

全球气体储运装备制造者
技术引领·安全可靠·绿色未来

Global Manufacturer of Gas Storage and Transportation Equipment
Technology-Driven, Safe and Reliable, Green Future

北京天海工业有限公司
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天海工业
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氢能及天然气装备产品

HYDROGEN AND NATURAL GAS EQUIPMENT PRODUCTS

储运绿色能源, 氢享美好生活

Storing and transporting green energy, enjoying a better life with hydrogen



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专业的气体储运装备制造服务商

Professional manufacturer and service provider of gas storage and transportation equipment

与国际标准接轨、按国际标准生产、创国际先进水平

Align with international standards, produce according to international standards, and achieve international advanced levels

公司简介 Company Profile

北京天海工业有限公司（以下简称“天海工业”）是北京京城机电控股有限责任公司所属北京京城机电股份有限公司（简称京城股份，H股证券代码00187，A股证券代码600860）主要骨干企业，是拥有七个专业气体储运装备生产基地（天海氢能、上海天海、天津天海、宽城天海、明晖天海、天海低温、江苏天海）及一个美国公司的集团公司。天海工业及下属子公司具有A2级高压容器、B1级无缝气瓶、B2级焊接气瓶、B3级纤维缠绕气瓶、B4级低温绝热气瓶、B5级溶解乙炔气瓶、C2级罐式集装箱、D级中低压容器的设计和生产资质。可生产800余个品种规格的钢质无缝气瓶、玻璃纤维环向缠绕气瓶、碳纤维全缠绕复合气瓶（含三型瓶、四型瓶、呼吸器）、无石棉填料乙炔瓶、焊接气瓶、焊接绝热气瓶（含车用）、固定式压力容器、低温罐式集装箱、船用罐、CNG/LNG/H2车载供气系统及加气站等系列产品，广泛应用于汽车、化工、消防、医疗、石油、能源、城建、食品、冶金、机械、电子等行业。

天海工业始终坚持“与国际标准接轨、按国际标准生产、创国际先进水平”的理念，天海工业及下属子公司取得了ISO9001和IATF16949质量管理、ISO14001环境管理和ISO45001职业健康安全管理体系认证，并取得三十余个国际认证、建立了完备高效的产品销售网络和售后服务体系，产品覆盖全国，远销世界五大洲四十多个国家和地区。天海工业以具有凝聚力的企业文化、较强的制造能力、切实前瞻的战略决策和全球化的发展格局，全力实现“打造全球领先的气体储运装备制造及服务企业”的奋斗目标。

天海工业一直秉承“诚信、敬业、学习、创新，志在一流”的企业精神，以安全可靠的产品和优质的服务，树立了良好的企业形象，先后荣获中国百强企业、北京市十佳外商投资企业、北京市高新技术企业，中国金属压力容器制造行业排头兵企业和全国“五一”劳动奖状、“北京市专精特新小巨人企业”、“国家级专精特新小巨人企业”等荣誉称号。

Beijing Tianhai Industry Co., Ltd. (hereinafter referred to as "Tianhai Industry") is a key enterprise under Beijing Jingcheng Electromechanical Holding Co., Ltd., which is a subsidiary of Beijing Jingcheng Electromechanical Co., Ltd. (hereinafter referred to as "Jingcheng Co., Ltd.", H-share securities code 00187, A-share securities code 600860). It is a group company with seven professional gas storage and transportation equipment production bases (Tianhai Hydrogen Energy, Shanghai Tianhai, Tianjin Tianhai, Kuancheng Tianhai, Minghui Tianhai, Tianhai Cryogenic, Jiangsu Tianhai) and one American company. Tianhai Industry and its subsidiaries possess design and production qualifications for Class A2 high-pressure vessels, Class B1 seamless gas cylinders, Class B2 welded gas cylinders, Class B3 fiber-wound gas cylinders, Class B4 cryogenic insulated gas cylinders, Class B5 dissolved acetylene gas cylinders, Class C2 tank containers, and Class D medium and low-pressure vessels. They can produce over 800 varieties and specifications of steel seamless gas cylinders, glass fiber hoop-wound gas cylinders, carbon fiber fully wound composite gas cylinders (including Type III, Type IV, and breathing apparatus), asbestos-free filler acetylene cylinders, welded gas cylinders, welded insulated gas cylinders (including for vehicles), fixed pressure vessels, cryogenic tank containers, marine tanks, CNG/LNG/H2 on-board gas supply systems, and gas filling stations, which are widely used in industries such as automotive, chemical, fire protection, medical, petroleum, energy, urban construction, food, metallurgy, machinery, and electronics.

