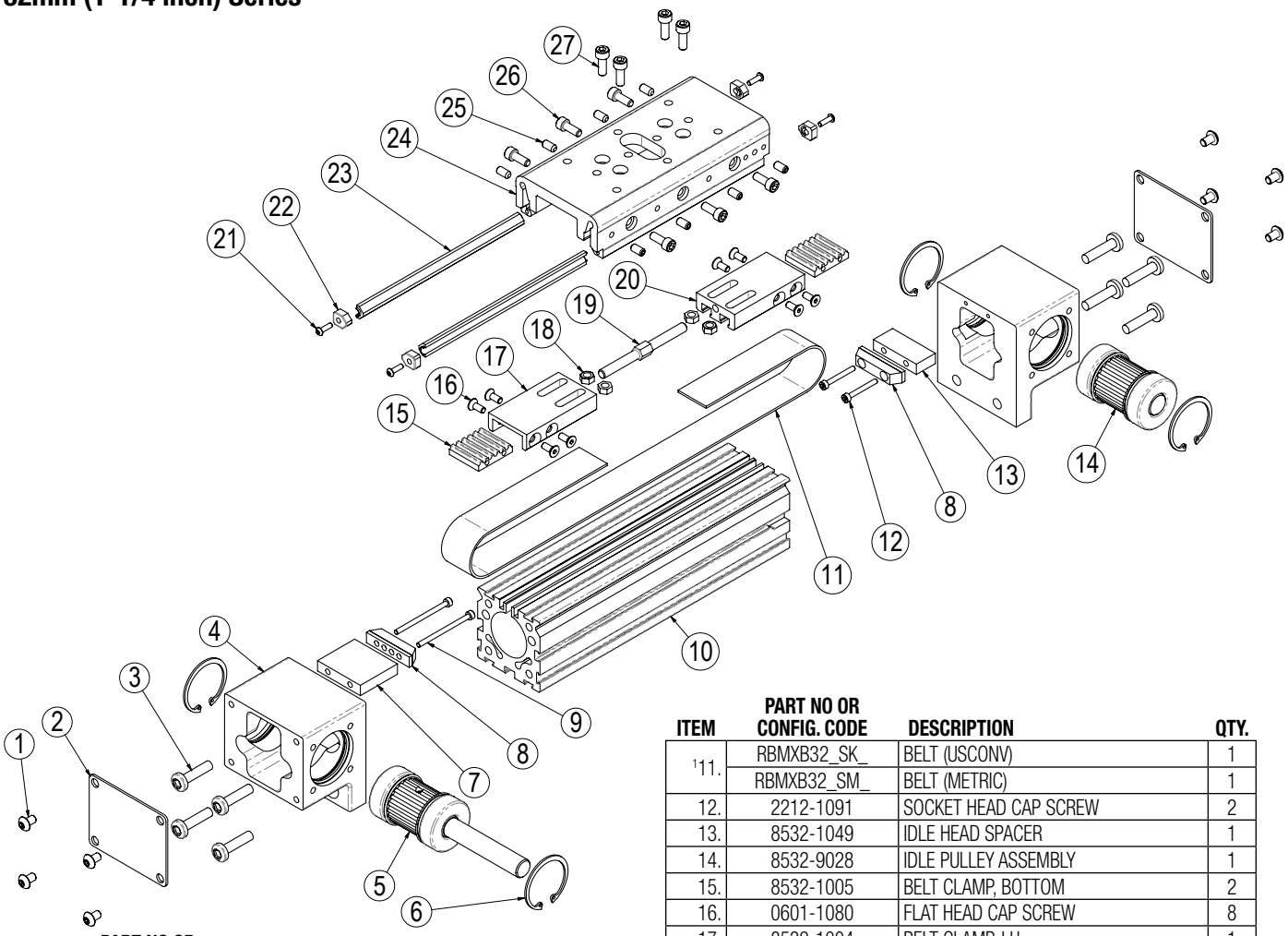
Tolomatic™
EXCELLENCE *IN MOTION*

Parts Sheet

8500-4020_03

MXB32S Solid Bearing, Belt-Drive Actuators

32mm (1-1/4 inch) Series



ITEM	PART NO OR CONFIG. CODE	DESCRIPTION	QTY.
1.	8540-1026	BUTTON HEAD CAP SCREW	8
2.	8532-1031	END COVER PLATE	2
3.	0604-1025	HEAD SCREWS	8
4.	8532-1047	HEAD	2
5.	8532-9026	DRIVE PULLEY ASSEMBLY	1
	8532-9027	DRIVE PULLEY ASSEMBLY, DUAL	1
6.	1014-1023	RETAINING RING	4
7.	8532-1048	DRIVE HEAD SPACER	1
8.	8516-9018	BUMPER	2
9.	8516-1050	SOCKET HEAD CAP SCREW	2
[1]10.	RTBMXB32_SK_	TUBE (US CONV)	1
	RTBMXB32_SM_	TUBE (METRIC)	1

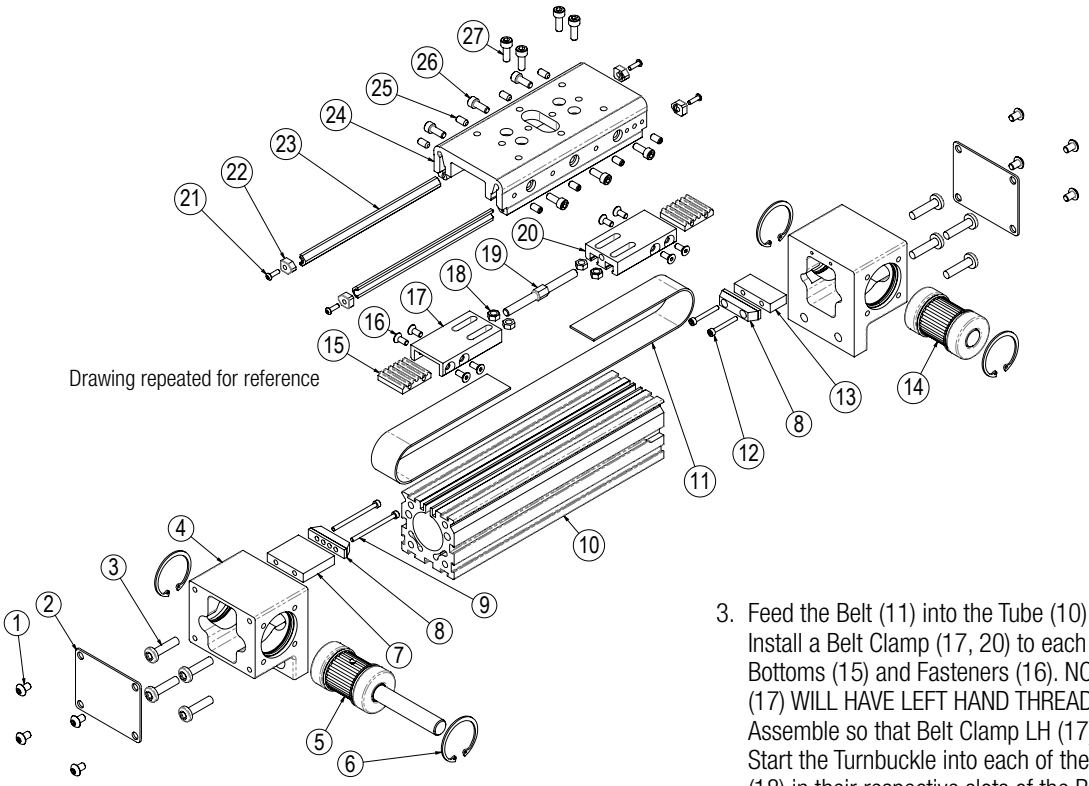
ITEM	PART NO OR CONFIG. CODE	DESCRIPTION	QTY.
