



# About MIYAWAKI

75 years of experience and technical know-how



## MIYAWAKI

MIYAWAKI – a leading Japanese manufacturer of steam traps and other equipment for steam and condensate systems was established in Osaka, Japan in 1933.



## Key Focus Areas

Engineering, manufacturing and distribution of steam traps, steam pressure reducing valves, air traps, air vents and ancillary equipment for steam and condensate lines.

## MIYAWAKI's Mission

„MIYAWAKI's mission is to promote the ideas of energy saving and environmental protection, to fulfill the deliveries of its products with a high rate of reliability, and to provide a high level of technical support for each transaction.



Kensuke Miyawaki,  
president of MIYAWAKI Inc.

Reducing the consumption of energy in the form of steam is an extremely important energy saving policy goal of every modern industrial enterprise. Steam traps are able to play an important role in this process, because by improving the organisation of steam handling and collection, they can reduce up to 40% of the steam loss which is not caused by manufacturing, thus making such equipment very effective and necessary for steam and condensate systems.

We have every confidence that the high quality of MIYAWAKI products will enable our customers to save energy and to meet their financial goals.“

## Basis for success

- Advanced manufacturing technology
- Permanent innovations
- Sophisticated engineering solutions
- High-grade materials
- Highly qualified and experienced work force
- Consistently excellent quality of the products

## Saving Energy Ressources

MIYAWAKI's equipment increases **the efficiency of the manufacturing processes** thanks to:

- Build-up of safety and durability of steam tracing and steam mains
- Stabilization and exact maintenance of the thermal conditions
- Elimination of waterhammer effects through on-time and complete condensate discharge
- Reduction of erosion and corrosion

and helps **to save energy** due to

- Elimination of steam loss
- Reduction of flash steam
- Improvement of the complete steam and condensate handling

## Return On Investment

According to our experiences the pay-off period lasts from 2 months to one year depending on the local circumstances and the technical conditions of steam tracing and steam mains.

## Our Client Base

Leading oil-refineries and chemical plants all around the world are equipped with MIYAWAKI steam traps. Some of them are:

<b>RUSSIA:</b>	Lukoil-Perm-Nefteorgsintez LLC, JSC Kazanorgsintez, JSC Azot Novomoskovsk
<b>UKRAINE:</b>	JSC AZOT, Cherkasy, Lisichansk Oil Refinery (TNK-BP Commerce LLC), CJSC Makeevskij metallurgicheskij zavod
<b>BELARUS:</b>	JSC Mogilevkhimvolokno, JSC Mozyr Oil Refinery, JSC Grodno Azot
<b>KAZAKHSTAN:</b>	JS CNPC-International Aktobe Petroleum (Zhanazhol Gas Processing plant)
<b>TURKMENISTAN:</b>	Turkmenbashinskii Oil Refinery
<b>POLAND:</b>	PKN ORLEN SA
<b>GERMANY:</b>	BASF SE, Ludwigshafen, PCK Schwedt
<b>CHINA:</b>	Exxon Mobil Corporation
<b>JAPAN:</b>	Nippon Oil Corporation, Idemitsu Kosan Co. Ltd., Cosmo Oil Co. Ltd.
<b>SINGAPORE:</b>	SINGAPORE REFINING Co. Pte. Ltd., Mitsui Phenol Singapore Pte. Ltd.
<b>SHANGHAI:</b>	Jinling Petrochemical Company, Yangzi Petrochemical Company, Shanghai Petrochemical Co. Ltd.

\* The complete reference list is available on request.

# About MIYAWAKI

## Success Story

### Our history

MIYAWAKI opened its doors in 1933 and began designing steam traps for industrial use. In 1949, after extensive experiments and tests, MIYAWAKI developed an entirely new type of steam trap, with a „Duplex“-type valve, a double-ported valve operating by the pressure differential to increase discharging capacity.

In the following years, the design was further refined and sales soared to the point where, by 1953, MIYAWAKI Steam Trap Manufacturing Co., Ltd. was able to incorporate. Along with the development and sales of products other than steam traps, the name changed to MIYAWAKI Inc. in April 1986.

To emphasize the growing international activities of MIYAWAKI Inc., the subsidiary company MIYAWAKI GmbH was established in Germany in June 1991. In the 1990s, the network of sales representatives around the world was enlarged considerably.

MIYAWAKI is operating today on a worldwide scale with customers and representatives situated not only in Japan, but also in Asia, Europe and America.

### Principles Of Work

MIYAWAKI offers through its official representatives the following services:

- Project evaluation and consultation concerning modernization of steam tracing and steam main lines.
- Steam trap checking and compilation of detailed reports about the results of the survey.
- Selection of optimum equipment for each technological position
- Assistance in installation of MIYAWAKI's delivered equipment
- Prompt warranty and postwarranty services
- Training and technical seminars

### Participation in exhibitions

MIYAWAKI and its representatives participate in many international exhibitions on a regular basis.



