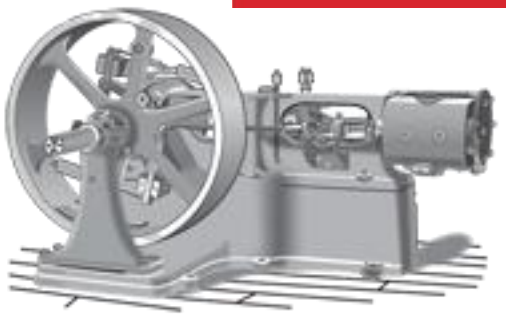
Reliable®



Minnesota Chief Engineers Guild Conference 2018

"Fire Protection…Things a Facility Manager Should Know"

Presented By: Scott Hanson Technical Services Manager

Presentation Goals…?

Important Things To Know…

- *Where's the riser?*
- *What type of systems do you have?*
- *Where's the control valve for each system?*
- *Alarms…What they mean and why they're important*
- *What sprinkler is it and what should you look for?*
- *Who are you going to call?*

Types of Sprinkler Systems…

Wet Systems…

H_2O Pressure Gauge

Main Drain

H_2O Flow Switch

System Control Valve (Indicating)

- *Pressurized Piping*
- *Sprinkler Opens…H_2O Flows*

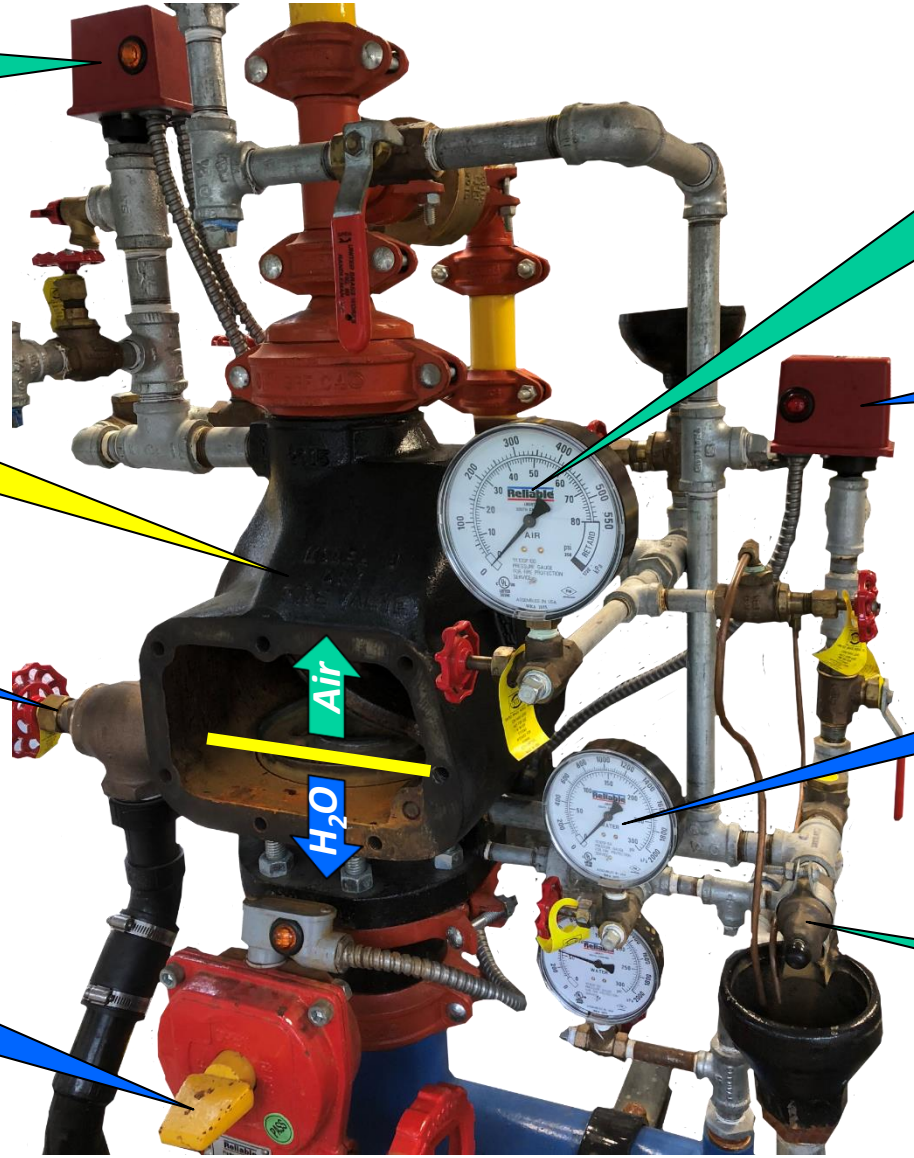
Dry Pipe Systems…

Conventional DPV

Low Pressure DPV

- *Pressurized Piping*
- *Loss of Air Pressure = System Trip*

Dry Pipe Systems…



Supervisory Air Switch

Air Gauge

Dry Pipe Valve

H_2O Flow Switch

Main Drain

H_2O Gauge

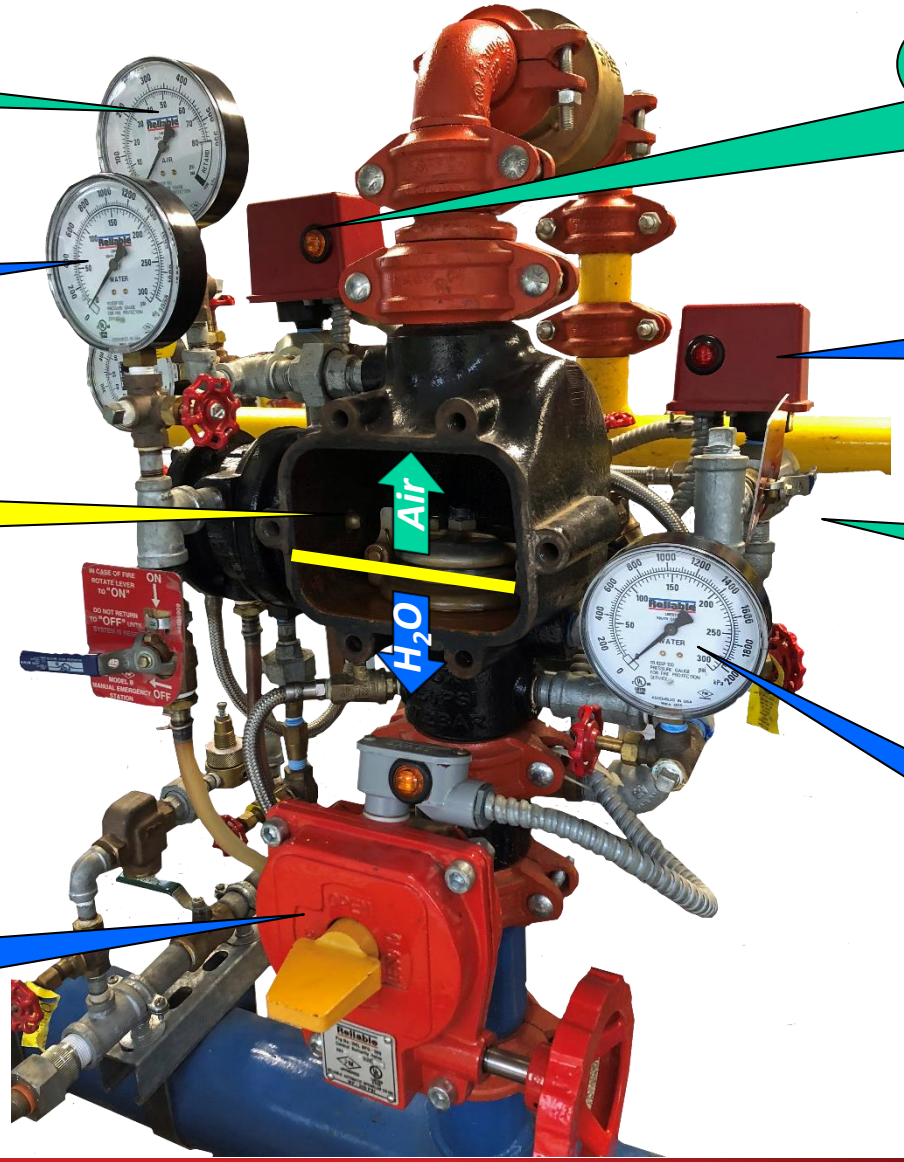
System Control Valve

Ball Drip

Differential Dry Pipe Valve

Reliable

Dry Pipe Systems…



Air Gauge

Supervisory Air Switch

H_2O Gauge

H_2O Flow Switch

Dry Pipe Valve

Ball Drip (Hidden)

Main Drain (Hidden)

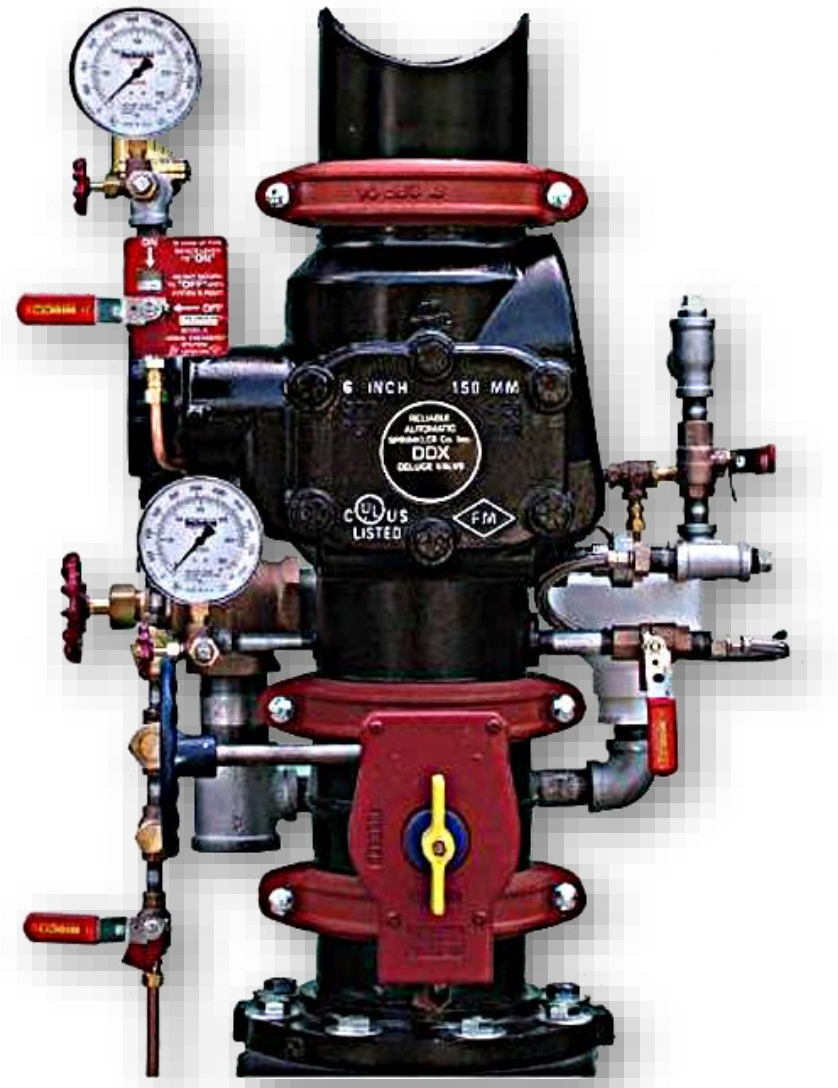
System Control Valve

H_2O Gauge

Low Pressure Dry Pipe Valve

Reliable

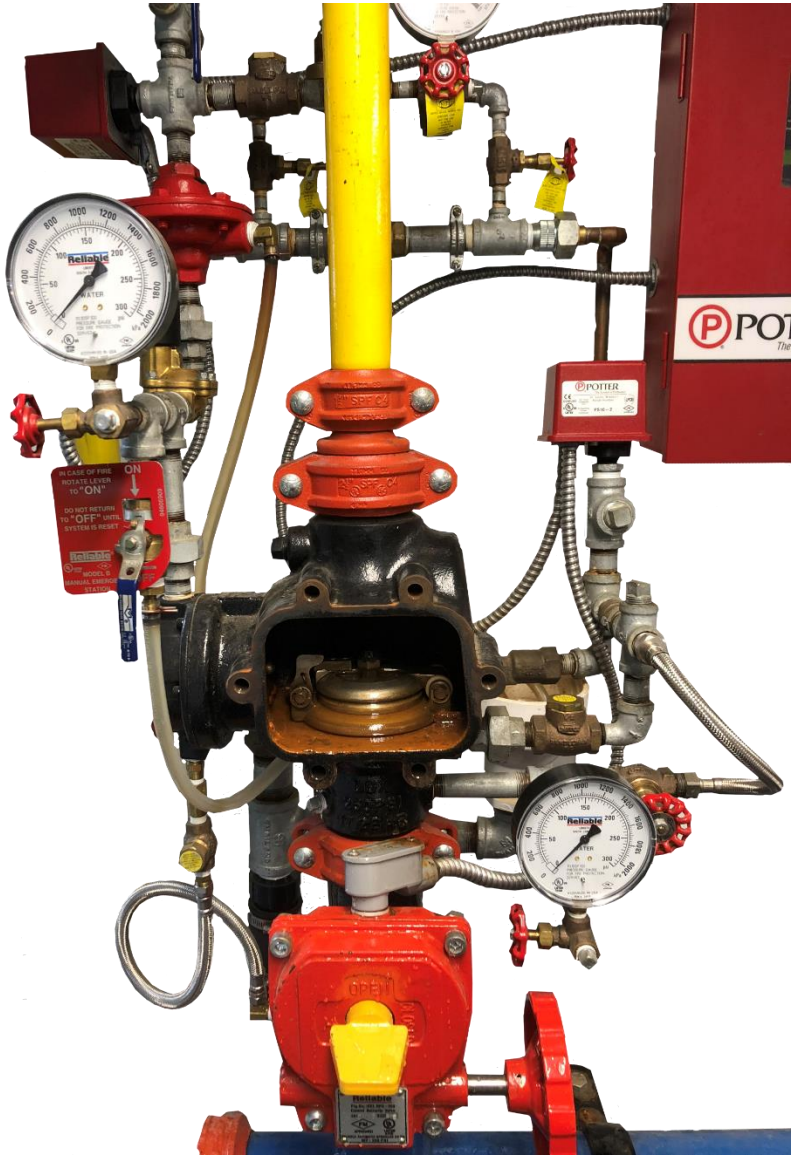
Deluge System (Open Sprinklers)