[1]11.	RBMXB32_SK_	BELT (USCONV)	1
	RBMXB32_SM_	BELT (METRIC)	1
12.	2212-1091	SOCKET HEAD CAP SCREW	2
13.	8532-1049	IDLE HEAD SPACER	1
14.	8532-9028	IDLE PULLEY ASSEMBLY	1
15.	8532-1005	BELT CLAMP, BOTTOM	2
16.	0601-1080	FLAT HEAD CAP SCREW	8
17.	8532-1004	BELT CLAMP, LH	1
18.	0603-2089	HEX NUT	4
19.	8532-1099	TURNBUCKLE	1
20.	8532-1003	BELT CLAMP, RH	1
21.	0603-1036	BUTTON HEAD CAP SCREW	4
22.	8132-1031	BEARING END CAP	4
23.	8132-1030	CARRIER BEARING	2
24.	8532-1513	CARRIER (US CONV)	1
	8532-1113	CARRIER (METRIC)	1
25.	8132-1570	SET SCREW (US CONV)	8
	8132-1073	SET SCREW (METRIC)	8
26.	0915-1016	SOCKET HEAD CAP SCREW (US CONV)	6
	8125-1071	LOW HEAD CAP SCREW (METRIC)	6
27.	1124-1034	SOCKET HEAD CAP SCREW	4

