



PRO 80 Linear Actuator

Disassembly and Reassembly Procedure

USAutomatic Part # 510310



Major Components and Sub-Assemblies

Acme Screw / Cover Tube Assembly
Consist of the 3 items below



Acme Screw Assembly
Part # 510119



Cover Tube
Part # 510123



Cover Tube Seal
Part # 510125



Potentiometer (POT)
Assembly
Part # 510121



Gear Motor
Assembly
Part # 510117



Cable Strain Relief
Part # 510106



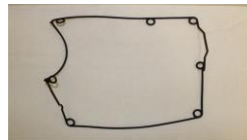
Gear Motor Assembly Screws
Torx Part #
Phillips Part #



Center Housing screw and O-ring
Screw Part #
O-Ring Part # 510129



Housing spaghetti gasket
Part # 510127



Wire Harness
Part # 510131



Tools Required:

Torx Bit size T15
Torx Bit size T25
Phillips Screw Drive size

Tape Measure
Wrench 15/16
Needle Nose Pliers
Multi Meter

Disassembly Steps

1. Unit should be placed on a smooth surface.

Note: Cover tube must be supported before screws are removed.



2. Remove Housing screws 8 plc. - Torx T25
Remove Rear adapter screws 2 plc. - T15



3. Remove housing cover, lift evenly.

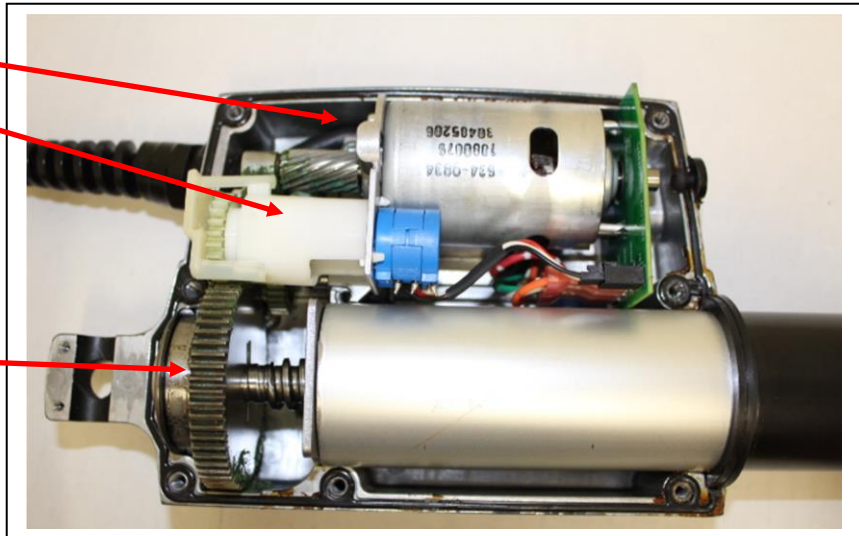
Note: Careful to not shift any parts inside the housing around.



Gear Motor Assembly

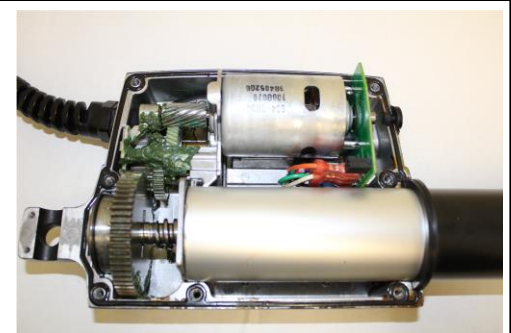
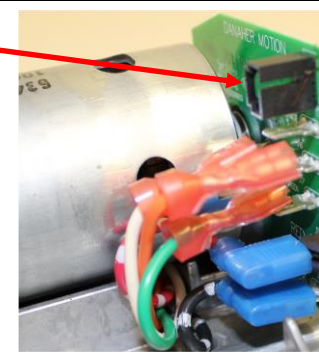
POT Potentiometer Assembly

