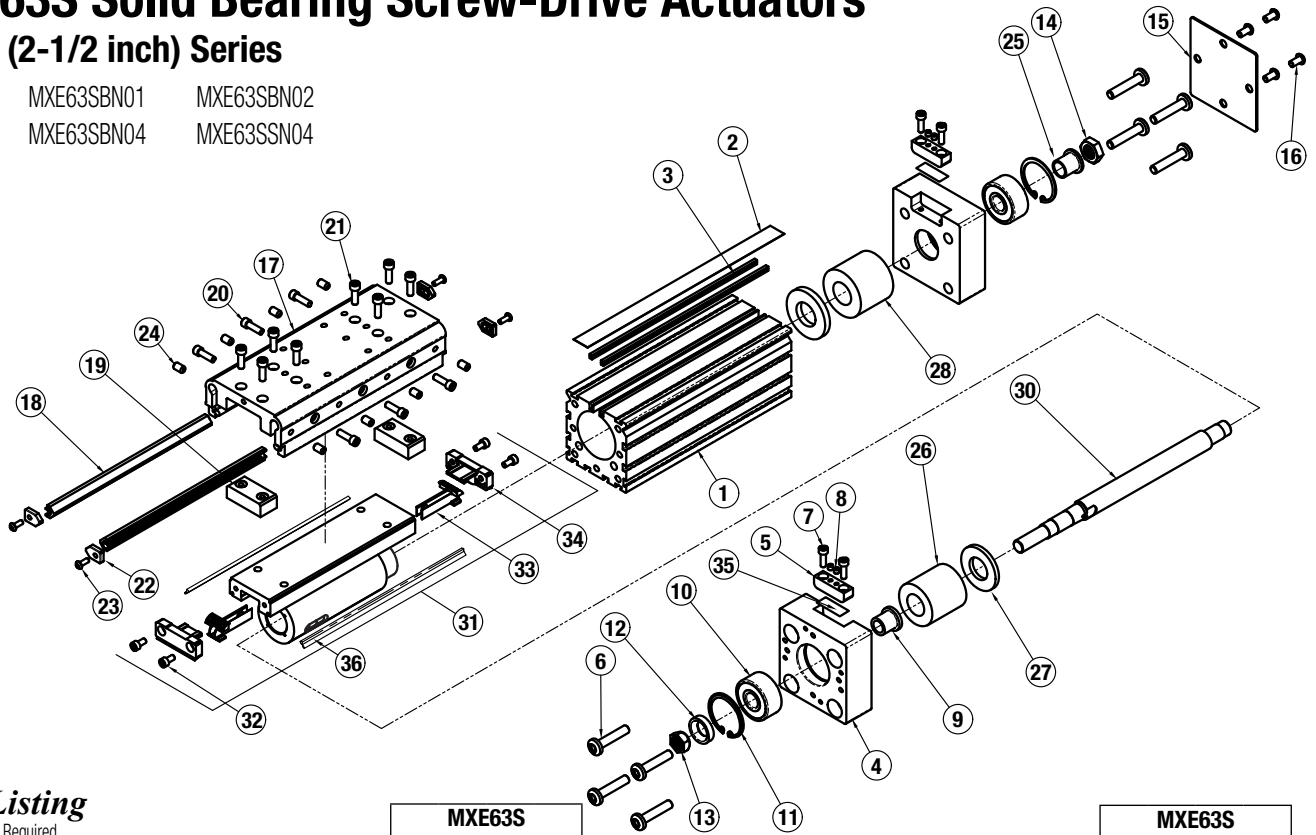


MXE63S Solid Bearing Screw-Drive Actuators

63mm (2-1/2 inch) Series

Models: MXE63SBN01 MXE63SBN02
 MXE63SBN04 MXE63SSN04



Parts Listing

A/R= Length As Required

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	MXE63S			
			BN01	BN02	BN04	SN04
1	RTBMXE63	Replacement Tube (8363-1010)	After Config. Code add: SK (stroke length in inches) or SM (stroke length in mm)			
2 ¹	NDBMXE63	New Dust Band (8363-1018)				
3	NMBMXE63	New Magnet Band Kit (8363-1019) (2 magnet strips included)				
4	8363-1011	Machined Head	2	2	2	2
5	8363-1017	Band Clamp	2	2	2	2
6	8350-1023	Pan Head Screw	8	8	8	8
7	2212-1031	Socket Head Cap Screw	4	4	4	4
8	8140-1073	Set Screw	4	4	4	4
9	1150-1144	Leadscrew Sleeve	2	2	2	2
10	2133-1022	Bearing	2	2	2	2
11	2133-1021	Retaining Ring	2	2	2	2
12	1150-1114	Spherical Washer	1	1	1	1
13	1150-1113	Spherical Nut	1	1	1	1
14	2124-1023	Jam Hex Nut	1	1	1	1
15	8363-1022	End Cap	1	1	1	1
16	8340-1009	Button Head Cap Screw	4	4	4	4
17	8363-1513	Carrier (inch)	1	1	1	1
	8363-1013	Carrier (metric)	1	1	1	1
18 ¹	8163-1030	Solid Bearing	2	2	2	2
19	8163-1025	Carrier Spacer Block	2	2	2	2
20	1009-1065	Tension Screw (inch)	6	6	6	6
	8163-1071	Tension Screw (metric)	6	6	6	6
21	2164-1065	Socket Head Cap Screw	8	8	8	8
22 ¹	8163-1031	Bearing End Cap	4	4	4	4
23	8340-1009	Button Head Cap Screw	4	4	4	4
24	8163-1572	Set Screw (inch)	8	8	8	8
	8163-1072	Set Screw (metric)	8	8	8	8
25	8363-1027	Flanged Sleeve Bearing	1	1	1	1
26	8363-1024	Nylon Spacer	1	8	8	8
27	8363-1023	Bumper	2	4	4	4

