Doc.No. LEF-MM01601-A

Maintenance Manual

Product Name

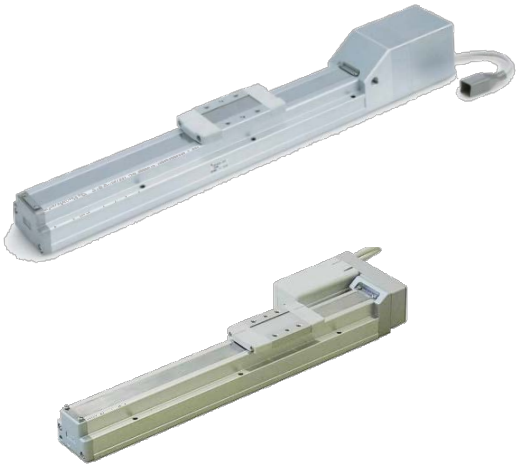
Electric Actuator / Slider Type

Model / Series / Product Number

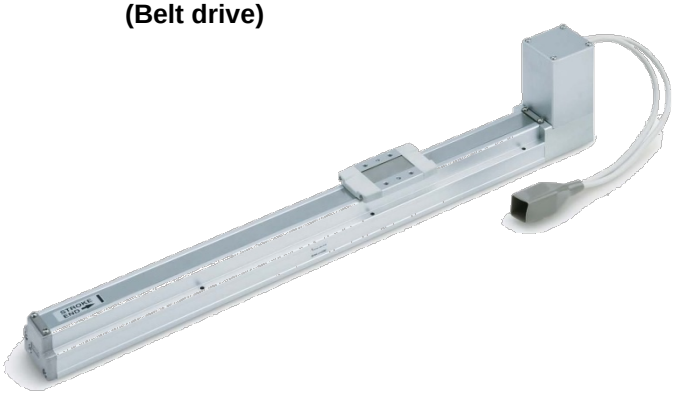
LEF

LEFS/LEFB Series

LEFS Series
(Ball screw type)



LEFB Series
(Belt drive)



Products after parts replacement by the user are outside of warranty.

SMC Corporation

Track changes

Rev. symbol	Date of change	Details of the changes	Approved by	Person in charge	Remarks
-	2016/03/23	First edition	T.Sugiyama 2016/03/23	H.Shiomi 2016/03/23	
A	2016/06/16	Addition of grease part number.	T.Sugiyama 2016/06/20	T.Nakazawa 2016/06/16	

Contents

1. Maintenance Precautions

⚠**Warning**

1) Remove the workpiece and disconnect the power supply during maintenance and replacement of the product.

[Maintenance frequency]

Preform maintenance according to the table below. if there are any problems, please contact SMC.

Inspection frequency	Appearance check	Internal check	Belt check
Inspect daily before operating	Good	-	-
* Every 6 months or every 1000km or every 5,000,000 cycles	Good	Good	Good

* Either of inspection early time is selected.

[Items for visual appearance check]

1. Loose set screws, abnormal/excessive dirt
2. Scratches, cable joint
3. Vibration, noise

[Internal check item]

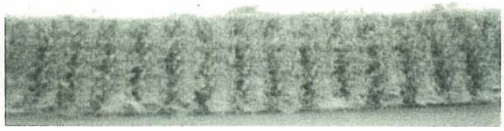
1.Lubricant condition and dirt on moving parts.
For lubrication, use lithium grease No. 2. (Refer to table 3-1.)
2.Loose or mechanical play in fixed parts or fixing screws.

[Items for belt check]

Stop operation immediately when the belt appears to be like malfunction shown in the pictures below. If it occurs in the first stage of use, confirm it is within the range of the product specification, the system requirements and conditions of use.
Return the actuator to SMC for the belt to be replaced.（When replacing the belt, please contact SMC for the instruction manual. Adjustment of the motor origin and adjustment of the belt tension etc. is difficult. Therefore we recommend returning the actuator to SMC for the belt to be replaced.)

a. Tooth shape canvas is worn out

Canvas fiber becomes fuzzy. Rubber is removed and the fiber becomes whitish. Lines of fibers become unclear.



b. Peeling off or wearing of the side of the belt

Belt corner becomes round and frayed thread sticks out.

c. Belt partially cut

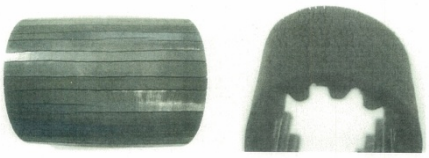
Belt is partially cut. Foreign matter caught in teeth other than cut part causes flaw.

d. Vertical line of belt teeth

Flaw which is made when the belt runs on the flange.

e. Rubber back of the belt is softened and sticky

f. Crack on the back of the belt



2.) If no locking adhesive is applied to the bolts or screws, take a countermeasure against loosening.

3) Refer to the spare parts list in the separate sheet for the part numbers and details of the spare parts.
Japanese version: LEF-MM01101, LEF-MM01201
English version: LEF-MM01301, LEF-MM01401

4). It is recommended replacing the motor as a motor assembly.

2. Mounting and removal of the dust seal band and seal band stopper assembly

Applicable model: LEFS/LEFB

2-1. Loosen the retaining screws for the band stopper.

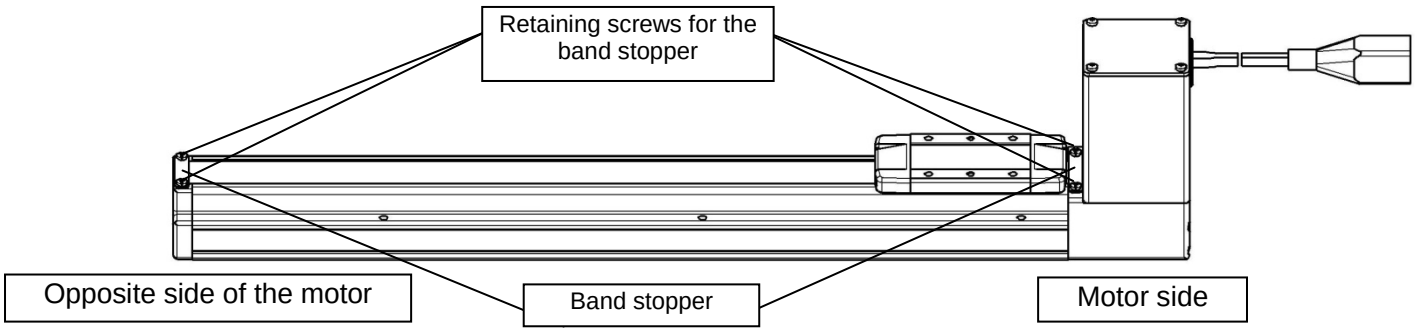


Table.2-1 Band stopper fixing screws

Size	Screw type	Screw size	Tightening torque +/- 10% [Nm]	Qty.
16	Round head combination screw	M2.5x5	0.36	4
25		M3x6	0.63	
32		M3x6		
40		M3x6		

2-2. Remove the seal band stopper at the opposite side of the motor, and pull out the blanking plate.

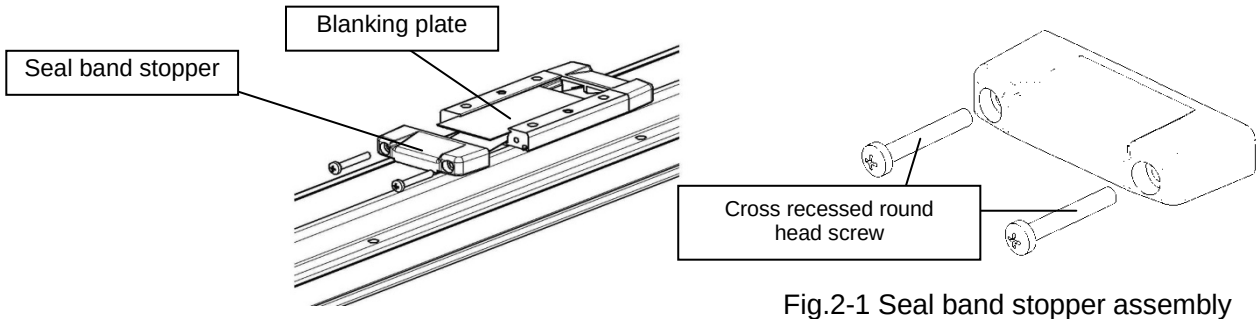
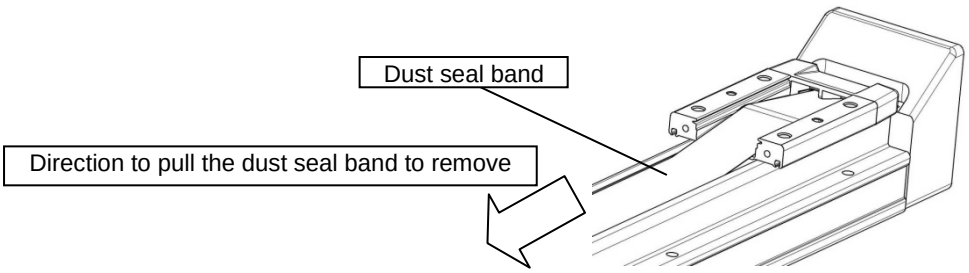


Fig.2-1 Seal band stopper assembly

Table.2-2 Seal band stopper fixining screws

Size	Screw type	Screw size	Tightening torque +/- 10% [Nm]	Qty.
16	Cross recessed round head screw	M2.5x16	0.36	2
25		M3x20	0.63	
32		M4x30	0.76	
40		M4x35		

2-3. Pull out the dust seal band to the opposite side of the motor.



2-4. To put the dust seal band back, mount the dust seal band in reversed order of 2-1 to 2-3.

For the replacement of the dust seal band and seal band stopper assembly, order replacement parts referring to the spare parts list in the attachment.

3. Applying additional grease on the guide.

Applicable model: LEFS/LEFB

3-1. Remove the dust seal band. (Refer to Chapter 2 Mounting and removal of the dust seal band and seal band stopper assembly)

3-2. Apply grease to the entire guide groove using a spatula (Fig. 3-1).
Slowly slide the table by hand so that the grease is applied to the inside of the guide.
Be careful not to smear the belt with grease.
After replenishment, perform several test runs to allow the grease to spread evenly.
*** For lubrication, use lithium grease No. 2.**
When ordering the grease from SMC, please order a grease pack: GR-S-□.
*** Not applicable for clean series, secondary battery or special product. Please contact SMC**.

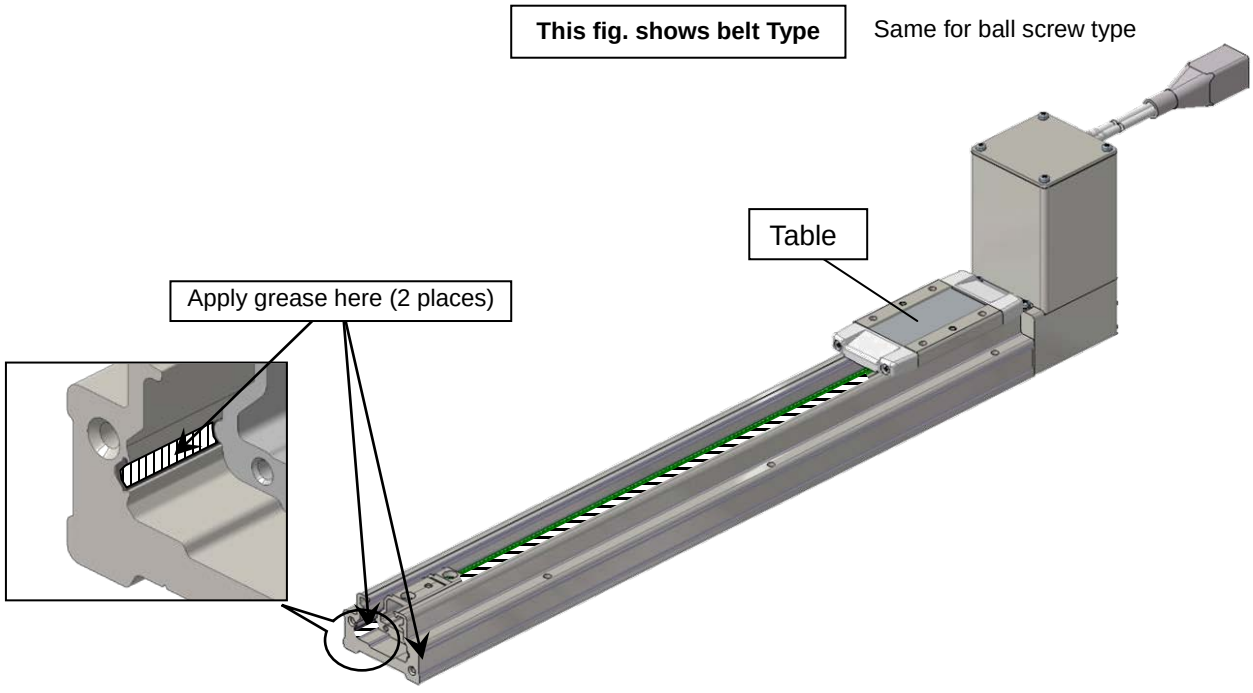


Fig. 3-1 Position for application of grease

Table.3-1 Grease package (Lithium grease No. 2) A

Applied section	Product No.
Refer to the above figure	GR-S-010 (10g)
	GR-S-020 (20g)

3-3. Mount the dust seal band. (Refer to Chapter 2 Mounting and removal of the dust seal band and seal band stopper assembly)

4. Replenishment of grease for the ball screw

Applicable model: LEFS

4-1. Remove the dust seal band. (Refer to Chapter 2 Mounting and removal of the dust seal band and seal band stopper assembly)

4-2. Apply grease to the entire ball screw shaft using a spatula.
Slowly slide the table by hand so that the grease is applied to the inside of the ball screw nut.
After replenishment, perform several test runs to allow the grease to spread evenly.
*** For lubrication, use lithium grease No. 2.**
When ordering the grease from SMC, please order a grease pack: GR-S-□.
*** Not applicable for clean series, secondary battery or special product. Please contact SMC.**

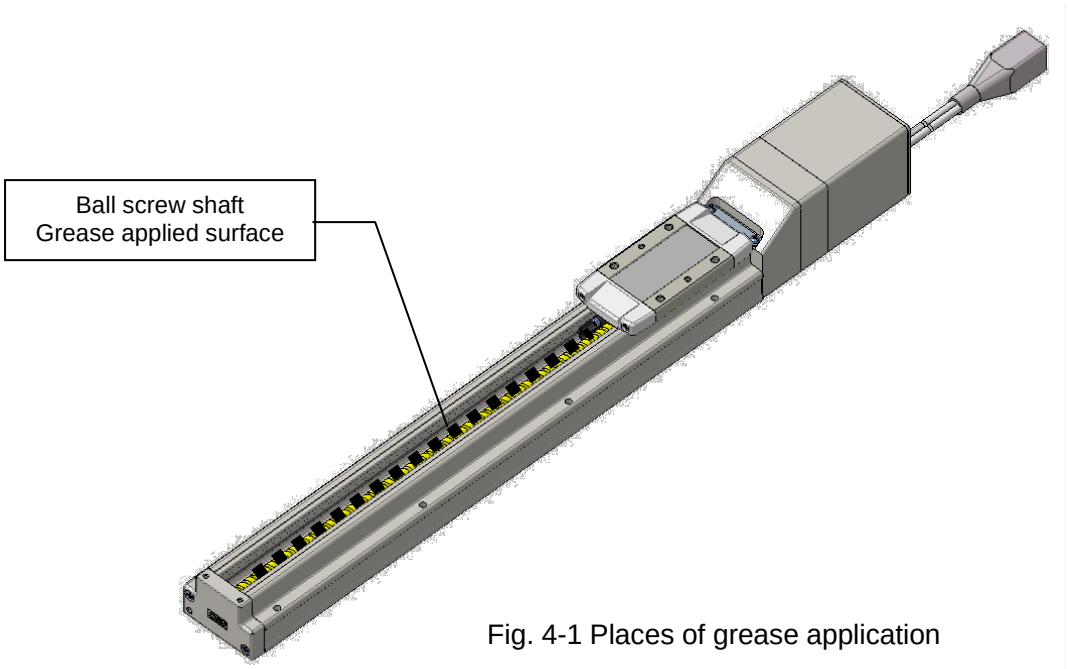


Fig. 4-1 Places of grease application

Table.4-1 Grease package (Lithium grease No. 2) A

Applied section	Product No.
Refer to the above figure	GR-S-010 (10g)
	GR-S-020 (20g)

4-3. Mount the dust seal band. (Refer to Chapter 2 Mounting and removal of the dust seal band and seal band stopper assembly)

5. LEFB Belt Tension Adjustment

Applicable model: LEFB

< Foreword >
It is recommended to use a belt tension meter.
If you do not have a belt tension meter, align the belt back to the original position that was marked before removal.
Recommended belt tension meter: (Gates Unitta Asia: U-508)

Step motor (Servo/ 24VDC) / Servo motor (24VDC), LEFB25　AC servo motor

With the dust seal band removed as in Chapter 2 Mounting and removal of the dust seal band and seal band stopper assembly,　loosen the screw(2) which retains (3) pulley holder assembly, and then rotate (1)tension adjusting screw. (Fig. 5-1)

LEFB32, 40　AC servo motor

With the dust seal band removed as in Chapter 2 Mounting and removal of the dust seal band and seal band stopper assembly, the tension is adjusted by rotating (1)tension adjusting screw. (Fig. 5-2)

Slide the table to the measurement position and enter the set values on the tension meter. Measure the tension by flicking the belt on the specified side shown in Fig. 5-3. Fig.5-3 shows the position of the table and the measurement using the belt tension meter. Table 5-2 shows the values for setting and recommended tension of the tension meter.

