

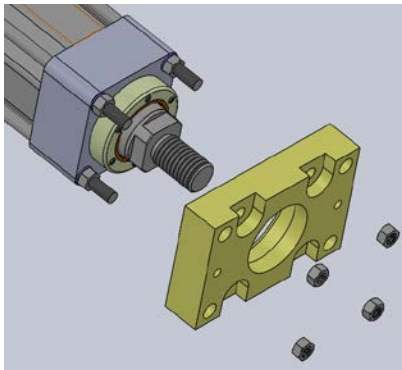
# RSX Extreme Force Electric Linear Actuator

Sizes: 10, 15, 20, 25

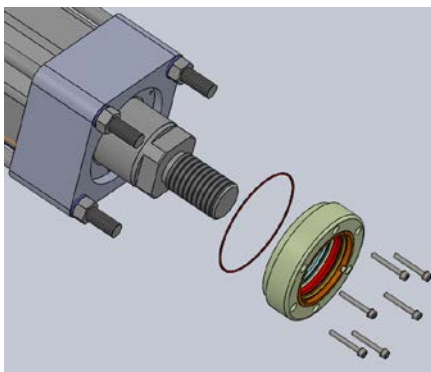
**Tolomatic recommends returning the RSX for most repairs. There are a few procedures that can be done in the field. See the following instructions:**

## RSX Seal Cartridge Replacement

1. Lock out/Tag out and safely secure the actuator
2. Retract the Thrust Tube if possible
3. Remove tooling from the Rod End of the actuator
4. Remove Front Flange mount if equipped



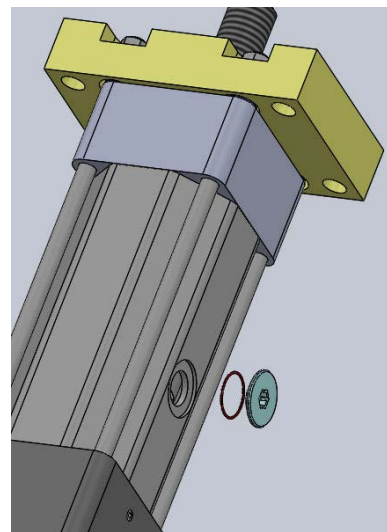
5. Remove any debris from around the Seal Cartridge
6. Remove the six Cartridge Retainer Bolts and Sealing Washers from the Seal Cartridge
7. Slide the old Seal Cartridge off the Thrust Tube
8. Install new O-Ring on new Seal Cartridge
9. Carefully slide the new Seal Cartridge onto the Thrust Tube and align to the bolt holes in the Head
10. Carefully install new Sealing Washers on the new Cartridge Retainer Bolts
11. Apply Loctite 242 to Cartridge Retainer Bolts and install into new Seal Cartridge



12. Torque Cartridge Retainer Bolts  
RSX10, 15, & 20 to 50 in-lbf (6 Nm)  
RSX25 to 80in-lbf (9Nm)
13. Reinstall the Front Flange if applicable
  - a. Apply Loctite 271 to the tie rod threads
  - b. RSX10 & 15, torque to 90 ft-lbf (122 N-m)  
RSX20, torque to 120 ft-lbf (160 Nm)  
RSX25, torque to 220 ft-lbf (300 Nm)

## RSX Relubrication

1. Remove the Lube Access Cover from the Cylinder Body



**For units with a ball screw** apply grease directly to the ball screw. For roller screw actuators follow steps 2 & 3 below

2. Extend or retract the Thrust Tube so that the Grease Zerk on the Nut Assembly is accessible through the access port
3. Pump grease into the Grease Zerk See instructions on next page for lubrication interval and quantity
  - a. Standard grease type is Mobilith 220 unless otherwise specified
4. Fully extend and retract the Thrust Tube to distribute the grease
5. Verify the O-Ring is in place then reinstall the Tube Access Cover onto the Cylinder Body

(Continues)

**RE-LUBRICATION RECOMMENDATION:**

Lubrication requirements for electric actuators depend on the motion cycle (velocity, force, duty cycle), type of application, ambient temperature, environmental surrounding and various other factors.