Deluge Trim:

- *Non-Pressurized Piping*
- *Need Detection System*
- *Detection Only = System Trip*

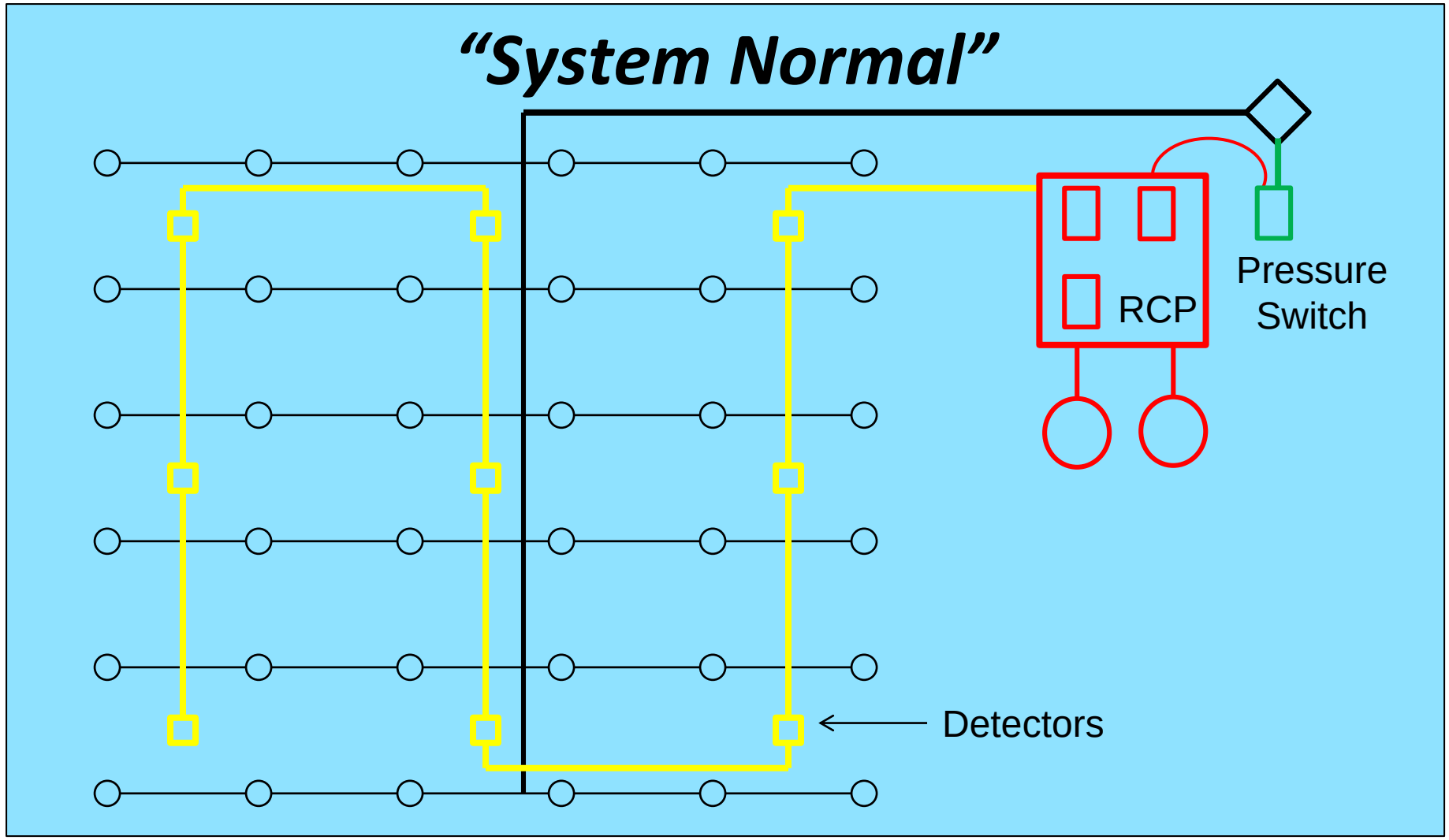
Preaction System (Non, Single, or Double-Interlock)



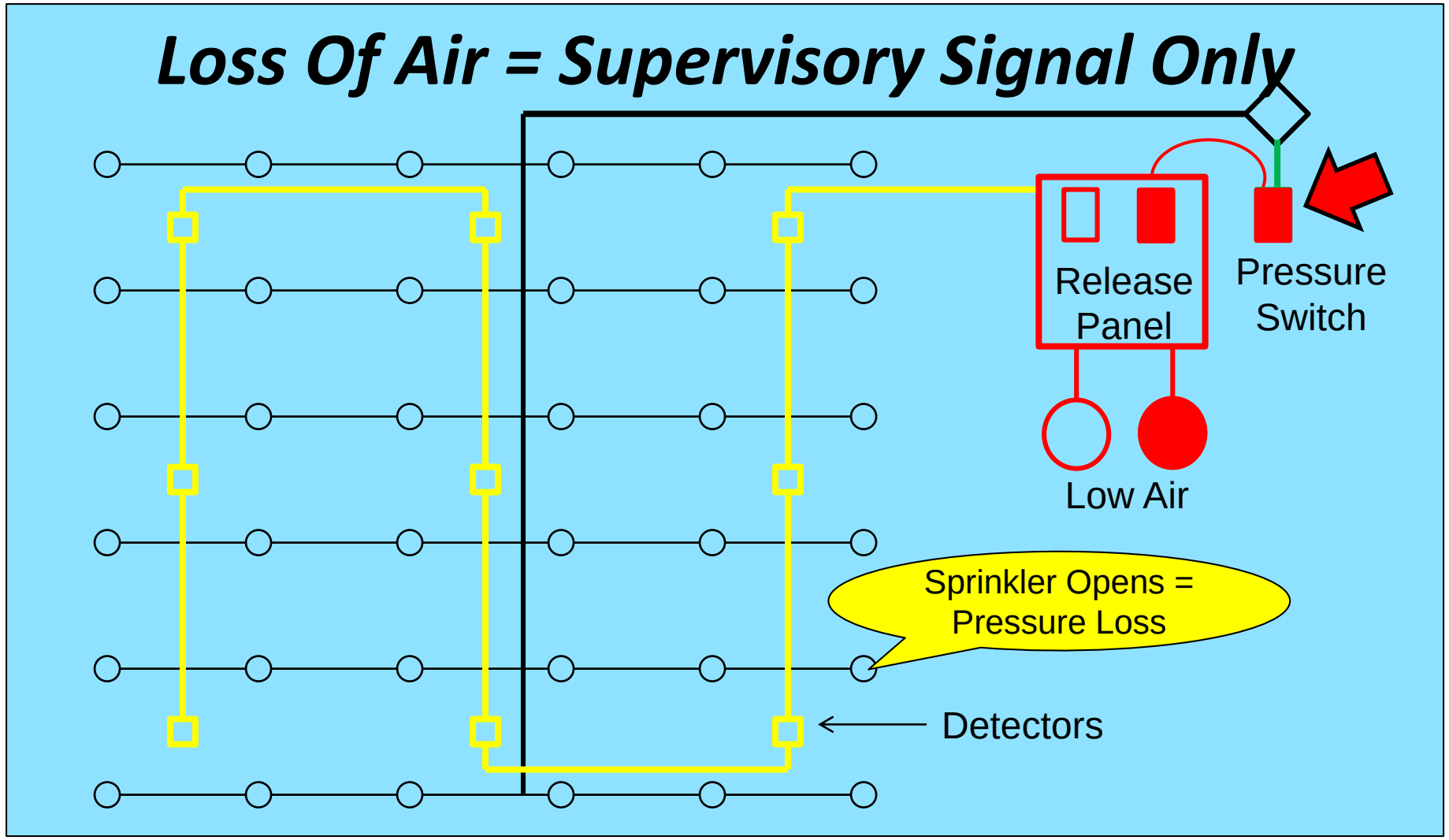
Preaction Trim:

- *Pressurized Piping*
- *Needs Detection*
- *Loss of Air Pressure And/Or Detection = System Trip*

