AYVAZ

INDUSTRIAL SOLUTIONS

HYGIENIC APPLICATIONS

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HYGIENIC APPLICATIONS

Nowadays; products manufactured in industries should be high quality and low cost. To reduce the cost, instead of reducing the quality of the material used in the product; it is necessary to reduce energy losses in the process.

Reducing energy losses is possible by transferring energy in a correct and efficient way. This method is the correct product selection.

Ayvaz can lead your energy with steam traps, blowdown systems, energy recovery & deaerators, steam condensate level controllers, hygienic steam applications and isolation materials.

In food, beverage, pharmatacual, medical or any other industries, energy efficiency can be 25-30% higher according to application investments with low redemption times.

In this case pure & hygienic steam getting more important. Trapping steam and more heat usage depends on the correct steam equipment selection. Althought steam traps look simple and small, their mission is very complex.

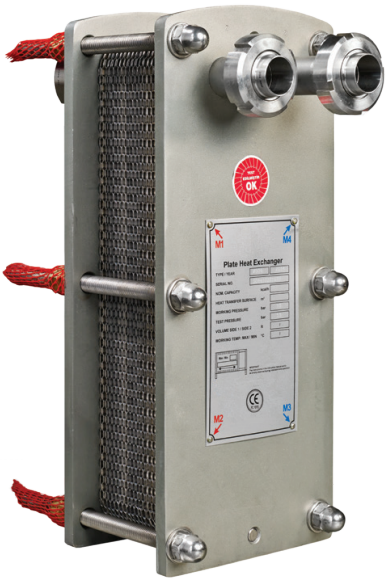
Saving more energy is related to the right chosen steam equipment and sizes. Working principles should be known well for choosing the right steam equipment for the process.

As Ayvaz, we are working for produce best quality steam equipment in our factory in Istanbul in order to help our customers and the users to get the most efficiency from their steam systems.

We aimed to explain our audit experiences and technical knowledge to partners and introduce different type of steam applications and all related products with details in this catalogue.

STAINLESS STEEL HEAT EXCHANGERS

The difference of food plate heat exchangers from other heat exchangers is their hygienic nature in terms of their bodies and all surfaces in contact with food are produced as stainless. In addition, the gaskets have FDA (food conformity) certificate.



Usage Areas

- Milk Heating and Cooling
- Pasteurisers
- Juice Pasteurisers
- Cream Cooling
- Brine Heating and Cooling
- Whey Processing

HYGIENIC STEAM TRAPS

HTT-6 HYGIENIC THERMOSTATIC STEAM TRAP

The hygienic thermostatic steam trap is designed to remove condensate from clean and pure steam applications such as CIP/SIP, sterile steam barriers, direct hygienic steam usage, reactors and process lines.

PRODUCT FEATURES

Body and Coupling	Stainless Steel AISI 316L
Seat - Gasket	PTFE, Teflon
Thermosatic Capsule Connections	Hastelloy - Stainless Steel Socket

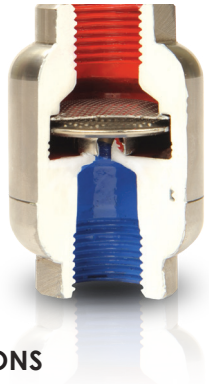
APPLICATION AREAS

Hygienic Applications
Food and Beverage Industries

OPERATING CONDITIONS

Max. Operating Pressure (PMO)	6 bar
Max. Operating Temperature (TMO)	165°C

TKK-41/42 THERMOSTATIC STEAM TRAP / AIR RELEASER



PRODUCT FEATURES

Body	Stainless Steel AISI 304 (316 OPT.)
Thermostatic Capsule	Hastelloy
Strainer, Seat	Stainless Steel AISI 304
Connection Types	Threaded

APPLICATION AREAS

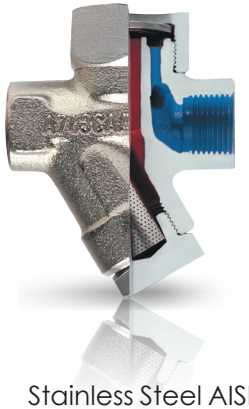
Convector Heaters
Heaters
Steam Jacket Pipelines
Drying Units
Pressing Units

OPERATING CONDITIONS

Max. Operating Pressure (PMO) 45 bar
Max. Operating Temperature (TMO) 250°C

HYGIENIC STEAM TRAPS

TDK-71 THERMODYNAMIC STEAM TRAP



PRODUCT FEATURES

Body	Stainless Steel AISI 304
Cover	Stainless Steel AISI 304
Strainer, Disc, Seat	Stainless Steel AISI 304
Connection Types	Threaded

