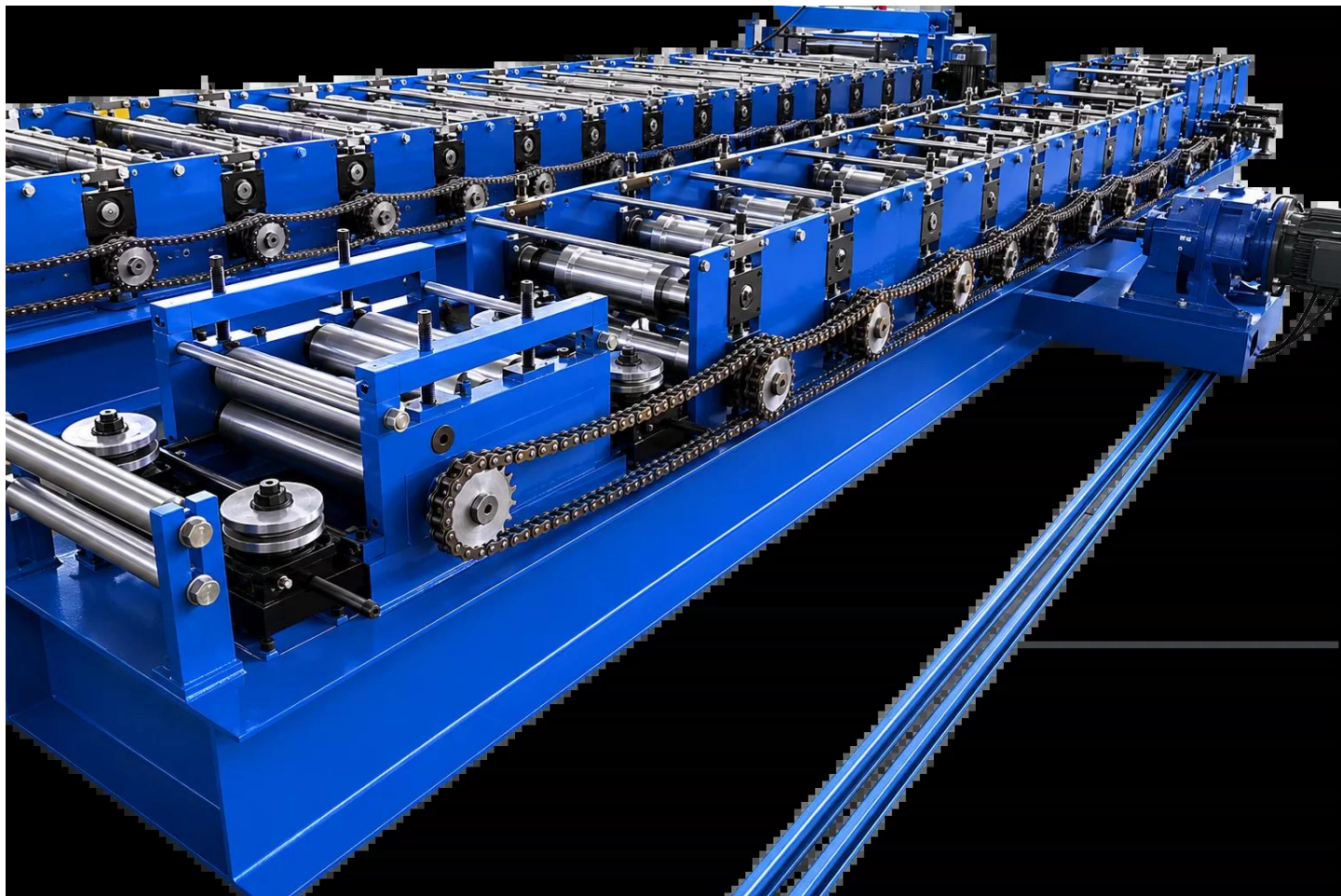
