



# ABS 300 • 400 NC

## AUTOMATIC BAND SAWS

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## Everything for metalworking under one roof

KNUTH Machine Tools is a leading supplier of conventional and CNC machine tools. KNUTH is a global company with a presence in more than 30 countries.

In an area of 172,000 ft<sup>2</sup> at our headquarters in Wasbek, Germany, we keep a complete selection of machines for all areas of machining and metal working ready for demos and quick delivery.



## Quality Assurance for your KNUTH Machine

### Quality by KNUTH Certified Quality Assurance

More than 1400 machines are shipped annually from our headquarters in Wasbek, Germany. Every machine has to pass a series of tests in our 5-level quality assurance process that covers everything from incoming quality control to alignment testing, and from functional, technical and geometric accuracy tests to the final acceptance test. These tests are conducted by our master technicians who use a dedicated customized data processing system for this purpose.

An ISO 9001 certified quality management system ensures continuous control and improvement of all quality-relevant activities. Design, development and precision of each individual machine are documented exactly in detailed inspection protocols and acceptance test logs.

### All-Encompassing KNUTH Service Worldwide Reliability

Trust our global qualified staff take care of everything from installation and maintenance to repairs and upgrades quickly and professionally.



The Process of Making a KNUTH Machine Tool



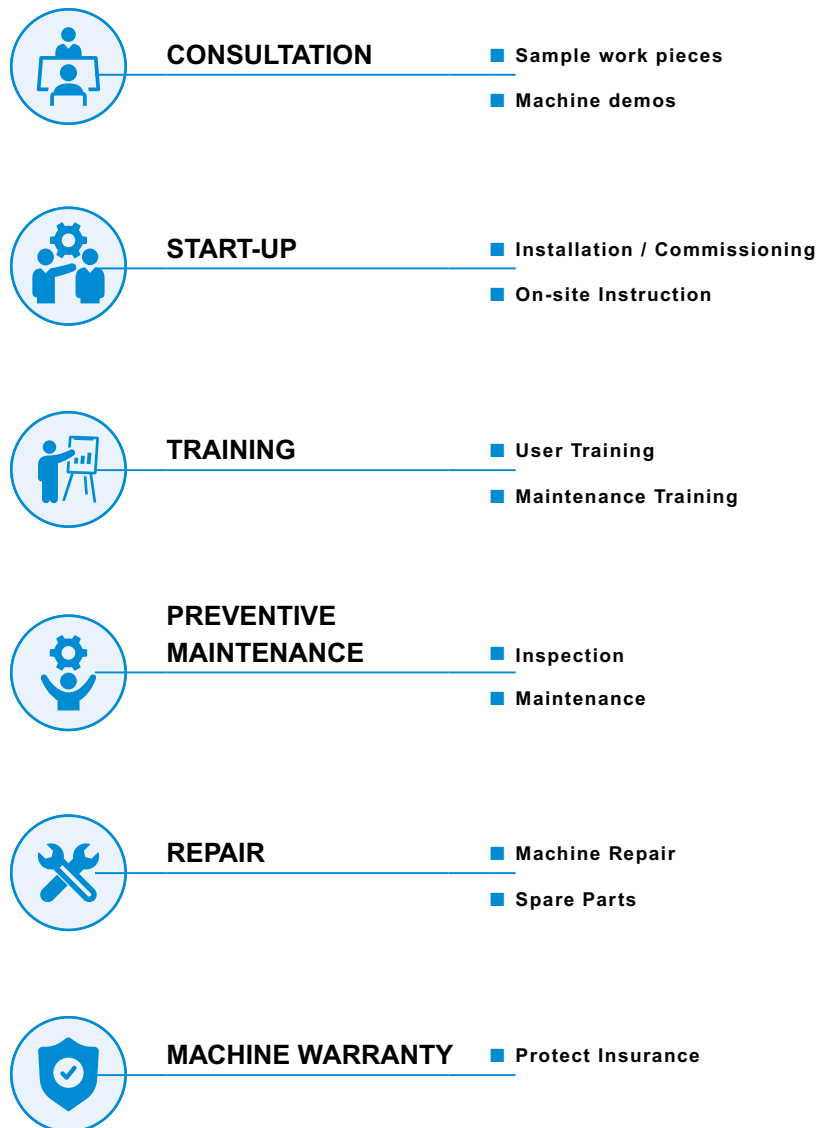
### KNUTH Machines in Action

Visit our YouTube page to experience machines in action before the real-life test on site

**Subscribe to our YouTube channel - Go to KNUTH Machine Tools!**

## Reliable service from a single source

We provide highly qualified technicians and engineers all over the world to ensure reliable service from one central source. And our global supplier network ensures prompt availability of replacement parts and consumables at a local level.



