HTAC | HGT

杭州汽轮辅机有限公司
Hangzhou Steam Turbine Auxiliary Equipment Co., Ltd.

杭州国能汽轮工程有限公司
Hangzhou Guoneng Steam Turbine Engineering Co., Ltd.



成为全球透平辅机的首选

To be the 1st choice for your turbomachinery auxiliary equipment

杭州汽轮辅机有限公司
HANGZHOU STEAM TURBINE AUXILIARY EQUIPMENT CO.,LTD

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公司简介

杭州汽轮辅机有限公司（含杭州国能汽轮工程有限公司）2004年10月成立于杭州，隶属于浙江杭汽轮动力科技集团股份有限公司，专注透平机械核心辅机的研发与成套制造。公司严格按照 HEI、API、TEMA、ASME、EN、GOST 及国内 GB 系列标准，开展水冷凝汽系统、空冷凝汽系统、润滑油系统、工艺空冷器、压缩机换热器的专业化、定制化设计与制造，全部产品严格遵循国际行业规范。产品适配汽轮机、燃气轮机、压缩机等透平主设备，可满足炼油、化工、发电、空分、煤化工及海上装备等多领域严苛工况运行要求。

作为国内专业的透平辅机及一体化服务提供商，公司在石油化工行业拥有较高行业认可度，核心辅机产品在中国石化领域市场拥有较高市场占比。依托成熟的极端工况适配能力、先进的成套设计制造能力以及完备的海外项目交付体系，产品远销全球6大洲、59个国家和地区。多年来为杭汽轮、西门子、三菱、埃理奥特、贝克休斯、埃维能、斗山斯柯达等全球主流主机厂商提供辅机成套配套；公司已成功进入阿布扎比国家石油、沙特基础工业、沙特电力、巴西国家石油、科威特国家石油等国际大型业主合格供方短名单，拥有承接中东、中亚、欧洲、美洲等高端海外项目的综合实力。

Company Profile

Hangzhou Steam Turbine Auxiliary Equipment Co., Ltd. (including Hangzhou Guoneng Steam Turbine Engineering Co., Ltd.) was established in Hangzhou in October 2004. Affiliated to Hangzhou Turbine Power Group Co., Ltd (HTP), we specialize in R&D and complete-set manufacturing of core turbomachinery auxiliaries.

We perform specialized and customized design and manufacture for water-cooled condensing systems, air-cooled condensing systems, lube oil systems, air-cooled heat exchangers and compressor intercoolers, strictly complying with HEI, API, TEMA, ASME, EN, GOST and domestic GB standards. All products follow international industrial specifications and fit main turbomachinery such as steam turbines, gas turbines and compressors, satisfying stringent operating demands of refining, chemical, power generation, air separation, coal-to-chemical and offshore facilities. As a domestic professional supplier of turbomachinery auxiliaries and integrated services, we are highly recognized in the petrochemical industry with considerable market share in China's petrochemical sector. Supported by proven extreme condition adaptability, advanced complete-set design & manufacturing expertise and robust overseas delivery capabilities, our products serve 59 countries and regions across six continents.

We provide complete auxiliary packages for world leading turbomachinery manufacturers including HTP, Siemens, MHI, Elliott, Baker Hughes, Everllence and Doosan Skoda. We are short-listed as an approved supplier by renowned global end-users such as ADNOC, SABIC, Saudi Energy, Petrobras and Kuwait Petroleum Corporation, and well-qualified to deliver high-end projects in the Middle East, Asia, Europe and the Americas.



里程碑
Milestones

2026
加入ADNOC Air Cooler-Finned Tube短名单
至此，实现全系汽轮机辅机产品ADNOC全覆盖入网
Shortlisted by ADNOC for Air Coolers-Finned Tube
As of now, shortlisted by ADNOC for all the steam turbine auxiliary equipment products

2025
与ATLAS签订油站框架协议
承接ADNOC工艺空冷器订单
Framework Agreement on LOU Signed with ATLAS
Awarded ADNOC Fin Fan Cooler Order

2024
服务沙特NEOM未来城项目
探索全球清洁能源及氢动力可持续发展
Serving NEOM Green Hydrogen STG Project exploring global clean energy and the sustainable development of hydrogen power

2021
服务阿联酋世界级CCPP发电项目-
富贾伊拉3X800MW F3独立电站项目
Serving the UAE world-class CCPP power plant
— Fujairah 3×800MW F3 IPP Project

2020
公司与西门子能源签订油气和发电战略合作协议
Signed strategic cooperation agreements with Siemens Energy (oil and gas & power generation)

2018
服务于世界单体产能最大炼油项目-恒力2000万吨 / 年炼化一体化项目、浙石化4000万吨 / 年炼化一体化项目
Supplied products for the world's largest refinery projects: Hengli 20,000KTA refining-chemical integration project and Zhejiang Petrochemical 40,000KTA refining-chemical integration project

2016
空冷器/工艺空冷陆续交付至哈萨克斯坦、俄罗斯、泰国
ACC / ACHE units successively delivered to Kazakhstan, Russia and Thailand

2014
冷凝器首次交付至美国及日本
WCC`s first delivery to the USA and Japan.

2009
冷凝器首次交付至南美洲及大洋洲
油站首次交付至北美
WCC`s first delivery to South America and Oceania.
LOU`s first delivery to the USA

2008
被世界一流透平机械厂家列为合格供应商
Qualified by world-class turbomachinery manufacturers

2006
公司投资建立了全资子公司-杭州国能汽轮工程有限公司
Wholly-owned subsidiary-Hangzhou Guoneng Steam Turbine Engineering Co., Ltd. (short as HGT) was established

2004
杭州汽轮辅机有限公司成立
Hangzhou Steam Turbine Auxiliary Equipment Co.,Ltd. (short as HTAC) was established

1989
前身为浙江杭汽轮动力科技集团
于1989年设立的电站辅机分部
Formerly the power-station auxiliary division of Zhejiang Hangzhou Turbine Power Technology Group, founded in 1989

