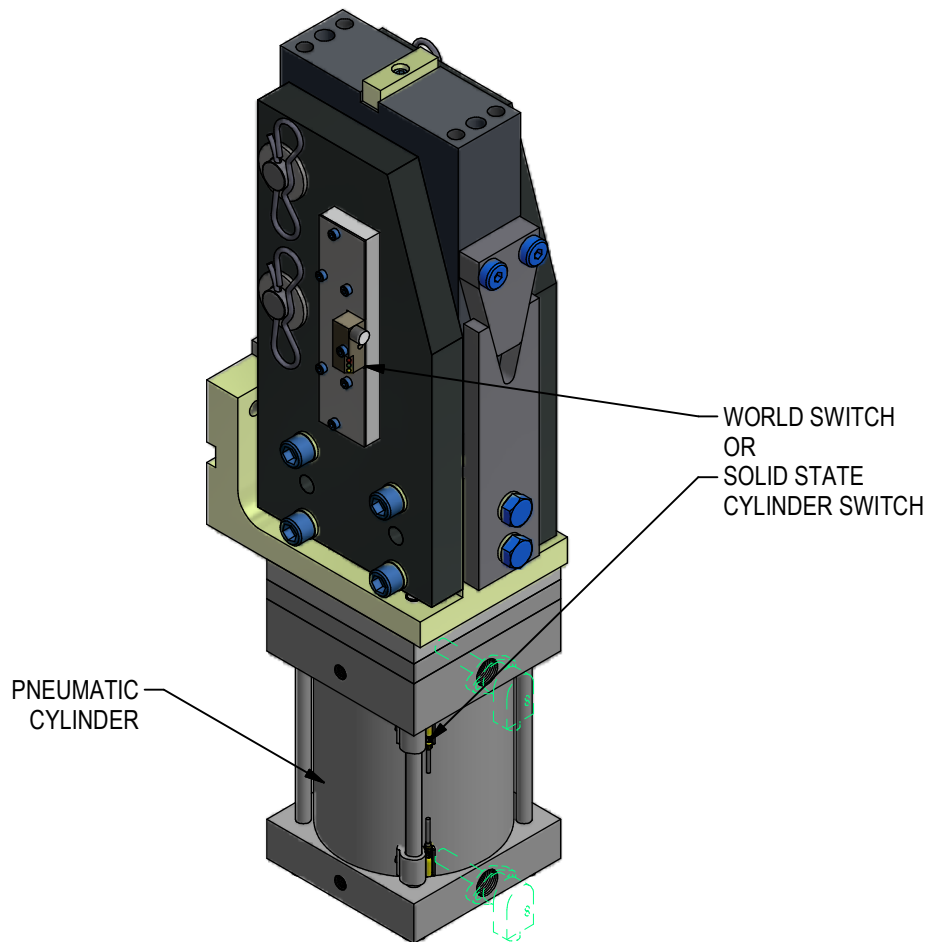


S01769 MAINTENANCE MANUAL

HEAVY DUTY PART EJECTOR/POSITIONER



MAINTENANCE

SAFETY FIRST!

MAINTENANCE SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL. PROPER SAFETY GEAR AND PROCEDURES MUST BE USED AT ALL TIMES.

BEFORE PERFORMING MAINTENANCE, CUT OFF AIR SUPPLY TO THE UNIT, ENSURE THAT ALL AIR IS REMOVED AND THAT THERE ARE NO "TRAPPED AIR" CONDITIONS.

