

Dry Pipe Risers

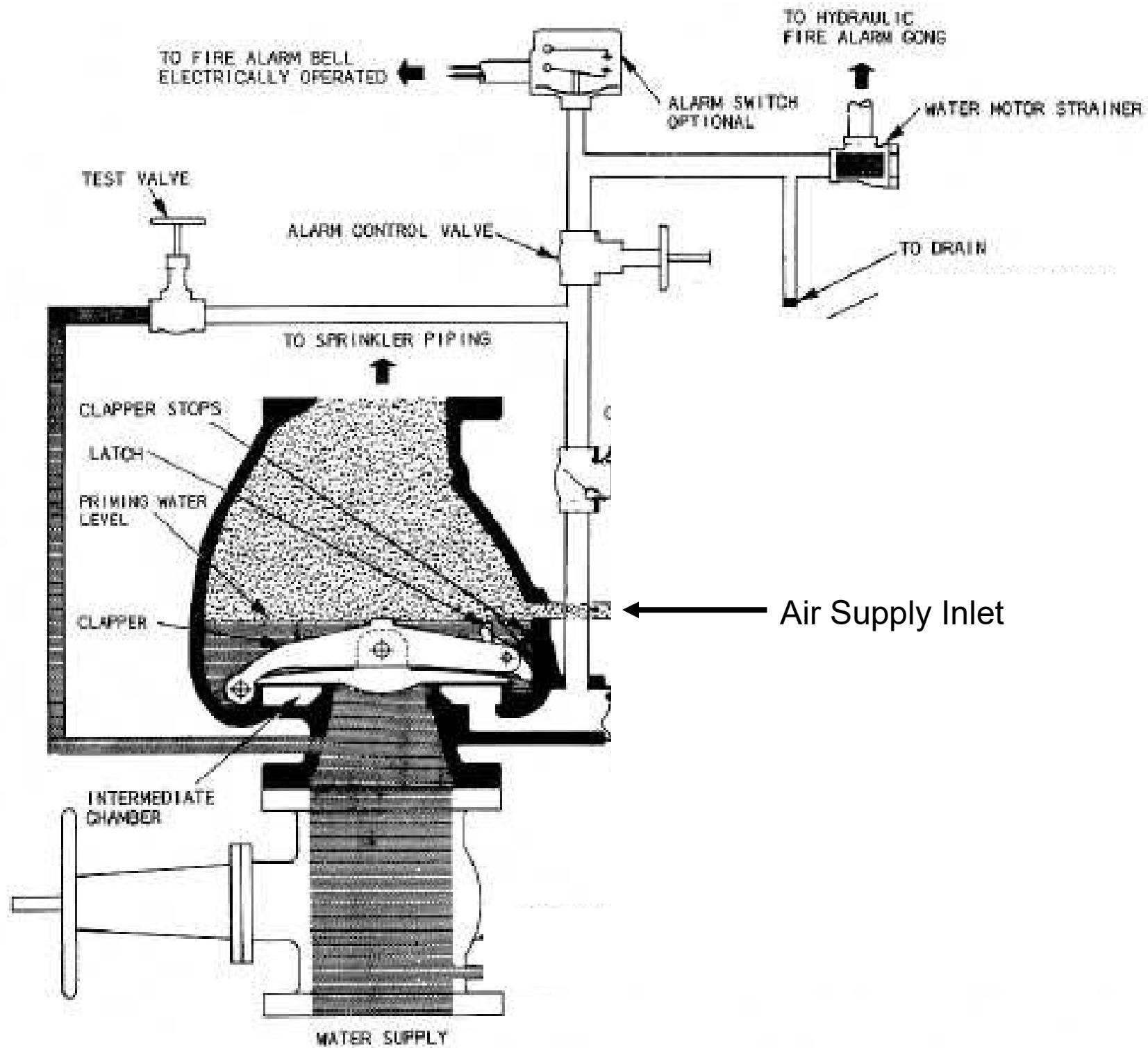
FPST 1373

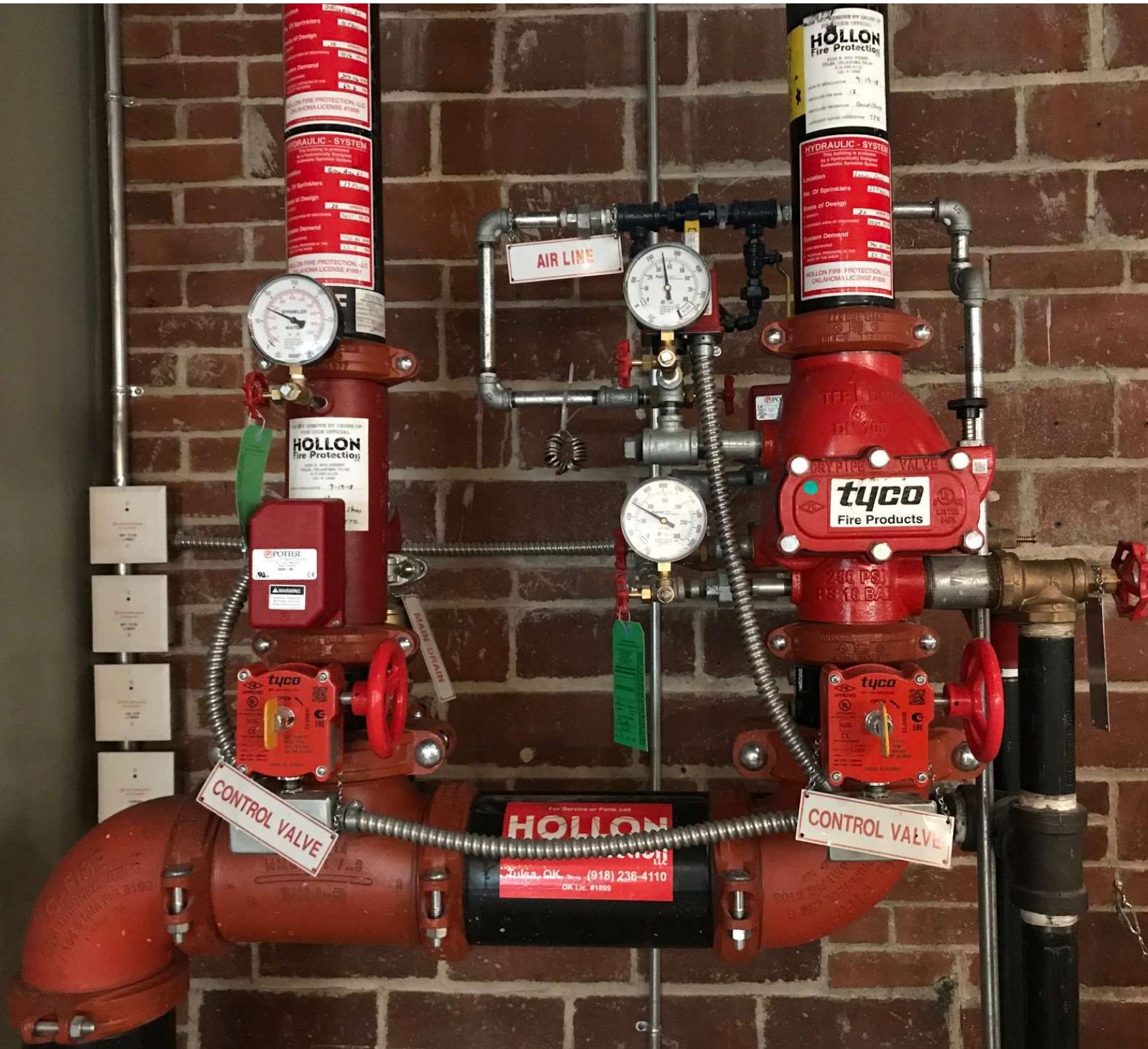


Dry Pipe Valve

- Work on differential principal
 - Typically 6:1
 - Air system pressure is dictated by the water pressure and an additional 20psi safety factor
 - Separate system required for air supply

