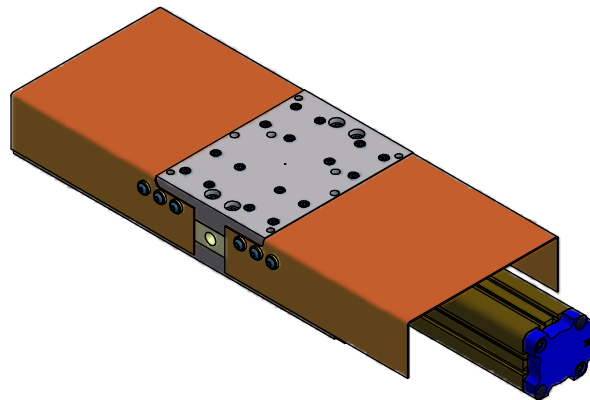
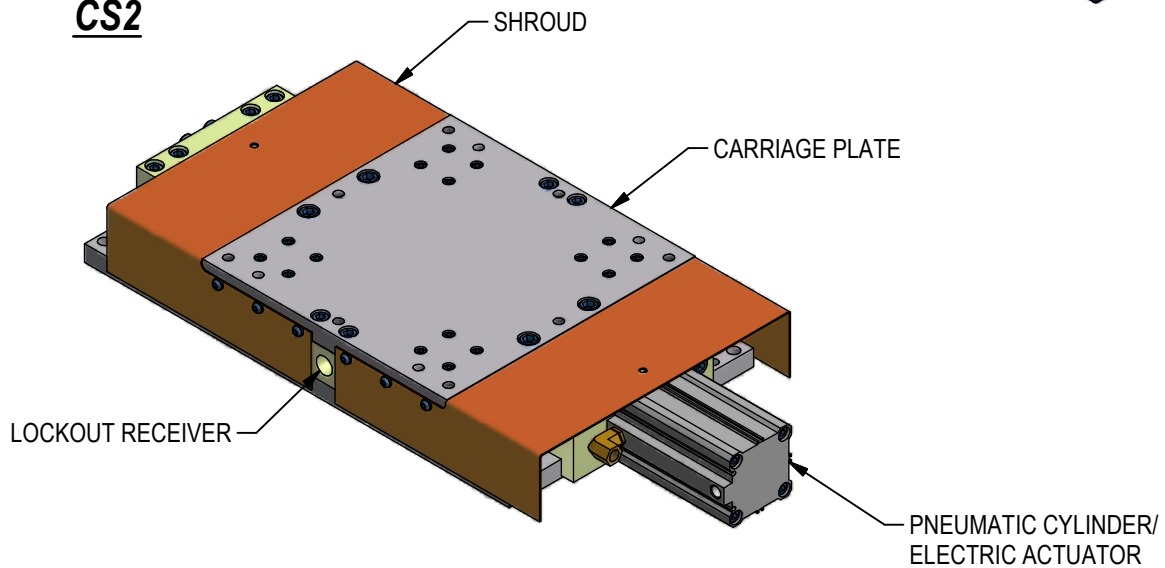


MAINTENANCE MANUAL CS SERIES RAIL SLIDES

CS1



CS2



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. SECURE SLIDE WITH LOCKOUT PIN TO PREVENT MOTION.

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: Welker pneumatic cylinders are lube free and require very little maintenance. Check rod and cylinder surfaces 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. **Consult Welker for electric actuators.**

STOPS: Shims (if applicable) may require adjustments; be sure to make adjustments to each location equally. Welker Smart Stop requires replacement upon failure. Welker Smart Stops use standard NAAMS (3) hole shims and spacers.

SHROUDS: Replace when damaged.

BEARING ASSEMBLY & RAIL: Inspect rails for damage and debris.

