



PENTAIR ED Series Engine Driven Self Priming Centrifugal Pump Owner's Manual

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PENTAIR
STA-RITE®

ED Series Engine Driven Self Priming Centrifugal Pump
OWNER's MANUAL
"ED", "EDD", and "EEDD" SERIES
ENGINE DRIVEN SELF-PRIMING CENTRIFUGAL PUMPS

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ED Series Engine Driven Self Priming Centrifugal Pump

California Proposition 65 Warning



WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

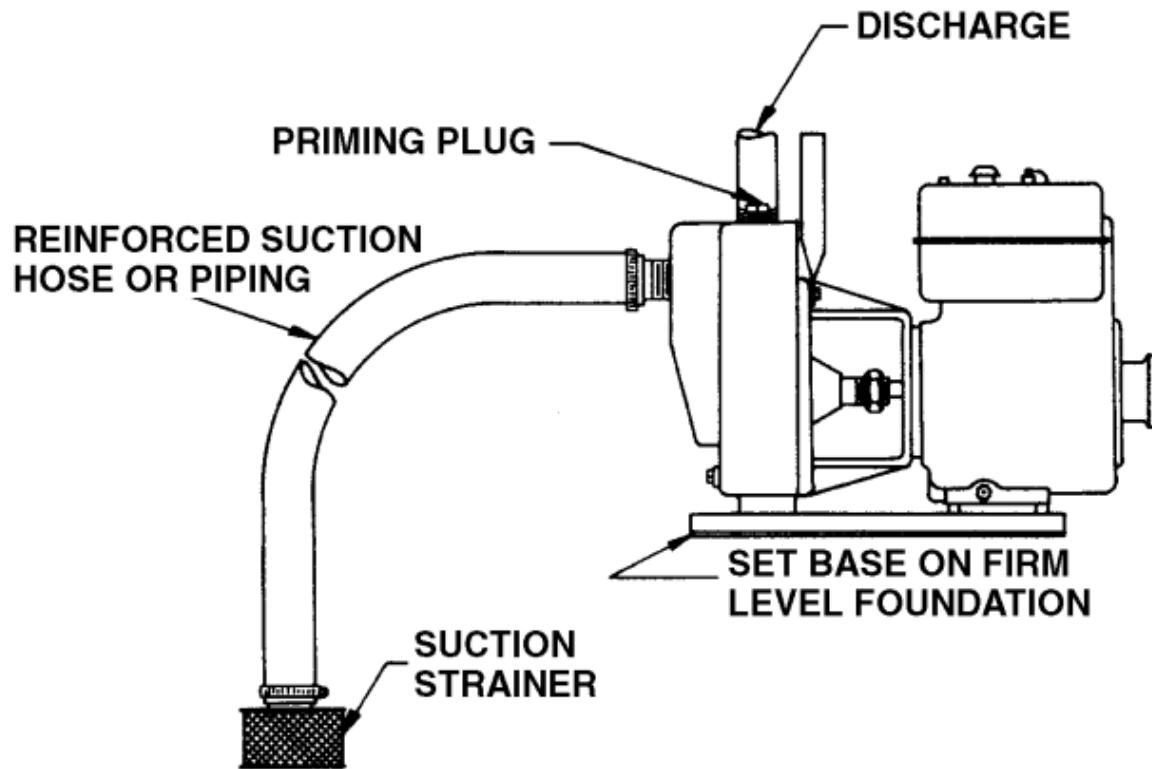


Figure 1

MODEL EDD-29 PUMP UNIT ONLY

To mount pump to your engine, proceed as follows:

1. Loosen clamp assembly (Key No. 4C) on shaft extension. Position pump adapter on motor; insert engine shaft into shaft extension. BE SURE pump adapter pilot fits pilot bore in engine.
2. Attach pump adapter to engine using (4) 5/16 x 3/4" capscrews and lockwashers—(5/16-24 capscrews are required for engines with aluminum blocks, and 5/16-18 capscrews are required for engines with cast iron blocks).
3. Push shaft extension toward pump until fibre spacer will not rotate freely on shaft. Tighten clamp assembly on shaft extension. Hold the shaft extension with a screwdriver in one of the slots while tightening the nut.
4. As the fibre spacer is used to establish impeller clearance only, it will burn out shortly after pump is put into operation and need not be replaced.