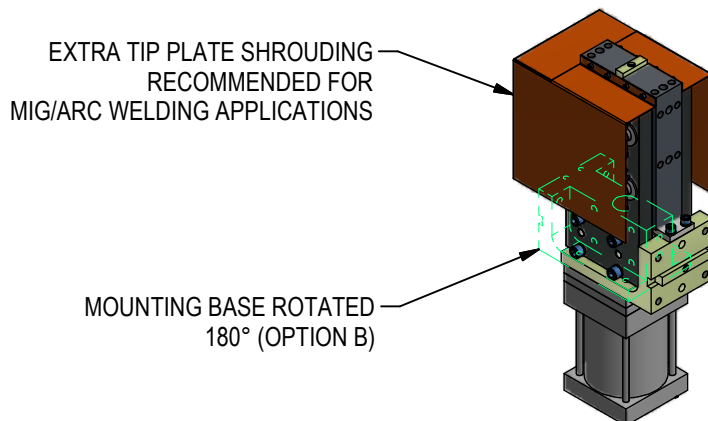
PREVENTATIVE MAINTENANCE: Regularly inspect unit to verify proper operation. Check for debris build up and clean as needed. Inspect all pneumatic, electrical, and mounting connections, making sure all connections are tight and secure. Routine replacement of cylinder seals is recommended.

CYLINDER: Check for abnormal wear or damage. Plant air supply to the cylinder should be free of contaminants, filtered to a minimum of 50micron and have a water separator. Be sure fittings are in good condition. Seals are subject to wear under normal operating conditions. It is recommended to keep a spare cylinder seal kit or repair kit on hand.

SWITCH: Switches may fail and need replacement; it is recommended to keep a spare switch on hand.

TROUBLESHOOTING

FAILURE	POSSIBLE CAUSE	SOLUTION
Tip plate does not extend/retract	Cylinder failure	Check plant air supply for proper pressure; too little will result in lack of cylinder movement. Seals may be worn, damaged or deteriorating. Replace as needed. If cylinder has been serviced, be sure tie rod nuts have been tightened to torque specifications.
	Switch failure	Check switch for proper operation. Replace as needed.
	Improper load	Check working load to be sure it is within recommended capacity.
	Cam slot contamination	Clean out cam slot. If slot contamination is a recurring problem, consider adding extra tip plate shrouding (Shroud Option 1 in catalog). See illustration below. Cam slot contamination can also cause no read on switch by blocking full tip plate movement.
Unit cycles too fast or throws part	No flow controls Flow controls not adjusted	Flow controls are required for all part ejectors and positioners. Flow controls must be adjusted by the customer to match application.



REPLACEMENT PARTS

NOTE A: When ordering cylinders, repair kits and switches, please have the unit's Welker Job Number available and/or the cylinder model & serial number.

REPLACEMENT PARTS			
QTY	STOCK*	DESCRIPTION	PART NUMBER
1		PNEUMATIC CYLINDER WITH NPT PORTS	WC-2173-STROKE-S01769 (SEE CHART BELOW)
1		PNEUMATIC CYLINDER WITH G PORTS	WC-2174-STROKE-S01769 (SEE CHART BELOW)
	1	UNIT REPAIR KIT	S01769-RK
		CYLINDER SEAL KIT (INCLUDED IN REPAIR KIT)	WC-2173-CSK
	1	L3 CYLINDER SWITCH	SWITCH L3
	1	L5 CYLINDER SWITCH	SWITCH L5
	1	AE or AR WORLD SWITCH	SWITCH SWA
	1	BE or BR WORLD SWITCH	SWITCH SWB
	1	CE or CR WORLD SWITCH	SWITCH SWC
	1	DE or DR WORLD SWITCH	SWITCH SWD
	1	EE or ER WORLD SWITCH	SWITCH SWE
	1	FE or FR WORLD SWITCH	SWITCH SWF
	1	GE or GR WORLD SWITCH	SWITCH SWG
	1	HE or HR WORLD SWITCH	SWITCH SWH
	1	JE or JR WORLD SWITCH	SWITCH SWJ

