

QL-RollForm Pro

QUAKELOGIC

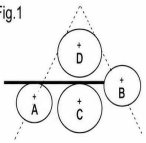
CNC FOUR-ROLL PLATE BENDING MACHINE



QL-RollForm Pro

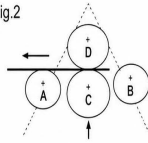
CNC Four-Roll Plate Bending Machine

Fig.1



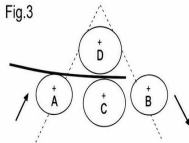
Step 1: The rear-side roller B rises, and the plate is aligned against roller B.

Fig.2



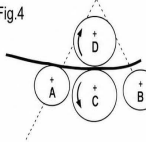
Step 2: The bottom roller C rises, clamping the plate between the top and bottom rollers. The rollers then reverse rotation, moving the plate leading edge back to the roller contact point position.

Fig.3



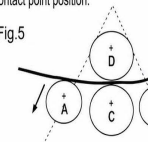
Step 3: The front-side roller A rises, and the rear-side roller B lowers.

Fig.4



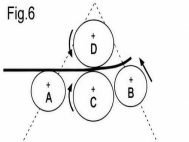
Step 4: The top and bottom rollers clamp the plate and rotate, performing the initial pre-bending on the plate.

Fig.5

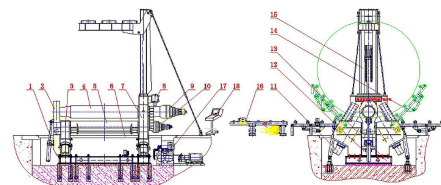


Step 5: The front-side roller A lowers.

Fig.6



Step 6: The rear-side roller B rises, and the top and bottom rollers rotate to complete the plate bending operation.



1. Overturning cylinder
2. Inverted stand
3. Left rack
4. Upper roll
5. Side roll
6. Bottom roll
7. Right rack
8. Balance device
9. Upper roller drive
10. Bottom Roller Drive (Optional)
11. Side roller cylinder
12. Bottom roller cylinder
13. Base
14. Side Support (Optional)
15. Top support system (Optional)
16. Feeding Electric Roller (Optional)
17. Hydraulic system
18. Electronic control system

PRECISION FOUR-ROLL CNC PLATE BENDING

The QL-RollForm Pro is a hydraulic CNC four-roll plate bending machine built for precision plate rolling, end pre-bending, cylindrical and conical forming in industrial fabrication. Its four-roll configuration with two independently controlled side rolls, Siemens PLC-based CNC control, and closed-loop roll-position feedback deliver repeatable forming across a 2,600 mm bending width. Integrated capacity, bend, and cone calculators plus programmable storage streamline production and shorten setup.

- Four-roll hydraulic layout with independent side rolls performs pre-bending and rolling in one setup, reducing plate handling and cycle time.
- Closed-loop displacement and pressure feedback holds roll synchronization within ± 0.10 mm for consistent, repeatable forming across production runs.
- Siemens PLC CNC with program storage lets operators create, save, and recall rolling programs for fast, reliable job changeover.
- Integrated capacity, bend, and cone calculators simplify job setup, cutting scrap and shortening the path from drawing to finished part.

STANDARD FEATURES »

- Four-Roll Hydraulic Design
- Siemens PLC CNC Control
- Color Touchscreen HMI
- Capacity Calculator
- Bend Calculator
- Cone Calculator
- Closed-Loop Positioning
- Displacement Sensors
- Hydraulic Pressure Sensors
- Planetary Gearbox Drive
- Cone Bending Device
- Hydraulic Drop-End
- Automatic Pressure Regulation
- Program Storage & Recall
- Emergency Stop
- Safety Interlocks
- Industrial Control Cabinet
- 42CrMo Hardened Rolls
- 12-Month Warranty
- Full Documentation Set

Key Features

- Four-roll hydraulic configuration with one upper, one lower, and two independent side rolls enables single-setup pre-bending and full cylindrical rolling.
- Siemens PLC-based CNC control with industrial color touchscreen HMI provides automatic and manual modes for flexible, repeatable production.
- Closed-loop automatic roll-position monitoring with high-precision displacement sensors maintains synchronization accuracy within ± 0.10 mm for consistent forming.
- Integrated capacity, bend, and cone calculation functions convert plate and geometry data into ready rolling parameters, reducing setup time.
- Forged, heat-treated, surface-hardened 42CrMo alloy-steel rolls deliver wear resistance and long-term dimensional stability under high forming loads.
- Hydraulic upper-roll drive through a planetary gearbox with continuously adjustable rotation speed matches feed rate to material and process.
- Automatic hydraulic bottom-roll pressure regulation with high-precision pressure sensors controls forming force for accurate, repeatable bends.
- Standard cone bending device and hydraulic drop-end support conical forming and fast plate removal after rolling is complete.
- Program creation, storage, recall, and reuse retains proven jobs, enabling rapid repeat production without re-teaching parameters.

