



# Building Services Brochure







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# COMPANY OVERVIEW

Since 1936, the Cla-Val Group is the “LEADING” supplier of diaphragm actuated control valves, used worldwide for the distribution of drinking and industrial water, fire protection systems, fuel supplies and industrial applications. Our desire for unsurpassed quality and commitment to continuous improvement can be found in every product we produce. With manufacturing facilities, warehouses and sales offices in the US, Canada, Switzerland, France, the United Kingdom, New Zealand and Mexico, Cla-Val truly is a global company, with a reputation for excellence around the world.

Cla-Val produces the world's highest quality automatic control valves, achieved through a unique combination of engineering expertise, craftsmanship, quality materials, sophisticated manufacturing processes, superior customer service and the best warranty in the business.

For more than 30 years Cla-Val's reputation for reliability and accuracy have set the benchmark for Pressure management throughout the UK water industry. Cla-Val UK are committed to maintaining high levels of customer service and support. We stock large quantities of valves in common sizes including spare parts. Our servicing department offers comprehensive commissioning and valve servicing capabilities.

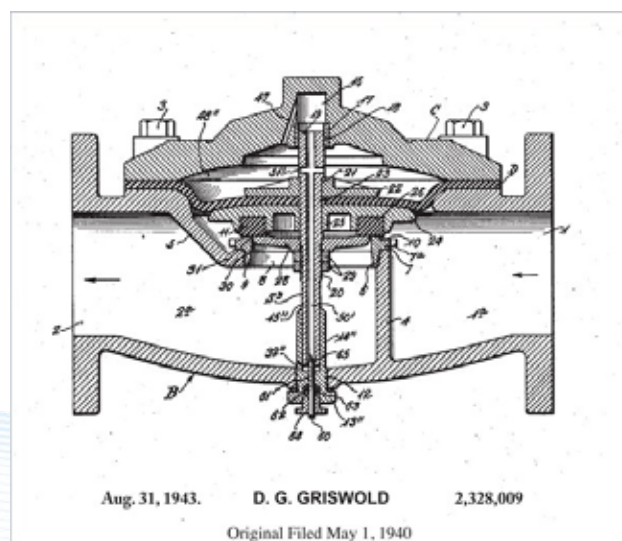
We are also ISO 9001, 14001 and 18001 compliant.

## Experience and Technology

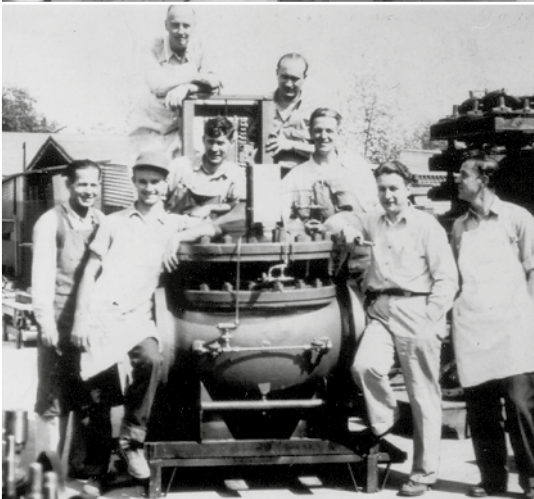
Cla-Val automatic control valves reflect the lessons learned from more than 80 years of demanding real-world use in applications such as waterworks distribution systems, fire protection systems, farm irrigation, naval ship systems, fuelling, mining and industrial fluid handling systems. Our aggressive research and development programs have resulted in the design and production of technologically advanced electronic and hydraulic control systems that consistently meet the challenges of increasingly complex and diverse applications.

### **Inventor and manufacturer of the diaphragm actuated automatic control valve**

'Registered on May 1, 1940'









# TRAINING

Cla-Val UK offers a wide range of training courses and seminars tailored to suit your individual needs.

Cla-Val control valves play a critical role in regulating pressures and flows within water distribution networks. At the design stage, it's important to understand the guidelines for sizing and specifying the most cost-effective solution. Our purpose-built training facility provides trainees with an opportunity to gain experience in the commissioning, servicing and troubleshooting of valves in a live system.

Our training programs cover a wide range of topics including:

- Principals of Pressure management
- Advanced pressure management
- Reservoir management solutions
- Electronic control valve solutions
- Surge management

Training programs can be tailored to suit your individual needs, just call us to discuss your requirements. Our facilities at Tunbridge Wells training include a demonstration rig incorporating a fully functional pumping system allowing us to offer practical demonstrations of pressure reducing, Pressure Relief, Pressure sustaining, Modulating Pressure control and electronic Flow control.

Alternatively, training can be undertaken at the customer's premises with the aid of a cutaway valve. All training is accompanied by comprehensive handouts and a certificate on completion.



# FIELD SERVICES

One of the best ways to ensure that your system operates at peak efficiency is to perform preventive maintenance on a regular basis. When it comes to Cla-Val automatic control valves, no one can do a better job at keeping your valves in tip-top shape than our own in-house team of factory trained field service engineers.

With over 30 years of experience our teams of highly skilled engineers are fully trained and equipped with the knowledge to maintain, service and commission the complete range of Cla-Val products from basic hydraulic functions to sophisticated electronic interfaces. The team are experienced in the installation and commissioning of a variety of flow modulation devices, in conjunction with the optimization of DMA's - including Calm Networks.

All Cla-Val engineers have confined spaces, street-works and hygiene certifications and all works are carried out diligently and within the companies 18001, 14001 and 9001 accreditations.



## Available Services

- Emergency repairs performed by certified engineers on call.
- Periodic inspection, maintenance and upgrading of installed valves, without removal from the pipeline
- Complete on-site valve refurbishment, including replacement of rubber goods and change-out of metal parts as needed
- Complete valve rebuilds in the workshop
- Field retrofits of a wide array of accessories and components to enhance valve function, including the addition of the following:
  - Pressure Management Pilot Systems and Controllers
  - Solenoid valves and E-Line Electronic Actuators for advanced electronic control
  - Hydro-powered turbines
  - Anti-Cavitation trim to protect valve from cavitation damage
  - Installation of pressure gauges, position indicators, limit switches, etc.



Preventative maintenance and emergency service



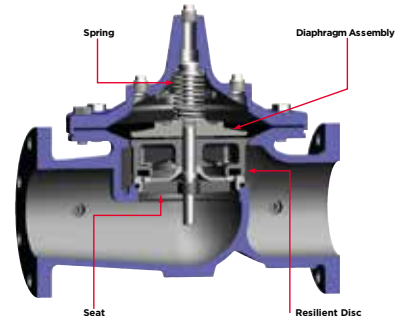
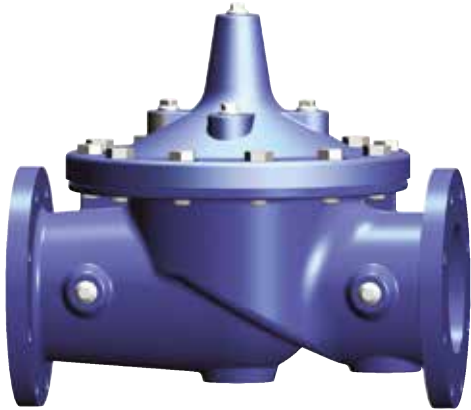
Electronics field retrofit and commissioning



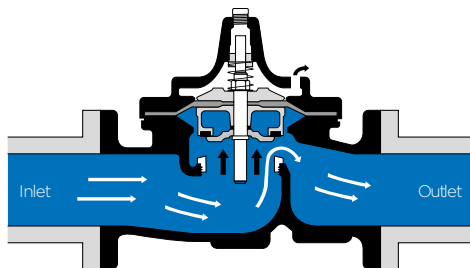
# HOW IT WORKS

## BASIC MAIN VALVE

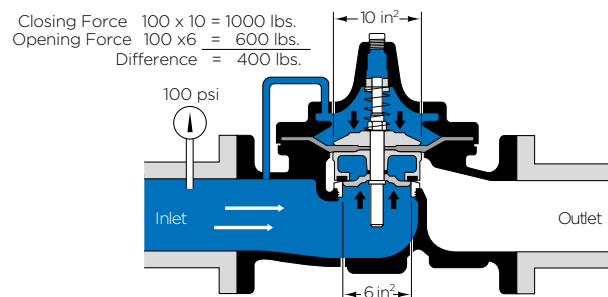
Most Cla-Val valves consist of a main valve and pilot control system. The basic main valve is called a Hytrol Valve.



When no pressure is in the valve, the spring and the weight of the diaphragm assembly hold the valve closed.



With the cover chamber vented to atmosphere, the valve will open from line pressure under the disc.