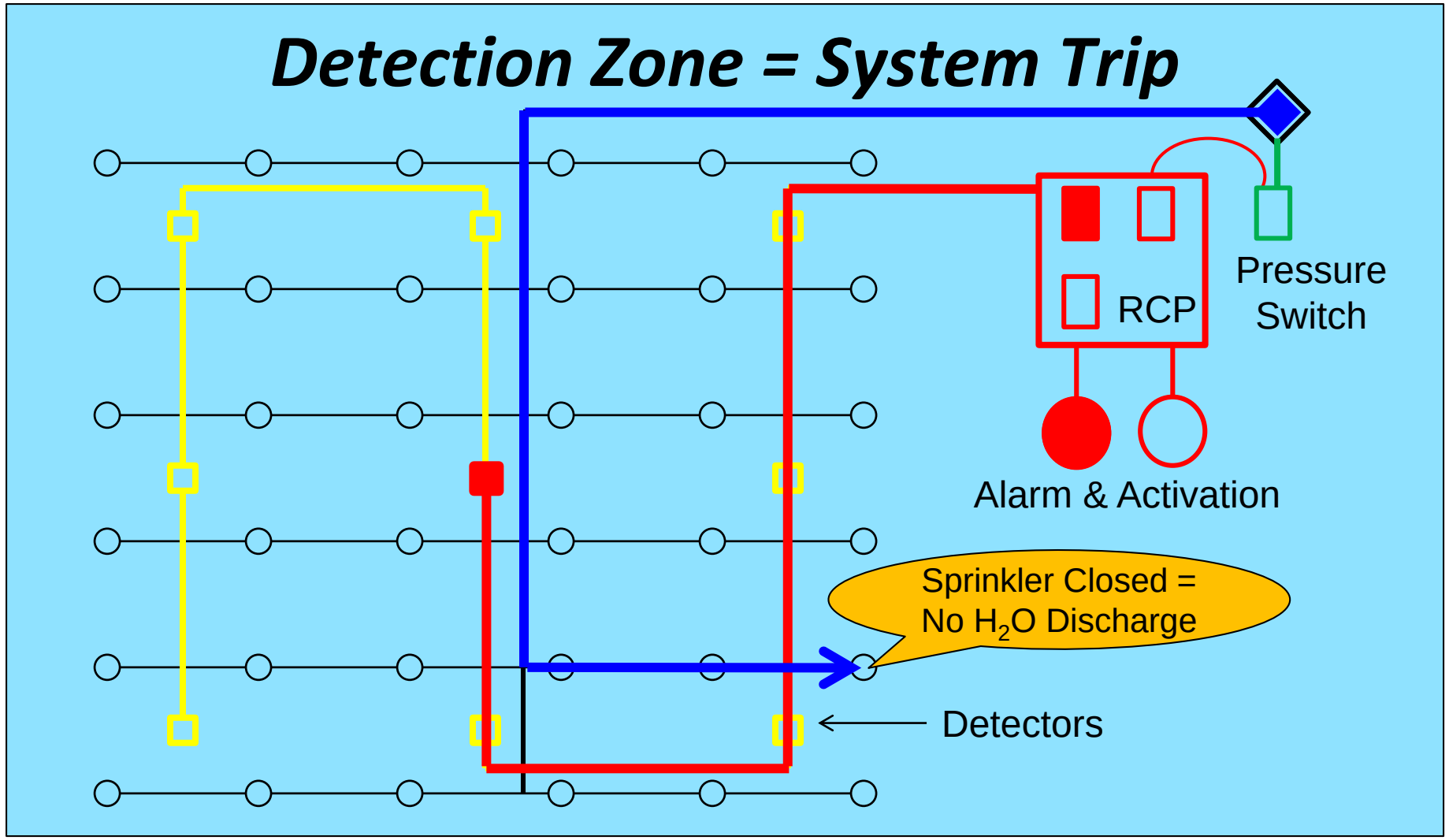
Single-Interlock Preaction System



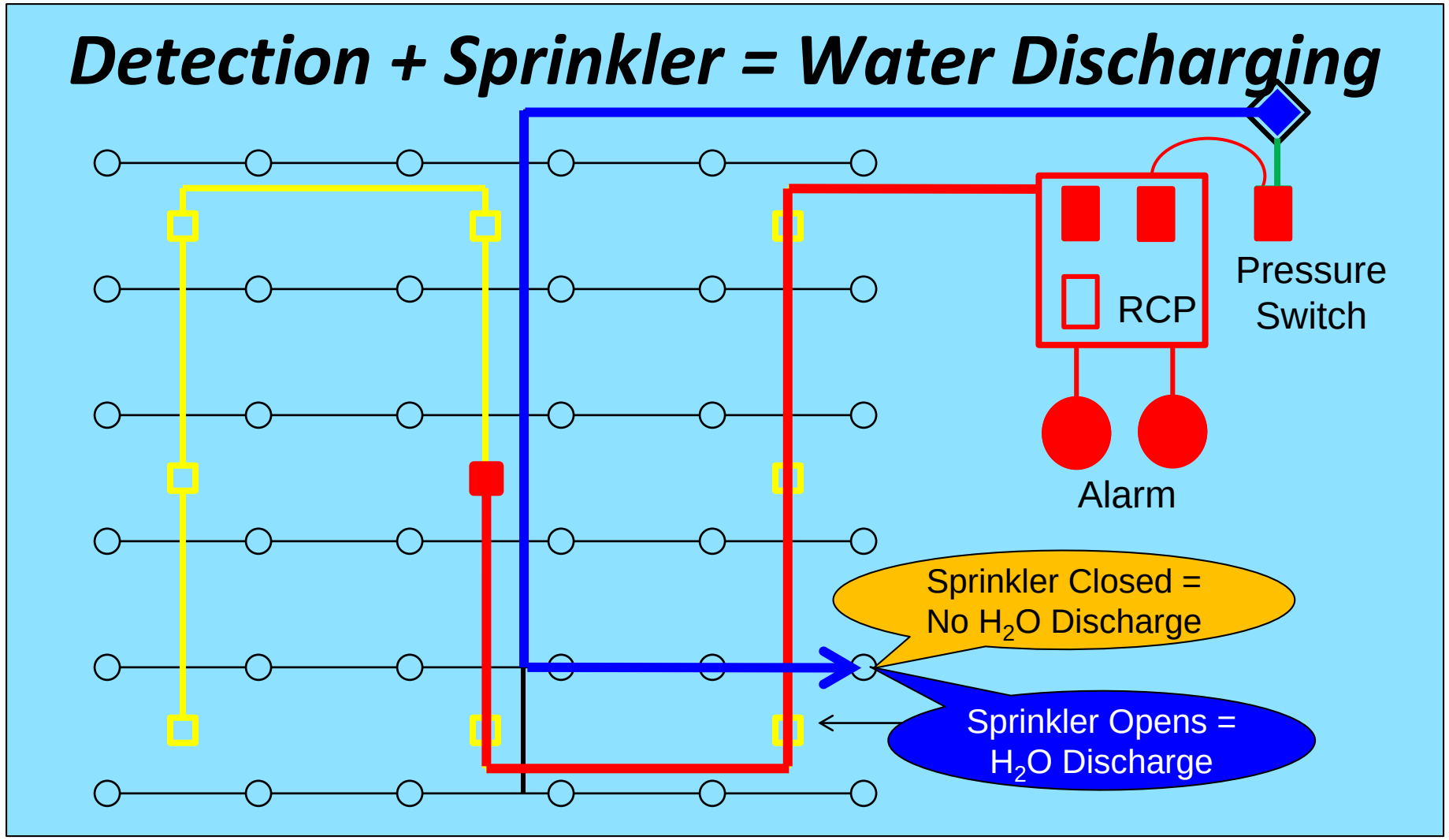
Single-Interlock Preaction System



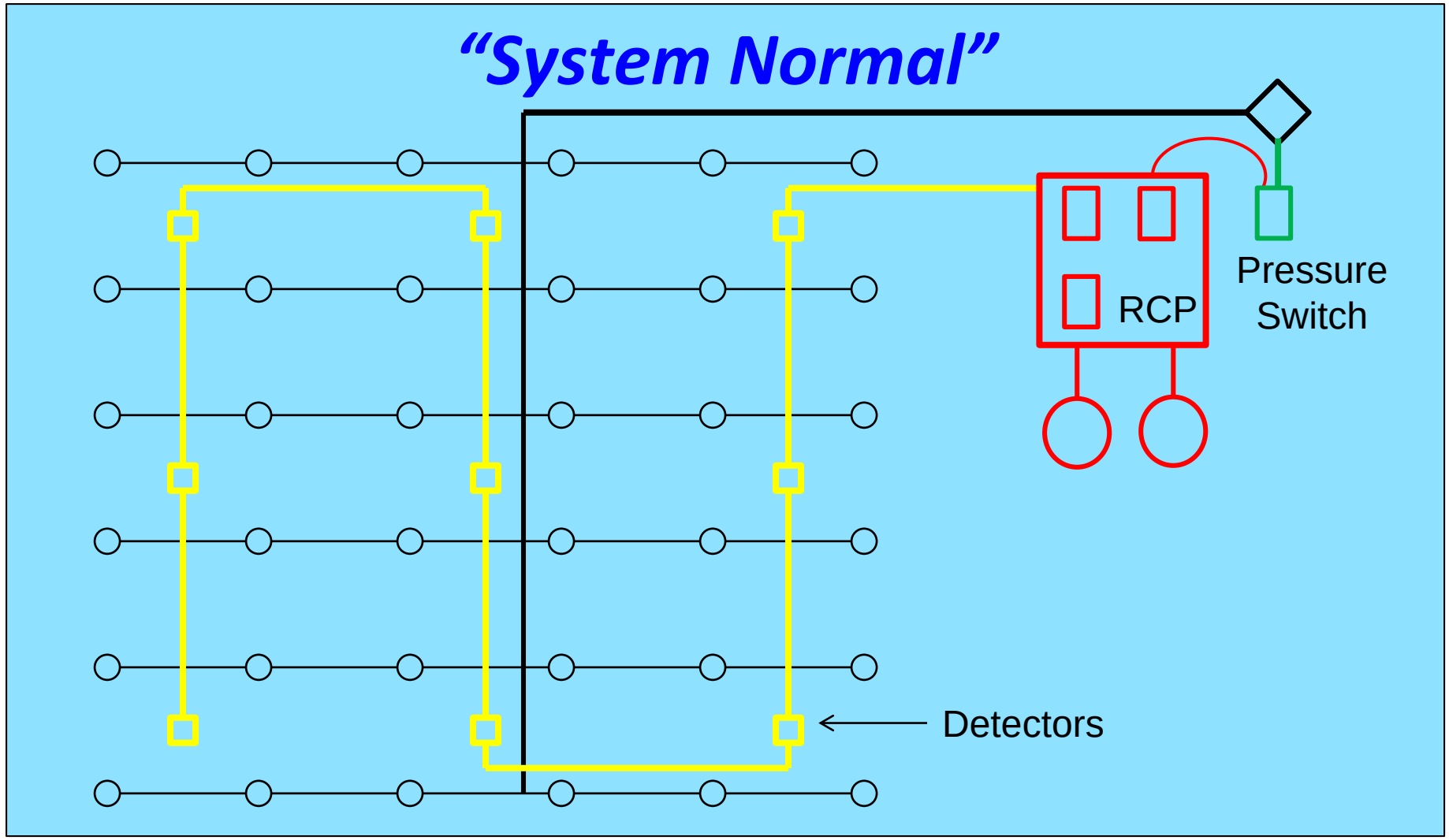
Single-Interlock Preaction System



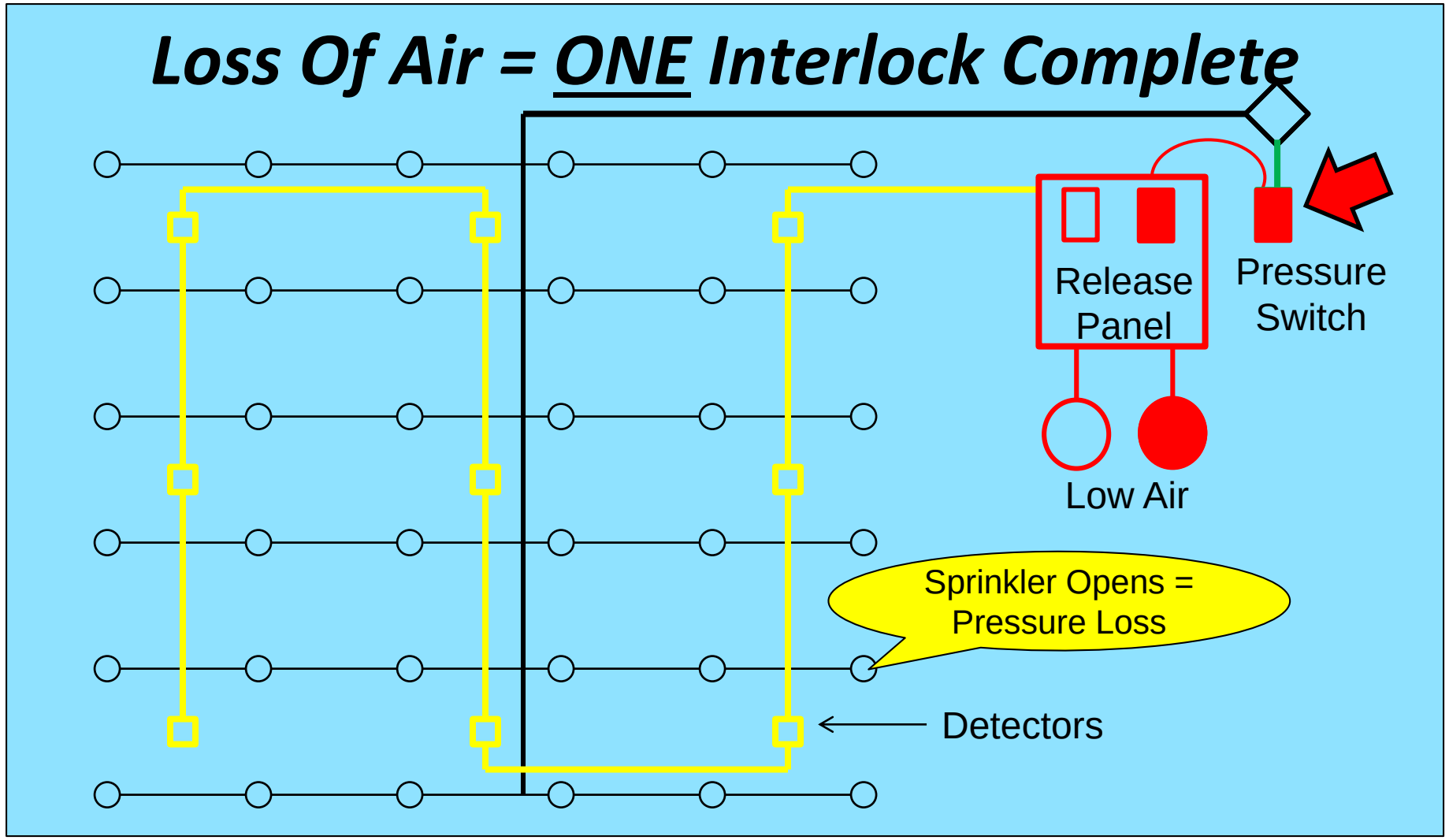
Single-Interlock Preaction System



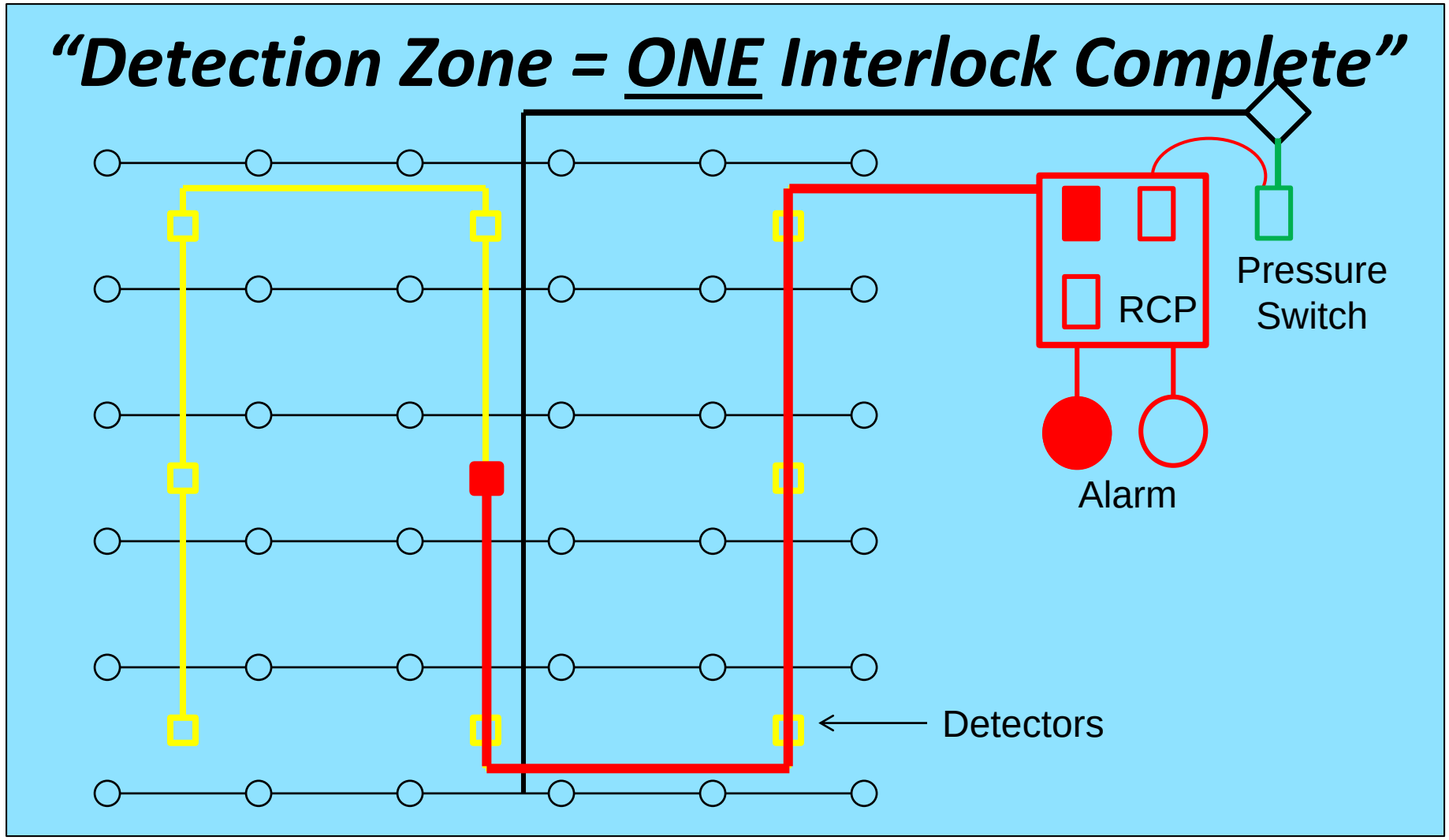
Double-Interlock Preaction System



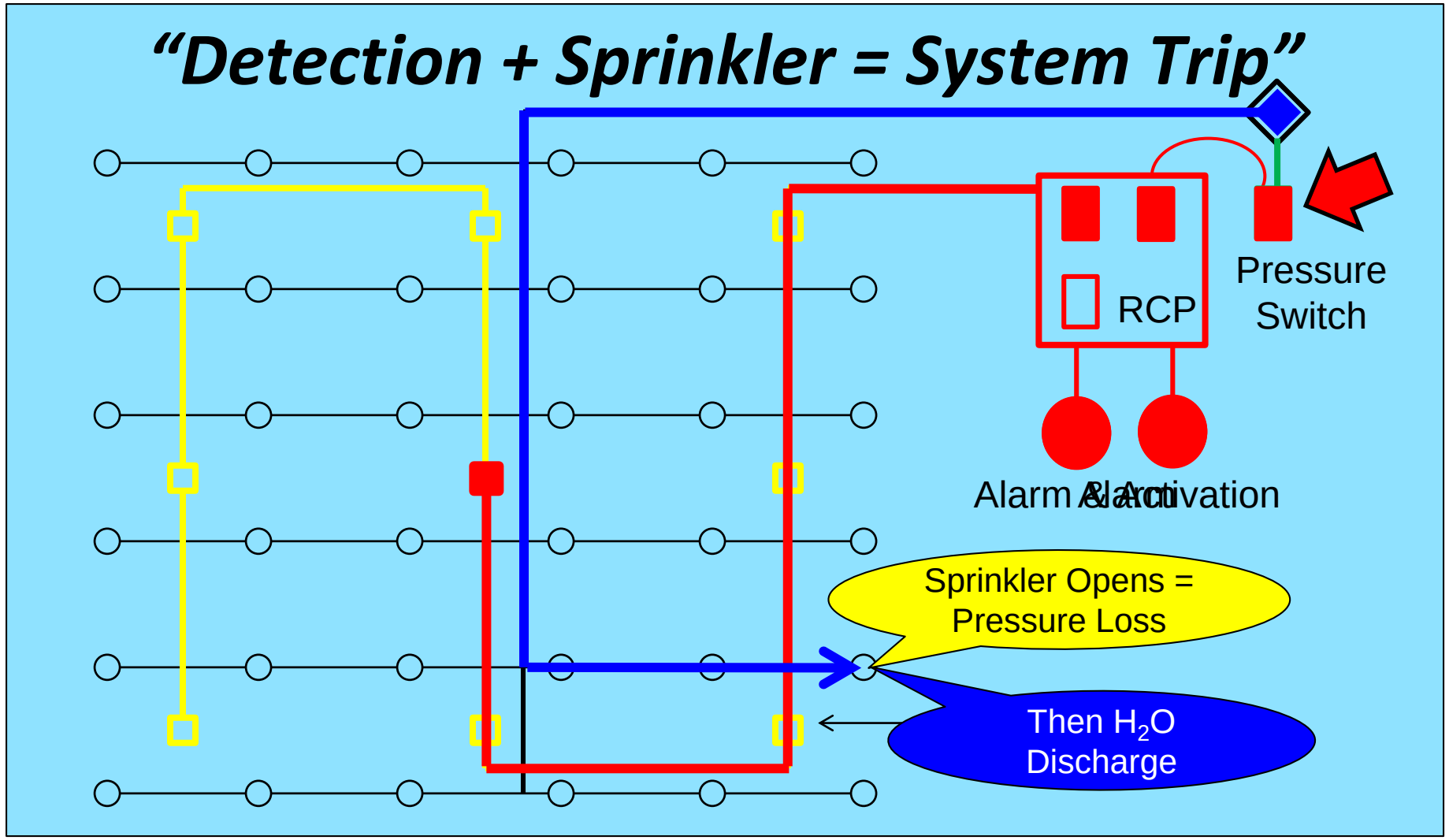
Double-Interlock Preaction System



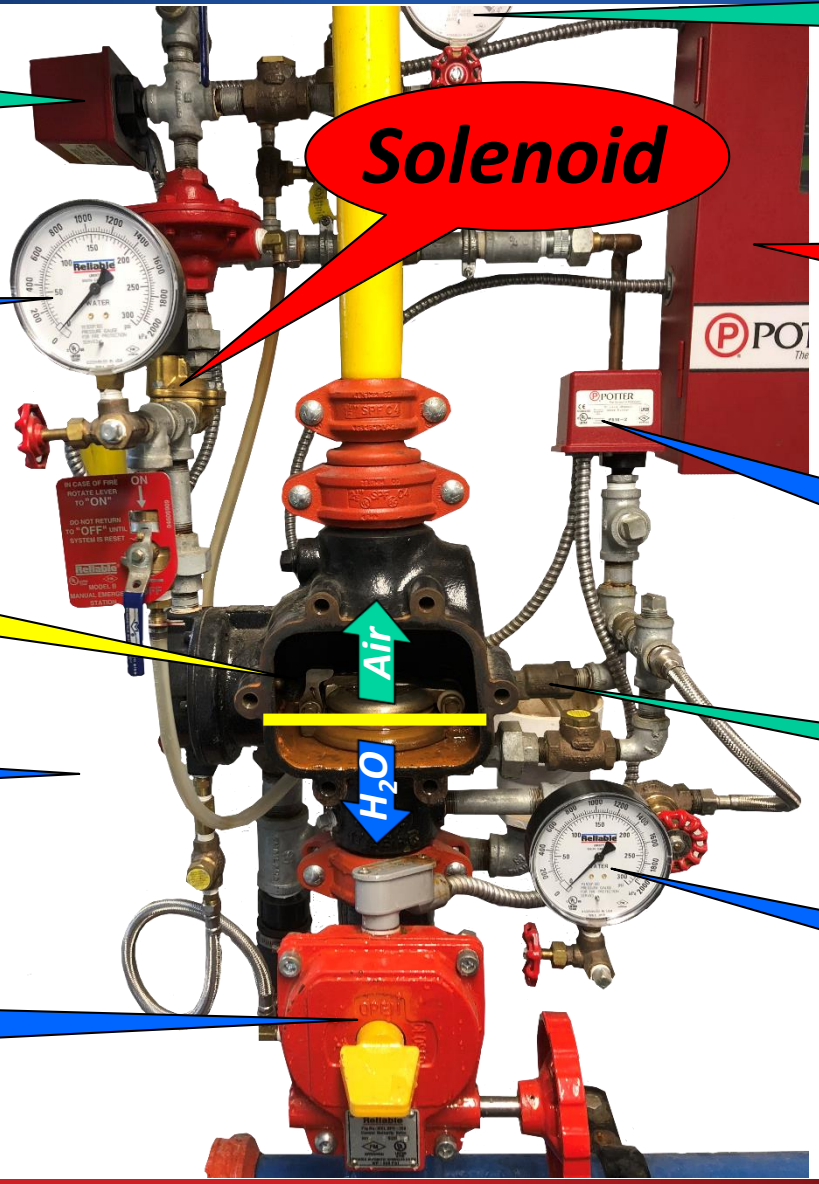
Double-Interlock Preaction System



Double-Interlock Preaction System



Preaction Systems…



Supervisory Air Switch

Air Gauge

Solenoid

H_2O Gauge

Releasing Panel

Deluge Valve

H_2O Flow Switch

Main Drain (Hidden)

Ball Drip

System Control Valve

