

# ALARM VALVE

## 8" MODEL "B"

Flange/Flange



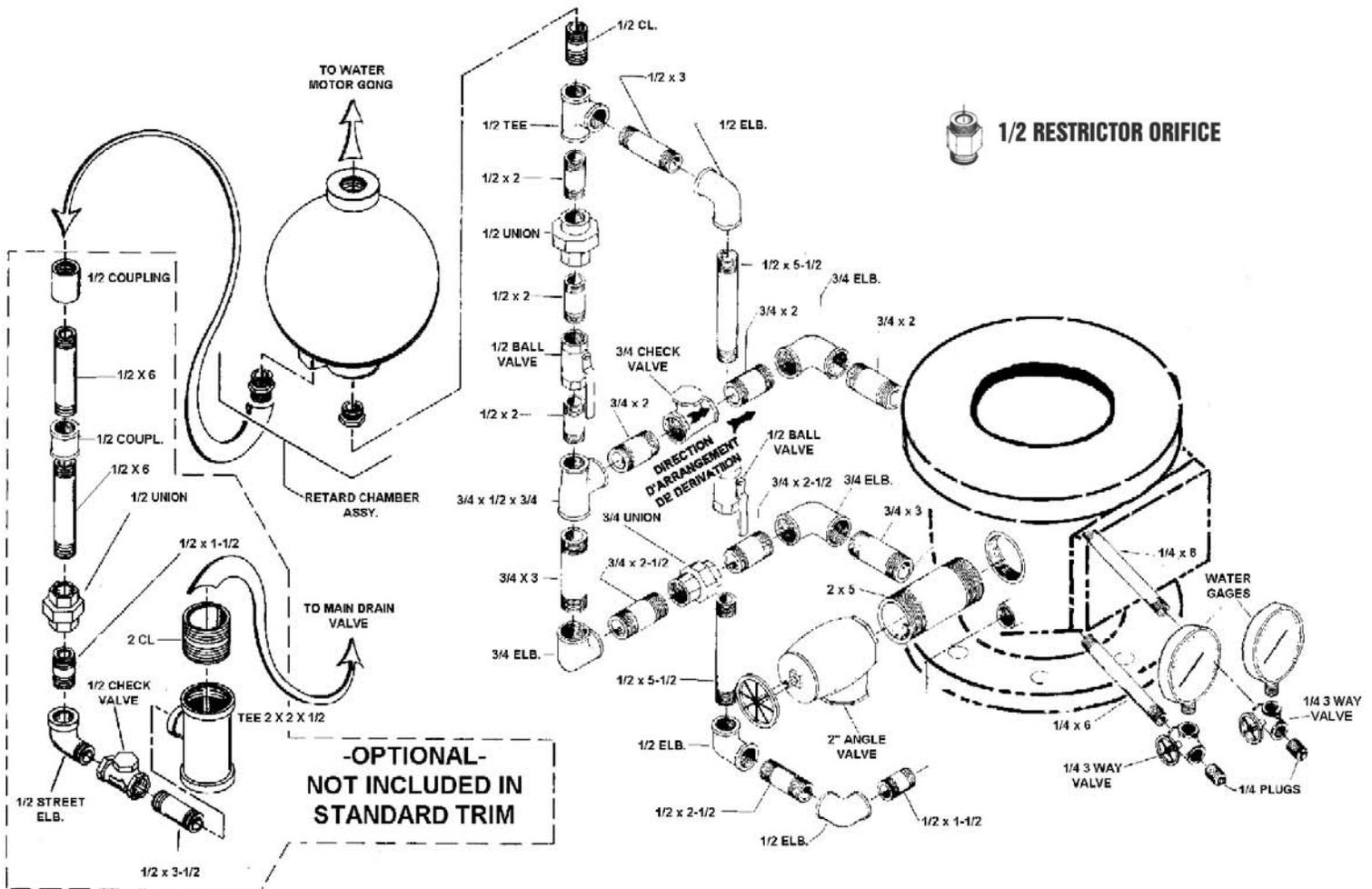
Listed by: Underwriters Laboratories Inc.  
Approved by: Factory Mutual

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# 8" ALARM TRIM (ASTRA) (TO USE WITH RETARD CHAMBER)



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## DESCRIPTION OF THE "ASTRA" 8" ALARM VALVE MODEL "B"

The "ASTRA" 8" alarm valve Model "B", differential type, consists of a rubber faced cast iron swing clapper seating on a grooved brass seat. The seat is tinned to prevent the rubber clapper facing from sticking to the seat. An external by-pass allows a pressure surge from the supply side to by-pass the alarm valve clapper and become entrapped in the sprinkler system thus creating an excess system pressure that will steady the clapper. Should a heavy surge from the supply side unseat the clapper, water will flow into the retard chamber.

