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北京天海工业有限公司
BEIJING TIANHAI INDUSTRY CO.,LTD

碳纤维全缠绕复合气瓶

CARBON FIBER FULLY WRAPPED COMPOSITE GAS CYLINDER

新能源汽车供气系统解决方案

NEW ENERGY VEHICLE GAS SUPPLY SYSTEM SOLUTION



III型瓶

III型瓶介绍

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，由于其具有压力高、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。



III型瓶产品优势

- 比钢质气瓶重量轻70%以上
- 强度高，经久耐用
- 安全性能好
- 技术成熟
- 同样的尺寸，总充气量更大，而系统净重大大降低
- 铝合金内胆，不易生锈

TYPE III CYLINDER

INTRODUCTION TO TYPE III CYLINDER

Tianhai Industry boasts a cutting-edge design and testing center as well as production lines for aluminum-lined carbon fiber fully wrapped composite cylinders, which possess proprietary intellectual property rights. With a comprehensive range of product types and specifications, Tianhai Industry can customize according to customer needs. Due to its high pressure, light weight, excellent safety performance, strong environmental adaptability, and good heat resistance, the 35MPa high-pressure hydrogen cylinders have been widely applied in hydrogen fuel cell vehicles and fuel cell backup power supply fields.



ADVANTAGES OF TYPE III CYLINDER

- More than 70% lighter than a steel cylinder
- High strength and durability
- High safety performance
- Mature technology
- With the same size, the total inflation volume is larger, while the net weight of the system is significantly reduced
- Aluminum alloy inner liner, which is resistant to rust

III型瓶

III型瓶典型产品参数

标准	规格型号	直径 (mm)	公称容积 (L)	工作压力 (MPa)	气瓶长度(不含阀) (mm) ±20	重量 (kg) ±10%	充装介质
GB/T 35544	CHG3-344-140-35 S/A	370	140	35	1800	80	压缩氢气
	CHG3-344-140-35 T/A	370	140	35	1800	79	
	CHG3-379-101-35 T/A	410	101	35	1150	60	
	CHG3-373-74-35 T/A	404	74	35	900	47	
	CHG3-373-130-35 T/A	404	130	35	1495	74	
	CHG3-373-165-35 T/A	404	165	35	1790	90	
	CHG3-373-166-35 T/A	404	166	35	1800	91	
	CHG3-382-213-35 S/A	410	213	35	2210	110	
	CHG3-465-260-35 S/A	505	260	35	1875	130	
	CHG3-382-210-35 S/A	420	210	35	2210	120	
	CHG3-537-385-35 S/A	580	385	35	2060	175	
	CHG3-234-27-70 T/B	275	27	70	875	32	
	CHG3-392-68-70 T/B	455	68	70	870	67	
	CHG3-352-134-70 S/B	405	134	70	1775	125	
	CHG3-358-134-70 S/B	410	134	70	1775	135	
ECE R134	CHG3-382-210-35 S/A	420	210	35	2210	120	压缩天然气
Q/JB THB0022	CNG3-373-80-25A	396	80	25	950	41	
	CNG3-383-80-20A	400	80	20	920	36	
	CNG3-383-92-20A	400	92	20	1017	39	
	CNG3-391-92-20B	406	92	20	950	36	
	CNG3-391-95-20B	406	95	20	980	37	
	CNG3-391-100-20B	406	100	20	1020	39	
	CNG3-404-223-20A	424	223	20	2005	81	
	CNG3-404-233-20A	424	233	20	2085	82	
	CNG3-417-104-20B	434	104	20	960	42	
CNG3-417-117-20B	434	117	20	1070	46		
NGV2	NGV3-373-80-25A	396	80	25	945	41	
	NGV3-383-100-25A	404	100	25	1100	41.5	
	NGV3-383-135-25A	404	135	25	1435	55	
	NGV3-383-207-25A	404	207	25	2100	80	
	NGV3-383-300-25C	404	300	25	3050	62	
	NGV3-383-100-25B	404	100	25	1055	42	
	NGV3-383-151-25B	404	151	25	1530	57	
NGV3-495-231-25A	523	231	25	1448	89		
ECER110	3ECE383A-20-00	400	100	20	1090	39	
	3ECE383A-20-00	400	300	20	3050	100	
	3ECE325B-20-00	338	120	20	1695	42	
ISO11439	3ISO373A-25-00	396	80	25	945	41	
ISO1119-2	CFW3-395-310-52H2	450	310	52	3150	250	压缩氢气
	3ISO11119-373A-25-00	396	135	25	1490	33	压缩天然气
	GFHP3-230-50-20B	240	50	20	1450	22	空气
Q/JB THB0044	GFHP3-230-50-20B	240	50	20	1450	22	空气
	GFHP3-383-80-20	400	80	20	920	36	空气、氧气、氮气、氩气
	GFHP3-383-92-20	400	92	20	1017	39	空气、氧气、氮气、氩气