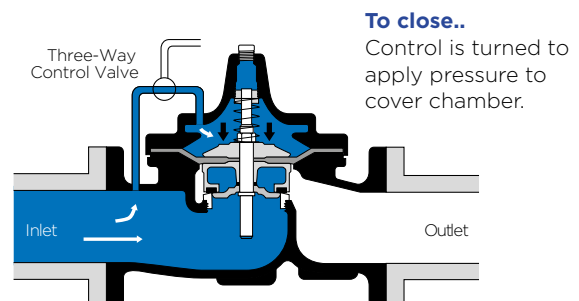
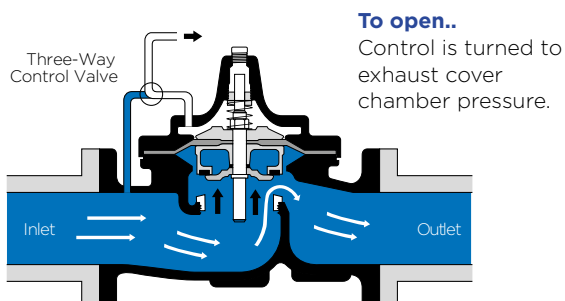


If inlet pressure is connected into the cover chamber, the valve closes tightly. In this example, the 400 pound difference is the force which pushes the disc against the seat and causes the valve to seal drip-tight.

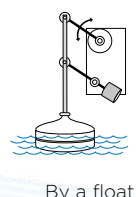
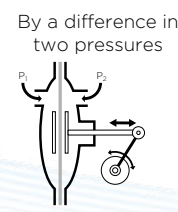
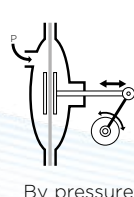
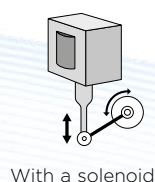
## NON-MODULATING CONTROLS

A simple control which either opens the valve wide or closes it tightly is a three-way valve. The type of operation this control gives is called "non-modulating" because the valve cannot pause in a partially open position.

Once the control is turned to either position, operating fluid flow into or out of the cover chamber until the valve is open or closed. For example...



Ordinary three-way valves usually are not satisfactory because they require so much force to operate. An easy-turning control which can be operated in a variety of ways is usually used. Several examples of controls and their operation are shown at right.



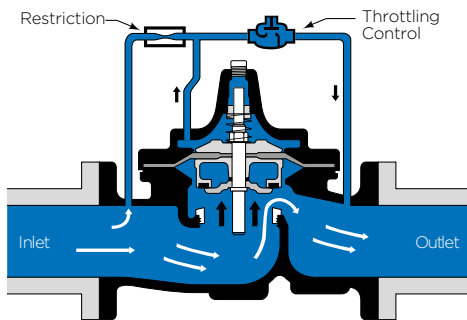


## MODULATING CONTROLS

The Cla-Val Automatic Control Valve modulates if the cover pressure is held between the inlet and outlet pressure. To achieve modulating operation, a slightly different type of control system is utilized.

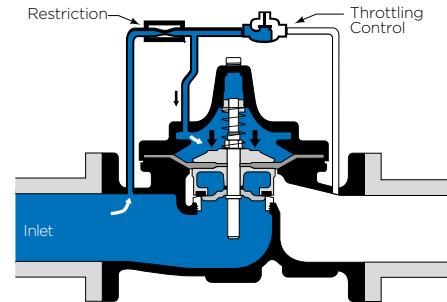
### Valve Open

When the throttling control opens to a point where more pressure is relieved from the cover chamber than the restriction can supply, cover pressure is reduced and the valve opens.



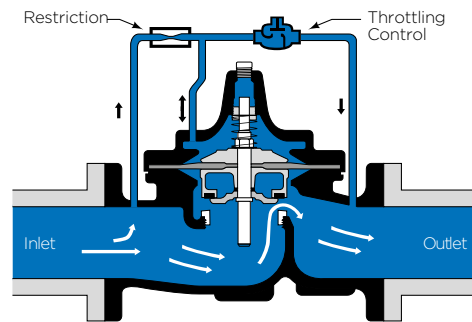
### Valve Closed

When the modulating control closes sufficiently to direct a great enough pressure into the cover chamber to overcome the opening forces of line pressure, the main valve closes.



### Valve Throttling

The main valve modulates to any degree of opening in response to changes in the throttling control. At an equilibrium point, the main valve opening and closing forces hold the valve in balance. This balance holds the valve partially open, but immediately responds and readjusts its position to compensate for any change in the controlled condition.

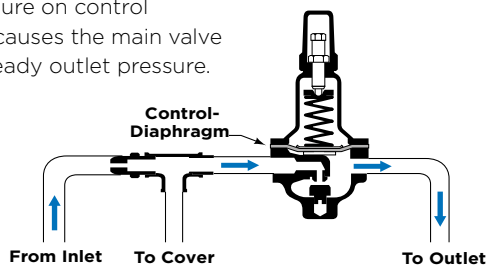


## AUTOMATIC CONTROLS

The following examples illustrate several different types of operation utilizing automatic controls.

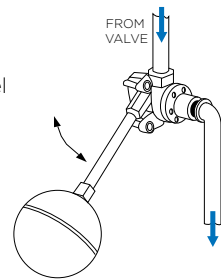
### Pressure Reduction

Outlet pressure on control diaphragm causes the main valve to hold a steady outlet pressure.



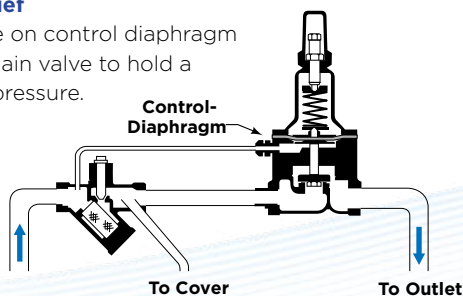
### Liquid Level Controller

Slight changes in flow through the float control causes main valve to counteract changes in reservoir level so liquid level is held constant.



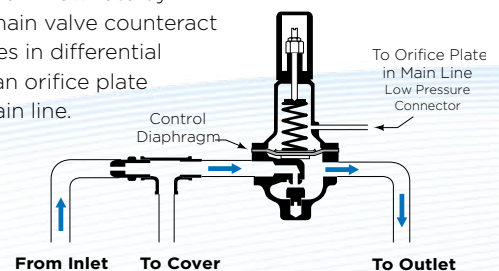
### Pressure Relief

Inlet pressure on control diaphragm causes the main valve to hold a steady inlet pressure.



### Rate of Flow Controller

Limits the maximum flow rate by changes to the main valve counteract any slight changes in differential pressure across an orifice plate located in the main line.



# BASIC VALVE 100-01

The Model 100GE-01/NGE100-01 is the basic valve used in nearly all Cla-Val Automatic Control Valves. It is the valve of choice for system applications requiring remote control, pressure regulation, solenoid operation, rate of flow control, liquid level control or check valve operation. The rugged simplicity of design and near frictionless actuation assure a long life of dependable, trouble-free operation. Its applications are unlimited.

- **Drip-Tight, Positive Seating**
- **Service Without Removal From the Line**
- **Threaded, Flanged or Grooved End Connections**
- **Globe or Angle Pattern**
- **Sizes: 40mm to 1400mm**
- **100% Factory Tested**

## Operation

The Cla-Val Model 100-01 Hytrol Valve is a hydraulically operated, diaphragm actuated, Globe or Angle pattern valve. It consists of three major components: Body, Diaphragm assembly, and Cover.

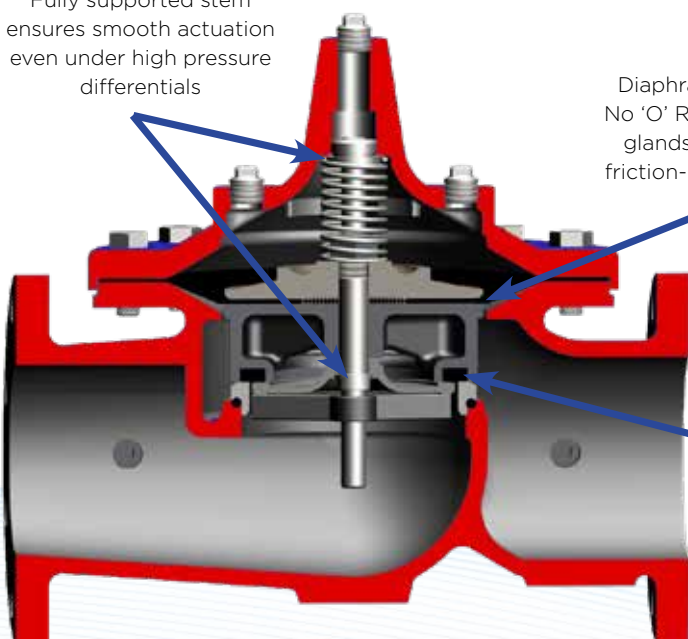
The diaphragm assembly is the only moving part. The diaphragm assembly is guided top and bottom by a precision machined stem. It utilises a non-wicking diaphragm of nylon fabric bonded with synthetic rubber. A resilient synthetic rubber disc retained on three and one half sides by a disc retainer forms a drip-tight seal with the renewable seat when pressure is applied above the diaphragm.



