

DOUBLE AND MIXPROOF VALVES

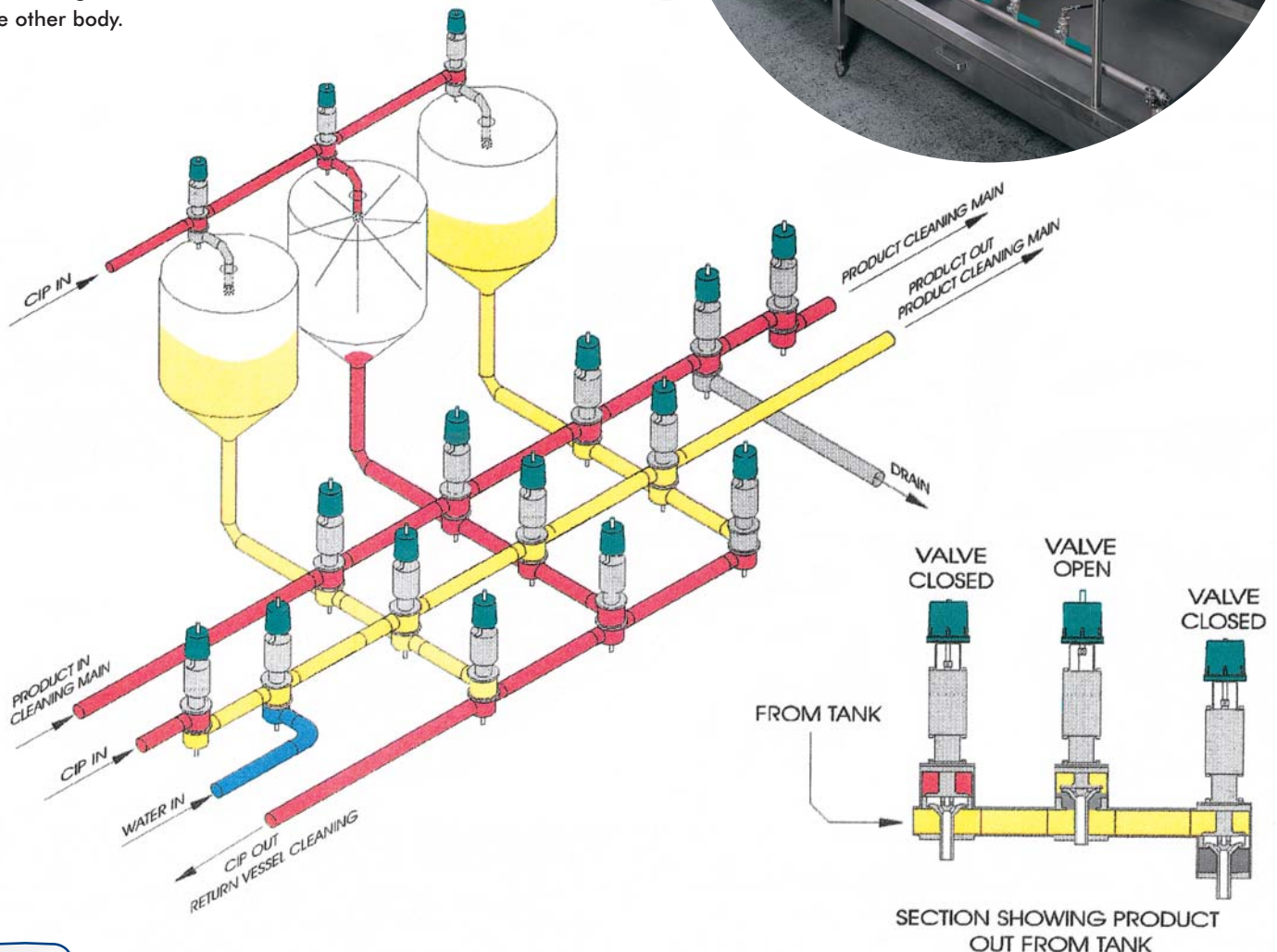
These valve systems allow concurrent automatic process and CIP operations by providing a safe interface between the two, preventing any possibility of product contamination.

Valve operation is illustrated using the typical tank farm application shown. Double seal mixproof valves are installed at each pipeline intersection. Tank 1 is being cleaned, tank 2 is filling, tank 3 is being emptied.

Consider valve A which is in the closed position. There is a cleaning fluid in the top body and product in the lower. Within the valve two independent poppets separate fluid in the top and bottom bodies. Between the poppets there is an annular space, the leakage chamber, which is vented to atmosphere through the drain tube. In the event of failure of either poppet seal, the resulting leakage would run to drain without pressurising the other poppet seal and risking contamination of the fluid into the other body.

