INSTALLING TUNE UP KIT

Note from author: I know that this looks like a daunting task based on the 39 steps put forth as instructions. Please gather your tools and read the entirety of these instructions next to your machine and do the key points as you read through the first time. This will allow you to understand and locate all the parts that are being changed during the tune up process.

Kit contents: Fuel Nozzle, Cad Cell, Coupler, Fuel Filter, F3 Retention Ring, Flange Gasket

Tools needed: screw drivers Philips and flat head, ratchet, 9/16 socket, 3/8 socket, 5/16 socket, 7/16, 5/8, & 3/4 open end wrench, needle nose pliers, regular pliers, metal paint scraper, dead blow mallet, flashlight

Instructions:

FUEL NOZZLE

1. (Key point) remove burner cover
2. (key point) use 5/16 socket and ratchet to loosen igniter tabs, located on top of burner body, then open the igniter. (figure a)
3. Use 7/16 open end wrench to loosen nut on top end of copper fuel tube, remove flare nut from threads.
4. Use regular pliers to remove escutcheon plate spline nut
5. Remove fuel nozzle assembly from burner body (figure c)
6. Use 5/8 wrench to remove old nozzle, use 3/4” wrench to hold the hex part of the fuel nozzle assembly to ensure that the electrodes aren’t damaged during this process.
7. Install new nozzle, do not touch the screen on the nozzle ensure the nozzle is tight to prevent fuel leak.
8. With fuel nozzle assembly removed use flashlight to look down the air tube, towards the combustion chamber and inspect the retention ring. Look for any damage at all. (this part can fall apart and cause undue damage to your combustion chamber insert. (figure d)
9. Reinstall the fuel nozzle assembly.
10. Reset escutcheon plate to edge of sticker, this action determines the depth of your fuel nozzle (figure b)
11. Reinstall the spline nut on escutcheon plate, ensure tightness to prevent fuel gun from sliding out of position.
12. Reinstall copper tube from fuel pump, tighten flare nut with 7/16 open end wrench.

CAD CELL

13. (key point) locate cad cell on igniter (the flip up lid is the igniter)
14. Remove cad cell from igniter being careful not to tear the gasket that surrounds the cad cell
15. (key point) use philips head screwdriver to loosen the screws in the primary controller and slide primary controller 3/8” towards the hopper and remove from box.
16. Use needle nose pliers to remove the 2 yellow wires from the cad cell tabs on the primary controller.
17. Install new cad cell on igniter ensuring that the gasket is intact and in place to prevent extra air from being introduced to combustion area.
18. Push wires into electrical box thru wire port in the side of the burner body
19. Use needle nose pliers to crimp fittings onto cad cell wires
20. Use needle nose pliers to install new wires on the cad cell tabs on the primary controller
21. Reinstall the primary controller and tighten screws

COUPLER

22. (key point) use 3/8 socket to loosen the fan motor bolts (figure e)
23. (key point) turn fan motor counterclockwise to release motor from burner body
24. (key point) pull fan out and locate the coupler (figure f)
25. remove all 3 pieces of the coupler (2 end caps, 1 black tube) one of the end caps may be stuck to the drive shaft of the fuel pump, if this is the case use pliers to reach in and remove.
26. Install new coupler on fan using the proper provided end cap that comes with the new coupler (you might have to switch one end out for the extra one in the pouch)
27. Locate flat spot on fuel pump shaft and orient the flat spot on the coupler (already on the fan) into position.
28. As you reinstall fan motor, reach through the open igniter area and slowly turn squirrel cage until the coupler lines up with fuel pump shaft. And finish installing the fan
29. Close the igniter area, ensure wiring is not pinched when doing so, tighten igniter tabs

