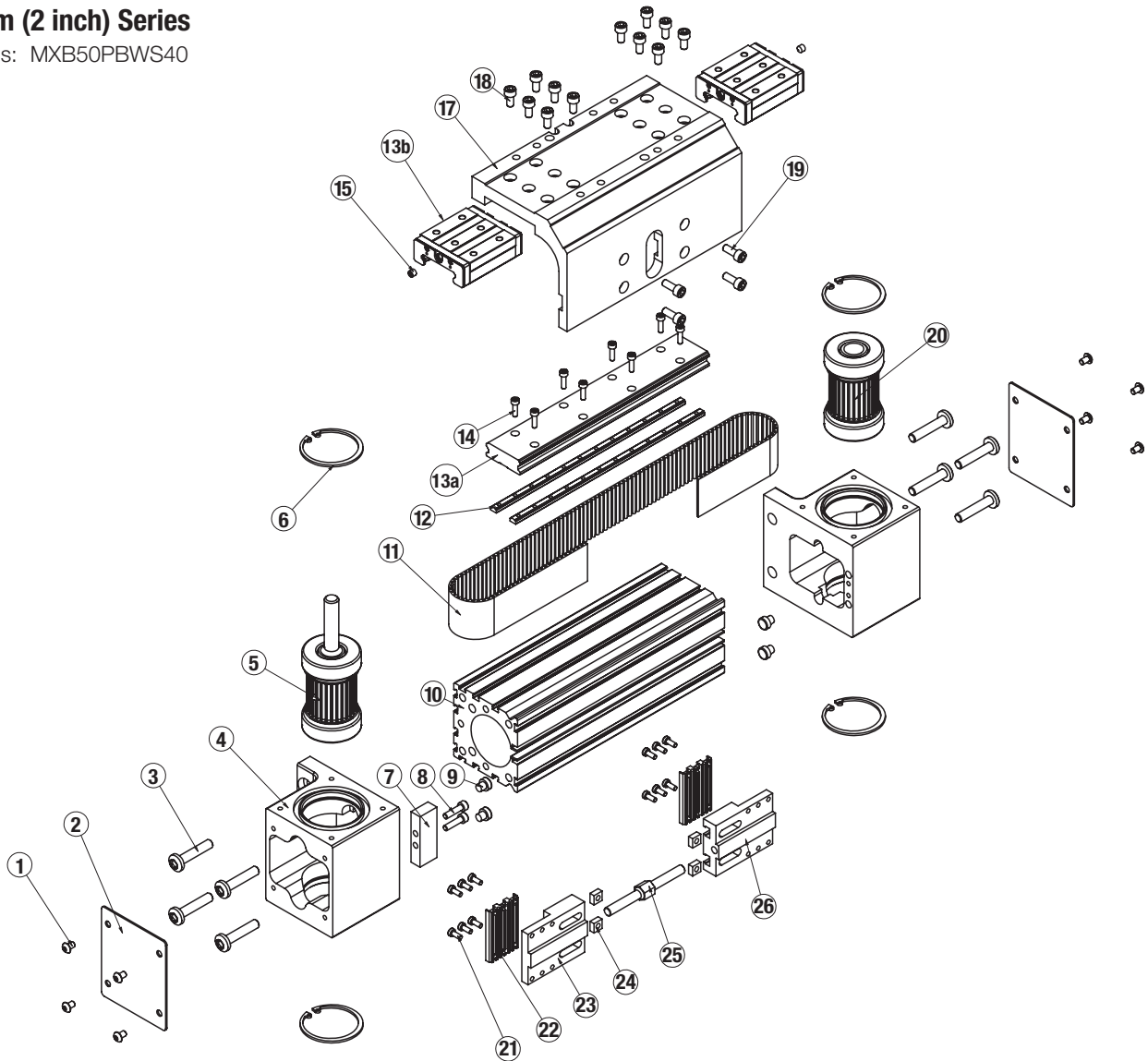


### MXB50P Profiled Rail, Belt-Drive Actuators

50mm (2 inch) Series

Models: MXB50PBWS40



ITEM	PART NO OR CONFIG. CODE	DESCRIPTION	QTY.
1.	8540-1026	BUTTON HEAD CAP SCREW	8
2.	8550-1020	COVER PLATE	2
3.	8350-1023	HEAD SCREW	8
4.	8550-1000	HEAD	2
5.	8550-9026	DRIVE PULLEY ASSY	1
	8550-9027	DRIVE PULLEY ASSY, DUAL	1
6.	2600-1005	RETAINING RING	4
7.	8550-1032	SPACER	1