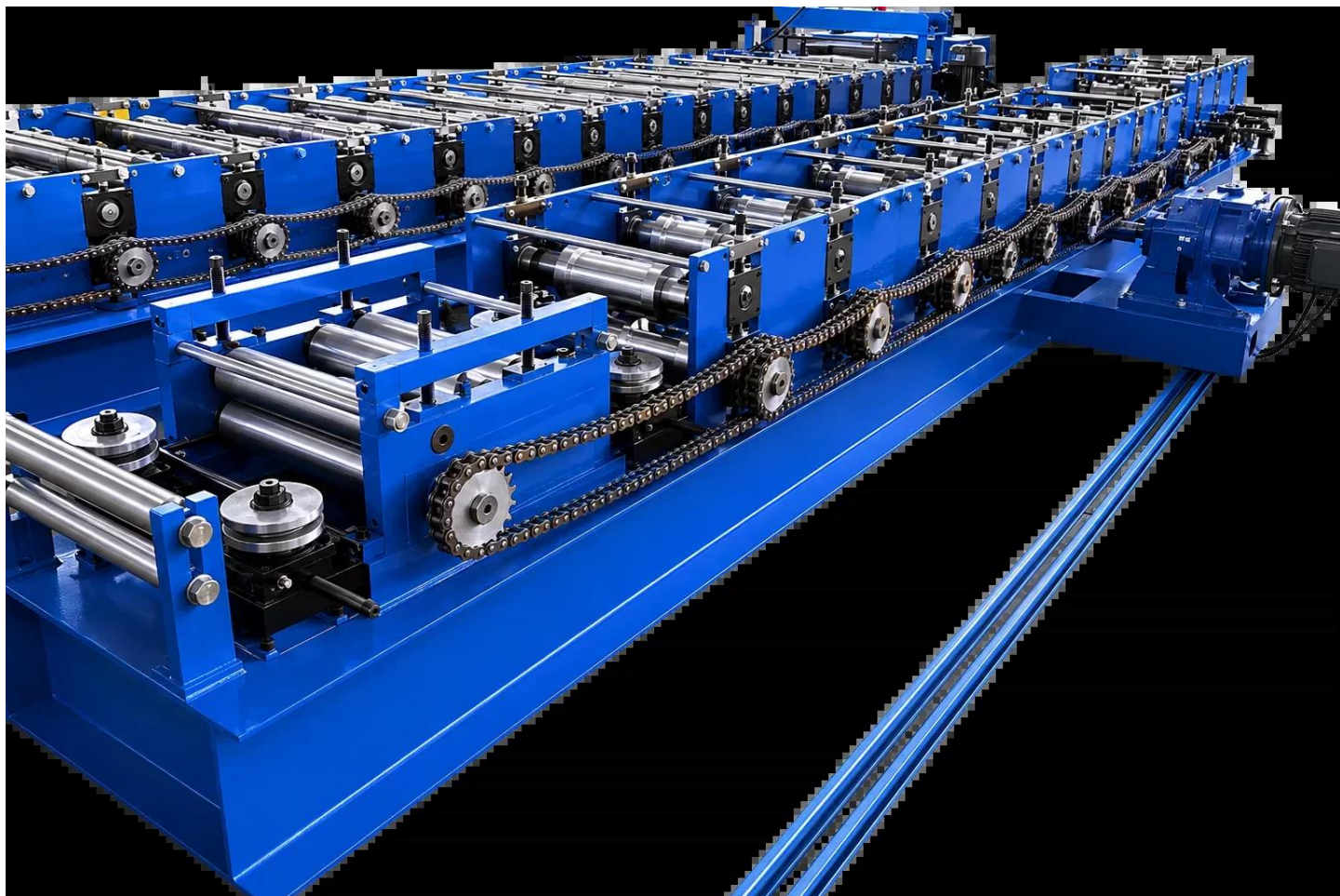




