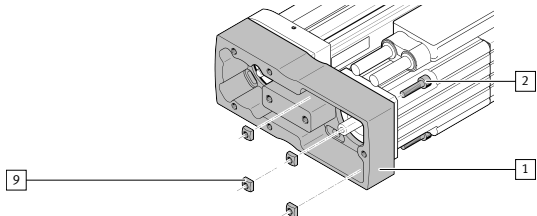


Fig. 9: Attach motor - without adapter plate

- Use the screws [2] and the square nuts [9] to attach the motor to the housing [1].
The motor is movable and can be easily tilted.



For EAMM-U-...-42A the mounting direction is different.

- Attach the housing [1] to the motor with the screws [2].
- With EAMM-U-...-67A an adapter plate [40] is required.
- Please note the following section.

With adapter plate [40]

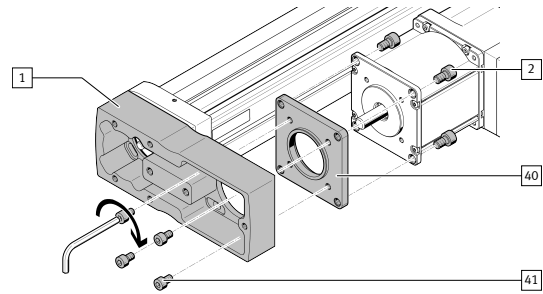


Fig. 10: Attach motor - with adapter plate

- Fasten the adapter plate [40] to the motor with the screws [2].
- Attach housing [1] to the adapter plate [40] with the screws [41].
The motor is movable and can be easily tilted.

5.1.2 Mounting the toothed belt

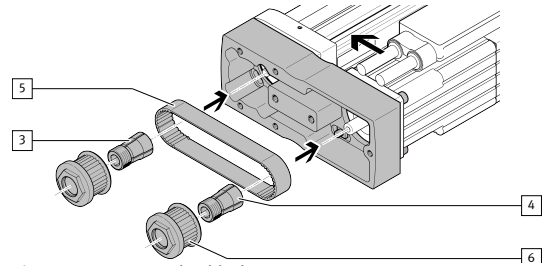


Fig. 11: Insert toothed belt

- Grease clamping sleeves [3]/[4] with the lubricating grease [60] on the thread and the outside of the cone only.
Greased clamping sleeves [3]/[4] can be tightened evenly.
- Screw the clamping sleeves [3]/[4] into the thread of the toothed belt pulleys [6]. Do not tighten.
- Insert the toothed belt pulleys [6] into the toothed belt [5].
- Move the motor in the direction of the axis up to the stop and tilt it slightly.
- Place the clamping sleeves [3]/[4] on the drive shaft.
- Fasten motor with the screws [2]/[41].
The motor is movable, but it can no longer be tilted.

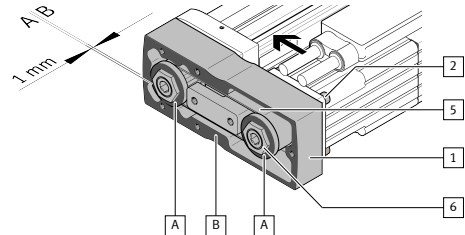


Fig. 12: Aligning toothed belt pulleys

- Position surfaces [A] approx. 1 mm above the reference surface [B].
Background: the toothed belt pulley [6] moves inwards when tightening. The position of the surface [A] depends on the size.

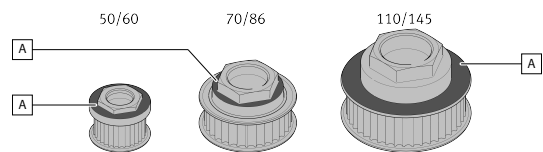


Fig. 13: Area A on the toothed belt pulley

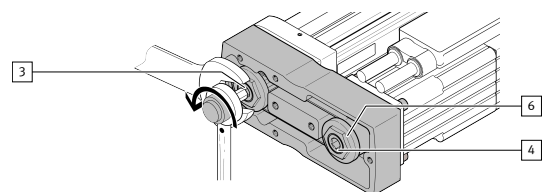


Fig. 14: Tighten toothed belt pulleys

- Select the required tightening torque for the toothed belt pulleys [6] → 8.2 Tightening torques for the toothed belt pulleys.
- Tighten toothed belt pulleys [6]. Apply counter pressure to the clamping sleeves [3]/[4].