ITEM	PART NO OR CONFIG. CODE	DESCRIPTION	QTY.
8.	2212-1098	SOCKET HEAD CAP SCREW	2
9.	8525-1002	BUMPER	4
10.	RTBMB50_SK_	TUBE (US CONV)	1
	RTBMB50_SM_	TUBE (METRIC)	1
11.	RBMXB50_SK_	BELT (US CONV)	1
	RBMXB50_SM_	BELT (METRIC)	1
12.	NNRMB50_SK_	NUT RAIL (US CON)	2
	NNRMB50_SM_	NUT RAIL (METRIC)	2

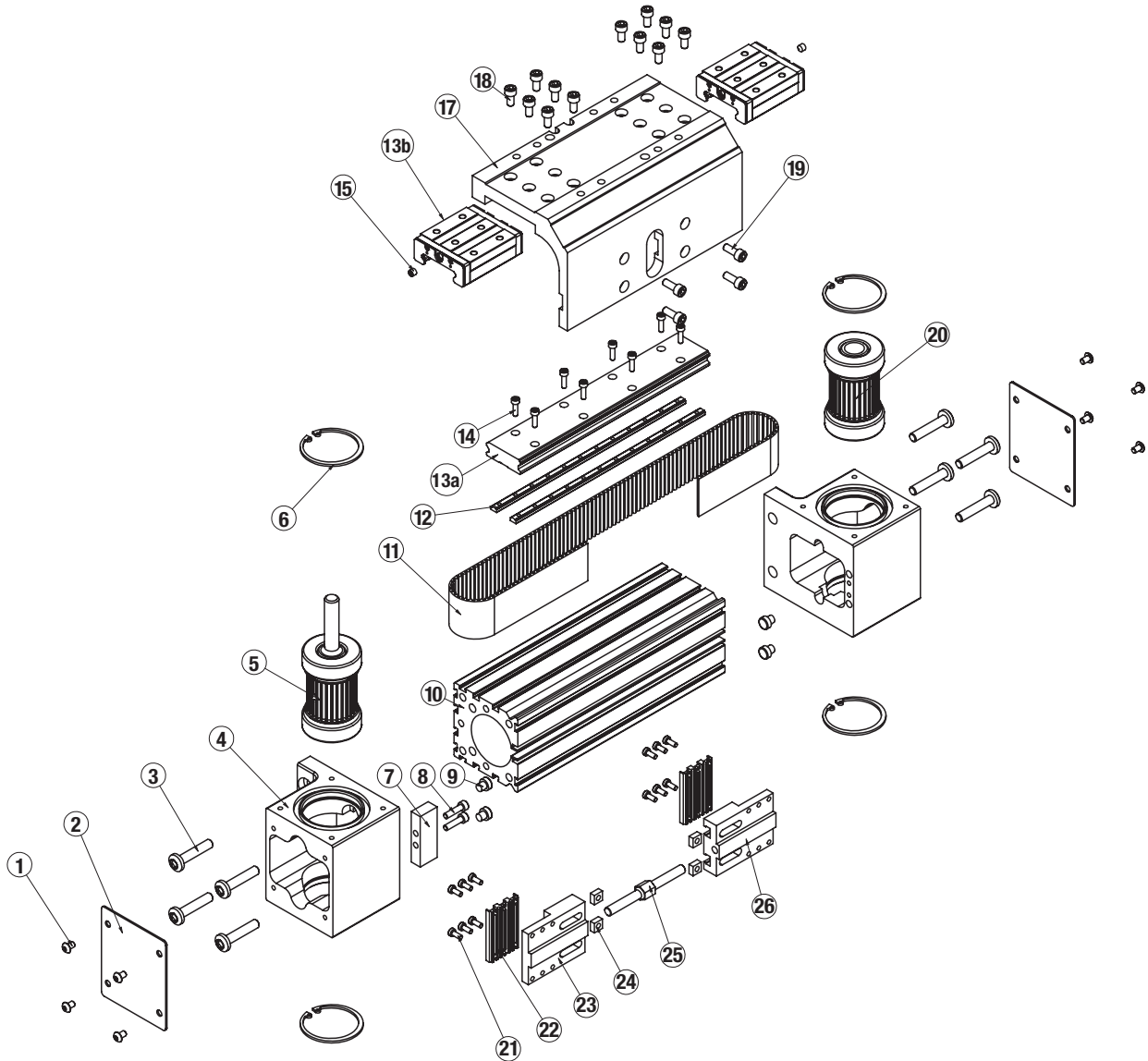
A/R = As Required

<sup>1</sup> Replacement ordering method using config code:  M X B 5 0 P B W S 4 0 S K  D C

EXAMPLE: N N R M X B 5 0 P B W S 4 0 S K 2 1 . 2 5 D C 7

Tube (RTB); Belt (RB); or Nut Rail (NNR) | Model & Size | Bearing Style | Belt Size | Stroke Length | Aux. Carrier

**Auxiliary Carrier Option Note:** If replacing a Tube (10); Belt (11); or Nut Rail (12) 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).



ITEM	PART NO OR CONFIG. CODE	DESCRIPTION	QTY.