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Automatic production line for C-profiles





C purlin production line — decoiling, feeding, levelling, roll forming, cutting and collection of the finished profile.

C Purlin Production Line

Automatic C Purlin Production Line

Complete Roll Forming Machine for C Profiles Made from 1.5–2.0 mm Steel Sheet

The professional **C purlin production line** is designed for forming components from galvanized, black and hot-rolled steel sheet. The machine performs the full production cycle: **decoiling, feeding, levelling, roll forming, cutting and collection of finished profiles**.

The system is designed for producing profiles from material with a thickness of **1.5–2.0 mm** and a yield strength of up to **G345 MPa**. The line operating speed is **0–15 m/min**, and PLC control enables automatic monitoring of the length and quantity of produced components.

1.5–2.0



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Material Thickness

1,5–2,0 mm

15

Operating Speed

0–15 m/min

12

Roll Forming Stations

12 Forming Stations

11kW

Main Motor

11 kW

Complete C Purlin Production Line with Automatic Length Measurement.

The machine combines a 3T decoiler, feeding and levelling section, 12 forming stations, hydraulic cutting, receiving table and PLC control with a touchscreen.

Product Images

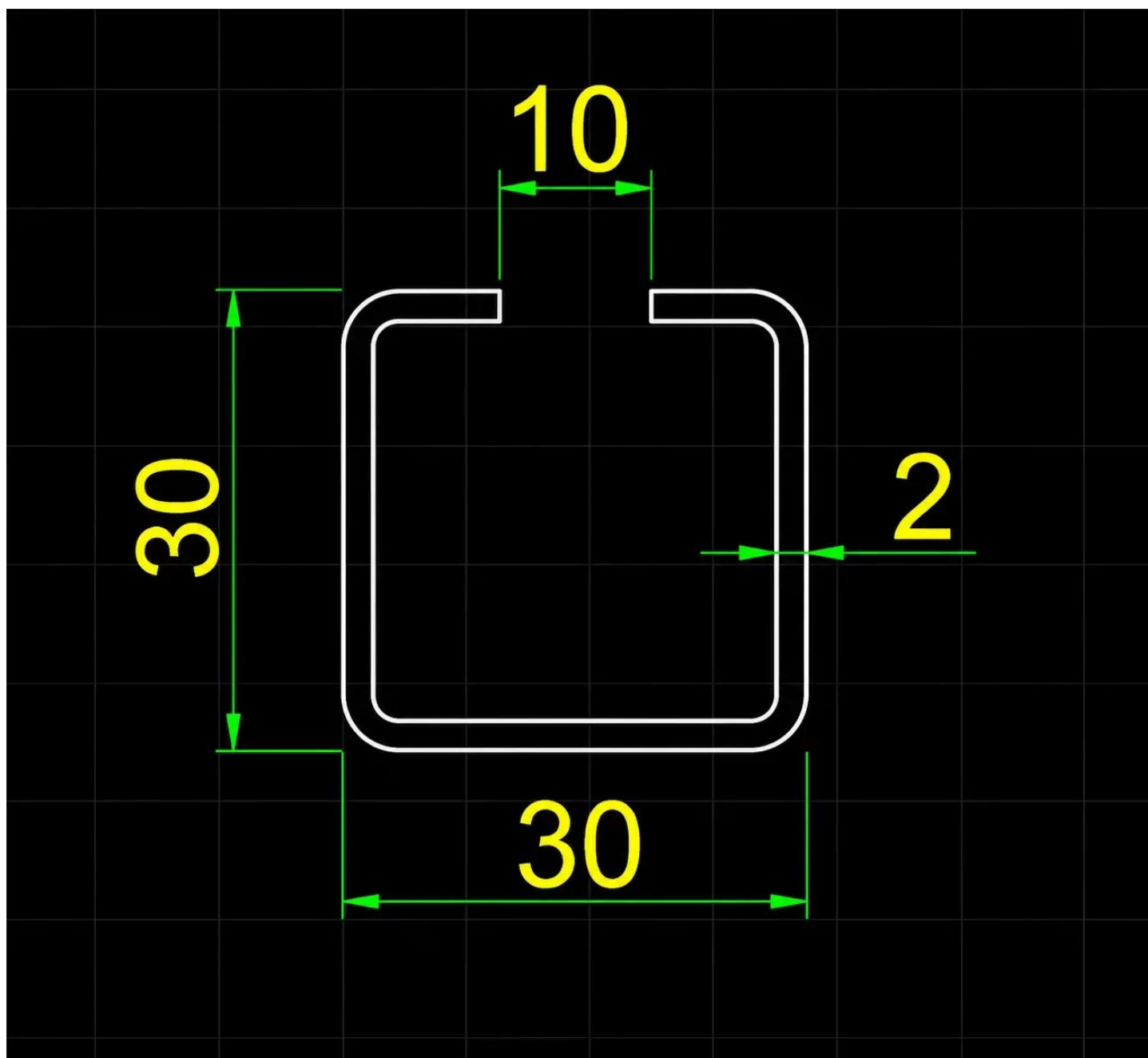
Line View, C Profile and Key Machine Modules

