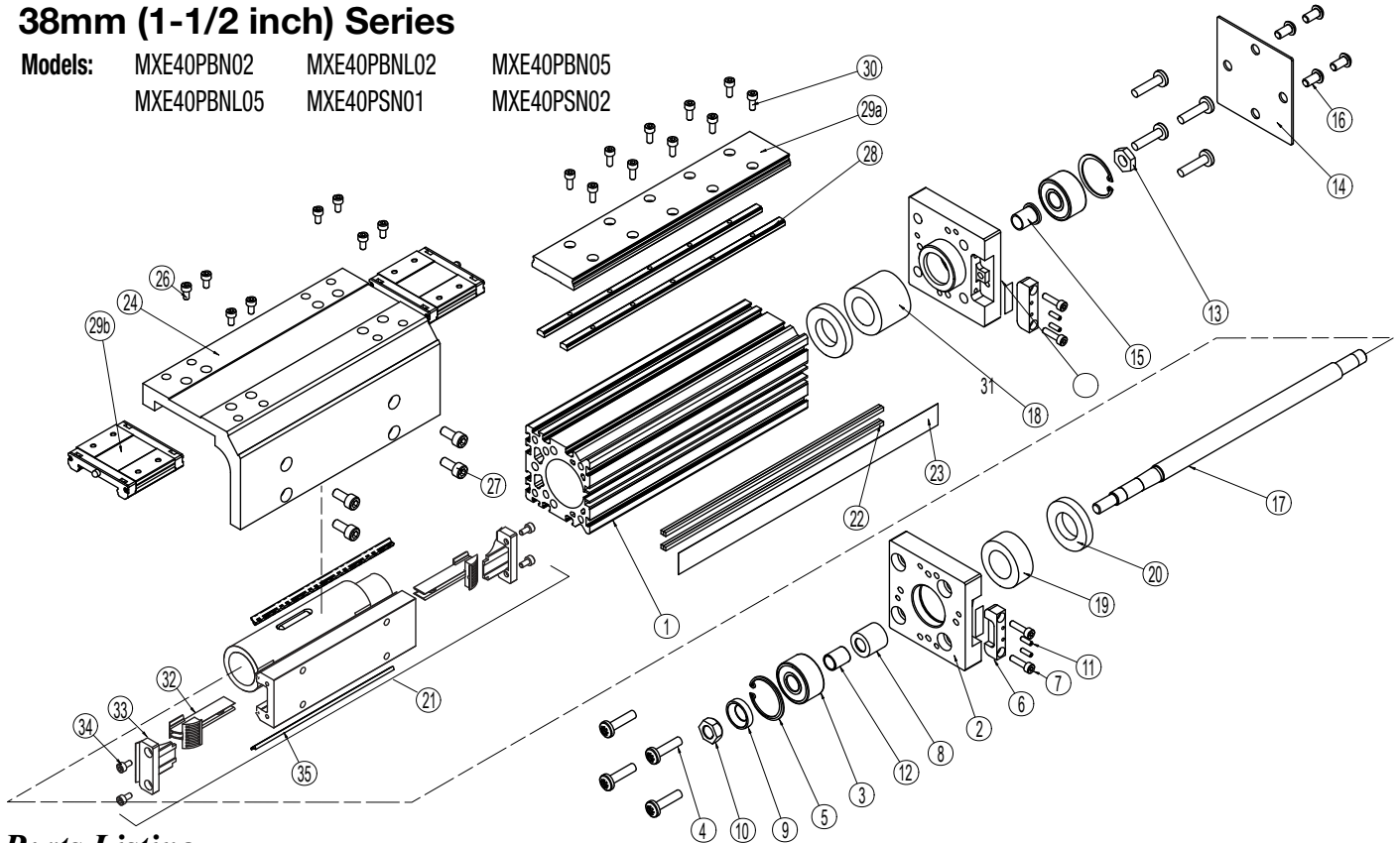


# MXE40P Profiled Rail Bearing Screw-Drive Actuators

## 38mm (1-1/2 inch) Series

Models: MXE40PBN02    MXE40PBNL02    MXE40PBN05    MXE40PBNL05    MXE40PSN01    MXE40PSN02



### Parts Listing

A/R= As Required

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	MXE40P					
			BN02	BNL02	BN05	BNL05	SN01	SN02
1 <sup>1</sup>	RTBMXE40	Replacement Tube (8340-1010)	A/R	A/R	A/R	A/R	A/R	A/R
2	8340-1011	Head	2	2	2	2	2	2
3	3415-1322	Bearing	2	2	2	2	2	2
4	0604-1025	Screw	8	8	8	8	8	8
5	3415-1307	Retaining Ring	2	2	2	2	2	2
6	8340-1017	Band Clamp	2	2	2	2	2	2
7	0602-1027	Screw	4	4	4	4	4	4
8	3415-2042	Sleeve	1	1				
	3415-2041	Sleeve			1	1	1	1
9	1124-1092	Washer	1	1				
	3415-2014	Washer			1	1	1	1
10	1124-1082	Hex Nut	1	1				
	1132-1013	Hex Nut			1	1	1	1
11	8325-1058	Set Screw	4	4	4	4	4	4
12	3415-2043	Sleeve	1	1				
	1076-1101	Hex Nut	1	1				
13	1001-1322	Hex Nut			1	1	1	1
	8340-1022	Cover Plate	1	1	1	1	1	1
14	8340-1022	Cover Plate	1	1	1	1	1	1
15	3415-1320	Sleeve	1	1				
16	8340-1009	Screw	4	4	4	4	4	4
17	RLSAMXE40-BN(L)02SK <sup>1</sup> LMI <sup>2</sup>	Leadscrew, .500, BN(L)02, LMI 23-Frame (8340-1100)	A/R	A/R	-	-	-	-
	RLSAMXE40-BN(L)02SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, BN(L)02, RP 23-Frame (8340-1101)	A/R	A/R	-	-	-	-
	RLSAMXE40-BN(L)02SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, BN(L)02, RP 34-Frame (8340-1102)	A/R	A/R	-	-	-	-

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	MXE40P					
			BN02	BNL02	BN05	BNL05	SN01	SN02
