

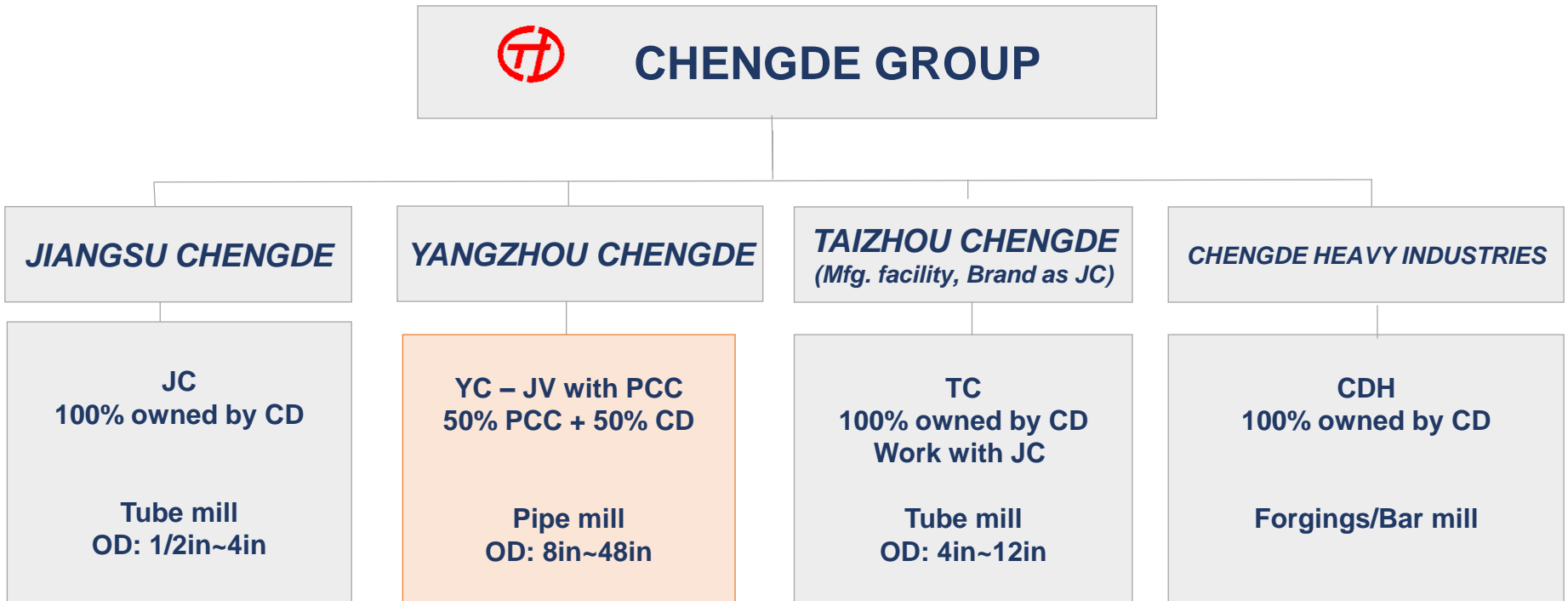


YANGZHOU CHENGDE STEEL PIPE CO., LTD

-----A Joint Venture with *PCC* Precision Castparts Corp.