The Model E retard chamber is connected into the alarm line piping between the grooved seat of the alarm valve and alarm devices such as circuit opener and circuit closer and water motor gong. Specially designed inlet and drain orifices allow the retard chamber to drain with sufficient speed to prevent false alarms.

The "ASTRA" 8" alarm valve Model "B" carries ULI and FM approvals, for installation in the vertical position.

### OPERATION

When a sprinkler head or inspectors test valve is opened, pressure on the system side of the clapper is reduced below the pressure on the supply side. The clapper then raises off the grooved seat and permits water from the supply to enter the system for distribution on the fire.

Water now flows through the uncovered groove and into the retard chamber and after filling the retard chamber, to the alarm devices.

A pressure surge or water hammer in the supply line will increase the pressure on the supply side of the clapper, causing it to lift intermittently which may result in a false alarm. The "ASTRA" 8" alarm valve Model "B" will prevent such false alarms by two features:

- a. The external by-pass with check valve allows a pressure surge from the supply to by-pass the alarm valve clapper. This will create and excess system pressure and thus steady the clapper. Should a heavy surge unseat the clapper and allow water to flow into the alarm line, the model E retard chamber then comes into action.
- b. The retard chamber consists of two specially designed inlet and drain orifices, which will allow the chamber to be drained before filling and activating an alarm device. The retard chamber has a strainer in the intake line to prevent foreign matter from clogging the intake orifice.

Care must be exercised when installing check valves in the trim to be certain that they are located with the arrow on the body pointing in the right direction. The arrow on the body of the 3/4" check valve in the by-pass must point towards the valve. The arrow on the body of the 1/2" check valve in the drain line from the retard chamber must point towards the main drain.

### INSPECTION AND MAINTENANCE

The "ASTRA" 8" alarm valve Model "B" is so constructed that there is nothing to adjust and under normal water and operating conditions requires very little maintenance.

The two water gauges in the alarm valve trim should indicate different pressure readings. Should these pressure readings be equal, and assuming that no test or drain valves have been recently opened, or any sprinkler heads have operated before the system pressure has had a chance to build up, such a condition indicates a leak is occurring at some point.

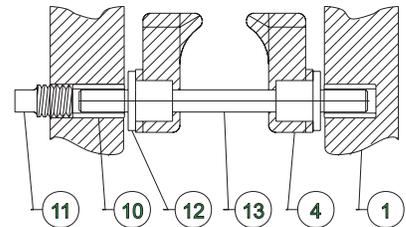
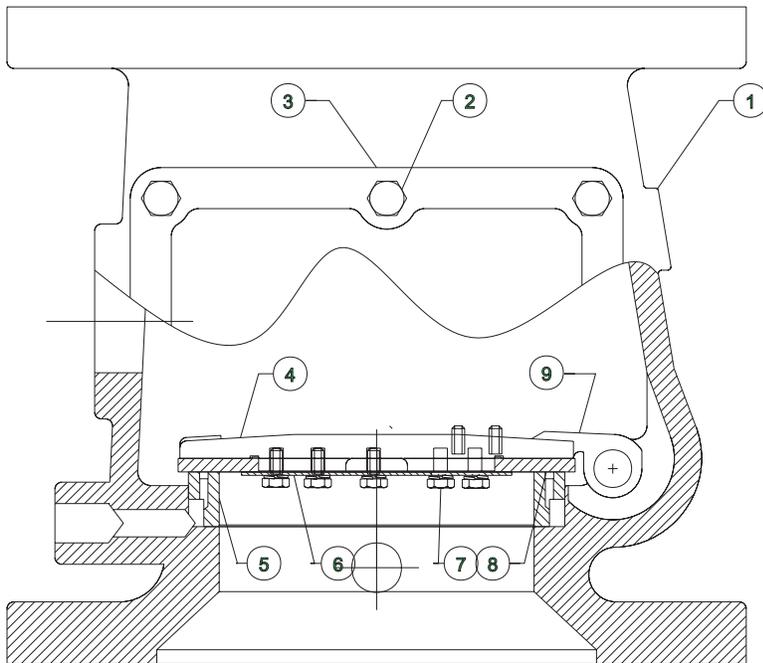
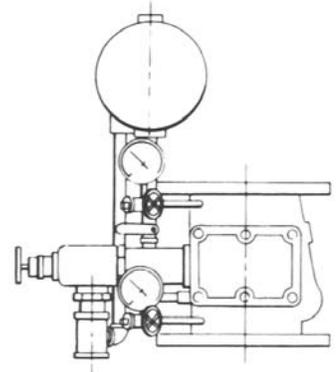
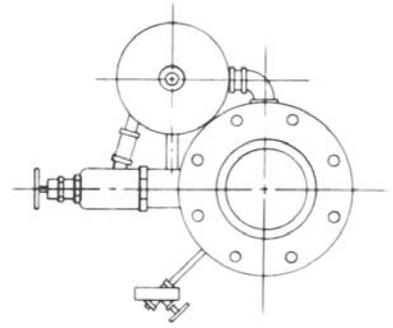
In this event check all valves in the trimming installation, as well as all test and drain valves on the system, making positive that all have been tightly closed and no leakage is occurring. Inspect the system carefully for broken fittings or similar damage to the overhead pipe. If this inspection reveals that no leakage is occurring, it is likely that the rubber clapper facing within the alarm valve needs replacing. A defective rubber facing is also a major cause of false alarms and renewal will tend to correct this condition. Such replacement may be found necessary from time to time and a new rubber facing should be obtained from the valve manufacturer. When this change is necessary it is done as follows:

1. Notify your insurance carrier that the system is to be temporarily out of service.
2. Close main control valve (OS & Y or post indicator valve located outside building) to shut off water supply a man should be stationed at the valve until service is restored.
3. Open 2" drain valve to drain the system.
4. Vent sprinkler system by opening inspectors test valve which is normally located at the top of the system.
5. After system is completely drained, the cover plate can be removed permitting inspection of the alarm valve clapper assembly, seat and interior.
6. Raise clapper off seat and scoop out any scale or solid particles around the valve seat. Wipe the surface of the valve seat with a clean cloth.
7. Renew clapper facing.
8. Clapper assembly may be removed from the alarm valve by removing the two clapper pin plugs, which permits the removal of the clapper pin.
9. Replace cover plate making sure cover plate gasket is in good condition.
10. Tightly close all drain and test valves making sure to replace any sprinkler heads which may have been removed. Leave inspectors test valve open.
11. To prevent alarms from sounding when service is being restored, close the two 1/2" ball valves in the alarm valve trim.
12. Carefully open the main control valve to allow the system to fill slowly. This will prevent any foreign matter in the supply main from being washed into the alarm valve. During this time the clapper assembly will be open and will automatically reseat when sufficient water has entered the system piping.
13. Allow inspectors test valve to remain open until a steady flow of water is maintained and then close tightly. This vents as much entrapped air in the sprinkler system as possible.
14. When full pressure is built up in the sprinkler system and the upper gauge on the alarm valve trim reads higher than the lower gauge, open the main control valve fully and seal.
15. Open the 1/2" ball valve on the alarm line only, and seal. Failure to do so will prevent an alarm from sounding in the event of system operation.
16. To test the alarm, open the 1/2" ball valve in the external by-pass trim. This takes water from below the clapper and permits testing of alarm without raising clapper off the seat.

# 8" ALARM VALVE MODEL "B"

## Parts list

| ITEM | PART No.   | DWG No.  | DESCRIPTION                                    |
|------|------------|----------|--|
| 1    | AV-18-1-6  | AVB 8003 | BODY   |
| 2    | AV-18-3    | AV 8006  | COVER BOLT                                     |
| 3    | AV-18-18-2 | AV 8005  | COVER  |
| 4    | AV-18-2-2  | AV 8008  | CLAPPER  |
| 5    | AV-18-7    | AV 8009  | SEAT RING                                      |
| 6    | AV-18-4    | AV 8014  | RETAINER RING                                  |
| 7    | AV-18-10   | AV 8023  | CAP SCREW & LOCK WASHER                        |
| 8    | AV-18-5    | AV 8015  | CLAPPER SEAL                                   |
|      |            | AV 8016  | CLAPPER SEAL (FOR VALVES MADE AFTER NOV. 1998) |
| 9    | AV-18-12-3 | AV 8018  | CLAPPER ASSEMBLY                               |
| 10   | AV-18-8    | AV 8010  | BUSHING  |
| 11   | AV-18-11   | AV 8012  | PLUG   |
| 12   | AV-18-6    | AV 8022  | CLAPPER BUSHING                                |
| 13   | AV-18-9    | AV 8011  | CLAPPER PIN                                    |
| 14   | AV-18-17   | AV-8017  | COVER GASKET (Not Illustrated)                 |



| 8" Alarm Valve Model "B" |          |
|--------------------------|----------|
| Face to face             | 11 3/4"  |
| Weight                   | 125 lbs. |

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