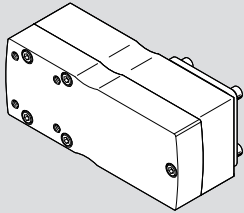


EAMM-U-...-S...-...G/H-1
Parallel kit



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8177743

Assembly instructions
8177743
2025-11d
[8177745]

Original instructions
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1 Applicable documents

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

Document	Product	Table of contents
Operating instructions	Gear unit	–
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.
- 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 gear unit in a parallel configuration.

2.2.2 Permissible axes and gear units

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 gear unit from the interface codes.

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
S60	ELGD-BS-120, ELGD-BS-WD-200
S62	EGC-120-BS, EGC-HD-220-BS, ELGA-BS-120
S95	EGC-185-BS

Tab. 2: Permissible axes

Gear unit interface	Gear unit
40G	EMGA-40, third-party gear unit
50GA	Third-party gear unit
60G	EMGA-60-...-SAS/-SST, third-party gear unit
60H	EMGA-60-...-EAS, EMGC-60, third-party gear unit
70GA	Third-party gear unit
80G	EMGA-80, third-party gear unit
90GA	Third-party gear unit

Tab. 3: Permissible gear units

1

It is the responsibility of users to qualify third-party gear units with the matching mechanical interface for the combination.
To find out which third-party gear units are suitable, contact your regional Festo contact or call → 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

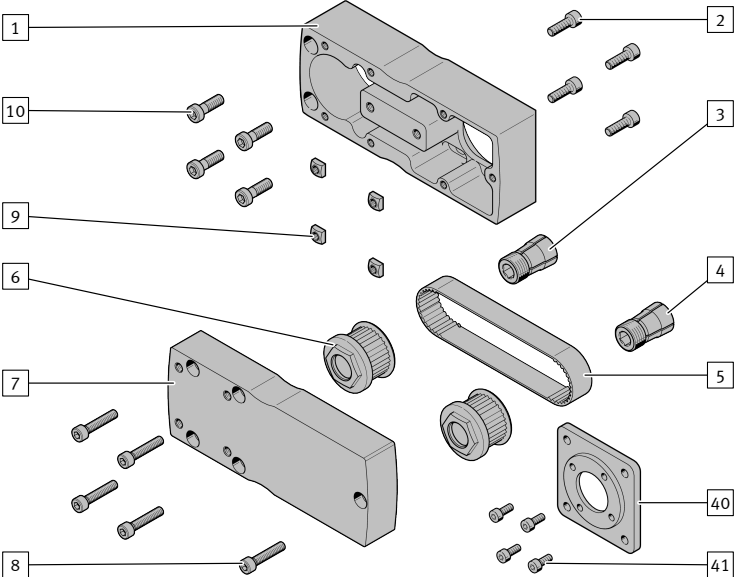


Fig. 1: Basic scope of delivery

1	Housing (1x)	7	Cover (1x)
2	Screw (4x)	8	Screw (5x)
3	Axis clamping sleeve (1x)	9	Square nut (4x)
4	Gear unit clamping sleeve (1x)	10	Screw (4x)
5	Toothed belt (1x)	40	Adapter plate (1x)
6	Toothed belt pulley (2x)	41	Screw (4x)
30	Centring ring (1x)	31	Axis clamping sleeve (1x)
33	Counter bearing (1x)	32	Counter bearing (1x)
		33	Screw (1x/2x)

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

1

For EAMM-U-...-S60: the counter bearing is not included in the scope of delivery.

