

**CATALOGUE OF
PRESSURE VESSEL TUBE & PIPE**





HYST owns the most entire rolling mills, advanced equipment and complete product specifications.




HYST is one of the largest seamless steel tube & pipe manufacturers of OCTG and pressure vessel in China.

HYST is the biggest enterprise sharing the largest export volume of seamless steel tube & pipe in China

HYST is one of the main strategic suppliers of Petro China, Sinopec, CNOOC, Shell, ExxonMobil, Shanghai Boiler, Dongfang Boiler, China National Nuclear Corporation, CGN,, Beijing Tianhai Industry Co.,Ltd, ZOOMLION and Sany etc.



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Company Profile

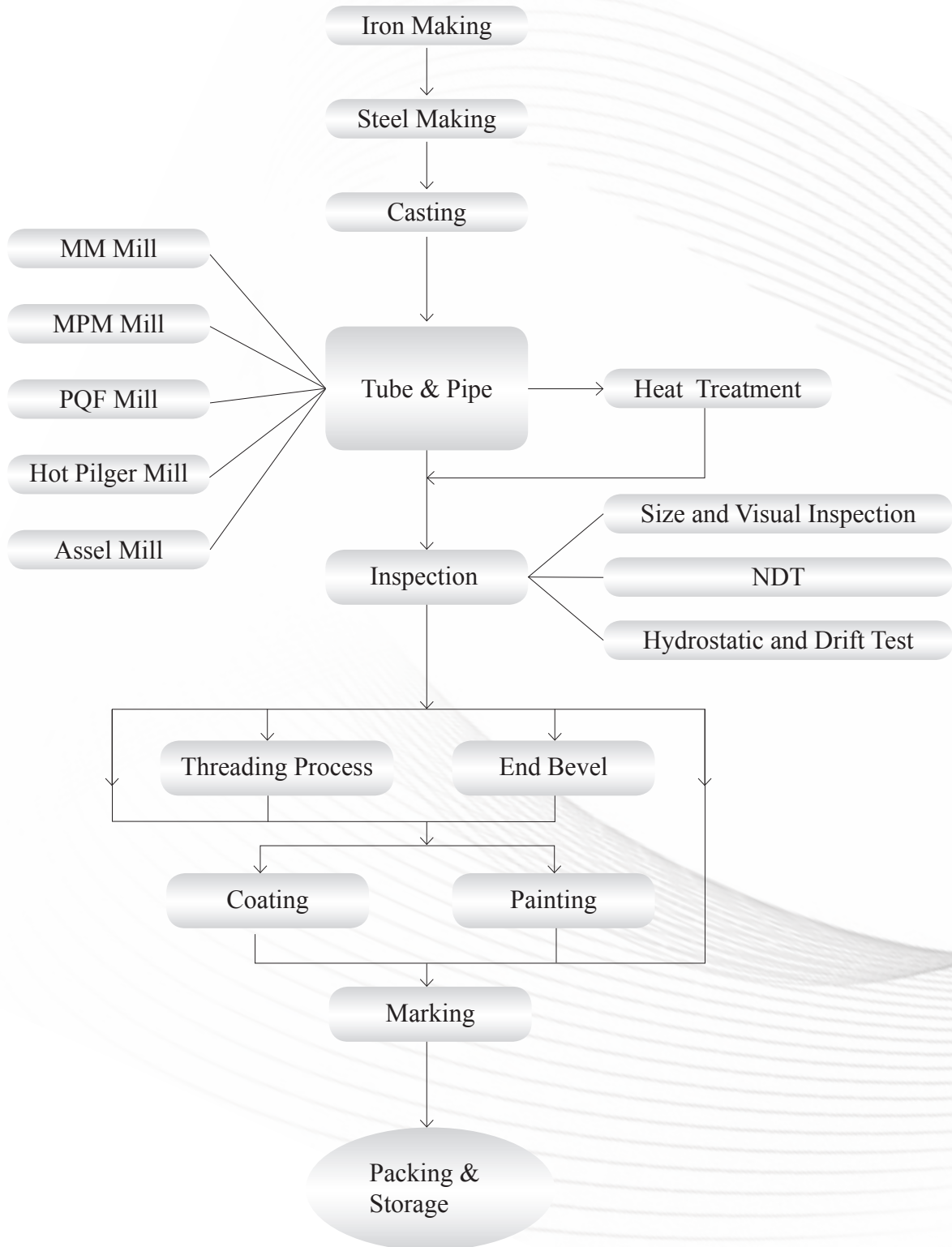
Hengyang Valin Steel Tube Co. Ltd. (hereinafter referred to as HYST) is a subsidiary of Hunan Valin Iron & Steel Group Co.,Ltd. founded in 1958, is one of the seamless steel tube & pipe enterprises with the most entire rolling mills, advanced equipment and complete product specifications whose production scale has been ranked the globe fifth by “Metal Bulletin” US. Its export volume has continuously kept the leading position in China seamless tube & pipe industry for dozen years. It is a national high and new-tech enterprise which is the first to pass the State Intellectual Property Management System Certification and one of the first among 45 steel standardizes enterprises audited by “Steel Industry Standard Condition” of MIIT. It has 5400 employees with total assets of 15 billion Yuan.

