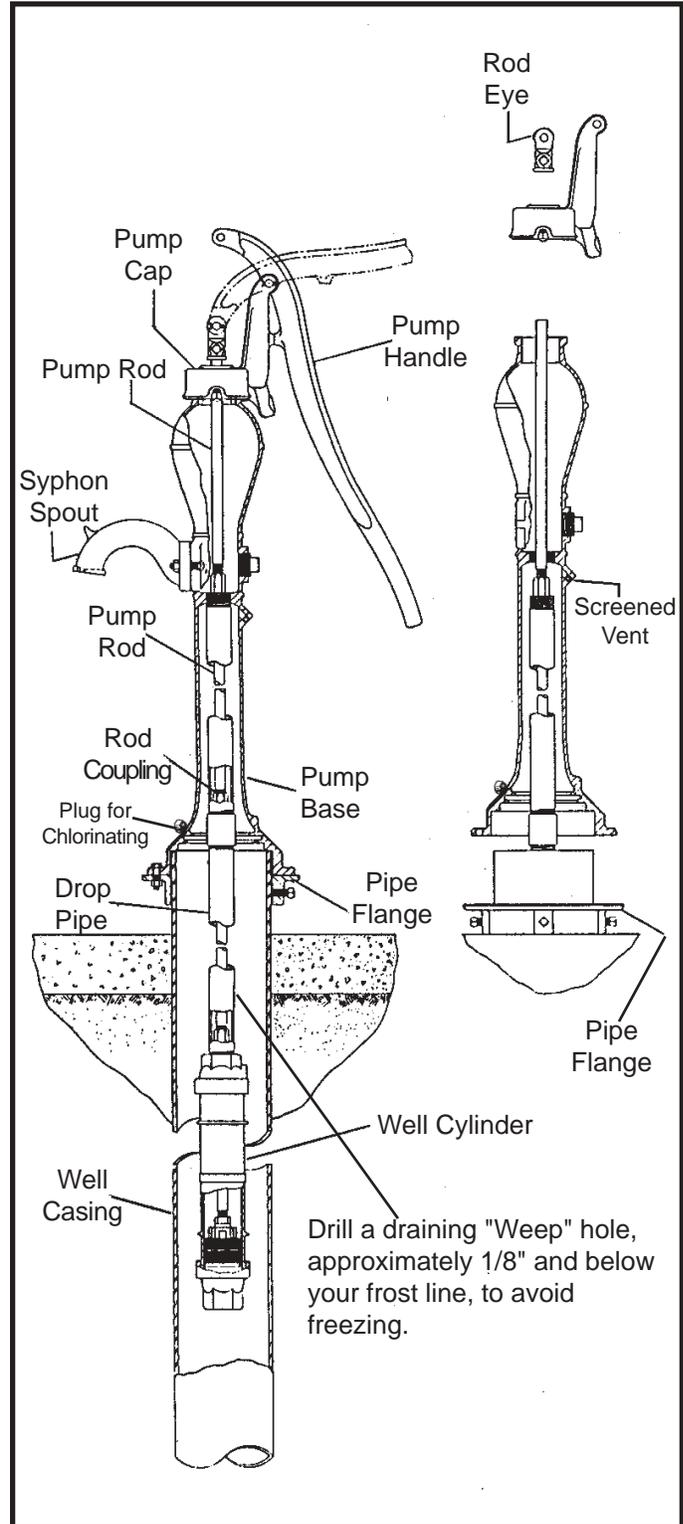


HAND PUMP INSTALLATION INSTRUCTIONS - 11HA

With depth of well known, assemble cylinder to equal lengths of drop pipe and pump rod. Insert into well and continue to add drop pipe and pump rod of equal lengths allowing for a minimum of 2 feet between bottom of cylinder and bottom of well.

Assemble pump following the procedure.