* RECOMMENDED SPARE PARTS TO KEEP IN STOCK

TIP ANGLE	STROKE (mm)
45	125
40	115
35	105
30	95
25	85
20	75

UNIT REPAIR KIT: S01769-RK

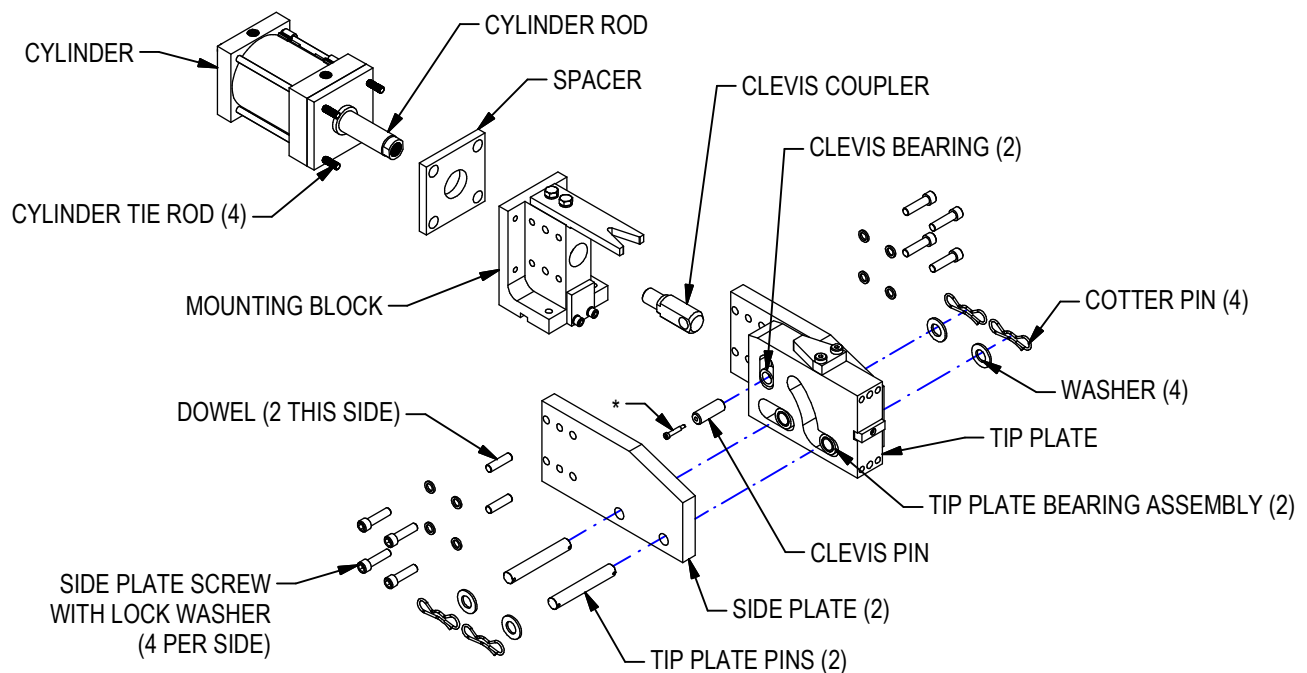
Standard repair kit includes: Cylinder seal kit, clevis pin & bearing, tip plate roller bearing assembly (2), tip plate pins (2), cotter pins (4), and washers (4).

Below are instructions for unit repair; cylinder repair is on the next page.

1. Release air pressure from system and remove air lines from cylinder.
2. Remove tip plate shroud if applicable. Remove cotter pins & washers. Remove side plate screws & lock washers.
3. Remove the side plates.
4. Remove pin from cylinder clevis coupler.
5. Clevis coupler is affixed to cylinder rod with permanent Loctite. To remove, first extend the cylinder rod to move the coupler away from mounting block. Apply gentle heat to coupler to soften thread locker being careful so as not to overheat nearby seals. Remove clevis coupler.
6. Loosen cylinder tie rods (approx 20mm) to release mounting block from cylinder.
7. Clean surfaces with silicon-free cleaner. Inspect for wear and damage.
8. Replace clevis bearings.
9. Remove tip plate roller pins. Replace tip plate roller bearing assemblies. Replace/install tip plate roller pins.