HYST has an annual output capacity of 2 million tons of seamless steel tube & pipe with entire specialized production process of iron, steel, tube & pipe and further processing, which can produce variety of seamless steel tube & pipe of OD6—800mm and WT 1.5—120mm based on specifications. It has been built the three leading products of petroleum and natural gas, pressure vessels and mechanical tubing as well as HS series with independent intellectual property rights. Among them petroleum and natural gas product and service is mainly for complex geological environment mining, which has passed the test by customers and other inspection authorities such as ABS, CCS and affirmed by famous International oil companies like Chevron, Total, Maersk, and a strategic partner of Petro China, Sinopec, CNOOC. Product for power station has realized the localization of four main pipelines and its quality enjoys a higher reputation in petroleum, petrochemical, boiler, power generation, machinery, coal mining, chemical, nuclear power and other industries of both domestic and oversea market.

HYST has consistently insisted on further structural adjustment, extended the industrial chain and active transformation and upgrading who is the first enterprise to invest a tube & pipe further processing industry zone in Hunan Province, which a number of tube & pipe further processing enterprises has been brought into. It has been named as new industrialization demonstration base by MIIT whose sales income including HYST is keeping over 100 billion Yuan.

HYST’s vision is to become “a world-class professional seamless steel tube & pipe enterprise ” and it insists on the green manufacturing, intelligent manufacturing and quality manufacturing through the path of professional development, vigorously promotion of structural adjustment and constantly elevation of the core competitiveness.

Process Flow Chart



Technical Facilities

Smelting Systems

One High Quality Iron Making 180m^3 Sinter+ 1080m^3 Blast Furnace
Two Curve Continuous Casters for Round Billet
 $\phi 140\text{mm}$ 、 $\phi 150\text{mm}$ 、 $\phi 180\text{mm}$ 、 $\phi 220\text{mm}$ 、 $\phi 250\text{mm}$
 $\phi 280\text{mm}$ 、 $\phi 330\text{mm}$
One curve Continuous Caster for Large Round Billet
 $\phi 500\text{mm}$ 、 $\phi 600\text{mm}$ 、 $\phi 700\text{mm}$ 、 $\phi 800\text{mm}$

Tube & Pipe Production Lines

$\phi 89\text{m}$ MM Mill $\phi 38\text{mm}\sim\phi 127\text{mm} \times 3.5\text{mm}\sim 12\text{mm}$
 $\phi 180\text{m}$ PQF Mill $\phi 73\text{mm}\sim\phi 180\text{mm} \times 4\text{mm}\sim 22\text{mm}$
 $\phi 219\text{m}$ Assel Mill $\phi 68\text{mm}\sim\phi 260\text{mm} \times 8\text{mm}\sim 55\text{mm}$
 $\phi 340\text{m}$ MPM Mill $\phi 139\text{mm}\sim\phi 368\text{mm} \times 5\text{mm}\sim 42\text{mm}$
 $\phi 720\text{m}$ Hot Pilger Mill $\phi 273\text{mm}\sim\phi 720\text{mm} \times 8\text{mm}\sim 120\text{mm}$

Tube End Upsetting Lines

Tubing Upsetting Line $\phi 48.3\text{mm} \sim \phi 114.3\text{mm}$
Drill tube Upsetting Line $\phi 60.3\text{mm} \sim \phi 127.0\text{mm}$

Heat Treatment Lines

$\phi 89$ Tubing Heat Treatment Line $\phi 48.3\text{mm} \sim \phi 127.0\text{mm}$
 $\phi 89$ Tubing Intermediate Frequency Heat Treatment Line
 $\phi 340$ Casing Heat Treatment Line 1 $\phi 139.7\text{mm} \sim \phi 376\text{mm}$
 $\phi 340$ Casing Heat Treatment Line 2 $\phi 73\text{mm} \sim \phi 244.5\text{mm}$
 $\phi 180$ Heat Treatment Line $\phi 114\text{mm} \sim \phi 219\text{mm}$
 $\phi 720$ Heat Treatment Line $\phi 159\text{mm} \sim \phi 720\text{mm}$

