



Elite
PROJECT ENGINEERING

SPECIALIZED IN PROCESS EQUIPMENT

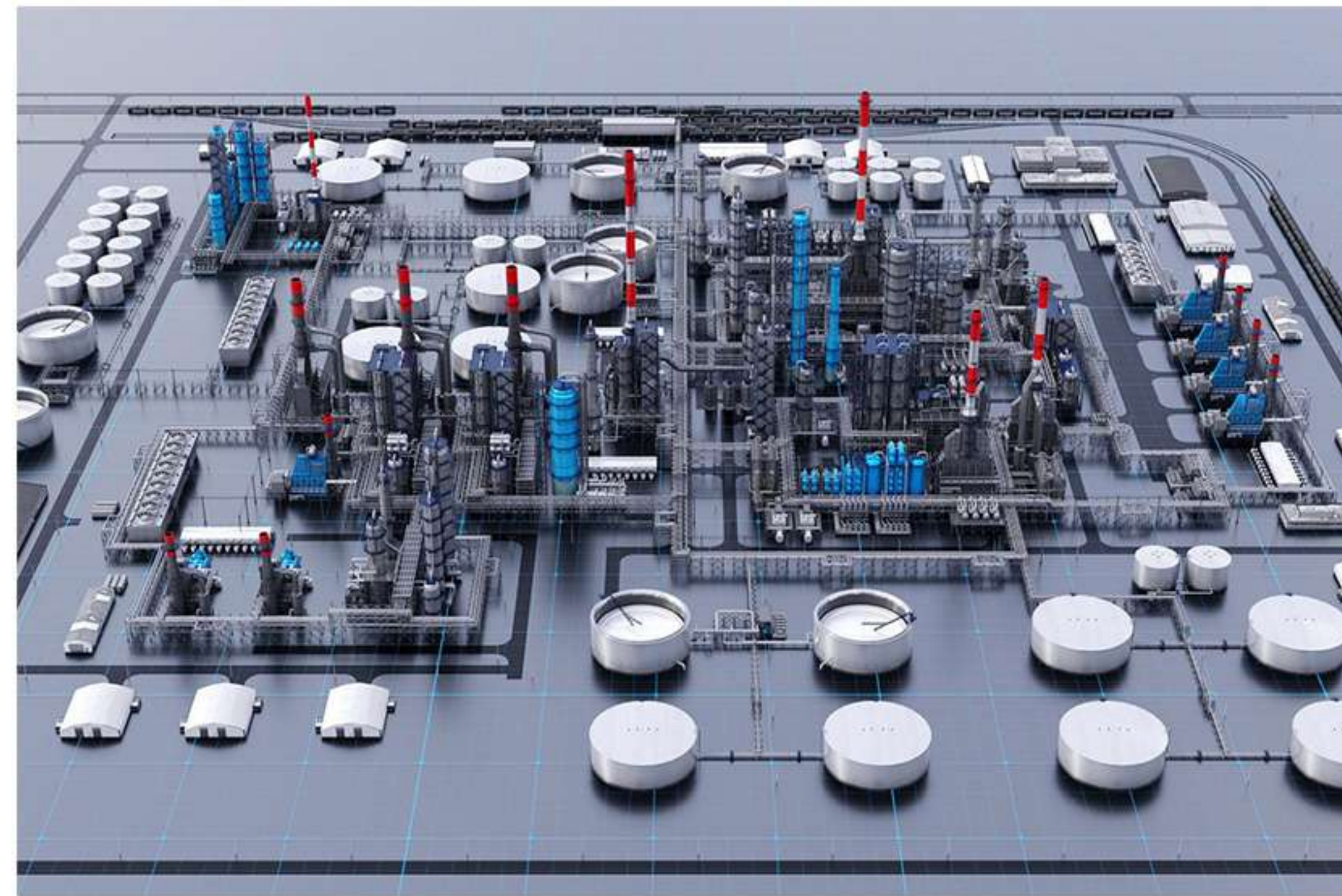
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Profile

Elite Project Engineering is specialized in Design, Engineering and Procurement services for ;

- Oil and Gas
- Petrochemical
- Chemical
- Fertilizer
- Oil Storage Terminals
- LPG Storage Depots
- Power Plants
- Food Processing
- Sugar Mills
- Pharmaceutical



The company is operating under the supervision of senior management having vast experience in Oil & Gas and Petrochemical sectors having its headquarter in China and global offices in United Kingdom, Unites States of America, Canada, Brazil, United Arab Emirates, Pakistan and Nigeria.

In addition to Design and Engineering services, we are capable to take over the complete Procurement (P) part of an EPCC (Engineering, Procurement and Construction and Commissioning) projects either directly from End Users, in Joint Venture with EPCC Contractor and or from EPC Contractor to make sure seamless supply chain management of all project materials from the stud bolts to the process equipment and from the pipeline to the drilling rig depending on the nature of project either its of Oil & Gas (Exploration, Gas Compression, Gas Processing, LPG Extraction, Oil Refinery, Oil Storage Depot) or Petrochemical, Chemical, Fertilizer, Power Plant, Food Processing, Sugar Mill, Pharmaceutical and / or allied industries. Elite clients always enjoy the seamless services through our highly professional representatives who are assigned delicately to one project at a time to oversee client contracts, supplier contracts and deliveries.