Acme Screw / Cover tube Assembly

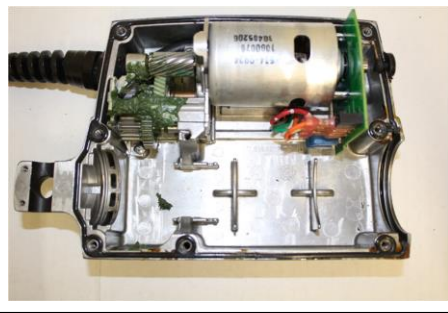


4. Disconnect POT assembly quick connect plug.

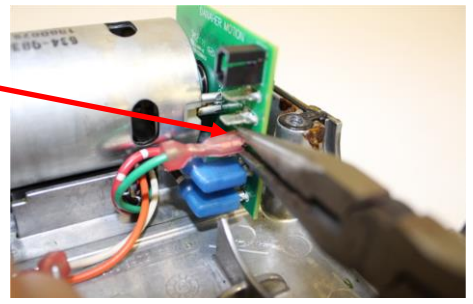
Lift POT straight up to remove.



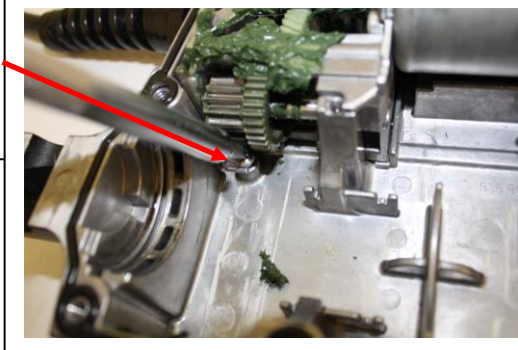
5. Lift acme screw and cover tube straight up to remove from housing



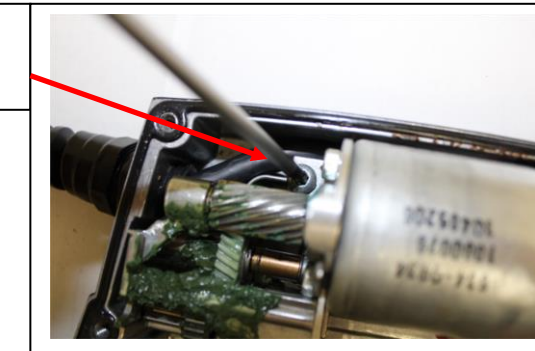
6. Use pliers to remove wires from the motor control board (squeeze under the connector, should pop off easily) remove all 5 wires



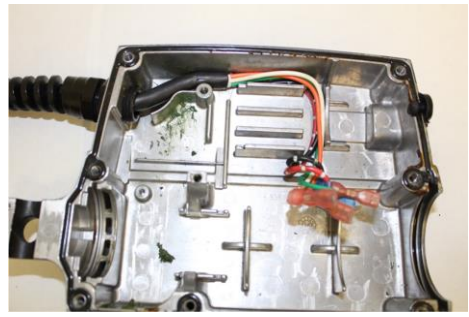
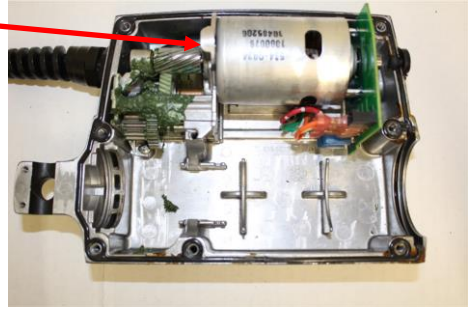
7. Use Philips head screwdriver to remove gear motor assembly screw.



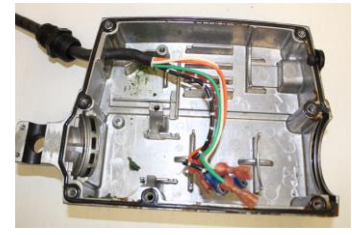
8. Use T25 Torx bit to remove gear motor assembly screw.