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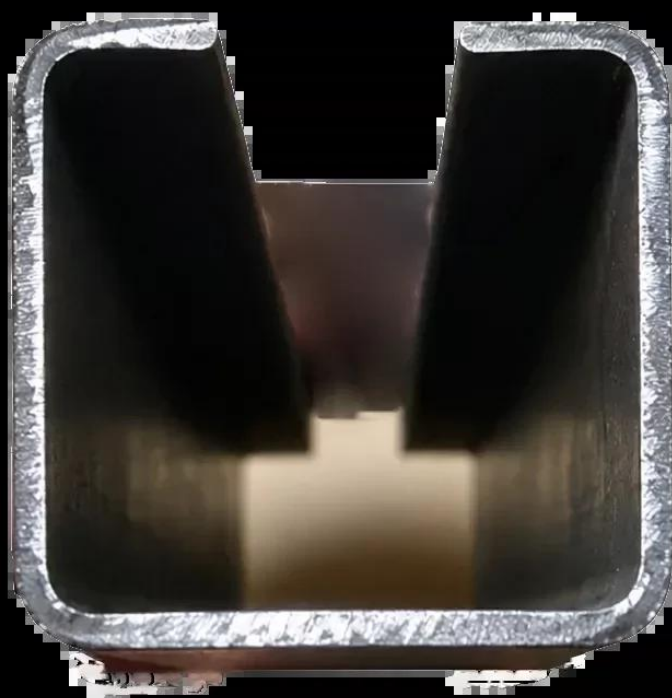
Complete Production Line Layout

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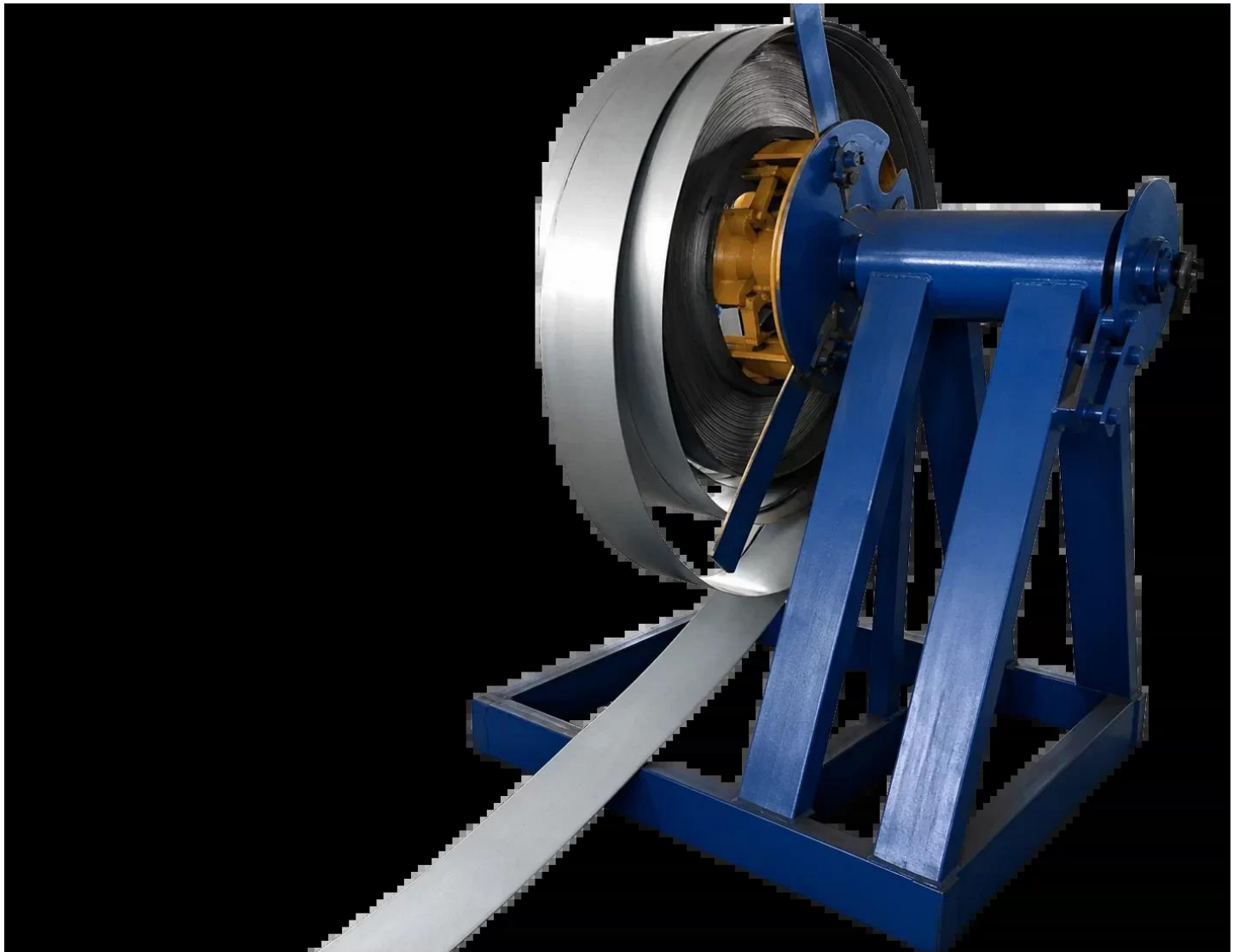
Example C Profile Cross-Section

