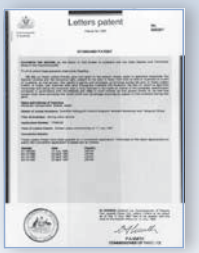
MIYAWAKI-Technology

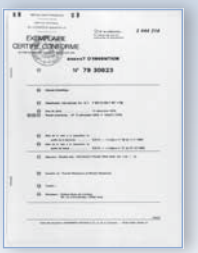
SCCV®-System

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



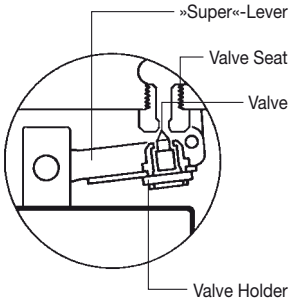


The MIYAWAKI SCCV®-System:
variable adjusted to various types

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

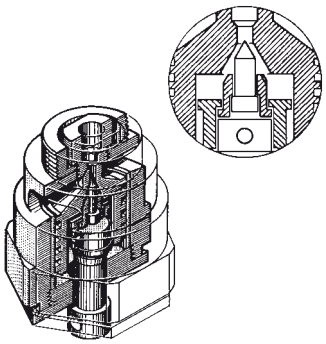
Series ES



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

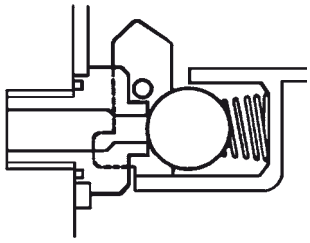
Series ER



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

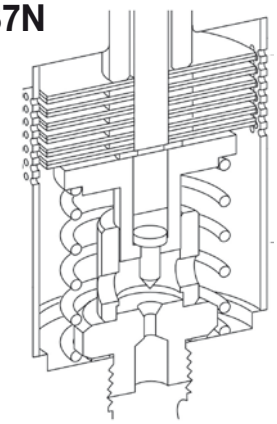
G11N, G12N



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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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.

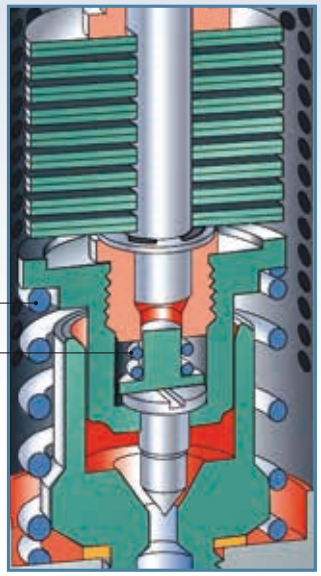
Centering and Soft Closing

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.

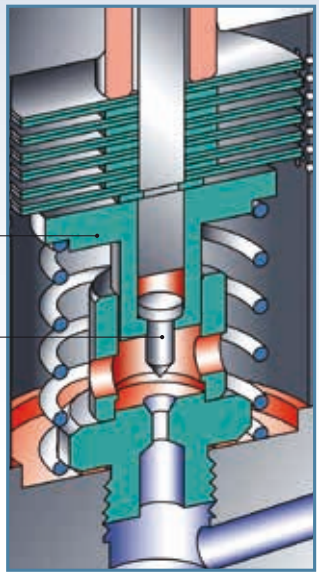
No Steam Loss

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

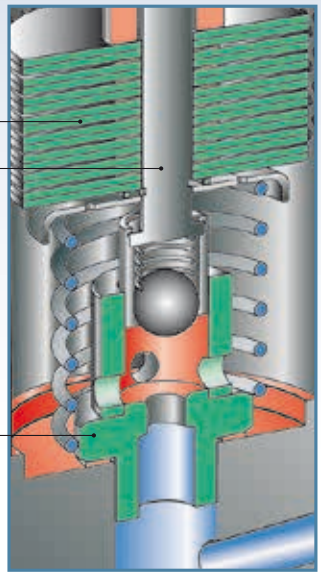
TB51



TB7N



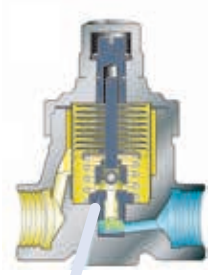
TB9N



1

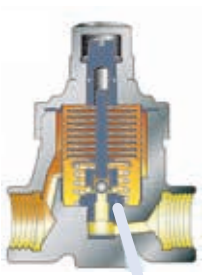
On start-up, the bimetal discs are all flat and the valve shaft is up with the valve fully open. Virtually all cold condensate and air are discharged.