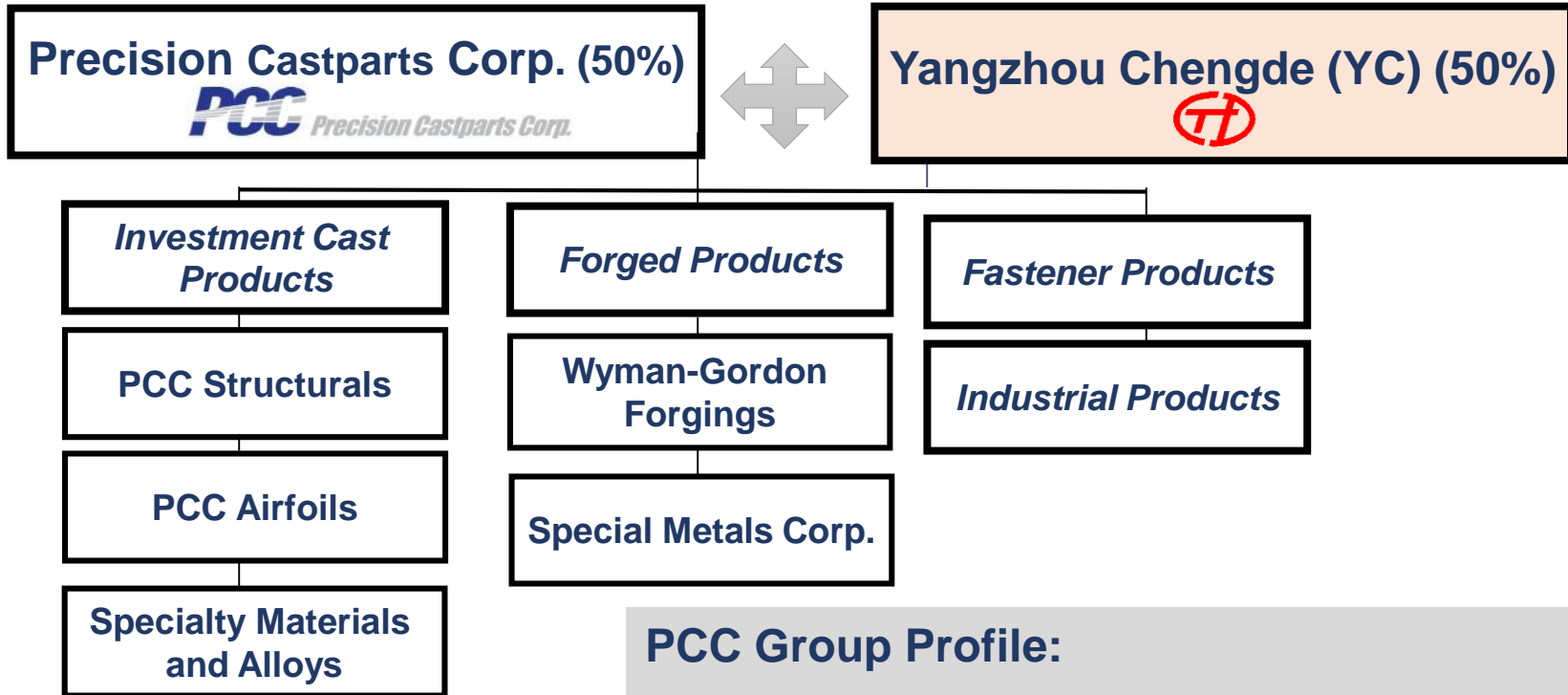


CHENGDE CORPORATE STRUCTURE



Chengde Group can offer ½” - 48” all kinds of seamless tubes & pipes, and dramatically reduces the difficulty of pipe sourcing for our customers.

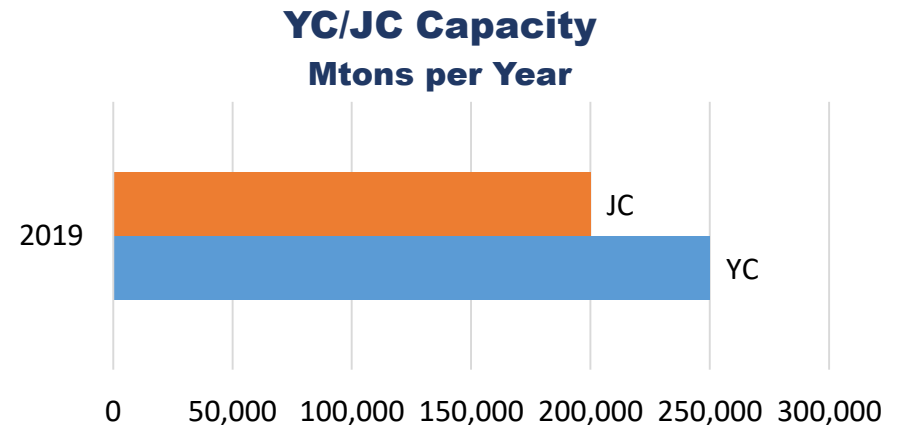
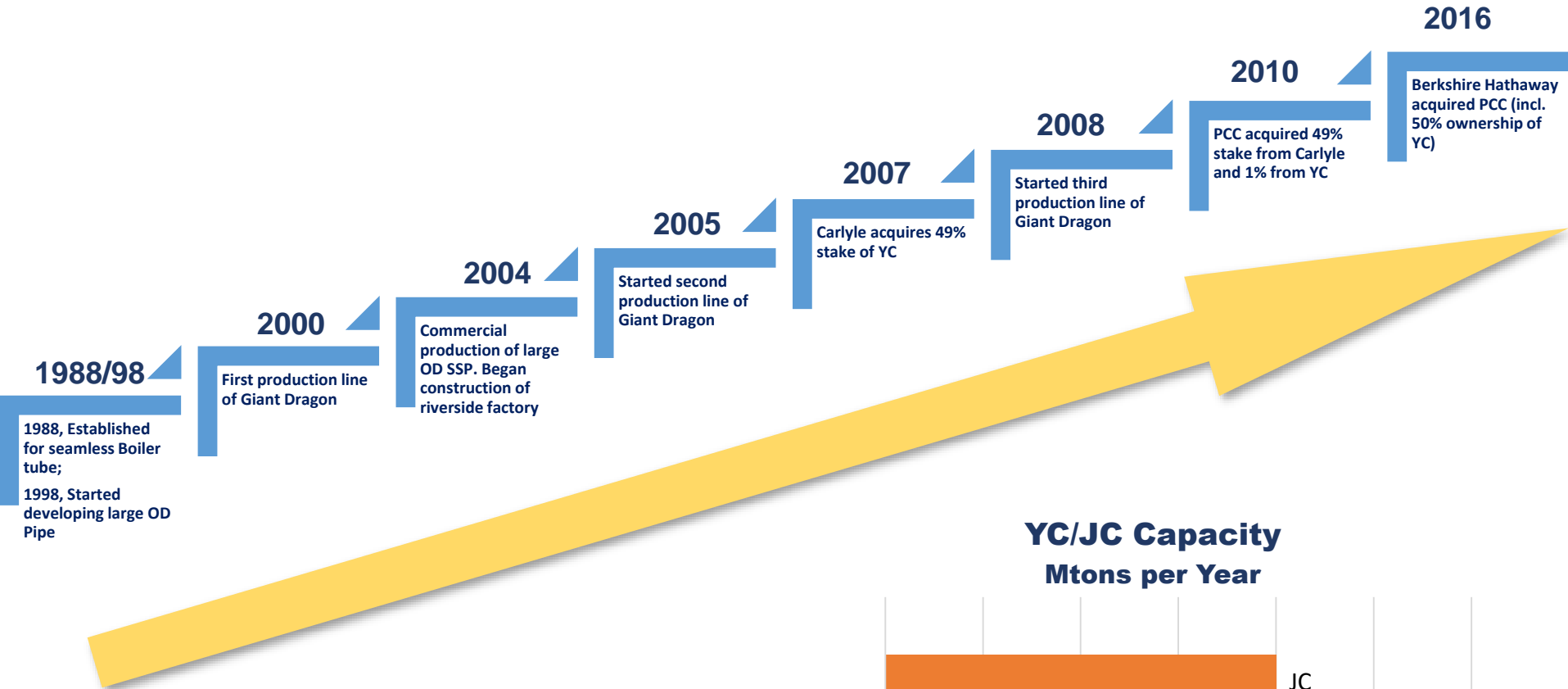
JOINT VENTURE PARTNERSHIP WITH PCC



