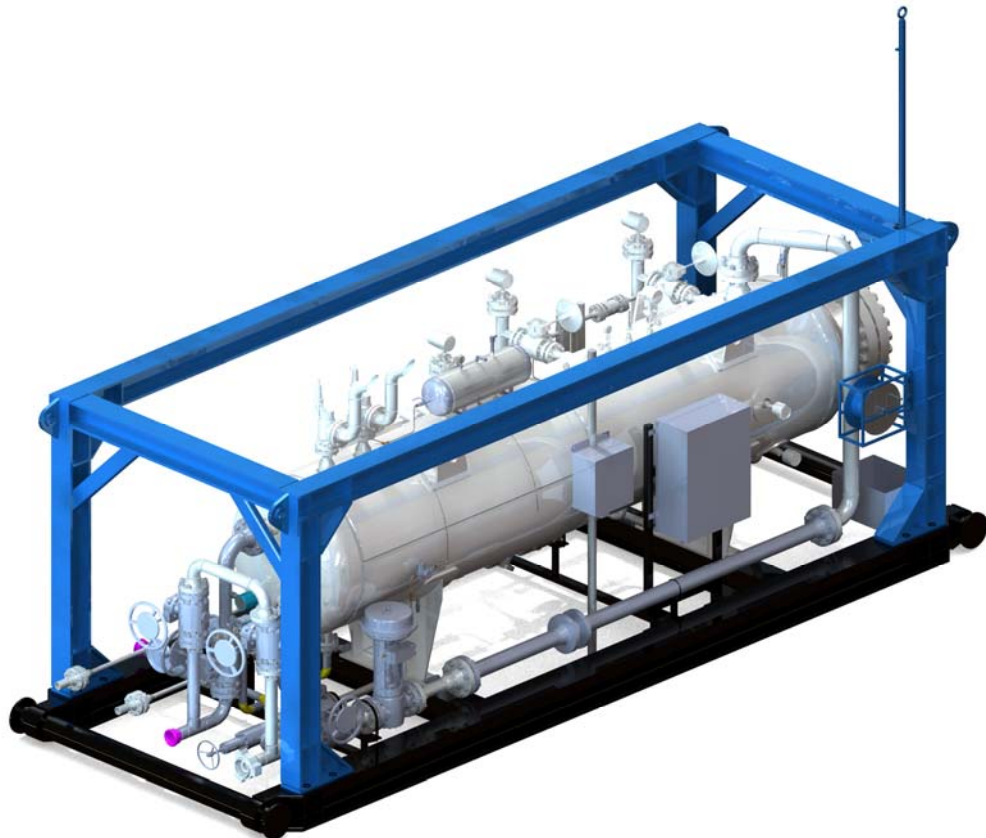


Three-Phase well Test Separator STG 655



Description

STG 655 Three-Phase Well Test Separator is an equipment designed to provide well effluent separation, measuring and analysis. The three-phase separator is a horizontal design steel vessel, welded according to pressure vessels provisions.

STG 655 and its instrumentation constitute modular technological units mounted on resistant metallic structures. This provides adequate and easy shipment, preventing the separators against mechanical and electrical integrity loss.

The main components of STG 655 three-phase separator:

- separator tank fitted with inner equipment (demountable and modular, made of stainless steel), level and pressure regulators, safety valves and measuring and control devices);
- tubes providing different fluids inlet-outlet and connection to measuring and control devices, as well as the corresponding equipment;
- metallic structure (slide type and, optionally, protection frame);
- surface sampling points collecting every well effluent phase samples;
- 3 parameters recorder system (absolute pressure, differential pressure, temperature);
- instrument gas conditioning system;
- optionally, shrinkage tester.