**KNUTH Technical Service Help Desk**

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**Our Service Help Desk is available 24/7 online at: [knuth-usa.com/servicedesk](http://knuth-usa.com/servicedesk)**



Automatic Band Saws

## ABS 300 • 400 NC

Fully automatic band saw with programmable cut angle adjustment



Model shown: ABS 300 NC

DOUBLE COLUMN DESIGN WITH HIGH CUTTING PRECISION

MITRE CUTTING WITH PROGRAMMABLE CUTTING ANGLE

NC CONTROL WITH TOUCHSCREEN FOR FAST PROGRAMM SET-UP

HYDRAULIC TOP VISES FOR BUNDLE CUTTING

### ABS NC Automatic Band Saws

**Models**  
ABS 300 NC  
ABS 400 NC

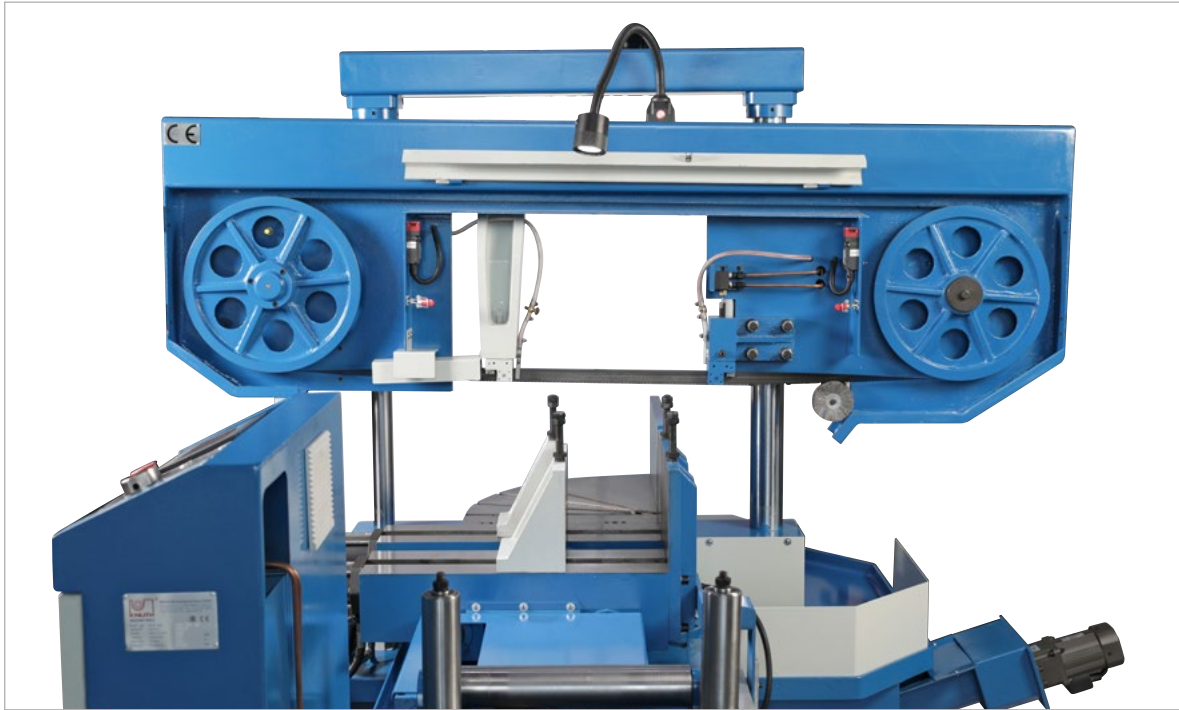
This series is an affordable intelligent turnkey cutting solution for series production. With NC control and programming capabilities, ABS NC series is designed to handle most production requirements, no matter if it is for single parts or bundle cutting.

Additionally, it's double column design eliminates vibrations and guarantees a constant high cutting precision even after many years of use.

