



INDUSTRIAL SOLUTIONS

OIL&GAS

Rev.07.24

info@ayvaz.com | www.ayvaz.com





About Ayvaz

Established in 1948, Ayvaz has been at the forefront of flexible connection parts manufacturing for over seven decades. Our extensive range of products includes various types and customized designs tailored to meet the specific needs of different industries.

Our company's reputation remains high, built on a foundation of providing innovative and reliable solutions to our partners. This steadfast commitment to quality and innovation has earned us the trust and loyalty of cooperators worldwide.

At Ayvaz, we are dedicated to supporting our partners around the clock, ensuring that they feel the presence and expertise of our "flexible solutions" no matter where their businesses are located. Our global reach and unwavering dedication to excellence make Ayvaz a name synonymous with reliability and innovation in the industry.

Consulting

At Ayvaz, we offer a wide range of products catering to various industries, ensuring that we meet the diverse needs of our clients. Our services go beyond just providing products; we also offer comprehensive engineering activities from product specification to project estimation, ensuring that we deliver the most specific solutions for each unique case.

Our team of experts is dedicated to sharing their knowledge and expertise with potential clients. We take pride in assisting those who encounter challenges with calculations for piping systems and product selection in new plants. Whether you are dealing with complex projects or need precise product recommendations, Ayvaz is here to provide the support and guidance you need.

OIL&GAS

Energy is getting more important day by day. According to the diminishing of energy sources food&beverage industries searching for alternative sources for increasing the productivity.

In boilers, heat exchangers, product heaters, trace lines or any other processes' energy efficiency can be 25-30% higher according to application investments with low redemption times.

In this case steam getting more important. Trapping steam and more heat usage depends on the correct steam equipment selection. Although 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 to 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.

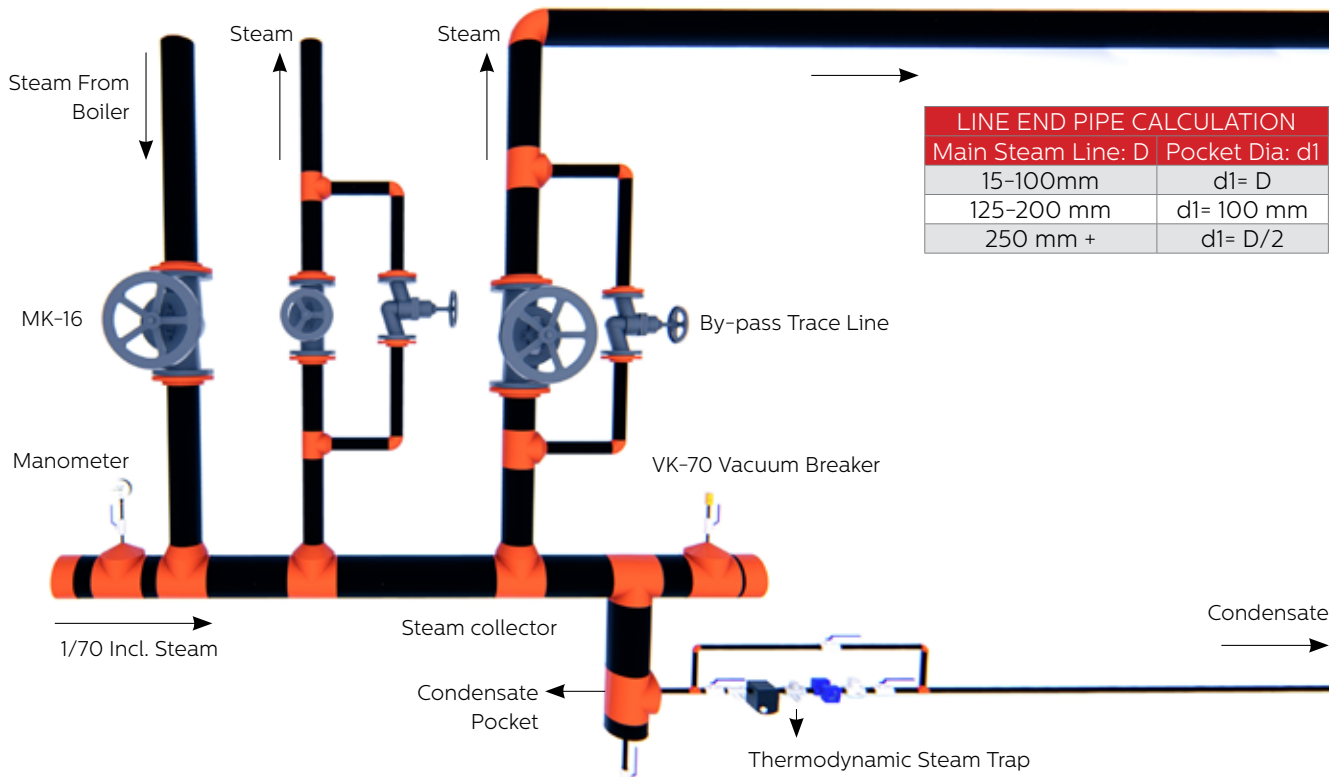


STEAM DISTRIBUTION

The system that distributes steam is called collector. Steam condensates in the collectors. The condensate is usually charged by thermodynamic steam traps from the collectors.

Steam collectors are the first stop in steam distribution. Saturated steam comes directly from boiler. MK-16 bellow seal valves are best option instead of globe valves at this installation.

Collector sizes can be calculated with $D = \sqrt{(d_1^2 + d_2^2 + d_3^2 \dots d_n^2)}$ formula. Steam trap's pocket size can be selected according to the selection table below;



DISTRIBUTION AND COLLECTION

Operation

KT-13 is used for both steam distribution and condensate generation. Piston valves must be completely open or closed during the operation. These valves are not designed for flow control. Because of the wide sealing area of the piston valves, usage of an additional valve for sealing is not necessary

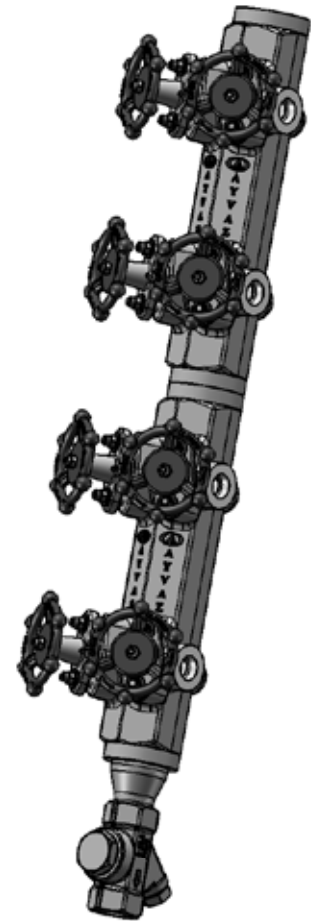
Installation

KT-13 condensate manifolds are designed for vertical installation. It is suggested to insulate the condensate manifolds in order to prevent heat losses and to protect the users. Condensate Generating

It is suggested to install the KT-13 as the condensate exit to come up to the top side. A stop valve for blowing off should be placed underneath the condensate generator. Usage of diffuser is suggested as well.

Steam Distribution

Suggested installation is to connect the steam entry to the top of the condensate manifold. A steam trap unit should be placed at the bottom. The discharge from this steam trap unit should return to the condensate line properly. If discharging will be done to the atmosphere, a diffuser must be used.



INSULATION

Steam traps and valves require periodic maintenance, easily applicable and removable jacket type insulations are more appropriate rather than fixed insulation applications for these armatures. A valve jacket is a simple and smart solution for preventing heat losses around the valves at hot or cold liquid transporting pipelines.

Thermal energy benefit by jacket type insulations is dependent on some factors likewise process temperature, ambient temperature and wind speed.

Un-insulated valves cause energy losses, reducing energy losses to the minimum level by using valve jackets helps to reduce operation costs. Easily removable valve jackets make the maintenance easier.

SELECTION CRITERIA

- Resistance to Different Operating Temperatures: Protects physical and thermal properties.
- Physical Strength: It should not lose its original properties during (vibration), storage, loadings, operation and application.
- Mechanical Strength: should not deteriorate in expansion and contraction.
- It must be easy to install.
- Resistance to Flammability: must be considered and covered with appropriate coating techniques.
- Resistance to Corrosive Effects: Water, steam etc. resistance to leaks or condensation.
- Insulation Thickness and Weight: Investment cost should be observed.

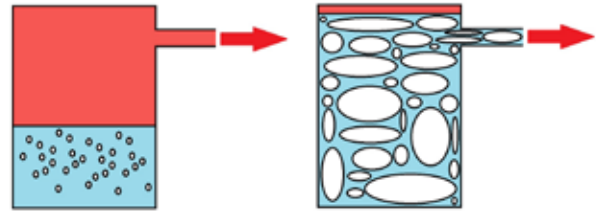


WATER DRAGGING IN STEAM LINES

In some cases hot boiler water can mix with steam and may drag to the system. This gets steam wet and may cause high water mass in system. This happens in that 3 case below;

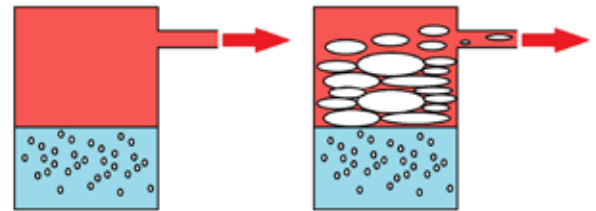
PEAK REQUESTS (PRIMING)

At the system startup, if all machines open in the same moment, boiler tank can not produce steam for request. It cause water dragging to the system and pressure loss in the steam boiler. When the pressure reduce suddenly, for balance the pressure, steam boiler start to boil and try to produce steam as fast as it can. This water steam mix drags to the system.



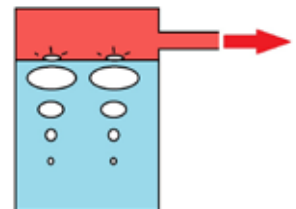
FOAMING

The components in the raw water which do not process properly process the water treatment process or the mixed condensate mixed with the condensate, cause the formation of bubbles in the cauldron. These foams fill the boiler and are dragged into the system due to the effect of steam. Foams contain water that is released when it explodes. This water damages the system.