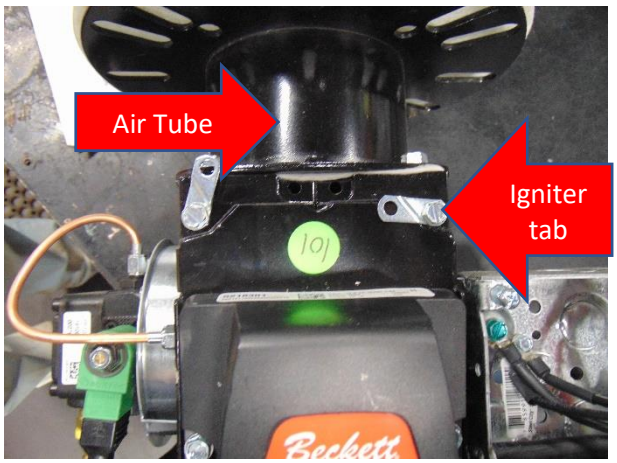
FUEL FILTER

30. Use flat head screwdriver and dead blow hammer to remove ring from around the top of the fuel filter.
31. Twist fuel filter to remove and install new fuel filter (this may be a tight squeeze, this is by design)
32. Reinstall the ring around the top of the fuel filter, using screwdriver and dead blow if needed.

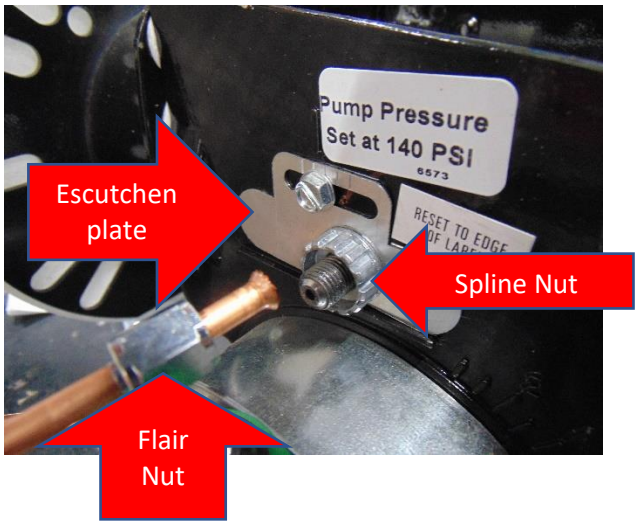
F3 RETENTION RING & FLANGE GASKET

33. Depending on what was found in step 8 (retention ring inspection) use 9/16 socket and ratchet to remove the 4 bolts holding the burner to the combustion chamber. Be careful here, the bolts can be seized up and require extra heat and penetrative oil to remove.
34. remove burner from combustion chamber
35. use metal paint scraper to remove all the old flange gasket
36. Use Philips head screwdriver to remove screws from old retention, ring-you may need the 3/4" open end wrench to help pry off the old ring.
37. Install new retention ring, this comes with new screws
38. Install new flange gasket and remove the 4 tabs from the bolt slots needed to reinstall burner bolts
39. Coat bolts with anti-seize lubricant and reinstall burner onto combustion chamber and reinstall burner cover.

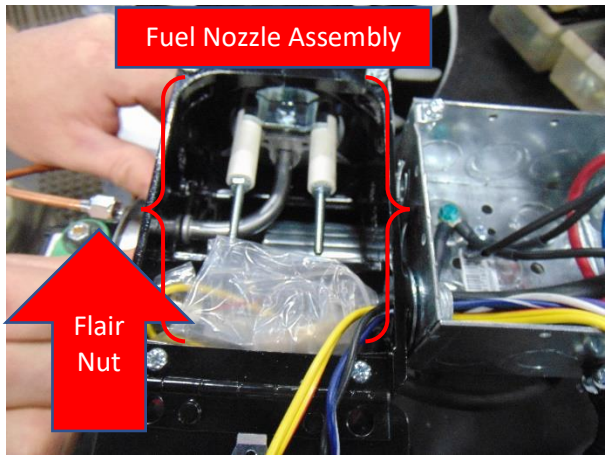
(a)



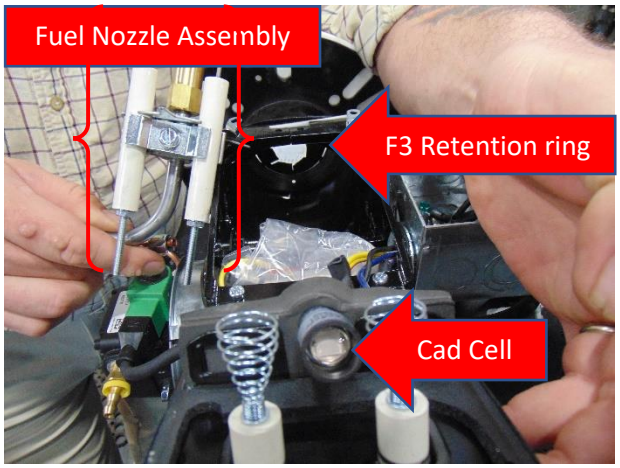
(b)



