

Lighting Switch Box U Shape Roll Forming Machine

Product specifications: The height is 300-900mm, the width is 300-600mm, and the depth is 150-250mm. The actual cross-section of the product provided by the customer.



[Metal Switch Box Making Machine](#)

Photo and video for reference only

一、 Technical parameters

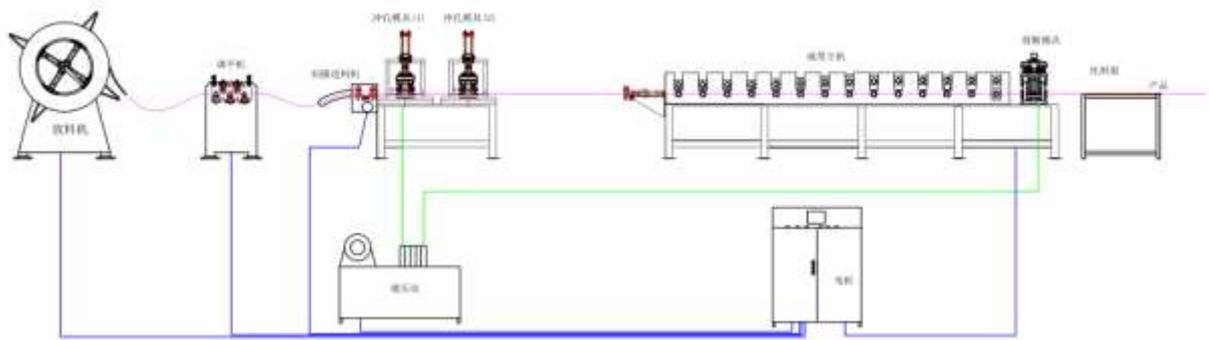
Item		Technology parameter
Material	Material	cold-roll strip,galvanized steel strip
	Thickness	1.0-1.5mm
	Coil Inner	Φ360—Φ510
Process	Form Speed	4-8m/min
	Length	Not limit
Quality	Length Precision	$L \leq 1000\text{mm}$: $\pm 0.5 \text{ mm}$
	Straight, Deflection	$L \leq 1000\text{mm}$, Bend no more than 1mm; Deflection no more than 2mm
	Forming size	As per design

二、 Process

Uncoiler → Straightening → Servo feeder → Hydraulic device

→ Guide device → Roll forming machine → Shear device

Layout for reference only, exactly as per buyer drawing design



Explanation

This production line is equipment for production flush wall mount enclosure. The strip coil to be processed is manually placed on the uncoiler, and then corrected and tensioned. After leveling, it enters the hydraulic pre-punching and punching notch, and is sent to the forming machine by the guide device to form. Under the frictional damping action of the forming roller and pressure roller, after entering the shearing section at a linear speed of 0-10m, the product is cut off as required, and then manually packed away.

三、 The main technical parameters

1.Details of accessory brand

No.	Name	manufacturer
1	Encoder	Omron
2	Touch Screen	Weinview
3	Programmable controller (PLC)	Mitsubishi
4	Low-voltage circuit breaker	Chint
5	AC contactor	Chint
6	Inverter	Mitsubishi
7	Hydraulic Solenoid Valve	Shun Xin, Taiwan
8	Guide rail	Hiwin Taiwan

9	Server System	Mitsubishi
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2. Feeding specifications

- a. Applicable materials: cold rolled coil, galvanized coil
- b. Material quality: Domestic GB standard
- c. Tensile strength: $\delta_b \leq 780 \text{Mpa}$ (Max.)
- d. Yield strength: $\delta_s \leq 510 \text{Mpa}$ (Max.)
- e. Material thickness: 1.0-1.5mm
- f. Material width: 400mm (Max.)
- g. Inner diameter of steel coil: $\Phi 360 \text{mm} - \Phi 510 \text{mm}$
- h. Outside diameter of steel coil: $\Phi 1250$ (Max.)
- i. Steel coil weight: 3 t (Max.)

