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TRISTAR TECHNOLOGIES (BEIJING) CO., LTD.

泰斯达科技（北京）有限公司

TRISTAR TECHNOLOGIES PTE. LTD.

新加坡泰斯达科技有限公司

分离/过滤产品样本

CATALOGUE OF SEPARATION / FILTRATION PRODUCT

工业领域分离技术专家
专注气液/气液固/气液液动力学分离

SEPARATION TECHNOLOGY EXPERTS IN THE INDUSTRIAL FIELD
FOCUSING ON DYNAMIC SEPARATION OF GAS & LIQUID / GAS & LIQUID & SOLID / GAS & LIQUID & LIQUID





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公司简介

Company Profile

泰斯达科技有限公司是一家位于新加坡，提供分离器，过滤器与凝聚设备的供应商。我们专注于石油和天然气，炼油，石化，化工，煤化工，天然气管道，天然气处理厂，液化天然气（LNG），发电，海上平台和陆上终端等领域。我们为客户提供完整分离技术的工程设计与设备供应，项目管理，质量控制和售后服务等。

泰斯达在北京设立了分公司，称为泰斯达科技（北京）有限公司，其主要任务是为客户提供更好的服务及项目管理，和利用国外科技、在中国本地制作分离设备。

除上述外，泰斯达签署了多项协议，在海外市场出售高质量的中国产品，如压力容器，管壳式换热器，反应器内网，管件，余热回收炉，膨胀节等。泰斯达也代表了一些知名的海外供应商，在中国市场上出售他们的产品，如含尘气体的洗涤和净化系统，快开盲板和静态混料器等。

泰斯达公司致力于工业领域分离技术，可以为用户提供安全、高效、专业的解决方案及整体设备，我们拥有完备的售前 / 售后服务团队、专业的技术团队，让客户拥有更好的使用体验。

我们专注的分离领域主要在：

固体从气体或蒸汽中的分离，液体从气体或蒸汽中的分离，液体从其他液体中的分离，固体和液体从气体中的分离，气 / 液 / 液三相分离，分离器的撬装装置。

Tristar Technologies Pte. Ltd. is a Singapore based company who can supply separators, filters and coalescers. Our business field is focus on petroleum, natural gas, petrochemical, chemical, coal chemical, natural gas pipeline, natural gas treating plant, LNG, power plant, offshore platform and onshore terminal etc. Our service and supply is to provide the customer complete separation engineering technology, equipment supply, project management, quality control and after market service etc.

Tristar sets up branch company in Beijing China called Tristar Technologies (Beijing) Co., Ltd., main purpose is to provide China customer better service and project management with our advanced overseas technology to make separation equipment locally in China.

Except above, Tristar has signed some agent agreement with China local supplier to sell their high quality product in overseas market, like pressure vessels, heat exchangers, reactor screens, pipe fittings, HRSGs and expansion joints etc. Also Tristar has signed some agent agreements with overseas famous suppliers to sell their product in China market, like gas cleaning and dedusting system, quick opening closure system and static mixers etc.

Tristar focuses our separation technology in industrial area, we can supply safe, high efficient, professional separation solution and equipment, we have team on technology, before sales and after sales to make our customer satisfaction to utilize our equipment and service.

The main separation area which we focus is as follows,

Solid separation from gas or steam, liquid separation from gas or steam, liquid separation from other liquid, solid and liquid separation from gas, gas-liquid-liquid 3-phase separation, separator skid supply.

泰斯达高效叶片式气液分离器

TRISTAR HIGH EFFICIENCY GAS-LIQUID VANE SEPARATOR

泰斯达高效叶片式气液分离器，利用美国专利核心双袋式叶片技术，广泛的应用于煤化工、石化、化工、炼油等领域大气流量气液分离场合，尤其在煤化工里的一氧化碳变换、压缩机前 / 机间 / 机后分离器、甲醇分离器、甲醇低温冷洗塔出口分离器等领域都有广泛的应用。

Tristar high efficiency gas-liquid vane separator, utilizes American patent core technology of double pocket vane element, widely apply on the area of coal chemical, petrochemical, chemical and oil refinery which there is gas/liquid separation with big flow rate, especially widely use on carbon monoxide conversion, compressor inlet, intermediate, outlet, methanol fabrication, methanol low temperature wash etc. in coal chemical process.