Tianhai Industry has always adhered to the concept of "aligning with international standards, producing according to international standards, and creating international advanced levels". Tianhai Industry and its subsidiaries have obtained ISO9001 and IATF16949 quality management, ISO14001 environmental management, and ISO45001 occupational health and safety management system certifications, as well as more than 30 international certifications. They have established a complete and efficient product sales network and after-sales service system, with products covering the whole country and exported to more than 40 countries and regions on five continents. Tianhai Industry, with its cohesive corporate culture, strong manufacturing capabilities, practical forward-looking strategic decisions, and global development pattern, is fully committed to achieving the goal of "building a globally leading gas storage and transportation equipment manufacturing and service enterprise".

Tianhai Industry has always adhered to the corporate spirit of "integrity, dedication, learning, innovation, and aiming for excellence". With safe and reliable products and excellent services, it has established a good corporate image and has successively won honorary titles such as China's Top 100 Enterprises, Beijing's Top Ten Foreign-invested Enterprises, Beijing High-tech Enterprises, China's Leading Enterprise in Metal Pressure Vessel Manufacturing Industry, National "May 1st" Labor Award, "Beijing Specialized, Precise, Unique, and Innovative Small Giant Enterprise", and "National Specialized, Precise, Unique, and Innovative Small Giant Enterprise".



企业精神 Corporate spirit

诚信、敬业、学习
创新、志在一流

Integrity, Dedication, Learning,
Innovation, Aiming for Excellence



企业理念 Corporate Philosophy

责任创造价值
诚信树立形象

Responsibility creates value,
and integrity builds image



企业愿景 Corporate Vision

成为跻身全球气体储运
装备行业最前列的公司

Become a company that ranks
among the forefront of the global
gas storage and transportation
equipment industry

企业荣誉 Corporate Honors

天海工业及下属子公司先后取得了 ISO 9001和 IATF 16949 质量管理、ISO 14001 环境管理和 ISO 45001 职业健康安全管理体系认证，并取得三十余个国际认证、建立了完备高效的产品销售网络和售后服务体系，产品覆盖全国，远销世界五大洲四十多个国家和地区。

天海工业一直秉承“诚信、敬业、学习、创新，志在一流”的企业精神，以安全可靠的产品和优质的服务，树立了良好的企业形象，先后荣获中国百强企业、北京市十佳外商投资企业、北京市高新技术企业，中国金属压力容器制造行业排头兵企业和全国“五一”劳动奖状、“北京市专精特新小巨人企业”、“国家级专精特新小巨人企业”等荣誉称号。

Tianhai Industry and its subsidiaries have successively obtained ISO 9001 and IATF 16949 quality management, ISO 14001 environmental management, and ISO 45001 occupational health and safety management system certifications, and have obtained more than 30 international certifications. They have established a complete and efficient product sales network and after-sales service system, with products covering the whole country and exported to more than 40 countries and regions on five continents around the world.

Tianhai Industry has always adhered to the corporate spirit of "integrity, dedication, learning, innovation, and striving for excellence". With safe and reliable products and high-quality services, it has established a good corporate image and has won honors such as China's Top 100 Enterprises, Beijing's Top 10 Foreign Invested Enterprises, Beijing's High tech Enterprise, China's Leading Enterprise in Metal Pressure Vessel Manufacturing Industry, and the National "May Day" Labor Award, "Beijing's Specialized, Refined, Unique and New Small Giant Enterprise", and "National Specialized, Refined, Unique and New Small Giant Enterprise".



