

Weeke CNC Controlled Vertical Processing Center, Model Optimat BHX 055-HSK



Basic Machine

- Solid machine frame in rigid steel frame construction
- Paint grey RDS 240 80 05
- Direct extraction at the processing unit and separate connection for the extraction device (on site)
- Hinged "L" shaped door at rear of machine for easy access and cleaning

Guiding System and Drive Technique

- dust protected linear guiding system
- ball screw drives in X-, Y-, and Z-directions
- digital drive technique in X-, Y-, and Z-directions
- Axis Speeds (Vector Speed)
 - X/Y = 50 m/min
 - Z = 15 m/min
- maintenance free motors with high resolution optical encoders guarantee high accuracy
- digital drive control units guarantee high reliability

Workpiece Handling

For feeding the machine, the workpieces are manually positioned against a pneumatically adjustable stop cylinder in the workpiece feeding area. The workpieces are removed manually out of the workpiece discharge area or, by means of the reversing function, also out of the workpiece feeding area.



- one (1) stop cylinder for workpiece positioning
- one (1) work piece clamping device (jaw) traveling in X direction via ball screw

The position of the clamping devices in X direction is automatically adjusted by program control. The clamp jaw itself has to be manually adjusted to the thickness of the workpiece. (The clamping device stroke is 10 mm).

- **workpiece length:** minimum 200 mm
- **workpiece length:** maximum 3050 mm
- **workpiece width:** minimum 70 mm
- **workpiece width:** maximum 850 mm
- **workpiece thickness:** minimum 12 mm (for processing at the surface)
minimum 12 mm (for horizontal processing at the two cross edges and at the top edge)¹
maximum 60 mm
- **workpiece weight:** maximum 35 kg

¹ Note: for horizontal drilling from the lower edge, center drilling is only possible up to a workpiece thickness of 19 mm.

For positioning, the workpieces must have a straight edge at the reference side. The workpiece length/width ratio should be ≥ 1 . The longer edge of the workpiece should be placed on the machine.

Warped workpieces (≥ 0.3 mm) lead to a higher range of processing tolerances and wear at the workpiece tables.

Due to the functional process flow of the machine (the workpiece is repositioned while processing), some highly sensitive surface structures are not suitable for the machine (e.g., high gloss painted surfaces without protective foil).

Workpiece Feeding Area

Mechanical support by means of roller conveyor for workpieces with a length of up to 1000 mm.

Note: an adequate safety zone must be kept in front of the feeding area (as per data sheet).

Workpiece Removal Area

Mechanical support by means of roller conveyor for workpieces with a length of up to 1000 mm.

Note: an adequate safety zone must be kept behind removal area (as per data sheet).

Extension of Working Length to 3050 mm Including Roller Conveyor

For workpieces with a maximum total length of up to 3050 mm, the working area of the machine is enlarged by extending the software with regard to the clamping device function and automatic displacement of the clamping device. The additional roller support enables safe feeding of long workpieces (up to 3050 mm) into the machine. The roller support has an adjusting range of 1200 mm to 1850 mm measured from the stop, and can be dismantled easily. To ensure safe handling and clamping of the lower edge of long workpieces, the rollers are positioned at an approx. 100 mm distance.

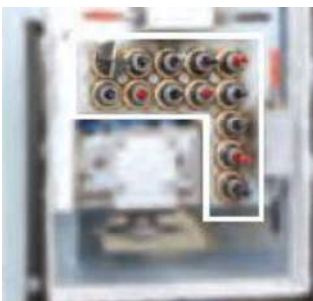
Configuration

The processing unit automatically traveling in Y and Z direction via ball screw, including drill block with independent drilling spindles as well as a workpiece counter-pressure block for guiding workpiece during processing and positioning.

Includes one (1) workpiece counter-pressure block with **automatic** adjustment of workpiece thickness.

Vertical Drill Block V13

Including quick change system and spindle clamping mechanism. Thirteen (13) spindle vertical drilling aggregate (separately activated with variable high speed range). Features spindle clamping to achieve the drilling depth safely.



- Working capacity: refer to separate layout
- Stroke Z-direction: 60 mm
- Drilling depth: maximum 38 mm
- Direction of rotation: right hand/left hand
- Speed: 1,500 to 7,500 rpm frequency controlled
- Drive: 2.3 kW
- Shaft diameter: d = 10 mm for quick change system
- Total length of drill: 70 mm
- Drilling diameter: maximum 35 mm (for some locations)
- Distance between spindles: 32 mm
- Type of spindle: individually selectable
- Arrangement: as per enclosed layout



Horizontal Drill Block with 4 Spindles in X Direction

Weeke Unit #1128, 1 of

Horizontal drill block integrated in the drill head of the basic machine.

