INSTALLATION INSTRUCTIONS

MUELLER® A-20814 WALL TYPE INDICATOR POST

YEAR DATE 2008

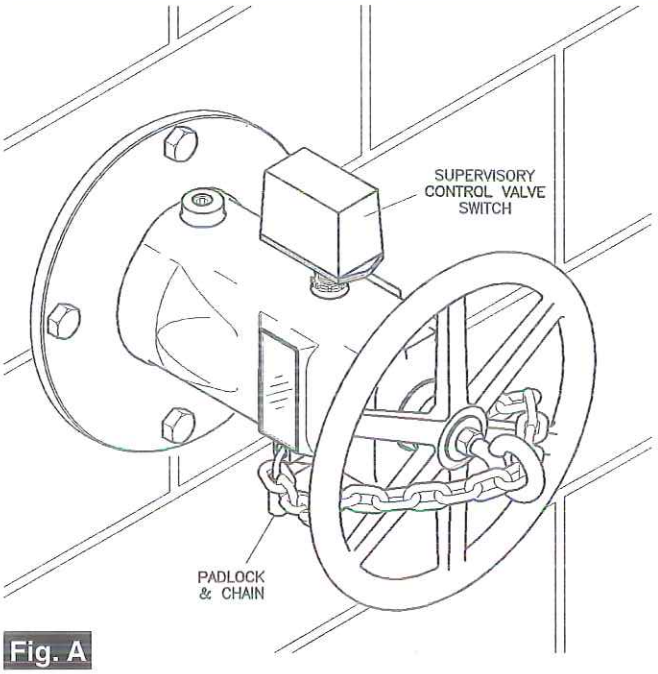

Fig. A

TYPICAL INSTALLATION OF THE MODEL A-20814 WALL TYPE INDICATOR POST

GENERAL DESCRIPTION

The Model A-20814 Wall Indicator Posts (Ref. Figure A) are designed to operate 4 through 14 inch non-rising stem (inside screw) gate valves, which are used to control the water supply to automatic sprinkler, water spray deluge, foam-water deluge, or standpipe fire protection systems. They permit operation of valves located immediately inside exterior walls while providing an exterior visual indication as to whether the valves are open or shut, in addition to a means for locking the valves in a particular position. Indicator posts provide for valve operation from outside of the protected property and, therefore, the opportunity for more prompt valve operation in an emergency situation.

The A-20814 Posts will accommodate 4 through 14 inch size post indicator valves requiring 14 to 48 turns to open and that are listed or approved for fire protection service.

Posts are provided "standard order" for use with left hand opening valves; however, they may be "special ordered" for use with right hand opening valves or converted in the field for use with a right hand opening valve by changing the left hand opening Post Head to a right hand opening Post Head.

The A-20814 Posts accept direct attachment of a 1/2 inch NPT mounting electric supervisory switching device which can be used by proprietary and central stations to monitor the open position of the A-20814 Post.

The Handwheel is fastened to the Post with an eyebolt so that the Post can be secured in position using a padlock and chain, as shown in Figure A.

APPROVALS AND STANDARDS

Model A-20814 Indicator Posts are listed by Underwriters Laboratories Inc. (UL) and Underwriters Laboratories Inc. for use in Canada (C-UL). They are approved by Factory Mutual Research Corporation.

⚠ WARNING

The Model A-20814 Indicator Posts described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or manufacturer should be contacted relative to any questions. Removing or disabling the tamper resistant feature of the special key wrench screw used to secure the cover of the Supervisory Control Valve Switch will void its listings and approval.

TECHNICAL DATA

Indicator Posts:

The A-20814 Post Head is mounted directly to an exterior wall, and it is designed to work with 4 through 14 inch PIVs employing 2 inch operating nuts. The Post Head has 3/4 inch clearance holes or the mounting bolts.