17 (cont.)	RLSAMXE40-SN02SK <sup>1</sup> LMI <sup>2</sup>	Leadscrew, .500, SN02, LMI 23-Frame (8340-1103)	-	-	-	-	-	A/R
	RLSAMXE40-SN02SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, SN02, RP 23-Frame (8340-1104)	-	-	-	-	-	A/R
	RLSAMXE40-SN02SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, SN02, RP 34-Frame (8340-1105)	-	-	-	-	-	A/R
	RLSAMXE40-BN(L)05SK <sup>1</sup> LMI <sup>2</sup>	Leadscrew, .500, BN(L)05, LMI 23-Frame (8340-1106)	-	-	A/R	A/R	-	-
	RLSAMXE40-BN(L)05SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, BN(L)05, RP 23-Frame (8340-1107)	-	-	A/R	A/R	-	-
	RLSAMXE40-BN(L)05SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, BN(L)05, RP 34-Frame (8340-1108)	-	-	-	A/R	-	-
	RLSAMXE40-SN01SK <sup>1</sup> LMI <sup>2</sup>	Leadscrew, .500, SN01, LMI 23-Frame (8340-1109)	-	-	-	-	-	A/R
	RLSAMXE40-SN01SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, SN01, RP 23-Frame (8340-1110)	-	-	-	-	-	A/R
18	RLSAMXE40-SN01SK <sup>1</sup> RP <sup>2</sup>	Leadscrew, .500, SN01, RP 34-Frame (8340-1111)	-	-	-	-	-	A/R
	8340-1023	Spacer	1	1	1	1	1	1
	8340-1024	Solid Nut Spacer					1	1
19	8340-1025	Ball Nut Spacer			1	1		


<sup>1</sup> SK or SM \_\_\_\_, indicate stroke length in inches or millimeters

<sup>2</sup> Length of connecting shaft varies by motor type and size, indicate motor code here

<sup>3</sup> Solid Nut Bracket Assembly available to order for replacement. Contact the Factory.

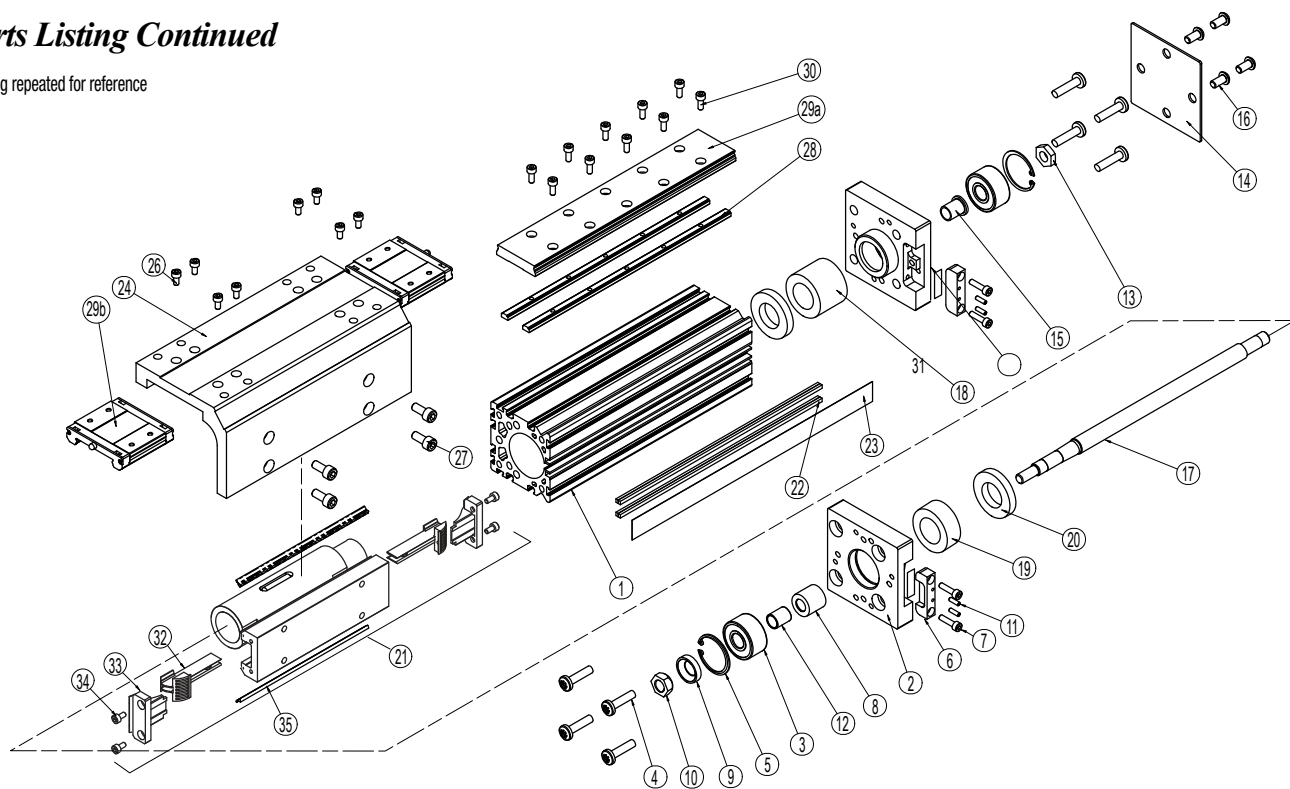
<sup>4</sup> Parts included in Repair Kits. (RKMXE40PSK or SM \_\_\_\_, indicate stroke length in inches or millimeters)

