

API 676

The API 676 standard for rotary pumps applies primarily to refinery applications and is published by The American Petroleum Institute. In addition, many petroleum companies use this standard for petrochemical plants and several chemical companies use this standard for the specifying heavy duty pumps. Often API 676 is requested by customers and it is important to fully understand the specific requirements and determine how and if it applies to the application in question.

API 676 covers a variety of pump types that includes gear pumps, screw pumps, vane pumps, progressive cavity, etc. It also covers pumps that range in size from a bread box to pumps that would take up a full tractor trailer. The general intentions of the spec states that pumps be designed for a 20 year life cycle, will not require major maintenance more often than every three years, and pumps should be relatively easy to maintain. Additional specifications state cast steel is the minimum material of construction for wetted parts. Finally, L-10 bearing life is to be a minimum of 25,000 hours, and the standard specifies minimum nozzle loads.

GlobalGear pumps are not automatically API 676. GlobalGear can be figured to API 676 with HG bearings, cast steel or stainless steel construction, and API 682 mechanical seals. There are a number of tests generally required where API 676 is specified. These include a hydrostatic test, performance test, four hour run test, vibration test and sound testing. Usually foundry material certificates are required for pressure containing parts. Nondestructive testing, usually by dye penetrant examination is required for all pressure containing castings. Positive material identification testing is required for all wetted alloy parts.

The baseplate on an API 676 spec pump must be fabricated to be rigid, and have machined mounting surfaces that are in a plane with each other. A sloped drip rim is required, with drain. A vent and drain from the pump casing extending to the edge of the base is required. The couplings must be metal disc type couplings, not elastomeric.

There are minor comments and deviations that we must take when quoting GlobalGear to an API 676 standard. The deviations primarily pertain to fastener details. One major advantage of GlobalGear is that our flanges for opposite port pumps meet the API 676 standard as is. The flanges on Viking Universal bracket style pumps generally do not meet API 676, and Viking must offer a complete new product line of API 676 pumps to meet the nozzle load requirements stipulated in API 676.

Tuthill has experience in supplying API 676 pumps to Saudi Aramco, Dow Chemical, Chevron, Repsol, and other major Petroleum and Petrochemical companies. Distributors should always contact Tuthill customer service whenever quoting an API 676 pump for a review of the requirements, and specification related pricing.

To see API comments and exceptions click [here](#).