

INSTALLATION INSTRUCTIONS

CASM electric cylinders

1. Use as intended

The adapter kit allows a parallel motor mounting of the specified servo motor - linear unit combinations of **chapter 2**.

2. Recommended motors

In principle, beside the recommended motors, also 3rd party motors may be fitted. It is important that torque and speed specifications of the motor do not exceed the permitted values of the linear unit. Detailed information may be found in the technical notes relating to the electrical cylinders. Ewellix recommends the following Siemens 1FK7 servo motors (→ **table 1**).



Table 1

Recommended CASM linear unit /Siemens servo motor combinations

Linear unit	CASM-32			CASM-40			CASM-63		
	TR	KGT	KGT	TR	KGT	KGT	TR	KGT	KGT
Screw	9x1,5	10x3	10x10	12,5x2.5	12x5	12,7x12,7	20x4	20x10	20x20
Motor	1FK7015			1FK7022 / 1FK7034			1FK7034		

3. Screws and tightening torques M_A

Table 2

	SB (Intermediate plate)		S1 (Cover)		S2 (Cover)		S3 (Motor)	
	Screw	Torque M_A	Screw	Torque M_A	Screw	Torque M_A	Screw	Torque M_A
CASM-32-1FK7015	M6x20	5,9 Nm ± 0,8 Nm	M6x20	4,0 Nm ± 0,5 Nm	M4x30	4,0 Nm ± 0,5 Nm	M4x16	3,0 Nm ± 0,3 Nm
CASM-40-1FK7022	M6x20	5,9 Nm ± 0,8 Nm	M6x20	4,0 Nm ± 0,5 Nm	M4x35	4,0 Nm ± 0,5 Nm	M5x20	5,9 Nm ± 0,8 Nm
CASM-63-1FK7034	M8x24	10,1 Nm ± 0,8 Nm	M8x20	5,9 Nm ± 0,8 Nm	M4x45	4,0 Nm ± 0,5 Nm	M6x20	10,1 Nm ± 0,8 Nm

4. Intermediate plate installation

Step 1

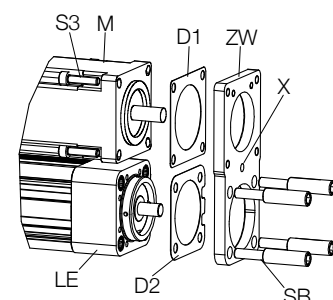
Mount the motor (**M**) on the intermediate plate (**ZW**) by inserting the square seal without cut-out (**D1**) in between and tightening it using all the Allen screws (**S3**). When assembling, note the alignment of the intermediate plate marking (**X**).

Step 2

Attach the linear unit (**LE**) to the intermediate plate (**ZW**), insert the square seal with cut-out (**D2**) and hand tighten the four screws (**SB**).

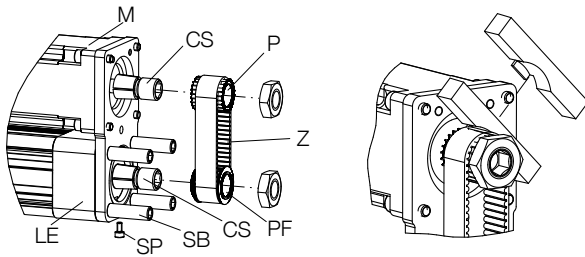
Note: Do not tighten the screws (**SB**) until **step 5 chapter 5**.

Fig. 1



5. Timing belt installation

Fig. 2



Step 1

Push the linear unit (LE) as far as possible towards the motor (M) and tighten the special screws (SB) by hand.

Place the two clamping sleeves (CS) on the shaft of the linear unit and the motor. Take the timing belt and insert the pulleys (P/PF).

