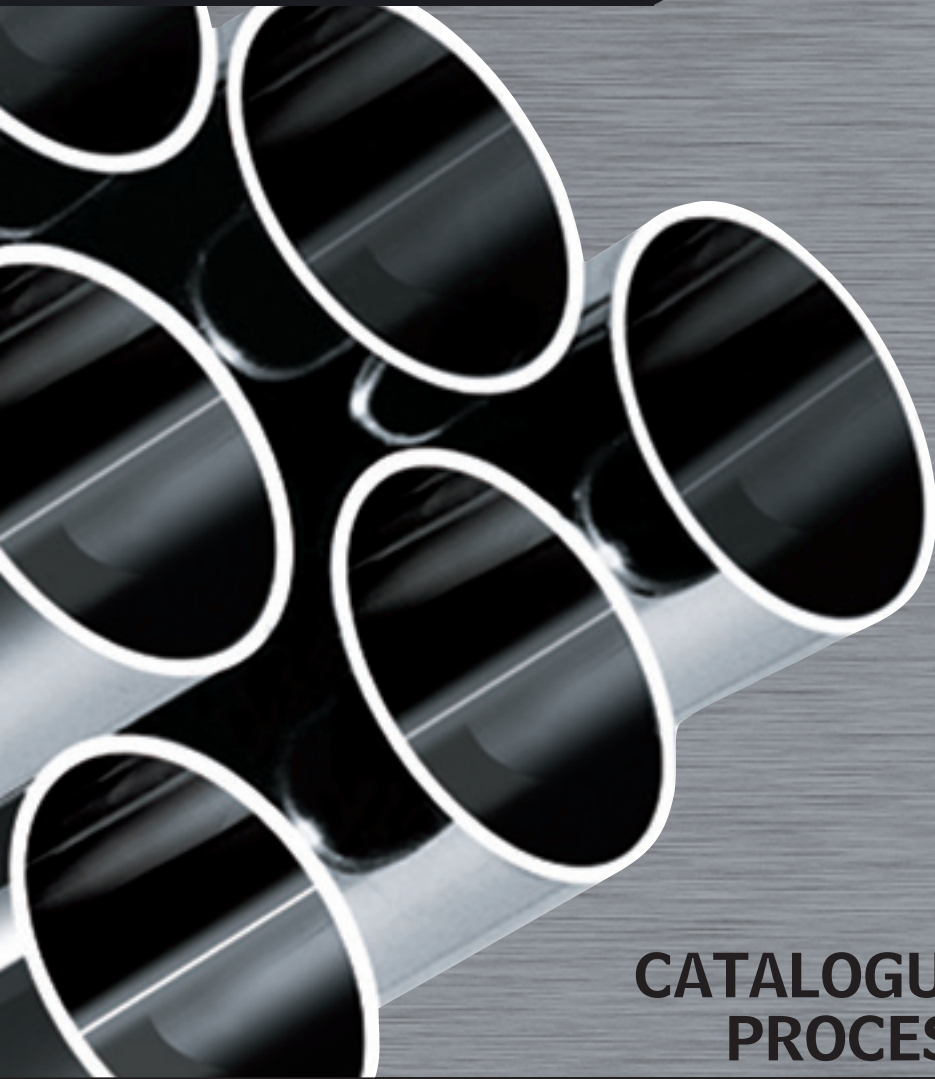




Hengyang Valin Steel Tube Co.,Ltd.