>> To replace cylinder seals >> continue on next page >>

10. Install mounting block to cylinder. Tighten cylinder tie rods according to torque chart on next page.
11. Install clevis coupler to cylinder rod using permanent Loctite (thread locker).
12. Coat surface and slots of tip plate with Magnalube G grease or similar.
13. Install side plates with screws/lock washers/dowels. Secure rollers with cotter pins/washers. Use removable Loctite on all fasteners.



* Shoulder screw is present only on units with a World Switch

CYLINDER SEAL MAINTENANCE

A. To replace rod and cartridge seals:

1. See instructions on sheet 4 for clevis pin release and cylinder removal.
2. Remove cartridge retainer. Remove rod cartridge from head by pulling straight out while twisting slightly.
3. Remove rod wiper, rod seal and cartridge O-ring.
4. Clean cartridge and inspect for excessive wear or scoring. Replace as required.
5. Install new rod wiper, rod seal, and O-ring, noting orientation of U-cup and wiper in seal grooves. Coat I.D. of rod cartridge with Acrolube grease.
6. Check piston rod end for burrs in area of threads and wrench flats. Remove and polish sharp edges as required.
7. Install cartridge assembly over piston rod end with a slight twisting motion. Push cartridge into cavity in head.
8. Install cartridge retainer. Install cylinder to mounting block. Torque screws to values in torque table.

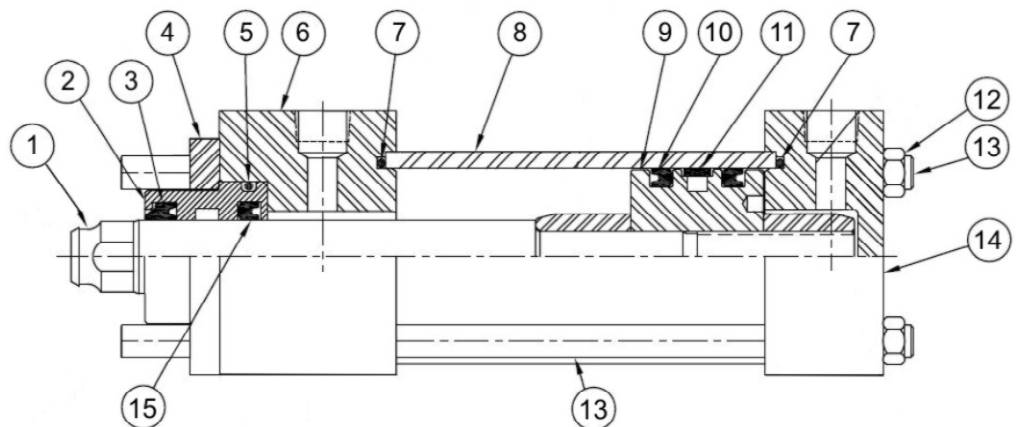
B. To replace tube end seals:

1. Follow instructions **A.1** (above).
2. Remove head and cap from cylinder. Remove old seals and clean seal grooves thoroughly.
3. Install new O-rings in head and cap (a small amount of grease on the O-ring may be helpful to hold it in place during assembly). Make sure that O-ring is fully seated in seal groove.
4. Re-assemble head and cap to tube being careful not to pinch O-rings.
5. Hand tighten tie rod nuts initially, making sure that head and cap are square to tube. Assembly of cylinder on a flat surface may be helpful to assure proper alignment of head and cap.
6. Torque tie rod nuts in order shown and to the torque values shown in torque chart.

