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0.3-3) X2000mm

CNC cold-rolled plate high-speed

slitting unit

** Full CNC High Precision

** Sheet Leveler

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Technical solutions

$0.3\sim3.0$ mm $\times1850$ Type slitting production line

1. Raw material parameters:

| No. | Name | Specification | |
|-----|---------------------|---|--|
| 1 | Material | cold rolled sheet, galvanized sheet | |
| 2 | Material thickness | 0.3~3.0mm | |
| 3 | Material width | 500 ~ 2000 mm | |
| 4 | Coil outer diameter | ≤Φ2000 mm | |
| 5 | Coil inner diameter | $\Phi480\mathrm{mm}\textcolor{red}{\sim}\Phi520\mathrm{mm}\Phi620\mathrm{mm}$ | |
| 6 | Max coil weight | 25T | |
| 7 | Tensile strength | ≤650Mpa | |

2.Finished sheet specification

| No. | Name | Specification | |
|-----|----------------------------|---------------------|--|
| 1 | Strip inner diameter | Ф 508mm | |
| 2 | Strip outer diameter | ≤2000 mm | |
| 3 | Finished roll weight | Max:25T | |
| 4 | Slitting number | 1.5mm≤40 : 2.0mm≤35 | |
| | | 3. 0 mm≤ 12 | |
| 5 | Finished Width Accuracy | ±0.05mm | |
| 6 | Strip inner diameter | $\Phi508$ mm | |

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- (1) Slitting finished product parameters
- (2) Equipment unit parameters

| No | Name | Specification | |
|----|---------------------|---|--|
| 1 | Shear line speed | he plate thickness is 0.3~3.0mm and the speed is 200m/min (stepless speed regulation) | |
| 2 | Threading speed | 0~15m/min | |
| 3 | power supply | 380V/50Hz/3Ph | |
| 4 | Installed capacity | 380KW | |
| 5 | production operator | 1 skilled worker 2-3 general workers | |
| 6 | Floor area | Length 23m×width 10m | |
| 7 | Operation | Facing the console from () to () (reverse machine) | |
| 8 | Unit color | customizable | |

Second, the basic diagram of the production process:

Three, equipment related components

| No | Name | quantity |
|----|---|----------|
| 1 | Preparation table | 1 set |
| 2 | hydraulic support arm | 1 set |
| 3 | Feeding trolley | 1 set |
| 4 | Hydraulic uncoiler | 1 set |
| 5 | Feeding device, tractor, hydraulic shear | 1 set |
| 6 | Crossing the bridge (for live application) | 1 set |
| 7 | Deviation correcting pressing material coating device | 1 set |
| 8 | Slitting host | 1 set |
| 9 | Scrap Coiler | 1 set |
| 10 | Crossing the bridge (for live application) | 1 set |
| 11 | Flat tension machine + roll cutting (optional) | 1 set |

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| 12 | Coiler | 1 set |
|----|-------------------------|-------|
| 13 | Small unloading machine | 1 set |
| 14 | hydraulic support arm | 1 set |
| 15 | Hydraulic system | 1 set |
| 16 | Pneumatic system | 1 set |
| 16 | Control System | 1 set |

Brief description of unit characteristics and functions:

1. Preparation table

- 1. Material preparation table (1, 1 for upper roll, 1 for lower roll)
- 2. Steel plate welded structure, fixed on both sides of the trolley roadway, forming a V-shaped seam, accepting steel coils with a coil diameter greater than $\Phi 1000$.
- 3. Quantity of storage rolls: 1 piece/upper roll, 1 piece/lower roll.

2. Hydraulic support arm

- 1. Auxiliary support: steel plates are required to be welded and annealed.
- 2. Purpose: To support the cantilever end of the reel of the uncoiler and increase the rotation rigidity of the reel.
- 3. The auxiliary support is a toggle mechanism, and the hydraulic cylinder pushes the swing arm up or down.
- 4. When unwinding, the swing arm lifts up to support the cantilever end of the uncoiler, and when winding up, the swing arm falls. The lifting or falling of the support arm does not affect the entry and exit of the trolley.