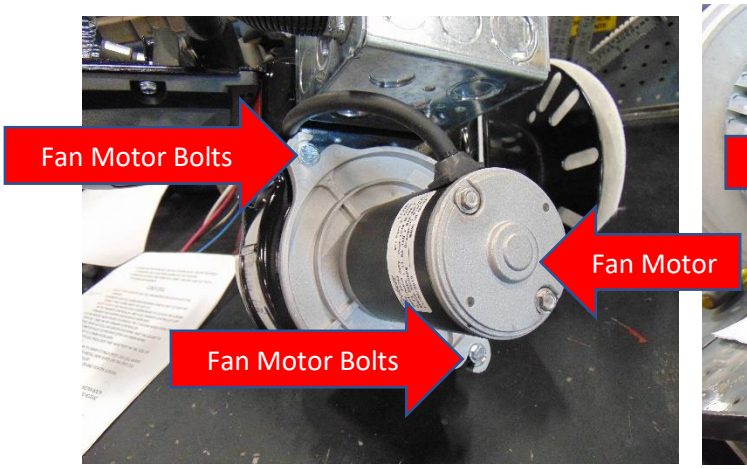
(c)


Fuel Nozzle Assembly
Flair Nut

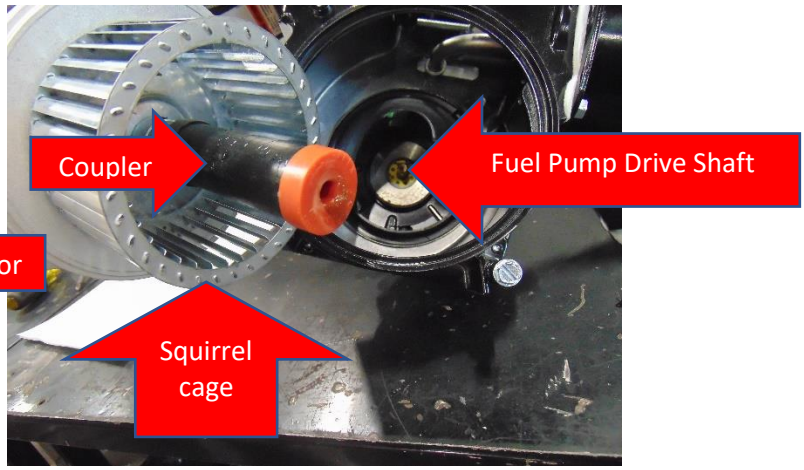
(d)


Fuel Nozzle Assembly
F3 Retention ring
Cad Cell

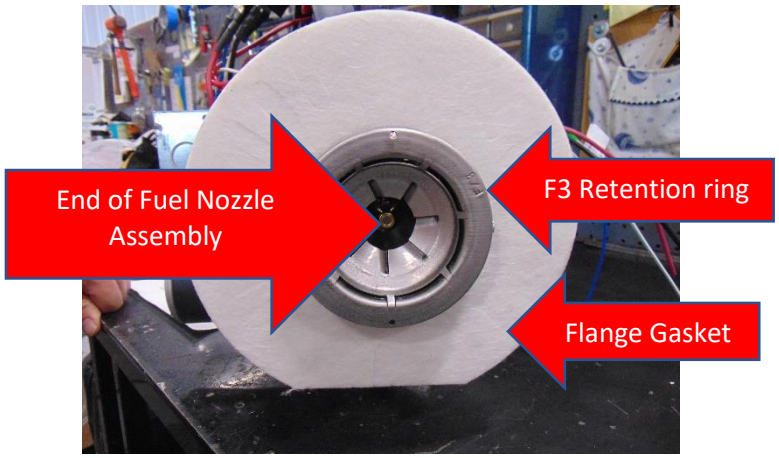
(e)


Fan Motor Bolts
Fan Motor
Fan Motor Bolts

(f)


Coupler
Fuel Pump Drive Shaft
Squirrel cage

(g)


End of Fuel Nozzle Assembly
F3 Retention ring
Flange Gasket