BUBBLING

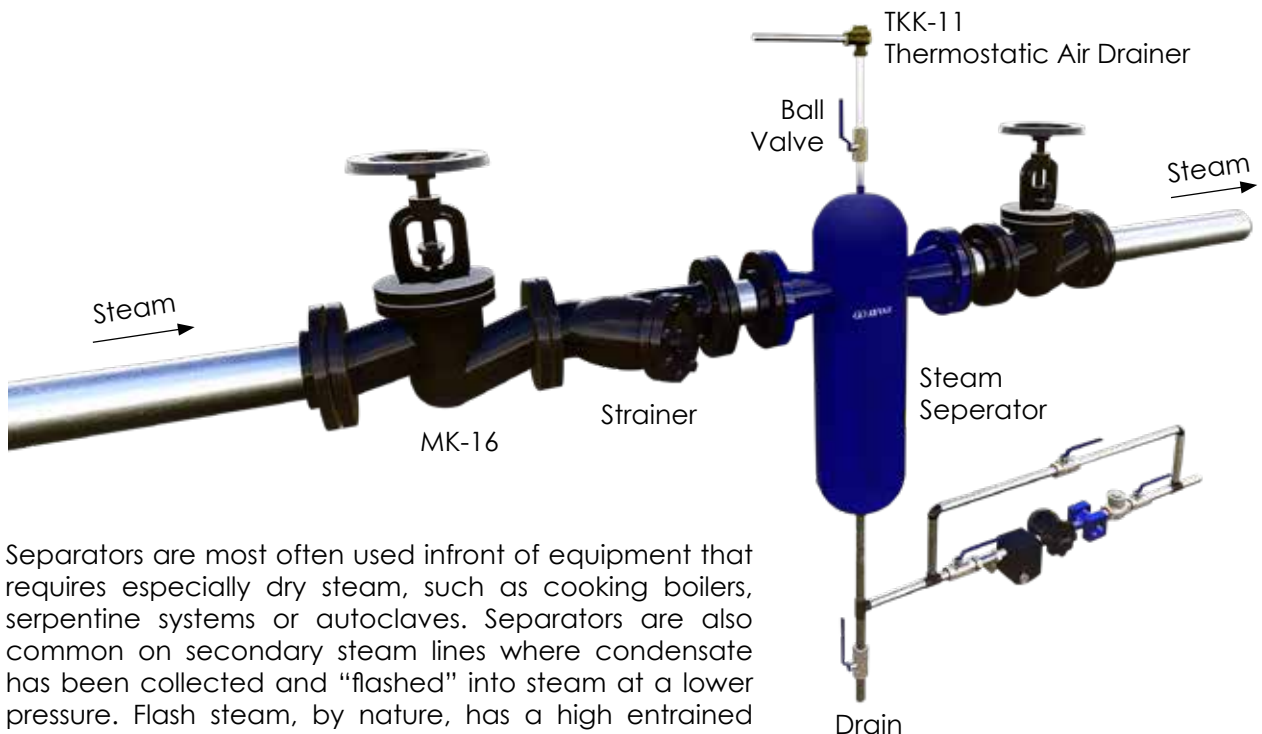
When water starts to boil on a metal heating surface, a steam bubble is formed in the water. This steam balloon rises rapidly and rises to the surface of the water. When the bubble breaks the surface of the water, some water is discharged from the surface. Discharged water continues to exist as mist at the same temperature as steam. It is usually discharged from the boiler together with the rapid flow of steam. The rest is suspended at the surface of the water since it is less dense than the density of water.



STEAM SEPARATOR SYSTEMS

In some cases, saturated steam may distribute directly with single line from boiler. That distribution may cause water draggings at system start up. To prevent that problem, separator systems must be installed directly to the steam lines.

In cases where dry and clean steam is required, branch line should be connected to the machine and process with a steam separator. This will help to collect the water at the bottom of the separator and to be discharged from the steam trap.



Separators are most often used in front of equipment that requires especially dry steam, such as cooking boilers, serpentine systems or autoclaves. Separators are also common on secondary steam lines where condensate has been collected and “flashed” into steam at a lower pressure. Flash steam, by nature, has a high entrained condensate content.

BLOWDOWN SYSTEMS

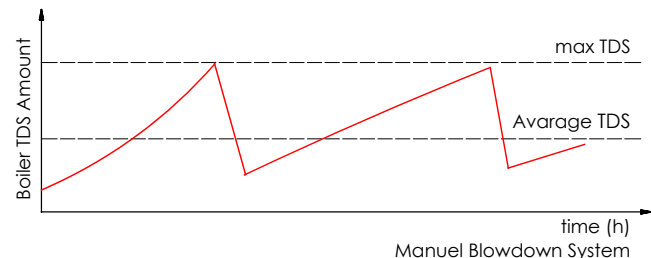
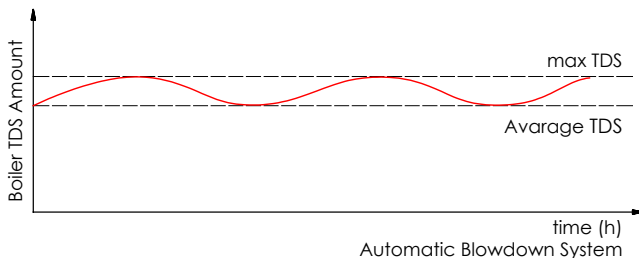
Surface blowdown and bottom blowdowns are required to ensure a continued safe transmission of the boiler. Sludge deposits are formed in the boiler and must be cleaned at regular intervals.

Sediments must be evacuated periodically to prevent the formation of the sludge layer. Bottom blowdown valves are used for this purpose. The bottom blowdown valve is opened and the pressurized boiler water is discharged from the lower zone of the boiler.

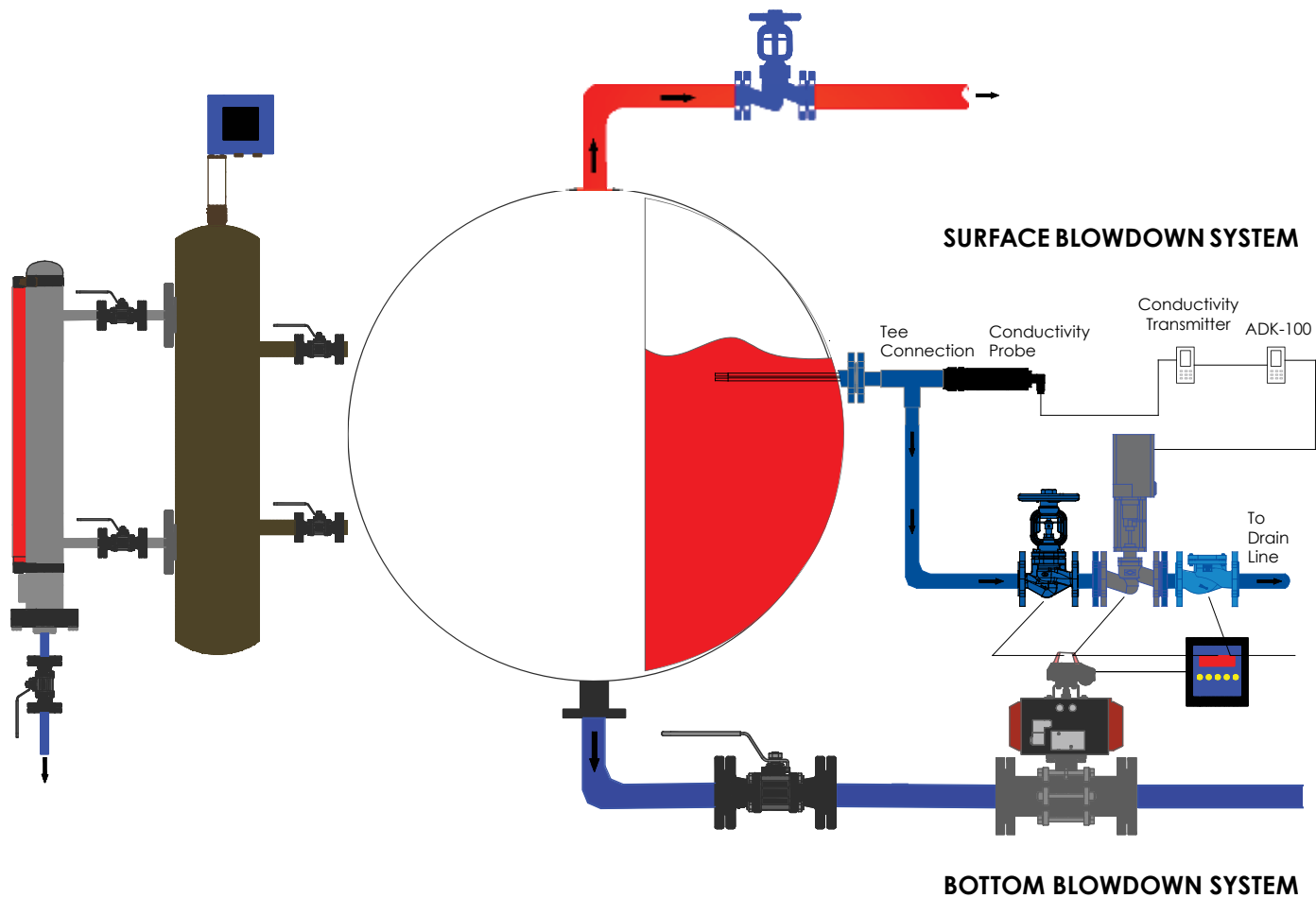
When the valve is opened, the sludge in the lower area of the boiler is effectively discharged by the high water velocity due to the pressure difference. Depending on the type of water preparation system and the dosing system, the steam boiler reaches salt and other foreign substances.

As a result of evaporation, the salinity in the boiler water increases. Salt concentration higher than the limit value causes the boiler stone, boiler corrosion and foam formation.