NOTICE: If engine is removed, a new fibre washer should be obtained to re-establish clearance before replacing engine.

5. Use one of the following engines:
 - (a) Briggs and Stratton
 - (b) Kohler
 - (c) Tecumseh

Refer to engine manufacturer's service manual for parts or service to engine.

BE SURE to fill crankcase with recommended grade of oil.

Do NOT run pump until it has been primed, as this could ruin the seal.

NOTICE: MODEL EDG-105 IS BUILT FOR USE WITH SWIMMING POOLS.

MODEL EDG-105 IS SHIPPED WITH A 1-1/2" SUCTION FLANGE ASSEMBLY.

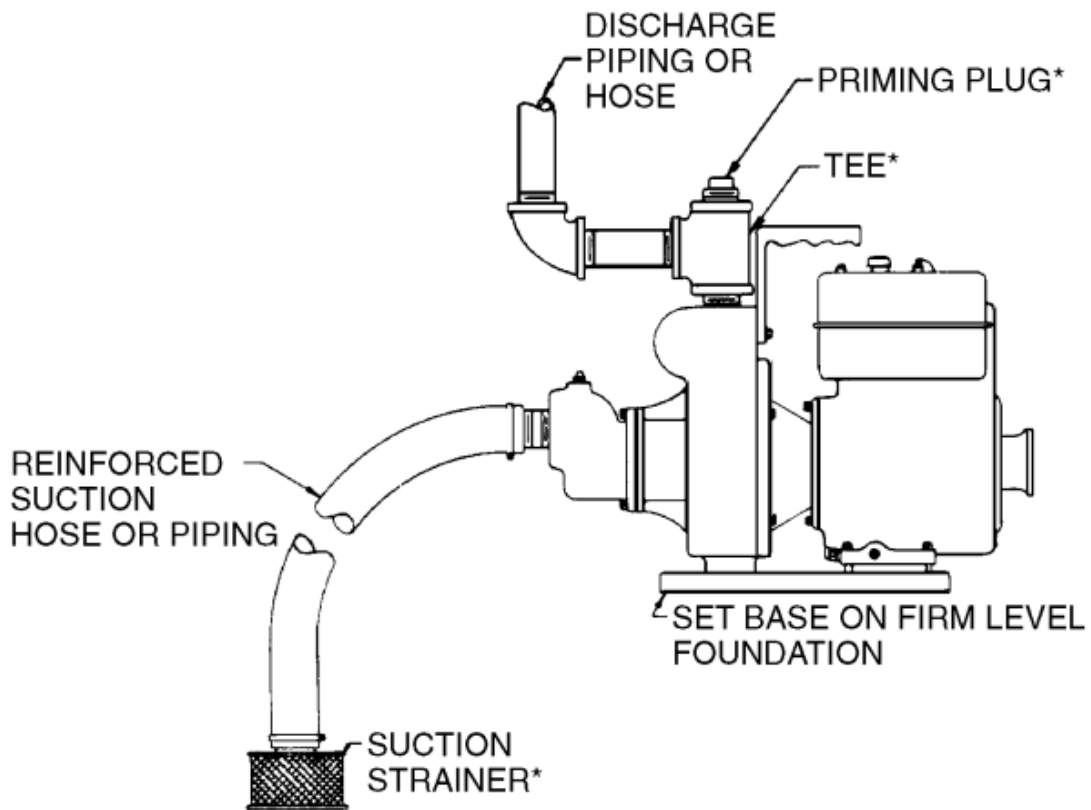


Figure 2

* These parts are not furnished. Order Strainer Fittings Pack age C298-9, which includes these parts.