Threading Lines

Threading Lines $\phi 60.3\text{mm} \sim \phi 508\text{mm}$

Coating Lines

External Surface Abrasive Blasting Line $\phi 21.0\text{mm} \sim \phi 800.0\text{mm}$
Internal Surface Abrasive Blasting Line $\phi 114.0\text{mm} \sim \phi 800.0\text{mm}$
O-die Extrusion Process Line $\phi 21.0\text{mm}\sim\phi 406.0/114.0\text{mm}\sim\phi 800.0\text{mm}$
Winding-up Extrusion Process Line $\phi 159.0\text{mm}\sim\phi 800.0\text{mm}$
Internal Corrosion-resistant Painting Line $\phi 114.0\text{mm}\sim\phi 800.0\text{mm}$



$\phi 340$ MPM Mill



$\phi 720$ Hot Pilger Mill



Blast Furnace



Curve Casters of Round Billet



End upsetting Line



Φ89 MM Mill



Φ180 PQF Mill



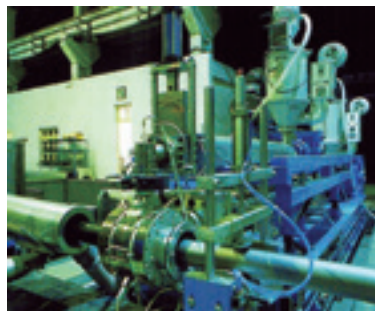
Φ219 Assel Mill



Threading Lines



Heat Treatment Lines



Coating Line

Boiler Products

Variety	Size		Steel Grade	Specification	Typical Application
	OD (mm)	WT (mm)			
Low-Medium Pressure Boiler	38 ~ 720	3.5 ~ 120	10	GB 3087	Low and medium pressure boiler heating tube & pipe, container & steam piping
			20		
High Pressure Boiler	38~ 720	3.5 ~ 120	20G	GB 5310	Heating tube & pipe, container & steam piping at working pressure >9.8MPa and temperature 450-650 C
			20MnG		
			25MnG		
			15MoG		
			20MoG		
			12CrMoG		
			15CrMoG		
			12Cr2MoG		
			12Cr1MoVG		
			10Cr9Mo1VNbN		
			15Ni1MnMoNbCu		
			SA106A/B/C	ASME SA106 ASME SA192 ASME SA209 ASME SA210 ASME SA213 ASME SA335	
			SA192		
			T1/T1a		
			SA210A-1/C		
			T/P2		
			T/P11		
			T/P12		
			T/P22		
			T23		
			T24		
			T/P91		
			T/P36		
			P195GH/P235GH/ P265GH	EN 10216	
			16Mo3		
			13CrMo4-5		
			10CrMo9-10		
15NiCuMoNb5-6-4					
P355N	DIN 17175				
St35.8、St45.8					
15Mo3					
13CrMo44					
10CrMo910					

Note: 15NiCuMoNb5-6-4(Abbreviation Wb36) used for high pressure water piping

For Nuclear Power Station

Variety	Size		Steel Grade	Specification	Typical Applications
	OD (mm)	WT (mm)			
Nuclear Power Station	38 ~ 720	3.5 ~ 120	HD245、HD245Cr	GB24512.1 GB24512.2	Carbon and alloy products for Nuclear Station Island and Conventional Island
			HD265、HD265Cr		
			HD280、HD280Cr		
			HD12Cr2Mo		
			HD15Ni1MnMoNbCu		
			TUE250B	RCC-M 2000 edition(02) addendum	
			TU42C		
			TU48C		
			P280GH		
			SA106B/C	ASME SA106 ASME SA335	
			P11		
			P22		
			P36(WB36CN1)		

For Pressure Chemical Fertilizer Equipments and Petroleum Cracking

Variety	Size		Steel Grade	Specification	Typical Applications
	OD (mm)	WT (mm)			
High Pressure Chemical Fertilizer Equipments	38~ 720	3.5 ~ 120	10	GB 6479	High pressure chemical fertilizer and pipeline
			20		
			Q345B、Q345C、Q345D、Q345E		
			10MoWVNb		
			12CrMo		
			15CrMo		
			12Cr5Mo		
			12Cr2Mo		
			T/P5	ASME SA213 ASME SA335	
			T/P9		
Petroleum Cracking	38~ 720	3.5 ~ 120	10	GB 9948	Cracking furnace of petroleum refineries
			20		
			12CrMo		
			15CrMo		
			12Cr5MoI、12Cr5MoNT		

