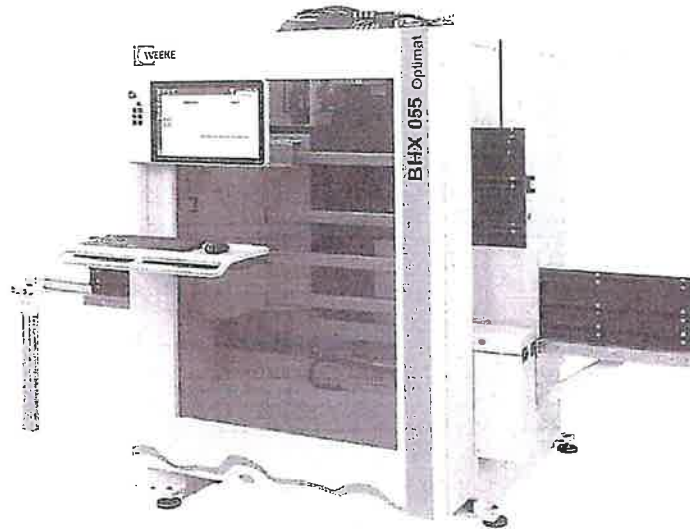


## Weeke CNC Controlled Vertical Processing Center

### Optimat BHX 055 HSK PSV PT



#### 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)
- Removable "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.



Figure 1

### 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 **8 mm** (for vertical drilling only)  
 minimum **12 mm** (for horizontal processing at the two cross edges and at the top edge)<sup>1</sup>  
 maximum **56 mm**
- Workpiece weight: maximum 35 kg

<sup>1</sup> 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  $\geq 1$ . The longer edge of the workpiece should be placed on the machine.

Warped workpieces ( $\geq 0.3$  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.

**Panel Size Verification (X&Y) for Vertical Processing Centers**

*Weeke Unit #6526, 1 of*

- Contact-free optical sensor system for panel size verification of the workpiece positioned at the workpiece fence
- A contact-free sensor in the X-direction checks the workpiece length, and another contact-free sensor in the Y-direction checks the workpiece width
- The tolerance range has been preset at the factory to 5 mm



Figure 2



Figure 3

**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.



Figure 4

**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



Figure 5

**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



Figure 6

**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



Figure 7

**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%)



Figure 8

- 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

**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.



Figure 9

**powerTouch – Homag Group Control System**

*Weeke Unit #6360, 1 of*

- operating panel with full HD Multitouch Display in widescreen format
- standardized Homag Group operating surface – powerTouch
- ergonomic touch operating with gestures, e.g., zooming, scrolling, and swiping
- simple navigation for standardized and intuitive operation of the machine
- intelligent display of readiness of production by light function
- machine data capturing MMR Basic for maintenance depending on need and for the representation of important operating figures (e.g., number of pieces, production time, etc.)
- optionally expandable to MMR Professional for optimization of production by capturing and evaluation of the downtimes of the machine as well as the reasons for disturbances
- operating system: Windows 7 Professional (English)

**powerControl PC86 Hardware:**

- PLC control according to international standard IEC 61131
- Intel Core 2 Duo Processor
- 21.5" full HD Multitouch Display with 16:9 wide screen
- One (1) SATA hard disc minimum 160 GB
- EtherNet connection 10/100 MBIT RJ45 (without switch)
- Central USB connection
- 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 PC86 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: 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

**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.



Figure 10

**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)

**Documentation and Control Texts: English**

*Weeke Unit #8322, 1 of*

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

- Display texts for machine operators in English; operating system dialog in English; and keyboard and dialog input in English
- Help texts in English
- Operating manuals in English – consisting of operating and maintenance instructions on DIN A4 paper and digital data media
- Spare parts descriptions and wiring diagrams in English on digital data media
- English Keyboard (VK #6204)



Figure 11

**BHX 050-200 Software Package for External PC (Single User License):**

*Weeke Unit #6779, 1 of*



Figure 12

- woodWOP 6.1 for External PC (Weeke Unit #6676)
  - For graphical, dialogue-oriented generation of CNC programs
  - Easy creation of macro programs by use of variables
  - Graphic tool selection
  - Automatic vacuum pod recommendation
- 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
- woodWOP DXF Basic (Weeke Unit #6062)
  - Interface for CAD data import of 2D CAD programs to woodWOP
  - Import of 2D DXF files
  - Converting is carried out according to fixed profiles (rules)
  - Display of the geometry, layer and drawing elements
  - Creation of the woodWOP program
  - Conditions for the DXF file: the drawing elements must 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
- woodAssembler (Weeke Unit #6012)
  - To visualize woodWOP programs (MPR) in 3D
  - Enables the assembly of individual workpieces to finished objects
  - Includes import interface for objects from Blum Dynalog
  - Note: woodWOP programs must be stored in or converted to MPR format, as the new MPRX file format is not supported
- woodVisio (Weeke Unit #6050)
  - Visualizes objects generated in woodAssembler or Blum Dynalog with surface materials
  - The objects are displayed in a free-standing position
  - An expandable library with surface materials is provided
- 3D NC-Simulation for BHX 050/055 (Weeke Unit #6740)
  - This license can be used either on the machine or on an office PC
  - For graphical simulation of a CNC program in 3D
  - Time calculation with an accuracy of  $\pm 10\%$
  - Display of error messages
  - Simulation of all processing in the X-, Y-, and Z-axis
  - Compatible with woodWOP 5.x/6.x



**BHX 050-200 Software Package for External PC (continued)**

Software package can only be operated with Windows® XP, Vista, or Windows 7.

Notes:

- the license server is installed on only one computer (virtual servers and terminal servers are not supported)
- on a machine computer, only single place licenses can be run
- on the Office PC, all software products are protected either by single place or floating licenses; it is technically not possible to install different type licenses

Note: the installation of the software on an Office PC and the integration of the machine into the customer's network will be the responsibility of the customer. This can be optionally supported by Stiles'/Weeke's software support at an additional expense to the customer.

The product must be activated by contacting Stiles Technical Support by phone at 616.698.6615 following the installation.

**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.



Figure 13



**CE-Security and Safety Units**

**Machine Special Voltage**

*Weeke Unit #6570, 1 of*

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

**Electric Components According to UL or CSA Regulations**

*Weeke Unit #6559, 1 of*

**Technical Specifications**

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

Utility Specifications

<b>electrical</b>	
protection	ip53
operating voltage	3 phase 208/480 volt, ±5 %
control voltage	24 v
frequency	60 hz
nominal current	40/18 amps
recommended amperage service	50/25 amps @ 208/480 v
total connected load	11.5 kw
<b>dust extraction</b>	
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 m <sup>3</sup> /h (1278 cfm)
<b>compressed air</b>	
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)
<b>ambient temperature</b>	
operating range (min. – max.)	10° - 40° c (50° - 100° f)
<b>foundation</b>	
total machine weight:	approx. 1580 kg (3483 lbs.)
surface pressure in the area of the points of support:	1.20 n/mm <sup>2</sup>
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.*