For many general purpose applications, Tolomatic ball screw actuators are typically considered lubricated for life unless otherwise specified, such as those actuator models outfitted with a re-lubrication feature. For roller screw or ball screw actuators outfitted with a re-lubrication feature, Tolomatic recommends to re-lubricate the actuator at least once per year or every 1,000,000 cycles, whichever comes first, to maximize service life. For more demanding applications such as

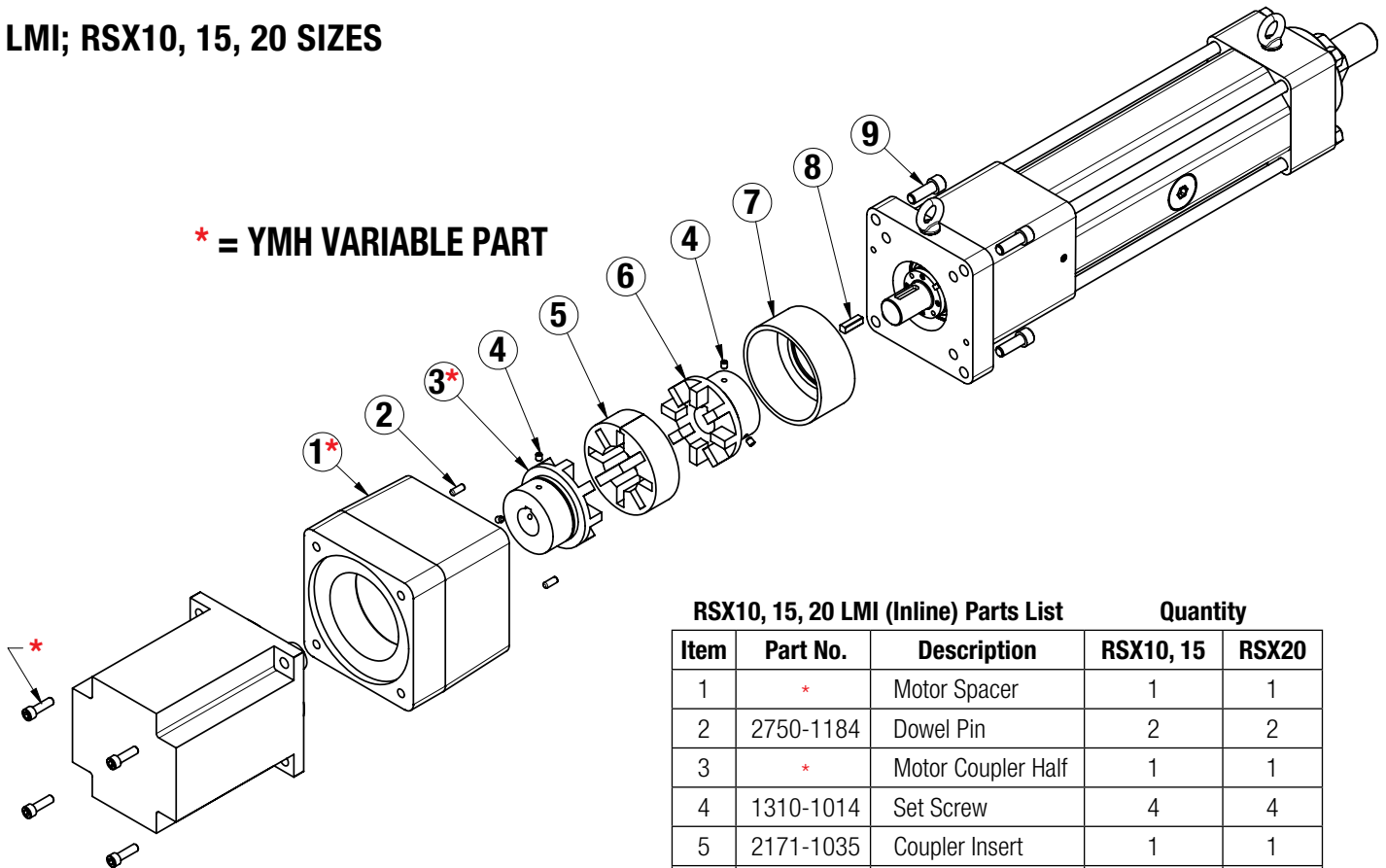
pressing, high frequency or other highly stressed applications, the re-lubrication interval for these actuators will vary and will need to be more frequent. In these demanding applications, it is recommended to execute at least 5 full stroke moves every 5,000 cycles of operation (or more frequent if possible) to re-distribute the grease within the actuator.