主要客户
Main Clients

主机厂 Turbomachinery Manufacturer

直接合作 Direct Cooperation

间接合作 Indirect Cooperation

工程公司 EPC

直接合作 Direct Cooperation

间接合作 Indirect Cooperation

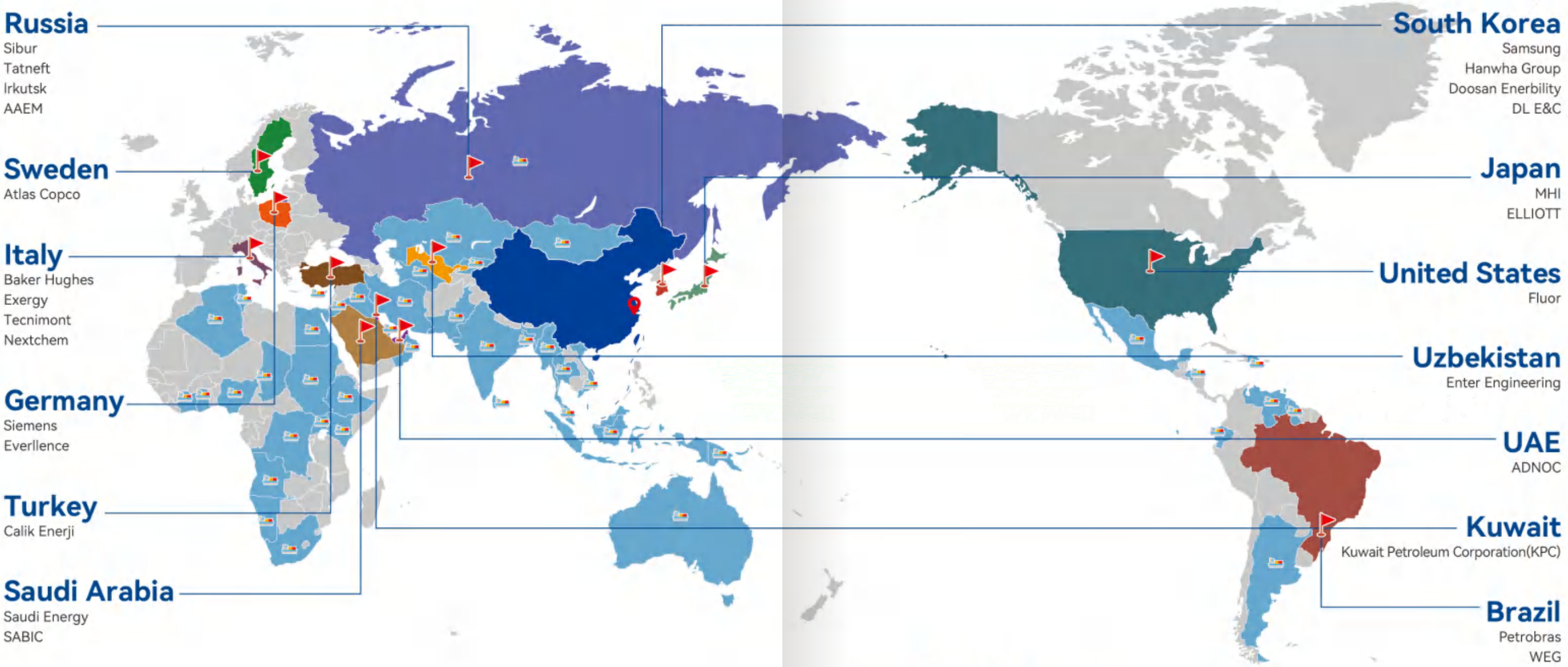
业主 End User

直接合作 Direct Cooperation

间接合作 Indirect Cooperation

项目交付区域及海外客户短名单准入版图

Map of Project Deliveries & Overseas Market Client Shortlist Approvals



Russia
Sibur
Tatneft
Irkutsk
AAEM

Sweden
Atlas Copco

Italy
Baker Hughes
Exergy
Tecnimont
Nextchem

Germany
Siemens
Everllence

Turkey
Calik Enerji

Saudi Arabia
Saudi Energy
SABIC

South Korea
Samsung
Hanwha Group
Doosan Enerbility
DL E&C

Japan
MHI
ELLIOTT

United States
Fluor

Uzbekistan
Enter Engineering

UAE
ADNOC

Kuwait
Kuwait Petroleum Corporation(KPC)

Brazil
Petrobras
WEG

总部杭州
Headquarters
Hangzhou

入网客户所在国家
Countries with Short-listed Client Approvals

项目交付所在国家
Project Deliveries Countries

超过 **3,873** 个项目在全世界运行。
More than 3,873 projects are in operation worldwide.

已累计服务超 **5,000** 台汽轮机
Served more than 5,000 sets of steam turbines

水冷凝汽系统
Water-cooled Condenser System（WCC System）

▲公司可根据项目工况开展定制化设计制造，产品严格遵循HEI 2629、JB/T10085、ASME BPVC VIII-1、TEMA、GB150等国内外标准，具备ASME、EN体系对应的制造资质，同时具备海工项目凝汽系统的成套制造及相关认证执行经验。换热管可选铜合金、不锈钢、双相不锈钢、钛合金等多种材质，可适配不同冷却水水质及严苛工况要求。

▲设备采用SolidWorks三维软件完成建模设计，同时运用PV Elite、ANSYS、CAESAR II专业工程软件，开展设备本体结构、强度校核及管道应力分析，充分保障设备运行可靠性。

▲自2006年以来，我们已被多家国际知名透平机械制造商认证为合格供应商，包括Elliott、Baker Hughes、Siemens、Everllence、MHI及Doosan Skoda等，并成功交付了众多国内外项目。我们的产品已入围包括 ADNOC、SABIC、Saudi Energy、KPC、Petrobras等知名业主的合格供应商。

▲We provide customized design and manufacturing according to project operating conditions. Our products comply with standards including HEI 2629, JB/T 10085, ASME BPVC VIII-1, TEMA, GB150. We hold manufacturing qualifications for ASME and EN standards, and have proven experience in complete set manufacturing and certification execution for condenser systems of offshore projects. Heat exchange tubes can be supplied in copper alloy, stainless steel, duplex stainless steel, titanium alloy and other materials to adapt to different cooling water qualities and severe operating conditions.

▲SolidWorks is adopted for 3D modeling and equipment design. Professional engineering software including PV Elite, ANSYS and CAESAR II are used for structural strength verification and piping stress analysis to fully guarantee equipment operational reliability.

▲Since 2006, we have been approved as a qualified supplier to internationally renowned turbine manufacturers including Elliott, Baker Hughes, Siemens, Everllence, MHI and Doosan Skoda, delivering numerous domestic and overseas projects. Our products are short listed by major end users including ADNOC, SABIC, Saudi Energy, KPC, Petrobras and others.

技术参数 Technical Parameter:

凝汽器换热面积 Condenser heat-transfer area	100 m^2 ~ 80 000 m^2（可定制） Can be customized
配套汽轮机功率 Matching steam turbine power	1 MW ~ 1 000 MW
设计真空度 Design vacuum	5 kPa(a)（可定制） Can be customized
凝结水含氧量 Dissolved oxygen in condensate	≤20 μg/L（除氧型可≤7 μg/L） Deoxygenated solution: ≤7 μg/L

技术特点及优势 Technical Features and Advantages:

技术优势：拥有60年汽轮机辅机成套经验，采用PV Elite、ANSYS、CAESAR II开展设备及管道受力分析；凝汽系统与主机深度耦合设计，真空度、端差、过冷度指标行业领先，拥有多项国家专利。

高效节能：采用专利管束布置结构，流场模拟效果优异，蒸汽分布合理，冷凝效率高、流阻小。

设计灵活：凝汽器可定制方形或圆形结构，支持轴向及多方向径向排汽；汽轮机接口可选用刚性、柔性、真空平衡式，满足多样化布置需求。

材质选型：关键部件选用TP304/TP316L、钛管、复合管板等耐蚀材料。发电工况优先采用不锈钢、钛合金换热管；石化工况可适配铜管、碳钢管。对各类管材凝汽器具备丰富设计制造经验，设备设计寿命≥30年。

业绩广泛：累计配套汽轮机组超3000台套，产品出口美国、比利时、日本、沙特、阿联酋、澳大利亚、俄罗斯、卡塔尔、墨西哥、印尼等50余个国家。持有ASME U stamp证书，具备CE、CU TR、IBR、AS等各类认证实施经验。



Technical Advantages: With 60 years comprehensive experience in steam turbine complete set engineering, we adopt PV Elite, ANSYS and CAESAR II for stress analysis of equipment and pipelines. Our deeply coupled design for condensing system and main unit delivers industry leading performance in vacuum level, terminal temperature difference and subcooling degree. We hold multiple national patents.

