

# OWNER'S MANUAL

## STA-RITE®

### “ED”, “EDD”, and “EEDD” SERIES ENGINE DRIVEN SELF-PRIMING CENTRIFUGAL PUMPS

MODELS  
EEDDH-29  
EEDD-29  
EDDH-29R  
EEDDH-29R  
EDPH-29R

#### LIMITED WARRANTY

Sta-Rite Industries warrants to the original consumer of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period from the date of original installation or manufacture as noted.

Product	Warranty Period
Water Systems Products – jet pumps, small centrifugal pumps, submersible pumps and related accessories	<i>whichever occurs first:</i> 1 year from date of original installation, or 2 years from date of manufacture
Hydro-Flow Filters	1 year from date of purchase
Signature 2000® Fibrewound 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	1 year from date of original installation, or 2 years from date of manufacture

Our warranty will not apply to any product that has been subject to negligence, misapplication, improper installation or maintenance. In the event a three phase submersible motor is operated with single phase power through a phase converter, or if three-leg ambient compensated, extra-quick trip overload relays of recommended size are not used, our warranty is void.

Buyer's only remedy and Sta-Rite Industries' only duty is to repair or replace defective products (at Sta-Rite Industries' choice). Buyer agrees to pay all labor and shipping charges associated with this warranty and to request warranty service through the installing dealer as soon as a problem is discovered. If warranty service is requested more than 30 days after the Warranty Period has ended, it will not be honored.

STA-RITE INDUSTRIES SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE WARRANTY PERIOD PROVIDED HEREIN.

Certain states do not permit the exclusion or limitation of incidental or consequential damages or the placing of limitations on the duration of an implied warranty, therefore, the limitations or exclusions herein may not apply. This warranty sets forth specific legal rights and obligations, however, additional rights may exist, which may vary from state to state.

Supersedes all previous publications.

Sta-Rite Industries, 293 Wright St., Delavan, WI 53115

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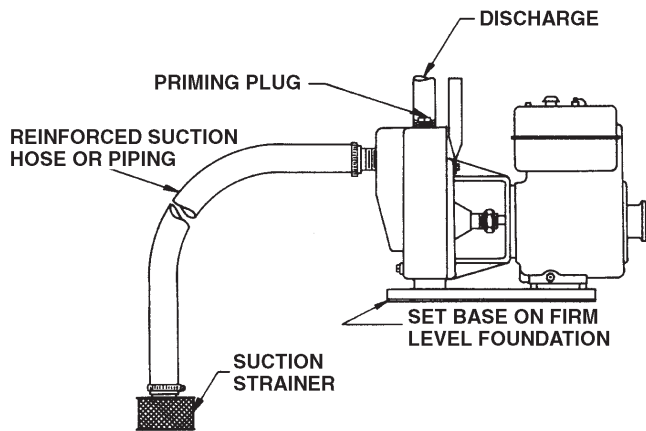


Figure 1

## 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.

NOTE: 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.**

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

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

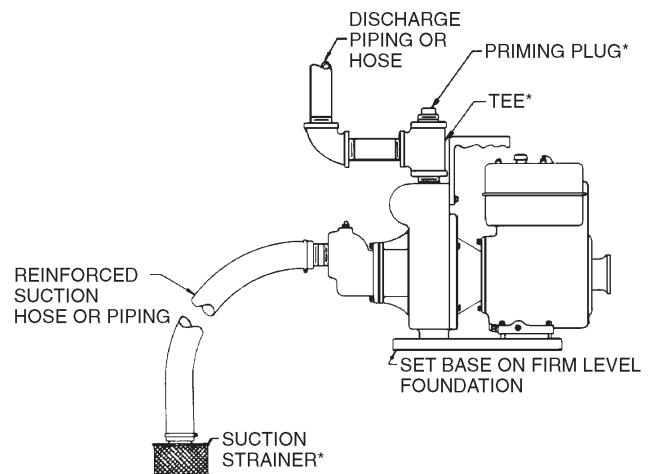


Figure 2

\* These parts are not furnished. Order Strainer Fittings Package 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 EDD-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 EDD-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 counter-clockwise.
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