## CATALOGUE OF MECHANICAL PROCESSING 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

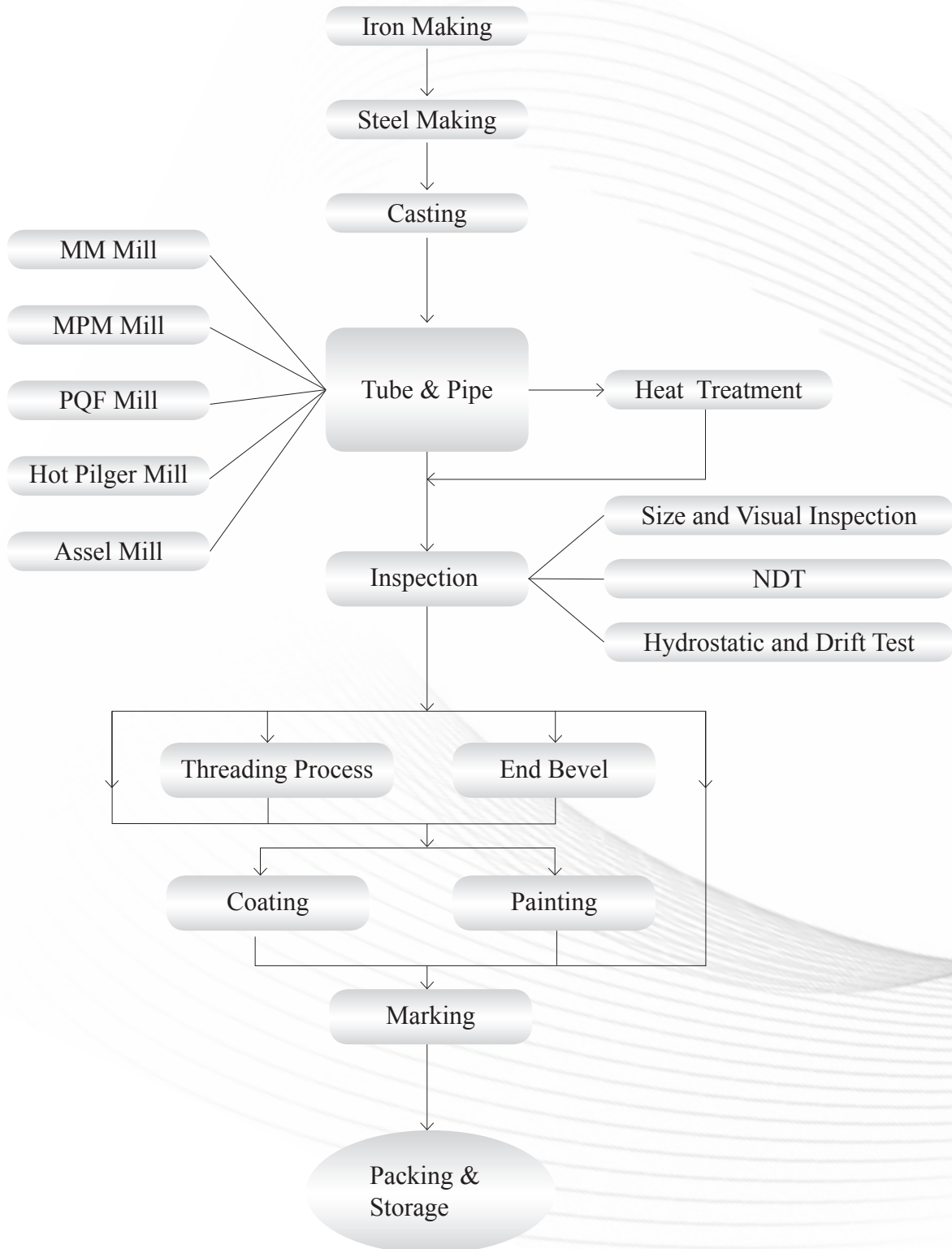
Hengyang Valin Steel Tube Co. Ltd. (hereinafter referred to as HYST) is a subsidiary of Hunan Valin Iron & Steel Group Co.,Ltd. founded in 1958, is one of the seamless steel tube & pipe enterprises with the most entire rolling mills, advanced equipment and complete product specifications whose production 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



## Smelting Systems

One High Quality Iron Making  $180\text{m}^3$  Sinter+ $1080\text{m}^3$  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