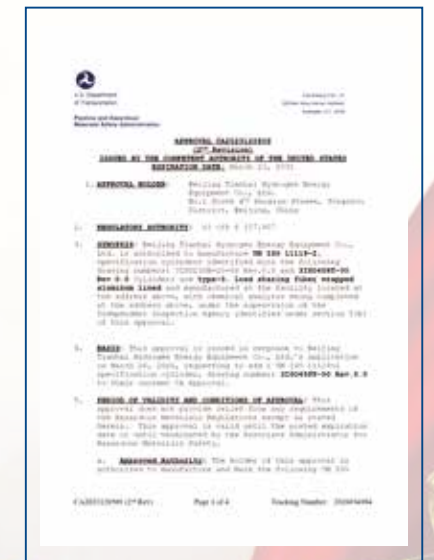
企业资质 Business Qualification

天海工业已完成多款产品研制，并取得了国内认证和多项国际认证，包括:ECER110、ISO19881、NGV2、ECER134、EN17339等。

容积范围:58-1080L 压力等级:20-70MPa 直径范围:356-910mm。

Tianhai Industry has completed the development of multiple product models and obtained domestic and international certifications, including: ECER110, ISO19881, NGV2, ECER134, EN17339, and others.

Capacity range: 58-1080L Pressure rating: 20-70MPa Diameter range: 356-910mm



III型瓶及系统

Type III Cylinders and system

产品介绍

Product Introduction

天海工业拥有先进技术水平的铝内胆碳纤维全缠绕复合气瓶设计测试中心及生产线，具有自主知识产权，产品种类规格齐全，可依据客户需求定制，由于其具有重量轻、安全性能好、环境适应能力强和抗热性好等特点，所生产的35MPa高压储氢气瓶已批量应用于氢燃料电池汽车及燃料电池备用电源领域。

Tianhai Industry has an advanced technology center and production line for designing and testing Aluminum lined carbon fiber fully wrapped composite gas cylinders. It has independent intellectual property rights, complete product types and specifications, and can be customized according to customer needs. Due to its lightweight, good safety performance, strong environmental adaptability, and good heat resistance, the 35MPa high-pressure hydrogen storage cylinders produced have been widely used in the fields of hydrogen fuel cell vehicles and fuel cell backup power supplies.



产品优势

Product Advantage

●铝合金内胆，不易生锈

Aluminum alloy liner, resistant to rust

●比钢质气瓶重量轻70%以上

More than 70% lighter than steel cylinders

●强度高，经久耐用

High strength and long service life

●技术成熟可靠，安全性能卓越

Mature and reliable technology with superior safety performance

●总充气量更大，而系统净重低

Larger total gas capacity and lower system net weight



应用场景

Application Scenarios

天海工业车用III型瓶产品规格齐全，是国内首批取得70MPa大容积氢气瓶型式许可认证的企业，储氢气瓶产品市场占有率处于第一梯队。为2022北京冬奥会氢燃料大巴车提供70MPa氢气瓶产品，同时为冬奥会鸟巢、张家口以及延庆等地赛场提供火炬供氢系统配套。

Tianhai Industrial's Type III hydrogen storage cylinder offer a complete range of product specifications. As one of the first domestic enterprises to obtain the 70MPa large-capacity hydrogen cylinder type certification, its hydrogen storage products rank among the top in market share. The company provided 70MPa hydrogen cylinders for hydrogen-fueled buses at the 2022 Beijing Winter Olympics, while also supplying hydrogen supply systems for torches in venues such as the Bird's Nest, Zhangjiakou, and Yanqing.