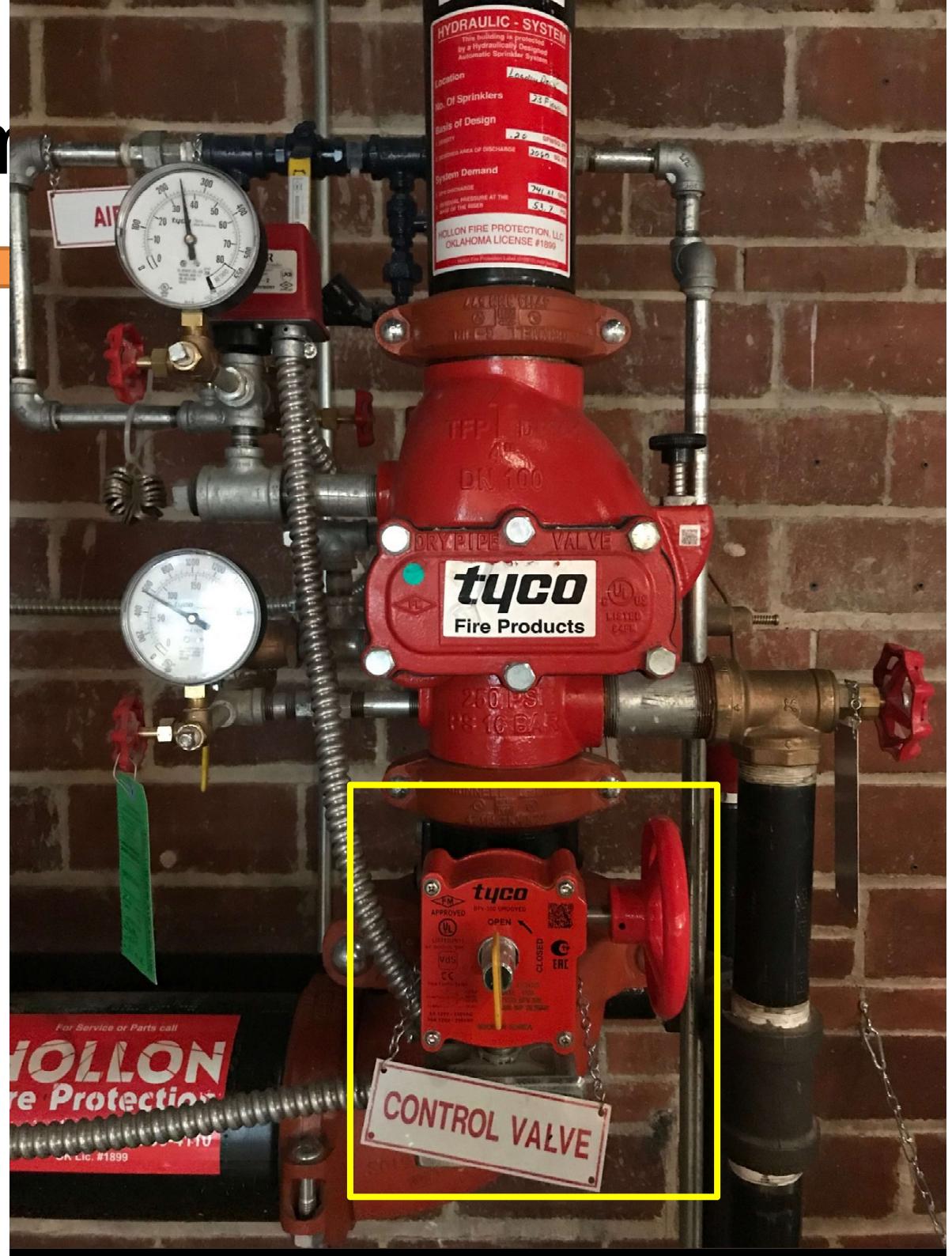






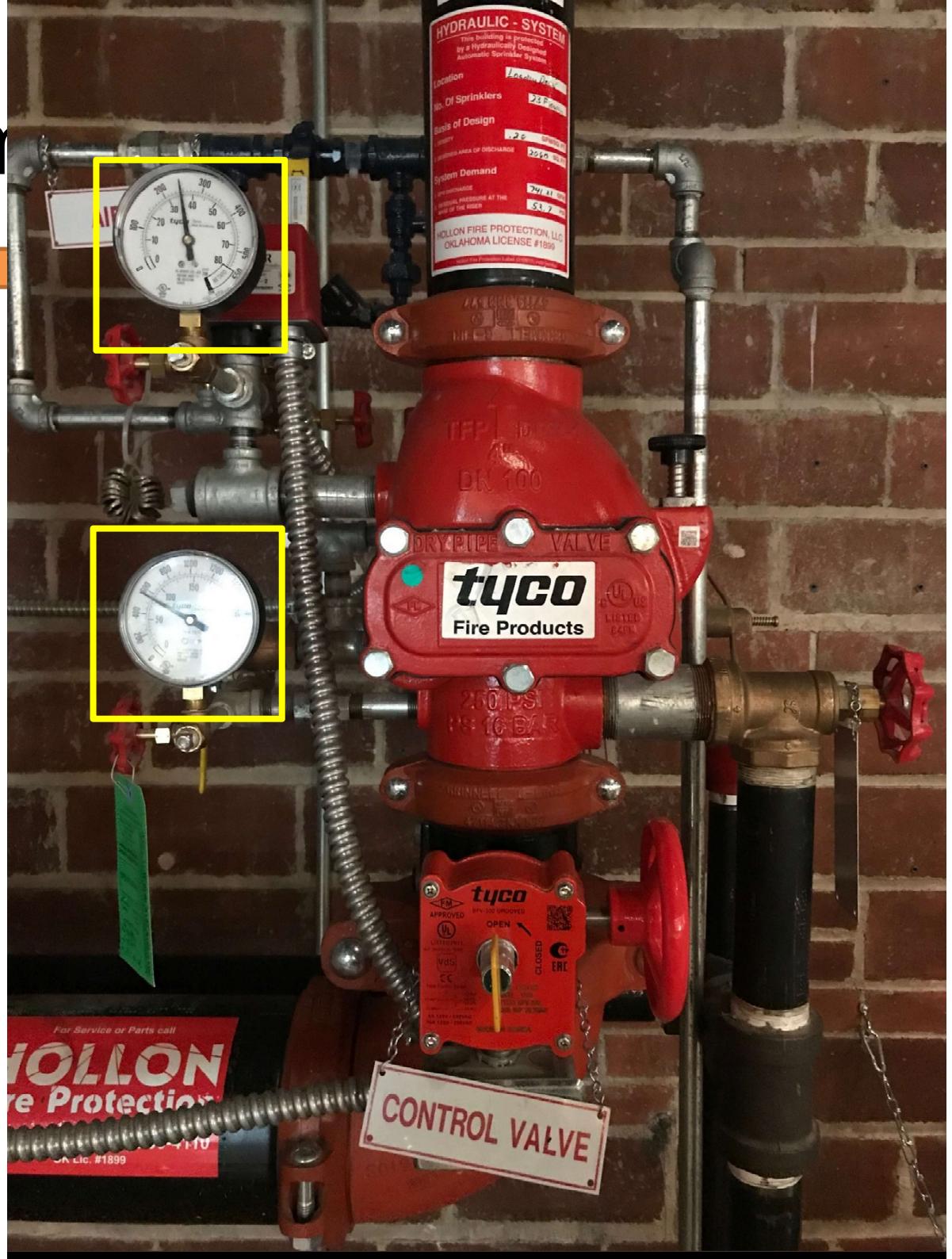
Control

- Main control valve



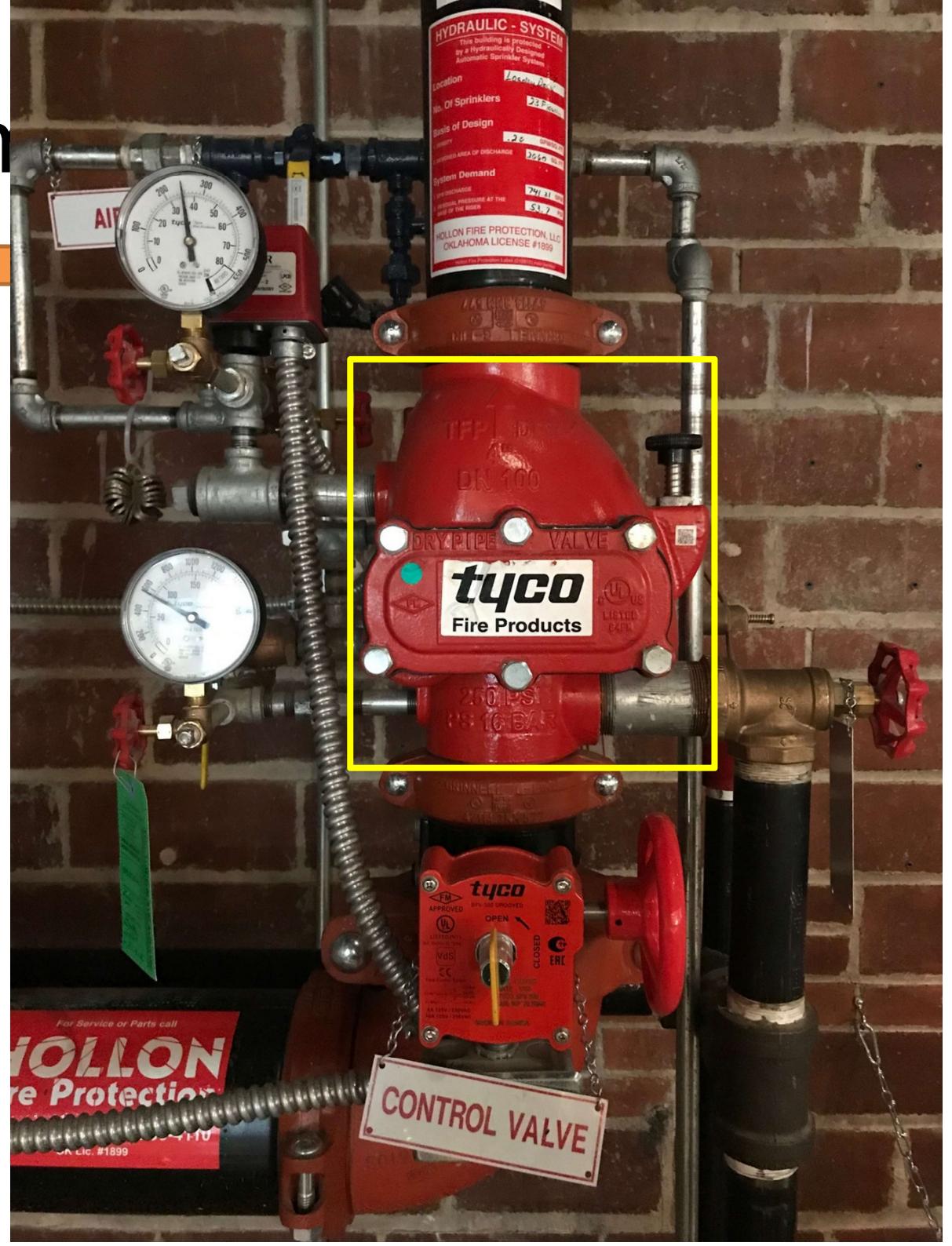
Con

- Gauges
 - Supply water
 - System air pressure



