



Maintenance

PRODUCT NAME

Electric Actuator / Slider Type
《 AC Servo Motor 》

MODEL / Series / Product number

LEJ Series

Applicable models: LEJS / LEJB

LEJS Series
(Ball screw type)



LEJB Series
(Belt type)



SMC Corporation

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1. Precaution on maintenance

⚠ Warning

1. Turn off the power supply and remove the workpiece before maintenance and replacement of the product.

[Maintenance frequency]

Perform maintenance according to the table below.

Contact SMC if any abnormality is found.

Frequency	Visual appearance check	Internal check	Belt check
Inspection before daily operation	○	/	/
Inspection every six months / 1000km / 5million cycle *	○	○	○

*Whichever occurs first.

[Items for visual appearance check]

1. Loose screws. Abnormal dirt.
2. Check of flaws/faults and cable connections.
3. Vibration, noise.

[Items for internal check]

1. Lubricant condition and dirt on moving parts.
For lubrication, use lithium grease No. 2.
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. Wear-out of tooth shape canvas

Canvas fiber becomes fuzzy.

Rubber is removed and the fiber becomes whitish.

Lines of fiber become unclear.



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

Belt corner becomes round and frayed threads stick out.



c. Belt partially cut

Belt is partially cut.

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

d. Vertical line of belt teeth

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

e. The rubber back of the belt is softened and sticky.

f. Crack on the back of the belt



2. Plug and unplug the “Dust seal band” of the end side

2-1. Loosen the bolts of the band holder on the end side of the actuator. Please take care to not cut your hands with the edges of the “Dust seal band”.

This is ball screw type.
It is same to belt type.

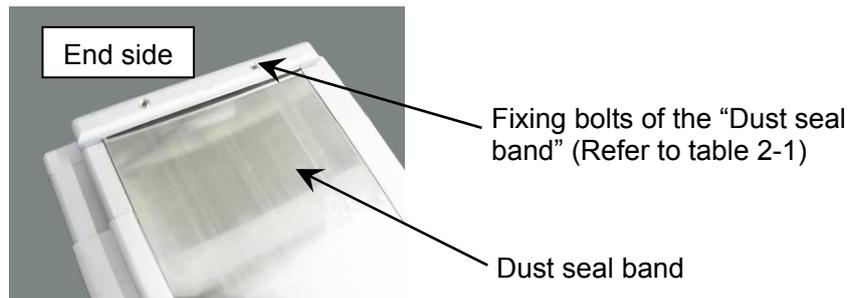


Table 2-1. Fixing bolts of the “Dust seal band”

Bolt type	Bolt size	Recommended tightening torque(N·m)	Quantity
Hexagon socket set screw	M4×5	0.4±0.1	2

2-2. Remove the “Seal band pusher” and the “Blanking plate”.

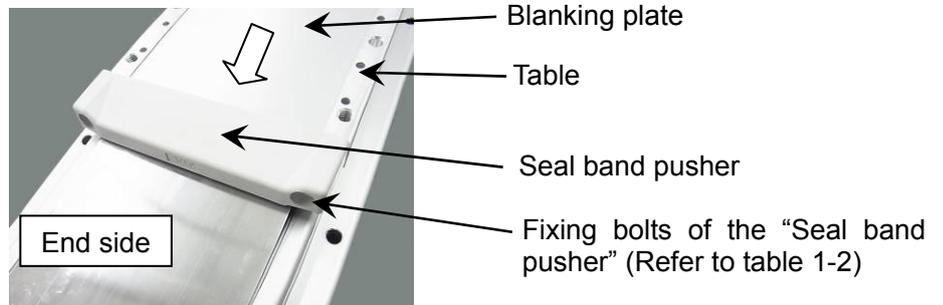
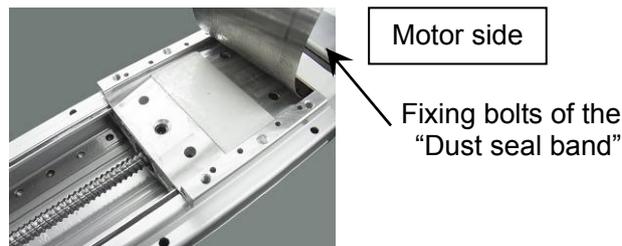