To open the valve the lower poppet is drawn up by the actuator. As it meets the stationary top poppet the drainage path is closed. The two poppets then lift together opening the flow path between top and bottom bodies. Valve B in the open position.

As product may be introduced into the leakage chamber during the operation, provision for cleaning this area is made. Normally this is achieved by spray nozzles situated near the base of the lower poppet shaft.



MONARCH DOUBLE SEAL MIXPROOF VALVES

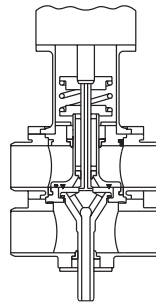
Double Seal Mixproof Valve Options

Double Seal on/off - fig. M2

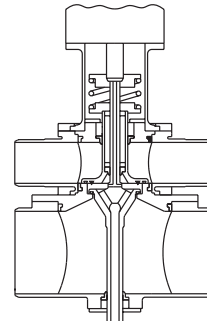
Mixed body sizes - fig. M3

Double seal routing - fig. M4

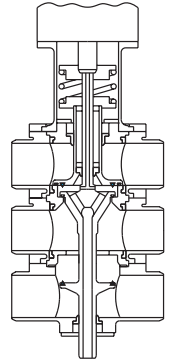
Bodies may have one or 2 ports



M2



M3



M4

Seat Lifting Device

Seat lifting provides a method of cleaning valve seats as well as the leakage chamber and drain tube.

This method may be desirable for particularly sensitive and arduous duties.

Both poppets are pulsed during each part of their respective line CIP cycle. The poppets are fractionally lifted by two additional limited movement pistons located within the main actuator. The leakage chamber and drain tube are cleaned at the same time.

Degree of poppet lift is adjusted during commissioning to ensure optimum cleaning is achieved for the application and CIP regime.

When lower poppet is pulsed the top poppet pneumatically locked in closed position.

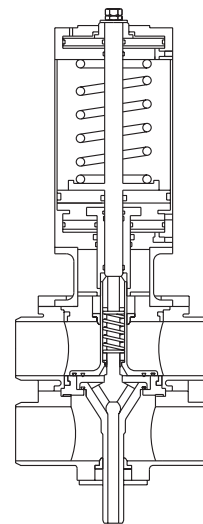
Seat lifting may be fitted retrospectively to any automatic double seal Monarch valve.

Maximum operating pressure: 10 bar.

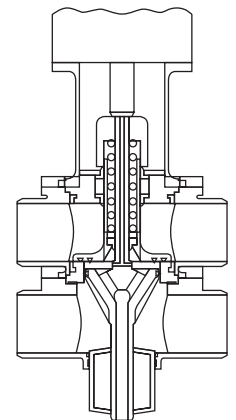


DSV - Low Leak - Balanced

The DSV Low Leak is an enhanced option of the Monarch Double Seal Valve series. As well as providing the features of Monarch, the Low Leak also offers leakage free changeover and a balanced lower poppet providing protection against over-pressure and shock up to 30 bar.



SEAT LIFTING



CAVITY SPRAY

MONARCH DOUBLE AND SINGLE SEAL VALVES

Features

Thick wall bodies provide repeatable high quality and robust construction.

Bolted slip flange body attachment adds to the robust construction, ensures leak free assembly and allows angular orientation to ports.

Monarch valves can be welded into line without the need to dismantle, reducing installation costs.

Modular construction allows a wide choice of options to be built quickly from standard stocked components. Many seals are common across the range of valves and sizes.

Triangular poppet seals, tightly fitted into dovetail grooves, provide crevice free retention.

Avoidance of over sophistication leads to operating reliability.

A range of actuator sizes accommodates different process/CIP and plant air pressures.

The removable seat, if damaged, can be replaced with ease.

Shafts well supported in bearings produce smooth operation and good sealing characteristics.

Monarch utilises the Realm MBV control box to house feedback switches and solenoids. Features of the control box are described in the MBV Control Box product sheet.

All services, air, electric and CIP (as applicable) are grouped together near the top of the valve for easy access. Entry of CIP fluid at this point eliminates dynamic seals often associated with cleaning double seal valve leakage chamber.



Specification

Size Range:	1 1/2" - 4", DN40 - DN100 Also mixed body sizes
Materials	
Product contact surfaces:	Stainless steel type 316/DIN 1.4401
Other metallic Components:	Stainless steel type 304/DIN 1.4301
Seals:	EPDM (standard), Nitrile, Viton
Operating Parameters	
Pressure:	Operating pressures are dependant upon valve size, type, size of actuator and plant air pressure. Full range of actuators available to suit most applications. Actuator selection table is provided in the Monarch User Manual.
Maximum temperature:	
Dependant upon seals -	120 °C continuous 130° C intermittent
End Connections:	Butt weld, RJT, IDF, DIN, SMS, Clamp, Flange, Acme