[1] Replacement ordering method using config code: ☐☐☐ MXB32 S BWS25 SK☐☐☐☐☐ DC☐

EXAMPLE: RTB MXB32 S BWS25 SK21·25 DC7

Tube (RTB) or Belt (RB) — Model & Size — Bearing Style — Belt Size — Stroke Length — Aux. Carrier

Auxiliary Carrier Option Note: *If replacing a Tube (10.) or Belt (11.) on an actuator that has an Auxiliary Carrier, add "DC _ _ _" between Stroke Length and Motor Code. "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).*



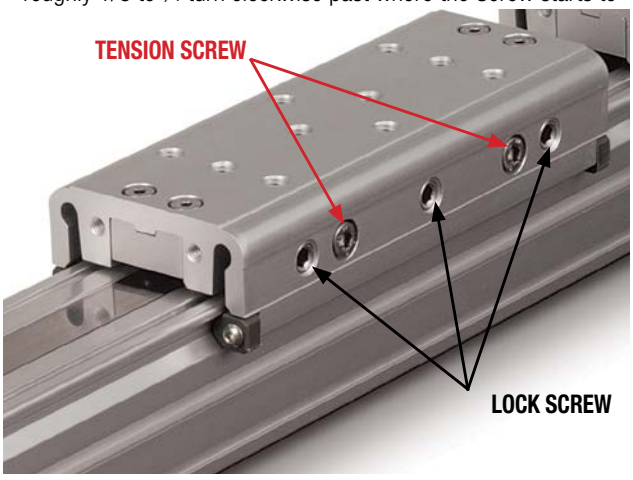
GENERAL ACTUATOR DISASSEMBLY

1. Remove LHCS (27) from top of Carrier (24) to free it from the belt clamp assembly. Loosen the Turnbuckle (19) removing all belt tension. Slightly loosen the Carrier Tension Screws (26) and Set Screws (25). Remove Bearing End Caps (22) from the Bearings (23) and slide the Bearings out. The Carrier can now be removed.
   a. Note: If the stroke of the actuator is too short to allow removal of the Carrier Bearings, it is necessary to remove the Non-Drive End Head (4) from the Tube (10).
2. Remove the Belt (11) from the Belt Clamps (17, 20) by removing Fasteners (16) and Belt Clamp Bottom (15). The Belt 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, 14) are slip fit into the Head, but are bonded in the bore w/ Loctite 641, so it may be necessary to press the Pulley Assemblies out of the Head.
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 and Bumper Spacer (13) installs onto the Idle End Head.
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, 14) and to the ID of the bearing bores of the Head. Install the Drive and Idle Pulley/Bearing Assemblies into the Heads.
   a. NOTE THAT ORIENTATION OF THE DRIVE SHAFT IS DETERMINED BY THIS ASSEMBLY STEP. Install the remaining Retaining Ring into each Head.
3. Feed the Belt (11) into the Tube (10) from one end of the actuator. Install a Belt Clamp (17, 20) to each end of the Belt with Belt Clamp Bottoms (15) and Fasteners (16). NOTE THAT ONE BELT CLAMP (17) WILL HAVE LEFT HAND THREADS FOR THE TURNBUCKLE (19). Assemble so that Belt Clamp LH (17) is nearest the drive end Head. Start the Turnbuckle into each of the Belt Clamps. Position Hex Nuts (18) in their respective slots of the Belt Clamps.
4. Position the Carrier (24) on Tube (10). Position the Bearings (23) on each side of the Carrier and install the Bearing End Caps (22). Snug SHCS (26) and Set Screws (25) then back off 1/8 turn to ensure they are not tight at this time.
5. **TENSION THE CARRIER.** The MX solid bearing carrier will provide best performance when properly adjusted. The carrier design contains both Tension (26) and Lock Screws (25). The Tension Screws control the amount of pressure placed on the Carrier Bearings. The Lock Screws lock the Tension Screws in place and provide fine adjustment of the Carrier Bearings (23).
   a. Fully loosen all Tension (26) and Lock Screws (25) about ½ of a turn so that they are not engaged with the Bearing (23).
   b. Tighten Tension Screws (26) on both sides of the Carrier (24) roughly 1/8 to ¼ turn clockwise past where the Screw starts to feel snug. The Carrier should be very difficult or impossible to move by hand. If not, turn another 1/8 turn until it is difficult to move.

