

# **ELKHART BRASS MANUFACTURING COMPANY**

## **INSTALLATION and OPERATING INSTRUCTIONS for MODEL "UP" PRESSURE RESTRICTING HOSE VALVES**

### **I. Models and Sizes Covered:**

UP-20, 1-1/2" size

UP-25, 1-1/2" size

UP-20, 2-1/2" size

UP-25, 2-1/2" size

### **Inlet and Outlet Connections:**

<b>Valve Model &amp; Size</b>	<b>*Inlet Thread</b>	<b>*Outlet Thread</b>
UP-20, 1-1/2"	1-1/2" fem. NPT	1-1/2" fem. NPT
UP-25, 1-1/2"	1-1/2" fem. NPT	1-1/2" male NH
UP-20, 2-1/2"	2-1/2" fem. NPT	2-1/2" fem. NPT
UP-25, 2-1/2"	2-1/2" fem. NPT	2-1/2" male NH

\*NPT = American National Standard Taper Pipe Threads (ANSI/ASME B1.20.1-1983, Latest Edition)  
NH = American National Fire Hose Connection Screw Thread (NFPA 1963-Latest Edition)

### **II. Application Guidelines:**

The model UP valves are designed for use as pressure restricting valves in fire protection standpipe systems. The 2-1/2" models are intended for use in Class I and Class III systems, and 1-1/2" valves are for use in Class II systems. They are combination shut-off and flow throttling valves which serve to reduce excessive standpipe pressures under flowing conditions only to below prescribed limits. These valves are listed by Underwriters Laboratories as Pressure Reducing Devices (VUTX). Requirements for the installation of pressure restricting valves in standpipe systems are given in Section 5-8 of NFPA-14, Standard for the Installation of Standpipe and Hose Systems, Latest Edition. The following maximum flow rate limits for the Model UP valves should be observed:

<b>Valve Model</b>	<b>Max. Flow (gpm)</b>	<b>Max. Pressure (PSI)</b>
UP-20 & UP-25, 1-1/2"	100	175
UP-20 & UP-25, 2-1/2"	300	175

When hose racks are used, the UP-20 valves can be utilized along with a special hose nipple for support of the rack. NFPA 14 requires that hose valve outlet pressure for Class I and Class III service be no greater than 175 PSI, and no less than 100 PSI. When permitted by the authority having jurisdiction, pressures less than 100 PSI may be allowed, but in no case shall the valve discharge pressure be less than 65 PSI. Class II hose valves must be limited to a maximum residual outlet pressure of 100 PSI, but the minimum outlet pressure shall not be less than 65 PSI.

### **Acceptance Tests**

Upon completion of the system, each pressure restricting hose valve shall be tested in accordance with paragraph 8-5.5 of NFPA 14 to verify that the installation is correct, that the valves are operating properly, and that the inlet and outlet pressures at the valve are in accordance with the design.

## **III. Valve Performance Characteristics & Limitations**

### **A. Valve Construction & Operating Principle**

The model UP valves are similar to standard angle hose valves except that they have a special mechanism incorporated into the stem and bonnet to limit how far the valve can be opened. This opening limit is adjustable to allow accurate setting of the valve outlet pressure for a given inlet pressure and flow rate. The valve design provides no ability to reduce outlet pressure under no-flow conditions. In the event of low supply pressure conditions, the adjustment mechanism can be overridden by fire department personnel by simply breaking off the restriction stem by prying with a spanner wrench.

### **B. Valve Adjustment**

For valve setting adjustment instructions below, please refer to Figure I.

1. Close valve with hand wheel.
2. Back off four setscrews (2) & (4).
3. Allow bottom side of the gage stop sleeve (1) to rest upon the packing nut (5).
4. Insert the gauging stem (3) into the gage stop sleeve (1) until the dash directly above the "0" setting is flush with the bottom side of the gage stop sleeve.
5. Temporarily tighten one setscrew (2) which will hold the gauging stem (3) in the gage stop sleeve.
6. Push upward on the bottom of the gauging stem (3) until it is stopped by the packing nut (5).
7. Tighten the two setscrews (4).
8. Back off the setscrew (2).
9. Determine inlet pressure for each valve location
10. Consult the adjustment position graphs, Figures II & III, to find the correct gauging stem setting to produce the discharge pressure of 100 PSI with the inlet pressure available.
11. Keeping valve closed, set gauging stem (3) to setting required, and tighten two setscrews (2).
12. If possible, flow test valve to verify setting.