High efficiency and energy saving: Patented tube bundle layout achieves favorable flow field simulation, rational steam distribution, high condensation efficiency and low flow resistance.

Flexible design: Condensers can be customized in square or circular form, supporting axial and multi direction radial steam exhaust. Turbine connections can be rigid, flexible or vacuum balanced to meet diverse layout requirements.

Material selection: Critical components adopt corrosion resistant materials including TP304/TP316L, titanium tubes and composite tube sheets. Stainless steel and titanium heat exchange tubes are mainly applied for power generation service; copper alloy or carbon steel tubes are available for petrochemical service. We have extensive experience in designing and manufacturing condensers with various tube materials, with a design service life ≥30 years.

Extensive track record: Supplied surface condensers for over 3,000 steam turbine units. Products are exported to over 50 countries including the United States, Belgium, Japan, Saudi Arabia, the United Arab Emirates, Australia, Russia, Qatar, Mexico and Indonesia. We hold the ASME U stamp certificate and possess rich practical experience for CE, CU TR, IBR, AS and other certification implementations.

水冷凝汽系统
Water-cooled Condenser System（WCC System）



主要项目客户名单 Main Project Customers :

主机厂 Turbomachinery Manufacturer

杭汽轮(HTP)、SIEMENS、BAKER HUGHES、ELLIOTT、EVERLLENCE、MHI、DOOSAN SKODA 等。

工程公司 EPC

中石化(Sinopec)、中国电建(PowerChina)、惠生(Wison)、杭氧集团(Hangyang Group)、国机集团(SINOMACH)、中国五环(China Wuhuan)、MAIRE、SAMSUNG、FLUOR、Air Products、Linde、WOOD、Calik Enerji 等。

最终用户 End Users

中石化(Sinopec)、中石油(PetroChina)、中海油(CNOOC)、中国中化(Sinochem)、盛虹石化 (Shenghong Petrochemical)、新凤鸣(Xinfengming)、恒力石化(Hengli Petrochemical)、浙石化(Zhejiang Petrochemical)、盈德气体(Yingde Gas)、ADNOC、SABIC、Qatar Energy、ENI、ExxonMobil、INEOS、Chevron Phillips、YINSON、SEMBCORP、Air Liquide、Petrobras、BP 等。

压缩机换热器
Compressor Intercooler

公司压缩机级间换热器用于冷却多级压缩机级间压缩气体或蒸汽；壳侧采用碳钢，管板可选不锈钢、铜合金、钛合金及复合板，换热管采用复合翅片管，基管为不锈钢、铜合金、钛合金，翅片一般选用铝合金。产品按GB150、GB151、TEMA等标准制造，广泛应用于石油化工、空分、PTA 领域。

Our compressor Intercoolers are used to cool compressed gas or vapor between stages of multi stage compressors. The shell side is of carbon steel. Tube sheets are available in stainless steel, copper alloy, titanium alloy and clad plate. Composite finned tubes are adopted, with base tubes in stainless steel, copper alloy or titanium alloy, and fins generally made of aluminum alloy. Designed and manufactured per GB150, GB151, TEMA standards, the products are widely applied in petrochemical, air separation and PTA industries.

技术参数 Technical parameters:

处理介质 medium	空气 / 富气 / 天然气 / 氢气 / PTA工艺气等 Air / Rich Gas / Natural Gas / Hydrogen / PTA Process Gas, etc.
设计流量 design flow	0.05 kg/s ~ 250 kg/s
换热面积 Heat transfer area	10 m^2 ~ 20 000 m^2

项目业绩介绍 Project Performance

新凤鸣独山能源三四期540万吨/年PTA项目

Xinfengming Dushan Energy Phase III-IV, 5400 KTA PTA Project

装置类型Type: PTA

配套压缩机Compressor Brand: EVERLLENCE

江阴苏龙热电800Nm^3/min空压机级间冷却器

Jiangyin Sulong Thermal Power 800 Nm^3/min Air Compressor Intercooler

装置类型Type: CHP

配套压缩机Compressor Brand: ATLAS COPCO

新疆新业能化20万吨/年BDO项目

Xinjiang Xinye Energy Chemical 200 KTA BDO Project

万华化学30万吨/年环氧乙烷装置

Wanhua Chemical 300 KTA Ethylene Oxide Unit

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空冷凝汽系统
Air-cooled Condenser System（ACC System）

我司是国内少数同时具备单排管、多排管及MIX混合型结构空冷器设计与制造能力的企业，拥有自主知识产权的空冷器热力计算系统。公司配备全套正版专业设计软件，实时更新最新设计参数与数据库，依托HTRI、Tekla、CAESAR II、SOLIDWORKS、STAAD PRO、PV Elite等主流工程软件，可独立完成换热计算、三维设备建模、钢结构设计、结构强度校核及管道应力分析等全流程精细化设计工作。

我司可按各类项目工况定制设计制造，产品遵循HEI、ASME、API、TEMA、GB等国内外行业标准。公司具备 ASME、EN 制造资质，拥有海工凝汽系统成套设备制造及认证项目执行经验。换热基管可选碳钢管、铝管、铜合金、不锈钢，适配不同环境与严苛工况。空冷系统产品已进入ADNOC、SABIC、Petrobras、KPC等国际业主合格供方短名单，拥有丰富海外项目设计与成套制造经验。

As one of the few domestic enterprises capable of designing and manufacturing single-row tube, multi-row tube and MIX hybrid structure air-cooled condenser, the company owns a self-developed ACC thermal calculation system with independent intellectual property rights. Equipped with fully authorized professional design software and the latest updated design parameters and databases, we adopt engineering software including HTRI, Tekla, CAESAR II, SOLIDWORKS, STAAD PRO and PV Elite to independently complete full-process refined design, covering heat transfer calculation, 3D equipment modeling, steel structure design, structural strength verification and pipeline stress analysis.

Our company offers customized design and manufacturing for diverse project conditions, complying with domestic and international standards including HEI, ASME, API, TEMA and GB. Possessing ASME and EN manufacturing qualifications, we have proven experience in offshore condensing-system complete-set equipment and certified-project execution. Heat-transfer base tubes can be supplied in carbon-steel, aluminum, copper alloy and stainless steel, adapting to different environments and harsh operating conditions. Our air-cooling-system products are short-listed by global end-users such as ADNOC, SABIC, Petrobras and KPC, with extensive experience in overseas-project design and complete-set manufacturing.

