

# EDSON PUMPS®

## Operations Manual

### Portable Manual Grout Pump

#### Part Numbers:

167AL-150 | Anodized Aluminum

167BR-150 | Marine Bronze



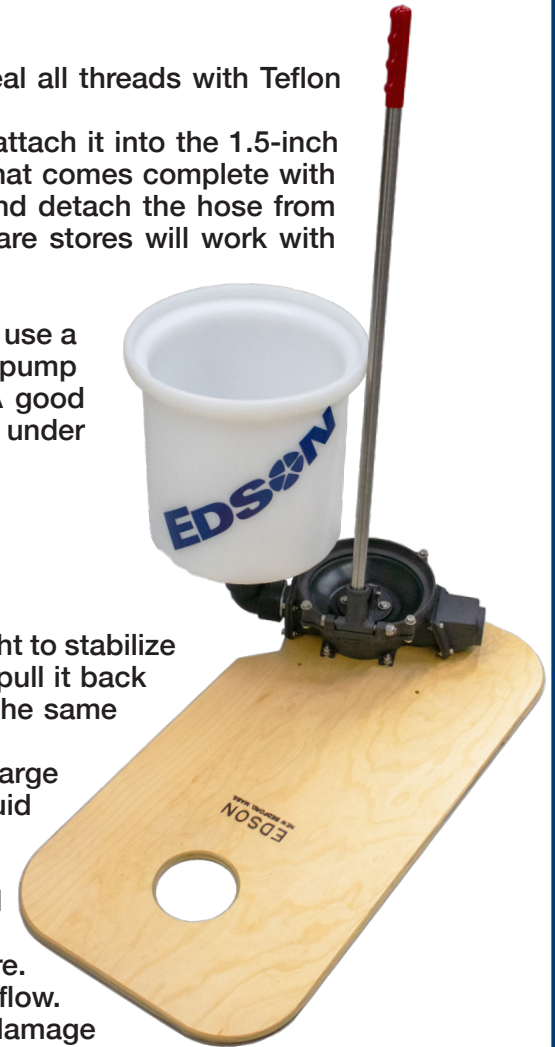
# Getting to know your Edson Portable Grout Pump

## Set Up

1. Screw the hopper onto the pump inlet. For effective suction seal all threads with Teflon tape or pipe sealant.
2. Determine the length and size of discharge hose required and attach it into the 1.5-inch FNPT discharge port. You can purchase Edson's Grout Hose Kit that comes complete with 20ft of Gray Flex Hose, Quick Connect Fittings to easily attach and detach the hose from the pump. For some applications, the clear tubing sold in hardware stores will work with appropriate hose barbs and reducer bushings.
3. Fill the hopper with material to be pumped
4. In some applications, it may be easier to remove the hopper and use a suction hose connected to the inlet and suck the material into the pump from a larger container. Usually, this pump will suck any liquid. A good indication of usable viscosity is if the pumped material will flow under gravity through the hose being used.
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 it back to raise the diaphragm for the suction stroke. Push forward from the same position for the discharge stroke.
2. The diaphragm raising creates a vacuum that pulls the discharge valve assembly closed, and atmospheric pressure pushes the liquid into the pump base.
3. Pushing forward on the handle compresses the air and fluid under the diaphragm closing the inlet valve and forces the air and liquid under pressure out through the discharge.
4. Thicker material and a smaller hose will create more back pressure. Move the pump handle slower to compensate for the resistance to flow. Using excessive force to increase the pumping speed could cause damage to the pump.



## Performance & Specifications

<b>Static Head</b>	Suction—18ft/5.48m   Discharge—18ft/5.48m
<b>Dry Suction Lift</b>	15ft/4.57m
<b>Volume</b>	18GPM / 67.5 LPM at 5ft Suction Lift & Zero Discharge at 48 Cycles per Min (1.5-inch 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 liquid's viscosity. For most manual pump applications, measure the vertical distance between the liquid being pumped and the pump's inlet. If it is within 15ft, then you should be able to pump the fluid. See Installation Guidelines for other considerations.