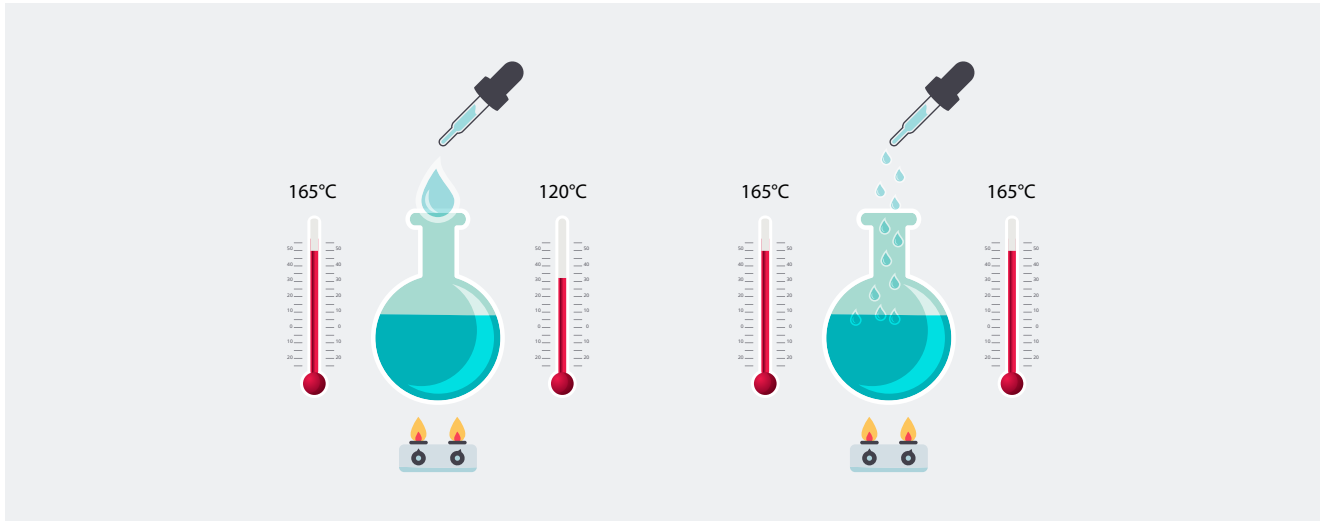
The foam can also reach the steam installation. Thus, the steam quality decreases and the accumulation of water forces the armatures.



APPLICATION EXAMPLE



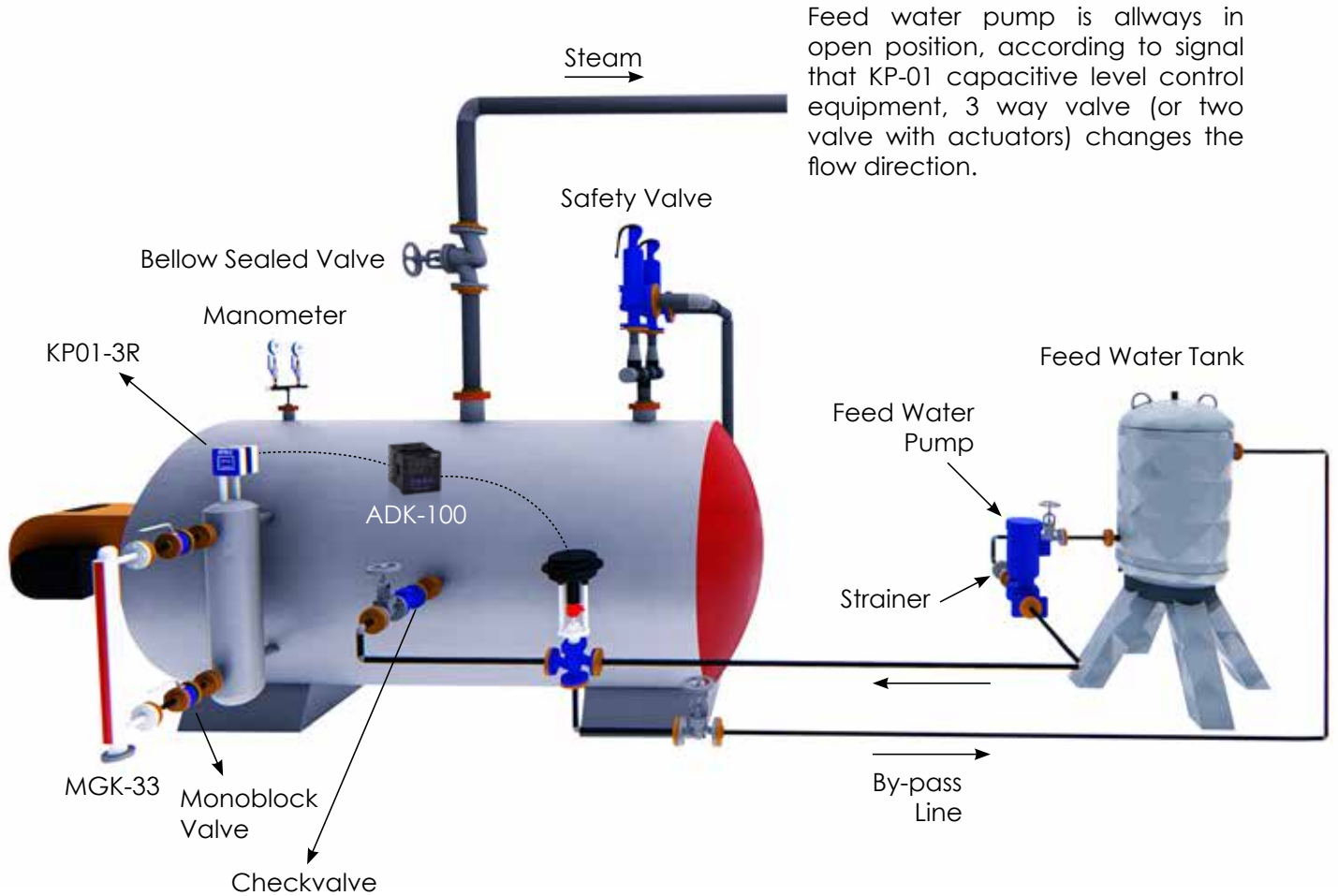
FEED WATER SYSTEMS



There are 2 general types of feed water system, such as; proportional and on-off. Main differences between proportional and on-off systems are;

- On-off systems are more economical than proportional systems.
- With proportional systems, pressure and temperature drops will be prevented.

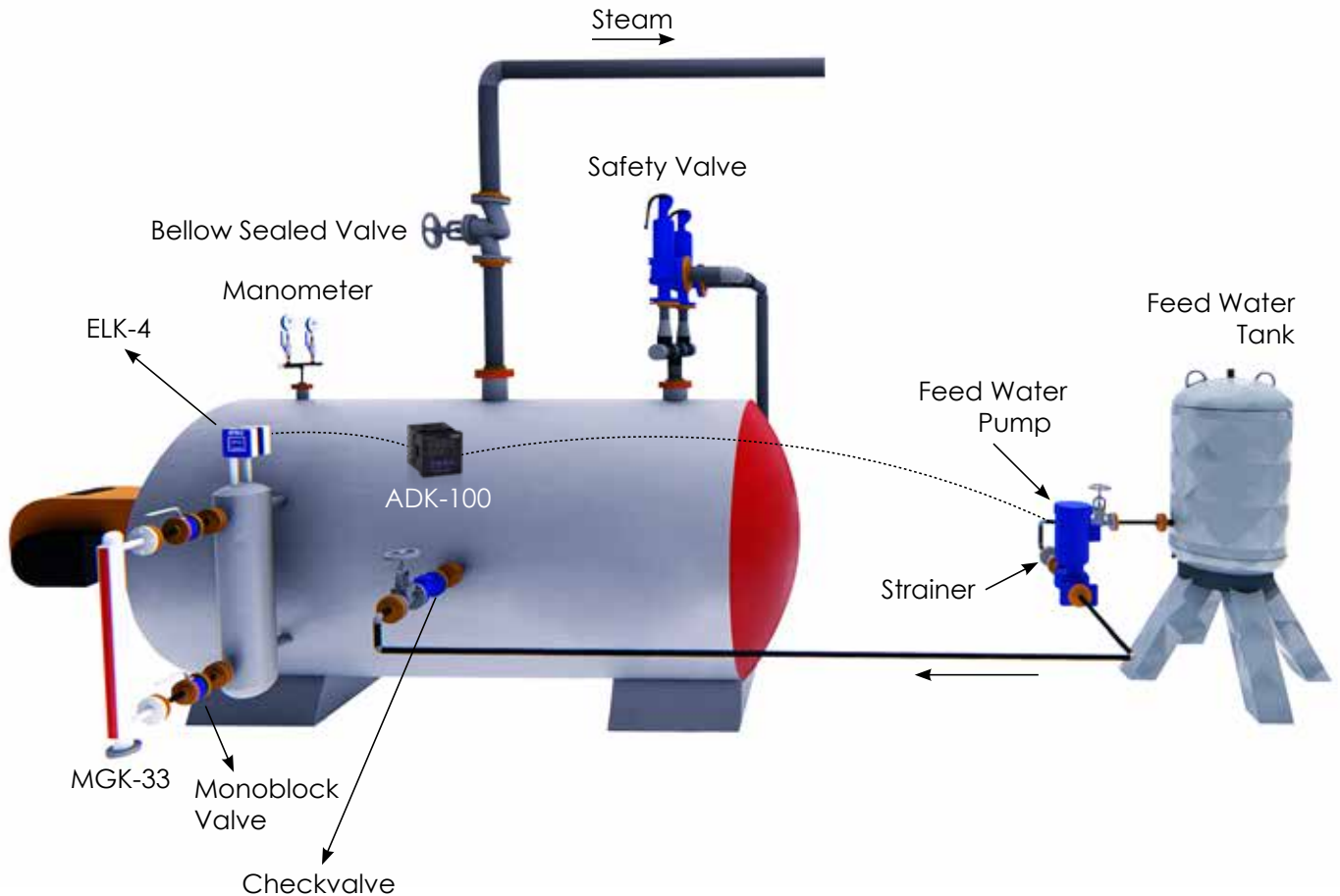
PROPORTIONAL FEED WATER SYSTEMS



Feed water pump is always in open position, according to signal that KP-01 capacitive level control equipment, 3 way valve (or two valve with actuators) changes the flow direction.

