Did You Know...

information you can use

STINGRAY® Parts Washers

Is Your Pump Cavitating?

Cavitation is the vacuum created when the discharge capacity of the pump exceeds the replacement in the suction tube. This causes bubbling and vibration which can damage the pump bearings and seals if allowed to continue over an extended period of time.

Excessive vibration can occur when parts of the impeller are handling vapor and other parts are handling liquid. The most serious problem is pitting and erosion of the pump impeller, resulting in an extremely shortened pump life as shown in Figure 1.

Fig. 1

Pitting and erosion is caused by the collapse of vapor bubbles as they pass into the impeller regions of higher pressure.
The vapor is undergoing a phase transformation from gas to a liquid. Excessive noise (low pitched rumbling) and vibration usually accompany cavitation.

As the vapor bubbles collapse the adjacent impeller walls are subjected to tremendous shock from the in rush of liquid into the cavity left by the bubble collapse.

This shock actually flakes off small bits of metal and the walls take an appearance of having been badly eroded as shown in this figure.

The erosion shows up not at the point of lowest pressure where the bubble is formed, but further downstream where the bubble collapses.

What to do if cavitation is a problem in your STINGRAY® Parts Washer:

1. Lower the operating temperature of the wash solution. Refer to the STINGRAY Operating Manual for proper wash temperature. Do not exceed the recommended temperature range for the chemical which you are using.
2. Raise the vapor pressure of the wash solution by adding more chemical to raise the boiling point. Perform a titration test to determine the alkalinity of your wash solution, add more chemical if necessary.
3. Inspect the float assembly periodically to make sure the wash solution is at the correct level in the reservoir. Clean and adjust if necessary.
4. Clean the pump suction filter screen daily (every 8 hours) using a long handled brush.