

SDS-Q SERIES PUMP REBUILD INSTRUCTIONS

Top Mounted Pistons

DISASSEMBLY

1. Remove cable guard screws.
2. Loosen the 4 discharge head screws about 4 turns each but do not remove at this time. With a rubber mallet tap the discharge head to break the bond between the head and the diaphragm. This will relieve any pressure in the motor housing.

WARNING: PUMP HOUSING MAY BE UNDER HIGH PRESSURE. USE EXTREME CAUTION IN REMOVING THE DISCHARGE HEAD.

3. Turn the pump over and remove the 3/8" set screw using 3/16" hex wrench and the two socket head screws from end cap using a 5/32" hex wrench.
4. Clamp the pump in the puller and screw the proper threaded mandrel in the end cap.
5. Pull the end cap out of the stainless housing. If the brass ends seem to be stuck, warm the stainless housing slightly with a small propane torch, being careful not to overheat and warp the housing. As the end cap comes out disconnect the two motor wires plugged into the cap.
6. With the end cap removed from the housing turn the pump around, screw the appropriate mandrel into the discharge head, and remove the pump assembly from the stainless housing.
7. Remove the four socket head screws from the discharge head using a 5/32" hex wrench.
8. Remove the suction screen, check valve assembly, relief valve assembly and o-rings from the discharge head. **Note: Check valve removal may require a light tap with a blunt tool through the discharge opening.**
9. Remove the four piston screws using a 1/8" hex wrench, the four pistons and then the diaphragm.
10. Remove the four motor adapter screws using a 5/32" hex wrench and the motor adapter.
11. Loosen the set screw in the cam assembly using an 1/8" hex wrench and remove the cam assembly.
12. Clean and inspect all parts to be reused and make sure the electrical studs protruding from the epoxy in the end cap are in good condition and the epoxy is still hard.

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ASSEMBLY

1. Set the SDS motor on the assembly plate with the motor shaft up.
2. Lightly coat the motor shaft with anti-seize compound and slip the cam assembly over the motor shaft aligning the set screw to the center of the flat on the shaft. As the cam assembly is inserted over the motor shaft tighten the set screw until it lightly touches the flat on the motor shaft and then back it off 1/8 turn. Continue installing the cam assembly until the cam butts up to the motor shaft step. While pushing the cam plate down firmly, tighten the set screw.
3. Insert the outer piston assembly inside the motor adapter with the round outer pistons facing the four holes.
4. Place the motor adapter on the motor and align mounting holes. Place a small amount of silicone sealant around the base of each of the motor adapter screw heads and insert into the four mounting holes. Tighten the screws while alternating between the four, to 40 inch lbs. of torque.
5. Insert the 4 pistons through the new quad diaphragm. Place the diaphragm on the motor adapter and push the pistons, while rotating them, into the hex socket of the outer piston assembly.
6. Install a small amount of Dow Corning 3145 RTV silicone sealant around the base of the head on each piston screw and insert into each piston.
7. With a 1/8" hex wrench, tighten each screw to 35 inch pounds of torque. Remove any excess silicone from the top of the pistons.
8. Lay the discharge head top side down on a flat surface. Install the relief valve assembly and secure with the two Phillips head screws. Install suction screen with the welded seam placed between the two cable guard screw holes.
9. Install the o-ring into the check valve and insert the check valve into the discharge head making sure check valve assembly is flush with discharge head. Turn the discharge head over and insert the four washers and the stainless head bolts in the 4 countersunk holes.

10. With the motor assembly still held in a vertical position place the discharge head on the motor adapter while carefully guiding the rings on the diaphragm into the mating holes in the check valve assembly.

11. While holding the discharge head in position tighten the four screws a little at a time, jumping to opposite sides, to 40 inch lbs. of torque.

12. Set the pump with the discharge end facing down on a flat table.

13. Install the two o-rings onto the motor adapter and lightly lubricate with a food grade grease or petroleum jelly.

14. Lightly grease the inside of both ends of the stainless housing about one inch deep and slip it over the pump assembly until it rests on the o-rings. With a small block of wood or other soft flat object push the housing down over the o-rings until it touches the brass lip on the motor adapter.

15. Screw a 10-32 X 3" stud into one of the coupling nuts on the back side of the motor. This is used as a guide when installing the end cap assembly.

16. Install the two o-rings on the end cap assembly and lightly lubricate the o-rings.

17. Connect the motor leads onto the electrical studs on the inside of the end cap. (The positive red wire lead connects to the red wire side). Before seating end cap in housing, be sure that the terminals on the wires are tight on the end cap electrical studs. Slide the end cap over the guide stud, making sure that the motor lead wires are not pinched between the end cap coupling nuts. Align the cable guard screw holes on the same side as the screw holes in the discharge head.

18. Push the end cap down inside the housing until it butts up against the brass cap lip and then remove the guide stud.

19. Slip a #10 stainless steel washer and the small o-ring on each of the end cap screws. Apply a small amount of non-outgassing silicone sealant around the o-rings of the two screws. Insert the two screws into the end cap and tighten to 35 inch lbs. of torque

CAUTION: DO NOT USE SILICONE SEALANT THAT HAS AN ODOR. (DOW CORNING 3145 RTV ADHESIVE/SEALANT IS RECOMMENDED). .

20. Install the end cap plug and tighten with a 3/16" hex wrench. An anti-seize should be used on the threads.

21. Install the cable guard over the motor lead and secure with the four Phillips head screws.