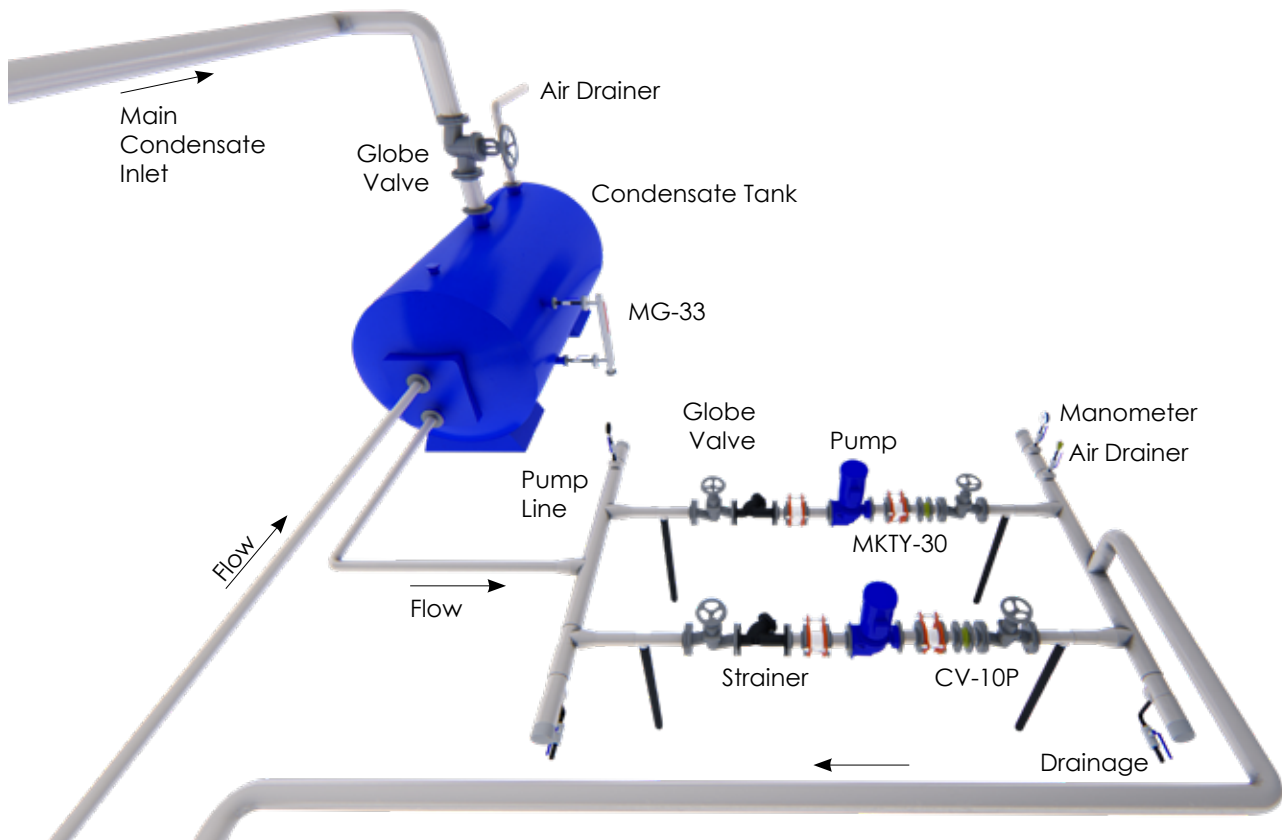
ON-OFF FEED WATER SYSTEMS

Feed water pump is opening and closing continuously, according to signal that ELK-4 probe level control equipment, control valve changes the flow direction.



CONDENSATION RECOVERY LINE

After process, saturated steam will transfer the energy and condensation will collect with steam traps to the condensate tanks. Condensate will mix with water supply in feed water tank by pumps, like the diagram below.



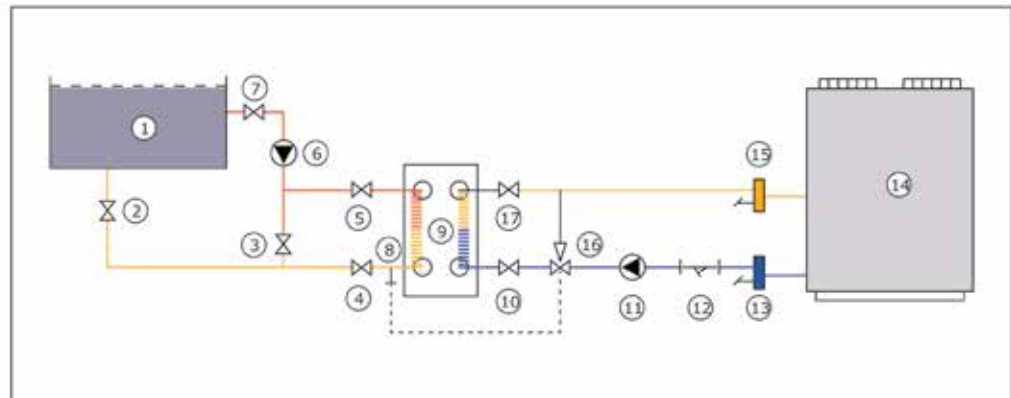
APPLICATIONS

Cooling of Rolling Oil

The oil used in the rolling mills becomes hot as a result of the process and the lubricating properties are reduced; as a result, operating performance is reduced. Ayvaz plate heat exchangers are used to keep the rolling oil at optimum temperature. With the cooling tower and the chiller circuit connected to the secondary circuit of the heat exchanger, and a simple automation, your rolling oil remains constant at the desired temperatures and your plant operates at maximum performance.

Boron Oil Cooling

Boron oil, one of the cornerstones of industry, is the lifeblood especially for metal cutting. The quality and temperature of the boron oil are very important for maximum efficiency and maximum life from the cutting edge. In order to keep the boron oil at optimum temperature, the cooling tower or chiller used with Ayvaz plate heat exchangers provides maximum efficiency.

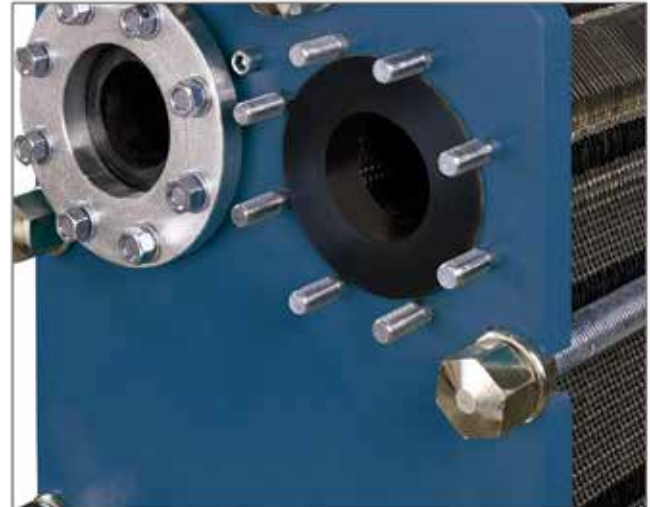


| | | | | | | | | | |
|---|----------|---|----------------------|----|------------------|----|-------------------------|----|-------|
| 1 | Oil Tank | 5 | Valve | 9 | Heat Exchanger | 13 | Going Collector | 17 | Valve |
| 2 | Valve | 6 | Oil Circulation Pump | 10 | Valve | 14 | Cooling Tower | | |
| 3 | Valve | 7 | Valve | 11 | Circulation Pump | 15 | Returning Collector | | |
| 4 | Valve | 8 | Oil Tank | 12 | Dirt Holder | 16 | Threeway Rational Valve | | |

APPLICATIONS

Chiller Group Circuit

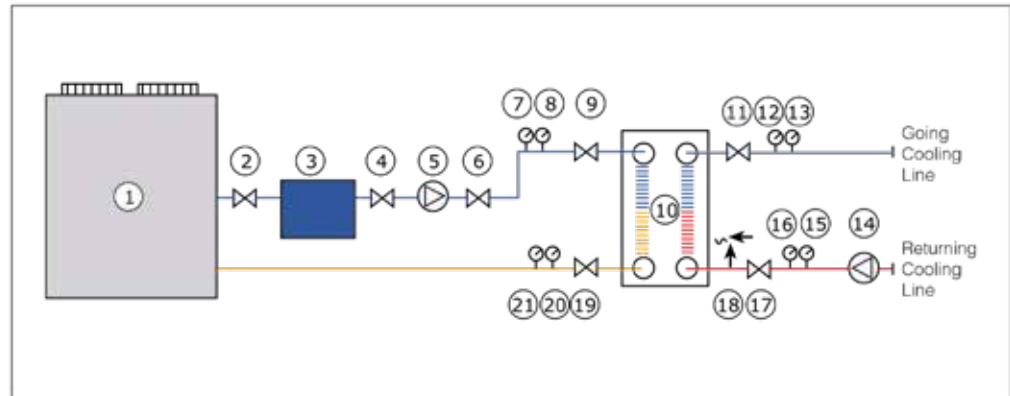
The cooling tower is generally insufficient for applications where low temperature water is desired. Therefore, chillers are preferred in these applications. Chiller groups are generally very sensitive, expensive and difficult to repair. Therefore, in case of any negative situation that may arise from the installation, large damages can occur. The Ayvaz plate heat exchangers separate the system from the chiller circuit, allowing the two systems to operate independently of each other, as well as the heat transfer between them.



APPLICATIONS

Cooling Group Circuit

Nowadays, cooling towers are the most commonly used cooling source to meet the cooling needs of industrial plants. Ayvaz plate heat exchangers are used in both types of these open and closed towers. Since some solid particles from the medium are mixed into the water in the open towers, the water where these particles are located cannot be sent directly to the system to be cooled. Using the Ayvaz plate heat exchanger between the system to be cooled and the open tower, the two systems are separated as two separate circuits and the Ayvaz plate heat exchangers collect all the risks on themselves. In case of contamination over time, only the heat exchanger can be cleaned and the system will perform the same performance again.

