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Operating Noise Levels for Edwards Rotar Gear Pump

The primary issue with fire protection pumps is that they are not meant to operate on a continuous or intermittent basis. Any fire protection pump is intended only to operate in an emergency.

Noise is not an issue in the design, selection or application of firewater or foam pumps. Often Edwards is asked to submit noise level data on our foam pumps because of a specification or customer requirement. When typical DBA noise data is furnished, our pumps have never been rejected due to expected noise levels. NFPA 20 "Standard for the Installation of Pumps for Fire Protection" makes no mention of noise levels, nor does UL or FM, which both approve pumps for fire and foam service.

It is not unusual to have DBA levels in the 88 to 96 level at 1 meter. However, it must be noted that pump operating noise levels are affected by many factors. The foremost being the method of mounting the pump base plate to its supporting surface. If the mounting surface is not flat and even the base plate can distort or twist. This can compound the natural frequencies that are inherent in any rotating machine making the base plate amplify the sound.

If noise levels need to be reduced as much as possible, it is highly recommended that the base plate be grouted in or filled with concrete. This acts as a noise absorption device and anchors the base plate to the supporting surface.

The coupling misalignment between the motor and the pump can also be a large contributor to noise levels. Proper coupling alignment should be checked prior to final start up to be sure that it meets the specifications for the coupling.

Using flex connectors to isolate the pump inlet and outlet piping from the pump will also tend to reduce noise levels. In effect it isolates the piping from the pump. Often, piping strain or misalignment may be a source of additional noise.

The Edwards rotary gear pump does produce noise. This is due to the hardened steel timing gears in the pump. (See the pump exploded view in the operating manual for details.) These hardened steel timing gears transmit the torque to the pump rotor. The timing gears are a crucial feature of the Edwards gear pumps. They allow the foam pump to run dry for up to 10 minutes without damage. This feature is more important to the fire protection engineer and end user than the subsequent noise levels that are produced by the timing gears.

In addition, the timing gears allow the pump rotors to operate without touching each other. The pump rotors don't drive each other, which allows the Edwards gear pump to sit idle for long periods of time without corrosion or metal to metal contact. When the pump MUST operate and perform properly because of fire, it will without trouble.

Edwards Pentair Water makes our pumps to the exacting standards of NFPA 20, UL and FM for the worldwide fire industry. That is why Edwards Pentair Water is the worldwide leader in the production of foam pumps. The noise is a by-product of our pump design; one we know is worthwhile because we have never had a foam pump fail during a fire.