



Booster Pump PB4-60 Replacement Kits

WARNING

FOR YOUR SAFETY - This product must be installed and serviced by a contractor who is licensed and qualified in pool equipment by the jurisdiction in which the product will be installed where such state or local requirements exist. The maintainer must be a professional with sufficient experience in pool equipment installation and maintenance so that all of the instructions in this manual can be followed exactly. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation will void the warranty.

Improper installation and/or operation can create unwanted electrical hazard which can cause serious injury, property damage, or death.

These instructions are to be used with the following Polaris Replacement Kits:

P61 -- 60 Hz, 3/4 HP Motor
R0536600 -- PB4-60 Backplate O-Ring Replacement Kit
R0445500 -- PB4-60 Ceramic Seal and Spring Replacement Kit
R0536400 -- PB4-60 Impeller Replacement Kit
R0536300 -- PB4-60 Volute Replacement Kit
R0536900 -- PB4-60 Bolts, Washers, and Nuts Replacement Kit
R0536700 -- PB4-60 Backplate Replacement Kit
R0537100 -- PB4-60 Booster Pump Base Replacement Kit
R0536800 -- PB4-60 Motor Bolts and Washers Replacement Kit
R0617100 -- PB4-60 Softube Quick Connect Install Kit
R0621000 -- PB4-60 Softube Quick Connect Pump Fitting 4 Pack
P19 -- PB4-60 Reinforced Hose for Pump 6' Length
R0536700 -- PB4-60 Backplate

WARNING

If the information in these instructions is not followed exactly, an electrical fire or shock hazard may result causing property damage, personal injury or death.

This document gives instructions for replacing the Volute, Impeller, Backplate, Base, Ceramic Seal, Hose, O-Rings and Hardware on the PB4-60 Booster Pump. The instructions must be followed exactly. These instructions were written with safety as the priority. Not following this procedure or taking shortcuts may result in personal injury. Read through the instructions completely before starting the procedure.

Before starting the procedure, use the parts list at the back of these instructions to identify the parts that are in your kit. If any parts are missing from the kit please call your local Zodiac® distributor for assistance. For technical assistance please contact our Technical Support Department at 800.822.7933.

1. Replace the Volute, Backplate O-Ring and Drain Plug

⚠ WARNING

While servicing the pump, switch off the circuit breakers at the power source. Severe personal injury or death may occur if the pump starts while your hand is inside the pump.

1. Turn off the pump. Switch off the circuit breaker to the pump motor. If you are not replacing the motor, do not disconnect the electrical wiring.

NOTE If you are replacing the motor, Zodiac Pool Systems, Inc. strongly recommends that a qualified service technician or electrician properly disconnect the electrical wiring at the pump motor.

2. Turn off any valves to prevent pool water from reaching the pump. Drain the water from the pump by removing the drain plug.
3. Using a 1/2" wrench, loosen the six (6) bolts connecting the pump volute to the motor backplate. Remove the bolts and washers and either set aside to use in reassembly or use new ones from the kit. See Figure 1.
4. Pull the volute from the backplate.

NOTE At this point you have access to the inlet and outlet of the impeller to remove any debris.

5. Remove the backplate o-ring and replace it with the new o-ring making sure it is seated properly.
6. Install the new volute using six (6) bolts with six (6) washers and six (6) nuts. Torque the bolts to 7±0.3 ft-lbs

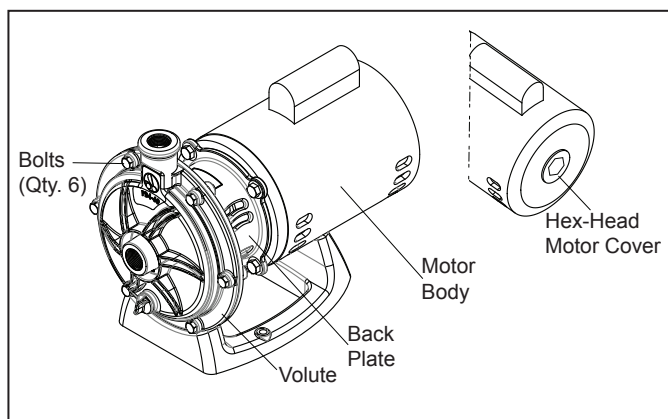


Figure 1. Remove the Volute

7. If required, install the new drain plug. Torque to 8 to 10 in-lbs.
8. Turn on the filter pump and turn on the circuit breaker to booster pump motor.