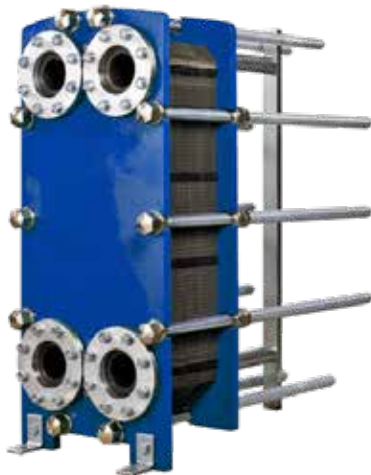


| | | | | | | | | | |
|---|------------------|----|----------------|----|------------------|----|--------------|----|-----------|
| 1 | Cooling Group | 6 | Valve | 11 | Valve | 16 | Manometer | 21 | Manometer |
| 2 | Valve | 7 | Thermometer | 12 | Thermometer | 17 | Valve | | |
| 3 | Tank | 8 | Manometer | 13 | Manometer | 18 | Safety Valve | | |
| 4 | Valve | 9 | Valve | 14 | Circulation Pump | 19 | Valve | | |
| 5 | Circulation Pump | 10 | Heat Exchanger | 15 | Thermometer | 20 | Thermometer | | |

APPLICATIONS

Waste Heat Recovery

Industrial facilities have many wasted heat sources such as rotten steam and hot water returning from fabric washing. At the same time, there are applications that require heat, such as domestic hot water production and office heating. With the Ayvaz plate heat exchanger you will use to transfer heat from existing heat sources to the part that needs heat, you do not waste your heat and you need to save extra heat for the heat requirement. Nowadays, the most important factor that will relax businesses is to reduce costs. Energy expenses, one of the biggest factor in expenses, are now worth the gold for everyone and cannot be ignored. A heat exchanger to be used for heat recovery with a rough calculation now pays off in 3-6 months and starts to add value to the operation in a short time.



WORKING PRINCIPLE

Working Principle of Shell & Tube Heat Exchangers

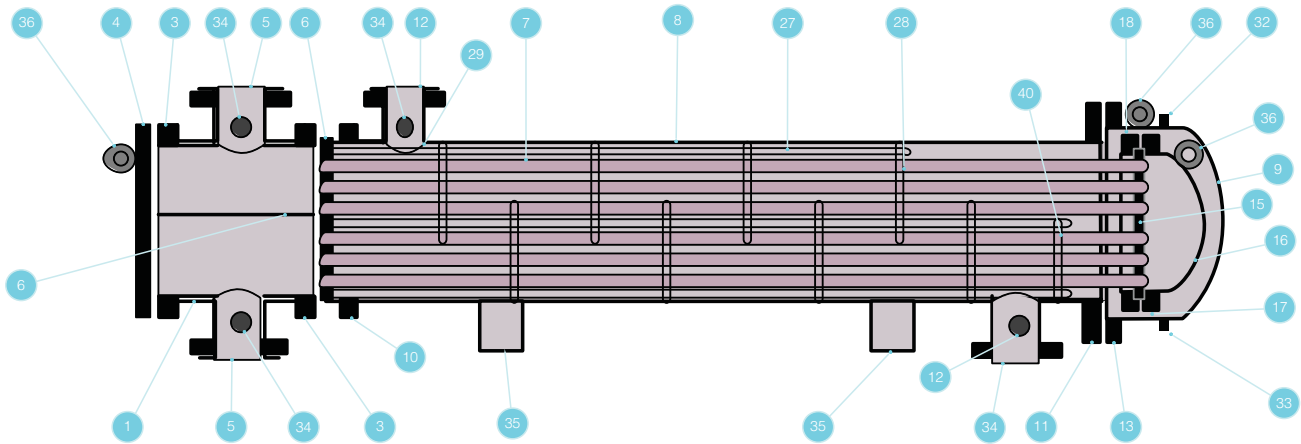
Shell & Tube heat exchangers are used in the public and private sectors of iron and steel, machinery industry, petroleum, petrochemical, gas, power plants, food, pharmaceutical, health, paper industry, leather, textile, air conditioning, ship and marine industrial facilities. in military, construction, swimming pool, geothermal and contracting sectors, in the areas of heating and cooling.

It is the most widely used heat exchanger in industrial facilities such as iron and steel, petroleum, petrochemical, gas, power plants, food, pharmaceuticals, leather, textiles, air conditioning, ships and maritime sectors.

The heat exchangers used in the industries can be used in all sectors where there is a second alternative energy requirement from an alternative energy.



SHELL & TUBE HEAT EXCHANGERS COMPONENTS



| | | | | | | | | | |
|---|-----------------------------|----|------------------------------|----|-----------------------------|----|---|----|---------------------------------|
| 1 | Fixed Head-Channel | 9 | Body Cover | 17 | Floating Head Flange | 25 | Packing Seal Ring | 33 | Unloading Connection |
| 2 | Fixed Head-Nozzle | 10 | Body Flange-Fixed Front Side | 18 | Floating Head Rear Assembly | 26 | Flashlight Ring | 34 | Measuring Instrument Connection |
| 3 | Fixed Head, Flanged Channel | 11 | Body Flange - Rear Side | 19 | Segment | 27 | Connecting Rods and Gaps | 35 | Support |
| 4 | Channel Cover | 12 | Body Inlet | 20 | Rear Flange | 28 | Suppression or Support Plates | 36 | Lifting Ring |
| 5 | Fixed Head Inlet | 13 | Body Cover Flange | 21 | Floating Head Cover | 29 | Inlet Surge Board (Curtain) | 37 | Support |
| 6 | Fixed Tube Mirror | 14 | Expansion Connection | 22 | Floating Tube Mirror Shirt | 30 | Longitudinal Surveillance Plate (Curtain) | 38 | Sluice |
| 7 | Tubes | 15 | Floating Tube Mirror | 23 | Seal Box Flange | 31 | Chamber | 39 | Liquid Level Connection |
| 8 | Body | 16 | Floating Head Cover | 24 | Seal | 32 | Airing Connection | | |

ADVANTAGES

Advantages of Shell & Tube Heat Exchangers;

- They can be designed and manufactured to operate at very high pressures.
 - Highly flexible and robust design.
 - They can be designed and manufactured to operate at very high and very low temperatures.
 - They are resistant to thermal shocks.
 - There is no size limitation.
 - They can be used in all applications.
 - Pressure losses are minimal and can be kept to a minimum in accordance with the process purpose.
 - They can be easily dismantled and reassembled for maintenance, repair and cleaning.
 - Maintenance and repairs are easy.
 - Pipe diameter, pipe number, pipe length, pipe pitch and pipe arrangement can be changed.
- Therefore, the design of tube heat exchangers has a lot of flexibility.

Heat transfer applications often require different solutions for different processes. After obtaining the necessary information in the process, it is designed by the expert engineers in the field and the schematic drawing is extracted. After the schematic drawing is checked, there is no dimensional problem and production pictures are taken.



U SHAPED - STRAIGHT S&T HEAT EXCHANGERS

Each heat exchanger approved for production is a process-specific heat exchanger, which is usually designed and which is similar. After the heat exchangers are manufactured, it is possible to isolate the heat losses to the minimum by isolating them if desired. There is no capacity limit in the production of pipe heat exchangers.

Heat exchangers can be grouped in multiple ways by connecting in series or parallel and their capacities can be increased. Ayvaz, which provides the provision of facilities that require high capacities such as Petrochemical Plants and Power Plants, is one of the leading companies in the sector with its experience in this field.



DOUBLE TUBE HEAT EXCHANGERS

The preferred type of product for safety reasons is the double tube safe heat exchangers where the fluids are mixed with each other.

A possible leakage is reported by means of an electrical signal through a pressure switch or a float in the control chamber.

The double walled safety tubes in the tube bundle are heat transfer tubes with thin channels that create a leakage space after the two tubes are connected.

In addition to oil cooling systems, the transformer is also used in chemical process engineering, heat recovery, food processes and domestic hot water heaters.

Copper and copper alloys are generally preferred in the products, and carbon steel and stainless steel materials are used according to the processes.

Depending on the application and processing requirements, special designs are selected on the inner or outer pipe to ensure the best heat transfer and processing.

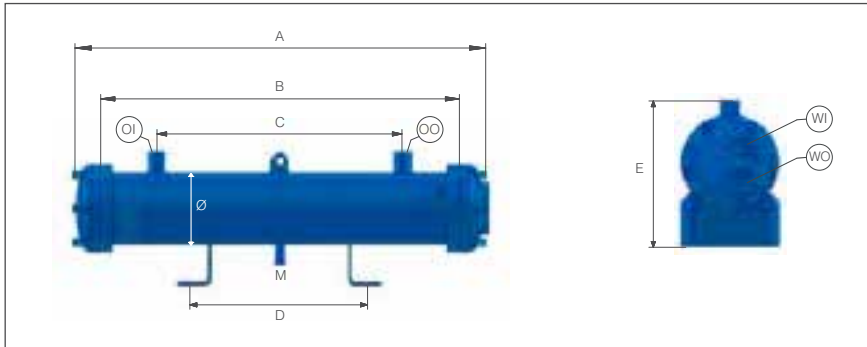


OIL COOLERS

Many machines used in the industry need cooling during their work. The cooling process is usually caused by the collision of the water from the cooling tower or the chiller in the heat exchanger by the machine. AYVAZ oil coolers can be used in all types of applications. Oil coolers can be manufactured as standard in certain dimensions and can be manufactured in special manufacturing processes.

GROOVED COPPER TUBE OIL HEAT EXCHANGERS

In AYVAZ oil coolers, internal pipes can be manufactured from grooved copper pipes and turbulent flow can be provided. In this way, heat transfer is much higher than standard flat tube heat exchangers. In standard products, the inner tubes are made of copper and the quality of all other equipments are manufactured as ST35.8.



PETROCHEMICAL & REFINERIES

The petrochemical industry uses petroleum and natural gas based feedstocks such as naphtha, LPG, gas oil to produce plastics, rubber and fiber raw materials and other intermediates which are consumed by several sectors such as packaging, electronics, automotive, construction, textile and agriculture.

Ayvaz produces all type of refractory lined expansion joints including gimbal, universal tied or pantographic linked types for FCCU systems.

Cold Wall expansion joints are refractory lined to ensure the outside wall temperature does not exceed the maximum. The wall is made from stainless steels and the lining is designed inside of the expansion joint. Hot Wall expansion joints are designed with the refractory lining on the inside as a thermal barrier. The purpose of the lining is to withstand abrasion from the catalyst flow medium.

