



Wuyang I&S Co. Ltd. P.R. China:

4.1m Wide Plate Mill

Main equipment





Plate Mill Stand

Double Side Trim Shear

Cutting Force	6500 kN
Drive	4 x 470 kW @ 1,080 rpm
Cut Rate	30 / min (max)
Plate Thickness	50 mm (max)

Divide Shear

Cutting Force	16,000 kN
Cut Rate	15 / min (max)
Drive	2 x 750 kW @ 1,000 rpm
Plate Thickness	50 mm (max)

Cold Leveller

No. of Rolls	11 (5 Top, 6 Bottom)
Rolling Load	2,750 tonnes (max)
Actuation	Hydraulic
Plate Thickness	6 - 35 mm
Drive Power	11 x 65 kW
Levelling Speed	1.0 m/s (max)

Test piece shear

Type	Hydraulic type down cut shear
Cutting Force	1,500 tonnes approx.
Cut Rate	6 cuts/min
Plate Thickness	50 mm (max)

4.1m Wide Plate Mill

On 31st March 2005 Siemens VAI signed a contract with Wuyang I&S Co. Ltd., for the engineering, part equipment supply and supervisory services for installation and commissioning of a new 4100 mm Plate Mill facility.



MULPIC® Cooling System

The contract was signed with immediate effectiveness, with commercial plate production due to commence in early 2007.

The project was successfully executed with a duration of 22.5 months from Contract Effectiveness to First Hot Plate.

The Project

In addition to the process equipment supply, the project included the supply of Level 1 and Level 2 automation systems by Siemens VAI. Mechanically, Siemens VAI have supplied engineering for the complete line from re-heat furnace exit, through the mill line, shearline and plate dispatch area.

This project included Siemens VAI's SmartCrown® Technology for the control of shape and profile on the finishing mill stand.

Siemens VAI have also provided the detail engineering for all of the shears, including a crop shear, double side trim shear and dividing shear. Extensive use of 3-D design techniques ensured that a short contract duration was achieved.

Phase 1 is a single stand solution with a second phase planned to add a roughing mill stand.



Benefits

- Extensive use of 3-D design techniques ensures short contract duration
- Siemens VAI SmartCrown® Technology
 - Higher throughput capability and crown control benefits
- Plate Mill long stroke AGC
 - Simple design and low maintenance
- Supply of Level 1 and Level 2 automation
 - Automatic pacing
 - Scheduling with mill adaptation
- MULPIC® Cooling System
 - High cooling rates and DQ capability
 - Lower alloying costs
- Shears with good quality edges and high cutting accuracy
- Levellers with AGC and model supply



Key Dates

Contract Effective	March 2005
Installation Complete	September 2006
First Commercial Plate	February 2007

Production Data

Rolled Width	1300 - 3750 mm
Finished Width	1150 - 3700 mm
Gauge	6.0 - 100 mm (Phase 1) 6.0 - 150 mm (Phase 2)
Annual Production	1,000,000 tonnes (Phase 1) 1,600,000 tonnes (Phase 2)
Products	Ship, PipeLine, Vessel, Structural, Bridge, etc

4-High Reversing Plate Mill

Max Rolling Load	8,600 tonnes
Power	2 x 8,500 kW
Speed	0 - 7.9 m/sec
Housings	single piece design
SmartCrown® with +/- 150 mm Axial shift and 350 tonnes per roll neck bending force	

Vertical Edger

Rolling Load	500 tonnes
Power	2 x 1200 kW
Speed	0 - 7.9 m/sec
Screw in	electro/hydraulic

Scope of Project

Primary Descaler

Thickness Range	150 - 300 mm (Phase 1) 150 - 400 mm (Phase 2)
Width	2500 mm (max)



Double Side Trim Shear

MULPIC® Cooling System

Cooling Rates	10 - 40°C / sec
Turndown Ratio	20:1
Max. Flow Rate	11,750 m ³ /hr

With Accelerated Cooling and Direct Quench

Hot Leveller

No. of Rolls	9 (4 top, 5 bottom)
Rolling Load	3,300 tonne (max)
Actuation	Hydraulic
Plate Thickness	6 - 100 mm
Drive Power	3 x 650 kW
Levelling Speed	2.0 m/s (max)

Cooling Beds

Plate Thickness crossing bed	6 – 80 mm
Max Plate Thickness on bed	100 mm (Phase 1) 150 mm (Phase 2)

Crop Shear

Cutting Force	16,000 kN
Drive	2 x 750 kW @ 1,000 rpm
Cut Rate	10 / min (max)
Plate Thickness	50 mm (max)