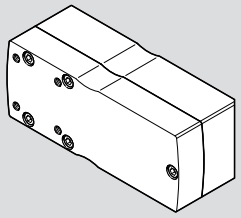
EAMM-U-...-D...-...A/P/R-1

Parallel kit



Festo SE & Co. KG
Ruiter Straße 82
73734 Esslingen
Germany
+49 711 347-0

www.festo.com

Assembly instructions

8178456
2025-09h
[8178458]

8178456

Original instructions

© 2025 all rights reserved to Festo SE & Co. KG

1 Applicable documents

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

Document	Product	Table of contents
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 drive shaft adapters.
- 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%.
  If the tightening torques are exceeded, the cover screws of the axis will loosen during disassembly.

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-D40-55A
D40: axis interface
55A: motor interface

Axis interface	Axis
D19	EGSL-35
D32	EGSL-45, ESBF-32
D40	EGSL-55, ESBF-40
D50	ESBF-50
D60	EGSL-75, ESBF-63
D80	ESBF-80
D100	ESBF-100

Tab. 2: Permissible axes

Motor interface	Motor
40A	EMMS-AS-40
40P	EMMB-/EMME-/EMMT-AS-40, EMMT-EC-40
42A	EMCS-/EMMB-/EMMS/EMMT-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
70A	EMMS-AS-70, third-party motor
80P	EMMB-/EMME-/EMMT-AS-80, third-party motor
87A	EMMB-/EMMS-/EMMT-ST-87
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

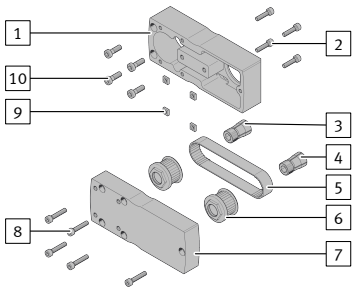


Fig. 1: Basic scope of delivery

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

With EAMM-U-...-42A: the square nut [9] is not required.

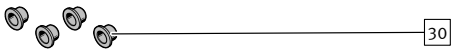


Fig. 2: Supplement to reducing sleeve

30 Reducing sleeve (4x)



Fig. 3: Supplement for EAMM-U from size 110

50 Sealing plug (2x)

4.2 Not included in the scope of delivery

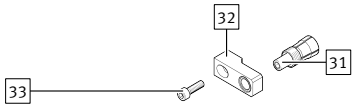


Fig. 4: Counter bearing EAMG-U1

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

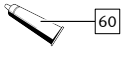


Fig. 5: Tools

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

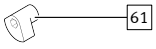


Fig. 6: Tools

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

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

5 Mounting

5.1 Assembling

5.1.1 Preassembly of reducing sleeve

The reducing sleeves [30] are only required if the mounting holes on the output flange of the motor are too large for the supplied retaining screws.



Fig. 7: Inserting reducing sleeves

- Insert the reducing sleeves [30] into the mounting holes of the motor.

5.1.2 Assembly of the housing

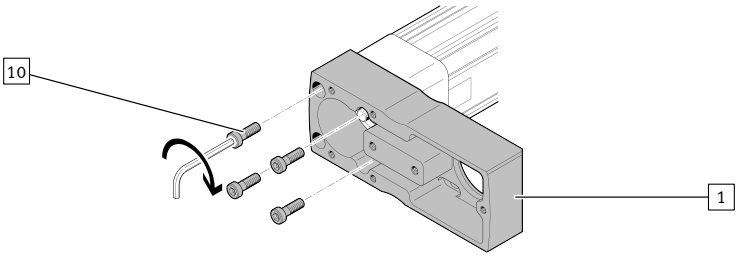


Fig. 8: Mounting axis

- Use the screws [10] to mount the axis on the housing [1].

