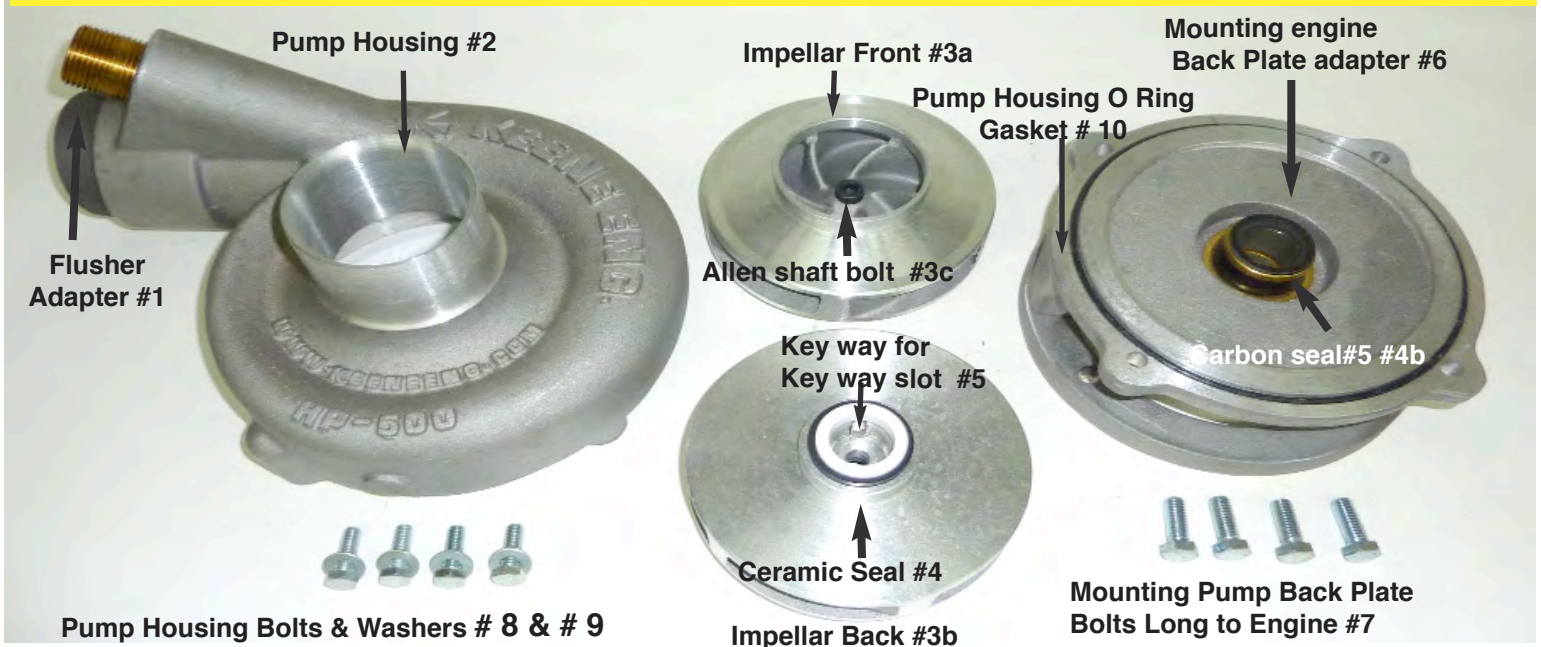


# HP500 KEY WAY SHAFT PUMP ASSEMBLY



**TOOLS REQUIRED:** Standard Allen wrench 3/16ths. Standard 3/8 " & 1/2" open end wrench,

ITEM #	DESCRIPTION	QUANTITY	PART NUMBER
1	Flusher port adapter	1	NIP1000BRS
2	Pump Housing	1	501
3a	Impeller Front Side	1	502
3b.	Impeller Back Side		502
3c	Allen head shaft connector bolt 3/8" X 16 X 1"- 1/4" socket	1	SHC375161250
4a	Ceramic Portion of Pump Seal	1	WPS3
4b	Carbon Portion of Pump Seal	1	WPS3
5	Key for Key way slot	1	502KK
6	Engine mounting back plate adapter complete	1	204 & 207
7	Mounting back plate bolts 3/8 x 16 x 1" hex head	4	HHB375161000
8	Pump Housing Mounting bolts 5/16" x 18 x 1" hex head	4	HHB312181000
9	Pump Housing Mounting washers 5/16".	4	WASHFL312
10	Pump Housing "O" Ring Gasket	1	2080

## MOUNTING THE BACK PLATE TO ENGINE.

Set the back plate assembly (#5) and mount using the four back plate bolts (#6). Set bolts into place and tighten finger tight then tighten gently with a 3/8 inch wrench. Make sure the seal assembly (#4b\_ is in place on outer side of the engine adapter before mounting.

## MOUNT IMPELLER TO ENGINE SHAFT

1. Insert Impeller Key (#4c) into center of impeller as shown in figure #4c. (Impeller key not shown)
2. Insert Impeller pump ceramic seal (#4a) firmly into center of impeller as shown in figure (#3a & #3b).
3. Place allen head shaft connector bolt (3c) onto shaft and press firmly. Be sure to align key in keyway slot (3c) on the drive shaft correctly or the impeller will not slide completely onto the engine shaft.
4. Insert Impeller Attaching (#3c) Allen Button Head Bolt into threaded hole in the center of the engine shaft and tighten firmly. Take care to not damage the ceramic seal while inserting impeller onto shaft.