PLACING THE PUMP

This pump is portable, and should be placed on a level foundation or firm level ground as near the water source as possible, for efficient operation. Model EEDD-29 can be mounted on an available gasoline engine. It must have the engine supported to the same level as the pump mount, to avoid placing strain on the pump adapter or engine. All suction and discharge piping should also be supported independently near the pump, to avoid strain on the unit. Standard piping can be used, or as the pump is portable, reinforced suction hose can be used on the suction inlet. This hose must have the equivalent capacity of 2" iron pipe. A strainer should be used on the end of the suction pipe or hose. See Figures 1 and 2 for typical installations.

PRIMING THE PUMP

Install pipe tee in the discharge opening of the pump with a nipple. Provide a priming plug in the top opening. See Figure 2.

Fill the pump with water and tighten the priming plug. Start the engine, and the pump will prime, with priming time depending upon the suction lift and the horizontal distance to water.

OPERATING SPEED

Models With Engine

These pumps leave the factory with a gas engine set to operate at 3500 rpm when pumping, which is the correct speed for maximum efficiency. Model EEDD-29 must be provided with an engine which will operate at approximately the same speed (3500 rpm).

Always start the unit at full speed until unit is primed and pumping water. It can be throttled to lower the pump's capacity while pumping.

PUMP SERVICE

Due to the simple, rugged construction of the pump, it should require little service. However, if it should be necessary to replace a part, the following procedure should be used.

1. Remove the capscrews, Key No. 8, which hold the pump body to the engine adapter.
2. The pump body can now be removed.

3. A tap on the volute diffuser, Key No. 18, will enable you to remove it, exposing the impeller.
4. Remove the impeller from the engine shaft by turning counterclockwise.
5. Seal replacement. The shaft seal consists primarily of two parts, a rotating member and a floating seat.



CAUTION The highly polished and lapped faces of this seal are easily damaged. Read instructions and handle the seal with care. Some models are equipped with an impeller screw, which has a left hand thread. Before unscrewing the impeller, remove the impeller screw.

Removal of Old Seal

1. After unscrewing impeller, carefully remove rotating part of seal by prying up on sealing washer, using two screwdrivers (see Figure 3A, below). Use care not to scratch motor shaft.
2. Remove seal plate from motor and place on flat surface, face down. Use a screwdriver to push ceramic seat out from seal cavity (see Figure 3B, below).

Installation of Floating Seat (Figure 3C)

1. Clean polished surface of floating seat with clean cloth.
2. Turn seal plate over so seal cavity is up. Clean cavity thoroughly.
3. Lubricate outside rubber surface of ceramic seat with soapy water and press firmly into seal cavity with finger pressure. If seat will not locate properly in this manner, place cardboard washer over polished face of seat and press into seal cavity using a 3/4" socket or 3/4" piece of standard pipe.
4. Dispose of cardboard washer. Be sure polished surface of seat is free of dirt and has not been damaged by insertion.

Installation of Rotating Part of Seal Unit (Figure 3D)

1. Reinstall seal plate.
2. Inspect shaft to make sure that it is clean.
3. Clean face of sealing washer with clean cloth.
4. Lubricate inside diameter and outer face of rubber drive ring with soapy water and slide assembly on motor shaft (sealing face first) until rubber drive ring hits shaft shoulder.
5. Screw impeller on shaft until impeller hub hits shaft shoulder. This will automatically locate seal in place and move the sealing washer face up against seat facing. Reinstall impeller screw (if used).

MAINTENANCE

Be sure to drain pump during freezing weather to prevent damage from frost. To drain, remove drain plug directly below the suction inlet of the pump; also remove the priming plug. Drain the suction pipe at a point below the frost line. All pipe exposed to freezing temperatures should also be drained. Before restarting pump, replace all connections and plugs and reprime.

For service and maintenance to the engine, see the booklet which comes with the engine.

