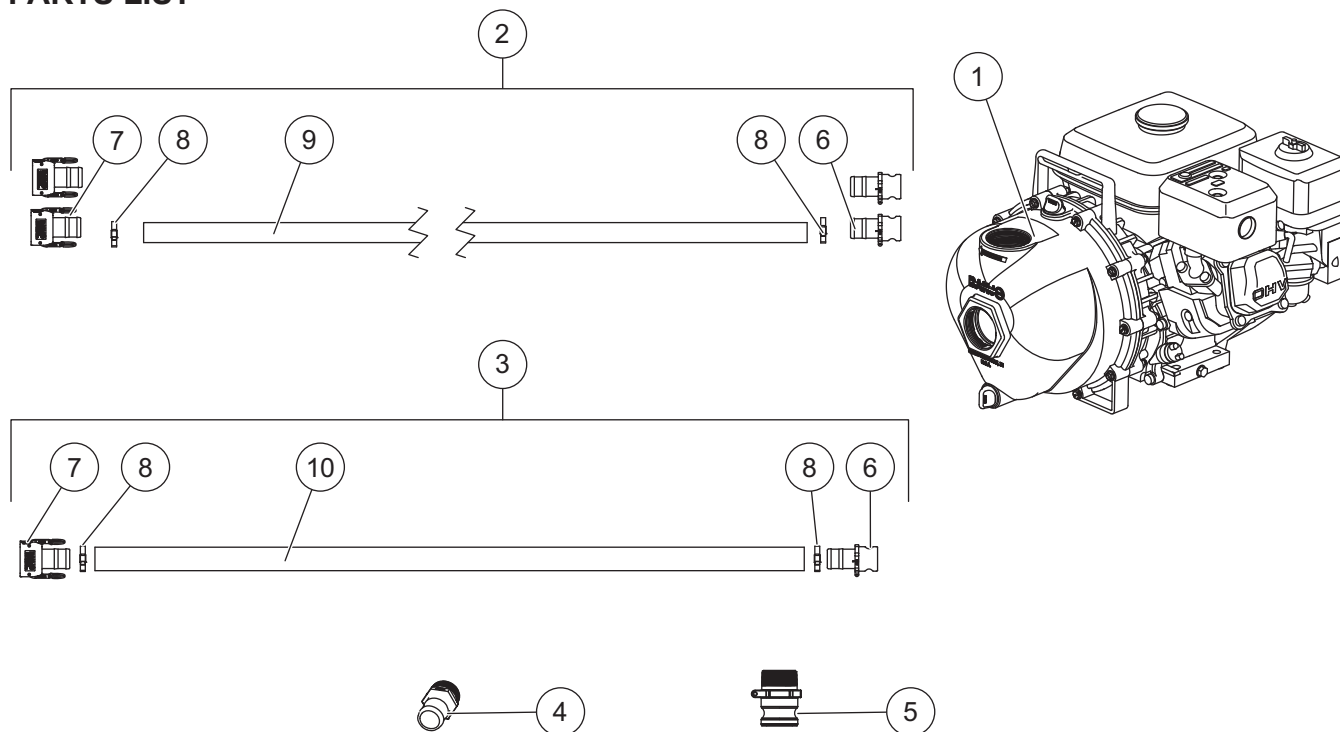




# Gas Engine Transfer Pump

## Brine Pro™ 2000 Brine Maker

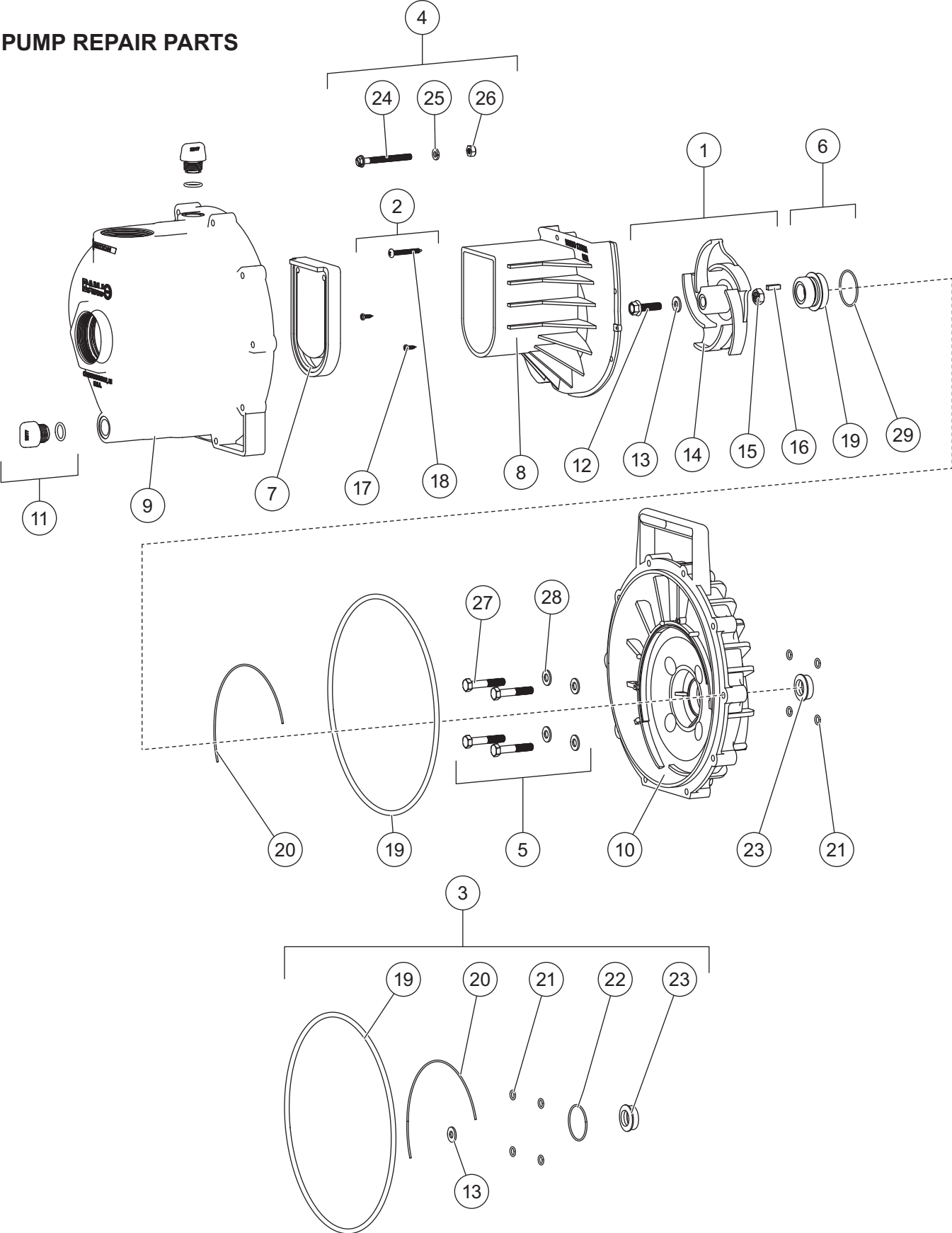
### PARTS LIST



TPS-200 Gas Engine Transfer Pump							
Item	Part	Qty	Description	Item	Part	Qty	Description
1	10781	1	Transfer Pump, Hypro 2" w/Cage	4	F51731	1	Hose Barb, 2" NPT x 2"
2	10937	1	Extension Hose Kit	5	F51766	1	2" Male Adapter – 2" Male NPT
3	1118NN	1	Suction Hose, 6'				
<b>Item 2</b>				<b>10937 Extension Hose Kit</b>			
6		2	2" Male Adapter – 2" Hose Shank	8		2	Band Clamp, 1-3/4 – 2-3/4
7		2	2" Female Coupler – 2" Hose Shank	9		1	2" x 25' Hose, EPDM
<b>Item 3</b>				<b>1118NN Suction Hose 6'</b>			
6		1	2" Male Adapter – 2" Hose Shank	8		2	Band Clamp, 1-3/4 – 2-3/4
7		1	2" Female Coupler – 2" Hose Shank	10		1	2" x 72" Suction Hose
SS = Stainless Steel							