叶片分离器包含以下四个类型

Vane Separator Including the Following 4 Categories

- 同轴分离器
- 卧式气体分离器
- Inline separator
- Horizontal gas separator
- 立式气体分离器
- 三相分离器（油、水、气的分离）
- Vertical gas separator
- Three phase separator (oil, water and gas separation)

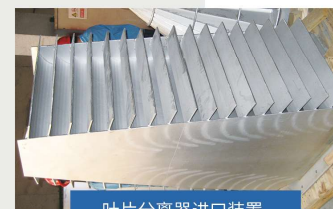


叶片分离器核心内件
Vane Separator Core Internal

分离器性能保证

Separator Performance Guarantee

- 大于 8 微米以上的液滴分离达到 100%;
- 出口气体里的液体携带量小于 0.01kg/1000Nm³;
- 通过整个分离器的压降小于 10kpa。
- 100% liquid particle separation 8 microns and larger;
- Liquid carryover from the outlet gas will be less than 0.01kg/1,000Nm³;
- Pressure drop through the complete separator will be less than 10 kpa.



叶片分离器进口装置
Vane Separator Inlet Device

Application Example

- Methanol Separator for Shenhua Ningmei coal to Methanol Project;
- Methanol Separator for Shenhua Baotou 1.8 MTPY Coal to Methanol Project;
- Gas Liquid Separators for Shanxi Lu'an Coal to Oil Project on Fischer-Tropsch Synthesis Unit;
- Compressor Inlet/Intermediate/Outlet Separators for Petrochina Yunnan Oil Refinery Project;
- Compressor Inlet/Intermediate/Outlet Separators for CNOOC Huizhou Oil Refinery Expansion Project;
- Gas Liquid Separators for Shenhua Ningmei By-products From Coal Chemical Further Processing Integrated Utilization Project.

分离器的优点

Vane Separator Advantages

- 可以处理非常规的大气液流量，达到理想气液分离效果；
- 可以优化尺寸，直径通常比传统分离器小 30%-40%；
- 分离效率高，压降低；
- 设备可以连续运行，无需更换备品备件；
- 核心叶片内件可做拆卸式，方便从设备人孔取出清洗并装回。
- Can handle very big gas/liquid flow rate, and get ideal gas-liquid separation performance;
- Vessel size can be optimized which is typically 30-40% smaller than conventional separator technology;
- High separation efficiency with low pressure drop;
- Vessel can operate continuously without any spare parts to replace;
- Process internals can be designed as removable configuration which can be dismantle and installed back from man way for cleaning purpose.



叶片分离器核心内件 - 双袋式叶片
Vane Separator Core Internal - Double Pocket Vane Element

应用实例

- 神华宁煤煤制甲醇项目甲醇分离器；
- 神华包头 180 万吨煤制甲醇项目甲醇分离器；
- 山西潞安煤制油项目费托合成气液分离器；
- 中石油云南大炼油压缩机机前机间机后分离器；
- 中海油惠州炼油扩建项目压缩机机前机间机后分离器；
- 神华宁煤煤制油副产品综合利用项目气液分离器。



泰斯达三相分离器

TRISTAR THREE PHASE SEPARATOR

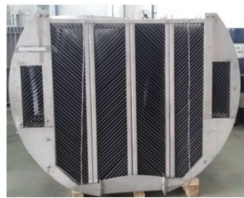
泰斯达三相分离器，广泛应用于石化，炼油，海上平台等领域，主要进行油、水、气三相物系的分离。

Tristar three phase separator, widely apply on the field of petrochemical, oil refinery and offshore platform etc., mainly for the purpose of oil, water and gas separation.

三相分离器包含以下两个类型

Three Phase Separator Including the Following 2 Categories

- 传统三相分离器
利用重力分层分离油、水两相，利用叶片分离内件组件分离气、液两相，从而实现油、水、气三相分离，具体操作通过液位计、液位计及阀门开度调节实现。
- 斜板聚结三相分离器
利用聚结斜板内件组件分离油、水两相，利用叶片分离内件组件分离气、液两相，从而实现油、水、气三相分离，具体操作通过双堰板自动调节实现。
- Traditional Three Phase Separator
Oil water separation by gravity, gas liquid separation by vane separation internal, so as to achieve oil, water and gas separation. Separation operation is achieved by the adjustment of position gauge, level gauge and valve opening.
- Oil Water Coalescing Tilted Plate 3-phase Separator
Separate the oil and water with tilted plate coalesce assembly, and separate liquid from gas with vane assembly so as to achieve oil, water and gas separation, the actual operation can be automatically adjusted by dual weir plate.



