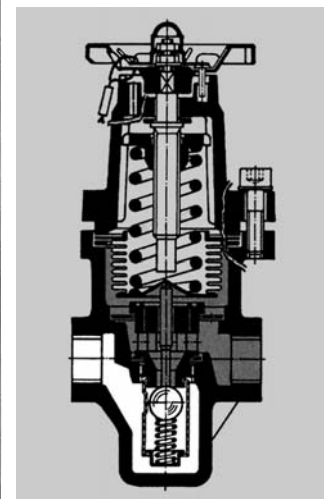


Direct action pressure reducing valve

Thread connection
Flange connection

Model 513
Model 514



□ Area of influence of input pressure. (P₁)
■ Area of influence of reduced pressure. (P₂)

Operation

The operation of the reducing valve is based on the principle of direct action. The force exerted by the spring displaces the axle and maintains the locking ball open. The fluid exerts an opposite force on the hood as it passes, which tends to reduce the section of passage of the fluid through the seating. The action of the spring and reaction of the pressure on the bellows balance each other, and the reduced pressure is maintained constant.

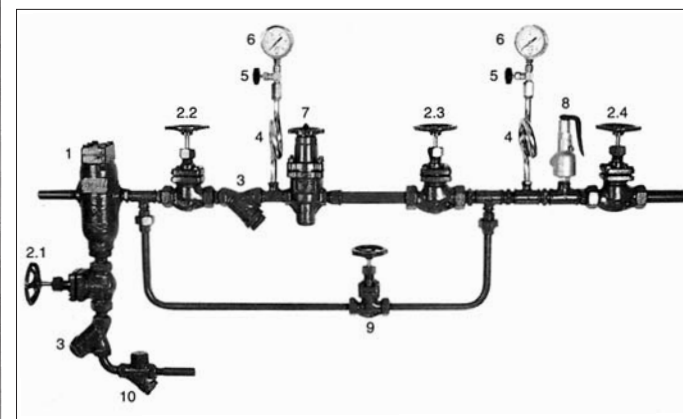
The fluctuations in consumption affect the reduced pressure. The bellows detects these variations via the balance hole, provoking a change in the passage of fluid as a function of the established reduced pressure.

In working conditions with zero consumption, the valve remains closed and completely airtight when there is a slight increase in reduced pressure.

Installation

- Always install the valve in a section of horizontal tubing, as close as possible to the point of consumption.
- The valve may be assembled in any position, even upside-down.
- Verify that the fluid flows in the direction indicated by the arrow on the body of the valve.
- The input and output tubes must be of the correct size and properly supported, to avoid any fall in pressure or tension.
- The output tubing should ideally have a greater diameter than the input tubing, to avoid excessive velocity of flow of the liquid.
- In accordance with the requirements of "Regulations for pressure devices ITC-MIE-AP 2 5.8", the pressure reduction facilities in steam circuits will be supplied with:
 - 1- A pressure gauge with syphon tube and three end cock, in accordance with article 11 of the MIE-AP 1 instructions, "Boilers", located before and after the reduction valve.
 - 2- A safety valve following the reduction valve, capable of evacuating the maximum flow of steam, which permits flow at the level regulated and adjusted to the maximum reduced pressure of service plus a maximum of 10%.

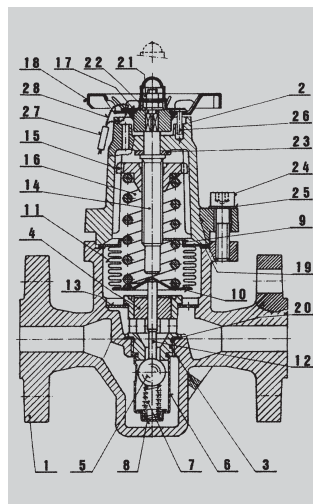
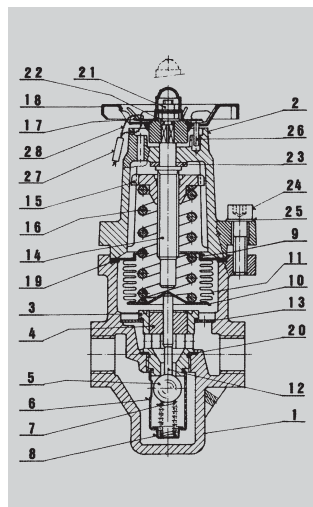
Example of installation for steam