c. Next, adjust the Lock Screws (25) on both sides of the Carrier (24) roughly 1/8 to ¼ turn clockwise past where the Screw starts to



engage. The Carrier will be loose but should not rock sideways. To correct this, loosen the Lock Screws about 1/16 of a turn. If the Carrier becomes too snug, adjust the Lock Screws another 1/8 of a turn.

d. Ideal carrier tension is achieved when the Carrier (24) feels snug in relation to the Tube (10), yet can be moved by hand. No rocking motion should be present. The Carrier should also be loose enough to be moved by hand over the entire length of the actuator. If after this process the Carrier has become too loose, equally adjust all of the Lock Screws (25) 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 in a properly adjusted tension will prolong the life of the MX bearing system and the actuator itself.**

ALLEN WRENCH SIZES FOR CARRIER ADJUSTMENT, SOLID BEARING ACTUATORS

	TENSION SCREW		LOCK SCREW	
	MM	IN	MM	IN
32	4	5/32	2	3/32

e. When the proper carrier tension has been achieved, finish tightening the four Screws (21) to the Bearing End Caps (22).

f. Position the Carrier (24) over the Belt Clamps (17, 20) and install Fasteners (27), leaving looser at this time.

6. **TENSION THE BELT:** To measure belt tension, position the edge of the Carrier (24) that is nearest the Head 6" from the inside edge of the Head (4) (either end of the actuator). Locate a force gage on the Belt (11) 2" from the inside edge of the Head. Support the tube side of the Carrier so that it is rigid to the Tube (10). Deflect the Belt 1/4" [6 mm] in either direction. The force gage should read between 16 and 20 lbs. [71 - 89 N]
7. Adjust the Turnbuckle (19) to achieve this tension, then tighten the Fasteners (27) to secure the Belt Clamps (17, 20) to the Carrier (24).

Direct Drive Motor 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

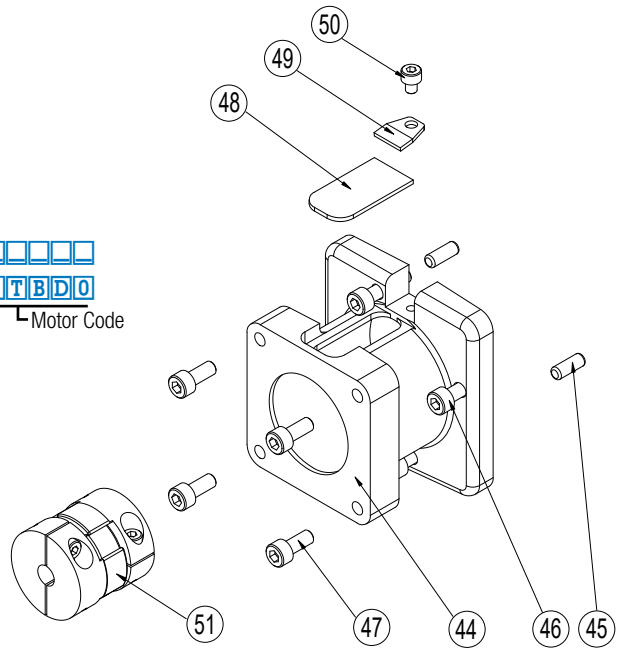
◊ Part number varies depending on YMH (Your Motor Here). Contact help@tolomatic.com for replacement part number.