Re-lubricate with Tolomatic Grease into the grease port located on the side of the actuator.

	RSX10, 15, 20	RSX25, 33
Quantity (g)	9.5 + (0.025 x Stroke <sup>mm</sup> )	12.0 + (0.027 x Stroke <sup>mm</sup> )
Quantity (oz)	0.34 + (0.022 x Stroke <sup>in</sup> )	0.42 + (0.024 x Stroke <sup>in</sup> )

Stroke<sup>mm</sup> = Stroke length in millimeters    Stroke<sup>in</sup> = Stroke length in inches

**LMI; RSX10, 15, 20 SIZES**

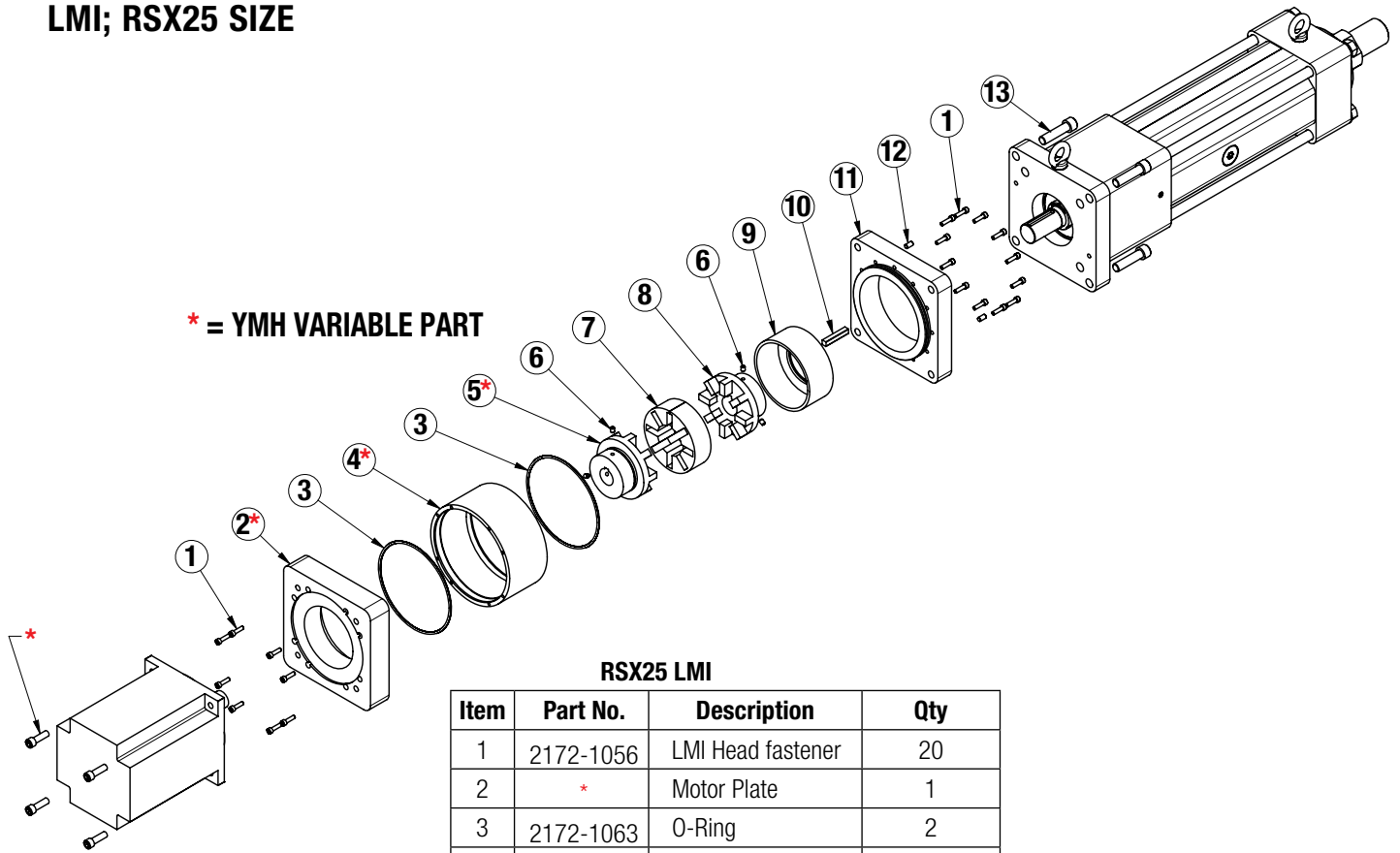


**RSX10, 15, 20 LMI (Inline) Parts List**

Item	Part No.	Description	Quantity	
			RSX10, 15	RSX20
1	*	Motor Spacer	1	1
2	2750-1184	Dowel Pin	2	2
3	*	Motor Coupler Half	1	1
4	1310-1014	Set Screw	4	4
5	2171-1035	Coupler Insert	1	1
6	2171-1032	Coupler Half	1	-
	2173-1032	Coupler Half	-	1
7	2171-1036	Coupler Cover	1	1
8	2171-1103	Key	1	-
	2173-1103	Key	-	1
9	2171-1111	LMI fastener	4	-
	2173-1302	LMI fastener	-	4