H_2O Gauge

Clapper Style Valve

Reliable

Preaction Systems…

Supervisory Air Switch

Solenoid

H_2O Gauge

H_2O Gauge

Main Drain

Air Gauge

H_2O Flow Switch

Deluge Valve

System Control Valve

Diaphragm Style Valve

Reliable®

Sprinkler System Alarms…Types

- ✓ *Tamper…*
  - ✓ *Control Valves*
- ✓ *Water flow…*
  - ✓ *Vane type (wet system only)*
  - ✓ *Pressure switch (activates on increasing pressure due to water flow)*
- ✓ *Supervisory air…*
  - ✓ *Low (activates on decreasing system supervisory pressure)*
  - ✓ *High (activates on increasing system supervisory pressure)*

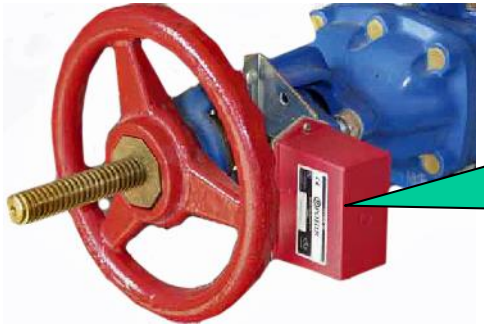
Alarms…2 Choices…(when they happen)

Acknowledge…Ignore

Acknowledge…Accept

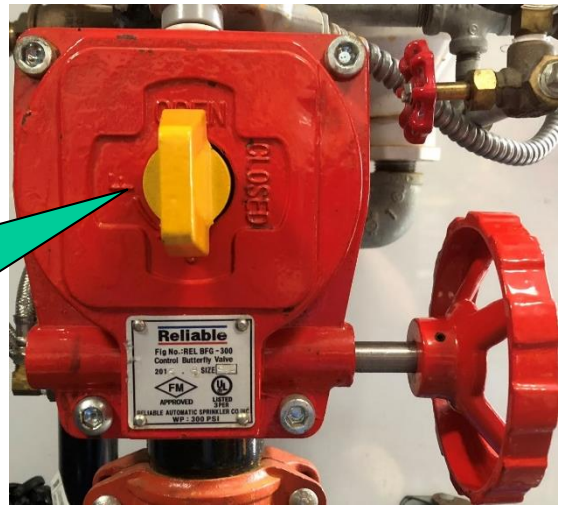
How Does It Work?