III型瓶系列产品凭借储氢密度高，储氢量大，可随不同的车型搭配不同数量的氢系统，现已应用于中型卡车、重卡、18T环卫车、31T自卸车和49T牵引车。

The Type III cylinder series, known for its high hydrogen storage density and large capacity, can be configured with varying hydrogen systems to suit different vehicle models. It has now been applied to medium-duty trucks, heavy-duty trucks, 18-ton sanitation vehicles, 31-ton dump trucks, and 49-ton tractors.



III型瓶典型产品参数

Typical product parameters of Type III cylinder

标准 Standard	规格型号 Type	气瓶直径 Cylinder Diame- ter(mm)	公称容积 Volume(L)	气瓶长度 Cylinder Length(mm)	重量 Weight(kg)	工作压力 Working Pressure(MPa)	充装介质 Filling Material
GB/T 35544	CHG3-344-140-35 S/A2	370	140	1800	77	35	H ₂
	CHG3-344-140-35 T/A2	370	140	1800	78		
	CHG3-373-165-35 T/A2	404	165	1790	88		
	CHG3-373-166-35 T/A2	404	166	1800	89		
	CHG3-382-213-35 S/A2	410	213	2210	98		
	CHG3-465-260-35 S/A2	505	260	1875	130		
	CHG3-382-210-35 S/A2	410	210	2210	98		
	CHG3-537-385-35 S/A2	580	385	2060	175		
	CHG3-564-450-35 S/A2	605	450	2150	200		
	CHG3-358-134-70 S/B2	410	134	1775	135	70	
Q/JB THB0022	CNG3-373-80-25A	396	80	950	41	25	CNG
	CNG3-383-80-20A	400	80	920	36	20	
	CNG3-383-92-20A	400	92	1017	39		
	CNG3-391-92-20B	406	92	950	36		
	CNG3-391-95-20B	406	95	980	37		
	CNG3-391-100-20B	406	100	1020	39		
	CNG3-404-223-20A	424	223	2005	81		
	CNG3-404-233-20A	424	233	2085	82		
	CNG3-417-104-20B	434	104	960	42		
	CNG3-417-117-20B	434	117	1070	46		
TCATSI 02016	CFW3-395-310-52H2	450	310	3150	260	52	H ₂
GB/T 28053	CRP III-458-220-30 T	488	220	1640	114	30	He
	CRP III-458-225-30 T	488	225	1670	116		
	CRP III-458-230-30 T	488	230	1700	118		
	CRP III-458-235-30 T	488	235	1735	120		
	CRP III-458-240-30 T	488	240	1765	122		
	CRP III-458-260-30 T	488	260	1900	130		
Q/JB THB0037	JCRPIII-326-50-35B	346	50	815	33	35	Air/N ₂ /Ar /He/Ne
	JCRPIII-326-50-35A	346	50	830	34		
	JCRPII-326-60-35B	346	60	935	36		