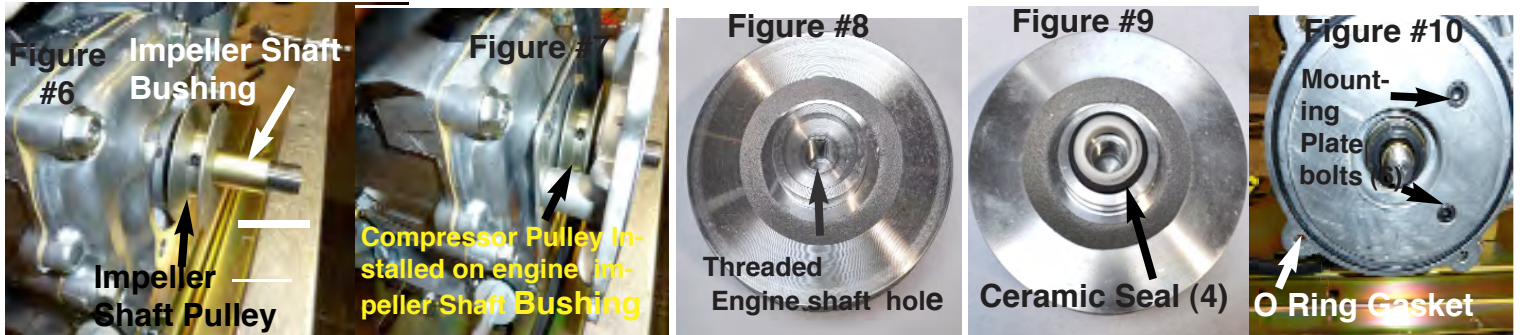
## INSERT O RING ON BACK PLATE ASSEMBLY

Insert Pump Housing "O" ring (#9) gasket and press into slot firmly.

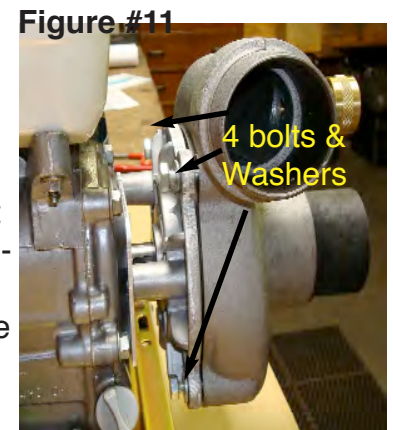
## MOUNT PUMP HOUSING ONTO ENGINE BACK PLATE

Place Pump Housing (#2) onto back plate (#5) and secure with 4 PumpHousing Mounting Bolts and 4 Pump Housing Mounting washers (#7 & #8). Set bolt and washers loosely though back Plate into Pump Housing. Make sure alignment is correct and tighten firmly. Double check to see that the Pump back plate contains the "O" Ring Washer (#9) and is in its proper position. Care must be taken not to overtighten as the bolts in the housing as the threads are aluminum and could become easily stripped.

- Before mounting the back plate assembly (105 & 105E) to engine, the BackPlate Pump Seal (5) must be pressed flush into center hole of the back of the Pump Back Plate (105) before attaching Engine Back Plate (105E). Use a small dab silicone adhesive around edge of the hole to prevent leakage.
- Attach Engine Mounting Back Plate (105E) to the Pump Mounting Back Plate (105) by Attaching the counter sunk back plate bolt (MBL) into the pump back plate (105) and tighten securely.
- Before mounting back plate assembly (105 & 105E) to the engine slip the impeller shaft bushing (ISB) onto the engine shaft as shown in figure # 6 and also place the compressor pulley over the bushing if a compressor is being used (14) and tighten set screw once placed on engine shaft, also place compressor V belt (A24) over the shaft pulley. (Ask for the size of V belt to match model of compressor being used)
- To align mounting plate to engine, insert and tighten the 2 Mounting back plate long bolts (#6) firmly to engine (see fig #10). Note: The Compressor V Belt is not shown in the above diagram.



- Insert ceramic seal firmly into the impeller as shown in figure (9).
- Place Impeller over the engine shaft and turn it in a clockwise direction to attach to the engine shaft.
- Insert "O" ring (104) gasket and press into slot firmly
- Place Pump Housing onto back plate (Figure 11) and secure with 4 Pump Housing Mounting Bolts and 4 Pump Housing Mounting washers (HB & HW). Set bolt and washers loosely though back Plate into Pump Housing. Make sure alignment is correct and tighten firmly. Double check to see that the Pump back plate contains the "O" Ring Washer (Fig 10) and is in its proper position. Care must be taken not to overtighten as the bolts in the housing as the threads are aluminum and could become easily stripped. O Ring is not shown in above diagram.



### ADDITIONAL SPECIAL SEAL INSTALLATION INSTRUCTIONS:

- Before installing the mounting plate to the engine, the spring portion of the water pump seal must be installed. Place this portion of the seal into the center of the mounting plate, with the use of a light hammer and or blunt instrument and or a seal setting tool. Tap the perimeter metal portion of the seal to set the seal into position. Care must be taken to avoid contact with the carbon portion of the seal. A small amount of Silicone Rubber Cement placed in this section will insure a water tight seal. Insert the mounting bolts into the mounting plate. Tighten the bolts evenly so as to prevent mis-alignment.
- Fit "O" Ring gasket into "O" slot on the front face of the mounting plate, making sure that it is properly seated. Place the ceramic portion of the water pump seal into the center of the impeller firmly, using the heel of your hand to insure a proper fit. The ceramic surface of the seal must be facing outwards. Thread the impeller onto the engine shaft by turning it gently in a clockwise rotation, taking care to avoid damage to the threads on the impeller.
- Attach the outer housing to the mounting plate, using the 4 housing bolts and washers. Tighten the housing bolts evenly to ensure proper tension and alignment. Extreme care must be taken to prevent over tightening of the bolts. Too much torque will damage the threads in the outer housing.