9. Once all the air has left the filter, close the air release valve. (Follow the manufacturer's instructions for your filter.)
10. Turn on the booster pump and check the system for proper normal operation.

2. Replace the Impeller and Mechanical Ceramic/Spring Seal

1. To access the impeller and mechanical seal, follow steps 1 through 4 of Section 1.
2. Remove the motor shaft cover on the back of the motor by twisting the hex-head motor cover with an adjustable wrench. See Figure 1. The motor shaft will be exposed.
3. The impeller is connected to the motor shaft. Hold the motor shaft with a 1/2" wrench while unscrewing the impeller from the motor shaft with your hand.

NOTE The impeller is a right-handed thread, therefore turn the impeller counter-clockwise to unscrew.

4. Inspect the impeller for signs of rubbing and/or damage and replace if necessary.
5. If you are replacing the mechanical seal do steps 6 through 10, if not, skip to step 11.

⚠ CAUTION

Do not damage the ceramic or carbon surfaces of the seals. If surfaces are damaged, leaks will occur.

6. Remove the carbon face seal half from the impeller. Refer to Figure 2 and 3. This is a spring-loaded seal. Grasp the portion of the seal closest to the impeller body and pull the seal off using a twisting motion.

NOTE This is a two (2) part replacement process. **The mechanical seal must be replaced as a set.**

7. Remove the four (4) 9/16" screws that secure the backplate to the motor and remove the motor.
8. Place the backplate o-ring side down and force the ceramic seal out using a screwdriver or drift pin.

⚠ CAUTION

VERY IMPORTANT! Do not touch the face of the seal. The oil from your hands will result in damage to the seal.

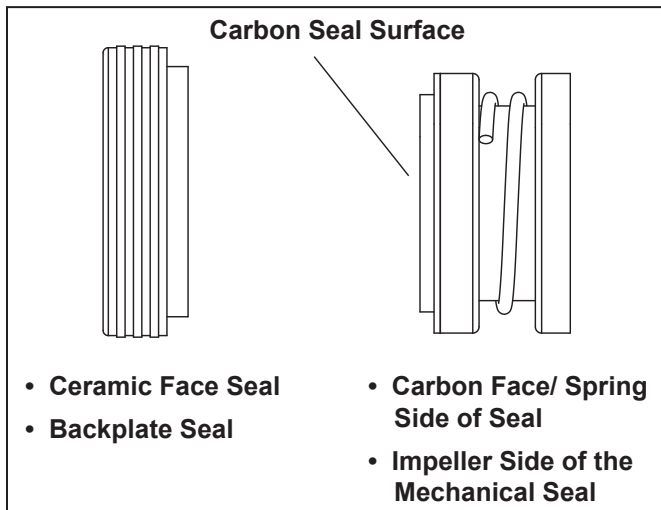


Figure 2. Replace the Mechanical Seal

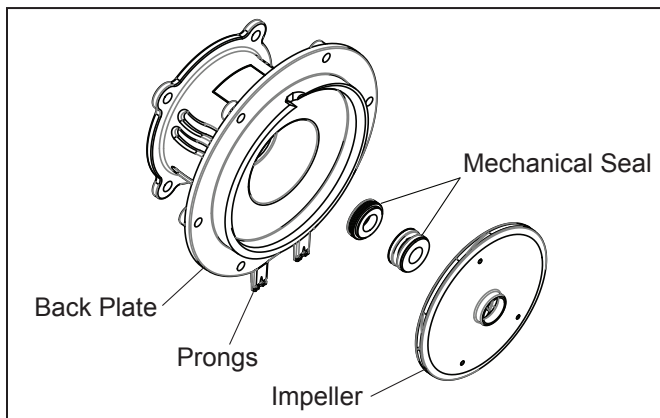


Figure 3. Backplate, Impeller and Mechanical Seal Location

9. Turn the backplate o-ring side up and insert the new ceramic seal side into the backplate. Use great care to press the seal in squarely with your fingers. The ceramic is easily damaged and must be pressed in using only your fingers or soft tools. Do not use any lubricant other than water and soap solution.