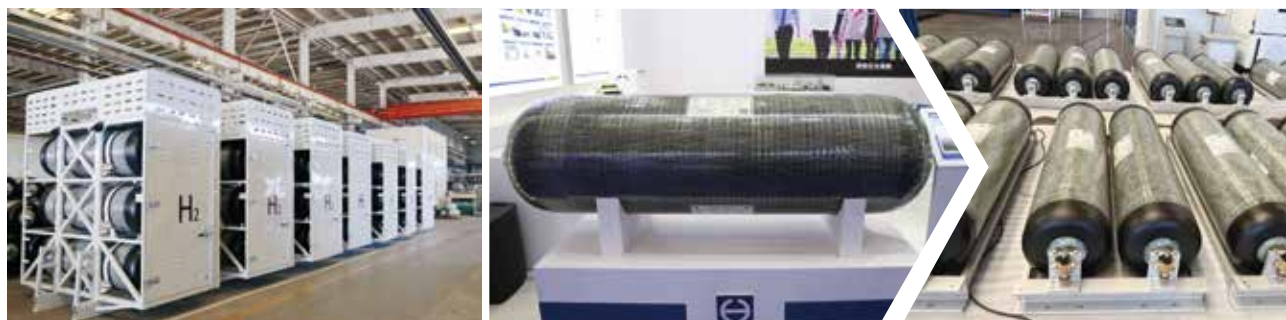
标准 Standard	规格型号 Type	气瓶直径 Cylinder Diame- ter(mm)	公称容积 Volume(L)	气瓶长度 Cylinder Length(mm)	重量 Weight(kg)	工作压力 Working Pressure(MPa)	标识 Regulatory Marks	充装介质 Filling Material
ECE R134	CHG3-382-210-35 S/A	420	210	2210	110	35	E MARK	H ₂
	CHG3-465-260-35 S/A	500	260	1875	130	35		
NGV2	NGV3-373-80-25A	396	80	945	41	25	/	CNG
	NGV3-383-100-25A	404	100	1100	41.5	25		
	NGV3-383-135-25A	404	135	1435	55	25		
	NGV3-383-207-25A	404	207	2100	80	25		
	NGV3-383-300-25C	404	300	3050	62	25		
	NGV3-383-100-25B	404	100	1055	42	25		
	NGV3-383-151-25B	404	151	1530	57	25		
	NGV3-495-231-25A	523	231	1448	89	25		
	NGV3-495-231-25A	523	231	1448	89	25		
ECER110	3ECE383A-20-00	400	100	1090	39	20	EMARK	
	3ECE383C-20-00	400	300	3050	100	20		
	3ECE325B-20-00	338	120	1695	42	20		
IS011439	3SO373A-25-00	396	80	945	41	25	/	
S0 7866 (Liner)	3ECE380C-20-01	380	280	2823	51	20	/	/
	3ECE380C-20-00	380	312	3128	59	20		
	3ISO386A-319-35	386	319	3165	85	35		
IS01119-2	CFW3-395-310-52H2	445	310	3150	224	52	TPED(T)	H ₂
	3ISO11119-373A-25-00	396	135	1490	33	25	/	CNG
	GFHP3-230-50-20B	240	50	1450	22	20	DOT	Air
	CRP IIII-458-220-31T	488	220	1640	114	31	TPED(T)& DOT	Air/N ₂ /Ar /He/Ne etc.
	CRP II-458-225-31T	488	225	1670	116	31		
	CRP II-458-230-31 T	488	230	1700	118	31		
	CRP III-458-235-31 T	488	235	1735	120	31		
	CRP III-458-240-31 T	488	240	1765	122	31		
	CRP III-458-260-31T	488	260	1900	130	31		
	CRP III-458-260-31T	488	260	1900	130	31		

IV型瓶及系统 Type IV T Cylinders and system

产品介绍 Product Introduction

天海工业车用IV型瓶通过六年多的持续技术创新研发，成为国内首批取得IV型瓶制造许可认证的企业。目前已完成多款产品研制，压力等级20MPa-70MPa，为天然气及氢燃料汽车提供轻量化车载供气系统解决方案。

After over six years of continuous technological innovation and R&D, Tianhai Industrial's Type IV cylinder have become one of the first domestic enterprises to obtain manufacturing certification for Type IV cylinder. The company has now developed multiple product models with pressure ratings ranging from 20MPa to 70MPa, providing lightweight onboard gas supply system solutions for natural gas and hydrogen fuel vehicles.



产品优势 Product Advantage

- 塑料内胆无腐蚀和氢脆风险
No risk of corrosion and hydrogen embrittlement for the plastic inner liner.
- 疲劳寿命高，可达45000次
High fatigue life, up to more than 45,000 cycles.
- 安全性能高，抗冲击能力强
High safety performance with strong impact resistance.
- 可依据车型灵活配套
Flexible matching available according to vehicle models.
- 重容比低，经济效益更佳
Low weight-to-volume ratio, economic benefits better.



