

GW MK3 PNEUMATIC DELUGE VALVE

INSTALLATION & OPERATION

100mm (4") 150mm (6") 200mm (8")



GW SPRINKLER A/S

Operation

Water under pressure from below the valve is fed via a non return valve and a restricted orifice (built into the chamber casting) into the hydraulic chamber. This applies pressure on the diaphragm, which via the piston, forces the latch to hold the clapper in the closed position.

The pneumatic diaphragm retains the water pressure in the chamber. Air pressure on the diaphragm closes the water exit from the hydraulic chamber. To activate the valve the air pressure is released by one of three methods:

1. Opening a manual release valve
2. Operation of an electrical solenoid valve
3. Fracture of a pneumatic detector line or detector head

Once the air pressure has been lost water can escape from the diaphragm chamber faster than it can be replaced (via the restricted inlet orifice) the pressure on the diaphragm is reduced until it no longer holds the latch in position, the clack is released and water flows to the pipework system and if required water can be diverted to sound a mechanical or electrical alarm.

Once the valve has been released the clack is lifted by the water flow and the latch normally moves forward on a spring to stop the clack falling back and closing. This is recommended as the Standard setting. However the clack latch can be spring biased to swing away from the clack to facilitate automatic valve reset. This option to be only used only with "fail safe" actuation system.

Commissioning

1. Shut off the main water supply to the underside of the valve.
2. Isolate the water supply to the large diaphragm
3. Isolate air supply. Ensure there is no residual water or air pressure in the valve.
4. Open the hydraulic chamber bleed bolt.
5. Remove the lower right hand bolt (when the valve is viewed from the front) from the front cover of the valve. Insert a screwdriver and engage with the slot in the latch pin. Turn the screwdriver clockwise to force the large piston and diaphragm back [water may exit through the bleed nut], allowing the latch to swing back and the clack to drop on to its seat.. Leave the lower right hand cover plate bolt out until the valve has been set since any leak past the clack will be detected by water exiting through this hole.
6. Re-instate the air supply to the system, fill the air system to the correct pressure normally between 3.0 and 4.0 bar.
7. Close the bleed nut finger tight.
8. Re-instate the water supply to fill the hydraulic chamber forcing the large rolling diaphragm down under pressure, which in turn will force the latch to secure the clack shut.
9. Slowly open the bleed nut until clear water flows and any air in the chamber has been exhausted. Fully close and tighten the bleed nut.
10. Ensure that the small pneumatic diaphragm has seated correctly by checking that no water is exiting through the pneumatic chamber drain. If water is seen turn off the air and water supply and re-seat the pneumatic diaphragm.
11. Slowly open the main water supply to the underside of the valve. If the clack has not seated correctly water will escape past the clack and exit through the lower right hand bolt hole in the valve front cover. Replace the lower right hand cover plate bolt.
12. The valve is now set.

The right is reserved to varv or modifv any specifications without prior notice

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Data Sheet: GW MK3 Pneumatic Deluge Valve

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Tightening Torque's

Item	Valve Size (mm)	Torque (Nm)
Cover Plate	100	35 ± 5
	150	80 ± 5
	200	150 ± 10
Clapper Bolt	All	25 ± 5

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