⚠ CAUTION

VERY IMPORTANT! Grasp the lower portion of the seal (opposite the carbon face) when installing the seal, or it will be damaged.

10. Press the new carbon face seal half (see Figure 2) on the impeller using a twisting motion. Make sure the carbon surface is facing toward the ceramic ring in the backplate.

NOTE To assist assembly, **only** use water and soap solution as a lubricant. Any other lubricant will destroy the seal after a short period of time.

NOTE Exercise great care to keep the seal and mating parts clean.

11. Install and tighten the screws lightly in a crossing “X” pattern using a 9/16” wrench then tighten the four (4) to draw the backplate to the motor body in an even manner and torque in the same order to 14 ± 0.3 ft-lbs.
12. While holding the motor shaft with a ½” wrench, thread the impeller onto the motor shaft. Hand-tighten the impeller until it is secure. **Do not overtighten.**
13. Replace the hex-head cover over the motor shaft by inserting the cover tabs into the slots and rotating the cover 90° clockwise.
14. Remove the backplate o-ring and replace it with the new o-ring making sure it is seated properly.
15. Install the volute using six (6) bolts with six (6) washers and six (6) nuts. Torque the bolts to 7 ± 0.3 ft-lbs.
16. If required, install the new drain plug. Torque to 8 to 10 in-lbs.
17. Turn on the filter pump and turn on the circuit breaker to booster pump motor.
18. Once all the air has left the filter, close the air release valve.
19. Turn on the booster pump and check the system for normal operation.

3. Replace the Motor

⚠ WARNING

To ensure continued safety and reliable operation, Zodiac Pool Systems, Inc. requires that you replace the motor with a motor that has the identical HP rating and service factor (Zodiac Pool Systems, Inc. approved only). Using an improper motor can create a safety hazard which could cause serious injury.

⚠ WARNING

To avoid the risk of property damage, severe personal injury, or death, turn off the pump and switch off the circuit breaker to the pump motor before beginning this procedure.

1. Have a qualified service technician or electrician properly disconnect the electrical wiring at the pump motor.
2. To disassemble the pump volute from the motor, follow steps 1 through 4 in Section 2.

- Remove the four (4) 9/16" screws and remove the motor.

NOTE Before removing the backplate, note the alignment of the backplate to the motor. Label is facing upward.

- If installing a new motor, remove the protective plastic cap from the motor shaft. Place the motor on the backplate. The label should be facing upward. The starting capacitor on the motor should be at the 12 o'clock position.
- Replace the four (4) bolts and washers holding the backplate to the motor.
- To reassemble the pump after replacing the motor, follow steps 10 through 16 of Section 2.
- Have a qualified service technician or electrician properly connect the electrical wiring at the pump motor.

NOTE Zodiac Pool Systems, Inc. recommends that the mechanical seals be replaced at the same time the motor is replaced. See Section 2, for the mechanical seal replacement instructions.

4. Replace the Pump Base

- Remove the pump base by pressing the release tabs on the base.
- Install the new base by placing the backplate prongs into the base slots to secure.

5. Install Quick Connect Fittings

- Mount the pump using two (2) concrete expansion anchors to ensure stability.
- Apply four (4) to six (6) wraps of Teflon® tape to the tapered thread of the connector barb. See Figure 4 (a).

CAUTION

Pipe dope should NEVER be used on barb threads. Pipe dope will severely weaken the plastic, causing leakage and may cause the plastic to fracture. DO NOT OVERTIGHTEN.