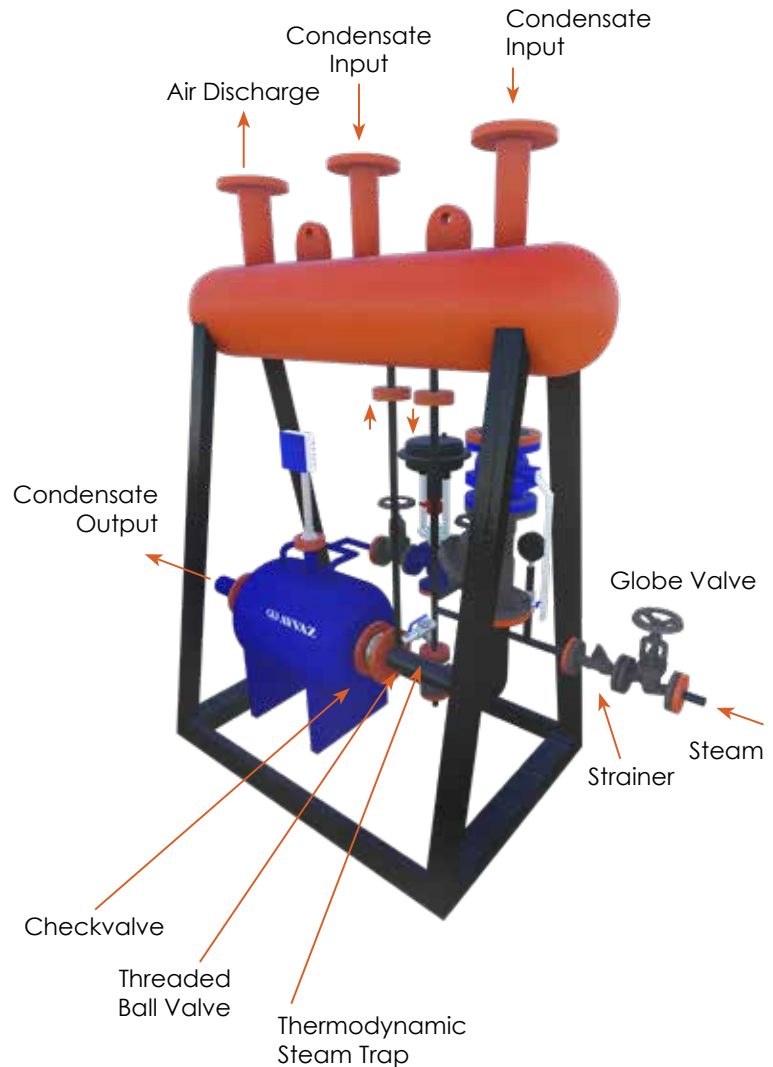
The expansion joint is a key component in this application because of critical operating conditions, and the selection of bellows material is very important. Double ply or redundant ply bellows are commonly utilized for FCCU applications. The simple double ply bellows utilizes the strength of both plies to withstand the operation conditions, and the redundant ply bellows are designed to let each ply take up the full load. So, if the inner ply is leaking, the outer ply will be able to take up the load and continuously operate without failure.



CONDENSATE PUMP SYSTEM

Condensate comes from the input collector and goes on internal pipe and access check valve than enter in condensate pump body so tank is getting full. In tank when the condensate comes on the upper limit, ELK-2 level gauge check the conductivity and change it to electrical signal and send it to 3 way pneumatic valve for the giving contact which is on the steam line than allows it to be opened. In normally steam has more high pressure than the condensate pressure. When 3 way valve is close, system discharge condensate from the system with thermodynamic steam trap.

When the condensate pressure is smaller than the opposite pressure in condensate pump, discharge operation do not occur. Steam is occurs the condensate discharging with entering the body, which have more pressure than the opposite pressure. When the condensate limit is getting bottom limit of the tank, ELK-2 level gauge send electrical signal to 3-way pneumatic valve for close the system for entering steam. After that condensate enter again and getting full tank. This operation frequency is connect between the condensate quantity. If the users want they can be follow the condensate quantity, from controller.



FLASH STEAM RECOVERY SYSTEMS

The most important components in a cascade system are the Flash Steam Tank Systems which separate the flash vapor from the condensate where the flash and the sweep / blow steam are located. A common mistake in enterprises is called "separator". It is important that the condensate is drained effectively and not allowed to accumulate in the separators. They can be emptied with a steam trap, an electrically driven pump / level control device, or a steam-driven pump system with a lower choice of both investment costs and operating costs.

Why Flash Steam is Important?

It includes too much energy and it can be mount to different installation areas. If Flash Steam drains to the atmosphere there will be waste energy and efficiency lost.

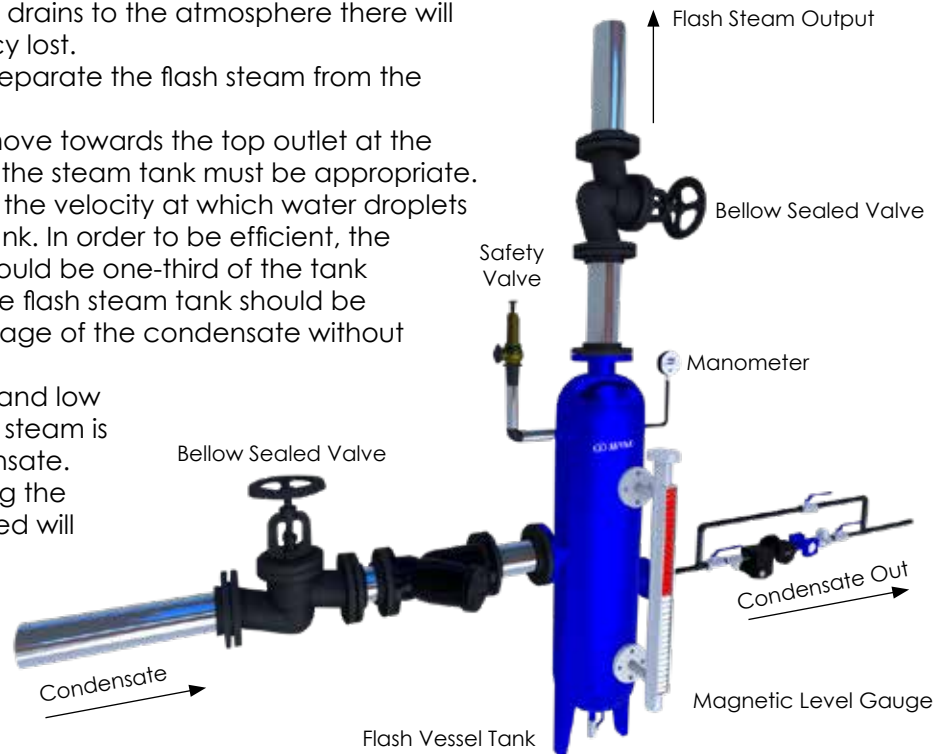
Flash Steam Tanks are used to separate the flash steam from the condensate water.

In order for the flash steam to move towards the top outlet at the correct speed, the diameter of the steam tank must be appropriate. This speed is about 3-5 m/s and the velocity at which water droplets can reach the bottom of the tank. In order to be efficient, the condensate inlet to the tank should be one-third of the tank neck below. The diameter of the flash steam tank should be a diameter that allows the passage of the condensate without coming into turbulence.

If the difference between high and low pressure is small. The amount of steam is less than the amount of condensate.

Flash steam outlet pipe selecting the diameter according to the speed will cause the tank to remain small.

In which case the tank must be selected to be two diameters larger.



FLOWMETERS

The most practical solution to prevent the waste of energy in today's world; is to control the amount of fuel used - steam. In order to do this, it is necessary to know the flow amounts. If the flow amounts are known; efficient use of energy becomes easier.

Flowmeter; It is the name given to the device that measures the fluids such as gas, liquid or steam passing through an installation in terms of unit quantity / unit time.

Measures dimensions mechanically or electronically. Flowmeter with another definition; It is a type of device used to measure the volume or mass of a gas or liquid. Flowmeter devices may also be referred to by more than one name, depending on a particular industry. These expressions are mostly: such as flow meter, flow indicator, liquid meter, flow rate sensor and so on.

One of the biggest benefits of the flowmeter is that it ensures that the liquid is at the maximum level in terms of solubility. Flow meters are devices designed in different ways. Flowmeter devices are sometimes used by measuring built into the pipe. Sometimes measurements can be made on the pipe. This situation varies depending on the characteristics of the flowmeter device.

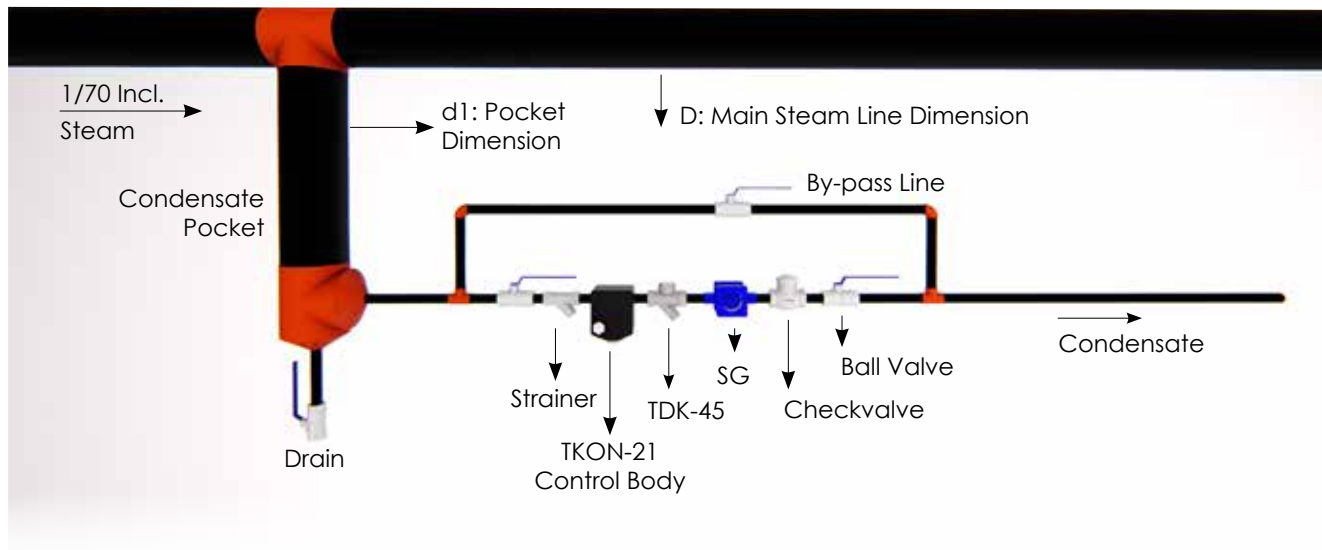
Flowmeter devices that measure the flow rate of solid, liquid or gaseous substances are generally devices used for motors, compressors, pumps or heat exchangers. It is used both to measure the accuracy of manufacturing and to evaluate product performance. When we look at the areas where the flowmeter is used, we see that it is mostly used by mechanical engineers.