TPS-200

PUMP REPAIR PARTS



Pump Repair Parts							
Item	Part	Qty	Description	Item	Part	Qty	Description
1	11708	1	Impeller Kit	7	10862	1	Check Valve, Pump
2	10856	1	Volute Hardware Kit	8	10864	1	Volute
3	11709	1	Seal Kit	9	10865	1	Body Assembly
4	10858	1	Body Hardware Kit	10	11711	1	Rear Bracket
5	11710	1	Pump Mounting Hardware Kit	11	76149	2	Threaded Plug & O-Ring
6	11712	1	Shaft Seal Assembly				
<b>Item 1</b>				<b>11708 Impeller Kit</b>			
12		1	5/16-24 Hex Flange Screw	15		1	7/16-14 Hex Nut
13		1	Impeller Bolt Gasket	16		1	3/16 Impeller Key
14		1	Pump Impeller, Poly				
<b>Item 2</b>				<b>10856 Volute Hardware Kit</b>			
17		2	#6 x 1/2 Phillips Screw	18		1	#10 x 1-1/2 Phillips Screw
<b>Item 3</b>				<b>11709 Seal Kit</b>			
13		1	Impeller Bolt Gasket	21		1	Rear Bracket O-Ring
19		1	Body O-Ring	22		1	Seal O-Ring
20		1	O-Ring Segment	23		1	Slinger
<b>Item 4</b>				<b>10858 Body Hardware Kit</b>			
24		10	Body Screw SS	26		10	Body Nut SS
25		10	Lock Washer SS				
<b>Item 5</b>				<b>11710 Pump Mounting Hardware Kit</b>			
27		4	Bracket Screw SS	28		4	Screw Head O-Ring
<b>Item 6</b>				<b>11712 Shaft Seal Assembly</b>			
19		1	Shaft Seal	29		1	Seal O-Ring
SS = Stainless Steel							

# TPS-200

## INSTALLATION INSTRUCTIONS

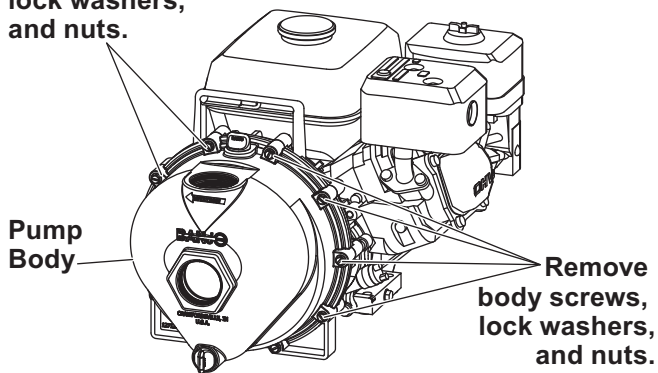
**⚠ CAUTION**  
Read this document before installing the Gas Engine Transfer Pump.

**⚠ CAUTION**  
Use standard methods and practices when installing equipment, including proper personal protective safety equipment.

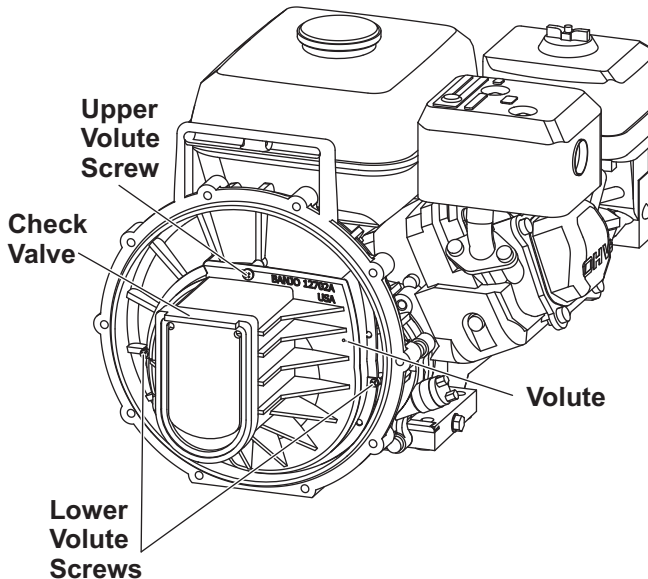
## Disassembly Instructions

1. Remove the 10 body screws, lock washers, and nuts from the pump assembly. Remove the body from the pump assembly. Save all for later use.