- ✓ Tamper Switches
  - ✓ Must initiate signal within 2 revolutions from its normal position
  - ✓ External tamper switch
  - ✓ Internal tamper switch



External Tamper Switch

Internal Tamper Switch



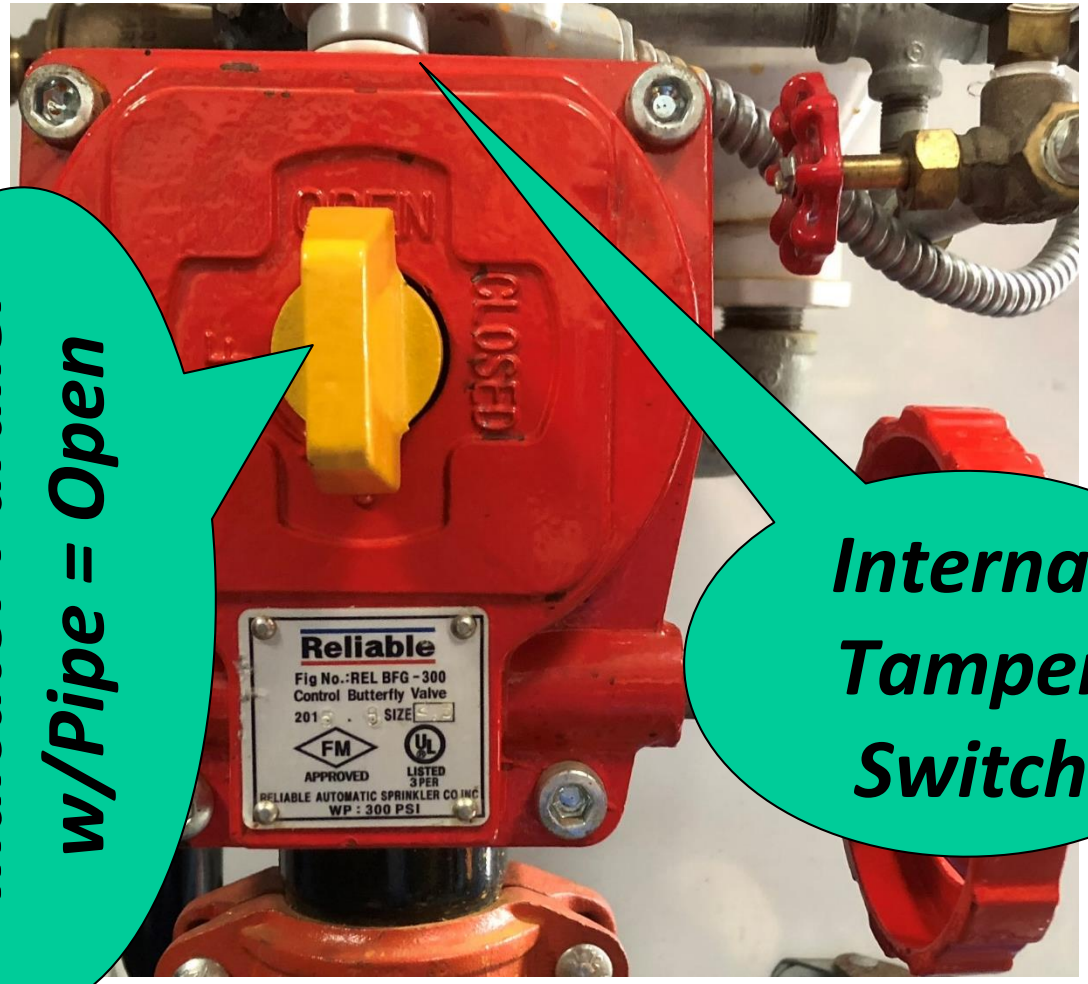
Alarms…Tamper Switches OS & Y

Stem Out = Open

Stem Down = Closed

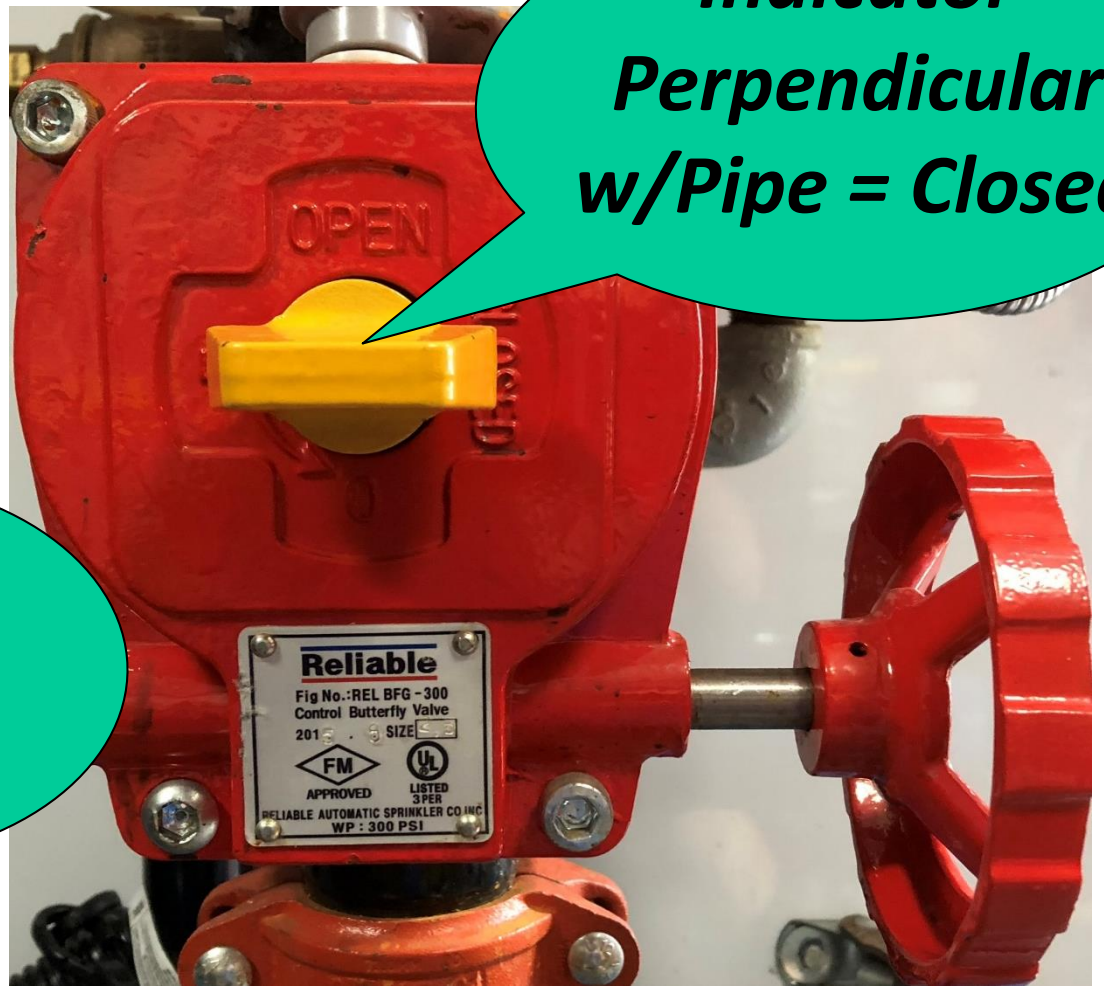
Tamper Switch

Alarms…Tamper Switches Butterfly



Indicator Parallel w/Pipe = Open

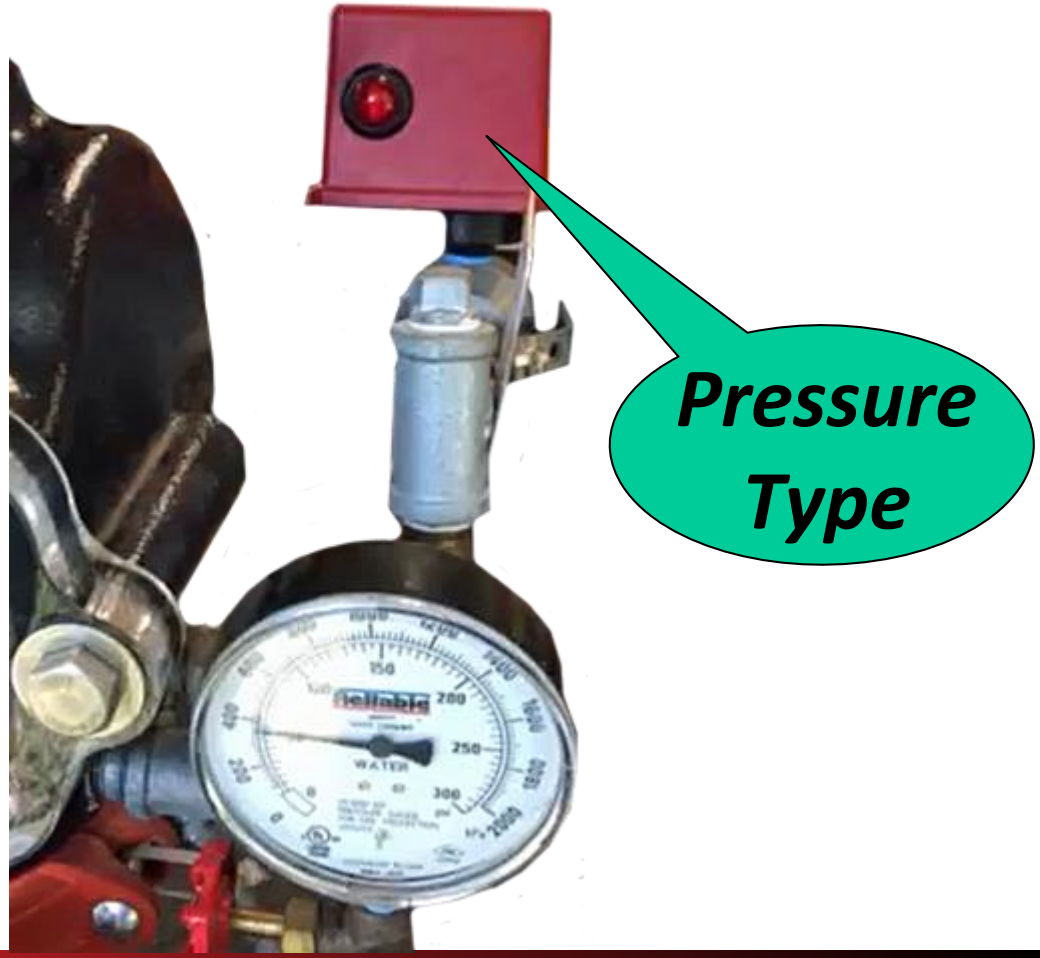
Internal Tamper Switch



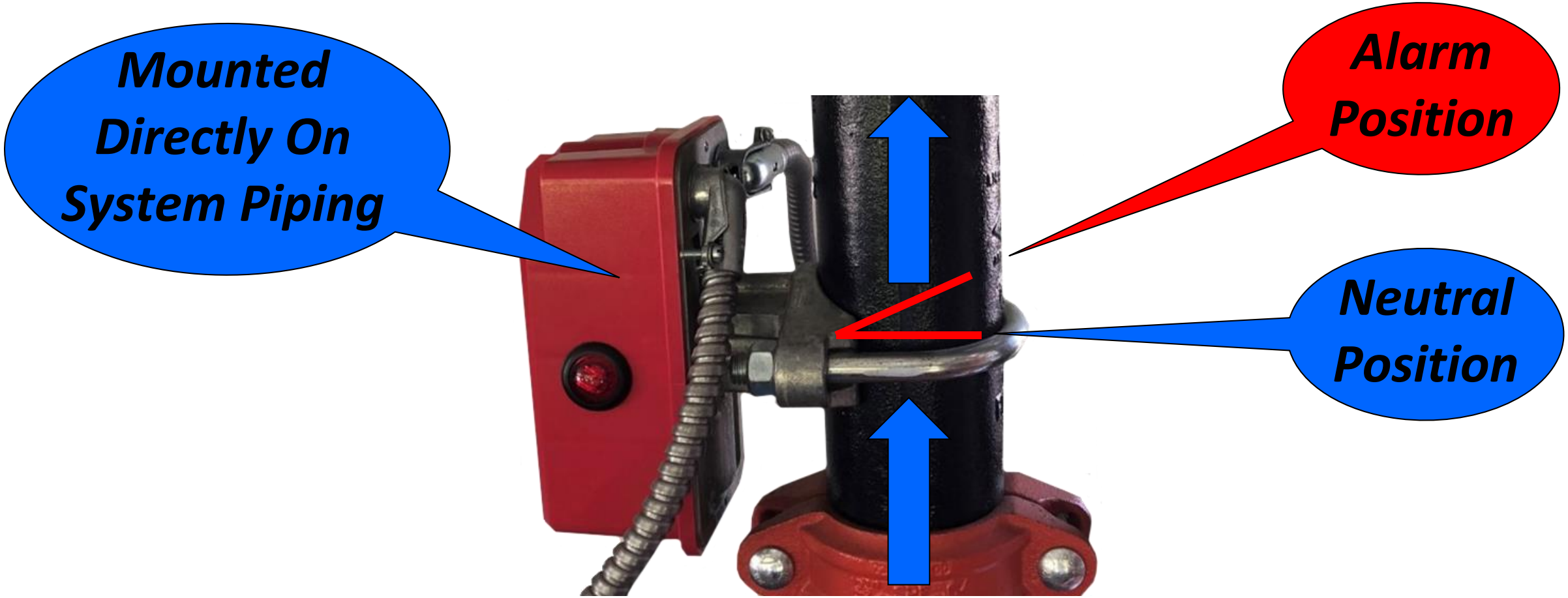
Indicator Perpendicular w/Pipe = Closed

Sprinkler System Waterflow Alarms…

- ✓ *Water flow*
  - ✓ *Vane type (wet system only)*
  - ✓ *Pressure switch (dry/preaction systems)*



Vane Type Waterflow Switch…



Water flowing through system piping lifts a paddle inside the pipe… activating the switch