STEAM LINE APPLICATIONS

MAIN STEAM LINE APPLICATION

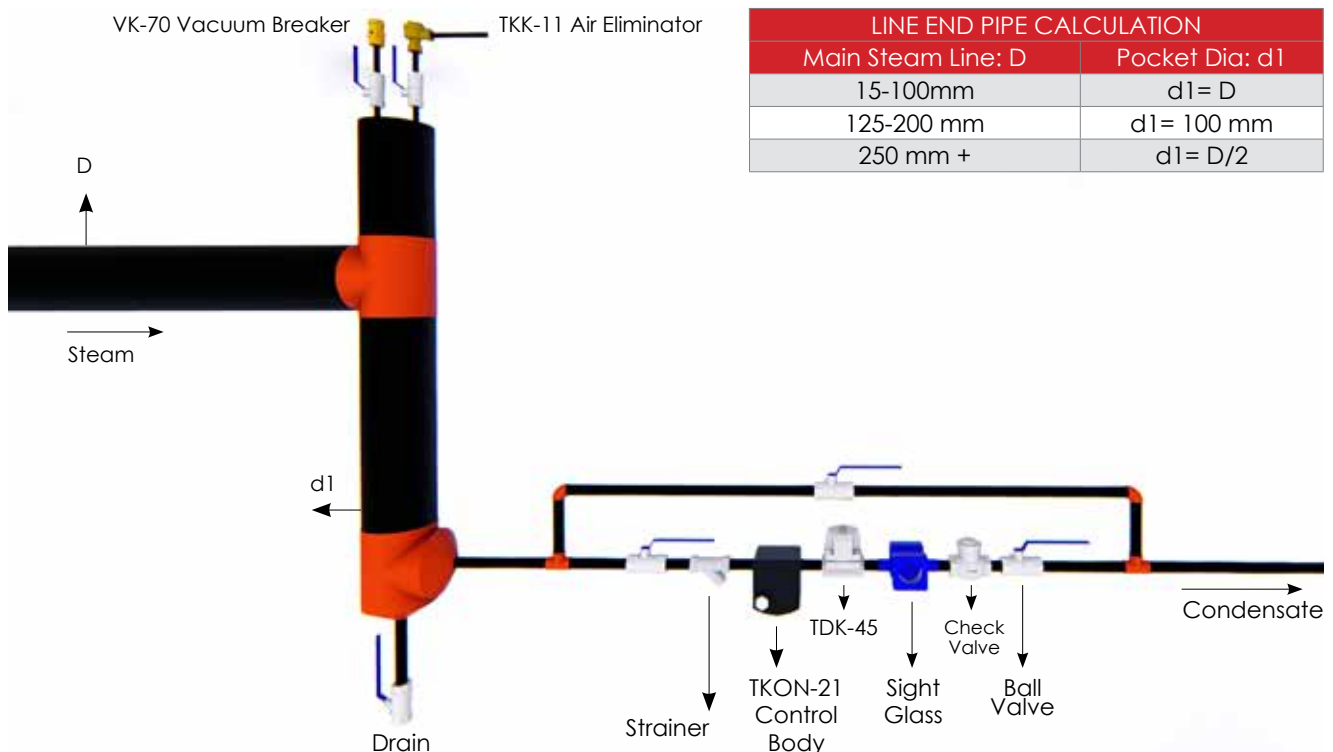
Condensate discharge unit should be placed in main steam lines in every 50 meters if the line is indoor and insulated or in every 30 meters if the line is outdoor and insulated. If any equipment like pressure reducer, pressure holder or proportional valve is installed in the line, a condensate discharge unit must be placed before these equipment.



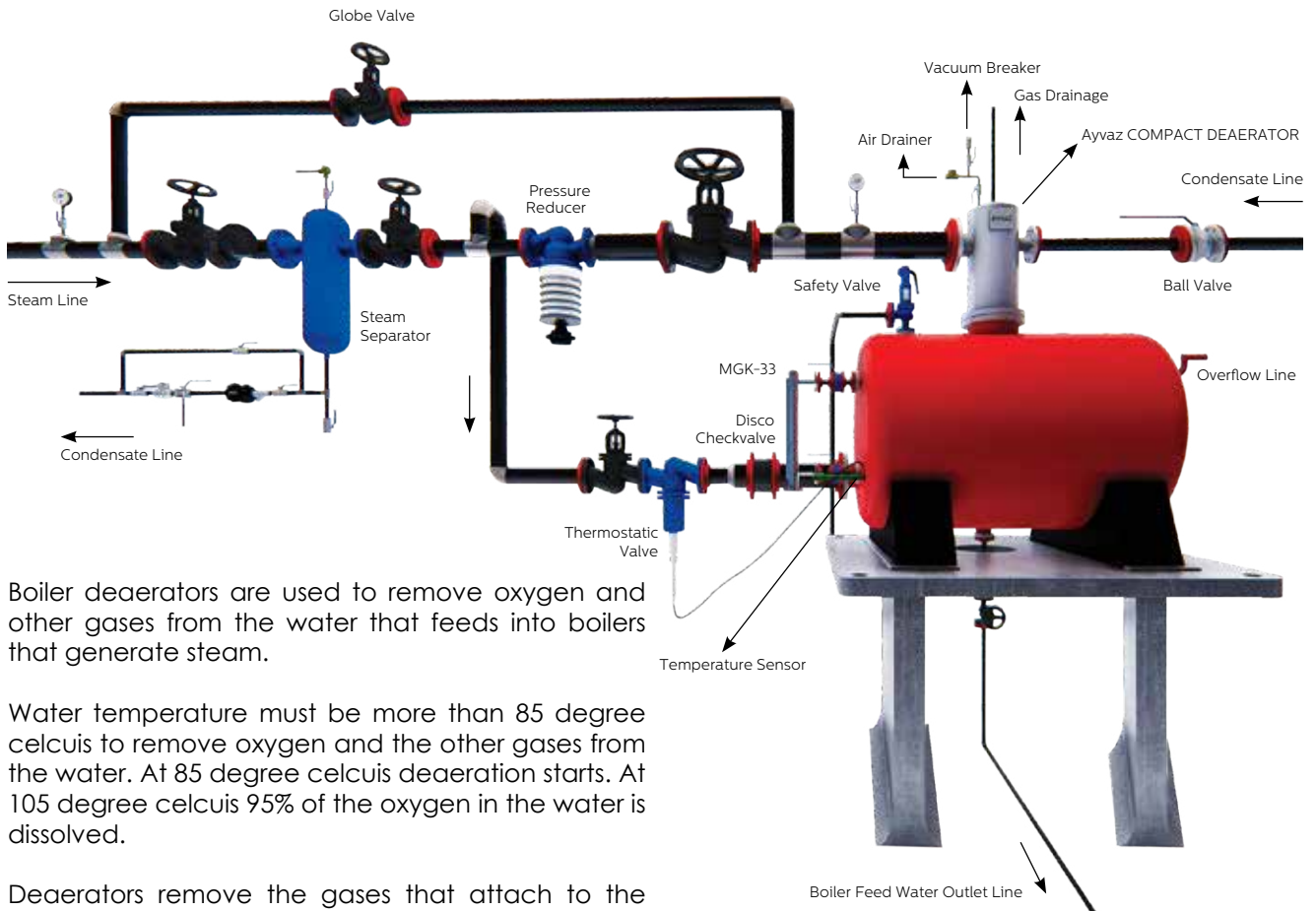
LINE END APPLICATION

If the steam systems are closed by the process, the steam will turn to condensation until it is turned on again. The volume difference will be filled with air. When the system is switched on again, the air must be evacuated to allow the steam to easily fill the line. This is only possible with "End of Line Application".

The occurred air and condensate around connection areas in the pipelines are dragged to the end of the line. If that air and condensate are not discharged, they may block the steam flow. In such cases, formed air and condensate are discharged with a line end application shown below. The steam trap kind must be thermodynamic.



DEAERATORS



Boiler deaerators are used to remove oxygen and other gases from the water that feeds into boilers that generate steam.

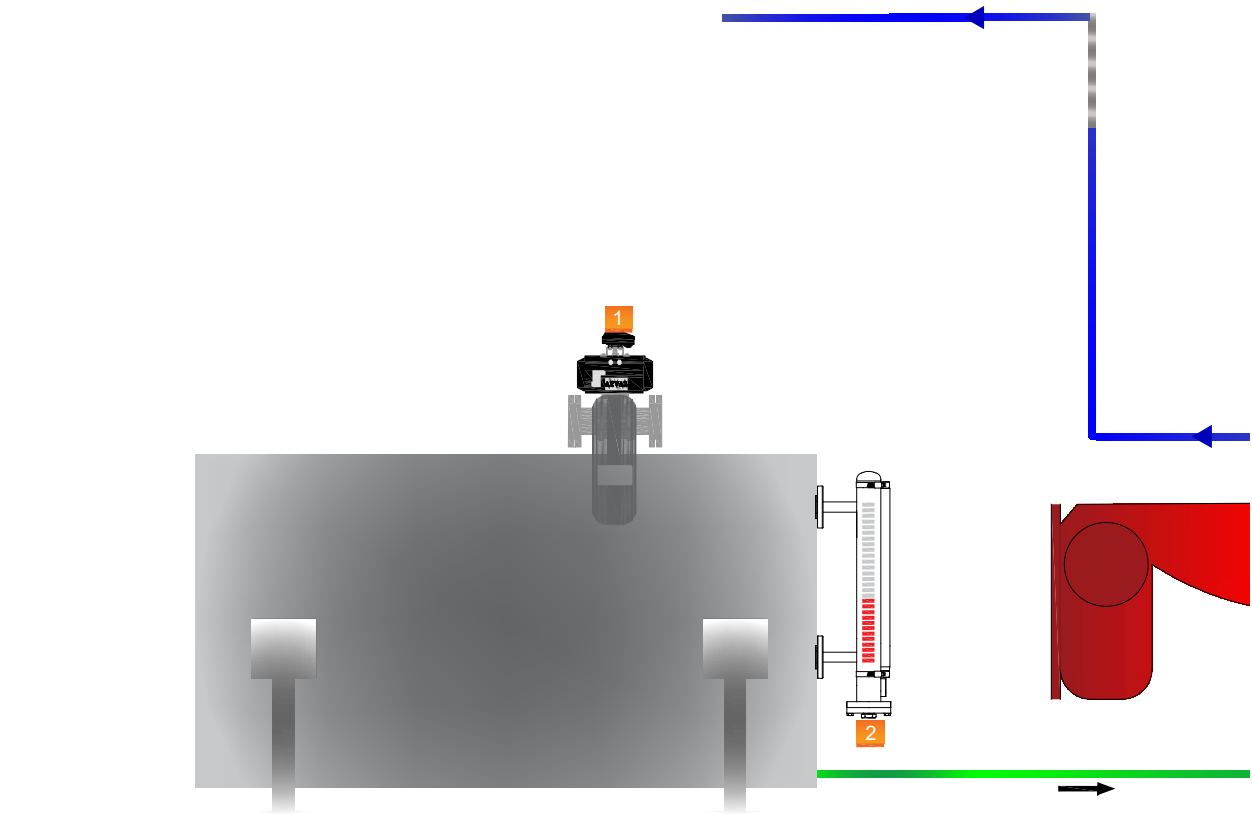
Water temperature must be more than 85 degree celcius to remove oxygen and the other gases from the water. At 85 degree celcius deaeration starts. At 105 degree celcius 95% of the oxygen in the water is dissolved.