A replacement Motor Mount Kit contains all parts listed above.

Replacement Motor Mount Kits ordering method: MMK MXB32 S ___ YM_____

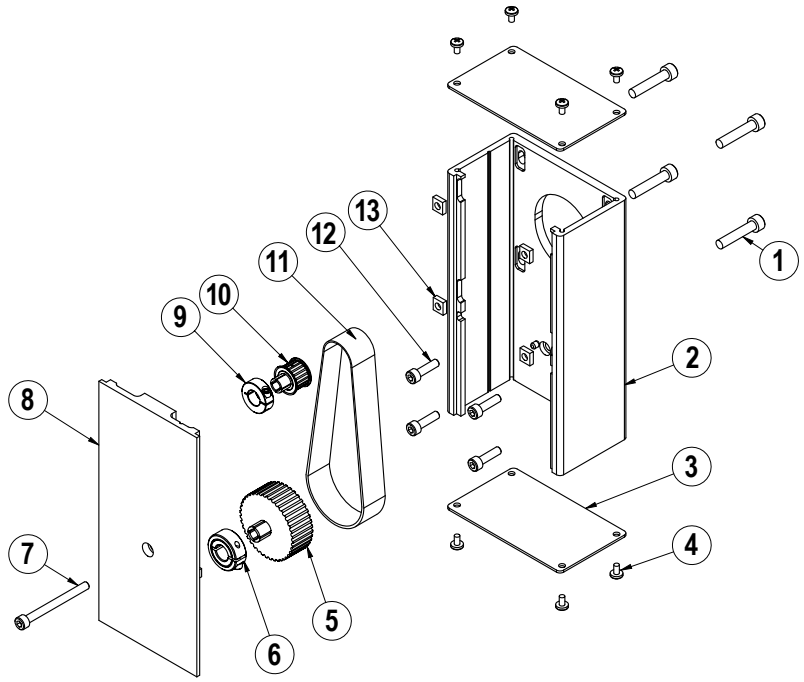
EXAMPLE: MMK MXB32 S SDL YM0TBD0

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 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

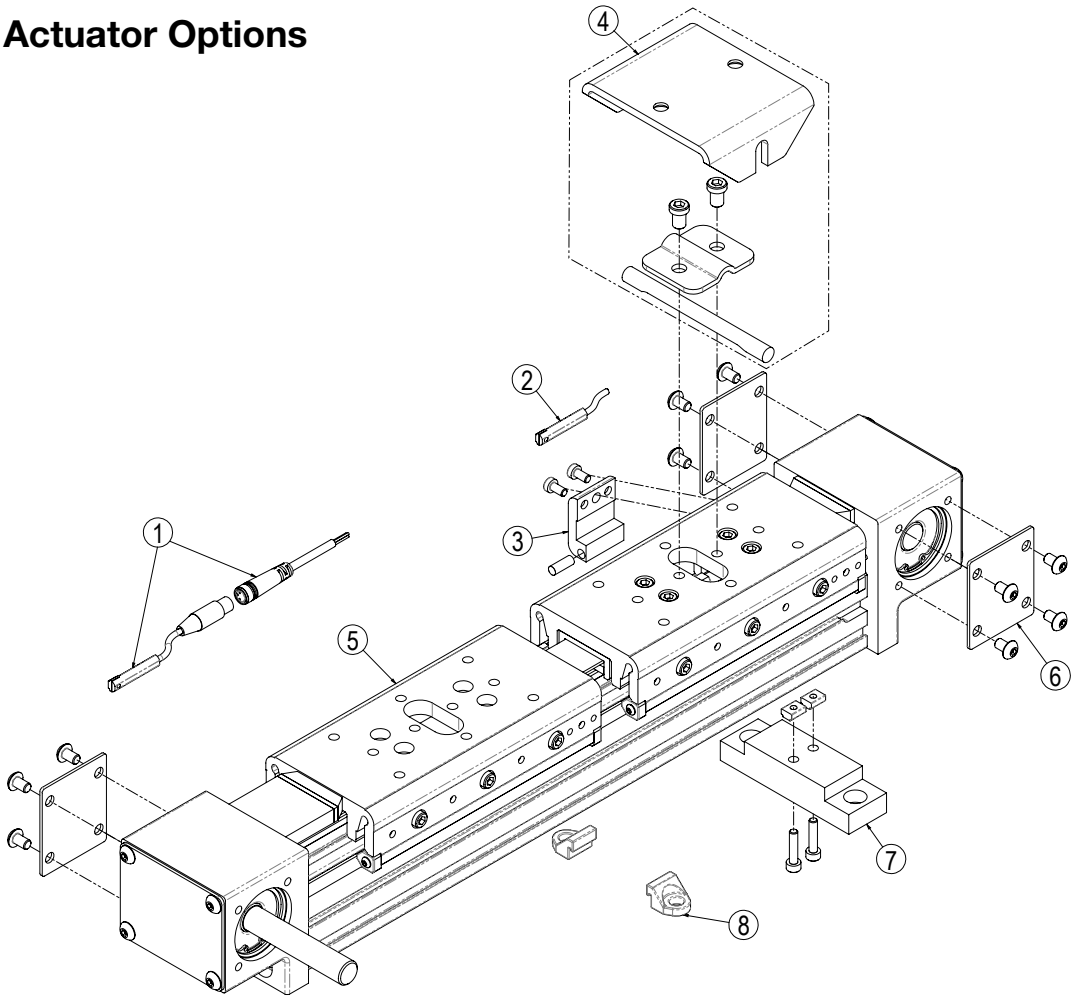
1. Install RP Housing (2) onto the actuator Head with Fasteners (12).
2. Install the Motor to the RP Housing with Fasteners (1) and Square Nuts (13). Do not tighten the fasteners at this time.
3. Locate the Belt (11) over the Pulleys (10) and (5) and slide both pulleys over their respective shafts. Tighten 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.

