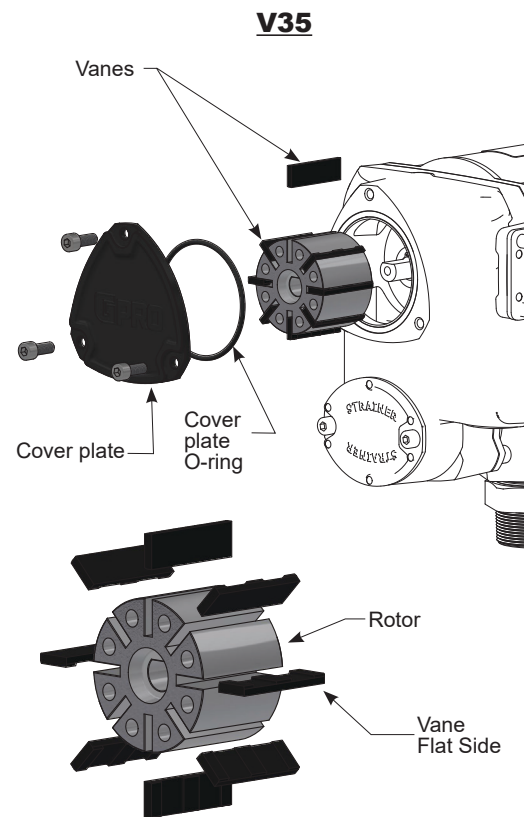
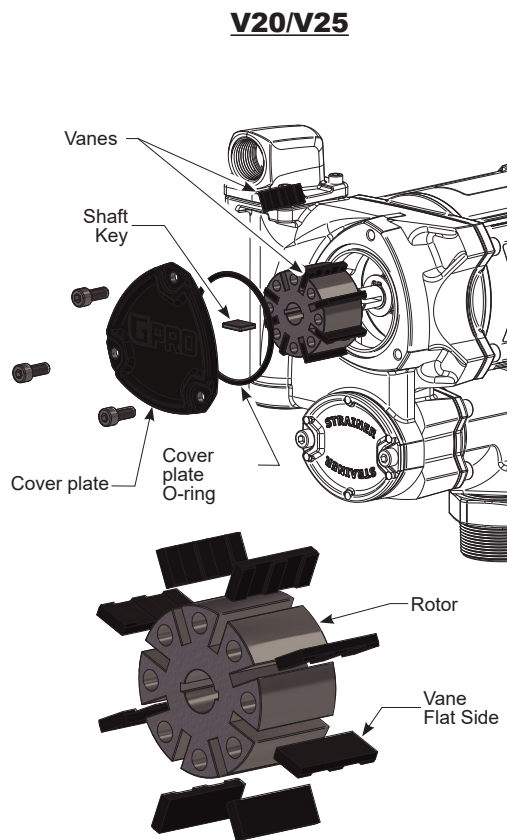


# GPRO Rebuild Kits

Instruction Sheet

## VANE ORIENTATION AND REPLACEMENT INSTRUCTIONS:

1. Turn the pump OFF and disconnect from power.
2. Using 6mm hex wrench, remove the cover plate and O-ring
3. Remove the shaft key, rotor, and vanes.
4. Inspect vanes for wear and damage. Replace as necessary.
5. Wipe the rotor pocket with a clean cloth.
6. Replace the rotor, shaft key (if applicable) and vanes, making sure the vanes are oriented with flat side facing forward (as shown below).
7. Make sure the cover plate O-ring is securely in place. Tighten the cover plate to the housing.