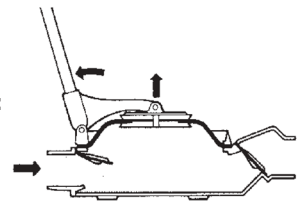
### Suction Stroke

**Inlet Valve Assembly:**

Opens into the pump

**Discharge Valve Assembly:**

Closes and seals on the valve seat that is part of the pump base under the discharge chamber.



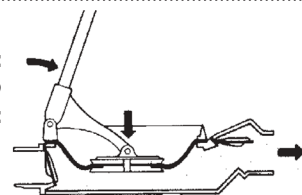
### Discharge Stroke

**Discharge Valve Assembly:**

Opens away from the pump

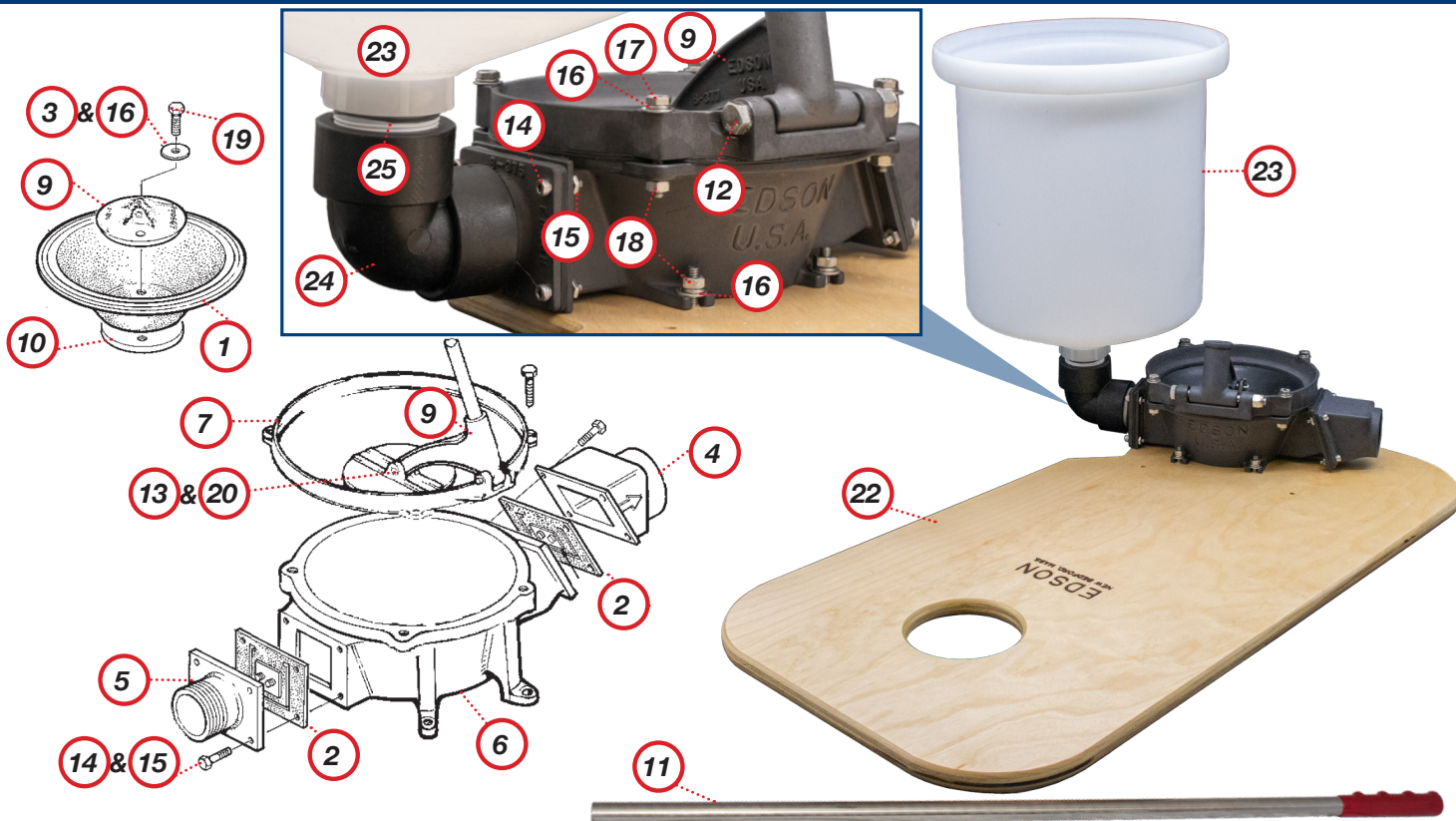
**Discharge Valve Assembly:**

Closes and seals on the valve seat that is part of the inlet chamber

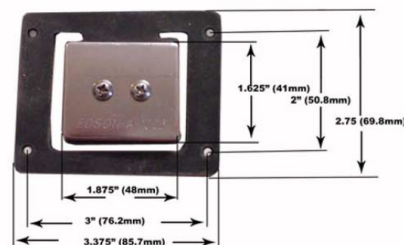


# Aluminum Grout Pump Parts List

## Part Number 167AL-150

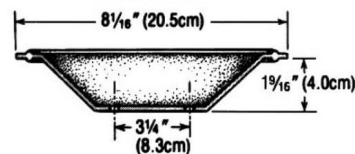


Part Number	Description	QTY
1 113N-18	Size 18 Diaphragm - Nitrile	1
2 160-A-1207	Valve Assembly - Nitrile	2
3 160-A-1253	0.25-inch Sealing Washer - Stainless	2
4 160-B-376A	1.5-inch Discharge Chamber- Aluminum	1
5 160-B-375A	1.5-inch Suction Chamber - Aluminum	1
