MEIJI

ALARM CHECK VALVE

Fig. 10-07

PN16/25

DN 65-200

TECHNICAL DATA

- Flanged to JIS 10K, BS4504 PN16/25, ANSI#150(300PSI).
- Size : DN 65mm, DN 80mm, DN 100mm, DN 150mm, DN 200mm.

PRESSURE/TEMPERATURE RATINGS

Working pressure	16/25 bar
Testing Pressure	24/37.5 bar
Working temperatre	-10℃ ~ 80℃

MATERIALS

Part	Material	ASTM	BS
Body, cover	Ductile iron	A536	Gr.420/12
Seat, Disc	Staniless steel	A240 304/410	SUS304/410
Stem, Spring	Staniless steel	A240 304/316	SUS304/316
Bolt/nut	Staniless steel	A240 304/410	SUS304/410
Fiting	Brass	B124 C37700	2874 CZ122
Painting	Epoxy power coating		

DESCRIPTION

- Alarm Check valve are divided seat ring, rubber faced clapper, waterflow alarm check valve which are intended for use in wet pipe fire pro-tection systems. They may be installed vertically and they are designed to automatically actuate electric or hydraulic alarm when there is a steady flow of water into the system that is equivalent to the dis-charge rate of one or more sprinklers.
- Alarm check valve trim includes pressure gauges to monitor system pressure conditions, a by-pass check valve, a main drain valve, and an alarm test valve. The by-pass check valve serves to reduce the possibility of false alarm by permitting slow as well as small transient increases in water supply pressure to be passed through to the system without opening of the water way clapper.

OPERATING PRINCIPLES

- When the fire protection system is in-itially being pressurized, water will flow into the system intil the water supply and system pressure become equal-ized and the torsion spring closes the clapper in the Alarm Check Valve. Once the pressure have stabilized, the Alarm Check Valve is in service and the centally located groove in the seat ring is sealed. Consequently, with the Alarm Check Valve set for service there is no flow through the alarm port to the alarm devices (water motor alarm or pressure alarm switch).
- When there is a steady flow of water into the sprinkler system due to a sprinkler operation, the Clapper opens . Water is then permitted to flow into the centrally lo-cated groove in the Seat Ring and out through the alarm port towards the Re-striction Assembly. When the flow through the inlet restriction of the Restriction Assembly exceeds the flow out through the outlet restriction, the Retard Chamber where provided in the case of system with varible pressure, begins to fill. Subsequently, the water motor alarm or pressure alarm switch will be actuated. The alarm will continue to be actuated as long as the Clapper remains opened. Water in the alarm lines will automatically drain out through 3mm drain orifice in the Restriction Assembly when the Clapper close “due to a discontinuation in the flow of water into the sprinkler system”.
- In the case of variable pressure systems, slow as well as small tansient increases in water supply pressure may continue to be built up in the system with out opening of the clapper. A trasient surge in supply pressure which is sufficient to only momentarily open the Clapper will not cause a false alarm, and a portion of the increase in pressure will be trapped within the system, thus reducing the possibility of another opening. Any water in the alarm line is automatically drained, which helps to further reduce the possibility of a false alarm due to a successive transient surge in supply pressure.

INSTALLATION PROCEDURE

- **Pipe flanged weldeding**: Properly positon Alarm Check Valve and bolt hole and then firmly weld in accordance to the pipe flange plan considering the height of Alarm Check Valve and gasket packing.
- **Pipe Cleaning**: when the installation is completed, clean thoroughly the pipe interior. Remove slag by knocking welded parts of pipe with a hammer and if possible, fush the interior with pressure water of 5kg/cm2 until it is

completely rinsed out. Negligence of cleaning will: 1. Cause repeated false alarm due to the damaged seat rubber in the Alarm Check Valve, 2. retard or even result in failure of fire supperession when the orifice of sprinkler head is choked up.

- **Note**: Alarm Check Valve depends upon the trim described in this data sheet being installed in accordance with the following instruction. Failure to follow the appropriate trim installation instructions may prevent the device from functioning properly as well as void listting/approvals, and the manufacture's warranties. The Alarm Check valve must be installed in readily visible and accessible locations. It is recommended that provision be made for viewing of the alarm line drain water by locating the main drain outlet in a readily visible area. Wet pipe fire protection systems must be maintained at a minimum temperature of 4°C.
- **Step 1**: Trim the Alarm Check Valve in accrdance with applicable. Apply pipe thread sealant sparingly to male threads ony.
- **Step 2**: the Alarm Vent Trim illustrated must be installed if a water motor alarm in not tobe used.
- **Step 3**: Plug unused alarm connections.
- **Step 4**: Suitable provision must be made for disposal of alarm line and sustem drainage water. Drainage water must be directed such that it will not cause damage or result in dangerous conditions.
- **Step 5**: The alarm line drain must be arranged so that there will be no danger of freezing.
- **Step 6**: The check valve in the externally mounted bypass around the waterway Clapper must be installed with its arrow pointed up and the drain check valve must be installed with its arrow pointing towards the drain.
- **Step 7**: It is recommended that a vent connection, be piped from a cross main or branch line at the point most remote from the alarm valve. The vent line should be connected to the top of a cross main or to the end of a branch line and be located at the highest level of a multi-level installation. The vent connection can be used to bleedoff excessive air from the system and, therefore, minimize the possibility of a false alarm due to a transient surge in supply pressure. The contraction/expansion associated with an excessive amount of trapped air could also cause the waterway Clapper to cycle open and shut during an inspector's test or during a discharge by a single sprinkler.