3. Feeding trolley

| form | Heavy-duty frame welded by steel plate, oil pressure and motor control | |
|------------------|--|--|
| quantity | 1 set | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| V-shaped surface | Steel plate welding | The state of the s |
| load-bearing | 25T | |
| Lifting stroke | 600mm | 230.000 (110.000) |
| Power | 1.5KW gear motor | |

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- 1. Load capacity of trolley: 25T
- 2. The lifting stroke of the material rack is 600mm (the lift reaches the drum directly, and the steel lining of the material can be removed)
- 3. The trolley is composed of a chassis and a lifting material frame. The steel plate and the four traveling wheels of the chassis are seated on two steel rails, two guide columns, transmission shafts, etc. It is driven by a 1.5KW gear motor through a reducer and a chain. The idler is installed on the material rack, and the roller is covered with polyester glue (all the rubber is made of polyurethane, the same below), and it is lifted by the oil cylinder \$\theau250\text{mm}\times600\text{mm}\$. Walking speed: \$10^15\$ meters per minute. The frame is composed of steel plates welded and the wheel material is GCr15, quenched HRC60.

4. With protective cover plate, safe production.

| form | Frame welded by steel plate, hydraulic expansion and contraction mandrel and gearbox structure | pattern |
|------------------------------|--|---------|
| weight | 1 set | |
| load-bearing | 25T | 100 |
| Steel coil inner diameter | Φ 450mm \sim Φ 520mm \sim Φ 610mm | |
| Steel coil outer diameter | AXM:2000mm | |
| tension generation | 18.5KW DC back tension + disc brake | |
| Feeding method | Active feeding | |
| unwinding power | DC18.5KW DC motor | |
| Pressing power | hydraulic motor drive | |
| Motor origin | Wuxi Pioneer, Baoying Ace | |
| Bearing origin | Harbin | |

- 1. Uncoiler bearing 25T
- 2. Reel expansion and shrinkage: 25mm (Φ 465mm \sim Φ 520mm diameter increasing sleeve rubber sleeve to Φ 610mm,)

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- 3. The uncoiler is composed of reel, machine base and transmission system, with hydraulic auxiliary support.
- 4. The reel is composed of a supporting shaft, a wedge-shaped sliding seat, four bow-shaped plates nested in the wedge-shaped sliding seat and a rotary hydraulic cylinder Φ200mm. The hydraulic cylinder is fixed on the back of the support shaft and rotates with the reel, its pull rod runs through the support, and the main shaft (42CrMoV, quenched and tempered) is connected with the wedge-shaped sliding seat. The pull rod pushes and pulls the wedge-shaped sliding seat to slide, and the bow-shaped plate realizes the expansion and contraction of the reel under the action of the wedge.
- 5. The transmission system drives the reel to rotate, which is composed of motor control, gear reducer, etc. The pressure roller is lifted by the oil cylinder, and the end of the main shaft of the reel is equipped with a disc-type pneumatic brake device.
- 6. The main function of the transmission system is to actively discharge the head and recycle the coil material. The rotation of the drum is driven by the pinch tractor when the line is running. Unwinding with constant tension, adjustable tension.
- 7. The uncoiler is equipped with a material head pressing device, and the pressing wheel is covered with rubber. The nip roll is covered with rubber and driven by a hydraulic motor.
- 8. The reel is made of 40Cr cast steel, cylindrically ground, and chrome-plated; the main shaft is made of 42CrMoV, quenched and tempered; the material of the quadrangular pyramid is 40Cr, quenched and tempered; 20CrMnTi, quenched and tempered, gear shaft\pinion forged, hardened tooth surface. Lubricated with oil.

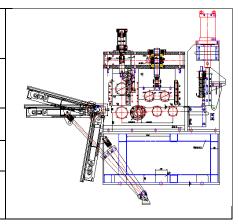
1. Feeding device, pinch device, five-roller leveling, hydraulic shearing machine

| form | Steel plate welded base and frame | |
|--------------------------------|---|--|
| quantity | 1 set | |
| Number of pinch rolls/diameter | $2	imes\Phi$ 180mm | |
| Pinch power | Driven by gears through universal couplings | |

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| Lifting power of upper pinch roller | cylinder lift |
|-------------------------------------|-----------------------------|
| Pinch upper and lower roll surfaces | Both cover rollers |
| Leveling roller | 5×Φ150mm |
| motor | AC37KW frequency conversion |
| Bearing origin | Harbin |