<sup>5</sup> Parts included in Nut Bracket Assembly.

<sup>6</sup>  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.

**Parts Listing Continued**

Drawing repeated for reference



A/R= As Required

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	MXE40P					
			BN02	BNL02	BN05	BNL05	SN01	SN02
20	3415-1318	Bumper	2	2	2	2	2	2
21 <sup>5</sup>	8340-9009 <sup>3</sup>	Nut Bracket Assy, SN01						1
	8340-9008 <sup>3</sup>	Nut Bracket Assy, SN02						1
	8340-9006	Nut Bracket Assy, BN02	1	1				
	8340-9007	Nut Bracket Assy, BN05			1	1		
22	NMBMXE40	New Magnet Band Kit (8140-1019) (4 magnet strips included)	After Config. Code add: SK (stroke length in inches) or SM (stroke length in mm)					
23 <sup>4</sup>	NDBMXE40	New Dust Band (8140-1018)	After Config. Code add: SK (stroke length in inches) or SM (stroke length in mm)					
24	8340-1021	Carrier (metric)	1	1	1	1	1	1
	8340-1521	Carrier (inch)	1	1	1	1	1	1
25		Number is not used						
26	0602-1030	Screw	8	8	8	8	8	8
27	8132-1063	Screw	4	4	4	4	4	4
28	NNRMXE40	New Nut Rail Kit (8140-1053) (2 rails included)	After Config. Code add: SK (stroke length in inches) or SM (stroke length in mm)					
29a <sup>6</sup>	NPRMXE40	Replacement Bearing Rail add DW for Dual Carrier	After Config. Code add: SK (stroke length in inches) or SM (stroke length in mm)					
29b <sup>6</sup>		add BB for optional Bearing Blocks						

ITEM	PART NO. or CONFIG. CODE	DESCRIPTION	MXE40P					
			BN02	BNL02	BN05	BNL05	SN01	SN02
30	4415-1001	SHCS M4 x 0.7 x 10mm	A/R	A/R	A/R	A/R	A/R	A/R
31	8325-1055	Shim, .005 Thick	2	2	2	2	2	2
	8325-1056	Shim, .010 Thick	2	2	2	2	2	2
	8325-1057	Shim, .020 Thick	2	2	2	2	2	2
32 <sup>4,5</sup>	8340-1007	Band Ramp	2	2	2	2	2	2
33 <sup>4,5</sup>	8140-1006	End Oap	2	2	2	2	2	2
34 <sup>5</sup>	0601-1038	Screw	4	4	4	4	4	2
34 <sup>4</sup>	8140-1059	Wiper	2	2	2	2	2	2

- <sup>1</sup> SK or SM \_\_\_\_, indicate stroke length in **inches** or **millimeters**
- <sup>2</sup> Length of connecting shaft varies by motor type and size, indicate motor code here
- <sup>3</sup> Solid Nut Bracket Assembly available to order for replacement. Contact the Factory.
- <sup>4</sup> Parts included in Repair Kits. (RKMXE40PSK or SM \_\_\_\_, indicate stroke length in inches or millimeters)
- <sup>5</sup> Parts included in Nut Bracket Assembly.
- <sup>6</sup> 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.

