



Shanxi Guanjiaying Flange Forging Group Co., Ltd.





Brief Introduction

- ❑ GJY was established in 1988.
- ❑ A leading flange manufacturer specializing in production of various standard and non-standard flanges and forgings.
- ❑ Workforce: 524 personnel
- ❑ Annual production capacity: 30,000 tons
- ❑ Production range: 1/2" – 196", Unit weight \leq 35 tons
- ❑ All production completed at GJY facility without outsourcing to Quality Control Inspector: 41



HSE Certification

Certification

- ❑ ISO 14001: 2004 Certified By TUV
- ❑ BS OHSAS 18001: 2007 Certified By TUV
- ❑ Safety production standardization management Level II certificate

Excellent Safety Record with zero lost time accidents since 1988

Environment Control Achievement: Convert coal gas furnace to natural gas & electric furnace for all GJY heating furnaces.



Human Resources

Total workforce:524

- Production Line: 368
- Technical personnel: 52
- Senior Engineer: 6
- Junior Engineers: 15
- Assistant Engineer:24
- Quality Control Inspector: 41
- NDT Inspector: 7 (ASNT & GB certified), Product Specialist: 28



Human Resources



Main Production Process & Quality Control

- Incoming billet receiving inspections
- Cutting
- Forging
- Heat treatment
- Mechanical property inspection
- Machining & drilling
- Marking, Cleaning, Painting & Packing



Raw Material Source

- ❑ Stainless Steel & Alloy Steel supplied by TISCO.
- ❑ Carbon Steel & Low Temperature Carbon Steel purchased from Baotou Steel.
- ❑ Duplex & Super Duplex stainless supplied by Outokumpu and TISCO.
- ❑ Nickel base steel supplied by Shanghai Zhongzhou Steel mill or imported from overseas.





RAW MATERIAL INSPECTION

- Perform chemical analysis for steel billets using Spectrum Analyzer





RAW MATERIAL INSPECTION

Carbon & Sulfur Analysis

- ❑ Carbon & sulfur analyzer with accuracy ratio 1/10000.



Non-Metallic Inclusion Analysis

- ❑ Zeiss microscope, Optical zoom 500 times & 1000 times.





CUTTING PROCESS

Cutting equipment: 32 sets

Inspections:

- ❑ Surface Marking and traceability card.
- ❑ Visual Inspections





FORGING PROCESS

Equipment: 24 sets

- ❑ Air hammer 11 sets (flange size up to 12")
- ❑ Friction press (Close die) 5 sets (flange size 2"- 6")
- ❑ Ring roller 6 sets (flange size 8"- 196")
- ❑ 1250 tons hydraulic machine 1 set
- ❑ 5000 tons hydraulic machine 1 set

Product range: ½" --- 196"

ANSI flange class range:150-2500

Pressure range up to 20,000 psi





FORGING PROCESS

Inspections:

- ❑ Drawing, marking and traceability card check
- ❑ Visual inspection
- ❑ Dimension Measurement





HEAT TREATMENT

Electric Furnaces : 13 Sets

Types of heat treatment: Normalizing, Quench & Temper, Solution

- ❑ All furnaces thermocouples and control panel meters are calibrated annually. Temperature record charts are kept for 5 years for traceability purpose.





MECHANICAL TESTING

Equipment:

- Specialized inspection equipment: 15 Sets

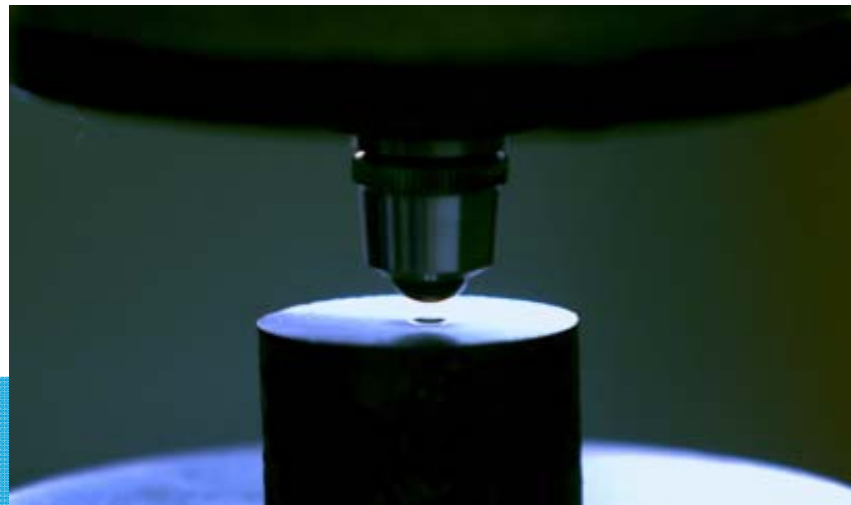
Scope of Inspection:

- Hardness
- Tensile
- Impact
- Microstructure
- Intergranular corrosion



HARDNESS TESTING

- ❑ Onsite hardness inspection using Hammering type Brinell hardness tester.
- ❑ In lab using Brinell or Rockwell hardness testers on specimen.





TENSILE TESTING

Room temperature tensile test



High temperature tensile test using
Electronic testing machine (Up to
900°C)

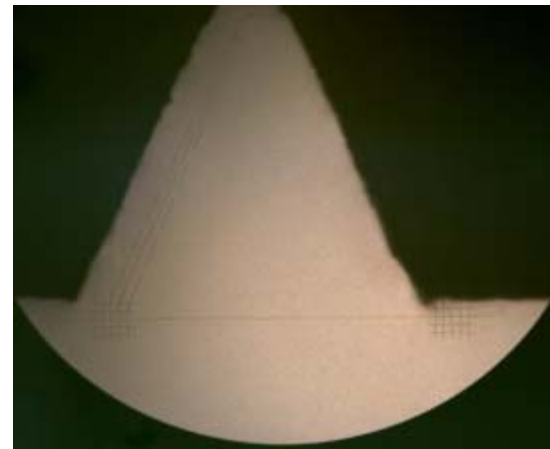




IMPACT TESTING

Testing temperature from 20°C to -197°C

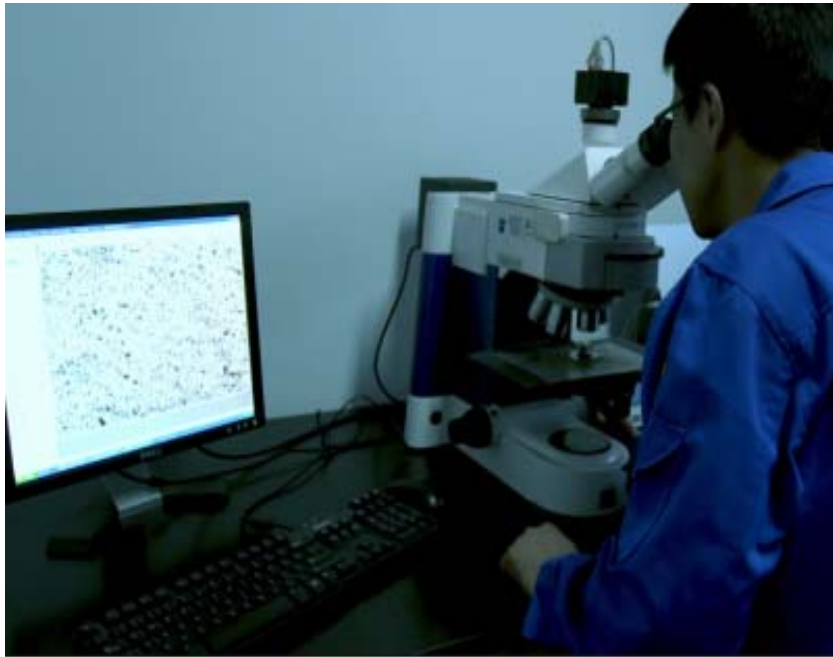
Digital impact test machine, accurate to 0.1J