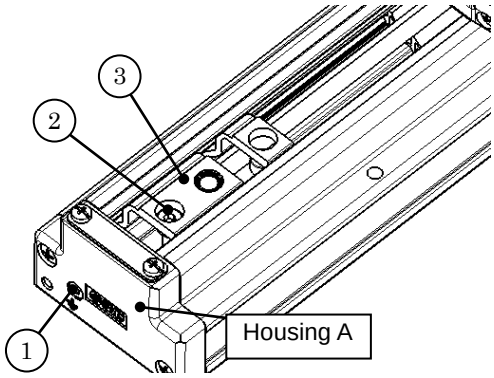


Fig.5-1. Part for belt tension adjustment 1

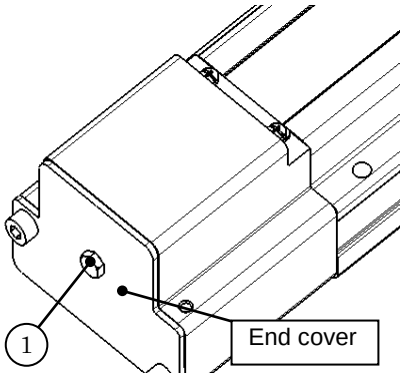


Fig.5-2. Part for belt tension adjustment 2

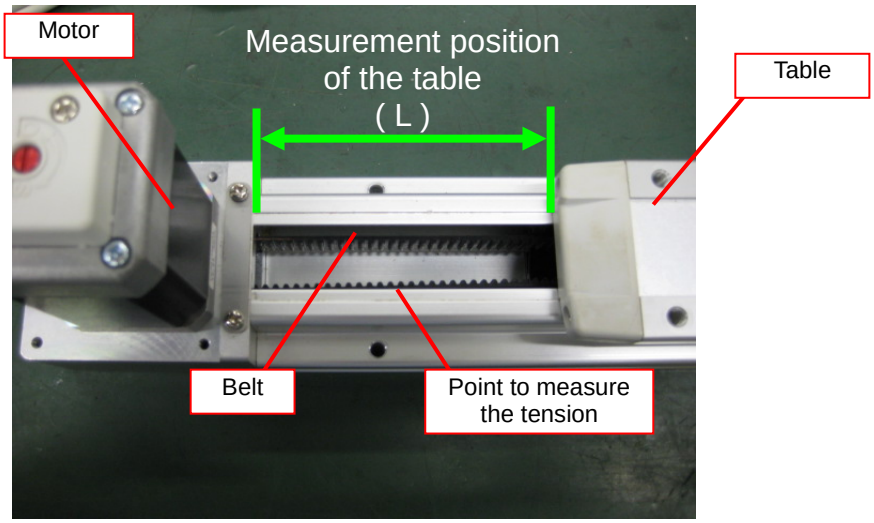


Fig.5-3 Position of the table and measurement

Table.5-1 Pulley holder assembly retaining screws

Model	Screw type	Screw size	Tightening torque +/- 10% [Nm]	Qty.
LEFB16∗T	Hexagon socket head cap screw	M3x20	0.63	1
LEFB25∗T		M4x20	1.5	1
LEFB32T		M5x25	3.0	1

Table.5-2 Data required for setting the tension meter that are recommended to tension the belt.

Model	Measurement position of the table (L) [mm]	Set values for acoustic belt tension meter			Recommended belt tension [N] +/-10%
		WIDTH [mm]	SPAN [mm]	WEIGHT (*)	
LEFB16*T	170	6	200	2.5	30
LEFB25*T	150	9			45
LEFB32T	130	15			75
LEFB25*(S/T/V)	150	9			82
LEFB32*(S/T/V)	130	15			136
LEFB40*(S/T/V)	117	20			186

* Unit: g/mm (Width) x m (Length)

6. Mounting/ removal of the motor and peripheral equipments (Ball screw type)

Applicable model: LEFS

6-1. Remove the motor cover

6-1-1. Step motor (Servo/ 24VDC) and servo motor (24VDC)

Inline motor mounting type

Remove the screws (1). Hold the rubber bushing (4) while removing the end cover (2) from the rubber bushing upward. Remove the motor cover (3), and remove the grommet from the cable (5).

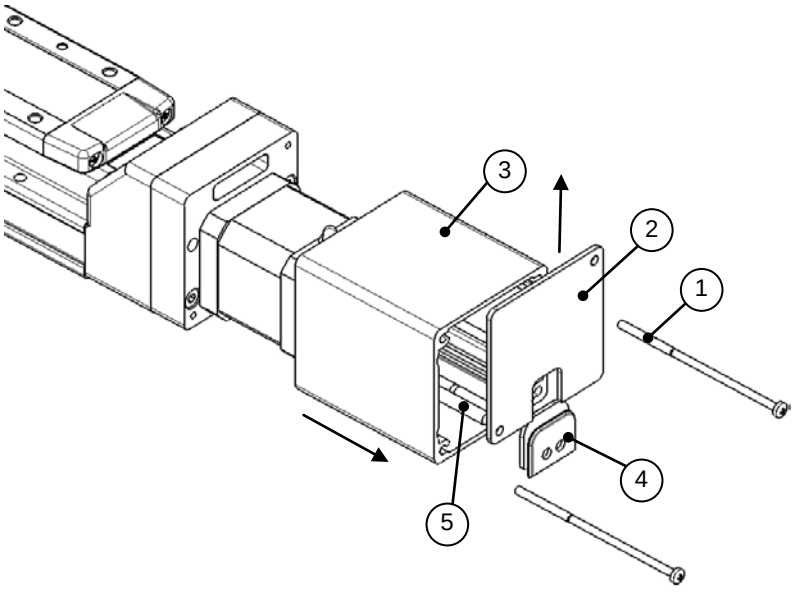
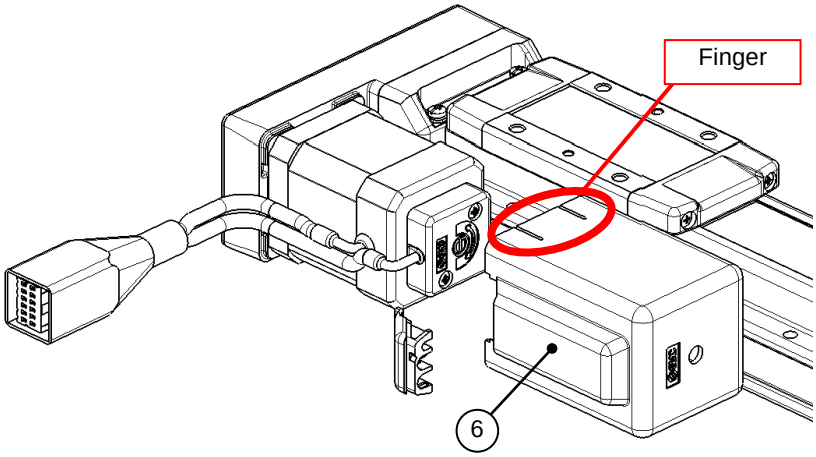


Table.6-1 Motor cover fixing screws

Part to be tightened	Model	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(2) End cover	LEFS16**-*	(1) Cross recessed round head screw	M3x80	2	0.32
	LEFS16**-*B		M3x120		
	LEFS25**-*		M3x75		
	LEFS25**-*B		M3x120		
	LEFS32*-*		M3x80	4	
	LEFS32*-*B		M3x130		
	LEFS40*-*		M4x100		0.76
	LEFS40*-*B		M4x150		

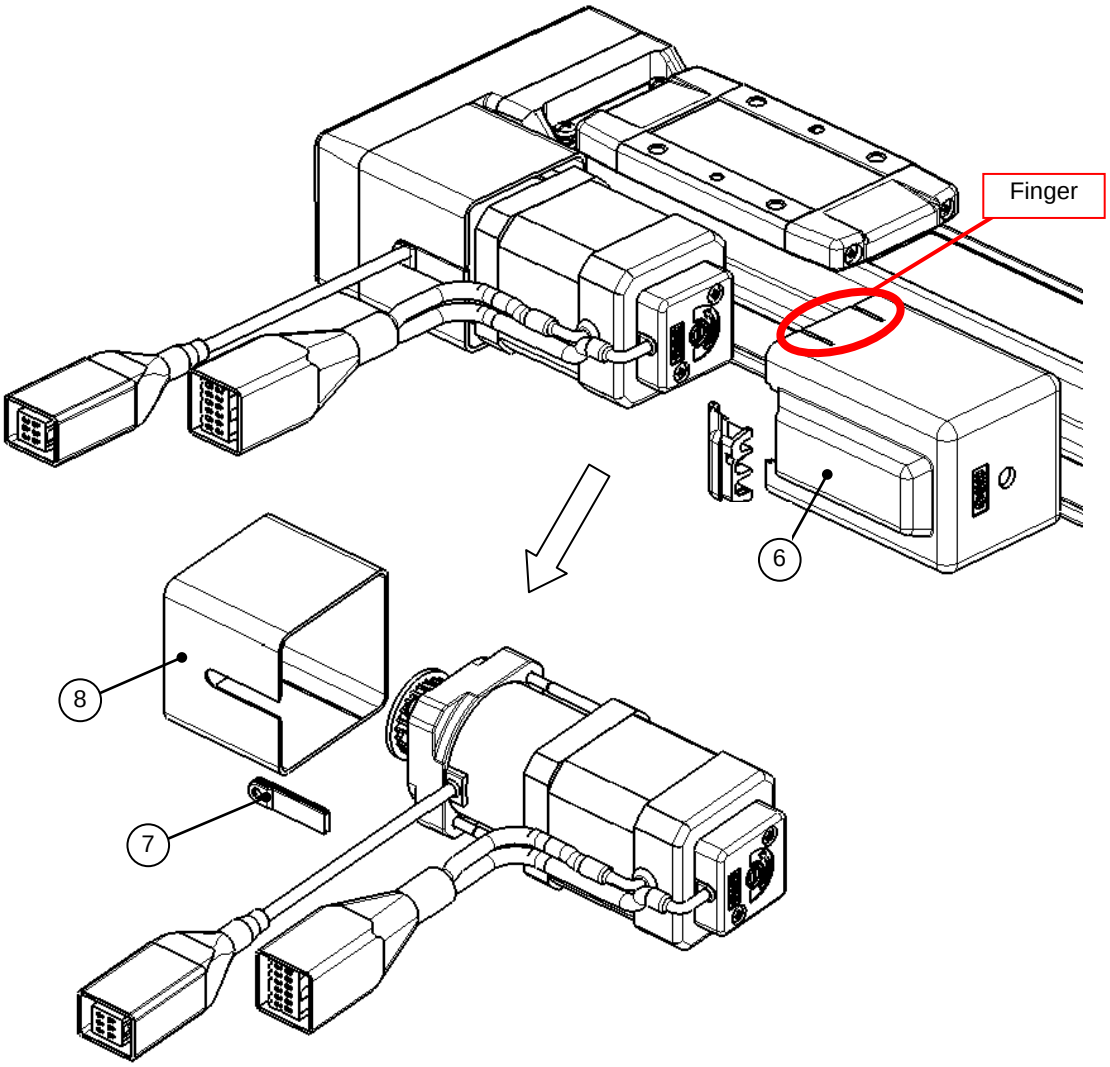
Parallel motor mounting type (without lock)

(6) Insert something flat such as a cable tie behind the fingers of the motor cover to lift the fingers.



Parallel motor mounting type (with lock)

(6) Lift the fingers of the motor cover to remove the cover. Referring to the removal procedure of 6-2-2, remove the motor. And then, remove the motor cover with lock(8) holding the grommet(7).



6-1-2. AC Servo Motor

Remove the screw(1). Hold the grommet(4) while removing the end cover(2) from the grommet downward. Remove the motor cover (3), and remove the grommet from the cable (5).

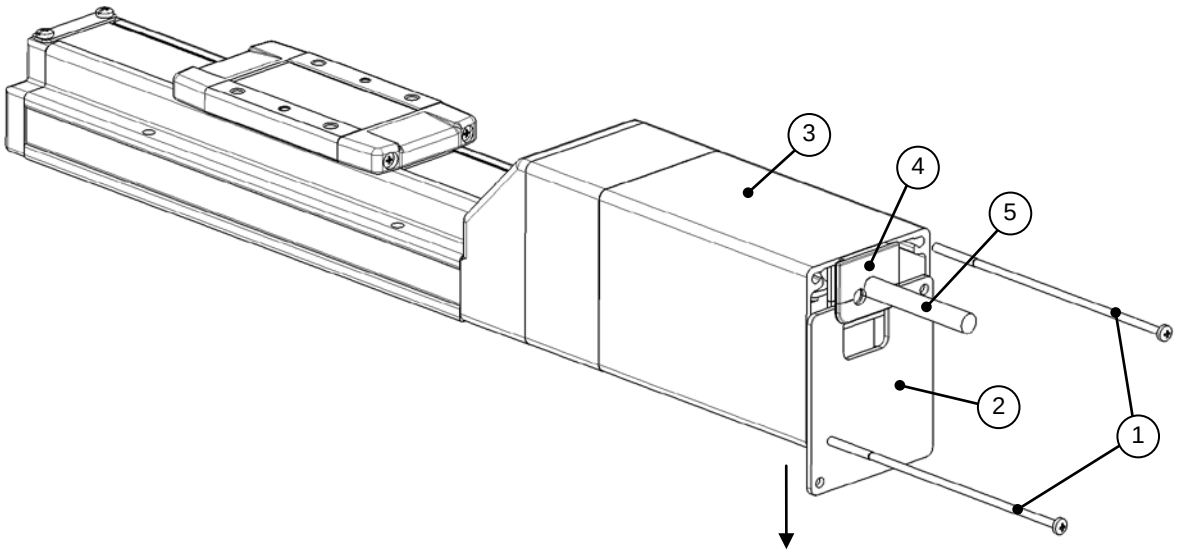


Table.6-2 Motor cover fixing screws

Part to be tightened	Model	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(2) Motor end cover	LEFS∗25(S/T/V)**-∗	(1) Cross recessed round head screw	M3x110	2	0.32
	LEFS∗25(S/T/V) **-∗B		M3x150		
	LEFS∗32(S/T/V) **-∗		M3x115	4	
	LEFS∗32(S/T/V) **-∗B		M3x145		
	LEFS∗40(S/T/V) **-∗		M4x135		0.76
	LEFS∗40(S/T/V) **-∗B		M4x165		

For a replacement of motor cover, order the part referred in the spare parts list in the attachment.

6-2. Remove the motor.

Caution)

When the motor of AC servo type is replaced, Encoder Z-phase detecting position is changed inevitably. (Max. 1 lead)

Adjust the home position shift distance according to the actual machine, in case of using Z-phase for home position rerurn.

