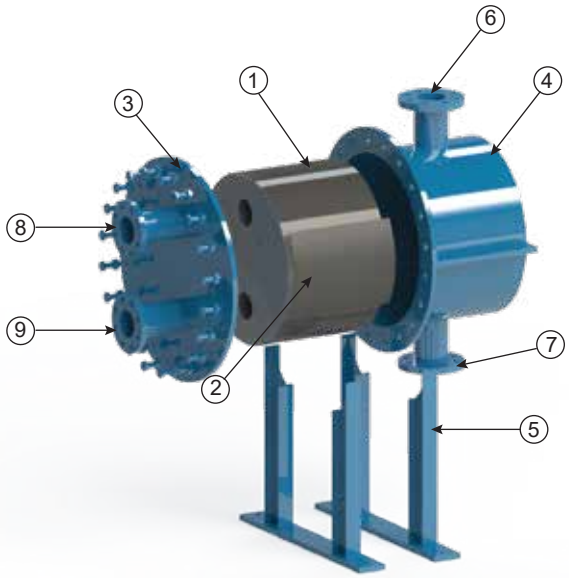
Plate & Shell Heat Exchanger (PSHE)

The PSHE range of heat exchangers are new generation heat exchangers, combining the best properties of the Plate & Frame and Shell & Tube heat exchangers. The PSHE provides high heat transfer rates with a high pressure and temperature operating range. They have no gaskets, are compact, low fouling and can operate at close approach temperatures.
At the heart of the PSHE is a fully welded pack of circular plates without gaskets. This plate pack is housed within a tubular shell to provide a strong compact construction. The PSHE series have a very wide operating range with capacities of up to 100 MW / units, and can operate at pressures up to 100 bar and temperatures up to 400°C. They have a low maintenance design that provides flexibility to select different material and nozzle combinations

Applications:
– Steam condensers and generators
– Condensate heaters and coolers
– Exhaust gas recovery
– LNG applications
– Crude oil heaters and coolers
– Gas heaters and coolers
– Hydrocarbon condensers and evaporators
– Product heaters and coolers
– Gas heaters and coolers
– Heat-recovery exchangers like feed/effluent exchangers
– Overhead condensers and gas liquefiers
– Thermosyphon and kettle reboilers
– Reactor temperature-control heat exchangers
– Cryogenic applications
– Evaporators
– Droplet separators
– Evaporators/droplet separators (Combined)
– Cascades
– Desuperheaters
– Oil coolers
– Subcoolers
– Condensers

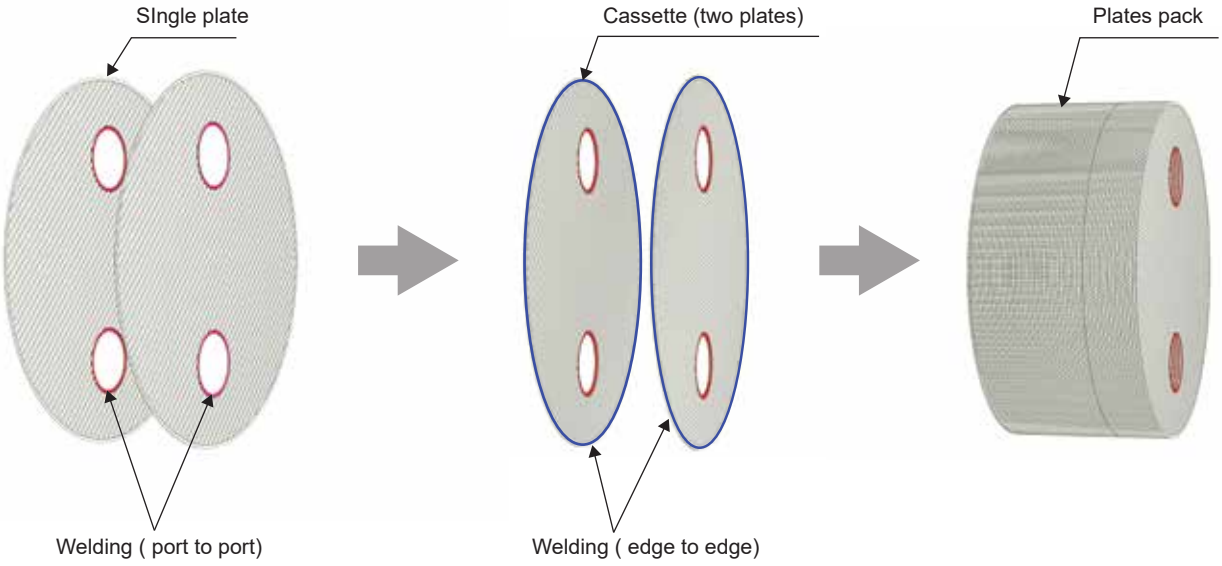
Benifits:
• No Gaskets or Brazing
• High Integrity / Total Containment
• Strong and Safe Construction
• Protection and Resistance to Thermal and Pressure Cycling
• Thermally Efficient
• Compact and Low Weight
• Flexible Construction
• Proven, Reliable Technology
• Low Fouling
• Minimal Maintenance Requirement
• Close Approach Temperatures