1. Attach HA52 pump rod to end of pump rod from well using a 7/16 x 7/16 rod coupling.
2. Slip pipe flange (must be ordered separately) over well casing.
3. Guide HD pump base over pump rod and attach to 1-1/4" drop pipe in well. Note: Base is internally tapped 1-1/4" NPT.
4. Place HA152 cap assembly over pump rod and onto top of base and align in direction you wish the handle to operate from (normally 180° from spout).
5. Tighten the (2) HA59 set screws securely.
6. Slip rod eye of HA153 pump handle assembly onto HA52 pump rod and tighten HA30 set screw securely.
7. Position pump handle into slot of pump cap HA152 and insert EP54 thru pump cap and handle. Secure pin with HF57 cotter pin.
8. Check for plunger striking bottom or top of cylinder with the pump handle in extreme upper or lower position respectively. Some adjustment in length of the Drop Pipe or Pump Rod may be required.
9. Lower pump onto the pipe flange and secure to flange. Note: Be sure that pipe flange is properly secured to the well casing.
10. Attach gasket (O80) and siphon spout (O9) to pump base using carriage bolts (HD70) and hex nuts (UB17).



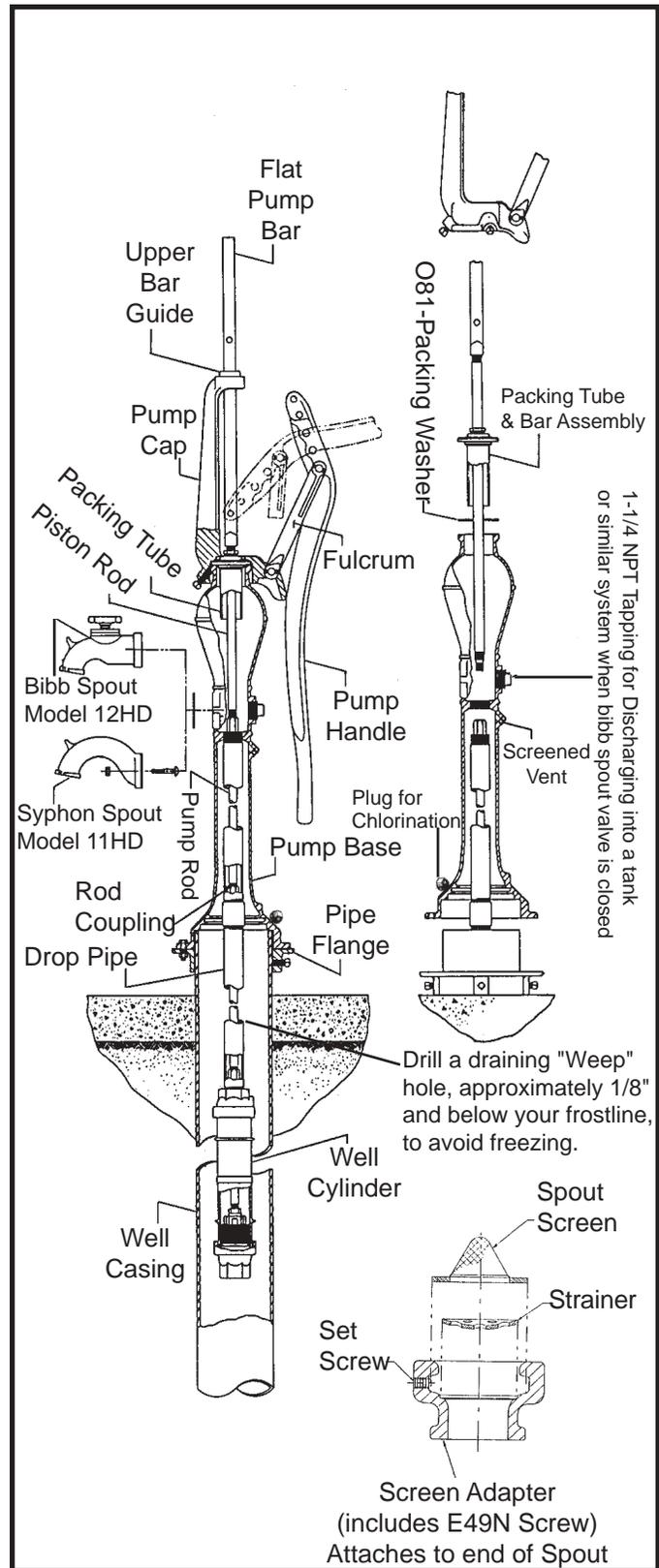
Hand Pumps

HAND PUMP INSTALLATION INSTRUCTIONS - 11HD & 12HD, 11HDA & 12HDA

With depth of well known, assemble cylinder to equal lengths of drop pipe and pump rod. Insert into well and continue to add drop pipe and pump rod of equal lengths allowing for a minimum of 2 feet between bottom of cylinder and bottom of well.

Assemble pump following the procedure.

1. Slip pipe flange (must be ordered separately) over well casing. Flange not required but may be used if preferred.
 2. Unless already assembled, screw a 7/16 x 7/16 rod coupling to top of pump rod.
 3. Guide pump base over pump rod and attach base securely to drop pipe. Note: Base is internally tapped 1-1/4" NPT. on 11HD & 12HD, 2" NPT. on 11HDA & 12HDA.
 4. Position rubber packing washer (O81) onto top of pump base.
 5. Attach bottom of round piston rod, of piston bar and packing tube assembly, to the 7/16 x 7/16 rod coupling attached to top of pump rod. Note: When tightening, grip the piston rod as close to the rod coupling as possible so as not to damage the rod surface that passes through packing tube assembly.
 6. Guide flat bar through pump cap (O200) and upper guide (O460) and attach pump cap to base by tightening the 3 set screws uniformly and securely.