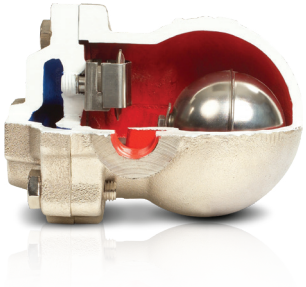
APPLICATION AREAS

Main Steam Lines Turbines
Marine Applications Presses
Irons

OPERATING CONDITIONS

Max. Operating Pressure (PMO)	Stainless Steel AISI 304
Body Pressure Class	Stainless Steel AISI 304
Max. Operating Temperature (TMO)	400°C

SK-61 FLOAT TYPE STEAM TRAP



APPLICATION AREAS

Tanks, pans, heat exchangers, drying cylinders, ovens

PRODUCT FEATURES

Body and Cover	Stainless Steel AISI 316
Internals and float	Stainless Steel
Connection Types	Flanged and threaded

OPERATING CONDITIONS

Max. Operating Pressure	(PMO) 25 bar
Max. Operating Temperature	(TMO) 250°C
Max. Differential Pressure	(ΔP) 4,5-10-14

HYGIENIC STEAM TRAPS

SK-61C FLOAT TYPE STEAM TRAP WITH SIGHT GLASS

PRODUCT FEATURES

Body and Coupling	Stainless Steel AISI 316
Internals and Float	Stainless Steel
Connection Types	Flanged and Threaded

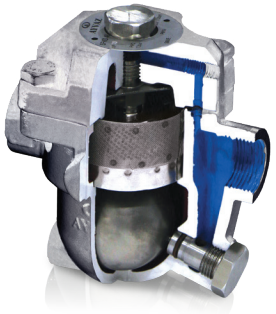
APPLICATION AREAS

Tanks, pans, heat exchangers, ovens, drying cylinders

OPERATING CONDITIONS

Max. Operating Pressure (PMO)	25 bar
Max. Operating Temperature (TMO)	250°C
Max. Differential Pressure (ΔP)	4,5-10-14

SFK-61 FLOAT TYPE STEAM TRAP FLOATING BALL



PRODUCT FEATURES

Body and Coupling	Stainless Steel AISI 316
Internals and Float	Stainless Steel
Connection Types	Flanged and Threaded

APPLICATION AREAS

Tanks, pans, heat exchangers, ovens, drying cylinders

OPERATING CONDITIONS

Max. Operating Pressure (PMO)	25 bar
Max. Operating Temperature (TMO)	250°C
Max. Differential Pressure (ΔP)	4,5-10-14

HYGIENIC STEAM GENERATORS

VERTICAL TYPE HYGIENIC STEAM GENERATORS

SIZE	300	500	750	1000	1500	2000	3000
POWER							
Steam Power (kg/h)	300	500	750	1000	1500	2000	3000
Heat Output (kW)	203	338	508	676	1014	1352	2028
Consumption kg/h	360	600	900	1200	1800	2400	3600
DIMENSIONS							
Height A (mm)	2450	2450	2450	2450	2800	2800	2800
Width B (mm)	1230	1230	1230	1230	1480	1480	1480
Depth (C mm)	780	780	780	780	1180	1180	1180
Weight (kg)	350	380	400	500	750	800	950
CONNECTIONS							
electrical (kW)	0,75	0,75	0,75	0,75	0,75	0,75	0,75
Pure Steam (DN)	40	50	65	80	100	125	150
Primary Steam (DN)	25	32	32	40	50	65	80
Condensate (DN)	32	32	32	40	50	50	65
Water In (DN)	15	15	15	15	25	25	25
Drain (DN)	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

This clean steam converter generates clean steam in accordance with EN285, optimized for the supply of sterilizers and ventilation systems.

After it has been preheated in the feed water preheater by the condensate, the demineralized water is led into the thermal high-temperature degasser.

HYGIENIC STEAM GENERATORS

There, the feed water is further heated by pure steam and degassed in countercurrent with high efficiency. Three stages ensure safe and efficient separation of the non-condensable gases.

There is a calming section in the lower area of the degassing. The degassed water is fed into the separator tank with the plate heat exchanger. The pure steam is generated in the plate heat exchanger by means of heating steam.

Before the pure steam is fed into the pure steam line, it flows through a highly effective steam conditioning system that optimally processes the pure steam.

