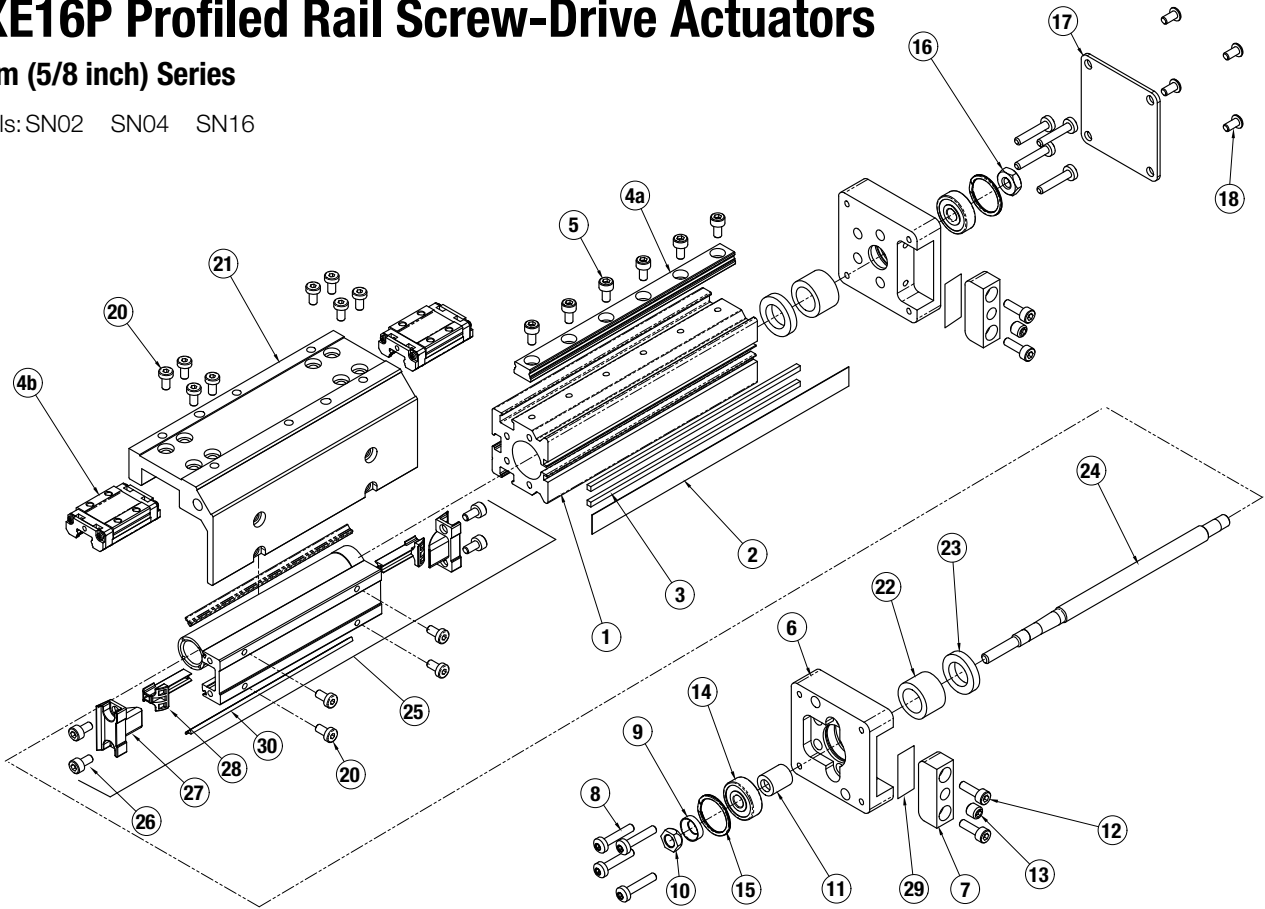


MXE16P Profiled Rail Screw-Drive Actuators

16mm (5/8 inch) Series

Models: SN02 SN04 SN16



ITEM	PART NO. OR CONFIG. CODE	DESCRIPTION	MXE16P		
			SN02	SN04	SN16
11.	RTBMXE16_SK_	TUBE (US CONV)	1	1	1
	RTBMXE16_SM_	TUBE (METRIC)	1	1	1
22.	NDBMXE16_SK_	DUST BAND (US CONV)	1	1	1
	NDBMXE16_SM_	DUST BAND (METRIC)	1	1	1
23.	NMBMXE16_SK_	MAGNET BAND KIT (US CONV)	2	2	2
	NMBMXE16_SM_	MAGNET BAND KIT (METRIC)	2	2	2
3,4A.	NPRMXE16_SK_	BEARING RAIL (US CONV) ADD BB FOR OPTIONAL BEARING BLOCKS (SEE 4B.)	1	1	1