Mission:

Elite is a leader in providing value-added Design, Engineering and Procurement services by creating a successful partnership with all stakeholders. Elite believe in lasting relationships with all stakeholders by exceeding their expectations and gaining their trust through meticulous performance by every member of the organization with the strong commitment to Quality, Health, Safety and Environment (QHSE).

Vision:

To be the most preferred and trusted partner of our customers in the industry with special focus and emphasis on delivering quality products & services.

Core Values:

Quality: It is our primary focus to produce and deliver superior quality products and services.

Commitment: What we commit, we deliver.

Teamwork: We believe in teamwork, which is the most important element to accomplish the set objective.

Customer Satisfaction: To achieve customer satisfaction with Quality, Commitment and Teamwork.



Gas metering and regulating system for gas turbine is a skid-mounted gas supply equipment for gas turbine in the compressor station of long distance gas pipeline, the system integrates the functions of filtering, heating, regulating, metering, venting, relief, leak alarm and automatic switching, having the characteristics of high explosion proof requirement, wide regulation range good safety performance and continuous stable gas supply.

Characteristics

The system presented here is composed of some subsystems, such as filtering and heating system, metering system, regulating system, venting system, gas leak alarm system and etc. Of which, the regulating system has the features of "pressure control system", adopting the configuration mode of "safety shut-off valve + monitor regulator + self-actuated pressure regulator". The metering system assembles with the flow computer used for the temperature and pressure compensation of the gas to calculate the flow rate. The venting system adopts centralized venting in principle, the gas leak alarm system can be interlocked with the main valve and venting system. When the leakage occurs in the operation field, the station control system will command the main valve to close and open the venting system to carry on the emergency venting.

System Characteristics

Using axial flow pressure regulator with large flow capacity and good closing performance Regulating accuracy of +1%, wide adjustable ratio.

Equal Percentage Characteristic (Logarithmic Characteristic)

The shut-off reaction time is less than 1s. Automatic shut-off, travel transmission, travel indicator (local and remote) can be provided. Available in two electric heating modes direct and indirect.



Metering and regulating system of self-used gas within the station is a skid-mounted gas supply equipment for small-scale generator, heating/hot water boiler and fuel gas for living within the station of long distance gas pipeline. The system integrates the functions of filtering, heating, regulating, metering, distribution, venting, relief, leak alarm and automatic switching, having the characteristics of high explosion proof requirement, multiple regulation steps, wide regulation range, good safety performance, intermittent gas supply and high metering requirement

Characteristics:

This system is suitable to manned (unmanned) operation or attended natural gas distributing station, metering station, storage and distribution station, regulator station and etc. High requirements for the heater in the system special explosion proof performance JP code and the manufacturing requirement of the equipment body, adopting direct or indirect electric heater, the safety protection measures of heating speed, heating temperature and dry combustion prevention effect the system safety directly.

System Characteristics

Available in two electric heating modes direct and indirect

Using intercepting pressure regulator valve with pressure stability and good closing performance at low flow condition

Adopting the safety protection measure of dual safety shut-off valves

Regulating accuracy of 11%, wide adjustable ratio

Equal Percentage Characteristic (Logarithmic Characteristic)

The shut-off reaction time is less than is Automatic shut-off, travel transmission, travel indicator (local and remote) can be provided Using special flowmeter in low flow situation

Pressure Control System



Pressure control system in the gas transmission station is a gas pressure control device used in the gas transmission station of long distance gas pipeline, city distributing station, storage and distribution station, fuel gas for gas turbine plant and so on. It is called "Regulator Train" in its industry and "Pressure Control System" in technical terms (refer to the definition for this device in EN12186 and G850251).

Characteristics

Pressure control system consists of safety shut-off valve, monitor regulator and active regulator. These three devices are in series regulation mode from upstream to downstream respectively. The whole system will be integrated as a skid ready for installation. The overall test for each component and the whole system have been carried out before delivery. The system presented here has the characteristics of safety, reliability, good property, easy installation and simple operation. Operating principle: under normal condition, safety shut-off valve and monitor regulator are in fully open position, and active regulator controls downstream pressure. If the active regulator fails on pressure control, monitor regulator starts to control downstream pressure automatically, when the monitor regulator fails on pressure control, safety shut-off valve quickly and automatically close the trim to shut off gas flow to protect the whole system.

System Characteristics

Using axial flow pressure regulator with large flow capacity and good closing performance Regulating accuracy of 1%, wide adjustable ratio.