For Gas Cylinder

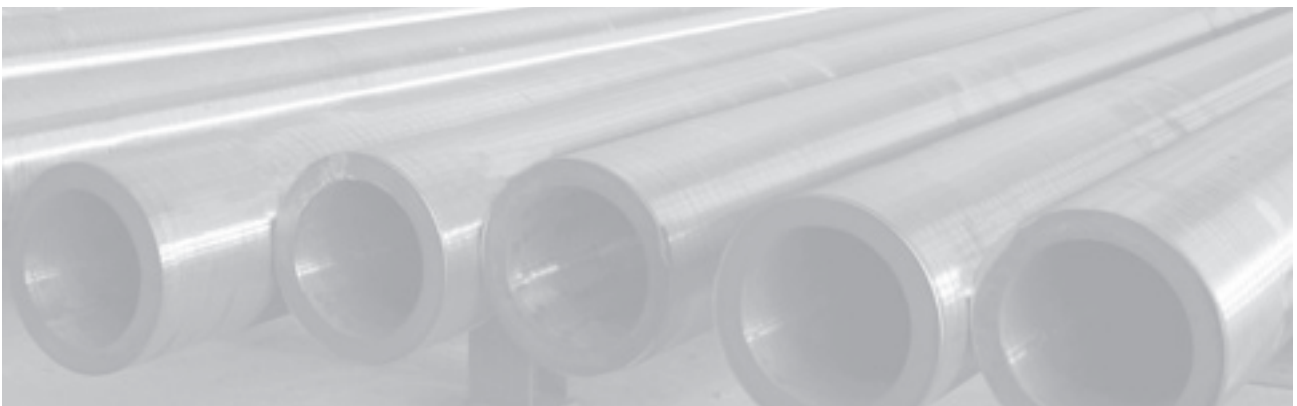
Variety	Size		Steel Grade	Specification	Typical Application
	OD (mm)	WT (mm)			
Gas Cylinder	38 ~ 720	3.5 ~ 120	37Mn、37Mn/1、37Mn/2	GB 18248 GB 28884 or Technical Specification	Oxygen bottle、 hydrogen bottle, natural gas bottle、 accumulator
			30CrMo、30CrMoE		
			35CrMo		
			34CrMo4		
			42CrMoE		
			4130X		
4145、4147					

For Ship and Vessel

Variety	Size		Steel Grade	Specification	Typical Application
	OD (mm)	WT (mm)			
Ship & Vessel	38 ~ 720	3.5 ~ 120	410I、410II	CSS and GB/T5312	Boiler tube & pipe of vessel, over heater and pipeline
			R410	GL	
			410HB	BV	
			Gr3、Gr5	ABS	
			TS410	DNV	
			410I、410II	LR	
			RST138、RST142	KR	
KSTPG38、KSTPG42、KSTS38	NK				

For Cryogenic Device

Variety	Size		Steel Grade	Standards	Typical Application
	OD (mm)	WT (mm)			
Cryogenic Device	38-720	3.5-120	16MnDG	GB/T 18984-2003	Cryogenic Fluid Tube & Pipe
			Gr3	ASTMA333/ASMESA333	
			Gr6		
			Gr8		

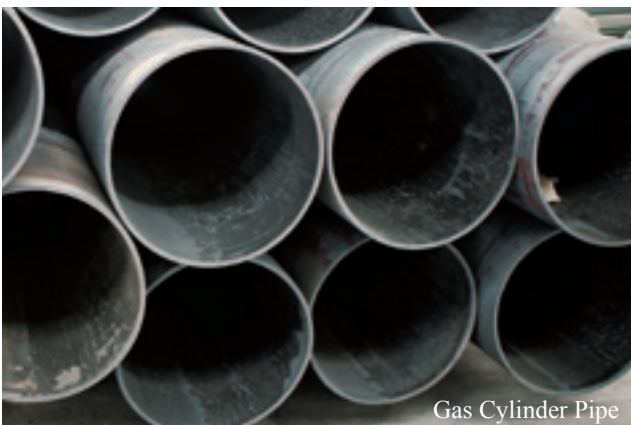




High Pressure Boiler



Ship and Vessel



Gas Cylinder Pipe



Nuclear Power Station

Quality Management

HYST insists on his operation concept with “to seek the survival at his quality” and Management objective with “to focus on customers”. It develops the system and products certification as the propelling force and implements the quality policy by deepening the total quality management, process approach, continuous improvement of his product application and enhancement of the customers’ satisfaction. It improves the product’s stable quality by quality performance indicators to each individual person and standardization quality management.



System Certification

ISO9002:2000 approved in 1998; Quality Management Cert.in 1994;
 ISO9001:2000 Change Edition in 2001; ISO9001:2008 Change Edition in 2008;
 ISO10012:2003 Measurement Management System in 2008
 Laboratory Cert. approved by China National Accreditation Service in 2008.



Product Certification

- API 5CT、API 5L for OCTG and line pipe in 1999
- TüV and ü Certificates for pressure vessel and building material products in 2000
- API 5D for drill pipe in 2003
- PED EU for pressure vessel products in 2003
- Manufacturing license for pressure piping parts in 2006
- CPD EU for Structural products in 2010
- Vessel Classification Societies Certificates by China, United Kingdom, Germany, France, Norway, USA, Korea and Japan
- Manufacturing license for civil nuclear safety equipment in 2013

API Logo Use Rights

API 5CT



API 5L



API 5DP



Second-part Qualification

It was approved by famous oil companies from more than 100 different countries such as Shell, Mobil, Total, Chevron, Halliburton, Maersk, Petrofac, Alstom, Abu Dhabi, Petro China, Sinopec, CNOOC etc.