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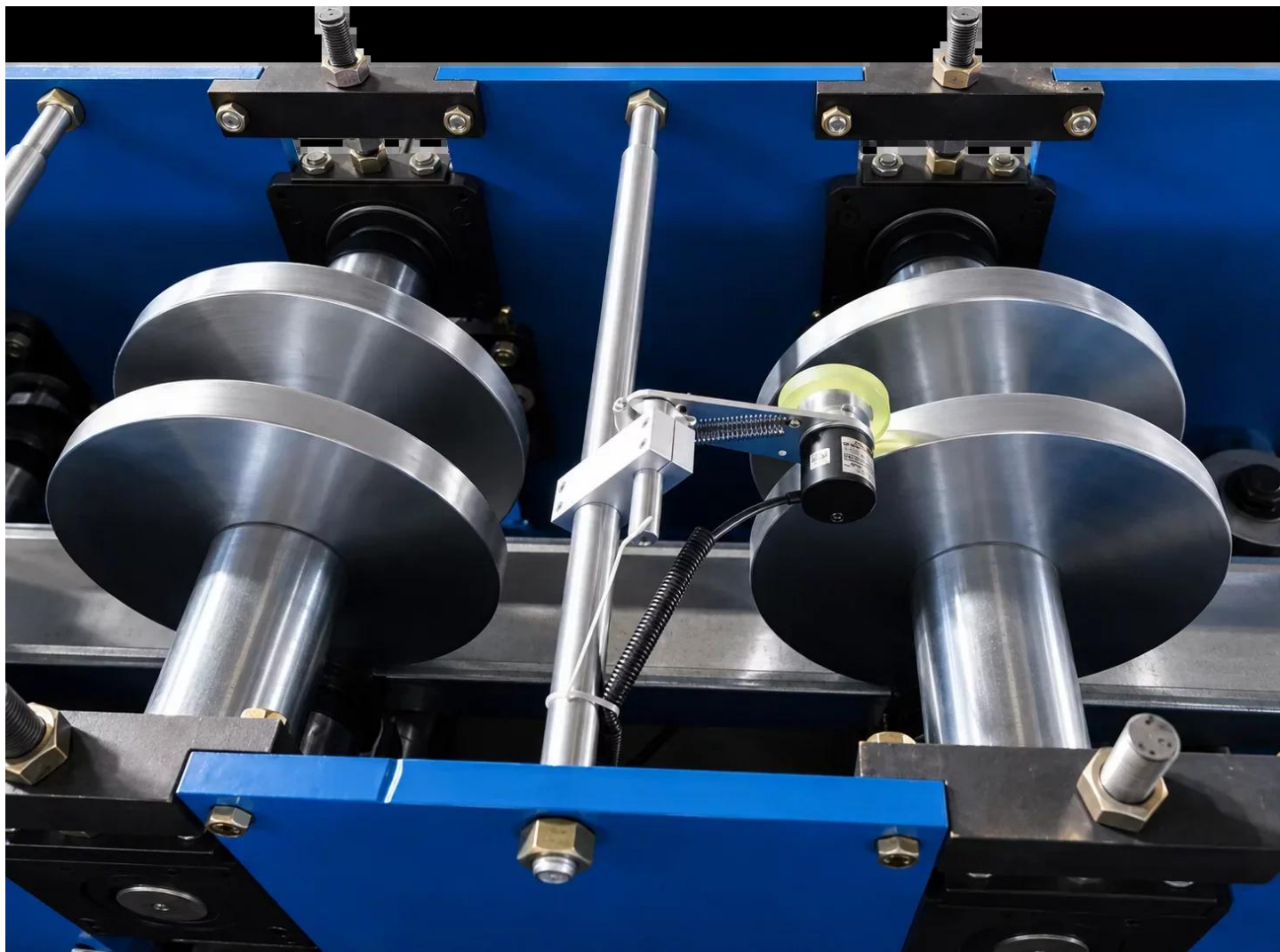