技术参数 Technical Parameter:

排汽流量Exhaust flow rate:	6 t/h ~ 500 t/h
风机直径Fan diameter:	1.5 m ~ 12 m
管束长度Bundling length:	3.7 m ~ 14.5 m
设计压力Design pressure:	0.1 MPa (FV) ~ 0.35 MPa (G)
环境设计温度 Environmental design temperature:	24 ℃ ~ 50 ℃
最低环境设计温度 Minimum environmental design temperature:	-52 ℃

技术特点及优势 Technical Features and Advantages:

空冷器技术成熟，拥有独立自主知识产权计算系统；同时拥有单排管、多排管及MIX结构设计制造能力。可满足电力、空分、炼油、化工等各行业，也可适应沿海、高原、寒地、沙漠等各类复杂气候条件，海内外业绩丰富。

可提供从设计、制造到调试的全生命周期服务，包括：

工程设计与优化：结合工艺参数、厂区布局、气象条件等需求，完成ACC选型、布置及热力与结构优化。

复杂环境适应性：针对高寒、高海拔、沙漠及沿海等情况，提供防冻、防风沙及防腐蚀等专项解决方案。

智能监测与运维：远程监测关键运行参数，识别振动、结垢、泄漏等趋势，辅助维护、清洗与检修优化。

The air-cooled condenser technology is mature, featuring an independent, proprietary computing system; the company also possesses the capability to design and manufacture single-row, multi-row, and MIX-type air-cooled condenser configurations. These solutions are suitable for a wide range of industries—including power generation, air separation, oil refining, and the chemical sector—as well as for operating in diverse and challenging climatic conditions,such as coastal, high-altitude, cold-region, or desert environments, demonstrating a strong track record both domestically and internationally.

Comprehensive full-lifecycle services covering design, manufacturing, and commissioning, including:

Engineering Design & Optimization: Based on process parameters, plant layout and meteorological conditions, complete ACC type-selection, layout, thermal and structural optimization.

Complex-environment Adaptability: Provide dedicated anti-freezing, sand-resistance and anti-corrosion solutions for severe cold, high-altitude, desert and coastal conditions.

Intelligent Monitoring & O&M: Remotely monitor key operating parameters, detect trends of vibration, fouling and leakage to support optimized maintenance, cleaning and overhaul.



空冷凝汽系统
Air-cooled Condenser System（ACC System）

多排管　Multi-row Extruded Finned Tubes

性能特点:

按照 API661 标准，采用钢管铝翅片结构，具备以下特性:

▲翅片与基管结合紧密，传热性能稳定

▲优异的耐腐蚀性能

▲顺流管束采用三种翅化比规格的换热管，逆流管束采用大管径换热管，综合提升性能与防冻

▲便于维护清洗，抗风沙冲蚀能力强，可采用最高10MPa 高压水清洗

▲设备使用寿命长

Performance Features:

According to the API661 standard, this design employs a steel pipe with aluminum fin structure and possesses the following characteristics:

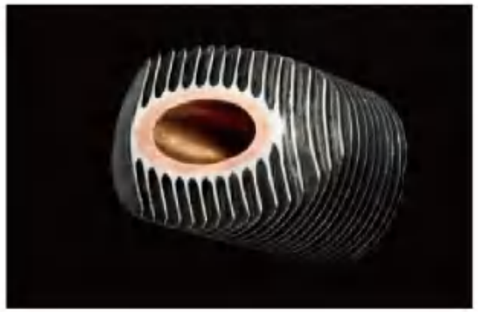
▲The fins are tightly fitted to the base tubes, ensuring stable heat transfer performance.

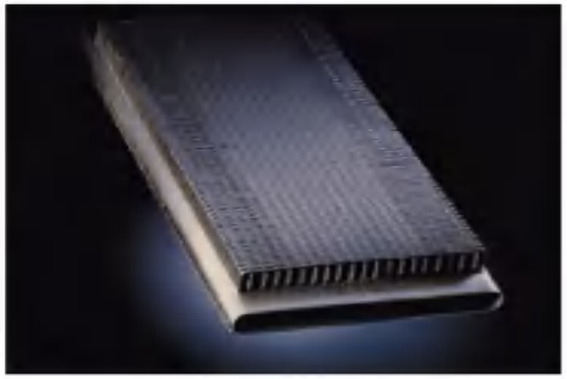
▲Excellent corrosion resistance.

▲The parallel-flow bundle utilizes heat exchange tubes with three different finning ratios; the counter-flow bundle employs heat exchange tubes with larger diameters – combining enhanced performance with frost protection.

▲Easy to maintain and clean; offers strong resistance to wind-blown sand erosion; can be installed at maximum 10 MPa high-pressure water cleaning.

▲ Long service life of the equipment.





单排管
Single Row: Flat Finned Tubes

性能特点:

依据HEI 3087标准进行设计

▲蒸汽分配均匀

▲适应性强(流通面积大、压力损失低)

▲适用工况范围广

▲优良的防冻性能

▲空气侧阻力较低

Performance Features:

Designed in accordance with the HEI 3087 standard:

▲Uniform steam distribution

▲High adaptability (large flow area, low pressure loss)

▲Broad range of applicable operating conditions

▲Excellent anti-freezing performance

▲Low air-side drag

主要项目客户名单:　Main Project Customers:

石油化工领域 Petrochemical sector

中国石化(Sinopec)、中国石油 (PetroChina)、中国海油 (CNOOC)、宁波中金 (Ningbo Zhongjin)、荣盛集团 (Rongsheng Group)、东营威联 (Dongying Weilian)、盛虹炼化 (Shenghong Refining & Chemical)、北方华锦 (Beifang Huajin)、新疆新业(Xinjiang Xinye)、内蒙古伊泰化工(Inner Mongolia Yitai Chemical)、Kazakhstan Petroleum、Russia NFP、Russia SIBUR、Russia PHOSAGRO等。

电力领域 Power sector

台湾丰育(Taiwan Fengyu)、中国福马(China Fuma)、青海格尔木鲁能新能源(Qinghai Golmud Luneng New Energy)、维尔利环保科技(Weili Environmental Protection Technology)、大连福佳(Dalian Fujia)、Mongolia UHG、Thailand Rexus Bioenergy、Thailand Siampower Power Plant、Thailand TPCH、Thailand Advance Power、Europe Chemical 等。

空分领域 Air separation sector

杭氧集团(Hangyang Group)、新疆山能(Xinjiang Shanneng)、新疆新业(Xinjiang Xinye)、陕煤集团(Shaanxi Coal Industry Group)、启东广汇新能源(Qidong Guanghui New Energy)、大唐内蒙(Datang Inner Mongolia)、Air Liquide、BP plc 等。

煤化工领域 Coal-chemical sector

中国石化(Sinopec)、陕煤集团(Shaanxi Coal Industry Group)、内蒙古卓正(Inner Mongolia Zhuozheng)、神华榆林(Shenhua Yulin)、新疆天业(Xinjiang Tianye)、中天合创(Zhongtian Hechuang) 等。



工艺空冷器
Air-cooled Heat Exchanger（ACHE）





工艺空冷器以环境空气为冷却介质，依靠风机强制横掠换热管束，对管内工艺流体实现冷却或冷凝，属于工业换热设备。设备主要由管束、风机（含风筒）、构架三大核心部件，以及百叶窗、梯子、平台等辅助部件构成。

我司工艺空冷器具备风场分布均匀、空气侧换热性能优异的特点，整体换热效果佳，可耐受高温高压，且安装便捷。设备按API661、ASME BPVC VIII、NB/T 47007 等标准设计制造，支持客户特殊工况定制与模块化设计，充分满足多样化项目需求。

我司拥有 ASME U 钢印设计与制造资质。现已成功纳入ADNOC、KPC、 Samsung、Hanwha、Doosan Enerbility等海外知名业主和EPC的合格供方短名单，具备承接海外高端工艺空冷器市场的完备条件。

ACHE is an industrial heat exchange equipment that uses ambient air as cooling medium. Forced air from fans flows across finned tube bundles to cool or condense process fluids inside tubes. It mainly consists of three core components: tube bundles, fans (including fan stacks) and supporting structures, together with auxiliary parts such as louvers, ladders and platforms.