Actuator Options



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
2.	SWMXB32S RY		5M (197 IN)	OPEN	REED
1.	SWMXB32S RK		QUICK-DISCONNECT		
2.	SWMXB32S NY		5M (197 IN)	CLOSED	REED
1.	SWMXB32S NK		QUICK-DISCONNECT		
2.	SWMXB32S TY		5M (197 IN)	OPEN	SOLID STATE PNP
1.	SWMXB32S TK		QUICK-DISCONNECT		
2.	SWMXB32S KY		5M (197 IN)	OPEN	SOLID STATE NPN
1.	SWMXB32S KK		QUICK-DISCONNECT		
2.	SWMXB32S PY		5M (197 IN)	CLOSED	SOLID STATE PNP
1.	SWMXB32S PK		QUICK-DISCONNECT		
2.	SWMXB32S HY		5M (197 IN)	CLOSED	SOLID STATE NPN
1.	SWMXB32S HK		QUICK-DISCONNECT		

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

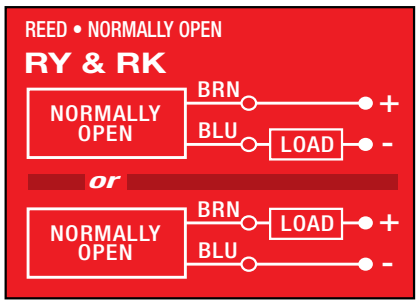
Ordering method: ☐☐ MXB32S SK☐☐☐☐☐ DC☐

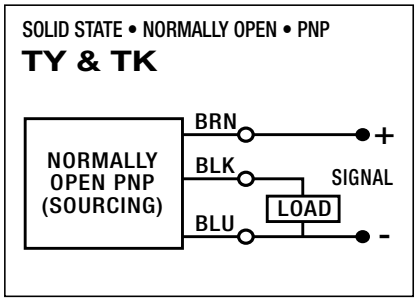
EXAMPLE: RK MXB32 S SK 210 · 25 DC 7

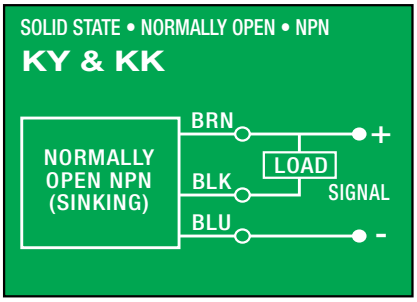
Switch — Model & Size — Bearing Type — Stroke Length — Aux. Carrier