PCC Group Profile:

- NYSE Listed Company Ticker ~ PCP
- Website www.precast.com
- Fiscal 2015 Revenue \$10.01 Billion
- Worldwide employees 30,500
- Manufacturing locations 162 facilities

FAST DEVELOPMENT PATH FORGING TODAY'S ACHIEVEMENTS



ONE-STOP PIPES & TUBES SUPPLY BASE

Markets:

Thermal & Nuclear Power

Mid / Downstream-Petrochem/Refinery

Mechanical industries

Offshore

Gas cylinder

Approved by all major EPC/Clients/Boiler makers

ASME SEC III Nuclear quality system

75% of production is alloy steel

+150,000 tons of P91 supplied in last 7 years

+75% market share of P91 in China

+70% of China boiler pipe export

+700,000 tons of boiler pipes delivered in 10 years

MAJOR ACHIEVEMENTS

- ✓ (2013~2015) Awarded the world's largest P91 order from Reliance (single PO 8,000 tons P91), the final additional quantity together is up to 16,000 tons, Plus CS 11000 tons. Entire projects P grades are from YC
- ✓ (2013~2015) Supplied to SHELL/Exxon projects
- ✓ (2014) EXXON MOBIL approved
- ✓ (2013~2016) P91 approved by GE/ALSTOM/MHPS/DOOSAN/IHI/BECHTEL
- ✓ (2014~2016) Win the entire quantity of Saudi Yanbu III project total quantity 10,000 tons, incl. P91 2,500 tons
- ✓ (2015) Win the first prize of National Science and Technology Progress Award by the program of "The innovative research & development, and application of steel pipes used in 600 °C Ultra-super critical coal power generation unit".
- ✓ (2015) Siemens P91/P92 approved and supplied (Exclusive P91/P92 supplier from China)
- ✓ (2016) Saudi Aramco/KNPC/NTPC approved and supplied (Exclusive P Grades supplier from China)
- ✓ (2017) Awarded over 7,000 tons P92 for overseas USC power plants
- ✓ (2017) Awarded the GE UK Hinkley point-C nuclear project, as the exclusive seamless pipe supplier from China.
- ✓ (2018) Formed the framework agreement with GE to supply the total package of pipes to GE Poland power plant, the first time for Chinese supplier to export European standard X10CrWMoVNb9-2 steel pipes.

