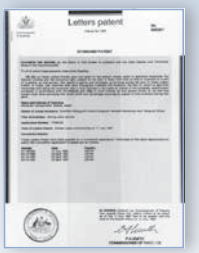
MIYAWAKI-Technology

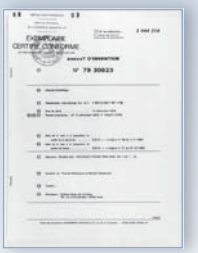
SCCV®-System

The MIYAWAKI SCCV®-System:
worldwide patented

MIYAWAKI's internationally patented Self Closing and Centering Valve SCCV®-System has proven its high reliability and effectiveness during more than two decades. Many thousands of steam traps equipped with the SCCV®-System have proven enormous advantages for our customers:

1. a substantially longer life compared with other steam traps
2. no partial or one-sided precipitate wear of valve and seat
3. greatly reduced wear of all internal parts due to the reduction of the closing forces required to maintain a seal
4. no steam loss for all Temperature Control Traps



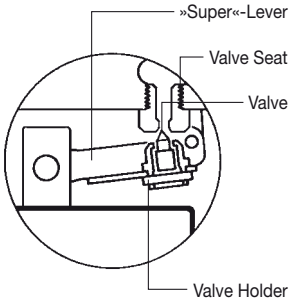


The MIYAWAKI SCCV®-System:
variable adjusted to various types

Intensive research and development activities over many years have enabled MIYAWAKI to incorporate the SCCV®-System in various types of steam traps. Thus it became possible to adopt the SCCV®-System to a wide pressure range and to utilize the SCCV®-System not only for Bimetal Steam Traps, but also for Inverted Bucket and Float Type Steam Traps.

Inverted Bucket Steam Traps

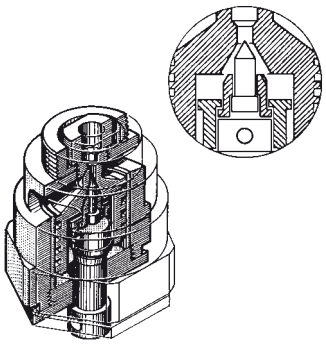
Series ES



The Valve Holder is fixed to a specially developed »Super-Lever«. The Valve is »free floating« inside the Valve Holder. Thus the control space inside the Valve Holder decreases the force toward the seat caused by the movement of the bucket. The Valve will close softly and exactly in the center of the seat.

Inverted Bucket Steam Traps

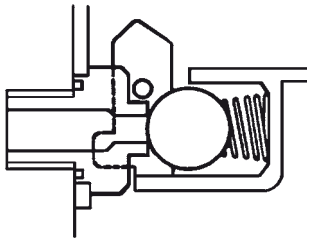
Series ER



The SCCV®-System is part of a »Double Valve Unit«, which is operating on the basis of the pressure difference inside the unit. The trap is thus characterized by extended life of the valve assembly and a greater condensate discharge per body size when compared to conventional Inverted Bucket steam traps.

Ball Float Steam Trap

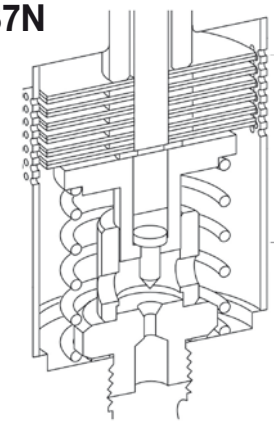
G11N, G12N



The Valve (Ball) lies inside a Valve Holder, which is directly connected through a lever with the float. By installing a spring inside the Valve Holder the movements of the float and the forces caused by it will not be directly transferred to the Valve. This will increase the service life of the sealing surfaces.

Temperature Control Steam Trap

TB7N



The Bimetal Unit including the Val-ve are guided inside the body. A spring reduces the force caused by the deflection of the bimetals which move the valve toward the seat. The guiding of the valve within the seat and the lift of the valve is designed in such a way that the Valve will close very smoothly in the center of the seat.

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SCCV®-System

Basic Principle

Regulating

The design of the Valve and Seat and the Valve lift (distance between the closed and open position of the valve) are calculated and designed in such a way that the valve closes its seat at the time that the condensate reaches the steam trap adjusted temperature.