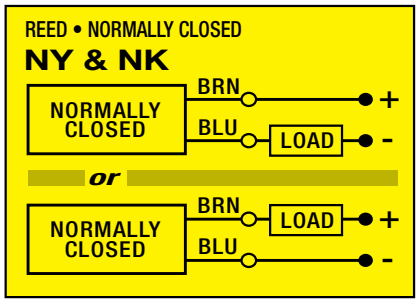
ITEM	PART NO	DESCRIPTION
3.	**8532-9074**	**MAGNET KIT**
	8532-1046	MAGNET BLOCK
	8325-1027	LOW HEAD CAP SCREW
	8116-1058	MAGNET
4.	**8132-9536**	**FLOATING MOUNT KIT (US CONV)**
	8132-9036	**FLOATING MOUNT KIT (METRIC)**
	8132-1561	FLOATING MOUNT CLAMP
	8132-1068	FLOATING MOUNT BRACKET
	8132-1069	PIN
	0910-1199	LOW HEAD CAP SCREW (US CONV)
	8132-1074	LOW HEAD CAP SCREW (METRIC)
5.	8532-9515	AUXILIARY CARRIER ASSEMBLY (US CONV)
	8532-9015	AUXILIARY CARRIER ASSEMBLY (METRIC)
6.	8525-9008	SIDE COVER ASSEMBLY
	8525-1020	COVER PLATE
	8540-1026	BUTTON HEAD CAP SCREW
7.	**8532-9030**	**MOUNTING PLATE KIT**
	8532-1070	MOUNTING PLATE
	8316-1050	T-NUT
	0604-1028	SOCKET HEAD CAP SCREW
8.	**8132-9018**	**TUBE CLAMP KIT**
	8132-1050	TUBE CLAMP

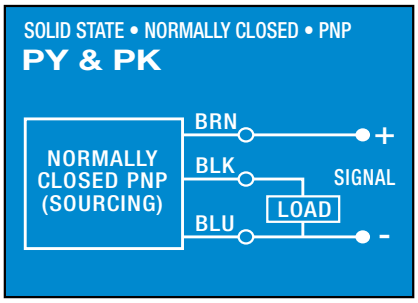
Switch Wiring Diagrams and Label Color Coding (Ce and Rohs Compliant)

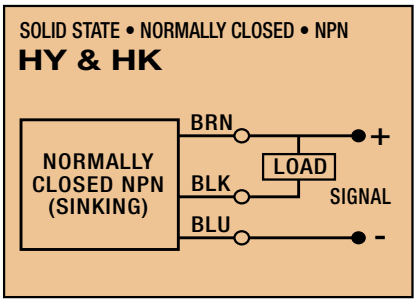


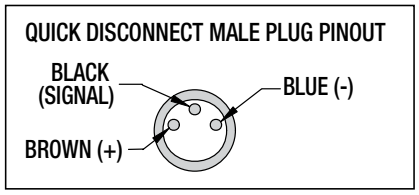


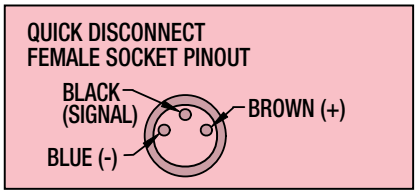






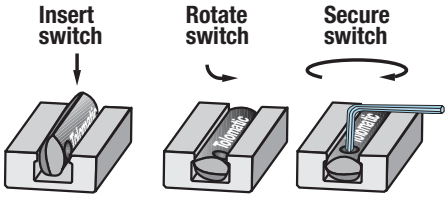






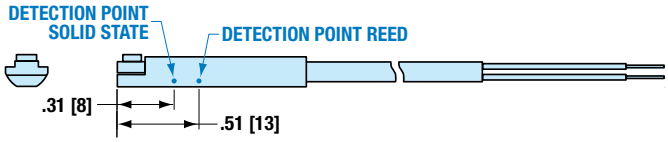
Switches for MX:
- Include retained mounting hardware
- In slot, sit below extrusion profile
- Same for all sizes and bearing styles

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]

Tolomatic™
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