- 1. Feeding device
- 2. Purpose: To introduce the sheet into the feeding tractor.
- 3. Structure: It consists of a swinging guide plate and a telescopic shovel.
- 4. The feeding device is installed on the frame of the straightening tractor, and the guide plate is swung by the oil cylinder.
- 5. The shovel plate is extended and extended by the oil cylinder, which is suitable for guiding materials with different diameters.
- 6. Main material: the frame is welded by section steel; the surface of the shovel plate is chrome-plated.
- 7. Purpose: To drag the uncoiler to run, to bend and straighten the material head for easy belt threading.
- 8. Structure: 2+3 roller structure
- 9. The frame is welded by steel plate, rubber roller Φ180mm (processed, outsourced with polyurethane), archway, slider and so on.
- 10. The material of the leveling roller is 9Cr2MoV, and the diameter of the leveling roller is Φ150mm
- 11. 37KW variable frequency motor.

Technical parameters of hydraulic shearing machine:

| form | Steel plate welded heavy-duty frame and slider, hydraulic power source |
|--------------------|---|
| quantity | 1 set |
| transfer method | Cylinder driven cutting, powered by hydraulic cylinder, Φ 100mm (2 pieces) |
| cropping method | Crop from top to bottom, glitch down |
| Lubrication method | Centralized integrated forced lubrication device |

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| scissors form | Four-sided scissors, all four blades can be used |
|----------------|--|
| Blade material | SKD-11 |

1. Structure and application: It is used for cutting irregular plate heads. Get ready for the next step. Driven by oil cylinder. When cutting plates of different thicknesses, the gap between the scissors blades can be adjusted manually. The four-sided scissors can be used alternately with replaceable blades

1. Crossing the bridge (for live application)

| form | The frame and the transition bracket are welded parts of steel plate, and the transition rollers are all steel rolls | |
|-----------------------------|--|----------------|
| quantity | 1 set | |
| Looper (length x depth) | 4100mm×3500mm | 4248 \$5050 |
| Set platform lifting method | 1.5KW electric lift | 2559 |

- 1. The swing bridge spans both ends of the pit, and it is composed of the motor intermediate bridge and the arc-shaped support surface formed by a number of rollers. When the material head moves forward, the middle bridge swings up to facilitate material feeding. When the material head is clamped by the feeding roller, the middle bridge swings down to form a material storage loop.
- 2. The upper and lower material level photoelectric switches are installed in the looper pit, and the slitting machine is the main speed of the production line.

1. Side guiding device, with two sets of pressure rollers, film-coated.

| form | Base, vertical roller and frame welded by steel plate |
|-------------------------------|---|
| quantity | 1 set |
| Board width | 300~1900mm |
| Width adjustment method | Manual left and right adjustment |
| Vertical roller specification | Φ70×L170mm |

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| Number of vertical rollers | 4 sticks on one side × 2, 6 sticks in total | #### #I |
|----------------------------|--|---------|
| Roller Material | GCr15 steel | |
| Anti-jump roller | A pair of 2 pieces, | |
| Bearing origin | Roll diameter Φ 150 $	imes$ 1850 $	imes$ 1850 $	imes$ 1850 $	imes$ 1850 $	imes$ 1 | |

- 1. Mechanism and application: It is used for positioning in the width direction of the plate to prevent the deviation of the plate. There are vertical rollers on both sides of the width direction of the sheet, which are fixed on their respective sliding seats, and the sliding seats are manually adjusted to move along the direction of the sheet width on the guide rails to adapt to different sheet widths. The vertical roller is quenched, and the surface of the roller is chrome-plated to increase the surface hardness and prevent mechanical wear.
- 2. Manual control, which is composed of guide rollers on both sides, moving slide, screw slide rail and adjusting handwheel.
- 3. There are 4 guide vertical rollers on both sides, and the diameter of the guide rollers is Φ 70mm.
- 4. The guide adjustment hand wheel is on the operating side, and the guide wheels on both sides are adjusted separately and can be moved simultaneously for centering.