\*YMH Variable Parts

**LMI; RSX25 SIZE**



**\* = YMH VARIABLE PART**

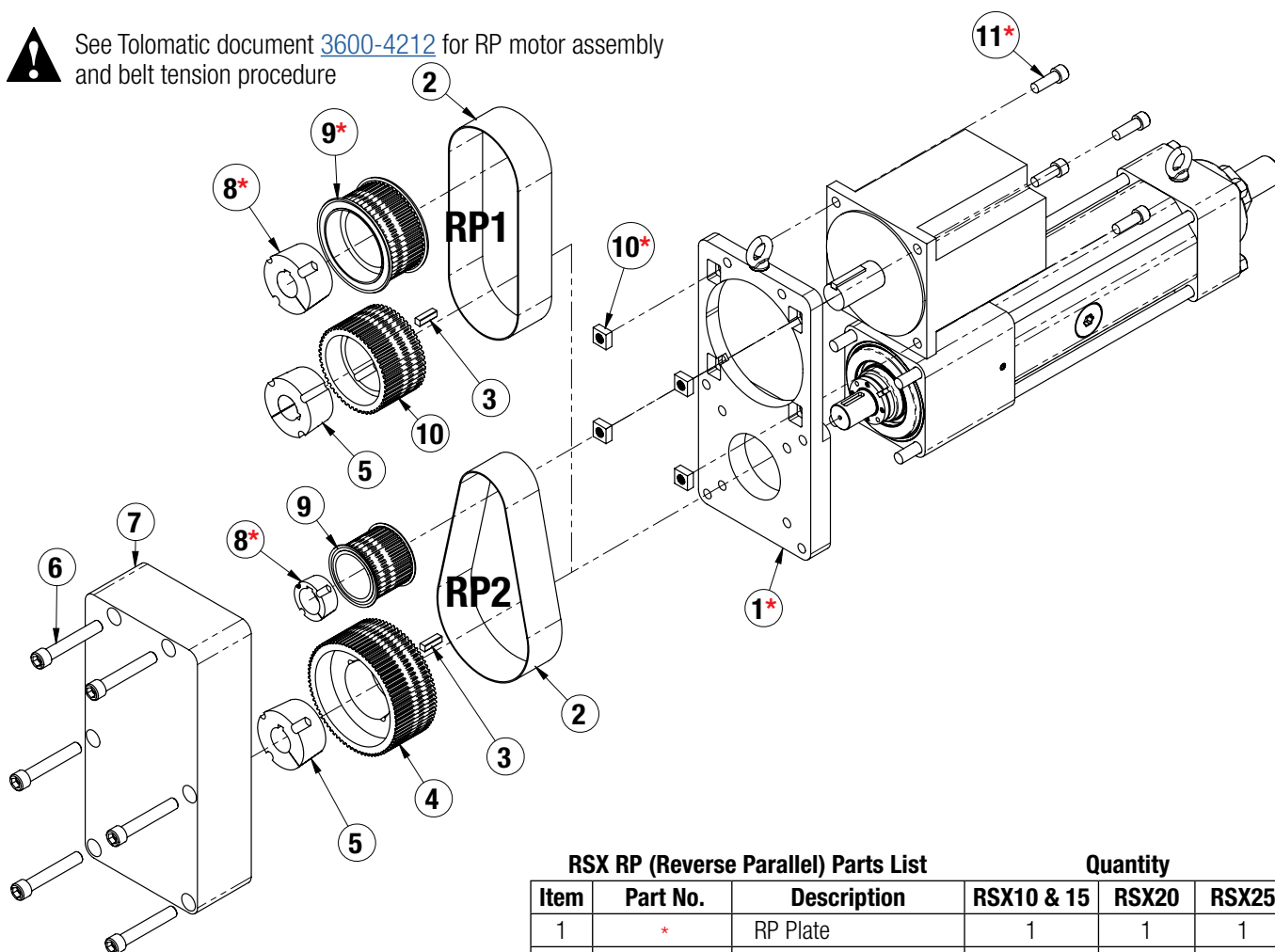
**RSX25 LMI**

Item	Part No.	Description	Qty
1	2172-1056	LMI Head fastener	20
2	*	Motor Plate	1
3	2172-1063	O-Ring	2
4	*	Spacer Tube	1
5	*	Motor Coupler Half	1
6	2172-1014	Set Screw	4
7	2172-1035	Coupler Insert	1
8	2172-1032	RSX Coupler Half	1
9	2172-1036	Coupler Cover	1
10	2172-1103	Key	1
11	2172-1066	Actuator Plate	1
12	4420-1004	Dowel Pin	2