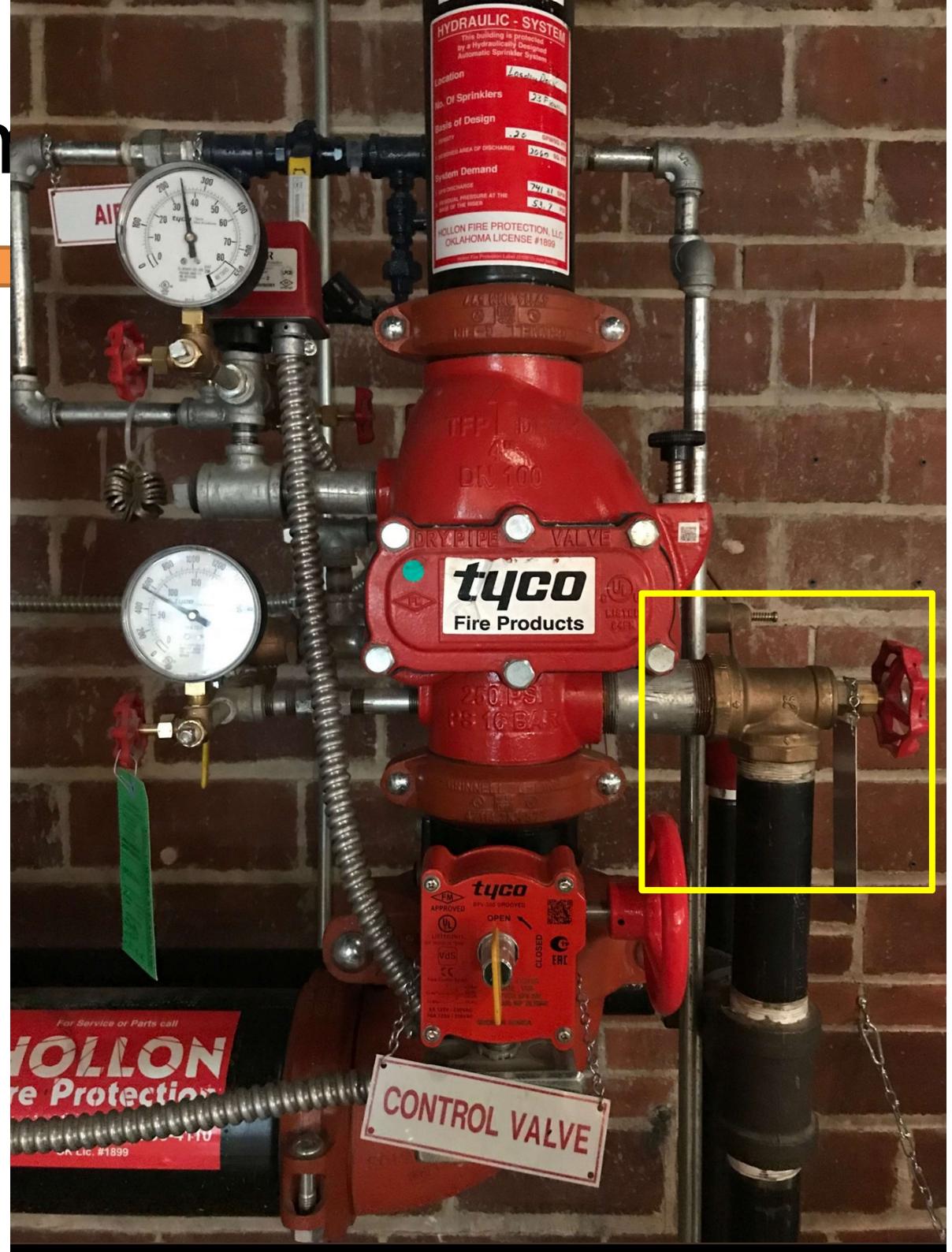
Con

- Dry pipe valve



Con

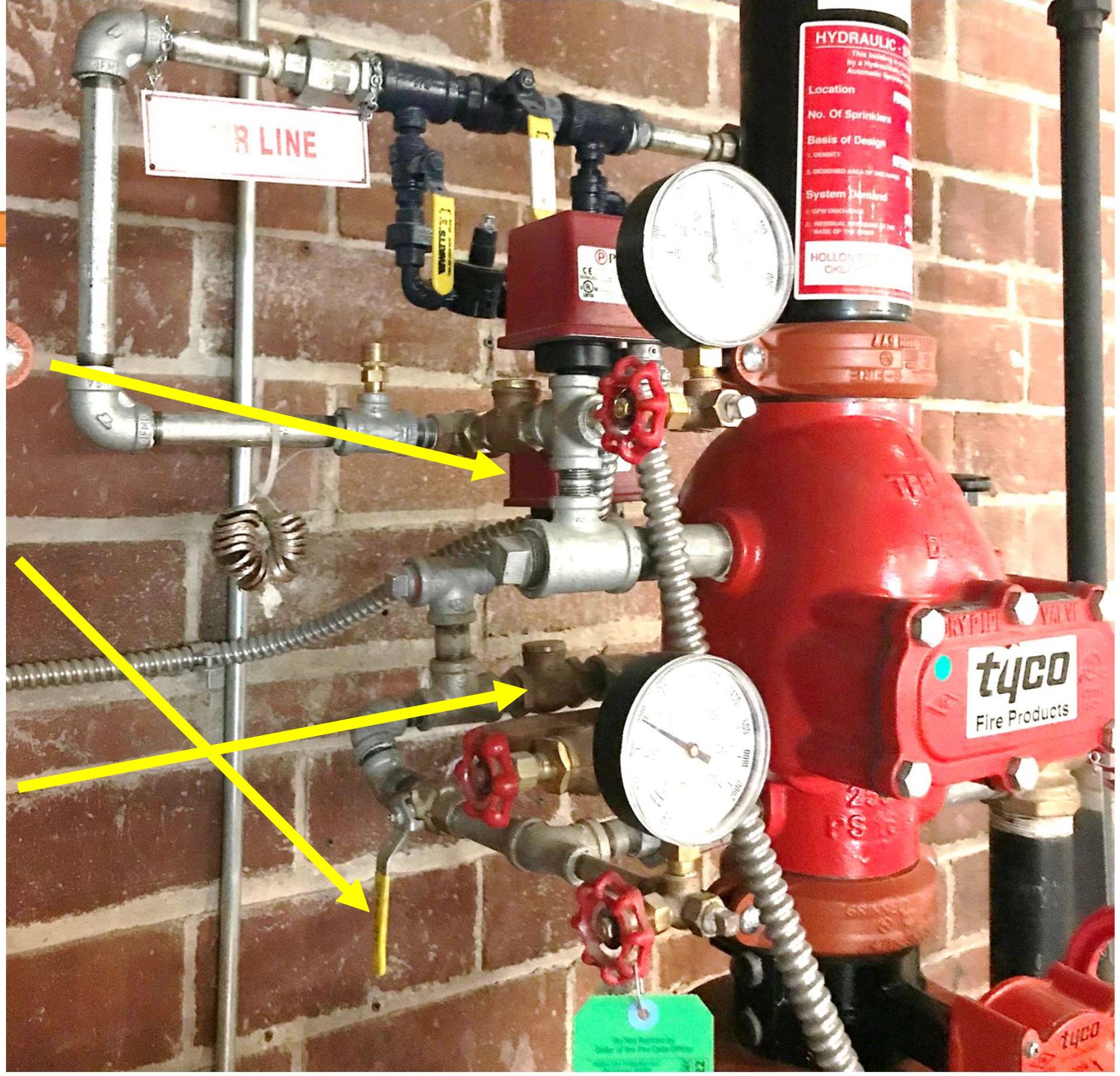
- Main drain

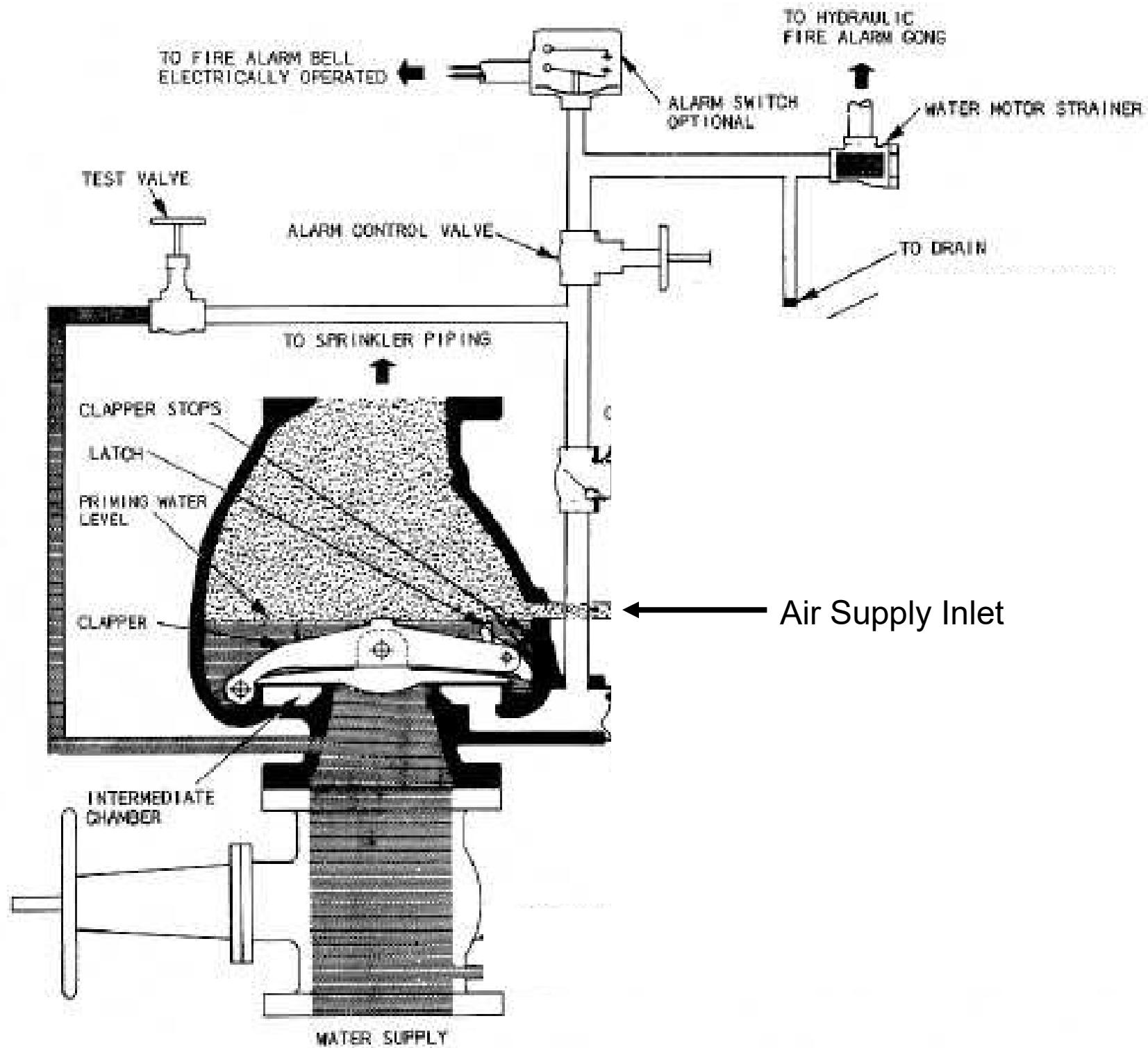


Water flow
alarm