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	MXE63S			
			BN01	BN02	BN04	SN04
28	8363-1025	Nylon Spacer	1	1	1	1
30	RLSAMXE63-BN01SK ³ LMI ⁴	Leadscrew, 1.00, BN01, LMI (8363-1100)	A/R	-	-	-
	RLSAMXE63-BN01SK ³ RP ⁴	Leadscrew, 1.00, BN01, RP (8363-1101)	A/R	-	-	-
	RLSAMXE63-BN02SK ³ LMI ⁴	Leadscrew, 1.00, BN02, LMI (8363-1102)	-	A/R	-	-
	RLSAMXE63-BN02SK ³ RP ⁴	Leadscrew, 1.00, BN02, RP (8363-1103)	-	A/R	-	-
	RLSAMXE63-BN04SK ³ LMI ⁴	Leadscrew, 1.00, BN04, LMI (8363-1104)	-	-	A/R	-
	RLSAMXE63-BN04SK ³ RP ⁴	Leadscrew, 1.00, BN04, RP (8363-1105)	-	-	A/R	-
	RLSAMXE63-SN04SK ³ LMI ⁴	Leadscrew, 1.00, SN04, LMI (8363-1106)	-	-	-	A/R
	RLSAMXE63-SN04SK ³ RP ⁴	Leadscrew, 1.00, SN04, RP (8363-1107)	-	-	-	A/R
31	8363-9006	Nut Bracket Assembly, BN01	1	-	-	-
	8363-9007	Nut Bracket Assembly, BN02	-	1	-	-
	8363-9008	Nut Bracket Assembly, BN04	-	-	1	-
	8363-9009	Nut Bracket Assembly, SN04	-	-	-	1
32 ²	0603-1016	Socket Head Cap Screw, SS	4	4	4	4
33 ^{1,2}	8363-1007	Band Ramp	2	2	2	2
34 ^{1,2}	8163-1006	End Cap	2	2	2	2
35	8325-1055	Shim	2	2	2	2
	8325-1056	Shim	2	2	2	2
	8325-1057	Shim	2	2	2	2
36 ¹	8163-1059	Wiper	2	2	2	2