- working range: please refer to layout

Horizontal Drill Block with 2 Spindles in Y Direction

Weeke Unit #1129, 1 of

Horizontal drill block integrated in the drill head of the basic machine.

- working range: please refer to layout



Grooving Saw D=100 mm (X Direction)

Weeke Unit #1012, 1 of

Grooving saw integrated in the drill head of the basic machine.

- tool diameter: 100 mm
- saw blade thickness: maximum 5 mm
- machining cross section: see technical documentation



Routing Motor HSK-63F 5 KW - Including Frequency Converter and 4-Place Tool Change Magazine

Automatic tool change routing spindle in combination with a tool change magazine

- working range: refer to separate layout
- tool holder: HSK63
- tool changing: automatic
- direction of rotation: right hand / left hand
- rotation speed: 1,250 to 24,000 rpm infinitely programmable
- drive: frequency-controlled AC motor
- maximum capacity at the tool: up to 5 kW in continuous operation (S1 - 100%)
- spindle lubrication: permanent grease lubrication
- cooling: air cooled
- dust extraction: central
- router bit: maximum 25 mm shank diameter
- tool diameter: maximum 25 mm
- tool length: maximum of 80 mm projected length
- tool changer: four (4) tool pockets
- tool change time: 16 sec. maximum





PowerControl – Modern Control System

PowerControl 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
- one (1) SATA hard disc minimum 160 GB
- Central USB connection
- EtherNet connection 10/100 MBIT RJ45 (without switch)
- Provision TeleserviceNet Soft capability – feasibility of remote diagnostics via the internet through a customer-provided DSL connection within the guarantee period; after the guarantee period, a corresponding teleservice contract has to be signed for the use of the teleservice
- potentiometer and emergency stop switch
- **UPS (uninterruptible power supply) for PC (Weeke Unit #6591)**

PowerControl Software

- PowerControl CNC-core with:
 - path control in all axis and parallel sequences by multi-channel technology
 - look-ahead-function for optimal speed at the transitions
 - dynamic pre-control for top precise accuracy of the contour
- PowerControl Software Package with Graphical Operating Programs:
 - woodWOP 6.1: For graphical, dialogue-oriented generation of CNC-programs
 - Tool Database: With graphical operator guide to manage tool data
 - Production List Software: for management and creation of product lists for individual manufacturing; hereby production sequences, target amounts, and processing information can be stored
 - Machine Data Recording: for recording of produced work piece quantities and supervision of the maintenance work
 - 3D NC-Simulation and Time Calculation: software for graphical simulation of a CNC program in 3D, including time calculation with a precision of $\pm 10\%$; optical error display

Workpiece Length Dependent Processing in X-Direction

Weeke Unit #6525, 1 of

Drilling and/or routing processes are programmed in woodWOP to suit the workpiece length; the measured differences are calculated automatically using the programmed set-point.

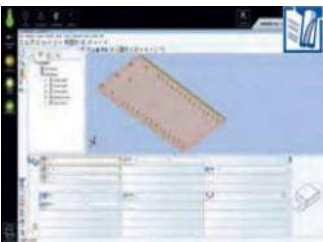
Barcode Software (woodScan)

Weeke Unit #6625, 1 of



- 'woodScan' for preparing the control for automatically taking over a 1D or 2D barcode from the barcode reader (optional)
- The connection of the barcode reader with the control is effected via a separate interface
- Simple allocation of the barcode information to the machine control
- Range of functions:
 - up to two (2) different barcodes per part can be read
 - transfer of up to ten variables, which positions must be defined clearly in the barcode
 - transfer of location or mode information, by choice as a second barcode or as the last character in the barcode
 - transfer of program names in a production list with transfer of a set-point which position must be defined clearly in a barcode
 - import of a production list
- Customer-specific requirements can optionally be realized after clarification and upon additional expense (Unit #6298)

Software Package for External PC (Single-User License)



- woodWOP 6.1: for graphical, dialogue-oriented generation of CNC programs
- woodAssembler: to visualize woodWOP programs (MPR) in 3D; this software enables the construction of individual workpieces to finished objects
- woodVisio: visualizes objects generated in woodAssembler or Blum Dynalog with surface materials
 - the objects are displayed in a free-standing position
 - includes a library of materials
- woodWOP Mosaic: software for woodWOP data administration with graphical preview 'thumbnails'
 - with this software woodWOP data files and complete directories can be managed from the graphical point of view
 - programs can be administered by drag and drop
- woodType: software to generate routing contours for characters and texts in all available Windows True-Type fonts
- Note: Can only be operated with Windows® XP, Vista, or Windows 7