Fully supported stem ensures smooth actuation even under high pressure differentials

Diaphragm actuated, No 'O' Rings or packing glands ensures near friction-less movement

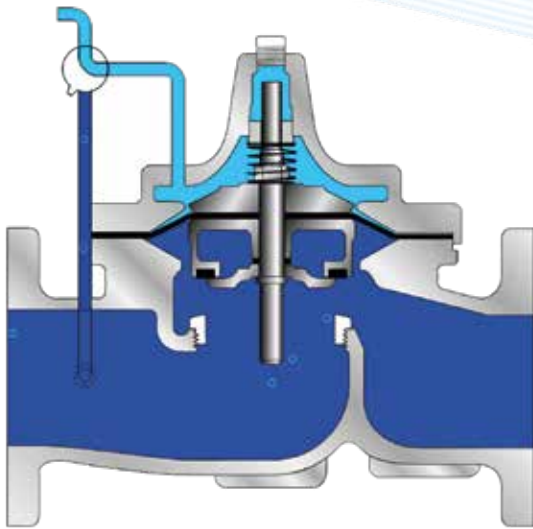
Resilient disc proved drip-tight shut-off



**The valve is available in other materials including Stainless Steel and Bronze**

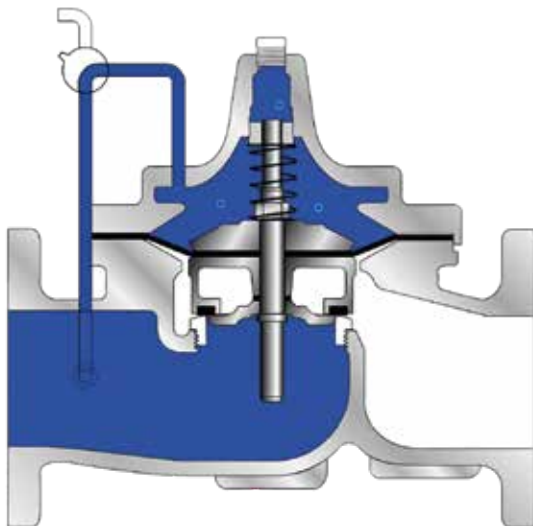






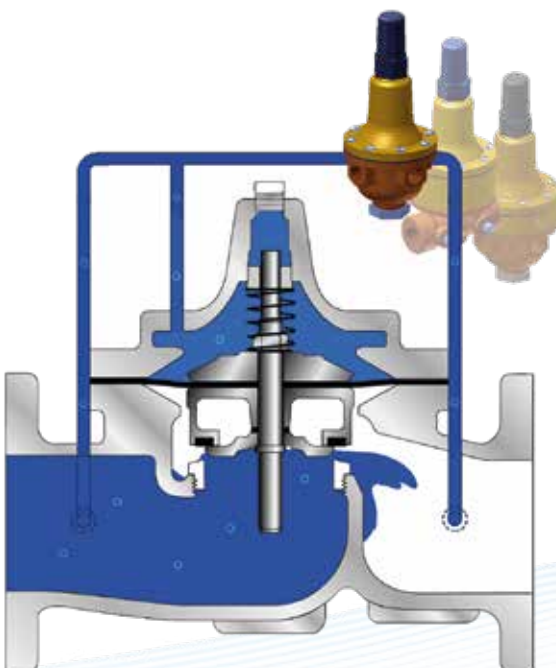
### FULLY OPEN OPERATION

When pressure in the diaphragm chamber is relieved to a lower pressure zone (or atmosphere), the inlet pressure opens the valve.



### TIGHT CLOSING OPERATION

When pressure from the valve inlet is applied to the diaphragm chamber, the valve closes drip tight.



### MODULATING ACTION

The valve modulates when diaphragm pressure is held at an intermediate point between inlet and discharge pressure. Utilising a suitable Cla-Val control pilot, which reacts to changes in line pressure, the pressure above the diaphragm is varied, allowing the valve to throttle and compensate for the changes.

# PRESSURE REDUCTION / REGULATION

## Model: 90-01B/LFS Pressure Reducing Valve

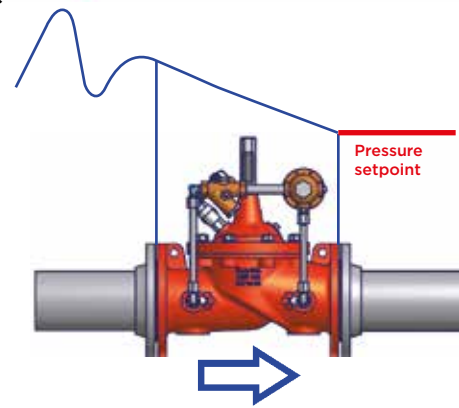
Cla-Val Model B90-01/LFS pressure reducing valve automatically reduces a higher inlet pressure to a steady lower downstream pressure regardless of changing flow rate and/or varying inlet pressure. This valve is an accurate, pilot operated regulator capable of holding downstream pressure to a pre-determined limit.

- **Sizes: 1 1/2 to 600mm (Flanged) or 1 1/2 and 2" (Screwed)**
- **Integral low flow seat for exceptional low flow performance**
- **Pressure ratings: 16 - 40 bar**
- **Integral Pressure gauge ports**
- **Downstream adjustment: 0.2 - 20 bar (User specified)**

> Refer to pages 24-26 for sizing and dimensions

Optional feature:

 **Non Return (check feature)** Model: 91-01B/LFS



## Model: 90-25B/LFS Pressure Reducing Valve with Low Flow Bypass

The Model 90-25B/LFS reduces a higher inlet pressure to a constant downstream pressure regardless of changing flow rate and/or varying inlet pressure. The 1/2" low flow by-pass PRV is preset to a higher pressure than the pilot controlled PRV and responds to pressure changes from the main valve outlet. When the main valve closes, the by-pass PRV remains open allowing water to flow through and by-passing the main valve. The bypass PRV closes when the flow decreases and the downstream pressure reaches its set point.

- **Sizes: 1 1/2" to 600mm (Flanged) or 1 1/2" and 2" (Screwed)**
- **Integral low flow seat for exceptional low flow performance**
- **Pressure ratings PFA: 16 bar - 25 bar - 40 bar**
- **Integral Pressure gauge ports**
- **Downstream adjustment: 0.5 - 15 bar (User specified)**

> Refer to pages 24-26 for sizing and dimensions





# PRESSURE REDUCTION / REGULATION

## Model: AQUA-PRV/FL

### Pressure Reducing Valve - Direct Acting

The Cla-Val AQUA-PRV/FL pressure reducing valve will automatically reduce and maintain a lower and constant outlet (downstream) pressure regardless of variations of inlet pressure. When downstream pressure exceeds the pressure setting, the valve will close drip-tight under zero demand conditions.

- **Sizes: 40mm to 150mm**
- **Pressure Rating PFA: 16 bar - 25 bar - 40 bar**
- **Downstream Adjustment Range: 2-14 bar**
- **1/4" BSP/F Outlet + Inlet Gauge / Test port**



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## Model: AQUA-PRV/SC

### Pressure Reducing Valve - Direct Acting

The Cla-Val AQUA-PRV/SC pressure reducing valve will automatically reduce and maintain a lower and constant outlet (downstream) pressure regardless of variations of inlet pressure. When downstream pressure exceeds the pressure setting, the valve will close drip-tight under zero demand conditions.

- **Sizes: 1/2" - 3/4" - 1" - 1 1/4" - 1 1/2" - 2"**
- **Pressure Rating PFA: 40 bar max.**
- **Downstream Adjustment Range: 0.5 - 15 bar (Depending on version)**
- **1/4" BSP/F Outlet Gauge / Test port**

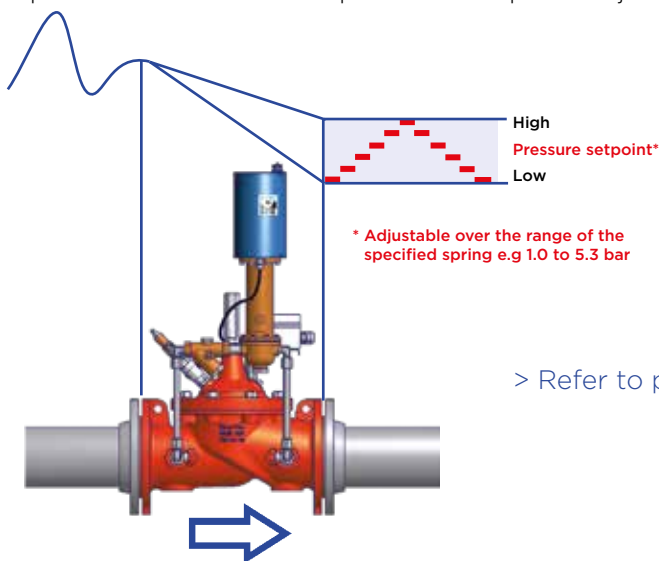


# PRESSURE REDUCTION / REGULATION

## Model: PCM90-01

### Pressure Reducing Valve with 4-20mA Remote Setpoint

Cla-Val Models PCM90GE-01/PCM-NGE90-01 Pressure reducing valves automatically reduces a higher inlet pressure to a steady lower downstream pressure regardless of changing flow rate and/or varying inlet pressure. The CRD-34 motorised pilot control, consisting of a hydraulic pilot and integral controller that accepts a 4-20mA remote set-point command input and makes smooth pressure set-point adjustments to the pilot.