1. Slitting machine

| form | Steel plate welded base, power gearbox, archway and frame, power belt clutch device | Pattern |
|---------------------|---|---------|
| quantity | two sets | |
| Slitting speed | 200m/min | |
| Tool shaft diameter | Φ 240mm $	imes$ 1900mm 2 sets | |

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| Material | 42CrMoV | |
|-----------------------------|--|--|
| Cutter size and accessories | $360 \text{nm} \times 240 \text{mm} \times 10 \text{nm}$ (outer diameter \times inner diameter \times thickness) | |
| user provided | Forging 20CrMnTi | |
| gear material | DC132KW | |
| main motor power | Jiangsu Ace | |
| Motor origin | Japan NSK | |

- 1. Mechanism and application: Split machine is a device for longitudinally cutting the coil into various widths. By exchanging the combined spacer, the width of the cut product can be flexibly changed. The adjustment of the cutter shaft is fixed by the lower shaft, and the upper shaft is adjusted by the worm gear and worm to adjust the distance between the cutter shafts synchronously, which can control the gap between the upper shaft and the lower shaft with high precision. Both the upper and lower cutter shafts are fastened axially with nuts, and the ends of the upper and lower cutter shafts are equipped with protective sleeves for installing knives. The machine is driven by a DC motor, and the single machine can be reversed. The side-opening frame is adopted, which is convenient to replace the blade
- 2. The upper and lower cutter shafts are actively rotating, Φ240mm×1900mm, material: 42CrMoV, intermediate frequency treatment after quenching and tempering rough machining, grinding, hard chrome plating, keyway 20mm.
- 3. Blade diameter: Φ 360mm, equipped with a grinding shaft.
- 4. Knife shaft locking: the nut locks the tool, with a wooden unloading mechanism.
- 5. Main bearing: Japanese NSK bearing
- 6. Tool seat movement: The knife seat moves in and out electrically, and the upper knife shaft moves up and down electrically.
- 7. The rotational power is input by the DC132KW motor from the fixed end of the knife shaft, and the speed is modulated by the DC controller.

1. Scrap Coiler

| form | Stool plate wolded frame | |
|--------|--------------------------|--|
| 101111 | Steel plate welded frame | |
| | | |

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| structure | Expansive, manually controlled | |
|---|--------------------------------|----------|
| quantity | 2 units, one on each side | 4 |
| Rewinding scrap width | 3-15mm/single side | |
| Winding speed | 200m/min | 3 |
| Single coiling weight | MAX:500KG | |
| Drive motor (frequency conversion speed regulation) | AC4KW | |

- 1. Structure and application: The edge material coiler is a device for coiling the edge material on both sides after slitting.
- 2. Driven by a variable frequency motor, it maintains a constant torque when coiling waste edges to ensure synchronization with the speed of the split machine.
- 3. The edge material can be neatly and orderly curled into a roll shape through the side material coiler with tension device,
- 4. It is also equipped with expansion and contraction mechanism, manual unloading. On the discharge side of the slitting machine, it is used to collect the waste trimmed by slitting on both sides of the sheet, and it is automatically arranged with expansion.
- 5. The scrap coiler is driven by an AC motor, with adjustable speed and winding torque.
- 6. The reel is a mechanical expansion and contraction type, the material is received densely, and the material is unloaded manually, and the waste is rolled into the waste shallow pit.
- 7. Load capacity of edge feeder: 500kg.
- 8. Material receiving bridge: Pneumatic swing.

1. Crossing the bridge (for live application)

| form | The frame and the transition bracket are welded parts of steel plate, and |
|------|---|
| | the transition rollers are all steel rolls |
| | |

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| quantity | 1 set |
|-----------------------------|------------------------------------|
| Looper (length x depth) | 4000mm × 5000mm |
| Set platform lifting method | Hydraulic cylinder support lifting |

- 1. The swing bridge spans both ends of the pit, and it is composed of a hydraulic swing intermediate bridge and an arc-shaped support surface composed of several rollers. When the material head moves forward, the middle bridge swings up to facilitate material feeding. When the material head is clamped by the feeding roller, the middle bridge swings down to form a material storage loop.
- 2. The upper and lower material level photoelectric switches are installed in the looper pit, and the slitting machine is the main speed of the production line.