9. Remove gear motor assembly



10. Use 15/16 wrench to loosen and remove heyco and strain relief from housing



11. Remove wire harness from the housing, remove green, orange and white wires first.

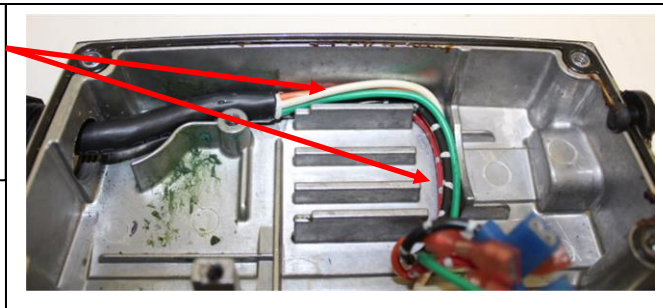


Reassembly Steps

1. Install wire harness and strain relief into the housing. Install red and black wires first.



2. Place wire in housing as shown. Verify enough wire is inserted to make gear motor assembly connections.



3. Use 15/16 wrench to retighten the heyco connector to the housing. Torque



4. Hand tighten the strain relief, do NOT use wrench (could possibly over tighten and damage the wires)

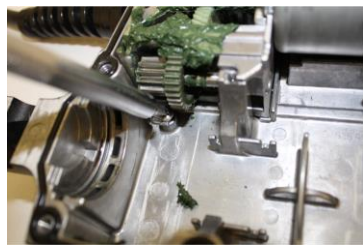


5. Hold the wires from harness down and place gear motor assembly in place on top of the harness.

Note: Ensure wires move freely under the gear motor assembly to prevent them from being pinched.



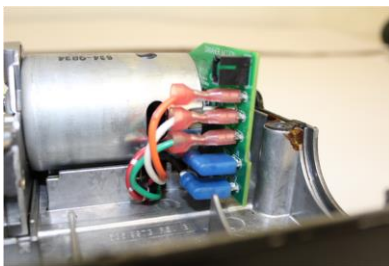
6. Use Phillips screw driver to install gear motor screw to hold the gear motor in place.
Torque 10 in lb.



- 6a. Use Torx T25 to install gear motor screw to hold the gear motor in place.
Torque 22 in lb.

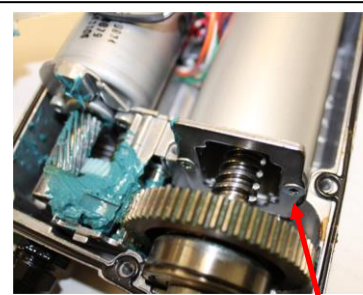
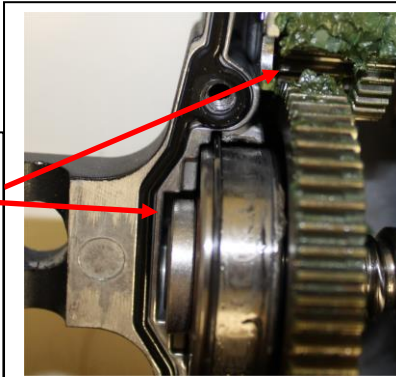


7. Reconnect wire harness wires to the motor control board (board is labeled with where each wire goes by color)



8. Install Acme screw / cover tube assembly as shown below.

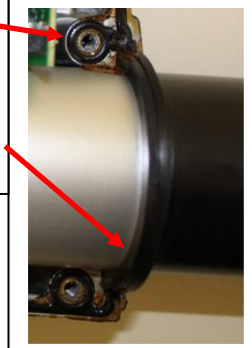
Place acme screw and cover tube in the housing.
Verify the large acme screw gear teeth are lined in with gear motor gear assembly teeth as shown.