2,3 13A.	NPRMXB50_SK_	BEARING RAIL (US CONV) ADD BB FOR OPTIONAL BEARING BLOCKS (SEE 13B)	1
	NPRMXB50_SM_	BEARING RAIL (METRIC) ADD BB FOR OPTIONAL BEARING BLOCKS (SEE 13B)	1
<sup>2</sup> 13B.	8150-9060	BEARING BLOCK KIT (SET OF TWO)	1
14.	4415-1024	SOCKET HEAD CAP SCREW	A/R
15.	8350-1008	SET SCREW	2
17.	8550-1021	CARRIER, METRIC	1
	8550-1521	CARRIER, INCH (US CONV)	1
18.	8150-1070	SOCKET HEAD CAP SCREW	12

ITEM	PART NO OR CONFIG. CODE	DESCRIPTION	QTY.
19.	0604-1057	SOCKET HEAD CAP SCREW	4
20.	8550-9028	IDLE PULLEY ASSY	1
21.	8125-1070	LOW HEAD CAP SCREW	12
22.	8550-1005	BELT CLAMP, BOTTOM	2
23.	8550-1004	BELT CLAMP, LH	1
24.	8540-1027	NUT	4
25.	8540-1006	TURNBUCKLE	1
26.	8540-1003	BELT CLAMP, RH	1

<sup>2</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.