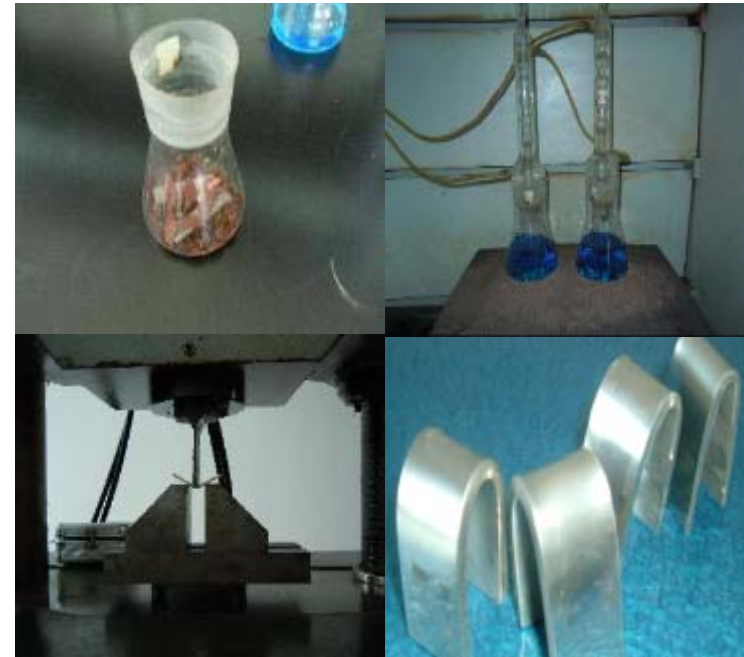


MICROSTRUCTURE TESTING

Microstructural inspection (1000 times)



Intergranular corrosion(SS)



Outsourcing Inspections: HIC testing and SSC testing



MACHINING & DRILLING

Equipment:

- Engine lathe 71 Sets
- CNC 21 Sets
- Drilling machine 20 Sets
- CNC Machining Center 1 set
- Product Range: ½"—196"

Inspections:

- Traceability Card check
- Dimension measurement according to drawing
- NDT testing: UT after rough machining



MACHINING & DRILLING





MACHINING & DRILLING





NDT, FINAL INSPECTION





PACKING





GJY LAB CENTER

- ❑ ISO/IEC 17025 : ISSUED BY CNAS
- ❑ Industrial technical center designated by state
- ❑ Third Party Inspection Institution Authorized by TÜV
Rheinland, Germany



MAIN CERTIFICATES

- ❑ ISO9001:2008 by TUV Since 1997
- ❑ AD-WO/TRD100 Pressure Vessel Directive by TUV
- ❑ PED 97/23/EC or the German Regulation (AD2000-W0)
- ❑ European Directive 97/23/EC for Pressure Equipment
- ❑ ASME Boiler and Pressure Vessel material registration
- ❑ ISO 14001: 2004 OHSAS 18001: 2007
- ❑ ISO/IEC 17025: 2005
- ❑ API (SPEC 6A & 17D)
- ❑ Lloyd's Register of Shipping
- ❑ Germanischer Lloyd
- ❑ Norsok M650



MAIN END USERS APPROVAL

- Shell Global – Global EFA
- ExxonMobil
- BP
- Husky Energy
- CNPC
- SINOPEC
- CNOOC
- SHENHUA GROUP
- PDO
- SABIC
- PETRONAS
- ABB
- EMERSON



MAIN EPC CUSTOMERS

- FLUOR
- Bechtel
- Linde
- WorlyParsons
- AMEC
- HYUNDAI
- SEI
- CPECC
- COOEC
- WISON