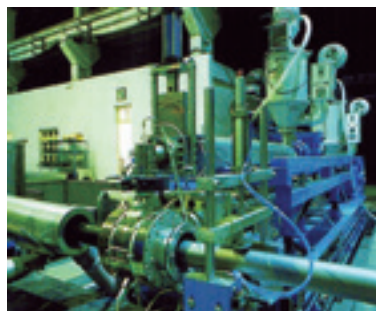
Φ219 Assel Mill



Threading Lines



Heat Treatment Lines



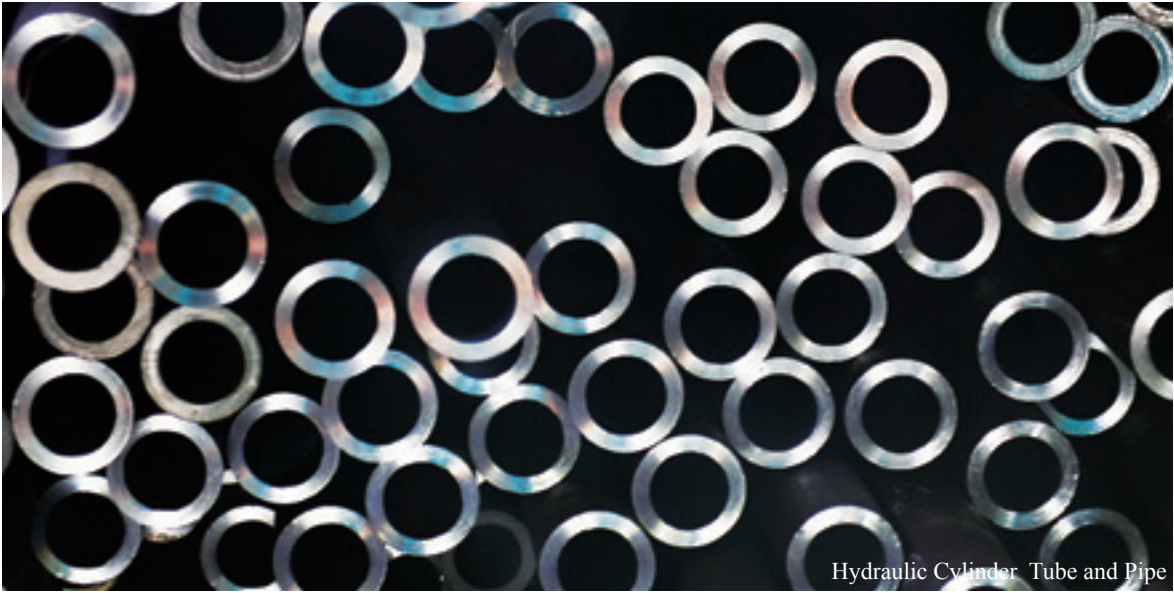
Coating Line



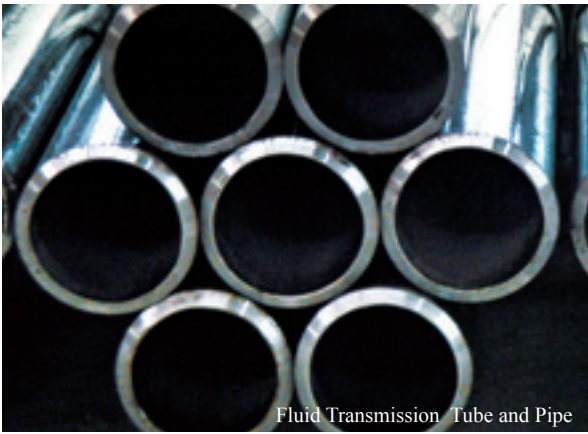
# Product Mix

Variety	Size		Steel Grade	Specification	Typical Applications
	OD (mm)	WT (mm)			
Structure Tube & Pipe	38 ~ 720	3.5 ~ 120	10、20、35、45、Q345、Q390、20Cr、40Cr、27SiMn、15CrMo、20CrMo、35CrMo、42CrMo、20CrNiMo、20CrMnMo、40CrMnMo、40CrNiMo、30CrMnSiA	GB/T 8162	Machining parts and fittings
			1020、1035、1045、4130、4140 etc.	ASTM A519	
Fluid Transmission Tube & Pipe	38 ~ 720	3.5 ~ 120	10、20、Q345、Q390	GB/T 8163	General gas and fluid transmission
Non-alloy Structure Tube & Pipe	38 ~ 720	3.5 ~ 120	S275J0H、S275J2H、S355J0H、S355J2H	EN 10210	Public facilities and mechanical engineering such as bridge, gymnasium, airport
Hydraulic Cylinder Tube & Pipe	38 ~ 720	3.5 ~ 120	20、35、45、27SiMn etc.	GB/T 17396 Q/OHAD010-1998	Hydraulic cylinder
Geology Drilling Tube & Pipe	38 ~ 720	3.5 ~ 120	DZ40、DZ50、DZ55、DZ60、STM-R780 etc.	YB/T5052 Q/OHAD006-2009	Geological drilling
