

CLA-VAL MEETS The Fire System

APPLICATION GUIDE



Your SAFETY Our PRIORITY

Reliable solutions for tomorrow's FIRE PROTECTION

MAIN VALVE KEY FEATURES



Internal Advantages:

- Dual Guided Stem Internal for Consistent Linear Seating
- Tapered Metal Seat for Drip Tight Shut-off
- Replaceable 316 Stainless Steel Seat
- · Single Internal Guided Assembly
- · Proven Repeat Functionality in Harsh Conditions
- In-Line Maintenance

Body & Cover Material:

- Ductile Iron ASTM A-536 / EN-GJS-400
- Cast Steel ASTM A216
- 316 Stainless Steel ASTM A743-CF-8M
- Nickel Aluminium Bronze ASTM B148
- Super Duplex SS ASTM A890 5A / UNS J93404

Internal Trim Material:

- 303-304 Stainless Steel
- 316 Stainless Steel
- Monel
- Super Duplex

End Details:

- Threaded: Class 300
- Grooved: Class 300
- Flanged: Class 150 & 300

Pressure Rating:

- 150 Class, MMWP 250 psi (Ductile Iron) / UL rating 250 psi
- 150 Class, MMWP 285 psi (Cast Steel) / UL rating 285 psi
- 300 Class, MMWP 400 psi / UL rating 300 psi

How Does the Main Valve work? Scan QR Code



FIRE SYSTEM GUIDE TABLE OF CONTENTS

Main Valve	
Table of Contents	
The Fire System Introduction	5
Typical Vertical Turbine Application Diagram	6-7
Typical Split Case Pump Application Diagram	8-9
Model 90A/G-21	
Model 50B/2050B-4KG1	
Model 55L-60	
Model 33ATD	
Model WC-1 Waste Cone	
Model X43HL Strainer	14
Model 582 Check Valve	
Model 3410-AR116.3 Air Valve	

CLA-VAL MEETS The Fire System



Fire systems play a crucial role in protecting life and property. High rise buildings require detailed design to ensure sufficient water and pressure is available throughout the building. Fire pumps, piping, and valves all work in unison to ensure success in the event of a fire. The system is typically made up of:

- **Control Panels:** Monitor the fire water pressure and alarms though components installed on the system.
- **Fire Pumps:** Specifically designed to increase water pressure (i.e. vertical turbine pumps and split case pumps).
- Jockey Pumps: Smaller pumps that maintain pressure in the system during normal conditions.
- Automatic Control Valves: Critical components in high-rise fire pump systems, serving several essential functions that enhance the safety, efficiency, and reliability of the entire fire protection system.

Why Are Control Valves So Important:

- **Pressure Regulation:** In high-rise buildings it is more important to deliver excess pressure than to not have any at all. Fire pumps help deliver adequate pressure to each floor and automatic control valves help regulate the pressure to a usable amount at all fire connections throughout the building.
- Maintaining Optimal Flow: Automatic control valves will continue to regulate regardless of the change in demand, such as the activation of multiple fire sprinklers or hose connections. This ensures system components will be supplied with sufficient flow and pressures at all times.
- Surge Protection: Automatic control valves can be designed to open and close at different rates to prevent flow and pressure surges, both can cause significant damage to the system.
- Automatic Response: These valves automatically respond to changes in system conditions, such as a drop in pressure when a sprinkler is activated, ensuring a rapid and reliable response to fire events.

TYPICAL VERTICAL TURBINE APPLICATION

Fire Pump

33ATD | Combination Air & Vacuum Valve with Throttling Device

Designed to protect pipelines from air lock and vacuum collapse, the Cla-Val Model 33ATD Air Release and Vacuum Breaker Valve eliminates air and prevents vacuum collapse. A large venting orifice and large float clearances freely exhaust or admit air during pipeline filling or draining.



