

Titanium Heat Exchangers

钛材换热器

Exergy's Technology Group have completed the R&D phase and successfully designed & manufactured prototype units in titanium alloy. Exergy's entire range of shell and tube & tube in tube heat exchangers are now available in titanium.

EXERGY 的技术团队通过研究和实验, 成功设计并生产出了钛材换热器的样品。现在钛材换热器已经加入到 EXERGY 的产品范围中。

Applying Exergy's highly efficient manufacturing technologies has resulted in less material required for fabrication and high EXERGY 高效的生产技术使产品体积小, 生产所需原材料少, 并且能达到很高的换热效率。



Titanium is an excellent solution
for highly corrosive applications

Targeted Industry and Applications

目标行业及工况

- Semiconductor 半导体行业

Heated DI water and other highly corrosive semi-conductor applications

半导体行业中加热去离子水或其他腐蚀性较高的工况

- Chemical 化工

Impervious to fluctuations in PH levels; performs well in oxidizing media such as hot nitric acid; for chlorine and organic chlorides it is resistant to pitting and crevice corrosion

不受 PH 值变动的影 响; 对于氧化剂 (例如高温硝酸) 有很好的防腐蚀效果; 对于氯和有机氯化物, 能够防止点蚀和裂缝。

- Pharmaceutical 制药

Improved corrosion resistance minimizes contamination of ultra-pure water.

较高的耐腐蚀性可以减少超纯水腐蚀产生的污染

- Marine 海水处理

Sea water and De-salinization; sea water can be used as a coolant in the heat exchanger

适用于海水淡化处理; 以及用海水作为冷媒的工况。

- Aerospace and Defense 航空和国防

A significantly lighter material that is strong as steel but with 60% less density

材质轻, 与钢材强度相同但比重降低了60%

Benefits of Titanium 钛材质的优势

- Maintains its integrity at elevated temperatures
温度升高的情况下能够保持它的完整性
- Improved corrosion resistance minimizes contamination of ultra-pure water
较高的耐腐蚀性可以减少超纯水腐蚀产生的污染
- Low cost of ownership 拥有成本低
- Small geometry, large heat 体积小，换热面积大，换热效率高

About Titanium

Overwhelming market demand for 100% titanium heat exchangers as a heat transfer solution motivated Exergy to advance the development of Exergy's standard designs using the latest technology for titanium fabrication. Exergy has been successful in applying highly efficient manufacturing technologies to the manufacture of titanium heat exchangers. The results of these advances are outstanding performance in 100% titanium; as compared to other solutions currently available in the market.

关于钛材

市场对100%钛材换热器的强烈需求推动了EXERGY将最新的钛生产技术引用到了标准产品中。EXERGY已经成功地将高效的生产技术使用到了钛材换热器的生产中，与目前市场上其他产品相比，EXERGY的优势在于100%钛材带来的性能优势。

Exergy's titanium heat exchangers are manufactured in 100% Commercially Pure (CP) Titanium. Unalloyed CP Titanium is available in four grades; 1, 2, 3, 4 which are used based on the corrosion resistance, ductility and strength requirements of a specific application. Grade 1 has the highest formability and grade 4 has the highest strength with moderate formability; while grade 2 combines both features and widely available in the market. CP titanium ASTM grade 2, (UNS R50400) offers excellent corrosion resistance, superior formability and strength; a widely used grade that offers a yield strength of 275MPa (40 ksi) minimum. It is considered the best combination of strength, ductility and brazeability.

EXERGY的钛材换热器使用100%工业纯钛。非合金工业纯钛根据耐腐蚀性，延展性以及特定工况的强度要求分成4个等级；1级可成形性最高，4级强度最高但可成形性较低；2级在这两方面较为平衡所以在市场上运用很广。ASTM2级（UNS R50400）工业纯钛具备很好的耐腐蚀性，可成形性以及强度；这种被广泛使用的等级最低屈服强度为275MPa（40KSI），被认为是强度，延展性和钎焊性的最佳组合。

Performance Features 性能特点

- Working Operation Pressure 工作压力
Tube Side 管程: 510-1,275 psi (3515-8790 kPa)
Shell Side 壳程: 340-850 psi (2344-5860 kPa)
- Working Operation Temperature 工作温度
600-1000 °F (316-536 °C)