油水聚结斜板分离内件
Oil Water Tilted Plate Coalescer Internal



旋风组件入口装置
Cyclone Assembly Inlet Device



稳液孔板及喷砂装置
Calming Baffle and Sand Jetting System



V-板叶片内件
V-bank Vane Assembly



三相分离器的优点

- 聚结斜板的应用极大的缩小了设备的尺寸，节省空间及投资；
- 操作工况波动时，双堰板自动进行液位调节，无需人工手动操作；
- 油、水、气三相分离效率高，压降低；
- 喷砂系统在线清洁设备内部。

Three Phase Separator Advantages

- The application of Coalescing Tilted Plate greatly reduces the size of equipment, save space and investment;
- When the operating conditions fluctuate, the double weir plate automatically adjust the liquid level without manual operation;
- Oil/water/gas three-phase separation has high efficiency and low pressure drop;
- Sand jetting system can on-line clean the vessel bottom part.

分离器性能保证

- 大于 8 微米以上的液滴分离达到 100%；
- 出口气体里的液体携带量小于 0.01 kg/1000Nm³；
- 水出口水中含油量小于 20mg/L；
- 100% 分离 20 微米及以上的水中油滴；
- 油出口油中含水量小于 50mg/L；
- 100% 分离 35 微米及以上的油中水滴；
- 通过整个分离器的压降小于 10 kpa。

Separator Performance Guarantee

- 100% liquid particle separation 8 microns and larger;
- Liquid carryover from the outlet gas will be less than 0.01kg/1,000Nm³;
- Oil content in the outlet water less than 20 mg/L;
- 100% separation of oil in water 20 microns and larger;
- Water content in outlet oil less than 50 mg/L;
- 100% separation of water in oil 35 microns and larger;
- Pressure drop through the complete separator will be less than 10 kpa.

应用实例

- 山西潞安矿业集团一体化示范项目；
- 巴西国家石油公司 ROTA-3 项目；
- 美国德克萨斯州西牧场 CO₂ 注入地下采油项目；
- 伊拉克胡尔马拉油田发展北部脱气站项目；
- 诺信威美国油田项目。

Application Example

- Shanxi Lu'an Mining Group Integration Demonstration Project;
- Petrobras Rota-3 Project;
- USA Texas West Ranch CO₂ Oil Enhancement Recovery Project;
- Iraq Khurmala Dome Development North Degassing Station Project;
- Nuoweixin USA Oil Field Project.



分离器性能保证 Separator Performance Guarantee

- 大于 8 微米以上的液滴分离达到 100%;
- 大于 5 微米以上的固体分离达到 100%;
- 出口气体里的液(固)体携带量小于 0.01kg/1000Nm³;
- 通过整个分离器的压降小于 15 kpa.
- 100% liquid particle separation 8 microns and larger;
- 100% solid particle separation 5 microns and larger;
- Liquid carryover from the outlet gas will be less than 0.01kg/1,000Nm³;
- Pressure drop through the complete separator will be less than 15 kpa.

泰斯达高效多管旋风气液固分离器

TRISTAR HIGH EFFICIENCY MULTI-CYCLONE GAS/LIQUID/SOILD SEPARATOR

泰斯达高效多管旋风气液固分离器, 利用美国先进的多管旋风因子技术, 广泛的应用于煤化工、石化、化工、炼油等领域大气流量的气液、气固、气液固分离场合, 尤其在煤化工里的反应器后、废气排空等领域有广泛的应用。

Tristar high efficiency multi-cyclone gas/liquid/solid separator, utilizes American advanced multi-cyclone technology, widely uses on large flow rate gas/liquid/solid separation in the area of coal chemical, petrochemical, chemical, oil refinery etc., especially in the cases of downstream of reactor in coal chemical plant, exhaust gas discharge etc.