2



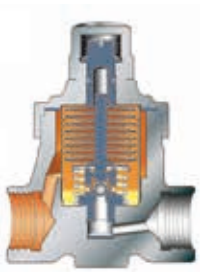
As the temperature of the condensate increases, the bimetal discs begin to curve gradually and force the valve shaft and the valve holder to move down.

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.

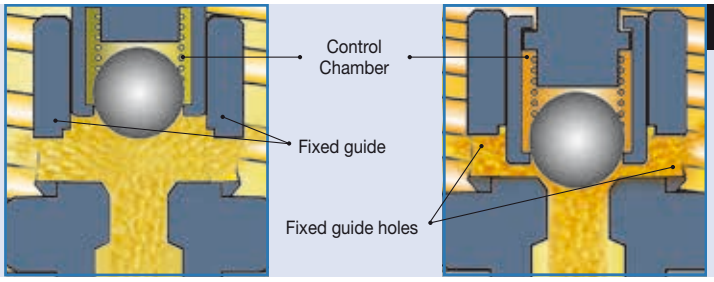
4



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.

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MIYAWAKI专利/自动定心关闭系统：引领世界水准

源自于宫胁独自创新的世界专利自动定心关闭系统（Self Closing & Centering Valve System）自问世以来已经过数十载春秋的验证，充分向各行业客户展示着其优越性，同时被广大客户所接受。其主要特征如下：

1、较之其他类型疏水阀拥有超长的使用寿命。

2、内部零部件阀瓣与阀座之间无片面或是局部过度磨损。

3、由于内部零部件的相互磨损程度大大降低，因此阀瓣与阀座之间的吻合密闭能力得以维持。

4、使用该系统的调温式蒸汽疏水阀绝无原生蒸汽泄露的可能。

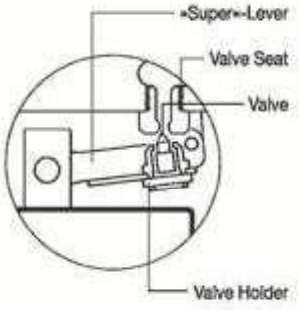


MIYAWAKI专利/自动定心关闭系统：适用于各种类型的蒸汽疏水阀

经过多年的研究与开发宫胁将这独特技术使用于各种不同类型的蒸汽疏水阀之中。使自动定心关闭系统在广泛的压力范围内得以使用，不仅使用于调温式蒸汽疏水阀，同时还使用于倒置桶或浮球类机械式蒸汽疏水阀，使该系统得以在更广泛的条件下使用。