MAJOR ACHIEVEMENTS

✓ **Approvals:**

- Oil Companies: Exxon Mobil, Saudi Aramco, KNPC, ADNOC, Petrobras, Petronas, SINOPEC, CNOOC, CNPC, Shell (Project basis)
- EPC: GE, Siemens, Fluor, Bechtel, TechnipFMC, Petrofac, Tecnicas Reunidas, Chiyoda, JGC, Toyo, Samsung, Hyundai, Kiewit, SNC lavalin, etc.
- Boiler/Turbine Makers: MHPS, IHI, Doosan, Toshiba, GE, AMEC foster Wheeler, Shanghai/Dongfang/Harbin Electric.
- Other Industries: Gas cylinder, offshore, mechanical application and others.

✓ **Major Projects:**

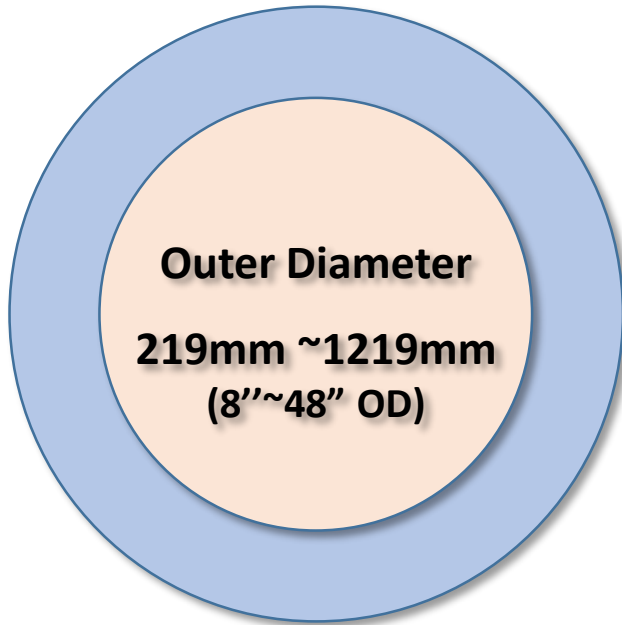
- GE: Hinkley point C project, 1050 tons P265GH and 13CrMo4-5. Other GE projects more than 30,000 tons
- Reliance: Jamnagar 3 Projects: 16,000 tons P91, 11,000 tons Carbon steel.
- Samsung Engineering: Yanbu III project, 2500 tons P91, 10,000 tons Carbon steel;
- Siemens Egypt Projects: 1700 tons P91/P92,
- Doosan: Jawa/Obra-C project: 3,000 tons P91/P92,
- BHEL/L&T: More than 60,000 tons P91/P92 supplied for various projects

WHY CHENGDE?



- ✓ Jointer venture with American top Aerospace and Energy products conglomerate PCC Group, fully integrated with PCC on technology and management.
- ✓ Focusing on Power and process pipes, especially for alloy steel pipes.
- ✓ Minimum Order Quantity (MOQ) as low as ONE piece AND Huge size scope to accommodate the project requirements (1/2"~48"), combing with sister company Jiangsu Chengde.
- ✓ Competitive price and shorter delivery, Superior international standard quality.
- ✓ 30 years experience and approvals with Major EPCs/OEMs/Clients in the supplier chain.

FULL RANGE OF TAILORED PIPES



Outer Diameter
219mm ~1219mm
(8"~48" OD)

Wall Thickness
9.53mm ~ 140mm
(STD ~ 5.5")

Application Fields	Standard	Steel Grade (incl. but not limited to)
<u>Nuclear Power</u> (Licensed manufacturer)	RCCM NF, ASME, HAF	TU48C, P265GH, P295GH, SA106B (Cr controlled), SA 333 Gr. 6, P11, P22
<u>Boiler / Thermal Power Generation</u>	Carbon Steel	A/SA106B/C, A/SA 53 A/B, A/SA333 Gr.1/Gr.6
	Alloy Steel	A/SA335 P11, P12, P22, P5, P9, P91, P92, 10CrMo9-10, 13CrMo4-5, 15NiCuMoNb5-6-4, WB36, X10CrMoVNb9-1, X10CrWMoVNb9-2
	Stainless Steel	A/SA 312 TP 304 (L), TP 316 (L), TP 321, TP 347
<u>Gas Cylinder Pipes</u>	ASTM	4130, 4130X, 4145, 4147 up to OD 914mm
<u>Offshore/ Shipping building pipes</u>	ABS/BV/RINA/ DNV/NKK/GL/L R/CCS	Drilling platform pipes A514Q/ A517Q certified by ABS/ CCS, X52/X60/X65/X70/X80 PSL2
<u>Mechanical Pipes</u>	ASTM / EN	S235~S460, E235~E570, ST44.0, ST44.4, ST52.0, ST52.4, 4140, 4340 and others per A519
<u>Line Pipes Casing & Tubing</u>	API 5L API 5CT	Gr. B, X42, X52, X60, X65, X70, X80 PSL2 K55, L80, C95, P110, Q125