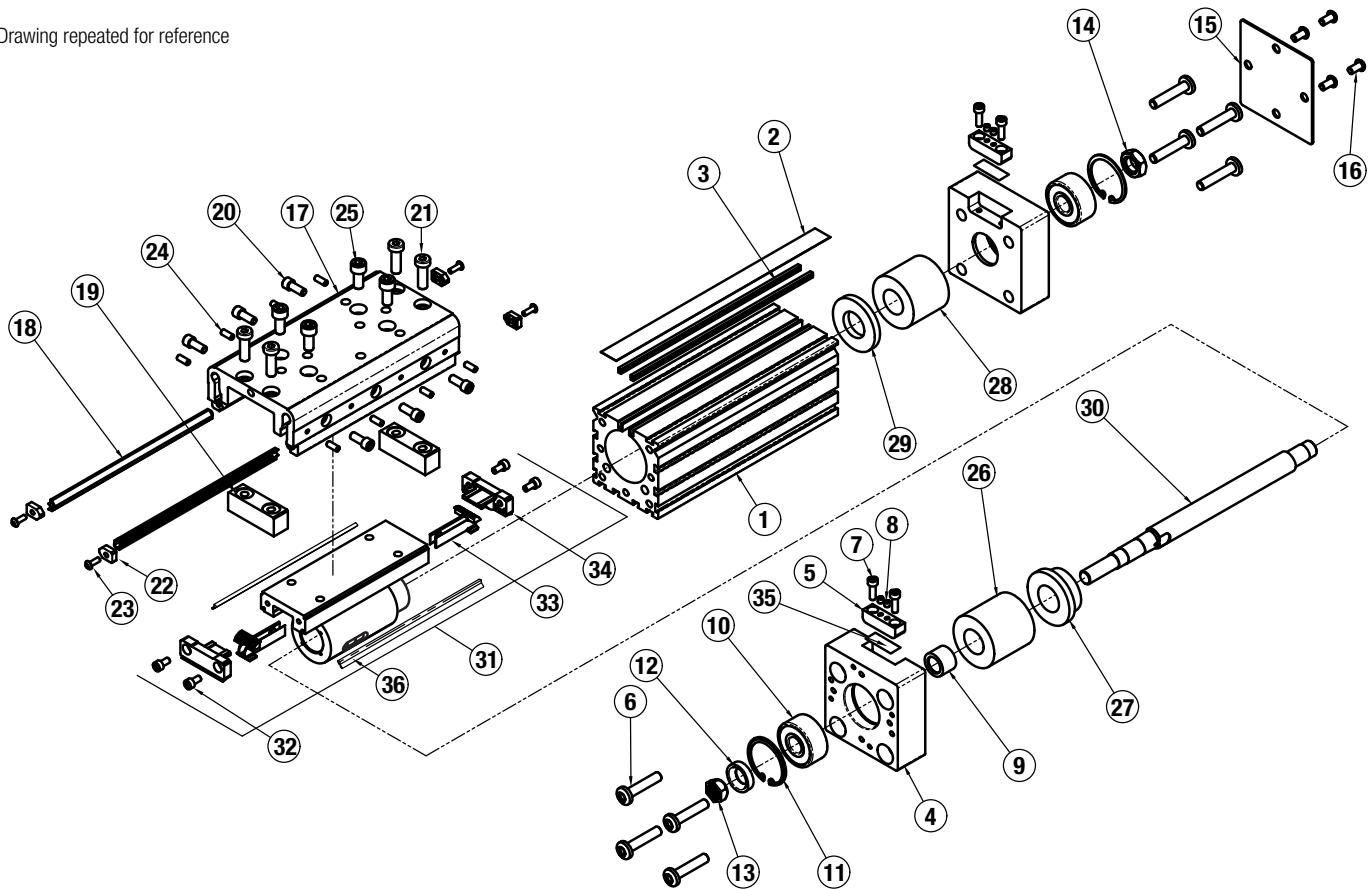
¹ Parts included in Repair Kits. (RKMXE63SSK or SM_ ___, indicate stroke length in inches or millimeters)

² Parts included in Nut Bracket Assembly

³ SK or SM_ ___, indicate stroke length in inches or millimeters

⁴ Length of connecting shaft varies by motor type and size, indicate motor code here

Drawing repeated for reference



Assembly and Disassembly Instructions

GENERAL ACTUATOR DISASSEMBLY INSTRUCTIONS

Begin with a clean work area. Be sure all replacement parts are present and have no visual damage or defects. The following tools are recommended for proper disassembly and assembly.

- SAE Hex Wrench Set
- Metric Hex Wrench Set
- Torx bit set
- Metric Socket Set
- SAE Socket Set

For best actuator performance it is recommended that the following instructions be read and followed carefully.

1. DUST BAND AND CARRIER REMOVAL

Remove the Band Clamps (5) from both Heads (4) of the actuator by removing Screws (7) and backing out the Center Set Screws (8) a couple turns. Carefully lift the Dust Band (2) from the slot in each Head (4) and remove any Shims (35) located under the Band (2) in the Head (4) slot. Retain the Shims (35) for reassembly. Remove the Carrier Spacer Blocks (19). Remove Screws (21) from the Carrier (17). Remove End Caps (34) from both ends of the Nut Bracket Assembly (31). The Dust Band (2) can now be removed from the actuator. Slightly loosen the Carrier Tension Screws (20) and Lock (Set) Screws (24). Remove

Bearing End Caps (22) from the Solid Bearings (18) and slide the Solid Bearings (18) out. The Carrier (17) can now be removed.

NOTE: If the stroke of the actuator is too short to allow removal of the Solid Bearings (18), it is necessary to remove the *Non-Drive End Head* (4) from the Tube (1).

2. LEADSCREW SUB-ASSEMBLY REMOVAL

On the *Non-Drive End* of the actuator, remove Screws (16) to remove the Cover Plate (15), and Hex Nut (14) from the Leadscrew (30). Remove Screws (6) from both Heads (4). Remove the *Non-Drive End Head* and the Drive Head/Leadscrew Assembly (30). The Nut Bracket Assembly (31) can now be removed from the Leadscrew (30) if necessary and the Band Ramps (33) may also be removed from the Nut Bracket Assembly (31) if required.

Ball Nut style: Caution is required if removal of the nut is necessary. Contact the factory for available parts and procedures.

Plastic Nut style: Plastic Nuts are factory pinned into the Nut Bracket and cannot be removed. If Nuts are worn, a new Nut Bracket Assembly (31) must be ordered.