应用场景 Application Scenarios

IV型瓶产品凭借其轻量化优势，为燃料电池汽车减重提供了新思路，截止目前，天海工业已完成多款车型公告，累计交付IV型瓶储气系统千余套，试用用于众多车厂49T牵引车型。

Type IV cylinder products, leveraging their lightweight advantages, offer a new approach to reducing the weight of fuel cell vehicles. To date, Tianhai Industry has completed the certification for multiple vehicle models, delivering over a thousand sets of Type IV bottle gas storage systems and testing them in various 49T tractor models for numerous automakers.



IV型瓶典型产品参数

Typical product parameters of Type IV cylinder

标准 Standard	规格型号 Type	气瓶直径 Cylinder Diameter(mm)	公称容积 Volume(L)	气瓶长度 Cylinder Length(mm)	重量 Weight(kg)	工作压力 Working Pressure(MPa)	设计寿命 Designser- vice life(year)	充装介质 Filling Material
Q/JB THB0053	CNG4-356-135-20/S	356	135	1800	43	20	15	CNG
	CNG4-401-160-20 S	401	160	1725	49	20	15	
	CNG4-401-160-20 S	401	160	1760	49	20	15	
	CNG4-906-1080-20 S	906	1080	2165	210	20	15	
ECE R 110	CNG4-356-135-20/S	356	135	1800	43	20	15	
	CNG4-362-150-20 S	362	150	1989	49	20	15/20	
	4ECE401-160-20/S	401	160	1725/1836	49	20	15	
	CNG4-533-328-20 S	533	328	2032	95	20	15	
	CNG4-906-1080-20 S	906	1080	2165	210	20	15	
	CNG4-401-160-20 S	401	160	1760	49	20	15	
ISO 11439	CNG4-356-135-20/S	356	135	1800	43	20	15	
	CNG4-362-150-20 S	362	150	1989	49	20	15	
	CNG4-401-160-20 S	401	160	1725	49	20	15	
	CNG4-906-1080-20S	906	1080	2165	210	20	15	
NGV2	CNG4-533-328-25 S	533	328	2032	95	25	15	
GB/T 42612	CHG4-580-390-35-S/A2	580	390	2060	147	35	15	H ₂
	CHG4-604-450-35-S/A2	604	450	2150	158	35	15	
EC79	CHG4-374-58-35 T/A	374	58	860	27	35	15	
ECE R 134	CHG4-408-160-35 S/A	408	160	1725	67	35	15	
	CHG4-580-390-35 S/A	580	390	2060	140	35	15	
AS ISO 19881	CHG4-408-160-35 S/A	408	160	1725	67	35	15	
	CHG4-580-390-35 S/A	580	390	2060	140	35	15	
EN 17339	CHG4-509-350-30 S/A	509	350	2342	115	30	Unlimited	

集束格、集装箱
Cylinder Bundle/MEGC



产品优势
Product Advantage

- 加氢站临时/备用/集中供气
- Temporary / Backup / Centralized Gas Supply for Hydrogen Refueling Stations
- 工程现场临时用气/野外作业
- Temporary Gas Supply for Construction Sites /Field Operations
- 应急救援/医疗气体配送
- Emergency Rescue / Medical Gas Delivery
- 海上/内河/中长距离干线运输
- Offshore / Inland River / Medium-and-Long-Distance Trunk Line Transportation