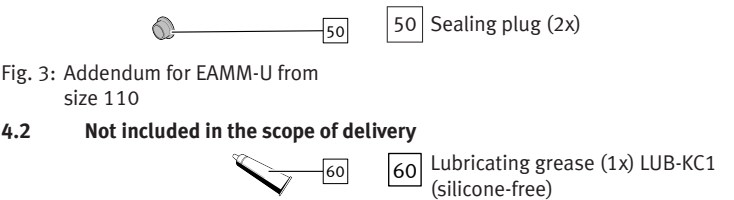


Fig. 3: Addendum for EAMM-U from size 110

4.2 Not included in the scope of delivery

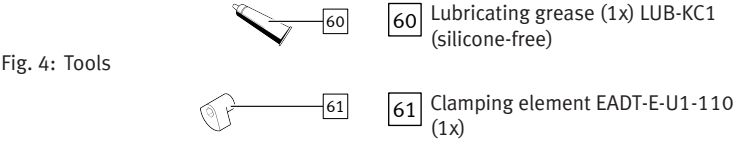


Fig. 4: Tools

Fig. 5: Tools

1

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

5 Mounting

5.1 Assembling

5.1.1 Assembly of the housing

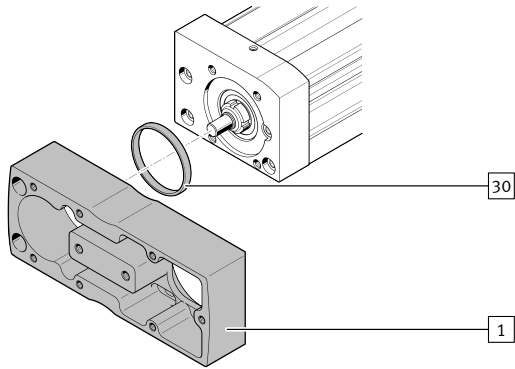


Fig. 6: Positioning centring ring

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

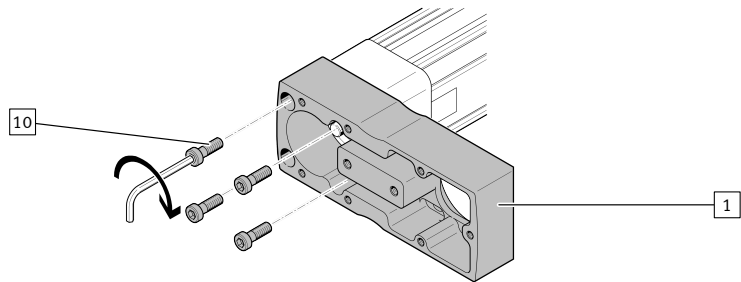


Fig. 7: Mounting axis

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

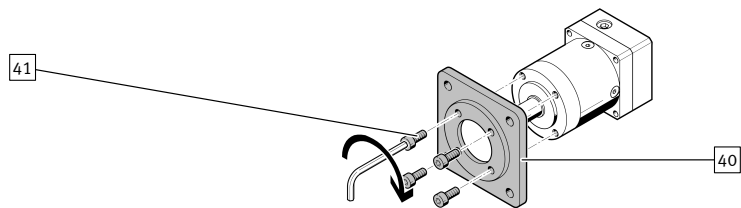


Fig. 8: Mount adapter plate, gear unit side

- Mount the adapter plate [40] on the gear unit with the screws [41].

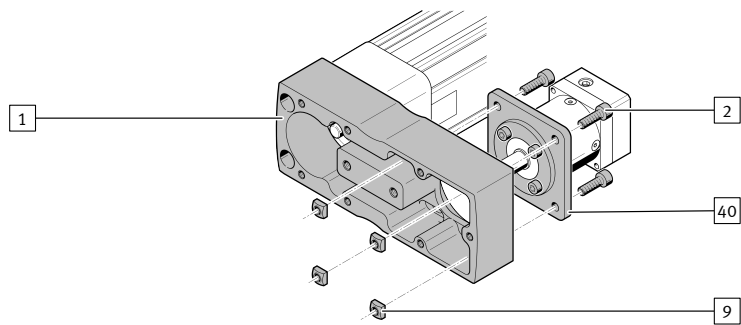


Fig. 9: Fastening gear unit

- Attach the gear unit to the housing [1] via the adapter plate [40] with the screws [2] and the square nuts [9].
 - The gear unit is movable and can be easily tilted.