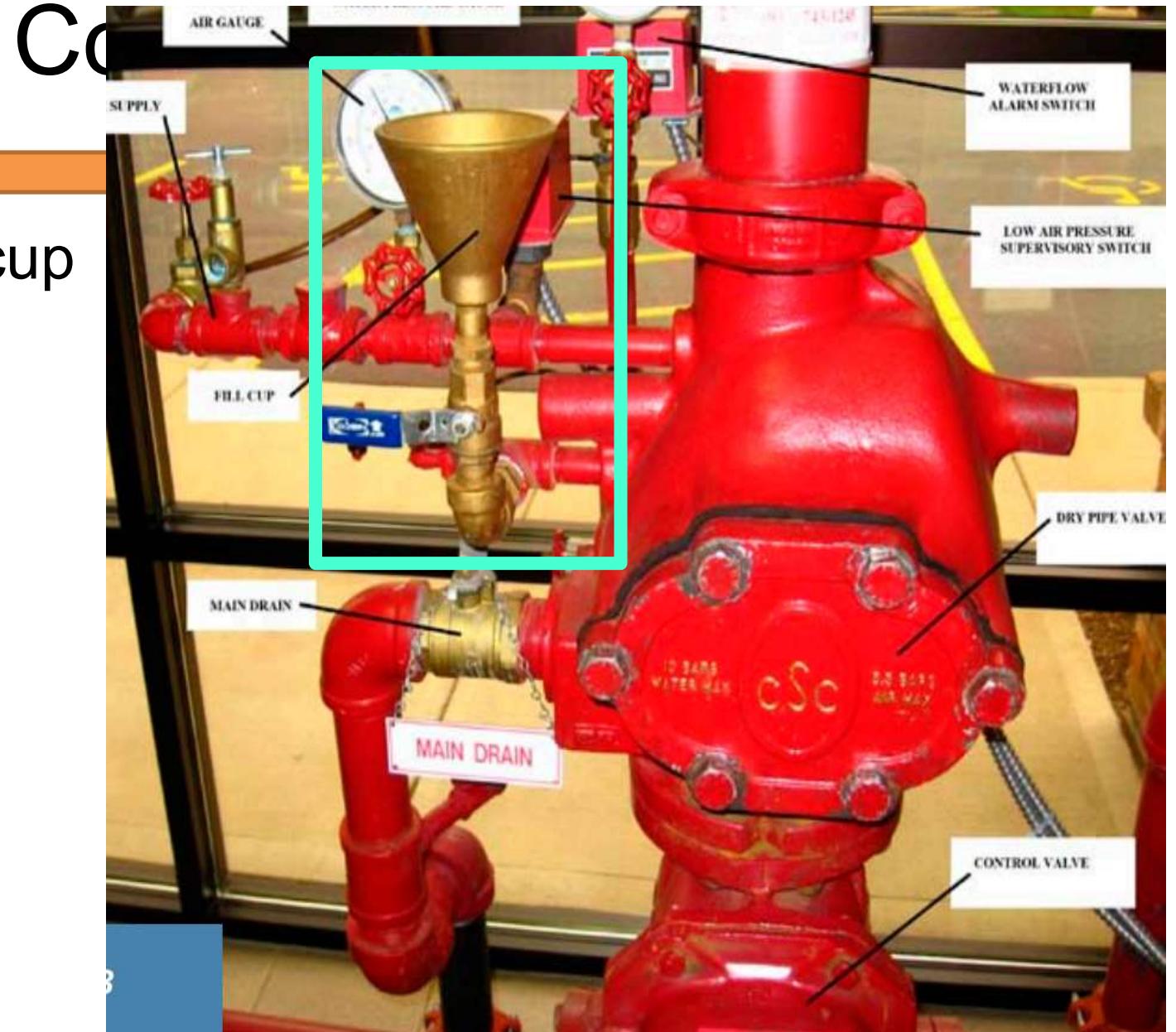
Alarm test
valve

Alarm valve





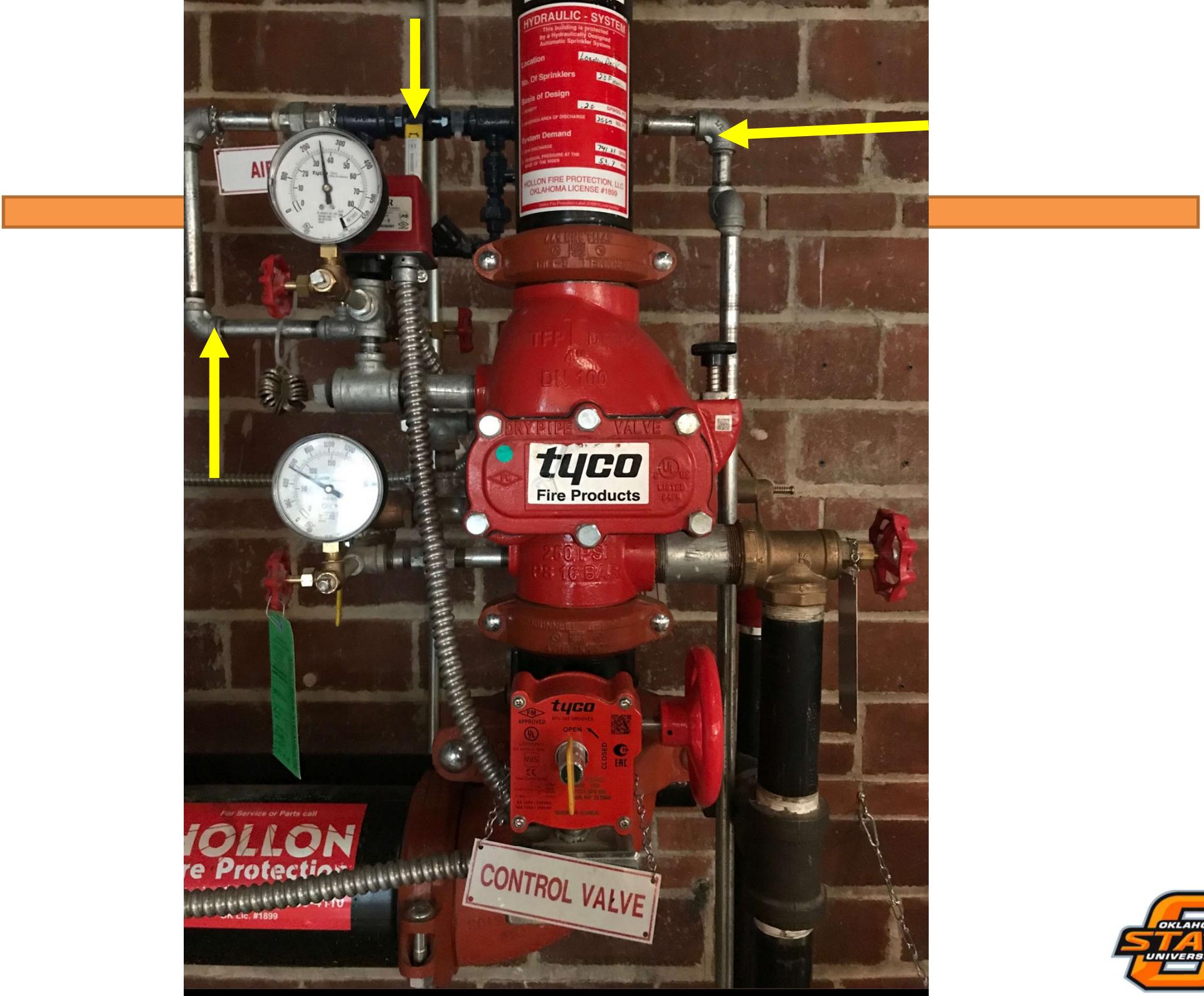
- Priming water cup

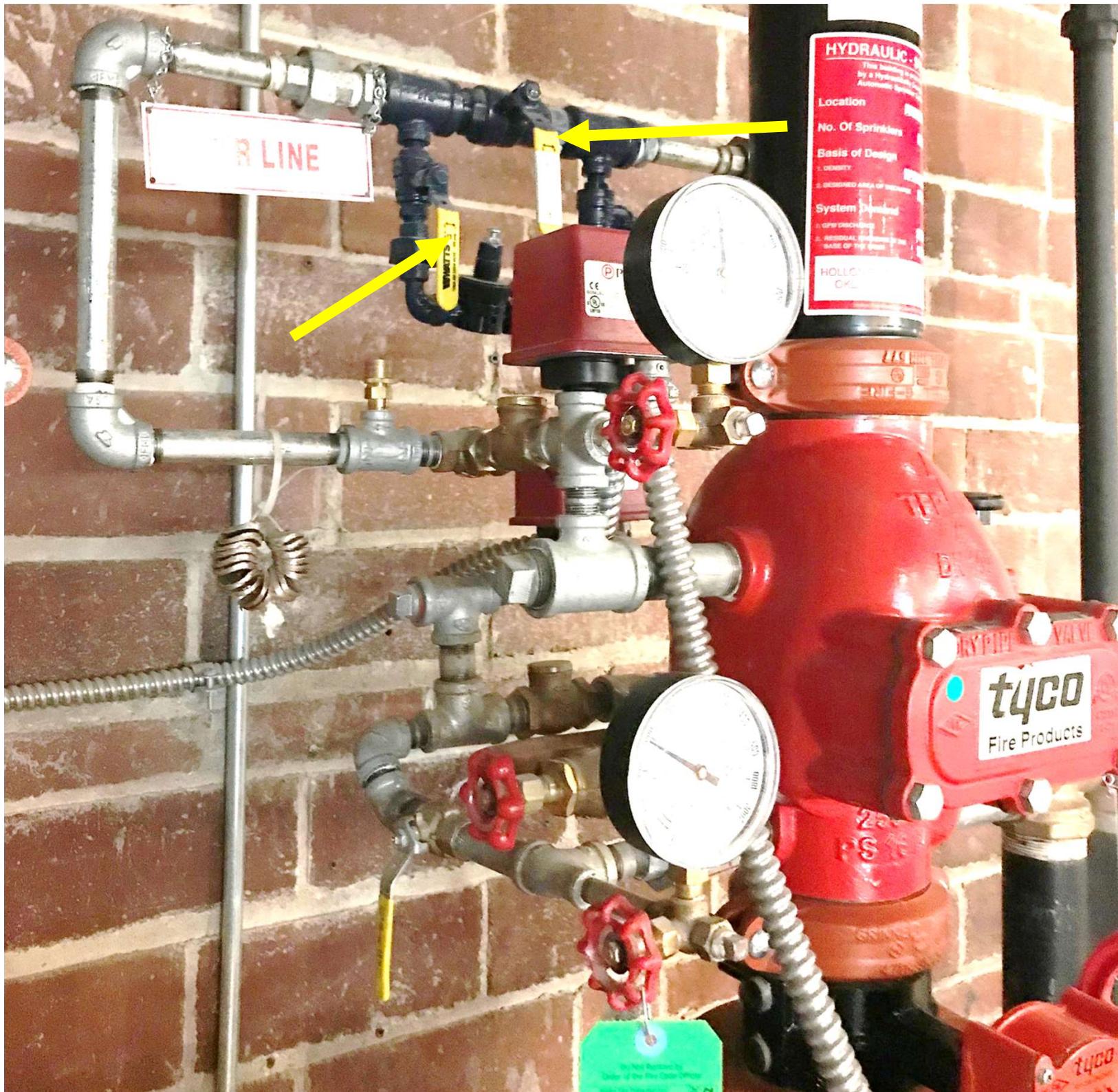


Con

- Compressed air system