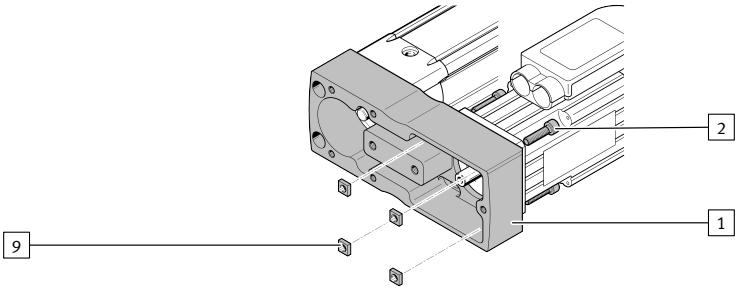


Fig. 9: Fastening motor

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

The mounting direction is different with the EAMM-U-...-42A.

- Attach the housing [1] to the motor with the screws [2].

5.1.3 Mounting the toothed belt

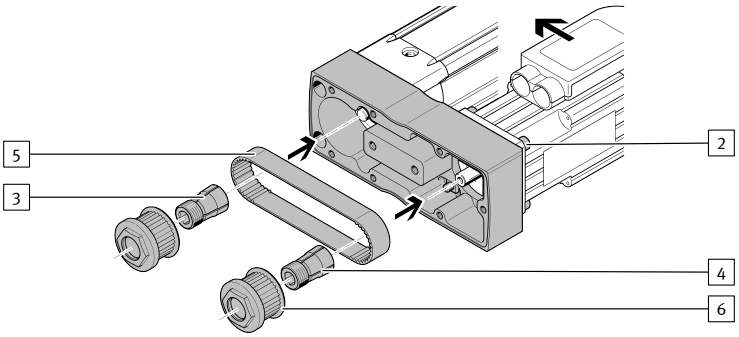


Fig. 10: Inserting toothed belt

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

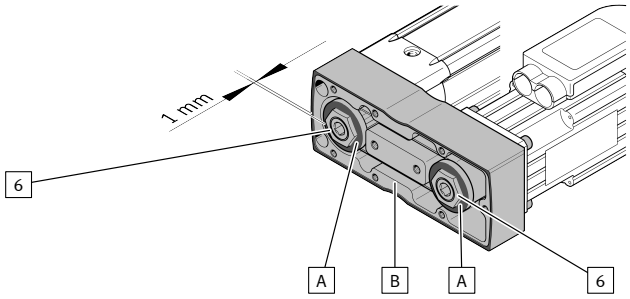


Fig. 11: Align toothed belt pulley

- Position the areas [A] approx. 1 mm above the reference area [B].
  - Background: the toothed belt pulley [6] moves inwards when tightened.

The position of the area [A] depends on the size.

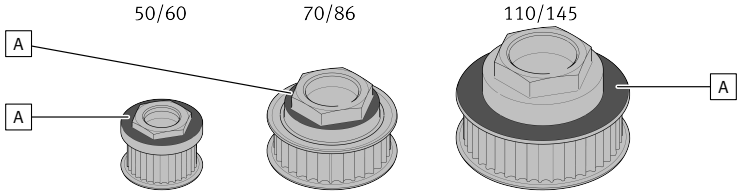


Fig. 12: Area A on the toothed belt pulley

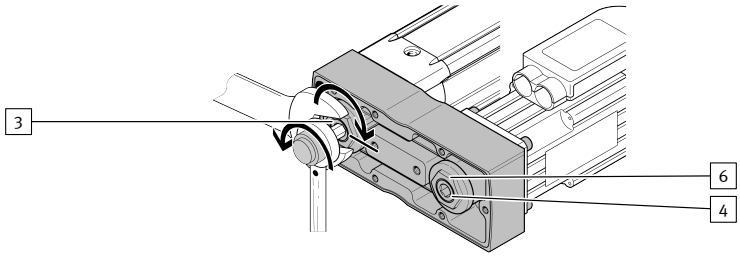


Fig. 13: Tightening the toothed belt pulley

1. Select the required tightening torque of the toothed belt pulleys [6] ➔ 8.2 Tightening torques for the toothed belt pulleys.
2. Tighten the toothed belt pulleys [6]. Counter hold the clamping sleeves [3]/[4].