5.1.2 Mounting the toothed belt

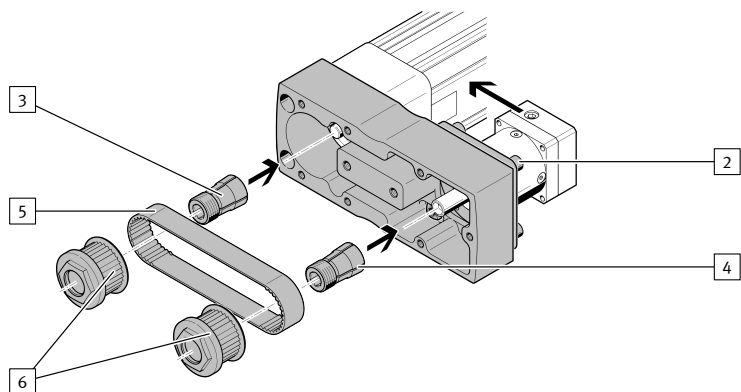


Fig. 10: Inserting toothed belt

- Grease the clamping sleeves [3]/[4] on the thread and the outside of the cone only with the lubricating grease [60].
 - 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.
- Place the toothed belt pulleys [6] into the toothed belt [5].
- Push the gear unit in the direction of the axis to the stop and tilt it slightly.
- Place the clamping sleeves [3]/[4] on the drive shaft adapter.
- Fasten the gear unit with the screws [2].
 - The gear unit can be moved, but it can no longer be tilted.

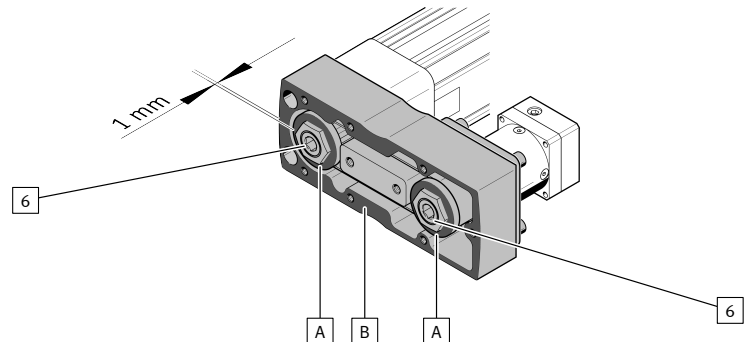


Fig. 11: Align toothed belt pulley

- 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.