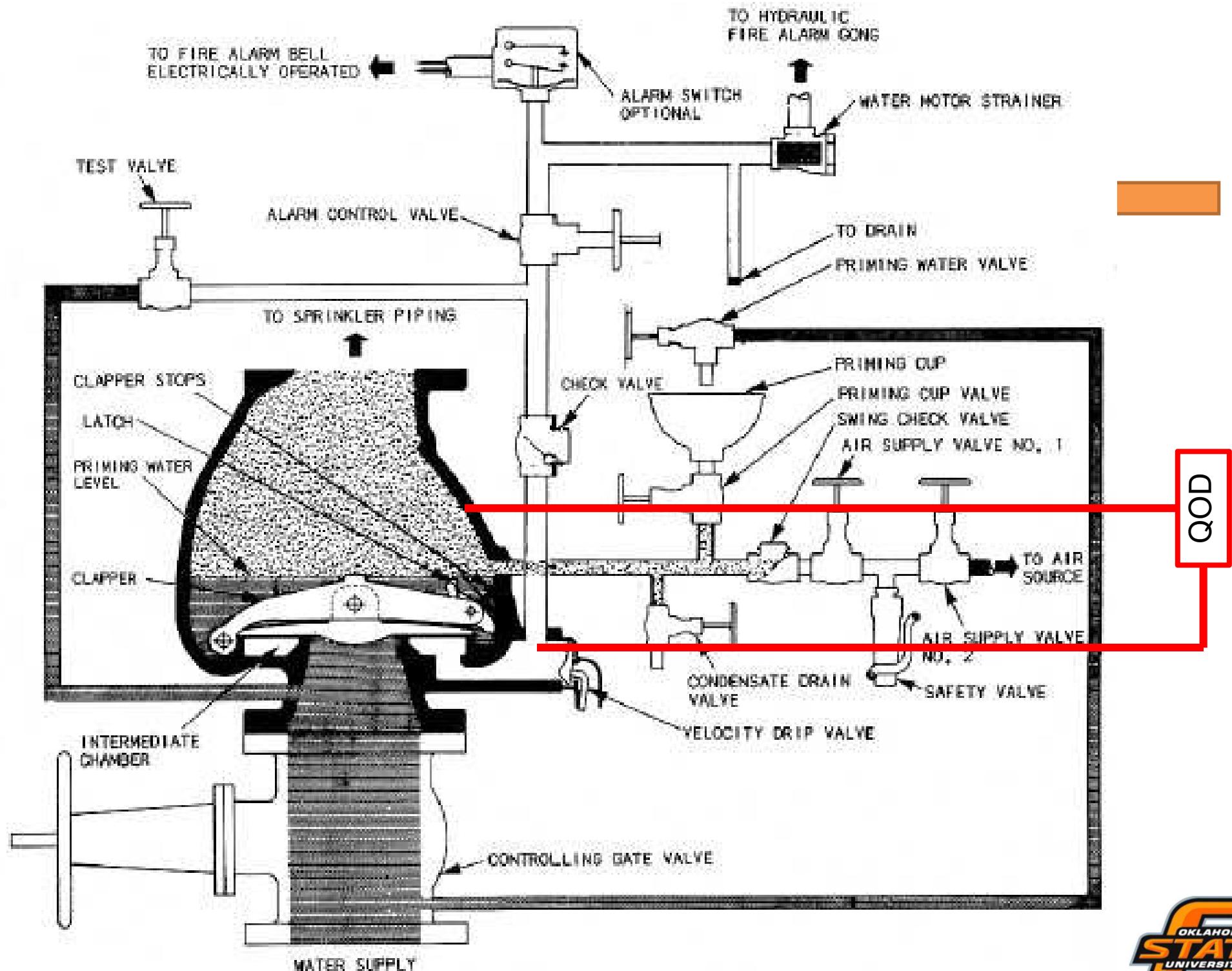




Quick Opening Devices

- Required on systems with more than 500 gallons
- Two types
 - Accelerators
 - Quickly unbalance the differential in the sprinkler valve
 - Most common
 - Exhausters
 - Quick release of air from entire system
 - Not approved anymore
 - dry riser video





ELECTRONIC WATER
FLOW ALARM
(PRESSURE SWITCH)

8

MECHANICAL WATER
FLOW ALARM
“WATER MOTOR
GONG”