6 160-B-378A	Side Inlet Pump Base - Aluminum	1
7 160-B-374A	Head-ring - Aluminum	1
8 160-B-377A	Drive Arm - Aluminum	1
9 160-A-1034A	Upper Standard - Aluminum	1
10 160-A-1006	Lower Standard - Stainless Steel	1
11 160-A-41ST	32-inch Stainless Steel Pump Handle with Grip	1
12 3/8-16 X 4"	Head Ring Pivot Bolt HHCS	1
13 3/8-16 X 4"	Head Ring Pivot Bolt HHCS	1
14 F1032-3/4-SC	10-32 X 3/4-inch Socket Cap Screw	8
15 F1032-FN	10-32 Nut Stainless Steel	8
16 F1/4-LW	1/4-inch Lock Washer	10
17 F1/4-1.5-SC	1/4-20-inch X 1 1/2-inch Socket Cap Screw	4
18 F1/4-FN	1/4-inch Nuts Stainless Steel	8
19 F1/4-1-SC	1/4-20-inch X 1-inch Socket Cap Screw	2
20 F1/8-3/4ss-CP	1/8-inch X 3/4-inch Cotter Pin Stainless Steel	2
21 F1/4-1.5-CARR	1/4-20-inch X 1.5-inch Carriage Bolts Stainless	4
22 116CB-24	Pump Carry Board	1
23 B-1852	Funnel For 167 Grout Pump	1
24 160-A-1803	Elbow, 1.5-inch 90 Degree Sch. 80 PVC	1
25 266-150	Nipple, 1.5-inch Close PVC Sch. 80	1