Inspection capability

HYST has his own laboratory approved by China National Accreditation Service and his approved inspection and calibration items cover 27 kinds of products with 129 parameters and 115 specifications, which cover four professional fields of materials testing, chemical analysis, NDT and calibration. There is a laboratory of metal material mechanical properties and physical properties, a chemical analysis laboratory, a corrosion resistant metal materials laboratory, a Full-size Test Lab for Casing and Tubing, measure and calibration laboratories, NDT laboratory, which equip with more than 170 sets of hydraulic pressure ,physical and chemical testing and other kinds of inspection/calibration equipment with 1000 million Yuan in fixed assets in total and the equipment level and test ability are in the leading position among domestic industry.



Tensile Tester



Impact Tester



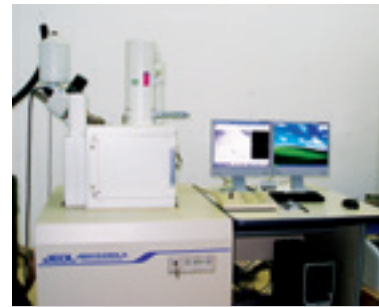
Hardness tester



Tube & Pipe technology Tester



Metallurgical microscope



Vertical Scanning Electron Microscope



Full-size Test Lab for Casing and Tubing



X-ray fluorescence spectrometer



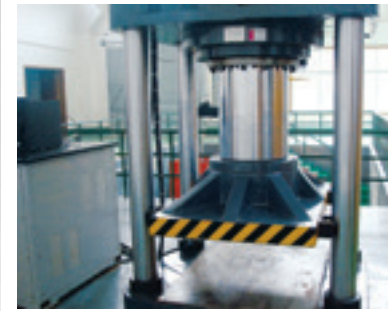
Plasma spectrometer



Hydrogen Analyzer



Oxygen & Nitrogen Analyzer



600T Flattening Tester



Stress ring



Thermocouple calibration device



Direct-reading spectrometer



Energy meter calibration device



Individual parameters calibration device

Health, Safety, Environment

HYST always insists on his strategic development objective by "Green HYST" and it has fully reached the standard discharge on the industrial pollution sources in 2000. It has been approved by ISO14001 environmental management system certification, United Kingdom UKAS certification and OHSAS18001 occupational health and safety management system certification early in 2001 and 2002, which was one of the foregoers in the Chinese metallurgical industry. In June 2005 it was the first one published <HYST Environmental Protection White Book> in Hunan industrial enterprises.

In recent years, it has invested more than 650 million RMB to renovate and rebuild more than 70 major environmental pollution treatments and waste water recycling facilities, therefore it basically has reduced the industrial waste water to zero discharge, and the exhaust gas and noise to standard discharge. All industrial furnaces use the clean natural gas mixed with the self BF gas, harmless solid waste and reutilization is implemented at a 98% comprehensive utilization rate.

Many energy conservation and emission reduction technologies have been used such as the comprehensive utilization of BF gas, TRT (Blast Furnace Top Gas Recovery Turbine Unit), power generation, waste heat boilers, oxygen-enriched combustion, dry dust removal and sinter desulfurization etc.

In order to guarantee the effective operation of environmental protection facilities, HYST ensures a specialized environmental protection operations authority protects the sub-contract of the main facilities. The main pollutant of HYST has reached the international cleaner production level and/or the advanced domestic level and was the first one to pass the cleaner production auditing of Metallurgical industry in Hunan in September 2011.

It won "Hunan environmental century" Special Honorary Award in 2002, "Hunan environmental century" Industrial enterprise honorary award in 2007, "Hunan Two-create Model units", Hunan "garden style unit", and "Secondary safety production standardization Enterprise".

"National Advanced Unit for energy saving" in February 2013, "Advanced Unit of safe Production" and "Safety and Health Cup" awards for many years.