Our ACHE feature uniform air field distribution and excellent air side heat transfer performance for superior overall heat exchange. They withstand high temperature and high pressure with fast and easy installation. Designed and manufactured in accordance with API 661, ASME BPVC Section VIII and NB/T 47007, the units support both custom built solutions for special requirements and modular design to meet diverse project demands.

Our company holds an ASME U stamping design and manufacturing qualification. It has been successfully included in the shortlist of qualified suppliers for renowned international clients and EPC contractors, including ADNOC, KPC, Samsung, Hanwha, Doosan Enerbility and others, possesses the comprehensive capabilities to undertake projects in the global high-end ACHE market.

技术参数 Technical Parameter:

可提供多种尺寸、结构可定制的钢管铝翅片式工艺空冷器。
Supply ACHE with various sizes and customized configurations.

技术特点及优势 Technical Features and Advantages:

换热效率高：优化翅片管结构、管束排布与空气侧流场，在兼顾空气侧压降与风机功耗的前提下，实现优异的整体换热性能。

工况适应性强：可依据介质特性、设计压力与温度开展材料及结构定制，适配炼化、天然气、化工等多类工艺介质的冷却、冷凝工况。

认证标准齐全：同时满足API Std 661、ASME BPVC VIII、NB/T 47007等国内外规范，适配全球项目合规要求。

模块化交付：管束、风机、构架等单元灵活组合，现场安装简便，后期扩容便捷。

High Heat Transfer Efficiency: Optimized fin tube structure, tube bundle layout and air side flow field deliver superior overall heat transfer performance while reasonably controlling air side pressure drop and fan power consumption.

Wide Operating Condition Adaptability: Materials and structures can be customized according to medium properties, design pressure and design temperature, suitable for cooling and condensing of various process media in refining, natural gas and chemical industries.

Comprehensive Certification Standards: Compliant with domestic and international codes including API Std 661, ASME BPVC Section VIII and NB/T 47007, meeting compliance requirements for global projects.

Modular Delivery: Units including tube bundles, fans and supporting structures can be flexibly combined, enabling simple on site installation and convenient later stage capacity expansion.

典型项目业绩 Typical Project Performance

▲阿联酋海勒 & 加沙项目RSHT-2 硫磺造粒厂
▲哈萨克斯坦 KMG PetroChem Tengiz气体分离综合体项目
▲泰国 KBI-FLOAT 玻璃项目闭式冷却系统
▲香港青衣化学 10 万吨/ 年废物处理项目

▲UAE Sulphur Granulation Plant at RSHT-2 for Hail & Ghasha Project
▲Kazakhstan KMG PetroChem Tengiz Gas Separation Complex Project
▲Thailand KBI-FLOAT Glass Project Closed-Loop Water Cooling Systems
▲HK Ecospace-Kum Shing Joint Venture Tsing Yi 100 KTA Chemical Waste Treatment Project

润滑油系统
Lube Oil System

润滑油系统是离心式压缩机、往复式压缩机、膨胀机、给水泵、汽轮机、燃气轮机、风机等大型旋转机械不可或缺的辅助设备。产品满足API 614、ASME、TEMA、GB及用户特殊技术规范。油站支持全数字化交付，采用HTRI、ANSYS、PV Elite等国际通用软件完成热力计算、模拟分析与强度校核。水站、燃油站、调节油站亦为公司主要产品。

Lubrication oil systems are essential auxiliary equipment for large rotating machinery including centrifugal compressors, reciprocating compressors, expanders, feed water pumps, steam turbines, gas turbines and fans. Products comply with API 614, ASME, TEMA, GB and customers' special technical specifications. The oil stations support full digital delivery. Internationally recognized software such as HTRI, ANSYS and PV Elite are applied for thermal calculation, simulation analysis and strength verification. Water stations, fuel oil stations and control oil stations are also our key products.

技术参数 Technical Parameter:

润滑油量：单台最大流量达9,333 L/min，油箱容积252m³。
Lubricant capacity: Maximum single-unit flow rate up to 9,333 L/min, oil tank volume: 252 m³



技术特点及优势 Technical Features and Advantages:

公司拥有近50年油系统设计经验：

▲自研软件精准核算油箱及高位油箱容积，满足项目工况要求。

▲采用HTRI开展冷油器换热计算，保障供油温度稳定。

▲运用ANSYS有限元仿真，对油箱满油、底盘起吊等工况进行模拟，确保油站运行性能。

▲通过SolidWorks完成油站管线排布、零部件结构设计及整机三维数字化建模，满足项目数字化需求；设备布局直观合理，便于制造、现场安装与巡检，优化实操体验。

▲配置冗余油泵、切换过滤、恒温调控、应急供油及安全联锁完整系统，具备完善的设计与仿真校核体系。

试验能力：我司拥有2套国内先进油站综合试验台，可完成AC380V/50Hz、单油泵≤200kW各类性能试验，也可开展250kW单油泵运转及相关性能测试。试验台自动采集压力、流量、温度、电机功率、电流等运行参数并生成试验报告，有效保障产品性能。



The company has nearly 50 years of experience in oil system design:

▲Self developed software accurately calculates the volume of oil tank and overhead oil tank to meet project requirements.

▲HTRI is adopted for cooler heat transfer calculation to ensure stable oil supply temperature.

▲ANSYS finite element simulation is used for full oil tank condition and base frame lifting condition analysis to guarantee oil station performance.

▲SolidWorks is utilized for piping layout, component design and full unit 3D digital modeling to satisfy project digital delivery requirements. Rational layout facilitates manufacturing, on site installation and inspection for improved operability.

▲Complete systems including redundant oil pumps, switchable filtration, constant temperature control, emergency oil supply and safety interlocks are provided, supported by well established design and simulation verification systems.

Testing Capabilities: We own two advanced comprehensive test benches for oil stations. They support performance tests for AC380V/50 Hz electrical equipment with single oil pump power ≤200 kW, as well as running and related performance tests for 250 kW single oil pumps. The test benches automatically record operating parameters including pressure, flow rate, temperature, motor power and current, and generate test reports to guarantee product performance.