ADVANTAGES OF VERTICAL HYGIENIC STEAM GENERATOR

- The use of plate heat exchangers leads to a very compact and cost-saving plant concept.
- The vertical design and assembly of the heat exchanger in the blow-down-valve saves space.
- The specially designed control equipment enables precise function of steam generator.
- The thermal degassing unit is separated from the clean steam through well proved separation units. Pressure- and load fluctuations do not affect the efficiency of the degassing unit.
- An additional steam conditioning unit improves the quality of the produced clean steam.
- The especially for this plants produced feedback control offers a fast reacting function.
- The also integrated feeding water heat unit / raw condensate cooling unit improves the thermal efficiency and decreases the amount of raw steam needed, approx. 15 %.
- The alternate offered DUPLEX-concept gives best breakdown reliability and the possibility of an over boost operation.

HYGIENIC STEAM GENERATORS

When “Steam Cleaning” is mentioned, it is often referred to as “Hygienic Steam” rather than system steam.

This is usually divided into 4 different categories:

System Steam - FDA approved standard boiler chemicals are used in a typical conventional water treatment and inside the steam generated boiler. The tubing is standard carbon steel or even black pipe can be cast iron. All the condensate is recovered.

Filtered Steam - Steam, which is generated by conventional boiler, is filtered to remove condensate and solid particles. FDA approved chemicals used in standard boilers. If the pipe is a standard carbon steel or black iron, it must be replaced with 316 Stainless Steel. All the condensate is recovered.

Hygienic Steam - is not include any addiction (boiler chemicals etc.) and iyonized or produced by reverse osmosis systems. All materials, components and pipes are 316 L Stainless Steel. Rarely recovered condensate is typically sent to a settling tank and then it is for water purification.

Pure Water - is not include any addiction (boiler chemicals etc.) and which is production of pure water. All materials, components and pipes are 316 L Stainless Steel.

HYGIENIC STEAM GENERATORS

Steam system is perfect for heat transfer application for petrochemicals, pulp mill and paper industries.

Food companies should use filtered steam at a minimum level or use hygienic steam to remove the risk of contamination.

Pure steam is the highest grade choice and is required for pharmaceutical and biotechnological applications.

Hygienically and pure steam; It is used for sterilization, vacuuming, humidification and heating processes in food, pharmaceutical, cosmetic and hospital establishments. Since steam used in these processes must meet the hygiene norms, hygienically steam generation is provided by second hygienically steam generators which are suitable for sterile steam conditions.

Steam Purity Range	Steam Application Area
Pure	Pharmaceutical Industry
	Biotechnology
Clean	Hospital
	Cosmetic
	Food & Beverage
Filtered	Food & Beverage
Plant	Hvac
	Textile
	Petrochemical

System is perfect for heat transfer application for petrochemicals, pulp mill and paper industries. Food companies should use filtered steam at a minimum level or use hygienic steam to remove the risk of contamination. Pure steam is the highest grade choice and is required for pharmaceutical and biotechnological applications.

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HYGIENIC EXPANSION JOINTS

METAL BELLOWS EXPANSION JOINTS

AXIAL EXPANSION JOINTS

APPLICATION AREAS

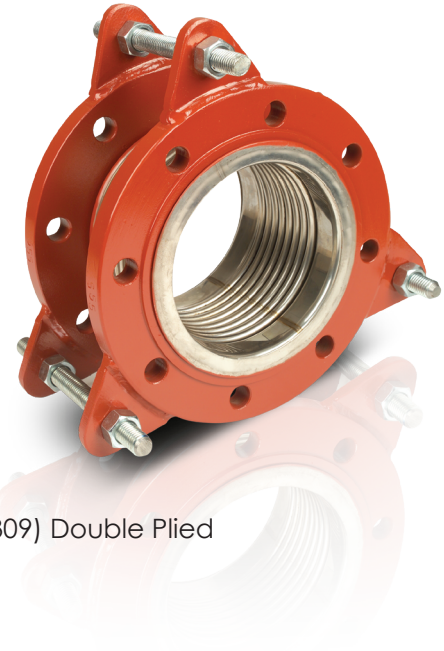
Hot and cold water systems
Steam and gas media related systems
Oil transporting lines
Pressured systems
Pumps, motors, machines

PRODUCT FEATURES

Bellow Material	Stainless Steel AISI 321 (Opt. 304, 316L, 316TI, 309)
Nominal Diameter	DN25 (1/2") - DN5000 (200")
Operating Pressure	PN 2,5/6/16/25/40/64
Operating Temperature	-10°C/+550°C
Connection Types	Fixed and Floating Flanged and Welded Ended
Flange Material	Carbon Steel St. 37.2 as standard, the material can be customized on request
Optional	Inner Sleeve Stainless Steel AISI 321 (Opt. 304, 316L, 316TI, 309)
Certificate	PED 2014 / 68 / EU Cat.III Mod. H

* Higher operating pressure is subject to special design and manufacturing.
Please contact our sales team.