分离器的优点 Multi-clone Separator Advantages

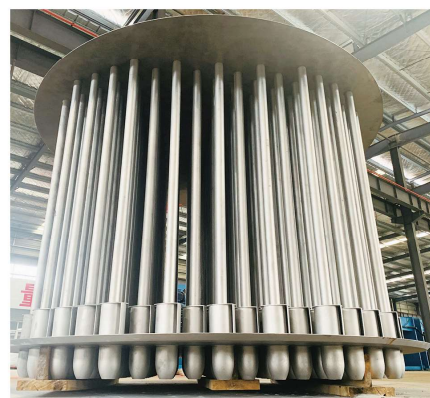
- 既可以分离气液流体里的液体, 也可以分离气固流体里的固体, 还可以同时分离气体里的液体与固体;
- 旋风因子有不同的尺寸可供选择, 设计上可以考虑堆叠设计以优化设备尺寸;
- 处理气量大, 分离效率高, 压降低;
- 设备可以连续运行, 没有无需更换的备件;
- 通过特殊设计可以分离含液固含量比较大的气体。
- The ability to separate the liquid from gas, separate the solid from gas, separate liquid & solid from gas;
- Multi-cyclone element has different size for selection, stack design for multi-cyclone element to optimize vessel size;
- Big flow rate handling, high separation efficiency, low pressure drop;
- Vessel can operate continuously, no spare parts to be replaced;
- Handle big liquid & solid content in inlet gas by special design.

应用实例 Application Example

- 神华宁煤煤制甲醇改造项目旋风分离器;
- 中石油彭州炼油项目高压旋风分离器;
- Chevron 川东北气体处理厂项目高压分离器;
- 浙江石化 4000 万吨 / 年炼化一体化项目高压旋风分离器;
- 沈鼓中晋太行矿业项目旋风分离器;
- 神华宁煤 400 万吨 / 年煤炭间接液化项目重质油旋风分离器。
- Shenhua Ningmei Coal to Methanol Revamping Project;
- Petrochina Pengzhou Oil Refinery Project;
- Chevron Chunadongbei Gas Treating Plant Project;
- Zhejiang Petrochemical 40 MTPY Refinery Integration Project;
- Shenyang Blower Works Zhongjin Taihang Mining Project;
- Shenhua Ningmei 4 MTPY Coal Indirect Liquefaction Project Heavy Oil Separator.

旋风分离器包含以下两个类型 Cyclone separators include the following 2 Categories

- 单旋风因子分离器 (SinTrifugal)
- 多管旋风因子分离器
- Sintrifugal Separator
- Multi-cyclone Separator



多管旋风因子组件 Multi-cyclone Element Assembly



单旋风因子 (Sintrifugal) 组件 Sintrifugal Element Assembly



泰斯达干气过滤器

TRISTAR DRY GAS FILTER

泰斯达干气过滤器是一款使用多根滤芯的气体过滤器，用来去除气相流体中的固体杂质，同时可保证过滤过程中较小的压降。

Tristar dry gas filter utilizes multi quantity filter element to filtrate the solid from gas with small pressure drop.

干气过滤器包含以下两个类型 Dry Gas Filter Including the Following 2 Categories

- 卧式干气过滤器
- 立式干气过滤器
- Horizontal Dry Gas Filter
- Vertical Dry Gas Filter

干气过滤器优点 The Advantages of Dry Gas Filter

- 高效滤芯 美国原装进口；
- 设备可以立式布置，也可以卧式布置；
- 安装快开盲板使过滤器的清洗及滤芯更换更加高效、便捷。
- High efficiency filter element imported from USA;
- Vessel can be arranged horizontally, or vertically;
- Install end quick opening closure for the convenience of the vessel cleaning and filter element replacement.

干气过滤器性能保证 Dry Gas Filter Performance Guarantee

- 100% 除去大于等于 3 微米的固体颗粒；
- 流经整个分离器的压降：小于 13kpa（滤芯洁净状态下）；
- 滤芯更换压降：通过筒体的最大压降 103kpa。
- 100% solid particle separation 3 microns and larger;
- Pressure drop through the complete separator will be less than 13 kpa;
- Filter element replacement pressure drop: 103 kpa.