**Assembly and Disassembly Instructions**

**GENERAL CYLINDER DISASSEMBLY INSTRUCTIONS**

Begin with a clean work area. Be sure all replacement parts 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

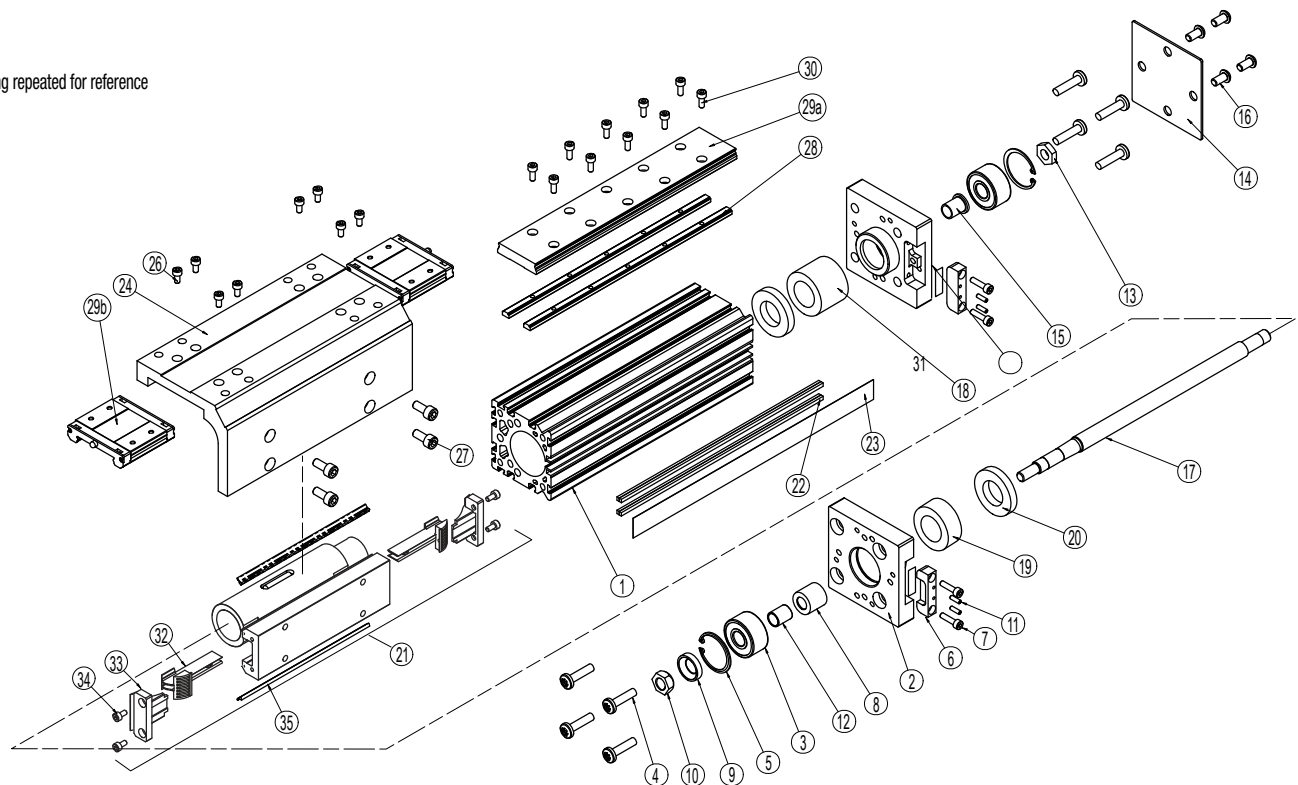
1. **DUST BAND AND CARRIER REMOVAL.** Position the actuator with the Dust Band (23) facing up. Remove the Band Clamps (6) from both Heads (2) of the actuator by removing Screws (7) and

backing out the Center Set Screw (11) a couple turns. Carefully lift the Dust Band (23) from the slot in each Head (2) and remove any Shims (31) located under the Band (23) in the Head (2) slot. Retain the Shims (31) for reassembly. Remove Screws (26) to release the Carrier (24) from the Nut Bracket (21). Slide the Carrier (24) clear of the Nut Bracket (21). Remove Nut Bracket End Caps (33) from both ends of the Nut Bracket (21). The Dust Band (23) can now be removed from the actuator.

NOTE: If removal of the Bearing Rail (29a) or Bearing Blocks (29b) is necessary, contact the factory prior to removal for specific instructions.

2. **LEAD SCREW SUB-ASSY REMOVAL.** On the Non-Drive End of the actuator remove the Screws (16) and remove the Cover Plate (14) and the Hex

Drawing repeated for reference



Nut (13) from Leadscrew (17). Remove Screws (4) from both Heads (2). Remove the Non-Drive End Head (2) and the Drive Head/Leadscrew (17) assembly. If necessary, the Nut Bracket Assembly (21) can now be removed from the Leadscrew (17) and the Band Ramps (32) may also be removed from the Nut Bracket Assembly (21) 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 (21) and cannot be removed. If Nuts are worn, a new Nut Bracket Assembly (21) must be ordered.

If Drive End Head (2) and Bearing (3) must be removed from the Leadscrew (17), contact the factory prior to removal for specific instructions.