HYGIENIC EXPANSION JOINTS



METAL BELLOWS EXPANSION JOINTS
VIBRATION ABSORBER EXPANSION JOINTS WITH TIE ROD

APPLICATION AREAS
Vibration absorption of rotating elements
Pressured systems
Pumps, motors, machines, compressors
Pressured systems
Industrial pipeline construction
Gas and water supply

PRODUCT FEATURES

Bellow Material	Stainless Steel AISI 321 (Opt. 304, 316L, 316TI, 309) Double Plied
Nominal Diameter	DN25 (1/2") - DN5000 (200")
Operating Pressure	PN 2,5/6/16/25/40/64
Operating Temperature	-10°C/+550°C
Connection Types	Fixed Flanged
Flange Material	Carbon Steel St. 37.2 as standard, the material can be customized on request
Tie Rod Material	Carbon Steel St. 37.2 as standard, the material can be customized on request
Certificate	PED 2014 / 68 / EU Cat.III Mod. H

* Higher operating pressure is subject to special design and manufacturing.
Please contact our sales team.

HYGIENIC FLEXIBLE METAL HOSES

INDUSTRIAL HOSES

BRAIDED AND NON-BRAIDED HOSES WITH FITTINGS

APPLICATION AREAS

Heating, air conditioning and ventilation applications
Chemical and petrochemical plants
Oil and gas processing
Ship building and drilling
Food processing

PRODUCT FEATURES

Hose Type	Standard corrugated metal hose
Hose Material	Stainless Steel AISI 316L - AISI 321
Braiding Material	Stainless Steel AISI 304
Fittings Types	Flange,Welded ends, Threaded
Fittings Materials	Carbon Steel St. 37.2 / Stainless Steel (Optional)

DIN EN ANSI ISO

* Please contact our sales team for hose lengths and connections

HYGIENIC LEVEL CONTROL

LEVEL ELECTRODES
ELK-4/ELK-4F

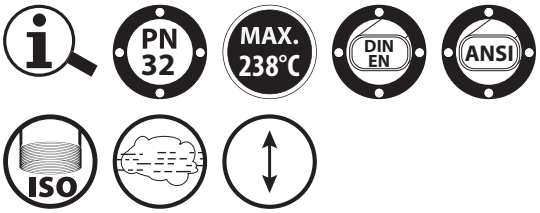
APPLICATION AREAS
Steam boilers
Supply tanks
Chemical applications
Marine application

OPERATING CONDITIONS

Main Power Supply	230V ± 10%,50-60 Hz 115V±10%,50-60 Hz 24V±10%,50-60 Hz
Power Consumption	5 VA
Fuse	Thermal fuse Tmax=115°C
Precision	Degree 1: 10µS Degree 2: 0.5µS
Output	3 Volt-free relay contact (dry)

PRODUCT FEATURES

Box Panel	Aluminium Injection
Body	Stainless Steel 1.4517
Flange	Forged Steel 1.0460
Electrodes	Stainless Steel 1.4517
Electrode Insulation	PTFE
Intermediate Disc	PTFE
Connections	Flanged and threaded
Max. Operating Pressure	32 bar
Max. Operating Temperature	238°C



DIMENSIONS		
ELK4 (Threaded) DIN ISO 228/1	ELK 4F (Flanged) PN 40, DIN 2635	Length (mm)
1"	DN50	500 1000 1500

HYGIENIC LEVEL CONTROL

LEVEL ELECTRODES

KP-01 CAPACITIVE LEVEL ELECTRODE

APPLICATION AREAS

Steam boilers
Supply tanks
Concrete tanks
Plastic tanks
Marine applications

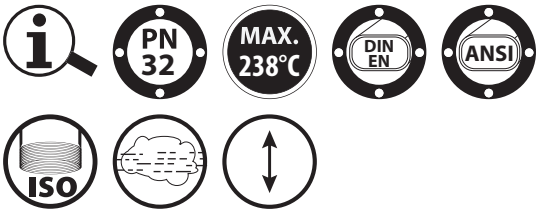
PRODUCT FEATURES

Body	Stainless Steel 1.4517
Box Panel	Aluminium Injection
Flange	Forged Steel 1.0460
Electrodes	Stainless Steel 1.4517
Electrode Insulation	PTFE
Intermediate Disc	PTFE
Connections	Flanged and threaded
Max. Operating Pressure	32 bar
Max. Operating Temperature	238°C