If encoder Z-phase detecting position must not be changed, actuator should be repaired in SMC factory.

6-2-1. Inline motor mouning type

LEFS16/25 Step motor (Servo/ 24VDC) and servo motor (24VDC)

Remove the screw (9) and motor assembly(10). Remove the screw(11) and motor(13) from the motor mount(12).

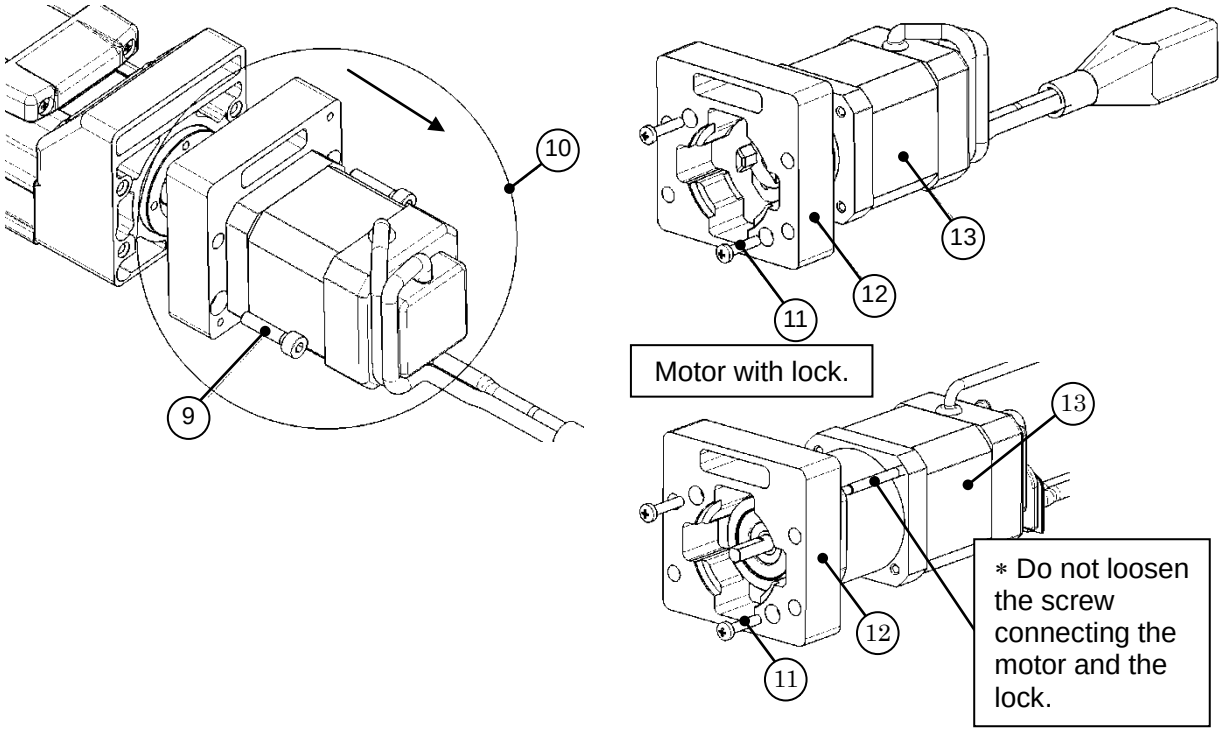


Table.6-3 Motor assembly fixing screws

Part to be tightened	Model	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(13)Motor	LEFS16	(11) Cross recessed round head screw	M2.5x12	2	0.36
	LEFS25		M3x14		0.63
(10) Motor assembly	LEFS16	(9) Hexagon socket head cap screw	M3x20	3	0.63
	LEFS25		M4x25	2	1.5

LEFS32/40 Step motor (Servo /24VDC) and servo motor (24VDC)
LEFS25/32/40 AC servo

Remove the screws (9) and then, remove the motor (13) from the motor mount (12).

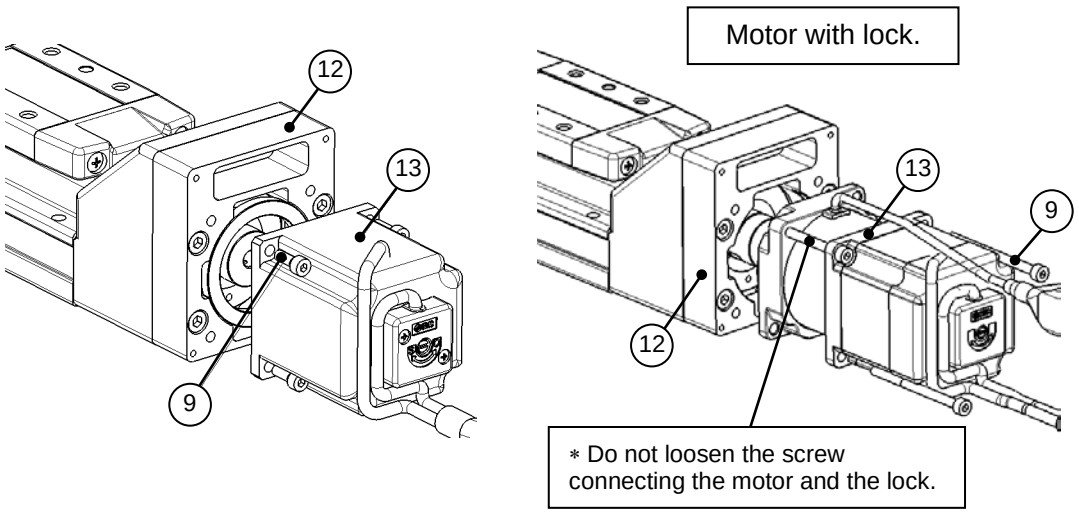


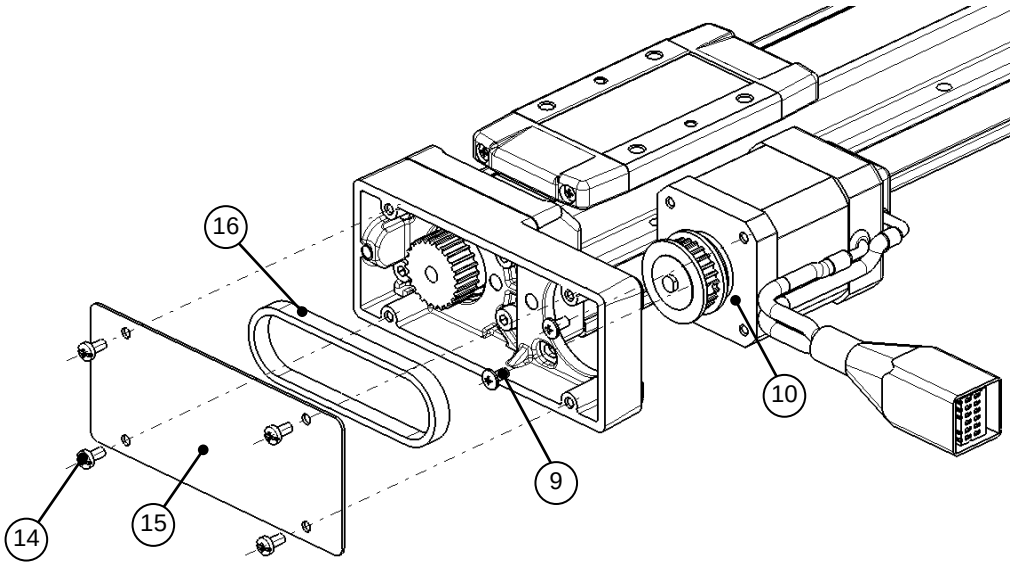
Table.6-4 Motor assembly fixing screws

Part to be tightened	Models	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(13) Motor	LEFS∗32∗∗-∗	(9) Hexagon socket head cap screw	M4x12	2	1.5
	LEFS∗32∗-∗B		M4x55	2	
	LEFS∗40∗-∗		M4x12	2	
	LEFS∗40∗-∗B		M4x55	2	
	LEFS∗25(S/T/V) ∗∗-∗		M4x12	2	
	LEFS∗32(S/T/V) ∗∗-∗		M5x15	2	3.0
	LEFS∗40(S/T/V) ∗∗-∗		M5x15	2	

6-2-2. Parallel motor mounting type

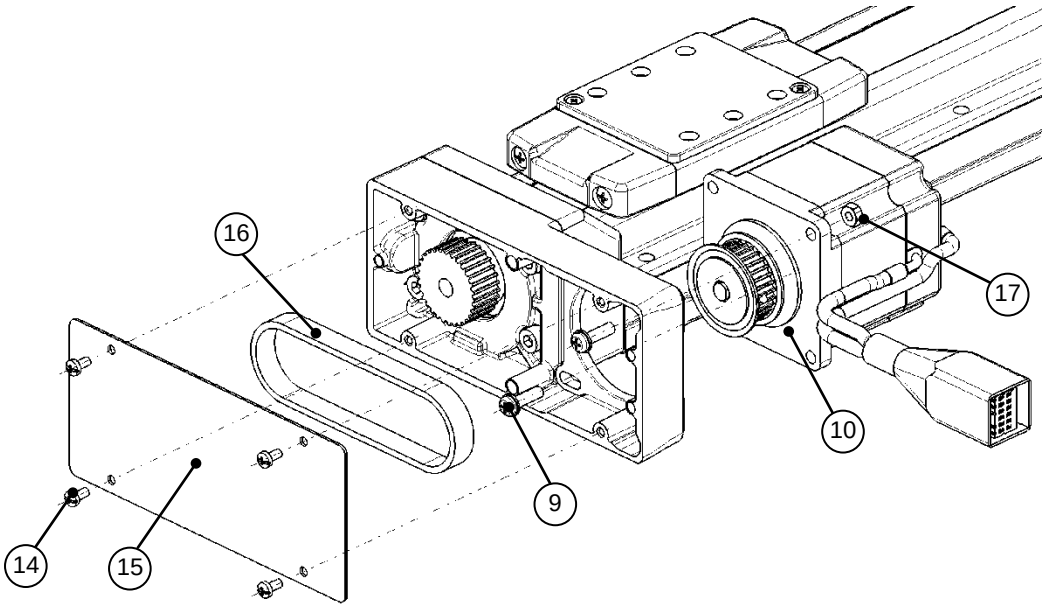
LEFS16/25 Step motor (Servo/ 24VDC) and servo motor (24VDC)

Remove the screw (14). Then, remove the cover plate (15) and loosen the screws to detention the belt (16), and then remove the belt.
Then, remove the screws (9) to remove the motor assembly (10).



LEFS32/40 Step motor (Servo/ 24VDC)

Remove the screws (14). Then, remove the cover plate (15) and loosen the screws to detention the belt (16), and then remove the belt.
Then, remove the screws (9) from the nut (17), and then remove the motor assembly (10).



AC Servo Motor

Remove the screws (14). Then, remove the cover plate (15) and loosen the screws to detention the belt (16), and then remove the belt.
Then, remove the screws (9) to remove the motor assembly (18).
Remove the screws (19) and then, remove the motor (21) from the motor adapter (20).

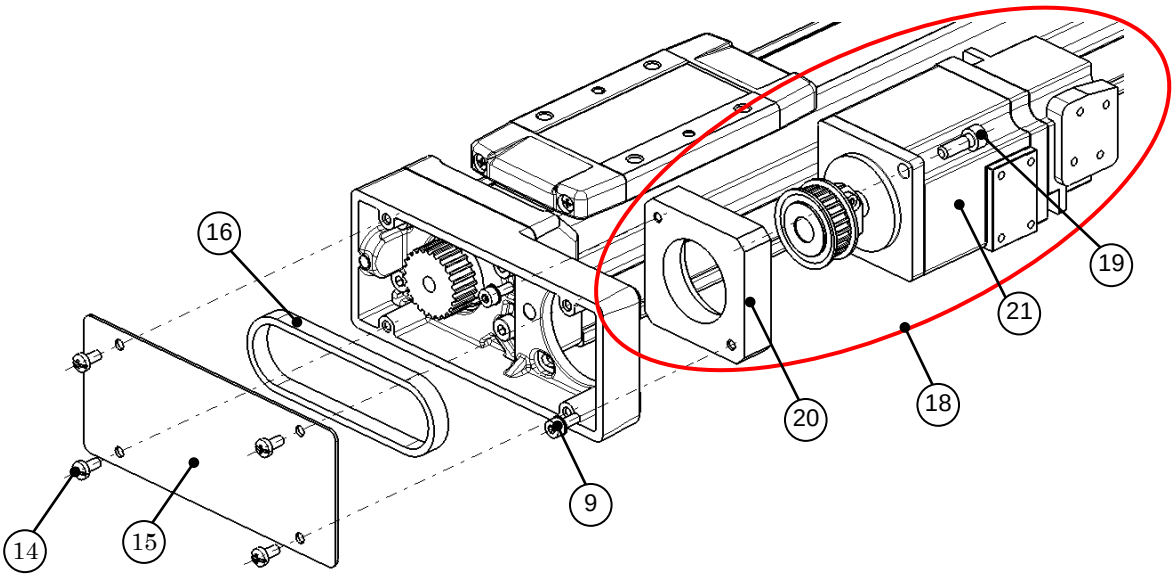


Table.6-5 Fixing screws of motor assembly and cover plate

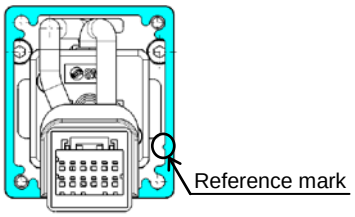
Part to be tightened	Model	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(15)Cover Plate	LEFS*16(L/R)**-**	(14) Round head combination screws	M2.5x5	2	0.36
	LEFS*25(L/R)***-**		M3x6	4	0.63
	LEFS*32(L/R) **-**		M3x6	4	
	LEFS*40(L/R) **-**		M3x6	4	
(18)Motor assembly	LEFS*16(L/R)*-*	(9) Cross recessed round head screw with washer	M2.6x7	2	0.36
	LEFS*16(L/R)A*-*		M2.5x7	2	
	LEFS*16(L/R)*-*B		M2.6x10	2	
	LEFS*25(L/R)*-*	(9) Cross recessed binding head screw	M3x6	2	0.63
	LEFS*25(L/R)**-*B		M3x8	2	
	LEFS*25(L/R)(S/T/V) **-**	(9) Hexagon socket head cap screw with washer	M3x8	2	
	LEFS*32(L/R)*-*	(9) Cross recessed round head screw with washer	M4x14	2	1.5
	LEFS*32(L/R)*-*B		M4x60	2	
	LEFS*32(L/R)(S/T/V) **-**	(9) Hexagon socket head cap screw with washer	M4x12	4	
	LEFS*40(L/R)*-*	(9) Cross recessed round head screw with washer	M4x14	2	
	LEFS*40(L/R)*-*B		M4x60	2	
	LEFS*40(L/R)(S/T/V)**-**	(9) Hexagon socket head cap screw with washer	M4x12	4	
	LEFS*32(L/R)*-**	(17) Nut	M4:type 1	2	-
	LEFS*40(L/R)*-**	(17) Nut	M4:Type 1	2	-
(21)Motor	LEFS*25(L/R)(S/T/V)**-**	(19) Hexagon socket head cap screw 19	M4x12	2	1.5
	LEFS*32(L/R)(S/T/V)**-**		M5x15	4	3
	LEFS*40(L/R)(S/T/V)**-**		M5x15	4	

6-3. To fit the belt back, mount the belt in reversed order of 6-1 to 6-2. Points to be Noted for Assembly

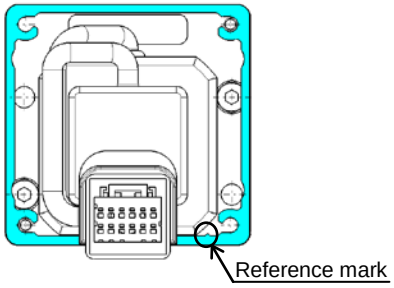
Caution 1): For LEFS inline motor type, before tightening the screw (9), move the table after temporarily tightening the screw (9) and confirm that the motor can rotates smoothly.
If there is a play of the motor assembly, insert the motor assembly correctly to the spider.

Caution 2): For step motor (servo 24VDC) and servo motor (24VDC), please be careful with the wiring of the cable and the mounting direction of the motor cover.

