SUMMIT™ *Select* SOFTWARE SCOPE

BY JIM ELSEY & The Summit Pump Team

Lessons Learned

A 1970's college class in Fortran forever changed my perspective of computer programs. Fortran is an older computer programing language where the name is short for "formula translation". A fourth generation of the program still exists and it remains a top program used in academic engineering circles.

The first lesson learned from this class was that even the smallest error in the program would prevent the entire program from running and/or yield bogus results. The colloquial phrase "*garbage in…garbage out*" was first used in the late 1950's and persists even today because of the inherent truth it conveys.

The other key insight is that just because a computer gives you an answer doesn't mean it is correct or complete. Consequently this discussion leads to an offer of advice regarding the pump selection program **Summit Select**. Summit Select operates using Pump-Flo® software in the background. Pump-Flo® is the first and oldest pump selection program utilized by over 150 pump companies with more than 400,000 users worldwide.

Methodology

Summit Select is a powerful tool for pump selection. The program will assist you in finding the correct pump for your application…when used correctly. Summit Select is specifically designed to search for the best "**hydraulic fit**" (The condition point of head (H) and flow (Q)).

The objective of today's message is, there are some things that Summit Select (or any pump selection program) can not/will not do:

- Choose the correct mechanical seal or seal piping plan (API or CPI)
- Pick the correct flange ratings (150-lb. versus 300-lb.)
- Select flat face (FF) versus raised face (RF) flanges
- Opt for a vertical pump in a horizontal program or vice versa
- Sort out a self-primer from a standard pump
- Designate a model 2175 if you are in the model 2196 catalog
- Determine the proper coupling size or service factor
- Determine correct motor frame size requirements
- Warn you that the suction piping diameter is too small, long, or torturous.
- For VFD application; alert you that the motor torque versus horsepower is insufficient.
- And unless you are also using Pipe-Flo$^®$ the system resistance curve may be incorrect.
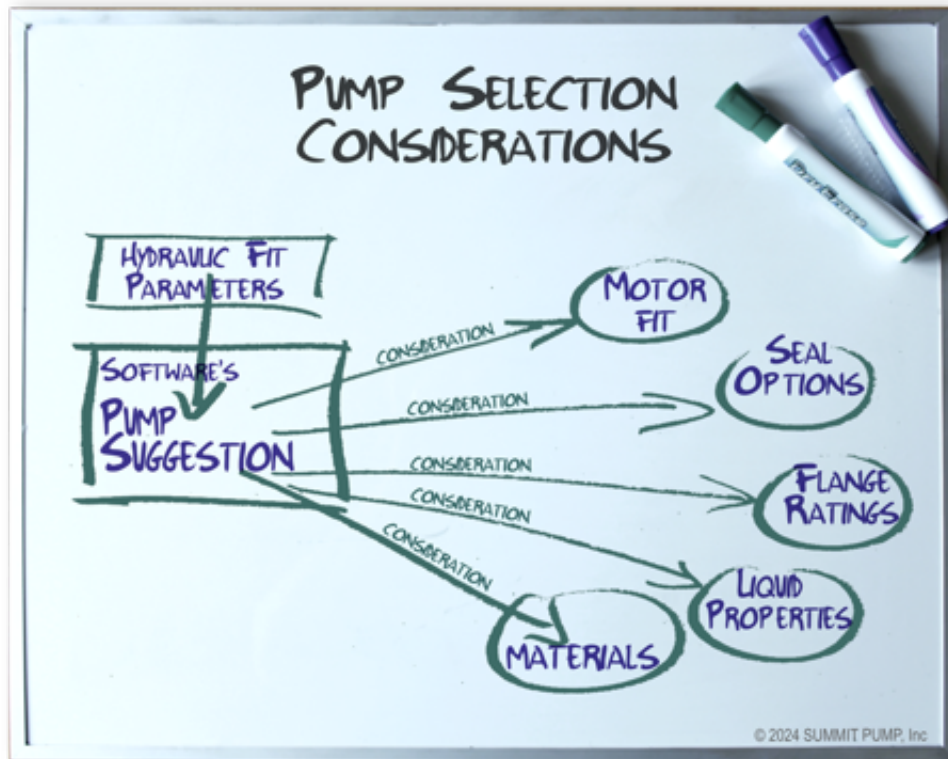
Note: If you don't provide the proper input to the program for all of the liquid properties and $NPSH_A$ the program assumes you are pumping ambient temperature water, consequently:

- The bhp (brake horsepower) could easily be incorrect due to SG (specific gravity) or viscosity differences
- Further, bhp mistakes lead to incorrect motor size choices that lead to incorrect baseplates and coupling sizes
- Even if you input the liquid properties correctly, the program is not capable of making the proper material selections
- The program will not advise you of high or low temperature limits that require extra options
- The program doesn't know the elevation above sea level, suction lift, critical submergence or vapor pressure considerations
- If you fail to input the pump system's $NPSH_A$ into the program it may select a pump that has insufficient margin

In summary…

The Summit Select program will assist you in finding the right pump, but it can't do all of the thinking and work. If you need help in the pump selection process please contact us.
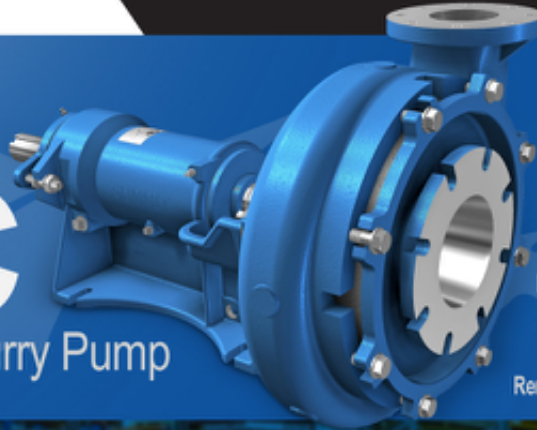
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