

PRODUCTS - Control valves

PVMY1100 SERIES HYDRANT PIT VALVES



- Designed for use in AH12-inch dia., or larger, hydrant pits
- Direct replacement for AH QRV valve
- Based on the highly successful PVMY 1000
- Fitted with four-inch API adaptor as standard or optional 2.5-inch & 4-inch three point bayonet
- Complies with the safety requirements of the IP or API
- 5mm stoneguard strainer as standard
- Optional 20 mesh strainer may be fitted
- Cast aluminium body, base being formed as a four-inch flange
- Optional selectivity
- API adaptor can be removed while hydrant system is at normal working pressure
- Maintenance and repair of pilot valve is possible while hydrant system is under normal working pressure

Construction

At the top of the body the internal bore is threaded to accept the screw-on four-inch API adaptor. A selectively ring may also be fitted. An 'O' ring seal is fitted between the body and the adaptor.

The body is formed internally into two chambers interconnected by ports. The lower chamber forms a cylinder in which a spring loaded piston valve operates, closing against a seal. The upper chamber is fitted with a valve guide and spring housing (and also provides the housing for the 20 mesh strainer if fitted). The valve stem of the API adaptor locates into the valve guide.

Bolted to the side of the body and connected by drillings is the isolating valve block to which, in turn, is bolted the pilot valve. This arrangement allows maintenance and repair of the pilot valve with the hydrant system at normal working pressure. The pilot valve also allows the API adaptor to be removed for maintenance and repair with the hydrant system at normal working pressure.

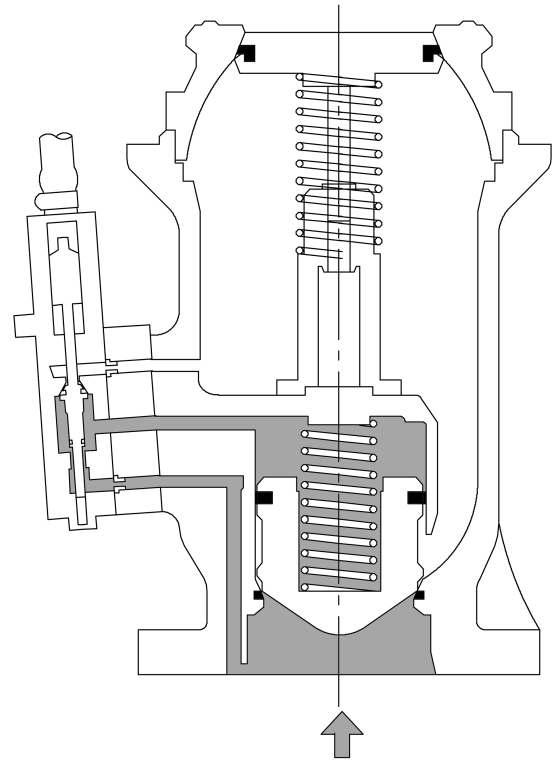


Figure 1 - Pit valve closed

Operation

The pilot valve is opened by pulling up on the 'T' handle. A spring-loaded latch mechanism then holds the valve open. To close the pilot valve, the lanyard shut-off cable is pulled, releasing the latch mechanism causing the valve to close under the influence of spring pressure.

With the pilot valve closed as in Figure 1, fuel pressure from the hydrant line is applied to the bottom face of the piston. At the same time fuel at equal pressure passes through internal drillings to the top of the piston. Due to an imbalance in surface area and with spring assistance the piston is held closed.

When the pilot valve is opened, fuel supply to the top of the piston is blocked off and fuel on top of the piston is released to the downstream side of the valve. Fuel pressure on the bottom of the piston now overcomes spring pressure forcing the piston off its seat and opening the ports in the valve insert allowing fuel to flow with minimum pressure drop (see Figure 2).