Semi shaft for auto	38 ~ 720	3.5 ~ 120	45、45Mn2、40MnB、40Cr etc.	YB/T5035 Q/OHAD001-1997	Auto semi shaft
Auto axle	38 ~ 720	3.52 ~ 120	20Mn2 etc.	Technology Agreement	Auto axle
Crane Jib	38 ~ 720	3.5 ~ 120	HSM450、HSM770、HSM890 etc.	Q/OHAD015-2008	Jib Crane arms
Hollow Mandrel Bar	318 ~ 720	50 ~ 120	42CrMo、30Cr3MoV	Q/OHAD002-2010	Hollow mandrel bar
Mold Tube & Pipe	DN200	DN600	21CrMo10	Technology Agreement	Centrifugal cast mold
High-end building	200x200	10 ~ 45	Q345、Q390、Q420	Technology Agreement	High-end building
Pump piping	38~368	3.5~42	20、Q345B、45Mn2	Technology Agreement Q/OHAD 031-2013	Pump piping
Cold drawn hydraulic cylinder	38~720	3.5~120	20、45、25Mn、Q345B、Q345D、27SiMn、20MnTiB、26MnNbTi	Technology Agreement Q/OHAD 032-2013	Hydrolic cylinder
Rotary drill Tube & Pipe	68~720	10~40	35CrMo	Technology Agreement	Rotary drilling
Petroleum Machinery tube & Pipe	38 ~ 720	3.5 ~ 120	4130、4140、K55、L80-1、T95-1、P110、C110、13Cr	Technology Agreement	Spare Parts of Petroleum Industry