CRD-34 motorised pressure reducing pilot



> Refer to pages 24-26 for sizing and dimensions

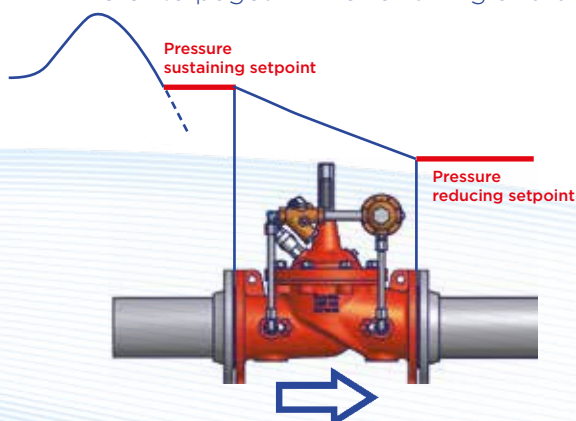
## Model: 92-01

### Pressure Reducing and Pressure Sustaining Valve

Cla-Val Models 92GE-01/NGE92-01 Combination pressure reducing and pressure sustaining valves automatically performs two independent functions. It maintains a constant downstream pressure, regardless of fluctuating demand and sustains the upstream pressure to a pre-determined minimum.

**Typical application** - Use this valve to automatically reduce pressure and sustain a minimum pressure in the high pressure main regardless of demand.

> Refer to pages 24-26 for sizing and dimensions





# TANK LEVEL CONTROL

## Model: 270-01

### On/Off Altitude Level Control Valve

The Cla-Val Models 270GE-01/NGE270-01 On/Off Altitude Level Control Valve controls the high water level in a closed storage tank without the need for floats or other devices. It is a non-throttling valve that remains fully open until the shut-off point is reached.

The valve is typically designed for closed storage tanks where water is withdrawn through a separate line. The desired water level is set by adjusting the spring force. The pilot control operates on the differential in forces between a spring load and the water level in the storage tank.



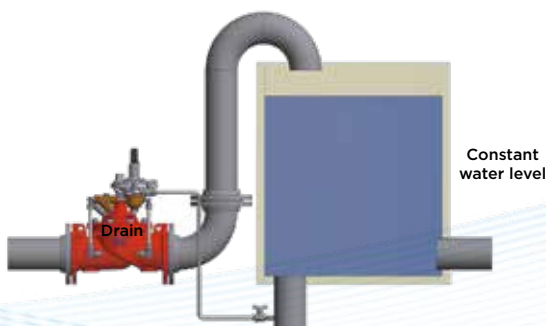
> Refer to pages 24-26 for sizing and dimensions

## Model: 278-01

### Modulating Altitude Level Control Valve

The Cla-Val Models: 278GE-01/NGE278-01 Constant Altitude Level Control Valve maintains a constant water level in closed storage tanks by compensating for variations in supply or demand. It can be installed to control the flow into or out of the storage tank by closing on rising level or opening on decreasing level.

The desired water level is set by adjusting the spring force.



> Refer to pages 24-26 for sizing and dimensions

# SURGE PROTECTION

## Model: Vent-A-Riser Surge Arrestor and Air Release Valve

The Cla-Val Model Vent-A-Riser dampens the impact of potentially destructive water hammer in the event of uncontrolled pump start-up and prevents vacuum forming in the riser when the pump stops and the riser drains.

### Operation

At pump start, air is forced through an “Anti-Shock” orifice resulting in the deceleration of the approaching water column due to the resistance of rising air pressure in the valve. This dampens a potential pressure transient when the valve closes.

### Vacuum Protection

The large orifice admits air into the riser to prevent vacuum and damage to pipes and fittings from occurring when the booster set is down (powered off).

### Effective Air Release

The small orifice functionality allows air to be removed from the system while the system is pressurized, preventing the formation of air pockets allowing the pipe system to operate efficiently.

- **Dampens The Effect of Water-Hammer At Pump Startup**
- **Vacuum Protection During Pump Trip**
- **Low Sealing Pressure (0.3 bar)**
- **Stainless Steel Construction**
- **3 Year Warranty**





# SURGE PROTECTION

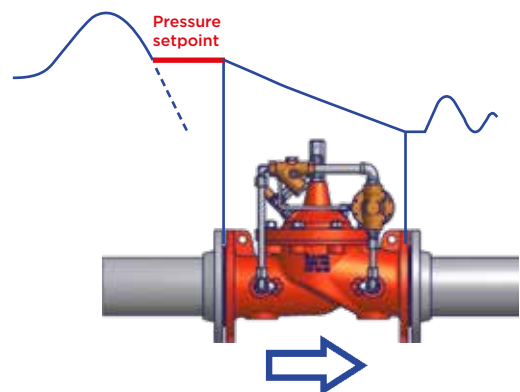
## Model: 50-01/B

### Pressure Relief / Pressure Sustaining Valve

Cla-Val Models 50GE-01/NGE50-01 Pressure sustaining/Relief valves are hydraulically operated, pilot-controlled, modulating valves designed to maintain constant upstream pressure within close limits. The valves can be used for pressure relief, sustaining, back pressure, or unloading functions in a by-pass system. In operation, the valve is actuated by line pressure through a pilot control system, opening fast to maintain steady line pressure but closing gradually to prevent surges. Operation is completely automatic and pressure settings may be easily changed.

- **WRAS Approved**
- **Sizes: 1 1/2 to 600mm (Flanged ends) or 1 1/2 and 2" (Screwed ends)**
- **Pressure ratings: 16 - 40 bar**
- **Integral pressure gauge ports**
- **Upstream pressure adjustment range: 0.1 - 21 bar (User specified)**

> Refer to pages 24-26 for sizing and dimensions



Optional feature:

 **Non Return (check feature)** Model: 51-01

## Model: 55B-60

### Pressure Relief Valve

Cla-Val Model 55B-60 Pressure relief valve is a spring loaded, diaphragm type relief valve. The valve may be installed in any position and will open and close within very close pressure limits. The bottom plug may be removed and installed in the inlet to convert it to an angle pattern flow path.

- **Sizes: 1/2", 3/4" and 1"**
- **Precise pressure control**
- **Drip Tight Closure**
- **Globe or Angle configurations**
- **Pressure rating PFA: 25 bar max.**
- **Upstream pressure adjustment range: 0.1 to 20 bar (depending on version)**
- **1/8" BSP/F Pressure gauge port**

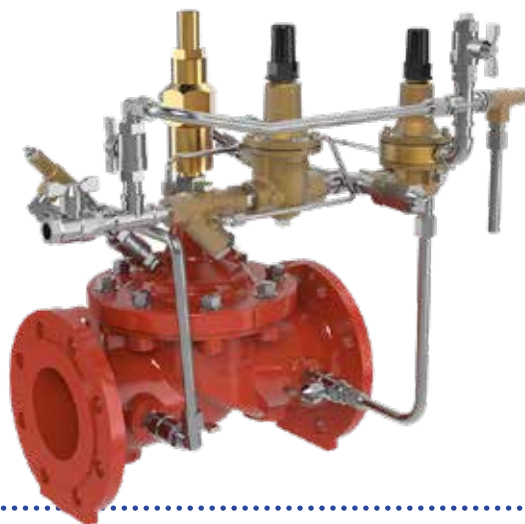


# SURGE PROTECTION

## Model: 52-03

### Surge Anticipator and Pressure Relief Valve

Cla-Val Model 52-03 Surge anticipator and relief valve is indispensable for protecting pumps, pumping equipment and all applicable pipelines from dangerous pressure surges caused by rapid changes of flow velocity within a pipeline. When using this valve, pumping systems are started and stopped gradually preventing harmful surges from occurring. The Cla-Val series 52-03 anticipates the surge by opening on the low pressure wave in order to be fully open on the returning high wave diverting the excess pressure to drain.