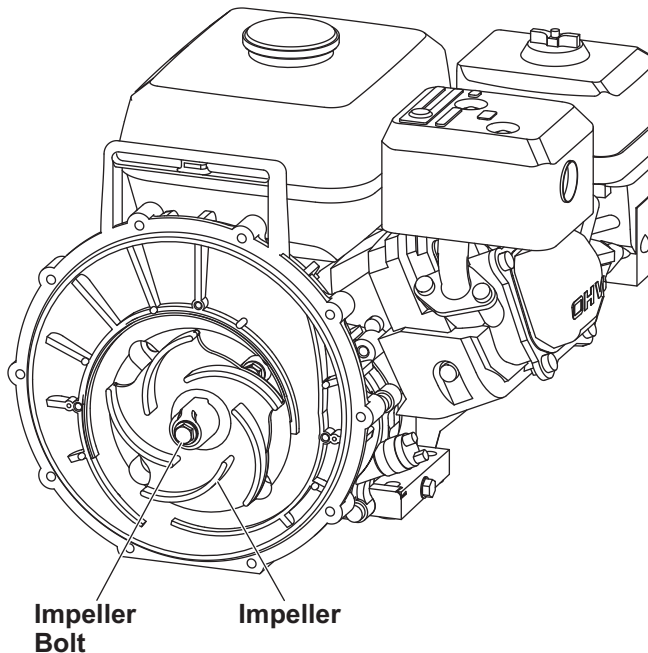
Remove the body screws, lock washers, and nuts.



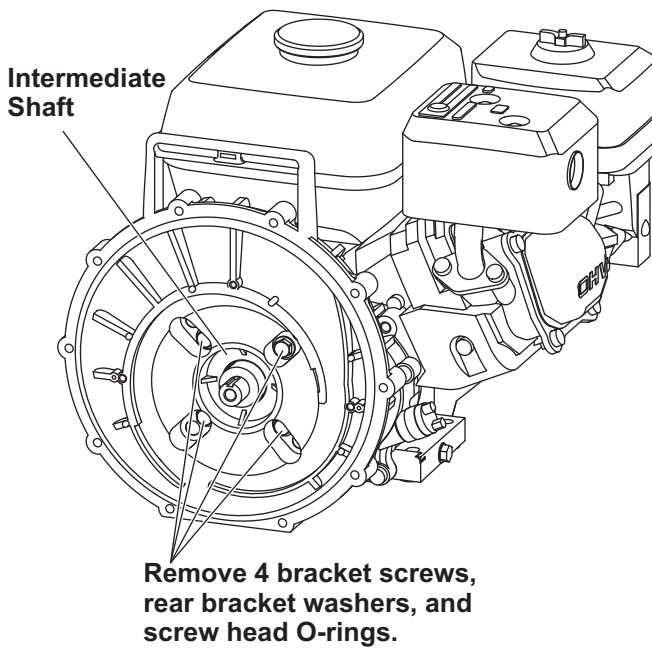
2. Remove the check valve from the volute. Remove the one upper and two lower volute screws, and remove the volute. Save all for later use.



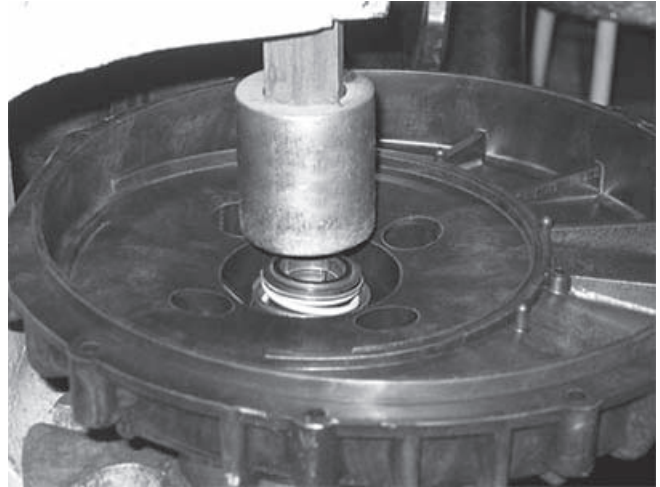
3. Remove the impeller bolt from the impeller and discard. Remove the impeller and keyshaft carefully, using a pry bar if necessary. Save for later use.



4. Insert the supplied 7/16" cap screw into the impeller snout. As the cap screw is tightened, the impeller will be pried off the shaft of the drive unit. Remove the 7/16" cap screw once the impeller has been removed from the drive unit.
5. If the pump impeller is to be reused, the ceramic seal half (Item #6 on page 3) should be removed from the impeller at this time. The impeller key (Item #16 on page 3) that is located behind the ceramic seal half should also be replaced at this time.
6. Remove the four bracket screws, rear bracket washers, and screw head O-rings from the rear bracket using a 1/2" socket.