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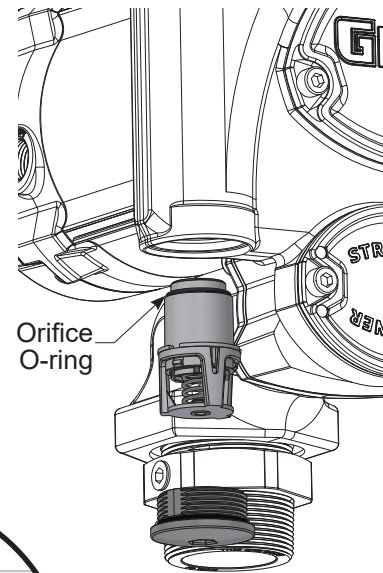
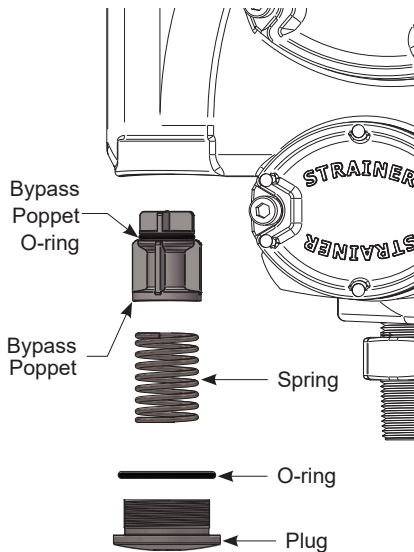
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# GPRO Rebuild Kits

Instruction Sheet

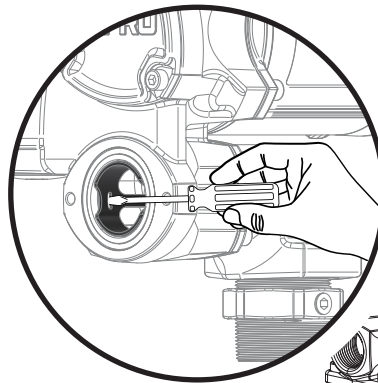
## BYPASS POPPET REPLACEMENT:

1. Turn the pump OFF and disconnect from power.
2. With a 10mm Hex wrench, remove the bypass plug from the pump. Remove the bypass poppet spring, O-ring, bypass poppet and orifice seal (see Figure 3).
3. Inspect the O-ring and replace as necessary  
NOTE: Replace O-ring if damaged, swollen or loose-fitting (see Seal Kit).
4. With a clean cloth, wipe the poppet components and replace.
5. Before seating, coat O-ring with light grease.

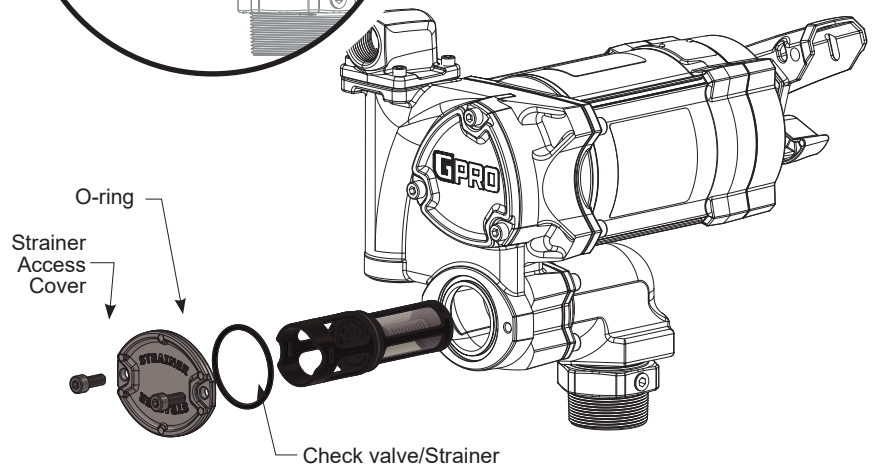


## CHECK VALVE REPLACEMENT:

1. Turn the pump off and disconnect from power. Using 6mm hex wrench, remove the strainer access cover, O-ring, and check valve/strainer assembly and inspect for damage or clogs (see Figure 1). Clean the strainer with a soft-bristled brush and solvent. If the strainer is very dirty, compressed air may be used. If damaged, replace the check valve/strainer assembly.
2. Clean the strainer access cover and O-ring. Coat the O-ring lightly with grease. Reinstall the check valve/strainer, O-ring and strainer access cover. Ensure the O-ring is properly seated and tighten securely.