TROUBLESHOOTING

FAILURE	POSSIBLE CAUSE	SOLUTION
Slide carriage does not move or does not fully extend/retract	Cylinder/actuator* failure	Inspect shroud, replace if damaged. 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.
	Debris in slide	Inspect unit for dirt/debris. Clean, remove debris.
	Lockout pin engaged	Check lockout pin
Bent, broken, or worn cylinder rod	Misaligned load or load in excess of capacity	Make sure load is properly aligned and within design limits. Please call Welker for cylinder service or replacement.
Rail damage	Bearing failure Contaminants inside bearing assembly	Replace bearing assembly (includes 1 rail and 2 carriages)
Rail noise	Lack of bearing lubrication	Lubricate bearings.
Welker Smart Stop LEDs do not light up	Cylinder/actuator* stroke not completing	Inspect unit for debris blocking full cylinder stroke. Clean, remove debris. Check cylinder operation.
	Switch failure	Check switch for proper operation and secure connection. Replace if required.

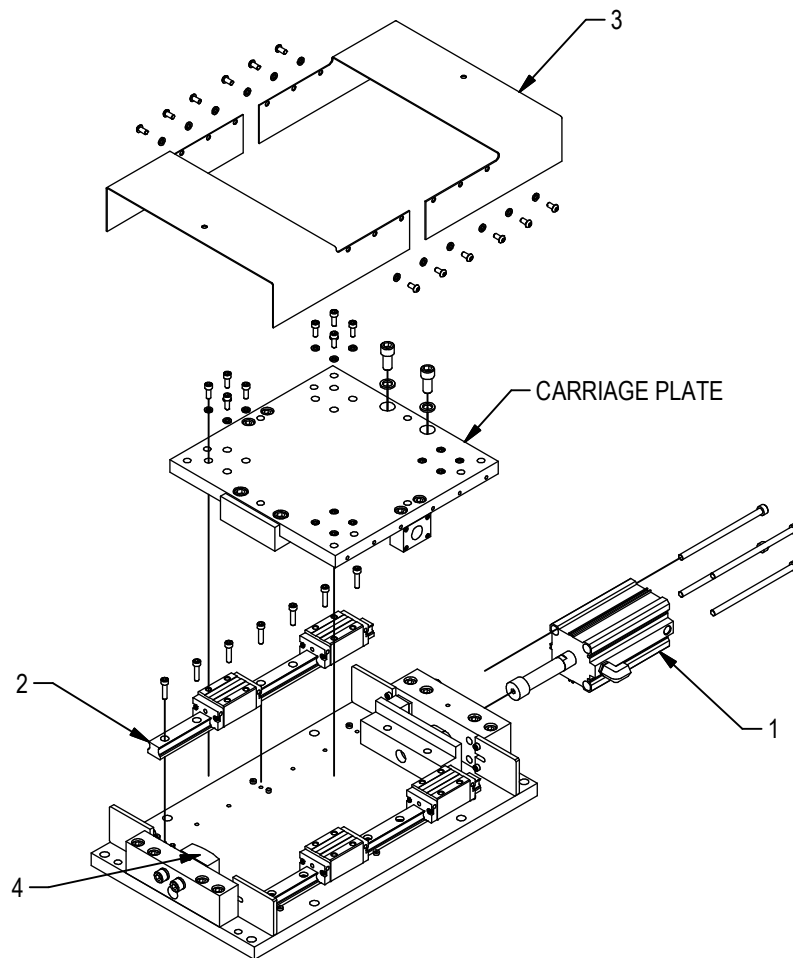
* Consult Welker for electric actuators

REPLACEMENT PARTS

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

REPLACEMENT PARTS				
ITEM	QTY	STOCK*	DESCRIPTION	PART NUMBER
1	1		PNEUMATIC CYLINDER WITH COUPLER	SEE CHART ON NEXT PAGE
2	2		CS1 BEARING ASSEMBLY: BEARING CARRIAGE (2) & RAIL (1)	CS1-RAILASSM-
2	2		CS2 BEARING ASSEMBLY: BEARING CARRIAGE (2) & RAIL (1)	CS2-RAILASSM-400
3	2		SHROUD FOR CS1 SLIDE	CS1E07
3	2		SHROUD FOR CS2 SLIDE	CS2E07
4	2	1	SMART STOP FOR CS1 SLIDE	ASC020-PD
4	2	1	SMART STOP FOR CS2 SLIDE	ASC021-PD