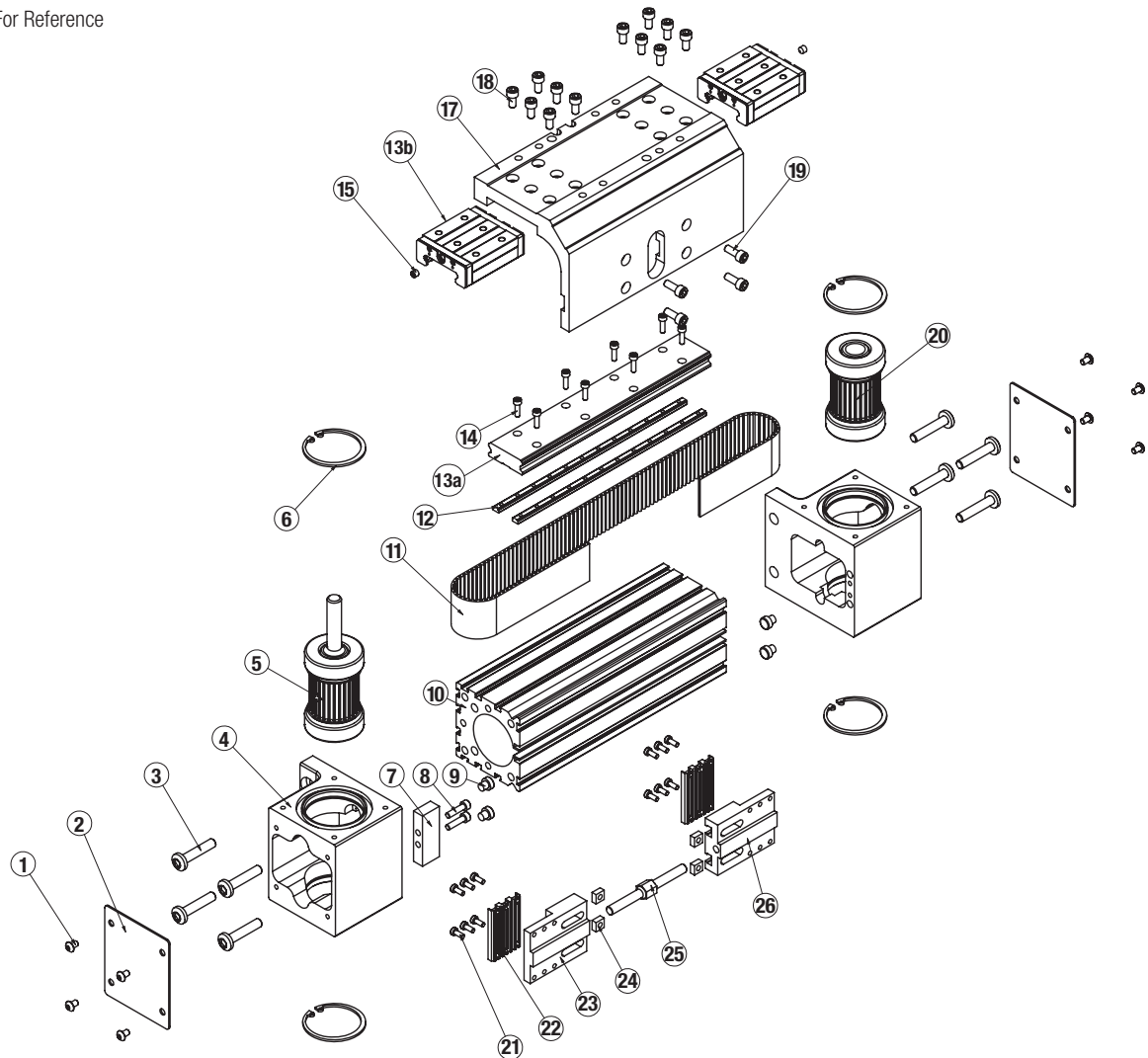
<sup>3</sup> Replacement ordering method using config code:  MXB50P BWS40SK  DC

EXAMPLE: NPR MXB50P BWS40SK 21.25 DC7

Bearing Rail (NPR) | Model & Size | Belt Size | Stroke Length | Aux. Carrier Bearing Style

**Auxiliary Carrier Option Note:** If replacing a Tube (10); Belt (11); or Nut Rail (12) 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



### General Actuator Disassembly

1. Remove End Cover Plates (2). Remove Socket Head Cap Screws (19). Position the Carrier (17) away from the Belt Clamps (23, 26) exposing the Turnbuckle (25). Loosen the Turnbuckle (25) removing all belt tension. The Carrier (17) can be removed from the Bearing Blocks (13b) by removing Fasteners (18).
2. Remove the Belt (11) from the Belt Clamps (23, 26) by removing Fasteners (21) and Belt Clamp Bottom (22). The Belt (11) can now be removed from the actuator.
3. Remove the Retaining Rings (6) from each of the Heads (4). Note that the Bearing/Pulley Assemblies (5, 20) are slip fit into the Head (4), but are bonded in the bore w/ Loctite 641, so it may be necessary to press the Pulley Assemblies (5, 20) out of the Head (4).
4. Remove the Heads (4) from the Tube (10) by removing Fasteners (3).