倒置桶机械式蒸汽疏水阀

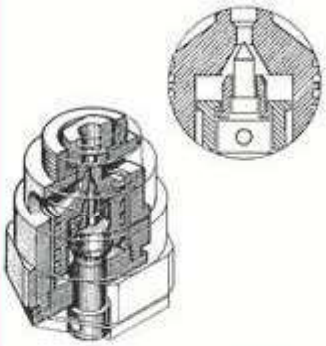
Series ES



夹持器安装于连接杠杆之上与阀座保持对应，阀瓣则可在夹持器内自由移动，在关闭时阀瓣伴随着冷凝水的流出力向阀座靠近并准确定心关闭。

倒置桶机械式蒸汽疏水阀

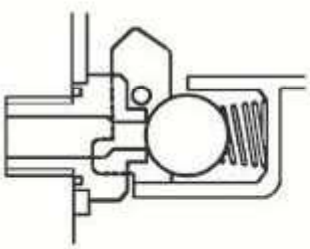
Serie ER



自动定心关闭系统在此安装于双阀座大排量组件内部，减少内部零部件的磨损程度确保大排量蒸汽疏水阀使用寿命延长。

浮球机械式蒸汽疏水阀

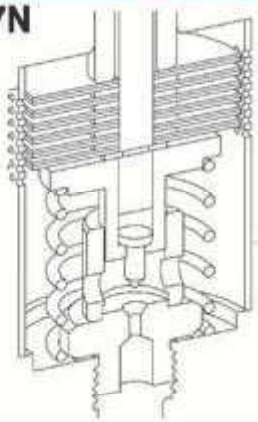
G11N, G12N



可在夹持器内自由游动的球体阀瓣借用弹簧的推力与阀座保持更优越的密封性防止原生蒸汽泄漏。

调温热静力式蒸汽疏水阀

TB7N



调节主杠杆通过双金属片组群的弯曲上下移动带动配置自动定心关闭系统的阀瓣关闭或开启使冷凝水更顺利的被排出。

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基本原理

夹持器内阀瓣自由游动伴随着冷凝水的流出可以准确对应阀座中心。

↓

定心

调节杠杆在双金属片组群感温弯曲并大于弹簧发弹力时带动阀瓣逐渐靠近阀座。

↓

调节

当冷凝水温度超出设定排出温度时调节杠杆下行至使阀瓣与阀座最终吻合保持关闭状态。

↓

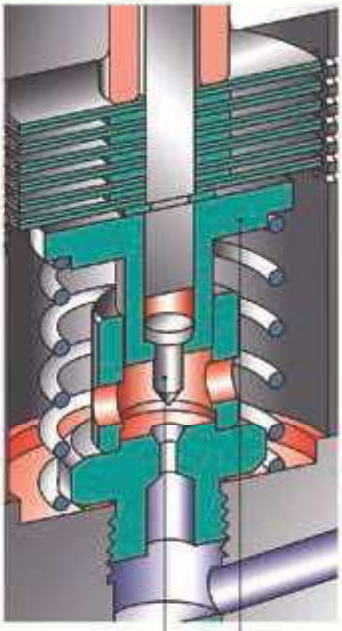
软密闭

↓

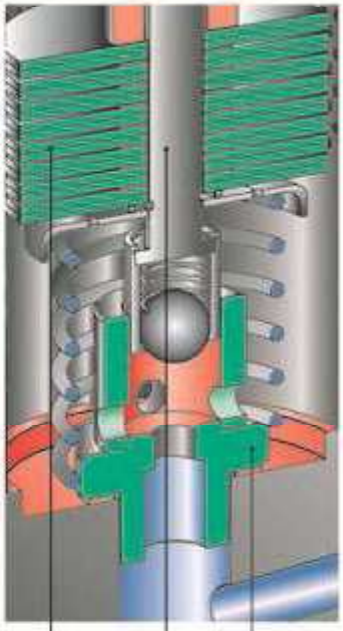
确保无蒸汽泄漏

TB51

TB7N



TB9N

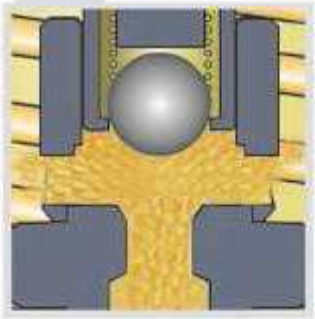


1

在通气初期双金属片呈扁平状态，调节杠杆因下部弹簧的作用力保持提升状态。此时阀瓣与阀座完全分离维持开启状态，低温冷凝水及非凝缩空气等迅速被排出。

2

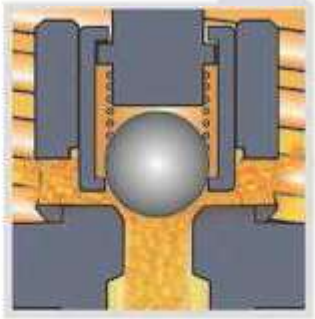
伴随着冷凝水的温度上升，双金属片开始弯曲带动调节杠杆向阀座靠近。



此时导杆侧面的排水孔已完全被打开，将大量冷凝水排出。

3

冷凝水温度逐渐超出排出设定温度时双金属片更加弯曲使阀瓣与阀座之间呈微开启状态。



闭阀前抑制了超过设定温度的冷凝水的排出，将其长时间地保留在本体内部，与以前相比能将冷凝水的热量有效地传递到双金属片上促进闭阀作动。

4

当达到设定温度时则阀瓣与阀座完全密封结合保持关闭状态。以后维持（2）的状态或是重复（2）与（3）的工作状态。