EDSON PUMPS®

Operations Manual

25 Gallon Pumpout Caddy

Part Number: 28202

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Pumpout Caddy Parts List

	Part Number	Description	QTY
1	160-B-605	Pump Caddy Frame, Painted	1
2	160-A-1551	25 Gallon Poly Tank	1
3	F3/16-2.5-CP	3/16 x 2 1/2 SS Cotter Pint	2
4	F3/4-FW	3/4 SS Flat Washer	6
5	160-A-1550	Pneumatic 12.6” Wheel	2
6	160-A-2365	Hose, 1.5-inch ID Water Suction/Discharge	1ft
7	159MA-150NY	Hose Coupling, Threaded Male 1.5-inch Nylon	1
8	256AL-150	Compact Manual Vertical Mount Pump, Aluminum	1
9	160-A-1023	Elbow 90 Degree 1.5” FNPT x 1.5” FNPT SCH 80 PVC	1
10	156MA-150NY	Quick Clamp Hose Coupling - 1.5” Male QC x 1.5” Hose Barb	1
11	160-A-2365	Hose, 1.5-inch ID Water Suction/Discharge	20ft
12	156FE-150NY	Quick Clamp Hose Coupling - 1.5” Female QC x 1.5” Hose Barb	1
13	160-A-2887	Hose Clamp	8
14	160-A-2365-TUBE	Yellow Sleeve (10-inches)	2

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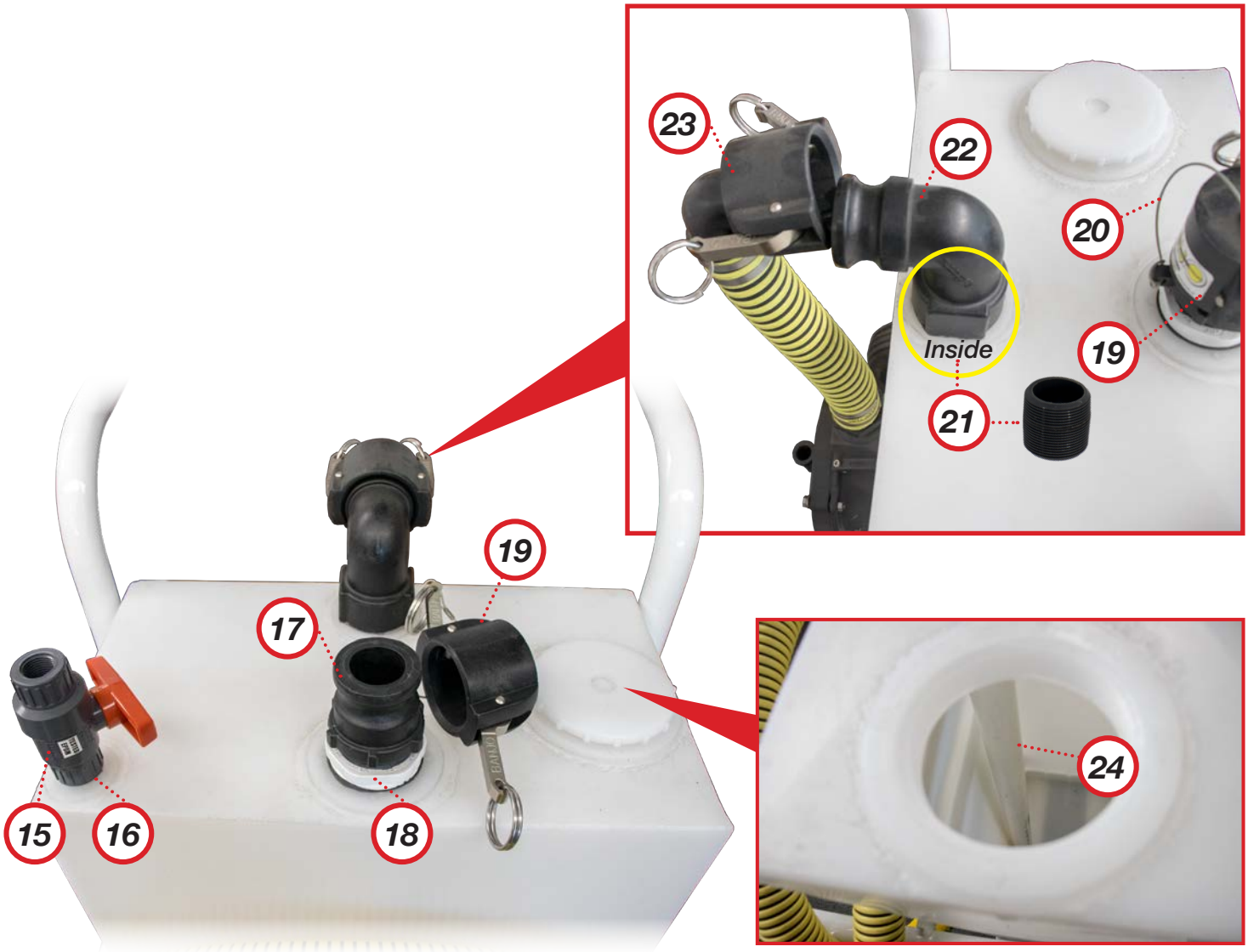
Pumpout Caddy Parts List



