UL APPROVAL DOCUMENT
(UL FILE EX2534)

FOR

CLA-VAL MODEL 90-21
PILOT OPERATED PRESSURE CONTROL VALVE

CONFORMS TO UNDERWRITERS LABORATORIES INC.
STANDARD UL 1739

GENERAL

PRODUCT COVERED:

Pilot Operated Pressure Control Valves.

FACTORY LOCATION AND IDENTIFICATION:

Location	Identification
Costa Mesa, CA	"None"
Beamsville, Ontario, Canada	"C"

LISTING MARK:

See Listing Mark Data Page 1.

MARKING:

1. A valve shall be provided with the following:

   a. Name or trademark of the manufacturer or private labeler.
   b. Nominal size of valve.
   c. Distinctive model number, catalog designation, identification mark, or the equivalent.
   d. Rated inlet pressure.
   e. The direction of flow.
   f. Year of manufacturer. A valve produced in the last 3 months may be marked with the following year as the date of manufacturer. A valve produced in the first 6 months of a calendar year may be marked with the previous year as the date of manufacture. The date of manufacture may be in form of date code on the valve nameplate which specifies the month and year.

2. The markings specified in 1 shall be in raised cast letters, on permanent-stamped metal nameplates, or applied by a method that provides equivalent permanence. Markings may be at any convenient location on the valve.

3. The valve shall be provided with a removable tag identified as "Factory Setting". This tag shall indicate the outlet pressure of the valve as shipped from the factory.

4. A valve shall be provided with a removable tag which identifies the following information to be recorded after installation of the valve has occurred:

   a. Valve installation location.
   b. Static pressure available at valve inlet.
   c. Residual pressure available at valve inlet.
   d. Static pressure at valve outlet.
   e. Residual pressure at valve outlet.
   f. Intended flow at valve outlet.

   A statement shall also be included indicating that the tag is not to be removed until the system has been accepted by an authority having jurisdiction.

5. If a manufacturer produces valves at more than one factory, each valve shall have a distinctive marking to identify it as the product of a particular factory.

PACKAGING FOR SHIPMENT:

The installation and operating instructions shall be shipped with each valve.

DESCRIPTION

PRODUCT COVERED:

SPECIAL SYSTEM WATER CONTROL VALVES

"Clayton," pilot operated pressure control valves, cast iron body (1-1/2 to 8 in.), ductile iron ASTM (65-45-12) body (1-1/2 to 8 in.) or bronze body (1-1/2 to 3 in.), consisting of the following models, sizes, inlet pressure ratings and outlet pressure setting ranges:

Model	Size (in)	Maximum Rated Inlet Pressure (psig)	Outlet Pressure Setting Range (psig)
90G-21	1-1/2 to 8	175	30-165
90A-21	2 to 6	175	30-165

"Clayton," pilot operated pressure control valves, cast steel (1-1/2 to 6 in.), *cast ductile iron body (1-1/2 to 6 in.)* or bronze (1-1/2 to 3 in.) body, consisting of the following models, sizes, inlet pressure ratings and outlet pressure setting ranges:

Model	*Size (in)*	*Maximum Rated Inlet Pressure (psig)*	*Outlet Pressure Setting Range (psig)*
90G-21	*1-1/2 to 6*	*300*	*30-165*
90A-21	*1-1/2 to 6*	*300*	*30-165*

For all valves, the manufacturer's design and installation instructions include a description of the performance characteristics for both flow and static conditions.

GENERAL CHARACTER AND USE:

The Model 90-21 Pressure Reducing Valve automatically reduces a higher inlet pressure to a steady lower outlet pressure regardless of changing flow rate and/or varying inlet pressure. The valve's pilot control system is very sensitive to slight downstream pressure changes. When downstream pressure exceeds the setting of the pilot control valve, it immediately throttles the main valve to maintain the desired downstream pressure. Pressure setting adjustment is made with a single adjusting screw. The adjusting screw is protected by a screw-type housing, which can be sealed to discourage tampering.

*ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

*The diaphragm, seat disc, and O-Rings used in the construction of this valve are identical to those used in this manufacturer's Listed Fire Pump Relief Valve (Ex2855) Special Service Water Control Valve - Class I, (Ex2834) and Accessories for Special Systems - Class III (Ex2569). All follow-up samples used for nonmetallic tests on these products are picked up and tested under Ex2834.

TEST RECORD NO. 5

SAMPLES:

Representative samples of the pressure reducing valves as indicated below and constructed as described herein, was submitted by the manufacturer for examination and test.

This Test Record is concerning the new ASTM A536 ductile iron body material and new grooved end body connections.

Model	Pattern	Size, in.	Maximum Rated Inlet Pressure (psi)	Set Pressure Range (psi)	Valve End Configuration
90G-21	Globe (ductile)	1-1/2, 2, 3, 4 and 6	300	30-165	Flanged, Grooved
90A-21	Angle (ductile)	2, 3, 4 and 6	300	30-165	Flanged, Grooved

GENERAL:

Test results relate only to the items tested.

Due to similarity of this these devices as compared to the currently Listed Model 90G-21 and 90A-21 devices, only the following tests were considered necessary.

The following tests were conducted.

1. Examination of Samples
2. Metallic Materials
3. Strength of Body

The material covered by this Report has been tested and found to comply with the requirements of the Standard for Pilot-Operated Pressure-Control Valve for Fire Protection Service, UL1739 in effect as of the date of this Report.

Test Record Summary:

The results of this investigation indicate that the product(s) evaluated comply with applicable requirements, and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Test Record No. 5 by:
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