

Taiyuan University of Science and Technology

1. 15-Rollers Micro-tension Combined Straightener

Technical Parameters

- Straightening gauge range: 6-50 mm;
- Straightening precision: 2 mm/m;
- Max straightening width: 4200 mm;
- Max straightening force: 30000 kN

Introduction

The 15-Rollers Micro-tension Combined Straightener is an important quality control product of our company. The straightening capacity covers cold ordinary steel and medium alloyed steel plate, especially is suitable for stainless steel heat treatment line.

The 15-Rollers Micro-tension Combined Straightener has full intellectual properties, fills the national gap of the products, has been granted 4 invention patents, and its technology level has reached the leading international standard.

With adoption of new features such as varying roll gauge and roll radius, pre-stressed frame, durable roll system, mechanical & hydraulic pressdown, and microtension, the straightening precision can be efficiently improved.

The 15- Rollers Micro-tension Combined Straightener has been successfully put into production lines in Taigang Group Lingang Iron & Steel Co. and Jiuquan Iron&Steel Co., it has been proved to be a new machine with leading international standard.

Awards and Patents:

- The 15-stand Microtension Combined Straightener for Medium Steel Plate. The First Prize of National Machine Industry Science&Technology Invention Award (2008)
- A 15-stand Combined Straightener. ZL200610012462.0
- Tensional Roll-type Straightener for Metallic Steel Plate and Strip. 200810054519.2
- A Straightening Scheme of Roll Gauge of Roll-type Combined Straightener for Metallic Steel Plate and Strip. 200810080098.0

Achievements

- Jiuquan Iron & Steel Group Co., Ltd. Design and Manufacture of 3500mm 15-stand Microtension Combined Heat Treatment Straightener for Medium & Thick Steel Plate (2008)
- Taigang Group Linfen Iron & Steel Co., Ltd. Design of 3300mm 15-stand Microtension Combined Heat Treatment Straightener and Manufacture of Electricity and Hydraulics for Medium & Thick Steel Plate (2006)

2. Complete Hydraulic 11-Rollers Straightener for Medium Steel Plate

Technical Parameters

- Straightening gauge range: 6-80 mm;
- Straightening precision: 2 mm/m;
- Max straightening width: 4200 mm;
- Max straightening force: 30000 KN

Introduction

The Complete Hydraulic 11-rollers Straightener for Medium Steel Plate is an important quality control product of our company. The straightening capacity covers different steel grades from hot or cold ordinary steel to high-alloy medium steel plate.

The Complete Hydraulic 11- rollers Straightener for Medium Steel Plate fills the national gap, has been granted 3 invention patents, and its technology level has reached the leading international standard.

With adoption of new features such as pre-stressed frame, durable roll system, hydraulic pressdown, bending roll and group transmission, high straightening quality of steel plate can be realized.

Such straightener has been successfully put into production lines in Jigang Iron & Steel Co. and Wuyang Iron & Steel Co. and Xinyu Iron & Steel Co., and it has been proved to be a new machine with leading international standard.

Awards and Patents

- A new straightening Process and Equipment Technology for Wide & Thick Steel Plate
- First Prize of Shanxi Provincial Science & Technology Invention Award (2008)
- Automatic Straightening Process Parameter Optimization Method for Metallic Steel Plate and Strip. ZL200610012463.5
- A Pressdown System of Straightener for Metallic Steel Plate and Strip. ZL 200710139360.x
- Straightening Pressdown System for Metallic Steel Plate and Strip. 200810054520.0

Achievements

- Jinan Iron & Steel Group Co., Ltd. Design and Manufacture of 3500 mm Complete Hydraulic 11-Stand Cold Straightener for Medium & Thick Steel Plate (2008)
- Xinyu Iron & Steel Group Co., Ltd. Design of 3800 mm Complete Hydraulic 11-Stand Thermal Straightener for Medium & Thick Steel Plate and Manufacture of Electricity and Hydraulics (2008)
- Wuyang Iron & Steel Group Co., Ltd. Design of 4300 mm Complete Hydraulic 11-Stand Thermal Straightener for Medium & Thick Steel Plate and Manufacture of Electricity and Hydraulics (2008)

3. Spatial Seven-bar Mechanical Rolling-Cut Shear

Technical Parameters

Shear gauge: 6-50 mm

Steel width: 1200-4800 mm

Max shearing force: 16000 kN

Shear times: 6-18 times/min

Introduction

The Rolling-cut Steel Plate Shear is an important quality control product of our company. The shearing capacity covers different steel grades from ordinary steel to high-alloy steel.