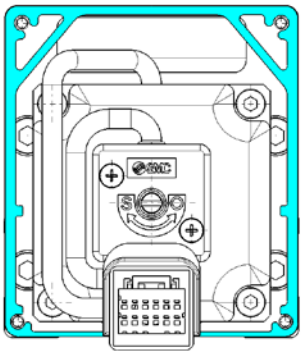
LEFS16



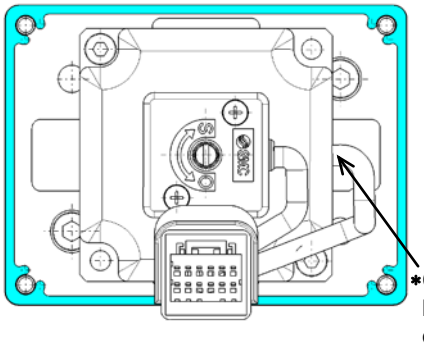
LEFS25



LEFS32



LEFS40



Caution 3): Dispose of the used screws. For new screws without adhesive, apply Loctite 262.

Caution 4): If the motor is parallel mounting type, it is necessary to adjust the belt tension.

<u>Adjustment using belt tension tool</u>

Place the plate (23) onto the return plate (22).

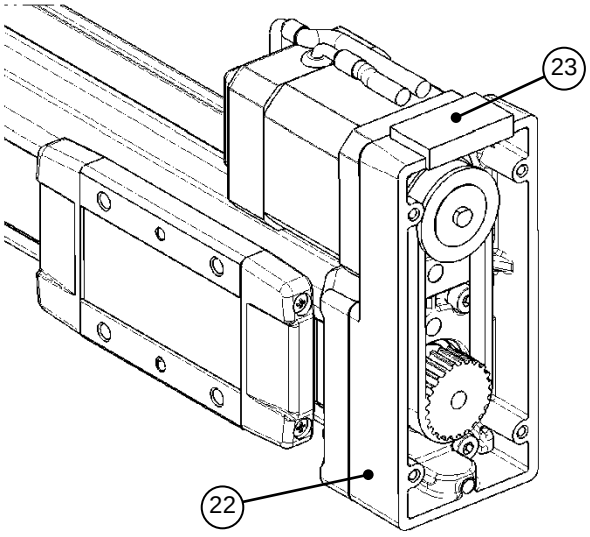
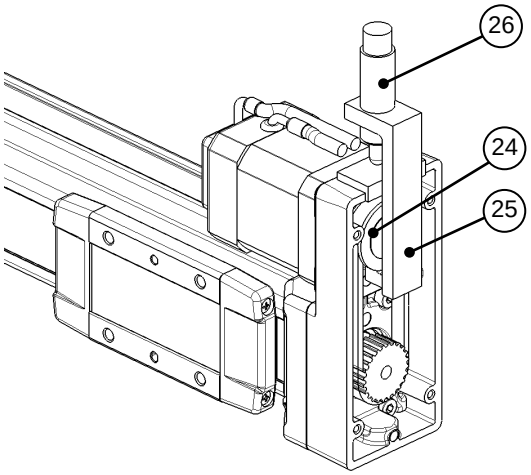


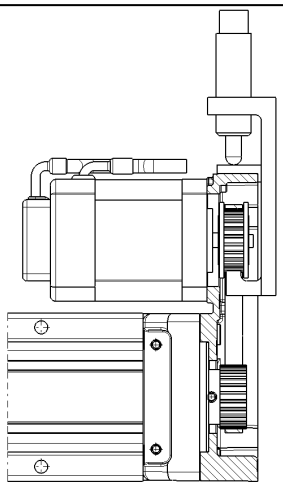
Table.6-6 Tension adjustment jig

model	Part No.
LEFS∗16∗(L/R)	LEF-B016
LEFS∗25∗(L/R)∗	LEF-B025
LEFS∗32(L/R)∗	LEF-B032
LEFS∗40(L/R)∗	LEF-B040

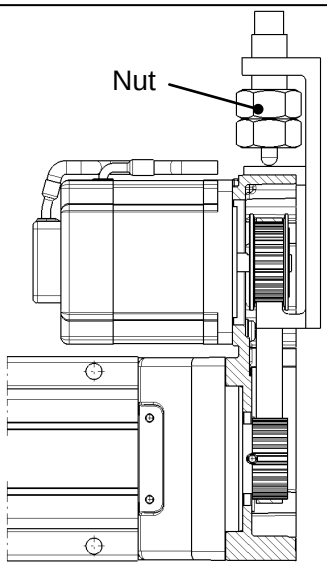
Set the belt tension tool (25) to the pulley (24). Then, place the nozzle at the end of the plunger (26) to the plate.



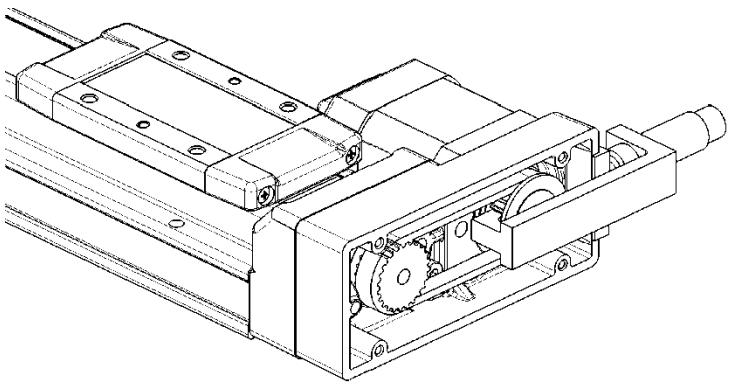
LEFS∗16, 25∗(L/R)



LEFS∗32, 40*(L/R)



Place the motor and the table as the drawing below, and then tighten the plunger until the end of the plunger or the nut contact the plate. Once the plate is contacted, loosen the plunger for 1/6 turn, and then tighten the screw which holds the motor.



Adjustment using tensile force

Pull the base of the motor with a cord or a long cable tie. With tensile force adjusted (Table.6-7), tighten the screws which secure the motor.

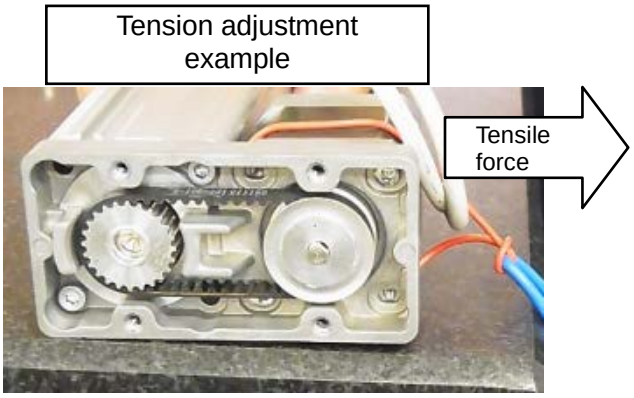


Table.6-7 Replacement Belt part No. and tensile force

Size	Replacement Belt part No.	Tensile force [N]
16	LE-D-6-1	9.8
25	LE-D-6-2	19.6
32	LE-D-6-3	49.0
40	LE-D-6-4	98.1

7. Mounting/ removal of the motor and peripheral equipments (Belt type)

Applicable model: LEFB

7-1. Remove the motor cover.

7-1-1. Step motor (Servo /24VDC) and servo motor (24VDC)

After removing the screws (1) and the end cover (2), remove the cable (4) from the rubber bushing (3), and then remove the motor cover (5).

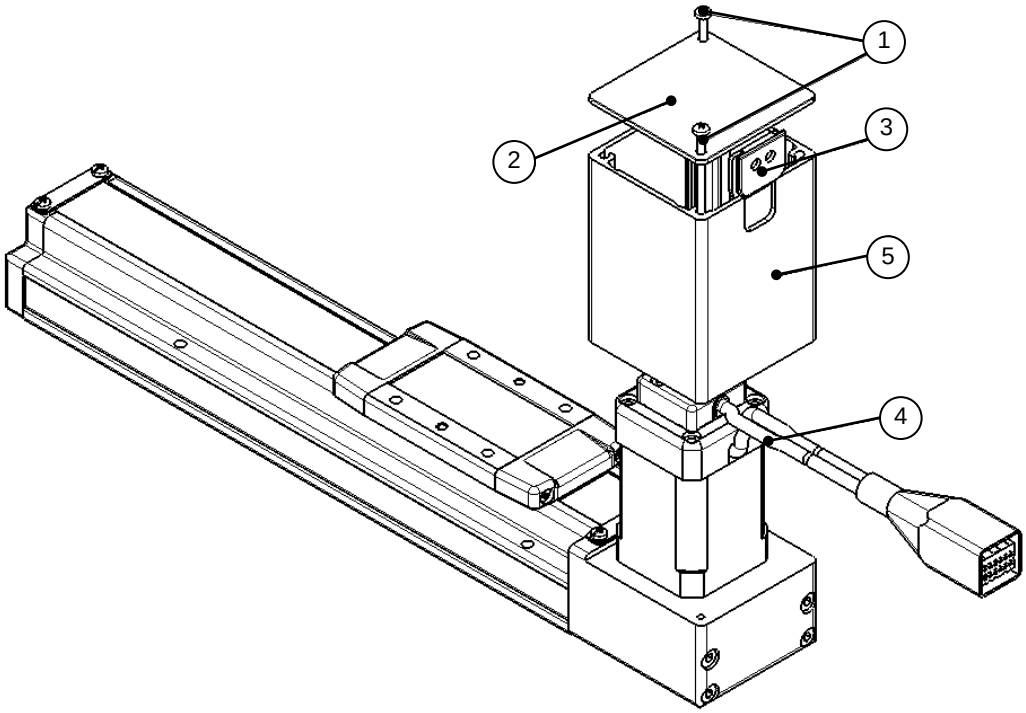


Table.7-1 Motor cover fixing screws

Part to be tightened	Models	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(2) End cover	LEFB16∗T-∗	(1) Cross recessed round head screw	M3x70	2	0.32
	LEFB16∗T-∗B		M3x120	2	
	LEFB25T-∗		M3x85	2	
	LEFB25T-∗B		M3x130	2	
	LEFB25SAT-∗		M3x70	2	
	LEFB25AT-∗B		M3x110	2	
	LEFB32T-∗		M3x100	4	
	LEFB32T-∗B		M3x145	4	

7-1-2. AC Servo Motor

Remove the screw(1). Hold the rubber bushing(3) while removing the end cover (2) and motor cover (5) from the rubber bushing. Then, remove the rubber bushing from the cable (4).

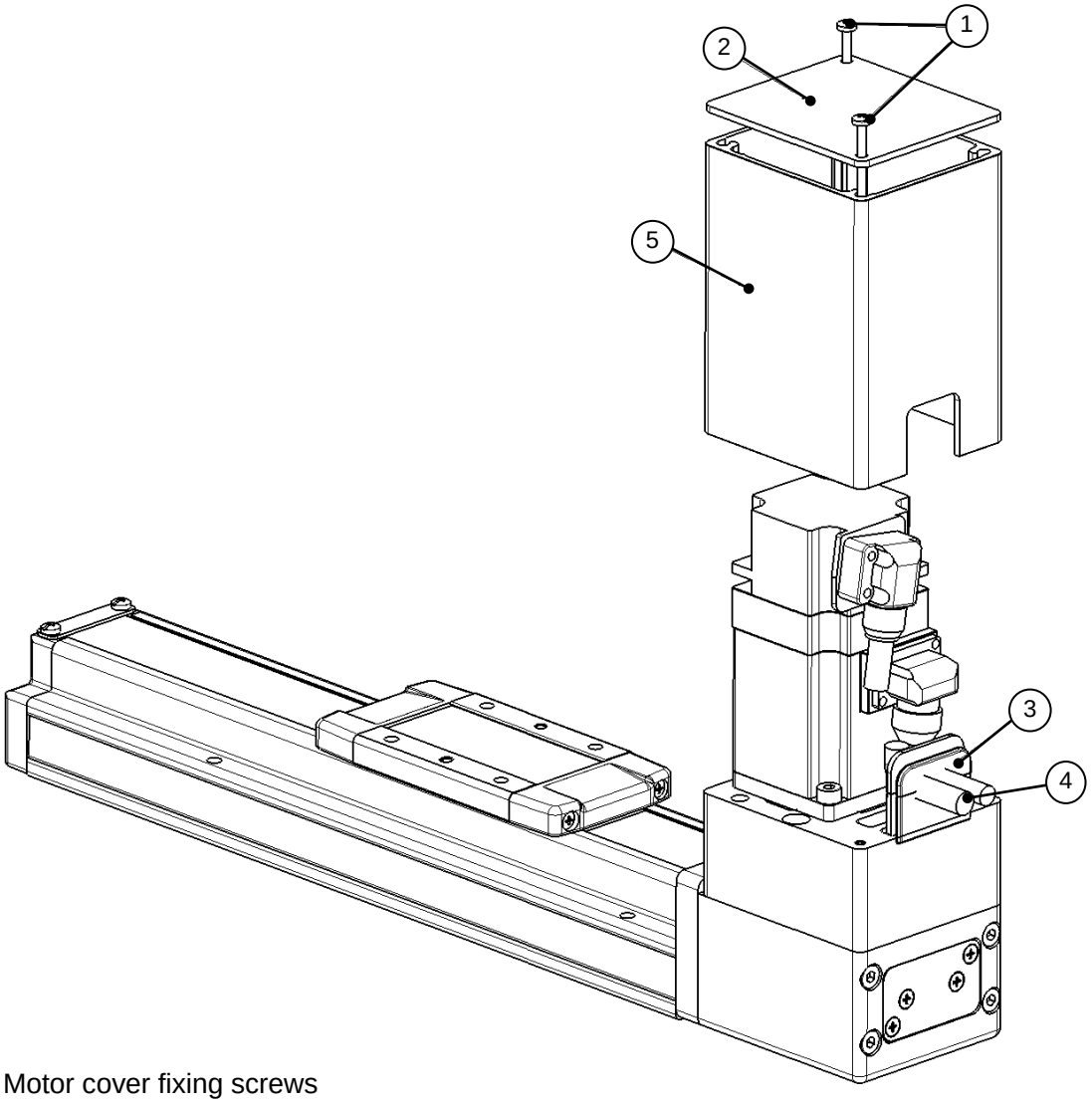


Table.7-2 Motor cover fixing screws

Part to be tightened	Models	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(2) End cover	LEFB25∗(S/T/V)∗S-∗	(1) Cross recessed round head screw	M3x95	2	0.32
	LEFB25 (S/T/V)∗S-∗B		M3x135		
	LEFB32 (S/T/V)∗S-∗		M3x100	4	
	LEFB32∗(S/T/V)∗S-∗B		M3x125		
	LEFB40∗(S/T/V)∗S-∗		M4x120		0.75
	LEFB40∗(S/T/V)∗S-∗B		M4x150		

For a replacement of motor cover, order the part referred in the spare parts list in the attachment.

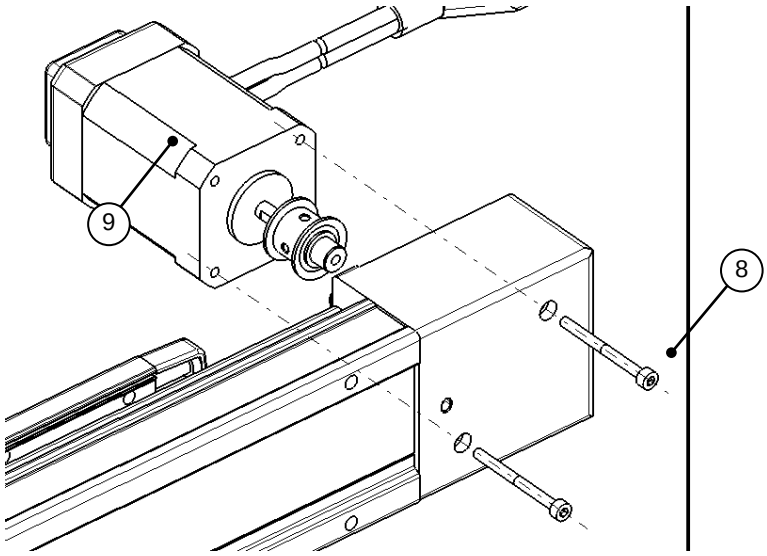
7-2. Remove the motor.