Equal percentage characteristic (logarithmic characteristic)

Self-carried pilot, filter. The active regulator with the characteristic of "fail to open" but the monitor regulator "fail to close" The shut-off reaction time is less than 1s Automatic shut-off, travel transmission, travel indicator (local and remote), pilot electric heater, flow limiting and pressure limiting and remote control can be provided Over flow shut-off and interlocked with prepayment IC card gas meter can be realized. A variety of configuration types are available upon request. such as "safety shut-off valve monitor regulator + control valve". "safety shut-off valve control valve active regulator control", "safety shut-off valve + safety shut-off valves active regulator control "and "safety shut-off valve safety shut-off valve+ control valve. The flow and pressure restricting system can be matched to, interaction with SCADA system is available), to realize distributing flow limit and imbalance gas supply control



The main function of Injection System is mixing the material with crude oil, stirring the material to be melted and homogenized and then injecting the material to crude oil pipeline for depressing effect. The equipment applies the modular structure design, which has several characteristics, such as simple structure, safe and reliable system, high heating efficiency and fast operation.

Characteristics:

The equipment mainly comprises Dissolution and Dilution System, Heat Medium Heating System and Control System. They complement one another; coordinate work to achieve the function of heating, dilution and mixing. Dissolution and Dilution System comprises Dilution Kettle, Blender, Process Pipeline and valves, Its function is mixing drag reducer with crude oil, stirring and dilution.

Heat Medium Heating System comprises Electrical Heater High Temperature Media (HTM) Pump, Expansion Tank, Process Pipeline Valves and other detecting instruments. Its function is getting heat from Electrical Heater for HTM and providing Heat Exchange Equipment with heat. Control system is set for operators, so they can monitor the whole process of heat treatment. It adopts PLC and HMI to achieve the function of signal collection, display and controlling.



Skid-Mounted Oil Mass Flow Meter



The skid-mounted oil mass flowmeter includes four parts: filtering system, metering system, calibration system and control system. The main components are in let pipeline, inlet electric gate valve, air-removed. filter, mass flowmeter, flow computer, touching type operating screen, control cabinet, PLC, electric control valve, manual gate valve, check valve, DBB ball valve, temperature transmitter, differential pressure transmitter, pressure transmitter, thermometer and pressure gauge. The technical difficulties of the oil mass flowmeter lie in the vibration prevention design, unstressed fabrication and installation process to ensure the accuracy of the metering system.

Characteristics

When the oil flows into the device, enters into the air-removed filter first through the inlet valve, after filtration it will be measured in the mass flowmeter, then flows into the downstream device with calibration loop, through the control valve, outlet electric ball valve, that is, at two ends of outlet electric ball valve downstream the mass flowmeter there are branches connected to calibration inlet and outlet DBB ball values to achieve the on-line calibration.

The mass flowmeter measures the mass flow rate through the vibration of two parallel measuring tubes on the principle of coriolis force, since the measuring tube vibrate continuously at a certain resonant frequency, the vibration frequency changes following with the fluid density, a density output signal corresponding to the resonant frequency can be obtained then transmits to the flow by computer

Turbine / Ultrasonic Metering System



Turbine/ultrasonic metering system is a skid-mounted metering system for custody transfer metering in the metering station of long distance gas pipeline. The system integrates the functions of filtering (or the filtering part is separated), metering, flow ratios, on-line calibration, system venting, leak alarm and automatic switching, having the characteristics of high metering accuracy, good safety performance, continuous stable metering and high explosion proof requirement.

Characteristics:

This system is composed of some subsystems, such as filtering system, metering system, flow ratios system, gas chromatograph analysis system, on-line calibration system, venting system, gas leak alarm system and etc. The accuracy of the filtering system is much more strict comparing to in other situations, besides gas turbine flowmeter or gas ultrasonic flowmeter, straight pipe meeting the requirement and suitable flow computer for temperature and pressure compensation calculation are used in the metering system. On-line type gas chromatograph detects the gas components. Two or more flowmeters series to achieve intercomparison what is flow ratios. According to processing requirement on-line calibration system reserves on-line calibration port in the system. Gas leak alarm system can be interlocked with the main valve and venting System. When the leakage occurs in the operation field, the station control system will command the main valve to close and open the venting system to carry on the emergency venting. High requirements for the flowmeter, straight pipe, gas analyzer and flow-straightening vane in the system. And, the upstream and downstream shut off valve of the flowmeter are critical, requiring zero leakage. Technical level of the manufacturer and installation accuracy affect the accuracy of the metering system directly. The abovementioned rules are the basic requirements to ensure the accuracy of the metering system,

System Characteristics:

Using gas turbine flowmeter or multi-path gas ultrasonic flowmeter as the mainstream gas flowmeter The accuracy of the meter is better than 10.5%, while the accuracy of the metering system is better than $\pm 1\%$ Adopting the plate or tube flow-straightening vane, Finish machining of the straight pipe inner boring. Zero leakage in the metering system, Transmission remote control, automatic switching and flow centralized man agreement can be realized.

Skid-Mounted Pressure Reduction Metering Station



The skid-mounted pressure reduction metering station (industrial gas) is a regulator station specially designed for industrial users, including gas power plant (gas turbine, gas boiler and other gas supply facilities), fertilizer plant, ceramic plant, carbon plant, glass factory and other enterprises. It is a gas supply equipment to industrial users after gas filtering, regulating and metering.

Characteristics:

The configuration mainly includes inlet block valve, filter, shut-off valve, regulator, safety relief valve, flowmeter, outlet block valve and etc. It integrates the functions of regulating, metering, monitoring, telemetering/remote control (SCADA system), peak shaving, noise elimination (muffler is separately provided), odorizing, heating, and safety protection. It has the characteristics of compact structure, safety gas supply, complete functions, low investment and etc. Engineered and manufactured to incorporate the client's specific requirements.

