

Model :SD- A

TECHNICAL DATA:

Nominal Size	: 200, 150, 100, & 80NB
RATED WORKING PRESSURE	: 12.3 Kg./Sq.Cm. (175 PSI)
THREADED OPENING	: BSPT (NPT - Optional)
MOUNTING	: Vertical mounting
FACTORY HYDROSTATIC TEST PRESSURE	: 25Kg./sq.cm. (350 psi)
FRictional LOSS IN TERMS OF EQUIVALENT LENGTH	: 200NB - 13.00 Mtrs (42.6 ft) 150NB - 7.50 Mtrs (24.6 ft) 100NB - 6.46 Mtrs (21.2 ft) 80NB - 3.65 Mtrs (12.0 ft)
APPROXIMATE NET WEIGHT WITH OUT TRIM	: 200NB - 84 Kg. 150NB - 59 Kg. 100NB - 38 Kg. 80NB - 28 Kg.
FINISH	: Fire red epoxy painted
APPROVAL	: UL listed
ORDERING INFORMATION	: Size of valve flange connection and trim details
REFERENCE	: NFPA 13 and NFPA 25



alarm valve, which allows water pressure surge to pass without lifting the valve clapper off its seat, thereby causing excessive high pressure surge entrapped in the system side due to presence of a check valve, which generally prevents false alarm. Sudden high pressure surge, as might be encountered by the start-up of a large fire pump may lead the valveclapper to lift momentarily, allowing water to flow through the valve seat grooves to the retarding chamber. The water in the alarm line is automatically drained out, which helps to prevent false alarm due to successive transientsurge in supply pressure. Restriction assembly located beneath the retarding chamber consists of an inlet and drain restriction orifice, which are established by considering the volume of the retarding chamber to meet the listing and approval requirement with regard to time-to-alarm. These requirements represent a balancing of the need to reduce the possible false alarm due to a transient surge in supply pressure and to achieve desired minimum time-to-alarm following a sprinkler operation. In constant pressure installation, the retarding chamber is not required and the water passing through the groove in the alarm valve seat flow directly through restriction drain assembly to activate the mechanical and electrical alarm.

Alarm Valve is a double seated clapper check valve with grooved seat design, which ensures positive waterflow for alarm operation and is designed for installation in wet pipe sprinkler system. External bypass prevents false alarm under all supply pressure condition. Retarding chamber under variable pressure condition prevent false alarm, thus the design allows for installation under both variable and constant supply pressure condition. By the operation of one or more automatic fire sprinklers, the water flows into the sprinkler system and the alarm valve opens, allowing continuous flow of water into the system and transmittal of an alarm, both electrical and mechanical.

OPERATION

The fire protection system initially when being pressurised, will allow water to flow into the system until the water supply and system pressure is equalised and the clapper closes the waterway. Once the pressure is stabilised, the fire protection system is ready to be placed in service and then the alarm control valve must be opened. Under normal condition, the water pressure gauge connected to the system side of the alarm valve would show a higher or equal pressure reading than the water pressure gauge connected to the supply side of the valve. This occurs because the 20 NB bypass line connecting downstream and upstream side of the



INSTALLATION

1. Shield Sprinkler alarm valve, Model SD-A must be installed vertically.
2. The alarm valve must be installed in a readily visible and accessible location and provision to be made in such a way that alarm line drain is visibly clear.
3. Where water pressure fluctuates the variable pressure trim with retarding chamber must be used. Under non-fluctuating water pressure condition, the constant pressure trim, which does not include retarding chamber may be used.
4. The valve must be installed with trim in accordance with the trim data. Failure to follow the appropriate trim connection guidelines may prevent the device from functioning properly as well as void listing, approval and the manufacturer's warranty.
5. Care must be exercised while installing the check valve in the trim to ascertain that they are located with the arrow mark on the check valve body and pointed in proper direction.
6. The contraction and expansion associated with an excessive volume of trapped air could cause the waterway clapper to cycle open and shut. This may result to false alarm or an intermittent alarm. To avoid these, it is recommended to have breather valve in the system piping network and a vent valve at the extreme end of the system to bleed-off the air.
7. The ball valve provided on the alarm line must be kept open and strapped in set position of the alarm valve.
8. Pipe connecting the retarding chamber and sprinkler alarm bell must be supported properly to avoid loading on the retarding chamber.
9. All the newly installed system pipes must be flushed properly before alarm valve is put into service.

INSPECTION AND MAINTENANCE

A qualified and trained person must commission the system. After few initial successful test an authorised person must be trained to perform inspection and testing of the system.

It is recommended to carry out physical inspection of the system at least twice a week. The inspection should verify that all the control valves are in proper position as per the requirement of the system and no damage has taken place to any component.

It is recommended that the alarm valve and its accessories should be examined and performed for following at least quarterly or as demanded by local authorities to ensure reliable and trouble free operation and service.

1. Inspection and testing is to be carried out only by an authorised person. DO NOT TURN OFF the water supply valve to undertake repair work or to test the valve, without placing a roving fire patrol in the area covered by the system. The patrol should continue until the system is back into service. Also do inform the local security personnel and alarm control station, so that a false alarm is not signalled.
2. Open the alarm test valve. Verify that the sprinkler alarm bell and/or the pressure alarm switch/electric alarm properly actuate. Close the alarm test valve and verify that water has ceased to flow from the alarm line drain.
3. Clean the 20 NB (3/4") strainer provided on the sprinkler alarm bell line.
4. Clean the strainer of restriction assembly.
5. Inspect the 20 NB (3/4") check valve clapper located on the bypass line.

FALSE ALARM

1. Inspect the valve rubber clapper face. If worn or damaged, replace it. Be certain that dirt, stone or any other foreign object have not accumulated under the clapper face and lodged in the groove or holes. Clean the clapper face thoroughly. If the seat ring surface is nicked or scored, it might be possible to repair the same using lapping compound. If not, replace the complete valve or return it to the manufacturer's works for repair.
2. If sprinkler alarm bell is not functioning or the impeller is jammed, please follow the maintenance guideline provided in the catalogue for sprinkler alarm bell.
3. If pressure alarm switch gives a steady signal, but sprinkler alarm generates an intermittent alarm, check sprinkler alarm bell shaft. If both the sprinkler alarm bell and pressure alarm switch are generating intermittent alarm then check for the possible air which is trapped within the sprinkler system. Trapped air is to be bleed-off. The intermittent alarm may also cause due to sudden pressure drop and increase in the system. These problems can be corrected by maintaining a steady supply.

NOTE

The listing of UL, approvals & manufacturer's warranty are valid only when the alarm valve is installed with Shield Trim set and installed as per trim installation guidelines.