* RECOMMENDED SPARE PARTS TO KEEP IN STOCK



PNEUMATIC CYLINDER REPLACEMENT

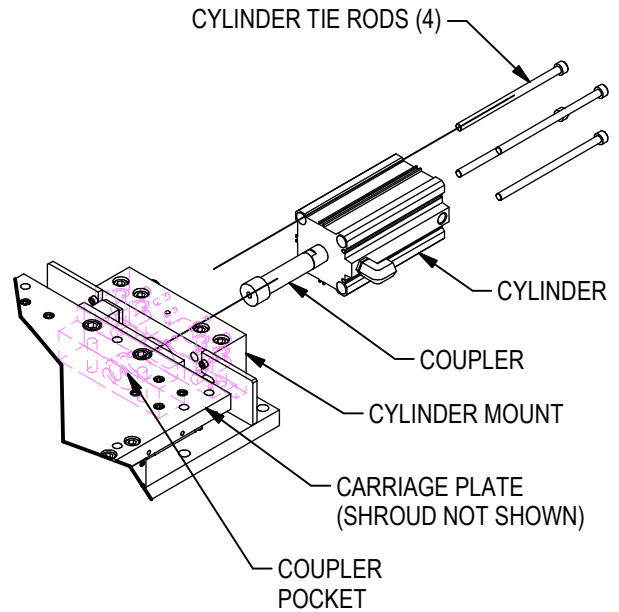
CONSULT WELKER FOR ELECTRIC ACTUATORS

TO REMOVE CYLINDER/COUPLER ASSEMBLY

1. Release air pressure from system and remove air lines from cylinder.
2. Extend slide to allow access to cylinder tie rod nuts and secure slide with lockout pin to prevent motion.
3. Remove cylinder tie rods (4) at cylinder mount.
4. Slide cylinder left to dislodge coupler from coupler pocket.
5. Remove cylinder assembly.

TO REINSTALL CYLINDER/COUPLER ASSEMBLY

1. Make sure debris is cleared from slide and coupler pocket.
2. Extend coupler from cylinder, aligning with coupler pocket. Insert tie rods into cylinder mount, making sure cylinder ports are on the same side as airline connections.
3. Reinstall cylinder tie rods.
4. Reinstall air lines.



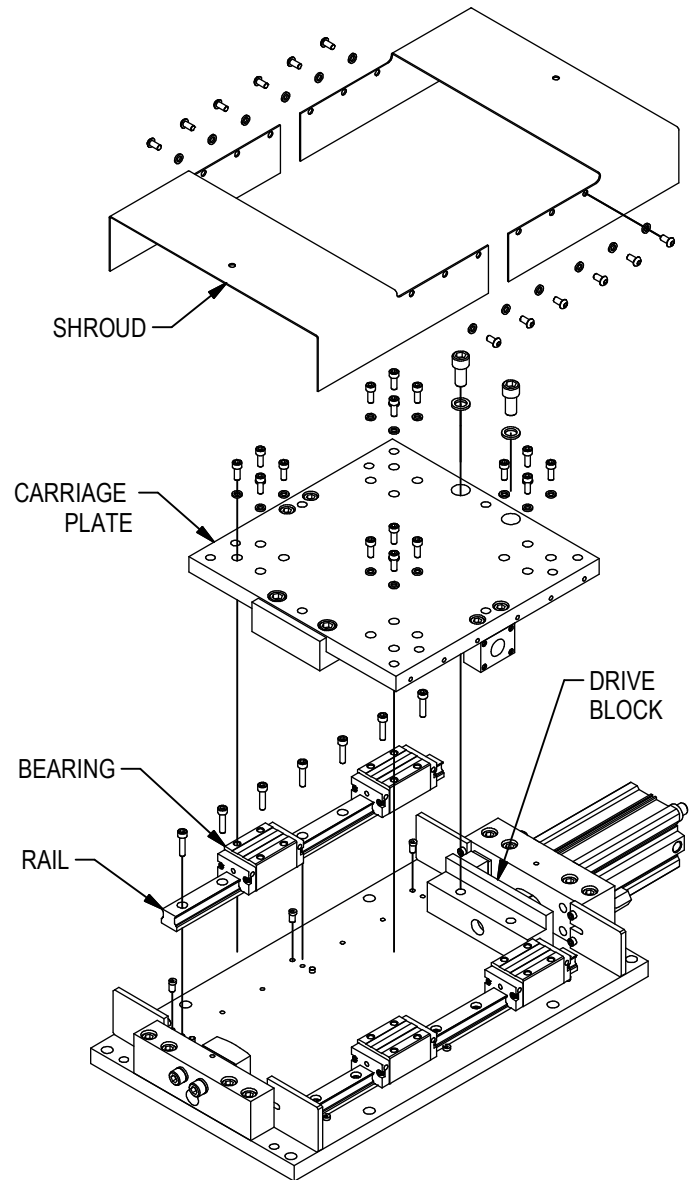
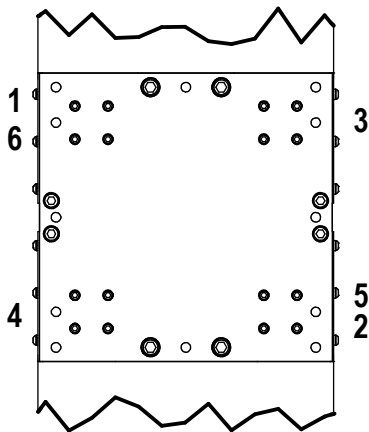
REPLACEMENT CYLINDERS

