

STEAM BOILERS

GENERAL DESCRIPTION

1. GENERAL

1.01 This section describes the controls and subordinate parts required on steam boilers. Each steam boiler, whether it is cast iron, steel fire tube, or steel water tube, shall have the controls and subordinate parts described in this section. (See Fig. 1.)

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 The recommendations contained in this section are minimum requirements. Other codes having jurisdiction will apply if they are more stringent. Engineering judgment, based on a specific job, may dictate more stringent requirements. Refer to Section 760-530-108* for additional information.

1.04 The controls, valves, and subordinate parts shall be manufactured in conformance with American Society of Mechanical Engineering (ASME), Section IV, and equipped to meet American Gas Association (AGA) American National Standard Institute (ANSI) Standard Z 21.13, and Underwriter's Laboratories (UL) Standard 726.

2. DESCRIPTION

2.01 The **operating pressure control** shall be connected to the steam space of the boiler. It is connected directly to the boiler shell without an intervening shutoff valve or cock. The device shall be installed with a minimum 1/4-inch National Pipe Thread (NPT) **nonferrous** syphon.

2.02 The **high-pressure limit control** shall be connected to the steam space of the boiler. It is connected directly to the boiler shell without an intervening shutoff valve or cock. The device shall be installed with a minimum of 1/4-inch NPT **nonferrous** syphon.

2.03 The **pump controller and low water cutoff control** shall be connected to the boiler in both the steam space and water space of the boiler.

*Check Divisional Index 760 for availability.

It is connected directly to the boiler shell without an intervening shutoff valve, using a minimum of 3/4-inch NPT pipe.

2.04 The **low water limit control** shall be connected to the boiler in both the steam space and water space of the boiler on the **opposite** side of the boiler from the low water feeder and fuel cutoff control. It is connected directly to the boiler shell without an intervening shutoff valve, using a minimum of 3/4-inch NPT pipe. A probe-type control is also acceptable.

2.05 The **steam pressure gauge** shall be connected to the steam space of the boiler. It is connected directly to the boiler shell with 1/4-inch NPT **nonferrous** gauge cock, provided for isolating the gauge, and 1/4-inch NPT **nonferrous** syphon. If the gauge has an internal syphon, the 1/4-inch NPT nonferrous syphon may be omitted.

2.06 The **water level gauge** shall be integral with the water column which is connected to the steam space and water space of the boiler. It may be connected in combination with the pump controller and low water cutoff.

2.07 The **king valve (main shutoff valve)** shall be connected to the boiler shell with as short a section of pipe as practical. The valve shall be a rising stem gate valve. If the valve is not operable by hand from the floor or platform, provide a chain operator.

2.08 The **safety valve** shall be flange mounted to the steam space of the boiler with as short a section of pipe as practical without an intervening valve.

2.09 The **boiler drain valve** shall be connected to the bottom of the water space of the boiler and fitted with a discharge pipe directed toward a floor or funnel drain. A sufficient number of drain valves shall be installed to assure proper flushing of the boiler.

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2.10 The **control drain valve** shall be connected to the bottom of each water-level control below the water-equalizing connection and shall be fitted with a discharge pipe directed toward a floor or funnel drain.

2.11 The **boiler return valve** shall be connected to the water space of the boiler with as short a section of pipe as practical. The valve shall be a rising stem gate valve.

2.12 The **boiler return check valve** shall be installed in the return line between the boiler return valve and the return system, located as close as practical to the boiler return valve. The valve shall be a swing check installed to permit water flow into the boiler.

2.13 The **manual feed valve** shall be connected to the return line between the boiler return valve and the boiler. The valve shall be a globe valve.

2.14 The **antisiphon device or back-flow preventer** is installed on water supply piping to prevent contamination of potable water supplies. Refer to local codes.

2.15 The **flame safeguard controls and fuel train** shall be installed as described in Section 760-530-110.*

*Check Divisional Index 760 for availability.