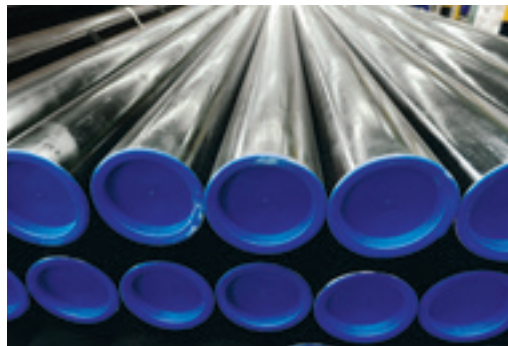


Marketing and Service



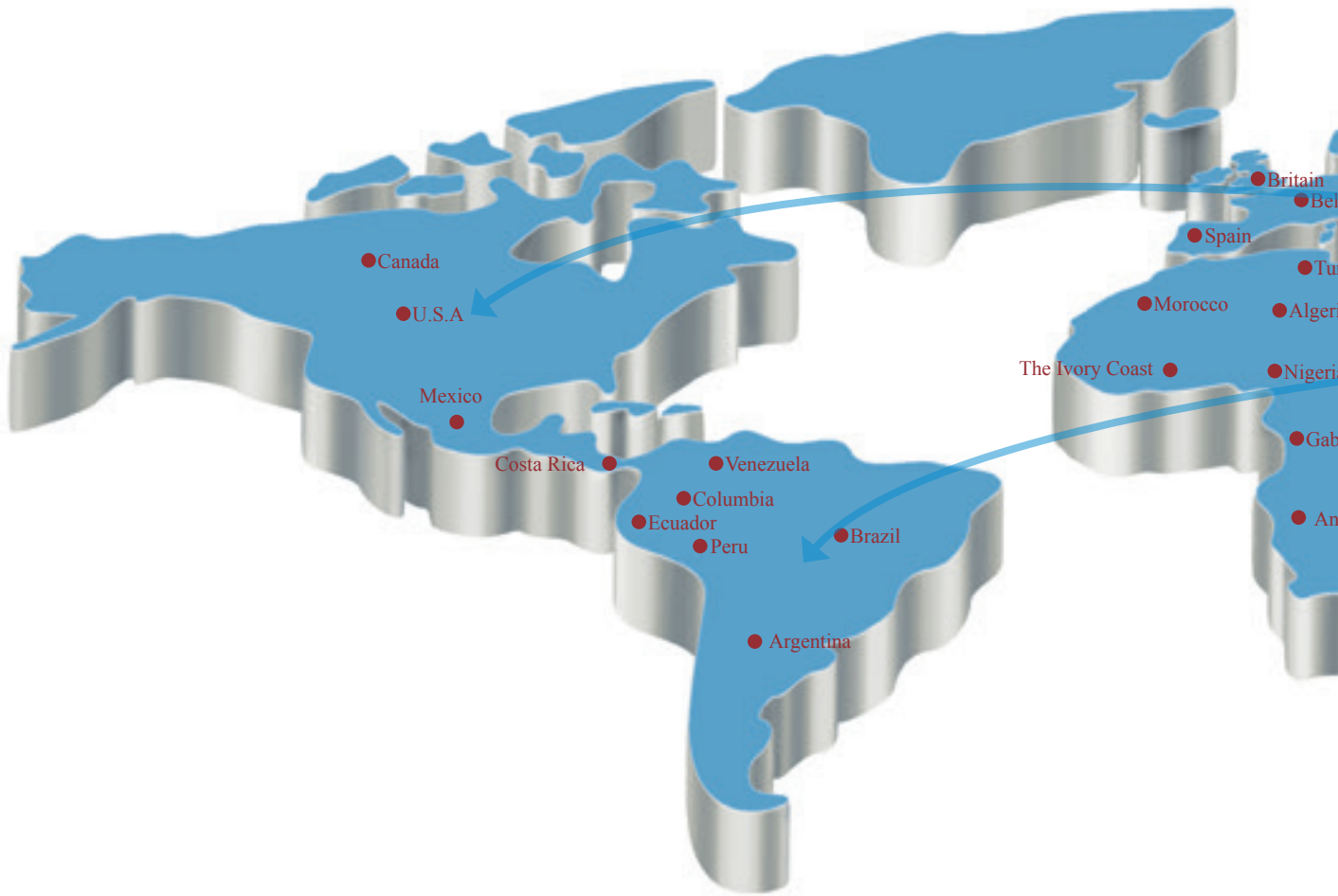
Main Customers

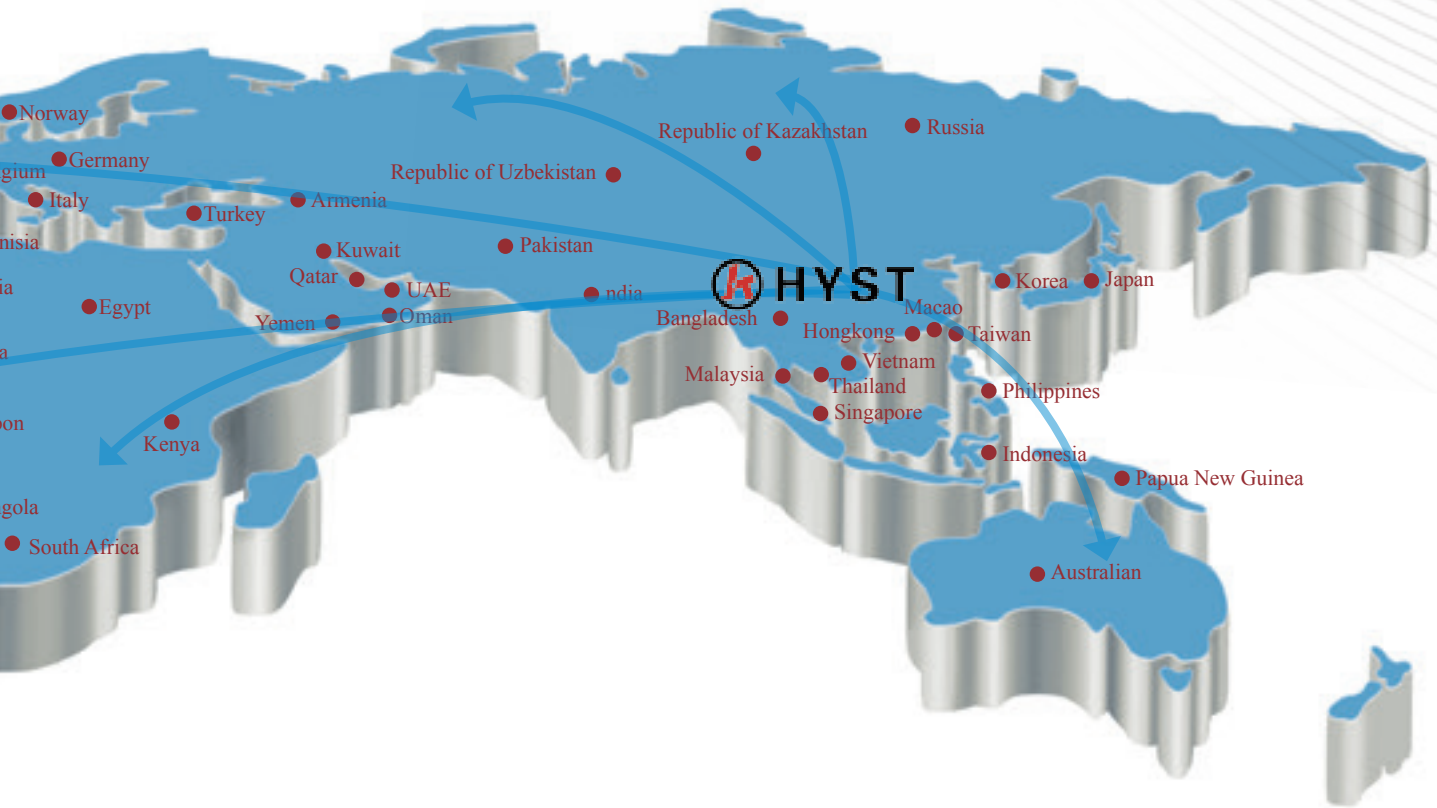
- Shanghai Boiler Works Ltd.
- Harbin Boiler Company Limited
- Dongfang Boiler Group Co., LTD.
- Wuhan Boiler Co., LTD.
- Babcock & Wilcox Beijing Company LTD.
- Wuxi Huaguang Boiler Co., LTD.
- Sichuan Boiler –making Plant
- Hangzhou Boiler Group Co., LTD.
- Chinercy Co., LTD.
- China Nuclear Power Engineering Co., Ltd.
- Beijing Tianhai Industry Co., Ltd.
- Sinoma
- Bharat Heavy Electricals Limited
- Everest Kanto Cylinder Ltd.





Sales Network





Product Application

The Main Clients of pressure vessel products includes a lot of large power station boiler and steam Turbine manufacturers in China, such as Harbin Boiler、 Dongfang Boiler、 Shanghai Boiler、 Wuhan Boiler、 B & W、 Wuxi Boiler、 Hangzhou Boiler、 Sichuan Boiler. Harbin Turbine、 Shanghai Turbine、 Dongfang Turbine etc. Meanwhile we have the ability to provide the nuclear piping for nuclear power station and dozen sizes of carbon and alloy products have been used in the nuclear power projects such as Ningde、 Taishan、 Sanmen in Fujian and Yangjiang Project in Guangdong etc.

Each year more than 20,000 metric tons of high pressure boiler tube & pipe (ASME specification) are exported to India、 Europe、 America and Middle East etc.

In recent years our high pressure boiler products are used in large thermal power units as follows:

1000MW ultra-supercritical units of Huaneng Yuhuan Power Plant、 Haimen Power Plant、 Guangdong Yudean Power Plant、 Guangxi Hezhou Power Plant of China Resources (Holdings)、 Shandong Laizhou Power Plant of China Huadian Corporation、 Zhejiang Jiaxing Power Plant of Zhejiang Energy、 ZhunDong Power Plant、 Jurong Power Plant of China Huadian Corporation etc.

600MW supercritical units of Weixin Power Plant、 Tadian Power Plant、 Wangqu Power Plant、 Changshu Power Plant、 San Menxia Power Plant、 Qinbei Power Plant、 Taicang Power Plant、 Shantou Power Plant、 Datang Power Plant、 Baoqing Power Plant of China Power、 Panxian Power Plant in Guizhou etc.

