



Spanner® "DIESECON"

Exhaust Gas Boiler

余热锅炉

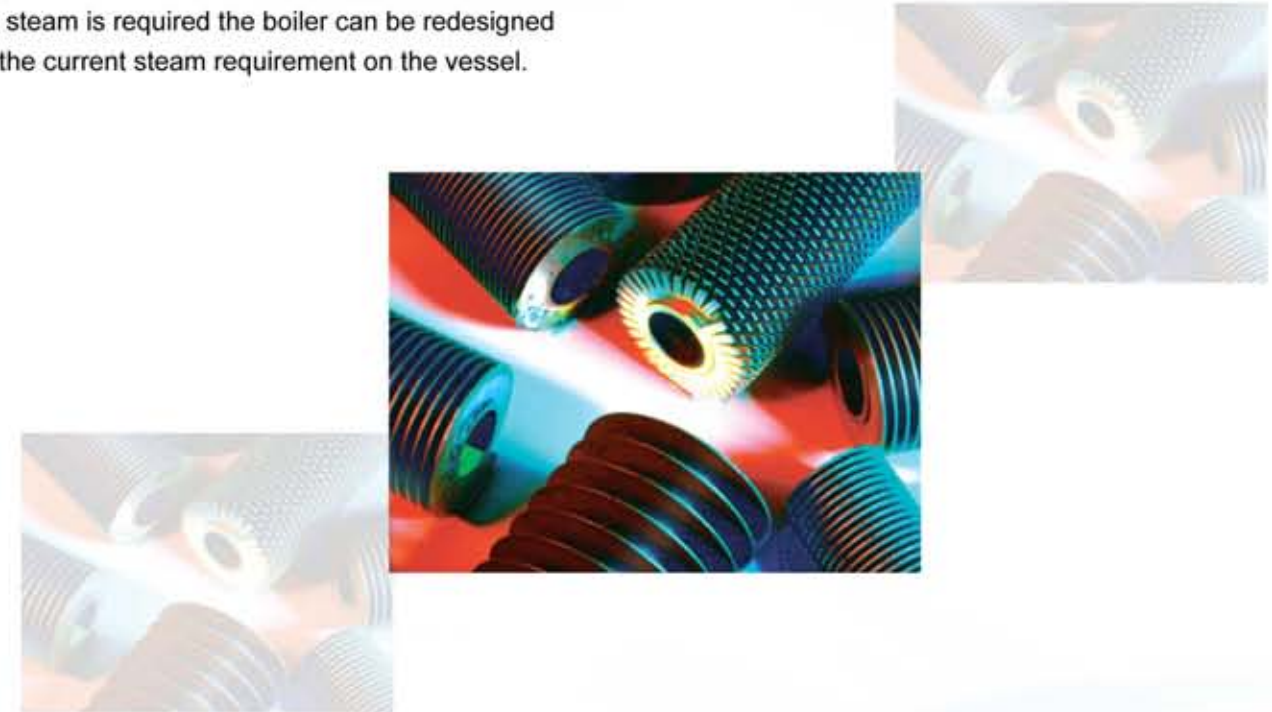


Replacement of Finned Tubes

Steel "H" finned tubes can be used in repairs of most types of heat transfer surface including those with plain tubes, pinned tubes and spirally finned tubes. Greens offers bespoke services to determine the best method to repair an existing boiler-using Steel "H" tubes within the existing casings and framework and providing the steam output originally required. For clean gas applications, spiral finned tubes can also be provided. If more or less steam is required the boiler can be redesigned to suit the current steam requirement on the vessel.

鳍片管的替换

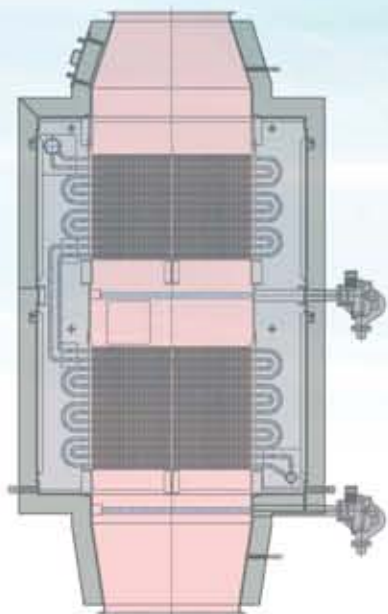
"H" 型鳍片管可以用于大部分的余热锅炉的换热面的修理替换, 包括光管、针形管和螺旋鳍片管。格菱针对客户要求提供利用"H" 型鳍片管进行专业修理替换的最佳设计方案。所有的设计将利用锅炉已有构架并保证余热锅炉的运行性能以满足当前的锅炉蒸发量要求。对于烟气比较清洁的运行环境, 也可以提供螺旋鳍片管余热锅炉。格菱余热锅炉可应客户要求设计以适应客户蒸汽量变化的要求。



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"Diesecon" Boiler Features:

Steel "H" extended surface tubes are used to transfer the heat from the gas to the water/steam.