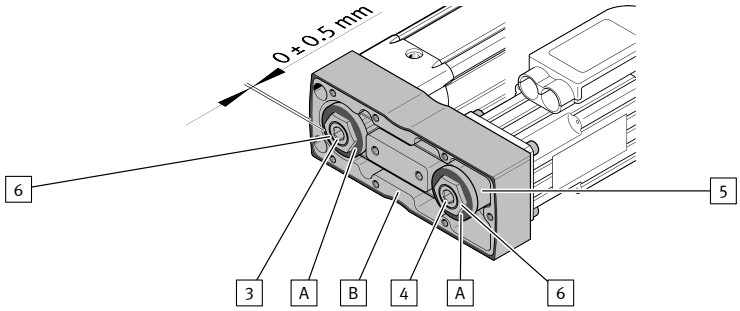


Fig. 14: Observe tolerances

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

5.1.4 Assembly of 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 [5] is mounted with the clamping sleeves [31] and [4] but not yet tensioned ➔ 5.1.3 Mounting the toothed belt.

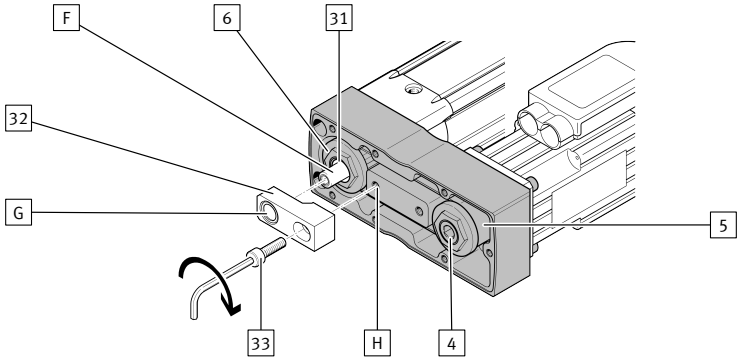


Fig. 15: Mounting counter bearing

1. Push the needle bush [G] onto the trunnion [F] of the clamping sleeve [31] without tension.
2. Mount the counter bearing [32] with the screw [33] on the thread [H].
3. Tension the toothed belt [5].

5.1.5 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 ≈ 1 ... 1.05 x

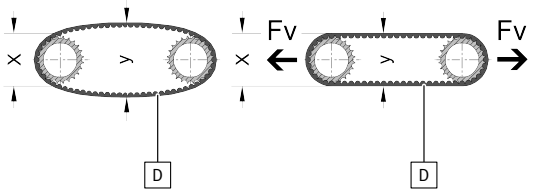


Fig. 16: Strands of the toothed belt

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 the screws [2].

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

Tab. 4: Permissible tension of the toothed belt

With EAMM-U-110/-145

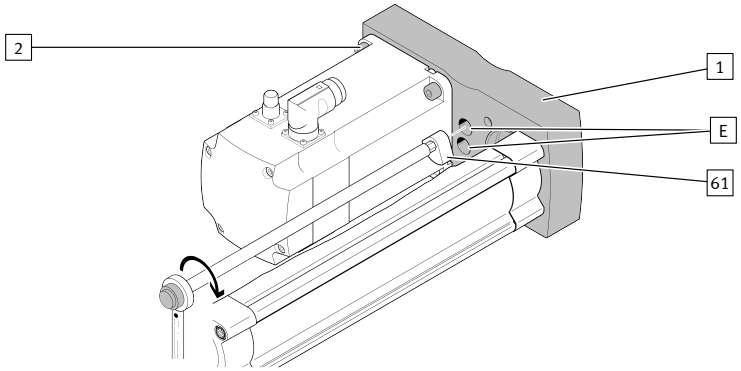
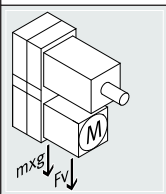
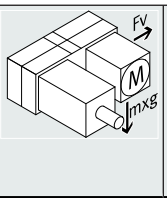
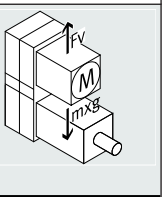


Fig. 17: Tension the toothed belt with a clamping element

1. Place the clamping element [61] in one of the two drilled holes [E] so the eccentric cam of the clamping element in contact with the motor flange.
2. Turn the 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 the 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-	Tension F_V [N]
110	120 ... 300
145	200 ... 450

Tab. 6: Permissible tension of the toothed belt

Checking the toothed belt pretensioning
The natural frequency of the toothed belt [5] can also be measured in order to check the correct pretension.