The A-20814 has a 14 pitch Threaded Sleeve which can readily accommodate field positioning of the "OPEN" and "SHUT" Targets for 4 through 14 inch PIVs requiring 14 to 48 turns to open.

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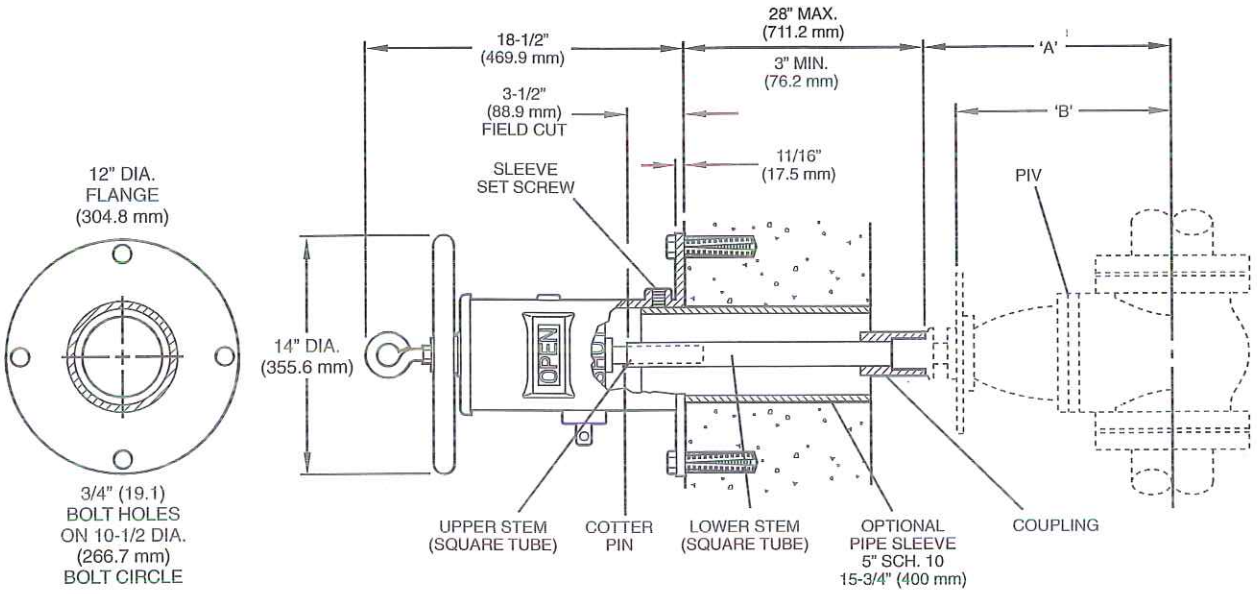

Fig. B

NOMINAL INSTALLATION DIMENSIONS FOR THE A-20814 INDICATOR POSTS

The A-20814 is provided with an operating stem assembly that can accommodate a range of 3 to 28 inches between the base of the Post Head and the PIV operating nut as shown in Figure B. The Lower Stem (square tube) is field cut to the desired length. An optional 15-3/4 inch long, 5 inch steel pipe Sleeve is available for protecting the Stem/ Coupling. Use of the Sleeve is recommended except in the case of sheet metal wall construction. The Sleeve must be field cut to the desired length.

"Standard order" Posts are factory set with the "OPEN" and "SHUT" Targets positioned for use with left hand (counterclockwise) opening valves. An arrow on the Post Head Cover indicates the left hand direction of opening. The position of the Targets may be reversed in the field, in order to accommodate a right hand opening valve, provided that the Post Head Cover is changed to one indicating right hand opening.

The Post Head and Cover are cast iron per ASTM A126 (Grade B), and the Handwheel is cast iron per ASTM A48 (Class 20). The Lower Stem, Upper Stem, Coupling, and Coupling Insert are carbon steel. The Operating Nut is ductile iron per ASTM A536. The Targets and Threaded Sleeve are Zytel, and the Cap is polypropylene. The Windows are made from plexiglas and the Window Gaskets are synthetic rubber with adhesive. The Post Head, Cover and Handwheel are painted red.