Deaerators remove the gases that attach to the metallic components of the steam system and cause corrosion by forming oxides, or rust. Oxygen and carbon dioxide are responsible for corrosion (pitting). There are two types of boiler deaerators: Tank model or compact deaerators.

BOILER ROOM

TANK SECTION (FEED WATER,
DEAERATOR, CONDENSATE RECOVERY)

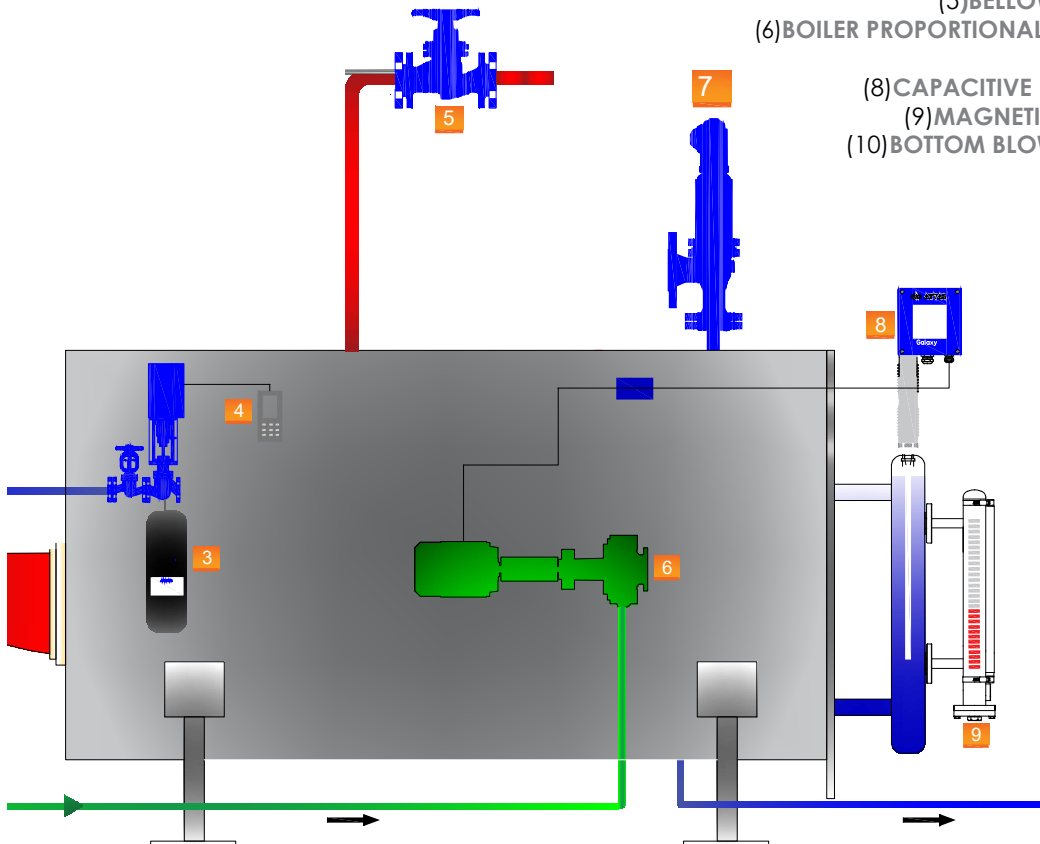
- (1) DEAERATOR ▶ ASD
- (2) MAGNETIC LEVEL GAUGE ▶ MG-33S



BOILER ROOM

BOILER

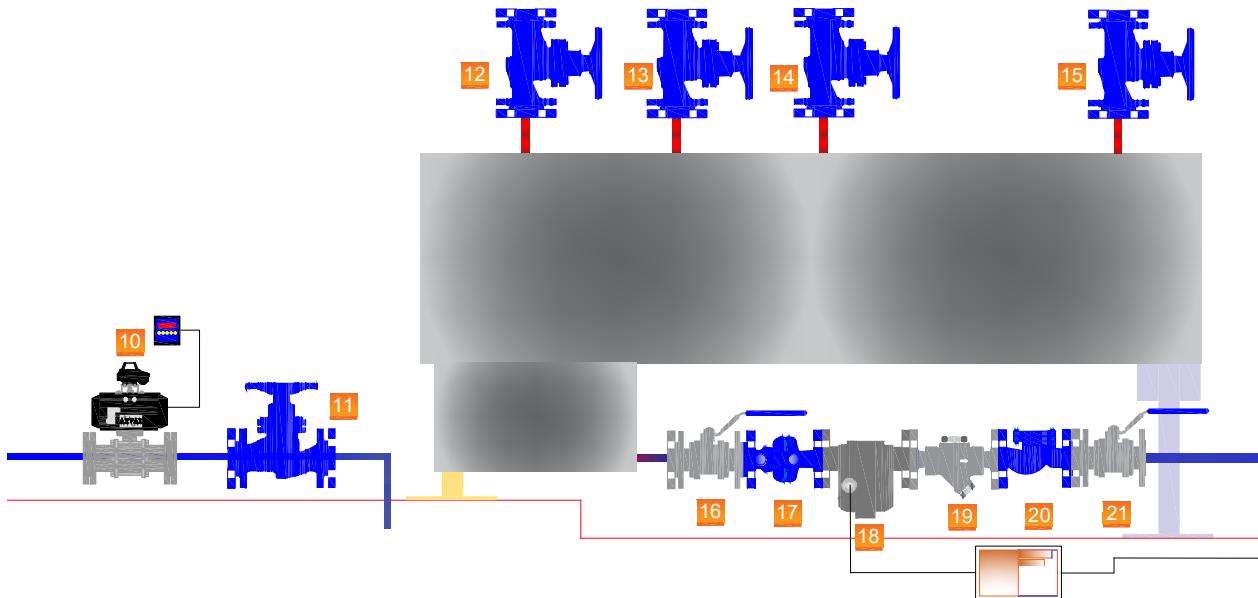
- (3) BOILER WATER SAMPLING GASKETINER ▶ NK-16
- (4) SURFACE BLOWDOWN SYSTEM ▶ YBS-10
- (5) BELLOW SEALED VALVE ▶ MK-16
- (6) BOILER PROPORTIONAL LEVEL CONTROL SYSTEM
- (7) SAFETY VALVE ▶ L9-BP
- (8) CAPACITIVE LEVEL ELECTRODE ▶ KP-01
- (9) MAGNETIC LEVEL GAUGE ▶ MG-33
- (10) BOTTOM BLOWDOWN VALVE ▶ DBV-10



BOILER ROOM

COLLECTOR (HEADER)

- (12-13-14-15) BELLOWS SEALED VALVE ▶ MK-16
- (16-21) STAINLESS STEEL BALL VALVE ▶ V3-F
- (17) STRAINERS ▶ PTY-40
- (18) STEAM TRAP CONTROLLING UNIT ▶ TKON
- (19) THERMODYNAMIC STEAM TRAP ▶ TDK-45
- (20) CHECK VALVE ▶ CLV-50





FACTORIES



Türkiye 4 Factories
İstanbul / Türkiye
Tel : +90 (212) 771 01 45
info@ayvaz.com



Ayvaz N
İsperih / Bulgaria
Tel : +359 (8431) 27 32
office@ayvaz-n.eu



Tricorr
Warsaw / Poland
Tel : +48 (32) 783 295 1
tricorr@tricorr.eu



Ayvaz China
Ningbo / China
Tel : +86 (152) 5830 73 61
msahin@ayvaz.com

OFFICES



Ayvaz Americas
Rhode Island
Tel : +1 (689) 280 09 08
americas@ayvaz.com



Ayvaz Germany
Viernheim / Germany
Tel : +49 (6204) 601 43 99
germany@ayvaz.com



Cona
Caserta / Italy
Tel : +39 (0823) 187 39 88
rmolaro@ayvaz.com



Ayvaz Ukraine
Kiev / Ukraine
Tel : +380 (44) 390 57 57
info@ayvaz.com.ua



Ayvaz Gulf
Dubai / U.A.E.
Tel : +971 (6) 621 58 04
mideast@ayvaz.com



Ayvaz Serbia
Belgrade / Serbia
Tel : +381 (61) 658 70 52
yakbiyik@ayvaz.com



Ayvaz Azerbaijan
Baku / Azerbaijan
Tel : +99 (455) 579 84 32
ahayatov@ayvaz.com



Ayvaz Egypt
Cairo / Egypt
Tel : +20 (122) 819 78 29
andrew.eid@ayvaz.com



Ayvaz Vietnam
HCMC / Vietnam
Tel : +84 (89) 850 83 45
ggursoy@ayvaz.com



Ayvaz Kazakhstan LLP
Almaty / Kazakhstan
Tel : +7 (727) 327 97 57
www.ayvaz.kz