
centrifugal pump TDH

Posted by galletta - 2008/05/13 02:42

If I'm pumping 280 GPM water in 4" dia. stl. pipe with an ANSI horizontal process pump, and I don't have the pump selected yet, I have to specify the TDH between the 4" inlet and outlet. Let's say the pump vendor recommends a 3 x 2 pump, They rate it's performance based on the 3" inlet and 2" outlet. I think the pump performance has to include an allowance added for the 4 x 3 inlet reducer and 2 x 4 outlet increaser. I'm having a hard time convincing the vendors to do this. For example, in my case I calculate 130 ft. TDH between a 4" inlet and outlet. TDH between a 3" inlet and 2" outlet is 150 ft. Since I can't predict the pump size combinations between different pump vendors it seems they should have these factors programmed into there selection programs for connection to the customer pipe sizes. I would think this situation has occurred before with someone else. Can someone else please comment on this situation?

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Re:centrifugal pump TDH

Posted by Mivos - 2008/05/13 03:42

It's best to give your vendor your specific operating parameters and let them select the pump that best fits. Get quotes and performance curves from several different vendors to help you pick the best pump.

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Re:centrifugal pump TDH

Posted by Nutzman - 2008/05/14 01:13

What you need to do measure up the piping system (line length, number of bends, static height (water level to water level)line size). See if where the product is going to, if the equipment requires any back pressure or discharge pressure), send all this to the pump vendors and let them take responsibility for the selection. The reason why the suction and discharge lines are bigger than the pump inlet and outlet is in order to keep the line velocity down, in order to reduce the occurance of cavitation. Typically you want to keep the suction velocity below 2 m/s (6.56 ft/s).

Regards,

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Re:centrifugal pump TDH

Posted by smartturner - 2008/06/05 08:29

The size of the lines both inlet and discharge affect your system and given this info you determine the TDH requirement & NPSH required. When you have done this the pump supplier proposes a pump to meet your requirements. A larger discharge line typically is to reduce losses over distance.

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Re:centrifugal pump TDH

Posted by jac - 2008/06/10 08:14

Hi, the pump supplier produces a more or less generic product which is a device that increases pressure and starts at a suction connection, ends at a discharge connection and has a connection for a motor. There is no way that a supplier can know or provide a product that would be tailored to your installation, not if you want a mass produced product at a reasonable price. That is why you, the user, have to deal with the calculations and estimates of the load (i.e total head and flow) that the pump will see with all the difficulties and uncertainties that this implies, including the use of fittings, reducers, etc. The wonderful thing about centrifugal pumps is that they are very tolerant to unexpected loads. The difficulty for you is that you may not get the flow rate you expect if your calculations are off.

Cheers,

Jacques
www.lightmypump.com

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