- 1 Condensate separator.
- 2 Interruption valve.
- 3 Filter.
- 4 Syphon tube.
- 5 Pressure gauge cock.
- 6 Pressure gauge.
- 7 Pressure reducing valve.
- 8 Safety valve.
- 9 Interruption valve with adjusting cone.
- 10 Condensate purger.

IMPORTANT

- The distance between the pressure reducing valve **7** and the interruption valves **2.2** and **2.3** must be 8 + 10 times the diameter of the tube.
- It is advisable to install the separator **1** and the condensate purger **10** using wet steam with dragging.
- We recommend that the reduction device be equipped with a by-pass and interruption valve with an adjusting cone **9**.



Start-up and adjustment of the reduced pressure

- 1- Before start-up, the tubes and the inside of the valve itself should be cleaned, eliminating any residues or impurities, particularly from the locking surfaces.
- 2- Check the rating plate (17) to verify that the regulation field for the reduced pressure is appropriate and that the spring (16) corresponds to the same range.
- 3- Remove the nut (21), the rating plate (17) and the anchoring bolt (26).
- 4- With the input interruption valve fully open and the output interruption valve closed, turn the handwheel (18) gradually from left to right to increase the reduced pressure, or from right to left to decrease it, until the required reduced pressure is obtained at zero consumption.
- 5- Slowly open the output interruption valve.
- 6- Readjust the required reduced pressure in consumption conditions.
- 7- Put the anchoring bolt (26) and the rating (17) in place, and fix with the nut (21).
- 8- Seal the valve to prevent further adjustments, using the sealing wire (28) and the seal (27).
- 9- We recommend that the input pressure P₁ and the reduced pressure P₂ be recorded in the corresponding space of the rating plate (17).

Assembly and disassembly

- 1- Unseal the valve by cutting the wire (28).
- 2- Remove the nut (21), the rating plate (17) and the anchoring bolt (26).
- 3- Turn the handwheel (18) from right to left until you notice the spring (16) loosening.
- 4- Remove the screws (24) along with the washers (25).
- 5- Separate the cover (2) from the body (1), and you will have access to all the internal components. This enables simple maintenance and replacement of the spring (16), the bellows components (9) (10) (11) and the seating components (3) (4) (5) (6) (7) (8).
- 6- If the seating has been disassembled, replace the joint (20) with a new one. Put a new body joint in place (19).
- 7- Put the axle (12) in the guide hole (4) and check that it can move freely and is perpendicular to the bellows disc (10) when the bellows components (9) (10) (11) are put in place.
- 8- Select the spring (16) corresponding to the reduced pressure.
- 9- Put the cover (2) on the body (1) and the screws (24) with the washers (25), and screw them in.
- 10- Finally, proceed as described in "Start-up and adjustment of the reduced pressure".

Maintenance

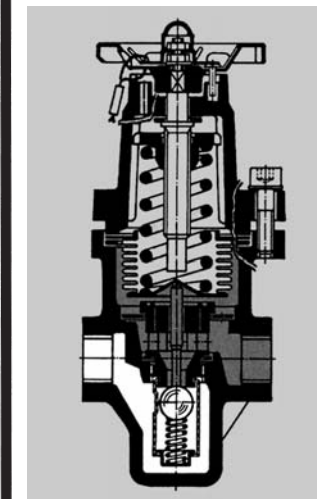
Correct installation with interruption valves at the input and output points facilitates maintenance. The filter (6) should be cleaned regularly. When assembling the valve, replace the seating joint (20) and body joint (19) with new ones.

Informative brochure, without obligation and subject to our General Sales Conditions.