Table 1

Dimensions in Inches

Valve Size	A	B	Turns To Open
4	13.00	11.44	14-1/2
6	16.12	14.38	20-1/2
8	20.12	18.38	27
10	24.50	22.38	33-1/2
12	27.88	25.38	39-1/2
14	32.12	29.62	46

Dimensions A & B for Mueller® IBBM Double Disc Post Indicator Valves

Table 2

Dimensions in Inches

Valve Size	A	B	Turns To Open
4	14.31	12.72	14-1/2
6	18.12	16.53	20-1/2
8	21.25	19.66	27
10	26.38	24.79	33-1/2
12	29.50	27.91	39-1/2

Dimensions A & B for Mueller® Resilient Wedge Post Indicator Valves

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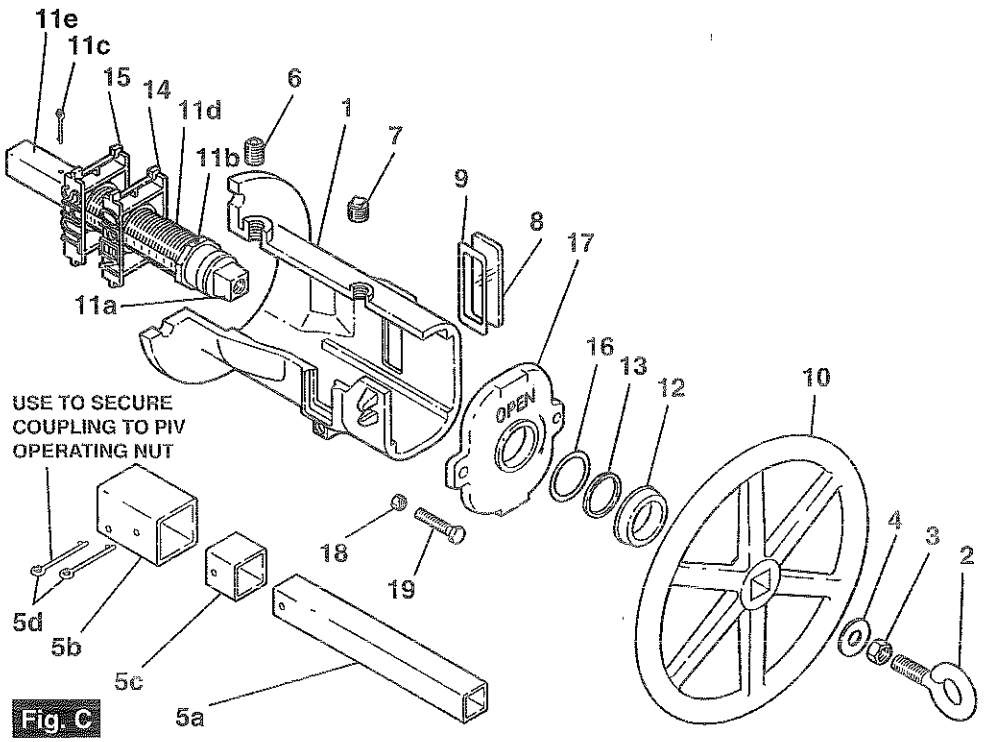
1- Post Head
2-Eye Bolt
3-Hex Nut, 5/8"
4-Flat Washer, 5/8"
5-Lower Stem Assembly
  a. Lower Stem
  b. Coupling
  c. Coupling insert
  d. Cotter Pin 1/4" x 3"
    (2 required)
6-Hex Socket Set Screw
  3/4 - 10 UNC x 1"
7-Pipe Plug
  1/2" NPT
8-Window
  (2 required)
9-Window Gasket
10-Handwheel
11-Upper Stem Assembly
  a. Operating Nut
  b. Spring Pin, 1/8" x 2-1/4"
  c. Coupling Pin, 1/8" x 1-1/2"
  d. Threaded Sleeve
  e. Upper Stem
12-Cap
13-Retaining Ring
14-Target Open
15-Target Shut
16-Washer
17-Wall Mount Indicator Post Cover
18-Hex Nut 1/2"
19-Hex Bolt 1/2"x1-3/4"