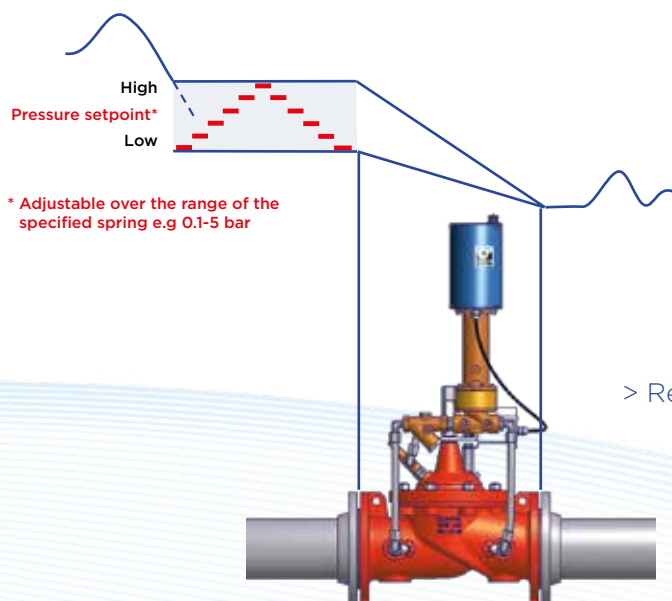


## Model: PCM50-01

### Pressure Sustaining Valve with 4-20mA Remote Set-point

Cla-Val Models PCM-50GE-01/PCM-NGE50-01 Electronically actuated pressure sustaining control valves combines precise control of the Cla-Val hydraulic pilot and simple, 4-20mA remote set-point control. The hydraulically operated, pilot controlled, modulating valve is designed to maintain a constant upstream pressure within close limits. The CRL-34 pilot control, consisting of a hydraulic pilot and integral controller, that accepts a remote pressure set-point command and makes smooth pressure set-point adjustments to the pilot.

CRL-34 motorised  
Pressure sustaining pilot



> Refer to pages 24-26 for sizing and dimensions



# SURGE PROTECTION

## Model: 85-09-1

### Automatic Breach Containment Valve

Cla-Val Model 85-09-1 Automatic Breach Control Valve is designed to automatically isolate portions of distribution piping when a catastrophic downstream breach or line break occurs. The Breach Control Valve is typically installed in commercial building water distribution systems, such as fire protection, potable water service, or chilled water circulation.

Strategically located to isolate damaged portions of a water system, the Breach Control Valve prevents significant water loss and damage, allowing continued service until piping can be repaired. The Breach Control Valve is especially well-suited for high-rise building sprinkler systems because of their vulnerability to failure should a line break occur in the top floors of a building, where gravity can cause fire water reserves to quickly drain.

- **Sizes: 65mm to 200mm Flanged**
- **Pressure ratings: 16 bar**
- **3 Year Warranty**



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## ON-OFF VALVE

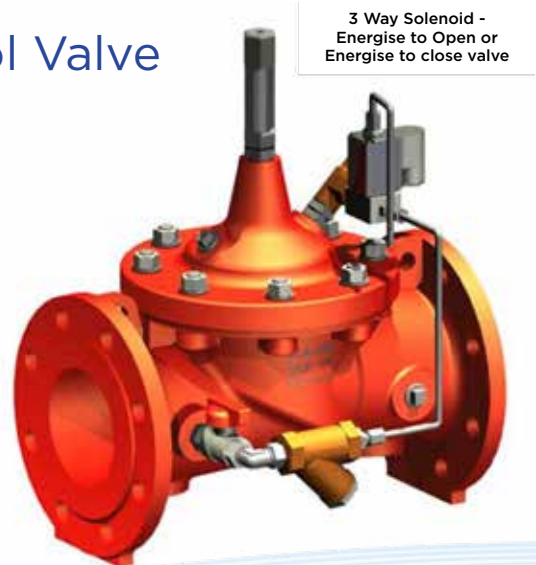
### Model: 136E/D-1 &03

### On/Off Electrical Remote Control Valve

The Cla-Val Models 136GE-01/NGE136-01 Solenoid Control Valves are on-off control valves that either opens or closes upon receiving an electrical signal to the solenoid pilot control. These valves consist of a Hytrol main valve and a three-way solenoid valve that alternately applies pressure to or relieves pressure from the diaphragm chamber of the main valve. It is furnished either normally open (de-energized solenoid to open) or normally closed (energized solenoid to open).

Industrial uses for the solenoid control valve are many and include accurate control of process water for batching, mixing, washing, blending or other on-off type uses.

Liquid level control can be provided by using a float switch or electrode probe which sends an electrical signal to open or close the valve as needed..



> Refer to pages 24-26 for sizing and dimensions

# FLOW LIMITING

## Model: 40-01

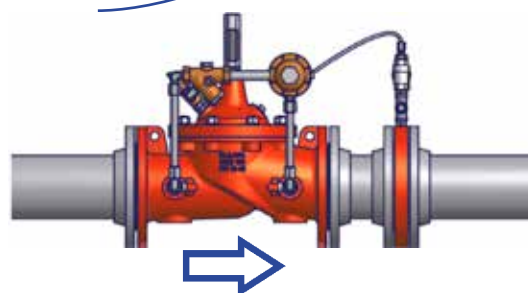
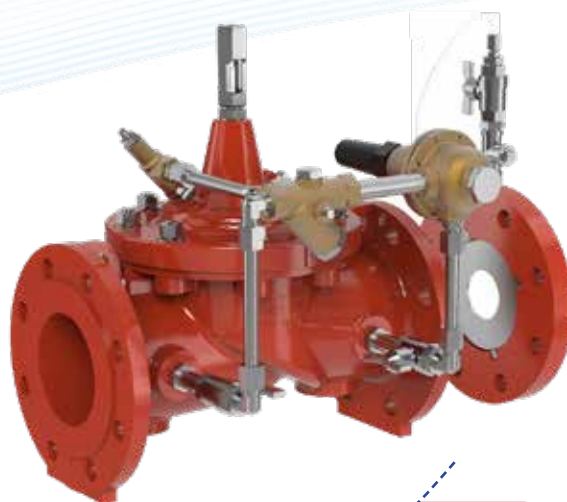
### Flow Limiting Valve

Cla-Val Models 40GE-01/NGE40-01 Flow limiting valves prevents excessive flow by limiting flow to a preselected maximum rate, regardless of changing line pressure. The pilot control responds to the differential pressure produced across an orifice plate installed downstream of the valve. Accurate control is assured as very small changes in the controlling differential pressure produce immediate corrective action of the main valve.

> Refer to pages 24-26 for sizing and dimensions

Optional feature:

 **Non Return (check feature)** Model: 41-01



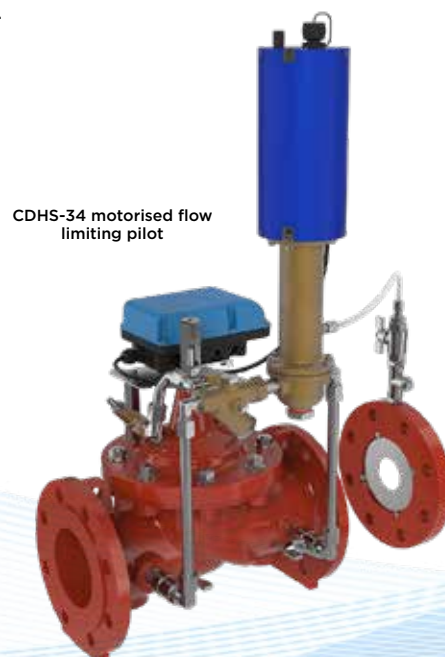
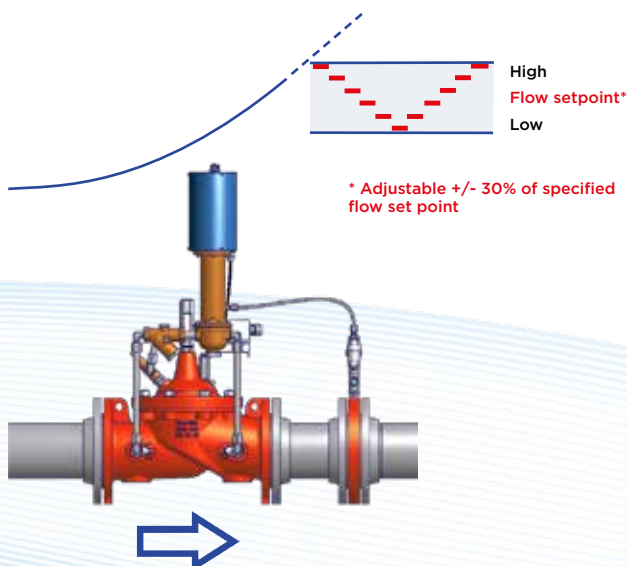
Flow setpoint

## Model: PCM40-01

### Flow Limiting Valve with 4-20mA Remote Set-point

Cla-Val models PCM-40GE-01/PCM-NGE40-01 limit flow to a preselected maximum rate (adjustment range  $\pm 30\%$ ), regardless of changing line pressure. It is a hydraulically operated, pilot controlled, diaphragm actuated control valve. The valve uses a CDHS-34 actuated pilot control, consisting of a hydraulic pilot and integral controller that accepts a remote set-point command input and makes set-point adjustments to the pilot.