Technical Specification
Maximum Heat Transfer Area • 2 000 m²/exchanger
Mechanical Design
• Full vacuum to 70 bar possible
• -164 to +500°C



1. Welded plate pack
2. Spoiler
3. Open plate
4. Shell
5. Stand
6. Shell side Inlet
7. Shell side Outlet
8. Plate side Outlet
9. Plate side Inlet

Schematic of the PSHE



Type of PSHE

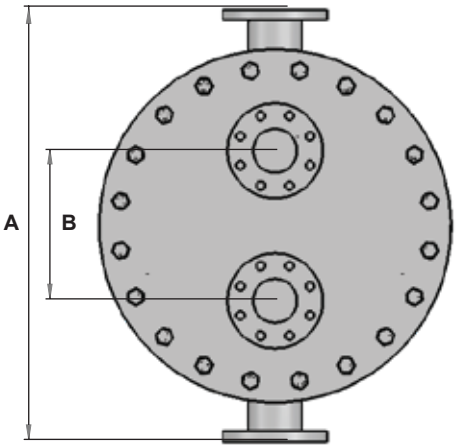
Openable

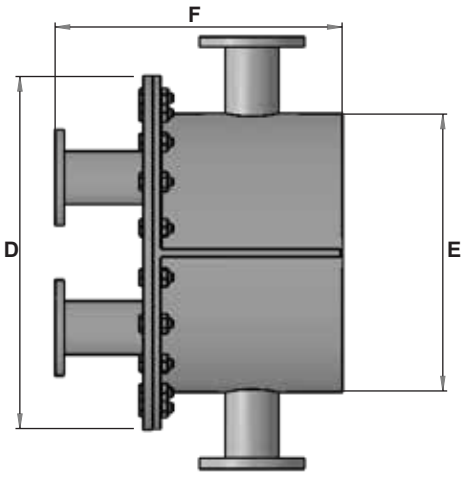
Fully welded

Mode name code

BPS - 179 - 16 - 96 - W/D/C

- W/D/C: W: Full welded; D: Openable; C: Compact
- 96: Plates Number
- 16: Design Pressure
- 179: Model
- BPS: BAODE Plate & Shell HEX





Model	A	B	C	D	E	F	G
BPS16	240	98	250	168	2.4*N+2	DN15	DN15-DN80
BPS22	448	135	310	219	2.4*N+3	DN20	DN20-DN100
BPS46	469	174	368	269	2.4*N+4	DN40	DN25-DN200
BPS72	565	277	460	355	2.8*N+4	DN50	DN25-DN300
BPS128	600	298	694	464	2.8*N+6	DN80	DN25-DN350
BPS179	963	338	725	559	2.8*N+6	DN100	DN25-DN400
BPS647	1520	650	1250	1016	3.2*N+6	DN150	DN25-DN700
BPS1200	1828	900	1548	1372	3.2*N+8	DN300	DN25-DN1000
BPS1600	2098	1000	1838	1562	3.2*N+8	DN350	DN25-DN1200

Material:

Shell	Plate
Carbon steel	AISI304
AISI 304	AISI 316L
AISI 904L	AISI 904L
AISI 904L	254 SMO
254 SMO	Tl
Ti	Nickle
Hastelloy	Hastelloy 254
Others	others