	Part Number	Description	QTY
15	160-A-1533	Ball Valve, 1/2" Compact PVC	1
16	160-A-153	Nipple, 1/2" x Close, PVC Schedule 80	1
17	157MM-125NY	Quick Clamp Adapter - 1.5" Male QC x 1.5" Male NPT	1
18	160-A-1552	Bushing Reducer - Machined 0 2" Male to 1.5" Female	1
19	155QC-150NY	Quick Clamp Cap - 1.5" Female QC	1
20	160-A-2592	Lanyard, 304 Stainless Wire Rope 8"	1
21	266-150	Nipple, 1.5" NPT X Close	1
22	141MF-150NY	Quick Clamp Adapter 90° 1.5" Male QC x 1.5" Female NPT	1
23	149FE-150NY	Quick Clamp Coupling 90° 1.5" Female QC x 1.5" Hose Barb	3ft
24	160-A-1941-150	Pipe PVC, 1 1/2" Schedule 40	20ft

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Pumpout Hose Assembly (Not Included)

#261-25-150
25ft Assembly Shown

The Edson Pumpout Hose (length 25 Ft [picture to the left], 1½" ID x 2" OD, EPDM tube with Polyethylene helix) comes complete with all fittings and adapters including 90° ball valve and sight glass. It's two part construction of smooth inner bore and rugged outer spiral cap provides a pump out hose that is corrosion resistant, extremely flexible, crush-proof, collapse-proof and abrasive resistant. It can be used with any suction pump and at 104 degrees F has a vacuum rating of 28" Hg and pressure rating of 35 psi.

Description	Part Number
25' Hose Assembly	#261-25-150
33' Hose Assembly	#261-33-150
50' Hose Assembly	#261-50-150
75' Hose Assembly	#261-75-150
100' Hose Assembly	#261-100-150

Deck Adapters (Included)

Ⓐ *Universal w/Splash Guard*
#272QC-150-SG

Ⓑ *1½ inch*
#273-150

Ⓕ *Potty Wand*
#274-150

Ⓖ *1¼inch*
#273-125

Assembly Components (Included)