#### GENERAL CYLINDER ASSEMBLY INSTRUCTIONS

1. **INSTALL LEAD SCREW ASSEMBLY AND CARRIER.** Install the Band Ramps (32) to the Nut Bracket (21) with Screws. From the Drive End, install the Head/Leadscrew/Nut Bracket Assembly (21) into the Tube (1) making sure the Bearing Rail (29a) is oriented on the left side of the Tube (1). With the Bumper (20) and Nut Spacer (19) in place, position the Non-Drive End Head (2) over the Leadscrew Bearing (3) and loosely install Screws (4) into the Head (2). Install the Drive End Screws (4) loosely into the Drive End Head (2).
2. **INSTALL DUST BAND AND CARRIER.** Install the Dust Band (23) through the Nut Bracket (21) and install the End Caps (33) onto the Nut Bracket (21). Position Carrier (24) over the Bearing Blocks (29b) and the Nut Bracket (21) and install all Fasteners (26 & 27) and leave them loose at this time. By hand, load the Carrier (24) to keep it tight down on the surface of the Bearing Blocks (29b) and tighten the Carrier-

to-Nut Bracket Fasteners (27). Tighten the Carrier-to-Bearing Block Fasteners (26).

3. **PERFORM HEAD ALIGNMENT AND FINAL ASSEMBLY.**

NOTE: Custom tooling is used at the factory to align the Heads (2) to the Tube (1) to maintain parallelism between the top of the Head (2) and top of the Tube (1). This is critical to performance and longevity of the Dust Band (23). In the following steps it will be necessary to measure parallelism between the Head (2) and Tube (1).

Move Carrier Assembly (24) to Drive End of Tube (1) and tighten one of the Head Bolts (4). Support the actuator on the Tube (1) such that the Head (2) is free to float while tightening the Head Fasteners (4).

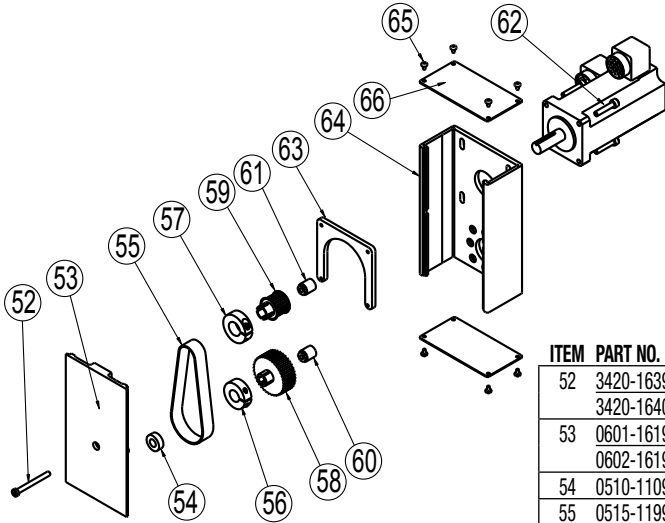
Move Carrier Assembly (24) to Non-Drive End of Tube (1) and tighten these Head Bolts (4).

Move Carrier Assembly (24) back to the Drive End of Tube (1) and loosen the fastener that was previously tightened and then tighten all Head Fasteners (4).

Apply Loctite 242 to Hex Nut (13) and thread onto the Leadscrew (17) and torque to 6-8 in-lbs. Install Cover Plate (14) with Screws (16).

4. **INSTALL BAND CLAMPS.** Visualize the interface between the Dust Band (23) surface of the Tube (1) and the clamping surface of each Head (2). This should be flush. It may be necessary to install Shims (31) in the pocket of the Head (2) in order to make flush. Position the Carrier (24) near the Drive End. Position the Band (23) in the pocket over any previously installed Shims (31) and install the Band Clamp (6) with the two Cap Screws (7). Lastly, tighten down the Center Set Screws (11). Position the Carrier (24) near the Non-Drive End and repeat the steps to install the other Band Clamp (6).