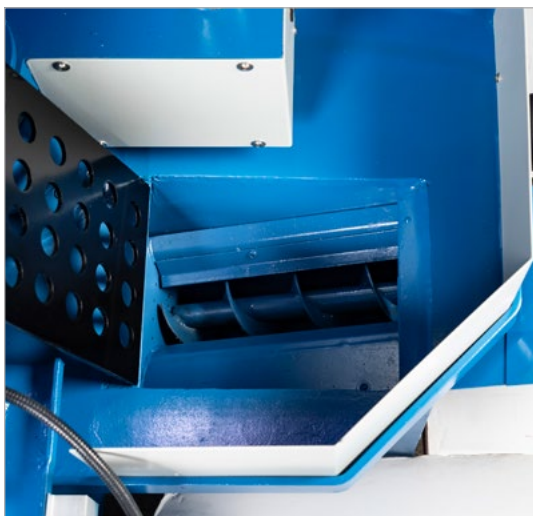


## Main Features

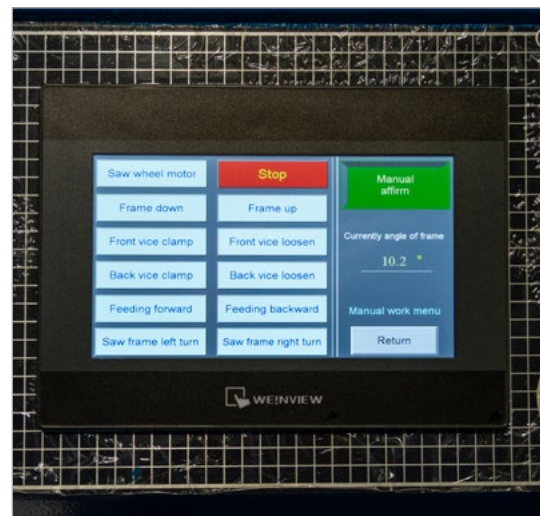
### Machine construction



- This series features a rigid steel frame construction which offers a good vibration absorption
- The "T" shape wide bed increases machine's overall stability assuring high cutting quality even after many years of use



- The base integrates a screw type chip conveyor which carries out the chips to keep the cutting area clear, facilitating continuous operation for series production



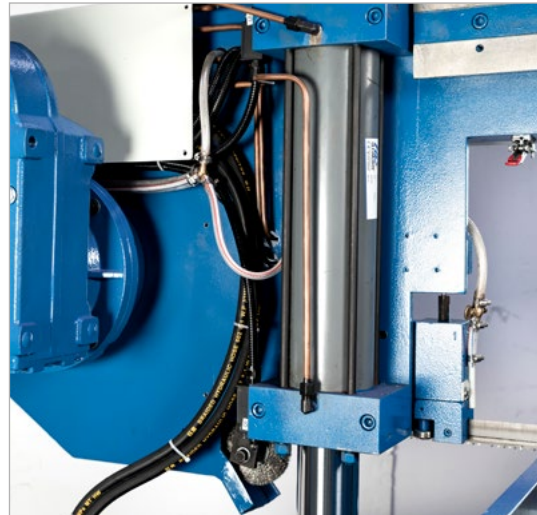
- Saw frame's down feed - automatic
- Material clamping - automatic
- Material feed - automatic, programmable
- Cutting angle selection - automatic, programmable

## Main Features

### Saw frame



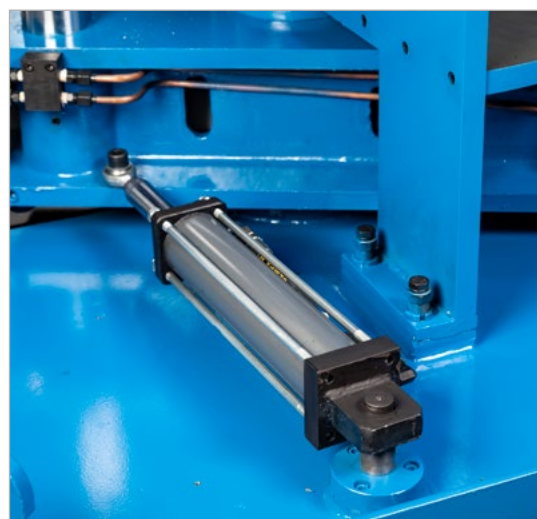
- The double column design facilitates a constant cutting precision, even when performing demanding operations like stainless steel cutting or bundle cutting.
- Another benefit is that more blade teeth are simultaneously in contact with the workpiece, making the cutting process faster than regular pivot type bandsaws



- Saw frame's down feed is done on a chrome plated precision ground column guide.
- The movement is done via a hydraulic cylinder which is accurately controlled by a powerful hydraulic motor.