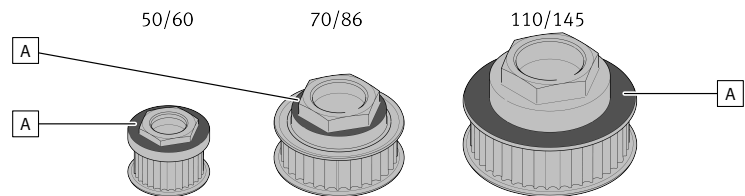


Fig. 12: Area A on the toothed belt pulley

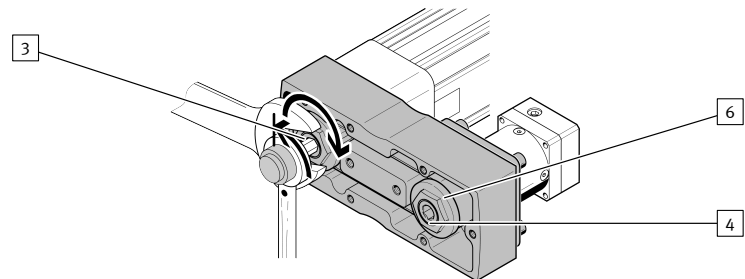


Fig. 13: Tightening the toothed belt pulley

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

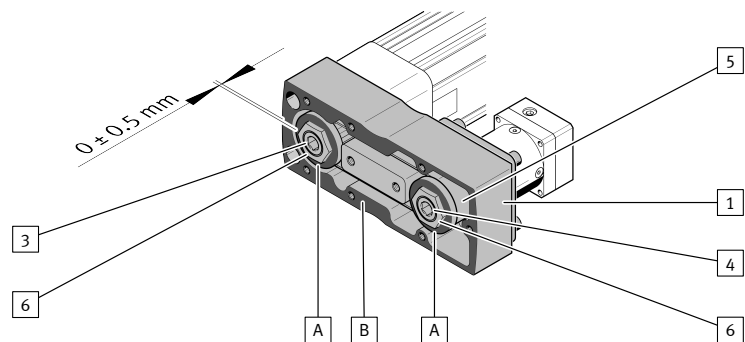


Fig. 14: Observe tolerances

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

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

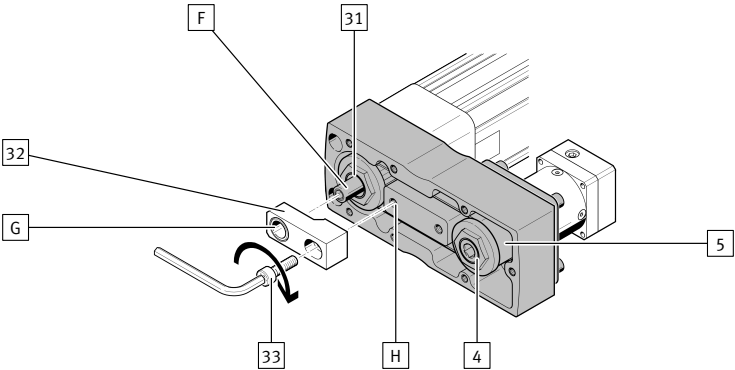


Fig. 15: Mounting counter bearing

- Push the needle bush [G] onto the trunnion [F] of the clamping sleeve [31] without tension.
- Mount the counter bearing [32] with the screw [33] on the thread [H].

ⓘ

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

- Tension the toothed belt [5].

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: $y \approx 1 \dots 1.05 \times$

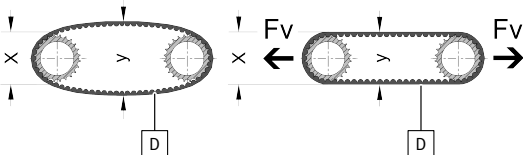


Fig. 16: Strands of the toothed belt

For EAMM-U up to size 86

- Move the gear unit until the clamping force F_v is exerted on the toothed belt [5].

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

- Tighten screws [2].

For EAMM-U from size 110 upwards

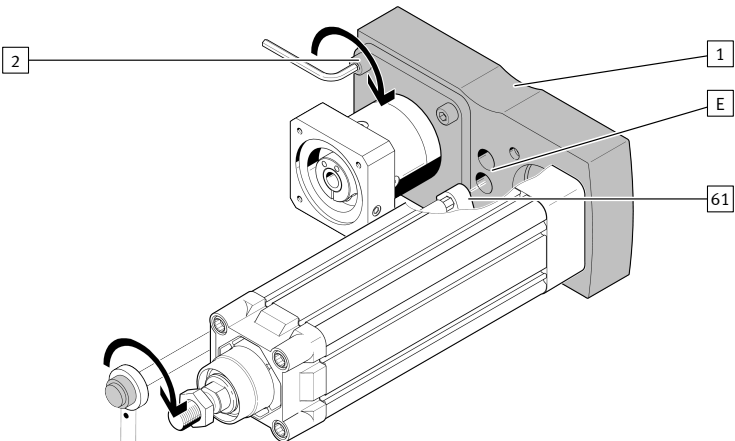


Fig. 17: Tension the toothed belt with a clamping element

- Place the clamping element [61] in one of the two drilled holes [E] so the eccentric cam of the clamping element is in contact with the motor flange.

- Turn the clamping element [61]. The gear unit, which can be moved along the slots, is pressed away from the axis mechanism by the eccentric cam of the clamping element.

Hex wrench : ≈ 8

Observe the recommended torque.

EAMM-U-	Recommended torque [Nm]		
110	0.2 ... 0.6	0.4 ... 0.8	0.6 ... 1.0

EAMM-U-	Tension F_v [N]
110	120 ... 300

- Tighten the screws [2].