13	2172-1111	LMI fastener	4

\*YMH Variable Parts

**RSX RP Parts List**

 See Tolomatic document [3600-4212](#) for RP motor assembly and belt tension procedure



**RSX RP Belt Removal**

1. Lock out/Tag out and safely secure actuator to prevent accidental start up.
2. Remove the RP Cover (#7).
3. Loosen the motor mount bolts to remove tension from the Belt (#14).
4. Remove the old Belt (#2).

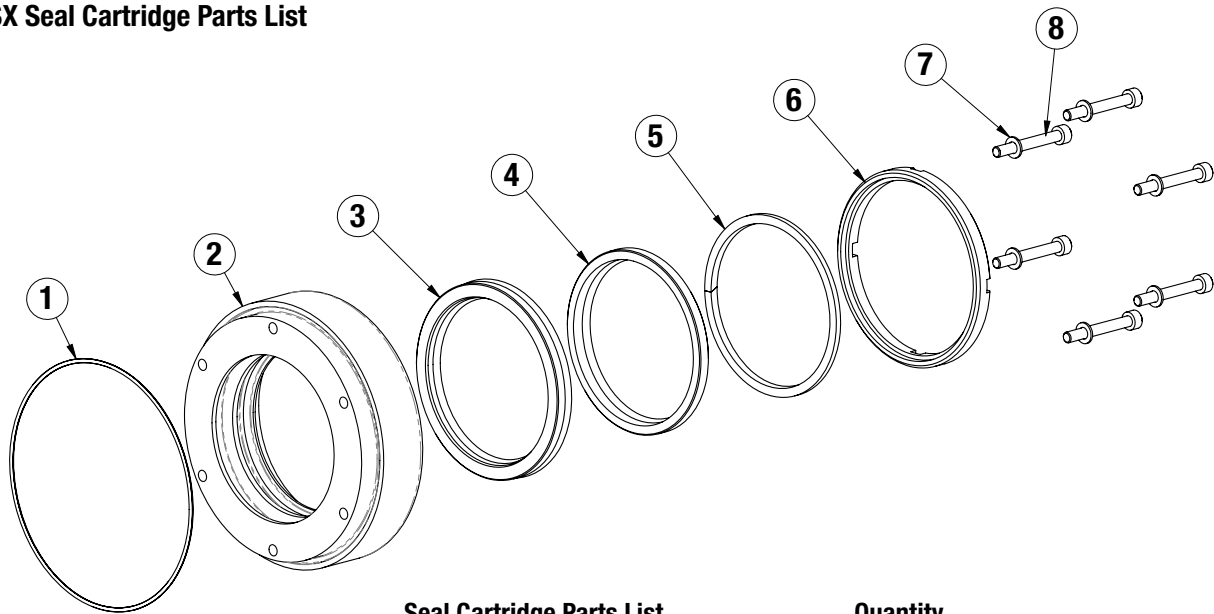
**RSX RP (Reverse Parallel) Parts List**