Table 2-2. Fixing bolts of the “Seal band pusher”

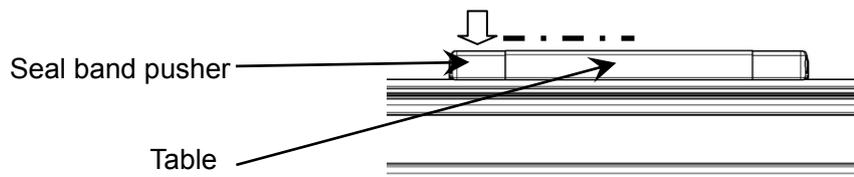
Bolt type	Bolt size	Recommended tightening torque(N·m)	Quantity
± recessed pan head screw	M4×25	0.9±0.1	2

Attention : Do not loosen the fixing bolts of the motor side of the stroke.



2-3. Re-assembly : Follow the reverse order of 2-1~2-2.

At the time, the surface of the “Seal band pusher” must be under the surface of the “Table”.



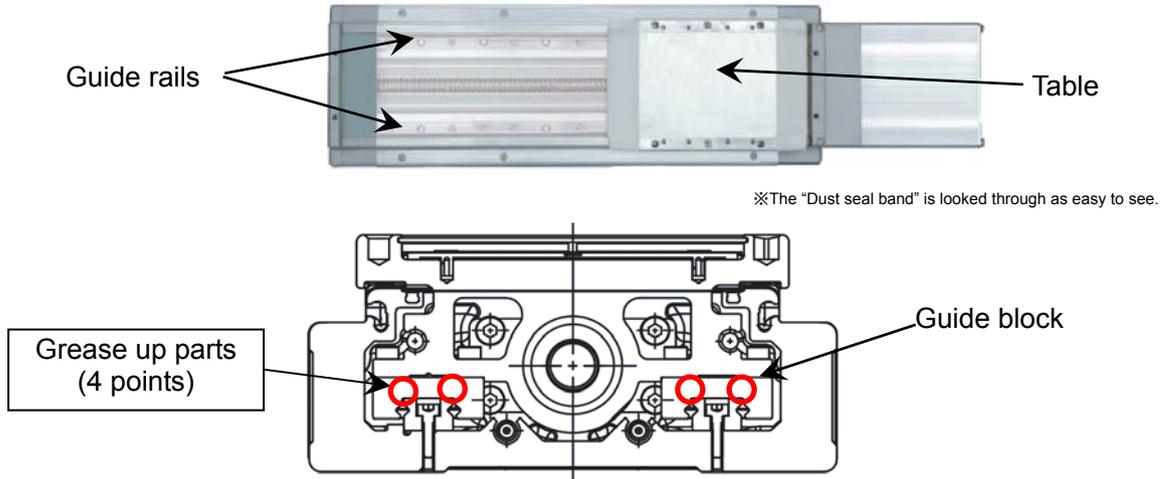
3. Grease up for the “Liner guide”

3-1. Unplug the “Dust seal band” of the end side.(Refer to chapter 2.)

This is ball screw type.
It is same to belt type.

3-2. Please use lithium grease No.2.

3-3. Applying the grease to the groove of the “Guide rails” by the spatula-shape thing, and adapt the grease to the entire of the guide rails.
Move the “Table” slowly by hand, and make the grease into inside of the “Guide block”.
In the case of belt type, be care to not grease on the belt.
Do not drive immediately after supplying grease, please make a few times test drive to adapt the grease enough.