应用实例 Application Example

- 乌兰集团 135 万吨合成氨 240 万吨尿素项目；
- 巴西国家石油公司 ROTA-3 项目；
- 伊朗罗尔德干化肥项目；
- 中石油陕京四线及西气东输三线天然气管线项目；
- 孟加拉 TITAS 天然气管线输送项目。
- Inner Mongolia Wulan Group 1.35 MTPY Ammonia & 2.4 MTPY Urea Project;
- Petrobras ROTA-3 Project;
- Iran Lordegan Fertilizer Project;
- Petrochina Shaanjin Gas Pipeline Phase 4 & East West Gas Pipeline Phase III Project;
- Bangladesh TITAS Natural Gas Pipeline Project.



干气过滤器滤芯、支架及组件
Dry Gas Filter Element, Stand Pipe and Assembly

泰斯达高效过滤分离器

TRISTAR HIGH EFFICIENCY FILTER SEPARATOR

泰斯达高效过滤分离器，利用美国 JONELL 公司高精度滤芯及专利核心双袋式叶片技术，广泛应用于煤化工、石化、化工、炼油等领域的气体中固体过滤及液体分离。

Tristar high efficiency filter separator, utilizes the technology of American JONELL high efficiency filter element and double pocket vane assembly, widely apply the separation of liquid and solid from gas in the area of coal chemical, petrochemical, chemical and oil refinery etc.

过滤分离器的优点

The Advantage of Filter Separator

- 高效滤芯 美国原装进口；
- 分离元件由传统的丝网升级为泰斯达专利双袋式叶片；
- 分离效率高，压降低；
- 设备可以立式布置，也可以卧式布置；
- 采用独特的变径快开盲板结构，降低快开盲板尺寸，从而减少设备制造成本。
- High efficiency filter element imported from USA;
- Separation function is changed from conventional meshpad to our patent vane assembly;
- High performance, low pressure drop;
- Vessel can be arranged vertically, or horizontally;
- The application of reduced head quick opening closure can reduce the size of the closure to reduce the cost of the equipment.

分离器性能保证

Separator Performance Guarantee

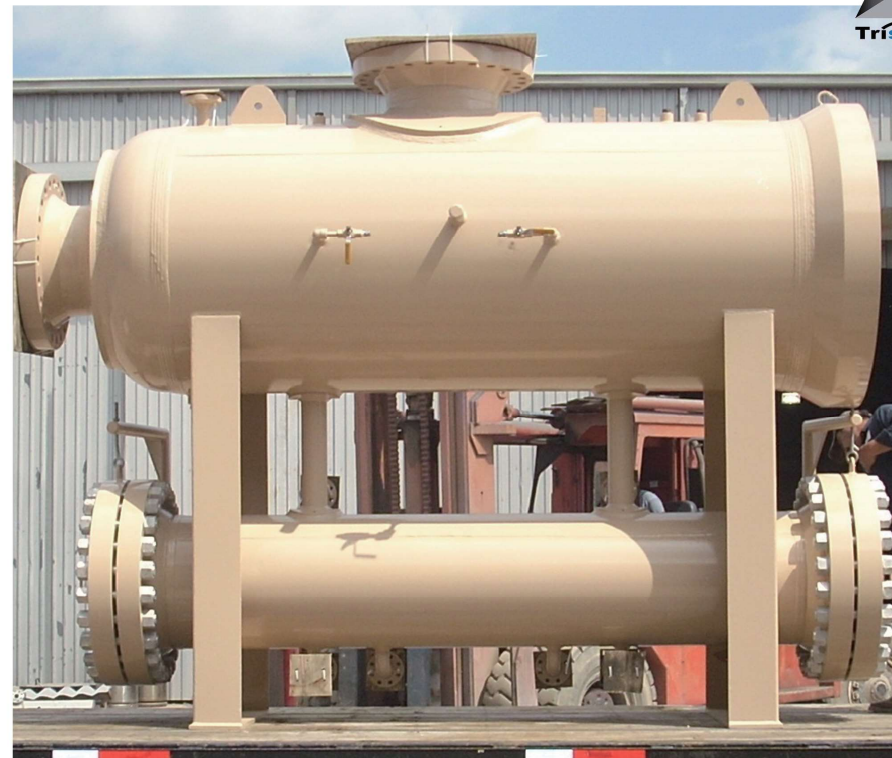
- 大于 3 微米以上的固体颗粒及液滴分离达到100%；
- 出口气体里的液体携带量小于 0.001kg/1000Nm³；
- 通过整个分离器的压降小于 13.7 kpa。
- 100% solid & liquid particle separation 3 microns and larger;
- Liquid carryover from the outlet gas will be less than 0.001kg/1,000Nm³;
- Pressure drop through the complete separator will be less than 13.7 kpa.