ITEM	PART NO. OR CONFIG. CODE	DESCRIPTION	MXE16P		
			SN02	SN04	SN16
4A.	NPRMXE16_SM_	BEARING RAIL (METRIC) ADD BB FOR OPTIONAL BEARING BLOCKS (SEE 4B.)	1	1	1
4B.	8116-9160	BEARING BLOCK KIT (SET OF TWO)	1	1	1
5.	4905-1005	SHCS M3 X 0.5 X 6MM	A/R	A/R	A/R
6.	8316-1011	HEAD	2	2	2
7.	8316-1017	BAND CLAMP	2	2	2
8.	8316-1022	PAN HEAD CAP SCREW	8	8	8
9.	8316-1028	SPHERICAL WASHER	1	1	1
10.	8316-1027	LOCK NUT	1	1	1

⁴ Bearing Blocks and/or Bearing Rail purchased before Oct. 1, 2014 are NOT compatible with current Bearing Blocks and Bearing Rails purchased after Oct. 1, 2014.

Tube Nut Style & Size
¹ Replacement Tube ordering method: **RTB MXE16P** **SK** **DC**
EXAMPLE: **RTB MXE16P BN02 SK21.25 DC7**

² Replacement ordering method: **MXE16P** **SK** **DC**
EXAMPLE: **NDB MXE16P SK21.25 DC7**

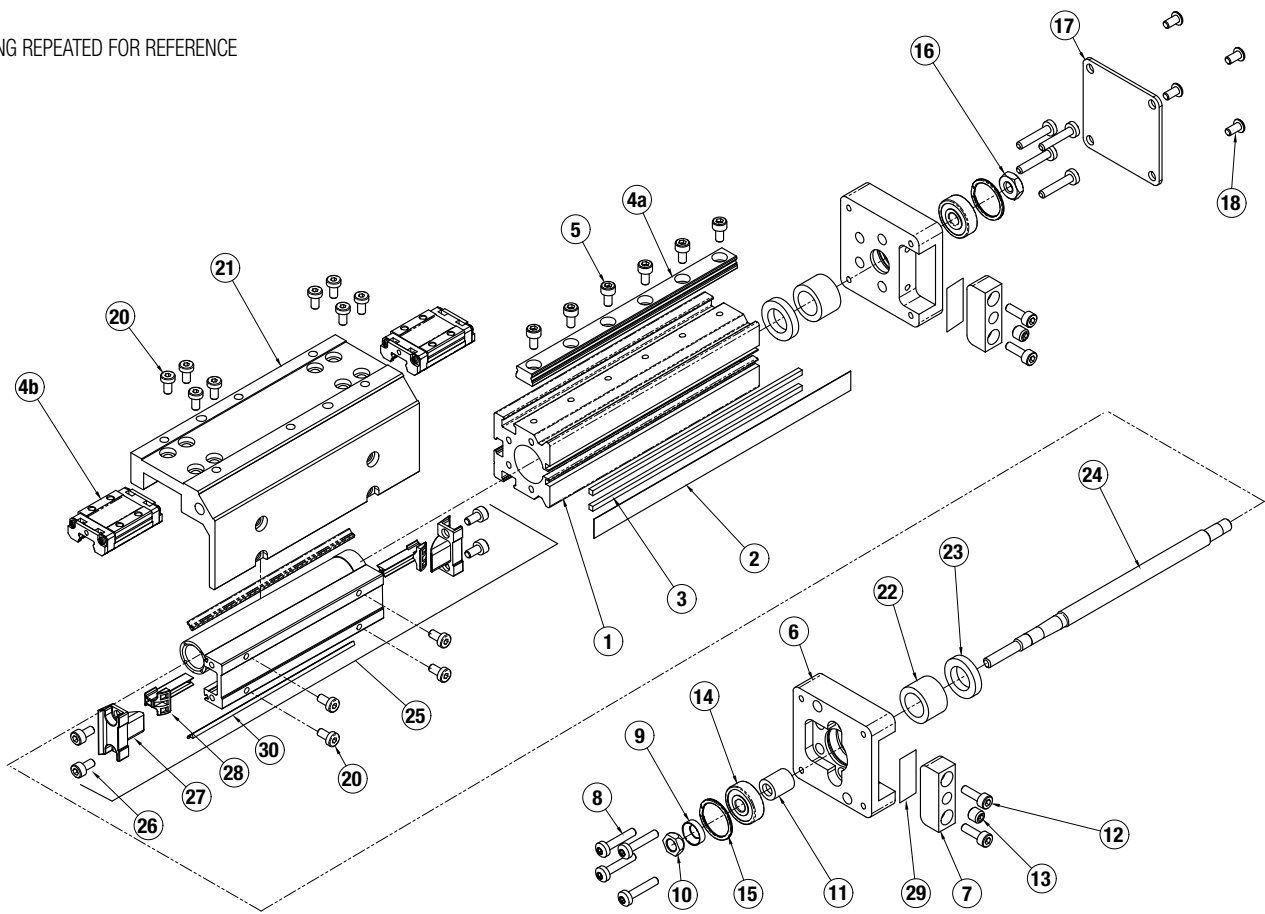
Magnet Band (NMB) or Dust Band (NDB) Model & Size Bearing Stroke Length Aux. Carrier