- Thread and tighten the tapered thread of the connector barb into the pump port on the pump body. See Figure 4 (b).
- Trim reinforced hose to required length. Make sure cut is clean and square. Avoid unnecessary loops or bends in the hose.

- Slide connector nut onto the trimmed end of the hose with threaded end toward the cut end of the hose. See Figure 4 (c).
- Apply water to connector barb to help hose slide over barbs. Push trimmed edge of hose fully onto the connector barb. See Figure 4 (d).
- Slide/Rotate the connector nut to the barb to engage threads. Tighten the connector until threads are no longer visible (gap about 1/8" or just less than the width of 2 dimes), or until it touches the barb face. See Figure 5.

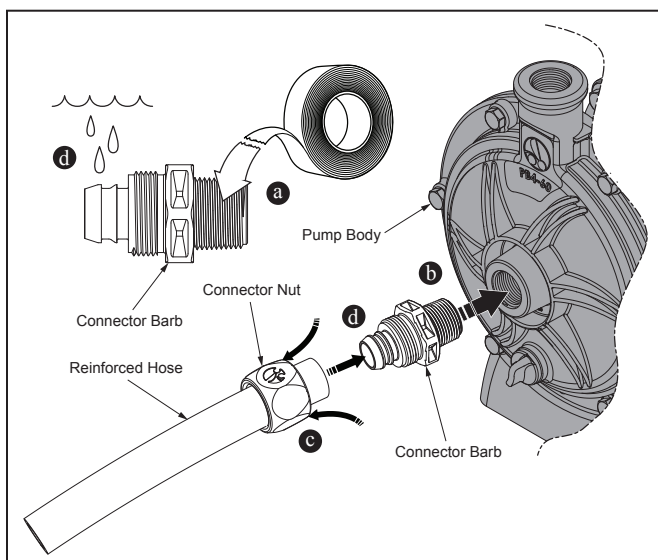


Figure 4. Prep and install Quick Connect barb and connector nut

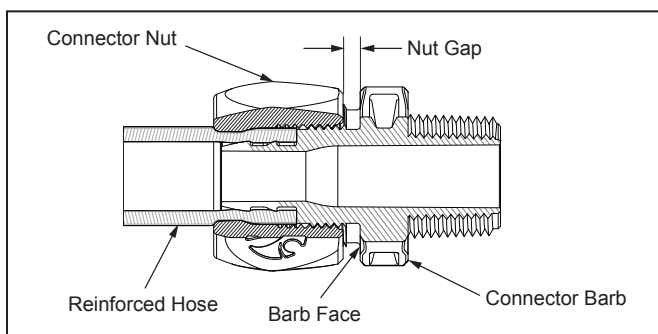


Figure 5. Tighten Connector Nut to Secure Hose

6. Replacement Parts List

To order or purchase parts for Polaris pumps, contact your nearest Zodiac dealer. If they cannot supply you with what you need, contact Zodiac® technical support at 800.822.7933 or www.zodiacpoolsystems.com.

Key No.	Description	Qty	Order Part No.	Comments
1	Motor, 3/4 HP, Threaded Shaft, 60 Hz	1	P61	
2	O-Ring, Backplate, PB4-60	1	R0536600	
3	Seal, Ceramic and Spring	1	R0445500	
4	Impeller, PB4-60	1	R0536400	
5	Volute, PB4-60 (Includes Drain Plug with O-Ring)	1	R0536300	
6	Bolts with Washers and Nuts	6	R0536900	
7	Drain Plug with O-Ring, Common	1	R0537000	
8	Base, Booster, PB4-60	1	R0537100	
9	Bolts and Washers, Stainless, Motor, PB4-60	4	R0536800	
10	Quick Connect Install Kit	1	R0617100	Kit includes 1 ea 6' length of reinforced hose and 4 ea Quick Connect fittings.
11	Quick Connect Fittings	4	R0621000	Comes with 4ea Quick Connect Fittings and Installation Instructions.
12	Flexible Reinforced Pump Hose	1	P19	6' Length
13	Backplate BP4-60	1	R0536700	

