



Ceramic Plunger

Sidewinder Pump Models 40, 60, 80, 42, 62, 82 Handling, Installation, Start-up, & Operating Instructions

1. This is a solid ceramic plunger. It is very brittle and **must** be handled with extreme care before & during use in a Sidewinder Pump.
2. When installing:
 - a) Be sure the Pump Chamber (Item #24) is separated from the Mounting Tube (Item #12).
 - b) Be sure the Powerhead (Item #4) is removed from Mounting Flange(for Models 42,62,82) or Mounting Tube(for Models 40,60,80).
 - c) **Model 42,62,82 only:** Mounting Flange (Item #10) should still be connected to the Mounting Tube (Item #12) by the Mounting Tube Locknut (Item #7A).
 - d) Place Piston U-cup (Item #6) on piston with “U” facing away from plunger side.
 - e) Upon assembly be sure the Powerhead (Item #4) is lubricated with Piston Grease (P/N 91-42). Grab the Ceramic Piston Plunger Assembly (Item #16) by the metal shank above the ceramic plunger and insert the piston into the Powerhead (Item #4) by cocking the assembly then straightening it. Be sure the Piston U-cup (Item #6) is not crimped or folded over.

Note: Never grab the Piston Plunger Assembly by the ceramic plunger.

- f) Once the Ceramic Piston Plunger Assembly (Item #16) is inserted into the Powerhead (Item #4), push it to the top of the cylinder bore. Install the Return Spring (Item #11) around the metal shank portion of the Piston Plunger Assembly (Item #16) being sure it slides into position against the piston portion of the assembly.
 - g) Mount the Powerhead & the Piston Plunger Assembly with Return Spring in place onto & into Mounting Flange & Mounting Tube, respectively. **Caution should be used as the ceramic plunger passes through the seal retainer hole in the lower portion of the Mounting Tube (Item #12). Too much side-to-side motion can bind the plunger causing it to break.**
 - h) Once Powerhead (Item #4) is fully in place on the Mounting Flange(for Models 42,62,82) or Mounting Tube(for Models 40,60,80) secure it by screwing in the three radial Lockscrews (Item #4A) evenly until tight.
 - i) Screw the Pump Chamber (Item #24) onto the Mounting Tube (Item #12) insuring that the Plunger Seal (Item #18) & Mounting Tube O-ring (Item #17) are installed into and onto the Pump Chamber, respectively. The Pump Chamber and Mounting Tube connection is designed to be hand tight. **Caution: Tightening the Pump Chamber (Item #24) and the Mounting Tube (Item #12) with wrenches can cause the two pieces to gall.**
- 3) When starting pump into operation:
 - a) Open the Bleeder Valve (Item #20) to prime pump.

- b) Make sure the Control Knob (Item #31) is screwed in all the way to insure that the pump is off.
- c) Back off on the air/gas supply regulator to 0 PSI.
- d) Slowly bring the supply pressure up to 10 PSI (regardless of fluid injection pressure).
- e) Slowly begin to unscrew the Control Knob (Item #31) until the pump begins to stroke at a rate of 1 stroke every 3-4 seconds.
- f) Allow the pump to run in this condition until the injection lines fill and pump stalls against the injection pressure. (When pump stalls, the Control Valve will continue to shift and in fact speed up slightly, but the Piston Plunger Assembly (Item #16) will no longer be moving up and down. This can be confirmed by removing the Vent (Item #13A) on the Mounting Tube (Item #12) and observing. If the Control Valve blows a continuous stream of air instead of cycling, increase the air/gas supply pressure slightly. After raising the air/gas supply pressure slightly the Control Valve continues to blow a continuous stream of air/gas it will be necessary to place a solid object over the exhaust port, interrupting the flow of air/gas for one second to reset the Control Valve.
- g) Once the pump stalls, slowly increase the air/gas supply regulator pressure until movement of the Piston Plunger Assembly begins. **Do not use more air/gas supply pressure than needed to cycle the pump.** Too much air/gas supply pressure will cause the Piston Plunger Assembly to slam down which can break the ceramic plunger portion of the assembly.
- h) Increase or decrease pump volume by using either or both the Control Knob (Item #31) and the Stroke Adjuster (Item #1).