

## EQUIPMENT REPAIR REPORT

**Date:** April, 2010

Page 1 of 7

**Customer:**

**Our Reference:** Sales Order #5000003764 Ref: 071459

**Your Reference:** Pump # 2 Circulating Tank

**Subject:** Gorman Rupp Model T3A60S-B/F

**Attention:**

Thank you for choosing ProSpec Technologies Inc. as your source for this repair estimate. We appreciate the opportunity to provide you with this assessment. Following is a report of our findings and a quotation for the work required.

### EQUIPMENT INFORMATION

**Description:** Horizontal Self Priming Pump

**Manufacturer:** Gorman Rupp

**Type:** Self-Priming

**Model:** T3A60S-B/F

**Serial Number Reference:**

**Lubrication:** Oil

**Shaft Sealing:** Mechanical Seal,

**Rotation:** CW when looking from the motor

**Service:** Waste Chemicals

**Originally supplied as new:** October 2007

**Previous Repairs:** R2020

## **OBSERVATIONS**

We received the pump contaminated with process fluid. A thorough inspection of the unit was conducted. The exterior of the pump was found to be in generally good condition. The wear plate is extensively worn from what we suspect is erosion due to the nature of the fluid being pumped and the wear being accentuated by the high velocities that exist were the impeller vanes run in close proximity to the wear plate. In an effort to extend the life of the wear plate it will be upgraded from standard carbon steel to a corrosion and erosion resistant stainless steel.

The pump shaft did turn freely when hand spun prior to disassembly. Upon disassembly we found the cast iron impeller with severe erosive and corrosive damage as can be seen in the photo below. The impeller will require replacement. The impeller will be upgraded from the standard cast iron to a corrosion and erosion resistant stainless steel. This is impeller upgrade should extend the impeller life.

The radial and thrust bearing turned freely when hand spun. It does not appear that this bearing is damaged however as part of a sound repair the bearings will be replaced.

The mechanical seal faces are worn excessively. The seal chamber had a sufficient amount of oil and it was relatively clean. The mechanical seal does not represent a significant cost to the repair. As part of a sound repair it will be replaced.

The casing has some internal erosive/corrosive wear. It is difficult to see it in the photo below. The casing suitable for reuse.

In addition to the parts stated above and as part of a sound repair we will replace the pressure relief valve, lip seals, bearing locknut, sight gauges, lock washer, shims and all of the o-rings and gaskets in the pump.

## **SCOPE OF WORK**

- Receive unit, perform initial visual inspection and record findings.
- Disassemble unit, perform rough cleaning, detailed inspection and record findings.
- Sand blast/chemically clean the parts as required and polish all machine fit surfaces.
- Clean and prepare exterior surfaces for finish coat. Mask off accordingly.
- Chase all threads, utilize new stainless steel fasteners as required and assemble with never seize thread lube.
- Reassemble pump with the new parts as described above.
- Apply Gorman Rupp Blue paint to the exterior non-machined surfaces.
- Apply appropriate tags and identification plates.
- Touch up finish, package and prepare for shipment.

***Total Price for the repair .....\$***

If any further repairs or parts are required during the cleaning process we will provide a quotation in writing prior to proceeding. The turn-around time for the proposed scope of work is 2 weeks after receipt of approval to proceed. We will make every effort to repair this pump in as short a time frame as possible.

Pump on arrival at our shop.



The impeller has suffered from erosion wear and possible chemical corrosion.





The process fluid and high velocities have eroded the wear plate. The wear plate will be replaced with one that will better withstand the effects of erosion.



The wear in this area is not bad. This casing is in relatively good condition given the service.





Completed repair.