> Refer to pages 24-26 for sizing and dimensions



CDHS-34 motorised flow limiting pilot



# DIFFERENTIAL PRESSURE CONTROL

## Model: 40-111

### Differential Pressure Control Valve (DPCV)

Cla-Val Model 40-111 differential pressure control valve is a hydraulically operated, pilot controlled, modulating valve designed to maintain a constant differential pressure across a pipe-work sub-circuit or temperature control valve to a pre-determined value despite fluctuations in mains pressure and/or flow-rate. The main control valve is internally pressure balanced and consequently can close-off tightly against extremely high upstream pressures.

- \* **Sizes: 1 1/2 to 600mm (Flanged) or 1 1/2 and 2" (Screwed)**
- \* **Internally pressure balanced**
- \* **Extremely accurate control of set-point**
- \* **High quality materials backed by a 3 year warranty**
- \* **Compact construction**

> Refer to pages 24-26 for sizing and dimensions



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## Model: 250-01

### Reverse Acting Differential Pressure Control Valve (RADPCV)

Cla-Val Model 250-01 is hydraulically operated, pilot controlled, modulating valve designed to be fitted on a typical by-pass and maintain a pre-determined pressure differential allowing "unwanted" water to "spill" from the flow pipe to return pipe. The valve tends to open on an increase in differential pressure and close on a decrease in differential pressure. The main control valve is internally pressure balanced and consequently can Close-off tightly against extremely high pumps heads.

- \* **Sizes: 1 1/2 to 600mm (Flanged) or 1 1/2 and 2" (Screwed)**
- \* **Internally pressure balanced**
- \* **Extremely accurate control of set-point**
- \* **High quality materials backed by a 3 year warranty**
- \* **Compact construction**

> Refer to pages 24-26 for sizing and dimensions



# ACCESSORIES

## Model: Aqua 90-501

### H - Strainer

The AQUA 90-501 strainer is used when effective filtration is required. Of compact design, maintenance is fast and easy and requires only top cover removal. The flat, stainless steel strainer mesh perpendicular to flow optimizes pressure drop. Moreover, the AQUA 90-501 model can be equipped with an autonomous programmable flushing valve (Cla-Val SERIES ECO) allowing fast flushing without removing top cover. The strainer may be installed in any position, however installation with the cover on top side is recommended.



- **Sizes: 40mm to 800mm**
- **Pressure rating PN 10 - 16 - 25 - 40**
- **Max. temperature 80° C**

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## Pressure Gauge

The Cla-Val Pressure gauge comprises a 63mm dial glycerine filled with Cla-Val Logo face. Typically directly mounted to the main valve inlet and outlet body ports. Gauges are waterproof, shock resistant, and fully enclosed within a sturdy Stainless Steel case.



- **Size: 63mm**
- **End Connections: 1/4" BSP Male**
- **Pressure range: 0-8 bar, 0-16 bar**

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## Model: e-Lift-34

### Valve Position Transmitter

The e-Lift-34 transmits the position of a Cla-Val regulating valve via a 4-20mA signal. When linked to a supervision system, the valve position is accessible in real-time. Valve position is determined via magnetic field instruments, avoiding direct physical friction and consequent mechanical degradation ensuring outstanding product longevity. The e-Lift-34 includes a calibration tool allowing very easy on-site calibration without the need to open the valve.

Two push-buttons are directly integrated in the junction box (or within the Cla-Val D22 Electronic Valve Controller) allowing simple and intuitive calibration.





# ACCESSORIES

## Model: e-Flowmeter Vortex Flowmeter

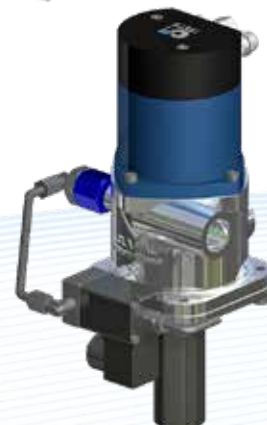
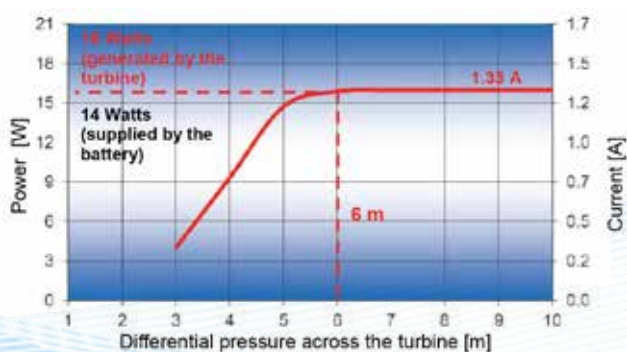
The Cla-Val Model e-Flowmeter is a vortex shedding insertion electronic flow meter designed to provide accurate flow measurement data, thus avoiding associated installation costs of a separate in-line flowmeter.

- **Simple to fit or retrofit to existing Cla-val valves**
- **Accuracy: 2% full scale**
- **Environmentally Sealed to IP68**
- **Flexible - A choice of 4-20mA or Pulse outputs**



## Model: e-Power IP Turbine - 12/24VDC

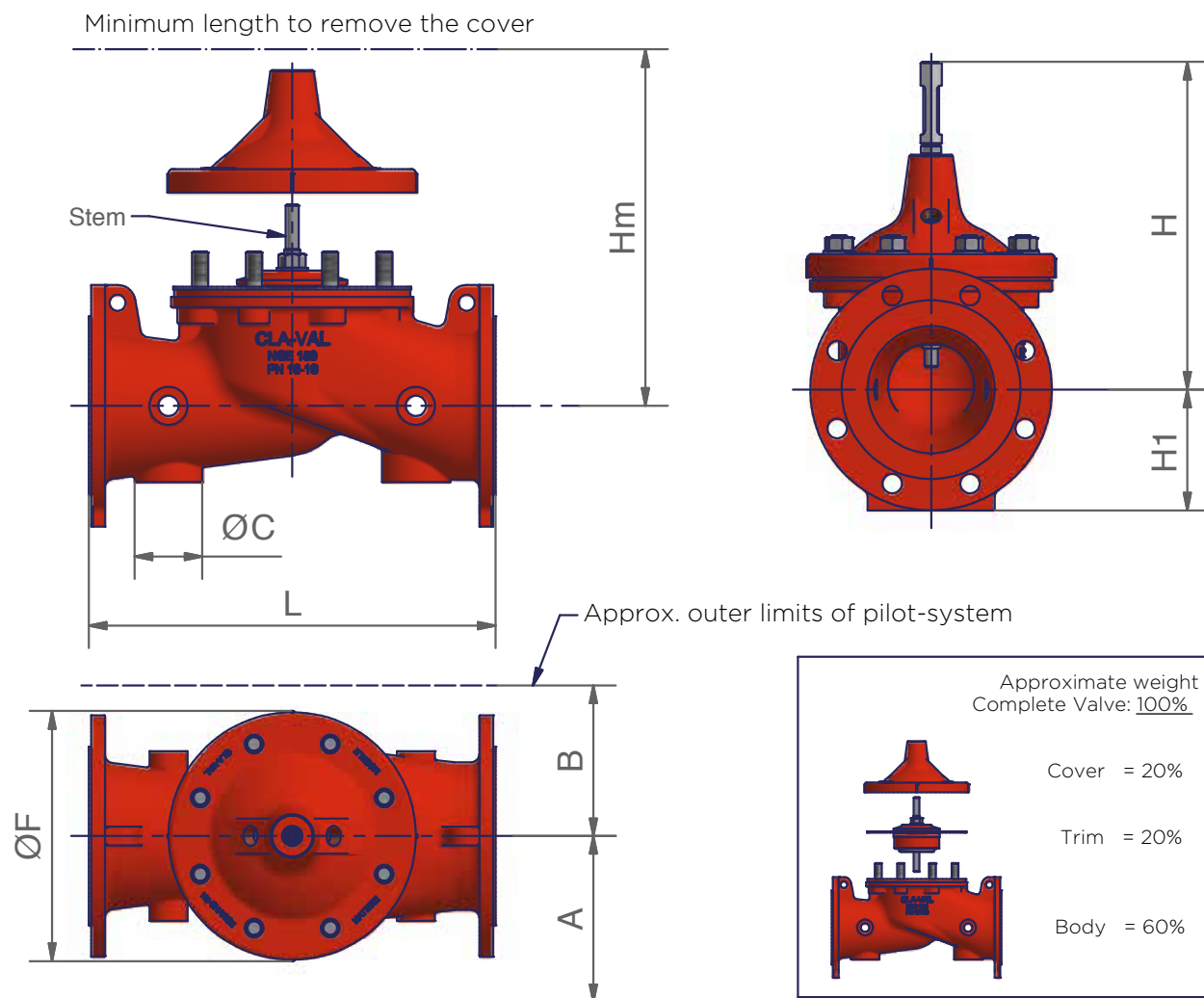
The Cla-Val e-Power IP turbine is self-contained power generation system designed to be mounted into the bypass of Cla-Val Automatic Control Valves. They use the hydraulic energy of the system to power products including: Telemetry outstations, Cla-Val Actuators and Sensors. They are suitable for Retrofit to an existing Cla-Val Control Valve or can be specified on a new valve making them ideal for isolated locations and confined spaces.



