

March 14th 2011 ~ Monday Morning Minutes:

Centrifugal Pump Readout Corrections – (Part 1)

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Last week the Monday Morning Minute article outlined the procedures we use during a check, test, and start-up of a B&G centrifugal pump. After converting from field gauge readings in PSIG to pump head in feet, there are several reasons why the results may be incorrect.

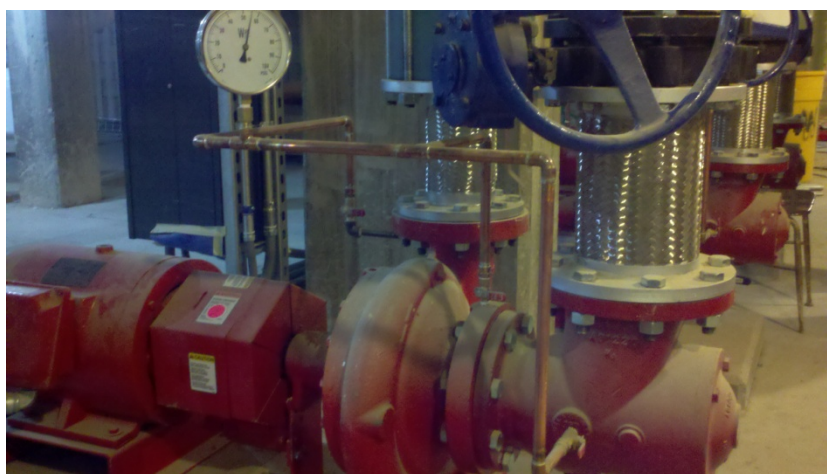
- The speed of the motor is different than the speed of the pump
- The fluid in the system has a different specific gravity & viscosity than used in the pump test.
- Proper correction factors were not used

Often times the pump curve will be one RPM and the motor is another. For example, the pump curve is 1750 RPM and the motor nameplate is 1775 RPM. A small correction normally, but it may have an impact on low head pump readings.

Sometimes the fluid specific gravity can cause a difference in the conversion for PSIG to feet of head. The formula we use is:

$$\text{Head} = (\text{PSIG} \times 2.31) / (\text{Specific Gravity})$$

We normally assume the Specific Gravity for water is one. If the fluid was 40% Ethylene Glycol/water at 40°F, then the specific gravity would be 1.07 and our 2.31 multiplier would become 2.16. It may or may not make a difference, but we should at least remember that it *could* make a difference.



The third item is proper correction factors to the gauge readings which we will look at next week.

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