Ⓒ *Suction Hose*
#262-XX-150

Ⓓ *Clear Check Valve*
#269CL-150

Ⓔ *90° Ball Valve*
#264-90-150

Ⓗ *Female QC x Female NPT*
#151FF-150NY

Ⓘ *Male QC x Female NPT*
#158MF-150NY

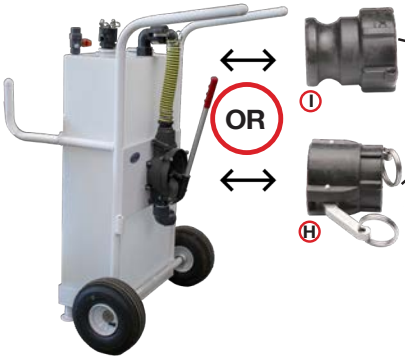
Ⓙ *Female QC Male NPT*
#152FM-150NY

Ⓚ *1½ inch Close Nipple*
#266-150

Assembly Instructions:

Insert appropriate size deck fitting adapter to fit boat waste/sewage connector.
NOTE: Use threaded adapters when possible for best results. Potty wand is for portable toilets only.
NOT FOR BILGES

Thread appropriate Quick Connect Adapter to fit either the existing suction hydrant or pump inlet



Thread all components as shown (exploded view)

Thread sealant (Teflon Tape or Paste) should be used on all threaded joints.

Ⓚ 
1½ inch Close Nipple can be used connect two female pipe thread together.

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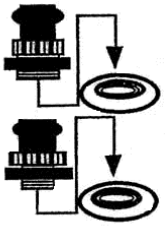
How To Use/Operate Pumpout Caddy

BEFORE YOU BEGIN:
1) **Wear Gloves**
2) **Make sure your Holding Tank Valves are positioned for Deck Fill Pump Out**
3) **The Holding Tank MUST be Vented**

1. SCREW ONE OF THE ADAPTERS INTO BOAT WASTE DECK FILL



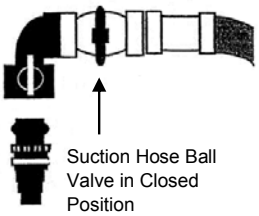
1 1/2" QUICK CLAMP DECK ADAPTER
For Waste Deck Fills with 1 1/2"Thread
On the Fill Cap

1 1/4" QUICK CLAMP DECK ADAPTER
For Waste Deck Fills with 1 1/4" Thread
On the Fill Cap

If You Can Not Use the Adapters—Pump-Out with the Quick Clamp Pump-Out Nozzle

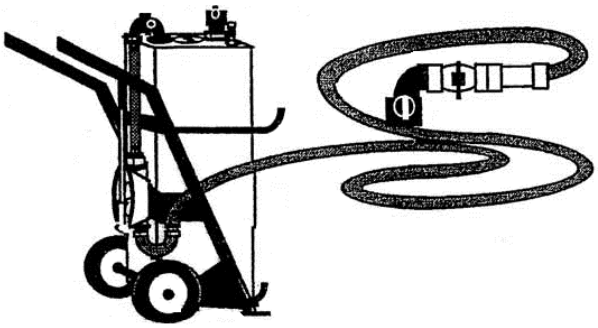
1a. CLAMP PUMP-OUT NOZZLE INTO END OF HOSE

Quick Clamp Pump-Out Nozzle
Clamps into end of Suction Hose
Can be used with any Deck Fill

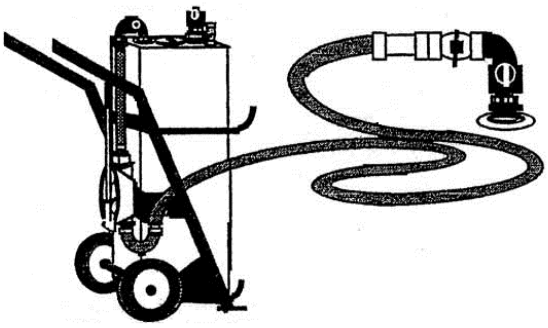


Must be Held in Place While Pumping

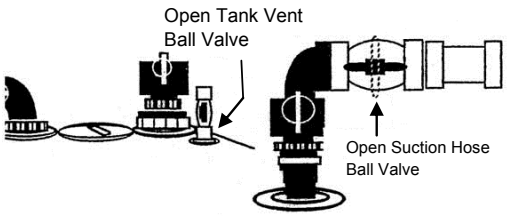
2. UNWIND HOSE "ALL THE WAY"