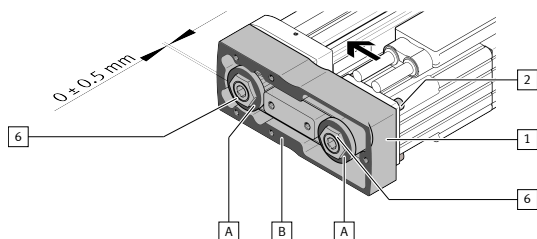


Fig. 15: Observe tolerances

1. Observe tolerances. The areas [A] must be flush with the reference area [B].
Tolerance: $\pm 0.5 \text{ mm}$
2. If the toothed belt [5] or one of the toothed belt pulleys [6] is grinding against the housing:
 - Unscrew clamping sleeves [3]/[4] slightly.
 - Readjust the toothed belt pulleys [6].

5.1.3 Mounting the counter bearings

NOTICE

When counter bearings are installed, they extend the service life of the axes and motors.

- Always mount the counter bearing [32] included in the scope of delivery.
- With heavy loads: mount optional counter bearing EAMG-U1
→ www.festo.com/catalogue.

NOTICE

Malfunctions and material damage may occur if the trunnion [F] is bent.

- When tightening the toothed belt pulley [6], avoid a transverse load of the trunnion [F] on the clamping sleeve [31].

Prerequisite: the toothed belt is fitted with clamping sleeves [31] and [4] mounted but not yet tensioned. → 5.1.2 Mounting the toothed belt.

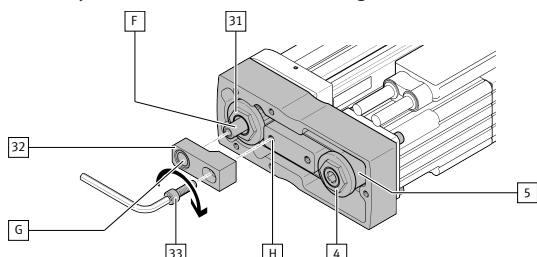


Fig. 16: Mount counter bearing

1. Push the needle bush [G] onto the trunnion [F] of the clamping sleeve [31] tension-free.
2. Fasten the counter bearing [32] with the screw [33] on the thread [H].
3. Tension toothed belt [5].

i

With EAMM-U-110/-145: fasten counter bearing [32] with 2 screws [33].

5.1.4 Tensioning the toothed belt

NOTICE

Toothed belt pretensioning too high.

Impermissible radial loads or shaft break.
Increased wear of the toothed belt and the bearings of axis and motor.

- Avoid excessive toothed belt pretension.
- A low toothed belt pretension is recommended.

The toothed belt [5] is tensioned when the strands [D] run approximately parallel:

- Untensioned: $y > x$
- Tensioned: $y \approx 1 \dots 1.05 x$

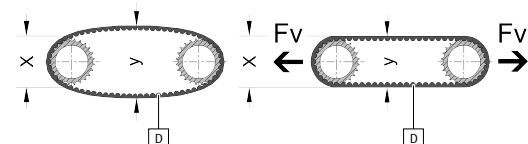


Fig. 17: Strands of the toothed belt

With EAMM-U-50/-60/-70/-86

1. Move the motor until the clamping force F_v is exerted on the toothed belt [5].
2. Tighten [2] screws.

EAMM-U-	Clamping force F_v [N]
50	15 ... 35
60	40 ... 70
70	60 ... 110
86	70 ... 130

Tab. 4: Permissible Clamping Force of the Toothed Belt

With EAMM-U-110/-145

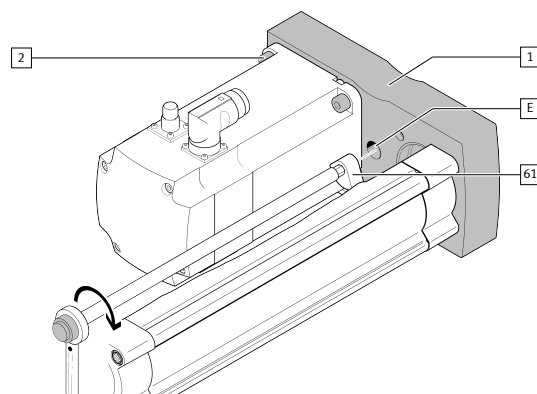


Fig. 18: Tension toothed belt with clamping element

1. Position clamping element [61] in the drilled hole [E].
2. Turn clamping element [61]. Hex wrench: ≈ 8
Observe the recommended torque.
→ The motor, which can be moved along the slots, is pressed away from the axis mechanism by the eccentric cam of the clamping element.
3. Tighten screws [2].

