

REFERENCE SHEET

Syngas Cooler Systems Following Reformer



SMARTER SOLUTIONS

**Custom-made
syngas cooler systems
following steam /
autothermal
reformer**



For decades, we've supported customers worldwide with process gas coolers (PGCs) and waste heat boilers (WHB) for their hydrogen / methanol / ammonia / carbon monoxide production plants. To provide licensors and operators optimum support for new systems or when planning modernizations, we apply our expertise to avoid stress cracking in tube sheets, metal dusting, hydrogen-induced stress corrosion cracking, thermal expansion problems, hot spots and long-term and low-temperature embrittlement. Our experience with more than 60 new plants and revamps since 1990 enables better customer solutions.

With our individual and customer-oriented design and optimal layout, we avoid unplanned shutdowns for our customers. We conduct root cause analysis and feasibility assessments based on the drawings of the existing heat recovery system. Our core competencies are the detailed design of upgraded modules and collaboration with specialized manufacturing partners.

For piggyback arrangements, U-type heat exchangers and 2-pressure systems, we've manufactured syngas coolers following reformers in many variations and design code combinations. We always evaluate customer specifications, discuss our concerns and propose alternative solutions, if warranted prior to finalizing contracts.

Scope of Supply

- Design beginning with heat engineering / root cause analysis (revamps)
- 3D and 2D planning, workshop drawings
- Manufacturing of coolers with refractory lining, ferrules already installed
- Auxiliaries: bypass regulation devices, steam drums, piping
- Pre-acceptance and shop test with notified body, stamping
- Seaworthy packing and transport to jobsite or FOB North Sea port
- Final documentation with detailed assembly manual

Technical Data

Design codes	ASME I / ASME VIII Div.1 with S/U stamps / PED, EN12953, AD2000
Thermal power / vessel	up to 90 MW
Process gas flow / vessel	up to 480,000 kg/h
Steam production / vessel	up to 165 t/h
Steam pressure	up to 165 t/h
Pressure part materials	Fine-grain steel, low alloyed steels, alloys, CS
Weight of single vessels	up to 150 t