- The models are equipped with sensor for a controlled down feed stop.



- The frame swivels for miter cutting on ground box type guide ways to ensure high angular accuracy. The cylinder features a cover (not shown in this image) which protects it from chips and coolant.



Automatic Band Saws

## ABS 300 • 400 NC

Fully automatic band saw with programmable cut angle adjustment

### Main Features



- The saw blade is supported by heavy casted wheels which provide proper alignment and tensioning.
- A blade control is installed, which automatically stops the machine if the blade breaks.



- The doors of the wheel covers are equipped with interlock system, stopping the machine if the door is opened.



- The guide arm is sliding smoothly on block type guide ways. It can be easily manually positioned according to the size of the workpiece.

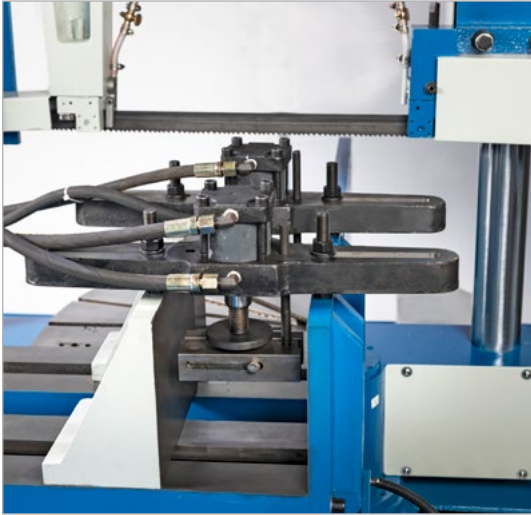


- The saw blade is slightly inclined to provide a better chip removal from the teeth. This improves cutting performance and increases the life of the blade.



## Main Features

### Vises

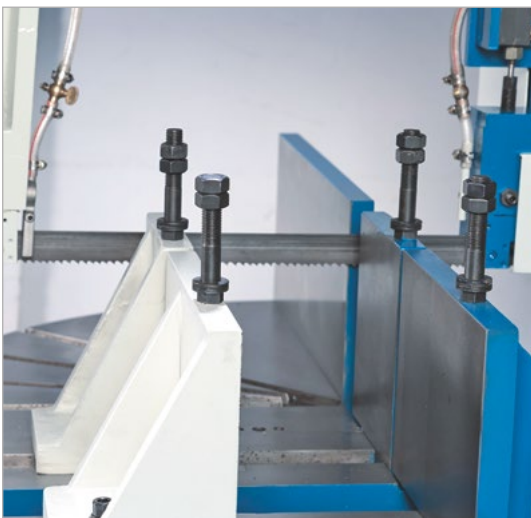


These models are standard delivered with 4 vises:

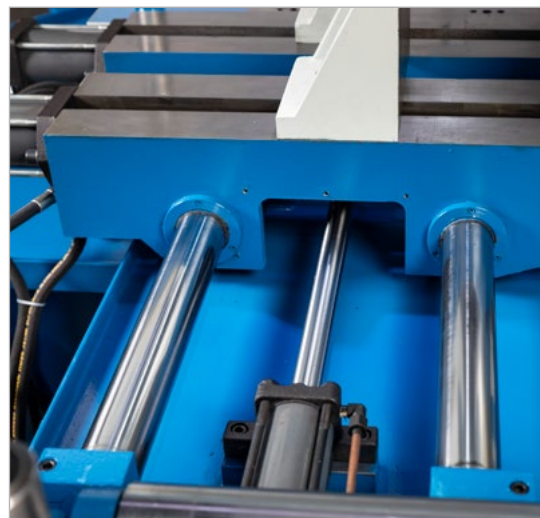
- 1 hydraulic fixed vise for clamping
- 1 hydraulic moving vise for clamping and feeding
- 2 hydraulic top vises for bundle cutting



- Both clamping vises have manual stroke which can be easily adjusted according to the size of the workpiece
- The clamping is hydraulic and controlled by the NC