2050B-4KG1 | Pressure Relief Valve

The Cla-Val Model 2050B-4KG1 Angle Pressure Relief Valve is designed specifically to automatically relieve excess pressure in fire protection pumping systems. Pilot controlled, it maintains constant system pressure at the pump discharge within very close limits as demands change. At pump start, Cla-Val Relief Valve modulates to relieve excess pump capacity, maintaining positive system pressure at the pump discharge. When fire demand slows or ceases, Cla-Val Model 50B-4KG1 opens, diverting entire pump output to discharge, allowing the fire pump to be stopped without causing surging in the lines.



Cla-Val's WC-1 Fire Pump Discharge Waste Cone is manufactured in accordance with NFPA 20 requirements, and is designed for use with UL/FM approved Fire Pump Pressure Relief Valves to provide easy visual confirmation of flow.



580 | Silent Wafer Check Valve

The Cla-Val Series 580 Silent Wafer Check Valve has a spring-loaded poppet that allows the valve to close before flow reversal occurs, resulting in a silent, non-slam closure. It is a truly silent check valve.

TYPICAL SPLIT CASE PUMP APPLICATION

3410-AR116.3 | Air Release Valve

The Cla-Val Series 3410-AR116.3 Air Release Valves are designed to vent entrained air that collects at high points in a pump or pipeline. This valve continuously eliminates air from a system by releasing small quantities of air before large air pockets can occur.



580 | Silent Wafer Check Valve

The Cla-Val Series 580 Silent Wafer Check Valve has a spring-loaded poppet that allows the valve to close before flow reversal occurs, resulting in a silent, non-slam closure. It is a truly silent check valve.



X43HL | H-Style Strainer

The Cla-Val Series X43HL H-Style Strainer is used to protect piping and equipment from damage caused by pipeline debris. Its large flow area and durable materials of construction means it can withstand the harsh conditions often encountered in refinery and offshore applications. The debris can be cleared through a manual flush valve or by removing the cover without taking the strainer out of the pipeline.



90-21 | Pressure Reducing Valve

Cla-Val Series 90G-21 (globe) and 90A-21 (angle) Pressure Reducing Valves automatically reduce higher inlet pressure to a steady lower outlet pressure regardless of changing flow rate and/or varying inlet pressure. The valves pilot control system is very sensitive to slight downstream pressure fluctuations, and will automatically open or close to maintain the desired pressure setting.

55L-60 | Pressure/Pump Casing Relief Valve

The Cla-Val Model 55L-60 Pressure Relief Valve is a direct-acting, spring-loaded, diaphragm type relief valve. When the set point of the adjustable spring is exceeded the 55L-60 will relieve excess pressure to atmosphere, preventing damage to the fire system.

Model 90A/G-21 Key features

Function:

This pilot controlled pressure reducing valve automatically reduces a higher inlet pressure to a steady lower downstream pressure regardless of changing flow rate and/or varying inlet pressure.

- Applications:
- Freshwater
- Seawater
- Foam

Model Features:

- Surge Free Operation
- Low Head Loss
- · Field Adjustable Pilot System

Pressure Rating:

Inlet Pressure Rating:

- 150 Class: 225 psi
- 300 Class: 300 psi

Outlet Pressure Setting:

• 50 - 175 psi

How Does the **90A/G-21** work? Scan QR Code **Certifications:**



Approved Sizes:

• Flanged: 1.5" - 12"

• Threaded: 1.5" - 3"

· Grooved: 1.5" - 8"

Model 50B/2050B-4KG1 **KEY FEATURES**



Applications: • Freshwater

Seawater

Foam

Function:

This pilot controlled relief valve maintains constant system pressure at the pump discharge within very close limits as demands change.

