

**THE FOLLOWING PARAGRAPH NUMBERS REFER TO API-611,
FOURTH EDITION, JUNE 1997 WHICH IS A PART OF THIS PRACTICE**

1 - SCOPE

- I 1.1 PURPOSE
- a. (Exception) This practice covers general purpose steam turbines.
 - b. All specifications in this practice are additions to those of **API-611** unless specifically noted as exceptions. Paragraph numbers in this practice that do not appear in **API-611** are new paragraphs.
 - c. **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-611** indicating that a Purchaser's decision is required.
- I * 1.1.1 **General purpose steam turbines**, unless otherwise specified, are intended as **drivers for**:
- a. Pumps, centrifugal and reciprocating utility and instrument air compressors, fans.
 - b. Reciprocating process gas compressors with single reduction gearing.
 - c. Reciprocating process gas compressors with double reduction gearing and less than 1000 hp (750 kW).
 - d. Generators less than 1000 hp (750 kW).
- I 1.1.2 **Vendor qualification.** Steam turbines shall be supplied by vendors qualified by experience in manufacturing the units proposed. To qualify, the vendor must have manufactured, at the proposed point of manufacture, at least two turbines of comparable power and speed with comparable steam conditions. These turbines must have been in service for at least one year and must be performing satisfactorily.

2 - REFERENCES

- I 2.1 REFERENCED PUBLICATIONS
- a. **Table 1** lists the practices and standards which shall be used with this practice.
 - * b. **Table 2** lists practices and standards which shall be used with this practice **as specified** by the Purchaser.

TABLE 1

PRACTICES	
IP 2-1-1	Plant Noise Design Criteria
IP 18-12-1	Positive Material Identification
IP 20-1-1	Inspection of Equipment and Materials
STANDARDS	
API Standard	
611	General-Purpose Steam Turbines for Petroleum, Chemical, and Gas Industry Services
ASME Code	
B31.3	Process Piping

*

TABLE 2

PRACTICES	
IP 10-10-1	Special Purpose Gear Units
IP 10-10-2	General Purpose Gear Units
IP 16-9-1	Low Voltage A-C Motors Up to 200 HP (150 kW)
IP 18-10-1	Additional Requirements for Materials
STANDARDS	
ASTM Standards	
A 488 / A 488M	Steel Castings, Welding, Qualifications of Procedures and Personnel
B 111 / B 111M	Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock
B 169 / B 169M	Aluminum Bronze Plate, Sheet, Strip and Rolled Bar
B 171 / B 171M	Copper-Alloy Plate and Sheet for Pressure Vessels, Condensers and Heat Exchangers
B584	Copper Alloy Sand Castings for General Applications
API Standard	
671	Special Purpose Couplings for Refinery Service
AGMA Standard	
6010	Standard for Spur, Helical, Herringbone and Bevel Enclosed Drives

4 - BASIC DESIGN

4.1 GENERAL

E 4.1.12 (Exception) **Noise.** Vendors shall furnish noise emission data for the quoted equipment with their proposal per IP 2-1-1.

O,R * 4.1.14 **Turbine and auxiliaries** shall be suitable for **outdoor installation** in the climatic zone specified.

R * 4.1.17 When specified, a spare rotor shall be furnished for and delivered with each turbine. If the rotors of two or more machines should be duplicates, a single spare rotor will suffice.

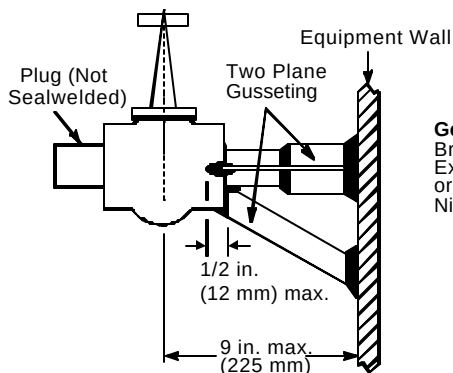
4.2 PRESSURE CASINGS

I,O * 4.2.7 For turbines specified for automatic unattended startup purchaser shall provide steam traps as required to automatically drain condensate from the casing.

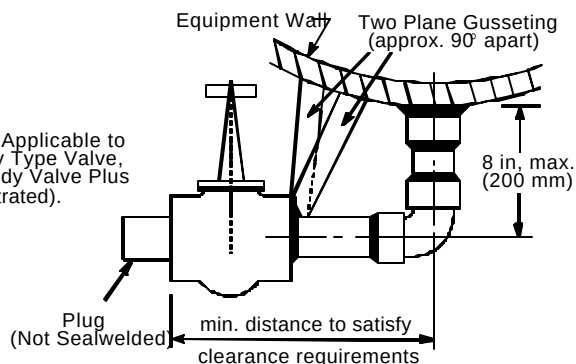
4.4 CASING CONNECTIONS

S ♦ * 4.4.3 a. Except for **Category D** fluid service conditions per **ASME Code B31.3**, **valved vent and drain connections** shall be **braced** and supplied with threaded, non-seal welded round head plugs per ANSI B16.11.

S,R 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.

- 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.