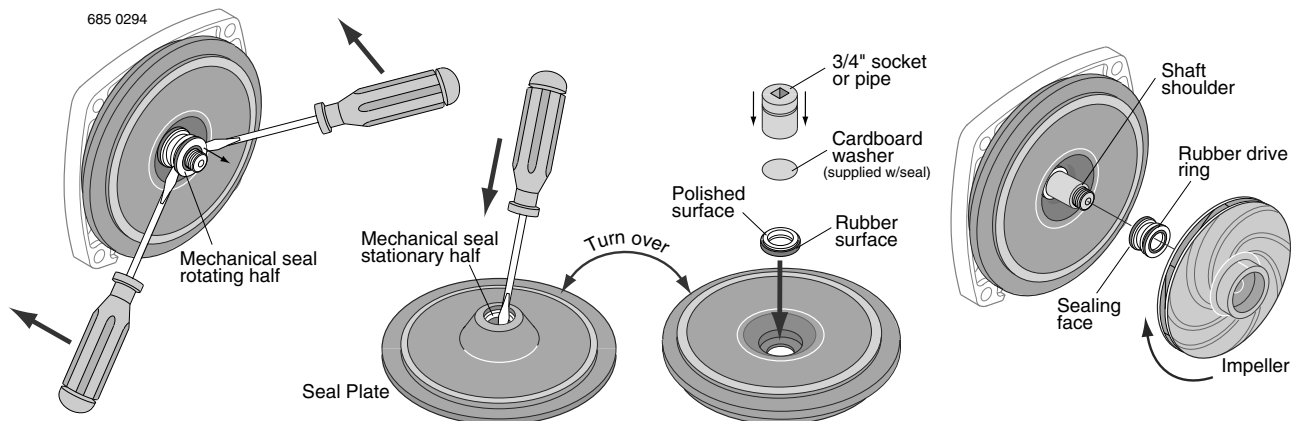


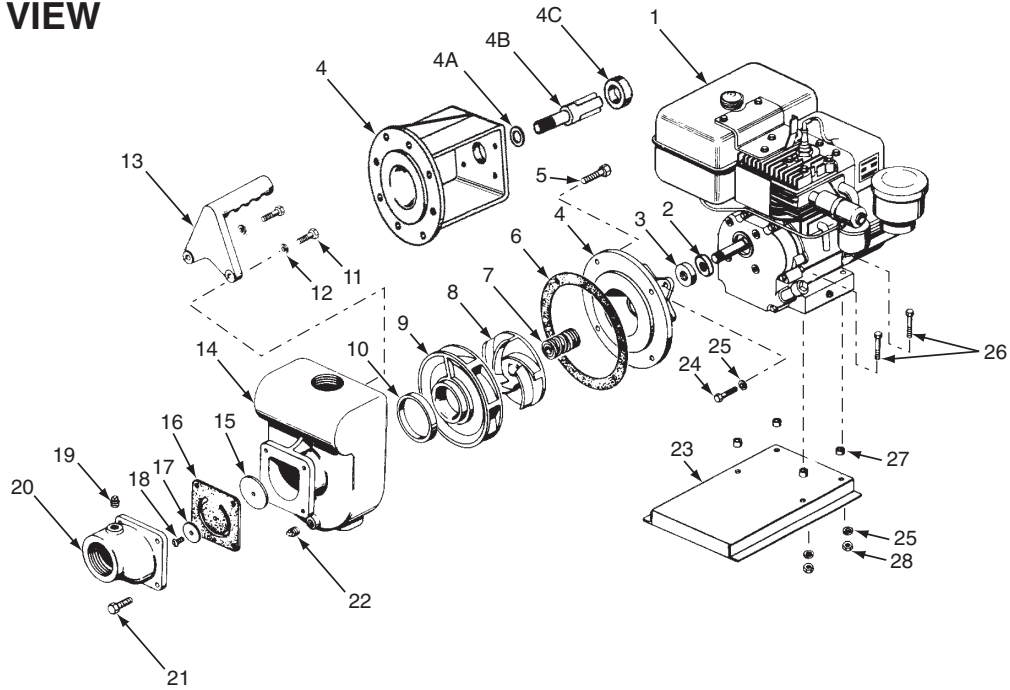
Figure 3 A-Seal removal-rotating half

B-Seal removal-stationary half

C-Stationary half installation

D-Rotating half installation

# EXPLODED VIEW



## REPAIR PARTS LIST

Key No.	Part Description	No. Used	EEDD-29* EEDDH-29R 3-1/2 HPPump w/ or w/oEngine	EDDH-29R 3-1/2 HP Pump w/Engine	EDG-105 2 HP Pump w/Engine	EDPH-29R 3-1/2 HP Pump w/Engine
1	Gas Engine	1	U277-24BR	U277-24R	U277-10	U277-24R
2	Grease Seal - Shaft	1	—	—	U9-42	—
3	Water Slinger	1	—	17351-0009	C69-2	17351-0009
4	Adapter	1	C2-49	C2-14B	C2-14F	C2-14B
4A	Spacer	1	C43-37	—	—	—
4B	Shaft Extension	1	C10-22	—	—	—
4C	Clamp Assembly	1	C111-1	—	—	—
5	Capscrew - 3/8 - 16 x 3/4" Lg.	2	U30-72SS	U30-72SS	U30-72SS	U30-72SS
6	Gasket	1	C20-21	C20-21	C20-21	C20-21
7	Shaft Seal	1	U109-106SS	U109-93SS	U109-106SS	U109-106SS
8	Impeller	1	C5-60	C5-60	C5-60H	C5-60
9	Diffuser	1	C1-51	C1-51	C1-51	C1-51
10	Diffuser Ring	1	C21-2	C21-2	C21-2	C21-2
11	Capscrew - 3/8 - 16 x 7/8" Lg.	2	U30-73SS	U30-73SS	—	—