Válvula reductora de presión a acción directa

Conexión roscada
Conexión a bridas

Modelo 513
Modelo 514



□ Zona de influencia de la presión de entrada. (P₁)
■ Zona de influencia de la presión reducida. (P₂)

Funcionamiento

El funcionamiento de la válvula reductora está basado en el principio de acción directa. La fuerza que ejerce el muelle desplaza el eje y mantiene abierta la bola de cierre. El fluido ejerce a su paso una fuerza sobre el fuelle contraria a la del muelle, fuerza que tiende a reducir la sección de paso de fluido por el asiento. La acción del muelle con la reacción de la presión sobre el fuelle se equilibran y la presión reducida se mantiene constante.

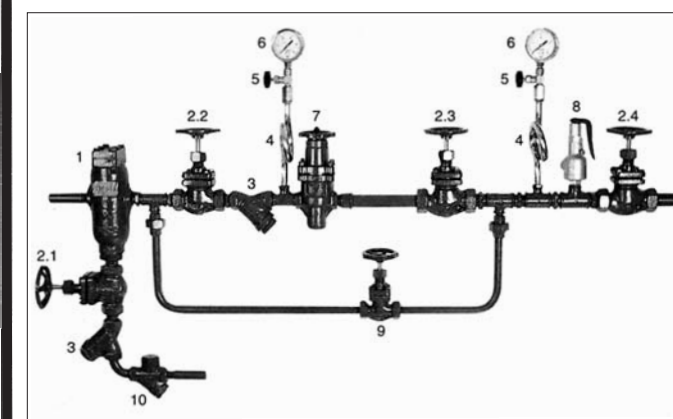
Las fluctuaciones de consumo inciden en la presión reducida. Estas variaciones son detectadas por el fuelle, a través del agujero de equilibrio, que provoca una variación en el paso de fluido en función de la presión reducida prefijada.

En condiciones de trabajo con consumo nulo la válvula permanece cerrada y totalmente estanca cuando se produce un ligero aumento de la presión reducida.

Instalación

- Instalar la válvula siempre en un tramo de tubería horizontal y lo más cerca posible del punto de consumo.
- La posición de montaje es indistinta, inclusive invertida.
- Verificar que el fluido circule en el sentido que indica la flecha insertada en el cuerpo de la válvula.
- La tubería de entrada y salida deben estar correctamente dimensionadas y soportadas para evitar caídas de presión y tensiones.
- Es conveniente que la tubería de salida tenga un diámetro superior a la de entrada para evitar una velocidad excesiva del fluido.
- De conformidad con las exigencias "Reglamento de aparatos a presión ITC-MIE-AP 2 5.8". Las instalaciones reductoras de presión en los circuitos de vapor dispondrán de:
 - 1- Manómetro con tubo de sífon y grifo de tres direcciones según artículo 11 de la instrucción MIE-AP 1, "Calderas", situados antes y después de la válvula reductora.
 - 2- Una válvula de seguridad después de la válvula reductora, capaz de evacuar el caudal máximo de vapor, que permita la conducción sobre la que se encuentra y tarada a la presión reducida máxima de servicio más un 10% como máximo.

Ejemplo de instalación para vapor



- 1 Separador de condensados.
- 2 Válvula de interrupción.
- 3 Filtro.
- 4 Tubo de sífon.
- 5 Grifo de manómetro.
- 6 Manómetro.
- 7 Válvula reductora de presión.
- 8 Válvula de seguridad.
- 9 Válvula de interrupción con cono de regulación.
- 10 Purgador de condensados.

IMPORTANTE

- La distancia entre la válvula reductora de presión **7** con respecto a las válvulas de interrupción **2.2** y **2.3** debe ser de 8 + 10 veces el diámetro de la tubería.
- La instalación del separador **1** y del purgador de condensados **10** es recomendable ante vapor húmedo con arrastres.
- Aconsejamos dotar el equipo reductor de un "by-pass" y válvula de interrupción con cono de regulación **9**.