Steel "H" Diesecon Features:

- Compact overall dimensions.
- Low dry weight and low water weight .
- Parallel fins allowing high gas velocity with low draught
- loss ensuring effective cleaning of heating transfer surface.
- Fins electric fusion welded to tubes-multi point contact
- ensuring continuous high strength weld with optimum heat transfer rates- resulting in low fin tip temperatures.
- Robust fins up to 3mm thick and tubes 3.5-4.0mm wall
- thickness designed to ensure effective performance and extended service life.
- Tubes and fins either standard carbon steel or for
- special applications corrosion resistant Corten steel materials can be supplied.
- For high temperature applications fins, tube and
- casing/framework can be manufactured from alloy steels to allow for dry running at elevated temperatures.
- Rugged all welded framework and casings designed to
- withstand pulsation effects of marine diesel engine.



"Diesecon"余热锅炉的特点:

采用 "H" 型鳍片加强烟气侧的传热。

"H" 型 Diesecon 余热锅炉特点

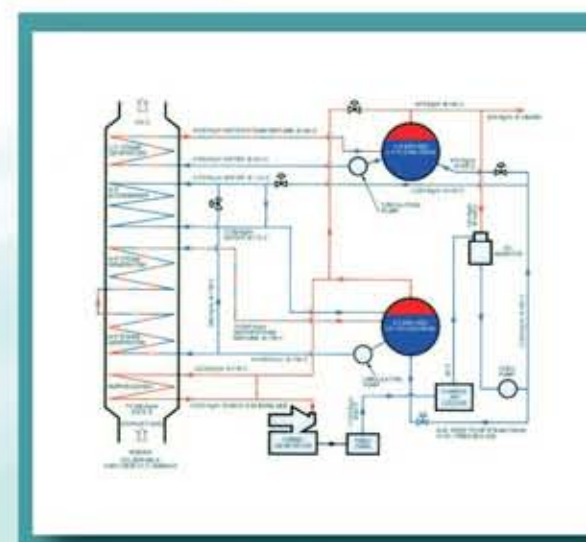
- 结构紧凑。
- 自重低；运行中水量需求少。
- 平行鳍片设置降低管组高度，在减小烟气侧流动阻力的同时可以保持相对较高的气流速度，有利于受热面表面的清洁。
- 鳍片通过电熔焊焊接到管子上——多接触点保证焊接具有高强度连续性的特点，从而优化传热效果——取得肋片末端温度低的优点。
- 坚固耐用的鳍片可达3毫米厚，管壁厚度在3.5至4毫米之间，这保证了高效的传热性能和延长的使用寿命。
- 管材可以是标准的碳钢管和鳍片，也可以采用抗腐蚀磨损的特殊钢材如 "Corten" 钢材等。
- 对在高温工作环境的肋片、钢管和炉墙及构架等材料采用合金钢材，从而容许锅炉在高温下干烧。
- 特别设计的全焊型锅炉钢结构和炉墙使锅炉可以适应船用柴油发动机的脉冲效应。

Power Generation

Where there is sufficient heat in the exhaust gases a "Diesecon" boiler can be designed to produce superheated steam. This superheated steam can be utilized in a Turbo-Alternator to generate electricity –often providing sufficient electricity to reduce the number of Diesel Generators fitted on board. Thus reducing the vessels overall operating costs (fuel and maintenance for diesel alternator ) for minimal additional capital expenditure when the savings made on installing one of the diesel alternators is used to offset the additional cost of a larger economizer and a turbo-alternator.

To determine whether a waste heat boiler and turbo-alternator system is feasible Greens can provide an assessment of the amount of power that can be generated. Care is taken in the design to protect the boiler and associated ducting from external corrosion as a result of the combustion of fuel containing sulphur.

To maximize heat recovery and maximize power generation both single pressure and two pressure boiler systems can be offered. If appropriate, the boiler can be designed to work in conjunction with other heat recovery systems applied to the engine charge air and jacket water cooler.



发电

如果烟气尾气中含有足够的热量，"Diesecon" 余热锅炉可以用来产生过热蒸汽。利用过热蒸汽通过蒸汽轮机发电机进行发电，可以提高热能利用效率并产生足够的电力以减少船上柴油发电机的数量。因此只需要在原本购买柴油发电机的成本上增加极少的资金就可以购置余热锅炉及蒸汽轮机发电机，从而取得长期的减少运行成本的(柴油发电机的油耗和保养)效果。

格菱可以提供技术支持帮助客户评估余热锅炉和蒸汽轮机发电系统的可行性，并计算发电量。格菱在余热锅炉和管道的设计制造上应用许多有效措施防止因为燃烧含硫燃料而导致烟气对钢材的腐蚀。

为了取得最好的余热利用效果和最大的发电量，单压力或者多压力余热锅炉可以针对客户要求优化设计。格菱余热锅炉也可以设计与其它余热系统如发动机空气预热和冷却水系统等共用。

