

HEAT EXCHANGER

Oiltest heat exchangers provide maximum versatility in well flow temperature control prior to the separating process.

This heater has a capacity of 4 MMBTU/hr. It is fitted with a bypass allowing the coils to be isolated once the surface temperatures have stabilised. The heater process coils upstream are rated to 5,000 psig and are “split” by an adjustable choke to allow the effluent to be heated after it has taken a pressure drop across the choke.



This type of heater proposed is a direct heater, i.e. heat is applied directly to the process coils. This is the most efficient type of heat exchanger available for testing purposes. Superheated steam is applied by means of a steam generator directly into the pressurised vessel of the heater, through which the process coils run. Heat is applied directly to the process coil from the steam, providing a more efficient heat transfer than indirect type heaters as heat losses are reduced. Steam condensate is routed back to either the steam generator or overboard through a steam trap, which only will allow only condensate to pass.

Safety systems in this type of heater include a relief valve and / or rupture disk located on the heater vessel and a fail-safe temperature control device. A high-pressure pilot tied into the ESD system is also placed on the heater vessel.

Specification

Service:	Sour	Inlet Connection:	3" Fig. 602 Hammer union thread
Capacity:	4mmbtu/hr	Outlet Connection:	3" Fig. 602 Hammer union wing
Pressure Rating (upstream choke coil):	5,000 psig	Relief Line:	4" Fig. 206 Hammer union wing
Pressure Rating (downstream choke coil):	1,800 psig	Pipework Connection Seal Type:	FR58/90 (Anson Super seals)
Pressure Rating (vessel):	150 psig	Steam Supply Connection:	2" Fig. 206 Hammer Union thread
Maximum Temperature Rating (coil):	400 deg F	Condensate Return Connection:	2" Fig. 206 Hammer Union wing
Minimum Temperature Rating (coil):	-20 deg F	Weight:	Estimated 10,000 kg
Maximum Temperature Rating (vessel):	400 deg F	Dimensions:	72" w x 240" l x 96.7/8" h
Valve Type:	Ball Valve	Maximum Adjustable Choke Size:	3/4" Tungsten Carbide
Valve Configuration:	Front Ball Valve manual 5k Back Ball Valve manual 5k Bypass Ball Valve manual 5k	Upstream Process Coil nominal OD:	3.5"
		Upstream Process Coil nominal ID:	2.3" (XXH)
		Downstream Process Coil nominal ID:	2.6" (Sch. 80)
		Steam Required at 125 psig:	5,340 lbs. / hr @80% Effi.

Equipment Features

Insulation 1.1/2" c/w aluminium jacket

Check Valve on Steam Inlet

Steam Trap on Condensate Return c/w water exhaust port to prevent freezing

Pressure Gauges:

Vessel pressure (steam)

Inlet tubing pressure

Outlet tube pressure

Temperature Gauges:

Vessel temperature (steam)

Inlet tubing temperature

Outlet tubing temperature

Sample Take off point downstream choke manifold 1/2" NPT

Relief Valve set @ 150 psig

Rupture Disc set @ 157 psig

High temperature shutdown

Safety Shutdown for high vessel pressure

Crash Frame with Lifting Connections

Standards

Vessel ASME VIII div. 1

Sour Service NACE MR.01.75

Piping ANSI B31.3

Third Party Certification BUREAU VERITAS