



# CLA-VAL 90A/G-21

## Fire Protection Pressure Reducing Valve

### ► Simple, Reliable and Accurate

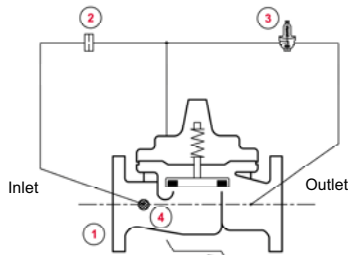
- U.L. Listed, MEA Approved
- Globe or Angle Pattern
- Proven Reliable Design
- Available in Cast Bronze, Ductile Iron and Cast Steel
- Accurate Pressure Control
- In Line Service
- Grooved Ends (1 1/2" - 8")

CLA-VAL 90G-21 (globe) and 90A-21 (angle) Pressure Reducing Valves are indispensable in any fire protection system. Our diaphragm actuated design is proven highly reliable and easy to maintain. We offer both a globe or angle pattern with a full range of adjustments. These valves are also available in a variety of material options. Epoxy coating is strongly recommended for all fire system valves (excluding bronze valves). The 90G-21 and 90A-21 can be supplied with optional internal and external epoxy coating of the main valve wetted surfaces.



Special System Water Control Valves - Class II  
UL Product Category VLMT - File No. Ex 2534

### ► Function

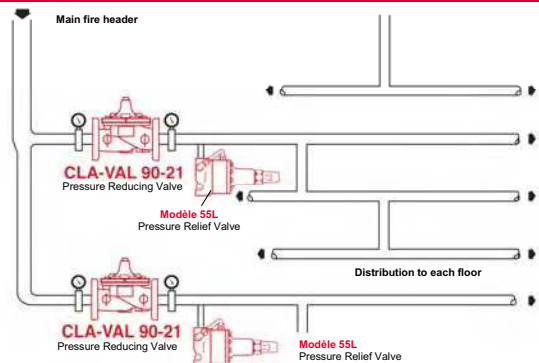


ITEM	DESCRIPTION
1	Model HYTROL AE/GE 100-01/KX
2	X58C Restriction Tube Fitting
3	CRD Pressure Reducing Control
4	X46A Flow Clean Strainer

CLA-VAL 90G-21 (globe) and 90A-21 (angle) Pressure Reducing Valves automatically reduce a 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. The downstream pressure can be set over a wide range by turning the adjustment screw on the CRD pilot control. The adjustment screw is protected by a screw-on cover, which can be sealed to discourage tampering.

### ► Typical Application

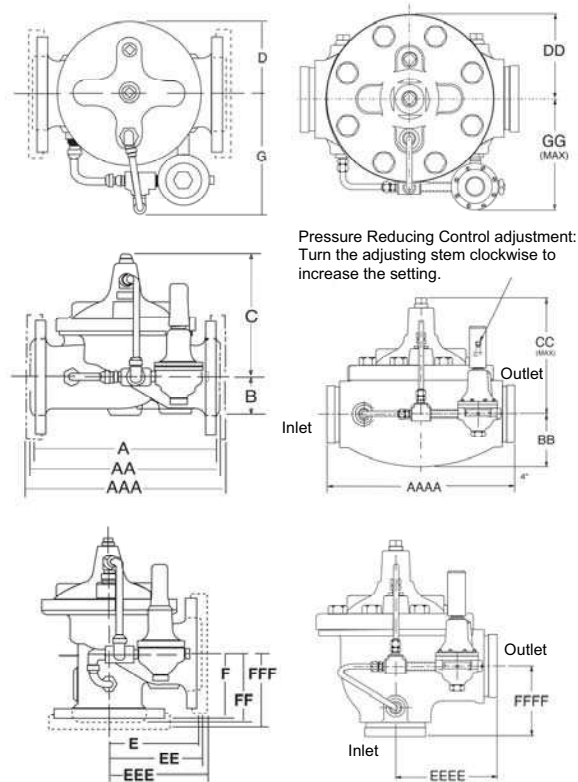
Underwriters Laboratories requires the installation of pressure gauges upstream and downstream of the Pressure Reducing Valve. Also, a relief valve of not less than 1/2 inch in size must be installed on the downstream side of the pressure control valve. Adequate drainage for the relief valve discharge must be provided.



Size	UL Listings						Globe Pattern Ductile iron Grooved end	Angle Pattern Ductile iron Grooved end
	Ductile iron 150# F	Ductile iron 300# S	Ductile iron 300# F	Bronze 300# threaded	Cast steel 300# F			
1 1/2"	UL	UL	UL	UL			UL	
2"	UL		UL	UL	UL		UL	
2 1/2"	UL		UL	UL	UL		UL	
3"	UL	UL	UL	UL	UL		UL	
4"	UL		UL		UL		UL	
6"	UL		UL		UL		UL	
8"	UL		UL				UL	
10"	ULC		ULC					

### ► Dimensions

	Valve size (mm)							
	40	50	65	80	100	150	200	250
<b>A</b> Threaded	184	238	279	318	-	-	-	-
<b>AA</b> 150 ANSI	216	238	279	305	381	508	645	756
<b>AAA</b> 300 ANSI	229	254	295	337	397	533	670	790
<b>AAAA</b> Grooved	216	228	279	318	381	508	645	-
<b>B</b>	28	38	43	65	81	109	135	235
<b>BB</b> Grooved	52	54	63	77	105	152	184	-
<b>C</b> (max.)	140	161	192	208	270	340	406	435
<b>CC</b> (max.) Grooved	104	127	175	165	223	281	369	-
<b>D</b>	71	84	102	116	146	200	254	300
<b>DD</b> Grooved	71	84	102	116	146	200	254	-
<b>E</b> Threaded	83	121	140	159	-	-	-	-
<b>EE</b> 150 ANSI	102	121	140	152	191	254	324	378
<b>EEE</b> 300 ANSI	108	127	149	162	200	267	349	395
<b>EEEE</b> Grooved	-	121	-	152	191	-	-	-
<b>F</b> Threaded	48	83	102	114	-	-	-	-
<b>FF</b> 150 ANSI	102	83	102	102	127	152	203	219
<b>FFF</b> 300 ANSI	108	89	109	111	135	165	216	236
<b>FFFF</b> Grooved	-	121	-	114	127	-	-	-
<b>G</b> (max.)	191	197	197	203	228	241	267	292
<b>GG</b> (max.)	206	203	-	207	236	267	292	-



Pressure Reducing Control adjustment:  
Turn the adjusting stem clockwise to increase the setting.

