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| **Introduction**  Pump is selected based on parameters like **flow-rate, pressure viscosity and RPM** but is most cases pump selection is over suited in terms of specifications due to that power consumption increases and leads to lower efficiency. To improve the efficiency pump is needed to selected carefully based on the parameters.  This software takes this parameter as an input and based on calculation it automatically selects suitable pump from the database in addition to that it generates some useful graphs like **flow-rate vs pressure, power vs pressure and pump efficiency.**  While selecting of pump company has to select manually data which take more time, so company needed a software by which they input some parameter and get appropriate pump and reduce time. | **OBJECTIVE**   * Energy saving: correcting for pump oversizing can save 15% to 25% of electricity consumption for pumping. * Pump efficiency * Flexible for various conditions at the best operating: from high to low viscous liquids. * Simple & easy maintenance with low service cost. | |
| **twin screw pump**  The two screw pump also known as the twin screw pump is the most common type for high power application such as heavy oil pipeline transfer. A twin screw pump is a positive displacement pump what means that the pump is transferring a certain volume of product in accordance to the speed and pitch of the screws. While turning, the two screws are forming closed chambers that are moving in an axial direction. This movement creates a vacuum at inlet side and a pressure at the outlet. Due to this double chamber technic there is an almost pulsation free working with high and low viscosity products. | |
| **Working of the software**  As shown in the Flowchart, this software takes inputs **Flowrate Viscosity, Pressure and RPM.** Then software calculates:  - Coefficient of leakage (QF)  - Required Flowrate (QR)  - Coefficient of RPM  - Pump Power (PP)  - Theoretical Power (PTH)  - Pressure Absolute (PABS)  - Theoretical Flowrate at 1000 RPM.  As shown process on the flowchart, Program iterate all values of pressure from the database and calculate all values that shown above and store all answers in the matrix array from that matrix array, program selects the required flowrate which is higher than input flowrate.  **Advantages after integrating the software**   * After integrating the software, the company will able to select the pump based on their customer needs without doing any calculations manually it can save significant amount of time. * Because the Pump is selected specifically based on the parameters it is more efficient therefore it will consume less power in compare to over suited pump. * Company can build a pump which take feedback of those parameters like Viscosity, pressure, RPM, Flowrate and optimize the RPM to save power.   **Conclusion:**  This software helps for automation  Industry save energy consumption and also make cost effective for the pump industry.  **Reference:**     * pump and system magazine. * pump square LLP. * MATLAB documentation. | |  |