# TECHNICAL DATA

## Cla-Val 100-01 NGE

### Weights and Dimensions



Technical Data:

Flanged (mm)	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400	DN 450	DN 500	DN 600
L	230	290	310	350	400	480	600	730	850	980	1100	1200	1250	1450
F	145	170	170	235	295	295	400	510	600	712	712	712	900	900
H	220	250	260	305	395	410	490	590	730	850	850	850	1030	1030
H1 (PN10)	82.5	93	100	110	125	142.5	170	200	227.5	260	290	325	370	430
H1 (PN16)	82.5	93	100	110	125	142.5	170	200	227.5	260	290	325	370	430
H1 (PN25)	82.5	93	100	117.5	135	150	188	225	242.5	277.5	310	335	370	430
Hm	255	290	300	390	470	480	585	700	890	1030	1030	1030	1310	1310
A	200	210	210	220	235	250	270	310	365	400	425	435	520	520
B	145	150	150	160	165	165	220	255	345	385	380	400	460	470
øC	45	60	60	60	60	80	80	80	80	80	80	80	-	120
Weight (Kg)	15	20	25	40	60	70	120	190	350	540	620	650	980	1080

Hydraulic Data:

Flanged (mm)	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400	DN 450	DN 500	DN 600
Kv (m <sup>3</sup> /h)	32	43	58	119	162	209	479	799	1292	1638	1789	2070	3049	3222
Cv (l/s)	9	12	16	33	45	58	133	222	359	455	497	575	847	895

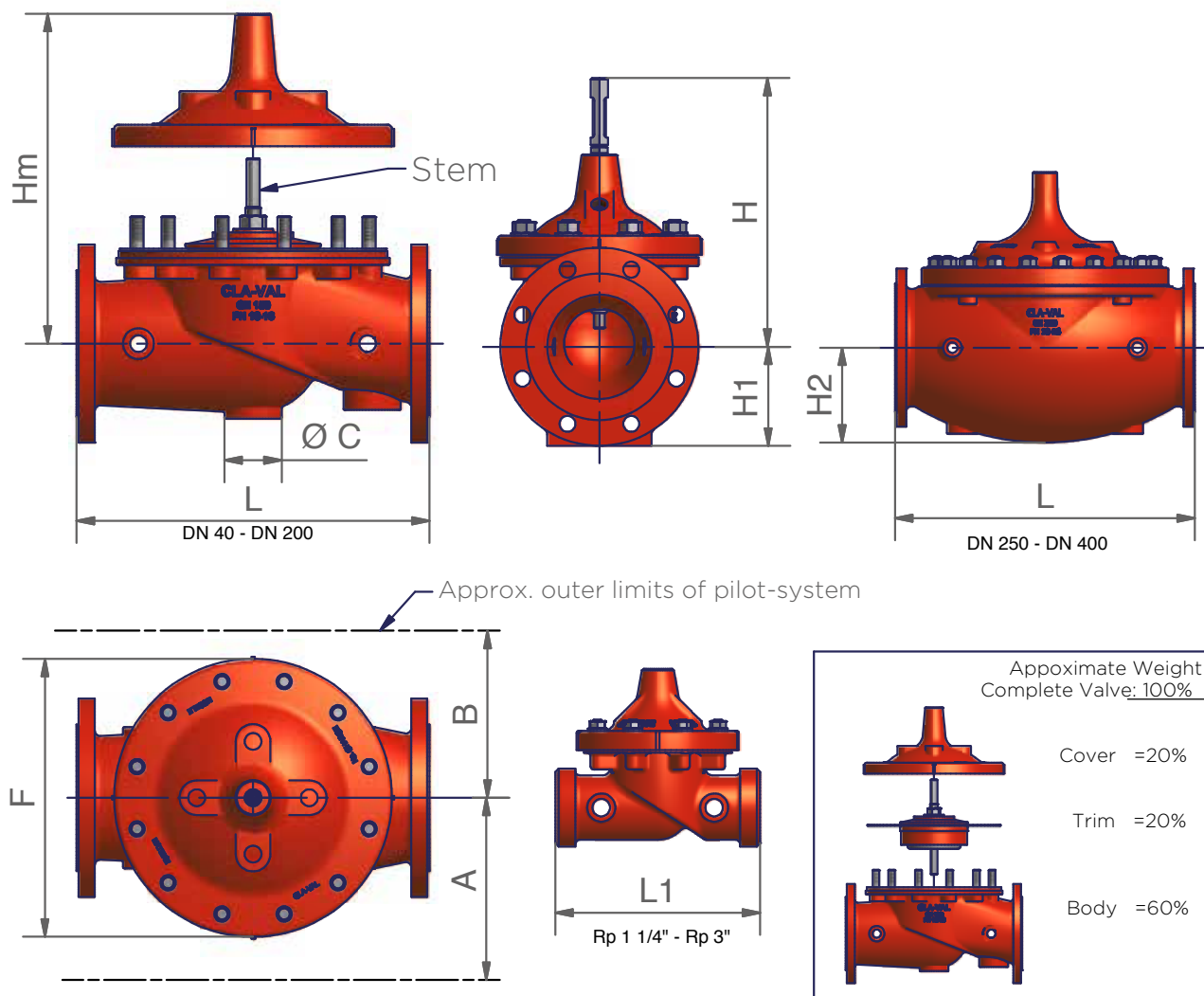
Kv or Cv = m<sup>3</sup>/h or l/s @ 100kPa (1 bar) head loss with 15°C water (valve totally open).



# TECHNICAL DATA

## Cla-Val 100-01 GE

### Weights and Dimensions



#### Technical Data:

Flanged (mm)	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 150	DN 200	DN 250	DN 300	DN 400
Screwed (in)	1 1/4"	1 1/2"	2"	2 1/2"	3"	-	-	-	-	-	-
L	215	215	254	280	305	381	508	645	756	864	1051
L1	184.5	184.5	238	280	318	-	-	-	-	-	-
F	145	145	170	205	235	295	400	510	600	712	900
H	191	191	215	245	260	345	415	495	595	695	850
H1 (PN 10-16)	-	75	82.5	93	100	110	142.5	170	-	-	-
H1 (PN 25)	-	75	82.5	93	100	117.5	150	180	-	-	-
H2	-	-	-	-	-	-	-	-	236	274	395
Hm	252	252	285	320	345	450	540	645	780	905	1120
A	150	150	150	165	203	216	230	285	330	370	475
B	100	100	100	115	127	152	205	260	305	362	450
$\varnothing C$	-	-	47	60	60	82	82	82	82	-	-
Weight (Kg)	13	13	20	25	30	50	95	170	310	470	970

#### Hydraulic Data:














Flanged (mm)	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 150	DN 200	DN 250	DN 300	DN 400
Screwed (in)	1 1/4"	1 1/2"	2"	2 1/2"	3"	-	-	-	-	-	-
Kv (m3/h)	26	28	47	72	101	173	400	666	1076	1490	2542
Cv (l/s)	7	8	13	20	28	48	111	185	299	414	706

Kv or Cv = m3/h or l/s @ 100kPa (1 bar) head loss with 15°C water (valve totally open).







































# TECHNICAL DATA

## Cla-Val 100-01

### Quick Valve Selection: Guide

Size	End Details	Normal Flow Range [l/s]			Maximum Continuous Flow [l/s]
		New Globe Execution NGE	Angle Execution AE	Globe Execution GE	
CAPACITY		★ ★ ★	★ ★ ★	★ ★ ★	
PATTERN					
CAVITATION RESISTANCE		★ ★ ★	★ ★	★ ★	
MATERIAL STANDARD		★ ★ ★	★ ★	★ ★	
DN [in]	SCREWED				
1¼"			 0.6 - 2.4	 0.6 - 2.4	
1½"			 1.0 - 3.8	 1.0 - 3.8	
2"			 1.6 - 6	 1.6 - 6	
2½"			 2.5 - 10	 2.5 - 10	
3"			 4 - 15	 4 - 15	

\* (Auxiliary Hytrol Valve 3/8", 1/2", 3/4", 1" refer to 000130TT)

DN [mm]					
32			 0.6 - 2.4	 0.6 - 2.4	4
40			 2 - 3.8	 1.0 - 3.8	6
50		 1.6 - 6	 1.6 - 6	 1.6 - 6	10
65		 2.7 - 10	 2.7 - 10	 2.7 - 10	16
80		 4 - 15	 4 - 15	 4 - 15	25
100	FLANGED	 6 - 24	 6 - 24	 6 - 24	40
125		 10 - 37			61
150		 14 - 53	 14 - 53	 14 - 53	88
200		 25 - 94	 25 - 94	 25 - 94	157
250		 39 - 147	 39 - 147	 39 - 147	245
300		 56 - 212	 56 - 212	 56 - 212	353
350		 77 - 289			481
400		 100 - 377	 100 - 377	 100 - 377	628
500		 157 - 589			982
600		 226 - 848		 226 - 848	1414
700		 307 - 1154			1924
800		 402 - 1508			2513