System Characteristics:

Over pressure low pressure shut-off valve, safety relief valve, gas leak alarm system, and other safety measures are provided

Compact structure, the equipment can be supplied in a skid-mounted mode or divided into several modules Installation and testing are on site, easy maintenance Adopting 120% flow design, automatic switching between the master line and slave line can be realized, ensuring continuous gas supply and high reliability in the downstream

Excellent expansibility, according to the user's requirements, the following functions can be added: noise elimination, monitoring, telemetering/remote control, SCADA system, heat tracing and etc

Regulating accuracy of $\pm 5\%$ ($\pm 2.5\%$) Insulation joints are installed in the inlet and outlet to protect the underground gas pipeline.

Skid-Mounted CNG Pressure Reducing Station



Skid-Mounted CNG Pressure Reducing Station is a set of Pressure Regulating and Metering Equipment, which makes the Compressed Natural Gas's pressure reduce to Pipeline's operating pressure by 2:3 step regulating. heat-exchange, metering and odorization, shipped by CNG tank car. The equipment has the characteristics of high-accuracy, compact structure, convenient maintenance, etc.

Characteristics:

Based on the CNG station's construction scale and feature, there are two configuration choices for Skid-Mounted CNG Pressure Reducing station with gas storage equipment without. In general, Skid-Mounted CNG Pressure Reducing station with gas storage equipment should adopt three-step regulating mode, and set up gas storage equipment after the second step regulating device. But CNG station without gas storage equipment only adopt two-step regulating mode.

Features:

- a. Adopting direct action regulator to assure the system high stability, reliability and fast respond:
- b. Adopting mode off for use and for standby, with shut-off and relief device:
- c. Meeting the needs of different scale CNG station:
- d. Skid-Mounted CNG Pressure Reducing station could integrate the following functions, including station control, metering, odorization, controlling remotely, etc.
- e. The design of the whole Regulating and Metering equipment accords with G850028.
- f. Protective Box and ESD Fire Leak Alarm System are configurable.

Typical Cases: Renglud CNG Pressure Reducing Station, Hejian CNG Pressure Reducing Station.

District Regulator Cabinet



District regulator cabinet is a gas pressure reduction metering device specially designed for urban resident sub-district. It is a gas supply equipment to domestic users after gas filtering, regulating and metering. The configuration mainly includes inlet block valve, filter, shut-off valve, regulator, safety relief valve, flowmeter, outlet block valve and etc. It integrates the functions of regulating, metering, monitoring, telemetering/remote control (SCADA system), peak shaving, noise elimination (muffler is separately provided), odorizing, heating, and safety protection. It possesses the characteristics of compact structure, safety gas supply, complete functions, low investment and etc. Engineered and manufactured to incorporate the client's specific requirements.

Characteristics

System Characteristics

Over pressure/low pressure shut-off valve, safety relief valve, excess gas limit and other safety measures are provided. The leave factory preassembly and performance test shall be done and all control points will be setted up according to the user requirements. It is suitable for natural gas, manufactured gas, LPG or gas mixing and etc. Easy to replace the gas type. Adopting 120% flow design, automatic switching between the master line and slave line can be realized, ensuring the continuous gas supply and high reliability in the down stream.

Regulating accuracy of 2.5% (21%).

District regulator cabinet is fitted with overpressure/low pressure automatic switching device and safety relief device, keeping the outlet pressure at a certain angle following with the variation of gas consumption and inlet pressure, high precision flow meter can be installed in the cabinet, the gas seal property test will be done before delivery, each control point is strictly setted up according to the user requirements, ensuring simple and easy operation for users. The insulation, electric tracing of the pipe line and the remote control of the system are available upon request.



City gas station/ storage and distribution station is a large skid-mounted regulator station specially designed for city gas. It is a gas supply equipment to civil and industrial users after gas filtering, regulating, metering peak shaving and odorizing.

The configuration mainly includes inlet block valve, filter, shut-off valve, regulator, safety relief valve, flowmeter, outlet block valve and etc. It integrates the functions of regulating, metering, monitoring, telemetering/remote control (SCADA system), peak shaving, noise elimination (muffler is separately provide to incorporate the client's specific requirements).

Characteristics

System Characteristics

Over pressure/low pressure shut-off valve, safety relief valve gas leak alarm system, fire ESD emergency venting system, excess gas limit and other safety measures are provided.

The leave factory preassembly and performance test shall be done and all control points will be set up according to the user's requirements, the equipment can be supplied in a skid-mounted mode or divided into several modules. Installation and testing are on site, easy maintenance.

It is suitable for natural gas, manufactured gas, LPG or gas mixing and etc. Easy to replace the gas type. Adopting 120% Acw design, automatic switching between the master line and slave line can be realized, ensuring the continuous gas supply and high reliability in the downstream.