If the *Drive End Head* (4) and Bearing (10) must be removed from the Leadscrew (30), contact the factory prior to removal for specific instructions.

GENERAL ACTUATOR ASSEMBLY INSTRUCTIONS**1. SUB-ASSEMBLY CARRIER**

Slide the Solid Bearings (18) into the slots on the Carrier (17) and install Bearing End Caps (22) loosely onto the Bearing Ends with Screws (23). Keep the Tension Screws (20) and Lock (Set) Screws (24) loose. If removed, install the Band Ramps (33) to the Nut Bracket Assembly (31).

2. INSTALL LEADSCREW ASSEMBLY

Install the Drive Head/Leadscrew Assembly (30) into the Tube (1). Ensure that the Bumper (27) and Nut Spacer (26) are in place and position the *Non-Drive End* Head (4) over the Leadscrew (30) and loosely install Screws (6) into the Head (4). Install the Screws (6) loosely into the *Drive End* Head (4).

3. INSTALL DUST BAND

Install the Dust Band (2) through the Nut Bracket Assembly (31) and install End Caps (34) onto the Nut Bracket Assembly (31). Position Carrier (17) sub-assembly onto the Tube (1).

4. TENSION THE CARRIER

The MX Solid Bearing Carrier (17) will provide best performance when properly adjusted. The carrier design contains both Tension (20) and Lock Screws (24). The Tension Screws (20) control the amount of pressure placed on the Solid Bearings (18). The Lock Screws (24) lock the Tension Screws (20) in place and provide fine adjustment of the Solid Bearings (18).

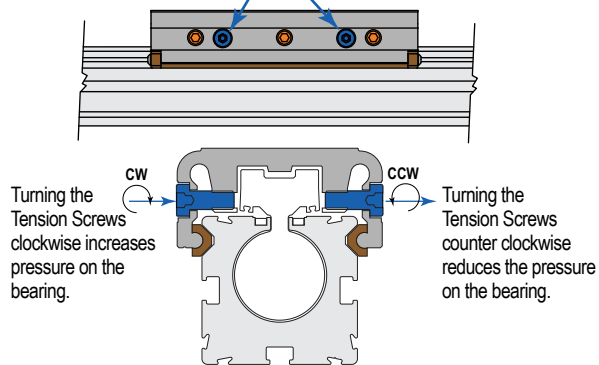
TOOLS REQUIRED:**Inch Models:**

3/16 and 5/32 inch Hex Key

Metric Models:

4 and 2.5 mm Hex Key

- Fully loosen all Tension (20) and Lock Screws (24) about ½ of a turn so that they are not engaged with the Solid Bearing (18).
- Tighten Tension Screws (20) on both sides of the Carrier (17) roughly ⅛ to ¼ turn clockwise past where the Screw (20) starts to feel snug. The Carrier (17) should be very difficult or impossible to move by hand. If not, tighten another 1/8 turn until it is difficult to move.
- Next, adjust the Lock Screws (24) on both sides of the Carrier (17) roughly 1/8 to ¼ turn clockwise past where the Screw (24) starts to engage. The Carrier (17) will be loose but should not rock sideways. To correct this, loosen the Lock Screws (24) about 1/16 of a turn.

TENSION SCREWS

Check out our MX--S carrier adjustment video on the web
<https://youtu.be/LVWPg2gfy0A>

If the Carrier (17) becomes too snug, tighten the Lock Screws (24) another 1/8 of a turn.

- Ideal carrier tension is achieved when the Carrier (17) feels snug in relation to the Tube (1), yet can be moved by hand. No rocking motion should be present. The Carrier (17) should also be loose enough to be moved by hand over the entire length of the actuator. If after this process the Carrier (17) has become too loose, equally adjust all of the Lock Screws (24) with a slight 1/32 turn counter-clockwise.

During the service life of the application this process may need to be repeated. Keeping the Carrier (17) in a properly adjusted tension will prolong the life of the MX bearing system and the actuator itself.

- When the proper carrier tension has been achieved, finish tightening the four Screws (23) to the Bearing End Caps (22).
- Position the Carrier (17) over the Nut Bracket Assembly (31) and install Screws (21). Install the Carrier Spacer Blocks (19) to the Carrier (17).

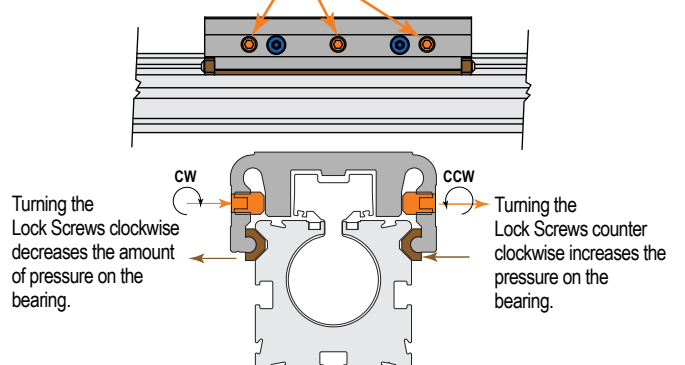
5. PERFORM HEAD ALIGNMENT AND FINAL ASSEMBLY.