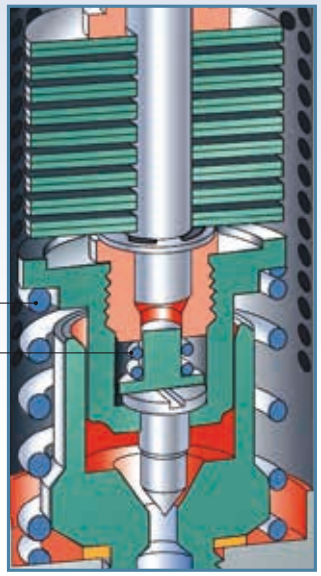
Centering and Soft Closing

The valve is “free floating” inside the valve holder. The valve moves to the center caused by the pressure and the flow of condensate. The tip of the valve is drawn down to the center axis of the valve seat.
A spring and a stop ring inside the control chamber absorbs and softens the movement of the valve (caused by the temperature and pressure of the steam system) towards its seat.
The centering and soft closing characteristics prevents premature or uneven wearing of the valve and its seat, extending the lifetime of the steam trap.

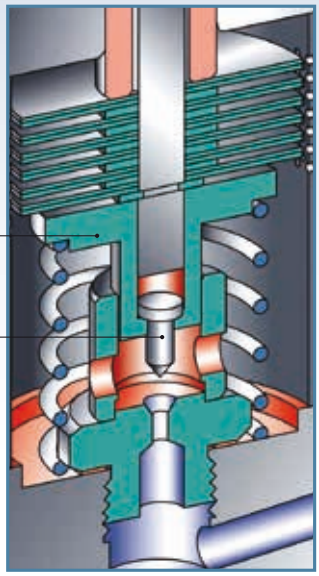
No Steam Loss

The valve closes exactly in the center of the seat at the adjusted temperature, slightly below the saturation temperature assuring Zero steam loss.

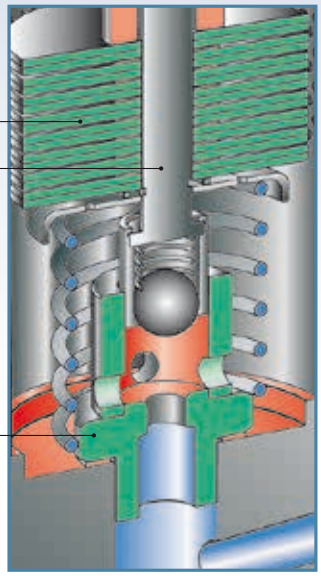
TB51



TB7N



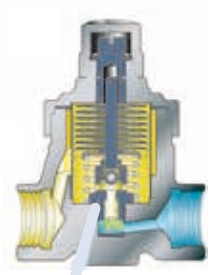
TB9N



1

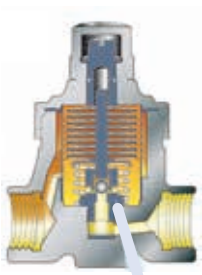
On start-up, the bimetal discs are all flat and the valve shaft is up with the valve fully open. Virtually all cold condensate and air are discharged.

2



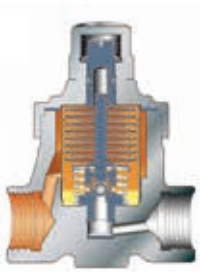
As the temperature of the condensate increases, the bimetal discs begin to curve gradually and force the valve shaft and the valve holder to move down.

3



When condensate with higher temperature (near to set temperature) flows in, the bimetal discs are curved even more and, at the same time, the valve shaft moves down and the valve holder closes the holes in the guide partially.

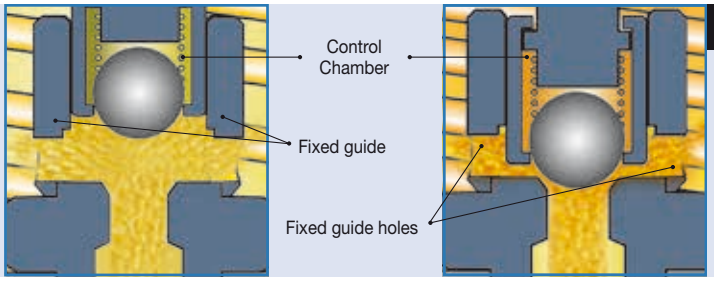
4



In case of very low condensate flow, the holes in the guide are closed completely by the valve holder and the valve will close precisely in the center of the seat. Normally, the trap is filled with hot condensate and the operation will rest in the state shown in figure 3. Condensate will be discharged continuously.

2

Most of the condensate is still discharged quickly, since the valve and the holes in the fixed guide on the valve seat are still fully open.



3

The amount of condensate being discharged is reduced quickly. This prolongs the time that the hot condensate stays near the bimetal discs and the heat of the condensate is transferred to the bimetals much more effectively.