## Certificates

ISO 9001-2000

ISO 14001-2004

European Directive 97/23/EC

GOST-R

Rostekhnadzor Permit



# MIYAWAKI-Technology – SCCV®-System

## The Key to MIYAWAKI's success – Self Closing and Centering Valve

The Self Closing and Centering Valve SCCV®-System is a unique technology developed by specialists of MIYAWAKI. Most of the MIYAWAKI products are equipped with the internationally patented SCCV®-System. Its high reliability and effectiveness is proven over more than three decades. The constant improvement and integration of the SCCV®-System into new products ensures MIYAWAKI's technological lead over competitors.

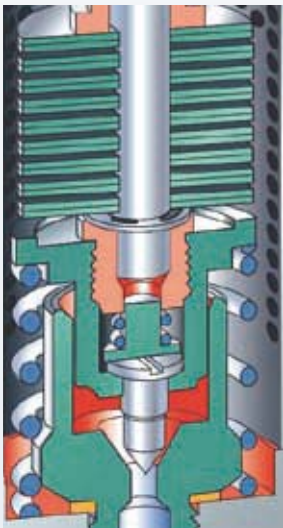
## Main Advantages of MIYAWAKI's Technology

- a substantially longer life compared with steam traps of other manufacturers
- no partial or one-sided precipitate wear of valve and seat
- considerably reduced wear of all internal parts due to the reduction of the closing forces
- no steam loss

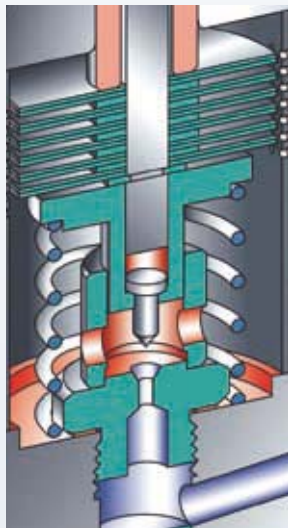
## Unique characteristics

The key to the uniqueness of the SCCV®-System is a „Free Floating“ valve inside the valve holder – what ensures the precise closing of the valve in the center of the seat.

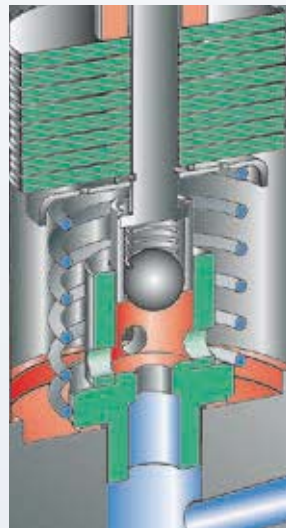
Intensive research and development activities over many years have enabled MIYAWAKI to incorporate the SCCV®-System in various types of steam traps. Thus it became possible to adopt the SCCV®-System not only for bimetal steam traps, but also for inverted bucket and float type steam traps.



TB51



TB7



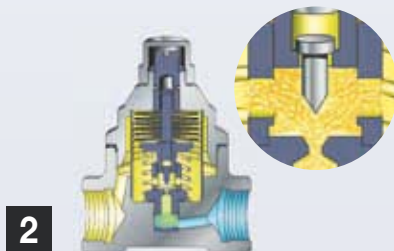
TB9

- All steam traps of the series TB are equipped with SCCV®-System
- The SCCV®-System is internationally patented

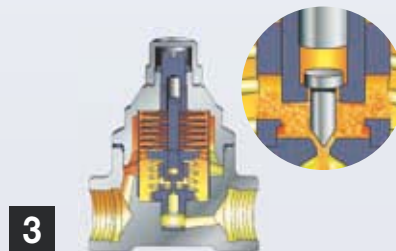
## Operating principle



1



2



3

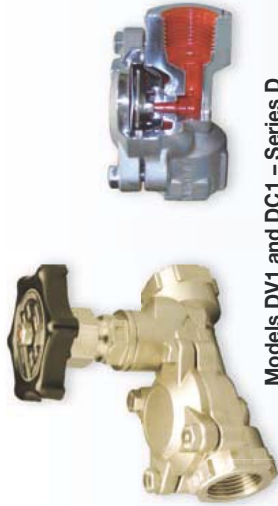


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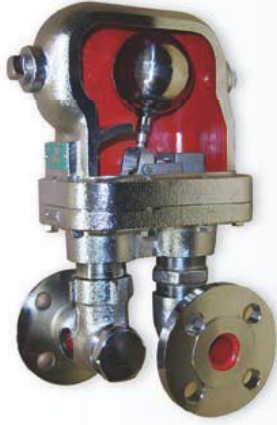
- 1 On start-up, the bimetal discs are all flat and the valve shaft is up with the valve fully open. Virtually all cold condensate and air are discharged.
- 2 As the temperature of the condensate increases, the bimetal discs begin to curve gradually and force the valve shaft and the valve holder to move down. 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 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. 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 bimetal discs much more effectively.
- 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.