³ Replacement Bearing Rail ordering method: **NPR MXE16** **SK** **DC**
EXAMPLE: **NPR MXE16 BN02 SK21.25 DC7**

Bearing Rail Model & Size Nut Style & Size Stroke Length Aux. Carrier

Auxiliary Carrier Option Note: If replacing a Tube (1.) or Dust Band (2.), Magnet Band Kit (3.) or Lead Screw (24.) on an actuator that has an Auxiliary Carrier, be sure to add "DC ___" to the end of the configuration string when ordering. "DC" indicates the need for additional length and "___" indicates the measurement of space between carriers (in inches [SK] or millimeters [SM] as indicated earlier in the configuration string).

DRAWING REPEATED FOR REFERENCE



ITEM	PART NO. OR CONFIG. CODE	DESCRIPTION	MXE16P		
			SN02	SN04	SN16
11.	8316-1029	BUSHING	1	1	1
12.	0602-3012	SOCKET HEAD CAP SCREW	4	4	4
13.	0601-1093	SET SCREW	2	2	2
14.	8316-1009	BEARING	2	2	2
15.	8316-1005	RETAINING RING	2	2	2
16.	2506-1007	HEX NUT	1	1	1
17.	8316-1020	COVER PLATE, IDLE END	1	1	1
18.	0602-1056	BUTTON HEAD CAP SCREW	4	4	4
20.	8125-1022	LOW HEAD CAP SCREW	12	12	12
21.	8316-1521	CARRIER (US CONV)	1	1	1
	8316-1021	CARRIER (METRIC)	1	1	1
22.	8316-1024	SPACER, NYLON	2	2	2
23.	8316-1023	BUMPER	2	2	2
24.	RLSMXE16_SK_	LEADSCREW (US CONV)	A/R	—	—
	RLSMXE16_SM_	LEADSCREW (METRIC)	A/R	—	—

ITEM	PART NO. OR CONFIG. CODE	DESCRIPTION	MXE16P		
			SN02	SN04	SN16
25.	8316-9006	NUT BRACKET ASSEMBLY, SN02	1	—	—
	8316-9007	NUT BRACKET ASSEMBLY, SN04	—	1	—
	8316-9008	NUT BRACKET ASSEMBLY, SN16	—	—	1
26.	0601-1038	SOCKET HEAD CAP SCREW	4	4	4
27.	8116-1006	END CAP	2	2	2
28.	8316-1007	BAND RAMP	2	2	2
29.	8325-1055	SHIM	2	2	2
	8325-1056	SHIM	2	2	2
	8325-1057	SHIM	2	2	2
30.	8116-1059	WIPER	2	2	2

