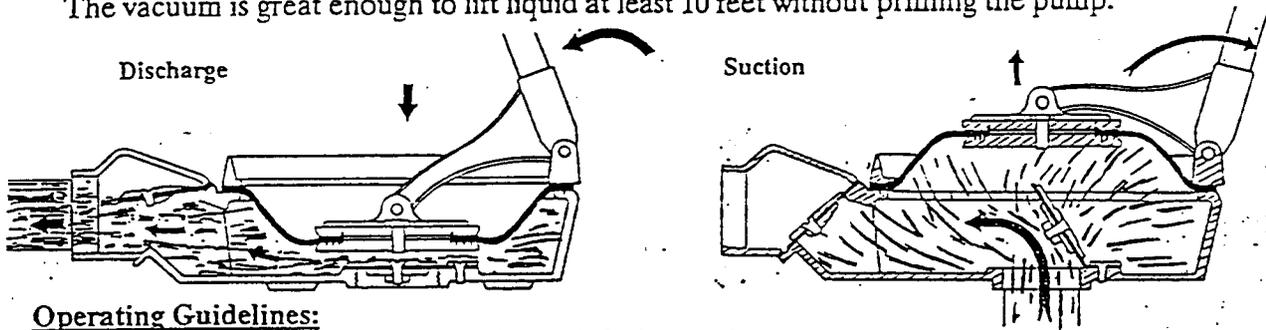


Model 638 - Bottom Inlet "Lever Action" Pump  
 Model 554 Offset Drive Bottom Inlet Pump  
 OPERATION AND MAINTENANCE INSTRUCTIONS

**How the Models 638 and 554 Work** - By pulling back on the handle the lever action raises the large diaphragm creating a vacuum. This vacuum closes the discharge valve and draws liquid through the bottom inlet into the pump base. When the handle is pushed forward depressing the diaphragm the suction valve is closed and the liquid is positively displaced through the discharge chamber.

The vacuum is great enough to lift liquid at least 10 feet without priming the pump.



**Operating Guidelines:**

1. The vacuum lift requires good seals on all fittings and suction hose.
2. The vacuum lift requires the use of non-collapsing hose.
3. The vacuum lift requires the discharge valve to seal well.
4. To avoid interference with discharge valve action do not insert threaded pipe past the threaded section of the discharge chamber.
5. The diaphragm must be held firmly by the Head Ring.  
 Note: Consider the inlet hose as a straw and the pump as a mouth. If the straw collapses you won't drink. If it has a hole in it you get only air.
6. Pumping harder will not overcome air leaks in the hose, discharge valve, or diaphragm. You may damage the drive arm.
7. Maximize the vacuum lift of the pump. Minimize the discharge height above pump. You will make pumping easier.
8. The discharge openings, hose, and fittings should always be the same size or bigger than the suction side.
9. When pumping liquid with large solids use at least a single bar strainer on the end of the suction hose. See the Edson Catalogue or call Edson for the appropriate strainer.

**Maintenance -**

**\*\*\*If Models 638 or 554 are used for emergencies it should be tested periodically.\*\*\***

The Edson Models 638 and 554 are simple in design and only two things will prevent them from working, a clog in the hose or drawing air instead of liquid.

**Clog** - If the hose clogs clear the hose and use an appropriate strainer for the material being pumped. See the Edson Catalogue or call Edson for appropriate strainers. If the hose is deteriorating and collapsing causing the clog, replace hose.

**Drawing Air** is caused by a break in the suction hose and/or fittings; obstructed and/or worn discharge valve rubber; a loose and/or worn diaphragm. To find the air leak remove the suction hose and pull back the handle with your hand over the suction chamber. Check the vacuum. If the vacuum is strong check suction hose and suction fittings for breaks. If weak or no vacuum check discharge chamber for obstructions or worn valve rubber. Remove obstruction or replace worn or swollen valve rubber. If the discharge valve is in good condition check diaphragm for loose head ring or worn diaphragm. Tighten head ring or replace diaphragm.





**INSTRUCTIONS FOR MODEL 117, 638, AND 654 LEVER ACTION HAND PUMPS**

**INSTRUCTIONS:** Connect inlet of Pump to liquid supply with pipe, plastic pipe or non-collapsing suction hose. (Use Edson Model 109/159 Couplings in latter case) Inlet and Outlet of all Models are threaded 1½" or 2" NPT. For best performance, use 2" suction and discharge line on the 2" pump and 1½" suction and discharge line on the 1½" pump. The 2" Pump may be reduced to 1½" hose sizes. Discharge hoses for all pumps should always be equal to or larger in diameter than suction hose. Avoid 90° elbows in intake or discharge lines. Tighten all fittings well using pipe dope where appropriate to avoid air leaks. NOTE that the head ring can be rotated into three different positions to allow pumping from three different angles.

