



## Operation & Parts Manual

### MODEL 165AL-18 PORTABLE PUMP KIT



Optional Carrying and Storage Bag  
Order # 275-31



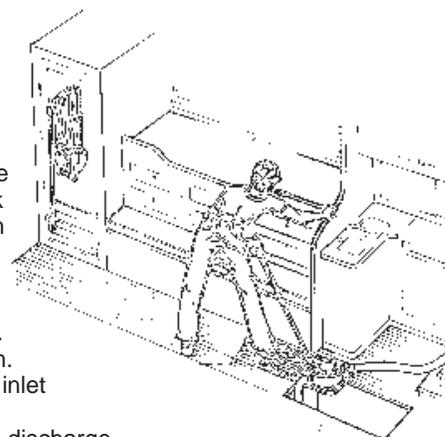
165AL-18-150

## Set Up

1. Screw the 2 male quick clamp adapters onto the pump. Threads must be sealed with pipe sealer.
2. Determine the length of the inlet and discharge hose and cut them from the single length supplied with the kit. Use a hacksaw to cut through the hose. If the primary use is for on board a boat, place the pump and the board where you want to do the pumping. Stretch the hose from the bottom of the boat, across the pump to the place you want the discharge to end up. Cut the hose where it crosses the pump.
3. Install the two female hose couplings into one end of each hose section. Secure them with the hose clamps.
4. Clamp the female couplings to the male adapters.
5. Check the bolts holding the pump to the carrying board.
6. Test the installation with clean water and check for leaks.

## Operation

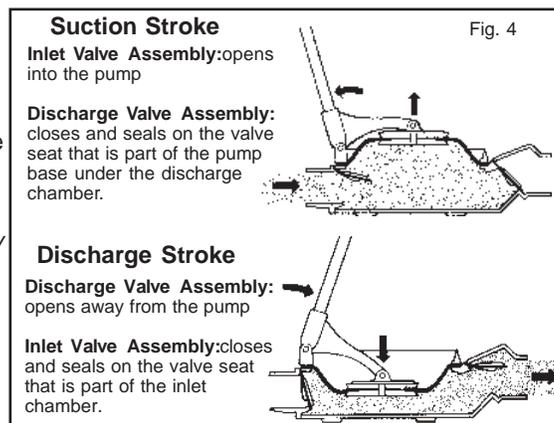
1. Stand on the open end of the carrying board. Use your body weight to stabilize the pump and board. Grip the handle with one or both hands and pull the handle back to raise the diaphragm for the suction stroke. Push forward from the same position for the discharge stroke.
2. The raising of the diaphragm creates a vacuum that pulls the discharge valve assembly closed.
3. Atmospheric pressure pushes liquid and/or air up the inlet hose to fill the vacuum.
4. Pushing forward on the handle compresses the air and liquid under the diaphragm.
5. The pressure closes the inlet valve assembly preventing the liquid trapped in the inlet hose from dropping back to atmosphere.
6. The air and liquid under the pressure of the diaphragm are forced out through the discharge.



## Performance & Specifications

Static Head: Suction-18 ft / 5.48m Discharge-18 ft / 5.48m  
 Dry Suction Lift: 15 ft / 4.57m  
 Volume: 18 GPM / 67.5 LPM at 5 ft Suction Lift and 0 Discharge  
 at 48 Cycles per Min. w/ 1 1/2" Hose

*Total Volume depends on the pumping speed and the conditions when pumping. A Cycle is one complete raising and lowering of the diaphragm. Static Head is determined by the vertical height, length and size of the plumbing and the viscosity of the liquid. For most manual pump applications just measure the vertical distance between the liquid being pumped and the inlet of the pump. If it is within 15ft. then you should be able to pump the liquid. See Installation Guidelines for other considerations.*