1. Start the strands [D] in the centre vibrating.
2. Measure the natural frequency of the toothed belt [5] with a frequency measuring device.

EAMM-U-	Centre distance [mm]	Natural frequency [Hz]
50-...-48	48	197 ... 300
50-...-78	78	122 ... 185
60-...-61	61	190 ... 252
60-...-91	91	126 ... 168
70-...-96	96	148 ... 200
86...-102	102.5	120 ... 163
86...-177	177.5	69 ... 94
110...-120	120	116 ... 183
110...-207	207.5	67 ... 106
145...-188	188	65 ... 97
145...-288	288	42 ... 64

Tab. 7: Recommended natural frequency of the toothed belt

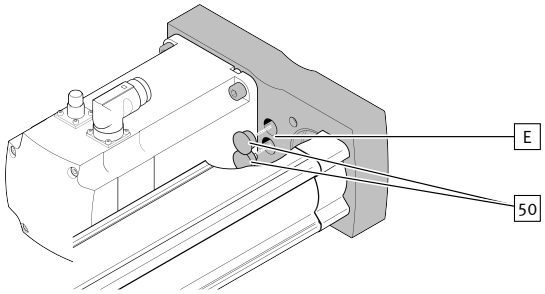


Fig. 18: Close drilled hole

• Press the sealing plugs [50] into the drilled holes [E].

5.1.6 Mounting the cover

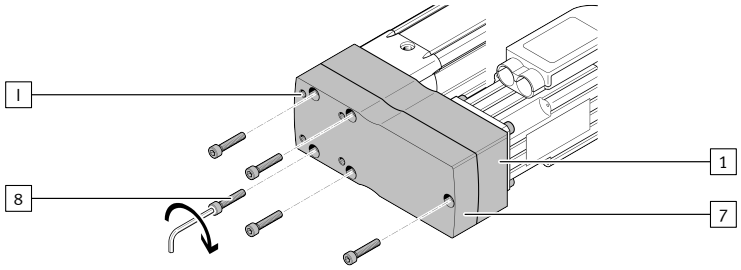


Fig. 19: Mounting cover

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

The threads [I] are used to fasten mounting accessories
➔ www.festo.com/catalogue.

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 the 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

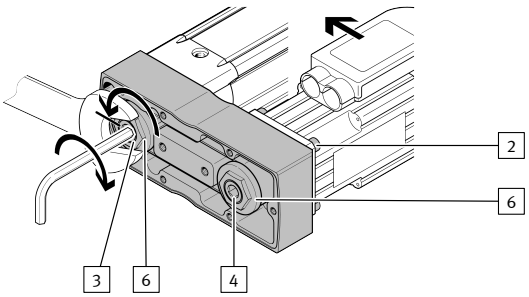


Fig. 20: Loosening toothed belt pulleys

1. Unscrew the screws [2] slightly.
   ↳ The motor is movable and can be easily tilted.
2. Push 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]. Counter hold the clamping sleeves [3]/[4].
5. Rotate the toothed belt pulleys [6] anticlockwise.
   ↳ The toothed belt pulleys [6] can be pulled from the cone of the clamping sleeves [3]/[4].