TYPE III CYLINDER

PARAMETERS OF TYPE III CYLINDER(Model Product)

Standard	Specification and model	Diameter (mm)	Nominal Volume (L)	Working Pressure (Mpa)	Cylinder Length(w/o valve) (±20mm)(m)	Weight (k ±10%)	Filling Medium
GB/T 35544	CHG3-344-140-35 S/A	370	140	35	1800	80	Compressed H2
	CHG3-344-140-35 T/A	370	140	35	1800	79	
	CHG3-379-101-35 T/A	410	101	35	1150	60	
	CHG3-373-74-35 T/A	404	74	35	900	47	
	CHG3-373-130-35 T/A	404	130	35	1495	74	
	CHG3-373-165-35 T/A	404	165	35	1790	90	
	CHG3-373-166-35 T/A	404	166	35	1800	91	
	CHG3-382-213-35 S/A	410	213	35	2210	110	
	CHG3-465-260-35 S/A	505	260	35	1875	130	
	CHG3-382-210-35 S/A	420	210	35	2210	120	
	CHG3-537-385-35 S/A	580	385	35	2060	175	
	CHG3-234-27-70 T/B	275	27	70	875	32	
	CHG3-392-68-70 T/B	455	68	70	870	67	
	CHG3-352-134-70 S/B	405	134	70	1775	125	
	CHG3-358-134-70 S/B	410	134	70	1775	135	
ECE R134	CHG3-382-210-35 S/A	420	210	35	2210	120	CNG
Q/JB THB0022	CNG3-373-80-25A	396	80	25	950	41	
	CNG3-383-80-20A	400	80	20	920	36	
	CNG3-383-92-20A	400	92	20	1017	39	
	CNG3-391-92-20B	406	92	20	950	36	
	CNG3-391-95-20B	406	95	20	980	37	
	CNG3-391-100-20B	406	100	20	1020	39	
	CNG3-404-223-20A	424	223	20	2005	81	
	CNG3-404-233-20A	424	233	20	2085	82	
	CNG3-417-104-20B	434	104	20	960	42	
CNG3-417-117-20B	434	117	20	1070	46		
NGV2	NGV3-373-80-25A	396	80	25	945	41	
	NGV3-383-100-25A	404	100	25	1100	41.5	
	NGV3-383-135-25A	404	135	25	1435	55	
	NGV3-383-207-25A	404	207	25	2100	80	
	NGV3-383-300-25C	404	300	25	3050	62	
	NGV3-383-100-25B	404	100	25	1055	42	
	NGV3-383-151-25B	404	151	25	1530	57	
NGV3-495-231-25A	523	231	25	1448	89		
ECER110	3ECE383A-20-00	400	100	20	1090	39	
	3ECE383A-20-00	400	300	20	3050	100	
	3ECE325B-20-00	338	120	20	1695	42	
ISO11439	3ISO373A-25-00	396	80	25	945	41	Compressed H2
ISO1119-2	CFW3-395-310-52H2	450	310	52	3150	250	
	3ISO11119-373A-25-00	396	135	25	1490	33	
Q/JB THB0044	GFHP3-230-50-20B	240	50	20	1450	22	air
	GFHP3-230-50-20B	240	50	20	1450	22	air
	GFHP3-383-80-20	400	80	20	920	36	air, O2, He, Ar
	GFHP3-383-92-20	400	92	20	1017	39	air, O2, He, Ar

IV型瓶

IV 型瓶介绍

天海工业四型瓶生产线主要设备全部采用进口设备。产品具有自主知识产权，产品灵活性高，可根据客户的需求进行定制。天海工业采用先进IV型瓶设计理念，已经完成多款产品的研制，压力等级20MPa-70MPa，为天然气及氢燃料汽车提供了轻量化车载供气系统解决方案。



IV型瓶产品优势

- 内胆无腐蚀 塑料内胆不会产生应力腐蚀和氢脆
- 疲劳寿命高，疲劳寿命可达45000次以上。
- 安全性能高，抗冲击能力强。
- 配套灵活，同直径同容积的产品长度更短，可满足不同车型安装空间的需求。
- 重容比低，同直径同容积的产品重量小，经济效益好。

TYPE IV CYLINDER

INTRODUCTION OF TYPE IV CYLINDER

The main equipments of type IV cylinder production line are all imported. The product has independent intellectual property rights, high flexibility, and can be customized according to customer needs. Tianhai Industry adopts the advanced IV type bottle design concept and has completed the development of multiple products with pressure levels of 20MPa-70MPa, providing a lightweight on-board gas supply system solution for natural gas and hydrogen fuel vehicles.