^{5,6} Solid Nut Bracket Assembly available to order for replacement. Contact the Factory.
⁶ Parts included in Repair Kits. (RKMXE16P_SK_ or RKMXE16P_SM_, indicate stroke length in inches or millimeters)
⁷ Parts included in Nut Bracket Assembly

⁸ Replacement Lead Screw ordering method: **RLS** **MXE16P** **□□□□** **SK** **□□□□□□** **LM** **I** **YM** **□□□□□□** **DC** **□**
EXAMPLE: **RLS** **MXE16P** **B** **N02** **SK** **21-25** **LM** **I** **YM** **0** **T** **B** **D** **0** **DC** **7**
 Lead Screw Bearing Nut Style Stroke Length Motor Orientation Motor Code Aux. Carrier

Auxiliary Carrier Option Note: If replacing a Tube (1.) or Dust Band (2.), Magnet Band Kit (3.) or Lead Screw (24.) on an actuator that has an Auxiliary Carrier, be sure to add "DC ___" to the end of the configuration string when ordering. "DC" indicates the need for additional length and "___" indicates the measurement of space between carriers (in inches [SK] or millimeters [SM] as indicated earlier in the configuration string).

Assembly and Disassembly Instructions

GENERAL 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

1. DUST BAND AND CARRIER REMOVAL.

Position the actuator with the Dust Band (2) facing up. Remove the Band Clamps (7) from both Heads (6) of the actuator by removing Screws (12) and backing out the Center Set Screw (13) a couple turns. Carefully lift the Dust Band (2) from the slot in each Head (6) and remove any Shims (29) located under the Band (2) in the Head (6) slot. Retain the Shims (29) for reassembly. Remove Screws (20) to release the Carrier (21) from the Nut Bracket Assembly (25). Slide the Carrier (21) clear of the Nut Bracket. Remove Nut Bracket End Caps (27) from both ends of the Nut Bracket. The Dust Band (2) can now be removed from the actuator.

NOTE: If removal of the Bearing Rail (4a) or Bearing Blocks (4b) is necessary, contact the factory prior to removal for specific instructions.

2. LEAD SCREW SUB-ASSEMBLY REMOVAL.

On the Non-Drive End of the actuator, remove the Screws (18) and remove the Cover Plate (17) and the Lock Nut (16) from Leadscrew (24). Remove Head Fastener Bolts (8) from both Heads (6). Remove the Non-Drive End Head (6) and the Drive Head/Leadscrew (24) assembly. If necessary, the Nut Bracket Assembly (25) can now be removed from the Leadscrew (24) and the Band Ramps (28) may also be removed from the Nut Bracket Assembly (25) 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 (25) and cannot be removed. If Nuts are worn, a new Nut Bracket Assembly (25) must be ordered. If Drive End Head (6) and Bearing (14) must be removed from the Leadscrew (24), contact the factory prior to removal for specific instructions.

GENERAL ASSEMBLY INSTRUCTIONS

1. INSTALL LEAD SCREW ASSEMBLY AND CARRIER.

Install the Band Ramps (28). From the Drive End, install the Head/Leadscrew/Nut Bracket (25) assembly into the Tube (1) making sure the Bearing Rail (4a) is oriented on the left side of the Tube (1). With the Bumper (23) and Nut Spacer (22) in place, position the Non-Drive End Head (6) over the Leadscrew Bearing (14) and loosely install Head Fastener Bolts (8) into the Head (6). Install the Drive End Head Fastener Bolts (8) loosely into the Drive End Head (6).

2. INSTALL DUST BAND AND CARRIER.

Install the Dust Band (2) through the Nut Bracket Assembly (25) and install the End Caps (27) onto the Nut Bracket (25). Position Carrier (21) over the Bearing Blocks (4b) and the Nut Bracket (25) and install all Fasteners (20) and leave them loose at this time. By hand, load the Carrier (21) to keep it tight down on the surface of the Bearing Blocks (4b) and tighten the Carrier-to-Nut Bracket Fasteners (20). Tighten the Carrier-to-Bearing Block Fasteners (20).