**Reverse Parallel Options Parts**



ITEM	PART NO.	DESCRIPTION	1:1 RATIO				2:1 RATIO											
			MRY2x	MRY2x, BND2	MRY3x	MRY3x, BND2	MRS2x	MRS2x, BND2	MRS3x	MRS3x, BND2	MRY2x	MRY2x, BND2	MRY3x	MRY3x, BND2	MRS2x	MRS2x, BND2	MRS3x	MRS3x, BND2
52	3420-1639	Screw (metric)			1	1												
	3420-1640	Lock Screw (metric)	1	1							1	1			1	1		
53	0601-1619	23-Frame Cover	1	1			1	1							1	1		
	0602-1619	34-Frame Cover			1	1			1	1							1	1
54	0510-1109	Radial Bearing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
55	0515-1199	Timing Belt	1	1	1	1	1	1	1	1								
	0515-1064	Timing Belt									1	1	1	1	1	1	1	1
56	2317-1005	Clamp Collar									1	1			1	1		
57	0520-1067	Clamp Collar	1	1	1	1					1	1	1	1				
58	0515-1192	Pulley	1		1		1		1									
	0515-1191	Pulley		1		1		1										
	0515-1193	Pulley							1		1		1		1		1	
	0510-1110	Pulley									1		1		1		1	
59	3420-1255	Pulley	1	1	1	1					1	1	1	1				
	0515-1191	Pulley				1	1							1	1			
	0515-1192	Pulley						1	1							1	1	
60	0515-1181	Trantorq, .375 Bore	1		1		1		1									
	0510-1111	Trantorq, .250 Bore		1		1		1			1		1		1		1	
61	0515-1181	Trantorq, .375 Bore						1	1								1	1
	0510-1111	Trantorq, .250 Bore				1	1							1	1			
62	2212-1098	Screw (metric)													4			
	2212-1099	Screw (metric)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
63	0601-1053	23-Frame Motor Plate	1	1			1	1			1	1			1	1		
	0602-1057	34-Frame Motor Plate			1	1			1	1			1	1			1	1
64	0601-1609	23-Frame Housing	1	1			1	1			1	1			1	1		
	0602-1609	34-Frame Housing			1	1			1	1			1	1			1	1
65	0601-1625	Self-Tapping Screw	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
66	0601-1602	23-Frame End Cap	1	1			1	1			1	1			1	1		
	0602-1602	34-Frame End Cap			1	1			1	1			1	1			1	1

**REVERSE PARALLEL DISASSEMBLY INSTRUCTIONS**

1. Remove End Caps (66). Release tension on Belt (55) by breaking loose the Motor Fasteners (62).
2. Remove RP Cover (53).
3. The Belt (55) can now be removed and the Motor can be removed as well.
4. Remove both Drive Pulley (58) and Driven Pulley (59) from their respective shafts.
5. Remove the RP Housing (64) from the Head (2) by removing the RP Housing (64) to Head Fasteners (4).

**REVERSE PARALLEL ASSEMBLY INSTRUCTIONS**

NOTE: Apply Loctite #242 to all fasteners upon installation

1. Install RP Housing (64) to the Head (2) with Cap Screws (4). Do not fully tighten the Fasteners (4) at this time and verify that the RP Housing (64) can move with respect to the Head (2).
2. Temporarily install the Cover (53) with Bearing (54), onto the RP Housing (64) positioning the bearing over the Leadscrew shaft. Hold the Cover (53) in place while tightening two of the Screws (4) that hold the RP Housing (64) to the Head (2).
3. Remove the Cover (53) and finish tightening all Fasteners (4) attaching the RP Housing (64) to the Head (2).
4. Install the Motor to the RP Housing (64) with Fasteners (62). Do not tighten the Fasteners (62) at this time.
5. Install the Driven (58) and Drive Pulley (59) as needed. Tighten each Pulley (58 & 59) to its shaft with either Trantorque (60 & 61) or Collar Clamp (56 & 57). If Trantorque (60 & 61), utilize torque wrench to

apply 75 in-lbs.

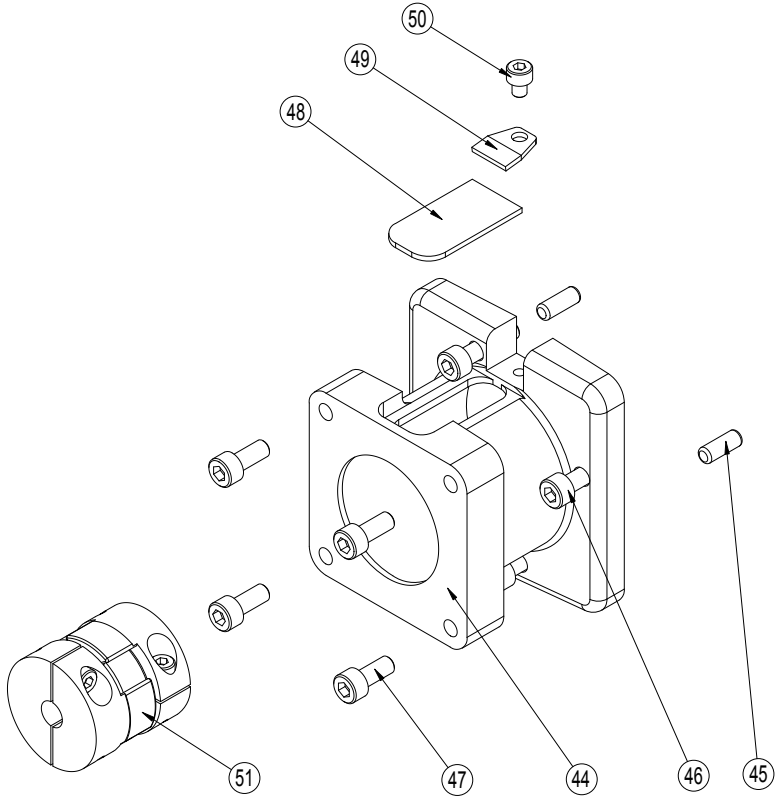
6. Locate the Belt (55) over the Pulleys (58 & 59).
7. Verify that there is clearance between the inside of the RP Housing (64) and each Pulley (58 & 59). Verify that the Pulleys (58 & 59) are aligned to each other.
8. Position the Cover (53) in mating slot of the RP Housing (64) and install the Socket Head Cap Screw (52) to hold in place. Take care not to over tighten. If the Cover (53) is deflected it can interfere with the Leadscrew (17).
9. Tension the Belt (55) by pulling the Motor away from the drive shaft with appropriate force from chart below while the actuator is oriented in a position such that weight of the Motor is not either directly adding or subtracting belt tension. Tighten the Motor Fasteners (62) while this 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.