PNEUMATIC COMPACT CYLINDERS ARE NOT REBUILDABLE, REPLACEMENT IS REQUIRED.
CONSULT WELKER FOR ELECTRIC ACTUATORS.

SLIDE	ACTUATOR #30: NPT PORTS	ACTUATOR #31: G PORTS
CS1	WCW2148-N125-CS1	WCW2148-G125-CS1
CS2	UND-SB063-CS2	UGD-SB063-CS2

BEARING & RAIL REPLACEMENT

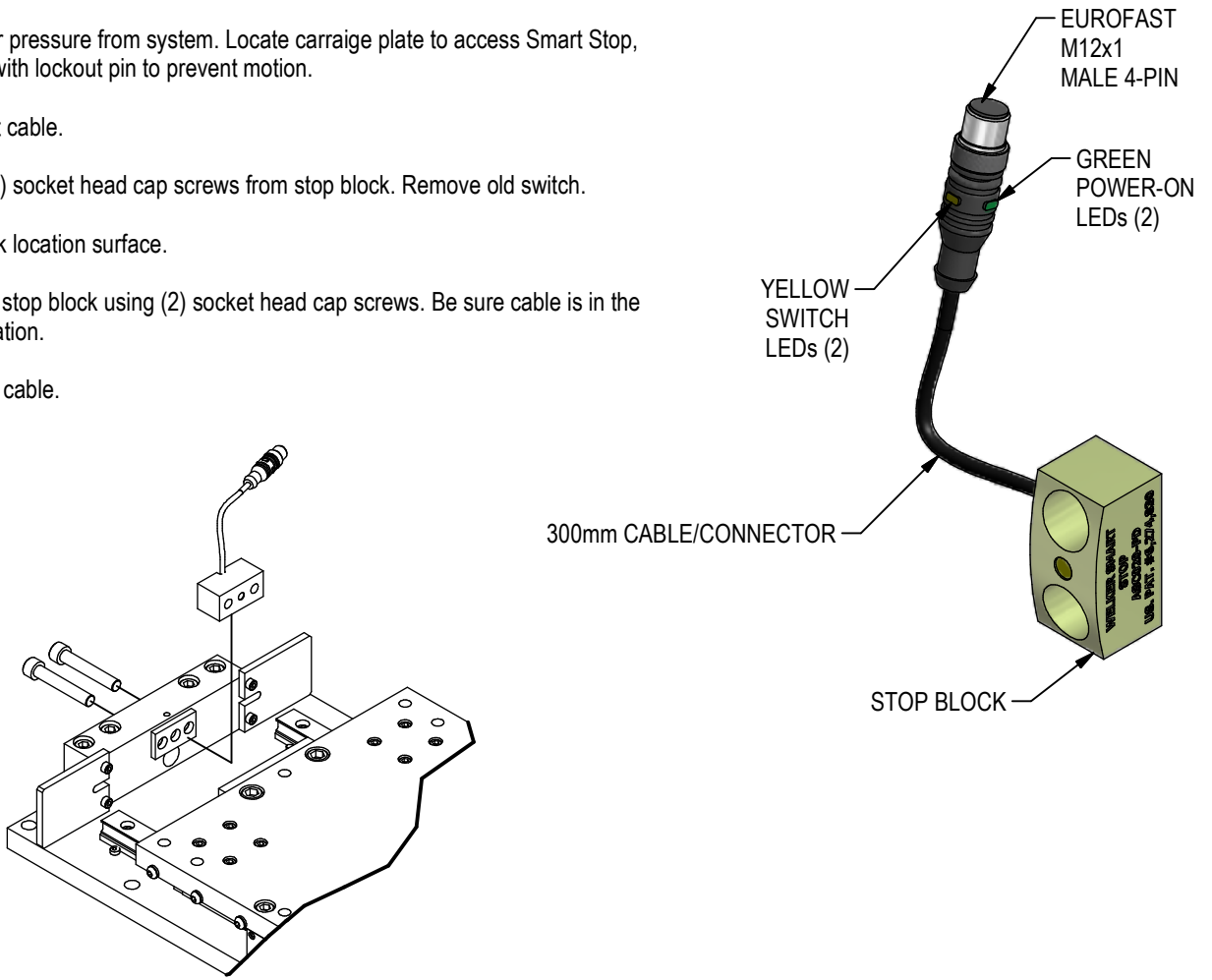
1. Release air pressure from system. Lockout slide to prevent motion.
2. Remove top shrouds.
3. Remove bolts and lockwashers from all bearings (4 bolts per bearing, 4 bearings) at carriage plate.
4. Remove bolts that fasten carriage plate to drive block.
5. Carefully lift carriage plate up and away from slide.
6. Remove the screw cover plugs from the rail that is going to be replaced (if applicable).
7. Remove bolts that anchor rail to base plate. Slide bearing assembly out of the way for bolt access as needed.
8. Remove rail and bearing assembly. Remove cam screws. Clean base plate and debris from rail pocket.
9. Set new rail/bearing assembly in place, being careful to keep the bearings on the rail at all times! The internal balls may become dislodged from the bearing block.
10. Reinstall the cam screws that hold the rail against dowels or machined edge. Install bolts in the new rail so that the rail is making light contact with the base plate, sliding bearings as needed for access. Do not tighten!
11. Tighten with just enough force to hold the rail firmly. Do not over-tighten.
12. Tighten rail bolts using torque wrench, working from the center of the rail to the ends. Torque to 22.4 lb ft. (3040 N-cm)
13. Install plugs in bolt holes so top of plug is flush with rail (if applicable).
14. Align carriage plate.
15. Install bearing bolts and lock washers, following the sequence in diagram below.
16. Bolt carriage plate to drive block. Install top shrouds.



TO REPLACE WELKER SMART STOP

There are four (4) LED lights on the Smart Stop's cable end: (2) green power-on lights and (2) yellow switch engagement lights. When lights fail, replace switch.

1. Release air pressure from system. Locate carriage plate to access Smart Stop, secure slide with lockout pin to prevent motion.
2. Disconnect cable.
3. Remove (2) socket head cap screws from stop block. Remove old switch.
4. Clean block location surface.
5. Install new stop block using (2) socket head cap screws. Be sure cable is in the proper orientation.
6. Reconnect cable.



SMART STOP LOCATIONS (2)
SHROUD NOT SHOWN
FOR CLARITY