- The clamping force can be adjusted to accommodate various workpieces from different materials
- The jaws feature screws on top to facilitate the mounting of the top vises



- The material feeding is done automatically by the hydraulic feeding vise and controlled by the NC controller
- The vise travels on two solid cylindrical guideways which ensure a high positioning accuracy
- A metal cover is mounted on top of the guideways to protect them against fallen chips



## Main Features

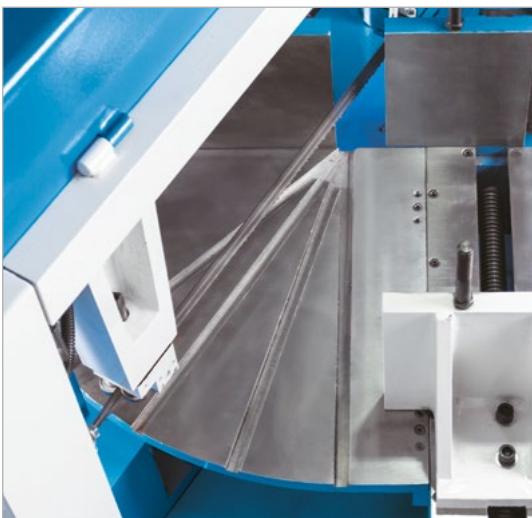


- Thought as a turnkey solution, ABS NC models are already prepared for cutting bundles. They are equipped standard with two top vises which can be quickly mounted
- Clamping is done hydraulically and NC controlled



- If they are not needed, they can be stored on their predefined place, on the side of the machine's bed

## Table



- The construction design with fixed table and swiveling frame makes this machine suitable also for cutting long workpieces



- The table has predefined grooves at main angle positions 0°, 15°, 30°, 45°



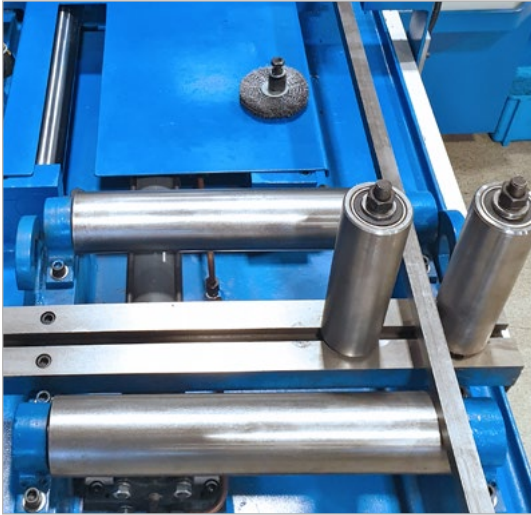
Automatic Band Saws

## ABS 300 • 400 NC

Fully automatic band saw with programmable cut angle adjustment

### Main Features

#### Feeding Rollers



- The material is carried-in to the feeding vise on two large rollers positioned at the loading point
- Two additional vertical rollers are mounted to fix the back side of the workpiece, providing an extra firm grip overall which helps maintaining high cutting accuracies even for bundles



- These models are delivered standard with a 79" roller feeding table, vital when working with long parts

#### Cooling system



- Machine is delivered standard with cooling system which reduces frictional heat to ensure operation in safety conditions and greatly increases saw blade's life
- To keep the design as compact as possible, the coolant pump is integrated in the base of the machine



- Blade's lubrication points are near the guides to ensure that the coolant is delivered into the cut efficiently