MODEL A-20814 WALL INDICATOR POST ASSEMBLY

Supervisory Control Valve Switch:
Figures E and F illustrate attachment of the Supervisory Control Valve Switch (supplied by customer).

INSTALLATION
The A-20814 Post Targets must be positioned for use with the appropriate number of turns to open the post indicator valve. Improper positioning of the Targets can result in an erroneous indication of the open or shut position of the valve. The A-20814 will accommodate positioning of the Targets to operate PIVs requiring 14 to 48 turns to open.

NOTE
The Targets for the A-20814 Indicator Post have been factory set for use with a left hand opening, 4 inch Mueller PIV. Consequently, Steps 5, 6, 7, and 9 need not be performed when installing the A-20814 Post with a 4 inch Mueller® PIV or with a PIV that requires 14-1/2 turns to open.

Proceed to install the Post as follows:

1. Completely close the PIV.

2. Along the centerline of the PIV make a 5-3/4 inche diameter clearance hole through the wall if the Optiona Sleeve is to be used or if the Coupling is to be located within the wall area. A 2-1/4 inche diameter clearance hole may be used otherwise.

3. If it is necessary to protect the Lower Stem Assembly (5) where it passes through the building wall, measure the thickness of the wall and cut the Optional Sleeve to an overall length equal to the wall thickness plus 2-1/2 inches. Temporarily place the Optional Sleeve into the wall clearance hole.

4. Attach the Coupling (5b) to the operating nut of the PIV using the Cotter Pin (5d), and then cut the Lower Stem (5a-square tube) so that it will extend 3-1/2 inches in front of the wall (Reference Figure B).

5. Remove the two bolts (19) securing the Cover (17) in
place and remove it along with the Upper Stem Assembly (11) from the Post Head.

6. Position the targets per Figure D.

7. Reinstall the Upper Stem Assembly into the Post Head and re-secure the Cover (17) using the two bolts (19).

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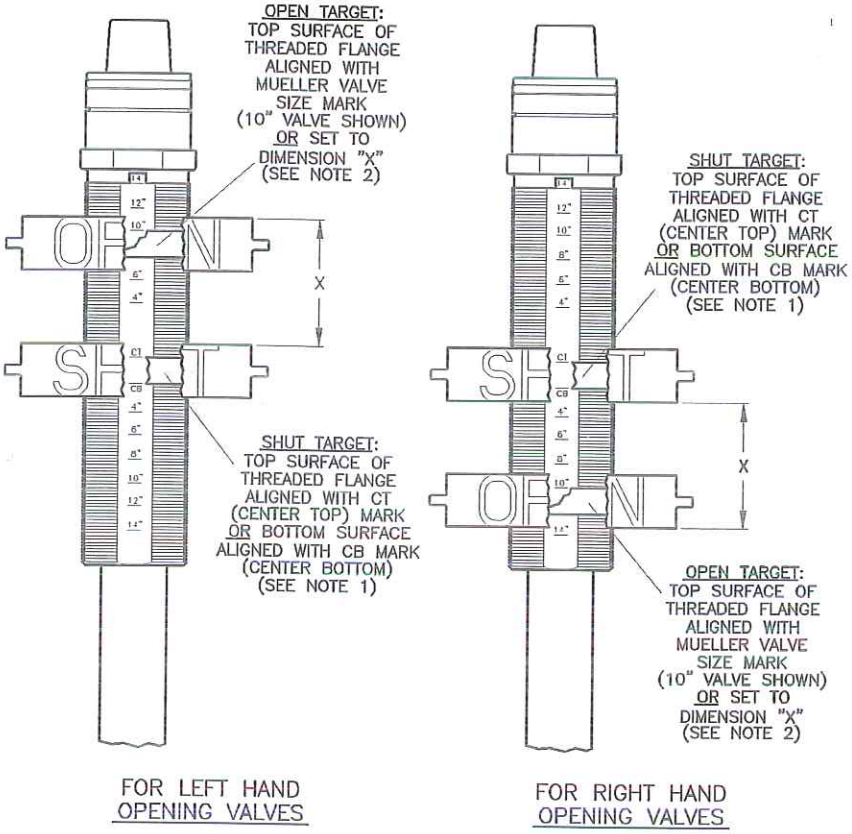