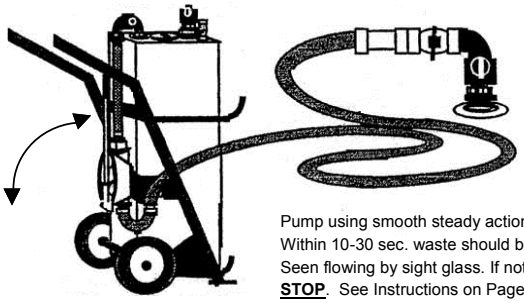
3. CLAMP HOSE TO ADAPTER ON DECK FILL



4. OPEN VALVE ON TANK & HOSE



5. PUMP BY MOVING HANDLE IN & OUT

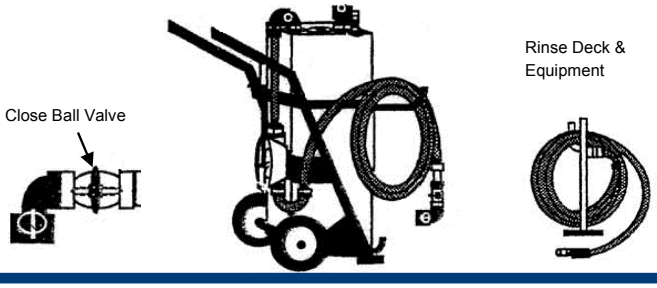


Pump using smooth steady action ; Within 10-30 sec. waste should be Seen flowing by sight glass. If not, **STOP**. See Instructions on Page 2.

6. STOP PUMPING—CLOSE BALL VALVE FLUSH BOAT TOILET—REPEAT 4 & 5

1) Flush Entire Waste System from the Toilet
2) Flush by Pumping Clean Water through The Toilet, not through the Deck Fill
3) Flush until the Sight Blass runs clear
4) Flushing is the best way to prevent odor

7. CLOSE BALL VALVE, STOW HOSE & RINSE AREA WITH FRESH WATER



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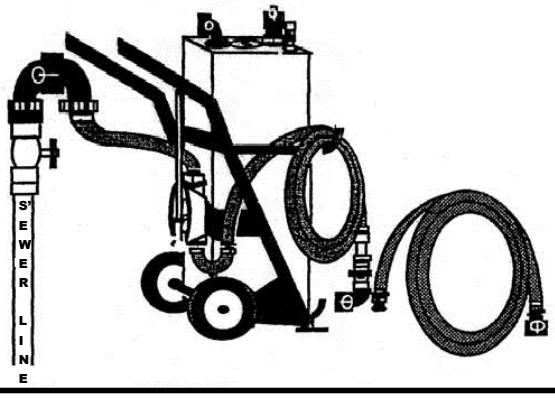
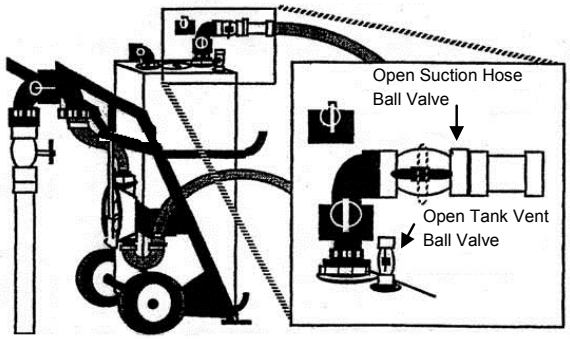
How To Empty Pumpout Caddy