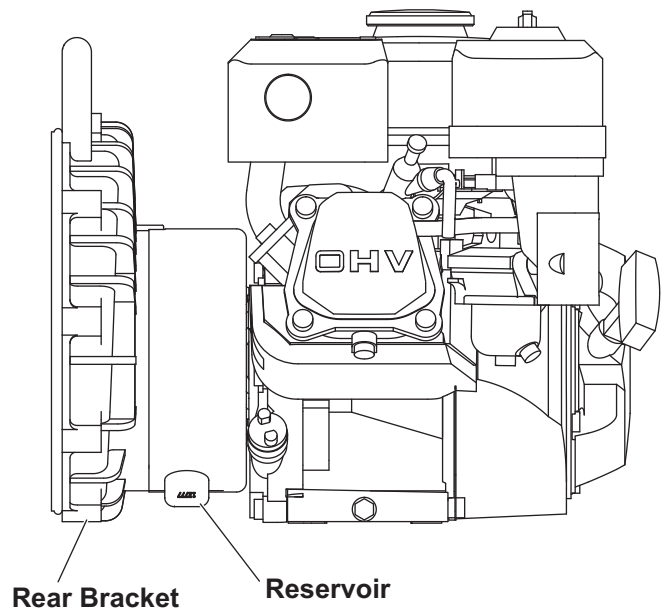


7. Using a round object such as a wrench socket, tap gently with a hammer to remove the carbon seal half from the rear bracket. The seal is very fragile; take care not to crack the seal if it will be reused.



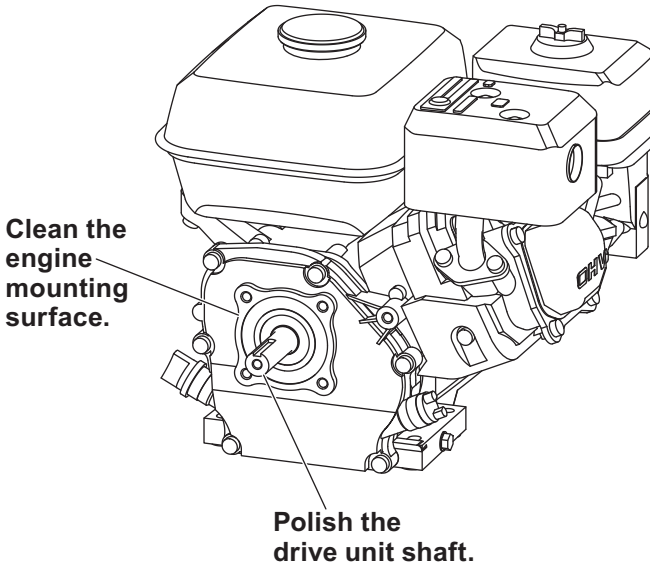
8. While the pump is completely disassembled, clean all of the reusable parts thoroughly, removing any traces of old gasket material and trapped or dried liquids that were run through the pump.

With the four bracket screws removed, the rear bracket and reservoir can now be removed from the drive unit.

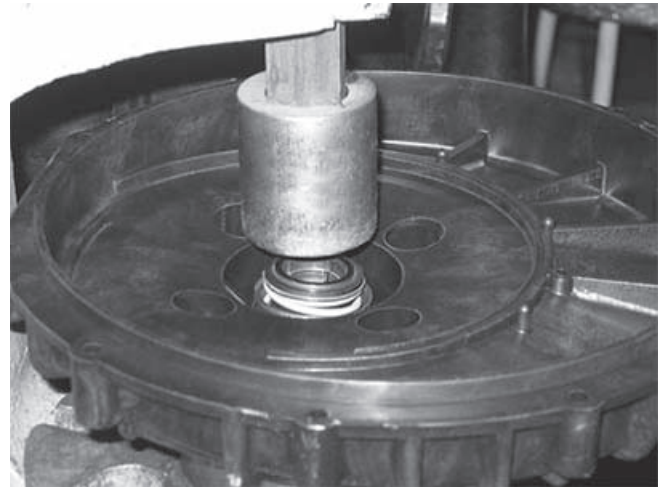


TPS-200

- Polish the drive unit shaft to remove any corrosion that may have formed. Clean the engine mounting surface of any debris, and polish if necessary.

