SUMMIT™ SIXTY SECONDS WITH SUMMIT PUMP : VOL 1-19

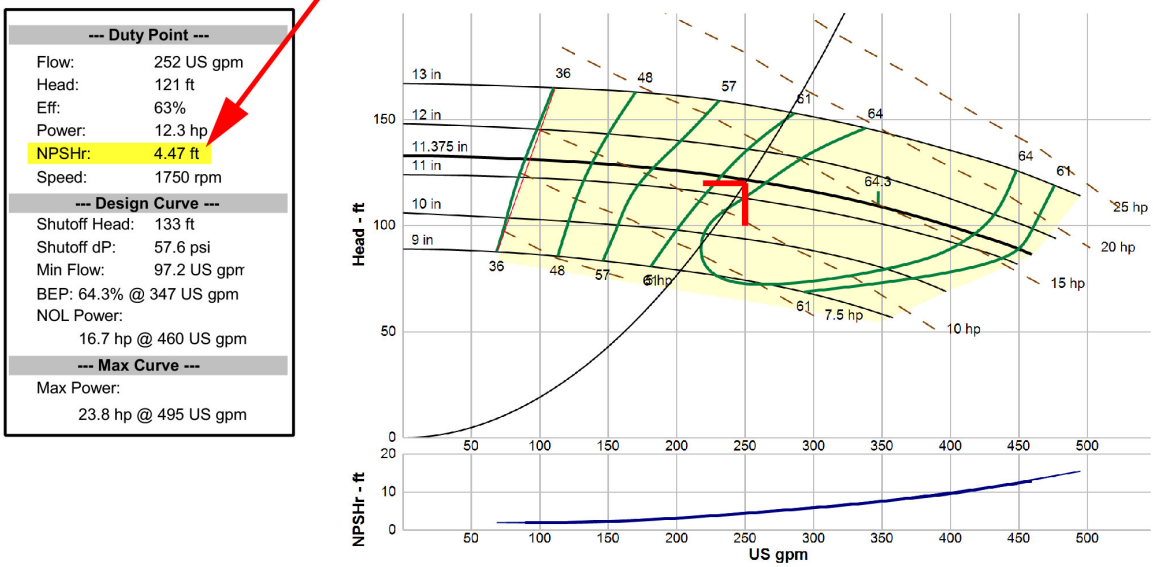
NPSH$_R$ versus NPSH$_A$ margins

From several sources I have recently studied: **The minimum accepted margin between NPSH$_R$ and NPSH$_A$ should be a factor of 1.35 times the NPSH$_R$ or a minimum of 5 (five) feet (1.524 meters), whichever is greater.** To eliminate the risk of cavitation to an acceptable level, the margin really needs to be a factor from 2 to 5 depending on the pump design and the fluid properties.

Remember, when the pump manufacturer publishes that the NPSH$_R$ is some value “X”, that really means the corresponding head for that pump has already dropped 3% at that flowrate.

Simply stated, the pump is already cavitating for the published NPSH$_R$ at that point. Want the specific background and data? Please refer to spec ANSI/HI 9.6.1 – 2017.

3% drop in head due to cavitation.
The pump is cavitating at this point.

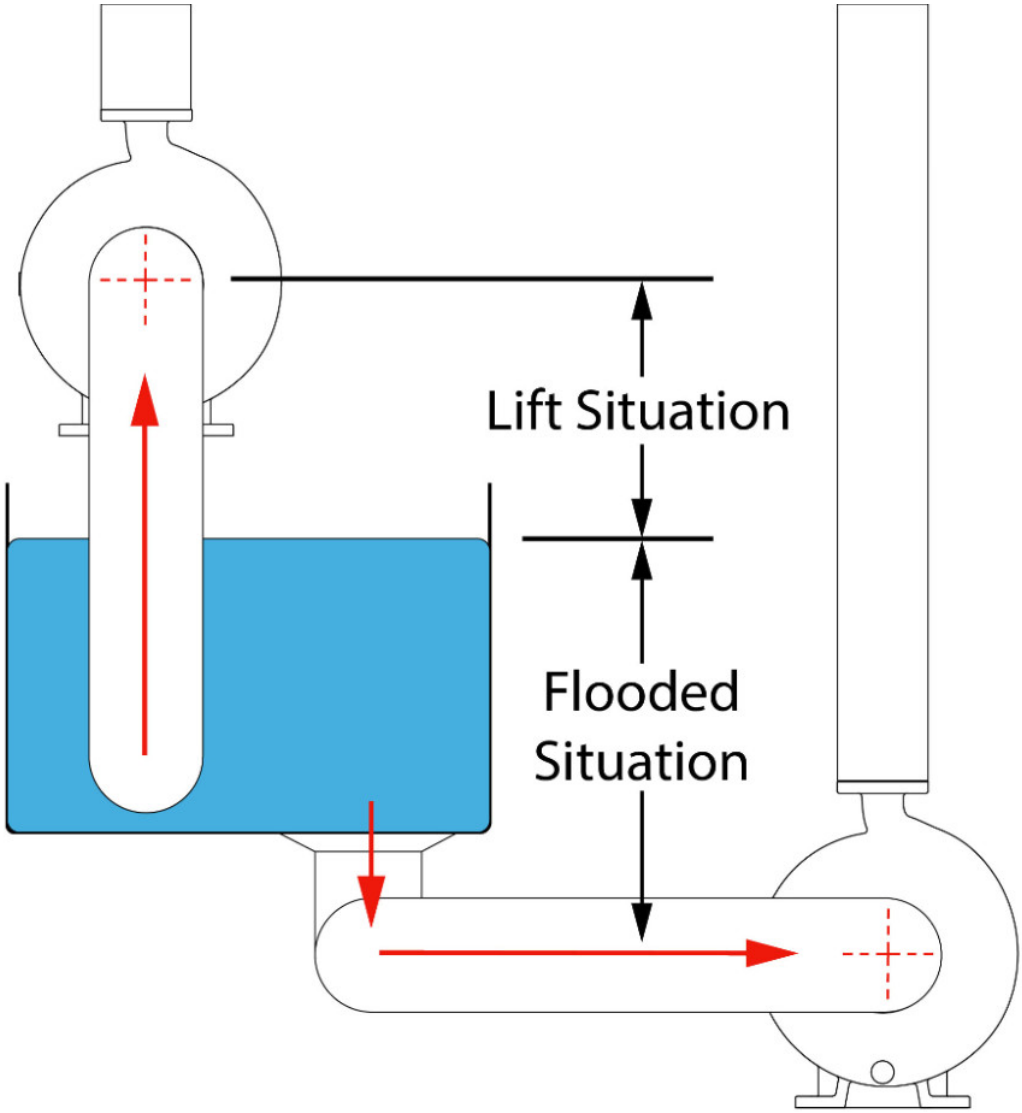


NPSH and Specific Gravity

Should you correct for the ***Specific Gravity*** when calculating $NPSH_A$?

Technically, the answer is yes, but when calculating Net Positive Suction Head Available ($NPSH_A$) for a given installation, Specific Gravity may or may not be ignored. If the suction source is below the centerline of the pump (“Lift” situation) and the source is open to atmospheric pressure, then you should correct for the Specific Gravity, but only if the value is greater than one (1.0).

If the source is above the centerline (“Flooded” situation) and the liquid’s Specific Gravity is less than one (1.0) then it can usually be ignored.



-The Summit Pump Team

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