## NC Control

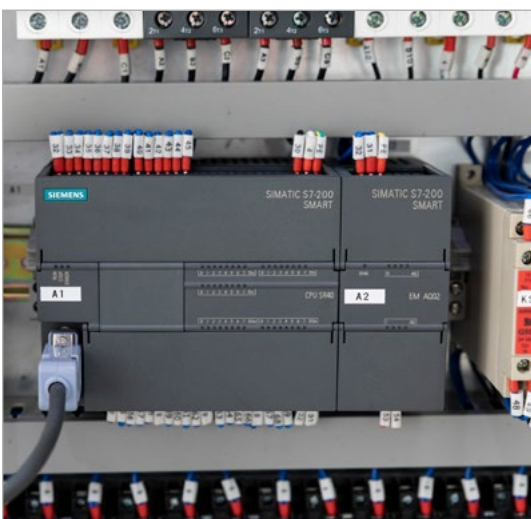
### Control Panel



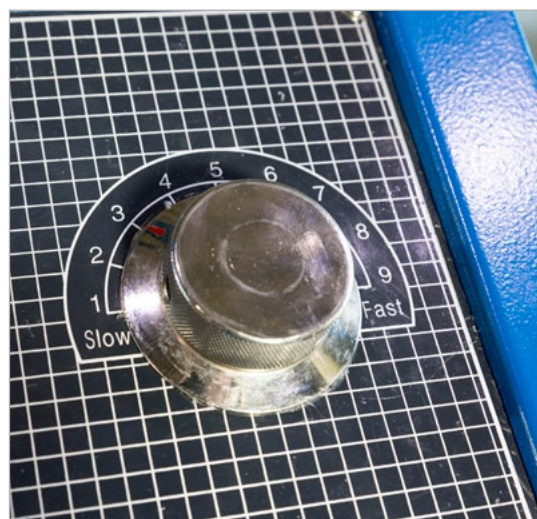
- The control unit is positioned on the right side of the machine and offers a complete view of the cutting and feeding process



- The operation of these models has been simplified by replacing conventional buttons with a rugged touchscreen input panel



- All operations are carried out by an advanced SIMATIC S7-200 SMART PLC from Siemens which is connected to the linear and angular encoder providing precise sawing cycles

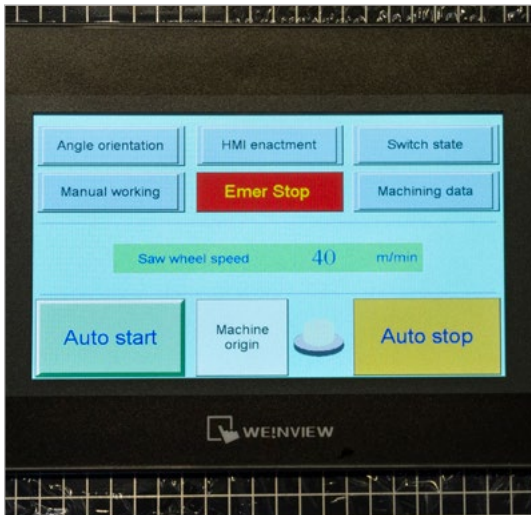


- The down feed adjustment wheel is used to select feed speed based on the type of profile or material



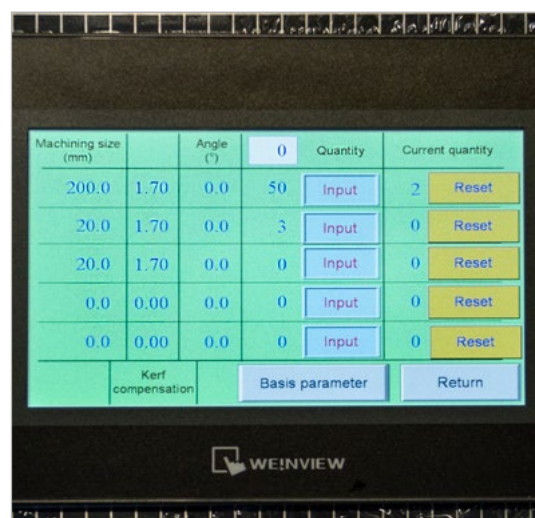
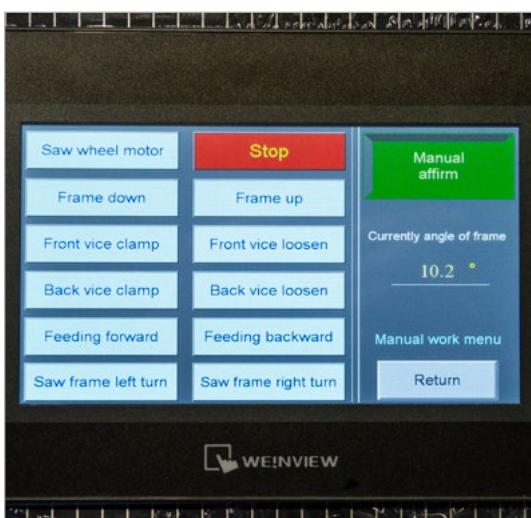
## NC control