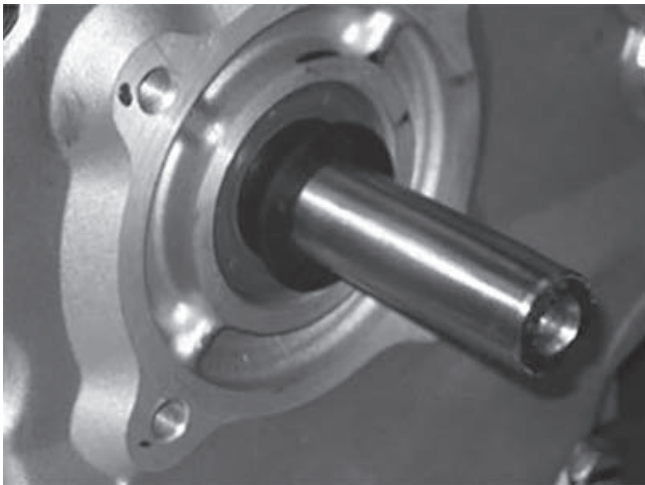


- Place the seal O-ring behind the lip of the spring half of the seal assembly. Install the seal assembly half into the rear bracket using a tool such as a 1-1/2" pipe nipple or arbor press to give even pressure on the metal flange of the seal housing during installation. Gently press the seal into position until it bottoms.

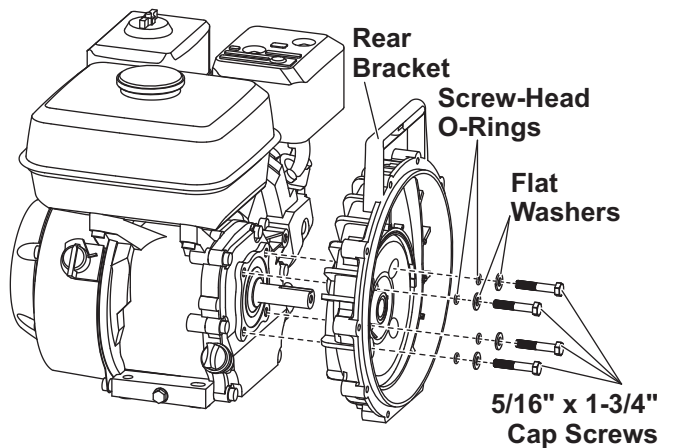


**Assembly Instructions**

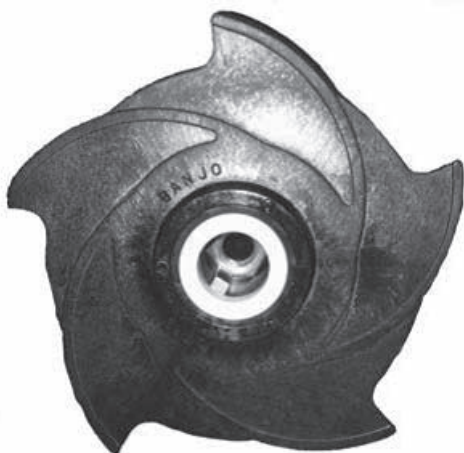
- Install the pump slinger on the drive unit shaft. The slinger should be slid all the way back on the shaft of the drive unit so that the slinger covers the step on the drive unit shaft as shown.



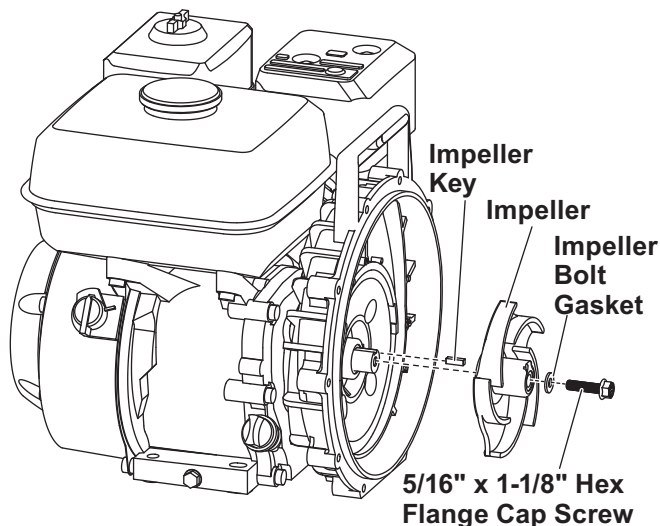
- Place a flat washer and screw head O-ring on each of the four 5/16" x 1-3/4" cap screws. Install the rear bracket onto the engine using the bracket screw assemblies from the previous step. The handle of the rear bracket should be to the top of the drive unit. Tighten securely.



