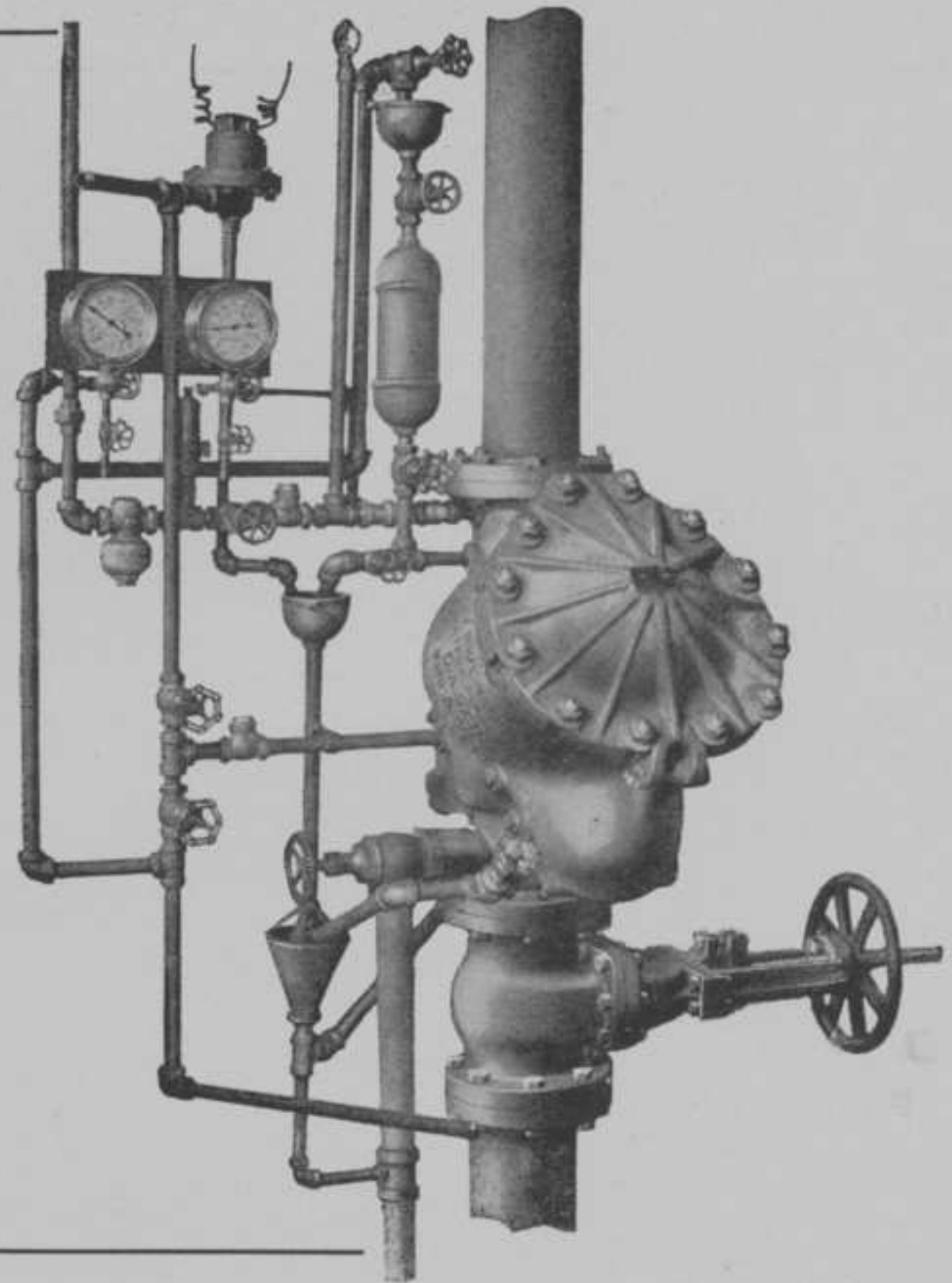


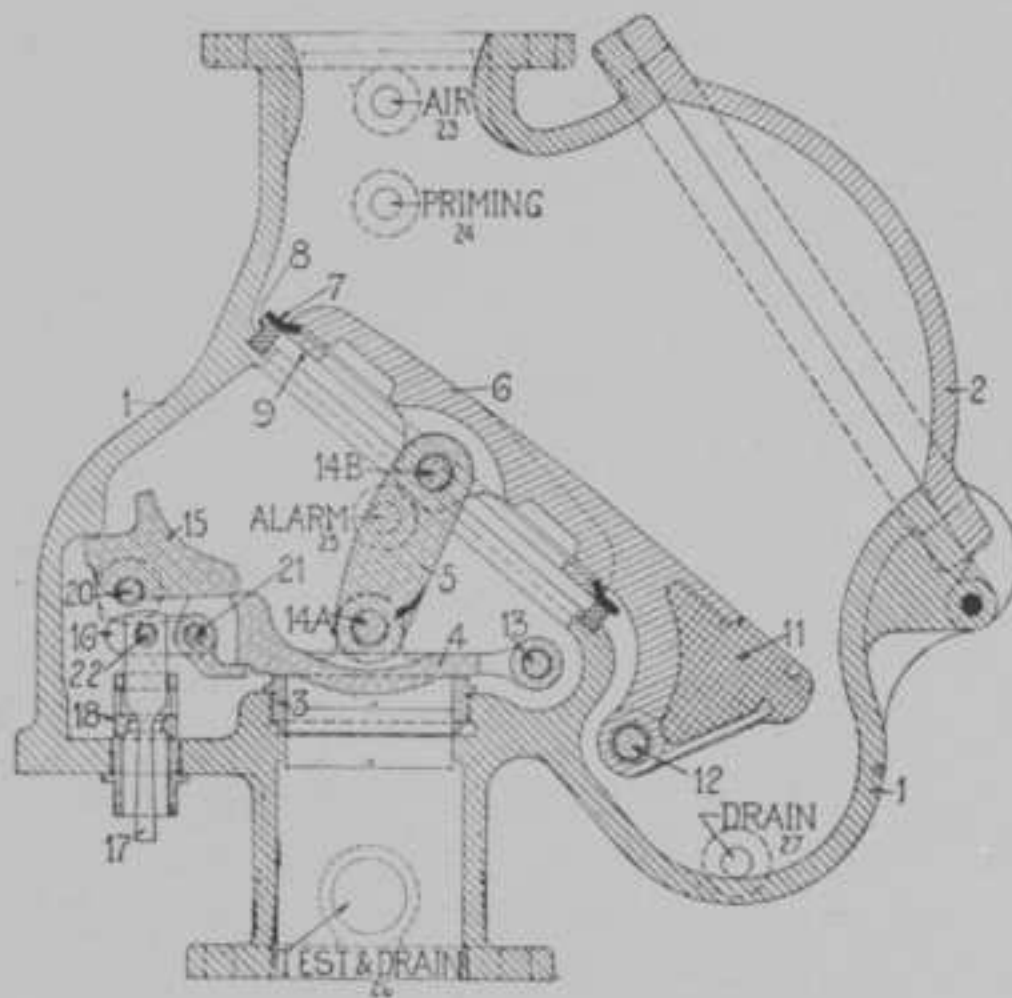
# Central Straightflow Dry Pipe Valve

**LEWIS  
MODEL "B"**



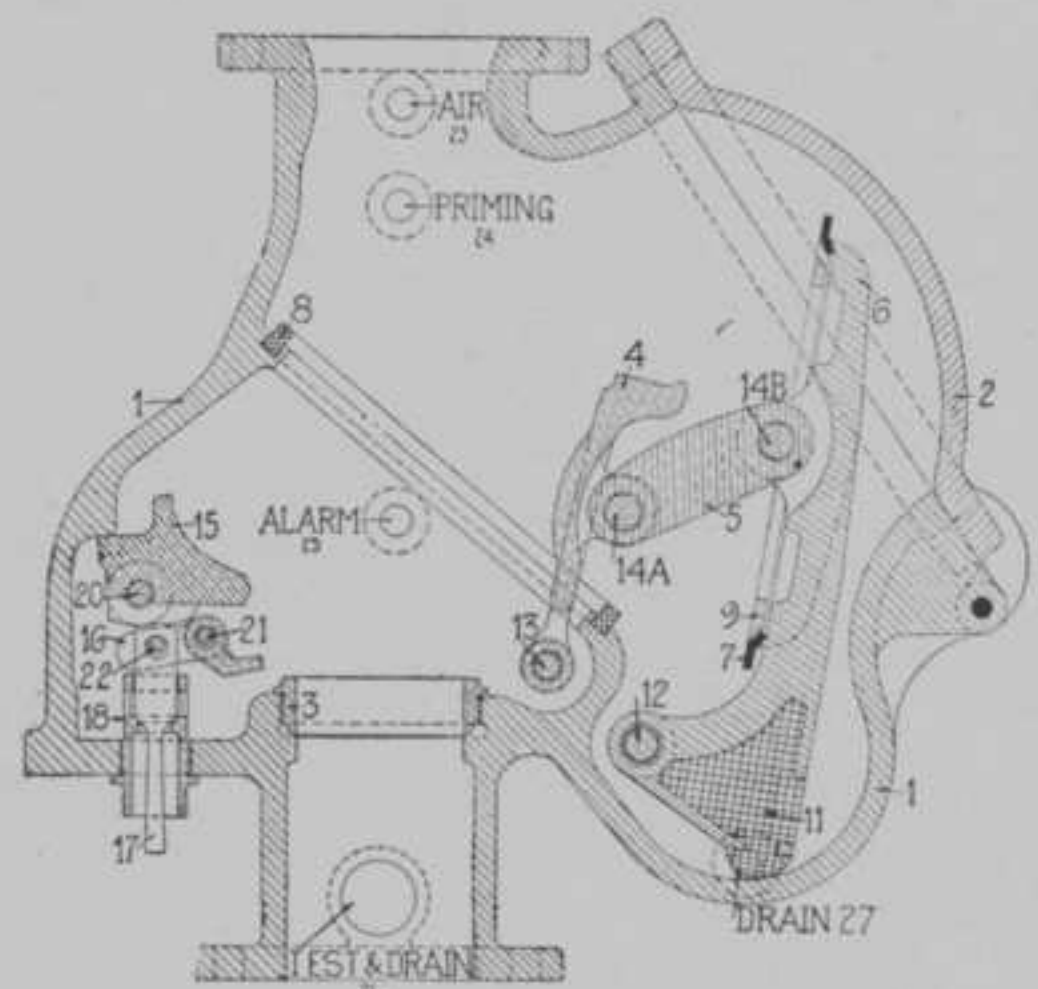
CUT No. 1

Central Straightflow Dry Pipe Valve With Connections



CUT No. 2

Sectional View of Valve in Closed Position



CUT No. 3

Sectional View of Valve in Open Position

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## Central Straightflow Dry Pipe Valves

### Purpose and Installation

The Central Straightflow Dry Pipe Valve (Lewis Model B) should be used in automatic sprinkler systems in unheated buildings or spaces where there is a possibility of the freezing of water in the pipe lines.

The Central Dry Pipe Valve is of the straightflow, differential type, giving simplicity of construction with a straight unobstructed flow of water. All parts of the valve are accessible for cleaning and repair through the single cover opening.

### Description

**See Cuts Nos. 2 and 3 for reference numbers**

No. 1 is the cast iron valve body.

No. 2 is the cast iron valve cover hinged and bolted to the body.

No. 3 is the bronze water seat fastened into the body.

