

Steam Heat Exchanger

The Expro Steam Heat Exchanger provides maximum versatility in well flow temperature control prior to the separation process.

Heat exchangers are used to raise the temperature of well effluents for hydrate prevention, viscosity reduction and breakdown of emulsions to improve the separation of gas, oil and water.

Shell and tube steam heat exchangers consist of a pressure vessel that contains a set of high process coils. The vessel receives the steam medium from an external steam generator to heat the well effluent that passes through the process coil.

A multi-tube steam heat exchanger consists of a series of tubes contained within a steam pressure shell. Steam is delivered to the shell and is passed around the tube bundles. Heat is conducted through the tube bundles into the flowing well effluent.



Shell and tube steam heat exchanger



Multi-tube steam heat exchanger

Features and benefits

- Integral automatic temperature control
- Combines the latest adjustable choke technology
- Electronic monitoring of process parameters available
- Complies with applicable industry standards
- Prevents hydrate formation
- Reduces oil viscosity for improved burner efficiency
- Improves separation of oil/water emulsions

Applications

- Offshore / onshore well testing
- Heavy oil wells
- High rate gas testing

Technical specifications

	Shell and Tube				Multitude			
Working pressure (process)	10,000 psi (690 Bar)		15,000 Psi (1,035 Bar)		5,000 Psi (345 Bar)		10,000 psi (690 Bar)	
Working pressure (steam)	350 Psi (24 Bar)		350 Psi (24 Bar)		350 Psi (24 Bar)		350 Psi (24 Bar)	
Service	H2S		H2S		H2S		H2S	
Coil size	3" & 4"		4"		55 Tubes 1.625" OD x 0.165" Wall		95 Tubes 1.0" OD x 0.203" Wall	
Working temperature	-20°F – 350°F (-29 – 177°C)		-20°F – 350°F (-29° – 177°C)		-40° – 350°F (-40 – 177°C)		-40° – 350°F (-40 – 177°C)	
Heating capacity	4.33 MMbtu/hr		6.0 MMbtu/hr		4.33 MMbtu/hr		8 MMbtu/hr	
Choke type	One adjustable		One adjustable		N/A		One adjustable	
Dimensions	3.5 x 5.7 x 10 ft. (1 x 1.7 x 3.1 m)		4.6 x 6.6 x 7.0 ft. (1.4 x 2 x 2.1 m)		4.0 x 4.0 x 20 ft (1.2 x 1.2 x 6.1)		6.0 x 6.0 x 20 ft (1.8 x 1.8 x 6.1)	
Connections	Effluent inlet	3" 1502	Effluent inlet	H4" 27	Effluent inlet	H4" 31	Effluent inlet	H6" 46
	Effluent outlet	3" 1502	Effluent outlet	H4" 27	Effluent outlet	H4" 31	Effluent outlet	H6" 46
	Steam inlet	2" 206	Steam inlet	2" 206	Steam inlet	2" 206	Steam inlet	2" 206
	Steam outlet	2" 206	Steam outlet	2" 206	Steam outlet	2" 206	Steam outlet	2" 206
Applicable codes	ASME VIII Div.1 ANSI B31.3, API6A, DNV 2.7-1(skid and frame), NACE MR-10-75		ASME VIII Div.1 ANSI B31.3, API6A, DNV 2.7-1(skid and frame), NACE MR-10-75		ASME VIII Div.1 ANSI B31.3, API6A, API 660, DNV 2.7-1(skid and frame), NACE MR-10-75		ASME VIII Div.1 ANSI B31.3, API6A, API660, DNV 2.7-1(skid and frame), NACE MR-10-75	

Note: Other sizes, configurations and pressure ratings are available to meet most applications. For more information contact your local Expro representative or email welltesting@exprogroup.com