

Changes shown by

THE FOLLOWING PARAGRAPH NUMBERS REFER TO API-676, SECOND EDITION, DECEMBER 1994,
WHICH IS A PART OF THIS PRACTICE

SECTION 1 - GENERAL

- I 1.1 SCOPE
- All requirements specified in this practice are additions to those of **API-676** unless specifically noted as exceptions. Paragraph numbers in this practice which do not appear in **API-676** are new paragraphs.
 - An asterisk (*)** indicates that a decision by the Purchaser is required or that additional information is furnished by the Purchaser.
- Note:** A bullet (•) is shown in **API-676** indicating that a Purchaser's decision is required.
- Vendor Qualification.** Rotary pumps shall be supplied by vendors qualified by **experience** to manufacture the units proposed. To qualify, a vendor must have at least two pumps of comparable rating and design performing satisfactorily in a similar service.
- 1.4 DEFINITION OF TERMS
- I 1.4.27 **Pressure casing** is the composite of all stationary pressure containing parts of the pump, including all nozzles, seal glands, seal chambers, and other attached parts but excluding stationary and rotating members of mechanical seals.
- I 1.5 REFERENCED SPECIFICATIONS
- Table 1** lists the practices and standard which shall be used with this practice.
 - Table 2** lists the practices which shall be used with this practice **as specified** by the Purchaser.

TABLE 1

PRACTICES	
IP 2-1-1	Plant Noise Design Criteria
IP 10-11-1	Sizing of Drivers and Transmissions for Compressors, Fans and Pumps
IP 18-10-1	Additional Requirements for Materials
IP 18-12-1	Positive Material Identification
IP 20-1-1	Inspection of Equipment and Materials
STANDARD	
API Standard	
676	Positive Displacement Pumps - Rotary

TABLE 2

PRACTICES	
IP 3-3-12	Oil Mist Lubrication Systems
IP 3-12-1	Valve Selection
IP 3-12-9	General Requirements for Valves
IP 3-16-1	Flanged Joints, Gaskets, and Bolting
IP 10-1-3	Shaft Sealing Systems for Centrifugal and Rotary Shaft Pumps
IP 10-7-1	General Purpose Steam Turbines
IP 10-10-2	General Purpose Gear Units
IP 16-9-1	Low Voltage A-C Motors up to 200 HP (150 kW)
IP 16-9-2	A-C Motors: Medium Voltage and Low Over 200 HP (150 kW)
IP 18-4-1	Postweld Heat Treatment of Equipment Handling Alkaline Solutions

IP 10-2-2		Positive Displacement Pumps – Rotary	
Page 2 of 5			
Rev. 3	June 2000		

(This practice is appropriate for attachment to Inquiry or Purchase Document)

(This practice is appropriate for attachment to Inquiry or Purchase Document)

SECTION 2 - BASIC DESIGN

2.1 GENERAL

E,I **2.1.4** (Exception) **Noise.** Pump vendors shall furnish noise emission data for the quoted equipment with their proposal per **IP 2-1-1**.

I *** 2.1.11** **Pumps and auxiliaries** shall be suitable for **outdoor installation** in the **climatic zone specified**.

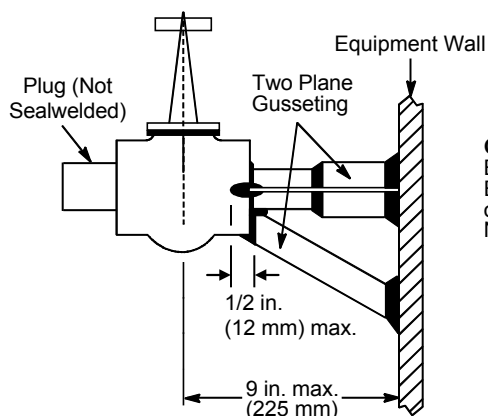
2.2 PRESSURE CASINGS

S **2.2.2** **Areas** of the pump which are normally **subjected to suction pressure** shall be designed to permit, as a minimum, a **hydrostatic test pressure equal to the casing maximum allowable outlet working pressure**.

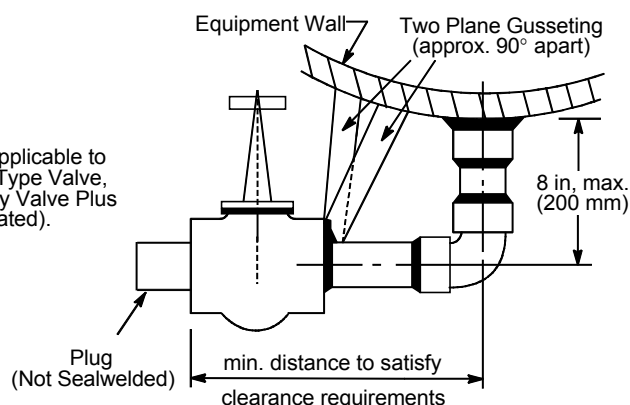
2.3 CASING CONNECTIONS

S *** 2.3.1** (Exception) **Flanged suction connections** shall be suitable for the maximum suction pressure and pumping temperature. The hydrostatic test pressure of suction flanges shall be equal to, or greater than, the pump casing hydrostatic test pressure associated with casing maximum allowable outlet working pressure.

S **2.3.3** a. **Valved vent and drain connections** shall be **braced** and supplied with threaded, non-seal welded round head plugs per ASME B16.11.
b. **Bracing design** shall be as follows:



General Note:
Bracing Detail Applicable to
Extended Body Type Valve,
or Compact Body Valve Plus
Nipple (as illustrated).



Acceptable Bracing Design for
Equipment Only Where Pipe Bend Necessary.

100202

- Gusseting material** for welded gussets shall be of the same nominal chemistry as the connected parts except that carbon steel may be used for **gusseting P-1, P-3, P-4, and P-5 materials**.
- Connections shall be braced in two planes** with gussets having a minimum thickness of 3/16 in. (5 mm), minimum width 3/4 in. (19 mm), as shown above.
- Gusset attachment welds to a pressure boundary shall be postweld heat treated (PWHT) whenever:** (1) PWHT is required for all welds, based on **service conditions** (see **Par. 2.9.4.6**); (2) PWHT is required in the **alloy steel component** to which the attachment is to be made, based on **ASME B31.3 PWHT criteria for butt welds in alloy steel materials** - whether or not butt welds are used in the assembly.
- Proposals to use clamped or bolted gusset designs** shall be submitted to Purchaser for approval by the Owner's Engineer.
- Bracing design for piping connections requiring double block valves** shall be submitted to Purchaser for approval by the Owner's Engineer.