# MIYAWAKI's product range



Models DV1 and DC1 - Series D



Model GH2 - Series G



Model TB51 - Series TB



Model GC20 - Series G



Models SC31 and SU2N - Series S

## Steam Traps

The key focus area of MIYAWAKI Inc. is the manufacturing of steam traps. MIYAWAKI produces all models and types of steam traps: from traditional thermodynamic, thermostatic and float (inverted bucket and ball float) steam traps to advanced in a technical and economical sense temperature control thermostatic steam traps.

The wide range of steam traps produced helps to find the most suitable solution for the customer. All models and connection sizes are available according to JIS, ANSI and DIN standards.

### Thermostatic Steam Traps

Temperature Control Steam Traps, **Series TB**, DN10 - DN25, PN40 - PN250. Discharge the condensate according to the adjusted temperature. Not influenced by inlet pressure changes. Operate on the

temperature change of the steam and condensate inside the steam trap. By regulating the lift of the shaft connected with the bimetal, the discharge temperature can be adjusted manually (optional under-cooling).

Balanced Pressure Thermostatic Steam Traps, **Series D**, DN15 - DN25, PN40. Discharge hot condensate at 5°C or 15°C (depending on the capsule) below the saturation temperature at a given pressure caused by the change of the aggregative state of a special liquid in a capsule. Very high flow capacity and compact design.

Thermostatic Radiator Steam Traps, **Series W**, DN15 - DN20, PN16. Discharge condensate with constant temperature independently of pressure changes thanks to the reaction of a special thermoelement. The opening temperature of the valve is preset.

## Thermostatic Temperature Control Steam Traps series TB – the most effective solution for drainage of steam tracing and steam mains.

MIYAWAKI is a worldwide leader in the production of the temperature control thermostatic steam traps.

### Reduction of steam consumption

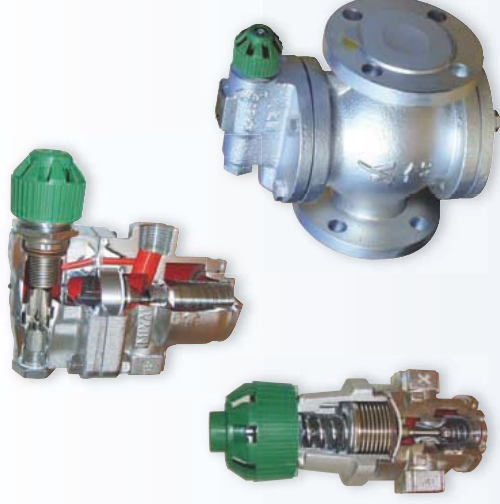
▲ up-to 10 - 20%	in case of steam mains
▲ up-to 50%	in case of steam tracing

### Operating principle:

Temperature control steam traps discharge condensate at a given temperature independently of the pressure changes and thus differ from other types of thermostatic steam traps, which follow the steam saturation curve. The discharge of undercooled condensate enables sensible heat savings and flash steam reduction. The max. effect of the exploitation of series TB steam traps occurs when they are installed in steam main lines and steam tracing with a specific condensate undercooling.



All models of series TB	
-	are equipped with integral strainer
-	are equipped with SCCV® System
-	100% elimination of steam loss
-	are easily maintained



Models RE1, RE3 and RE10N - Series RE

## Steam Pressure Reducing Valves (PRV)

Direct Acting PRV, **Series RE1, RE2, RE3**, DN10 - DN25, PN16. Max. Steam Flow: 450 kg/h. Very compact. Easy adjustment and accurate operation. Body material: brass or stainless steel.

Pilot Operated PRV, **Series RE3, RE10N**, DN15-50, PN16. Max. Steam Flow: 3200 kg/h. Compact, easy adjustment and accurate operation. Body material: brass or ductile cast iron.

## Ancillary Equipment

Air vents, sight glasses, strainers, separators, check valves, blow-down valves, anti-freezing valves, water guns.

## Ball Float Steam Traps

Ball Float Steam Traps, **Series G**, DN15 - DN100, PN16 - PN40. Ensure immediate discharge of condensate. In-built air vent for venting air and gases at the time of start-up and for preventing air locks.

Inverted Bucket Steam Traps, **Series E**, DN15 - DN65, PN16 - PN63. Immediate condensate discharge. Withstands high back pressure (up to 90%). Resistant to waterhammers.