11	Cap Screw 3/16-16x1" Long	2	—	—	U30-74C	U30-74C
12	Lock Washer 3/8"	2	—	—	U43-12C	U43-12C
13	Handle	1	C54-29	C54-29	C54-9B	C54-9B
14	Pump Body	1	C76-52	C76-52F	C176-1D	C176-1
15	1-1/2" Suction Flange Assembly	1	—	—	C203-22	—
•	Valve Plate	(1)	—	—	C61-5SS	—
16	Gasket - Flange	(1)	—	—	C20-15	—
17	Valve Washer	(1)	—	—	C43-15SS	—
18	Cap Screw - 1/4-20x1/2" Long	(1)	—	—	U30-50SS	—
•	Hex Nut - 1/4-20	(1)	—	—	U36-36SS	—
19	Pipe Plug - 1/4" NPT	(1)	—	—	U78-57SST	—
20	Suction Flange	(1)	—	—	C3-22	—
21	Cap Screw - 5/16-18x3/4" Long	(4)	—	—	U30-60SS	U30-60SS
22	Pipe Plug - 1/4" NPT	1	U78-57SS	U78-57CT	U78-57SST	U78-57SST
23	Base	1	C104-9	C4-73	C104-9	C104-9
24	Capscrew - 5/16 - 18 x 7/8" Lg.	4	U30-777C	U30-777C	U30-777C	U30-777C
25	Lockwasher - 5/16"	8	U43-11C	U43-11C	U43-11C	U43-11C
26	Capscrew - 5/16 - 18 x 1-3/4" Lg.	4	U30-66C	U30-65C	U30-665C	U30-665C
27	Engine Pads	4	C43-20	—	C43-20	C43-20
28	Nut - 5/16" - 18	4	U36-37C	U36-37C	U36-37C	U36-37C
•	Pipe Plug - 3/4" NPT	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.