Pressure Type Waterflow Switch…

Mounted On Valve Trim Piping

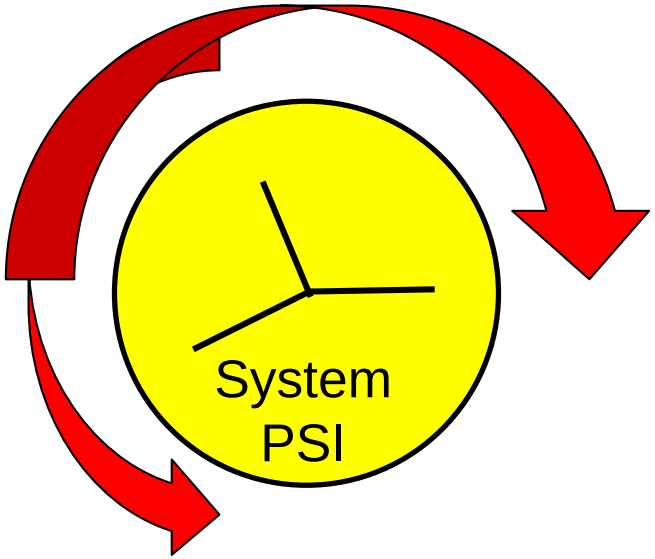
Alarm Position = PRESSURIZED

Neutral Position = NO PRESSURE

Water flowing into system pressurizes switch…

Sprinkler System Supervisory Air Alarms…

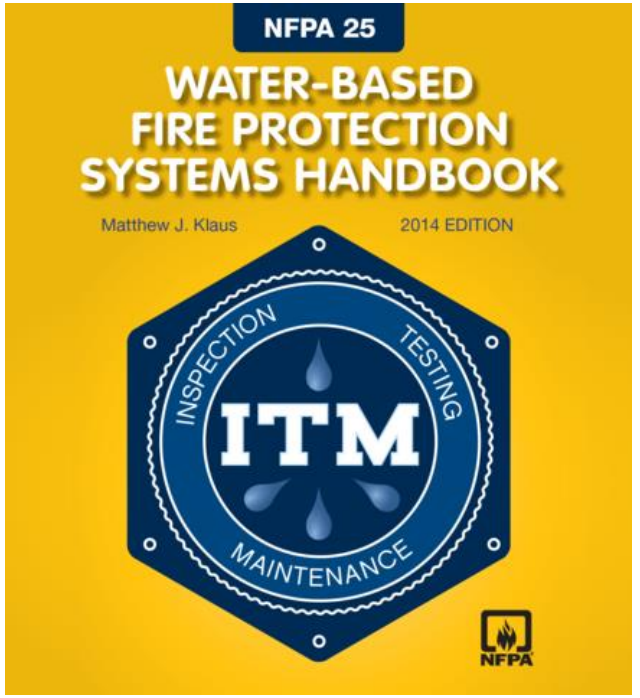
- ✓ ***Supervisory air…monitors system air pressure***
  - ✓ ***Low (activates on decreasing system supervisory pressure)***
  - ✓ ***High (activates on increasing system supervisory pressure)***



NFPA-25.5.2.1 Sprinklers

NFPA-25

- *5.2.1.1.2 Any sprinkler that shows signs of the following shall be replaced:*
  - *Leakage*
  - *Corrosion*
  - *Physical Damage*
  - *Loss of fluid in the glass bulb*
  - *Loading*
  - *Painting (unless done by manufacturer)*

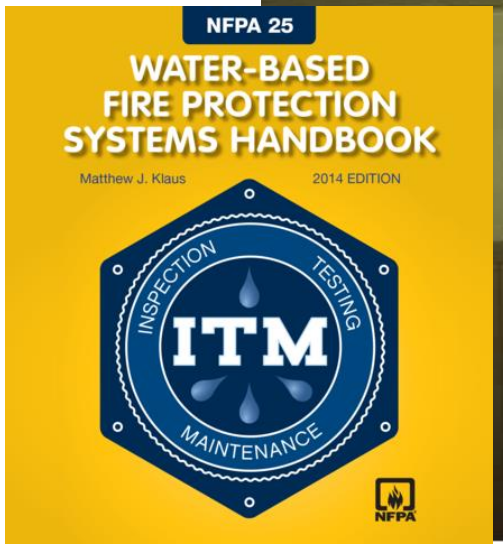


- *5.2.1.1.5 Glass bulb sprinklers shall be replaced if the bulbs have emptied.*

NFPA-25.5.2.1 Sprinklers

Sidewall??…

Orientation Correct?

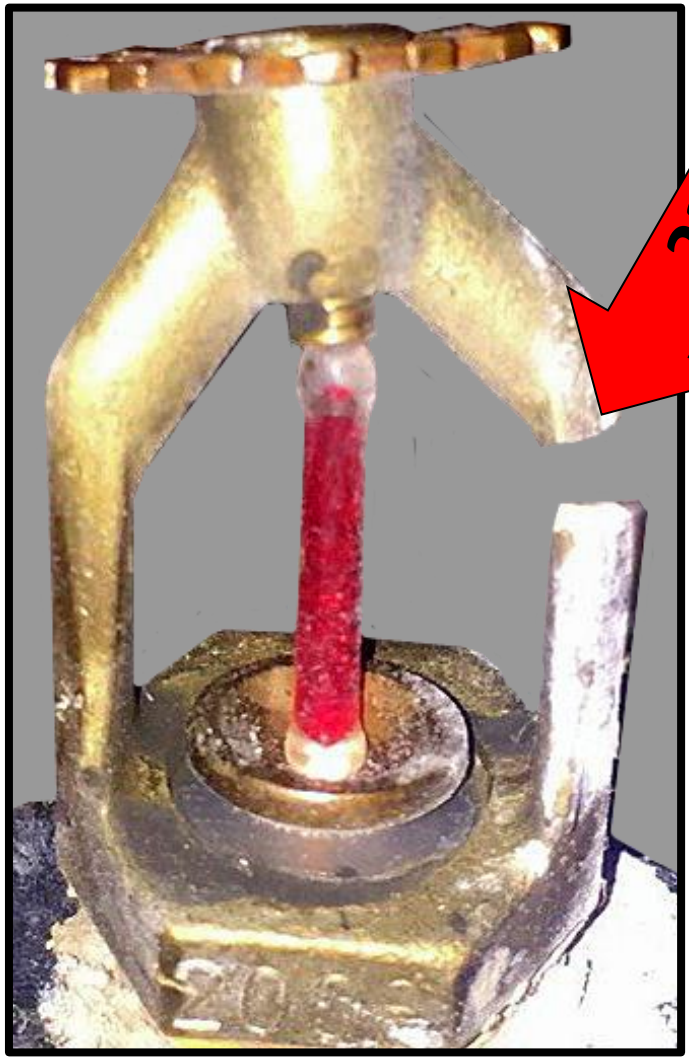


5.2.1.1.3 Any sprinkler that has been installed in the incorrect orientation shall be replaced.

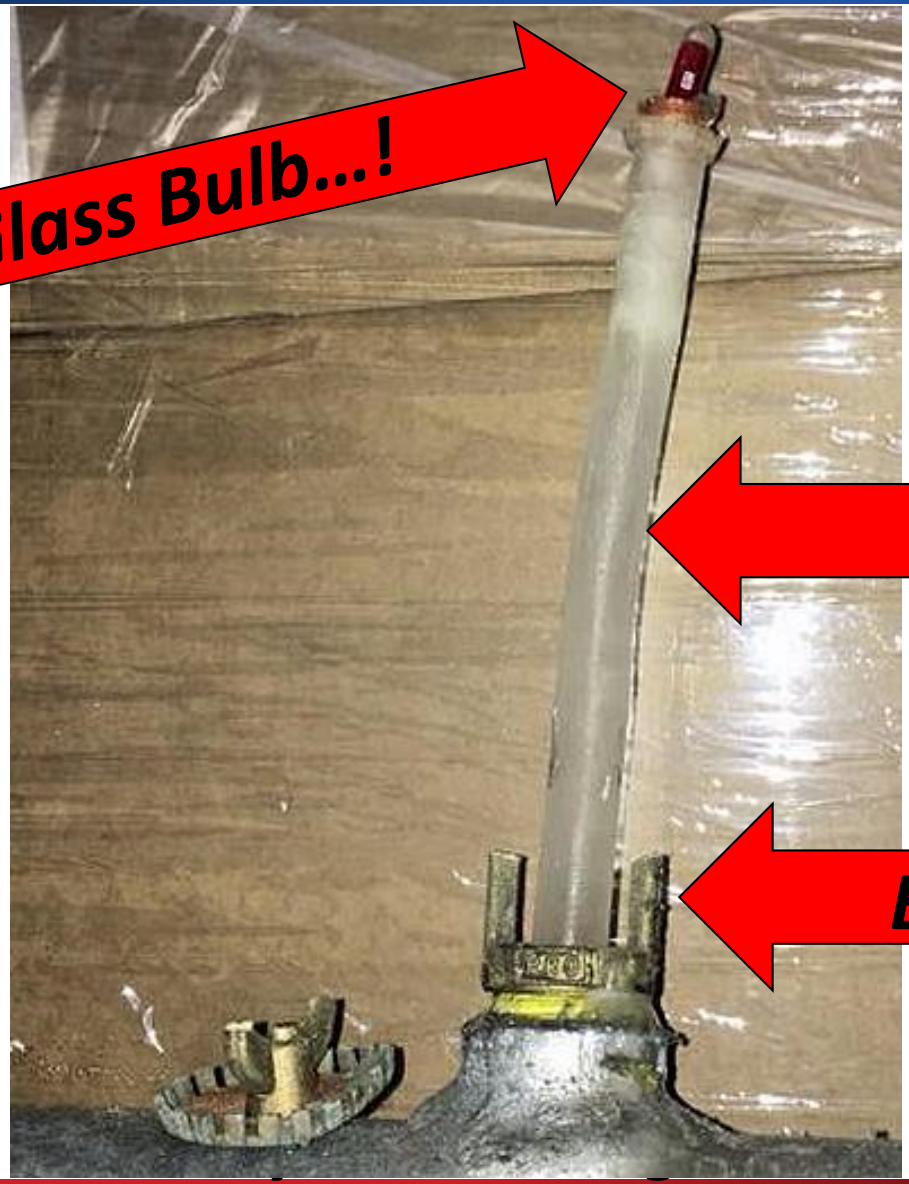
Leakage…

Corrosion…

Physical Damage…



Physical Damage…



Glass Bulbs

Pop Quiz!

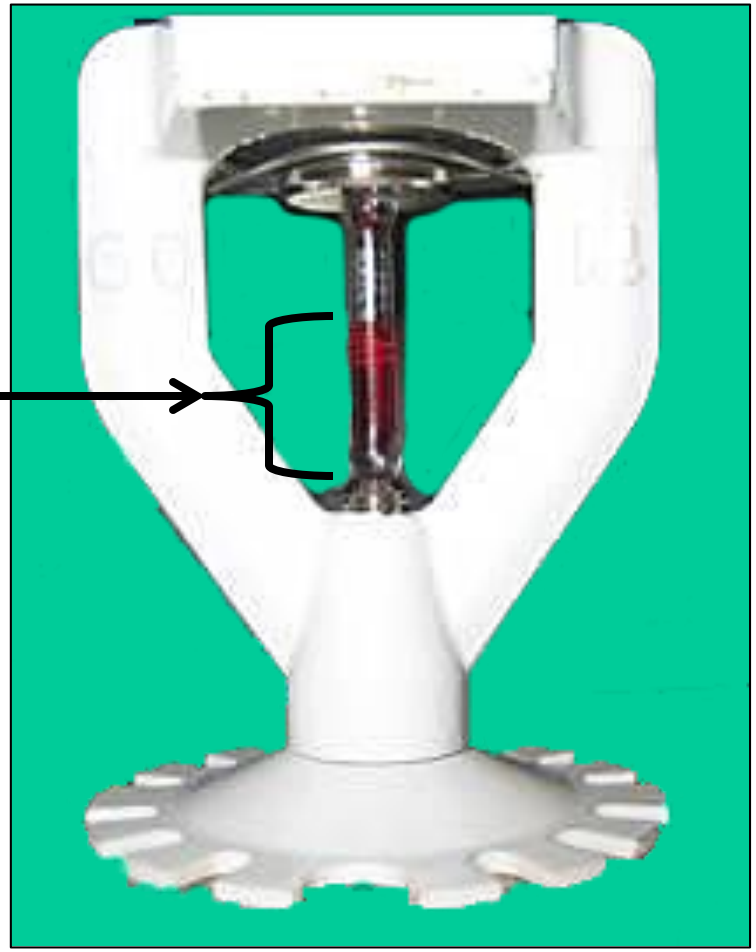
The color of the bulb affects the temperature….True or False?

False!!