PRODUCT FEATURES

Roll Configuration

One upper, one lower roll · Two independent hydraulic side rolls
· Forged, hardened 42CrMo alloy steel

Drive System

Hydraulic upper-roll drive · Planetary gearbox transmission ·
Continuously adjustable rotation speed

CNC Control

Siemens PLC-based CNC · Industrial color touchscreen HMI ·
Automatic and manual modes

Computation

Integrated capacity calculator · Integrated bend calculator ·
Integrated cone calculator

Feedback & Positioning

Closed-loop roll-position monitoring · High-precision
displacement sensors · High-precision hydraulic pressure
sensors

Hydraulics

Fully hydraulic lower and side roll positioning · Automatic
bottom-roll pressure regulation · Maximum pressure 19 MPa
(2,756 psi)

Forming Capability

Cylindrical rolling and arc forming · Plate-end pre-bending ·
Conical forming with standard cone device

Electrical & Safety

Complete industrial control cabinet · Emergency stop and
safety interlocks · NRTL listing / field evaluation available

For more information about the features, specifications, and available configurations of the QL-RollForm Pro, please contact QuakeLogic.

MACHINE CONFIGURATION

COMPONENT	CONFIGURATION
Machine Type	CNC Four-Roll Hydraulic Plate Bending Machine
Roll Configuration	1 Upper, 1 Lower, 2 Independent Side Rolls
Roll Material	Forged, Heat-Treated, Surface-Hardened 42CrMo Alloy Steel
Drive System	Hydraulic Upper-Roll Drive with Planetary Gearbox
Roll Positioning	Fully Hydraulic Lower and Side Roll Positioning
Control System	Siemens PLC-Based CNC Control
Operator Interface	Industrial Color Touchscreen HMI
Operating Modes	Automatic and Manual
Position Feedback	Closed-Loop Automatic Roll Position Monitoring
Cone Bending Device	Standard
Hydraulic Drop-End	Included
Electrical System	Complete Industrial Electrical Control Cabinet

CAPACITY

SPECIFICATION	VALUE
Maximum Bending Width	102.36 in (2,600 mm)
Symmetric Rolling Capacity	0.63 in (16 mm) at yield $\leq$ 245 MPa
Asymmetric / Pre-Bending Capacity	0.51 in (13 mm) at yield $\leq$ 245 MPa
Minimum Rolling Diameter	31.5 in (800 mm)
Upper Roll Diameter	12.6 in (320 mm)
Lower Roll Diameter	11.8 in (300 mm)
Side Roll Diameter	10.24 in (260 mm)
Main Motor Power	20.1 HP (15 kW)
Maximum Hydraulic Pressure	2,756 psi (19 MPa)

OPTIONAL FEATURES & ACCESSORIES

NRTL FIELD EVALUATION

NRTL listing or on-site field evaluation to certify the electrical system for compliant North American installation.

REMOTE DIAGNOSTICS PACKAGE

Remote technical assistance and diagnostics for rapid troubleshooting, minimizing downtime and on-site service visits.

SPARE PARTS KIT

Recommended spare parts support package to keep critical hydraulic and electrical components on hand for continuous operation.

SOFTWARE LIFECYCLE SUPPORT

Ongoing CNC software updates and lifecycle support maintaining control performance and compatibility over the machine's service life.

TECHNICAL SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Machine Type	CNC Four-Roll Hydraulic Plate Bending Machine
Roll Configuration	1 Upper, 1 Lower, 2 Independent Side Rolls
Maximum Bending Width	102.36 in (2,600 mm)
Symmetric Rolling Capacity	0.63 in (16 mm) at yield ≤245 MPa
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Minimum Rolling Diameter	31.5 in (800 mm)
Upper Roll Diameter	12.6 in (320 mm)
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Side Roll Diameter	10.24 in (260 mm)
Roll Material	Forged, Hardened 42CrMo Alloy Steel
Drive System	Hydraulic Upper-Roll Drive with Planetary Gearbox
Roll Positioning	Fully Hydraulic Lower and Side Roll
Control System	Siemens PLC-Based CNC Control
Operator Interface	Industrial Color Touchscreen HMI
Operating Modes	Automatic and Manual
Program Storage	Creation, Storage, Recall, and Reuse
Capacity Calculator	Integrated CNC Capacity Calculation

SPECIFICATION	DESCRIPTION
Bend Calculator	Integrated CNC Bend Calculation
Cone Calculator	Integrated CNC Cone Calculation
Forming Capabilities	Cylindrical, Arc, Pre-Bend, Conical
Position Feedback	Closed-Loop Automatic Roll Position Monitoring
Position Sensors	High-Precision Displacement Sensors
Pressure Monitoring	High-Precision Hydraulic Pressure Sensors
Automatic Roll Adjustment	Closed-Loop Position Synchronization
Display Accuracy	≤ ±0.002 in (±0.05 mm)
Roll Synchronization Accuracy	≤ ±0.004 in (±0.10 mm)
Displacement Sensor Resolution	≤ 0.002 in (0.05 mm)
Rotation Speed	Continuously Adjustable
Bottom Roll Pressure Control	Automatic Hydraulic Regulation
Main Motor Power	20.1 HP (15 kW)
Maximum Hydraulic Pressure	2,756 psi (19 MPa)
Cone Bending Device	Standard
Hydraulic Drop-End	Included
Warranty	Minimum 12-Month Comprehensive

QL-RollForm Pro

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About QuakeLogic:

QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, high-quality solutions to customers worldwide.

Our Commitment

We are committed to quality, innovation, and customer satisfaction – building lasting partnerships through reliable solutions and dependable support.

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