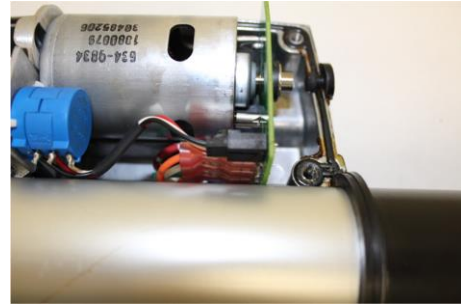
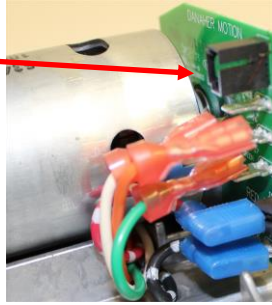
Cover tube flange installs as shown

Verify spaghetti gasket is installed in housing groove.

Cover tube rubber ring must seat into the housing groove as shown.



9. Reconnect POT quick connect harness to motor control board (only goes in one way)



With Potentiometer connected the value needs to be adjusted so that the limits will be correct when reassembled. Using the Extension Rod length chart.

1. Measure the length of the stainless rod as shown below.
2. In the extension rod length chart column A - locate your measurement.
3. Move across the chart to column C to find the resistance reading the POT must be set to.



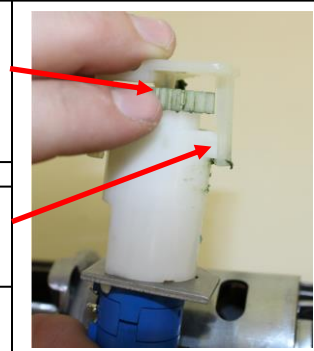
Example:
 Extension Rod measures 5 inches.
 Pot value should be set to 2770 ohms
 Or 2.77 K ohms.

10. Insert meter leads into the female pins which have the green and white wires attached as shown. If the unit does not have plug connect the meter leads to the green and white wires.



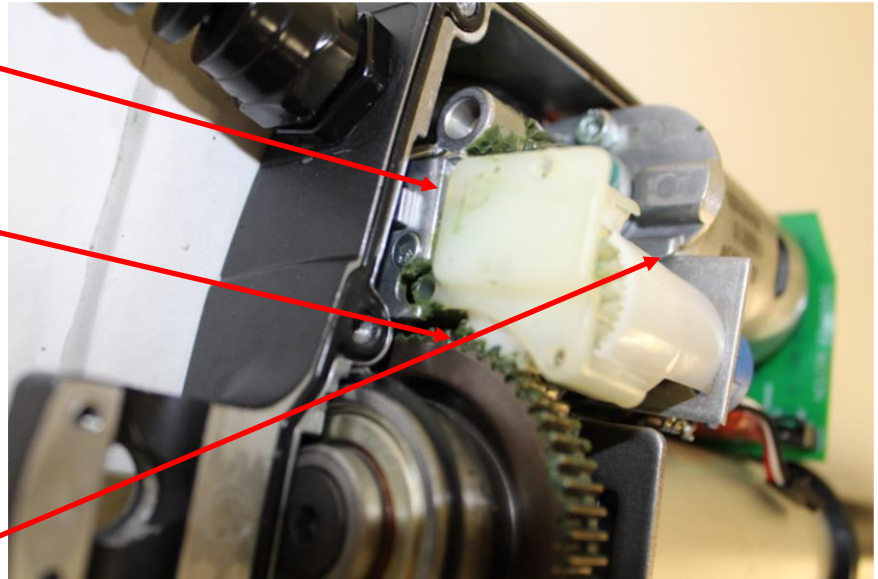
Holding the POT assembly in hand gently rotate the large white gear until the ohms reading on the meter is correct per chart.

NOTE: the end cap on the POT assembly has 3 legs attaching it to the gear housing. Verify these 3 legs stay in place.