NOTES:

1. SET SHUT TARGET FIRST.
2. FOR VALVES MANUFACTURED BY OTHER THAN MUELLER COMPANY, SET TO DIMENSION "X" CALCULATED AS FOLLOWS:

$$\text{"X" IN INCHES} = \frac{\text{NO. OF TURNS TO OPEN VALVE}}{14}$$

Fig. D

POSITIONING OF TARGETS

8. Slide the Upper Stem into the Lower Stem and center the base of the Post Head over the hole in the wall and fasten it securely to the wall.

NOTE

Before mounting the Post Head and if using the Optional Sleeve, loosen the Set Screw (6), insert the Sleeve into the Post Head, and then tighten the Set Screw (6).

9. Reinstall the Handwheel if it had been removed.

10. Using the Handwheel, open and close the valve and check to see that the "SHUT" and "OPEN" Target Plates are clearly in view in the Windows, at their respective positions and that there is no feeling of binding of the Upper and Lower Stem Assemblies (5,11). It is recommended that the turns to open/close be counted and compared to the valve manufacturer's specification, in order to verify full valve opening.

NOTES

If there is any indication of binding of the internal operating parts, alignment of the Indicator Post must be corrected.

If the Targets are not properly in view, completely close the PIV, remove the Post Head from the wall, remove the Optional Sleeve from the Post Head if applicable, and then repeat Steps 5 through 10.

11. Tighten the switch mounting hole plug if Supervisory Control Valve Switch is not to be immediately attached.

12. Proceed to install the Supervisory control Valve Switch as follows:

12a. Remove the Cover from the assembly, and then loosen the Trip Rod Screw. Adjust the position of the Trip Rod so that it extends about 1 3/8 inches beyond the Nipple, and then securely tighten the Trip Rod Locking Screw.

12b. Rotate the Handwheel until the valve is fully open. Note the position of one of the "OPEN" Targets in its Window.

12c. Rotate the Handwheel until the "OPEN" Targets are out of the Post Windows. Note the direction in which the "OPEN" Target will move when it is returned to the Post Window.

12d. Remove the Nipple from the assembly and with the Locknut screwed over the Nipple threads, hand tighten the Nipple into the 1/2 inch NPT hole provided in the Post Head, and then tighten the Locknut against the Post Head to secure the Nipple firmly in place.

12e. Refer to Figure E or F as appropriate, and note the direction in which the Trip Rod must move when the "OPEN" Target is returned to the Post Window.

Slide the assembly as far as possible onto the Nipple while maintaining proper orientation of the assembly, and then tighten the Set Screw that holds the assembly onto the Nipple.

12f. Attach leads from an electrical continuity meter, to the appropriate Switch terminals.

12g. Return the valve to its fully open position. Verify that the "OPEN" Target returns to the position noted in Step b. Also, verify that the Switch contacts change position within two turns of the valve being fully open.

12h. Begin to return the valve to its closed position. Verify that the Switch contacts change back to their original position within two turns from full open.

NOTE

If the Upper Stem Assembly binds before the "OPEN" Target reaches its full open position, or the switch contacts do not change position as described in Steps g and h, then the Targets must be readjusted.