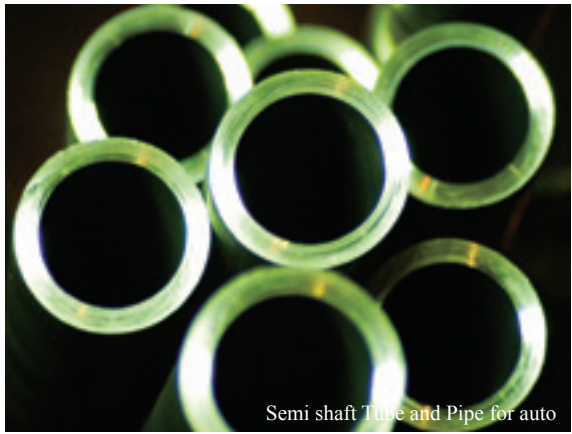




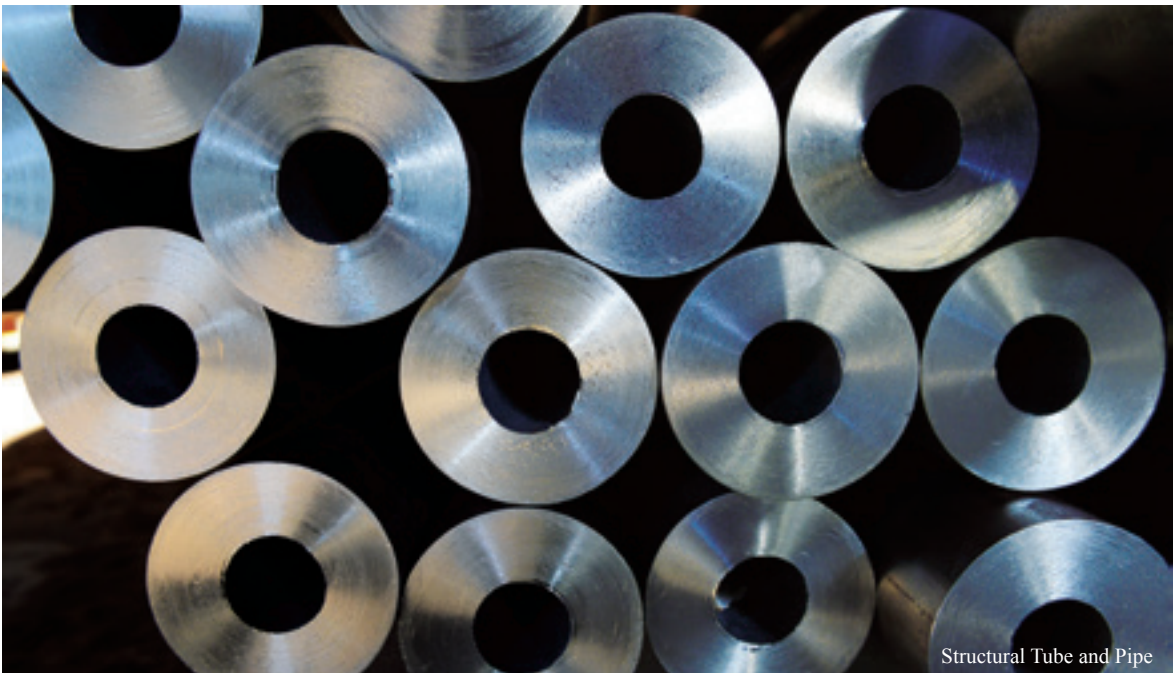
Hydraulic Cylinder Tube and Pipe



Fluid Transmission Tube and Pipe



Semi shaft Tube and Pipe for auto



Structural Tube and Pipe

# 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

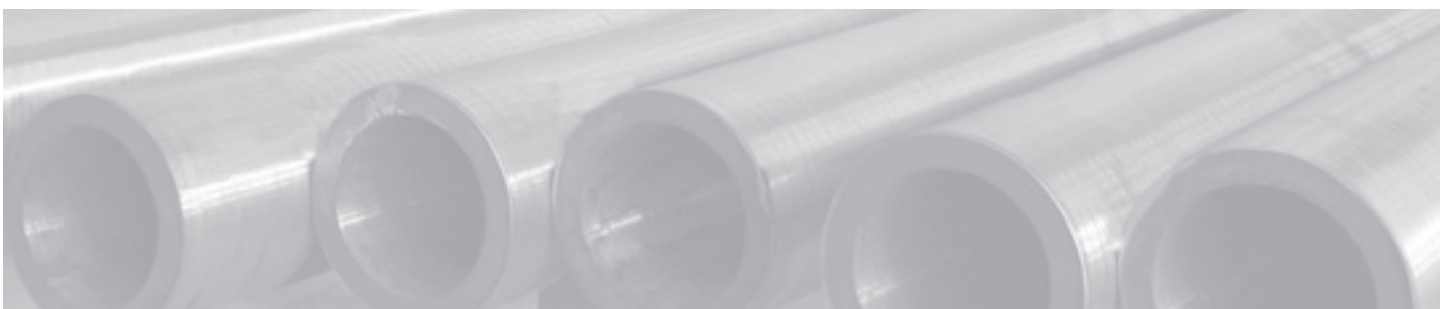


API 5DP



## 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



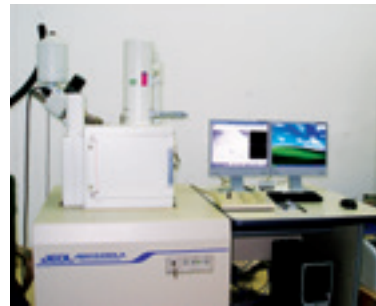
Hardness tester



Tube & Pipe technology Tester



Metallurgical microscope



Vertical Scanning Electron Microscope



Full-size Test Lab for Casing and Tubing



X-ray fluorescence spectrometer



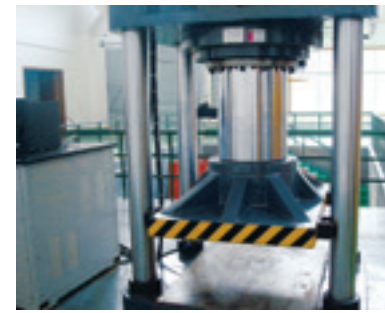
Plasma spectrometer



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".