C. To replace piston seals:

1. Follow instructions **A.1** (above).
2. Pull piston and rod assembly from cylinder tube.
3. Remove piston seals (U-cups) from grooves with brass or plastic tool (avoid tools which will damage seal groove surfaces).
4. Remove wearband and inspect for wear; replace if necessary. Wearband is split and snaps into groove on piston.
5. Clean piston and cylinder tube with suitable solvent. Blow dry with compressed air. Inspect parts for wear or scoring, replace if necessary.
6. Fill lubrication groove (below wearband groove) with grease.
7. Install two new piston seal U-cups on piston. (Note: Lips on seals must face air pressure in cylinder; see parts list for proper seal orientation).
8. Lightly coat seals and tube I.D. with grease.(Acrolube)
9. Install piston assembly into tube being careful to avoid damage to piston seals.
10. Re-install head, cap, and tie rods; tighten tie rod nuts following instructions **B.6 & B.7**.

1	PISTON ROD
2	BEARING CARTRIDGE
3	ROD WIPER*
4	CARTRIDGE RETAINER
5	O-RING, CARTRIDGE*
6	HEAD
7	O-RING, HEAD/CAP*
8	CYLINDER TUBE
9	PISTON
10	PISTON SEAL*
11	WEARBAND*
12	NUT, TIE ROD
13	TIE ROD
14	CAP
15	ROD SEAL*



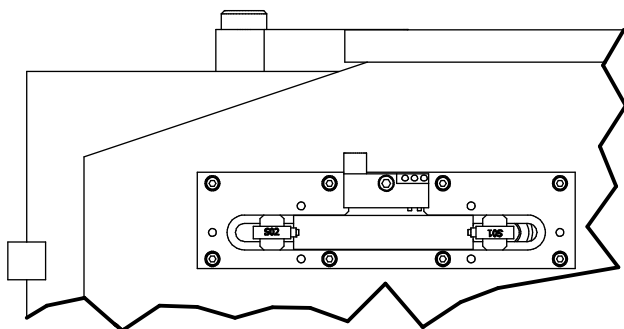
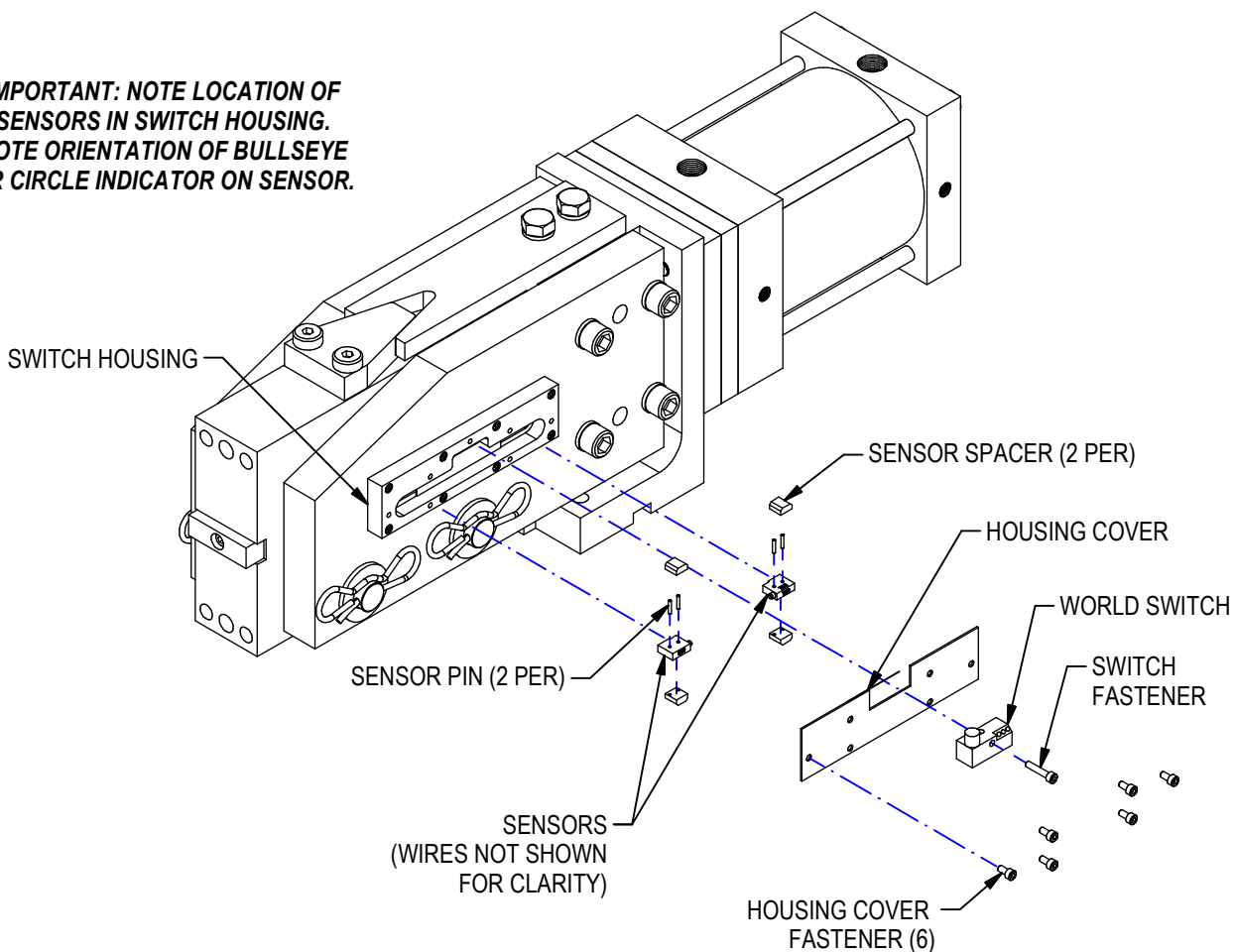
Tightening Torques for Metric Bolts (installed dry)				
	Steel		Aluminum	
M5	10 Nm	7.375 ft lb.	5 Nm	3.6875 ft lb.
M6	19 Nm	14.014 ft lb.	9.5 Nm	7.007 ft lb.
M8	45 Nm	33.19 ft lb.	22.5 Nm	16.595 ft lb.
M10	89 Nm	65.643 ft lb.	44.5 Nm	32.8215 ft lb.
M12	156 Nm	115.06 ft lb.	78 Nm	57.53 ft lb.

