

# Vacuum Pump Rebuild Services

Vooner FloGard Corporation has been involved in liquid ring vacuum pump applications for over 25 years. During that time we have developed the expertise to accurately diagnose and re-build Vooner, Nash, Siemens and Somarakis vacuum pumps. We can offer a Standard or a Full Clad Rebuild service as described below.

## STANDARD REBUILD

- Disassemble and sandblast
- Clad cones with 316 SS
- Skin (re-machine) rotor tapers
- Machine and match fit cones to rotor to restore OEM clearance to obtain 90% of original airflow
- Replace bearings, slingers, seals, gaskets, and piping
- Repair shaft for normal wear/re-metalize and machine to OEM dimensions
- Ceramic epoxy coating on wetted surfaces for wear resistance
- Paint with primer coat and grey paint

## FULL CLAD REBUILD

- Disassemble and sandblast
- 316 SS cladding on cones, heads and body
- Body cladding includes epoxy resin between body and cladding to prevent vibration. Depending on pump size install 10-20 3/4" countersunk 316SS welded plugs to insure body cladding is secured to body
- 316 SS ring rotors as required
- Machine and match fit cones to rotor to restore OEM clearance to obtain 90% of original airflow
- Replace bearings, seals, gaskets, and piping
- Repair shaft for normal wear/re-metalize and machine to OEM dimensions
- Paint with primer coat and grey paint

## TYPICAL VACUUM PUMP PROBLEMS

### PERFORMANCE

- ***Less airflow at vacuum level***
- ***Pump can't create enough vacuum***
- ***Airflow too low for dewatering***
- ***Process debris buildup plugs pump***

### STRUCTURALLY

- ***Vacuum pump leaks due to holes in the housing***
- ***Shaft wear in packing ring area***
- ***Bearing failure***



Shaft Needing Repair

## SERVICE CHARGES

*Estimate provided prior to inspection. Final pricing is based on "as received" condition.*

## WAYS TO DETECT POOR PERFORMANCE

- **Orifice Plate Testing** (Measure of airflow at vacuum of installed pumps based on Heat Exchange Institute (HEI) Standards), **Vooner can provide this service to you.**
- **Boroscope Inspection** is an indication of visual wear but, not a clear test of actual performance

## INTERNAL DAMAGE TO A PUMP NEEDING REPAIR PERFORMANCE

- **Iron Rotor Vanes** have worn to not produce enough vacuum
- **Iron Cones** have worn to not produce enough vacuum
- **Buildup of debris** plugs pump

### STRUCTURAL

- **Hole in housing** allows leaks also indicates more holes will soon appear
- **Shaft wear in packing ring area** cannot control normal drip
- **Bearing failure** may cause shaft break



Inside of housing after cladding

## REBUILDING THE VACUUM PUMP

### PERFORMANCE

- **Attempting to restore iron vane dimensions with nickel weld** has a failure mode of the nickel weld chipping off
- **Performance can be restored to 90% of original airflow** by cutting a new larger dimension taper in rotor
- **Remanufacture of the pump** may include replacement with a new stainless steel rotor.

### STRUCTURAL

- **Clad the housing with Stainless Steel** to stop leakage
- **Rebuild the shaft in Packing Ring area** with metal spray coating and grinding to final dimension
- **Clad cones and match fit to rotor** by re-machining the tapers
- **Clad heads, ring housing, and rotors** to original dimensions



New Stainless Steel Rotor

## WARRANTY

- Two years for materials and repairs made except for bearings.
- 90% of original airflow based on OEM clearances.