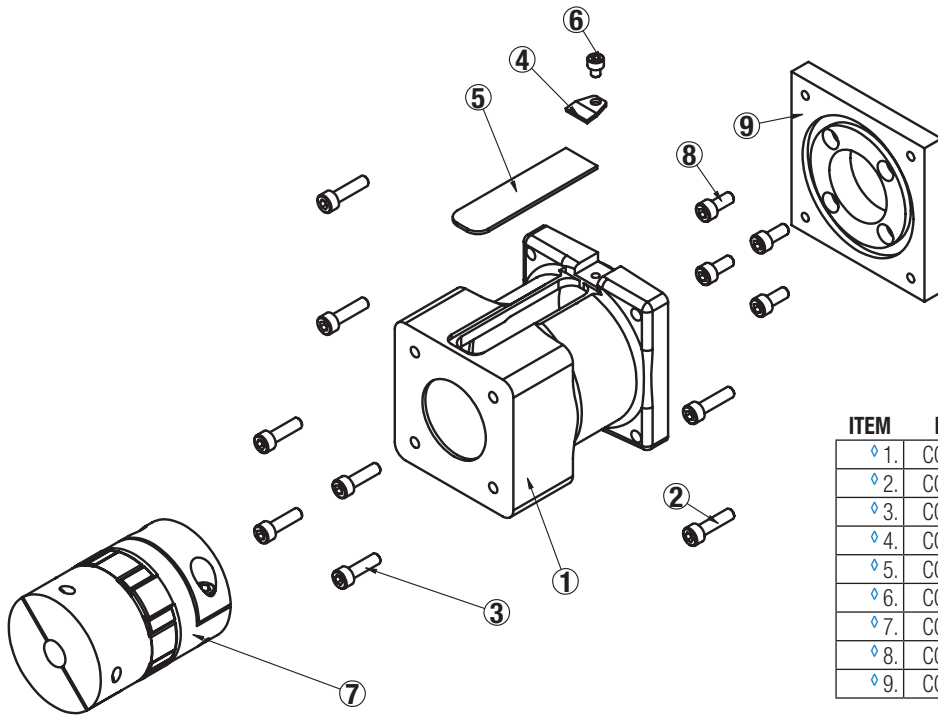
### General Actuator Assembly

1. Install the Drive and Idle Heads (4) to the Tube (10). Note that the Bumper Spacer (7) installs onto the Drive End Head (4).
2. Install one Retaining Ring (6) into each Head (4). Apply a light coating of Loctite 641 to the OD of the bearings of the Pulley Assemblies (5, 20) and to the ID of the bearing bores of the Head (4). Install the Drive and Idle Pulley/Bearing Assemblies (5, 20) into the Heads (4). NOTE THAT ORIENTATION OF THE DRIVE SHAFT

IS DETERMINED BY THIS ASSEMBLY STEP. Install the remaining Retaining Ring (6) into each Head (4).

3. Feed the Belt (11) into the Tube (10) from one end of the actuator. Install a Belt Clamp (23, 26) to each end of the Belt (11) with Belt Clamp Bottoms (22) and Fasteners (21). NOTE THAT ONE BELT CLAMP (23) WILL HAVE LEFT HAND THREADS FOR THE TURNBUCKLE (25). Assemble so that Belt Clamp LH (23) is nearest the drive end Head (4). Start the Turnbuckle (25) into each of the Belt Clamps (23, 26). Position Hex Nuts (24) in their respective slots of the Belt Clamps (23, 26).
4. Position Carrier (17) over the Bearing Blocks (13b) and attach with fasteners (18). Position the Carrier (17) over the Belt Clamps (23, 26) and install Fasteners (19) leaving loose at this time.
5. Tension the Belt: To measure belt tension, position the edge of the Carrier (17) that is nearest the Head (4) 10" from the inside edge of the Head (4) (either end of the actuator). Locate a force gage on the Belt (11) 4" from the inside edge of the Head (4). Deflect the Belt (11) 1/4" [6 mm] in either direction. The force gage should read between 16 and 20 lbs. [71 - 89 N]
6. Adjust the Turnbuckle (25) to achieve this tension, then tighten the Fasteners (19) to secure the Belt Clamps (23, 26) to the Carrier (17).