Caution)

When the motor of AC servo type is replaced, Encoder Z-phase detecting position is changed inevitably. (Max. 1 lead)
Adjust the home position shift distance according to the actual machine, in case of using Z-phase for home position rerurn.
If encoder Z-phase detecting position must not be changed, actuator should be repaired in SMC factory.

7-2-1. Step motor (Servo /24VDC) and servo motor (24VDC)

Remove the screws (8) with the belt tension loosened as the Chapter 5 Belt Tension Adjustment, remove the motor assembly (9).



7-2-2. AC Servo Motor

LEFB25∗(S/T/V)∗S

Remove the screws (8) with the belt tension loosened as the Chapter 5 Belt Tension Adjustment, remove the motor assembly (9).

LEFB32,40∗(S/T/V)∗S

Remove the screws (8) and then, remove the motor assembly (9).
*** It is not necessary to loosen the belt tension for LEFB32,40∗(S/T/V)∗S.**

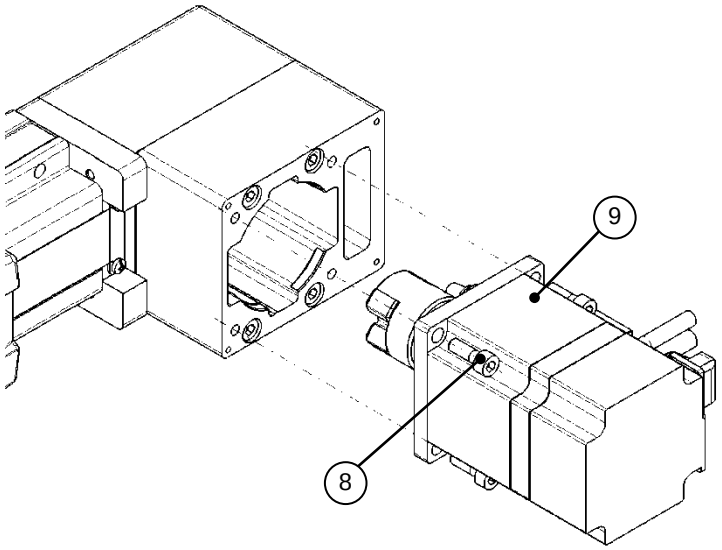


Table.7-3 Motor assembly fixing screws

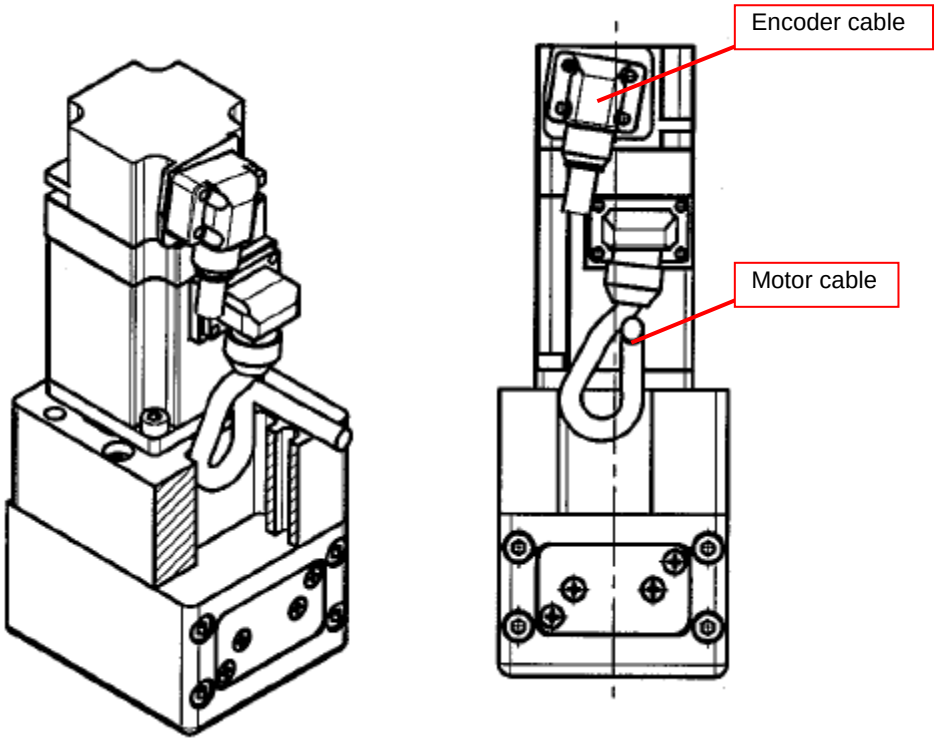
Part to be tightened	Models	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(9) Motor assembly	LEFB16T-∗	(8) Hexagon socket head cap screw	M2.6x20	2	0.36
	LEFB16AT-∗		M2.5x20		
	LEFB25∗T-∗		M3x35		0.63
	LEFB32T-∗		M4x12	4	1.5
	LEFB32T-∗B		M4x55	2	
	LEFB25∗(S/T/V)∗S-∗∗		M4x12		
	LEFB32∗(S/T/V)∗S-∗∗		M5x15	4	3
	LEFB40∗(S/T/V)∗S-∗∗		M5x15		

7-3. To refit the dust seal band, mount the belt in reversed order of 7-1 to 7-2. Points to be Noted for Assembly

Caution 1): Before tightening the screw (8), move the table after temporarily tightening the screw (8) and confirm that the motor can rotates smoothly. If there is a play of the motor assembly, insert the motor assembly correctly to the spider.

Caution 2): Adjust the belt tension to the recommended value of SMC (Refer to the Chapter 5 LEFB Belt Tension Adjustment)

Caution 3): For AC servo motor, refer to the drawing below for the wiring of the cable during mounting the motor cover.



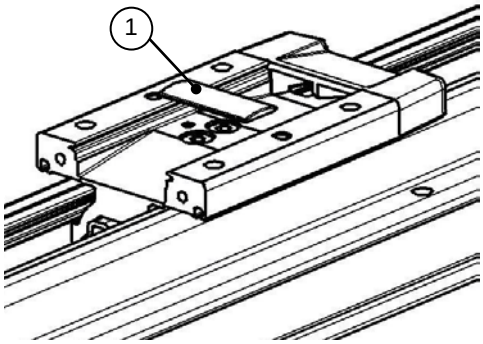
Caution 4): Dispose of the used screws. For new screws without adhesive, apply Loctite 262.

For the replacement of the motor assembly, order the parts referring to the spare parts list in the attachment.

8. Mounting/ removal of the Belt (Belt type)

Applicable model: LEFB

8-1. With the dust seal band and motor are removed, remove the table cap (1) on the table. Then, remove the retaining screws of the belt holder assembly (2). (Refer to the Chapter 7 for the removal of the dust seal band and motor)



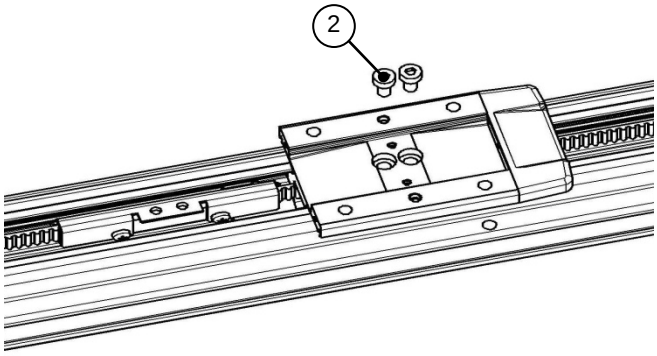


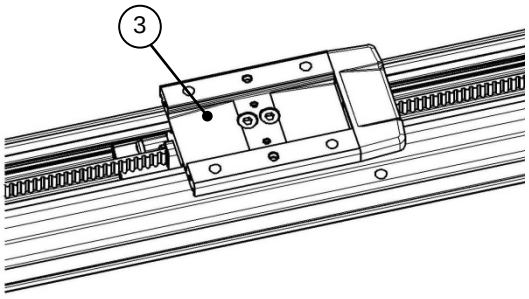
Table.8-1 Belt holder assembly fixing screws

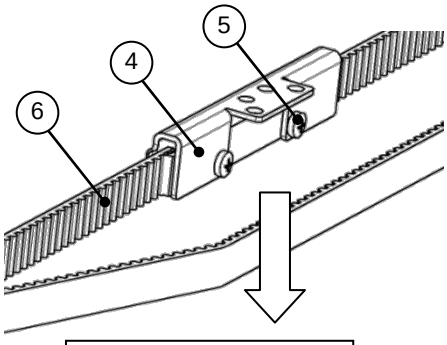
Part to be tightened	Model	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
Belt holder assembly	LEFB16	(2) Hexagon socket head cap screw	M3x8	2	0.63
	LEFB25		M4x10		1.5
	LEFB32		M5x10		3
	LEFB40		M5x15		3

8-2. Remove the belt from the belt holder assembly.

LEFB16, 25, 32∗T, LEFB25∗ (S/T/V) ∗S

Remove the belt holder assembly (4) from the table (3), and remove the screws (5) to pull out the belt (6) downward.





Pull the belt in this direction.

LEFB32, 40∗(S/T/V)∗S

Pull out the belt holder assembly (4) from the table (3). After loosening the hexagon socket head cap screw (7), remove the end block assembly (8) from the body in the direction of the arrow. Remove 2 cross recessed round head screws (5) to pull out the belt (6) downward.

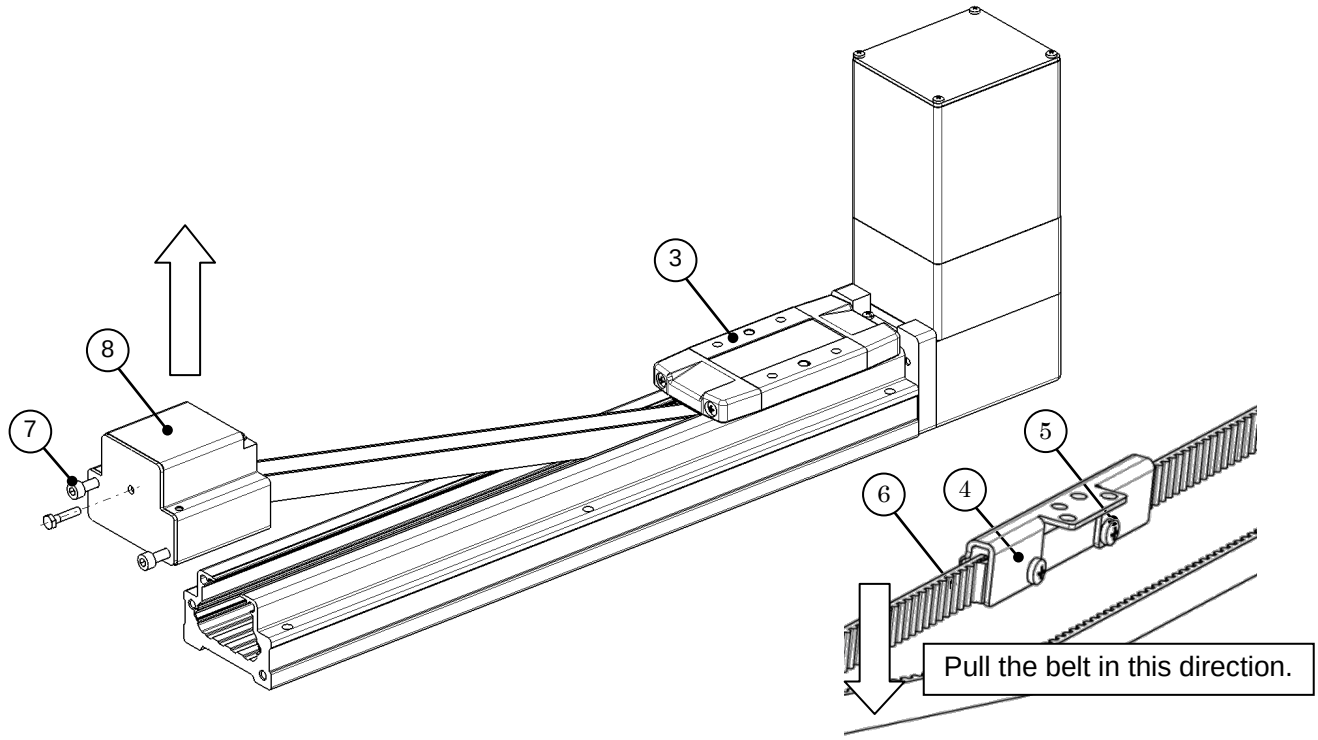


Table.8-2 Fixing screws of the belt and end block

Part to be tightened	Models	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(6) Belt	LEFB16	(5) Cross recessed round head screw	M3x7	2	0.63
	LEFB25		M3x8		0.63
	LEFB32		M4x8		1.5
	LEFB40		M4x8		1.5
(8) End block assembly	LEFB32∗(S/T/V)	(7) Hexagon socket head cap screw	M5x70		3
	LEFB40∗(S/T/V)		M6x75		5.2

8-3. Pull the belt and remove it from the actuator.

8-4. To refit, mount the belt in reversed order of 8-1 to 8-3. Points to be Noted for Assembly.

Cautions 1):

LEFB16, 25, 32∗T, LEFB25∗(S/T/V)∗S

Pass the belt to be replaced through the pulley holder assembly (9) in the reverse order to the removal procedure (Fig.8-1) and securely install the belt into the table. Then bring the end of the belt to the other end of the table. Confirm that the bearing (10) is inserted into the housing on the motor side.

*** To change the stopper position, mark the position before the change.**

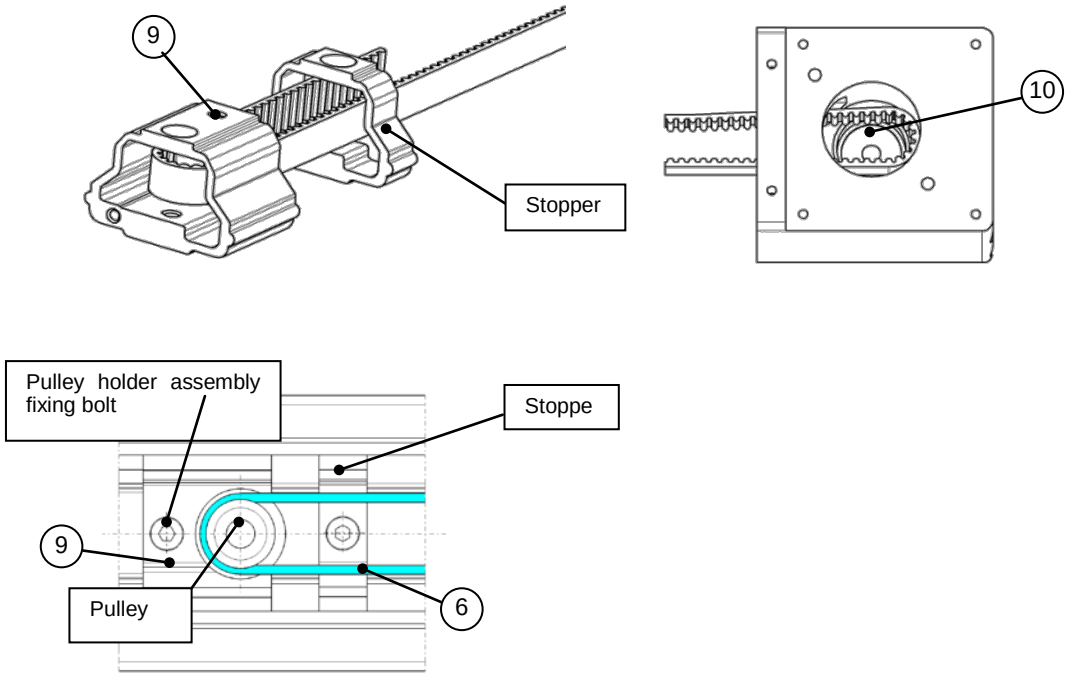
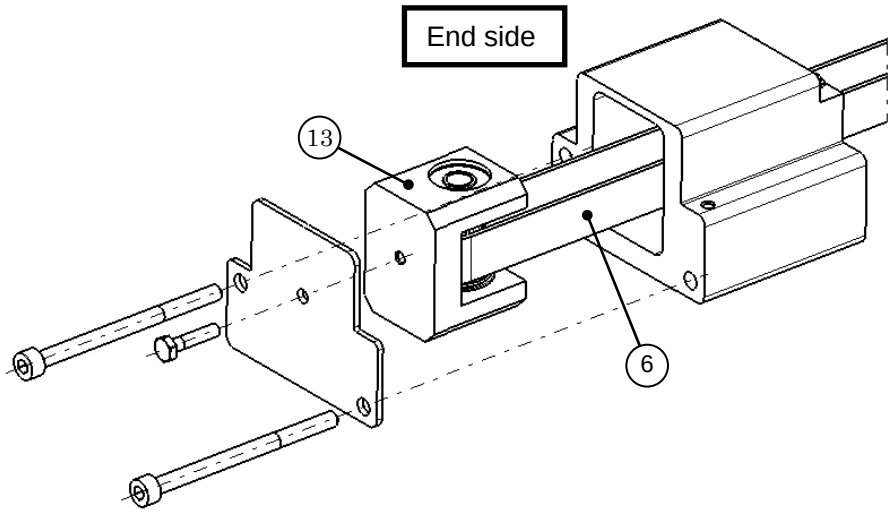


Fig.8-1 Sectional view of the pulley holder

LEFB32, 40∗(S/T/V)∗S

Remove cross recessed countersunk head screws (11) holding the belt stopper assembly diagonally to remove the belt stopper assembly (12). Loop the belt around the end side pulley (13), then the motor side pulley (14) to hold the belt to the belt holder.