NOTE: Custom tooling is used at the factory to align the Heads (4) to the Tube (1) to maintain parallelism between the top of the Head (4) and top of the Tube (1). In the following steps take care to visually align Head (4) to Tube (1).

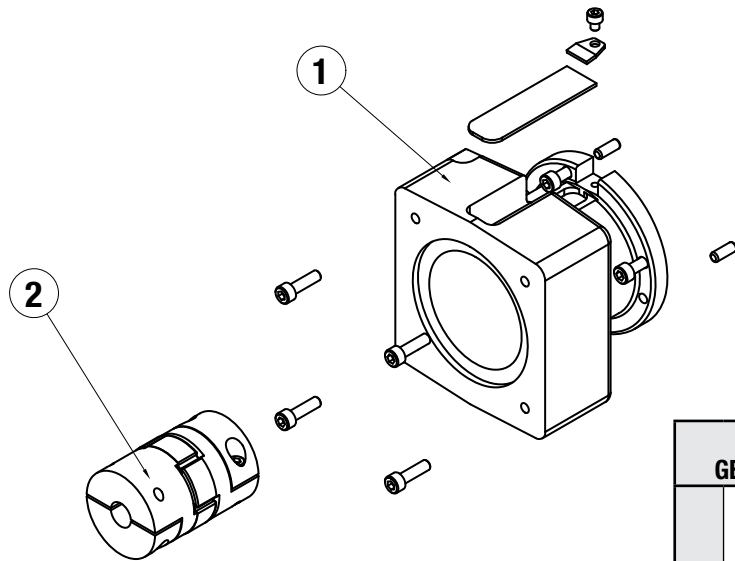
Move the assembled Carrier (17) to the *Drive End* of Tube (1) and tighten one of the Head Screws (6), supporting the actuator so the Head (4) is free to float while tightening the Screws (6). Move the Carrier (17) Assembly to *Non-Drive End* of Tube (1) and tighten the Head Screws (6). Move Carrier Assembly (17) back to the *Drive End* of Tube (1) and loosen the Screw (6) that was previously tightened and then tighten all Head Screws (6). Apply Loctite 242 to Hex Nut (14) and thread onto the Leadscrew (30) and torque to 18-20 in-lbs (2-2.25 N-m). Install Cover Plate (15) with Screws (16).

6. INSTALL BAND CLAMPS

The Dust Band (2), Tube (1) and clamping surface of the Head (4) must be flush with each other. To accommodate this, it may be necessary to re-install any Shims (35) that were present during disassembly into the clamp pocket on the Head (4). Position the Carrier (17) near the *Drive End* and position the Dust Band (2) in the Head (4) pocket over the installed Shims (35) and install the Band Clamp (5) with the two Screws (7). Tighten down the Center Set Screws (8). Position the carrier near the *Non-Drive End* and repeat the steps to install the other Band Clamp (5).

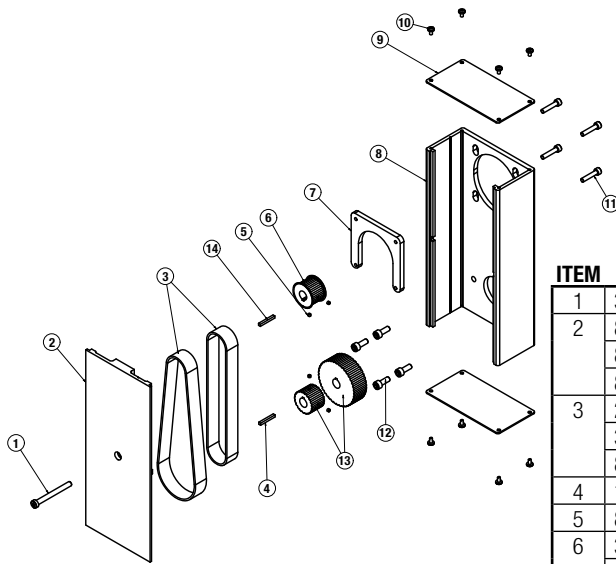
LOCK SCREWS

Inline Motor Mount Option



ITEM	PART NUMBER	DESCRIPTION	WITH GEARHEAD				WITHOUT GEARHEAD				
			MRS3XXX/GHS3XX	MRS33XX/GHS3XX	MRV2XXX/GHV2XX	MRV3XXX/GHV3XX	MRS3XXX	MRS33XX	MRV2XXX	MRV3XXX	MRV5XXX
1	2150-9053	Motor Mounting Kit, MRV23X, 200			1			1			
	2150-9200	Motor Mounting Kit, MRV34FR,RSA/R	1	1		1					
	4520-9086	Motor Mounting Kit, MRS3,MCS20/M3S20					1	1		1	
	2150-9056	Motor Mounting Kit, MRV51 RSA50								1	
2	3600-9242	Coupler Kit, 24,.50/.50,AL,M	1	1	1	1		1	1		
	3600-9244	Coupler Kit, 24,.50/.63,AL,M6					1				
	3600-9244	Coupler Kit, 24,.50/.63,AL,M6								1	