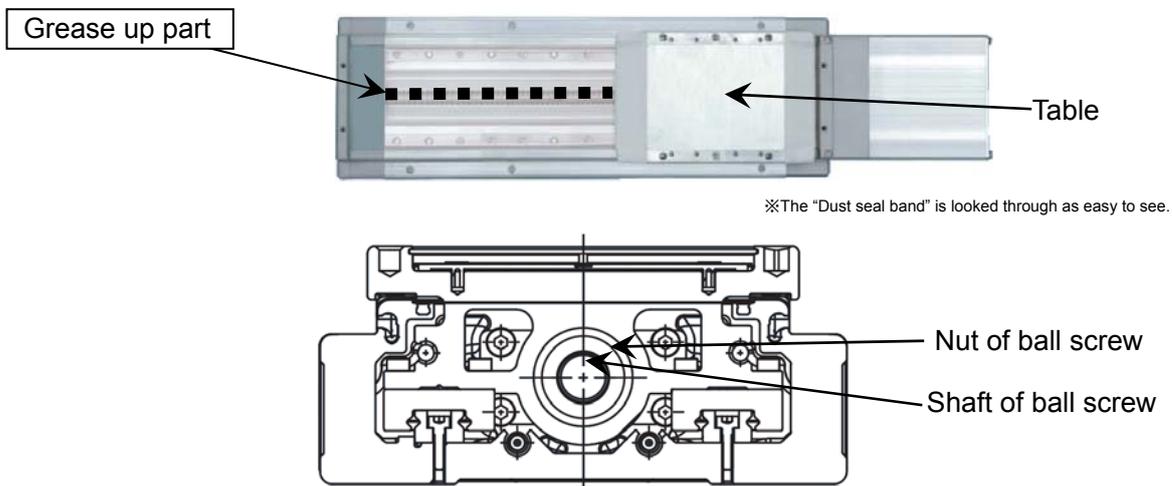
3-4. Plug the “Dust seal band” of the end side. (Refer to chapter 2.)

4. Grease up for the “Ball screw”

4-1. Unplug the “Dust seal band” of the end side. (Refer to chapter 2.)

4-2. Use lithium grease No. 2.

4-3. Applying the grease to the “Shaft of ball screw” by the spatula-shape thing, and adapt the grease to the entire of the shaft.
Move the “Table” slowly by hand, and make the grease into inside of the “Nut of ball screw”.
Do not drive immediately after supplying grease, please make a few times test drive to adapt the grease enough.



4-4. Plug the “Dust seal band” of the end side. (Refer to chapter 2.)

5. Tension adjustment of the “Drive belt”

5-1. Unplug the “Dust seal band” of the end side. (Refer to chapter 2.)

5-2. Loosen the fixing bolts of the “Pulley holder”.

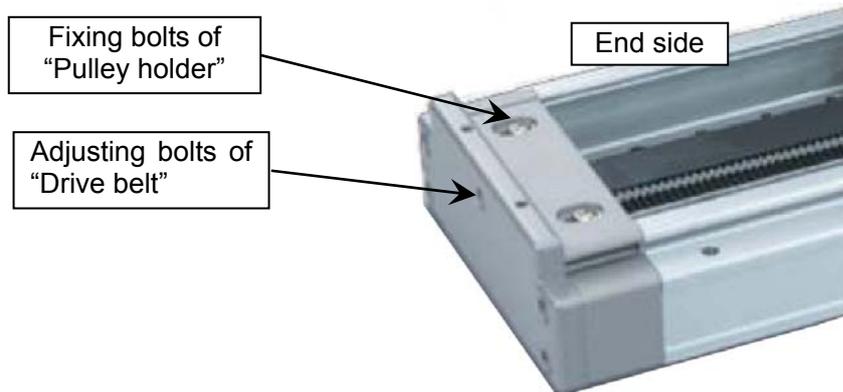


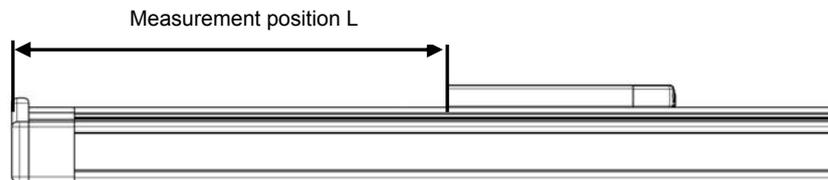
Table 5-1. Fixing bolts of “Pulley holder”

Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
Button head screw with flange	M4×8	2.7±0.3	2

Table 5-2. Adjusting bolts of “Drive belt”

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Hexagon socket	M4×12	1.5±0.2	1
63	head cap screw	M4×10		2

5-3. Increase the belt tension by turning clockwise the adjusting bolts of the “Drive belt”. In the case of check tension by using acoustic tensiometer, refer to following. Move the “Table” to the measurement position L, and input settings into tensiometer, and measure tension by flicking.



※There is not the “Seal band pusher” of end side.