The Seven-bar large Rolling-Cut Shear has full intellectual properties, fills the national gap in this field, has been granted 5 invention patents, and its technology level has reached the leading international level.

With adoption of new features such as asymmetry, negative offset and elastic guide rod, the high shear quality of steel plate can be obtained.

Such rolling-cut shear has been successfully applied into production lines in Hebei Wenfeng Iron & steel Co. and Taigang Group Lingang Iron & Steel Co. It has been proved to be a new machine with leading international standard.

Awards and Patents

- Spatial Seven-bar Rolling-cut Shear. The Second Prize of National Science & Technology Invention Award
- Spatial Seven-bar Steel Plate Rolling-cut Shear Mechanism. The Second Prize of National Machinery Industry Group Award
- Spatial Seven-bar Rolling-cut Shear. The First Prize of Shangxi Provincial Science & Technology Progress Award
- Rolling-cut Metal Plate Shear. ZL200510012595.3
- Rolling-cut Shear with Single Shaft, Double Eccentricity and Asymmetry. ZL200510012654.7
- Rolling-cut Shear with Single Shaft, Double Eccentricity and Negative Offset. ZL200510012655.1
- Self-adaptive Side Rod Mechanism of Steel Plate Rolling-cut Shear. ZL200520024426.7

Achievements

- Design and Manufacture of Large Rolling-cut Shear. Hebei Wenfeng Iron & Steel Co., Ltd. 2003.7-2004.12
- The transformation of Rolling-cut Shear for Jigang Medium Plate plant. Jigang Iron & Steel Co., Ltd.
- Design, development and Manufacture of 3000mm Steel. Rolling-cut Shear for Lingang and Lingang Iron & Steel Co., Ltd., Taigang Group.
- Transverse Rolling-cut Shear for 3500 mm Furnace Hot-rolled Production Line. Tangshan Medium Plate Co., Ltd. (Undergoing).
- 3500x50 Cut-to-length Rolling-cut Shear. Hanye Tegang Medium Steel Plate Plant (Undergoing).
- 3500x50 Rolling-cut Shear for Stainless Steel Heat Treatment line. Jiuquan Iron & Steel Co., Ltd. (Undergoing).

**Heavy Machinery Engineering Research Center of Ministry of Education
Shanxi Provincial Modern Rolling Engineering Technology Research Center
Taiyuan Ke Da Heavy Industry Sci&Tech Co., Ltd.**

4. Hydraulic Rolling-cut Shear

Technical Parameters

Shear gauge: 6-50 mm;
Steel Width: 1200-4800 mm;
Max shearing force: 16000 kN;
Shear times: 6-12 times/min

Introduction

Rolling-cut shear with linkage driven by hydraulic power, radically changes the traditional drive mode of crank-link mechanism, can be regarded as an important innovation in rolling-cut shear technology.

The Hydraulic rolling-cut shear not only can meet the current demands on shearing capacity and shearing quality, but has some other features such as the simple structure, less device investment and lower maintenance cost.

The Hydraulic rolling-cut shear has full intellectual properties, and has been granted applied 6 invention patents.

The Hydraulic rolling-cut shear has been successfully applied in production lines of Hebei Wenfeng Iron&Steel Co. and Handan Iron&Steel Co., and has created economic profits for enterprises.

Awards and Patents

Hydraulic Rolling-cut Shear for Metallic Steel Plate. ZL200610102208.X