## Thermodynamic Steam Traps

Thermodynamic Steam Traps, **Series S**, DN8 - DN50, PN16 - PN100. Immediate discharge of condensate. Equipped with bimetal ring for a quick discharge of air and cold condensate. Easy maintenance.

## Air Traps

Air Traps, **Series A**, DN15 - DN50, PN16 - PN40. Air Traps for quick discharge of condensate from air and gas piping.

# Steam Trap Survey Assistant Dr. Trap® Jr.

In matters of energy saving it's in a class of its own.



PC-based Survey Assistant Dr. Trap® Jr. designed for a quick and comprehensive check of steam traps and of other related equipment.

## Dr. Trap® Jr. consists of:

- Steam Trap Ultrasonic checker **PM 11**
- Software **SurveyPro Light PM150**

## Steam Trap Ultrasonic Checker PM 11

- Display of vibration and temperature at the same time
- One key operation for all functions
- Long battery life – 40 hours or more of continuous use, automatic power shut off after 5 minutes of idle time.
- As additional function the checker includes a stopwatch – useful for monitoring the periodic characteristics of vibrations.
- Determination and display of the pressure of the saturated steam corresponding to the temperature measured. Useful for testing not only steam traps, but also steam valves.
- Compact, lightweight and easy to carry



Testing equipment for steam traps and other related equipment

## Software SurveyPro Light PM150

- Analysis of the vibration level
- Evaluation of steam leaks
- Calculation of the steam loss and the related financial losses resulting from faulty steam traps
- Display of trap lists showing the status of all measured steam traps by type and by manufacturer.
- Contains the data of steam traps of all main manufacturers. The list of steam traps can be extended by new types and manufacturers.
- Compilation and display of summaries and graphs
- Comparison with former surveys is possible – allows conclusions about the quality and life time of different types of steam traps.



Compiles the list of the checked equipment

**Also available: Advanced Steam Trap Management System Dr. Trap®.**

**Regular check of the steam traps – Guarantee for an effective energy saving policy!**

# Contacts

## Head office



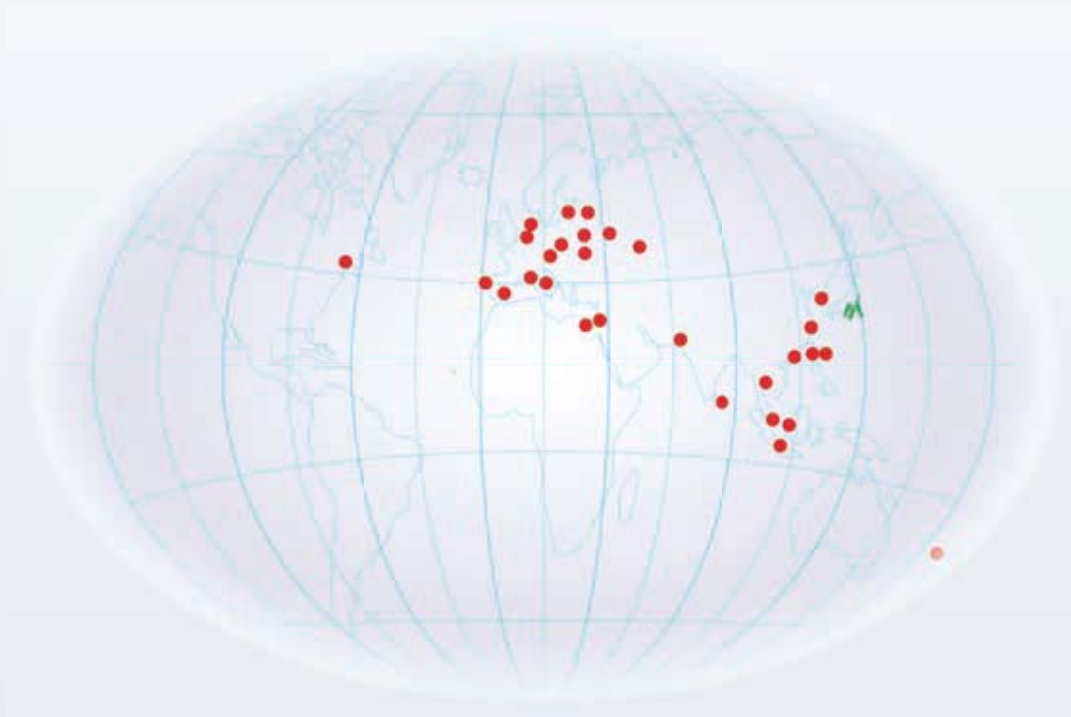
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## Representatives of MIYAWAKI



**Welcome to cooperation!**