Reverse Parallel (RP) Option



ITEM	PART NUMBER	DESCRIPTION											
			(8363-9020)					(8363-9021)					
			1:1					2:1					
			MRV2XXX	MRS3XXX	MRV51XX	MRS31XX, MRS32XX	MRS33XX	MRV2XXX	MRV31XX	MRV51XX	MRS31XX, MRS32XX	MRS33XX	
1	3420-1641	Low Head Cap Screw	1	1	1	1	1	1	1	1	1	1	1
2	8363-1046	RP Cover, 34 Frame		1		1	1		1		1		1
	8363-1047	RP Cover, 56 Frame			1					1			
3	8363-1045	RP Cover, 23 Frame	1					1					
	2164-1007	Timing Belt, 375L	1										
	3415-1441	Timing Belt, 425L		1	1	1	1	1					
4	8363-1042	Timing Belt, 475L							1	1	1	1	1
	1004-7706	Square Key, .125 X .125 X 1.00	2	2	1	2	1	2	2	1	2	2	1
5	8363-1043	Set Screw	4	4	4	4	4	4	4	4	4	4	4
6	3415-1438	Pulley, 20Teeth, .500B, Key	1	1		1		1	1		1		1
	3420-1438	Pulley, 20Teeth, 5/8B, Key			1		1			1			1
7	0601-1053	U-Plate, 23 Frame	1					1					
	0602-1057	U-Plate, 34 Frame		1		1	1		1			1	1
	3420-1625	U-Plate, 56 Frame			1					1			
8	8363-1035	RP Housing, 23 Frame	1					1					
	8363-1036	RP Housing, 34 Frame		1		1	1		1		1	1	1
	8363-1037	RP Housing, 56 Frame			1					1			
9	3420-1602	End Cap, RP Housing	2	2	2	2	2	2	2	2	2	2	2
10	0601-1625	Screw	8	8	8	8	8	8	8	8	8	8	8
11	2212-1099	Socket Head Cap Screw, M5 X 0.8, 25mm	4	4		4	4	4	4			4	4
	3420-1638	Socket Head Cap Screw, M8 X 1.25, 35mm			4					4			
12	4415-1000	Socket Head Cap Screw, M6 X 1.0, 16mm	4	4	4	4	4	4	4	4	4	4	4
	8363-1040	Pulley, 20 Teeth	1	1	1	1	1						
13	8363-1041	Pulley, 40 Teeth						1	1	1	1	1	1
	2150-1067	Square Key, .18 X .188 X 1.00			1		1			1		1	1

REVERSE PARALLEL DISASSEMBLY INSTRUCTIONS

1. Remove Screws (10) to release Housing End Caps (9). Release the tension on Belt by breaking loose the Motor Screws (11).
2. Remove Screw (1) to remove Cover (2).
3. The Belt (3) can now be removed along with the Motor.
4. Remove both Pulleys (6) and (13) from their respective shafts.
5. Remove the RP Housing (8) from the actuator by removing Screws (12).

REVERSE PARALLEL ASSEMBLY INSTRUCTIONS

NOTE: Apply Loctite #242 to all Screws upon installation

1. Install RP Housing (8) to the actuator Head (pg.1-#4) with Screws (12). Do not fully tighten the Fasteners at this time and verify that the RP Housing (8) can move with respect to the Head (pg.1-#4).
2. Install the Motor to the RP Housing (8) with Screws (11). Do not tighten the Screws (11) at this time.
3. Install Pulleys (6) and (13) as needed. Tighten each Pulley (6 & 13) to its shaft with either a trantorque or a collar clamp.