### ► Standard Specifications

**Size:** 175 lb. Class 1 1/2" - 8" (globe)  
2" - 6" (angle)  
300 lb. Class 1 1/2" - 8" (globe)  
2" - 6" (angle)

#### End Details:

Flanged: 150 ANSI B16.5 (Ductile iron)  
Flanged: 300# (Ductile iron)  
Flanged: 300# (Cast steel)  
Grooved: 300# (Ductile iron)

#### Pressure Differential:

Min. 10 psi / 0,7 bar

#### Pressure Adjustment Range:

175 lb. Class: 30-165 psi / 2,1-11,4 bar  
300 lb. Class: 30-165 psi / 2,1-11,4 bar

#### Temperature Range:

Water max. 180°F / 82°C

**Specification note:** Other non-standard specifications upon request.

**Coating note:** The model 90-21 is supplied as a European standard with internal epoxy coating of the main valve. This coating is U.L. file no. EX2855, c.c. no. HNFx epoxy coating is strongly recommended for all cast valves.

### ► When Ordering, Please Specify

1. Model Number 90-21
2. Size
3. Globe or Angle pattern
4. Main Valve Body and Cover Material
5. Threaded, Flanged or Grooved
6. Optional Epoxy Coating (specify with suffix KC)

### ► Selection Guidelines

#### Flow Capacity Table

Valve size	Maximum Flow Rate	
	GPM	m <sup>3</sup> /h
1 1/2"	160	36
2"	262	59
2 1/2"	373	85
3"	576	131
4"	992	225
6"	2251	511
8"	3900	886
10"	6150	1397

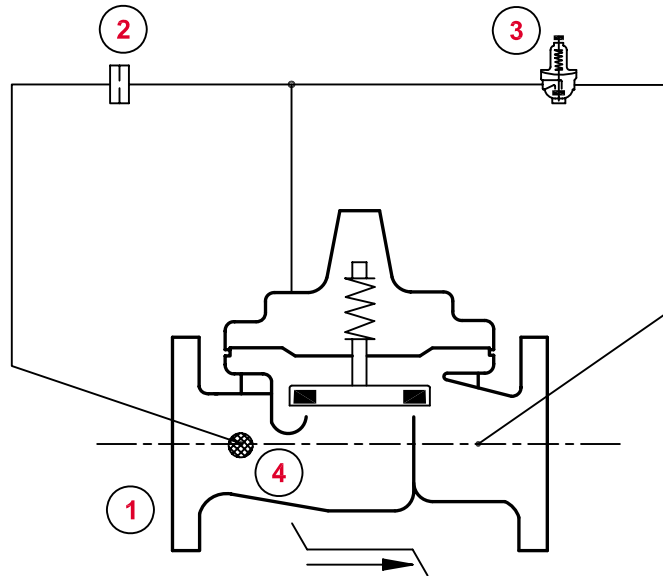
**Note:** The actual capacity is limited by available Differential Pressure.

For accurate sizing contact CLA-VAL Europe.

7. Pressure Class



1 1/2" - 8"



### STANDARD EQUIPMENT

No	Description	Qty	Type
1	MAIN VALVE HYTROL AE/GE	1	100-01/KX
2	RESTRICTION ASSEMBLY	1	X58C-CSA
3	PRESSURE REDUCING CONTROL	1	CRD
4	FLOW CLEAN STRAINER	1	X46A

### OPTIONAL FEATURES

No	Description	Qty	Type

### NOTES

AE/GE : DN 32 - DN 200  
100-01/KX = R9S999

OPTIONAL FEATURES : \_\_\_\_\_  
NOT FURNISHED BY CLA-VAL : \_\_\_\_\_



# CLA-VAL 90A/G-21

Fire System Pressure Reducing Valve  
(UL listed 1 1/2" - 8")

## ▶ Operating data

### 1.1 ▶ PRESSURE REDUCING FEATURE

Pressure reducing control (3) is a "normally open" control that senses main valve (1) outlet pressure changes. An increase in outlet pressure tends to close pressure reducing control (3) and a decrease in outlet pressure tends to open pressure reducing control (3). This causes main valve cover pressure to vary and the main valve (1) to modulate (open and close) maintaining a relatively constant outlet pressure.

**Pressure reducing control (3) adjustment:** Turn the adjusting screw clockwise to increase the setting.

### 1.2 ▶ SELF-CLEANING STRAINER

The self-cleaning strainer CLA-VAL, type **X46A** (4) is at the inlet of the main valve (1) screwed. The assembly of the self-cleaning strainer (4) removes the assembly of an external filter.

The cleaning of the self-cleaning strainer (4) is requesting its removal from the main valve body (1).

### 1.3 ▶ CHECK LIST FOR PROPER OPERATION

- System valves open upstream and downstream.
- Air removed from the main valve cover and pilot system at all high points.
- Periodical cleaning of the self-cleaning strainer (4).