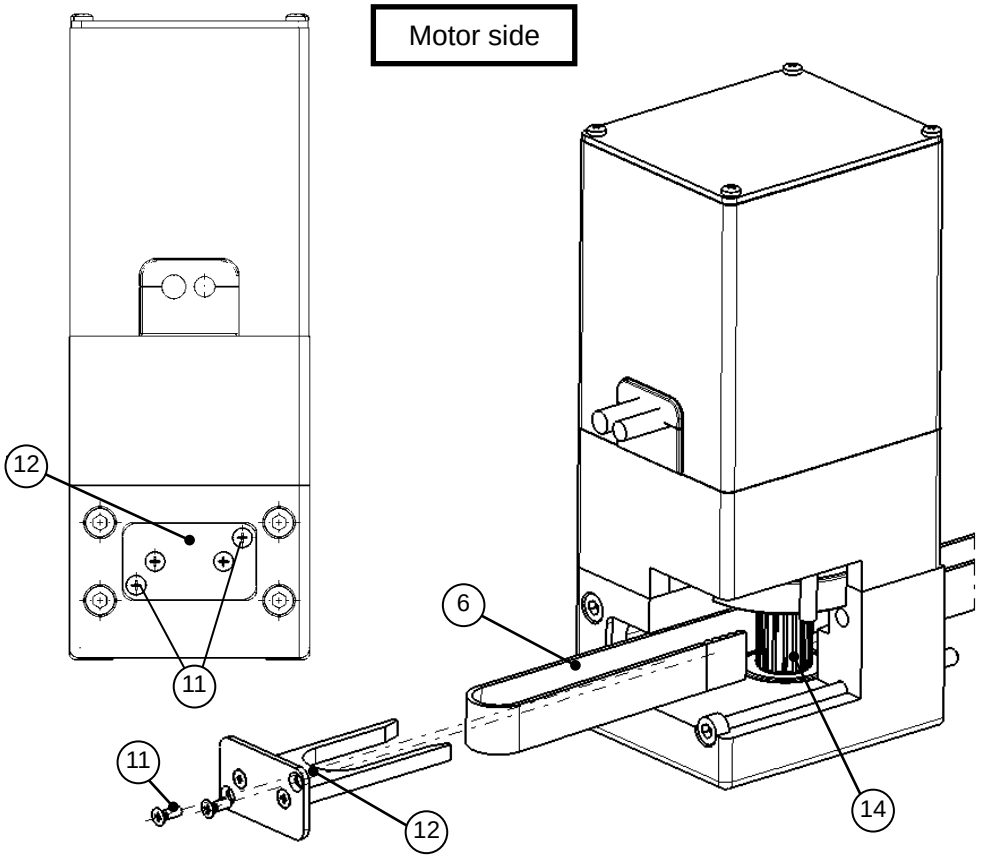
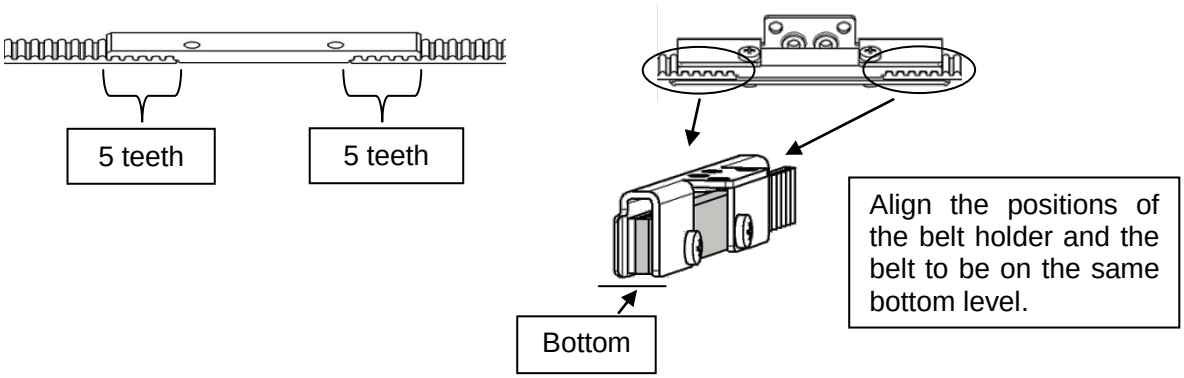


Table.8-3 Belt stopper assembly fixing screws

Part to be tightened	Model	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(12) Belt stopper assembly	LEFB25∗(S/T/V)∗S	(11) Cross recessed countersunk head screw	M3x8	2	0.32
	LEFB32∗(S/T/V)∗S				
	LEFB40∗(S/T/V)∗S				

Note 2) Mount both ends of the belt in the loop shape to the belt holder. Engage five belt teeth each at both ends of the belt holder. Align the positions of the belt and the belt holder to be on the same bottom level, and tighten the screws using the specified tightening torque.



*** It is strongly recommended to use new screws, but if the screws are re-used, a locking agent must be used to prevent the screws becoming loose. Locking agent, however, may have no effect. Use new screws as much as possible.**

For the replacement of the pulley holder assembly, stopper, order the parts referring to the spare parts list in the attachment.

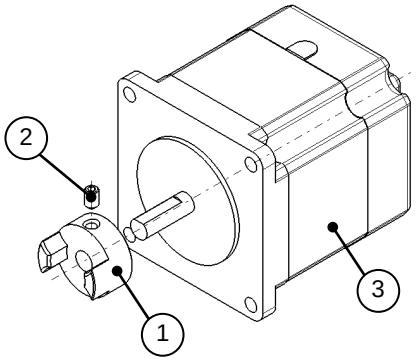
9. Mounting/ removal of the hub (pulley) at the motor side

Applicable model: LEFS/LEFB

9-1. Remove the motor side hub (pulley) from the motor.

Step motor (Servo/ 24VDC) and servo motor (24VDC)

(1) Loosen the retaining screw (2) of the hub (pulley) (1), then remove the hub (pulley) from the motor (3).



AC Servo Motor

(1) Loosen the retaining screw (2) of the hub (pulley) (1), then remove the hub (pulley) from the motor (3).

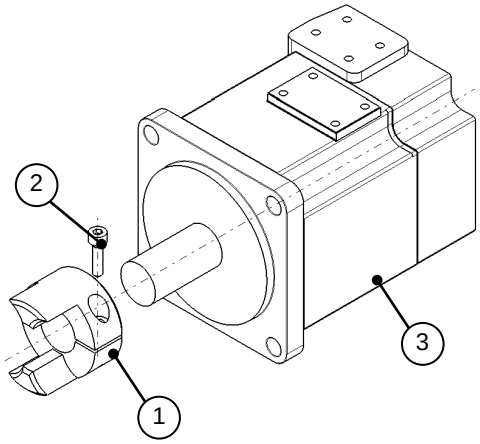


Table.9-1 Hub (Pulley) fixing screws

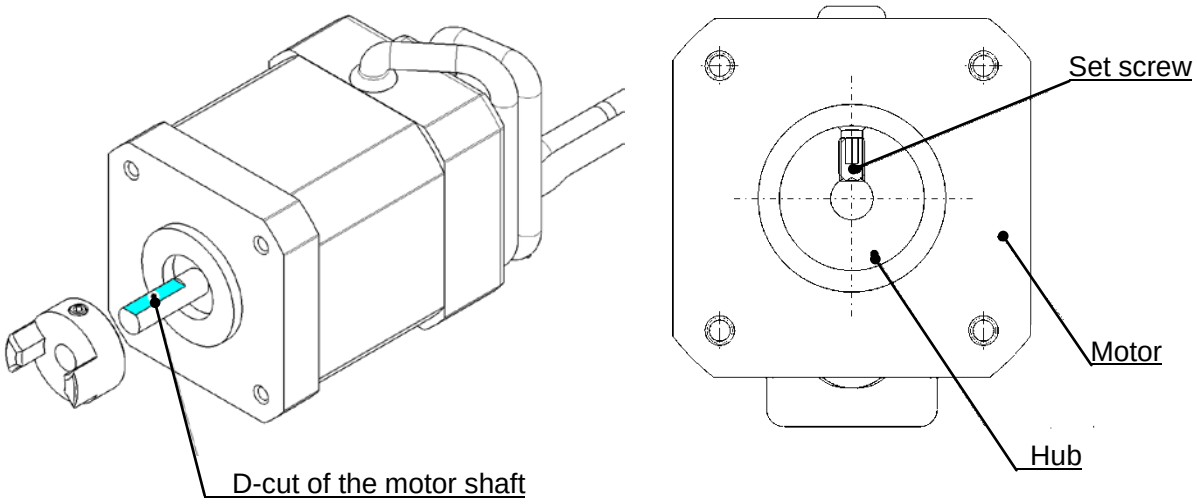
Part to be tightened	Models	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(1) Hub	LEFS∗16∗∗	(2) Hexagon socket head set screw	M3x4	1	0.63
	LEFS∗25∗∗		M3x4		0.63
	LEFS∗32∗		M4x5		1.5
	LEFS∗40∗		M4x5		1.5
	LEFS∗25(S/T/V)∗∗	(2) Hexagon socket head cap screw	M2.5x10		1
	LEFS∗32(S/T/V)∗∗		M3x12		1.5
	LEFS∗40(S/T/V)∗∗		M3x12		1.5
	LEFB25∗(S/T/V)∗S		M2.5x10		1
	LEFB32∗(S/T/V)∗S		M3x12		1.5
	LEFB40∗(S/T/V)∗S		M3x12		1.5
(1) Pulley	LEFS∗16(L/R)∗∗	(2) Hexagon socket head set screw	M2.5x4		0.36
	LEFS∗25(L/R)∗∗		M3x4		0.63
	LEFS∗32(L/R)∗		M3x4		0.63
	LEFS∗40(L/R)∗		M4x5		1.5
	LEFS∗25(L/R)(S/T/V)∗∗	(2) Hexagon socket head cap screw	M2.5x10		1
	LEFS∗32(L/R)(S/T/V)∗∗		M3x12		1.5
	LEFS∗40(L/R)(S/T/V)∗∗		M4x12		2.5
	LEFB16∗T	(2) Hexagon socket head set screw	M3x3	2	0.63
	LEFB25∗T		M3x3		0.63
	LEFB32∗T		M3x3		0.63

9-2. To reassemble, mount the hub in reversed order of removing. Points to be Noted for Assembly.

Cautions 1):

Step motor (Servo /24VDC) and servo motor (24VDC)

When mounting the hub to the motor, make sure that the retaining screw of the hub becomes the right angle for the D-cut of the motor shaft.



Cautions 2):

Make adjustment checking the mounting dimension L.

Apply adhesive to the retaining screw of the hub.

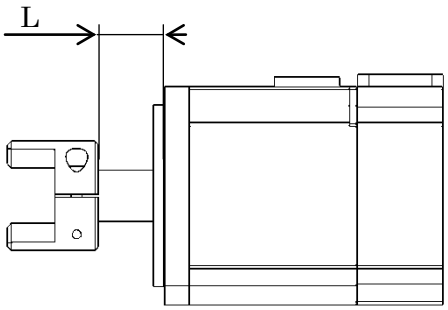


Table 19. Hub (Pulley) fixing screws

Model	L [mm]
LEFS∗16∗∗	2.6
LEFS∗25∗∗	4.3
LEFS∗32∗	5.4
LEFS∗40∗	5.1
LEFS∗25(S/T/V)∗∗	12.4
LEFS∗32(S/T/V)∗∗	17.5
LEFS∗40(S/T/V)∗∗	17.5
LEFB25∗ (S/T/V)∗S	11
LEFB32∗ (S/T/V)∗S	17.5
LEFB40∗ (S/T/V)∗S	17.5

Model	L [mm]
LEFS∗16(L/R)∗∗	3
LEFS∗25(L/R)∗∗	4
LEFS∗32(L/R)∗	5.6
LEFS∗40(L/R)∗	5.5
LEFS∗25(L/R)(S/T/V)∗∗	8
LEFS∗32(L/R)(S/T/V)∗∗	4.5
LEFS∗40(L/R)(S/T/V)∗∗	4.5
LEFB16∗T	2.5
LEFB25∗T	5.3
LEFB32∗T	3.3

For the replacement of the motor and hub (pulley), order the parts referring to the spare parts list in the attachment.

10.Mounting/ removal of the Housing

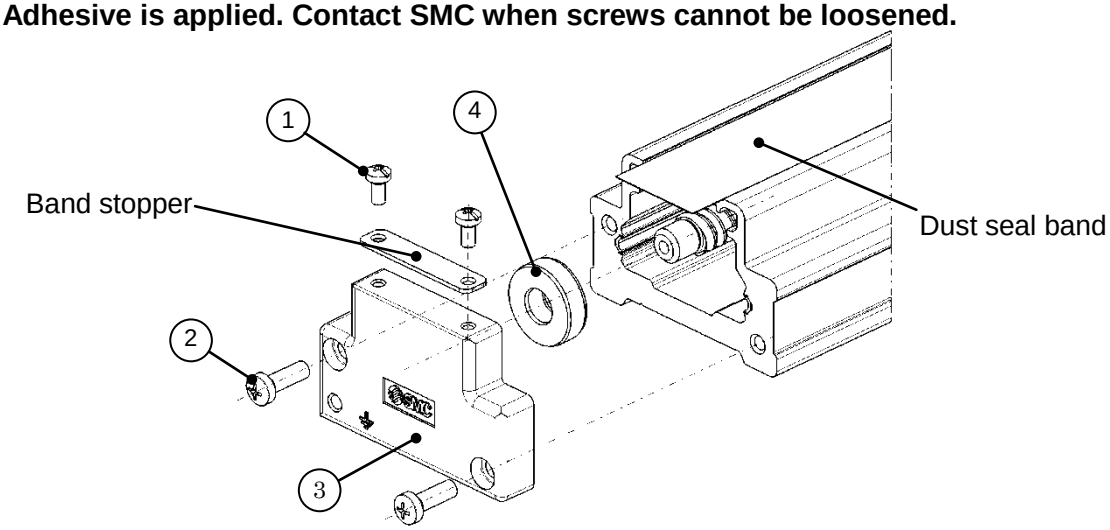
Applicable model: LEFS/LEFB

10-1. Remove the housing.

LEFS

Loosen the round head combination screw (1), and then remove the screws (2), and the housing (3) and sliding bearing (4).