### Replacement Flapper Valve

Nitrile (Standard)	160-A-1207
Viton (Optional)	160-A-1207V



### Replacement Diaphragm

Nitrile (Standard)	113N-18
Viton (Optional)	113V-18

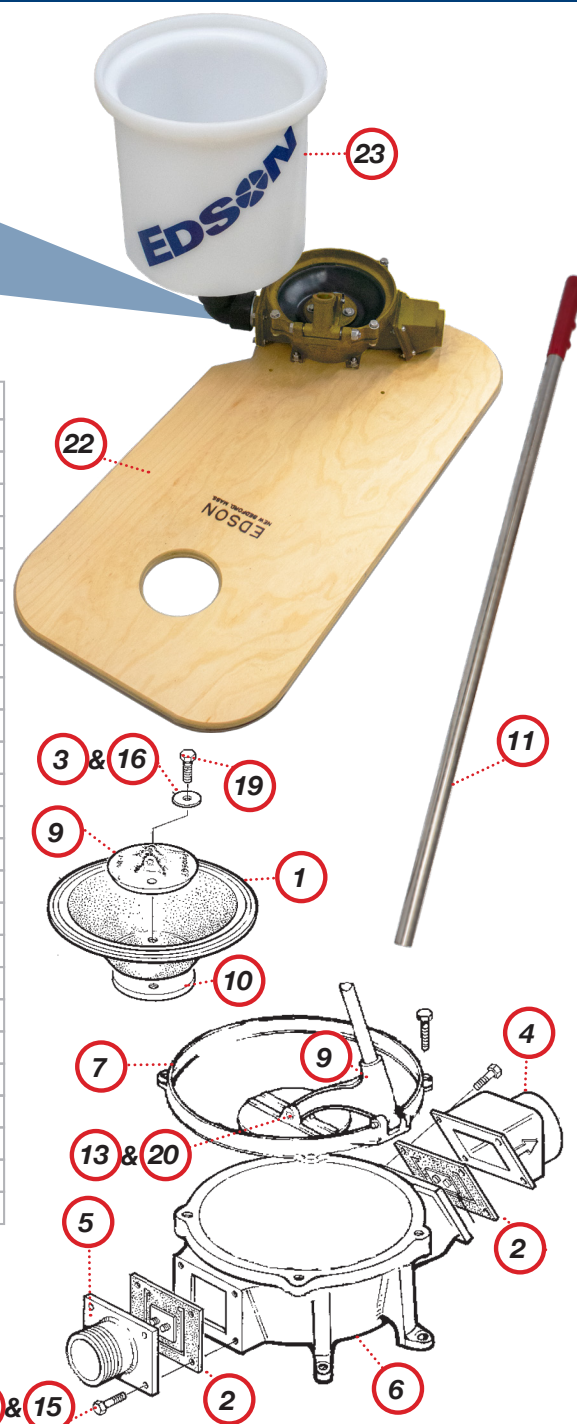
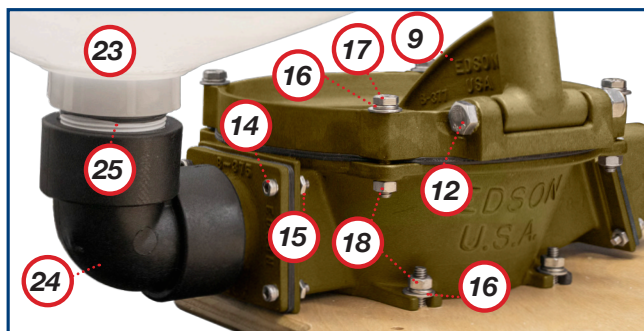
### Diaphragm & Valves Spares Kit

Nitrile (Standard)	114N-18-220
Viton (Optional)	114V-18-220



# Bronze Grout Pump Parts List

## Part Number 167BR-150

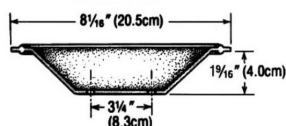


	Part Number	Description	QTY
1	113N-18	Size 18 Diaphragm - Nitrile	1
2	160-A-1207	Valve Assembly - Nitrile	2
3	160-A-1253	0.25-inch Sealing Washer - Stainless	2
4	160-B-376B	1.5-inch Discharge Chamber- Bronze	1
5	160-B-375B	1.5-inch Suction Chamber - Bronze	1
6	160-B-378B	Side Inlet Pump Base - Bronze	1
7	160-B-374B	Head-ring - Bronze	1
8	160-B-377B	Drive Arm - Bronze	1
9	160-A-1034B	Upper Standard - Bronze	1
10	160-A-1006	Lower Standard - Stainless Steel	1
11	160-A-41ST	32-inch Stainless Steel Pump Handle with Grip	1
12	3/8-16 X 4"	Head Ring Pivot Bolt HHCS	1
13	3/8-16 X 4"	Head Ring Pivot Bolt HHCS	1
14	F1032-3/4-SC	10-32 X 3/4-inch Socket Cap Screw	8
15	F1032-FN	10-32 Nut Stainless Steel	8
16	F1/4-LW	1/4-inch Lock Washer	10
17	F1/4-1.5-SC	1/4-20-inch X 1 1/2-inch Socket Cap Screw	4
18	F1/4-FN	1/4-inch Nuts Stainless Steel	8
19	F1/4-1-SC	1/4-20-inch X 1-inch Socket Cap Screw	2
20	F1/8-3/4ss-CP	1/8-inch X 3/4-inch Cotter Pin Stainless Steel	2
21	F1/4-1.5-CARR	1/4-20-inch X 1.5-inch Carriage Bolts Stainless	4
22	116CB-24	Pump Carry Board	1
23	B-1852	Funnel For 167 Grout Pump	1
24	160-A-1803	Elbow, 1.5-inch 90 Degree Sch. 80 PVC	1
25	266-150	Nipple, 1.5-inch Close PVC Sch. 80	1