 7. Attach pump handle to fulcrum (O400) using hole in pump handle as shown on drawing. In this position there will be a 10" stroke. Length of stroke may be varied to 7-1/2 inches or 5 inches simply by using one of the other holes available in pump handle.
- Note:** Check for cylinder plunger striking bottom or top of cylinder with pump handle in extreme upper or lower position respectively. Some adjustment in length of the drop pipe or pump rod may be required to utilize the 10 inch stroke.
8. Lower the pump onto the pipe flange and secure to flange. Note: Be sure that pipe flange is properly secured to the well casing.
 9. Attach syphon spout (O9 for 11HD & 11HDA) or bibb spout (O7 for 12HD & 12HDA) along with gasket (O80) to base using the 2 carriage bolts and nuts furnished.
 10. Attach screen adapter assembly HPS (HD189, DP31, HD190) to end of spout, 1/4 turn and tighten set screw to lock to spout.



Hand Pumps

HAND PUMP INSTALLATION INSTRUCTIONS - 11HDS & 12HDS

With depth of well known, assemble cylinder to equal lengths of drop pipe and pump rod. Insert into well and continue to add drop pipe and pump rod of equal lengths allowing for a minimum of 2 feet between bottom of cylinder and bottom of well.

Assemble pump following the procedure.

1. Slip pipe flange (must be ordered separately) over well casing. Flange not required but may be used if preferred.

2. Screw 7/16 x 7/16 rod coupling (may already be installed) onto pump rod. Assemble pump rod extension (HD90) securely into rod coupling. Assemble rod coupling supplied with pump (7/16x7/16RC) onto top of rod extension followed by piston rod (DP72).

Note: When tightening piston rod into rod coupling, grip piston rod as close to rod coupling as possible to avoid damaging the rod surface that passes through packing assembly.

3. Guide pump base over piston rod and attach base securely to drop pipe. Note: Base is internally tapped 1-1/4" NPT.

4. Position packing washer (O81) onto top of pump base.

5. Guide cap and inner shroud assembly over piston rod until it rests on top of packing washer and pump base. Tighten 3 set screws uniformly and securely to draw cap down tight upon base and washer.

6. Install Teflon packings (DP134), consisting of 3 rings, one ring at a time, into packing housing and around piston rod, being sure each ring is properly seated in bottom of housing. Note: Alternate cuts in ring approximately 90° from each other when installing.