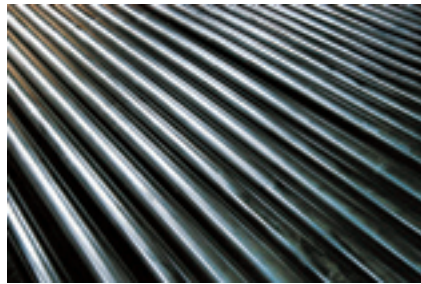
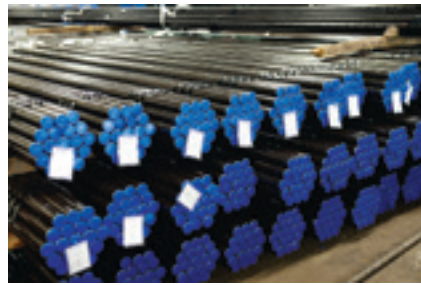
"National Advanced Unit for energy saving" in February 2013, "Advanced Unit of safe Production" and "Safety and Health Cup" awards for many years.







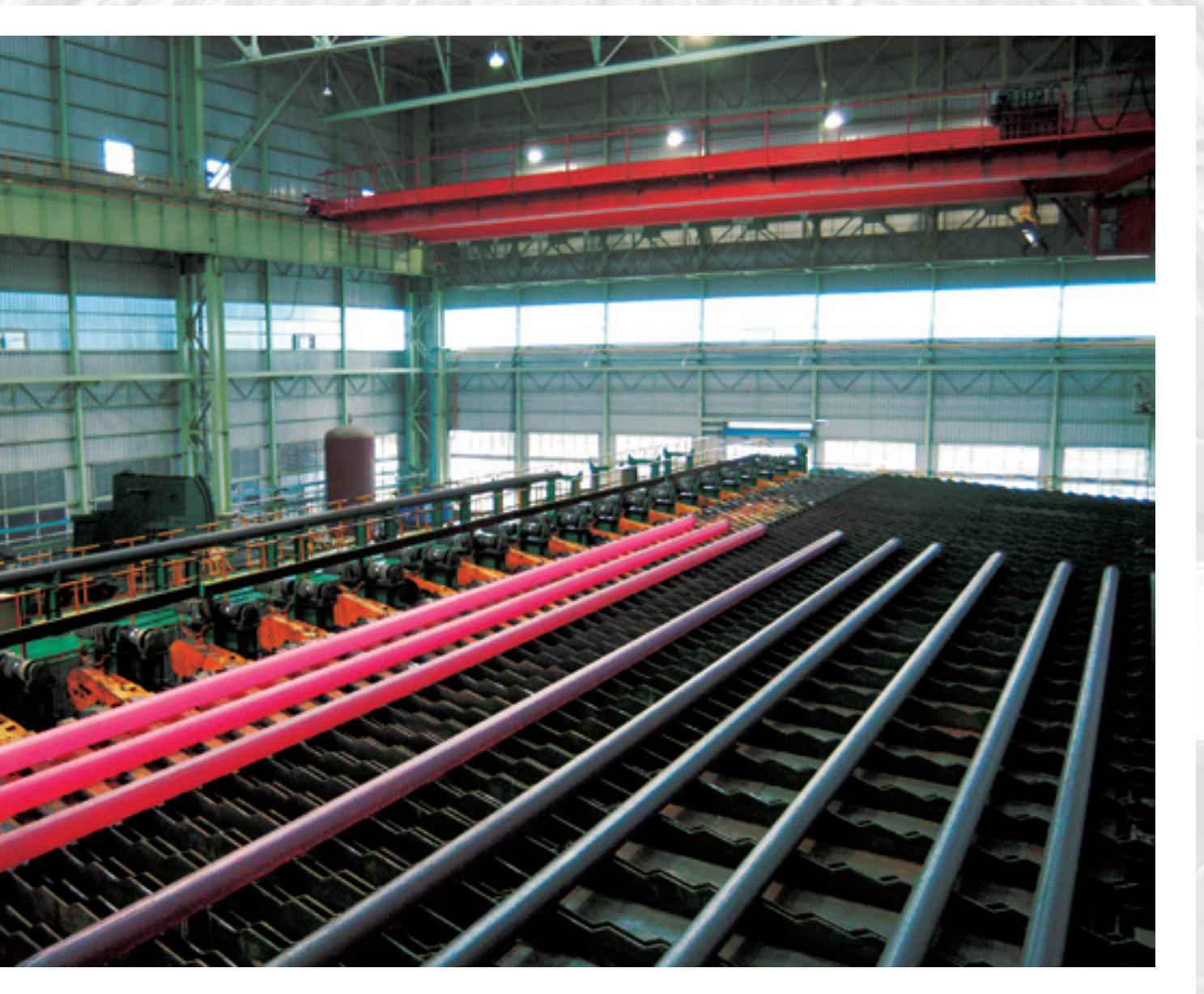
# Marketing and Service



## Main Customers in Domestic

- China Faw Jiefang Automotive Company ,Ltd.
- Dongfeng Passenger Vehicle Company
- SANY Heavy Industry Co., Ltd.
- Broad Sustainable Building
- Zoomlion Heavy Industry Science & technology Co., Ltd.
- Huainan Mining (Group) Co., Ltd.
- Zhengzhou Coal Mining Machinery Group Co. Ltd.
- Henan Sino Coal Special Steel Co., Ltd.
- MTR Corporation Limited
- Shui On Construction Co., Ltd.







# Product Application

Mechanical processing tube & pipe mainly includes that of structure, fluid transmission, hydraulic cylinder, geological drilling, auto semi shaft, jib crane arm, high-end buildings, pump piping, cold drawn cylinder, rotary drilling, ship & vessel and etc. End users are as follows: oil fields of Petro China & Sinopec, Sany, Zoomlion, Fuwa, XCMG, Dalian Mining, Liugong Machinery Co. Ltd and etc. Large coal mining enterprises like Zhengzhou Coal Mining Machinery Group Co. Ltd., Henan