## Direct Drive Motor Mounting Option



ITEM	PART NO.	DESCRIPTION	QTY
◇ 1.	CONFIGURED	MOTOR SPACER	1
◇ 2.	CONFIGURED	SOCKET HEAD CAP SCREWS	4
◇ 3.	CONFIGURED	SOCKET HEAD CAP SCREWS	4
◇ 4.	CONFIGURED	CLAMP	1
◇ 5.	CONFIGURED	COVER	1
◇ 6.	CONFIGURED	SOCKET HEAD CAP SCREWS	1
◇ 7.	CONFIGURED	COUPLER	1
◇ 8.	CONFIGURED	SOCKET HEAD CAP SCREWS	4
◇ 9.	CONFIGURED	ADAPTER PLATE	1

◇ Part number varies depending on YMH (Your Motor Here).  
Contact [help@tolomatic.com](mailto:help@tolomatic.com) for replacement part number.

A replacement Motor Mount Kit contains all parts listed above.

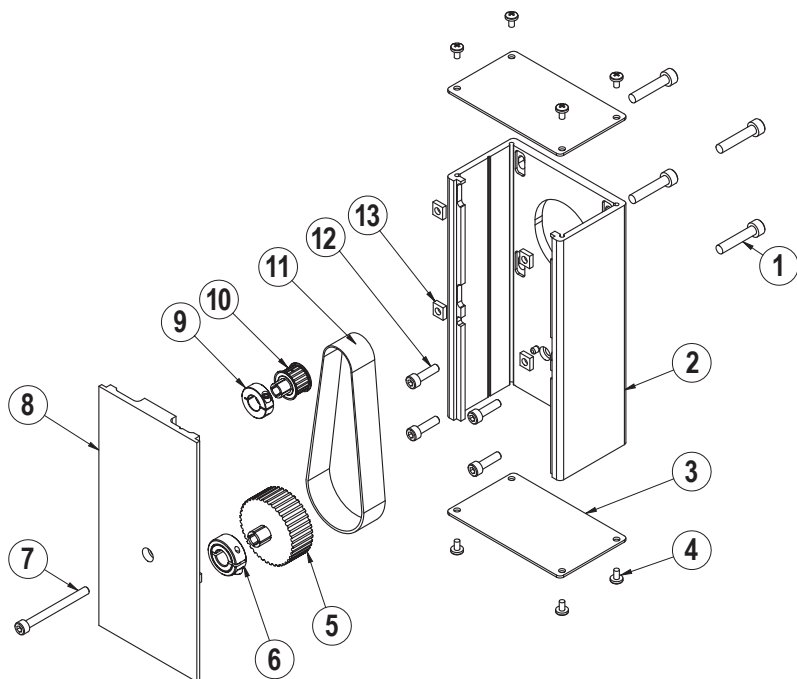
Replacement Motor Mount Kits ordering method: **MMK MXB50P □□ YM□□□□**

**EXAMPLE: MMK MXB50P S D L Y M O T B D O**

Motor Mount Kit ——— Model & Size ——— Bearing Style ——— Mounting Style ——— Motor Code

# Reverse Parallel Reduction Drive Option

3:1 Reduction Drive



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](mailto: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).  
**Note:** If the RP housing has a bearing in it do not fully tighten the fasteners at this time. Instead temporarily install the RP cover (8) onto the RP case, positioning the bearing over the leadscrew shaft. Hold the cover in place while tightening all the Fasteners (12) so that the case is snug. Then remove the RP cover and finish tightening the fasteners
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).

