

Splitcase - firefighting Pump

Application:	Rebuilding and protection of Splitcase firefighting Pump
Place:	Assens Shipyard - Workshop
Date:	September 2007
Job and report done by:	Assens Shipyard Ltd, Denmark and Wencon technical Supervisor
Wencon products used:	Rapid, Coating white & blue, Cleaner, appl. tools



Introduction

Pump inspected after only two years of service, and heavy corrosion attacks were found. These types of big pump housings are rather expensive, it is therefore important to protect against bi-metallic corrosion.

1. One half of the pump housing, before surface preparation.
2. Internal bi-metallic corrosion in the supporting seat zones.

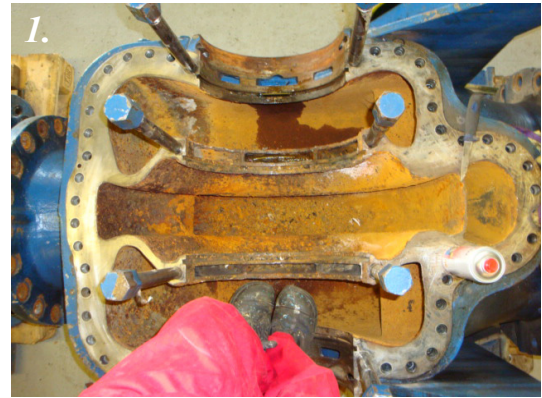
As the damages were observed at an early stage, no rebuild of the seats were required. The mechanical strength were still present, so no need for recasting new seats.

3. Bi-metallic corrosion attacks around the partition wall zones. It is obvious, that it is only a matter of time, before the damage becomes so large, that it affects the pump capacity.

All edges rounded to radius 3 before surface preparation.

4. Bi-metallic corrosion in the support ring seat zones. Here the situation starts to look critical, as it is only a matter of time before the ring-seats will despair.

All surfaces to be applied are full blasted to SA 2 ½ 75 micron, and degreased using Wencon Cleaner before application.



5. To obtain original shape and surface, dents and deeps are filled using Wencon Rapid applied with a spatula.



6. While Wencon Rapid is still tacky, it is time to apply first layer of Wencon Coating white.



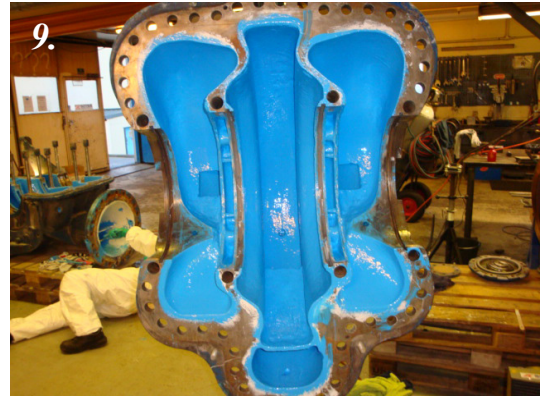
7. Wencon white Coating applied. Time for semi cure 30-45 minutes, before applying second and final layer.



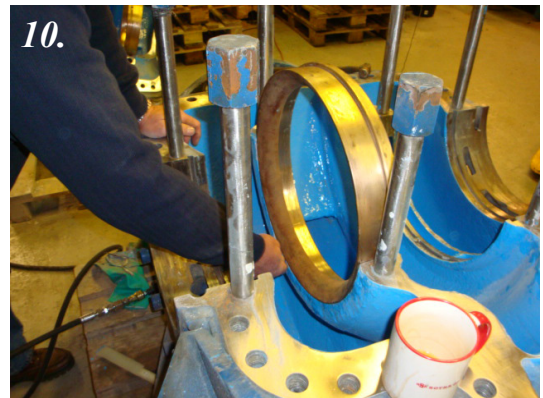
8. Second layer applied using a brush while first layer still are tacky
Wencon uses two-layer coating system, to ensure right thickness and full coverage.



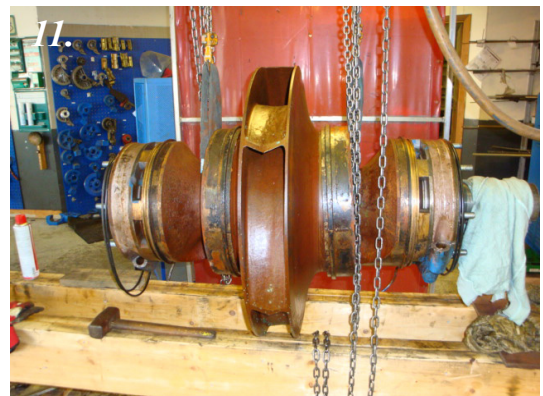
9. Application now completed. Time for curing and next step - renewal of threads, removal of existing materials on flanges etc.



10. Wear ring clearance checked before assembling. Last minute before the pump is assembled last time, the Seats are protected by applying a thin layer of Coating. A thin layer of release agent applied on the support ring will insure 100% “cast to fit” and that it is possible to dismount the pump again.



11. Shaft overhauled according to client's requirements, here only new Bearings and Seal Box was required to replace. Only the support rings needs to be centered in position - ready to install.



12. Pump assembled and pressure tested, ready to be packed and sent directly to vessel or to customer's own warehouse.



Choose the relevant surface preparation, according to the nature of the job. Seek advice from a Wencon Technician if needed.

Specification for surface preparation for Dry Applications

Defined as applications, where the Wencon product will be applied to a surface at a temperature minimum 3 degrees above dew point. Use the Wencon Products: Wencon Cream, Wencon Rapid, Wencon Coating, Wencon Ceramic Cream, Wencon Ceramic Coating, Wencon Hi-Temp, all requiring a dry surface.

1. Blast the machine part to SA 2 ½ using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40 °C (86-104 °F) using gas torches.
3. Blast again to SA 2 ½ immediately prior to the application.
4. For parts containing lots of water and salt, it may be necessary to repeat 2. and 3. until the surface remains light grey for at least 2 hours after blasting.
5. Always use Wencon Cleaner prior to application.

Specification for surface preparation for Wet/Damp Applications

Defined as applications, where the Wencon product will be applied to a surface at a temperature less than 3 degrees above dew point. Use the products Wencon UW Putty, Wencon UW Cream and Wencon UW Coating for applications on wet or damp surfaces.

1. Water jet the entire surface with water and sand to a standard equal to SA 2½, as described above.

Specification for surface preparation for Emergency/Temporary Applications

Perago Treatment

Perago is a rubber disk with hard steel spikes mounted on the periphery. Perago can be mounted in a normal drilling machine, and gives a surface close to a blasted surface - clean and rough with sharp edges. Perago dishes can be ordered at Wencon and at all Wencon Distributors.

Grinding

Wheel grinding is often an acceptable surface preparation for emergency applications, where shot blasting is not possible. When grinding use a coarse stone or flap. Use the Wencon Cleaner before and after grinding. Grinding with sandpaper or emery cloth is only advisable when, for example, carrying out shaft-repair on a lathe. Often the grinding will not hit the dents.

Needle Gunning

Needle gunning is a method that has almost been forgotten in recent years. Or should we say is mostly used for very rough cleaning or removal of rust. It is possible to do a very nice job using a needle gun, but it takes time and should be closely supervised. It is essential that the marks from the sharp needles cover the whole surface so that none of the original surface remains. It is recommendable to steam clean the surface before needle gunning.

Wire Brushing

Wire brushing can be a good way of removing scales, rust and old paint. However, you will need to grind the surfaces after the wirebrushing to make the surface as rough as possible.