主要项目客户名单： Main Project Customers:

主机厂Turbo-machinery Manufacturers: 杭汽轮(HTP)、沈鼓(SBW)、Siemens、Everllence、MCO、Doosan Skoda、ELLIOTT、Atlas Copco、Baker Hughes、EBARA等。

工程公司 EPC: 杭氧集团(Hangyang Group)、SEI、TR、DLE&C、Hanwha Group、Doosan Skoda等。

终端业主 End-users: 中石油(CNPC)、中石化(Sinopec)、ADNOC、Saudi Aramco 等。

汽轮机冷凝综合解决方案
Comprehensive Condenser Solution for Steam turbines



水冷凝汽系统
Water-cooled
Condenser System
+
空冷凝汽系统
Air-cooled
Condenser System



空冷凝汽系统
Air-cooled
Condenser System
+
蒸发空冷器
Evaporative Air Cooler



干湿联合
闭式循环冷却塔
Combined Dry-Wet
Closed-Circuit
Cooling Tower



水冷凝汽系统
Water-cooled
Condenser System
+
闭式循环冷却塔
Closed-Circuit
Cooling Tower

水冷凝汽系统海外业绩
WCC System Oversea Project References

阿联酋富贾伊拉 3X800MW F3 独立电站项目
UAE Fujairah 3X800MW F3 IPP Project



装置类型:联合循环发电
Type: CCPP

配套汽轮机：斗山斯柯达
Turbine Brand：Doosan Skoda

总包方：三星物产
EPC：Samsung C&T Corporation

业主：丸红& 阿联酋水电公司
End User：MARUBENI CORPORATION and EWEC

卡塔尔拉斯拉凡208万吨/年乙烯项目
Qatar Ras Laffan 2080KTA Ethylene Project



装置类型:乙烷裂解装置
Type: Ethane Cracking Unit

配套汽轮机：埃理奥特
Turbine Brand：Elliott

总包方：三星工程
EPC：Samsung E&A Co. Ltd.

业主：卡塔尔能源&雪佛龙菲利普斯
End User：Qatar Energy & Chevron Phillips

美国JUMBO 100万吨/年PET及120万吨/年PTA项目
USA JUMBO 1000KTA PET & 1200KTA PTA Project



装置类型:PTA装置
Type：PTA

配套汽轮机：埃维能
Turbine Brand：Everllence

总包方：中石化工程公司
EPC：SINOPEC Engineering

业主：意大利 M&G 化学集团
End User：Italy M&G Chemical

巴西云升浮式生产储油装置
Brazil Yinson Integrado Perque Das Baleias FPSO, Brazil



装置类型:离岸设备
Type: Offshore

配套汽轮机：贝克休斯
Turbine Brand：Baker Hughes

总包方：云升控股
EPC：Yinson

业主：巴西石油公司
End User：Petrobras

水冷凝汽系统海外业绩
WCC System Oversea Project References

圭亚那埃克森美孚圭亚那海上能源开发储油项目
Guyana ExxonMobil MODEC Offshore Guyana Green FPSO-Project



装置类型：离岸设备
Type：Green FPSO

配套汽轮机：贝克休斯
Turbine Brand：Baker Hughes

总包方：三井海洋开发株式会社
EPC：MODEC

业主：埃克森美孚
End User：ExxonMobil

沙特NEOM未来城绿氢项目
Saudi Arabia NEOM Green Hydrogen STG Project



装置类型：新能源
Type：New Energy

配套汽轮机：贝克休斯
Turbine Brand：Baker Hughes

总包方：空气产品
EPC：Air Products

业主：尼尤姆公司
End User：NEOM Company

英力士安特卫普150万吨/年乙烯项目
INEOS Antwerp Project One 1500KTA Ethylene Project



装置类型:石化
Type：Petrochemical

配套汽轮机：贝克休斯
Turbine Brand：Baker Hughes

总包方：西班牙 TR 工程公司
EPC：Técnicas Reunidas S.A.

业主：英力士
End User：INEOS Manufacturing Belgium NV

巴西国家石油2100吨/天合成氨项目
Petrobras Fertilizer 2100MTPD Ammonia Project



装置类型：化工
Type：Fertilizer Chemicals

配套汽轮机：三菱
Turbine Brand：MHI

总包方：空气产品
EPC：Air Products

业主：巴西国家石油
End User：Petrobras

空冷凝汽系统海外业绩
ACC System Oversea Project References

俄罗斯惠生西布尔570KTA PDH工厂
Russia WISON SIBUR 570KTA PDH plant



装置类型：石化
Type：Petrochemical

配套汽轮机：杭汽
Turbine Brand：HTP

总包方：惠生工程
EPC：Wison Engineering

业主：西布尔
End User：Sibur

哈萨克斯坦欧洲化学年产80万吨硫酸厂2*15MW余热发电机组
Kazakhstan EuroChem 800KTA Sulfuric Acid Plant 2×15MW Power Plant



装置类型:发电
Type：Power Plant

配套汽轮机：杭汽轮
Turbine Brand：HTP

总包方：中国化学工程集团
EPC：CNCEC

业主：欧洲化学
End User：EuroChem-Karatau LLC

约旦国家石油公司200吨/天催化裂化主风机装置
Jordan Petroleum 200TPD Fluidized Catalytic Cracking Unit (FCCU)



装置类型：炼油
Type：Refine Petroleum

配套汽轮机：埃理奥特
Turbine Brand：Elliott

总包方：泰克尼蒙特
EPC：Tecnimont

业主：约旦炼油公司
End User：Jordan Petroleum Refinery Company

新加坡13.2MW 生物质利用木屑发电项目
Singapore 13.2MW gross Biomass Energy Power Plant



装置类型:发电
Type：Power Plant

配套汽轮机：西门子
Turbine Brand：SIEMENS

总包方EPC:
Sobono Energy Private Limited

业主End User:
Rexus Bioenergy Pte Ltd

工艺空冷器业绩
ACHE Project References

阿联酋海勒&加沙项目RSHT-2硫黄造粒厂
UAE Sulphur Granulation Plant (SGP) at RSHT-2 for Hail & Ghasha Project



装置类型：循环冷却水装置
Type: Water Cooling Systems

冷却介质：冷凝水
Cooling Medium: Steam Condensate

总包方：惠生
EPC: Wison

业主：阿布扎比国家石油
End User: ADNOC

泰国KBI项目闭式冷却系统
Thailand KBI-FLOAT Glass Project Water Cooling Systems



装置类型：循环冷却水装置
Type: Water Cooling Systems

总包方：三角工程公司
EPC: Triangle Engineering Co.,Ltd.