集束格、集装箱典型产品参数
Typical product parameters for bundled grids and containers

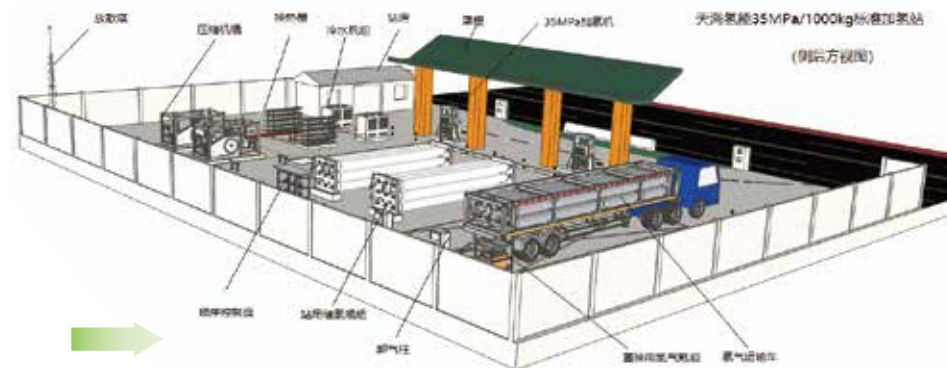
标准 Standard	产品种类 Product Type	箱体尺寸 Box dimensions LxWxH(mm)	气瓶类型 Cylinder Type	总容积 Volume(L)	工作压力 Working Pressure(M- Pa)	气瓶数量 Number of cylinders	总重量 Weight(kg)	充装介质 Filling Material
ISO10961/ EN13807	集束格(4x230L)	1100x1100x2000	III	920	31	4	720	工业气体
	集束格(4x260L)	1100x1100x2200	III	1040	31	4	720	
EN13807	20尺集装箱(25x310L)	6058x2438x2591	III	7250	52	25	10000	H ₂
	40尺集装箱(110x350L)	12192x2438x2591	IV	38500	30	110	18000	



加氢站产品

天海工业凭借对氢能市场的准确把握，先后开发了35MPa加氢站、70MPa加氢站核心装备。可以为客户提供制氢加氢一体站、加氢站、合建站等个性化解决方案，以及系统设计、设备制造、安装调试、以及员工培训、技术支持、运营管理服务等全方位一揽子服务，并可帮助客户通过金融租赁等方式进行融资经营。

Tianhai Industry has developed core equipment for 35MPa and 70MPa hydrogen refueling stations based on its accurate understanding of the hydrogen energy market. The company can provide customers with personalized solutions such as hydrogen production and refueling integrated stations, refueling stations, and joint construction stations, as well as comprehensive package manufacturing, installation and commissioning, services including system design, equipment installation and commissioning, employee training, technical support, and operation management services. The company can also assist customers in financing and operating through financial leasing and other means.



固定式加氢站
Fixed hydrogen refueling station



撬装式加氢站
Skid mounted hydrogen
refueling station

加氢站典型产品参数

Typical products of hydrogen refueling stations

类型 type	规格 Specifications	适用场景 Adapt to the scene	参数 parameter	
撬装式 skid-mounted	500kg/12h@12.5MPa; 1000kg/12h@12.5MPa	集成氢气压缩机、加氢机、 换热系统等为一体, 结构 紧凑, 安装便捷, 可节约项 目用地, 降低现场安装工 程量, 缩短安装周期。 Integrated hydrogen compressor,hydrogena- tion machine, heat exchange system, etc., with a compact struc- ture and easy installa- tion, can save project land,reduce on-site installation work- load,and shorten installation cycle.	进气压力 Intake pressure	5MPa~20MPa
			最大排气压力 Maximum exhaust pressure	45/87.5MPa
			加注压力 refueling pressure	35/70MPa
			加注温度 refueling tempera- ture	35MPa可低至-10℃; 70MPa可低至-40℃ 35MPa can be as low as -10℃; 70MPa can be as low as -40℃
固定式 fixed-type	500kg/12h@12.5MPa; 1000kg/12h@12.5MPa	采用模块化设计理念, 适 用于对占地面积要求不 高, 对功能、安全防护、自 动化程度要求较高的客户。 Adopting a modular design concept,it is suitable for customers who don't have high requirements for floorspace, but have high requirementsfor functionality, safety protection,and automa- tion level.	进气压力 Intake pressure	5MPa~20MPa
			最大排气压力 Maximum exhaust pressure	45/87.5MPa
			加注压力 Add pressure	35/70MPa
			加注温度 Add temperature	35MPa可低至-10℃; 70MPa可低至-40℃ 35MPa can be as low as -10℃; 70MPa can be as low as -40℃