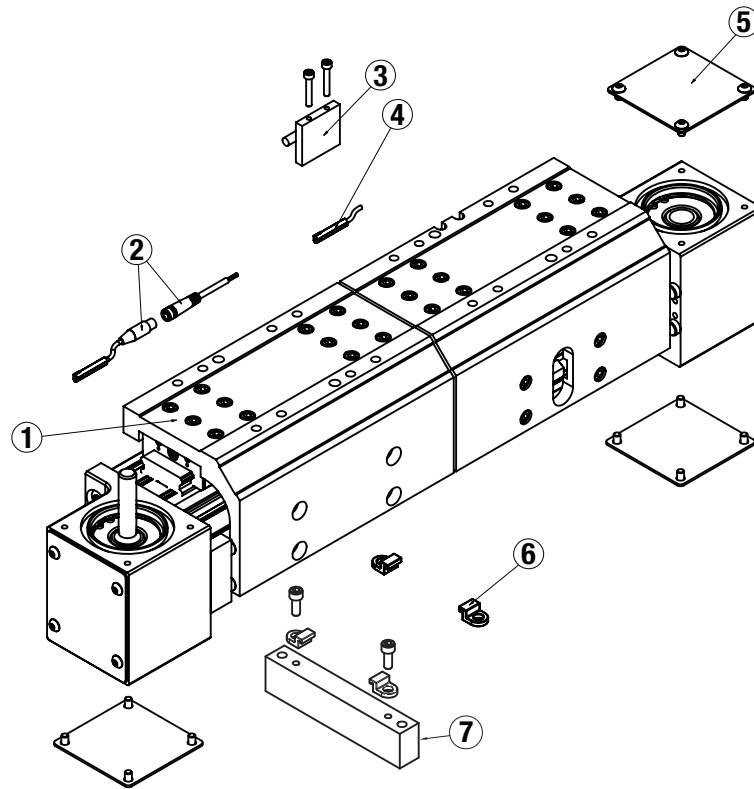
4. Tension the Belt (11) by pulling the motor away from the drive shaft with the appropriate tension force shown in the chart below. While tensioning, the actuator should be positioned so the weight of the motor does not affect the belt tension. Tighten the Motor Fasteners (1) while the tensioning force 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](#).

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

### Actuator Options



ITEM	PART NO.	DESCRIPTION
1.	8550-9014	DUAL CARRIER ASSEMBLY (METRIC)
	8550-9514	DUAL CARRIER ASSEMBLY (US CONV)
3.	<b>8550-9009</b>	<b>MAGNET KIT</b>
	8550-1028	MAGNET BLOCK
	8340-1008	MAGNET
	0601-1674	SOCKET HEAD CAP SCREW
5.	<b>8540-9008</b>	<b>SIDE COVER PLATE ASSEMBLY</b>
	8540-1020	COVER PLATE
	8540-1026	BUTTON HEAD CAP SCREW
6.	8140-1050	TUBE CLAMP
7.	<b>8350-9016</b>	<b>MOUNTING PLATE KIT</b>
	8350-1030	MOUNTING PLATE
	8140-1050	TUBE CLAMP
	0604-1057	SOCKET HEAD CAP SCREW

