

NOTE: THE FOLLOWING PARAGRAPH NUMBERS REFER TO API-614, FOURTH EDITION, APRIL 1999, WHICH IS A PART OF THIS PRACTICE

CHAPTER 1 - GENERAL REQUIREMENTS

- I 1 SCOPE
- 1.1 a. This practice covers lubrication, shaft sealing systems, and control oil systems for:
1. Centrifugal Compressors and Axial Compressors.
 2. Rotary Screw Compressors.
 3. Special Purpose Centrifugal Fans.
 4. Special Purpose and Generator Drive Steam Turbines.
 5. Gas Turbines and Expanders.
 6. High Speed Special Purpose Gears.
 7. Motors for compressors and fans (above **Items 1-3**).
- b. (Exception) The **requirements for general purpose machinery lube oil systems** shall be as specified in the International Practice(s) covering the specific type of general purpose machinery.
- c. All requirements specified in this practice are additions to those of **API-614** unless specifically noted as exceptions. Paragraph numbers in this practice which do not appear in **API-614** are new paragraphs.
- d. **An asterisk (*)** indicates that a decision by the Purchaser is required or that additional information is furnished by the Purchaser.
- I 2 REFERENCED PUBLICATIONS
- 2.1 a. **Table 1** lists the practices, code, and standards which shall be used with this practice.
- * b. **Table 2** lists the 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 15-5-1	Level Instruments
IP 3-6-1	Piping for Instruments	IP 15-9-1	Control Valves
IP 3-6-2	Piping at Control and Protective System Valve Stations	IP 16-9-1	Low Voltage A-C Motors Up to 200 HP (150 kW)
IP 3-12-1	Valve Selection	IP 16-9-2	A-C Motors: Medium Voltage and Low Voltage Over 200 HP (150 kW)
IP 3-12-9	General Requirements for Valves	IP 18-7-1	Welding Procedures
IP 3-18-1	Piping Fabrication Shop or Field	IP 18-10-1	Additional Requirements for Materials
IP 15-1-2	Instrumentation for Compressors and Drivers	IP 18-12-1	Positive Material Identification
IP 15-2-1	Temperature Instruments	IP 20-1-1	Inspection of Equipment and Materials
IP 15-3-1	Pressure Instruments		
CODE AND STANDARDS			
ASME Code		ASTM Standards	
B31.3	Process Piping	B 151 / B151M	Copper-Nickel-Zinc Alloy (Nickel Silver) and Copper-Nickel Rod and Bar
API Standard		B 466 / B466M	Seamless Copper Nickel Pipe and Tube
614	Lubrication, Shaft-Sealing, and Control-Oil Systems and Auxiliaries for Petroleum, Chemical and Gas Industry Services		

TABLE 2

PRACTICES	
IP 3-16-1	Flanged Joints, Gaskets, and Bolting
IP 5-1-1	Pressure Vessels
IP 15-7-1	Electric Power Branch Circuit Design for Instrumentation
IP 15-7-2	Protective Systems
STANDARDS	
ASTM Standards	
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 Condenser Tube Plates [Metric]
B 584	Copper Alloy Sand Castings for General Applications

4 GENERAL

4.3 SYSTEM SELECTION

- M 4.3.2 a. **Special purpose systems** shall be provided for the equipment types specified in **Par. 1.1a**.
- b. For general purpose machinery, this practice applies only when specified in the International Practice(s) covering the specific type of general purpose machinery. See **Par. 1.1b**.
- c. **Auxiliary piping and wiring within the baseplates and console**, furnished and mounted by Vendor shall terminate in flanged connections and terminal boxes, respectively, suitable for Purchaser's connections.

5 PIPING

5.1 GENERAL

- I 5.1.1 **Piping design and joint fabrication, examination, and inspection** shall be in accordance with ASME B31.3 and the additional requirements of [IP 3-18-1](#) and [IP 18-7-1](#).

- I 5.1.2 a. The piping requirements of this practice are applicable to auxiliary piping which is provided by the Vendor and which terminates at a Purchaser's connection, and to auxiliary piping which may be supplied by the Purchaser to interconnect vendor furnished components.

- I * b. Unless otherwise specified, for salt or brackish cooling water, carbon steel piping and 90 Cu 10 Ni ASTM B466 Alloy C70600 tubing in sizes 1/2 to 1 in. (12 to 25 mm) shall be used. Fittings shall be per ASTM B151 Alloy C70600.

- S c. Piping and components between double block valves shall be suitable for the more severe line classification on either side of the double block valve.

- C,O d. Unexposed oil piping in bearing housings, crankcases, and similar applications may be vendor's standard for lube and control oil.

- R,M e. (Exception) Gaskets shall be per [IP 3-16-1](#) for Groups I, II, and III. For Group IV, gaskets shall be spiral wound Type 304 stainless steel with non-asbestos filler. An internal and external centering ring shall be provided.

- I,O 5.1.5 a. Bracing of connections shall be per [IP 3-18-1](#). Block valves shall not be installed in small piping connections where interruption of flow will result in machine damage or shutdown, e.g., lube oil laterals to bearings.

- M b. Flanges or other removable connections shall be provided throughout the piping system to permit complete removal of the piping and shall be located close to machinery to permit removal or assembly of the equipment. Blind flanges shall be installed at dead ends of all piping.

- R 5.1.9 (Exception) Except as permitted by [IP 3-6-1](#), tubing shall not be used.

- R 5.1.14. The **root pass of all butt welds on stainless steel pipe** shall employ an inert gas welding process such as GTAW or GMAW. Only solid wire filler metal may be used, and the joint shall be back purged with pure argon during the entire welding operation.

- R,M 5.1.17 a. **Sealwelding** is also required for pressurized lube, seal, and control oil lines and gas services under vacuum.

- b. There shall be no seal welding on instrument connecting piping and tubing downstream of the valved take off connection.