If the Targets require readjustment, close the PIV, remove the Post Head from the wall, remove the Optional Sleeve from the Post Head if applicable, and then repeat Steps 5 through 10; however when positioning the Targets, rotate both Targets at the same time as necessary

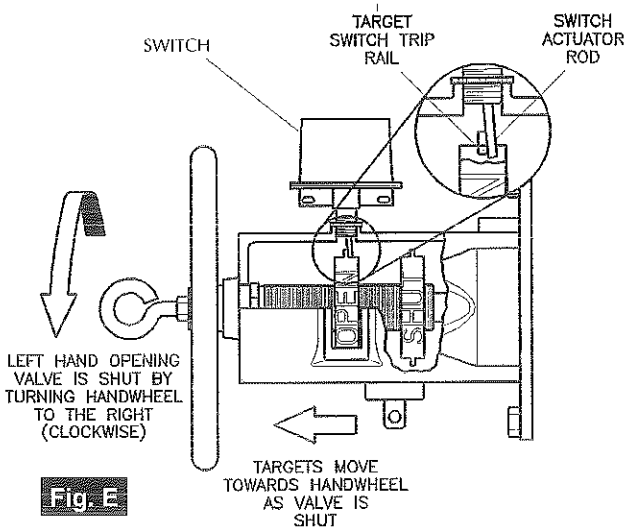

Fig. E

ATTACHMENT OF THE SUPERVISORY CONTROL VALVE SWITCH FOR LEFT HAND OPENING VALVES

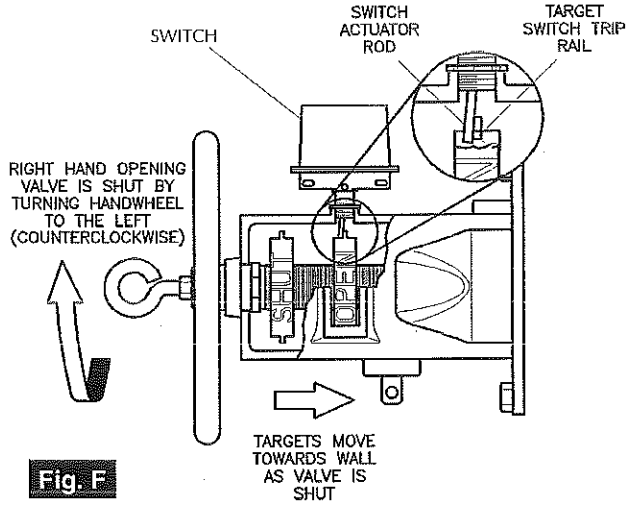

Fig. F

ATTACHMENT OF THE SUPERVISORY CONTROL VALVE SWITCH FOR RIGHT HAND OPENING VALVES

so that the "OPEN" target will trip the Actuator Rod of the Switch. Repositioning of the "OPEN" and "SHUT" Targets relative to each other should not be necessary. Repeat Steps b through h.

12i. Remove the electrical continuity test leads. The external field wiring connections can now be made to the Switch.

NOTE

Use of a weathertight conduit connector with a gasket seal is recommended.

CARE AND MAINTENANCE

The Model A-20814 Indicator Post does not require any regular schedule maintenance.

It is recommended that Posts used to operate fire protection system water control valves be locked in the fully-open position using the Handwheel as shown in Figure A. The locks must be sturdy and resistant to breakage except by heavy bolt cutters.

It is also recommended that once a month a visual inspection procedure be followed, with the following items checked:

1. The Post Head, Handwheel, and Windows have not been damaged.

2. The Targets indicate that the valve is open.

3 The Post is properly locked open.

In addition, on a quarterly basis, the Post should be closed two turns and then reopened tight to verify that the PIV is in the full open position and properly engaged with the Post and, that the Supervisory Switch contacts (if applicable) properly change position.