ADVANTAGES OF TYPE IV CYLINDER

- Non corrosive plastic inner liner will not produce stress corrosion and hydrogen embrittlement
- High fatigue life of over 45000 cycles.
- High safety performance and strong impact resistance.
- Flexible matching, products with the same diameter and volume have shorter lengths, which can meet the installation space requirements of different vehicle models.
- Low weight to capacity ratio, products with the same diameter and volume have smaller weight, and better economic benefits.

IV型瓶



IV型瓶典型产品参数

标准	规格型号	公称直径 (mm)	公称容积 (L)	工作压力 (MPa)	气瓶长度 (mm)	气瓶公称重量 (kg)	充装介质
Q/JB THB 0053	CNG4-356-135-20/S	356	135	20	1800	43	压缩天然气
	CNG4-401-160-20 S	401	160	20	1725	49	
	CNG4-906-1080-20 S	906	1080	20	2165	210	
ECE R 110	CNG4-356-135-20/S	356	135	20	1800	43	
	CNG4-362-150-20 S	362	150	20	1989	49	
	4ECE401-160-20/S	401	160	20	1725/1836	49	
ISO 11439	CNG4-533-328-20 S	533	328	20	2032	95	
	CNG4-356-135-20/S	356	135	20	1800	43	
	CNG4-362-150-20 S	362	150	20	1989	49	
NGV 2	CNG4-401-160-20 S	401	160	20	1725	49	
	CNG4-533-328-25 S	533	328	25	2032	95	
	GB/T 42612	CHG4-580-390-35-S/A2	580	390	35	2060	
CHG4-604-450-35-S/A2		604	450	35	2150	158	
CHG4-430-190-70-S/B2		430	190	70	2090	145	
EC 79	CHG4-374-58-35 T/A	374	58	35	860	27	
T/CATSI 02 007	CHG4-580-390-35 S/A	580	390	35	2060	140	压缩氢气
	CHG4-374-58-35 T/A	374	58	35	860	27	
ECE R 134	CHG4-408-160-35 S/A	408	160	35	1725	67	
	CHG4-580-390-35 S/A	580	390	35	2060	140	
AS ISO 19881	CHG4-408-160-35 S/A	408	160	35	1725	67	
	CHG4-580-390-35 S/A	580	390	35	2060	140	

注：1. T型为单头口结构，S型为双头口结构；
2. 可根据客户需要定制开发不同规格产品。

TYPE IV CYLINDER



PARAMETERS OF TYPE IV CYLINDER

Standard	Specification and model	Nominal Diameter (mm)	Nominal Volume (L)	Working pressure (MPa)	Length (mm)	Nominal Weight (kg)	Filling Medium
Q/JB THB 0053	CNG4-356-135-20/S	356	135	20	1800	43	Compressed H ₂
	CNG4-401-160-20 S	401	160	20	1725	49	
	CNG4-906-1080-20 S	906	1080	20	2165	210	
ECE R 110	CNG4-356-135-20/S	356	135	20	1800	43	
	CNG4-362-150-20 S	362	150	20	1989	49	
	4ECE401-160-20/S	401	160	20	1725/1836	49	
ISO 11439	CNG4-533-328-20 S	533	328	20	2032	95	
	CNG4-356-135-20/S	356	135	20	1800	43	
	CNG4-362-150-20 S	362	150	20	1989	49	
NGV 2	CNG4-401-160-20 S	401	160	20	1725	49	
	CNG4-533-328-25 S	533	328	25	2032	95	
	GB/T 42612	CHG4-580-390-35-S/A2	580	390	35	2060	
CHG4-604-450-35-S/A2		604	450	35	2150	158	
CHG4-430-190-70-S/B2		430	190	70	2090	145	
EC 79	CHG4-374-58-35 T/A	374	58	35	860	27	
T/CATSI 02 007	CHG4-580-390-35 S/A	580	390	35	2060	140	CNG
	CHG4-374-58-35 T/A	374	58	35	860	27	
ECE R 134	CHG4-408-160-35 S/A	408	160	35	1725	67	
	CHG4-580-390-35 S/A	580	390	35	2060	140	
AS ISO 19881	CHG4-408-160-35 S/A	408	160	35	1725	67	
	CHG4-580-390-35 S/A	580	390	35	2060	140	

Note: 1. The T-shaped structure is a single ended opening structure, while the S-shaped structure is a double ended structure.
2. We can customize and develop products of different specifications according to customer needs.