Step 2

Push the pulleys over the clamping sleeves. The flanged pulley (PF) has to be on the shaft of the linear unit. Push the flanged pulley and clamping sleeve as far as possible on the screw trunnion and align the pulley (P) and the 2nd clamping sleeve on the motor side as follows:

- **CASM-32:** Push the pulley as far as possible
- **CASM-40/63:** Position the pulley by placing the assembly tool (MH) on the intermediate plate and pushing the pulley as far as possible.

Step 3

Secure the pulley (P/PF) by tightening the nut (torque as per table 3) and countering at the same time with a hexagonal wrench.

Step 4

Place the central pretension screw (SP) in the side bore of the intermediate plate (ZW) and tighten the timing belt (Z) using the pretension screw (SP) (→ fig. 1).

Note: Loosen the special screw (SB) if the belt cannot be tightened.

Step 5

Measure the timing belt tension using a suitable frequency measurement device. Adjust the pretension screw (SP) until the required belt tension is reached and tighten the screws (SB) according to table 1.

Tightening the pretension screw (SP) increases the natural frequency of the timing belt (→ table 4). Excessive preloads can lead to increased wear in the bearing of the linear unit (LE) or motor (M) due to radial loading. Once the correct frequency is set, secure the special screws (SB) and check the timing belt frequency again.

Note: 3rd party motors installation: the given natural frequencies in table 4 refer to the recommended Siemens motors. The natural frequency limit for of a third party motor might be different from the given values in table 4. The frequency is usually limited by the max admissible radial load of the motor shaft.

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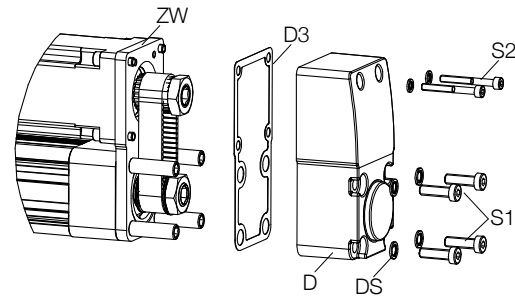
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6. Gearbox cover installation

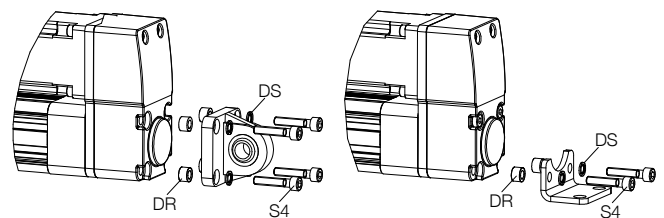
Fig. 3



Place the flat sealing (D3) in between the gearbox cover (D) and the intermediate plate (ZW). Push the seal washers (DS) over the Allen screws (S1/S2) and fix the gearbox cover (→ fig. 4). For screws and torques, refer to table 2.

6.1 Fixing accessories option

Fig. 4



Insert the sealing rings (DR) between the gearbox cover and fixing accessories. Push the sealing washers (DS) over the Allen screws (S4) and fix the accessories by tightening the screws (torque as per table 5).

Table 3

Pulley fixation	Pulley	
	Pulley	Torque M _A
CASM-32-1FK7015	GT3-3M-Z18	5 Nm
CASM-40-1FK7022	GT3-3M-Z24	20 Nm
CASM-63-1FK7034	GT3-5M-Z22	40 Nm

Table 4

	CASM-32-1FK7015	CASM-40-1FK7022	CASM-63-1FK7034
Natural frequency	565 Hz ±8	525 Hz ±8	345 Hz ±8
Strand deflection	1 mm @ 8 N	1,2 mm @ 15 N	1,6 mm @ 20 N

Replace interval for all timing belts: 2 Mio cycles

Table 5

S4 (CASM-32)		S4 (CASM-40)		S4 (CASM-63)	
Screw	Torque M _A	Screw	Torque M _A	Screw	Torque M _A
M6×30	5 Nm ± 0,5 Nm	M6×30	5 Nm ± 0,5 Nm	M8×35	8 Nm ± 0,8 Nm