TROUBLE – CAUSES AND REMEDY

Trouble	Probable Cause	Remedies
No water delivered or not enough water delivered.	Pump not primed Speed too low Suction line clogged Suction lift too high Air leak in suction line Impeller plugged Suction end not submerged deep enough	Fill pump body with water Pump should operate about 3500 RPM – Check engine Clean suction screen Put pump closer to water Tighten connections or replace with new hose or pipe Use pipe compound to seal all male threads Clean impeller Submerge suction hose or piping enough so that no air enters while pump is operating

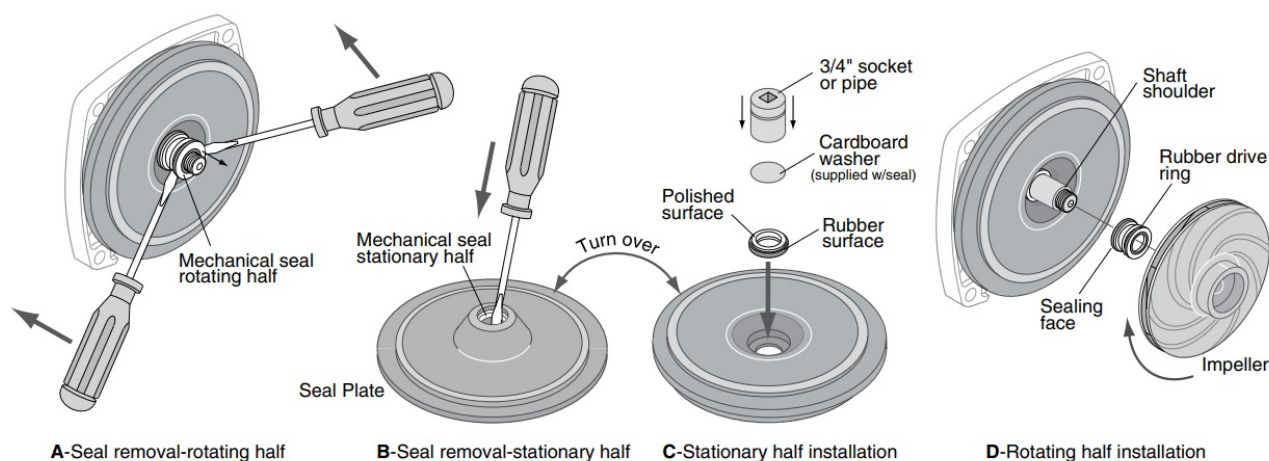
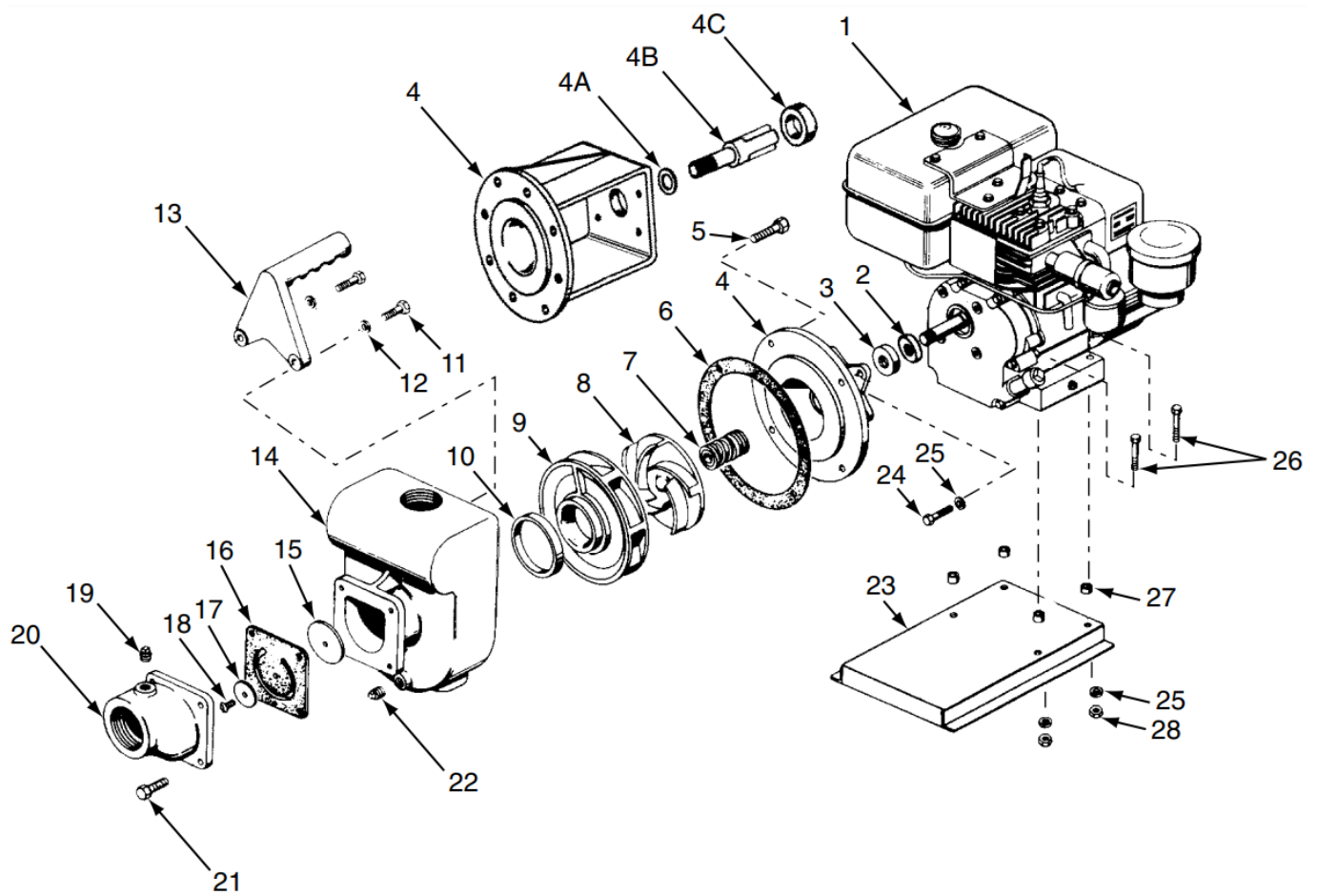