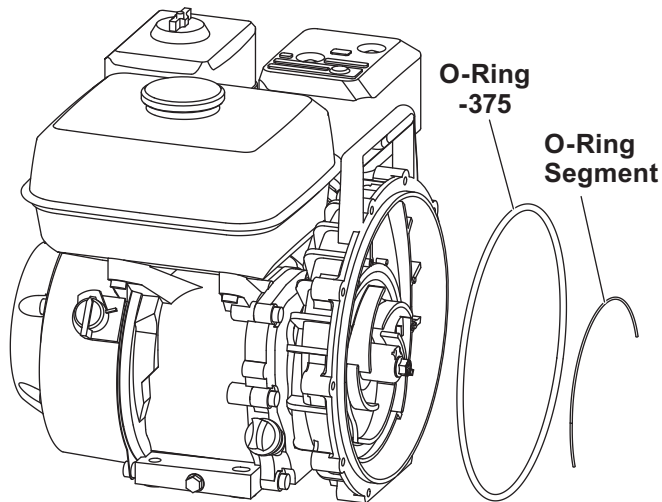
4. Install the ceramic seal half into the impeller rubber first, with the ceramic surface facing out. The seal half is pressed into the hub of the impeller by using an arbor press or similar tool that will provide a uniform press fit. The outside diameter of the rubber boot may be sparingly coated with silicone grease to ease installation. Be absolutely sure that the ceramic seal half is bottomed out and installed squarely. If the installation is not square, seal wobble will occur, leading to premature seal failure. Care must be used when handling the seal to not scratch the seal surface.



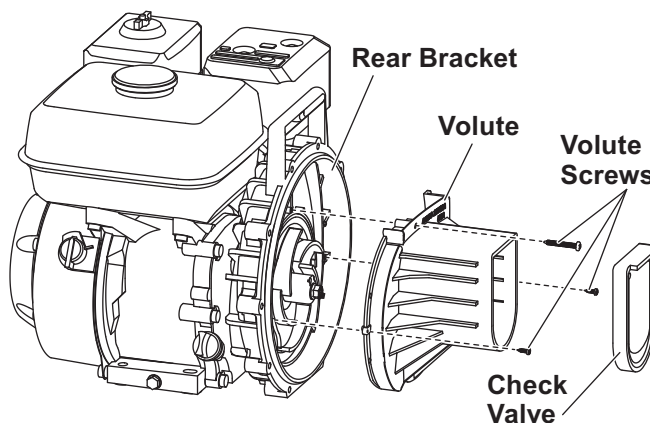
5. Install the impeller key shaft and impeller onto the engine drive shaft. Secure the impeller to the drive unit shaft with the impeller bolt gasket and the 5/16" x 1-1/8" hex flange cap screw. Tighten the cap screw until snug.



6. Install the O-ring segment and O-ring -375. Lightly coat with silicon grease to secure.

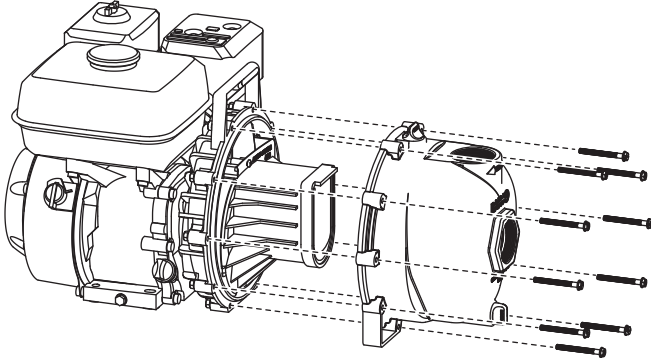


7. Reinstall the volute onto the rear bracket using the three volute screws. Reinstall the check valve onto the snout of the volute. The drive unit should be turned over a few times to check for clearance between the impeller and volute. A small amount of drag between the impeller and volute will cause no problem; however, if the drive unit will not turn over because of the lack of clearance, a shim may have to be used.