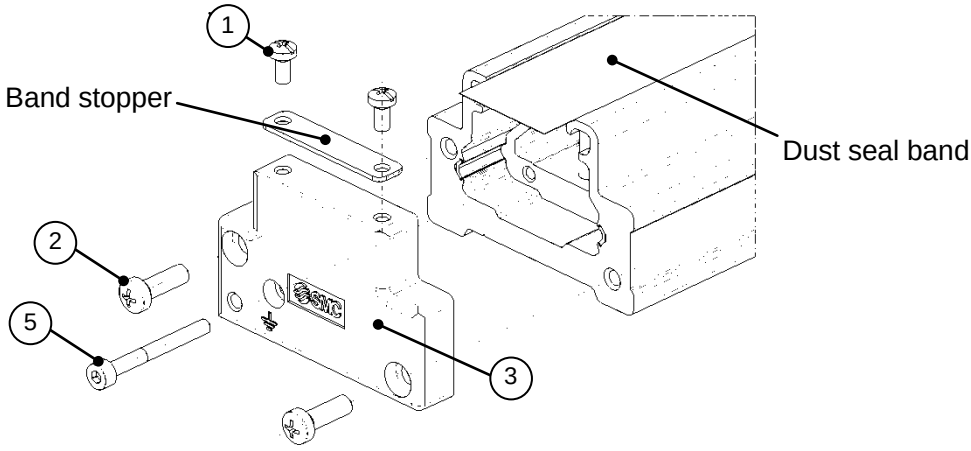
∗ Adhesive is applied. Contact SMC when screws cannot be loosened.



LEFB16, 25, 32∗T, LEFB25∗(S/T/V)∗S

Loosen the round head combination screw (1), and then remove the screw (2), (5) and housing (3).

∗ Adhesive is applied. Contact SMC when screws cannot be loosened.



LEFB32, 40∗(S/T/V)∗S

Loosen the screws (2) and (5), and then remove the end cover (housing).

∗ Adhesive is applied. Contact SMC when screws cannot be loosened.

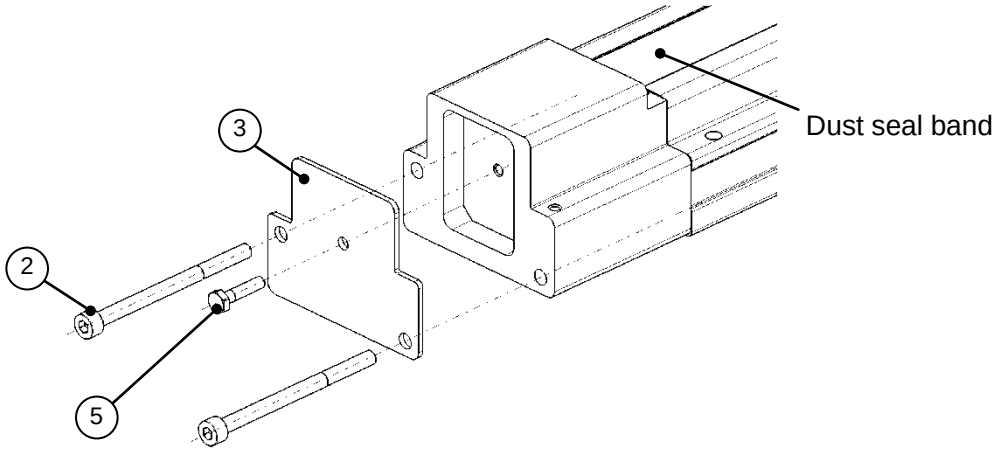


Table.10-1 Fixing screws of the housing (end cover) and band stopper

Part to be tightened	Model	Screw			Tightening torque +/- 10% [Nm]
		Type	Size	Qty.	
(3) Housing	LEFS∗16	(2) Cross recessed round head screw	M3x10	2	0.63
	LEFS∗25		M4x12		1.5
	LEFS∗32		M5x14		3
	LEFS∗40		M6x16		5.2
	LEFB16		M3x10		0.63
	LEFB25		M4x12		1.5
	LEFB32T		M5x14		5.2
(3) End cover	LEFB32∗ (S/T/V)∗S	(2) Hexagon socket head cap screw	M5x70		3
	LEFB40∗ (S/T/V)∗S		M6x75		5.2
Band stopper	LEF∗16	(1) Round head combination screws	M2.5x5		0.36
	LEF∗25		M3x6		0.63
	LEF∗32				0.63
	LEF∗40				0.63

10-2. To reassemble, mount the parts in reversed order of removing. Points to be Noted for Assembly.

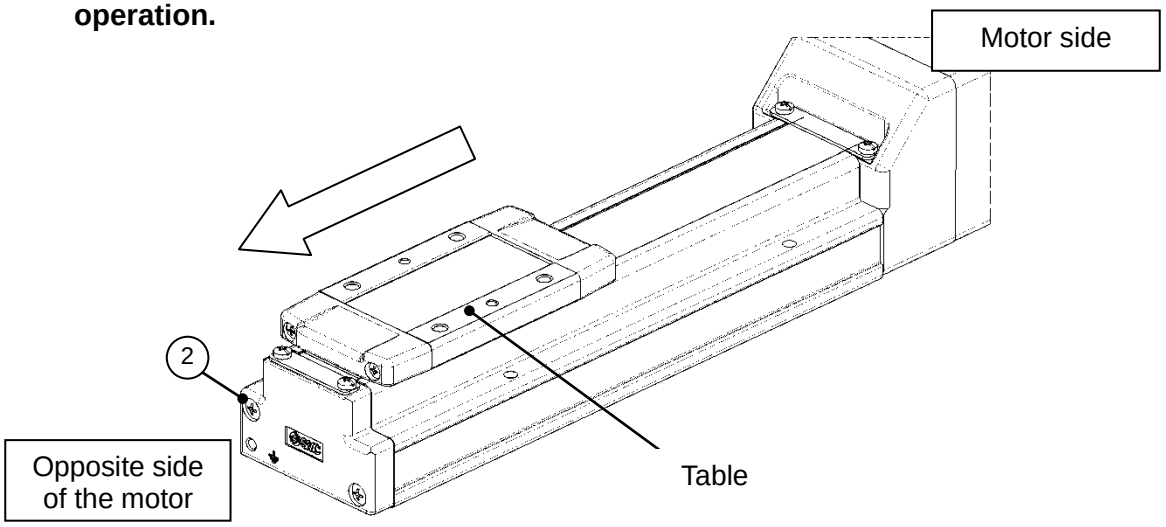
Cautions 1):

Ball screw type

Before fixing the housing, it is necessary to align the slide bearing and the ball screw axis.

Move the table to the opposite side of the motor as much as possible. And then, tighten the screw (2).

∗ When they are misaligned, there will be vibration and noise while the actuator is in operation.



Cautions 2):

Belt type

It is necessary to adjust the belt tension.

Refer to the Chapter 5 LEFB Belt Tension Adjustment.

Cautions 3):

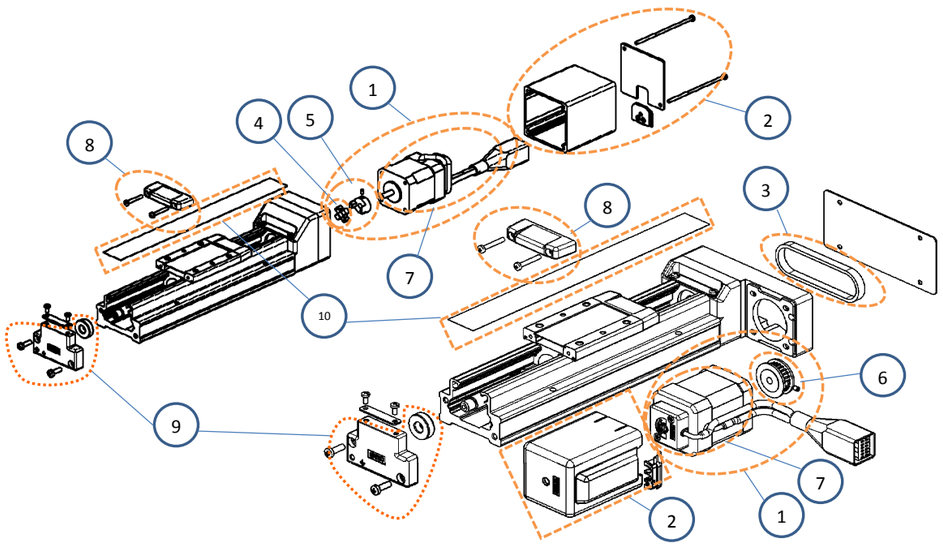
Pull the dust seal band smoothing out the band with a finger from the motor side so that there will be no deflection in the band, and then hold the band with a band stopper.

For the replacement of the housing, order the part referring to the spare parts list in the attachment.

SMC Corporation
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021 JAPAN
Tel: + 81 3 5207 8249 Fax: +81 3 5298 5362
URL http://www.smcworld.com

LEFS Spare parts list

No. LEF-MM01301



Guarantee expires after parts replacement by customer or SMC subsidiary.

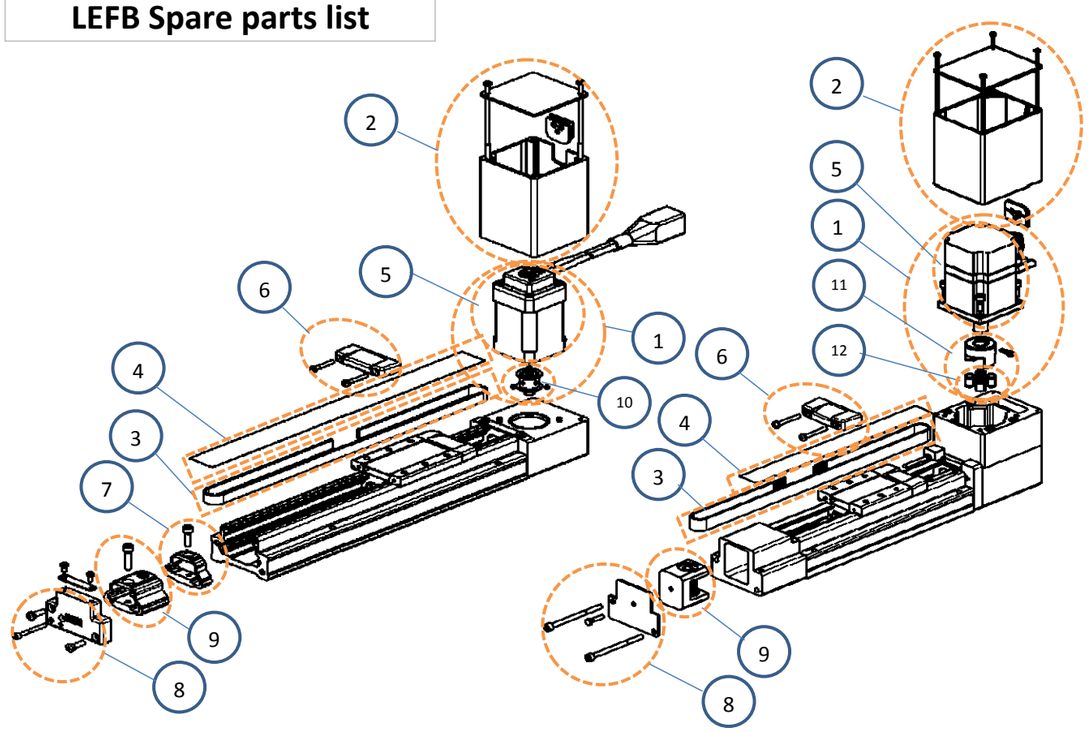
No.	Name	Order number	Applicable actuator model	Contents	Remarks
1	Motor Ass'y	**LEFS-MP16-D**	LEFS16*-*	Motor, Motor mounting bolts, Hub, Hub mounting bolts, Spider (Check that the spider color is black.)	[Tightening torque] 0.36N・m
		LEFS-MP16-DB	LEFS16*-*B		[Tightening torque] 0.63N・m
		LEFS-MP25-D	LEFS25*-*		[Tightening torque] 1.5N・m
		LEFS-MP25-DB	LEFS25*-*B		[Tightening torque] 1.5N・m
		LEFS-MP32-D	LEFS32*-*		[Tightening torque] 0.36N・m
		LEFS-MP32-DB	LEFS32*-*B		[Tightening torque] 0.63N・m
		LEFS-MP40-D	LEFS40*-*		[Tightening torque] 1.5N・m
		LEFS-MP40-DB	LEFS40*-*B		[Tightening torque] 1.5N・m
		LEFS-MA16-D	LEFS16A*-*		[Tightening torque] 0.36N・m
		LEFS-MA16-DB	LEFS16A*-*B		[Tightening torque] 0.63N・m
		LEFS-MA25-D	LEFS25A*-*		[Tightening torque] 1.5N・m
		LEFS-MA25-DB	LEFS25A*-*B		[Tightening torque] 3N・m
		LEFS-MS25A-D	LEFS25S2*-*		[Tightening torque] 3N・m
		LEFS-MS25B-D	LEFS25S6*-*		
		LEFS-MS25A-DB	LEFS25S2*-*B		
		LEFS-MS25B-DB	LEFS25S6*-*B		
		LEFS-MS32A-D	LEFS32S3*-*		
		LEFS-MS32B-D	LEFS32S7*-*		
		LEFS-MS32A-DB	LEFS32S3*-*B		
		LEFS-MS32B-DB	LEFS32S7*-*B		
		LEFS-MS40A-D	LEFS40S4*-*		
		LEFS-MS40B-D	LEFS40S8*-*		
		LEFS-MS40A-DB	LEFS40S4*-*B		
		LEFS-MS40B-DB	LEFS40S8*-*B		
		LEFS-MP16-R	LEFS16(L/R)*-*	Motor, Motor mounting bolts, Pulley, Pulley mounting bolts,	[Tightening torque] 0.36N・m
		LEFS-MP16-RB	LEFS16(L/R)*-*B		[Tightening torque] 0.63N・m
		LEFS-MP25-R	LEFS25(L/R)*-*		[Tightening torque] 1.5N・m
		LEFS-MP25-RB	LEFS25(L/R)*-*B		[Tightening torque] 1.5N・m
		LEFS-MP32-R	LEFS32(L/R)*-*		[Tightening torque] 0.36N・m
		LEFS-MP32-RB	LEFS32(L/R)*-*B		[Tightening torque] 0.63N・m
		LEFS-MP40-R	LEFS40(L/R)*-*		[Tightening torque] 1.5N・m
		LEFS-MP40-RB	LEFS40(L/R)*-*B		[Tightening torque] 1.5N・m
		LEFS-MA16-R	LEFS16(L/R)A*-*		[Tightening torque] 3N・m
		LEFS-MA16-RB	LEFS16(L/R)A*-*B		[Tightening torque] 3N・m
		LEFS-MA25-R	LEFS25(L/R)A*-*		
		LEFS-MA25-RB	LEFS25(L/R)A*-*B		
		LEFS-MS25A-R	LEFS25(L/R)S2*-*		
		LEFS-MS25B-R	LEFS25(L/R)S6*-*		
		LEFS-MS25A-RB	LEFS25(L/R)S2*-*B		
		LEFS-MS25B-RB	LEFS25(L/R)S6*-*B		
		LEFS-MS32A-R	LEFS32(L/R)S3*-*		
		LEFS-MS32B-R	LEFS32(L/R)S7*-*		
		LEFS-MS32A-RB	LEFS32(L/R)S3*-*B		
		LEFS-MS32B-RB	LEFS32(L/R)S7*-*B		
		LEFS-MS40A-R	LEFS40(L/R)S4*-*		
		LEFS-MS40B-R	LEFS40(L/R)S8*-*		
		LEFS-MS40A-RB	LEFS40(L/R)S4*-*B		
		LEFS-MS40B-RB	LEFS40(L/R)S8*-*B		