EAMM-U-	Recommended torque [Nm]		
110	0.2 ... 0.6	0.4 ... 0.8	0.6 ... 1.0
145	1.0 ... 1.5	1.5 ... 2.0	2.0 ... 2.5

Tab. 5: Recommended torque of the clamping element

EAMM-U-	Clamping force F_v [N]
110	120 ... 300
145	200 ... 450

Tab. 6: Permissible clamping force of the toothed belt

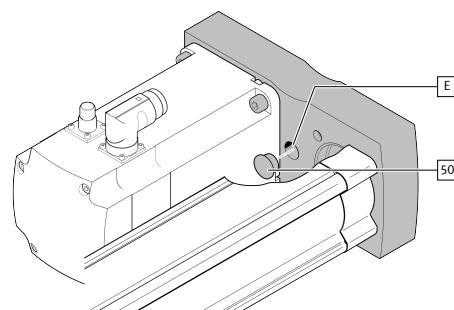


Fig. 19: Close drilled hole

- Press the sealing plug [50] into the drilled hole [E].

5.1.5 Mounting the cover

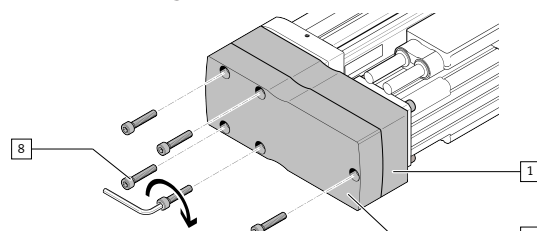


Fig. 20: Attach the cover

- Mount cover [7] on the housing [1] with the screws [8].

6 In operation

CAUTION

Risk of injury from touching hot surfaces.

The motor connecting kit becomes hot due to the heat dissipation of the motor.

- Do not touch the motor connecting kit during operation or immediately afterward.

WARNING

Risk of injury due to unexpected movement of components if toothed belt fails.

- Take supplemental safeguarding measures.

7 Maintenance

7.1 Checking the toothed belt

The toothed belt [5] is a wearing part → www.festo.com/spareparts.

1. Check toothed belt [5] regularly:
 - during maintenance of the machine
 - when replacing an axis
2. Replace the toothed belt [5] at the following indicators of wear:
 - excessive accumulation of wear particles in the housing
 - cracks on the back of the toothed belt
 - visible glass fibre cords in the tooth base

7.2 Demounting the toothed belt

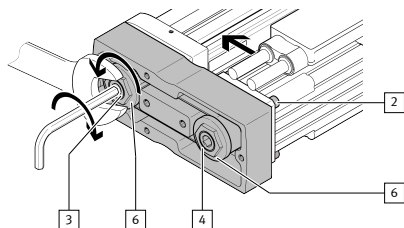


Fig. 21: Loosen toothed disc

1. Unscrew the screws [2] slightly.
 - ↳ The motor is movable and can be easily tilted.
2. Move the motor in the direction of the axis up to the stop and tilt it slightly.
3. Demount the counter bearing.
4. Unscrew the toothed belt pulleys [6]. Apply counter pressure to the clamping sleeves [3]/[4].
5. Rotate toothed belt pulleys [6] anti-clockwise.
 - ↳ The toothed belt pulleys [6] can be pulled from the cone of the clamping sleeves [3]/[4].

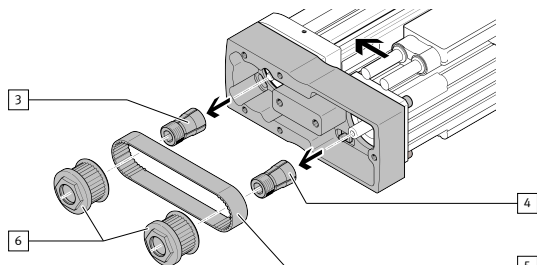


Fig. 22: Remove toothed belt

1. Pull the clamping sleeves [3]/[4] off the shaft journals.
2. Remove the toothed belt [5] from the toothed belt pulleys [6].