Any damaged parts must be immediately replaced. The Post should also be physically tried to be sure that the valve is in the fully-open position, if there are any damaged parts, sign of tampering, or the position of the valve is questionable.

NOTES

Before closing a fire protection system main valve for maintenance work on either the Post or fire protection systems which it controls, permission to shut down the affected fire protection systems must first be obtained from the proper authorities and all personnel who may be affected by this decision must be notified.

It is recommended that fire protection systems be inspected by a qualified Inspection Service.

10.4.2 Both engine company and ladder company personnel should carry wooden sprinkler wedges or sprinkler tongs to stop the flow of water from a sprinkler head in order to facilitate operations and reduce water damage.

10.4.3 The sprinkler system control valve should **only** be shut down on orders from the Incident Commander once it is determined that the fire has been controlled and hoselines are in position.

10.4.4 Sprinkler system control valves may be one of four basic types:

- Outside Stem & Yoke (OS&Y)
- Post Indicator Valve (PIV)
- Wall Indicator Valve (WIV) or Wall Post Indicator Valve (WPIV)
- Butterfly Type Indicating Valve

The Outside Stem & Yoke (sometimes called an Outside Screw & Yoke) and Post Indicator Valve are the most commonly encountered. See Fig. 10-1A to 10-1D for illustrations of each type of valve. The OS&Y's and PIV's may also be found in standpipe systems for use as section or zone control valves.

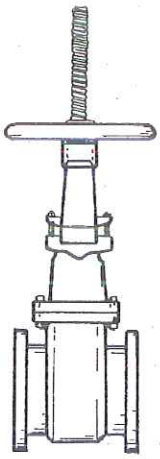

Fig. 10-1A

OS & Y
OUTSIDE
STEAM & YOKE

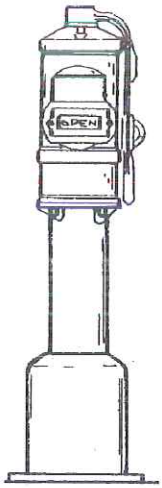

Fig. 10-1B

PIV
POST
INDICATOR
VALVE

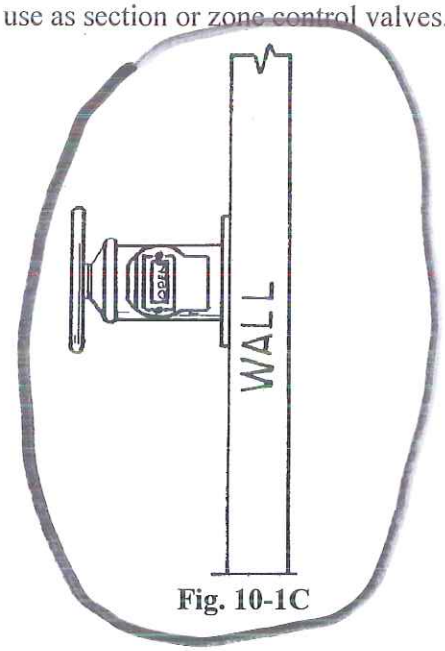

Fig. 10-1C

WALL PIV
WALL POST
INDICATOR
VALVE

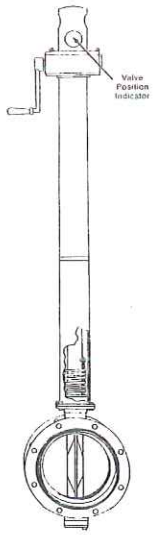

Fig. 10-1D

UNDERGROUND
BUTTERFLY
VALVE

10.4.5 The member assigned to the sprinkler system control valve (oftentimes a ladder company chauffeur) must be equipped with a handie-talkie and prepared to re-open any shut valve immediately on orders of the Incident Commander.

10.4.6 Chief officers are reminded of the fact that the New York Fire Patrol possesses specialized equipment in order to protect commercial property from unnecessary water damage.