Table 5-3. Measurement position and tensiometer settings

Size	Measurement position L (mm)	Setting values for sonic belt tension meter			Belt Tension (N)
		Belt width (mm)	Span (mm)	Belt mass (kg/10mm×m long)	
40	203	20	200	0.025	130±13
63	214	30		0.040	290±29

5-4. After fix the fixing bolts of the “Pulley holder”, fix the adjusting bolts of the “Drive belt”.

5-5. Plug the “Dust seal band” of the end side. (Refer to chapter2.)

6. Tension adjustment of the “Reduction belt”

6-1. Remove the fixing bolts of covers that fix the “End cover B” and the “Pulley cover”.

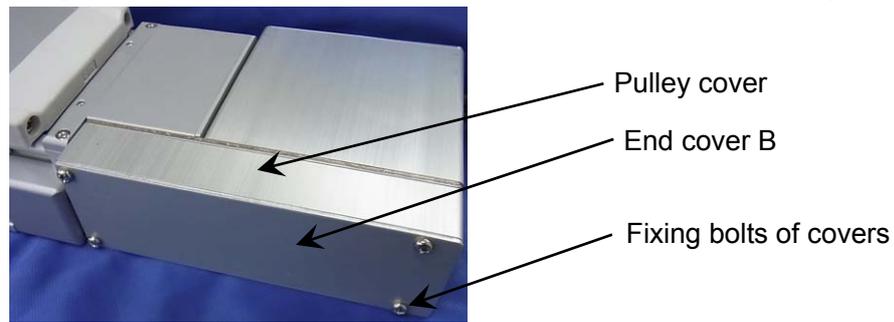


Table 6-1. Fixing bolts of cover

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Cross recessed pan head screw	M4×35	0.9±0.1	4
63		M4×40		

6-2. Remove the “End cover B” and the “Pulley cover”, and loosen the fixing bolts of the “Motor”.



Table 6-2. Fixing bolts of “Motor”

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Hexagon socket head cap screw	M4×12	2.7±0.3	2
63		M5×16	5.4±1.0	

Table 6-3. Adjusting bolts of “Reduction belt”

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Hexagon socket head cap screw	M4×12	1.5±0.2	1
63		M5×16	3.0±0.3	

6-3. Increase the belt tension by turning clockwise the adjusting bolts of the “Reduction belt”. In the case of check tension by using acoustic tensiometer, refer to following. Input settings into tensiometer, and measure tension by flicking.

Table 6-4. Tensiometer settings

Size	Tensiometer settings			Belt tension (N)
	Belt width (mm)	Span (mm)	Unit mass (kg/10mm×m long)	
40	12	58	0.025	30±3
63	15	81		40±4

6-4. After fixing the fixing bolts of the “Motor”, fix the adjusting bolts of the “Reduction belt”.

6-5. Assemble the “End cover B” and the “Pulley cover” by following the reverse order of 6-1.

7. Change of the “Drive belt”

7-1. Unplug the “Dust seal band” of the end side. (Refer to chapter 2.)

7-2. Loosen the fixing bolts of the “Pulley holder”, then loosen the adjusting bolts of “Drive belt”.

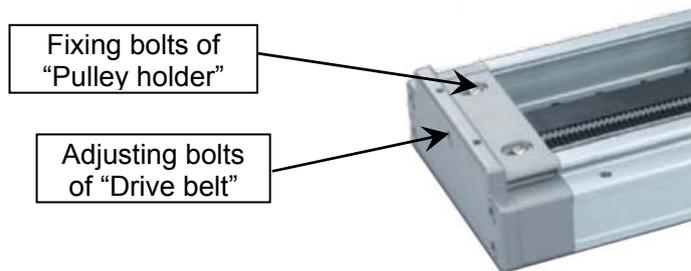


Table 7-1. Fixing bolts of “Pulley holder”

Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
Button head screw with flange	M4×8	2.7±0.3	2

Table 7-2. Adjusting bolts of “Drive belt”

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Hexagon socket head cap screw	M4×12	1.5±0.2	1
63		M4×10		2

7-3. Remove the “Table cap”, and remove the “Belt holder”.