No.	Name	Order number	Applicable actuator model	Contents	Remarks
2	Motor cover Ass'y	**LEFS-MC16**	LEFS16**-*	Motor cover, Grommet, End cover、Mounting bolts	[Tightening torque] 0.32N・m
		LEFS-MC16-B	LEFS16**-*B		
		LEFS-MC25	LEFS25**-*		
		LEFS-MC25-B	LEFS25**-*B		
		LEFS-MC32	LEFS32*-*		
		LEFS-MC32-B	LEFS32*-*B		
		LEFS-MC40	LEFS40*-*		
		LEFS-MC40-B	LEFS40*-*B		
		LEFS-MC25S	LEFS25S*S-*		
		LEFS-MC25S-B	LEFS25S*S-*B		
		LEFS-MC32S	LEFS32S*S-*		
		LEFS-MC32S-B	LEFS32S*S-*B		
		LEFS-MC40S	LEFS40S*S-*		
		LEFS-MC40S-B	LEFS40S*S-*B		
		LE-D-4-1	LEFS16(R/L)*-*	Motor cover, Grommet	–
		LE-D-4-2	LEFS25(R/L)*-*		
		LE-D-4-3	LEFS32(R/L)*-*		
		LE-D-4-3L	LEFS40(R/L)*-*		
		LE-D-8-1	LEFS16(R/L)*-*B	Motor cover, Grommet, Cover of motor with lock	–
		LE-D-8-2	LEFS25(R/L)*-*B		
		LE-D-8-3	LEFS32(R/L)*-*B		
		LE-D-8-3L	LEFS40(R/L)*-*B		
3	Belt	**LE-D-6-1**	LEFS16(R/L)*-**	Belt	[Pulling force] 10N
		LE-D-6-2	LEFS25(R/L)*-**		[Pulling force] 19N
		LE-D-6-3	LEFS32(R/L)*-**		[Pulling force] 49N
		LE-D-6-4	LEFS40(R/L)*-**		[Pulling force] 98N
4	Spider	**LE-D-10-2**	LEFS16*	Spider (Check that the spider color is black.)	–
		LE-D-10-3	LEFS25*/LEFS25NM1*		
		LE-D-10-4	LEFS32*/LEFS32NM1*/LEFS40*/LEFS40NM1*		
		LE-D-10-5	LEFS25S*/LEFS25NY*/LEFS25NZ*		
		LE-D-10-6	LEFS32S*/LEFS32NZ*/LEFS32NY*/LEFS32NW*/LEFS32NX* LEFS40S*/LEFS40NZ*/LEFS40NY*/LEFS40NW*/LEFS40NX*		
5	Hub Ass'y	**LE-D-11-2**	LEFS16*	Hub, Hub mounting bolts, Spider (Check that the spider color is black.)	[Tightening torque] 0.63N・m
		LE-D-11-3	LEFS25*/LEFS25NM1*		[Tightening torque] 0.63N・m
		LE-D-11-4	LEFS32*/LEFS40*/LEFS32NM1*/LEFS40NM1*		[Tightening torque] 1.5N・m
		LE-D-11-6	LEFS25S*/LEFS25NZ*/LEFS25NY*		[Tightening torque] 1.0N・m
		LE-D-11-7	LEFS32NY*		[Tightening torque] 2.5N・m
		LE-D-11-8	LEFS32S*/LEFS32NZ*/LEFS40S*/LEFS40NZ*/LEFS40NY*		[Tightening torque] 1.5N・m
		LE-D-11-10	LEFS32NW*/LEFS40NW*		[Tightening torque] 2.5N・m
		LE-D-11-11	LEFS32NX*/LEFS40NX*		[Tightening torque] 2.5N・m
6	Pulley Ass'y	**LE-D-12-21**	LEFS16(R/L)*-***	Pulley, Pulley mounting bolts	[Tightening torque] 0.36N・m
		LE-D-12-13	LEFS25(R/L)*-***		[Tightening torque] 0.63N・m
		LE-D-12-4	LEFS32(R/L)*-***		[Tightening torque] 0.63N・m
		LE-D-12-19	LEFS40(R/L)*-***		[Tightening torque] 1N・m
		LE-D-12-14	LEFS25(R/L)S*-***		[Tightening torque] 1N・m
		LE-D-12-16	LEFS32(R/L)S*-***		[Tightening torque] 1.5N・m
		LE-D-12-17	LEFS40(R/L)S*-***		[Tightening torque] 2.5N・m
7	Motor	**LE-D-P28M-1**	LEFS16*-*/LEFS16(R/L)*-*	Motor	–
		LE-D-P28MB-A	LEFS16*-*B/LEFS16(R/L)*-*B		
		LE-D-A28M-1	LEFS16A*-*/LEFS16(L/R)A*-*		
		LE-D-A28MB-A	LEFS16A*-*B/LEFS16(L/R)A*-*B		
		LE-D-P42M-1	LEFS25*-*/LEFS25(R/L)*-*		
		LE-D-P42MB-A	LEFS25*-*B/LEFS25(R/L)*-*B		
		LE-D-A42M-1	LEFS25A*-*/LEFS25(L/R)A*-*		
		LE-D-A42MB-A	LEFS25A*-*B/LEFS25(L/R)A*-*B		
		LE-D-P56M-1	LEFS32*-*/LEFS32(R/L)*-*		
		LE-D-P56MB-A	LEFS32*-*B/LEFS32(R/L)*-*B		
		LE-D-P56L-1	LEFS40*-*/LEFS40(R/L)*-*		
		LE-D-P56LB-A	LEFS40*-*B/LEFS40(R/L)*-*B		
		LE-D-S2	LEFS25S2*-* /LEFS25(R/L)S2*-*		
		LE-D-S2-B	LEFS25S2*-*B/LEFS25(R/L)S2*-*B		
		LE-D-S6	LEFS25S6*-* /LEFS25(R/L)S6*-*		
		LE-D-S6-B	LEFS25S6*-*B/LEFS25(R/L)S6*-*B		
		LE-D-S3	LEFS32S3*-* /LEFS32(R/L)S3*-*		
		LE-D-S3-B	LEFS32S3*-*B/LEFS32(R/L)S3*-*B		
		LE-D-S7	LEFS32S7*-* /LEFS32(R/L)S7*-*		
		LE-D-S7-B	LEFS32S7*-*B/LEFS32(R/L)S7*-*B		
		LE-D-S4	LEFS40S4*-* /LEFS40(R/L)S4*-*		
		LE-D-S4-B	LEFS40S4*-*B/LEFS40(R/L)S4*-*B		
		LE-D-S8	LEFS40S8*-* /LEFS40(R/L)S8*-*		
		LE-D-S8-B	LEFS40S8*-*B/LEFS40(R/L)S8*-*B		
8	Seal band stopper A'ssy	**LEF-SB16-N**	LEFS16*	Seal band stopper, mounting bolts	[Tightening torque] 0.36N・m
		LEF-SB25-N	LEFS25*		[Tightening torque] 0.63N・m
		LEF-SB32-N	LEFS32*		[Tightening torque] 0.76N・m
		LEF-SB40-N	LEFS40*		[Tightening torque] 0.76N・m
		LEF-SB16-C	11-LEFS16*		[Tightening torque] 0.36N・m
		LEF-SB25-C	11-LEFS25*		[Tightening torque] 0.63N・m
		LEF-SB32-C	11-LEFS32*		[Tightening torque] 0.76N・m
		LEF-SB40-C	11-LEFS40*		[Tightening torque] 0.76N・m
9	Housing A'ssy	**LEFS-D-1-1**	LEFS16*	Housing, Sliding bearing, mounting bolts (Check that sliding bearing is used. In case that ball bearing is used, these parts are not interchangable.)	[Tightening torque] 0.63N・m
		LEFS-D-1-2	LEFS25*		[Tightening torque] 1.5N・m
		LEFS-D-1-3	LEFS32*		[Tightening torque] 3.0N・m
		LEFS-D-1-4	LEFS40*		[Tightening torque] 5.2N・m
10	Dust seal band	**LEFS-DS16-***	LEFS16***-**	Dust seal band	–
		LEFS-DS25-*	LEFS25***-**		
		LEFS-DS32-*	LEFS32***-**		
		LEFS-DS40-*	LEFS40***-**		
		LEFS-DS25S-*	LEFS25S**-**		
		LEFS-DS32S-*	LEFS32S**-**		
		LEFS-DS40S-*	LEFS40S**-**		

* = Indicate product stroke

LEFB Spare parts list

No. LEF-MM01401



Guarantee expires after parts replacement by customer or SMC subsidiary.

No.	Name	Order number	Applicable actuator model	Contents	Remarks
1	Motor Ass'y	**LEFB-MP16**	LEFB16T-*	Motor, Motor mounting bolts, Pulley, Pulley mounting bolts	[Tightening torque] 0.36N・m
		LEFB-MP16-B	LEFB16T-*B		
		LEFB-MP25	LEFB25T-*		[Tightening torque] 0.63N・m
		LEFB-MP25-B	LEFB25T-*B		
		LEFB-MP32	LEFB32T-*		[Tightening torque] 1.5N・m
		LEFB-MP32-B	LEFB32T-*B		
		LEFB-MA16	LEFB16AT-*		[Tightening torque] 0.36N・m
		LEFB-MA16-B	LEFB16AT-*B		
		LEFB-MA25	LEFB25AT-*		[Tightening torque] 0.63N・m
		LEFB-MA25-B	LEFB25AT-*B		
		LEFB-MS25A	LEFB25S2S-*	Motor, Motor mounting bolts, Hub, Hub mounting bolts, Spider (Check that the spider color is black.)	[Tightening torque] 1.5N・m
		LEFB-MS25B	LEFB25S6S-*		
		LEFB-MS25A-B	LEFB25S2S-*B		
		LEFB-MS25B-B	LEFB25S6S-*B		
		LEFB-MS32A	LEFB32S3S-*		[Tightening torque] 3N・m
		LEFB-MS32B	LEFB32S7S-*		
		LEFB-MS32A-B	LEFB32S3S-*B		
		LEFB-MS32B-B	LEFB32S7S-*B		
		LEFB-MS40A	LEFB40S4S-*		[Tightening torque] 3N・m
		LEFB-MS40B	LEFB40S8S-*		
		LEFB-MS40A-B	LEFB40S4S-*B		
		LEFB-MS40B-B	LEFB40S8S-*B		
2	Motor cover Ass'y	**LEFB-MC16**	LEFB16T-*	Motor cover, Grommet, End cover, mounting bolts	[Tightening torque] 0.32N・m
		LEFB-MC16-B	LEFB16T-*B		
		LEFB-MC16A	LEFB16AT-*		
		LEFB-MC16A-B	LEFB16AT-*B		
		LEFB-MC25	LEFB25T-*		
		LEFB-MC25-B	LEFB25T-*B		
		LEFB-MC25A	LEFB25AT-*		
		LEFB-MC25A-B	LEFB25AT-*B		
		LEFB-MC32	LEFB32T-*		
		LEFB-MC32-B	LEFB32T-*B		
		LEFB-MC25S	LEFB25S*S-*		
		LEFB-MC25S-B	LEFB25S*S-*B		
		LEFB-MC32S	LEFB32S*S-*		
		LEFB-MC32S-B	LEFB32S*S-*B		
		LEFB-MC40S	LEFB40S*S-*		
		LEFB-MC40S-B	LEFB32S*S-*B		
3	Belt	**LEFB-B16-***	LEFB16*T-*	Belt	[Pulling force] 30N
		LEFB-B25-*	LEFB25*T-*		[Pulling force] 45N
		LEFB-B32-*	LEFB32*T-*		[Pulling force] 75N
		LEFB-B25S-*	LEFB25S*S-*		[Pulling force] 82N
		LEFB-B32S-*	LEFB32S*S-*		[Pulling force] 136N
		LEFB-B40S-*	LEFB40S*S-*		[Pulling force] 186N
4	Dust seal band	**LEFB-DS16-***	LEFB16*T-*	Dust seal band	-
		LEFB-DS25-*	LEFB25*T-*		
		LEFB-DS32-*	LEFB32*T-*		
		LEFB-DS25S-*	LEFB25S*S-*		
		LEFB-DS32S-*	LEFB32S*S-*		
		LEFB-DS40S-*	LEFB40S*S-*		
5	Motor	**LE-D-P28M-1**	LEFB16T-*	Motor	-
		LE-D-P28MB-A	LEFB16T-*B		
		LE-D-A28M-1	LEFB16AT-*		
		LE-D-A28MB-A	LEFB16AT-*B		
		LE-D-P42L-1	LEFB25T-*		
		LE-D-P42LB-A	LEFB25T-*B		
		LE-D-A42M-1	LEFB25AT-*		
		LE-D-A42MB-A	LEFB25AT-*B		
		LE-D-P56L-1	LEFB32T-*		
		LE-D-P56LB-A	LEFB32T-*B		
		LE-D-S2	LEFB25*S2*-*		
		LE-D-S2-B	LEFB25*S2*-*B		
		LE-D-S6	LEFB25*S6*-*		
		LE-D-S6-B	LEFB25*S6*-*B		
		LE-D-S3	LEFB32*S3*-*		
		LE-D-S3-B	LEFB32*S3*-*B		
		LE-D-S7	LEFB32*S7*-*		
		LE-D-S7-B	LEFB32*S7*-*B		
		LE-D-S4	LEFB40*S4*-*		
		LE-D-S4-B	LEFB40*S4*-*B		
		LE-D-S8	LEFB40*S8*-*		
		LE-D-S8-B	LEFB40*S8*-*B		
6	Seal band stopper A'ssy	**LEF-SB16-N**	LEFB16*T-*	Seal band stopper, mounting bolts	[Tightening torque] 0.36N・m
		LEF-SB25-N	LEFB25*T-*		[Tightening torque] 0.63N・m
		LEF-SB32-N	LEFB32*T-*		[Tightening torque] 0.76N・m
		LEF-SB25-C	LEFB25*S*S-*		[Tightening torque] 0.63N・m
		LEF-SB32-C	LEFB32*S*S-*		[Tightening torque] 0.76N・m
		LEF-SB40-C	LEFB40*S*S-*		[Tightening torque] 0.76N・m
7	Stopper A'ssy	**LEFB-D-2-1**	LEFB16*T-*	Stopper, mounting bolts	-
		LEFB-D-2-2	LEFB25*T-*/LEFB25S*S		
		LEFB-D-2-3	LEFB32*T-*		
8	Housing A'ssy	**LEFB-D-1-1**	LEFB16*T-*	Housing, mounting bolts, Tension adjustment bolt	[Tightening torque] 0.63N・m
		LEFB-D-1-2	LEFB25*T-*/LEFB25S*S		[Tightening torque] 1.5N・m
		LEFB-D-1-3	LEFB32*T-*		[Tightening torque] 3.0N・m
		LEFB-D-1-4	LEFB32S*S		[Tightening torque] 3.0N・m
		LEFB-D-1-5	LEFB40S*S		[Tightening torque] 5.2N・m
9	Pulley holder A'ssy	**LEFB-D-3-1**	LEFB16*T-*	Pulley holder, Pulley, Bearing, Pulley shaft, Spacer, mounting bolts	-
		LEFB-D-3-2	LEFB25*T-*		
		LEFB-D-3-3	LEFB32*T-*		
		LEFB-D-3-4	LEFB25*S*S		
		LEFB-D-3-5	LEFB32*S*S		
		LEFB-D-3-6	LEFB40*S*S		
10	Pulley Ass'y	**LE-D-12-1**	LEFB16*T-*	Pulley, mounting bolts	[Tightening torque] 0.63N・m
		LE-D-12-2	LEFB25*T-*		[Tightening torque] 0.63N・m
		LE-D-12-3	LEFB32*T-*		[Tightening torque] 0.63N・m
11	Hub A'ssy	**LE-D-11-5**	LEFB25NM1*	Hub, Hub mounting bolts, Spider (Check that the spider color is black.)	[Tightening torque] 0.63N・m
		LE-D-11-6	LEFB25S*S/LEFB25NZ*/LEFB25NY*		[Tightening torque] 1N・m
		LE-D-11-7	LEFB32NY*		[Tightening torque] 2.5N・m
		LE-D-11-8	LEFB32S*S/LEFB32NZ* LEFB40S*S/LEFB40NZ*/LEFB40NY*		[Tightening torque] 1.5N・m
		LE-D-11-9	LEFB32NM1*/LEEFB40NM1*		[Tightening torque] 1.5N・m
		LE-D-11-10	LEFB32NW*/LEFB40NW*		[Tightening torque] 2.5N・m
		LE-D-11-11	LEFB32NX*/LEFB40NX*		[Tightening torque] 2.5N・m
12	Spider	**LE-D-10-5**	LEFB25S*S/LEFB25NM1*/LEFB25NZ*/LEFB25NY*	Spider (Check that the spider color is black.)	-
		LE-D-10-6	LEFB32S*S/LEFB32NZ*/LEFB32NY*/LEFB32NM1 LEFB32NW*/LEFB32NX*/LEFB40S*S/LEFB40NZ* LEFB40NY*/LEFB40NM1/LEFB40NW*/LEFB40NX*		

* = Indicate product stroke