No. 4 is the bronze water valve operating on hinge pin (13) which pin extends through bosses in the valve body (1).

No. 5 is the bronze link connecting the water valve (4) with the air valve (6) and operates on hinge pins (14A and 14B) which extend through lugs on the water and air valves.

No. 6 is the cast iron galvanized air valve to which is attached the rubber diaphragm (7) which is held in place by the bronze retaining ring (9). The air valve (6) operates on hinge pin (12) which extends through bosses in the valve body (1). Air valve (6) has a lead counterweight and bumper (11).

No. 7 is the rubber diaphragm or ring closing the air seat.

No. 8 is an air seat of babbitt metal.

No. 9 is the bronze retaining ring held in place by bronze machine screws and holds the rubber ring in position.

No. 11 is the lead counterweight and bumper formed in the hollow space of the air valve (6).

No. 12 is the air valve hinge pin.

No. 13 is the water valve hinge pin.

Nos. 14A and 14B are the link pins attaching the link to the water and air valves respectively.

No. 15 is the bronze latch which operates to prevent the valve from reseating and is pivoted on hinge pin (20) which extends through the bosses on the valve body (1).

No. 16 is the bronze drip valve lever operating on hinge pin (21) which extends through bosses on the valve body (1).

No. 17 is the bronze drip valve which is attached to the drip valve lever (16) through a bronze pin (22) fitting loosely in the drip valve (17).

No. 18 is the bronze drip valve seat attached to the valve body (1).

No. 20 is the latch pin extending through lugs on the body (1).

No. 21 is the drip valve lever pin extending through lugs on the body (1).

No. 22 is the drip valve pin extending through the drip valve lever (16).

No. 23 are  $\frac{3}{4}$ " pipe outlets on either side of the valve body for connection to the air supply line to the sprinkler system.

No. 24 are  $\frac{3}{4}$ " pipe outlets on either side of the valve body for connection to priming water supply for the purpose of priming the valve when setting.

No. 25 are  $\frac{3}{4}$ " pipe outlets on either side of the valve body for connection to the alarm devices which give indication of the operation of the dry valve and the sprinkler system.