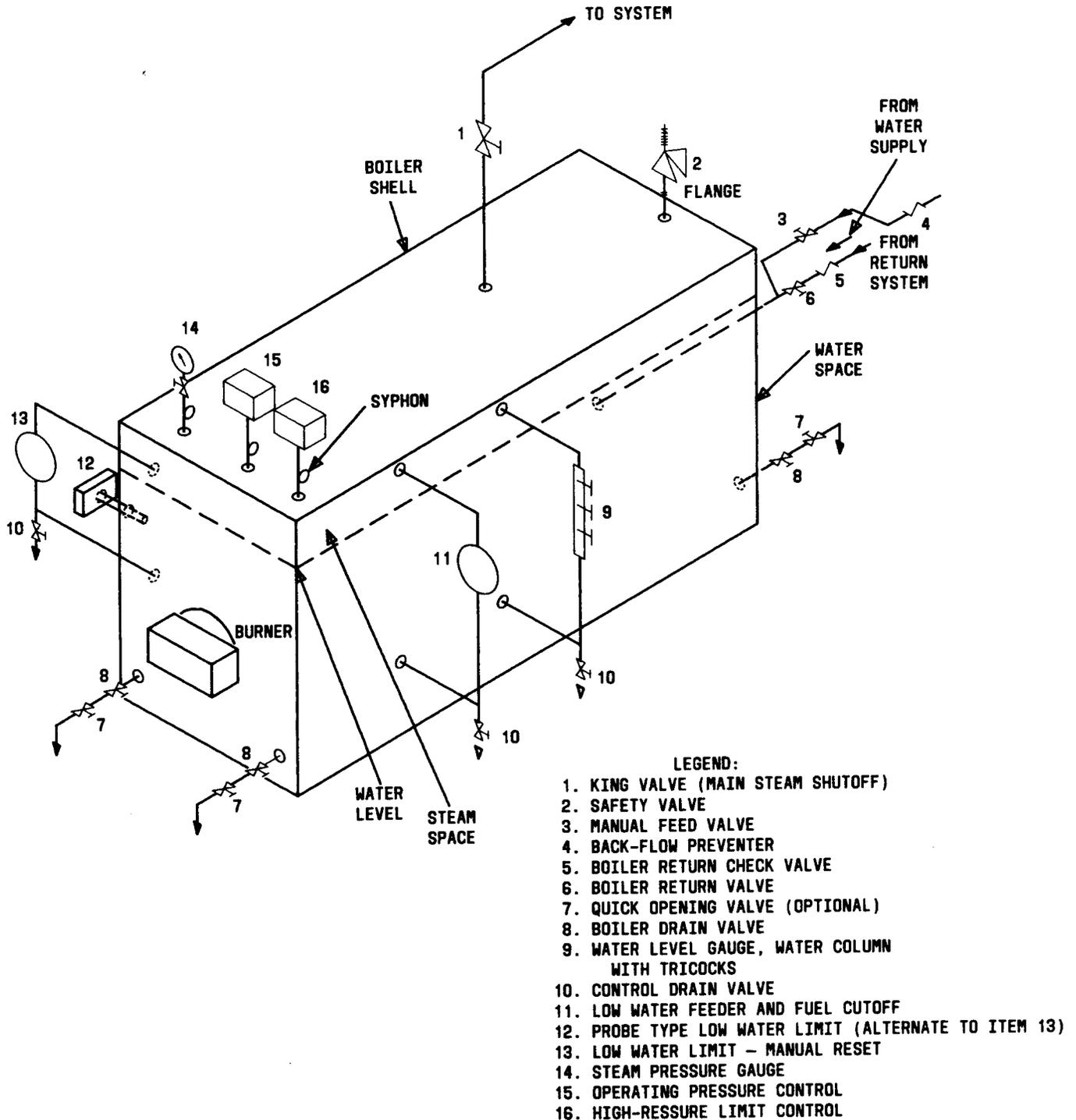


Fig. 1—Steam Boiler