Finished Workpiece After Roll Forming

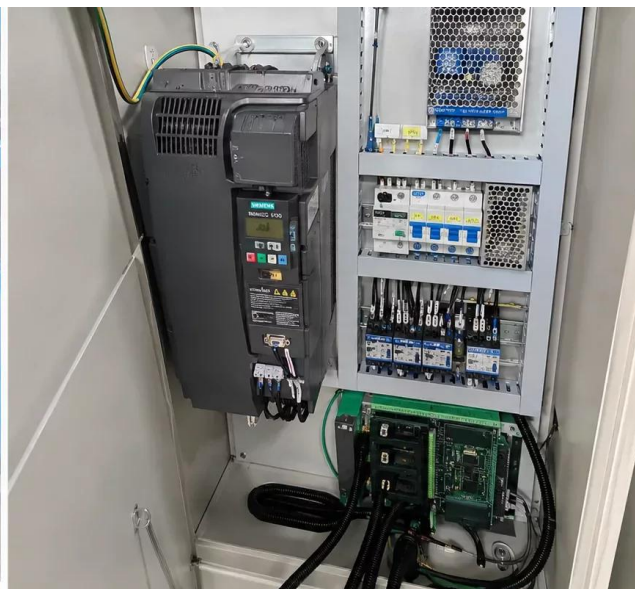
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3T Manual Decoiler



Roll Forming Section





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PLC Control Panel and Automation
Production Process

Complete C Purlin Line Workflow

The line performs production in a structured and repeatable manner. Coil material is fed onto the decoiler, then fed and straightened before passing through the forming roller section. After the required shape is achieved, the system measures the length and performs hydraulic cutting.

1

Coil Decoiling

The decoiler supports and unwinds the steel coil.

2

Feeding

The material is guided into the working section.

3

Levelling

Straightening rollers prepare the steel strip for forming.

4

Forming

12 roller stations give the profile its final C shape.

5

Cutting and Collection

Finished profiles are cut and placed on the receiving table.

Key Benefits

Why Choose This C Purlin Production Line?

Complete Configuration — decoiler, feeding, levelling, forming, hydraulic cutting, PLC control and receiving



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tables.

Processing 1.5–2.0 mm Sheet — the line is suitable for galvanized, black and hot-rolled steel.

0–15 m/min Speed — efficient profile production while maintaining process control.

12 Forming Stations — stable, gradual shaping of the C profile.

Post-Forming Cutting — hydraulic cutting of the profile after the set length is reached.

Automatic Length Measurement — the encoder allows control of the length and quantity of workpieces.

PLC Control — the touchscreen enables quick input of production data.

Stable Construction — the 350 H-beam frame and centre side-plate arrangement provide machine rigidity.

Machine Modules

Main Components of the Production Line

3T

Manual Decoiler

The decoiler supports the steel coil and enables unwinding. The system capacity is 3 tonnes, the uncoiling width is 500 mm and the coil inner diameter is 450–550 mm.