* ITEMS INCLUDED IN CYLINDER SEAL KIT

REPLACING WORLD SWITCH

1. REMOVE SWITCH HOUSING COVER FROM TIP PLATE (6 SCREWS).
2. NOTE LOCATION OF SENSORS IN SWITCH HOUSING. NOTE ORIENTATION OF BULLSEYE OR CIRCLE INDICATOR ON SENSOR. (TAKE PHOTO FOR REFERENCE)
3. REMOVE WORLD SWITCH FASTENER. REMOVE RUBBER STRIP (IF APPLICABLE) THAT HOLDS WIRES IN PLACE. REMOVE SWITCH AND SENSOR ASSEMBLIES.
4. REMOVE SENSOR PINS FROM SENSORS AND SPACERS.
5. INSTALL NEW SENSORS TO SPACERS WITH PINS.
6. INSTALL NEW SENSORS & SWITCH TO PROPER LOCATION AND ORIENTATION. SECURE LOOSE WIRES INTO SWITCH HOUSING WITH RUBBER STRIP, IF APPLICABLE.
7. INSTALL SWITCH HOUSING COVER TO UNIT TIP PLATE WITH SCREWS (6).

IMPORTANT: NOTE LOCATION OF SENSORS IN SWITCH HOUSING. NOTE ORIENTATION OF BULLSEYE OR CIRCLE INDICATOR ON SENSOR.



VIEW WITH SWITCH HOUSING COVER REMOVED, SHOWING SENSORS AND SENSOR SPACERS IN PLACE.

FOR *RETRACT* OPTION SENSOR S01 AND S02 ARE POSITIONED AS SHOWN.

FOR *EXTEND* OPTION SENSORS WOULD BE IN OPPOSITE POSITION.