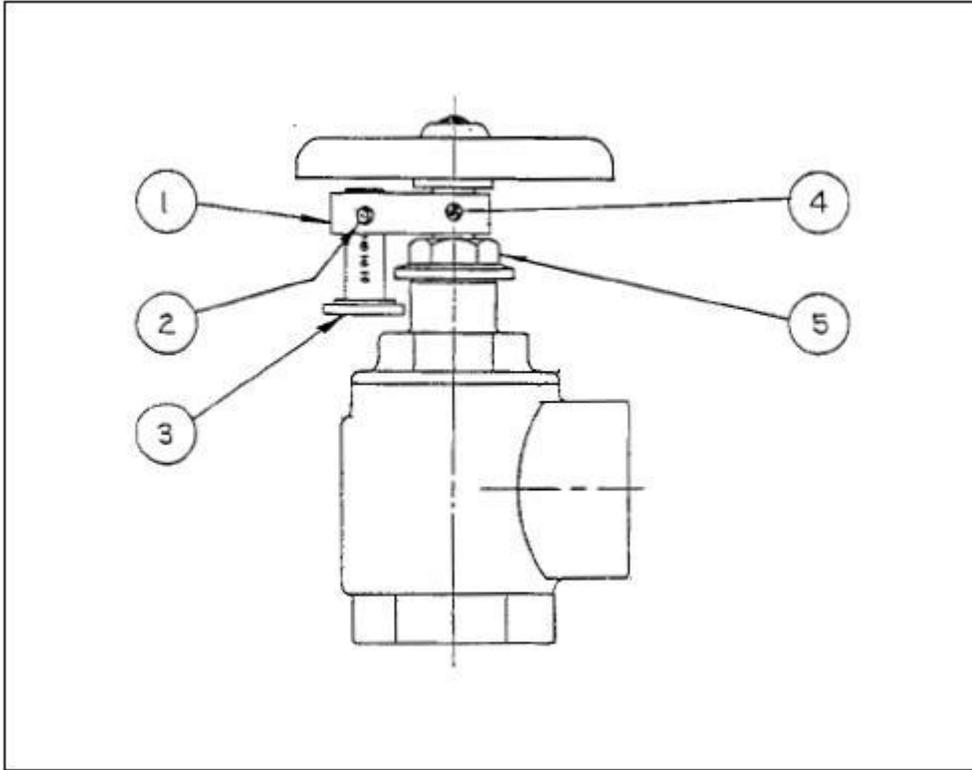


Figure 1

#### IV. Valve Care & Maintenance

Elkhart model UP valves require minimal maintenance, and can normally serve reliably for twenty years or longer in fire protection systems. However, a routine inspection and testing program is essential for any fire protection system to insure that it is in proper operating condition. NFPA 25, Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems should be consulted for a determination of the required test frequency and methods. This standard requires standpipe pressure regulating hose valves to be inspected quarterly, and flow test at least once every five years. Flow test results should be compared to previous test results, and to system performance criteria. If valve adjustments are necessary, follow setting procedure in Section III B of this document.

For repair parts, please contact:

Elkhart Brass Mfg Co  
PO Box 1127  
Elkhart, IN 46514  
574-295-8330

Figure II

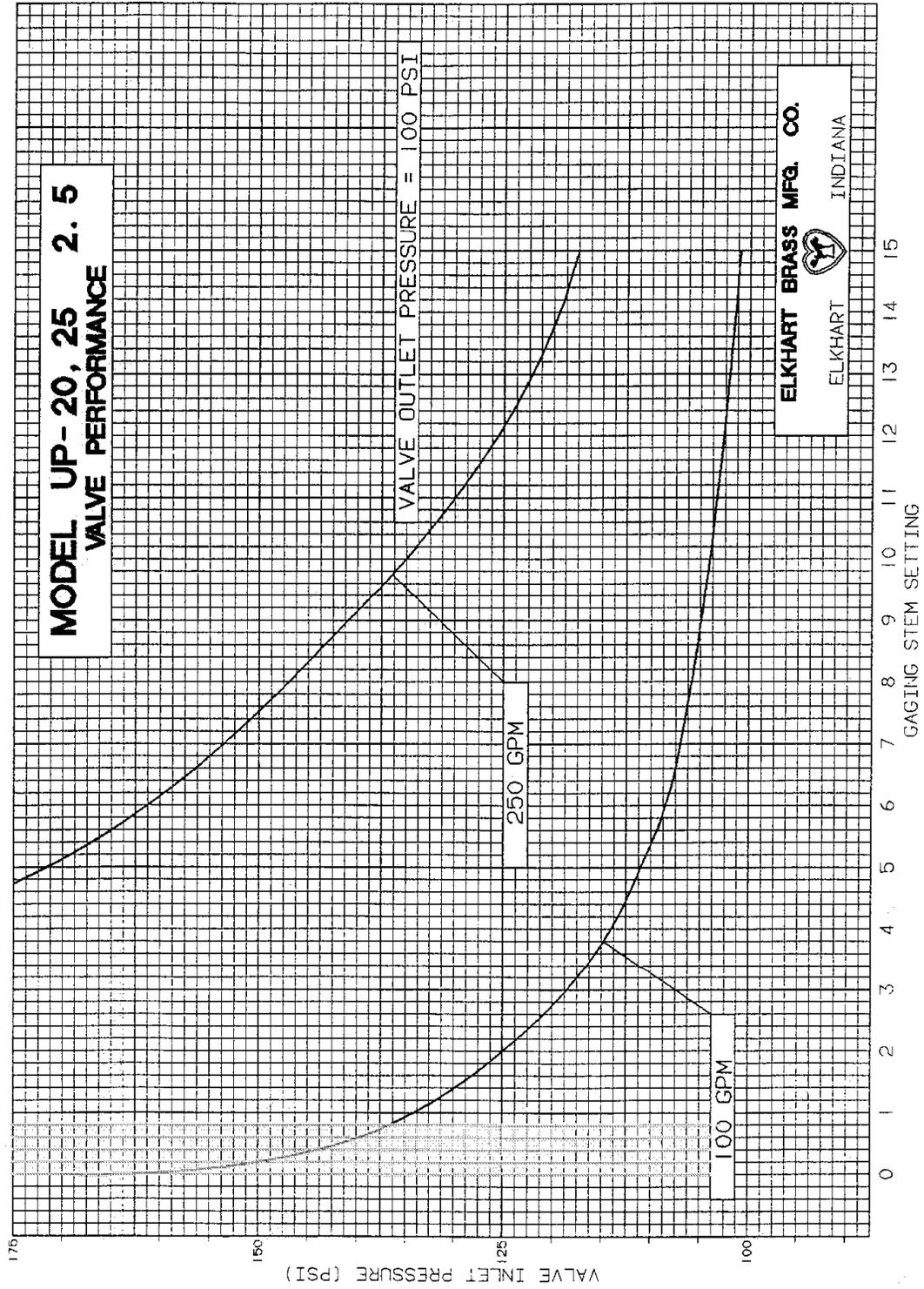


Figure III

