

LARSACC Linear Actuator Assembly Repair Kit Instructions For SureMotion™ LARSD2 Series Twin-Slide Linear Actuator Assemblies

REPAIR KITS COVERED BY THESE INSTRUCTIONS

Repair Kit Product Compatibility	
Repair Kit #	Linear Actuator Assembly #
LARSACC-013	LARSD2-08T12BP2C (12-in travel)
LARSACC-014	LARSD2-08T24BP2C (24-in travel)

COMPONENT PARTS INCLUDED IN THE REPAIR KIT

- 1 ea Ball Screw with Machined Ends
- 1 ea Ball Nut
- 1 ea Bearing Support Unit, Flange Mount
- 1 ea Bearing
- 1 ea Grease Packet
- 1 ea Locknut
- 2 ea Spacer Sleeves



TOOLS

REQUIRED TOOLS

- Metric hex key set
- Imperial hex key set

OPTIONAL TOOLS

- Open ended 16mm wrench, pliers, or equivalent tool for lock nut removal



WARNING: BEFORE REPAIR IS PERFORMED, ALL ELECTRICAL POWER TO THE SYSTEM COMPONENTS SHOULD BE REMOVED, AND THE PAYLOAD MUST BE REMOVED FROM THE CARRIAGE. FOR EASE OF REPAIR, THE SYSTEM SHOULD IDEALLY BE DETACHED FROM ITS MOUNTING SUBSTRATE.

TORQUE SPECIFICATIONS

Standard Steel Bolt/Screw Torque Specifications				
Bolt/Screw			Torque*	
Size	Pitch	Type	lb-in	lb-ft
6	32	Low Carbon Steel	8.7	-
8	32		17.8	
10	24		20.8	
1/4	20	SAE Grade 5 Med. Carbon Steel	-	10
5/16	18			19
3/8	16			33
7/16	14			54
1/2	13			78

* It is recommended to use 50% of listed torque when using steel threads into aluminum material.

Metric Steel Bolt/Screw Torque Specifications			
Bolt/Screw			Torque*
Size	Pitch	Type	N-m
M3	0.5	Standard 5D Med. Carbon Steel	0.6
M4	0.7		1.5
M5	0.8		3.0
M6	1.0		5.2
M8	1.0		12.5

* It is recommended to use 50% of listed torque when using steel threads into aluminum material.

ACTUATOR DISASSEMBLY

Disassembly assumes that a motor is attached to the motor mount and coupler.

- 1) Remove the retaining ring from the ball screw at the simple end plate using a pair of snap ring pliers.



- 2) Loosen the drive coupler collar lock with a 2.5mm hex key on the coupler screw closest to the ball screw. The coupler can stay attached to the motor and motor mount.



LARSACC Linear Actuator Assembly Repair Kit Instructions
For SureMotion™ LARSD2 Series Twin-Slide Linear Actuator Assemblies

- 3) Remove the four motor mounting screws from the motor end plate using a 5/32" hex key. Remove the motor, motor mount, and coupler assembly from the actuator.



- 7) Remove the two mounting screws from the top side of the carriage to release the drive screw nut block using a 5/32" hex key.



- 4) Loosen the two set screws on the end support bearing locking nut using a 1.5mm hex key.



- 8) Reposition the actuator up onto its side to access the bottom.



- 5) Use a 16mm open end wrench to loosen the bearing locking nut. To prevent turning of the ball screw, hold the carriage or the ball screw by hand during loosening. Unscrew, remove, and discard the locking nut.



- 9) Remove the ball screw assembly. Push on the drive screw nut block toward the simple end plate until the radial bearing comes free of the simple end plate.



- 6) Remove the four fixed bearing mounting screws from the bearing flange using a 9/64" hex key.



- 10) Remove the bearing from the ball screw and discard the bearing.

LARSACC Linear Actuator Assembly Repair Kit Instructions
For SureMotion™ LARSD2 Series Twin-Slide Linear Actuator Assemblies

- 11) Remove the ball screw, ball nut, and nut block from the main assembly.



- 12) Remove the spacer sleeves from the flange bearing inner and outer. The inner sleeve may come apart and be on the ball screw. Discard the two spacer sleeves.



- 13) Remove the nut block from the ball nut. Move the nut to the end of the ball screw, but do not remove it all the way or the ball bearings may fall out of the nut. Gently clamp the ball nut in a vice with soft jaws. Use a 1.25" open-end wrench, or an adjustable wrench, to loosen the nut block. Discard the used ball nut and ball screw.



- 14) Remove the flange mount bearing support unit from the fixed end plate. Use a punch tool such as a large socket and gently tap the bearing from the housing. If necessary, disassemble the housing from the linear rods and use a bench arbor press to remove the bearing. Discard the flanged bearing support unit.



ACTUATOR ASSEMBLY

- 15) Install the flanged bearing support unit into the fixed end plate. Use a soft mallet to seat the bearing in the pilot bore. If necessary, use a bench arbor press to insert the bearing unit.



- 16) Install the four fixed bearing mounting screws on the flange using a 9/64" hex key.



LARSACC Linear Actuator Assembly Repair Kit Instructions
For SureMotion™ LARSD2 Series Twin-Slide Linear Actuator Assemblies

- 17) Cut the zip tie from the ball nut packaging, but do not remove the sleeve tube.



- 18) Position the ball screw and with the machined and threaded end near the ball nut in the orientation shown.



- 19) Slip the ball nut sleeve tube over the ball screw machined section.



- 20) Slide the ball nut onto the ball screw and gently rotate it to engage the ball bearings. Rotate the ball nut until it is completely onto the ball screw past the machined section. Keep the sleeve tube pressed against the ball screw thread shoulder during the entire process to prevent any ball bearings from falling out.

- 21) Remove and discard the sleeve tube.



- 22) Install the nut block onto the ball nut. Clamp the ball nut in a vise with soft jaws and gently clamp. Thread the nut block onto the ball nut threads. Tighten with a 1.25" open-ended wrench or adjustable wrench.



- 23) The flanged bearing unit is packaged with two spacer sleeves. Install one new spacer sleeve onto the machined and threaded end of the ball screw.



- 24) Install the ball screw onto the main assembly. Slide the ball screw through the simple end bearing hole.



- 25) Install the simple end radial bearing onto the machined end of the ball screw.



- 26) Insert the machined and threaded end of the ball screw through the flange mounted bearing support unit. Also ensure that the simple end bearing is seated into the simple end plate.



LARSACC Linear Actuator Assembly Repair Kit Instructions
For SureMotion™ LARSD2 Series Twin-Slide Linear Actuator Assemblies

27) Align the carriage to the nut block and attach with the two screws using a 5/32" hex key.



31) Slide the motor, motor mount, coupler assembly onto the ball screw. Install the four motor mounting screws using a 5/32" hex key.



28) Install the second spacer sleeve onto the machined end of the ball screw at the flanged mounted bearing support unit.

29) Install the bearing locking nut onto the machined threads of the ball screw. Orient so that the round step face is located against the bearing unit. Tighten using a 5/8" open-ended wrench.



32) Tighten the drive coupler collar lock using a 2.5mm hex key to clamp onto the ball screw.



30) Tighten the two set screws on the bearing locking nut using a 1.5mm hex key.



33) Install the retaining ring onto the ball screw at the simple end plate bearing. Use a pair of snap ring pliers to install into the groove.



34) Apply a light coating of grease onto the ball screw threads. Move the unit through the full travel to help spread the grease.