## For Automatic Sprinkler Systems

No. 26 are 2" pipe outlets tapped on either side of the valve body for connection to a drain outlet to test the pressure and flow of water under the water valve and also for the purpose of draining the sprinkler system above the valve, after the valve has operated, preliminary to resetting the valve.

No. 27 are 3/4" pipe outlets in the air chamber of the valve connected to a drain line for the purpose of fully draining the air chamber of all water when the system is thoroughly drained.

### Directions for Setting Central Straightflow Dry Pipe Valve

**Do not apply grease, tallow, or any oily substance to valve seats (3 and 8).**

A. Close the main controlling gate valve in the water supply pipe under the dry pipe valve.

B. Open draw-off valve on outlet (26). Close valve when water ceases to flow.

C. Open valve on outlet (27) to drain all water from air chamber of dry pipe valve.

D. Open the dry valve cover (2) and remove the valves from their seats.

E. Use a clean piece of waste or smooth rag and carefully clean the faces of air seat (8); water seat (3); air valve diaphragm (7) and water clapper (4) to remove all sediment and dirt from the faces of these valves and seats.

F. Slowly push the air valve (6) downward and allow the valves to engage and rest on the latch (15); push upwards on drip valve (17) until it lifts latch (15) and permits the valves to drop to their seats.

G. Replace valve cover (2) and bolt tightly in place.

H. See that the valves on drain lines (26 and 27) are closed and open valve on priming line (24); prime the dry pipe valve with water through the priming line until water flows

out of valve on outlet (23) indicating that water has reached the proper level. Close valves on priming inlet (24) and allow water to fill priming chamber on exterior of dry valve in piping connections until priming water shows in the open priming cup, then close all valves on priming line.

I. Open valve on air supply line on outlet (23) and pump a few pounds of air pressure into the system.

J. Open draw-off valves and vent valves throughout the system (draw-off valves to be opened first) to force the water from low points of system, then close all draw-off and vent valves.

K. Pump the necessary air pressure into the sprinkler system to hold the dry pipe valve closed against the water pressure in the supply pipe.

See the following table:

Water Pressure	Air Pressure	
	Not less than	Not more than
50	15	25
75	20	30
100	25	35
150	35	50

Note: In using the above table the maximum water pressure to which the system is likely to be subjected should be considered instead of the normal pressure.

L. Open slowly the main controlling gate valve in the supply pipe under the Dry Pipe Valve. Carefully observe to see if any water leaks past the drip valve (17) into the drain funnel. If there is no leakage dry pipe valve seats (3 and 8) are tight and the main controlling gate valve should then be opened wide.

**Water must not be allowed to stand in the dry pipe system above the 3/4" inlet (23) where it might freeze or exert pressure on the air valve.**

## Central Straightflow Dry Pipe Valves

### Operation

When the air pressure in the system is relieved by the opening of a sprinkler, the pressure of the water under the water valve (4) causes the water valve to lift, allowing the drip valve (17) to close, filling the intermediate chamber. This causes the full water pressure to act on the under side of the air valve (6) which throws wide open the valve, giving a full size unobstructed straightflow for the water. The pressure of water passing through the alarm outlet (25) to the alarm devices causes an alarm to be sounded indicating the operation of the sprinklers and valve.

### Inspection

#### Water Supply

See that water controlling gate valve is wide open.

#### Air Pressure

See that sufficient air pressure is maintained on the system.

#### Priming Water Level

Open valve on priming line (24) slightly, to see that priming water is at the proper level, then close valve immediately. If water does not appear, add priming water by closing valve under the open funnel on the priming line and opening valve underneath the priming chamber and on priming line (24) to permit the water standing in priming chamber to flow into the valve to proper level, then close valves on priming line.

Open test valve on air line (23) to see if sprinkler system is free of water down to the level of the air inlet; if water appears, draw off until flow ceases, then close valves on air test line.

#### Drip Valve

Observe if there is any flow of water from drip valve (17) into open funnel at this point.

Press upwards on drip valve (17) to see that latch (15) is free to rotate on its pin.

If no water appears at drip valve (17) air and water seats are tight.

#### Testing of Alarm

It is advisable occasionally to test the alarm systems by operating the by-pass valves from the water supply to see that the alarm devices are in operative condition. If continuous alarms are given close valves on by-pass and open valve on alarm line (25).

### Important

The Dry Pipe Valve should be located in a clean, dry, frost-proof room.

A Central Automatic Sprinkler should be placed in dry pipe valve room and should be connected to the air side of the dry pipe valve into the air supply line between the dry pipe valve and the air supply valve, so that this sprinkler will be under the system pressure when air is on the system.

Approved by All Insurance Companies

MANUFACTURED BY

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