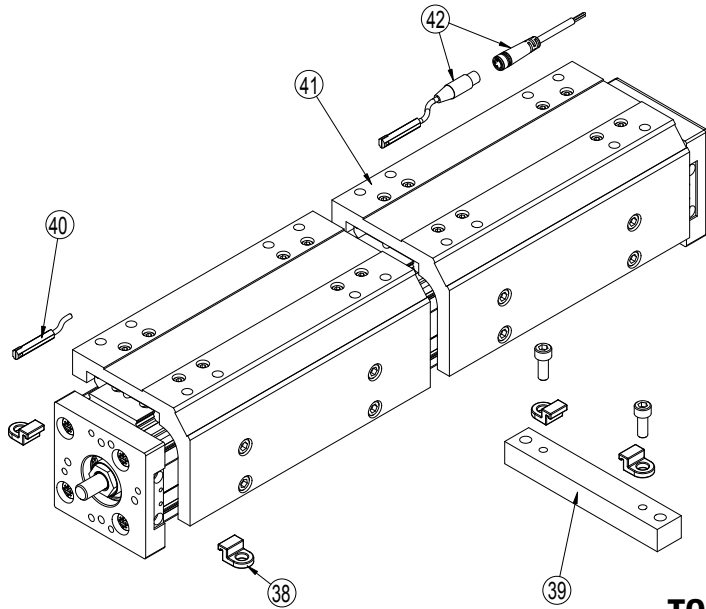
10. Install both End Caps (66) with the Screws (65) to finalize assembly.

***In-Line Mounting Options Parts***



ITEM	PART NO.	DESCRIPTION	With Gearhead																			
			MRI2x	MRI2x, BNO2	MRS2x	MRS2x, BNO2	MRI3x	MRI3x, BNO2	MRS31, 32	MRS31, 32, BNO2	MRS33	MRS33, BNO2	MRI2x, MRS2x	MRI2x, MRS2x, BNO2	MRI3x, MRS31, 32	MRI3x, MRS31, 32, BNO2	MRS33	MRS33, BNO2				
44	3415-1510	Motor Spacer														1	1					
	0515-1959	Motor Spacer			1	1																
	0515-1861	Motor Spacer						1	1	1	1											
	4415-1549	Motor Spacer					1	1											1	1		
	4415-1550	Motor Spacer	1	1																		
	4415-1552	Motor Spacer												1	1							
45	1820-1003	Dowel Pin	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	4415-1020	Screw (metric)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	4415-1020	Screw (metric)			4	4			4	4					4	4					4	4
	4910-1004	Screw (metric)			4	4																
46	0910-1314	Screw (inch)														4	4					
	1124-1035	Screw (metric)							4	4	4	4										
	3410-1120	Cover	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	1906-1022	Clamp	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
49	1124-1159	Screw (metric)			1	1																
	3415-3046	Screw (inch)	1	1			1	1							1	1	1	1	1	1	1	
51	3415-9039	Coupler				1																
	3415-9045	Coupler										1									1	
	3415-9169	Coupler																1				
	3600-6168	Coupler	1																			
	3600-6169	Coupler		1					1		1											
	3600-6170	Coupler					1															
	4520-9120	Coupler								1								1				
	3600-9241	Coupler										1									1	
	3600-9249	Coupler												1								
	3600-9250	Coupler			1																	
	3415-9043	Coupler															1					

Actuator Options Parts



ITEM	PART NO.	DESCRIPTION
38 <sup>1</sup>	<b>8140-9018</b>	<b>Tube Clamp Mount Kit</b>
	8140-1050	Tube Clamp
39 <sup>2</sup>	<b>8340-9016</b>	<b>Mounting Plate Kit for 23-Frame Motor</b>
	<b>8340-9017</b>	<b>Mounting Plate Kit for 34-Frame Motor</b>
	8140-1050	Tube Clamp
	0604-1057	Screw (metric)
	8340-1030	Mounting Plate for 23-Frame Motor
	8340-1031	Mounting Plate for 34-Frame Motor

<sup>1</sup> Tube Clamp Mount Kit contains 2 tube clamps.

<sup>2</sup> Mounting Plate Kit contains 2 tube clamps, 1 mounting plate, and 2 fasteners.