2. Flat roller tension machine:

| form | Steel plate welded base and frame, brake system | | |
|--------------------------|--|---|--|
| quantity | 1 set | | |
| Pressure plate | The pressure plate is driven by the oil cylinder to achieve the ideal pressure tension | | |
| Guide roller material | Cot Roller | | |
| Guide roller | All have been finely turned and chrome- |] | |
| surface treatment | plated | | |
| Distributing shaft | Oil cylinder lift | | |
| lifting power | | | |
| tension roller | Φ 400mm × 2000mm | | |
| motor | Gear Motor 1.5KW | | |
| Cut in rolls | Optional | | |
| Bearing origin | Ha, Wa, Lo | | |

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- 1. Strip steel guide (the sheet that enters the tension station without this device is more likely to deviate)
- 2. Purpose: To guide the direction of the steel plate.
- 3. Structure: Disc guide.
- 4. Two sets of guiding devices, one set at the exit of the pit, the oil cylinder lifts, and the other set is fixed at the entrance of the tension table.
- 5. There is an anti-jump roller between a set of guide devices, which is hydraulically lifted.
- 6. Purpose: The tension table exerts positive pressure on the slats to generate winding tension, which is convenient for tightening the sheet. Structure: pressed board felt type.
- 7. The pressing slider is lifted and pressed by the oil cylinder, and the pressure of the oil cylinder can be adjusted independently.
- 8. The operating side is equipped with an oil pressure regulating valve and an air pressure regulating valve.
- 9. Main structure: frame, separation roller, pinch roller, etc.
- 10. Tension pad: Lay wool felt on top.
- 11. Hydraulic shearing machine: The frame is welded with steel plates, and the upper and lower knife seats are cast steel.
- 12. Scissors: four-sided knife, material: SKD11, hardness: HRC61±1º, a set.
- 13. Hydraulic power: hydraulic shearing: hydraulic cylinder: FA-Φ125mm (2 pieces).
- 14. Roller and feeding pallet
- 15. The discharge side of the tensioning machine is equipped with a feeding roller, and the surface of the roller is covered with polyurethane glue.
- 16. The shaft end of the drum is equipped with a winder speed measuring encoder.
- 17. The tensioning machine is equipped with a material head feeding pallet, which is convenient for feeding to the jaws of the winding machine.

1. Coiler:

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1. Structure:

- 2. Hydraulic expansion and contraction, hydraulic jaw, expansion and contraction range Φ480-508mm.
- 3. The main shaft of the reel is made of 42CrMoV, forged, and has a large bearing capacity.
- 4. Enclosed gearbox, the gears are immersed in oil and lubricated.
- 5. The reel is driven by a DC motor through a reducer and a transmission gear to rotate positively and negatively, and the motor power is 132kw.

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6. Main material: drum material is 40Cr, quenched and tempered, cylindrical grinding, surface chrome plating; spindle material is 42CrMoV, quenched and tempered; frame steel plate welding, annealed; transmission gear material is 20CrMnTi, quenched and tempered.

1. Unloading trolley

Technical Parameters

| form | Heavy-duty frame welded by steel plate, oil pressure and motor control |
|------------------|--|
| quantity | 1 set |
| V-shaped surface | Steel plate welding |
| load-bearing | 25T |
| Lifting stroke | 800mm |
| power | 1.5KW gear motor |

- 1. Load capacity of trolley: 25T
- 2. The lifting stroke of the material rack is 800mm (the lift reaches the drum directly, and the steel lining of the material can be removed)
- 3. The trolley is composed of a chassis and a lifting material frame. The steel plate and the four traveling wheels of the chassis are seated on two steel rails, four guide columns, transmission shafts, etc. The lifting is driven by the oil cylinder Φ 200mm×800mm. Walking speed: 7^8 meters per minute. The frame is composed of welded steel plates.

1. hydraulic support arm

- 1. Auxiliary support: steel plates are required to be welded and annealed.
- 2. Purpose: To support the cantilever end of the reel of the uncoiler and increase the rotation rigidity of the reel.
- 3. The auxiliary support is a toggle mechanism, and the hydraulic cylinder pushes the swing arm up or down.

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4. When unwinding, the swing arm lifts up to support the cantilever end of the uncoiler, and when winding up, the swing arm falls. The lifting or falling of the support arm does not affect the entry and exit of the trolley.

2. Hydraulic system:

| quantity | 2 sets |
|-------------------------|-----------------------------|
| Oil pump displacement | 28/MIN *2 |
| System working pressure | 10MPa |
| Motor Power | 7.2KW |
| cooling method | fan cooling |
| Operating temperature | 0℃~60℃ |
| working medium | N46 anti-wear hydraulic oil |

- 1. Composition and purpose: Control the action of the hydraulic part of the entire production line.
- 2. Using centralized control, the system consists of 2 hydraulic stations, multiple valve stacks and several pipelines. It mainly includes oil tank body, oil pump motor unit, hydraulic valve stack, hydraulic pipeline, etc.