Excellent expansibility, according to the user's requirements, the following functions can be added: noise elimination, monitoring, telemetering/remote control, SCADA system, heat tracing and etc. Regulating accuracy of $\pm 2.5\%$ ($\pm 1\%$) Insulation joints are installed in the inlet and outlet to protect the underground gas pipeline.

Gas Gathering Skid



A set of gas production and gas well to summarize system, gas-water separation system, drainage and blowdown Flash tank system, piping pigging system, output metering systems, use gas decompression system equal to one and integrating new digital automatic control of skid-mounted.

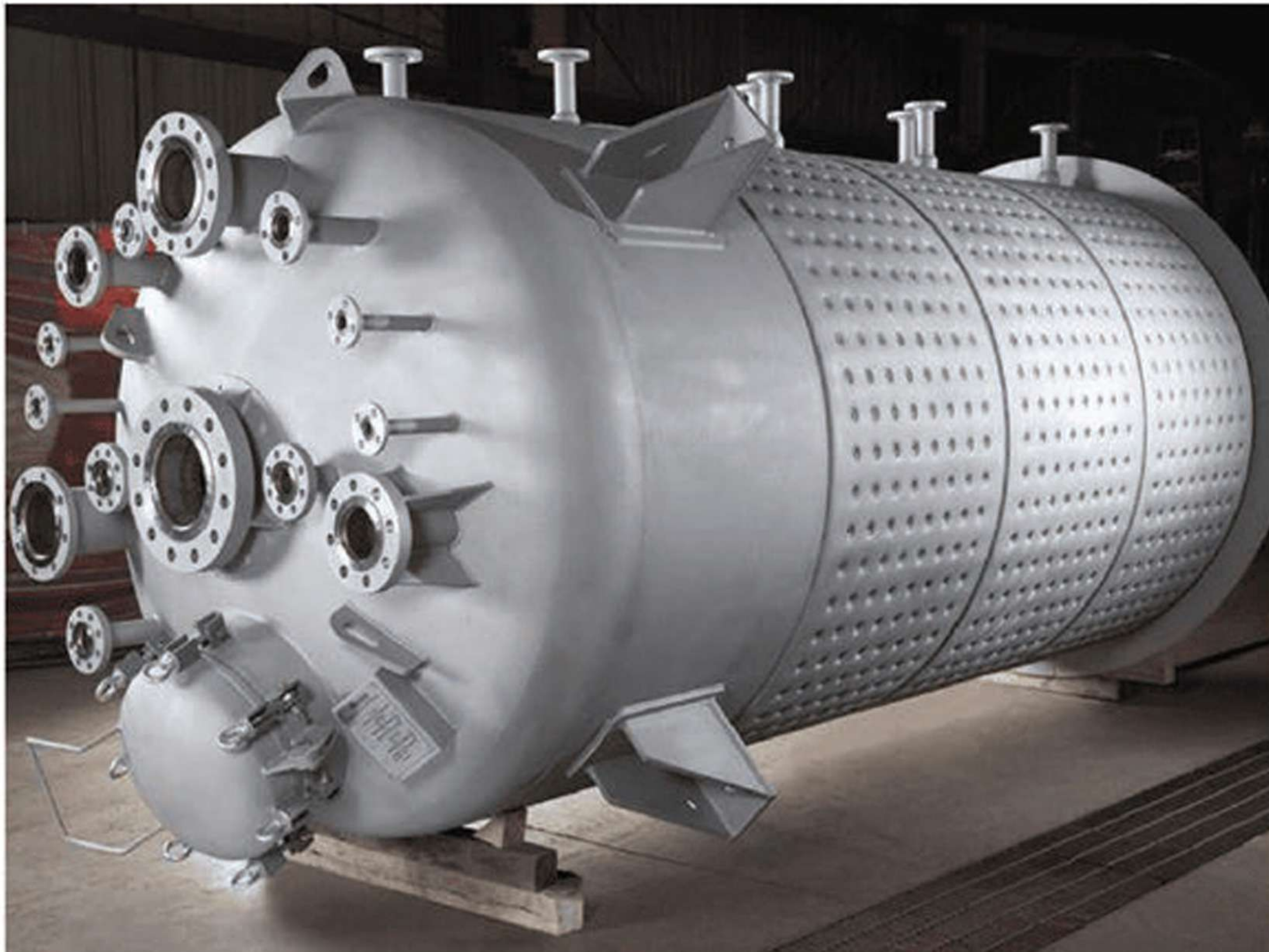
is made up of the ball tube, liquid Flash tank, gas tank, flow meter (orifice, Vortex precession), electric heaters, electric three-way ball valve, ball valve, safety valve, self-operated pressure regulating valve equipment consisting of natural gas set integrated device



Pressure Vessel

Pressure Vessel is an important equipment in gas transmission and distribution system.

During the gas transmission and distribution, flow meter, regulator, and valves require protection against the damage potential of solid impurities and liquid impurities.