8 Technical data

8.1 Screw sizes and tightening torques

EAMM-U-	[2]	[Nm]	[8]	[Nm]	[10]	[Nm]	[33]	[Nm]
50-S38-40A	M3x12	1.2	M4x25	3	M5x12	6	M5x20	6
50-S38-40P	M3x10	1.2	M4x25	3	M5x12	6	M5x20	6
50-S38-42A	M3x8	1.2	M4x25	3	M5x12	6	M5x20	6
60-S38-60P	M4x35	3	M5x25	6	M5x12	6	M6x20	10
60-S38-40R	M4x12	3	M5x25	6	M5x12	6	M6x20	10
60-S38-55A	M5x20	6	M5x25	6	M5x12	6	M6x20	10
60-S38-57A	M5x30	6	M5x25	6	M5x12	6	M6x20	10
60-S38-67A	M6x10	10	M5x25	6	M5x12	6	M6x20	10
60-S48-40R	M4x12	3	M5x25	6	M5x12	6	M6x20	10
60-S48-55A	M5x20	6	M5x25	6	M5x12	6	M6x20	10
60-S48-57A	M5x35	6	M5x25	6	M5x12	6	M6x20	10
70-S48-60P	M4x16	3	M5x35	6	M5x14	6	M8x30	18
70-S48-60R	M4x16	3	M5x35	6	M5x14	6	M8x30	18
70-S48-70A	M5x18	6	M5x35	6	M5x14	6	M8x30	18
86-S48-60P	M4x16	3	M6x40	10	M5x12	6	M8x30	18
86-S48-70A	M5x18	6	M6x40	10	M5x12	6	M8x30	18
86-S48-87A	M6x40	10	M6x40	10	M5x12	6	M8x30	18
86-S62-55A	M5x20	6	M6x40	10	M6x18	10	M8x30	18
86-S62-70A	M5x18	6	M6x40	10	M6x12	10	M8x30	18
86-S62-80P	M5x20	6	M6x40	10	M6x12	10	M8x30	18
86-S62-87A	M6x40	10	M6x40	10	M6x12	10	M8x30	18
110-S62-88A	M6x20	10	M8x50	18	M6x12	10	M8x40	18
110-S62-100A	M8x25	18	M8x50	18	M6x12	10	M8x40	18
110-S95-100A	M8x25	18	M8x50	18	M8x16	18	M8x40	18
145-S62-140A	M10x55	30	M8x50	18	M6x12	10	M8x40	18
145-S62-150A	M10x60	30	M8x50	18	M6x12	10	M8x40	18
145-S95-140A	M10x55	30	M8x50	18	M8x16	18	M8x40	18
145-S95-150A	M10x60	30	M8x50	18	M8x16	18	M8x40	18

Tab. 7: Screws [2] ... [33]

EAMM-U-	[41]	[Nm]
60-S38-67A	M5x8	6

Tab. 8: Screw [41]

8.2 Tightening torques for the toothed belt pulleys

The transferable torque depends on the tightening torque of the toothed belt pulleys [6].

- Select the tightening torque of the toothed belt pulley [6] from the permissible range.
 - ↳ Check: the transferable torque is greater than the driving torque of the motor → Technical data of the motor.

EAMM-U-	Toothed belt pulley [6]	Parallel kit
	Tightening torque [Nm]	Transferable torque [Nm]
50	3 ... 5	0.5 ... 1
60	10 ... 15	1.5 ... 3
70	22 ... 35	3.5 ... 7
86	25 ... 40	4.8 ... 9.5
110	65 ... 80	12.5 ... 25
145	120 ... 180	25 ... 50

Tab. 9: Tightening torques of the toothed belt pulley [6]

EAMM-U-	Toothed belt pulley [6]	Clamping sleeve [3]/[4]	Clamping sleeve [31]
50	≈ 17	≈ 5	≈ 3
60	≈ 22	≈ 8	≈ 5
70/86	≈ 30	≈ 8	≈ 6
110/145	≈ 36	≈ 10	≈ 8

Tab. 10: Width across flats of the toothed belt pulley [6] and the clamping sleeves [3] ... [31]