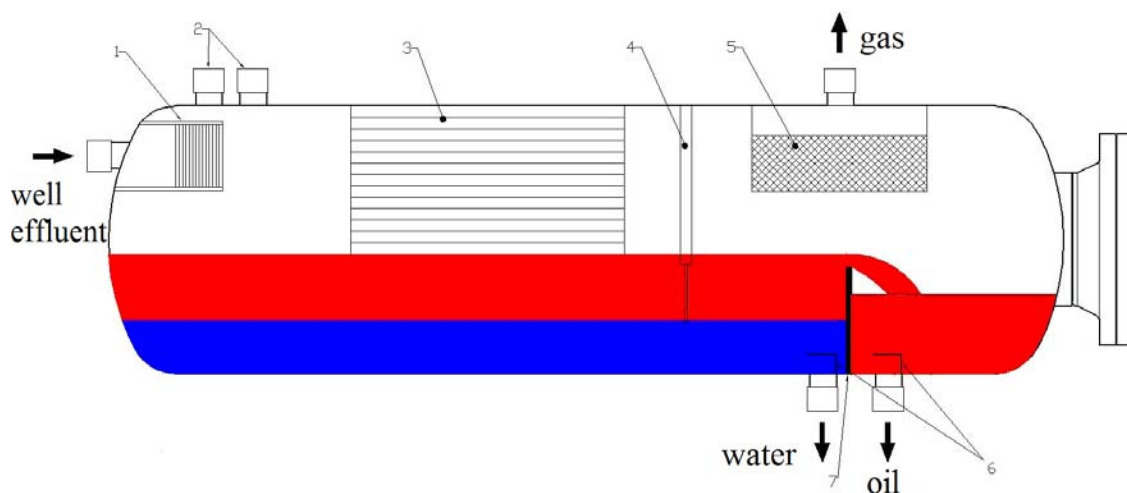


Figure 1 – Three-phase separator tank

The main inner elements of the separator tank (Figure 1):

- Gas jet breakup device (1) on inlet connection (deflector);
- Coalescer plates (3);
- Straightening plate (4) provided for foam breaking;
- Stainless steel, demountable demister (5), in modular construction in order to be mounted through manhole with diameter 18”;
- Weir plate (7), variable height provided;
- Flow regulators (6) on water and petrol outlet connections;
- Washing coil.

Coalescer plates separate drops > 15 mm and the demister filters the fine droplets from the gas flow.

A weir plate separates the water accumulation from the condensate section. The plate can be fitted with adjustable height in order to ensure adequate operation of the three-phase separator at highly different concentrations of the well effluent phases.

The phase capacity of the 3-phase separator depends on pressure and temperature conditions, as well as on the following characteristics:

- liquid viscosity and density;
- tank liquid level;
- inner separator equipment;
- required separation efficiency;
- tank dimensions.

Dimension (mm)	Pressure (bar)	Liquid flow (m ³ /day)	Gas flow (m ³ /h)	H ₂ S service conditions
Ø1067x3500	100	2000	54,000	Yes
Ø1067x5000	100	2100	67,000	Yes
Ø1219x3500	100	2200	98,000	Yes
Ø1219x5000	100	3000	110,000	Yes

Measurement equipment

STG 655 three-phase separators can be provided with the following types of measurement equipment:

Gas line:

- orifice plate metering system with corresponding holder with one room, quick change or with two rooms, change in flow;
- Coriolis flow meter;

Water line:

- electromagnetic meter;
- Coriolis flow meter;
- positive run indicator;

Condensate line:

- Coriolis flow meter;
- positive run indicator.

The following instrumentation is to be used:

- Water and liquid condensate level indicators
- Water and liquid condensate level regulators
- Level detector
- Differential pressure transmitter / differential pressure gauge provided to measure the demister pressure drop
- Local indication pressure gauge
- Local indication thermometer
- Temperature transmitter on separator inlet and outlet;
- Local indication pressure transmitter on separator inlet and outlet.

Safety equipment

Every separator is equipped with two pneumatic and progressive safety valves.

Control valves

- Pressure control pneumatic valve, on gas line
- Pneumatic valves for tank liquid level control
- One-direction valves
- Isolation valve with flow meter, upstream and downstream.

The separator can also comprise:

- Safety line ensuring overpressure protection, one-direction valve provided, connected to the gas outlet or to an independent flame
- Deviation line between petrol and water lines
- By-pass lines
- Washing lines
- Y filters on liquid purging tubes
- Insulation and electrical heating for the equipment and tubes using water or liquid condensate
- Gas detectors
- Manual control system of the pneumatic valve for pressure control
- Shrinkage tester.

The manufacturer reserves the right to make modifications without any prior notice.

CT No. 486 / 2011

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