

# solo<sup>®</sup>

## Diaphragm Pump Repair Kit (0610406-K)

### Tools needed to perform this installation:

6 mm Allen Head Wrench  
Flat Head Screwdriver  
Valve Assembly Tool (Figure 3)  
Grease (Vaseline<sup>®</sup> or Petroleum Jelly)  
13 mm Socket or Wrench

T-25 Torx Screwdriver (optional)  
11 mm Wrench or Crescent Wrench  
2x4 piece of wood 18" long

### SAFETY PRECAUTIONS:

1. Always wear rubber gloves, safety goggles and appropriate protective clothing when repairing a sprayer.
2. Work in a well ventilated area.
3. Prior to repair, thoroughly flush the sprayer with water. Next, fill the tank and pump the water through the sprayer and discharge out of the end of the wand into an appropriate container or area.
4. Ensure all pressure in the sprayer is relieved by locking the shut-off valve in the open position.

### PROCEDURE:

1. Loosen the bolt (3) but do not remove the stop plate (17, Figure 1).
2. Remove the two 13 mm handle bolts (6) from the pump shaft.
3. Remove the two 6 mm Allen head bolts (72) from the connecting brackets (69 & 70). Rotate the pump shaft (18) as necessary to access the bolts. Remove the pump shaft.
4. Remove the black clamp (16) that holds the pressure cylinder (39) to the tank. Push the pressure cylinder down from the inside of the tank until the notch on the pressure cylinder is clear of the tab on the tank.
5. Rotate the pressure cylinder 180° and remove the twelve screws. It is necessary to rotate the housing in order to access all twelve screws.
6. Remove the valve assembly (63) by turning counterclockwise with the locally made tool. See tool drawing (Figure 3) for measurements to make the tool. Remove and replace the top valve plate (20) and the O-ring (12). Lubricate the O-ring with grease. Remove the lower valve plate by pulling out the red retaining pin. Discard the valve plate and set the retaining pin aside.
7. Remove the diaphragm housing (60) and replace the O-ring (106) in the first groove closest to the edge of the housing. Lubricate the O-ring with grease.
8. Locate the diaphragm assembly (64, 65, 66, 67), remove the screw from the center of the lever (67). Place the diaphragm (66) between the lever (67) and the plunger (65). The plunger is on the side where the raised marking "SOLO 4074245" is located. Insert the screw into the center of the lever, diaphragm and plunger and turn the plunger clockwise with an 11 mm wrench or Crescent Wrench while holding onto the head of the screw with a screw driver. Lubricate the plunger side of the diaphragm with grease.
9. To replace the large O-ring on the pressure cylinder, the cylinder will need to be removed from the tank. **Note: The cylinder will only need to be removed if this O-ring needs to be replaced. If you do not need to replace the large O-ring, move to instruction 11.**
10. To remove the pressure cylinder from the tank, first remove the control knob and valve body from the top of the cylinder by turning counterclockwise. To protect the pressure cylinder, place a rag over the top. Using the 2x4 and heavy hammer, forcibly knock the cylinder out through the bottom of the tank. Replace the large O-ring by sliding it over the top of the pressure cylinder ensuring that it is seated in the groove.
11. Remove the spring (25) and seal plug (24) from the control knob and replace with those in

- the repair kit. Next remove and replace both O-rings (8 & 10) on the valve body. Reinstall the valve body and control knob.
12. Insert the diaphragm housing (60) into the pressure cylinder (39). The squared edges of the tab of the diaphragm housing should be aligned with the notches on the pressure cylinder. (The tab should fit between the notches.)
  13. Reinstall the valve assembly by turning clockwise. Be sure that the two square holes on the threaded portion of the valve assembly are aligned with the holes in the pressure cylinder. If the pressure cylinder was removed, look through the inlet screen to check alignment. If the pressure cylinder was not removed, the four holes of the valve assembly must be centered on and facing the hose nipple. Install the new lower valve plate and retaining pin.
  14. Place the lever/diaphragm/plunger assembly into the diaphragm housing (60) with the lever (67) facing outwards. The hole in the lever should be parallel with the tab on the diaphragm housing (39). This alignment is necessary so that the wrist pin (68) and connecting rods (69, 70) will attach correctly.
  15. Place the flange (61) with the raised inner ring facing the diaphragm (66).
  16. Tighten the flange to the housing with the twelve T-25 Torx/slotted head screws (64). Tighten all screws equally.
  17. Rotate the pressure cylinder (39) 180° (if the cylinder wasn't removed) and push the cylinder back into the formula tank. The tab on the pressure cylinder should fit into the slot on the formula tank.
  18. Secure the pressure cylinder to the formula tank by installing the black clamp (16) and tightening the bolt and nut.
  19. Reinstall the pump shaft (do not tighten the stop plate yet). Insert the wrist pin (68) into the hole on the lever. Fit the connecting brackets onto the wrist pin.
  20. Insert the 6-mm Allen head bolts (72) into the connecting brackets (69,70) and tighten onto the pump shaft (18).
  21. Retighten the stop plate. Reattach the handle with the two 13 mm bolts and washers.
  22. Fill the formula tank with water only and make sure there are no leaks. Pressurize the sprayer to make sure there are no leaks and that all components are functioning properly. **Do not use the sprayer until all components are leak free and functioning properly.**

**Hint: Vaseline® applied to O-rings will help in reassembling.**

Figure 1

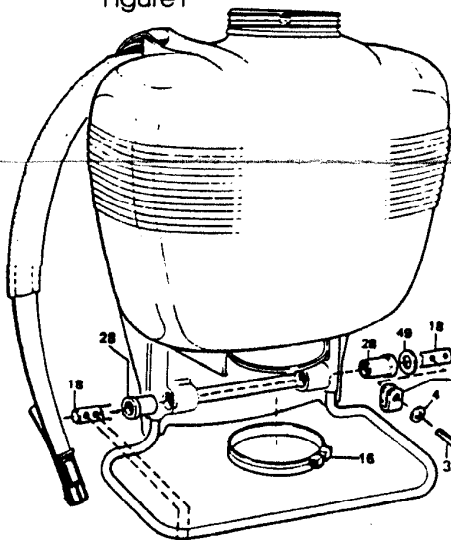


Figure 2

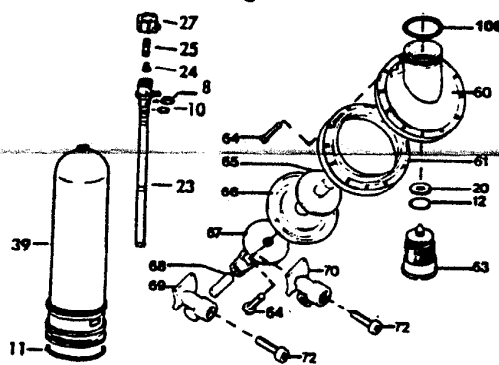
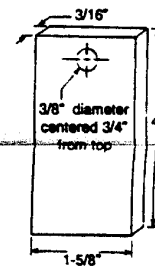


Figure 3



Order No.	Description	Reference No.
0062139	O-ring	12
0062324	O-ring	13
4061257 x 2	Valve Plate	20
4074245	Diaphragm	66
0062291	O-ring	11
0062115	O-ring	10
0070260	Spring	25
4074350	Sealing Plug	24
0062258	O-ring	8