3. PERFORM HEAD ALIGNMENT AND FINAL ASSEMBLY.

NOTE: Custom tooling is used at the factory to align the Heads (6) to the Tube (1) to maintain parallelism between the top of the Head (6) and top of the Tube (1). This is critical to performance and longevity of the Dust Band (2). In the following steps, it will be necessary to measure parallelism between the Head (6) and the Tube (1).

Move Carrier Assembly (21) to Drive End of Tube (1) and tighten one of the Head Fastener Bolts (8). Support the actuator on the Tube (1) such that the Head (6) is free to float while tightening the Head Fasteners (8).

Move Carrier Assembly (21) to Non-Drive End of Tube (1) and tighten these Head Fastener Bolts (8).

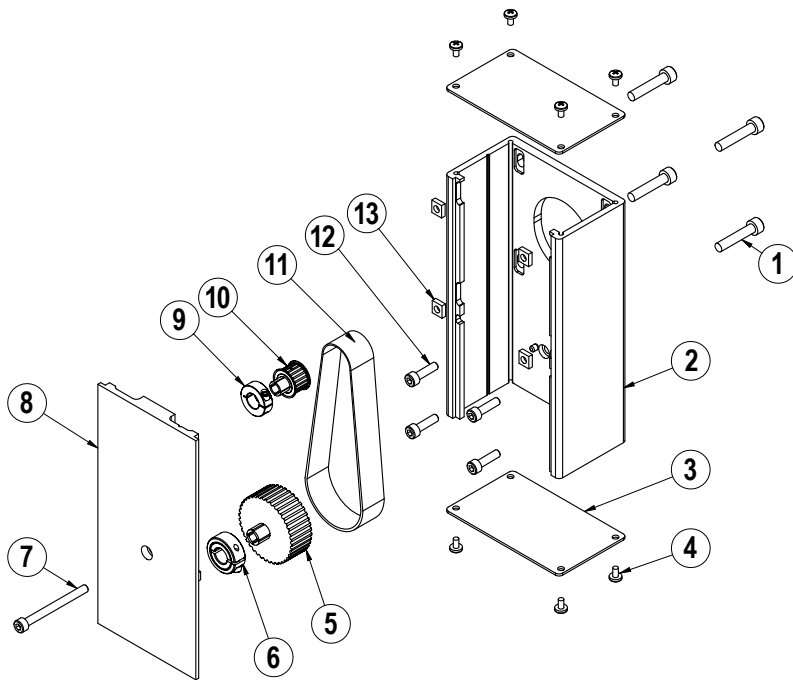
Move Carrier Assembly (21) back to the Drive End of Tube (1) and loosen the Fastener (8) that was previously tightened and then tighten all Head Fastener Bolts (8).

Apply Loctite 242 to Hex Nut (16) and thread onto the Leadscrew (24) and torque to 16-20 oz.-in Install Cover Plate (17) with Screws (18).

4. INSTALL BAND CLAMPS.

Visually inspect the interface between the Dust Band (2) surface of the Tube (1) and the clamping surface of each Head (6). This should be flush. It may be necessary to install Shims (29) in the pocket of the Head (6) in order to make flush. Position the Carrier (21) near the Drive End. Position the Band (2) in the pocket over any previously installed Shims (29) and install the Band Clamp (7) with the two Cap Screws (12). Lastly, tighten down the Center Set Screw (13). Position the Carrier (21) near the Non-Drive End and repeat the steps to install the other Band Clamp (7).

Reverse Parallel (RP) Mounting Option



ITEM	PART NO.	DESCRIPTION	QTY.
◊1.	CONFIGURED	MOTOR FASTENER	4
◊2.	CONFIGURED	RP HOUSING	1
◊3.	CONFIGURED	RP HOUSING END CAP	2
◊4.	CONFIGURED	END CAP SCREW	8
◊5.	CONFIGURED	DRIVE SHAFT PULLEY	1
◊6.	CONFIGURED	COLLAR CLAMP, DRIVE SHAFT	1
◊7.	CONFIGURED	RP COVER FASTENER	1
◊8.	CONFIGURED	RP COVER	1
◊9.	CONFIGURED	COLLAR CLAMP, MOTOR	1
◊10.	CONFIGURED	MOTOR PULLEY	1
◊11.	CONFIGURED	BELT	1
◊12.	CONFIGURED	RP PLATE FASTENER	4
◊13.	CONFIGURED	SQUARE NUT	4

◊ Part numbers varies depending on YMH (Your Motor Here). Contact help@tolomatic.com for replacement part numbers.