**CAUTION:** To avoid interference with valve action, do not insert threaded portion of pipe or hose adapter to a depth of more than 5/8" into outlet of either model or inlet of Model 638 and 654.

**OPERATION:** Insert handle in drive arm socket, move back and forth in slow easy strokes. A neoprene diaphragm and neoprene valve rubbers are standard in all models. These allow the pumps to be used for pumping liquids containing oils, acids, etc. (consult the Edson Corporation for special applications).

**MINTENANCE:**

**TO CHANGE DIAPHRAGM:** Remove 4 head ring bolts, lift diaphragm and drive assembly, loosen standard cap screws, replace diaphragm and reassemble.

**TO CHANGE VALVES:** Inlet and outlet valves Model 117 and outlet valve Model 638 and 654; remove chamber bolts, detach weight and washer from old valve, install weight and washer on new valve, reassemble. Inlet valve Model 638 and 654; remove head ring bolts, remove diaphragm and drive assembly, remove inlet valve guard screws, detach weight and washer from old valve, install weight and washer on new valve, reassemble.

**CAUTION:** Lower end of valve flaps must seat on pump base, but they must be kept 3/16" away from the outlet valve chamber. (See pump diagrams) Also avoid excessive tightening of chamber bolts as this causes distortion of the valves.

**GUARANTEE:** Every item we manufacture is guaranteed to be free from defect at time of shipment. The Edson Corporation will replace any item found to be defective provided we are notified promptly upon receipt and, if we request, the item is returned to us for examination. This guarantee is void if repairs are attempted by anyone other than ourselves. We cannot be responsible for labor charges incurred in the replacement of any item exceed its replacement cost to us.

Edson Stocks a complete line of hose, strainers, couplings, and Pump accessories.

DATA SHEET



WHEN ORDERING PARTS YOU MUST INDICATE WHETHER YOUR PUMP IS BRONZE OR ALUMINUM

PARTS LISTS FOR MODEL 117 AND MODEL 638

"Lever Action" PUMP

SIDE INLET--MODEL 117

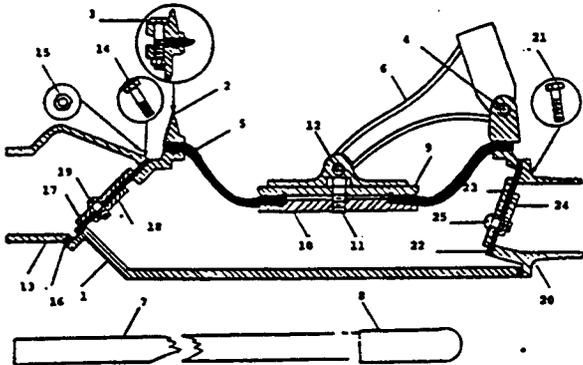


Table with 4 columns: REFERENCE, PART #, DESCRIPTION, QTY. Lists parts for Model 117 pump.

PUMP DATA SHEET

"Lever Action" BILGE PUMP

BOTTOM INLET--MODEL 638 MODEL 654

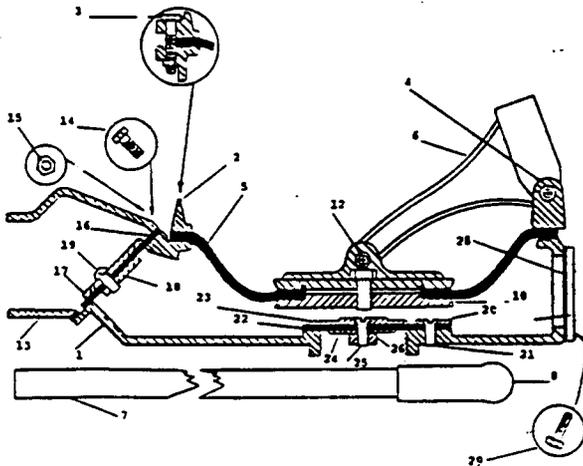


Table with 4 columns: REFERENCE, PART #, DESCRIPTION, QTY. Lists parts for Model 638 and Model 654 pumps.

ADDITIONAL PARTS FOR EDSON'S 654 PUMP TO BE SUBSTITUTED OR ADDED TO 638 PUMP

Table with 4 columns: REFERENCE, PART #, DESCRIPTION, QTY. Lists additional parts for substitution or addition.

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