7

6 SYSTEM AIR PRESSURE
GAUGE

5 PRIMING WATER INLET

3

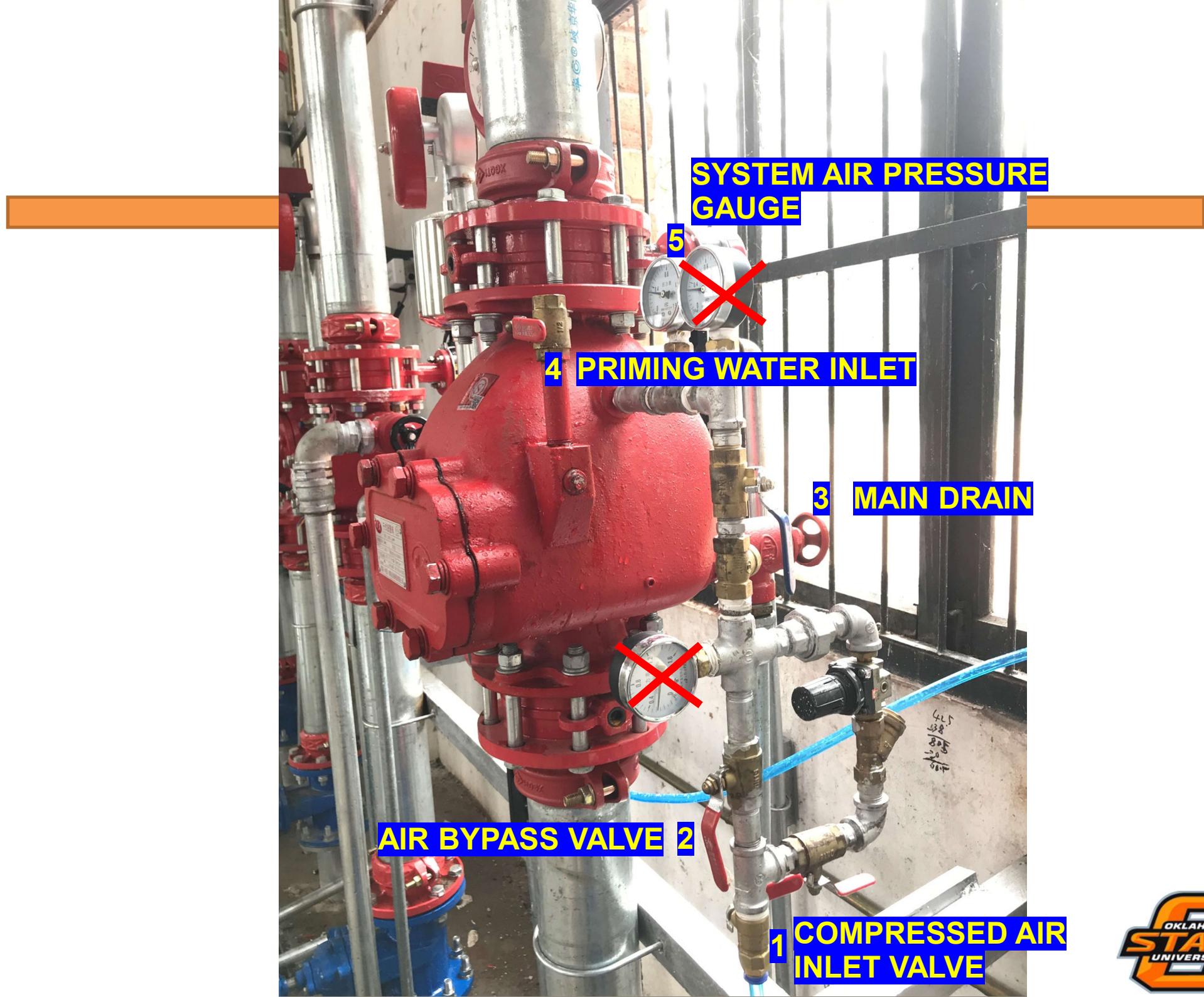
DRY PIPE VALVE

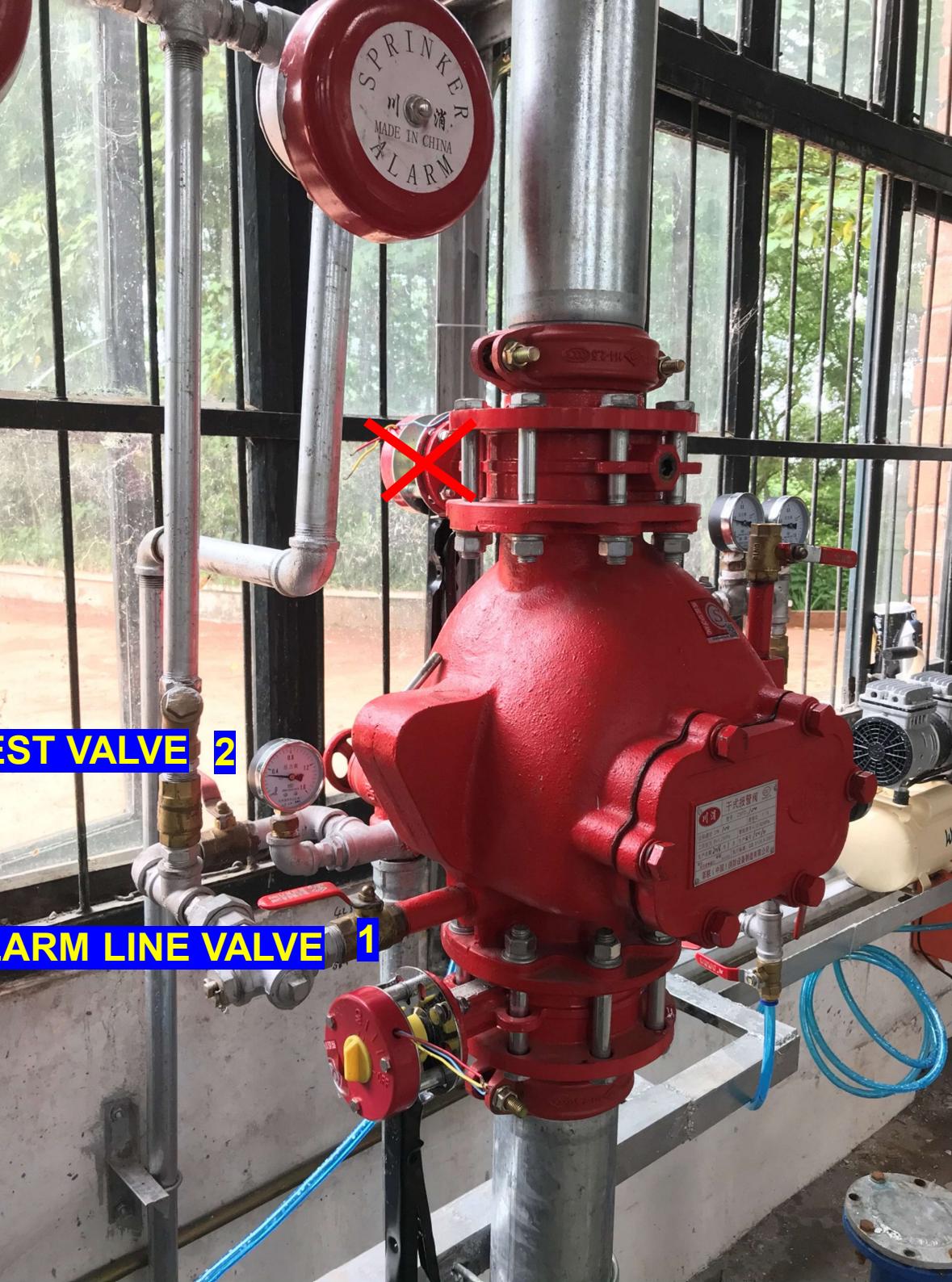
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MAIN CONTROL VALVE

2 COMPRESSED AIR
INLET VALVE







Dry Pipe System Riser Practical a.k.a “Partial Trip Test”

- Notify, Notify, Notify
- Inspection
- Alarm Test
- Dry pipe valve test (partial trip)
- Reset dry pipe valve
- Open control valve
- Valve assessment/main drain test
- Notify, Notify, Notify



Dry Pipe Riser Practical Procedure

- Notifications
 - “Notify” Alarm Co, “Notify” Fire Department, “Notify” building occupants
- Inspection
 - Dry Pipe Valve and Function
 - Main Control Valve and Function and indicating and supervision
 - Alarm Drain and Function
 - Alarm Test Valve and Function
 - Alarm Line Valve and Function and indicating supervision
 - Water Flow Switch (Water Motor Gong) and Function
 - Water Flow Switch (Electronic Pressure Switch) and Function
 - Priming Water inlet and Function
 - Air line connections and Function
 - Water Supply Pressure Gauge and Function
 - Air Pressure Gauge and Function
 - Automatic Air Maintenance Loop and Function
 - Main Drain and Function



Dry Pipe Riser Practical Procedure

- Alarm Test
 - Frequency (electronic – semi-annually; mechanical - quarterly)
 - Operate alarm test valve to full open
 - Observe and Record Actuation of Alarm
 - Close valve



Dry Pipe Riser Practical Procedure

- Partial Trip Test
 - Frequency annually
 - Verify Water Pressure Normal