Note: we can also supply tailored material as per customer spec

PATENTED TECHNOLOGY ENSURING LOW COST AND FAST DELIVERY



Raw Material Inspection



Cold Centering



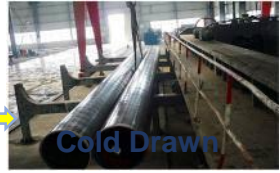
Heating



Piercing & Rolling



Sizing



Cold Drawn



Heat Treatment



Testing



Finishing



NDE



Visual & Dimension Inspection



Marking

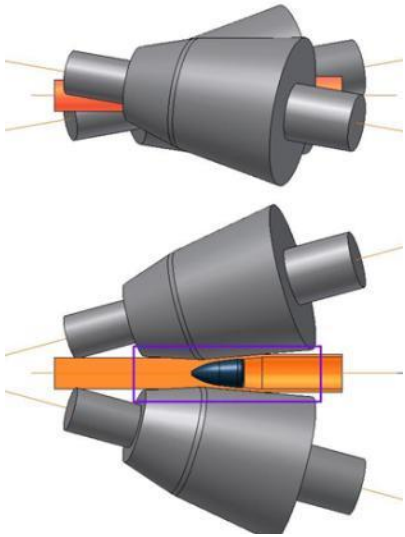


Storing & Shipping

PATENTED PIERCING & ROLLING **EXTENSION TECHNOLOGIES + SIZING**

The Piercing and rolling technology of Chengde possesses a number of patents in designing and manufacturing the equipment, and has improved in lots of areas targeting better performance and efficiency, which has distinguished itself from the peers.

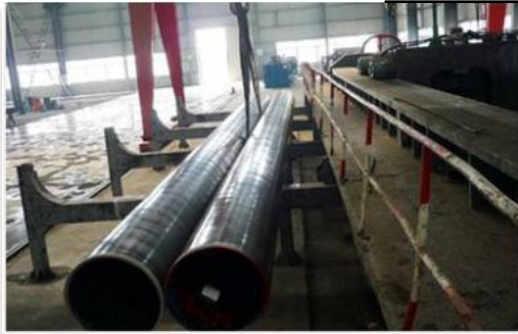
- ❑ Stable, fast and continuous
- ❑ Flexible on non-standard sizes
- ❑ Swift tooling switching
- ❑ Uniform mechanical properties and dimensions in Longitudinal & Transversal directions
- ❑ Better surface condition thanks to shorter rolling time & good tooling quality
- ❑ Three-roller/five racks sizing machine can avoid inner hexagon significantly



STATE-OF-THE-ART FACILITIES

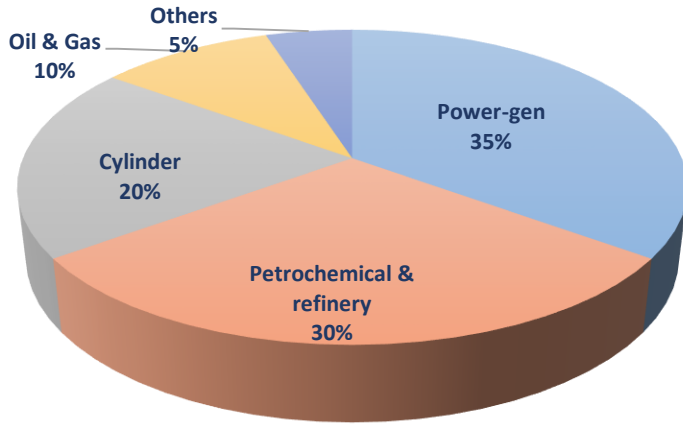


Rotary furnace	Piercing & rolling machine	Sizing machine
Cold drawn	Heat treatment furnace	Straightening machine

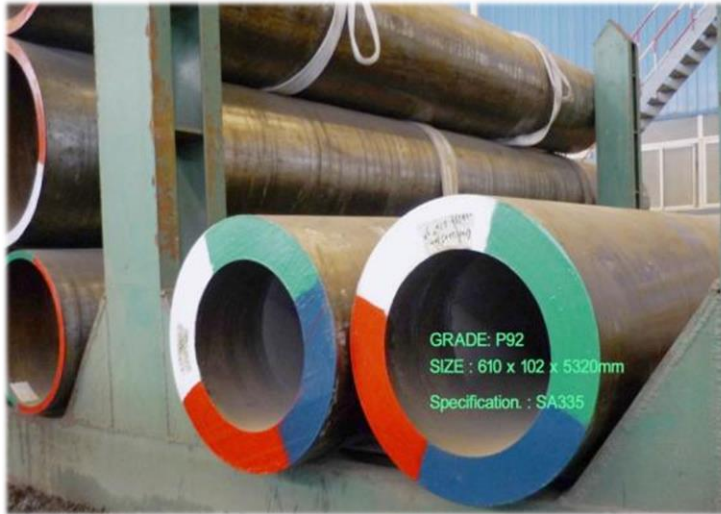


No.	Name	Quantity
1	Cross Piercing and rolling Machine	5
2	Sizing machine	2
3	Straightening machine	3
4	Ten roller Straightening machine	1
5	Cold drawn machine	4
6	LPG Trolley Type Normalizing Furnace	14