Copy protection of all software licenses via the HOMAG Group license server.
The product must be activated by contacting Stiles Technical Support by phone at 616.698.6615 following the installation.



woodWOP DXF Import Basic (Single-User License)

Weeke Unit #6062, 1 of

- interface for CAD data import of 2D CAD programs to woodWOP
- import of 2D DXF files
- converting is carried out under fixed profiles (rules)
- display of the geometry, layer, and drawing elements
- creation of the woodWOP program
- Conditions for the DXF file:
 - the drawing elements have to be filed on the corresponding layers for differentiation of the processes
 - the layer should include numeric values for the definition of the Z-axis
- alphanumeric layer definition
- requirements: PC with Windows XP, Vista, or Windows 7

Note: the license server is installed on only one (1) computer (virtual servers and terminal servers are not supported). The product must be activated by contacting Stiles Technical Support by phone at 616.698.6615 following the installation.

Documentation and Control Texts: English

Weeke Unit #8322, 1 of

Scope of delivery (to be delivered with the machine):

- Operation manuals – consisting of operating and maintenance instructions on DIN A4 paper and CD-ROM
- Display texts – for machine operators, for PowerControl
- Spare parts descriptions – consisting of CAD drawings and wiring diagrams on CD-ROM

Off-Line Programming Training

Two seats in the Stiles Education course MC066 for programming training in the WoodWOP software are included with the machine. The courses are designed to provide Weeke CNC Machining Center owners with the introductory information necessary to utilize WoodWOP software to operate the machine. Participants must have basic computer skills including use of Windows "operating systems".

Stiles Education classes are conducted at Stiles Machinery locations. The customer is responsible for all travel and living expenses incurred during training. Training scholarships will expire one (1) year from machine delivery. To enroll your employees, please contact Stiles Education at (616) 698-7500.



Energy Saving Mode

- Includes the EcoPlus button for starting stand-by operation
- The EcoPlus button can be activated during processing
- This will have the following impacts after the end of the program:
 - Primary power of drives will be switched off
 - When machine is not processing, control voltage will be switched off after a pre-set time

CE-Security and Safety Units

Electric Components According to UL or CSA Regulations

Weeke Unit #6559, 1 of

Machine Special Voltage

Weeke Unit #6570, 1 of

Allows for connection to various electrical sources at a customer location from 208V to 460V

Technical Data

The technical data sheets: equipment plan, drilling block equipment, and general outline are an integral part of this offer, or a resp. order confirmation.

Tool "Starter Kit" for BHX 055

Weeke Unit #9953, 1 of

- Dowel Hole Drills:
 - three (3) RH dowel-hole drills for quick-change system HW d = 5 mm
 - three (3) LH dowel-hole drills for quick-change system HW d = 5 mm
 - five (5) RH dowel-hole drills for quick-change system HW d = 8 mm
 - five (5) LH dowel-hole drills for quick-change system HW d = 8 mm
- Tool Chucks:
 - three (3) HSK-63F collet chucks, with one (1) 10 mm collet, one (1) 16 mm collet, and one (1) 25 mm collet
- Router Tool:
 - one (1) replaceable insert finishing router bit Diamaster PRO Z1+1, DP/D16/NL35/S25x60/GL105/RL/ID 091274
- Grooving Saw Blade:
 - 100 mm diameter
 - flat tooth grooving saw blade D = 100 mm / W = 3.2 mm

Utility Requirements

Electrical		
Protection	IP53	
Operating Voltage	3 Phase 208/480 volt, ±5%	
Control Voltage	24 Volt	
Frequency	60 HZ	
Nominal Current	40/18 Amps	
Recommended Amperage Service	50/25 Amps @ 208/480 Volts	
Total Connected Load	11.5 kW	
Dust Extraction		
Connection Size(s)	1 @ 160 mm dia.	
Air Velocity (min.)	30 m/sec	99 ft/sec
Static Pressure (min.)	2200 PA	
Air Volume (min.)	2170 m³/h	1278 cfm
Compressed Air		
Connection Size(s)	R ½"	
Pressure Required	102 psi	7 bar
Compressed Air Consumption	CA 40 - 60 NL/min (1.4 to 2.1 cfm)	
Ambient Temperature		
Operating Range (min. – max.)	10° - 40° C	50° - 100° F
Foundation		
Total Machine Weight:	approx. 1580 kg	3483 lbs.
Surface pressure in the area of the points of support:	1.20 N/mm²	
Thickness of concrete: (min.)	200 mm	7.9"
Concrete quality C25/30 XC1 capable of bearing pressure and tension		
The foundation must be at ground level, and evenness of floor to be within ± 10 mm (± 0.394")		

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.