SALES

2013

- ❑ Production 16,323 tons
- ❑ Sales Revenue: USD 62.56 Million

2014

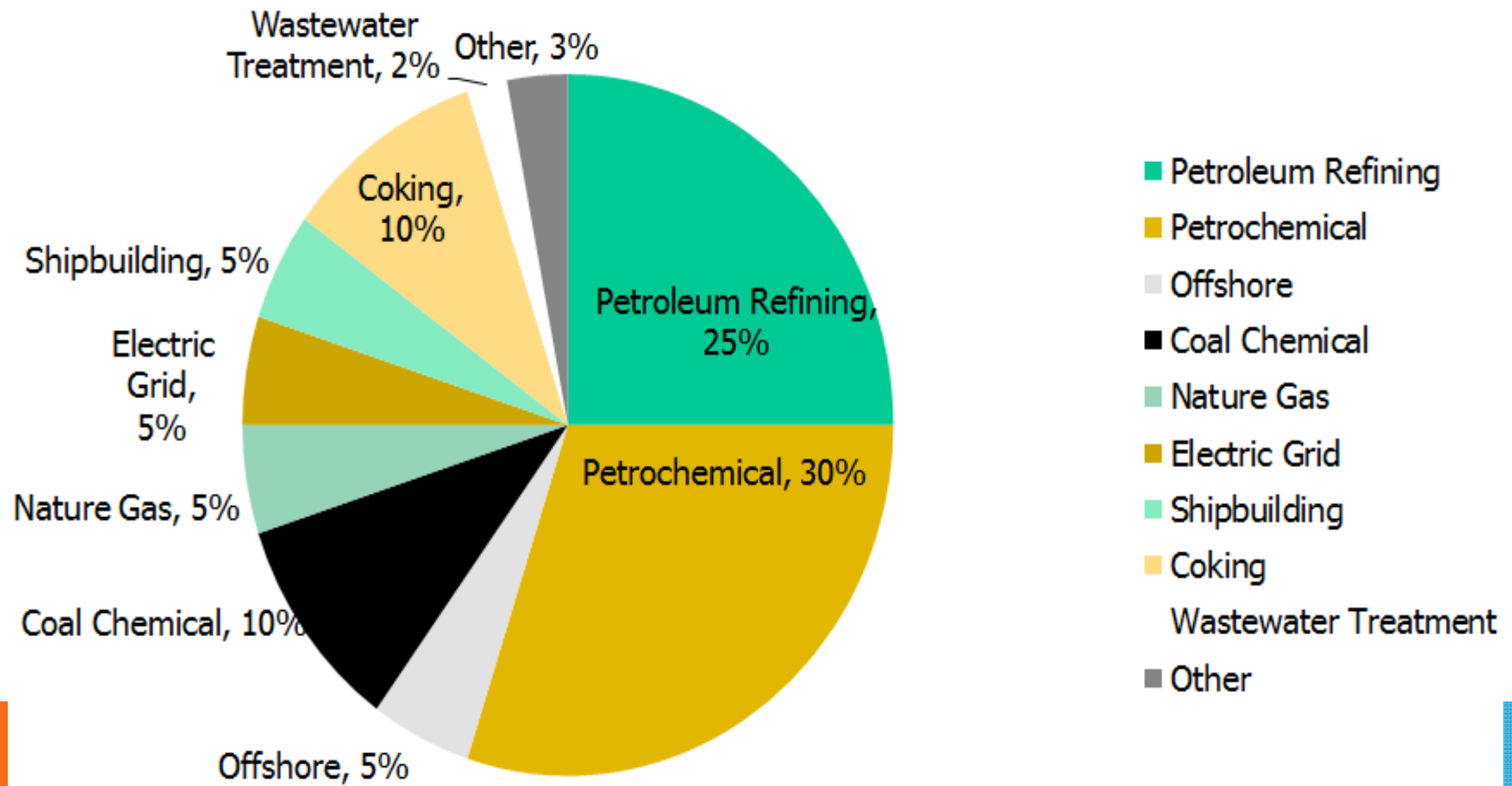
- ❑ Production 13,870 tons
- ❑ Sales Revenue: USD 56.0 Million

2015

- ❑ Production 16,132 tons
- ❑ Sales Revenue: USD 53.8 Million



INDUSTRIES SERVED





COMPETITIVE ADVANTAGES

- ❑ Implementing ISO9001 quality management system for the past 15 years. Implementing ISO14001 and BS OHSAS18001 HSE management system since 2011.
- ❑ Strict raw material source control. All production is completed at GJY facility without outsourcing to enhance quality control and traceability.
- ❑ Lab is CNAS & TUV certified.
- ❑ Large variety of raw materials are in stock and offer wide range of flanges to meet client specifications and ensure fast delivery.

No Minimum order requirement.

Thank you for your time!