CREATING VALUE FOR YOUR ENERGY PROJECTS



CREATING VALUE FOR YOUR ENERGY PROJECTS -POWER



Thermal Power:

- Enhanced working pressure and temperature require more critical material like P91, P92
- Material range from CS to P91/P92
- Total supply record over 1,100,000 tons
- Total P91 supply record over 160,000 tons



Nuclear Power:

- Supply to many nuclear plants in China and India
- Material incl. TU48C, P265/295GH, A106 B, and P11, P22
- Total supply record over 6,000 tons

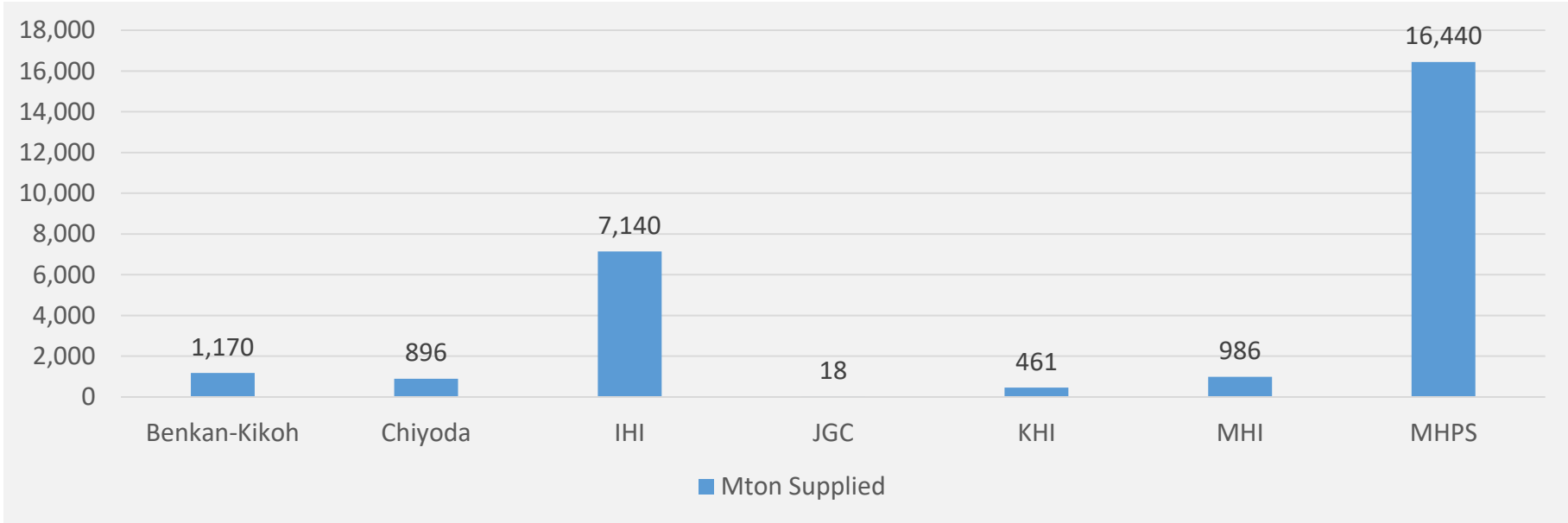
MAJOR POWER CLIENTS

Customer	No. of Power Projects Supplied	Remarks
AC Boiler	2	Includes P91
Alstom	21	Includes P91
Ansaldo	7	Includes P91
Bechtel	8	Includes P91
BHEL	41	Includes P91 & P92
Black & Veatch	2	Includes P91
Doosan	18	Includes P91 & P92
GE	18	Includes P91
Hyundai	7	Includes P91
IHI	8	Recently Approved for P91 on future projects.
L&T	18	Includes P91 & P92
MHPS	17	Includes new orders for MISUMI, TAKETOYO, TOKUYAMA. Includes P91 on Japan domestic and International projects
Nooter Eriksen	11	Includes P91
PGESCO	4	Includes P91
SEC	4	Includes P91
Siemens	7	Includes P91 & P92
Toshiba JSW	1	
Yieh	3	Includes P91 & P92

JAPAN MARKET DEVELOPMENT



EPC	Mtons Supplied
BENKAN-KIKOH	1,170
CHIYODA	896
IHI	7,140
JGC	18
KHI	461
MHI	986
MHPS	16,440
Total	27,111



JAPAN MARKET DEVELOPMENT



PCC Precision Castparts Corp.