600MW sub-critical units of Pannan Power Plant、 Datong Power Plant、 Diandong Power Plant、 Gongxian Power Plant etc.

300MW sub-critical units of Yushe Power Plant、 Shi Zuishan Power Plant、 Xuanwei Power Plant、 Zhongning Power Plant、 Guotai Power Plant in Hebei etc.

300MWCFB Boiler of Baima Power Plant.



Name of Power Generation Boiler	Boiler Parameter	User	Material	Size
Shanxi Gujiao thermal power plant 1#	660W Ultra Supercritical	Harbin Boiler Company Limited	P91	508*85
Palestinian SaXiM	660W Ultra Supercritical	Harbin Boiler Company Limited	P91	559*60、559*85
Shenhua yongzhou power plant 1#2#	2*1000MW Ultra Supercritical	Dongfang Boiler Group Co., Ltd.	P91	635*90
Shenhua Guonebg ZhunDong power plant	Ultra Supercritical	Dongfang Boiler Group Co., Ltd.	P91	457*47、508*70、610*108、711*50
Shenhua Yongzhou Power Plant	Ultra Supercritical	Dongfang Boiler Group Co., Ltd.	15NiCuMoNb5-6-4	457*45、600*65
Cogeneration Unit in Bohai new district	Supercritical	China Resources Power Holdings Company Limited	15NiCuMoNb5-6-4	Φ406.4×40 Φ273×30
India Lanco 2	Supercritical	China Huadian Corporation	15NiCuMoNb5-6-4	Φ508x50 Φ355.6x40
Chengde Thermal Power Plant	Ultra Supercritical	Harbin Boiler Company Limited	15NiCuMoNb5-6-4	457*90
Xiyuan Aluminium Power Plant	Ultra Supercritical	Dongfang Boiler Group Co., Ltd.	15NiCuMoNb5-6-4	508*50
Shenhua Yongzhou Power Plant	Ultra Supercritical	Dongfang Boiler Group Co., Ltd.	12Cr1MoVG	711*120
Shandong Hongqiao	Ultra Supercritical	Harbin Boiler Company Limited	12Cr1MoVG	697*50
Guodian Bengbu Power Generation Plant	Ultra Supercritical	Dongfang Boiler Group Co., Ltd.	12Cr1MoVG	711*60、711*65
Qibei 1#、2#	600MW supercritical	Dongfang Boiler Group Co., Ltd.	12Cr1MoVG	Φ50.8×4.8
Yuhuan#1-2	1000MW ultra-supercritical	Harbin Boiler Company Limited	12Cr1MoVG	Φ89×12
Yuhuan#4	600MW supercritical	Harbin Boiler Company Limited	SA-209T1a	Φ63.5×4.5
Yuhuan#4	600MW supercritical	Harbin Boiler Company Limited	SA-209T1a	Φ63.5×4.8
Malaysia 2#	1000MW ultra-supercritical	Harbin Boiler Company Limited	SA-213T11	Φ50×4
Malaysia 2#	1000MW ultra-supercritical	Harbin Boiler Company Limited	SA-213T12	Φ57×4.5
India 2#	1000MW ultra-supercritical	Harbin Boiler Company Limited	SA-213T12	Φ57×6.5
Zhuanghe 2#、Jiangyin1#、Shuang yashan1#、PINGwei2#	1000MW ultra-supercritical	Harbin Boiler Company Limited	SA-213T22	Φ38×5.6
Malaysia #1-2	1000MW ultra-supercritical	Harbin Boiler Company Limited	SA-213T22	Φ57×5
Qing Tongxia 1#	600MW supercritical	Dongfang Boiler Group Co., Ltd.	12Cr1MoVG	Φ298.5*65
Jurong 2#	1000MW supercritical	Dongfang Boiler Group Co., Ltd.	12Cr1MoVG	Φ190.7*38
Dilong 2#	600MW supercritical	Dongfang Boiler Group Co., Ltd.	12Cr1MoVG	Φ377*25
Zhulong 1#	600MW supercritical	Dongfang Boiler Group Co., Ltd.	15CrMoG	Φ323.9*40
Kashi #6	600MW supercritical	Harbin Boiler Company Limited	15CrMoG	Φ324*50
Panxian #1	1000MW ultra-supercritical	Harbin Boiler Company Limited	12Cr1MoVG	Φ559*60
Linhuan II #2	600MW supercritical	Harbin Boiler Company Limited	12Cr1MoVG	Φ325*40
India Anuppur	600MW supercritical	Harbin Boiler Company Limited	SA-335P12	Φ559*60
India Cuddalore	600MW supercritical	Harbin Boiler Company Limited	15NiCuMoNb5-6-4	Φ559*60

China Professional Seamless Steel Tube & Pipe Enterprise



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