OPERATING CONDITIONS

Main Power Supply	230V ± 10%,50-60 Hz 24V±10%,50-60 Hz
Power Consumption	5 VA
Fuse	Thermal fuse Tmax=115°C
Precision	Degree 1:Water ≥0.5µS/cm Degree 2:Water ≥20µS/cm Degree 3:Fuel Oil εr 2.3
Output	4-20 m Analog Proportional

* Please contact our sales team for our bigger lengths.



DIMENSIONS		
KP01 (Threaded) DIN ISO 228/1	KP01-F (Flanged) PN 40,DIN 2635	Length (mm)
3/4"	DN50	300 all sizes are available in between 2000

HYGIENIC LEVEL CONTROL

LEVEL GAUGES

MG-33 MAGNETIC LEVEL GAUGE

APPLICATION AREAS

Steam boilers
All liquid tanks
Chemical industry
LPG tanks, underground tanks
Marine applications

PRODUCT FEATURES

Body	Stainless Steel AISI 316
Float	Stainless Steel AISI 316L
Magnetic Disc	Plastic
Flange Material	Carbon Steel St. 37.2 (Opt. Stainless Steel)
Connections	Flange
Max. Operating Pressure	16 bar
Max. Permissible Temperature	160°C
Contact Signal	Yes
Drain Plug	3/4"

DIMENSIONS	
MG-33 (Flanged) PN 16	Length (mm)
DN15 DN20 DN25	300 all sizes are available in between 5000

* Please contact our sales team for our bigger lengths.

HYGIENIC LEVEL CONTROL

FLOAT SWITCHES

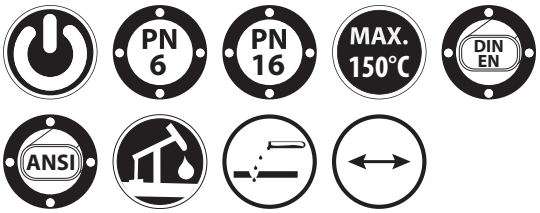
C-4 FLOAT SWITCH

APPLICATION AREAS

Water storage tanks
Waste water tanks
Shipbuilding
Fuel tanks
Small boilers
Condensate tanks
Chemical storage vessels

PRODUCT FEATURES

Float	Stainless Steel AISI 316L
Connections	Square Flange
Flange Material	Carbon Steel St. 37.2/Stainless Steel
Shaft	Aluminium Injection
Micro switches	16A (Normally open or closed)
Max. Operating Pressure	6/16 bar
Max. Operating Temperature	-20/+150°C



DIMENSIONS	
C-4 Square Flange (mm)	Length (mm)
94x94x15	From flange to the end of the float 250 mm

HYGIENIC STEAM SEPERATORS

STEAM SEPERATOR
SPR-16/25/40

APPLICATION AREAS
Steam lines
Gas applications

PRODUCT FEATURES

Body	Carbon Steel / Stainless Steel (Optional)
Internals	Stainless Steel AISI 304
Connections	Flanged

OPERATING CONDITIONS

Max. Operating Pressure (PMO)	16/25/40 bar
Max. Operating Temperature (TMO)	200°C

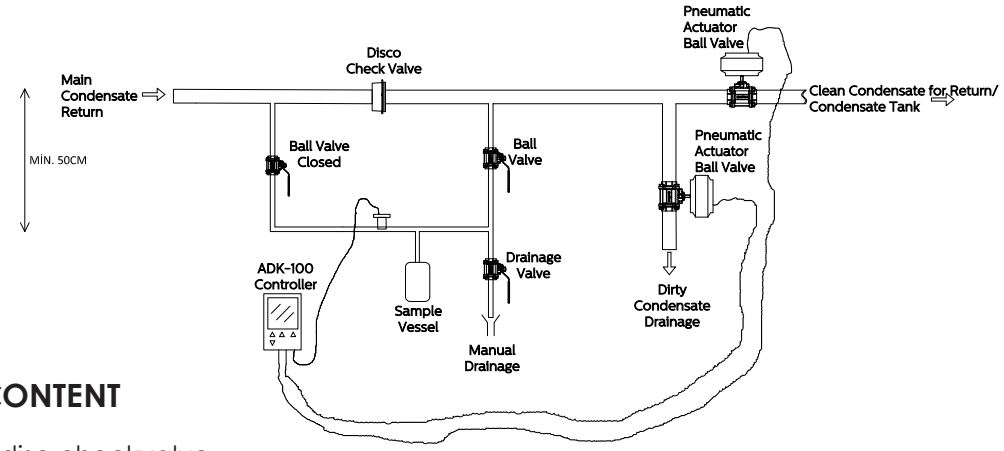
DIMENSIONS		
PN	FLANGED (DN)	THREADED (inch)
16	15 20 25 32 40	1/2"
25	50 65	3/4"
40	80 100 125 150 200	1"