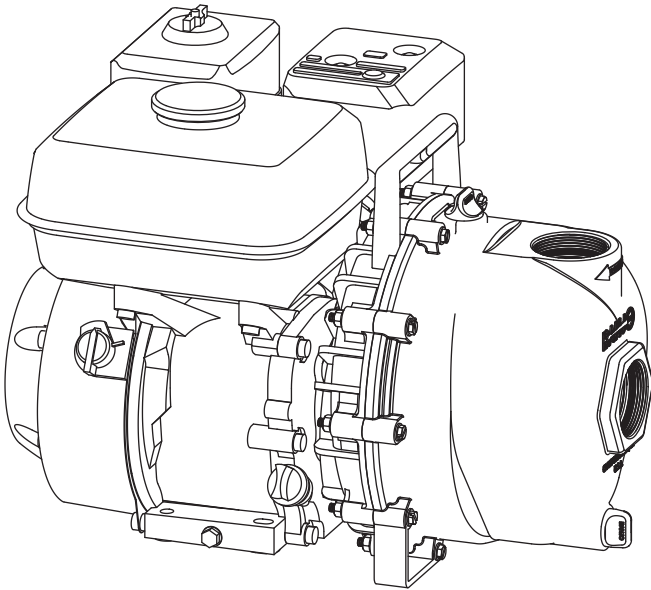
TPS-200

- Reinstall the pump body with the outlet flange facing up. Reinstall the 10 body screws, 10 lock washers, and 10 nuts to secure the pump body to the rear bracket. Tighten the cap screws securely all the way around.



Reinstall the 10 body screws and secure with 10 lock washers and 10 nuts.

- The pump is now ready for operation.



OPERATING INSTRUCTIONS

**⚠ WARNING**

Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on the equipment. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.

**⚠ WARNING**

Do not use the pump with flammable or other hazardous liquids. Failure to follow this warning may result in explosion, bodily injury, or death. Read and follow the safety precautions in the engine owner's manual.

**⚠ CAUTION**

Read the engine manufacturer's manual before operating the Gas Engine Transfer Pump.

**NOTE:** The gas engine is shipped without oil in it. Do not operate the gas engine until it has been filled with oil. Consult the engine owner's manual for oil specifications and maintenance procedures.

**NOTE:** To avoid premature pump seal failure, NEVER run the pump dry. Prime and fill the pump with the fluid being pumped before starting the unit.

- Ensure that hose and pipe connections are air tight. An air leak will reduce pump capacity and may prevent priming.
- Place the pump and engine on a level foundation, positioned as close to the liquid tank as possible.
- Keep the suction line short and position it with few bends.
- Install a pump strainer on the suction line when pumping dirty water or liquids that contain solids.



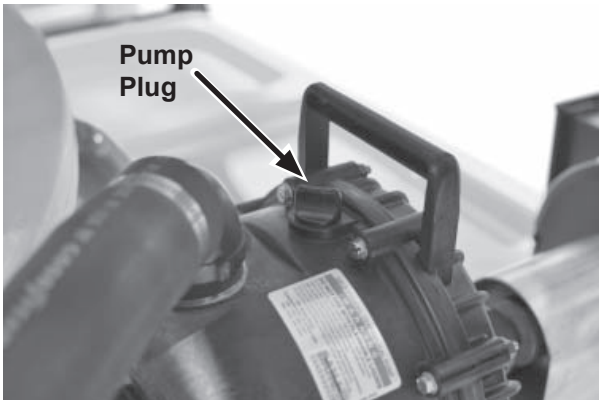
## Pump Priming

**NOTE: Running the pump with no liquid will cause damage. Make sure the pump is primed before operation.**

Make sure the circulation pump is appropriately primed every time the unit is started. If the pump does not automatically prime within 20 seconds of the circulation pump starting (no visible churn in the liquid being pumped), stop the unit and manually prime the pump following the instructions below.

### Manual Pump Priming

1. Remove the pump plug and fill the chamber with at least 64 oz of water or brine.



2. Replace the plug and jog the pump for a few seconds to remove any air in the circulation system.
3. Repeat Steps 1 and 2 until the pump is primed. The liquid in the mixing tank will begin to noticeably churn once the pump is primed.

## Maintenance and Storage

- There is no need to lubricate the pump. The seal is lubricated and cooled by the fluid that is pumped.
- Drain the pump body after use if there is a danger of freezing.
- If the engine will be unused for long periods of time, drain the pump, leave the fill and drain plugs out of the pump, and store the unit in a heated, dry building.
- See the engine manual for further instructions.

Copyright © 2017 Douglas Dynamics, LLC. All rights reserved. This material may not be reproduced or copied, in whole or in part, in any printed, mechanical, electronic, film, or other distribution and storage media, without the written consent of TrynEx International, LLC. Authorization to photocopy items for internal or personal use by TrynEx International outlets or snowplow owner is granted.

TrynEx International reserves the right under its product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications used. TrynEx International or the pump manufacturer may require or recommend optional equipment for brine making. TrynEx International offers a limited warranty for all brine makers and accessories. See separately printed page for this important information. The following are registered (®) or unregistered (™) trademarks of Douglas Dynamics, LLC: Brine Pro™, SnowEx®.

**Printed in U.S.A.**

---