安装在设备内的环形叶片
Circular Vane Installed in the Vessel



环形叶片内件
Circular Vane Assembly



应用实例

Application Example

- 德西尼布宁夏哈纳斯气体站项目；
- Salof 中国迷你 LNG 项目；
- 中石油长庆油田项目；
- 中石油西气东输项目二期东段；
- 巴西石油公司 ROTA-3 项目；
- 巴基斯坦 HMC 气体站发展项目；
- 孟加拉 TITAS 天然气管线输送项目。
- Technip Ningxia Hanas Gas Station Project;
- Salof China Mini LNG Project;
- Petrochina Changqing Oil Field Project;
- Petrochina East West Gas Pipeline Project Phase II, East Section;
- Petrobras ROTA-3 Project;
- Pakistan HMC Gas Development Project;
- Bangladesh TITAS Natural Gas Pipeline Project.



过滤部分内件组件
Filter Element Assembly



应用实例

- 中石油西气东输二期东段管线项目;
- 中石油大沈线管线项目;
- 中石油山东输气管网项目;
- 内蒙古乌兰大化肥项目;
- GE Oil & Gas 土耳其盐湖气体储气站项目;
- 德西尼布宁夏哈纳斯气体处理厂项目。

Application Example

- Petrochina East West Gas Pipeline Project Phase II Eastern Section;
- Petrochina Dalian-Shenyang Gas Pipeline Project;
- Petrochina Shandong Gas Pipeline Network Project;
- Inner Mongolia Wulan Fertilizer Project;
- GE Oil & Gas Turkey Salt Lake Gas Storage Station Project;
- Technip Ningxia Hanas Gas Treating Plant Project.

泰斯达高效聚结分离器

TRISTAR HIGH EFFICIENCY COALESCER SEPARATOR



泰斯达高效聚结分离器, 利用美国 JONELL 公司高精度聚结滤芯, 结合专利核心双袋式叶片技术及旋风分离技术, 广泛应用于煤化工、石化、化工、炼油、天然气管线等领域气流中的固体过滤及液体聚结分离, 从而获得高纯度工艺气体。

Tristar high efficiency coalesce separator, utilizes the technology of American JONELL high efficiency coalescer cartridge, with combination of core double pocket vane and multi-cyclone assembly, widely apply to coalesce the liquid and solid from gas in the area of coal chemical, petrochemical, chemical, oil refinery and natural gas pipeline etc., so as to get high purity process gas.

高效聚结分离器包含以下三个类型

High Efficiency Coalescer Separator Including the Following 3 Categories

- 单级高效聚结器
- 组合式叶片高效聚结器
- 组合式多管旋风高效聚结器
- Single Stage Coalescer
- Vane Coalescer
- Multi-cyclone Coalescer

分离器性能保证

Separator Performance Guarantee

- 大于 0.3 微米以上的固体颗粒及液滴分离达到 100%;
- 出口气体里的液体携带量小于 0.001 kg/1000Nm³;
- 通过整个分离器的压降小于 13.7 kpa。
- 100% solid & liquid particle separation 0.3 microns and larger;
- Liquid carryover from the outlet gas will be less than 0.001kg/1,000Nm³;
- Pressure drop through the complete separator will be less than 13.7 kpa.

聚结分离器的优点

The Advantage of Coalescer Separator

- 高效聚结滤芯为美国原装进口;
- 根据分离精度要求, 泰斯达可以应用不同分离技术包括泰斯达专利双袋式叶片或者旋风因子进行灵活组合;
- 分离效率高, 压降低;
- 可以同时捕集与聚结气体里的液体与固体。
- High efficiency coalesce element imported from USA;
- Based on the separation performance requirement, Tristar can combine its vane technology, or multi-cyclone technology together with coalescer to meet the performance;
- High separation performance with low pressure drop;
- Equipment can coalesce solid and liquid from the gas at the same time.



多管旋风聚结滤芯组件
Multi-cyclone Coalescer Assembly



多管旋风组件
Multi-cyclone Assembly



聚结滤芯组件
Coalescer Element Assembly

公司资质

COMPANY QUALIFICATION



合作伙伴及客户

PARTNERS AND CUSTOMERS