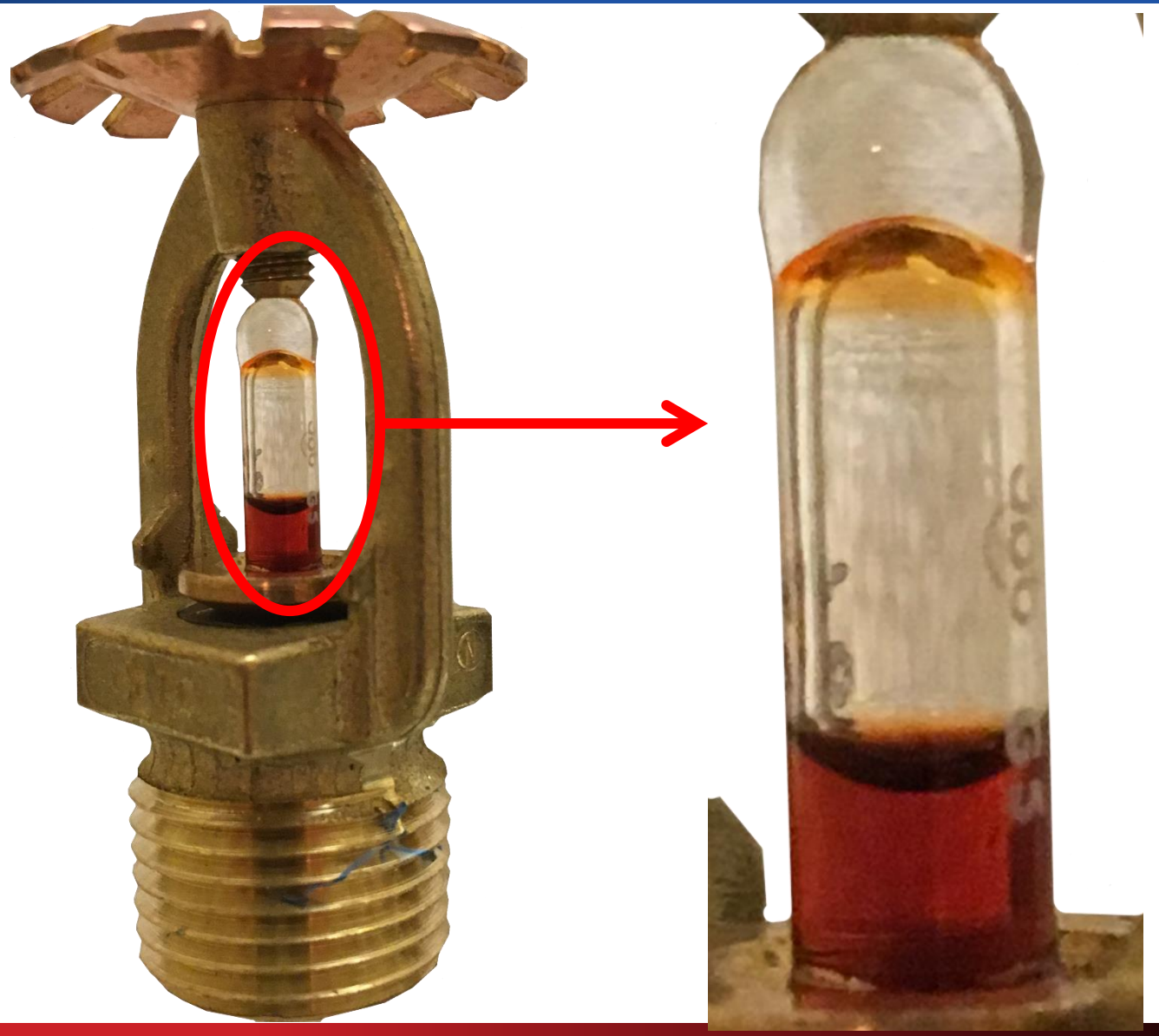
Size of the bubble inside the glass bulb affects the temperature

Loss Of Fluid In Bulb

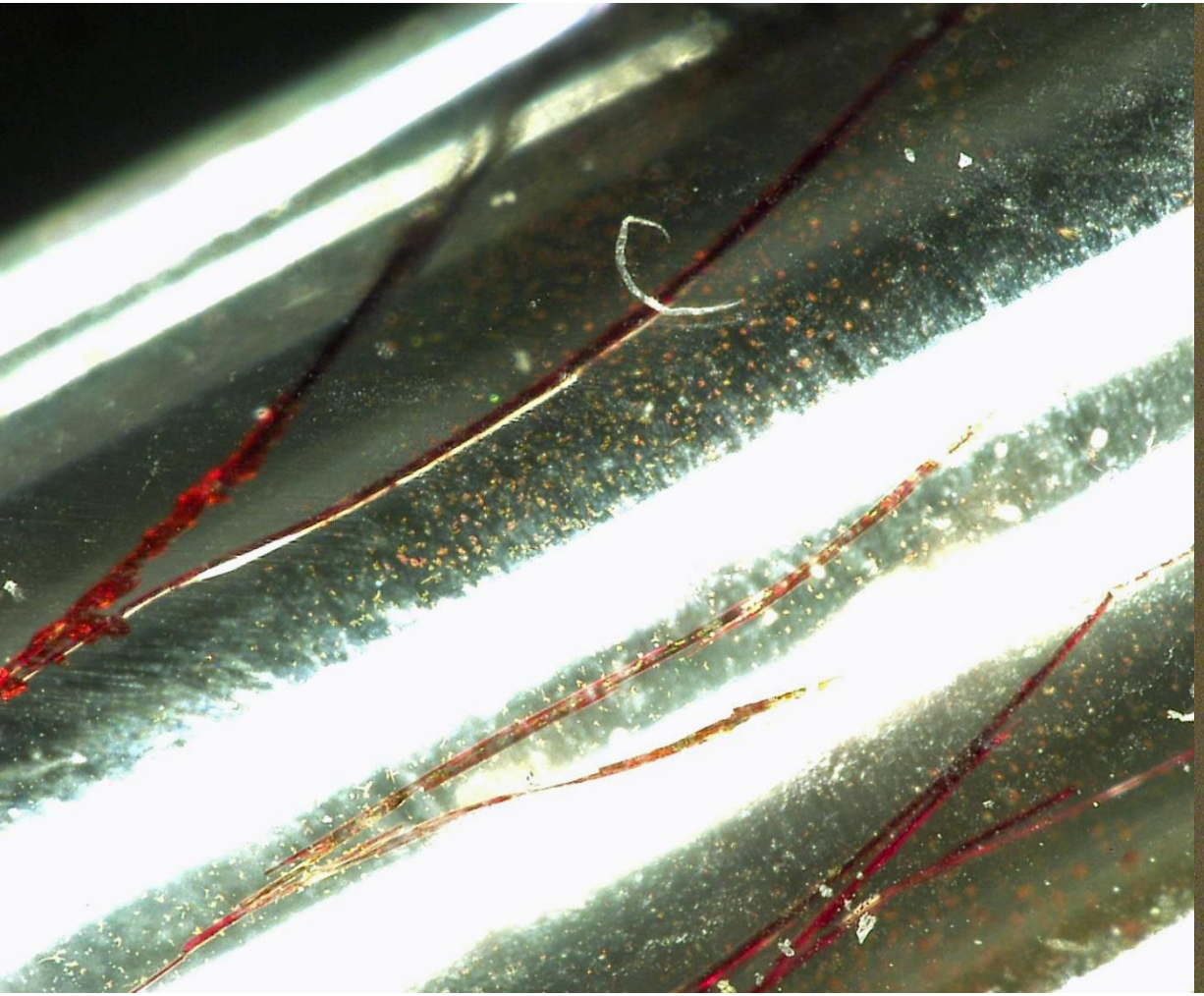
Fluid Level

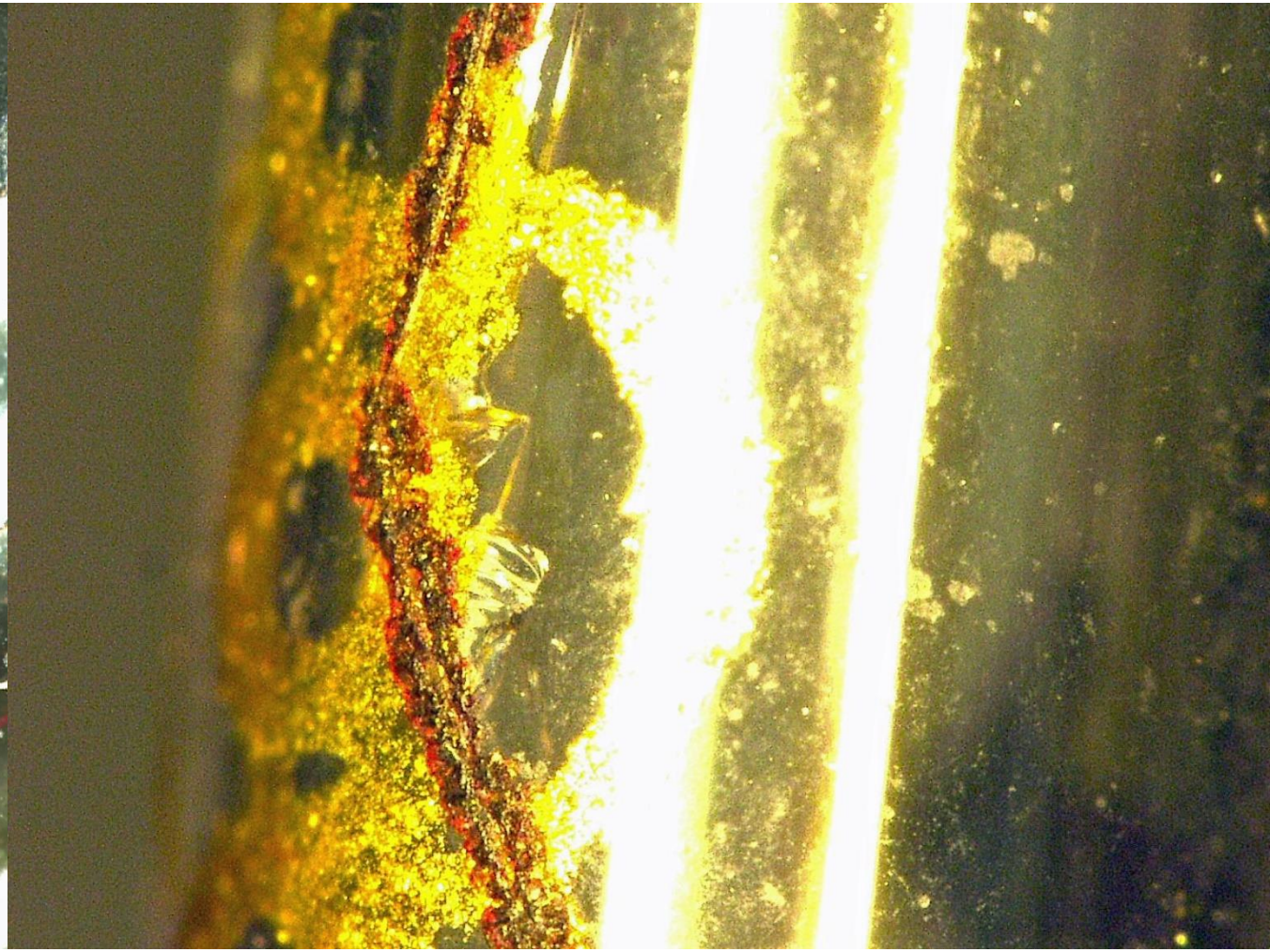


Glass Bulb…A Closer Look



Glass Bulb…A Closer Look





What If…?

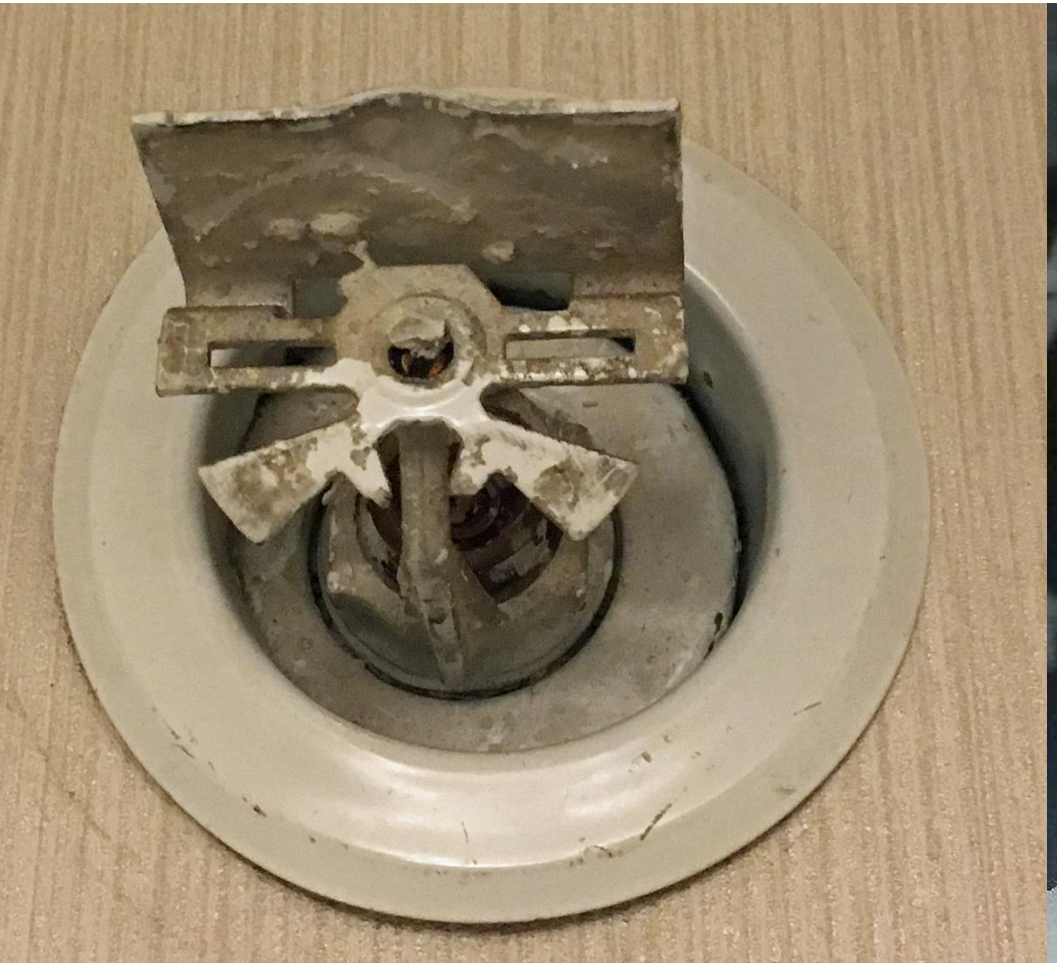
=

?????OR??

