

ENGINEERING
TOMORROW



Instruction guide

Change of bearings in the iSave 50/70 Vane pump

1. General Introduction

The new bearing kit and tool kit enable the customer to change the bearings of the vane pump in the field. To get the full benefit of having new bearing in the vane pump, the bearing's surface of the rotor shall be reworked and prepared to reduce the risk of excessive wear of the new bearings. The following chapters explains in detail the procedure of changing the used bearing and preparing the used rotor.

Bearing kit: 180F4200
 Tool kit: 180F4201

2. How to change the bearings of the vane pump:

1. The below tool kit shall be used for changing the bearings of the vane pump:

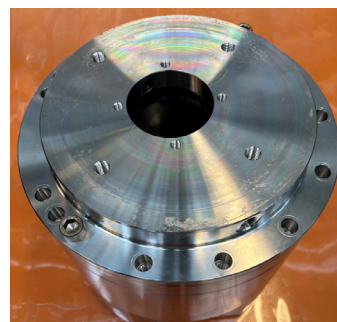


The process of changing the bearings can be started with disassembly of vane pump from pressure exchanger. The black plastic insertion tool is long enough that the new bearing can be inserted into the flange without any needs for dismounting both flanges from the stator ring, only one of flanges is required to be dismounted, then take out the internal parts like rotor and vanes.

2. If the used bearing has signs of wear like in the below pictures, then it's time to change it:



3. The ceramic side plate must be dismounted from the flange, please refer to service guide (iSave 50-70 Disassembling and assembling). It is recommended to have the proper Seal Kit available as there is risk that side plate breaks during the disassembly. Place the Motor Flange on top of the stator ring and secure it with two screws (if the Motor Flange was completely dismounted from the Stator) like picture on the right, to have enough space for pressing out the used bearing:



4. Use the tool kit and hammer out the bearing gently like shown in the picture below (don't scratch the flange):



6. Follow the same procedure to press out the bearing from the middle flange like below pictures:



5. There might be dirt and signs of corrosion on the bearing surface of the flange (underneath of the bearing), please try to clean it with the fiber cloth provided in the kit:



Please make sure that the bearing's surfaces of both flanges are clean and there are no dirt and particles in the flange.

* Inspect the areas marked with * for any cracks. If any cracks are discovered a new flange will be required.

7. Lubricate the bearing's surface of the flange with clean water like below picture:



8. Place the bearing on top of the flange, the bearing has chamfers on both sides, there might be few cases that the chamfer on one side is bigger than the other side due to the tolerance so please adjust the side with bigger chamfer toward the flange:



9. Use the black plastic tool to press in the new bearing:



10. The bearing top surface shall be perfectly aligned with the flange. See the picture below, otherwise the bearing is not pressed in completely:



11. The same procedure shall be followed for the endflange:

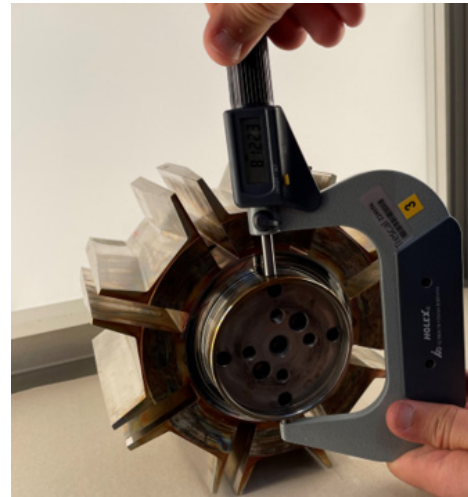


3. How to rework and prepare the used rotor:

The outer diameter of the bearing's surface of the Rotor shall be higher than the following dimension to results in proper gap between the rotor and the bearing:

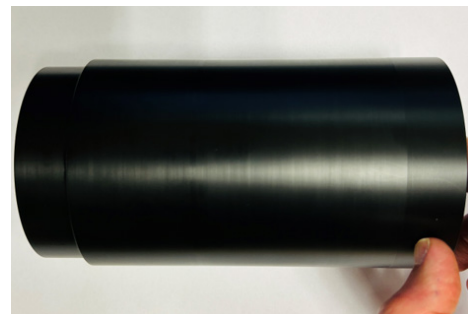
| |
|------------------------------------|
| Min acceptable outer diameter [mm] |
| Ø80.92 |

The outer diameter of the rotor shall be measured via micrometer (highly recommended) by a skilled operator few times in different orientation and the average of the measurements shall be higher than the value specified in the table:



The bearing's surface of the used Rotor shall be relatively smooth and without significant signs of wear otherwise it can influence the bearing lifetime and speed up the wear process.

1. The first inspection: the surface roughness of the bearing's surfaces can be judge by using the feature on top of the black plastic tool. Please use your nail to judge if the surface roughness of the bearing's surface of the rotor finer or coarser than the surface roughness on the top side of the black plastic tool. If the surface roughness of the bearing's surface of the rotor is finer than the black plastic tool then the rotor can be reused, please follow the instruction for using sandpaper on the rotor.



2. The second inspection: the quality of the surface can be judged in the field by using a straight edge tool and flashlight, place the tool on top of the bearing's surface of the rotor and point the flashlight toward the backside of the tool like picture below:



The big gap indicates that the surface quality is not acceptable. The quality of the surface can be improved in some cases by sanding the surface. Simply hang up the rotor by using lifting eye (*make sure that the lifting eye is tightened enough to avoid risk of falling and causing injury). Hanging up the rotor enables us to rotate the rotor during the sanding procedure. Lubricate the surface with water before sanding. One operator shall take care of sandpaper and another operator shall take care of rotating the rotor, both operators shall pull the rotor toward themselves to ensure getting enough force for sanding on the bearing's surface of the rotor (*make sure that lifting eye tightened properly). Follow the below sequence for polishing the surface:

| Sequence | Sandpaper characteristics |
|----------|---------------------------|
| 1st | P400 |
| 2nd | P600 |

The bearing's surface of the rotor (outer diameter and surface quality) shall be evaluated after sanding with micrometer, straight edge tool and flashlight.





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