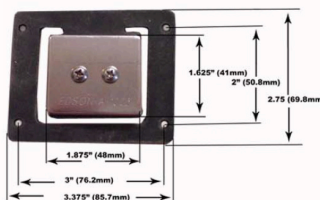
### Diaphragm & Valves Spares Kit

Nitrile (Standard)	114N-18-220
Viton (Optional)	114V-18-220



### Replacement Diaphragm

Nitrile (Standard)	113N-18
Viton (Optional)	113V-18



### Replacement Flapper Valve

Nitrile (Standard)	160-A-1207
Viton (Optional)	160-A-1207V

# Maintenance & Trouble Shooting Edson's Grout Pump

## **CAUTION**

### ***Special Applications***

Edson pumps are used for many diverse applications. Some may require particular parts or maintenance procedures. (i.e., pumping liquid with gasoline or other fuels requires using Viton diaphragms and valves). If you have any questions regarding practices 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.

# Optional Grout Pump Accessories

## Edson's Grout Pump Hose Kit [27920]

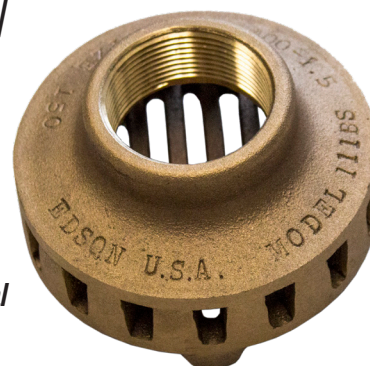
Make the job easier with Edson's Grout Pump Hose Kit. This kit comes complete with 20 feet of gray flex hose to help get into those hard to reach places while grouting. With an easy, quick clamp, you can set up and breakdown your equipment in seconds.



Part Numbers	Description	QTY
671FH-150	Gray Glex Hose	20ft
156MA-150NY	Male Quick Clamp Hose Barb	1
156FE-150NY	Female Quick Clamp Hose Barb	1
157MM-150NY	Male Quick Clamp with Male NPT	1
670ST-150	Hose Clamps (1.5-inch)	2

## Edson's 1.5-inch Bronze Strainer [111BS-150]

The Edson Shatterproof Bronze Strainer is used to prevent clogging of a suction hose. The resilience, corrosive resistance, and non-sparking character of marine grade bronze will provide extended life over aluminum, cast steel, or plastic strainers. Perfect for Dewatering, Spill Clean-Ups, Well Testing, collection/transferring, and much more. This Edson strainer has 1.5" FNPT (Female National Pipe Threads) for easy attachment to hose or pipe fittings ending with 1.5" MNPT (Male National Pipe Threads).



## Edson's Quick Clamp Adapter [152FM-150NY]

(To attach 1.5-inch Bronze Strainer to Grout Pump Hose Kit)

Edson's 152FM-150NY is a Quick Clamp Adapter that has a 1.5-inch Female Quick Clamp end fitting by 1.5 inch Male National Pipe Threading.

- Economical and superior in performance.
- Most complete line of polypropylene couplings available.
- Operating conditions: 1.5" — 100 P.S.I. at 0°F; 125 P.S.I. at 70°F; 70 P.S.I. at 150°F.
- Precision molded — insures a uniform and accurate fit.
- Smooth operating — finger rings are designed for easy opening of cam levers.
- Stainless steel rings, arms & pins.

**WARNING:** Couplings should not be disconnected under pressure or with liquid in the line.