Checking the toothed belt pretensioning

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

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

EAMM-U-	Centre distance [mm]	Natural frequency [Hz]
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

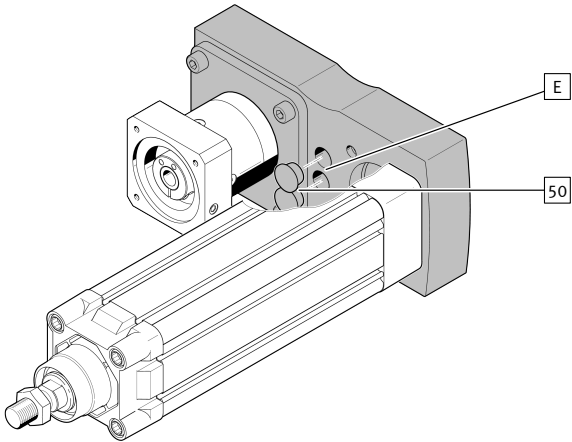


Fig. 18: Close drilled hole

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

5.1.5 Mounting the cover

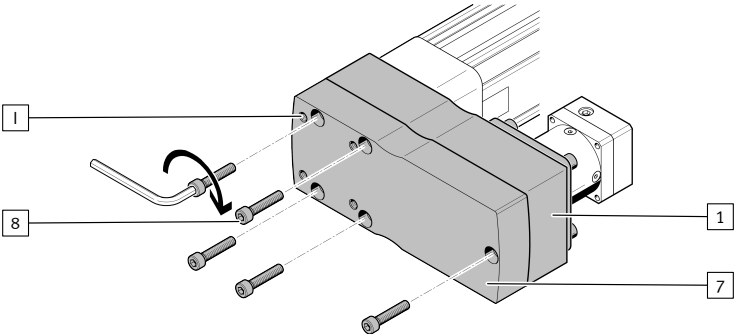


Fig. 19: Mounting cover

- 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.

5.2 Integration

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 afterwards.

⚠ 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.

- Check the toothed belt [5] regularly:
 - during maintenance of the machine
 - when replacing an axis
- 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

8 Technical data

8.1 Screw sizes and tightening torques

EAMM-U-	[2]	[Nm]	[8]	[Nm]	[10]	[Nm]	[33]	[Nm]
60-S38-40G	M5x16	6	M5x25	6	M5x12	6	M6x20	10
60-S38-50GA	M4x30	3	M5x25	6	M5x12	6	M6x20	10
60-S48-40G	M5x16	6	M5x25	6	M5x12	6	M6x20	10
60-S48-50GA	M4x30	3	M5x25	6	M5x12	6	M6x20	10
70-S48-60G	M4x16	3	M5x35	6	M5x14	6	M8x30	18
70-S48-60H	M4x16	3	M5x35	6	M5x14	6	M8x30	18
86-S48-60G	M5x16	6	M6x40	10	M5x12	6	M8x30	18
86-S48-60H	M5x16	6	M6x40	10	M5x12	6	M8x30	18
86-S48-70GA	M5x20	6	M6x40	10	M5x12	6	M8x30	18
86-S60-60G	M5x20	6	M6x40	10	M8x20	18	M8x30	18
86-S60-60H	M5x20	6	M6x40	10	M8x20	18	M8x30	18
86-S62-60G	M5x16	6	M6x40	10	M6x12	10	M8x30	18
86-S62-60H	M5x16	6	M6x40	10	M6x12	10	M8x30	18
86-S62-70GA	M6x50	10	M6x40	10	M6x12	10	M8x30	18
110-S95-80G	M8x25	18	M8x50	18	M8x20	18	M8x40	18
110-S95-90GA	M8x25	18	M8x50	18	M8x20	18	M8x40	18

Tab. 4: Screws [2] ... [33]

EAMM-U-	[41]	[Nm]
60-S38-40G	M4x10	3
60-S38-50GA	M4x10	3
60-S48-40G	M4x10	3
60-S48-50GA	M4x10	3
70-S48-60G	M5x12	6
70-S48-60H	M5x12	6
86-S48-60G	M5x12	6
86-S48-60H	M5x12	6
86-S48-70GA	M5x14	6
86-S60-60G	M5x12	6
86-S60-60H	M5x12	6
86-S62-60G	M5x12	6
86-S60-60H	M5x12	6
86-S62-70GA	M5x12	6
110-S95-80G	M6x12	10
110-S95-90GA	M6x16	10

Tab. 5: 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]
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

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

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

Tab. 7: Width across flats of the toothed belt pulley [6] and the clamping sleeves [3] ... [31]