

Weeke ABD 050 Drill and Dowel Inserter

The Weeke ABD 050 is a CNC-Controlled Drill and Dowel Inserting Machine for manufacturing furniture or cabinet components made of wood or similar materials. The machine brings value as a stand alone machine or a component of a work cell to designed increase production on point-to-points or CNC routers by moving drill/dowel operations down-line.

Machine Operating Sequence

The CNC program is selected at the machine control. Parts are then manually loaded and positioned against the machine backstops. The machine can process up to four parts per set-up by utilizing right, right center, left center and left positioning or the center stop can be retracted for working large panels. Once parts are positioned, there are workpiece clamps, activated by foot pedal that hold the piece at each station. The panel support beams and clamps are PVC coated to protect the work piece. A cycle start button is activated and the drilling and dowel insertion then takes place. After this, the mechanical clamp is released, and parts are manually removed from the machine.

The Weeke ABD 050 includes many premium features:

- Horizontal and vertical machining capability.
- WoodWop Programming: With over 16,000 installations WoodWop provides one of the most user friendly programming interfaces provided by a machine manufacturer. For those with previous WoodWop experience, ramp up time on the ABD is brief.
- Extremely heavy machine base and build quality: At 2,645 lb., the weight of the ABD 050 machine is heavier than the typical machine in its class. Its rigid frame ensures a vibration free platform that will hold very tight machining tolerances for many years.
- In addition to its weight, the ABD 050 has been engineered with Weeke's patented mineral cast SorbTech material, further enhancing its ability to shield the work piece from vibration resulting in higher quality finished parts and longer tool life.
- Precision linear guides ensure precise tracking over time: The attachment points on the linear guides are also covered to ensure that dust and debris does not get compacted leading to premature failure of guide rails and bearings.

Premium Features

- Stainless steel closed loop gluing system: The system is not exposed to air, and it is not necessary to purge the system of glue if not used for extended periods throughout the day. A small dab of grease placed on the tip of the injector is all that is required to ensure that glue does not set up in the machine.
- Glue flow control monitoring system: prevents the operator from inserting dowels without glue.
- Engineered to spray glue as fast as water, the ABD 050 provides users the ability to realize superior joinery, without sacrificing time.
- Pneumatic control of center stop as well as left and right fences.
- Open end table design: allows for machining of parts longer than 48". A great feature for those producing a small percentage of long parts, but not looking to invest in a 96" machine.
- Configured for the use of traditional or pre-glued dowels
- Large 17" Display.
- Large Vibrating Dowel Hopper: Prevents frequent refilling of the hopper in high volume situations.
- Multi-tap transformer standard: A separate transformer is not required to connect to various voltages 208/230V, 460/480V
- Up to four part processing.
- Installation is included within all ABD 050 proposals.

Basic Machine

- Solid steel frame construction
- **SorbTech** Main Beam
- Heavy Phenolic table surface
- CNC Positioning of the X axis
- Rack & pinion drive in the X-direction
- Digital AC servo motors
- Mechanical Y and Z-adjustment
- Support table integrated with rear stop
- Pneumatic control of left, center, and right stops (activated by toggle switch)
- 4 universal clamping cylinders for securing work pieces in horizontal or vertical orientation, manually adjustable

Panel Dimensions

- Maximum Length: 1250 mm / approx 49.2"
- Minimum Length: 20 mm / approx 0.79"
- Maximum Width: 800 mm / approx 31.5"
- Minimum Width: 50 mm / approx 1.97"
- Maximum Thickness: 60 mm / approx 2.36"
*30 mm for vertical drilling
- Minimum Thickness: 10 mm / approx 0.39"
- Max Length for Active Center Stop: 600 mm / approx. 23.5"

Drill, Dowel and Glue Equipment

- Horizontal drilling aggregate with one (1) spindle, 7,500 RPM
- One (1) doweling tool (in 32 mm distance from the drilling spindle)
- Glue injector with adjustable glue amount
- Standard dowel dimensions: 8 x 30 mm / 8 x 35 mm
- Vibrating hopper for automatic dowel feeding

Note: machine will be delivered with a default dowel dimension 8 x 30 mm set by the manufacturer.

Part Present Detection

Each of the four reference locations is outfit with a part present sensor providing the machine the ability to know if the part is located in the proper reference location and allow for the start of machining cycle.

Glue Flow Control with Oil Mist for Glue Injector

The glue flow control ensures that any interruption of the glue flow is displayed on the machine control as an error, preventing the operator from inserting dowels without glue. Furthermore, the oil mist lubricator coats the injector nozzle with a thin layer of oil, preventing the glue from attaching and the nozzle from becoming congested

Low Pressure Pump for Glue

Included is a double membrane pump 1:1 (6 bar) with a filter unit; pump is compact and designed for reduced noise, low energy consumption, and suited to supply low viscous glue.