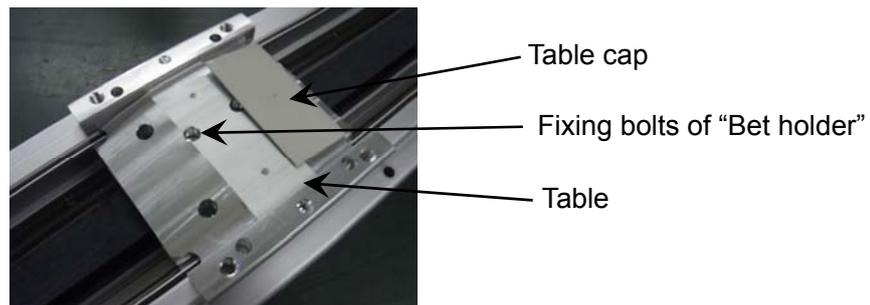


Table 7-3. Fixing bolts of “Belt holder”

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Hexagon socket head cap screw	M4×12	2.7±0.3	2
63		M5×16	5.4±1	

7-4. Remove the “Belt stopper”.

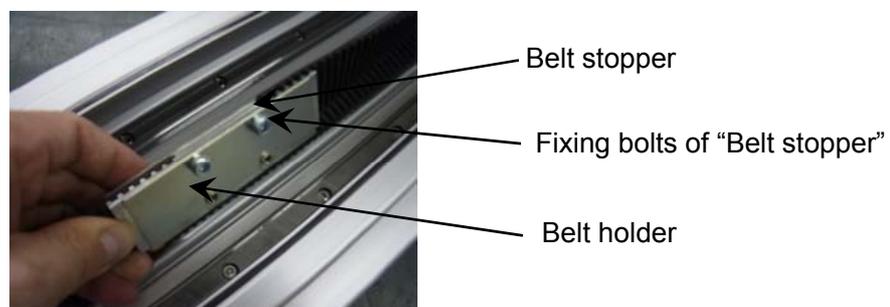


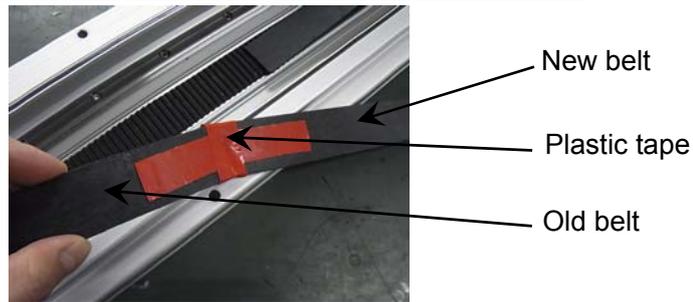
Table 7-4. Fixing bolts of “Belt stopper”

Size	Bolt type	Bolt size	Recommended Tightening torque (N·m)	Quantity
40	Hexagon socket head cap screw	M4×8	2.7±0.3	2
63		M5×12	5.4±1	

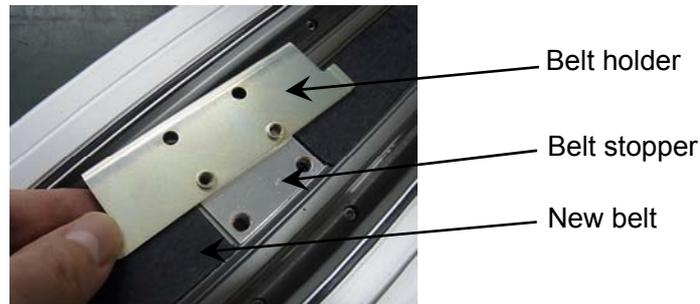
7-5. Change the "Drive belt". Connect new belt with old belt using plastic tape, and replace it.

Table 7-5. "Drive belt" for change

Size	Part number	Others
40	LEJB-B40-※	※ shows product stroke(mm).
63	LEJB-B63-※	



7-6. Insert the "Belt stopper" into the "Belt holder" with the tooth of belt that is fitted the groove of the "Belt stopper".



7-7. Fix the "Belt stopper" to the "Belt holder".



7-8. Fix the "Belt holder" to the "Table", then attach the "Table cap".



7-9. After adjusting tension of the "Drive belt", plug the "Dust seal band" of the end side.
(Refer to chapter 2.)

8. Change of the “Reduction belt”

8-1. Remove the fixing bolts of covers that fix the “End cover B” and the “Pulley cover”.