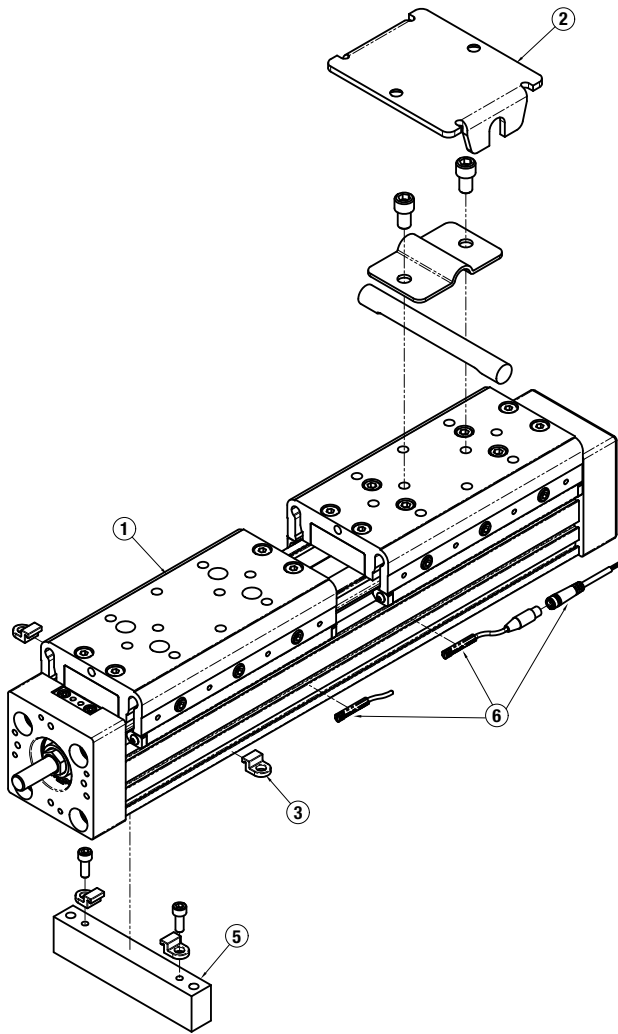
4. Locate the Belt (3) over the Pulleys (6) and (13).
5. Verify that there is clearance between the inside of the RP Housing (8) and each Pulley (6 & 13). Verify that the Pulleys (6 & 13) are aligned with each other.
6. Position the Cover (2) in the mating slot of the RP Housing (8) and install the Screw (1) to hold in place. Take care not to over tighten.
7. Tension the Belt (3) by pulling the Motor away from the drive shaft with the appropriate tension force shown in the chart below. While tensioning, the actuator should be positioned so the weight of the Motor does not affect the belt tension. Tighten the Motor Screws (11) while the tensioning force is applied to the Motor.

Smallest Shaft Diameter*	Tension Force
.18" to .25"	10 lbs
> .25" to .50"	20 lbs
> .50"	30 lbs

*The smaller of the actuator drive shaft or the motor shaft.

8. Install both End Caps (9) with the Screws (10) to finalize assembly.

Actuator Options Parts



ITEM	PART NO.	DESCRIPTION	QTY in KIT
1	8363-9515	Auxiliary Carrier Assembly, (inch)	
	8363-9015	Auxiliary Carrier Assembly, (metric)	
2	8163-9536	FLOATING MOUNT KIT (inch)	
	8163-9036	FLOATING MOUNT KIT (metric)	
	0925-1054	Floating Mount Clamp	1
	8163-1068	Floating Mount Bracket	1
	8163-1069	Pin	1
	8163-1570	Socket Head Cap Screw (inch)	4
	8150-1074	Socket Head Cap Screw (metric)	4
3	8163-9018	TUBE CLIP MOUNT KIT	
	8163-1050	Tube Clamp	2
5	8363-9016	MOUNTING PLATE KIT	
	8363-1031	Mounting Plate	1
	8163-1050	Tube Clamp	2
	8363-1044	Button Head Cap Screw	2

TO ORDER SERVICE PARTS SWITCHES:

Switches for MXE include retained mounting hardware and are the same for all actuator sizes and bearing styles

	Config. Code	Lead	Normally	Sensor Type
6	SWMXE63S R Y	5m (197 in)	Open	Reed
	SWMXE63S R K	Quick-disconnect		
	SWMXE63S N Y	5m (197 in)	Closed	Reed
	SWMXE63S N K	Quick-disconnect		
	SWMXE63S T Y	5m (197 in)	Open	Solid State PNP
	SWMXE63S T K	Quick-disconnect		
	SWMXE63S K Y	5m (197 in)	Open	Solid State NPN
	SWMXE63S K K	Quick-disconnect		
	SWMXE63S P Y	5m (197 in)	Closed	Solid State PNP
	SWMXE63S P K	Quick-disconnect		
	SWMXE63S H Y	5m (197 in)	Closed	Solid State NPN
	SWMXE63S H K	Quick-disconnect		

Mating QD cable is included.