1. Pneumatic system

Technical Parameters

| Air pressure | 0.7MPa |
|--------------|------------------------------------|
| Air supply | 1 cubic meter/min (compressed air) |
| Air supply | user |

1. Composition and use: the pneumatic system is composed of air source (user-provided)

2. Control System:

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| voltage | 380VAC±10% |
|-----------|------------|
| frequency | 50Hz±1% |

1. Composition and purpose: The system is equipped with a main operating console, an uncoiling auxiliary operating console, and a coiling machine auxiliary console. The whole line adopts centralized control, and the main operation console has functions such as digital display, high and low speed adjustment, manual feeding, continuous cutting, and fault alarm. The speed control system and the program controller (PLC) adopt the products of Siemens Company of Germany. Other electrical control components imported products or joint venture products of the same grade. Main console, sub-console, button box, detection components and cables, wires. Using touch screen control, it is convenient to set and modify production process parameters, including speed, etc.; it is convenient to switch between manual, single-action and automatic modes, and monitor the operating status of each part. Ensure the safe and efficient operation of the production line.

Others

List of major outsourced parts suppliers

| | Part Name | place of origin | brand |
|-----------------|---------------------------|-----------------|---|
| Mechanical part | Mechanical part bearing | | Ha, Wa, Lo |
| | Cross cardan coupling | China | Jingjiang, Jiangsu |
| | gear reducer Chi | | Jiangsu Taixing, Guomao Cathay Pacific |
| | conveyor belt | China | Jiangsu Wuxi |
| | hydraulic motor | China | Ningbo Zhongyi |
| | blade | China | Maanshan Hengfeng |
| | Straightening roller | China | Wuxi |
| hydraulic part | hydraulic pump | China | Taiwan Sun Hung |
| | The electromagnetic valve | China | Jiangsu Jiayite |
| | hydraulic cylinder | China | Wuxi |

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| | Rotary joint | China | Tengzhou Shenghao Machinery |
|------------------|---------------------------|---------|--------------------------------|
| | high-pressure hose | China | Yangzhou, Jiangsu |
| Pneumatic part | Pneumatic triple | China | Shanghai |
| | The electromagnetic valve | China | Shanghai |
| | pressure reducing valve | China | Shanghai |
| | cylinder | China | Wuxi |
| Electrical parts | DC speed control system | U.K. | Continental |
| | PLC | Germany | Siemens |
| | HMI (touch screen) | Taiwan | Weilun |
| | Inverter | China | Yi Neng |

Note: This equipment uses the brands in the above table or products of the same grade

Equipment safety and protection:

Security alert system;

- 1. Configure the linkage operation condition confirmation lock (safety lock) and alarm prompt for each post.
- 2. Alarms can be independently operated on each operating station, including loading, main operation, stacking, etc.
- 3. Alarm prompt at startup.
- 4. Alarm prompt when each moving equipment is working.
- 5. Safety interlock device (infrared detection and alarm are used for key hazard sources)
- 6. The equipment feeding trolley and the uncoiler infrared comparison automatic feeding, pinch rollers, connecting shafts, transmission chains, exposed brake pads and other moving bodies must be equipped with protective covers, and safety railings must be installed around the looper.
- 7. The air conditioner for the safe air-conditioning room of distribution equipment shall be provided by Party A.

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- 8. The dangerous parts and important parts of the equipment are equipped with warning signs.
- 9. The part of the rotating body is clearly marked in color, which is different from the color of the main body equipment (in yellow)

Eight, the buyer's requirements (water, electricity, gas, oil, and workshop requirements)

- 1. The buyer provides cooling water and air source to the equipment interface.
- 2. The buyer should prepare the power distribution box (three-phase five-wire), and its capacity must meet the power requirements of the unit.
- 3. There are more than three outgoing terminals in the power distribution box.
- 4. The power distribution box is within 5m from the main operation cabinet.
- 5. The buyer is responsible for bringing power to the operator station.
- 6. The buyer shall prepare one air compressor.
- 7. The buyer prepares gear oil, hydraulic oil, lubricating oil, and the oil grades are provided by the seller.
- 8. The buyer provides the necessary materials for commissioning and related auxiliary tools and equipment.
- 9. The minimum area of the production workshop is: length 35m×width 9m×height 6m.
- 10. Equipped with a crane carrying more than 15T cargo and supporting equipment that should be in the production workshop.
- 11. The production workshop is equipped with production lighting equipment and a room temperature environment below 42°C.