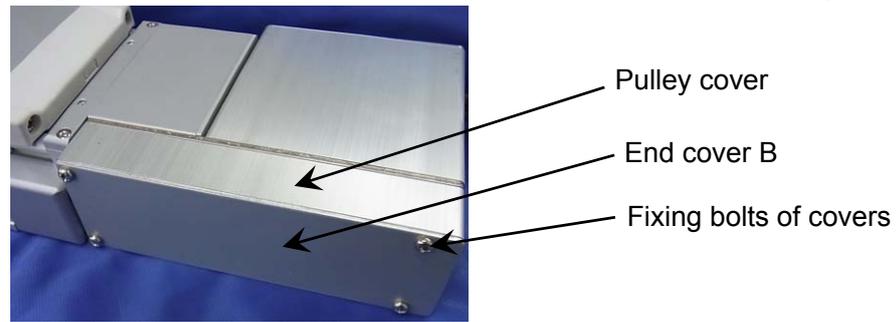


Table 8-1. Fixing bolts of covers

Size	Bolt type	Bolt size	Recommended Tightening torque (N·m)	Quantity
40	Cross recessed pan head screw	M4×35	0.9±0.1	4
63		M4×40		

8-2. Remove the “End cover B” and the “Pulley cover”, and loosen the fixing bolts of the “Motor”.



Table 8-2. Fixing bolts of “Motor”

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Hexagon socket head cap screw	M4×12	2.7±0.3	2
63		M5×16	5.4±1.0	

Table 8-3. Adjusting bolts of “Reduction belt”

Size	Bolt type	Bolt size	Recommended tightening torque (N·m)	Quantity
40	Hexagon socket head cap screw	M4×12	1.5±0.2	1
63		M5×16	3.0±0.3	

8-3. Decrease the belt tension, by turning counterclockwise the adjusting bolts of the “Reduction belt”.

Next, change the “Reduction belt”.

Table 8-4. “Reduction belt” for change

Size	Part number
40	LE-D-5-1
63	LE-D-5-2

8-4. Adjust tension of “Reduction belt”. (Refer to chapter 6.)

8-5. Assemble the “End cover B” and the “Pulley cover” by following the reverse order of 8-1.

9. Change of the “Dust seal band”

9-1. Unplug the “Dust seal band” of the end side. (Refer to chapter 2.)

This is ball screw type.
It is same to belt type.

9-2. Loosen the fixing bolts of the band holder on the motor side of the stroke.

Please take care to not cut hand on the edges of the “Dust seal band”.

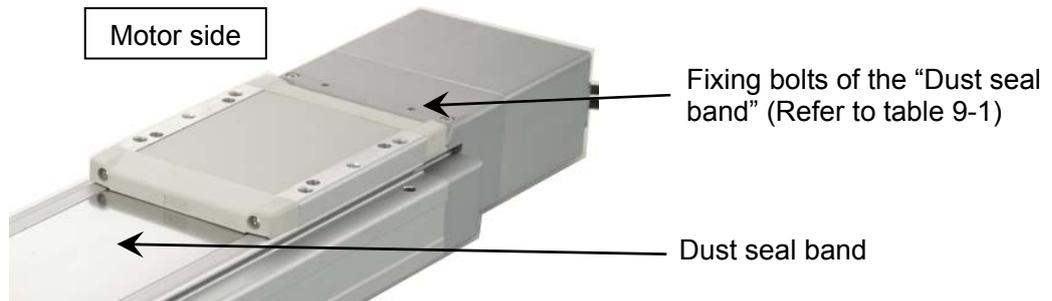


Table 9-1. Fixing bolts of the “Dust seal band”

Bolt type	Bolt size	Recommended tightening torque(N·m)	Number
Hexagon socket set screw	M4×5	0.4±0.1	2

9-3. Change the “Dust seal band”.

Table 9-2. “Dust seal band” for change

Type	Size	Part number	Others
LEJS	40	LEJS-DS40-※	※shows product stroke(mm).
	63	LEJS-DS63-※	
LEJB	40	LEJB-DS40-※	
	63	LEJB-DS63-※	

9-4. Re-assembly : Follow the reverse order of 9-1~9-2 for fixing the “Dust seal band”.