



LP REGENERATIVE PREHEATERS



PRODUCT OFFER

The **Low Pressure (LP) regenerative preheaters** are used in low pressure heat recovery system to heat up the condensate to temperature resulting from the turbine heat balance and required for correct condensate deaeration usually in Feed Water Tank. LP preheaters are installed and work horizontally. The steam condensate from the condenser flows in tube side, while heating steam extracted from the turbine is passed to the shell side. Non-condensed steam and inerts are extracted from the shell-side through perforated deaeration tube out of shell to the turbine condenser.

The additional condensate subcooler is installed in bottom parts of the shell side. Condensate level in subcooling zone is controlled by use of level controller and control valves on condensate outlet line from preheater. Design of subcooling zone depends on condensate amount and preheater size. To increase of turbulence condensate flow and the subcooling efficiency the grid baffles are installed.

The **LP preheaters** are shell & tube exchanger with U-tubes, in-full welded design, equipped with removable covers or manholes on condensate inlet chambers for maintenance and service. The tubes are fixed into tubesheet by expanding or expanding and seal welding.

The **materials selection** is to Client requirements. The U-tubes usually are made from SS steel. Other parts of heater are made from boiler carbon steel.

To design these heaters, Famet uses ASPEN/HTRI and HEI softwares.

Documentation is made in accordance with PED 2014/68/EC, UDT, ASME or AD 2000 Code.

There is also possible to fabricate LP heaters according to Client documentation.

The **reference list for LP heaters** designed and fabricated by FAMET are to be found on www.famet.com.pl



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EXEMPLARY DELIVERIES

LP REGENERATIVE PREHEATERS

End User Company Name	Year	Quantity [pcs]	Name	Temp. [°C]	Pressure [bar]	Material	Weight [kg]	Code Inspection
Balcke Dürr GmbH / SPX PGE, Power Plant Opole Unit 5&6 POLAND	2016	6	LP1/2/3 Heater	110/110	0.4/38	SS/CS	35 900	PED + EN13445
HOLTEC International PGE, Power Plant Opole Unit 5&6 POLAND	2016	2	LP 5 Feedwater Heater	270/166	6/38	SS/CS	21 000	PED + EN13445
HOLTEC International PGE, Power Plant Opole Unit 5&6 POLAND	2016	2	LP 4 Feedwater Heater	220/152	4/38	SS/CS	22 000	PED + EN13445
HOLTEC International PGE, Power Plant Opole Unit 5&6 POLAND	2016	2	LP 3 Feedwater Heater	180/134	2/38	SS/CS	25 000	PED + EN13445
SIEMENS Brno Bielsko-Biala POLAND	2012	2	LOW PRESSURE HEATER LP1, LP2	170 / 220 170 / 220	24 / 7,5 24 / 6	13Cr Mo45 +CS +SS	6 200 6 100	PED + EN13445
ALSTOM POWER, Termoelektrarna Sostanj SLOVENIA	2012	3	LOW PRESSURE HEATER LP	190/134 240/152 290/171	49/-1	CS + SS	17 200 13 650 13 200	PED + EN13445
ALSTOM POWER Power Plant ŁAGISZA POLAND	2007	1	LP Heater	180/300	42/9	CS, SS	9.900	PED+EN13445 UDT
ALSTOM POWER Power Plant ŁAGISZA POLAND	2007	1	LP Heater	170/210	42/5	CS, SS	11.500	PED+EN13445 UDT
ALSTOM POWER Power Plant ŁAGISZA POLAND	2007	1	LP Heater	170/110	42/2	CS, SS	11.750	PED+EN13445 UDT
ALSTOM POWER Power Plant ŁAGISZA POLAND	2007	1	LP Heater	170/100	42/2	CS, SS	13.250	PED+EN13445 UDT
Balcke-Dürr GmbH GERMANY Siemens AG Power Generation Framatome ANP for Nuclear Power Plant OKILUOTO III FINLAND	2006	1	LP Condensate Cooler	121/121	2/34	SS/CS	30/100	PED 97/23/EC +EN13445 Modul H1
Balcke-Dürr GmbH GERMANY Siemens AG Power Generation Framatome ANP for Nuclear Power Plant OKILUOTO III FINLAND	2006	1	LP Feedwater Heater	219/152	4/34	SS/CS+ Cladding /CS	95.100	PED 97/23/EC +EN13445 Modul H1
Balcke-Dürr GmbH GERMANY Siemens AG Power Generation Framatome ANP for Nuclear Power Plant OKILUOTO III FINLAND	2006	1	LP Feedwater Heater	149/134	2/34	SS/CS+ Cladding /CS	86.600	PED 97/23/EC +EN13445 Modul H1
Balcke-Dürr GmbH GERMANY Siemens AG Power Generation Framatome ANP for Nuclear Power Plant OKILUOTO III FINLAND	2006	3	LP Feedwater Heater	120/120	1/34	Low alloy /CS+ Cladding /CS	121.000	PED 97/23/EC +EN13445 Modul H1
ALSTOM POWER Power Plant PAŃNÓW POLAND	2002	1	LP	280/160	8/63	C-Steel SS-Steel	15.450	UDT UDT
ALSTOM POWER Power Plant PAŃNÓW POLAND	2002	1	LP	170/160	3/63	C-Steel SS-Steel	17.970	UDT UDT
ALSTOM POWER Power Plant PAŃNÓW POLAND	2002	1	LP	120/160	2/63	C-Steel SS-Steel	13.680	UDT UDT
ALSTOM POWER Power Plant PAŃNÓW POLAND	2002	2	LP	100/100	1/63	C-Steel	19.900	UDT UDT