业主：曼谷玻璃集团 BG
End User: Bangkok Glass

哈萨克斯坦KMG PetroChem气体分离装置项目
Kazakhstan KMG PetroChem Gas Separation Unit Project



装置类型：气体分离及液化
Type:Gas Separation and Liquefaction

配套压缩机：韩华动力
Compressor Brand: Hanwha Power System

总包方：泰克尼蒙特
EPC: Tecnimont

业主：哈萨克斯坦国家石油天然气公司
End User: KMG PetroChem

香港金城营造青衣化学10万吨/年废物处理项目
HK Ecospace-Kum Shing Joint Venture 100KTA Chemical Waste Treatment Project



装置类型：废物能源化
Type: Waste to Energy

总包方：金城营造
EPC: Ecospace & Kum Shing

业主：香港环境保护署（EPD）
End User: HK Environmental Protection Department

润滑油系统海外业绩
LOU System Oversea Project References

沙特贾富拉270MW 燃气联合循环发电项目润滑油站
Saudi Arabia Jafurah 270MW Gas-Fired CCPP Project



装置类型:联合循环
Type: CCPP

配套汽轮机：斗山斯柯达
Turbine Brand: Doosan Skoda

总包方：三星工程
EPC: Samsung E&A Co. Ltd.

业主：沙特阿美
End User: Saudi Aramco

阿联酋ADNOC Sahil 3期扩建项目
UAE ADNOC SAHIL PHASE 3 DEVELOPMENT PROJECT



装置类型：上游油气
Type: Upstream Oil & Gas

配套离心泵：美国Pumpworks
Pump Brand: USA Pumpworks

总包方：塔吉特工程建设公司
EPC: Target Engineering

业主：ADNOC
End User: ADNOC

沙特塔纳吉布133MW东部燃气厂电站项目
Tanajib Eastern Gas Plant 133MW Project, Saudi Arabia



装置类型:联合循环
Type: CCPP

配套汽轮机：斗山斯柯达
Turbine Brand: Doosan Skoda

总包方：三星工程
EPC: Samsung E&A Co. Ltd.

业主：阿布扎比国家能源
End User: ABU Dhabi National Energy Company

哈萨克斯坦Silleno LLP聚乙烯厂建设锅炉给水泵项目
Kazakhstan Silleno LLP Polyethylene Plant Construction Boiler Feedwater Pump Project



装置类型：石化
Type: Petrochemical

配套泵品牌：苏尔寿
Pump Brand: Sulzer

总包方：泰克尼蒙特+中石化
EPC: Tecnimont+Sinopec

业主 End User: Silleno LLP

水冷凝汽系统国内业绩
WCC System Domestic Project References

恒力系列项目
Hengli Series Projects, China



大连恒力2000万吨/年炼化一体化项目
Dalian Hengli 20MTPA Refinering-Chemical Integration Project

凝汽器：35台套
WCC: 35 sets

装置类型：PSA装置/83000Nm³/H空分装置/12MW 余热发电/循环氢压缩机/产品气压缩机等
Type: PSA Unit / 83000Nm³ / H ASU Unit / 12MW Waste Heat Power Generation / Recycle H2 Compressor / Product Gas Compressor...



大连恒力150万吨/年乙烯项目
Dalian Hengli 1500KTA Ethylene Project

凝汽器：6台套　WCC：6 sets
装置类型：乙烯等化工装置
Type: Ethylene Unit and other Chemical Unit

恒力（大连）PTA1-5期项目
Hengli (Dalian) PTA Line 1-5 Project

凝汽器：10台套　WCC：10 sets
装置类型：PTA装置　Type：PTA Unit

恒力（惠州）PTA项目
Hengli (Huizhou) PTA Project

凝汽器：4台套　WCC：4 sets
装置类型：PTA装置　Type：PTA Unit

逸盛PTA系列项目
Yisheng PTA Series Projects, China



大连逸盛大化PTA1-3期项目
Yisheng Dahua (Dalian) PTA Line 1-3 Project

凝汽器：6台套　WCC：6 sets
装置类型：PTA装置　Type：PTA Unit

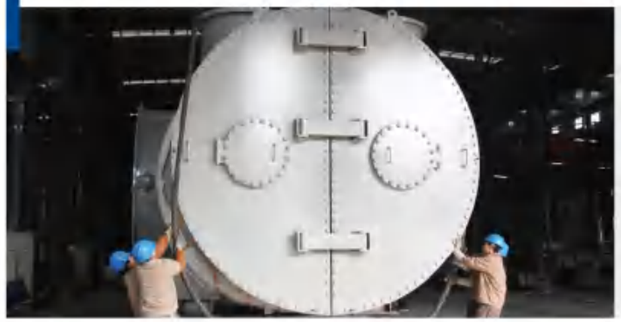
宁波逸盛PTA3/4期项目
Yisheng (Ningbo) PTA Line 3/4 Project

凝汽器：4台套　WCC：4 sets
装置类型：PTA装置　Type：PTA Unit

海南逸盛250万吨/年PTA1-2期项目
Yisheng (Hainan) 2500KTA PTA Line 1-2 Project

凝汽器：4台套　WCC：4 sets
装置类型：PTA装置　Type：PTA Unit

浙江石化4000万吨/年炼化一体化项目
ZPC 40MTPA Refining-Chemical Integration Project, China



凝汽器：33 台套
WCC：33 sets

装置类型：83000Nm³/H空分装置和140万吨/年乙烯装置
Type：83000Nm³/H ASU and 1400KTA Ethylene Unit

宁波中金年产330万吨PTA项目
Ningbo Zhongjin 3300KTA PTA Project, China



凝汽器：6台套
WCC：6 sets

装置类型：PTA装置
Type：PTA Unit

空冷凝汽系统国内业绩
ACC System Domestic Project References

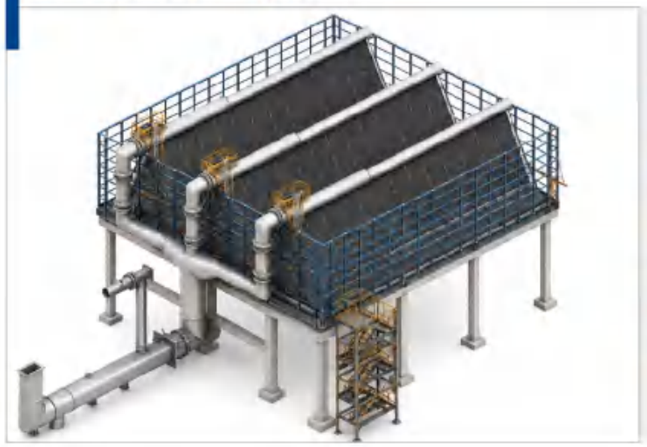
浙江石化4000万吨/年炼化一体化项目
ZPC 40MTPA Refining-Chemical Integration Project, China



空冷器：26 台套
ACC：26 sets

装置类型：380万吨/年连续重整循环氢装置/350万吨/年柴油加氢裂化装置/200万吨/年PX装置/120万吨/年苯乙烯装置等
Type：3800KTA Continuous Reforming Cycle Hydrogen Unit / 3500KTA Diesel Hydrocracking Unit / 2000KTA PX Unit / 1200KTA Styrene Unit...