Sino Coal Special Steel Co., Ltd., Huainan Mining and etc. Auto accessory manufacturers such as Faw, Dongfeng, Sinotruk, Guangdong FUWA, FUHE Automobile, Ho's, Dongfeng Liuzhou Motor Co., Ltd. and etc. Big ship & vessel manufacturers as CSSC, COSCO, SINOTRANS & CSC and etc. New style buildings designer like Broad Group.



Product	Customers	Material
Semi Shaft For Auto	Sany, Faw, Dongfeng, Sinotruk, jinan Truck,Guangdong Fuwa, Huhe Auto, Ho's, Donghua Motor	45Mn2、30Mn2、20Mn2、40Cr、45#
Geological Drilling	Wuxi Drilling Tools Factory	45Mn2、37Mn5、36Mn2V、42MoMn7、50Mn
Hydraulic Cylinder	Henan Sino Coal Special Steel Co., Ltd. , Zhengzhou Coal Mining、Machinery Group Co. Ltd., Huainan Mining Industry (Group) Co., Ltd.	27SiMn、35CrMo、30CrMnSi、26MnNbTi
High-end building	Broad Sustainable Building	20、Q345、Q390、Q420
Jib Crane	Fuwa, XCMG, Sany	HSM450、HSM770、HSM890
Pump piping	Zoomlion、Zhongyang Machinery of Hunan Sany	20、Q345B、45Mn2
Cold drawn cylinder	CSIC Zhongnan Equipment Company LTD., CCTEG XI'AN Research Institute	20、45、25Mn、Q345B、Q345D、27SiMn 20MnTiB、26MnNbTi
Rotary drilling	Beijing Sany Heavy Industry	35CrMo





## China Professional Seamless Steel Tube & Pipe Enterprise



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