7R

Feeding and Levelling

The system straightens the steel strip before it enters the forming rollers. It is equipped with feeding, guiding and levelling rollers: 3 upper + 4 lower.

12

Main Forming Section

Roll forming takes place on 12 roller stations. The rollers are made of Cr15 steel after heat treatment and



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precision machining.

CUT

Cutting System

Hydraulic post-forming cutting ensures stability, precision and reduced scrap. Length measurement is performed automatically by an encoder.

PLC

Electrical Control

The PLC system with touchscreen controls the automation of forming, cutting and measurement. Includes a Delta inverter and Omron encoder.

HYD

Hydraulic Power Unit

The hydraulic power unit drives the cutting system. It includes an oil tank, pumps, hydraulic hoses, solenoid valves and an air-cooling system.

Applications

Where Is the C Purlin Line Suitable?

The C purlin line is designed for manufacturing structural, assembly and technical components from steel sheet. It is suitable for producing profiles used in lightweight steel structures, enclosures, support systems, industrial structures, racks, installation components and parts intended for further assembly.

Steel Structures – production of profiles for lightweight frames, brackets and load-bearing components.

Construction and Industrial Buildings – profiles for enclosures, auxiliary structures and installation components.

Technical Systems – installation, support, guide and structural components.

Serial Production – automatic length and quantity measurement supports repeatable production.

Technical Specifications



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Main Machine Parameters

Machine Type **C Purlin Production Line / C Purlin Machine**

Quantity **1 complete set**

Power Supply **220 V / 50 Hz / 3P or as required**

Material Thickness **1,5–2,0 mm**

Material Yield Strength **≤ G345 MPa**

Processed Material **GI galvanized steel, black steel, HR hot-rolled steel**

Operating Speed **0–15 m/min**

Operating Process **Decoiler ▯ feeding ▯ levelling ▯ roll forming ▯ cutting ▯ receiving table**

Set Components **Manual decoiler, forming machine, hydraulic power unit, PLC control, receiving tables, service tools, operating manual**

Decoiler and Feeding

Decoiler, Feeding and Levelling Parameters

Decoiler Type **Manual coil decoiler**

Decoiler Function **Supporting the steel coil and unwinding the material by rotation**

Decoiler Capacity **3 tonnes**

Uncoiling Width **500 mm**

Coil Inner Diameter **450–550 mm**

Feeding Rollers **1 set**

Guiding Rollers **2 sets**

Levelling Rollers **3 upper + 4 lower**

Levelling Roller Diameter **50 mm**

Roller Material **Cr15**

Section Drive **Pulled by the main geared motor**

Forming and Cutting

Main Roll Forming Section and Cutting System

Main Motor Power **11 kW**

Table Frame **350 H Beam**

Number of Roller Stations **12 stations**

Forming Roller Material **Cr15 steel, heat treated, precision machined, hard chrome plated, HRC55–60**

Shaft Diameter **Ø80 mm**

Shaft Material **40CR, hard chrome plated, heat treated to HRC42**

Transmission **Chain drive**

Roller Stand Construction **Centre Side Plate**

Side Plate Thickness **20 mm**

Cutting Type **Post-Forming Cutting, z zatrzymaniem profilu**

Cutting Drive **Hydraulic drive**



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Blade Material **Cr12MoV after heat treatment**
Length Measurement **Automatic encoder measurement**
Length Tolerance **3000 mm $\pm$ 1,0 mm**
Hydraulics and Automation

Hydraulic Power Unit, PLC Control and Receiving Table

Receiving Table **Welded frame made of angle bars and square profiles, with support rollers**
Receiving Table Type **Non-powered**
Receiving Table Dimensions **3,0 $\times$ 1,0 $\times$ 0,9 m**
Table Roller Diameter **50 mm**
Number of Receiving Tables **2 sets**
Hydraulic Power **5,5 kW**
Hydraulic Oil **46# hydraulic oil**
Hydraulic Components **Hydraulic tank, 2 hydraulic pumps, 4 hydraulic hoses, 2 solenoid valves**
Power Unit Cooling **Air-cooling system**
Control System **PLC with touchscreen**
Inverter **Delta**
Encoder **Omron, Japan**
Automatic Functions **Automatic length measurement and automatic quantity counting**