

IDENTIFICATION GUIDE

This guide serves as a resource in determining if a VORTEX fluid end is failed. All renderings and pictures are for reference only. Key considerations:

- When in doubt, load a new set of valves and seat to conduct a pressure test. If the new set holds pressure, • keep pumping.
- If wash occurs in the areas shown in green below, load new valves and seat and keep pumping. If the wash • occurs in the are shown in **yellow**, load new valves and seat and keep pumping, but use **caution** as the first low pressure seal has failed. If wash occurs in areas shown in **red**, change the fluid end block.
- The extent of the wash may not be easily determined with the dynamic section threaded in.





Dynamic Section Failure

If the wash extends from the plunger side of the carbide to the discharge side, the dynamic section is failed.

If the wash extends beyond the low pressure seal on the dynamic section nose, then the dynamic section is failed.





Dynamic Section Failure

Examine the face of the carbide for cracks and chips. If cracked or chipped, the dynamic section is failed.

If wash extends behind the carbide from the seat face to the plunger bore (shown below), the dynamic section is failed.





Non-failed Fluid End & Dynamic

The washed areas shown below are visually concerning, however, the wash never leaked behind the carbide. These fluid end should be reloaded with new valves and seat to continue pumping.





Wash occurs in the suction "racetrack" but does not extend into the low pressure seal region or behind the carbide. These are **NOT** failed fluid ends.

When in doubt, load a new set of valves and seat to conduct a pressure test. If the new set holds pressure, keep pumping.



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Non-failed Fluid End & Dynamic

The picture below is taken from the packing side of the fluid end, with the dynamic section removed. The wash doesn't extend into the low pressure seal groove, which means the fluid end is still functional.





Failed Fluid End & Carbide

The picture below shows a carbide ring with cracks circumferentially along the load face. If this were to continue running, the carbide would eventually crack further and completely fail.





Failed Fluid End & Carbide

The picture below shows a carbide ring cracked axially.



For any questions, please contact KERR Pumps