Disassembly Instructions

1. Remove End Caps (3), and release the tension on the Belt (11) by breaking loose the motor fasteners (1).
2. Remove the RP Cover (8).
3. The Belt (11) can now be removed along with the Motor.
4. Remove both Pulleys (10) and (5) from their respective shafts.
5. Remove the RP Housing (2) from the actuator head by removing the Fasteners (12).

Assembly Instructions

Note: Apply Loctite #242 to all fasteners upon installation

1. Install RP Housing (2) onto the actuator Head with Fasteners (12).
2. Install the Motor to the RP Housing with Fasteners (1) and Square Nuts (13). Do not tighten the fasteners at this time.
3. Locate the Belt (11) over the Pulleys (10) and (5) and slide both pulleys over their respective shafts. Tighten each pulley to its shaft with the Collar Clamps (9) and (6).
4. Position the Cover (8) in the mating slot of the RP case and install the Fasteners (7) to hold it in place. Take care not to overtighten. If the cover is deflected, it can interfere with the leadscrew.

5. Tension the Belt (11) 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 Fasteners (1) while the tensioning force is applied to the motor.

SMALLEST SHAFT DIAMETER (Motor or Actuator)		TOTAL WEIGHT TO APPLY	
Inches	mm	lbs	kgs
0.18 to 0.259	4.572 to 6.579	13	5.902
0.260 to 0.499	6.604 to 12.675	22	9.988
0.500 to 0.625	12.7 to 15.875	31	14.074
0.625 and larger	15.875 and larger	40	18.160

Additional tips are found in Tolomatic [Electric Actuator Motor Mounts Technical Note # 3600-4203](#).

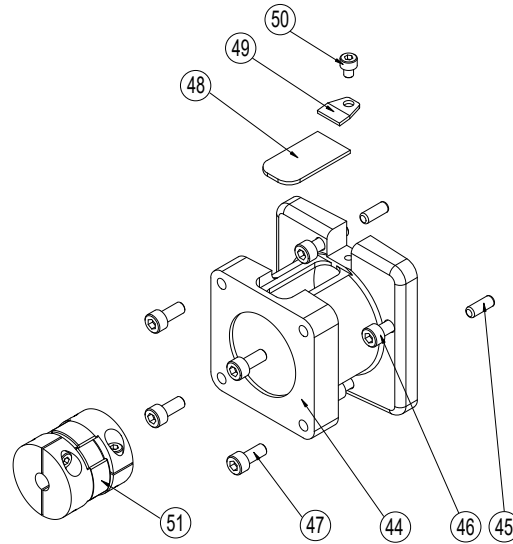
6. Verify that there is clearance between the inside of the RP case and each pulley. Verify the pulleys are aligned to each other.
7. Install both End Caps (3) with the Screws (4) to finalize the assembly.

In-Line (LMI) Mounting Option

ITEM	PART NO.	DESCRIPTION	QTY
◊44.	CONFIGURED	MOTOR SPACER	1
◊45.	CONFIGURED	DOWEL PIN	2
◊46.	CONFIGURED	SCREW	4
◊47.	CONFIGURED	SCREW	4
◊48.	CONFIGURED	COVER	1
◊49.	CONFIGURED	CLAMP	1
◊50.	CONFIGURED	SCREW	1
◊51.	CONFIGURED	COUPLER	1