1. HOOK DISCHARGE HOSE TO SEWER SYSTEM USE TRANSFER HOSE IF NECESSARY



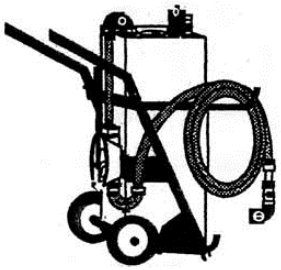
2. CLAMP SUCTION HOSE TO COLLECTION TANK PUMP-OUT ADAPTER - OPEN BALL VALVES



3. FLUSH SYSTEM WITH AVAILABLE WATER BY:

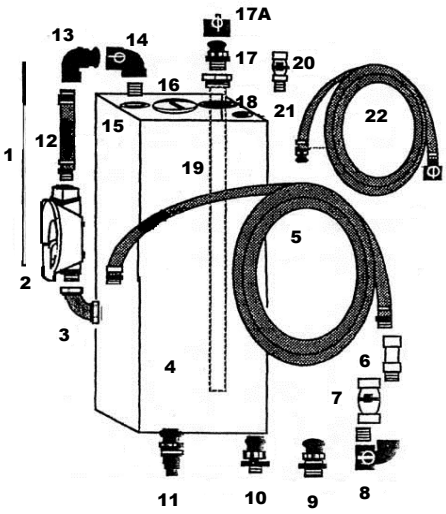
1. Removing Tank Access Cap
2. Rinse Tank using Fresh Water
3. Pump until Sight Glass runs clear & Tank is Clean and Empty
4. Flushing is the best way to prevent odor

4. RECONNECT DISCHARGE HOSE TO TANK CLOSE VALVES. WASH EQUIPMENT & HANDS

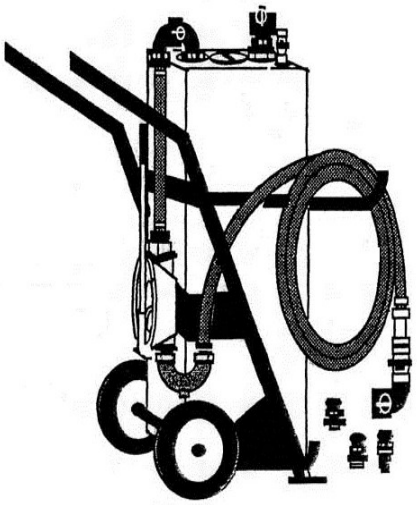


If Pump-Out dies not work after 30 seconds of pumping - STOP. Pumping harder will not make it work.

1) Check Boat Holding Tank for correct Valve Position and Venting.
2) Check for tight connection of Suction Hose to Deck Adapter
3) Check Hose and that Tank Ball Valves are opened
4) Try pumping again - If waste still does not pump: CALL ATTENDANT - SEE OPERATIONS MANUAL - CALL EDSON (508)995-9711



1. Pump Handle
2. Pump
3. 1.5” Elbow
4. Tank
5. Suction Hose
6. View Glass
7. Suction Hose Ball Valve
8. Female Quick Clamp Adapter
9. 1.5” Quick Clamp Deck Fill Adapter
10. 1.25” Quick Clamp Deck Fill Adapter
11. Quick Clamp Flex Nozzle (Optional)
12. Discharge Hose
13. 90 degree 1.5 Male Quick Clamp Adapter
14. 90 degree 1.5 Female Quick Clamp Adapter
15. 1.5” FNPT Tank Fill Port
16. Tank Access Port
17. 1.5” Male Quick Clamp Adapter
17A. 1.5” Quick Clamp Cap
18. 2” FNPT Tank Pumo-Out Port
19. Tank Pump-Out Tube
20. ..5” Vent Ball Valve
21. .5” FNPT Tank Vent Port
22. Transfer Hose



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Operation & Parts | Pump 256AL-150

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.