Model Features:

- Field Adjustable Pilot System · Quick Response to Ensure
- Reduced System Damage
- · Drip Tight Shut-off
- Surge Free Operation

Pressure Rating:

- 150 Class: 225 psi
- · 300 Class: 300 psi

Approved Sizes:

• Flanged: 1.5" - 8" • Threaded: 1.5" - 3"

• Grooved: 1.5" - 8"

Approved Spring Ranges:

- 10 75 psi
- 20 200 psi
- 100 300 psi

Certifications:



FM

How Does the 50B/2050B-4KG1 work? Scan QR Code



Model 55L-60 Key features



- Pump Application:
- Set during pump commissioning
- Sprinkler System Application:
- Set 10 psi above PRV (90-21) setting

Angle

Function:

Direct acting relief valve, typically used as a pump circulation relief valve or thermal expansion relief valve.

Globe

Model Features:

- Field Adjustable
- Rapid Response to Slight
 Pressure Changes
- Drip Tight Shut Off

Approved Spring Ranges:

- ¹/₂" ³/₄" (UL & FM):
- 10 75 psi
- 20 200 psi
- 100 300 psi
- 1" (UL Only):

GTI-TT

- 20 75 psi
- 40 200 psi
- 100 300 psi

Pressure Drop Values:

- 1/2" 6 [Cv Factor] 25 (Max Flow [GPM])
- 34" 8.5 [Cv Factor] 40 (Max Flow [GPM])
- 1" 12.8 [Cv Factor] 65 (Max Flow [GPM])



How Does the 55L-60 work? Scan QR Code

Certifications:



Model 33ATD Key features





Certifications:



ABS ABS Assessed

How Does the **33ATD** work? Scan QR Code



Model WC-1 WASTE CONE QUICK OVERVIEW

Cla-Val's WC-1 Fire Pump Discharge Relief Waste Cone is manufactured in accordance with NFPA 20 requirements and available for onshore and offshore applications.

Available Sizes:

3" X 5", 3" X 6", 4" X 6", 4" X 8", 6" X 8", 6" X 10", 8" X 12", and 8" X 14"

Pressure Rating:

- 150 Class: 225 psi
- 300 Class: 300 psi
- · Grooved: 300 psi

Available Materials:

- Epoxy Coated Ductile Iron
- Nickel Aluminum Bronze

Designed per NFPA20 requirements





Model X43HL STRAINER QUICK OVERVIEW

The durable Cla-Val Model X43HL Strainer is the easiest and most cost effective way to protect piping and equipment from damage caused by pipeline debris. Its large flow area and durable materials of construction means it can withstand the harsh conditions often encountered in refinery and offshore applications.

Available Sizes:

• 1.5" - 48"

Pressure Rating:

- · Class 150: 250 psi
- · Class 300: 400 psi

Available Materials:

- · Epoxy Coated Ductile Iron
- Nickel Aluminum Bronze



Model 582 CHECK VALVE QUICK OVERVIEW



The Cla-Val 582 Series Two-Door Wafer Check Valve has torsion springs that force the two doors to shut before flow reversal, reducing the water hammer potential that normally occurs with single-door swing check valves. To help reduce water hammer, the two-door design also reduces the travel distance from open to shutoff for a quicker response. Extremely short in lay length, the valve is both a compact and an economical solution.

Available Sizes:

• 4" - 16"

Pressure Rating:

• Wafer: 250 psi

Available Materials:

- Epoxy Coated Ductile Iron
- Nickel Aluminum Bronze

Certifications: FM Approved



Model 3410-AR116.3 AIR VALVE QUICK OVERVIEW

Cla-Val Series 34 Fire Protection System Air Release Valves are designed to vent entrained air that collects at high points in a pipeline. This valve continuously eliminates air from a system by releasing small quantities of air before large air pockets can occur.

Available Sizes:

• ½" - ¾", 1"

Pressure Rating:

- ³/₃₂ Orifice: 175 psi
- 1/16 Orifice: 300 psi

Available Materials: • Epoxy Coated Ductile Iron

Certifications: UL and FM Approved



GLOBAL LOCATIONS





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