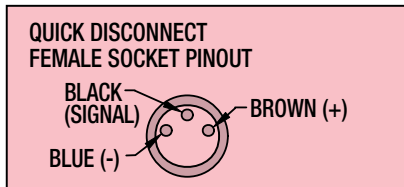
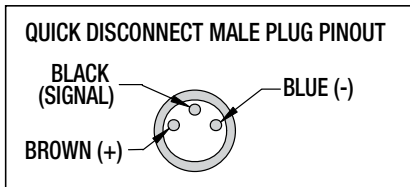
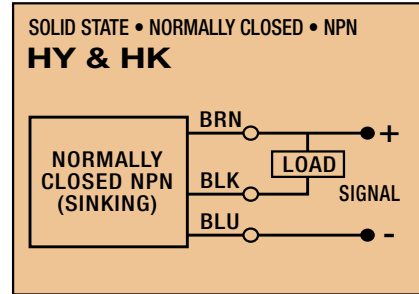
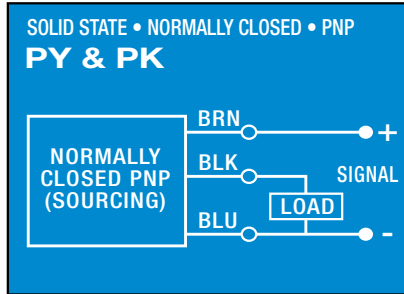
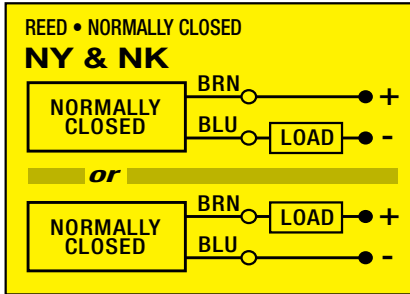
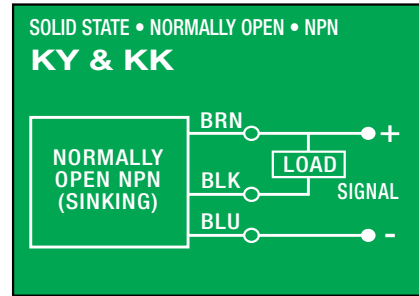
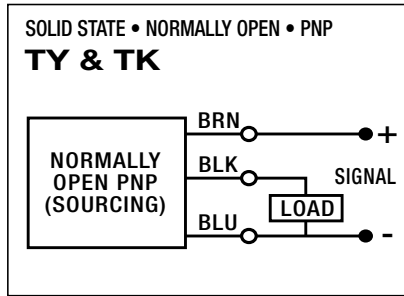
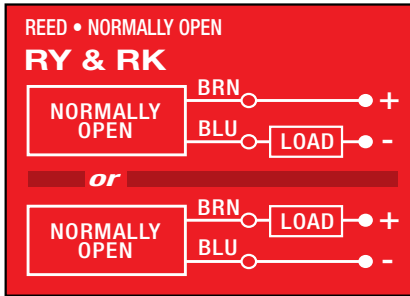
ORDERING REPAIR KITS

Repair kit includes: dust band, end caps, wipers, solid bearings, bearing end caps

The part number for a repair kit begins with RK followed by model, actuator size, bearing type, and stroke length (**S****K** = inch/US Standard, **S****M** = metric) (NOTE: If unit has an auxiliary carrier also include DC and distance between carrier centers)

REPAIR KIT	MODEL	ACTUATOR SIZE	BEARING TYPE	STROKE METRIC	STROKE LENGTH	AUXILIARY CARRIER	DISTANCE BETWEEN CARRIERS
RK	MXE	63	S	SM	2007	02	DC215.9

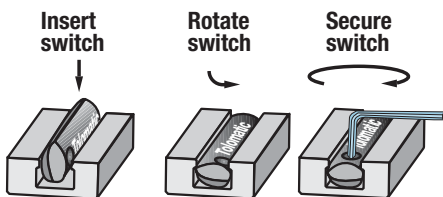
SWITCH WIRING DIAGRAMS AND LABEL COLOR CODING (CE and RoHS Compliant)



Switches for MX:

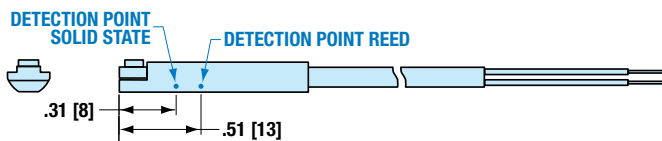
- Include retained mounting hardware
- In slot, sit below extrusion profile
- Same for all sizes and bearing styles

SWITCH INSTALLATION AND REPLACEMENT



Place switch in side groove on tube at desired location with "Tolomatic" facing outward. While applying light pressure to the switch, rotate the switch halfway into the groove. Maintaining light pressure, rotate the switch in the opposite direction until it is fully inside the groove with "Tolomatic" visible. Re-position the switch to the exact location and lock the switch securely into place by tightening the screw on the switch.

SWITCH DETECTION POINT



Dimensions in inches [brackets indicate dimensions in millimeters]



3800 County Road 116, Hamel, MN 55340
<http://www.Tolomatic.com> • Email: Help@Tolomatic.com
 Phone: (763) 478-8000 • Fax: (763) 478-8080 • Toll Free: 1-800-328-2174



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