Product Characteristics:

- Quick opening closure structure, easy installation and simple maintenance
- Vertical, horizontal, single-stage, multi-stage type are available
- It is suitable for natural gas, LPG, city gas, mine drainage gas and etc.
- High filtering precision, up to 5 μ m
- Small resistance, large flow capacity and high separating efficiency
- Filter element can be cleaned and replaced easily, service life is greatly extended
- The differential pressure gage with local indicating is equipped, remote monitoring is available
- It integrates the functions of sap cavity local indicating and remote monitoring
- Automatic drain function

Heat Exchanger



Shell and Tube Heat Exchangers can be customised to meet customer requirements. They are available in a wide range of design variations, special materials and features to meet virtually any heat transfer requirement. With the customers application needs in mind, our design team is able to design appropriately, as well as suggest accordingly to address any foreseen limitations or possible application challenges.

Where the application is sited in a salt-laden environment, such as seawater usage, additional steps should be considered to keep corrosion at bay.

There are three main methods for controlling the tendency of metals to corrode in seawater

- Glass flake coating at end bonnets.
- Cathodic protection by coupling to a sacrificial zinc anode,
- Use a more corrosion resistant metal, such as stainless steel, titanium, naval bronze, copper nickel and aluminium brass,

Typical construction materials are as follows:

- Shell and end bonnets: Carbon Steel or Stainless Steel.
- Tube sheets: Carbon Steel or Stainless Steel or Naval Brass.
- Tubes: Aluminium Brass. Stainless Steel or Copper Nickels.

By incorporating virtually any type of design concept to meet our customers' needs, our design team is most able, ready and willing to engage in active discussions with customers to ensure that the best solution is provided.

System Characteristics:

Heat exchanger is an important heat exchange equipment in petrochemical application situation. Fixed plate type, floating head type and model U tube type are available upon request.

Filter Separator

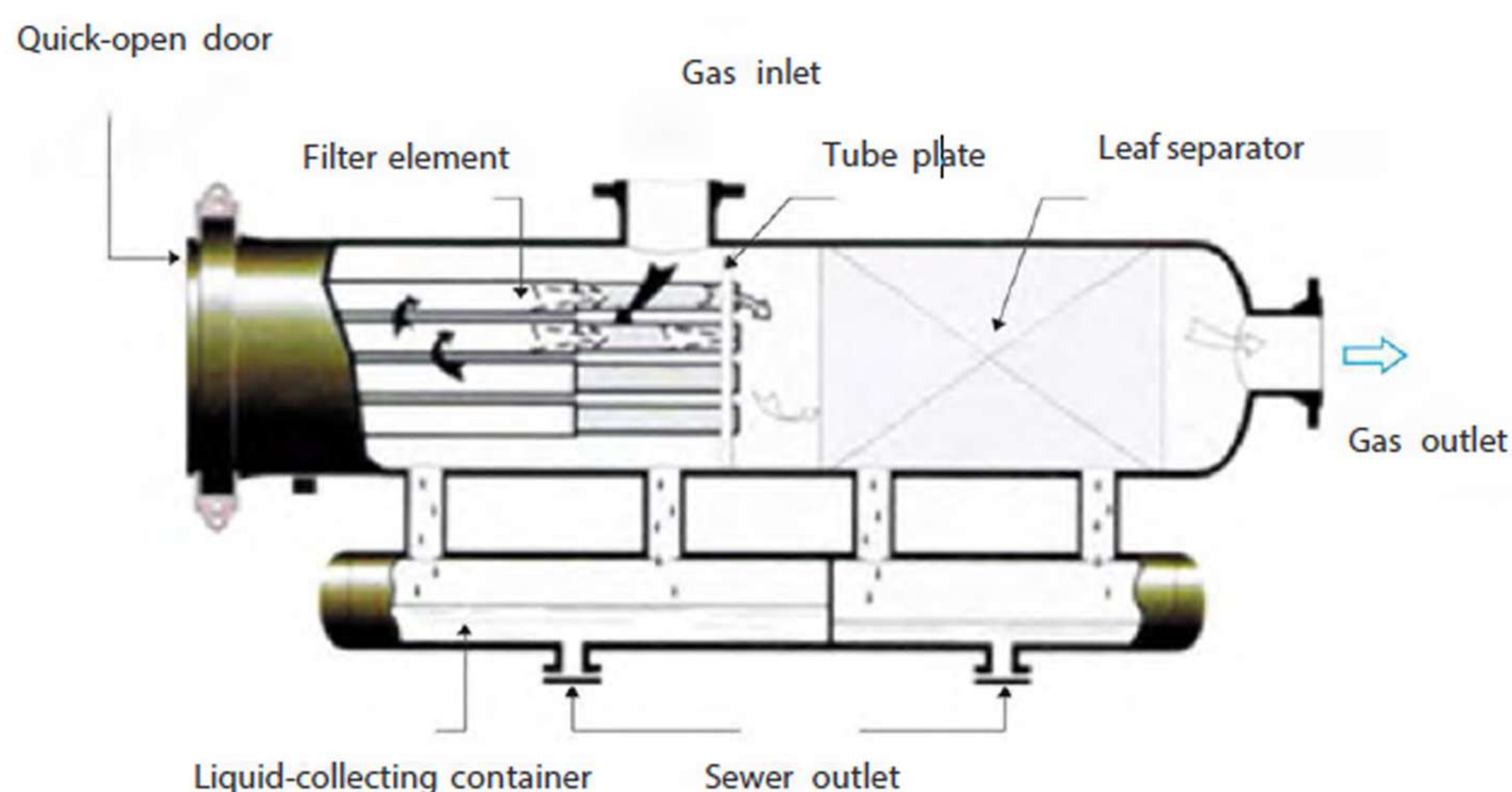


Gas filtrating separator is an important equipment in gas transmission and distribution system. During the gas transmission and distribution, flowmeter, regulator, and valves require protection against the damage potential of solid impurities and liquid impurities. That is, high-precision filtrating separator must be installed in front of the critical equipments. We have developed high accuracy filtrating separator drawing lessons from domestic and international advanced technologies and experiences.