Figure 3

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EXPLODED VIEW

NOTICE: The appearance of your pump's engine may differ from the drawing.



Key No.	Part Description	No. Used	EEDD-29*EE DDH-29R3-1/2 HPPump w / or w/oEngine	EDDH-29R 3-1/2 HP Pump w/Engine	EDG-1052 H P Pump w/Engine	EDPH-29R 3-1/2 HP Pump w/Engine

	Gas Engine	1	U277-29BR		U277-10	U277-29R
1	Grease Seal – Shaft	1	—	U277-29R	U9-42	—
2	Water Slinger Adapter	1	C2-49	17351-0009	C69-2	17351-0009
3	Spacer	1	C43-37	C2-14B	C2-14F	C2-14B
4	Shaft Extension	1	C10-22	—	—	—
4A	Clamp Assembly	1	C111-1	—	—	—
4B	Capscrew – 3/8 – 16 x 3/4” Lg.	1	U30-72SS	—	—	—
4C	Gasket	2	C20-21	U30-72SS	U30-72SS	U30-72SS
5	Shaft Seal	1	U109-106SS	C20-21	C20-21	C20-21
6	Impeller Diffuser	1	C5-60	U109-93SS	U109-106SS	U109-106SS
7	Diffuser Ring	1	C1-51	C5-60	C5-60H	C5-60
8	Capscrew – 3/8 – 16 x 7/8” Lg.	1	C21-2	C1-51	C1-51	C1-51
9	Cap Screw 3/16-16x1”	1	U30-73SS	C21-2	C21-2	C21-2
10	Long Lock Washer 3/8”	2	—	U30-73SS	—	—
11	Handle	2	—	—	U30-74C	U30-74C
11	Pump Body	2	C54-29	—	U43-12C	U43-12C
12	1-1/2” Suction Flange Assembly	1	C76-52	C54-29	C54-9B	C54-9B
13	Valve Plate	1	—	C76-52F	C176-1D	C176-1
14	Gasket – Flange	1	—	—	C203-22	—
•15	Valve Washer	(1)	—	—	C61-5SS	—
16	Cap Screw – 1/4-20x1/2”	(1)	—	—	C20-15	—
17	Long Hex Nut – 1/4-20	(1)	—	—	C43-15SS	—
18	Pipe Plug – 1/4” NPT	(1)	—	—	U30-50SS	—
•19	Suction Flange	(1)	—	—	U36-36SS	—
20	Cap Screw – 5/16-18x3/4” Long	(1)	—	—	U78-57SST	—
21	Pipe Plug – 1/4” NPT	(1)	—	—	C3-22	—
22	Base	(4)	—	—	U30-60SS	U30-60SS
23		1	U78-57SS	U78-57CT	U78-57SST	U78-57SST
24	Capscrew – 5/16 – 18 x 7/8” Lg.	1	C104-9	C4-73	C104-9	C104-9
25	Lockwasher – 5/16”	4	U30-777C	U30-777C	U30-777C	U30-777C
26	Capscrew – 5/16 – 18 x 1-3/4”Lg.	8	U43-11C	U43-11C	U43-11C	U43-11C
27	Engine Pads	4	U30-66C	U30-65C	U30-665C	U30-665C
28	Nut – 5/16” – 18	4	C43-20	—	C43-20	C43-20
•	Pipe Plug – 3/4” NPT	4	U36-37C	U36-37C	U36-37C	U36-37C
		1	U78-60S	U78-60S	—	—

* Model EEDD-29 is identical to Model EEDDH-29R except that it does not include engine or engine hardware (Key Nos. 1, 23-28).
Not illustrated.

Limited Warranty

STA-RITE warrants to the original consumer purchaser (“Purchaser” or “You”) of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period shown below.

Product	Warranty Period
Water Systems Products — jet pumps, small centrifugal pumps, submersible pumps and related accessories	whichever occurs first: 12 months from date of original installation, or 18 months from date of manufacture
Pro-Source™ Composite Tanks	5 years from date of original installation
Pro-Source™ Steel Pressure Tanks	5 years from date of original installation
Pro-Source™ Epoxy-Lined Tanks	3 years from date of original installation
Sump/Sewage/Effluent Products	12 months from date of original installation, or 18 months from date of manufacture

Our warranty will not apply to any product that, in our sole judgement, has been subject to negligence, misapplication, improper installation, or improper maintenance. Without limiting the foregoing, operating a three phase motor with single phase power through a phase converter will void the warranty. Note also that three phase motors must be protected by three-leg, ambient compensated, extra-quick trip overload relays of the recommended size or the warranty is void.

Your only remedy, and STA-RITE's only duty, is that STA-RITE repair or replace defective products (at STA-RITE's choice). You must pay all labor and shipping charges associated with this warranty and must request warranty service through the installing dealer as soon as a problem is discovered. No request for service will be accepted if received after the Warranty Period has expired. This warranty is not transferable.


STA-RITE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER. THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING WARRANTIES SHALL NOT EXTEND BEYOND THE DURATION EXPRESSLY PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on the duration of an implied warranty, so the above limitations or exclusions may not apply to You. This warranty gives You specific legal rights and You may also have other rights which vary from state to state.

This Limited Warranty is effective June 1, 2011 and replaces all undated warranties and warranties dated before June 1, 2011.



Documents / Resources

	<p>PENTAIR ED Series Engine Driven Self Priming Centrifugal Pump [pdf] Owner's Manual ED Series Engine Driven Self Priming Centrifugal Pump, ED Series, Engine Driven Self Priming Centrifugal Pump, Self Priming Centrifugal Pump, Centrifugal Pump</p>
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References

-  [Sta-Rite | Brands | Pentair](#)
-  [Sta-Rite | Brands | Pentair](#)