**NOTE:** Insert a flat tip screwdriver into the slot on the inside of the filter to pry it out of the cavity. (see Figure 1a)



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# GPRO Rebuild Kits

Instruction Sheet

## SHAFT SEAL REPLACEMENT:

1. Remove the coverplate bolts and coverplate. Set these parts aside for reinstallation.
2. Remove the key (if applicable), and rotor, noting the orientation of the vanes in the rotor. Make sure the rotor and vanes are not damaged during this process. Set these parts aside for reinstallation.
3. Remove the snap ring using an appropriately sized external snap ring pliers. Remove the spacer washer and shaft seal (see Figure 1). Discard these parts. Be careful not to damage the housing bore and outside diameter of motor shaft.

## ABOUT THE SHAFT SEAL ASSEMBLY:

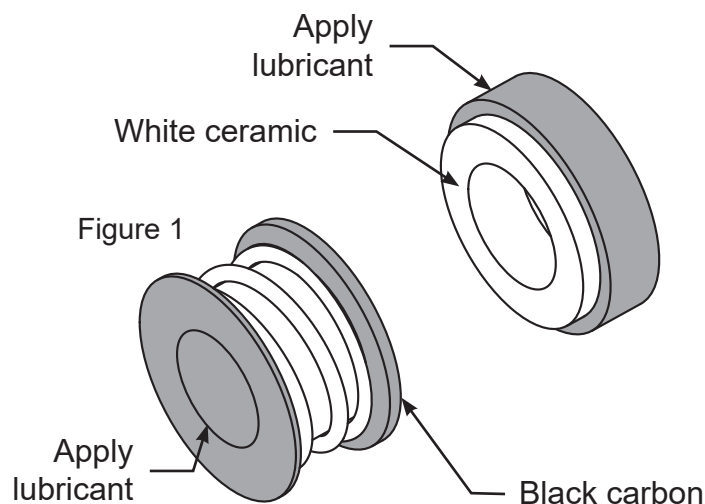
The shaft seal assembly includes two parts:

- White ceramic portion of seal with rubber cup
- Black carbon seal with spring

**CAUTION:** The polished ceramic and carbon surfaces must be free of all oil residue and foreign material. If seal inadvertently becomes contaminated, both ceramic and carbon mating surfaces must be carefully cleaned using a lint free cloth and methyl alcohol.

## BEFORE GETTING STARTED:

The tool for installing the shaft seal is **NOT** provided in this kit. Create a shaft seal installation tool using a 6-inch piece of 3/4-inch PVC pipe or similar plastic pipe. The ends should be cut square and smooth. The inside diameter of the pipe will slide over the 5/8-inch diameter motor shaft and inside the 1.25-inch ID seal bore in the pump housing. This allows for easy installation of the two parts of the shaft seal.



## INSTALLING THE SHAFT SEAL ASSEMBLY:

1. Apply light oil (as rubber lubricant) to the outside diameter on the rubber cup of the white ceramic seal. Place the white ceramic part over the shaft with the rubber cup toward the motor. Use the installation tool to align the parts. Seat the seal in the bore by pushing down. Make sure the seal meets the bottom of the seal gland in housing.
2. Apply light oil to the motor shaft or inside of rubber bore in the spring portion of the shaft seal.
3. Place black part of seal over the shaft with carbon facing the motor as shown. Press the seal onto the shaft by hand as far as possible. Place the washer over the shaft, then use the press tool to fully seat against the white ceramic portion of seal.
4. Expand the snap ring with snap ring pliers and slide over the shaft as far as possible. Use flat blade screwdriver or flat punch to seat snap ring fully into groove.
5. Install the rotor, vanes, key and coverplate parts that were set aside earlier. Ensuring the vanes are returned to their original orientation.

Torque specs:

For V-series, torque coverplate bolts to 215-235 in-lb

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