**Quantity**

Item	Part No.	Description	RSX10 & 15	RSX20	RSX25
1	*	RP Plate	1	1	1
2	*	Belt	1	1	1
3	2171-1103	Key	1	-	-
	2173-1103	Key	-	1	-
	2172-1103	Key	-	-	1
4	2171-1426	Actuator Pulley, RP1	1	1	-
	2172-1026	Actuator Pulley, RP1	-	-	1
	2171-1425	Actuator Pulley, RP2	1	1	-
	2172-1025	Actuator Pulley, RP2	-	-	1
5	2171-1434	Actuator Taperlock	1	-	-
	2173-1434	Actuator Taperlock	-	1	-
	2172-1268	Actuator Taperlock	-	-	1
6	2171-1087	RP Cover Fastener	1	1	-
	2172-1087	RP Cover Fastener	-	-	1
7	2171-1346	RP Cover	1	1	-
	2172-1446	RP Cover	-	-	1
8	*	Motor Taperlock	1	1	1
9	*	Motor Pulley	1	1	1
10	*	Square Nuts	4	4	4
11	*	Motor Fasteners	4	4	4

\*YMH Variable Parts

**RSX Seal Cartridge Parts List**

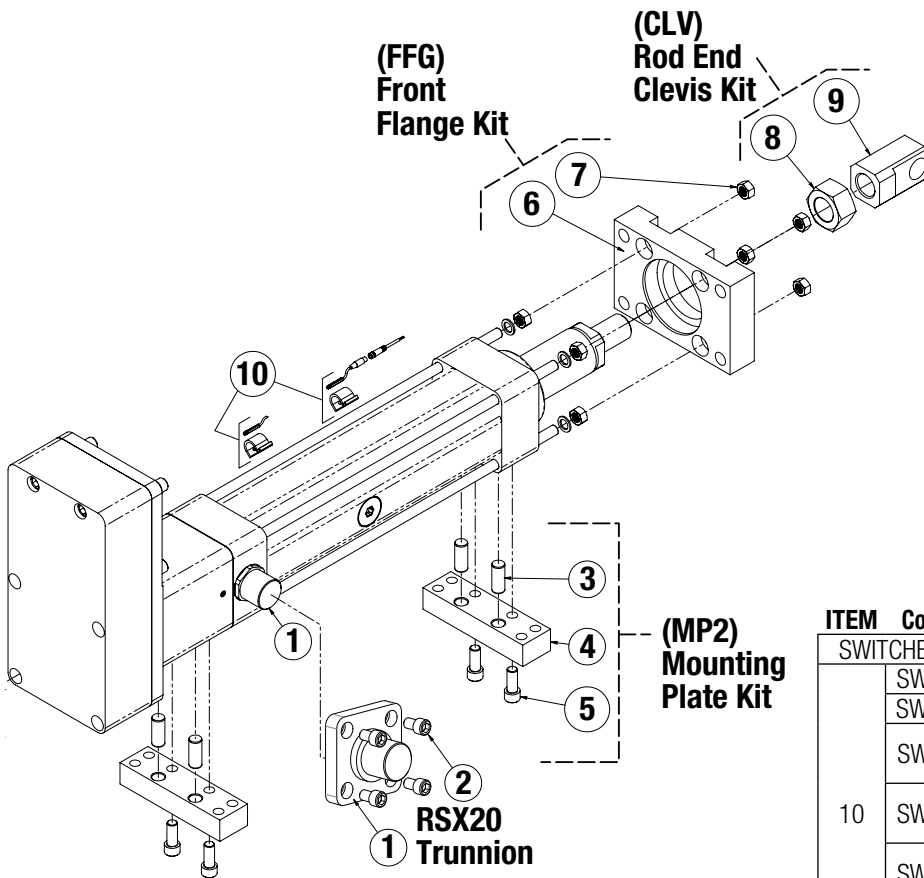


**Seal Cartridge Parts List**

**Quantity**

Item	Part No.	Description	RSX10, 15, 20	RSX25
SC	2173-9002	Seal Cartridge Kit	1	-
SC	2171-9002	Seal Cartridge Kit, IP67	1	-
SC	2172-9002	Seal Cartridge Kit	-	1
1	2171-1007	O-Ring	1	-
	2172-1007	O-Ring	-	1
2	2171-1002	Cartridge	1	-
	2172-1002	Cartridge	-	1
3**	2171-1004	U-Cup	1	-
	2172-1004	U-Cup	-	1
4	2171-1005	Wiper	1	-
	2172-1005	Wiper	-	1
5**	2171-1006	Scraper	1	-
	2172-1006	Scraper	-	1