#### Note

- Normal Flow Range based on 1 m/s to 3 m/s
- Maximum Continuous Flow based on 5 m/s
- Surge Flow up to 10 m/s consult factory

> Refer to 000121DE-3 to -5 for friction losses

★ Low    ★ ★ Normal    ★ ★ ★ High



Available Sizes

#### More Information

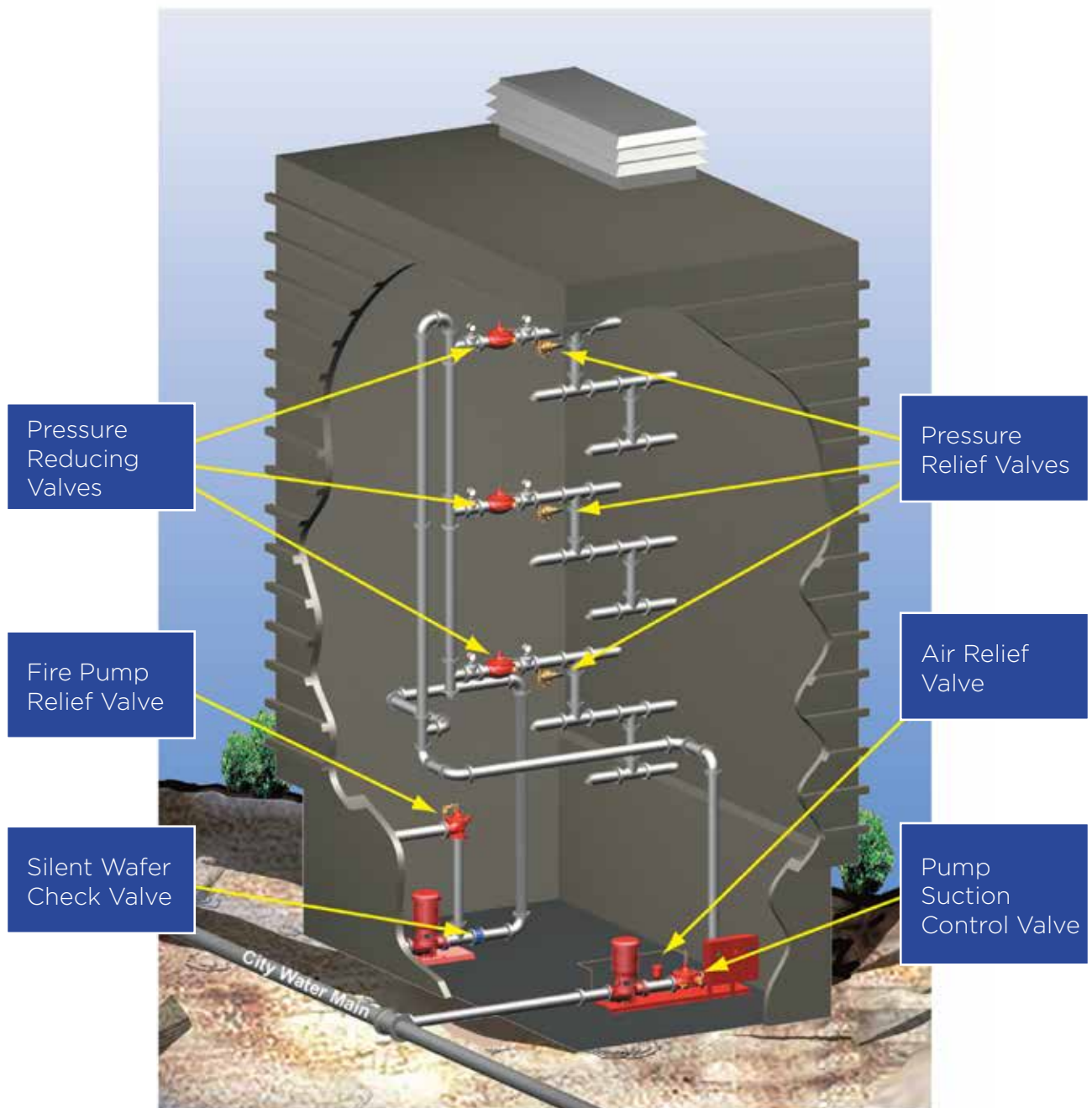
☒ Quick Valve Selection (Cavitation Chart) 000121DE-1

☒ Quick Valve Selection (Performance Chart) 000121DE-2

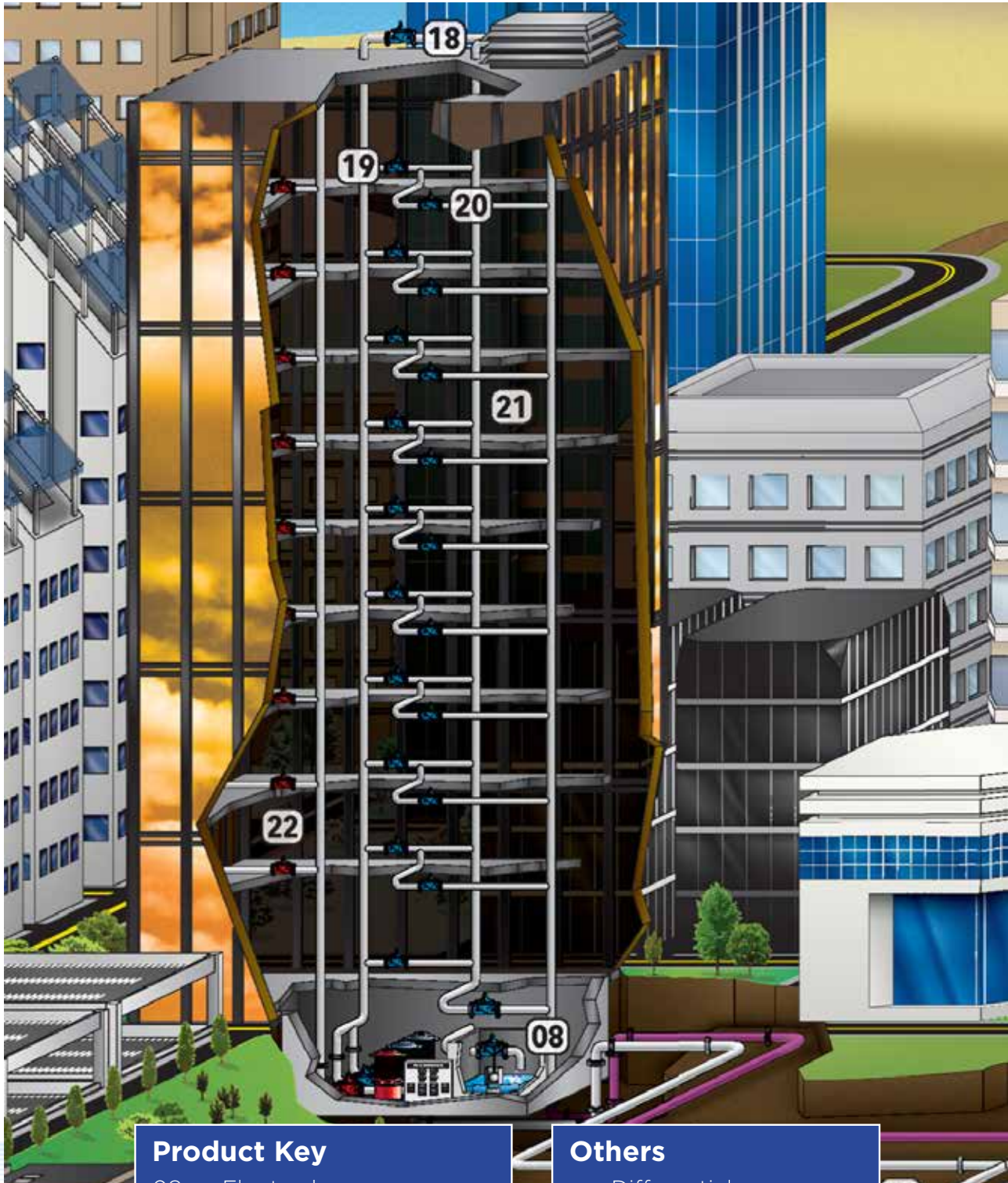
☒ Sizing Software Run CLA-VAL Softwares



## Typical Water/Heating System Applications for High Rise Buildings



## Typical Water/Heating System Applications for High Rise Buildings



### Product Key

- 08 - Float valves
- 18 - Solenoid Control Valve
- 19 - Pressure Reducing Valve
- 21 - Direct Acting PRV
- 22 - Fire System Pressure Reducing Valve

### Others

- Differential pressure control valves
- Reverse acting differential control
- Breach control



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