7. Polaris PB4-60 Booster Pump Exploded View

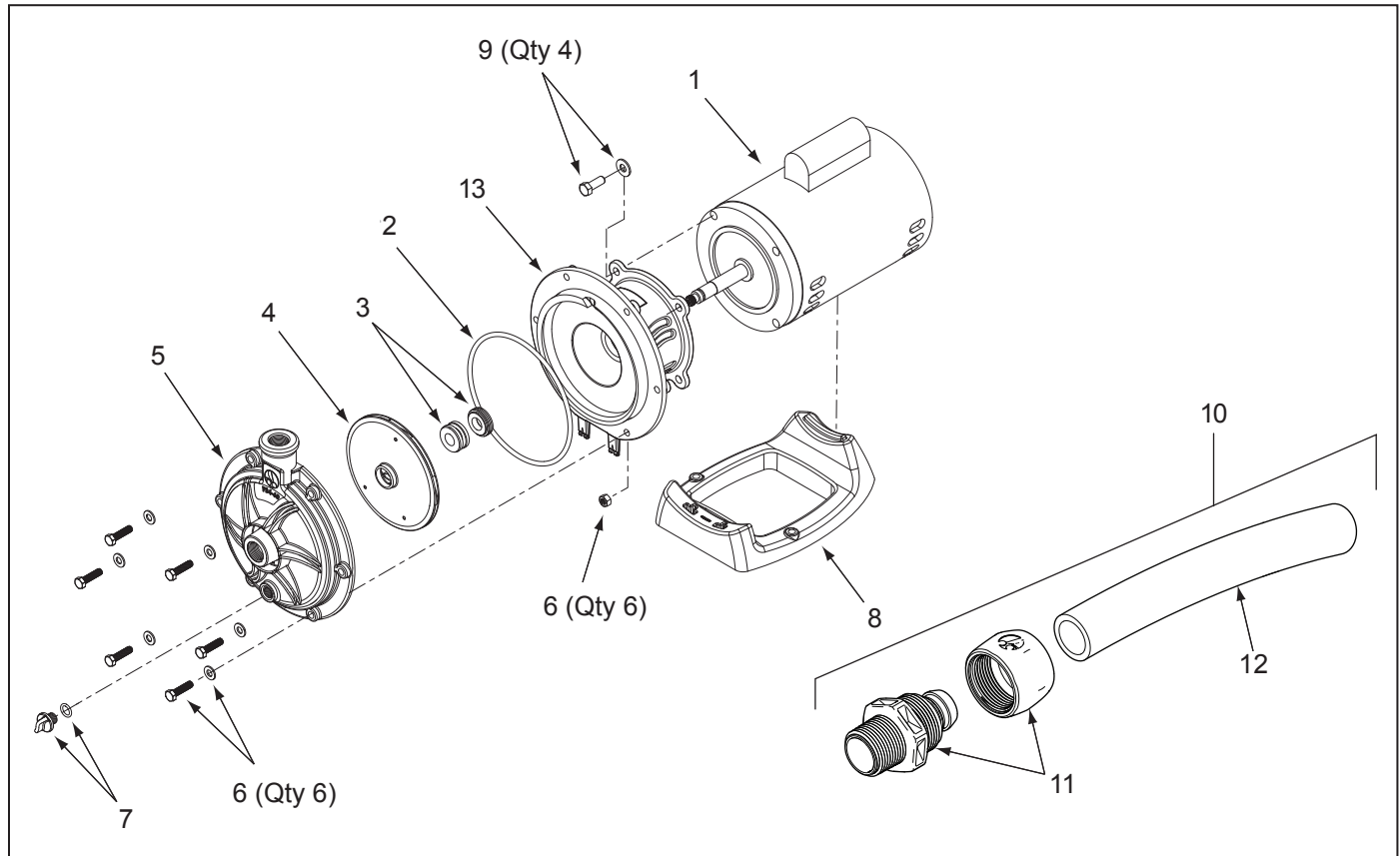


Figure 6. Polaris PB4-60 Booster Pump Exploded View

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H0332800 Rev D