 - Turn Off Air Supply
 - Release System Air Pressure
 - Read and Remember Trip Point Air Pressure
 - Close Main Control Valve
 - Open Main Drain
 - Reset Dry Pipe Valve
 - Add Priming Water to Right Level
 - Restore Air Supply
 - Observe Air Pressure
 - Close Main Drain
 - Open Main Control Valve
 - Observe Water Pressure



Dry Pipe Riser Practical Procedure

- Main Drain/Valve Assessment Test
 - Frequency annually
 - Record Static Pressure
 - Operate valve to full open
 - Record Residual Pressure
 - Close valve
 - Check Return to Static Pressure
- Notify, Notify, Notify
 - “Notify” Alarm Co, “Notify” Fire Department, “Notify” building occupants



Dry Pipe System Full Trip Test Procedure (on Exam #3)

- Conducted every 3 years
- One person is at the riser valve conducts inspection
- One person is at the inspector's test connection
- Notify, Notify, Notify
- Person at riser opens and closes main drain to flush supply line
- Person at riser records static pressures
- Person at riser communicates with person at inspector's test connection to open inspector's test connection
- Person at riser records time it takes for dry valve activation and the air pressure when it activates
- Person at the inspector's test connection records the time it takes for water to come out of the inspector's test connection
- Person at the inspector's test connection communicates with the person at the riser to close main control valve
- Reset dry pipe valve
- Reset QOD
- Open main control valve
- Conduct valve assessment/main drain test
- Notify, Notify, Notify

