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Bosal P5-THE thin walled heat exchangers for 400 – 950°C / 750 – 1742°F

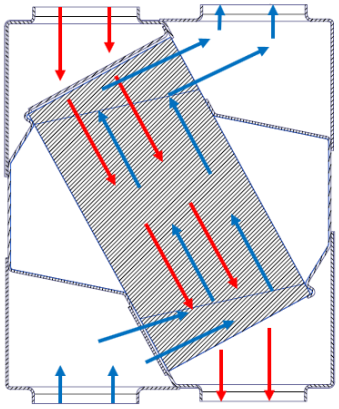
BOSAL Energy offers welded, compact plate heat exchangers for high temperature applications. The heat exchanger line is modular, and is available by default in high-end stainless steel. For the most demanding applications we offer products entirely made out of Ni-alloy. The Bosal heat exchangers are highly effective and are suitable for high temperatures (up to 950ºC/ 1742ºF) with limited Cr evaporation and metal dusting.

Application
Suitable for a wide range of applications, such as:
- Fuel cell systems (SOFC, SOEC, PEMFC, MCFC)
- Chemical Processes
- Gas turbines
- Micro gas turbines
- Stirling engines
- Internal combustion engines

Benefits
- High effectiveness and low pressure drop
- Compact
- Easy to install
- Optimized for lifetime
- Upgrade to Ni-alloy version for the most demanding applications
- On-demand catalytic coating for combined heat exchange and steam reforming, oxidative reactions, ammonia cracking.
- On-demand protective coatings for limiting Cr evaporation, increased resistance to corrosive conditions or high temperature.

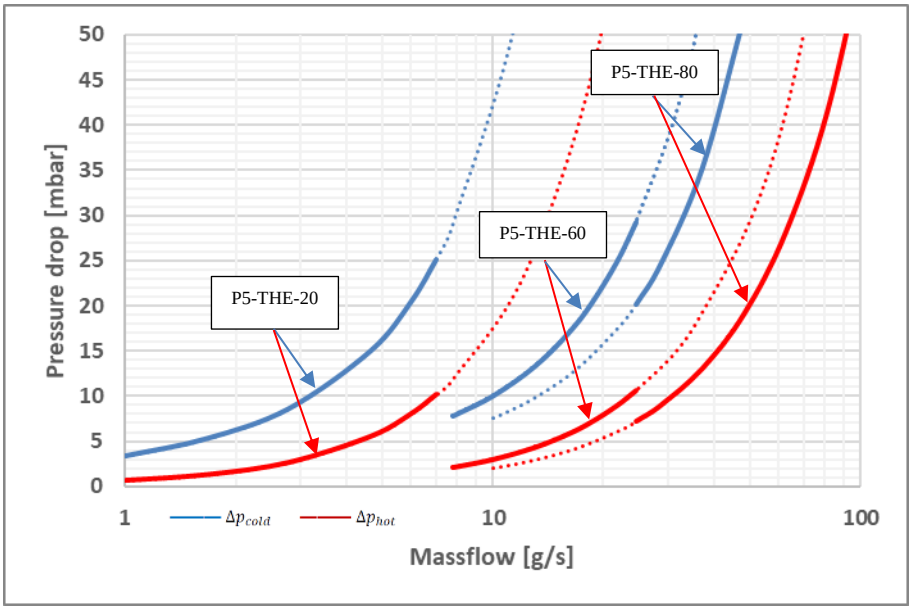
Design
- High quality robotized welding (Laser, MIG/MAG)
- Validation tested using highly sophisticated infrastructure
- Manufacturing and process engineering expertise
- Fully integrated Hot Balance of Plant system design capabilities
- Customized designs for high production volumes

High effectiveness P5 variant: P5-THE-60



Schematics of the hot and cold flow direction

Pressure drop vs. mass flow



Boundary conditions: Air-air, $\dot{m}_{cold} = \dot{m}_{hot}$, $T_{cold_{in}} = 20\ °C$, $T_{hot_{in}} = 800\ °C$, $p_{cold} = p_{hot} = 1\ bar(a)$

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Technical data

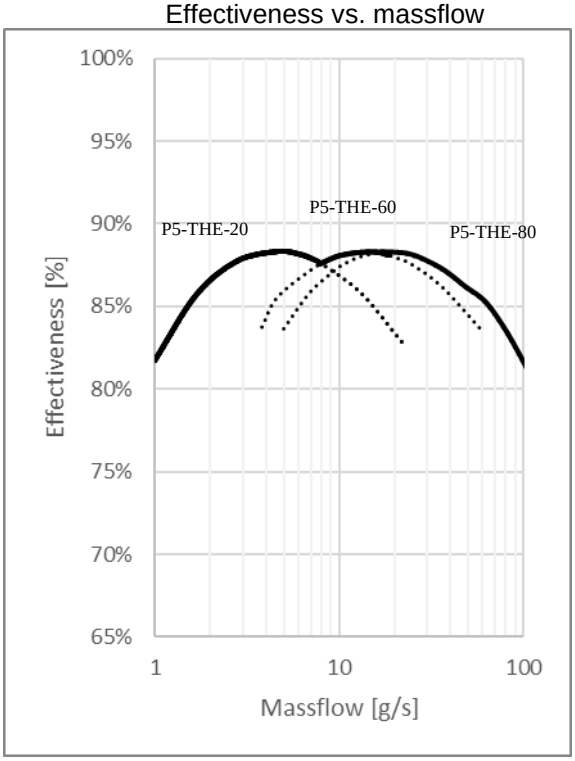
Housing material	Stainless steel Ni-alloy (optional)
Foil material	Stainless steel Ni-alloy (optional)
Max. flowrate m³/h (gpm)	250 (1100)
Max. design temperature °C (°F)	900 (1652) 1000 (1832) (Ni-alloy)
Flow directions	Counter flow or co flow
Oxidative coating (optional)	Heat exchanger with oxidizer function
Reductive coating (optional)	Heat exchanger with Steam reformer function or ammonia cracking function
Protective coating (optional)	Heat exchanger with reduced Cr evaporation and increased corrosion and temperature resistance

Dimensions and mass

# plate pairs (= n)	A (height) mm (inches)	B (Port OD) mm (inches)
20	52.5 (2.07)	34 (1.34)
60	141.5 (5.57)	89 (3.5)
80	192 (7.56)	89 (3.5)

# plate pairs (= n)	Weight kg (lb)	Volume l (gal)
20	7.65 (16.87)	4.78 (1.26)
60	14.94 (32.94)	12.9 (3.41)
80	19.68 (43.39)	17.5 (4.62)

Effectiveness vs. massflow



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Dimensional Drawing
mm (inches)