3. Forming parameters

- a. Number of forming station: 16 sets of roller
- b. Spindle specification: $\text{Ø}48 \text{mm}$ Ggr15 quenching and tempering
- c. Roller material: Gr12 mold steel heat treatment
- d. Integral archway: precision machined from 28mm steel plate, the hole distance error is less than 0.1mm
- e. Base plate thickness: 20mm

4. Forming ability

- a. Outside diameter of coil: $\Phi 1250 \text{mm}$ (Max.)
- b. Material forming thickness: 1.0-1.5mm

c. Product width 190

5.Speed parameters of forming unit

a. Linear speed, 0-10m / min

b. Acceleration time < 30 seconds

6, Forming accuracy

a. Shear length tolerance: $\leq \pm 0.5\text{mm} / \text{m}$

b. Width tolerance: $\leq \pm 0.5\text{mm}$

c. Sickle curve: $\leq 2\text{mm} / \text{m}$

d. Burr: $\leq 0.1\text{mm}$ (new blade cutting ordinary carbon steel plate with reasonable clearance)

e. Height tolerance: $\leq \pm 0.5\text{mm}$

The above tolerances are based on the first-grade steel coils with flat and edgeless waves.

7.Other equipment parameters

a. Power supply: 380V / 50HZ / 3PH (Or Custmized)

b. Installed capacity: about 25Kw

c. Forming speed: 0-10m / min

d. Cutting method: forming then cutting

e. Driving motor:

 Straightener machine motor 2.2KW

 Hydraulic punching and cutting 15kw,

 Forming host motor 5.5KW

 Servo motor 2KW

f. Floor area (approximately): length 24m × width 3m

(Roll Forming 7mX1.7m)

g. Production line direction: from left to right

(facing the unit from the operation table).

h. Equipment color: (Customer choice)

i. Unit equipment design can meet 12 hours of continuous production

j. Operating environment:

1: power supply voltage: 380V ± 10% / three-phase four-wire, frequency: 50HZ total power: about 25KW

2: Ambient temperature: 0-40 °C, relative humidity: 60-95% RH.

Devices:

No.	Machine name	QT Y	REMARK
1	Uncoiler	1	
2	Straightener	1	
3	Servo Feeder	1	2kw Mitsubishi motor
4	Servo Hydraulic machine		With mould
5	Guide device	1	
6	Forming machine	1	
7	Hydraulic cutting	1	With mould
8	Control system	1	

V. Equipment structure and system configuration:

Overview: The production line is mainly composed of Uncoiler,

Straightener, Hydraulic punching machine,

forming machine, hydraulic cutting ,

hydraulic system, electrical control part and safety protection part.

1. Unloading (uncoiler): used for unwinding material and providing sheet material to the forming part, 3 tons of electric unwinding.
2. Leveling (straightener): 9-roller precision leveling (up 4 down 5), 2.2KW electric feeding, used to straighten the coil and eliminate material stress.



***Uncoiler and straightener

3. Servo feeder, Hydraulic Hole Punch: 2KW servo system, precision feeder. Hydraulic punching device (die) and cutting device.



Hydraulic Punch

2. Forming mainframe: The mainframe base of this production line is welded with 100 * 100 * 4MM square tubes, the frame is integrated with a fixed archway, the side plates are made of 25mm steel plates, and the supporting parts are made of high-quality Taiwan bearings. Twisting up and down adjustment, the host has good rigidity and stable structure.

B: Roller (roller station): 16 sets of roller forming, high-quality Gr12 mold steel, HRC up to 58 ~ 60 °are

processed by precision CNC machine tools,
precision is 6 ~ 7, surface roughness is
above 0.8, no scratches on the surface.

Roll station



U shape forming out



Box after assembly



photo just for reference only

C: Transmission part: It is the conveying part of the forming power of the production line. The power is transmitted from the main motor to the reduction gearbox, and then transmitted to the driving wheel by the gearbox through the gearbox.

3. Fixed-length bending part: It consists of fixed-length device and bending mechanism. The fixed-length device uses a laser probe combined with an

encoder to fix the length. When the sheet reaches the fixed length, the bending product is controlled by the PLC.

4. Electric control system: The entire production line adopts centralized control, the components are imported and domestic high-quality products, or specified by customers, and the standard components are Taiwan brand. The installation of the equipment's electronic control components complies with national regulations, with clear line numbers, reasonable bureaus, clean control panels, and clear labels.

5. Security protection: The host is equipped with a protective net, and warning signs are set on the parts involving personal safety. The electrical appliance has reliable safety grounding, and the emergency stop button is also provided on the die end to protect personal safety to the greatest extent.

Oversea after service: After the production line arrives at user's factory, the supplier will arrange engineer to installation and training as per user

requirements. Buyer burden the related cost such as air tickets, room and board, visa, food etc. will be borne by the buyer, and the labor cost is 150 USD per person per day.