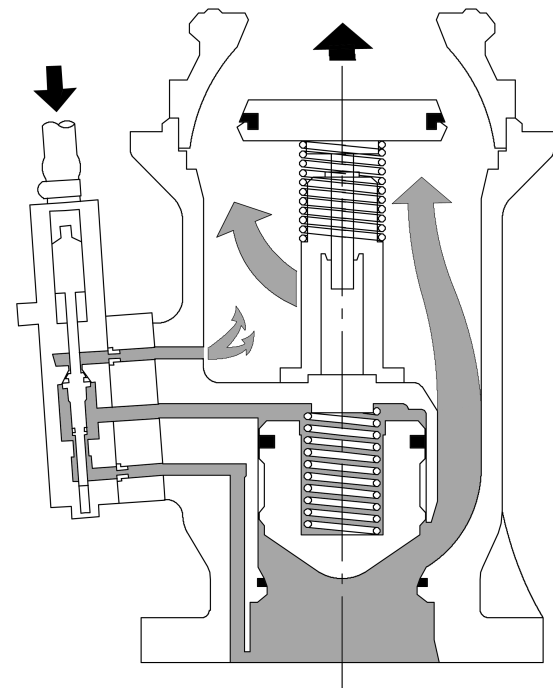


Figure 2 - Pit valve open

Specification and performance

Standards

The PVMY1100 Pit valve complies with the functional and safety requirements of API 1584 and IP "Recommendations for new hydrant systems"

Materials

Body anodised aluminium alloy, stainless steel and PTFE with fluorocarbon and high nitrile seals 4" API adaptor - cast Iron with high performance flouropolymer coating (stainless steel available to special order)

Pressures

Max. safe working pressure (gauge)	18.7 bar (275lbf/in ²)
Hydrostatic test pressure (gauge)	28.0 bar (412lbf/in ²)

Temperature limits

Min. operating temperature	-25degC (-13degF)
Max. operating temperature	135degC (275degF)

Pressure drop

Using a test rig as defined in IP recommendations, at a flow rate of 4500 l/min (1000 imp gall/min):

1)	Without 20 mesh strainer	24lbf/in ²
2)	With 20 mesh strainer	26lbf/in ²

Opening time

From 0-90% full flow 5-10 seconds

Closing time

From a flow rate of 4500 l/min(1000 imp gall/min) 2-5 secs

Overshoot 180 litres (40 imp galls)

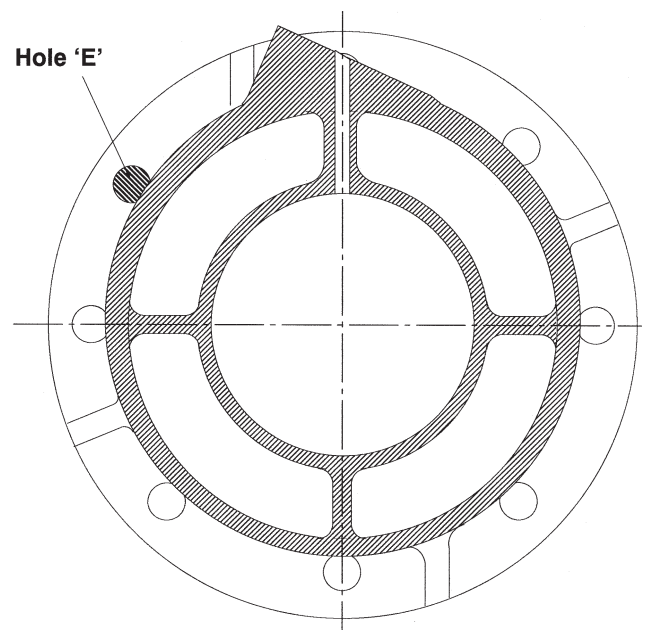
Storage life

Two years, when stored in cool dry conditions, (limited only by deterioration of seals)

Dimensions

Maximum width	279mm (11-inches)
Height (including dust cap)	370mm (14.55 inches)
Diameter of base flange	214mm (8.44 inches)

Pit valve flange: eight holes 0.562-inch dia. equispaced on 7.25 PCD with the exception of hole 'E' (shown below)



Ordering information

The basic unit comes ready for use with a four-inch riser pipe, however it can be fitted to a six-inch riser pipe by using a base intermediate flange.

State whether selectivity is required and also if the 20 mesh strainer is required.

PVMY1100	Standard unit
PVMY1101	Standard unit + Strainer
PVMY1102S1-S6	Standard unit + Selectivity
PVMY1103S1-S6	Standard unit + Selectivity + Strainer

Optional extras

To include the following optional items, please add the relevant letter to the part number.

A - Air/lanyard dual pilot valve

L - Long (18-inch) lanyard (Short lanyard supplied as standard)

R - Stainless steel API adaptor

Equipment manual reference

Technical publication number TP0015

Couplings

The following couplings are suitable for use with the hydrant pit valve

CCMY 8500M2R2

CCMY 8501M2R2

CCMY 5500M2 (four-inch three point bayonet)

CCMY 554 or CCMY 555 (four-inch three point bayonet)

HUMY 40352DP (2.5-inch three point bayonet)

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