Characteristics:

Product Characteristics

Quick opening closure structure, easy installation and simple maintenance
Vertical, horizontal, single-stage, multi-stage type are available It is suitable for natural gas, LPG, city gas, mine drainage gas and etc. High filtering precision, up to 5 μ m
Small resistance, large flow capacity and high separating efficiency It integrates the functions of sap cavity local indicating and remote monitoring
Automatic drain function



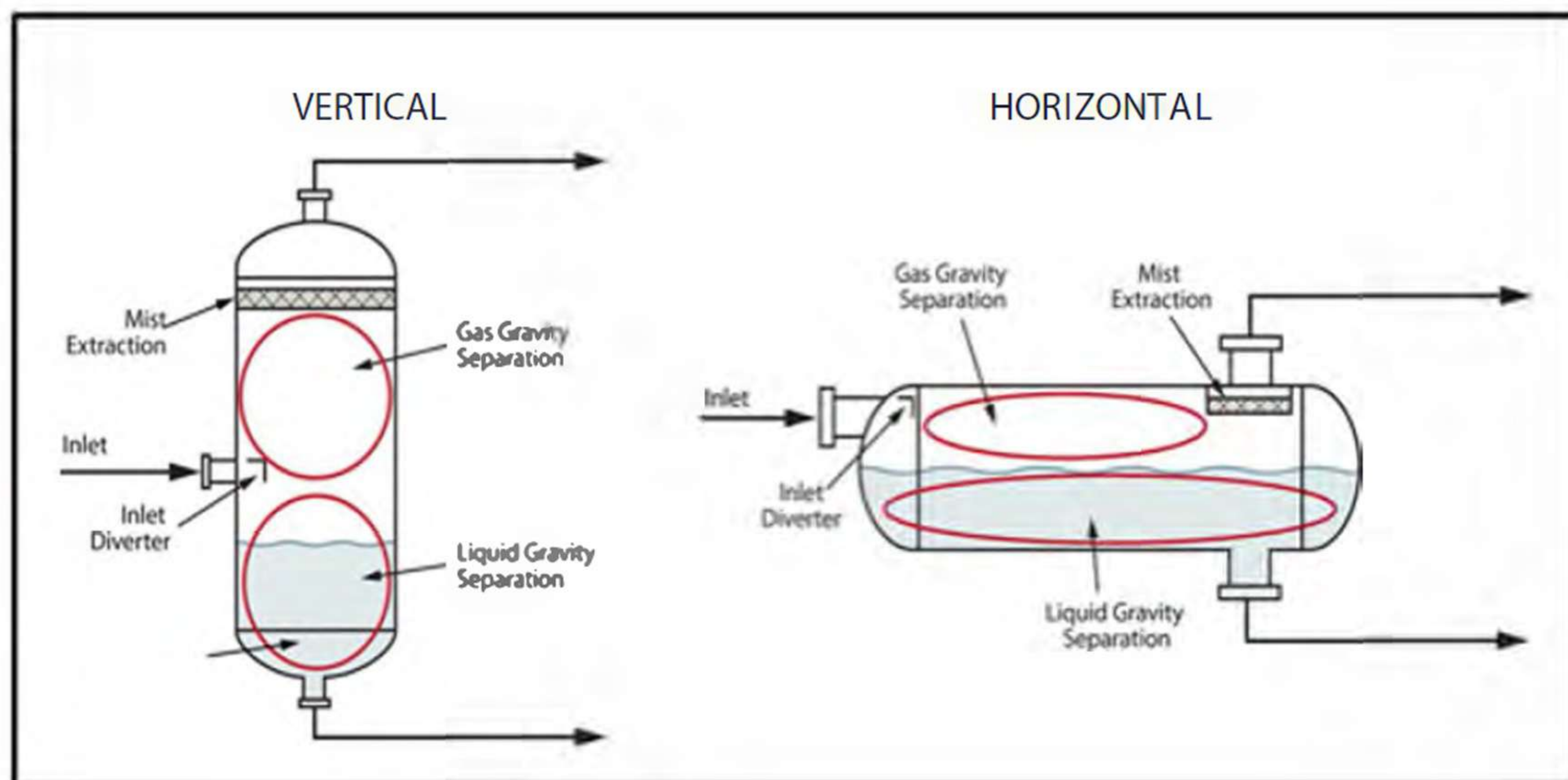
Gas Scrubber



Gas Scrubber removes traces of liquid droplets from gas streams to protect downstream equipment from damage and failure.