7. Install packing nut (O81) and tighten down onto packing until a slight drag is felt on piston rod when raised. Note: It may be necessary to tighten further if leakage is noted when pump is in operation. Overtightening may make operating pump difficult.

8. Guide outer shroud (DP66P) over inner shroud followed by spacer ring (DP61) and spacer washer (DP62).

9. Install one jam nut (DP22) and tighten, then install other jam nut and tighten followed by top cap (DP60P).

10. Assemble pump handle (HF153) to fulcrum using pin (O54) and cotter pin (HD58). When installing pump handle with pin in position shown on drawing there will be a 10" stroke. Length of stroke may be varied to 7-1/2" or 5" simply by using one of the other holes available in pump handle.

11. Attach pump handle to outer shroud using pin (HF61) and cotter pin (HF57).

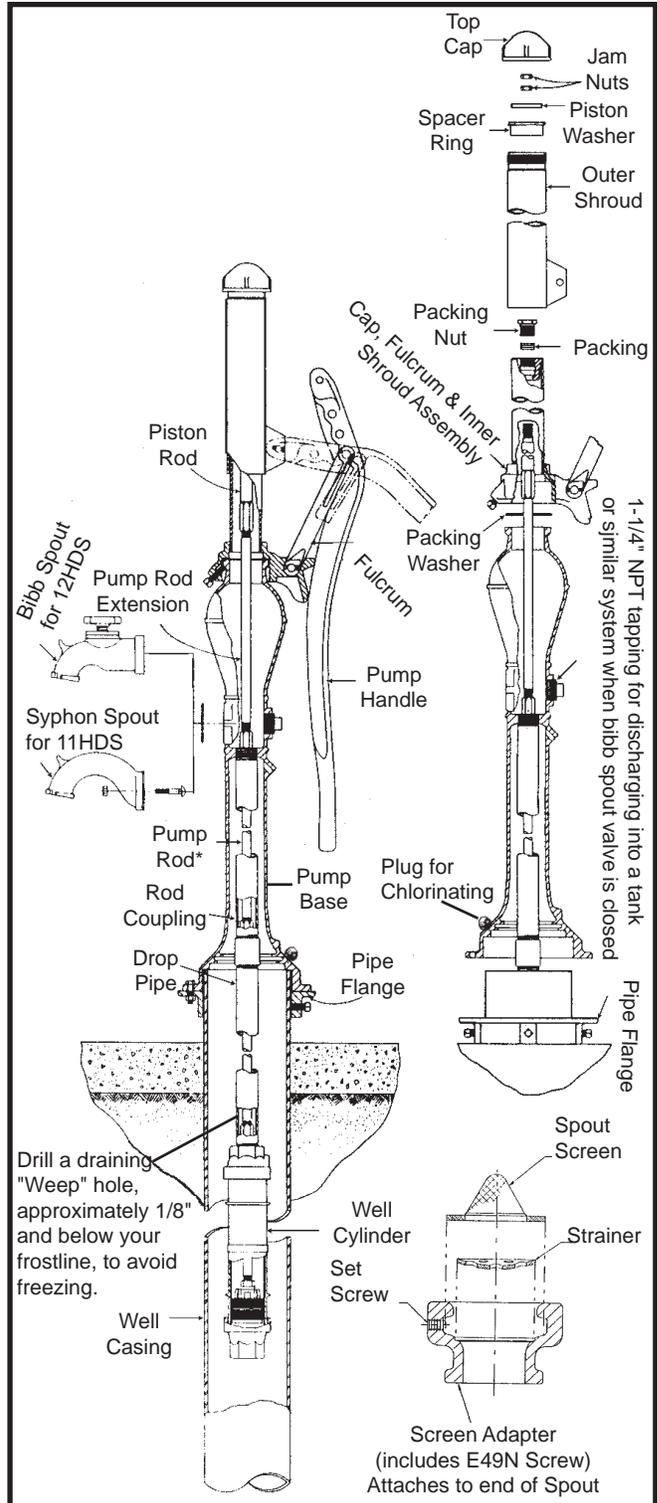
12. Lower the pump onto the pipe flange and secure to flange. Note: Be sure that pipe flange is properly secured to the well casing.