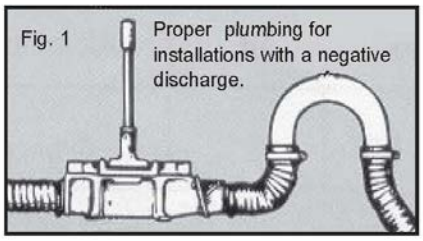
Set Up

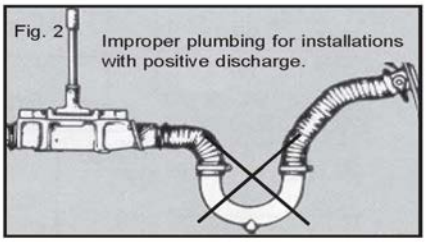
Installing the Pump

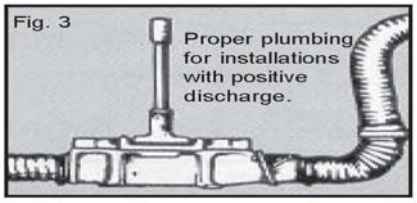
1. Install the pump in a manner that allows for a comfortable position for pumping and easy access for inspection and maintenance.
2. The head ring and drive arm can be rotated to the four 90 degree positions allowed by the square bolt pattern. (Fig 5 Page 2)
3. The pump is designed to be installed on a relatively horizontal surface using 1/4" bolts or screws at the four corners of the base (Fig 5). If the mounting surface can not be horizontal, the inlet port should be lower than the discharge.
4. Do not combine incompatible metals i.e.. no aluminum fittings on a bronze pump or bronze fittings on an aluminum pump.
5. Check that all nuts and bolts are tight (Fig 5). Requires two 7/16 and one phillips screw driver.

Installing the Plumbing

1. Fittings and hose couplings must be air tight. Threads must be sealed with pipe sealer.
2. To avoid clogging, the discharge should be the same size or larger than the inlet.
3. Connect plumbing to the pump using unions or easily removed couplings.
4. For sewage and sump applications using backup check valves on the inlet and discharge will improve the ability of the pump to dry prime.
5. For sewage and sump applications where the discharge drains naturally down and away from the pump, installing a positive loop will improve the self priming feature. When you stop pumping the loop traps some liquid against the discharge valve improving the seal. Fig. 1
6. When discharging to a point higher than the pump, install the discharge plumbing so that no air can be trapped in the plumbing. Fig. 2 &3. Trapped air restricts the flow of liquid and requires more work to pump liquid past the air lock.
7. If the pump is being installed to pump liquids with suspended solids and the use will be intermittent, solid matter can get traped under the check valves. This will prevent self priming at the next use. Flushing with water will generally clear out the solid matter. Installing secondary clear flapper check valves right at the inlet and discharge will improve the dry suction start performance of the pump. Order Edson Clear Check Valve 269CL-150.







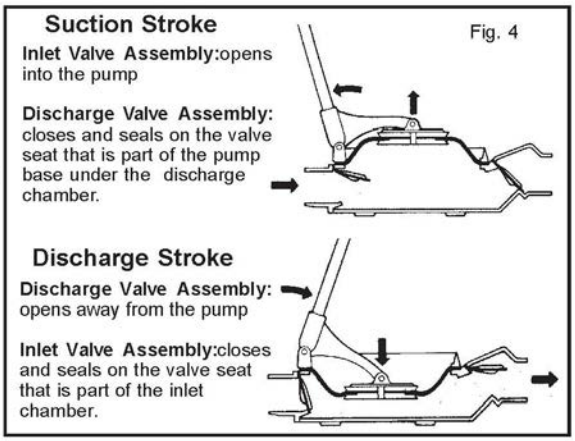
Operation

The Pump Works By:

1. Pulling back on the handle raises the diaphragm creating a vacuum .
2. The vacuum pulls the discharge valve assembly closed.
3. Atmospheric pressure pushes liquid up the inlet plumbing to fill the vacuum.
4. Pushing forward on the handle compresses the air and liquid under the diaphragm closing the inlet check valve and forcing the air and liquid out the discharge.
5. The closing of the inlet valve assembly prevents the liquid and air trapped in the inlet line from dropping back to atmosphere.