**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
40	SWMXE40 <b>R</b> <b>Y</b>	5m (197 in)	Open	Reed
42	SWMXE40 <b>R</b> <b>K</b>	Quick-disconnect		
40	SWMXE40 <b>N</b> <b>Y</b>	5m (197 in)	Closed	Reed
42	SWMXE40 <b>N</b> <b>K</b>	Quick-disconnect		
40	SWMXE40 <b>T</b> <b>Y</b>	5m (197 in)	Open	Solid State PNP
42	SWMXE40 <b>T</b> <b>K</b>	Quick-disconnect		
40	SWMXE40 <b>K</b> <b>Y</b>	5m (197 in)	Open	Solid State NPN
42	SWMXE40 <b>K</b> <b>K</b>	Quick-disconnect		
40	SWMXE40 <b>P</b> <b>Y</b>	5m (197 in)	Closed	Solid State PNP
42	SWMXE40 <b>P</b> <b>K</b>	Quick-disconnect		
40	SWMXE40 <b>H</b> <b>Y</b>	5m (197 in)	Closed	Solid State NPN
42	SWMXE40 <b>H</b> <b>K</b>	Quick-disconnect		

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

**ORDERING REPAIR KITS**

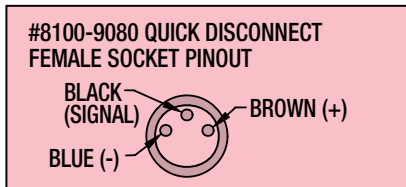
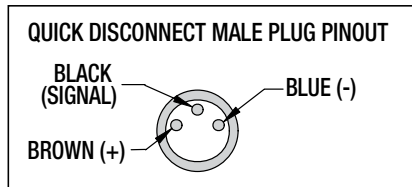
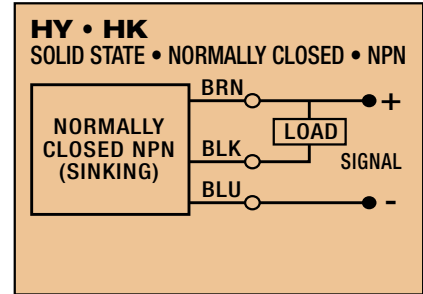
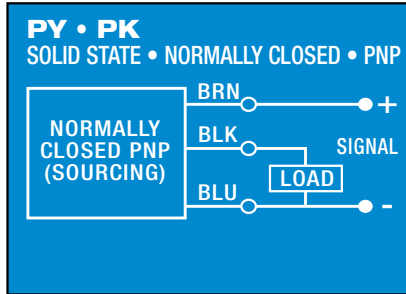
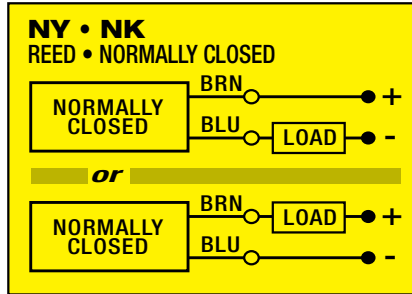
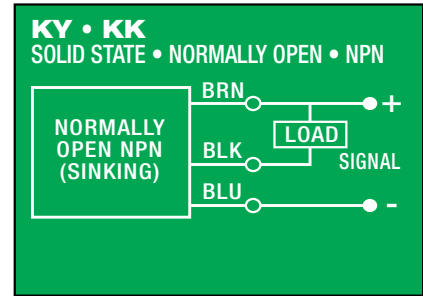
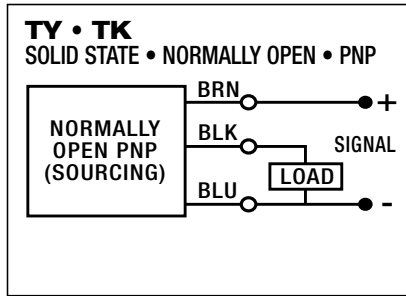
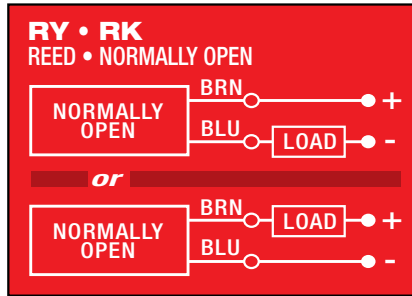
Repair kit includes: dust band, end caps, wipers

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
<b>RK</b>	<b>MXE</b>	<b>40</b>	<b>P</b>	<b>SM</b>	<b>2007.02</b>	<b>DC</b>	<b>215.9</b>

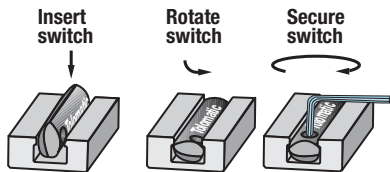
**SWITCH WIRING DIAGRAMS AND LABEL COLOR CODING (CE and RoHS Compliant)**



Switches for MX:

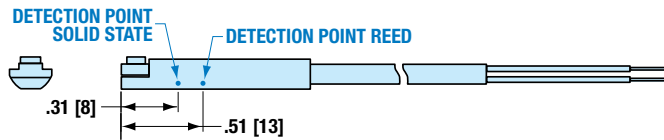
- Include retained mounting hardware
- In slot, sit below extrusion profile
- Same for all sizes and bearing styles

**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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