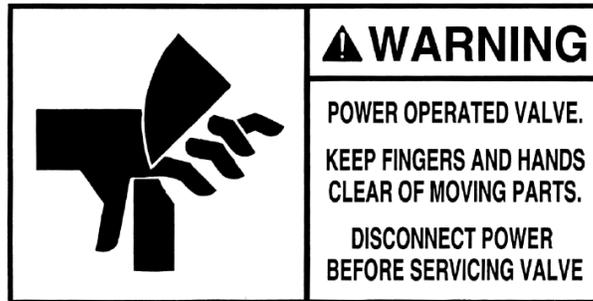


UNIBODY ELECTRIC VALVE ACTUATORS E14X & E16X GEARCASE ROTATION INSTRUCTIONS

(Please refer to Fig. 1 of this document)



1. Disconnect harness from 12 pin connector if required.
2. Remove the four cap screws and washers that retain the gearcase cover (Item #'s 2 & 3)
3. Remove the gearcase cover (Item #4).
4. Make note of the position of the gear segment (Item #8) relative to the gearcase (Item #11) you will be rotating these two items the same amount and in the same direction; when done, they should be in the same relationship with each other as they are now. Having a sketch or digital photo can help ensure the parts get put back in the correct relationship to each other. Parts that are put back together incorrectly can damage the position sensor (Item #4).
5. Remove the magnet bolt and washer (Item #'s 5, 6 & 7) to retain the gear segment (Item #8).
6. Remove the gear segment (Item #8). It may be necessary to rotate the worm (Item #9) slightly back and forth using a wrench on the hex end of the worm gear shaft (Item #12) while removing the gear segment.
7. Remove the eight cap screws (Item #10) that secure the gearcase (Item #11) to the valve body.
8. Rotate the gearcase to its new position. It can be rotated in 45-degree increments. Make sure the actuator shaft, the square shaft sticking up in the middle of the gearcase, does not rotate with the gearcase. It should stay in its original position.
9. Reinstall the eight cap screws (Item #10) that secure the gearcase (Item #11) to the valve body. Apply #243 Loctite to the threads of the eight screws and tighten them in an "X" pattern to 22 in/lbs.
10. Reinstall the gear segment (Item #8). It may be necessary to rotate the worm (Item #9) slightly back and forth using a wrench on the hex end of the worm gear shaft (Item #12) while reinstalling the gear segment. Be sure that the position of the gear segment (Item #8) relative to the gearcase (Item #11) is correct. Refer to sketch or digital photo from step 4.

11. Reinstall the bolt and washer (Item #'s 6 & 7) that retain the gear segment (Item #8). Apply #243 Loctite to the threads and tighten to 5-7 ft/lbs.
12. Place the gearcase cover down onto the gearcase.
13. Reinstall the four cap screws and washers that secure the gear case cover (Item #'s 2 & 3). Apply #243 Loctite to the threads and tighten to 16 in/lbs.
14. Recalibrate the valve via the controller's manual located on the website.
 - Apex is Maintenance/Calibration section in 98600000.
 - Apex-S is Maintenance/Calibration section in 98607000.
 - UBEC controllers are in the Calibration section of the Unibody manual 98311000.

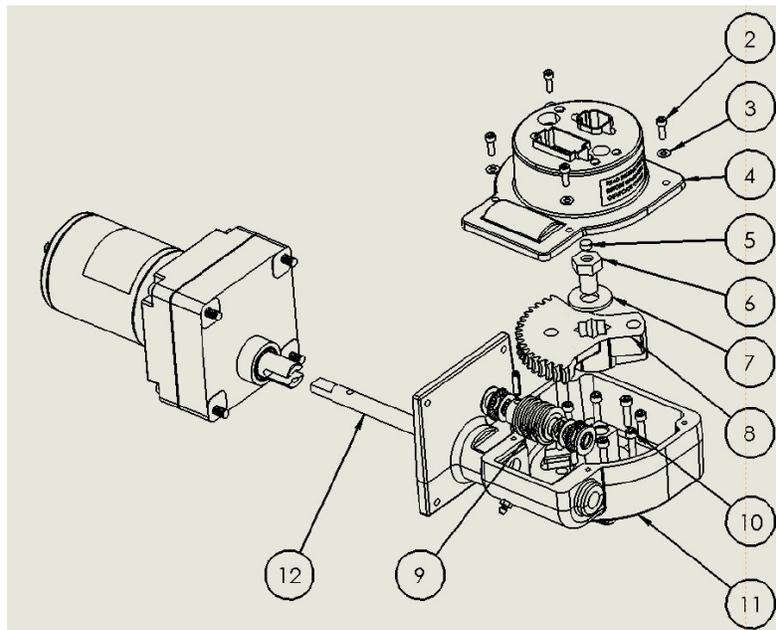


Fig. 1

(Parts are shown with valve in the OPEN position except for the EB_J valves which would be closed.)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
2	64103000	SCREW 8-32X0.500 SOC CAP SS	4
3	71609000	WASHER #8	4
4	81596400	E14/16X CONTROLLER	1
5	46056000	MAGNET - 8MM OD X 4MM LG	1
6	17870001	BOLT - MAGENT HOLDER	1
7	71060000	WASHER FLAT 0.50 S.A.E S/S	1
8	33610001	GEAR SECTOR	1
9	71249001	WORM GEAR	1
10	64085000	SCREW 10-24X0.750 SOC CAP SS	8
11	24488001	CASE - GEAR (E1F, E14X)	1
12	65382000	SHAFT - ELECTRIC ACTUATOR	1