6**	2171-1003	Retainer	1	-
	2172-1003	Retainer	-	1
7	1150-1466	Washer	1	-
	2733-1289	Washer	-	1
8	0601-1144	Cartridge Fastener	1	-
	1150-1199	Cartridge Fastener	-	1

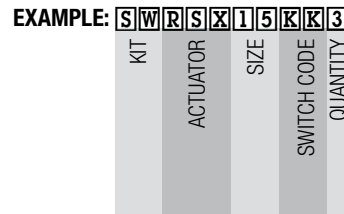
\*\* Only included with IP67 option



ITEM or Code	Part No.	Description	Quantity		
			RSX10,15	RSX20	RSX25
1	2171-9009	Trunnion	2	-	-
	2173-1085	Trunnion	-	2	-
	2170-1085	Trunnion	-	-	2
2	2173-1038	Trunnion Fastener	-	8	-
	2171-9017	Mounting Plate Kit	1	-	-
	2173-9017	Mounting Plate Kit	-	1	-
MP2	2172-9017	Mounting Plate Kit	-	-	1
	3	2171-1110	Dowel Pin	4	4
4	2171-1109	Mounting Plate	2	-	-
	2173-1109	Mounting Plate	-	2	-
	2172-1109	Mounting Plate	-	-	2
5	2171-1088	Mounting Plate Fastener	4	-	-
	2172-1088	Mounting Plate Fastener	-	4	4
FFG	2171-1062	Front Flange Kit	1	-	-
	2173-1062	Front Flange Kit	-	1	-
	2172-1062	Front Flange Kit	-	-	1
6	2171-1062	Front Flange	1	-	-
	2173-1261	Front Flange	-	1	-
	2172-1062	Front Flange	-	-	1
7	2171-1047	Nut	4	-	-
	2172-1047	Nut	-	4	-
	2172-1047	Nut	-	-	4
CLV	2171-9013	Rod End Clevis Kit	1	-	-
	2172-9013	Rod End Clevis Kit	-	1	1
8	2171-1114	Clevis Nut	1	-	-
	2172-1114	Clevis Nut	-	1	1
9	2171-1113	Clevis	1	-	-
	2172-1113	Clevis	-	1	1