13. With pump handle operated in the extreme upper or lower position, the cylinder plunger must not strike the bottom or top of cylinder in these positions respectively. Some adjustment in length of Drop Pipe or Pump Rod may be required to utilize the 10 inch stroke.

14. Attach syphon spout (O9) for 11HDS) or bibb spout

(O7 for 12HDS) along with gasket (O80) to base using the 2 carriage bolts and nuts provided.

15. Attach Screen Adapter Assembly (HD189, DP31, HD190) to end of spout, 1/4 turn and tighten set screw to lock to spout.



Hand Pumps

HAND PUMP INSTALLATION INSTRUCTIONS - 1DFHCS & 1DFHFS

With depth of well known, assemble cylinder to equal lengths of drop pipe and pump rod. Insert into well and continue to add drop pipe and pump rod of equal lengths allowing for a minimum of 2 feet between bottom of cylinder and bottom of well.

Assemble pump following the procedure below and drawings for 1DFHCS or 1DFHFS pumps respectively.

1. Slip pipe flange (must be ordered separately) over well casing (1DFHCS only). Flange not required on 1DFHFS pumps.

2. Screw a 7/16 x 7/16 rod coupling onto pump rod in well. Assemble pump rod extension (HD90 for 1DFHCS pumps) or extension (DP90 for 1DFHFS pumps) securely onto rod coupling followed by rod coupling (7/16x7/16RC), supplied with pump, onto other end of rod extension. Assemble piston rod (DP72) into other end of rod coupling.

Note: When tightening piston rod into rod coupling, grip piston rod as close to rod coupling as possible to avoid damaging the rod surface that passes through packing assembly.

3. Guide pump base over piston rod and attach base securely to drop pipe. Note: Base is internally tapped 1-1/4" NPT.

4. Position packing washer (O81) onto top of pump base.

5. Guide cap and inner shroud assembly over piston rod until it rests on top of packing washer and pump base. Tighten 3 set screws uniformly and securely to draw cap down tight against base and washer.

6. Install Teflon packings (DP134), consisting of 3 rings, one ring at a time, into packing housing and around piston rod, being sure each ring is properly seated in bottom of housing. Note: Alternate cuts in ring approximately 90° from each other when installing.

7. Install packing nut (O31) and tighten down onto packing until a slight drag is felt on piston rod when raised. Note: It may be necessary to tighten further if leakage is noted when pump is in operation. Overtightening may make operating pump difficult.

8. Guide outer shroud (DP66P) over inner shroud followed by spacer ring (DP61) and spacer washer (DP62).

9. Install one jam nut (DP22) and tighten, then install other jam nut and tighten followed by top cap (DP60).

10. Assemble pump handle (HF153) to fulcrum using pin (O54) and cotter pin (HD58). When installing pump handle with pin in position shown on drawing there will be a 10" stroke. Length of stroke may be varied to 7-1/2" or 5" simply by using one of the other holes available in pump handle.

11. Attach pump handle to outer shroud using pin (HF61) and cotter pin (HF57).

12. Lower the pump onto the pipe flange and secure to flange. Note: Be sure that pipe flange is properly secured to the well casing. This is for the pump model number 1DFHCS only. In the case of the model 1DFHFS, the base sets directly onto the casing and is secured by tightening the 4 set screws in the base, no flange is required.

13. With the pump handle in the extreme upper or lower

position, the cylinder plunger must not strike the bottom or top of cylinder in these positions respectively. Some adjustment in length of the Drop Pipe or Pump Rod may be required to utilize the 10 inch stroke.

14. Assemble the tank and bowl assembly (DP58) along with gasket (DP11) securely to base outlet using the 2 carriage bolts and nuts supplied.

15. Screw drain pipe (DP18) into bottom of bowl assembly, followed by the drain (DP16). Note: Drain outlet to be directed away from pump operator.

NOTE: Screen filters for vermin protection require periodic cleaning to prevent waterflow restriction.