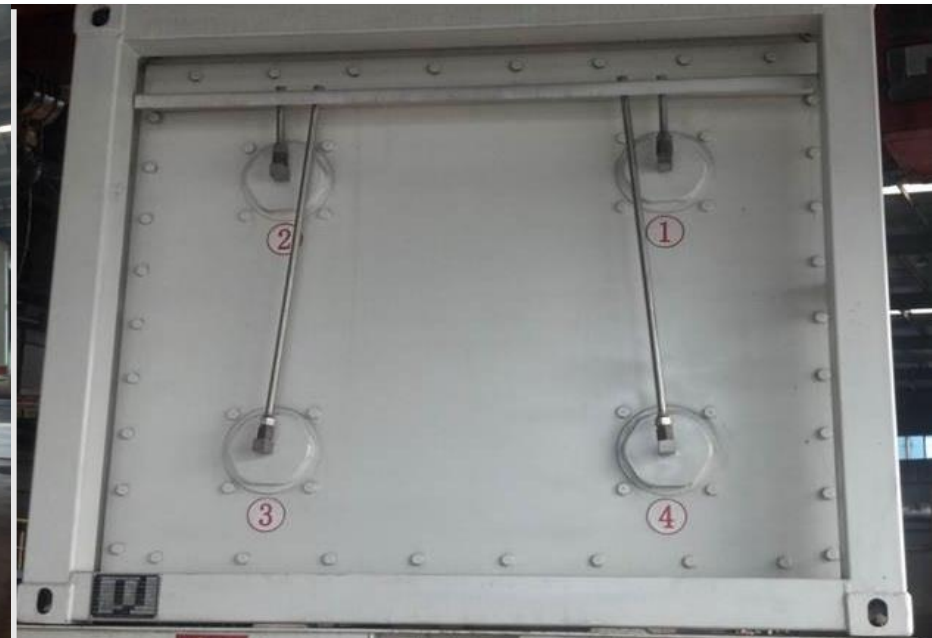
	Central Java	Indonesia	JGC	SEC Sarangani	Philippines
	GRDA/Chouteau	USA	KHI	GTG	Turkmenistan
	IGCC Fukushima	Japan		Silican Acid Project	Russia
	JGC/Ichtyis	Australia	MHI	TGF	Turkmenistan
	Kashima	Japan		TMD	Trinidad and Tobago
	KK3	Japan		UFN	Uzbekistan
	Kurashi-5	Japan			
	MHI Takasago/KEGOCK/GTCC	Thailand		Al Mussaib	Iraq
	Misumi	Japan		Central Java	Indonesia
Benkan-Kikoh	Pagbilao	Philippines		Cirebon	Indonesia
	Rabigh (4x140MW's)	Saudi Arabia		IGCC Fukushima	Japan
	Safi	Morocco		KK3	Japan
	South Jeddah	Saudi Arabia		Linkou	Taiwan
	South Helwan	Egypt		Misumi	Japan
	Suzukawa	Japan	MHPS	OCG	Japan
	Talin	Taiwan		Ogishima	Japan
	Tokuyama	Japan		Pagbilao	Philippines
	XSBP (Quezon)	MALAYSIA		Rabigh	Saudi Arabia
CHIYODA	GCVJ Olefins	USA		Saijo	Japan
	Cochrane	Chile		Setouchi	Japan
	Ishinomaki 149MW	Japan		South Helwan	Egypt
	Jimah 2 x 1000 MW	Malaysia		Taketoyo	Japan
IHI	Keppel FELS	Singapore		Tanjung Jati 5/6	Indonesia
	Nakayama	Japan		Tokuyama	Japan
	SAFI	Morocco		XMTA (Manjung)	Malaysia
	Sakaide	Japan		XSBP (Quezon)	Philippines
	Talin	Taiwan		Fukuyama	Japan

GAS CYLINDER

World's Largest 914mm Trailer Cylinder

- Process by cold-rolling make sure the $\Phi 914\text{mm}$ cylinders with high dimensional accuracy, stable performance and lower production costs.
- $\Phi 914\text{mm}$ cylinder with larger volume ,single trailer with 4 pieces cylinders can reach 25m^3 up.
- $\Phi 914\text{mm}$ cylinder's units with lower transport costs, ratio of volume/ weight basically more than 1, the biggest can up to 1.3.
- $\Phi 914\text{mm}$ with fewer numbers of cylinders compared with $\Phi 559\text{mm}$, small sealed interfaces and higher safety factor.