# Parts



### 165AL-18-150 Parts:

Key #	Part No.	Description	Qty
1	113N-18	Size 18 Diaphragm - Nitrile	1
2	160-A-1207	Valve Assembly - Nitrile	2
3	160-A-1253	1/4" Sealing Washer - Stainless	2
4	160-B-376A	1 1/2" Discharge Chamber- Alum.	1
5	160-B-375A	1 1/2" Suction Chamber - Alum.	1
6	160-B-378A	Side Inlet Pump Base - Alum.	1
7	160-B-374A	Heading Alum.	1
8	160-B-377A	Drive Arm - Alum.	1
9	160-A-1034A	Upper Standard - Alum.	1
10	160-A-1006	Lower Standard-SS	1
11	160-A-41ST	32" Pump Handle with Grip	1
12	3/8-16 X 4"	Head Ring Pivot Bolt HHCS	1
13	960-A-1315E	Standard Pivot Pin	1
14	F1032-3/4-SC	10-32 X 3/4" Socket Cap Screw	8
15	F1032-FN	10-32 Nut Stainless	8
16	F1/4-LW	1/4" Lock Washer	10
17	F1/4-1.5-SC	1/4-20 X 1 1/2" Socket Cap Screw	4
18	F1/4-FN	1/4" Nuts Stainless	8
19	F1/4-1-SC	1/4-20 X 1" Socket Cap Screw	2
20	F1/8-3/4ss-CP	1/8" X 3/4" Cotter Pin Stainless	2
21	F1/4-1.5-CARR	1/4"-20 X 1.5" Carriage Bolts Stainless	4
22	116CB-24	Pump Carry Board	1
23	671FH-150	Flex Hose 1 1/2"	20'
24	670ST-150	Hose Clamps 1 1/2" Stainless	2
25	156FE-150NY	Quick Clamp Hose Coupling, Female 1 1/2"	2
26	158MF-150NY	Quick Clamp Adapter Male QC X FNPT 1 1/2"	1
27	157MM-150NY	Quick Clamp Adapter Male QC X MNPT 1 1/2"	1

### Optional Viton Diaphragm and Valve:

1	113V-18	Size 18 Diaphragm - Viton	1
2	160-A-1207V	Valve Assembly - Viton	2

### Pump Spares Kits:

**Nitrile Pump Spares Kit**  
 Order # 114N-18-220 Includes:  
 113N-18 Size 18 Diaphragm - Nitrile  
 160-A-1207 Valve Assembly - Nitrile (2)  
 160-A-1253 1/4" Sealing Washer - Stainless (2)

**Viton Pump Spares Kit**  
 Order # 114V-18-220 Includes:  
 113V-18 Size 18 Diaphragm - Viton  
 160-A-1207V Valve Assembly - Viton (2)  
 160-A-1253 1/4" Sealing Washer - Stainless (2)

## CAUTION

Special Applications - Edson pumps are used for many diverse applications. Some may require special parts or maintenance procedure. i.e.. pumping liquid with gasoline or other fuels requires using Viton diaphragms and valves. If you have any questions regarding procedures for your application, call Edson customer service.

## Maintenance & Trouble Shooting

### PUMPS USED FOR CRITICAL APPLICATIONS SHOULD BE INSPECTED AND TESTED OFTEN

#### Visually Inspect Pump Inside and Out for Corrosion and Wear. Oil pivot pins. Replace Parts as Required.

Pump Performance Depends On an air tight diaphragm, valve assemblies that seal well on the pump inlet and discharge valve seats and inlet plumbing that is air tight all the way to the point it is submersed in the liquid. If the pump is not pumping check first for anything blocking the hose. If it is clear then check the pump by:

1. Removing all hose and fittings from the pump.
2. To check the discharge valve assembly and diaphragm put your hand tightly over the pump inlet and pull back on the handle. You should feel a vacuum suction and if the discharge valve assembly and diaphragm are working properly, you should not be able to raise the diaphragm all the way. If you do not feel any suction, do the same thing again and listen for air being sucked in around the diaphragm. If you hear air movement, inspect for loose bolts or worn diaphragm. If you hear no air movement, remove the discharge chamber and inspect the valve assembly and valve seat. Clean or replace the valve and clean or resurface the valve seat as appropriate.
3. To check the inlet valve assembly raise the diaphragm; put your hand over the discharge and push forward on the handle. If the inlet valve is sealing properly, you should feel the pressure against your hand. If you don't, then remove the inlet chamber and inspect the valve assembly and valve seat. Clean or replace the valve and clean or resurface the valve seat as appropriate.
4. When you are sure the pump is working properly and the pump still will not pump liquid, check the inlet plumbing for leaks. Depending on the height above the liquid even one unsealed fitting can prevent liquid from getting to the pump.