CONDENSATE POLLUTION CONTROL

This system, which is located at the entrance of the condensate tank, continuously measures the electrical conductivity of the condensate water. The conductivity measurement probe value is transmitted at the system control value. The controller compares the set conductivity value with the set value. When the set value is exceeded, the discharge valve opens and the condensate is discharged.

When the electric conductivity value is lower than the set value, the discharge valve closes and the condensate tank line is opened. It is sent to the condensate tank.

Since the electrical conductivity varies with temperature, the conductivity probe used in the system must be able to measure the conductivity at the temperature together with the conductivity so that the conductivity of the condensate at every temperature can be measured accurately.



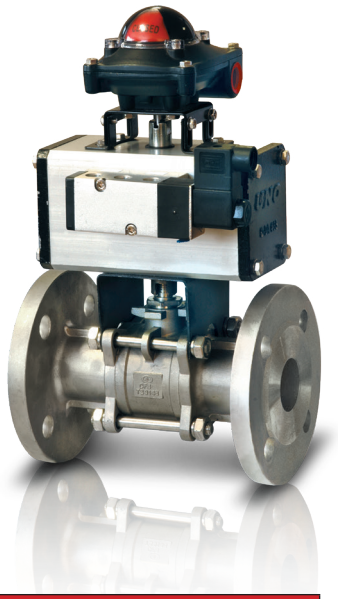
SYSTEM CONTENT

- Stainless disc checkvalve
- Double effective pneumatic actuated stainless ball valve normally open
- Double effective pneumatic actuated stainless ball valve normally closed
- Conductivity transmitter B&C electronic C3600 4-20mA (110x90x60mm)
- Conductivity sensor sensorex CS675 httc 250 PSI 200C 1" diving length
Sensor diameter 19mm cable side 3/4 ADK-100 controller
- Stainless ball valve threaded 304 quailty

BLOWDOWN SYSTEM

BLOWDOWN SYSTEMS

DBV-10 BOTTOM BLOWDOWN VALVE



APPLICATION AREAS
Steam boilers (Safety)

System Elements
3 Pieced Ball Valve (V-3FP)
Timer
Pnuematic Actuator
Selenoid Valve
Limit Switch

FLANGED	
DIMENSIONS	DN40 Please contact our sales team for customized dimensions.

PRODUCT FEATURES DBV-10	
BALL VALVE	
Body Material	Stainless Steel AISI 304/316
Ball Material	Stainless Steel AISI 304/316
Stem	Stainless Steel AISI 304/316
Body Gasket	PTFE
Ball Seat	R-PTFE (15%)
Nominal Pressure (PN)	40 bar
Max. Operating Temp.	-50/+210°C

PNEUMATIC ACTUATOR	
Body Material	Epoxy Coated Aluminium Injection
Pistons	Aluminium Cast
Shaft Material	Cadmium Coated Steel
Tightness Component	Nitrile Rubber
Valve Connection	Standard

BLOWDOWN SYSTEM

BLOWDOWN SYSTEMS

YBS-10 SURFACE BLOWDOWN SYSTEM

APPLICATION AREAS
Steam boilers (Safety)

System Elements
DN20, PN 40 Forged Steel Bellow Sealed Stop Valve
DN20, PN 40 Stainless Steel Disc Check Valve
Conductivity Measuring Probe
Conductivity Transmitter (with LCD screen)
Digital Regulator
Surface Control Valve with Electric Motor
Anti corrosion Control Panel
Service Support Before Installation

ANSI DIN EN PN 40 MAX. 210°C

DIMENSIONS	FLANGED
	DN20 Please contact our sales team for customized dimensions.

INDUSTRIAL SOLUTIONS

HYGIENIC APPLICATIONS

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