### Controller functions



- ABS NC series feature a powerful controller that gives you the access to adjust or program all main functions of the machine
- The HMI is designed to be user friendly with intuitive display of the functions. The large screen and colourful interface facilitates the operation and informs the operator if the cutting jobs is finished. Clear error descriptions are displayed for a quick fault diagnosis

- On the main screen you can choose the operation mode of the machine: manual or automatic
- Additionally, you can also reset the machine to origin, adjust the saw blade speed and change the angle orientation



- Manual work mode allows the operator to control the entire process, from clamping of the vices, choosing feeding direction to blade speed and angle adjustment

- In the auto mode you can easily program cycles which can have up to 5 different cutting jobs. You just need to input the desired cutting length, cutting angle and the number of pieces to cut
- Compensation of the cutting width can be carried out centrally so it no longer has to be considered in the programmed workpiece lengths



Automatic Band Saws

## ABS 300 • 400 NC

Fully automatic band saw with programmable cut angle adjustment

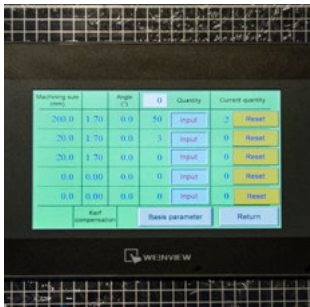
### Technical Data

Technical Data		ABS 300 NC	ABS 400 NC
<b>Cutting Capacities</b>			
Feed per scale division X-axis	in	15.75	15.75
Cutting speed	fpm	65.4 - 294.3	65.4 - 261.6
Cutting capacity 0° (round)	in	12	16
Cutting capacity 0° (flat)	in	14x12	20x16
Cutting capacity 0° (square)	in	12	16
Cutting capacity 30° (round)	in	12	16
Cutting capacity 30° (flat)	in	12x12	16x16
Cutting capacity 30° (square)	in	12	16
Cutting capacity 45° - flat	in	9x12	14x16
Cutting capacity 45° - round	in	9	14
Cutting capacity 45° - square	in	9	14
<b>Drive capacity</b>			
Motor rating main drive	Hp	4	5.4
Motor rating hydraulic pump	Hp	1	1
Motor rating coolant pump	Hp	0.1	0.1
<b>Measures and weights</b>			
Blade dimensions	in	174.41x1.34x0.04	220.08x1.61x0.04
Overall dimensions (length x width x height)	in	87x79x67	95x91x79
Weight	lbs	4,180	6,380
Part No.		152880	152883

\*Due to the process of continuous improvement, product and it associated data can change without notice.

## Standard Equipment

### Touch screen monitor



- User friendly touch screen with large diameter color monitor
- Automatic program cycle with up to 5 different angle and distance setting

### Siemens PLC control



- Reliable Siemens SIMATIC S7-200 SMART PLC with rugged touchscreen input panel

### Autom. cleaning brush



- Efficient chip removal to maintain a high quality cutting

### Feed roller table (6.5 feet)



- Manual feed table of 6.5 feet length
- The height of the table is adjustable

### 1 saw blade



- 1 piece Bi-Metallic saw blade:
- 174.41x1.34x0.04" - ABS 300 NC
- 220.08x1.61x0.04" - ABS 400 NC

### Bundle vise



- Vertical hydraulic vise for clamping bundles

### Chip conveyor



- Screw type chip conveyor for an efficient chip removal

### Coolant system



- With the nozzles positioned on the saw frame this emulsion coolant system protects the blade from excessive heating

### Operating tools



- Tool box with tools for machine set-up and maintenance

### Operator manual



- Contains installation, maintenance and operating instructions



## Optional Equipment

### Bi-Metallic saw blade



- Extra bandsaw blade
- 174.41x1.34x0.04" - ABS 300 NC
- 220.08x1.61x0.04" - ABS 400 NC
- Different blade pitches available based on part dimension and material

### 6.5 feet Material Roller Table



- Manual feed roller table for material support
- 6.5 feet length
- Adjustable height

### 9.8 feet Material Roller Table



- Manual feed roller table for material support
- 9.8 feet length
- Adjustable height

### Micro-spray cooling



- Popular alternative to regular coolant systems especially when cutting long tubes
- Please consult with our specialists before choosing this option

### Coolant concentrate



- 5 Ltr canister for improved chip flow and longer tool life
- Dilute with water 1:20



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