

NPSHR

Net Positive Suction Head Required (NPSHR) is a function of pump design. The liquid velocity increases and the pressure decreases as the liquid passes over the leading edges of the impeller vanes.

The NPSHR is positive head, in feet absolute, required at the pump suction to overcome these pressure drops in the pump and maintain the liquid above its vapor pressure. The NPSHR varies with the pump design, capacity, and operating speed. These NPSHR values are stated in terms of feet of head on the manufacturer's performance curves. NPSHR characteristics are annotated on all Cornell's performance curves associated with the refrigeration product group.

When the NPSHA in the system has been determined, it is compared to the NPSHR as published on the liquid overfeed pump performance curve. The Net Positive Head Available (NPSHA) must be greater than the NPSHR. Moreover, Cornell recommends NPSHA equal to or greater than NPSHR + 2 feet.