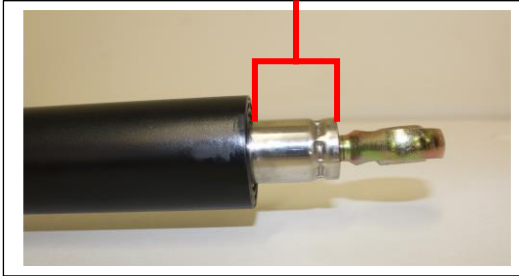
11. Install POT assembly as shown.
Verify POT assembly large white gear meshes with gear teeth on acme screw and gear motor teeth.

There is a slot in the gear motor assembly for the POT to fit into, make sure the metal square end piece fits into that slot as shown.



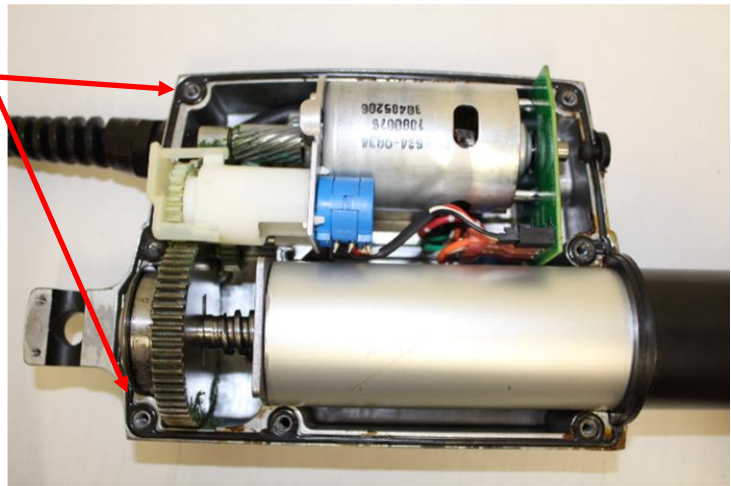
Extension Rod length Chart

A - Ext Rod Length measurement made here



A	B	C
Extension Rod Length in inches	DC Voltage measured Actuator plug White wire	Ohm Reading Green wire to White wire unplugged from control board
1.25	2.79	642 or 642 K
2	2.67	1060 or 1.06 K
2.5	2.59	1340 or 1.34 K
3	2.5	1640 or 1.64 K
3.5	2.42	1880 or 1.88K
4	2.34	2190 or 2.19 K
4.5	2.25	2480 or 2.48 K
5	2.17	2770 or 2.77 K
5.5	2.1	3020 or 3.02 K
6	2.01	3330 or 3.33 K
6.5	1.93	3590 or 3.59 K
7	1.85	3870 or 3.87 K
7.5	1.76	4180 or 4.18 K
8	1.68	4480 or 4.48 K
8.5	1.6	4740 or 4.74 K
9	1.51	5040 or 5.04 K
9.5	1.44	5310 or 5.31 K
10	1.36	5580 or 5.58 K
10.5	1.27	5870 or 5.87 K
11	1.19	6160 or 6.16 K
11.5	1.1	6460 or 6.46 K
12	1.02	6760 or 6.76 K
12.5	0.95	7010 or 7.01 K
13	0.86	7310 or 7.31 K
13.5	0.78	7590 or 7.59 K
14	0.7	7860 or 7.86 K
14.5	0.61	8170 or 8.17 K
15	0.53	8430 or 8.43 K
15.5	0.45	8740 or 8.74 K
16	0.36	9020 or 9.02 K

12. Inspect spaghetti gasket and ensure it is installed correctly. There is a groove in the housing that it should lay in. Verify it is in place around the entire housing.



13. Line up top housing cover with the base cover and gently apply pressure to close back together



NOTE: 2 of the housing screws are longer and one of them has the O-ring this screw installs in the housing center hole location as shown.



14. Install the center screw with O-ring first and snug in place to hold housing. Do not torque at this point. Then install and snug the remaining screws alternating sides to ensure the cover is evenly installed.

Torque 8 large screws 50 in. lbs.
Torque 2 rear adapter screws 22 in. lbs.