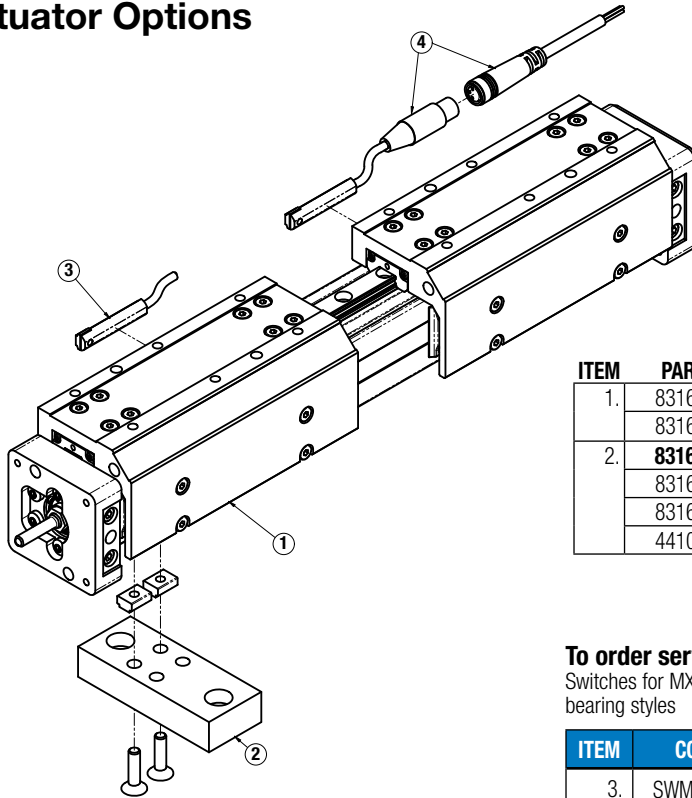
◊ Part number varies depending on YMH (Your Motor Here).
Contact help@tolomatic.com for replacement part number.

A replacement Motor Mount Kit contains all parts listed above.



Replacement Motor Mount Kits ordering method: **MMK MXE16P** **LMI YM**
EXAMPLE: MMK MXE16P S N 0 2 L M I Y M 0 1 1 0 0 1
 Motor Mount Kit ——— Model & Size ——— Bearing Style ——— Lead Screw ——— Motor Orientation ——— Motor Code

Actuator Options



ITEM	PART NO.	DESCRIPTION	QTY IN KIT
1.	8316-9514	AUXILIARY CARRIER ASSEMBLY (INCH)	
	8316-9014	AUXILIARY CARRIER ASSEMBLY (METRIC)	
2.	8316-9016	MOUNTING PLATE KIT	
	8316-1030	MOUNTING PLATE, .50 THICK	1
	8316-1050	T-NUT	2
	4410-1018	FLAT 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

ITEM	CONFIG. CODE	LEAD	NORMALLY	SENSOR TYPE
3.	SWMXE16P RY	5M (197 IN)	OPEN	REED
4.	SWMXE16P RK	QUICK-DISCONNECT		
3.	SWMXE16P NY	5M (197 IN)	CLOSED	REED
4.	SWMXE16P NK	QUICK-DISCONNECT		
3.	SWMXE16P TY	5M (197 IN)	OPEN	SOLID STATE PNP
4.	SWMXE16P TK	QUICK-DISCONNECT		
3.	SWMXE16P KY	5M (197 IN)	OPEN	SOLID STATE NPN
4.	SWMXE16P KK	QUICK-DISCONNECT		
3.	SWMXE16P PY	5M (197 IN)	CLOSED	SOLID STATE PNP
4.	SWMXE16P PK	QUICK-DISCONNECT		
3.	SWMXE16P HY	5M (197 IN)	CLOSED	SOLID STATE NPN
4.	SWMXE16P HK	QUICK-DISCONNECT		

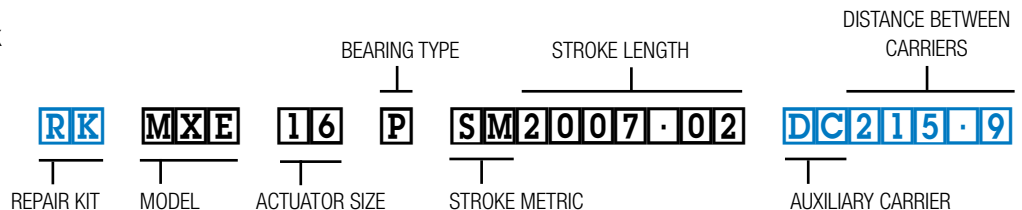
NOTE: When ordering Quick-disconnect mating female connector is included