Loaded Sprinkler…

Common Human Loading…

Loaded Sprinkler…



Slightly Loaded…

Loaded Sprinkler…

Extremely Loaded…

Loaded Sprinkler…?

Nope!

Listed Wax Coated Corrosion Resistant Sprinkler…

Painted Sprinkler…

By The Manufacturer…

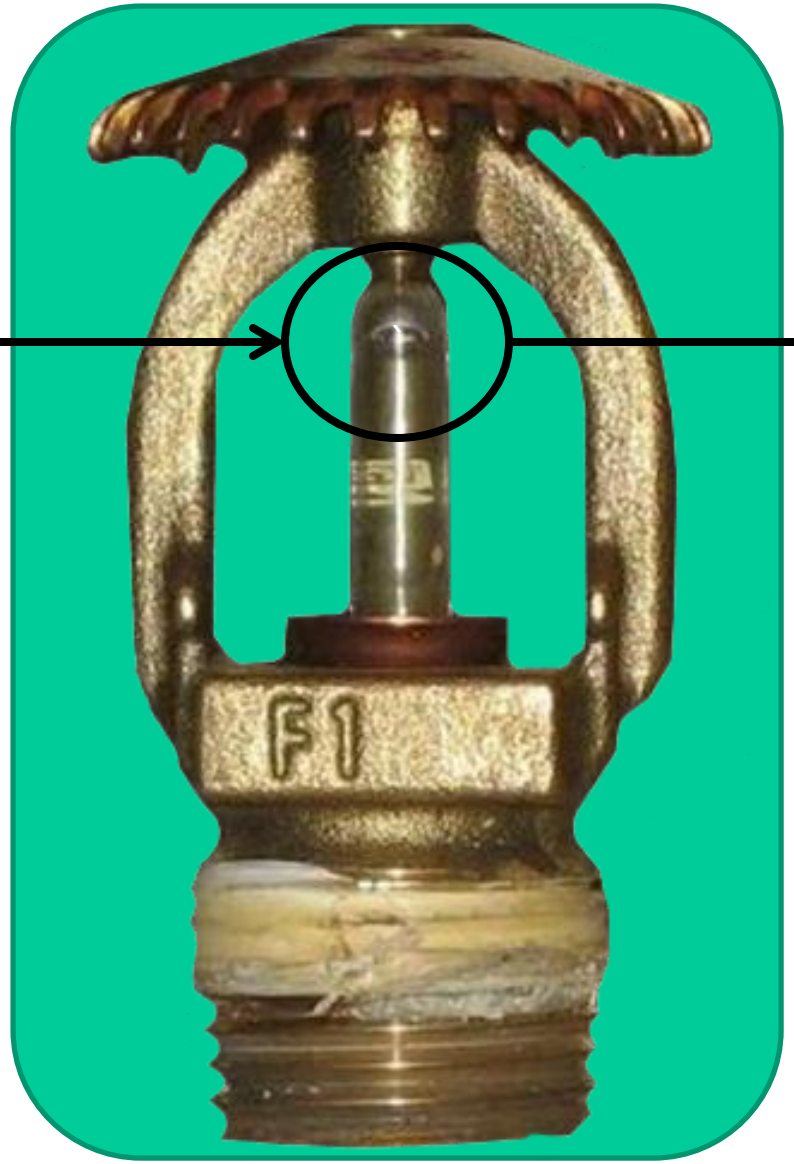
By The Painter…

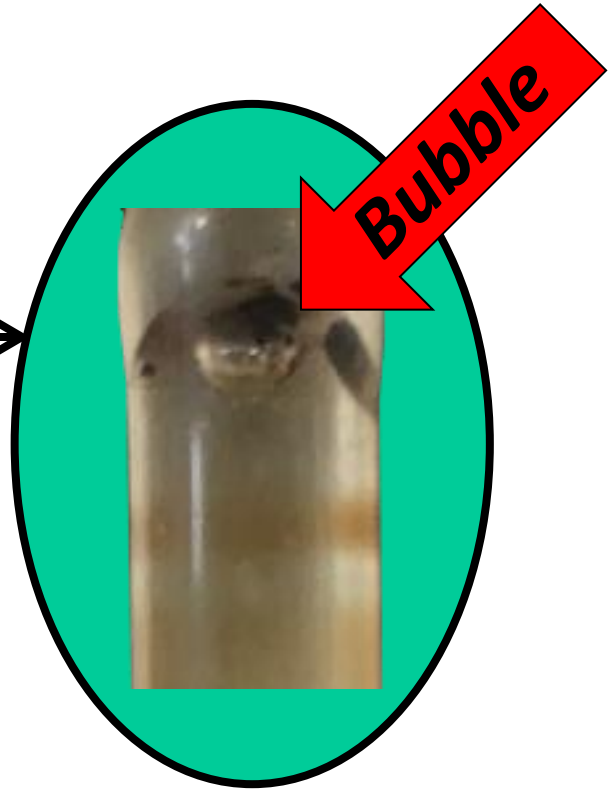
Faded Bulb Color?

NFPA-25…??

Faded Bulb Color?

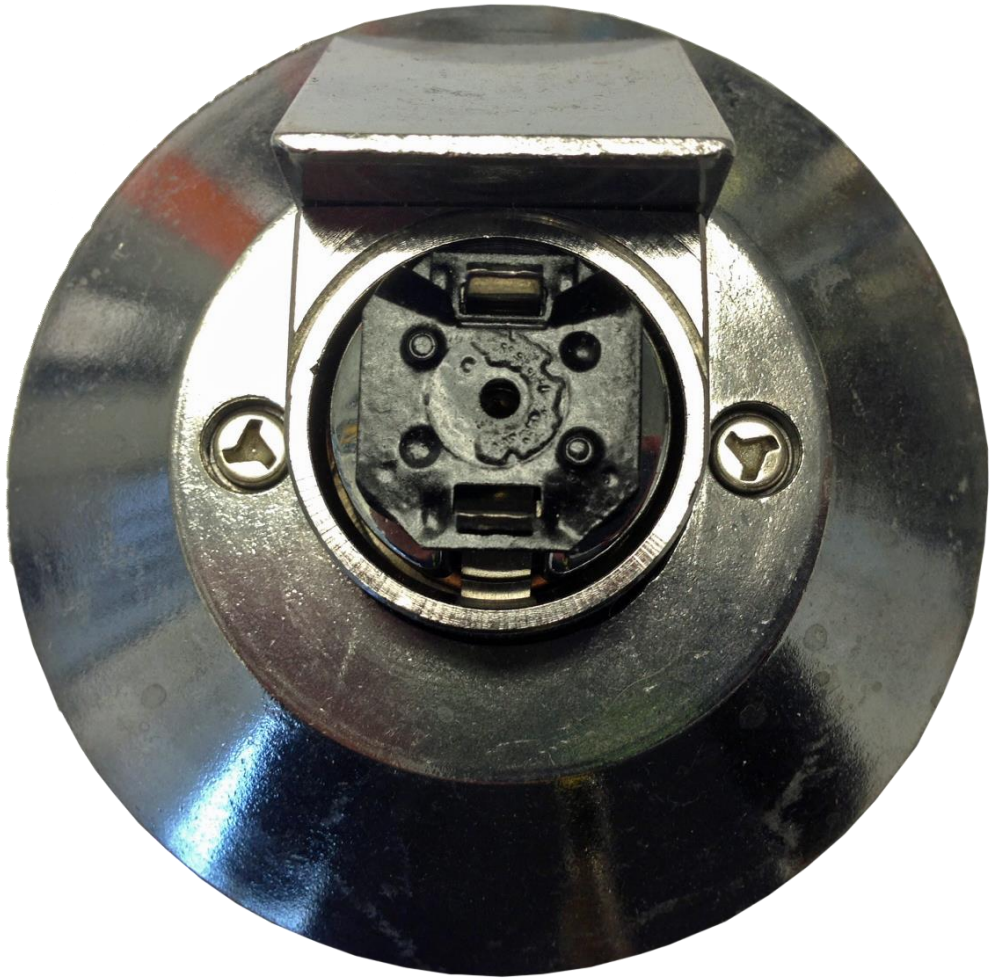
Verify Bubble





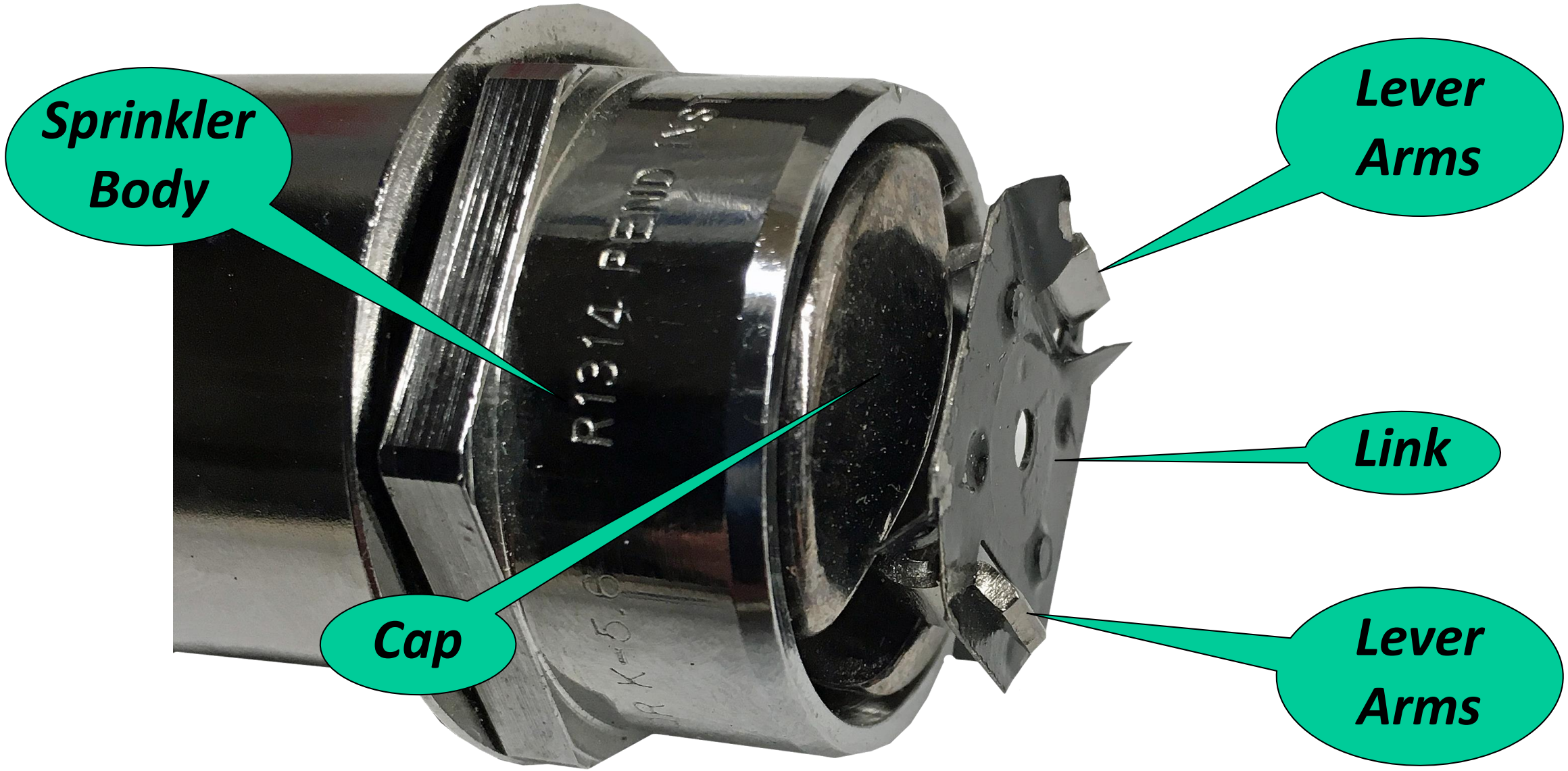
Institutional Sprinklers…

Pendent



Sidewall

Institutional Sprinklers…



Institutional Sprinklers…

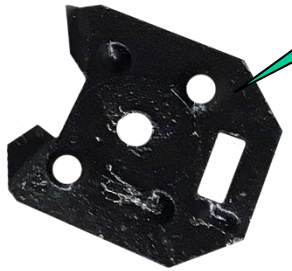
Sprinkler Body

Deflector

Spring

Cap

Lever Arm



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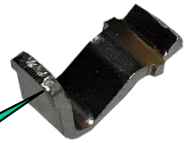
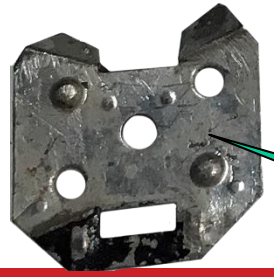


Lever Arm



½ Link

Reliable®

Who You Going To Call?

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(800-557-2726)

shanson@reliablesprinkler.com

www.reliablesprinkler.com

Thank You! Questions?