Central Dust Extraction

An 80 mm (3.15") port is provided for connection to your dust extractor.

Transformer for Customer's Supply Voltage

A multi-tap transformer is built into the machine facilitating an connection to the customer's electrical source for three-phase voltage of 208 V, 230/240 V, or 460/480 V

Paint

Grey RDS 240 80 05

Electrics

According to UL Regulations

Safety and Protection Devices

Machine is supplied according to CE standards.

Machine Control

Power Control PC85

The ABD 050 features a Microsoft Windows based control complete with intuitive software. Having proven itself on more than 16,000 installations, the **WoodWop** programming system included with the ABD 050 is the heart of the machine and unmatched by any programming software provided with a machine today. The powerful drawing functions offered by **WoodWop** simplify programming for operators without CNC experience and provide the premium features required to satisfy advanced users. In addition to the **WoodWop** software within the machine control, a copy of the program is included for installation on an office PC for off-line programming.

PC85 Hardware:

- PLC control according to international standard IEC 61131
- Operating system Windows XP (US) embedded
- Intel Core 2 Duo Processor
- 17 Inch TFT-flat screen
- 1 SATA hard drive 160 GB minimum
- Central USB port
- EtherNet connection 10/100 MBIT RJ45 (without switch)
- Modem for remote diagnostic service

Machine Software Bundle: (software pre-loaded on the machine PC)

PC85 Software Package with Graphical Operating Programs:

- **WoodWOP:** Programming software built upon a graphical, dialogue-oriented approach to generating CNC programs
- **ABDWork:** Modern and simple control of main machine functions via softkey
- **Tool Data Base:** A graphical operator guide to manage tool data
- **Production List Software:** For creation and management of product lists for manufacturing. Production sequences, target amounts, and processing information can be stored and recalled for future use.
- **Schuler MDE Basic:** Designed to track and record machine data, alert the operator when machine maintenance intervals are approaching, as well as track finished workpiece quantities

Software for External PC - Single Seat License for the Following Program:

Requires computer operating Windows NT4, 2000, XP, Vista or 7

- **WoodWOP:** Programming software built upon a graphical, dialogue-oriented approach to generating CNC programs

Documentation and Control Texts:

- Standard Manuals, CD, as well as .PDF versions stored on the machine containing operating and maintenance instructions
- Display texts for machine operators of the POWER CONTROL
- Spare parts descriptions consisting of CAD-drawings and wiring diagrams

Technical Specifications

Supported workpiece length	min/max	20 / 1250 mm	0.79" / 49.2"
Workpiece width	min/max	50 / 800 mm	1.97" / 31.5"
Workpiece thickness	min/max	10 / 60 mm	0.39" / 2.36"
Vertical Drilling Thickness	min/max	10 / 30mm	0.39" / 1.25"
Horizontal spindle Qty.		1	
Rotational spindle speed	max.	7500 rpm	
Drill shank diameter		10 mm	
Total length of drill bit		70 mm	
Dowel driver		1	
Dowel diameter		8 mm	
Dowel length		30 mm / 35 mm	
Tolerances required for wooden			
Dowel length		±1 mm	
Dowel diameter		±0.2 mm	
Dowel projection	Fixed according to dowel length		
Dowel adhesive	Low Viscous Glue (approx. 350 mPas)		
CNC control	PC-based with WoodWOP programming		
Length of machine		2570 mm	(101")
Width of machine		1286 mm	(50.6")
Height of machine		1921 mm	(75.6")
Weight of machine (approx.)		1200 kg	2645 lb

Utility Requirements

Electrical			
Operating voltage	208/480 Volts / 3 Phase / 60 Hz		
Amperage (Nominal)	16/7 Amps @ 208/480 Volts		
Control voltage	24 Volt		
Total connected load	4.5 kW		
Dust extraction			
Connection size(s)	80 mm dia.	3.15"	
Air velocity (minimum)	30 m/sec	98 ft/sec	
Static pressure	Minimum 3440 Pascal		
Air volume	550 m ³ /h	323 cfm	
Compressed air			
Connection size(s)	R 1/2 in		
Pressure required	102 psi	6 bar	
Consumption / volume	100 NL/min.	3.53 cfm	
Ambient temperature			
Operating range	35° C (max)	95° F (max)	
Foundation requirement			
Surface pressure at support points	174 lb/in ²		

Voltage supplied must not fluctuate in excess of ±5 % of its stated value. Voltage must be balanced phase-to-phase and phase-to-ground.

Note: The stated values are only applicable to the machine as specified. Adding or deleting optional equipment may change service connection requirements.