Ordering Repair Kits

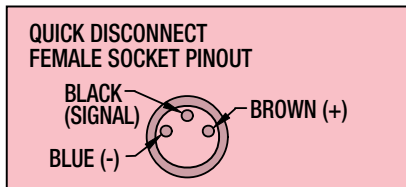
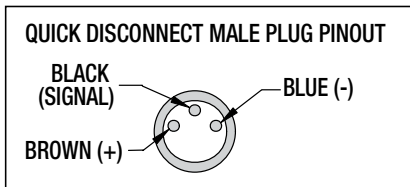
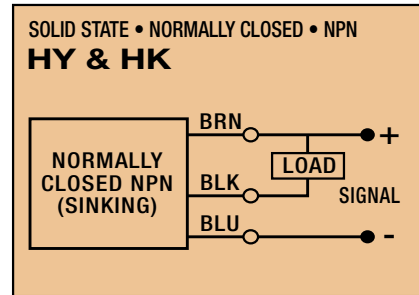
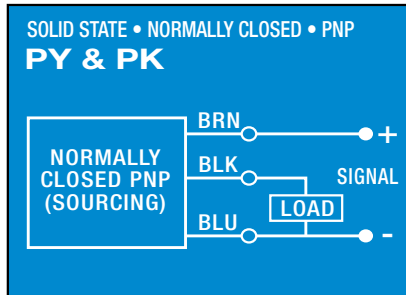
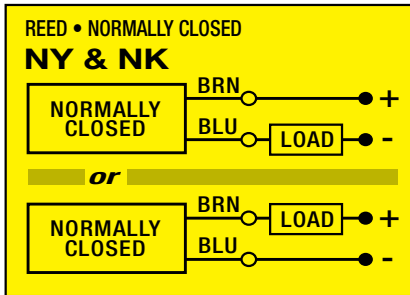
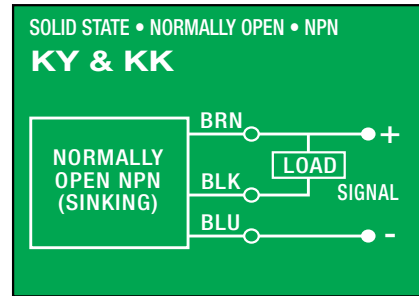
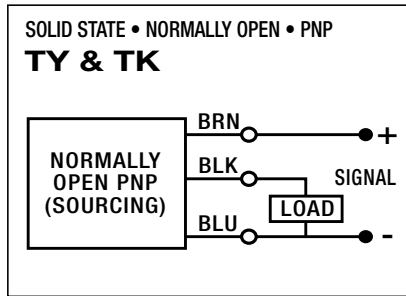
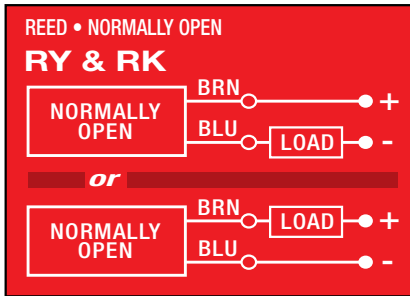
Repair kit includes: dust band, end caps, wipers, solid bearings, bearing end caps

The part number for a repair kit begins with RK followed by model, actuator size, bearing type, and stroke length (**SIK** = inch/US Standard, **SIM** = metric)

(NOTE: If unit has an auxiliary carrier also include DC and distance between carrier centers)

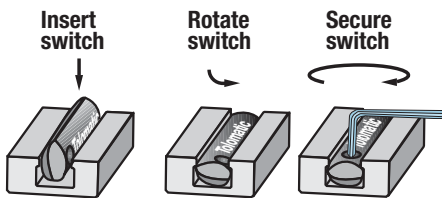


Switch Wiring Diagrams and Label Color Coding (Ce and Rohs Compliant)



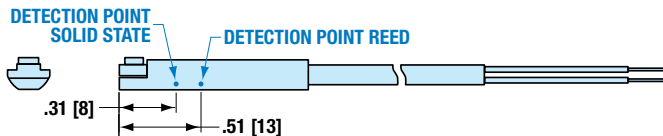
- Switches for MX:
- Include retained mounting hardware
 - In slot, sit below extrusion profile
 - Same for all sizes and bearing styles

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 it such that the switch is halfway in the groove. Maintaining light pressure, rotate the switch in the opposite direction until the switch 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]



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 Phone: (763) 478-8000 • Fax: (763) 478-8080 • Toll Free: 1-800-328-2174

COMPANY WITH
 QUALITY SYSTEM
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