It is typically used upstream of gas treating equipment that contains dry desiccants or mechanical equipment such as compressors.

It is also used downstream of equipment where liquids have condensed from the gas. The Gas Scrubber is designed to handle light liquid loads and does not take the place of a primary separator.



Pig Launcher and Receiver



Pig launcher & receiver are important parts of pigging equipment on long distance pipeline, which is installed on both ends of pipeline to launch or receive the pig. It mainly consists of quick opening closure, barrel, reducer, and saddle support. Pig launcher & receiver shall assemble vent valve, safety valve and pressure gauge and other parts.

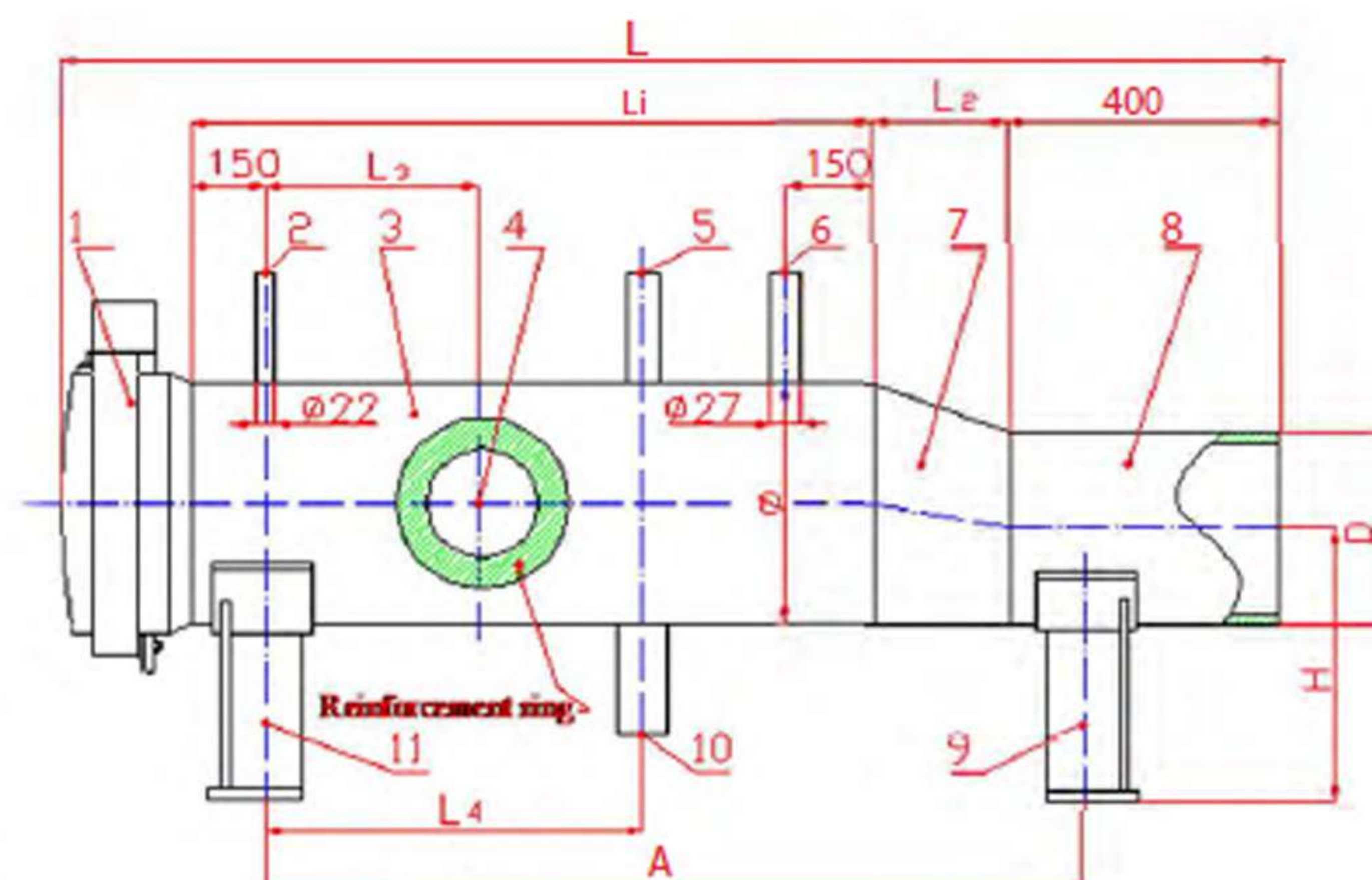
Characteristics:

Characteristics and Parameters

Quick opening closure structure, convenient for rapid on-off of the launcher & receiver Simple structure, easy operation, particularly well suited to daily maintenance of the pipeline Pigging indicator can be equipped indicating the launching and receiving process It is suitable for natural gas, crude oil, oil products and etc.

General Structure of Pig Launcher & Receiver

1. QOC
2. Pressure Gauge Nozzle
3. Barrel
4. Kickre Line
5. Safety Valve Nozzle
6. Vent Valve Nozzle
7. Reducer
8. Nozzle
- g. Rear Support
10. Drainage Valve Nozzle
11. Front Support





Elite

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