**To order service parts switches:**

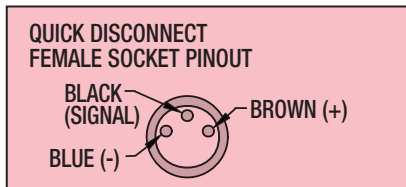
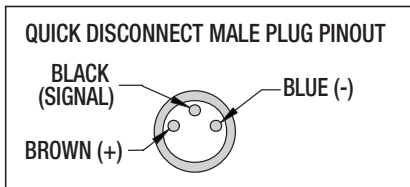
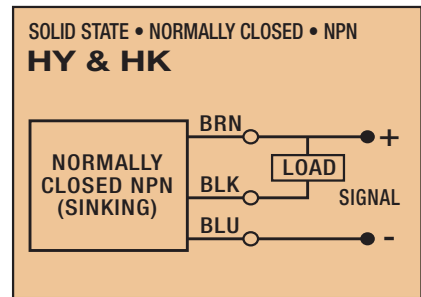
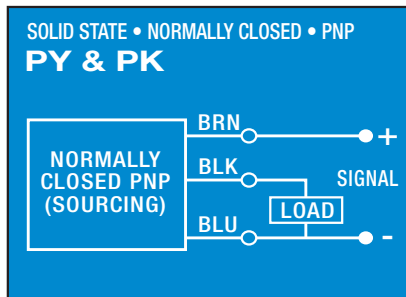
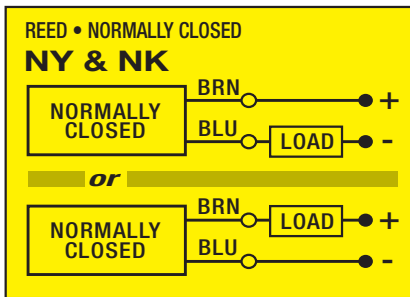
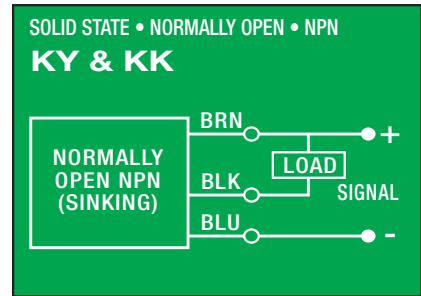
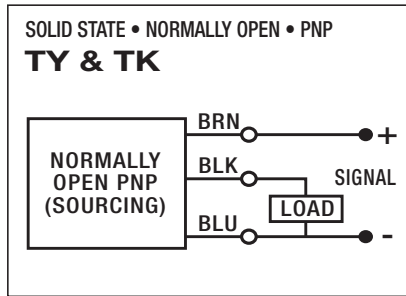
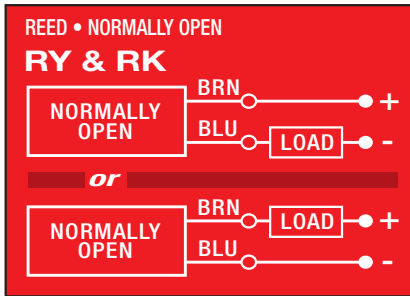
Switches for MXB include retained mounting hardware and are the same for all actuator sizes and bearing styles

ITEM	CONFIG. CODE	LEAD	NORMALLY	SENSOR TYPE
4.	SWMXB50P <b>RY</b>	5M (197 IN)	OPEN	REED
2.	SWMXB50P <b>RK</b>	QUICK-DISCONNECT		
4.	SWMXB50P <b>NY</b>	5M (197 IN)	CLOSED	REED
2.	SWMXB50P <b>NK</b>	QUICK-DISCONNECT		
4.	SWMXB50P <b>TY</b>	5M (197 IN)	OPEN	SOLID STATE PNP
2.	SWMXB50P <b>TK</b>	QUICK-DISCONNECT		
4.	SWMXB50P <b>KY</b>	5M (197 IN)	OPEN	SOLID STATE NPN
2.	SWMXB50P <b>KK</b>	QUICK-DISCONNECT		
4.	SWMXB50P <b>PY</b>	5M (197 IN)	CLOSED	SOLID STATE PNP
2.	SWMXB50P <b>PK</b>	QUICK-DISCONNECT		
4.	SWMXB50P <b>HY</b>	5M (197 IN)	CLOSED	SOLID STATE NPN
2.	SWMXB50P <b>HK</b>	QUICK-DISCONNECT		

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

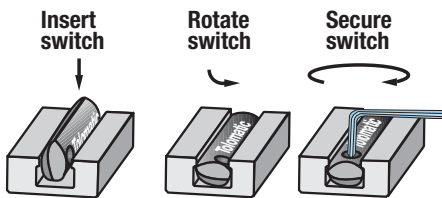


### Switch Wiring Diagrams and Label Color Coding (Ce and Rohs Compliant)



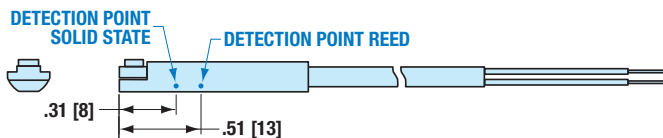
- Switches for MX:
- Include retained mounting hardware
  - In slot, sit below extrusion profile
  - Same for all sizes and bearing styles

#### 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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