Replacing the Pump Seal on a Goulds 3656 Pump

Isolate the skid by closing off the valves on the suction and on the discharges of the skid.

The next step to replacing a pump seal on a Goulds 3656 pump is disconnecting the Suction and Discharge pipes from the Wet End of the pump. Remove the bolts from the flanges and then remove the Groove lock fittings, set the fittings aside. When you assemble these items again you will need to clean any sealing surfaces (pipes and rubber gaskets)

Suction   Discharge

Remove all of the bolts that secure the wet end to the collar.

Pry off the wet end from the collar with the use of a or two flat head screw drivers. Alternating the prying action will help remove the wet end.

Set the Wet end aside.

Hold the impeller still and remove the bolt from the front of the impeller, set the bolt and corresponding washer aside

Pry the impeller off of the shaft with the use of a screwdriver. Pry only on the impeller where the webbing connects the back plate and the front of the impeller. If the impeller is difficult to remove, make sure to use opposing screw drivers or pry bars and alternate the pressure from one side of the impeller to the other to help it slide off of the motor shaft. Once the impeller is removed let it aside and remove the key from the shaft and set it aside as well.

You can use a set of screwdrivers or channel lock pliers to remove the seal from the motor shaft.

Once the seal is pulled off the shaft, set the seal aside.

Remove the four bolts that secure the collar to the motor

Pry off the collar from the motor and set it aside.

Push the back seal off of the collar from the motor side. Once removed, make sure that there is no severe rust on the collar surface that comes in contact with the new seal. If the rust can be removed, Do so, if the surface is pitted to bad, use RTV silicone on the new seal when you install it.

Make sure you removed the key from the motor shaft earlier and then turn on the pump motor. With it spinning you can clean the shaft with the use of some 120 grit emery cloth to remove any rust or remaining rubber from the shaft surface.
Inspect the cleaned surface and make sure the surface is not pitted or rusty.

Install the back seal into the collar, making sure to use RTV sealant as needed. DO NOT touch the white seal surface of the seal with your fingers, use the provided cardboard overlay to push the new seal into the collar making sure to press the seal into position using alternative presses on both sides of the seal.

This picture shows how to drop the seal into the collar.

This picture shows the two finger press used to seat the seal into place on the collar.

Remove the cardboard and inspect the seal surface. if you see finger prints or grease, remove them with an alcohol pad.

Carefully place the collar back onto the motor and secure in place. Make sure not to touch the seal up against the motor shaft so not to damage the new seal.

Lubricate the front seal's rubber collar making sure not to apply to much silicon lubricant.

Lightly lubricate the rubber on this portion of the seal
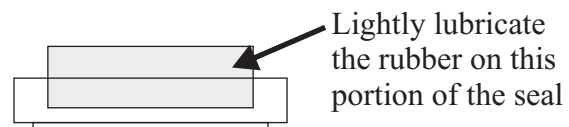
Make sure no finger prints or grease is on the sealing surface.
If you have any buildups, clean them off with the alcohol pad.

Slide the front seal onto the motor shaft and press it into place against the back seal face.

Place the key back into the motor shaft slot.

Install the new spring onto the front seal

Line up the impeller grove with the key and press the impeller back onto the motor shaft.

Insert a screw driver into the impeller channel and install and tighten the washer and bolt onto the motor shaft through the impeller on the front.

Install the wet end back onto the collar, you may want to lubricate the oring with silicone or use RTV sealant on the oring to make sure the wet end slides over the collar easily.

Tighten the bolts securing the wet end to the collar.

Install the flanges or any other pipes you removed.

Test system for leaks under full water conditions. You may need to remove any air in the system by removing one of the plugs on the wet end and then opening the water flow back up to the pump.