Pump Performance Depends On:

1. An air tight diaphragm.
2. Valve assemblies that seal well on the pump inlet and discharge valve seats.
3. Inlet plumbing that is air tight all the way to the point it is submersed in the liquid.



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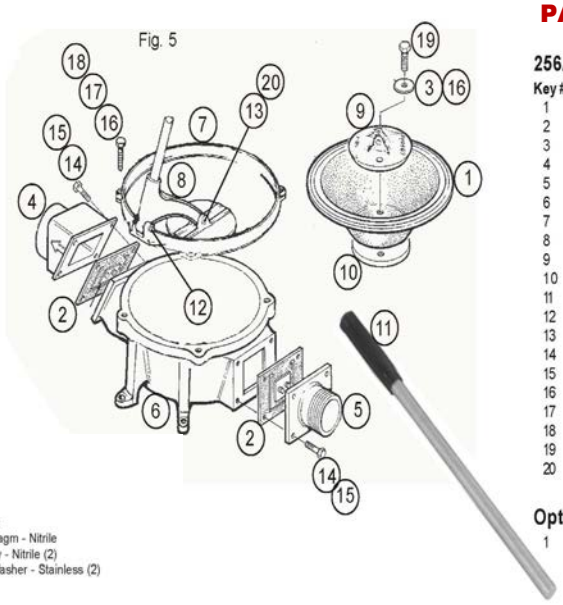
Operation & Parts | Pump 256AL-150



PARTS:

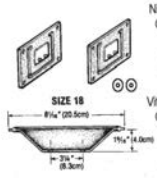
256AL- 150 Parts:

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-150	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	Headring Alum.	1
8	160-B-382A	Drive Arm -Alum.	1
9	160-A-1034A	Upper Standard - Alum.	1
10	160-A-1006	Lower Standard-SS	1
11	160-A-1013ST	18" 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	6
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	4
19	F1/4-1-SC	1/4-20 X 1" ocket Cap Screw	2
20	F1/8-3/4ss-CP	1/8" X 3/4" Cotter Pin Stainless	2

Optional Viton Diaphragm and Valves:

1	113V-18	Size 18 Diaphragm - Viton	1
	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)

MAINTENANCE & TROUBLE SHOOTING:

PUMPS USED FOR CRITICAL APPLICATIONS SHOULD BE INSPECTED AND TESTED OFTEN

- For boat applications at least every six months, at annual commissioning, and prior to any offshore passage
- Visually inspect pump inside and out for corrosion and wear. Lightly oil pivot pins. Pump some water and if the pump does not pump, check first for anything blocking the inlet line. If clear, see instructions below:

1. To check status of the pump and inlet plumbing all at once, seal the open end of the inlet plumbing. If you have a vacuum gage, connect it to the open end of the inlet plumbing. Start pumping. If the plumbing is airtight you should be able to build a vacuum of 9 to 10 inches of mercury. When you stop pumping the vacuum should very slowly bleed off. This procedure requires inlet plumbing of at least 4 ft. in length. If you cannot establish or hold vacuum in the system proceed to Step 2.

2. Remove all plumbing from the pump.

3. 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 & 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 & clean or resurface the valve seat as appropriate.

4. 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 & clean or resurface the valve seat as appropriate.

5. When you are sure the pump is working properly, and it still will not pump liquid, check the inlet plumbing for leaks. Depending on the height above the liquid, every one unsealed fitting can prevent liquid from getting to the pump.

PERFORMANCE & SPECIFICATIONS:

Static Head: *Suction 18' / 5.48m Discharge 18' / 5.48m* ***Dry Suction Lift:*** *15' / 4.57m*

Volume: *18 GPM / 67.5 LPM @ 5' Suction Life and 0 Discharge at 48 cycles/min. With 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 15 ft. then you should be able to pump the liquid.

*See Installation Guidelines for other considerations.