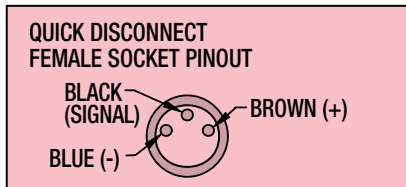
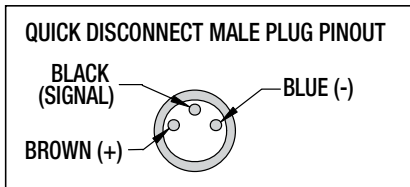
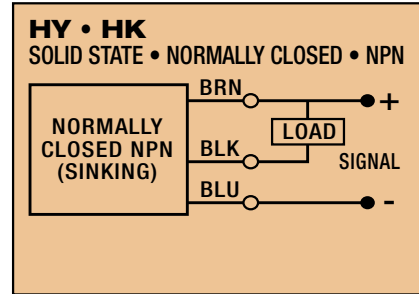
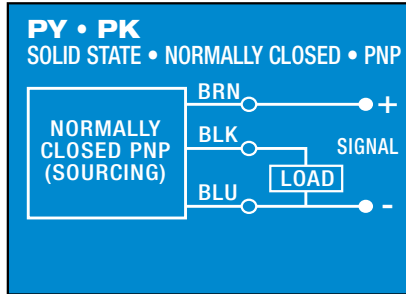
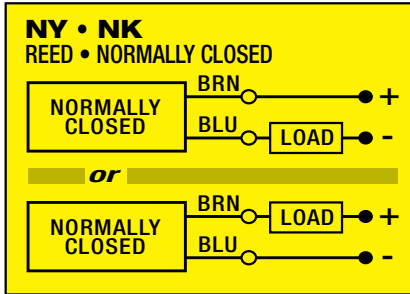
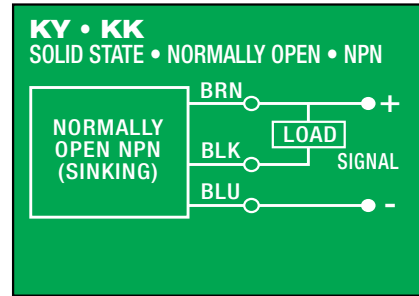
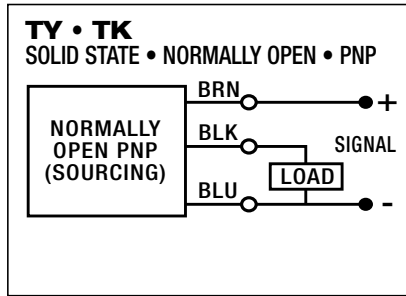
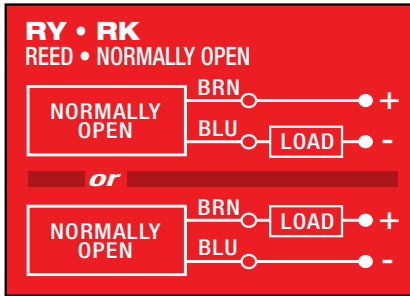
ITEM	Config. Code	DESCRIPTION
SWITCHES WITH QUICK-DISCONNECT COUPLERS		
10	SWRSX__RK	Reed Switch, SPST Normally Open
	SWRSX__NK	Reed Switch, SPST Normally Closed
	SWRSX__TK	Solid State Switch, PNP (Sourcing) Normally Open
	SWRSX__KK	Solid State Switch, NPN (Sinking) Normally Open
	SWRSX__PK	Solid State Switch, PNP (Sourcing) Normally Closed
	SWRSX__HK	Solid State Switch, NPN (Sinking) Normally Closed
NOTE: Includes retained hardware & female connector for quick-disconnect		
SWITCHES WITHOUT QUICK-DISCONNECT COUPLERS		
10	SWRSX__RY	Reed Switch, SPST Normally Open
	SWRSX__NY	Reed Switch, SPST Normally Closed
	SWRSX__TY	Solid State Switch, PNP (Sourcing) Normally Open
	SWRSX__KY	Solid State Switch, NPN (Sinking) Normally Open
	SWRSX__PY	Solid State Switch, PNP (Sourcing) Normally Closed
	SWRSX__HY	Solid State Switch, NPN (Sinking) Normally Closed

To order switch kits use configuration code for switch preceded by SW and actuator code.

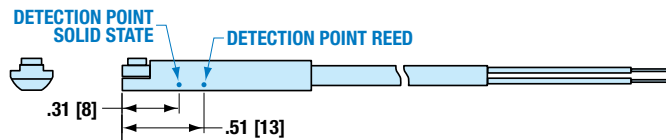


The example is for 3 Solid State NPN, Normally Open Switches with Quick-disconnect couplers. Each switch is complete with Bracket, Set Screw, Switch and mating QD cable. Note that the bracket/switch size is common and may be used on any size RSX.

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



**SWITCH DETECTION POINT**



Dimensions in inches [brackets indicate dimensions in millimeters]

**SWITCH INSTALLATION**



Place switch bracket onto any one of the four tie rods that run the length of the extruded tube. Insert the switch with set screw and the word “Tolomatic” facing up and slide it the mating slot on the bracket. Position the bracket with the switch to the exact location desired, with the bracket tight to the surface of the extrusion, then lock the bracket securely into place by tightening the set screw with the Allen wrench provided. Then tighten the switch into the bracket with a small slotted screwdriver.



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