新疆山能化工准东五彩湾 80 万吨/年煤制烯烃项目3x80000Nm³/h空分项目
Xinjiang Shanneng Chemical 800KTA Coal-to-Olefins Project&3x80,000 Nm³/h Air Separation Project



空冷器：2台套
ACC：2 sets

装置类型：空分
Type：ASU

客户：杭氧集团
Customer：Hangyang Group

汽轮机品牌：埃维能
Turbine Brand：Everllence

中天合创鄂尔多斯煤炭深加工示范项目
Zhongtian Hechuang Ordos Coal Deep Processing Demonstration Project



空冷器：4台套
ACC：4 sets

装置类型：丙烯制冷压缩机/工艺气压缩机
Type：Propylene Refrigerant Compressor /Process Gas Compressor

客户：浙江杭汽轮动力科技集团
Customer：Hangzhou Turbine Power Group

汽轮机品牌：杭汽轮
Turbine Brand: Hangzhou Turbine (HTP)

大连福佳20MW余热回收节能综合项目
Dalian Fujia 20MW Waste Heat Recovery Project, China



空冷器：2台套
ACC：2 sets

装置类型：发电
Type：PP

客户：大连福佳大化石油化工
Customer：Dalian Fujia Dahua Petrochemical

汽轮机品牌：杭汽轮
Turbine Brand：Hangzhou Turbine (HTP)

润滑油系统国内业绩
LOU System Domestic Project References

恒力系列项目
Hengli Series Projects, China



大连恒力2000万吨/年炼化一体化项目
Dalian Hengli 20MTPA Refinering-Chemical Integration Project

油站：84 台套　　LOU：84 sets

大连恒力150万吨/年乙烯项目
Dalian Hengli 1500KTA Ethylene Project

油站：22台套　　LOU：22 sets

恒力（惠州）PTA项目
Hengli (Huizhou) PTA Project

油站：4台套　　LOU：4 sets

裕龙岛炼化一体化 82000 Nm^3/h 空分装置
Yulong Island Refining Chemical Integration 82000 Nm^3/h ASU Unit



装置类型：空分
Type：ASU

配套设备：西门子空压机
Air Compressor Brand：SIEMENS

客户：西门子
Customer：Siemens

业主：山东裕龙杭氧气体有限公司
End User：Shandong Yulong Hangyang Gas Co., Ltd.

陕煤集团榆林化学1500万吨/年煤炭分质清洁高效转化示范项目
Shaanxi Coal Group Yulin Chemical 15000KTA Coal Pyrolysis Clean and Efficient Conversion Demonstration Project



装置类型：煤化工
Type：Coal to Chemical

空压机品牌：阿特拉斯·科普柯
Air Compressor Brand：Atlas Copco

客户：阿特拉斯·科普柯
Customer：Atlas Copco

业主：陕煤集团榆林化学
End User：Shaanxi Coal Group Yulin Chemical

川能兴文燃机项目SGT800燃气轮机机组
Chuaneng Xingwen Gas Turbine Project SGT800 Gas Turbine Unit



装置类型：联合循环
Type：CCPP

汽轮机品牌：西门子SGT800
Turbine Brand：SIEMENS SGT800

客户：杭汽新能源
Customer：Hangzhou Steam Turbine New Energy

业主：四川能投
End User：Sichuan Energy Investment Group

公司资质
Company Qualifications

- 环境管理体系
  ISO14001:2015
  Environmental Management System
- 职业健康安全体系
  ISO45001:2018
  Occupational Health and Safety System
- 质量管理体系
  ISO9001:2015
  Quality Management System
- ASME U证书
  ASME U Certificate
- 压力容器设计&制造许可证
  Design License for Pressure Vessel
- 压力管道元件制造许可证
  Manufacturing License for Pressure Piping Components
- **FPSO海上平台认证证书**
  Offshore Platform Certification
- DNV 认证
  DNV Certification
- ABS 认证
  ABS Certification



公司专利
Company Patent



其他产品与服务改造
Other Products And Retrofit Services


冷却水塔
Cooling Tower


冷油器
Oil Cooler


注水注油装置
Water Injection Unit & Oil Injection Unit


抽气装置
Evacuation Unit


大气泄放阀
Atmospheric Relief Valve (API)


凝液提升装置
Condensate Lifting Unit

凝汽系统全生命周期性能保障服务
Condenser System Full Lifecycle Performance Assurance Service

无论凝汽系统出自哪家设备厂商，性能保障都可以由我们承担。服务以系统实际状态和适用标准为依据，与各设备供应商保持开放的合作态度，为最终用户提供专业的服务。

Regardless of the brand of the turbine auxiliary equipment, performance assurance can be undertaken by us — based on actual conditions and applicable standards, with open cooperation with all equipment suppliers for the end user.

初步性能检查 Initial Check	初始性能建档 Profiling	持续性能跟踪 Monitoring	异常专项诊断 Diagnosis
方案与检修策划 Planning	实施与现场支持 Field Support	效果验证 Verification	年度复盘与滚动优化 Annual Review

远程诊断
Remote

现场诊断
On-site

持续优化
Optimize


现场安装与维修
Site Installation and Maintenance


备件与改造
Spare Parts and Revamp









绿色低碳 智造未来

Green & Low-carbon · Smart Manufacturing

以高效辅机技术节能，以清洁能源实践减排——让每一度电、每一份资源都更有价值

Saving energy through efficient auxiliary equipment technology, reducing emissions through clean energy practice —making every kilowatt-hour and every resource count.

技术节能 · 源头降耗
Technology-driven Energy Conservation

高效空冷凝汽系统
High-Efficiency Air-Cooled Condensing System

以空冷替代传统水冷，在节水的同时显著降低厂用能耗，是缺水地区与大型电站的节能优选方案。

Replacing traditional wate rcooling with air cooling significantly reduces plant power consumption while saving water— an ideal solution for water-scarce regions and large power stations.

高效水冷凝汽系统
High-Efficiency Water-Cooled Condensing System

优化管束排布与流场分布，降低机组背压与能耗，让每一公斤蒸汽的能量都用在"刀刃"上。

Optimized tube bundle arrangement and flow field distribution reduce unit backpressure and energy consumption, ensuring every bit of steam energy is put to best use.

工艺空冷器 / 换热器
Process Air Coolers /Heat Exchangers

高精度换热设计减少无效热损、提升工艺能效，并延长设备寿命，帮助客户持续降耗增效。

Precision heat exchange design minimizes ineffective heat loss,improves process energy efficiency, and extends equipment life, helping customers continuously reduce consumption and increase efficiency.

全周期节能服务
Full-Lifecycle Energy-Saving Service

从协同设计、成套供货到安装调试、运维诊断，提供贯穿设备全生命周期的节能优化方案。

From collaborative design and complete equipment supply to installation, commissioning, and O&M diagnostics—providing energy-saving optimization solutions throughout the entire equipment lifecycle.

清洁能源 · ESG实践
Clean Energy · ESG Practice

自有厂房分布式光伏
On-site Rooftop Distributed Solar PV for Self-consumption

公司利用自有厂房屋顶建设分布式光伏，将清洁太阳能直接转化为生产用能，把绿色运营从理念落到实际场景，让"低碳"成为可感知的日常。

The company has built distributed solar photovoltaic systems on itsown factory rooftops, converting clean solar energy directly intoproduction power. Green operations have moved from concept toreal-world practice, making "low carbon" part of everydayoperations.