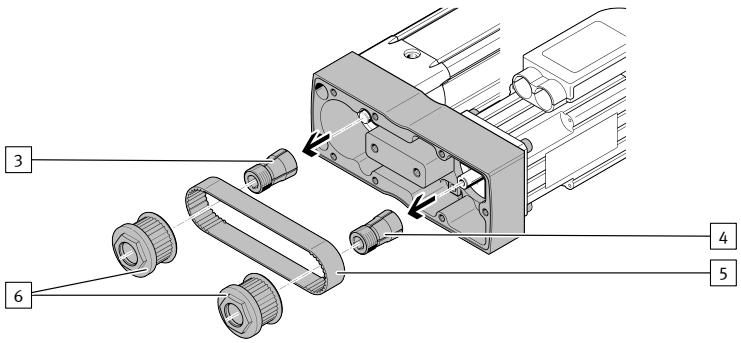


Fig. 21: Removing toothed belt

1. Pull the clamping sleeves [3]/[4] off the drive shaft adapters.
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-D32-40A	M3x12	1.2	M4x25	3	M6x18	5/6[1)]	M5x20	6
50-D32-40P	M3x12	1.2	M4x25	3	M6x18	5/6[1)]	M5x20	6
50-D32-42A	M3x8	1.2	M4x25	3	M6x18	5/6[1)]	M5x20	6
60-D32-55A	M5x20	6	M5x25	6	M6x18	5/6[1)]	M6x20	10
60-D32-57A	M5x35	6	M5x25	6	M6x18	5/6[1)]	M6x20	10
60-D32-60P	M4x35	3	M5x25	6	M6x18	5/6[1)]	M6x20	10
60-D40-55A	M5x20	6	M5x25	6	M6x18	5/6[1)]	M6x20	10
60-D40-57A	M5x35	6	M5x25	6	M6x18	5/6[1)]	M6x20	10
60-D40-60P	M4x35	3	M5x25	6	M6x18	5/6[1)]	M6x20	10
70-D32-60P	M4x16	3	M5x35	6	M6x18	5/6[1)]	M8x30	18
70-D32-70A	M5x18	6	M5x35	6	M6x18	5/6[1)]	M8x30	18
70-D40-60P	M4x16	3	M5x35	6	M6x18	5/6[1)]	M8x30	18
70-D40-70A	M5x18	6	M5x35	6	M6x18	5/6[1)]	M8x30	18
70-D50-60P	M4x16	3	M5x35	6	M8x20	12	M8x30	18
70-D50-70A	M5x20	6	M5x35	6	M8x20	12	M8x30	18
86-D40-70A	M5x18	6	M6x40	10	M6x18	5/6[1)]	M8x30	18
86-D40-80P	M5x20	6	M6x40	10	M6x18	5/6[1)]	M8x30	18
86-D40-87A	M6x40	10	M6x40	10	M6x18	5/6[1)]	M8x30	18
86-D50-80P	M5x20	6	M6x40	10	M8x20	12	M8x30	18
86-D50-87A	M6x45	10	M6x40	10	M8x20	12	M8x30	18
86-D60-55A	M5x20	6	M6x40	10	M8x20	9/12[1)]	M8x30	18
86-D60-60P	M4x20	3	M6x40	10	M8x20	9/12[1)]	M8x30	18
86-D60-70A	M5x20	6	M6x40	10	M8x20	9/12[1)]	M8x30	18
86-D60-80P	M5x20	6	M6x40	10	M8x20	9/12[1)]	M8x30	18
86-D60-80P-G2	M5x20	6	M6x40	10	M8x20	9/12[1)]	M8x30	18
86-D60-87A	M6x45	10	M6x40	10	M8x20	9/12[1)]	M8x30	18
110-D50-100A	M8x25	18	M8x50	18	M8x20	12	M8x40	18
110-D60-100A	M8x25	18	M8x50	18	M8x20	9/12[1)]	M8x40	18
110-D80-100A	M8x25	18	M8x50	18	M10x20	25	M8x40	18
145-D80-140A	M10x55	30	M8x50	18	M10x20	25	M8x40	18
145-D80-150A	M10x60	30	M8x50	18	M10x20	25	M8x40	18
145-D100-140A	M10x55	30	M8x50	18	M10x20	25	M8x40	18
145-D100-150A	M10x60	30	M8x50	18	M10x20	25	M8x40	18

1) With axis EGSL: 5 Nm; ESBF: 6 Nm

Tab. 8: Screws [2] ... [33]

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	⌭ 36	⌭ 10	⌭ 8

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