Parameter	L: 6 meters		L:8 meters		L: 11.7 meters	
	$\Phi 914 \times 4$ pieces	$\Phi 559 \times 8$ pieces	$\Phi 914 \times 4$ pieces	$\Phi 559 \times 8$ pieces	$\Phi 914 \times 4$ pieces	$\Phi 559 \times 8$ pieces
Wall Thickness	24.93mm	17.3mm	24.93mm	17.3mm	24.93mm	17.3mm
Volume L	13004	10602	17694	14055	26372	18000
Weight kg	13120	11093	14790	14790	25580	21631
Ration L/kg	0.99	0.956	1.2	0.95	1.03	0.83



CUSTOMER BASE



SIEMENS



TechnipFMC

FLUOR®

HYUNDAI
HEAVY INDUSTRIES CO.,LTD.

MITSUBISHI HITACHI
POWER SYSTEMS

IHI



CHIYODA
CORPORATION

JGC



Kiewit



SNC • LAVALIN



NE NOOTER/ERIKSEN

SEONGHWA
For The Power, We Deliver



LARSEN & TOUBRO

It's all about Imagination

FOSTER WHEELER

DUKE
ENERGY.



Dominion

BLACK & VEATCH
Building a world of difference.



上海电气
SHANGHAI ELECTRIC

DEC
东方电气
DONGFANG ELECTRIC

哈电集团
HAHE POWER EQUIPMENT COMPANY LIMITED

YIEH CORP.
Professional Reliable Efficient

中广核 CGN



中国核工业集团公司
China National Nuclear Corporation



एनपीसीआईएल
NPCIL

न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड
भारत सरकार का उद्यम

NUCLEAR POWER CORPORATION OF INDIA LIMITED

A Government of India Enterprise

CUSTOMER BASE



ExxonMobil

أرامكو السعودية
saudi aramco



PETROBRAS

شركة البترول الوطنية الكويتية
إحدى شركات مؤسسة البترول الكويتية
A Subsidiary of Kuwait Petroleum Corporation



KNPC

Keppel Offshore & Marine



**Reliance
Industries Limited**

**SBM
OFFSHORE**



NOV

cpi



Weatherford

KVERNER



MITSUBISHI

INNOVATION & RESEARCH: CLEANER & MORE EFFICIENT ENERGY

Post-doctoral station for new material research

USC boiler demands more critical material and works at higher temp/pressure but more efficient and cleaner. YC had established the post-doctoral research station since 2006 focusing on new material development such as P92, P91, X80. More than 29 kinds of new materials and products have won the national and provincial prizes from 2006 till now.

“Chengde “Large OD SMLS Boiler Pipes

Award for scientific and technological advancement of Jiangsu.

P91

National key product certificate—By Sci & Tech. Dept. of China.
National torch program key product- By Sci & Tech. Dept. of China.

Cylinder pipe 4130X, X80, P92/P91/Nuclear pipes etc.

National high-tech product certificate.



SMLS pipe engineering research center

YC has a provincial engineering research center for seamless steel pipes.

More than 20 patents have been generated from this center since 2006 with regard to piercing & rolling technology, tooling design, optimization of process and new equipment design and manufacturing etc.

HSE & QUALITY CONTROL

HSE/QA system in accordance with:

- ISO 9001: 2008 –certified by TÜV-NORD
- ISO 14001/OHSAS 18001 for HSE
- API Q1 8th edition
- China Nuclear Safety Laws & Regulations- HAF 003/HAD
- ASME Nuclear Material Organization
- Shipping Classification DNV-BV-LR-ABS-GL-RINA-CCS qualification



Lab is certified to ISO17025/CNAS criteria

- 30 units of creep test machines are equipped in the lab
- Full set of mechanical & chemical testing equipment for pipe manufacturing.

HSE & QUALITY CONTROL

NDE Capability

- 11 UT/ET automatic lines
- 1 automatic MT line (black and fluorescence)
- 1 Hydro test machine (Max. 1300mm)



CERTIFICATION

Certificate	Expires
Civil Nuclear pipe certificate	Dec. 31st, 2019
ASME SEC III Nuclear certificate	Sep. 18th, 2021
TÜV ISO9001:2008	May. 12th, 2021
ISO 14001:2004/GB/T24001:2004	Aug. 27th, 2020
ISO 18001:2007/GB/T28001:2011	Aug. 30th, 2020
API 5CT (0900)	Feb. 25th, 2020
API 5L (0621)	Feb. 25th, 2020
DNV-GL	May 31st, 2020
Lloyd's (MD00/3432/0001/4)	Feb. 24th, 2020
Bureau Veritas (SMS.W.II/71328/A.1)	Jul. 9th, 2019
TÜV-CPR (0045-CPR-0953)	Sep. 28 th , 2020
ABS (American Shipping Bureau)	Aug. 24th, 2019



**Thanks for
your
attention!**