Application of scope of work

| No | Description Description | Scope of delivery | | Remarks |
|-----|-------------------------|-------------------|--|---------|
| 110 | | | | |
| 1 | design | | | |

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| 1.1 | design schedule | | |
|------|---|--|--|
| 1.2 | Mechanical Design | | |
| 1. 3 | Electrical Design for Machine Operation | | |
| 1.4 | Pneumatic and hydraulic circuit design | | |
| 1.5 | Production line layout design | | |
| 2 | manufacture | | |
| 2. 1 | Manufacturing schedule | | |
| 2. 2 | Manufacturing of mechanical and electrical parts | | |
| 2. 3 | Manufacturing inspection and testing | | |
| 2. 4 | spray paint | | |
| 3 | delivery conditions | | |
| 3. 1 | Party A on-site unloading | | |
| 3. 2 | Party A's on-site unloading equipment (cranes, etc.) | | |
| 3. 3 | Party A's on-site equipment confirmation and storage | | |
| 4 | Basic engineering | | |
| 4. 1 | Civil engineering foundation design | | |
| 4. 2 | Basic Engineering and Consulting | | |
| 4.3 | Inspection of basic engineering | | |
| 4.4 | Anchor bolts | | |
| 4.6 | Grouting and mortar pouring into mechanical foundations | | |
| 4. 7 | Mortar injected into the equipment anchor hole | | |

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| Г | T | |
|------|--|--|
| 4.8 | Embedded parts in concrete (H-shaped steel, etc.) | |
| 5 | Installation work | |
| 5. 1 | Installing equipment (trucks, trucks, cranes, etc.) | |
| 5. 2 | installation tool | |
| 5. 3 | Installation materials (hydraulic and pneumatic piping and wiring) | |
| 5. 4 | Installation engineering (primary proofreading, secondary proofreading, alignment, etc.) | |
| 5. 5 | Installation and regulation of headlights (optional) | |
| 5.6 | Foundation inspection | |
| 6 | security measures | |
| 6. 1 | Trench covers and submersible pumps | |
| 6.2 | fence | |
| 7 | Hydraulic Pneumatic and Refrigeration Engineering | |
| 7. 1 | Primary air pressure engineering (air pressure - 1000mm of the unit) | |
| 7.2 | Secondary air pressure engineering (unit 1000mm-machine) | |
| 7. 3 | hydraulic device | |
| 7. 4 | Hydraulic piping engineering (inside equipment) | |
| 7. 5 | Hydraulic piping engineering (in the trench) | |

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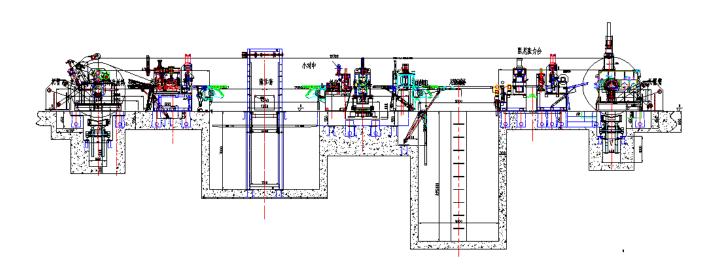
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| 8 | electrical engineering | |
|-------|---|--|
| 8. 1 | Electricity required for installation | |
| 8. 2 | Primary cable between 5m leads from power box to control cabinet and power distribution cabinet | |
| 8.3 | Primary cable trench | |
| 8.4 | Secondary wiring from the main line cabinet to the machine | |
| 8. 5 | Cable tray for secondary wiring | |
| 8.6 | Motor and Drive Controllers | |
| 8. 7 | Wiring and piping inside the machine | |
| 8.8 | Each line of the valve group to the power distribution cabinet | |
| 8.9 | Approval for the use of lighting and electrical appliances | |
| 9 | test drive | |
| 9.1 | Materials for test run | |
| 9.2 | test worker | |
| 9.3 | The first oil injection, gear oil, hydraulic oil, etc. | |
| 9. 4 | Operation and maintenance tools | |
| 10 | Training and after-sales service | |
| 10. 1 | Operator's and Service Manuals | |
| 10.2 | Operation and maintenance training | |

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2. If the buyer needs, the buyer can send inspection personnel to the site



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