stiles

Homag 5-Axis Gantry CNC Processing Center, Model BMG Venture 311/42/F/K – Basic

The BMG Venture 311 gantry series of high-performance processing centers was created from an innovative concept that offers new technology with optimized interaction between components. This series of processing center offers an extensive range of equipment possibilities for industrial multiple-shift operation.

The BMG Venture 311 gantry series of processing centers features rigid steel frame construction that includes a flexible K-type console table with manually adjustable vacuum pods and an innovative computer numeric control (CNC).

This BMG Venture 311 features one (1) 16-spindle (V12 + H4) flexible drilling unit and one (1) heavy-duty 5-axis Drive 5C router spindle unit which can be used for both 3-axis and 5-axis machining, giving this machine the highest level of flexibility for a wide range of complex manufacturing operations. This design offers efficient, cost effective, high-speed batch size production with the ability to process a variety of work pieces on the same machine with minimum down time.

5-Axis Main Router Spindle – 10/12 kW "Drive 5C"

Homag Unit #7430 (1 of)

- Gimbal (cardanic) type 5-axis router spindle for routing, drilling, and sawing at an arbitrary angle to the panel
- HSK-63F - DIN 69893 spindle taper
- speed regulated (by transmitter), three-phase asynchronous **10 kW (13.4 hp) motor - *S1 rated***, (12.0 kW (16 hp) - *S6 rated*), with high torque at low spindle speeds, and with full nominal power from 12,000 rpm for exceptional power output
- number of revolutions is programmable from 1,500 to 24,000 rpm
- "active" liquid cooled, hybrid spindle bearings with temperature monitoring to avoid thermal damage and to increase service life
- maximum tool weight of 6 kg (13.23 lbs.) including tool holder
- maximum tool length of 230 mm (9-1/32") calculated from lower edge of motor spindle for boring and routing tools of 20 mm (25/32") diameter maximum
- maximum tool length of 165 mm (6-1/2") calculated from lower edge of motor spindle for roughing or profile tools of 80 mm (3-1/8") diameter maximum
- maximum tool diameter of 180 mm (7-3/32") for routing tools
- maximum tool diameter of 350 mm (13-3/4") for using a saw blade in the optional saw blade chuck (#7942); with tool chuck "A" dimension of 50 mm
- max. cutting depth depends on the position of the spindle (see technical data)
- tools with increased disruptive contour result in a more restrictive working field
- inclusive Z-axis module

5-Axis Main Router Spindle – 10/12 kW "Drive 5C" (continued)

- cardanic arrangement of the setting axes
- range or stroke of C-axis (swiveling) is ±361° (at A=0°)
- when A ≠ 0°, the angle of rotation is reduced in the C-axis
- range or stroke of A-axis (tilting) is ±100°
- includes vibration sensor for surveillance of the router spindle during operation
  - indicates vibrations caused by unbalanced tools or improper utilization
  - when the acceptable threshold value is exceeded, the machine stops and an error message is displayed to the operator
- automatic feed reduction when programmed spindle speed cannot be maintained
- supplied with one (1) HSK-63F collet chuck and collet
- supplied without cutting tools
- the length of tools and the position of the A-axis can effect the limitations of the working area in the X, Y, and Z axes
- programming of the 5th axis as an adjusting or positioning axis only, is possible with WoodWOP, for a workpiece thickness of 270 mm (10-5/8") maximum, including any clamping devices or fixtures
- WoodWOP is not capable of programming full 5-axis simultaneous movement of this spindle, as for contour routing; this would require a separate 5-axis CAD/CAM software package and the Homag CAD/CAM interface
- for the working zone in the horizontal position, please see Technical Data sheet
- the processing accuracy using the swiveled spindle (A-axis ≠ 0°) can be up to ±0.35 mm (±0.014") depending on the tool length being used
- increased demands in view of process forces, surface quality or contour accuracy need a preliminary examination and the production of trial samples; material, clamping devices, tools, and programs must be provided by customer

Unit Interface for Drive 5C Router Spindle

- for connection of processing units in A=0 position (only); unit application according to technical data sheet(s)
- with 3-point support system for a secure force transmission when the machining forces are high
- pneumatic supply for the unit interface, e.g., for High-Performance (HP) units or floating/tracing units

Suction Capacity 5-Axis Processing Center

- due to the 5-axis processing, the suction (dust) hood has a certain size, and it uses spatial suction; for this reason and depending on the system, the cleaning effect of the suction is reduced when different processes are carried out (e.g., sawing or nesting)
- the suction hood can be adjusted in height at three (3) levels
- programming of the hood position is effected subject to panel thickness, tool, and position of the A-axis, and therefore suction effect can be reduced
- depending on the type of processing required (synchronous movement or opposite movement) and the cutter being used (saw, drill, router bit, etc.), contamination can occur in the zone of the processing tables due to dust and chips
- the optimal TRK value of 2 mg/M^3 may not be achieved subject to processing
- for optimal prevention of dust outside of the processing area, a full machine enclosure may be required and can be quoted upon request

Coolant Reservoir for Main Spindle

Homag Unit #7072 (1 of)

- required to supply the main router spindle's coolant cycle

Energy Efficient Dust Suction Hood for 5-Axis

Homag Unit #7030 (1 of)

- dust suction hood for better removal of the chips at a reduced volume flow
- optimized catching angle of the chips and guidance of the air stream around the spindle
- streaming optimized air distributor with a pneumatic alternating switch
- main connection is positioned horizontally to the left
- required volume flow: 4,950 m^3/h (2,914 cfm)
- required vacuum pressure: 2,000 Pa (7.87 in. H_2O)
- connection diameter: 250 mm (9.85")
- supplied instead of standard suction hood

14 Position HSK-63F Plate-Type Tool Changer D=130 Below

Homag Unit #7455 (1 of)

- for tools and processing units (aggregates) with HSK-63F interface
- plate-type tool changer for up to 14 tool/unit places
- maximum rotating tool weight of 6 kg (13.23 lbs.) including tool holder
- maximum processing unit weight of 10 kg (22 lbs.)
- maximum total weight of all equipment is 70 kg (154 lbs.) distributed evenly
- following tool combinations are possible:
  - 14 x maximum diameter of 130 mm (5-1/8") or
  - 7 x maximum diameter of 180 mm (7-3/32") and 7 x maximum diameter of 70 mm (2-3/4")
- maximum tool diameter for sanding tools is 200 mm (7-7/8")
- with Drive 5C/+: saw blade of 350 mm diameter and "A" dimension of 50 mm can be interchanged into the tool changer
- supplied without tool holders or tools

Tool Transfer Place for BMG 300/500/600

Homag Unit #7471 (1 of)

- auxiliary device for automatic loading of the ATC unit
- tool transfer place adaptable on the clamping table
- sensor technology for the inquiry of the free place in the tool changer
- only suitable for tools in HSK-63F tool chucks
- maximum tool diameter of 300 mm
- positioned on the left side of the machine bed
- supplied without tool holders or tools

Saw Tool Chuck for Drive 5C/5C+

Homag Unit #7942 (1 of)

- special use HSK-63F tool chuck with "A" dimension = 50 mm for insertion into the Drive 5C/5C+spindle
- tool arbor D=30 mm
- reference circle diameter 90 mm, M5 8 x 45°
- design of the chuck appropriate for clamping the saw blade alternately with washer disk for optimum concentricity or with countersunk head screws for miter cuts

Saw Blade for Cutting D=350 mm

Homag Unit #7944 (1 of)

- TCT saw blade for general cutting D=350 mm x 3.6/2.5 x 30, Z=16, both-side bevel tooth
- for tool arbor D=30 mm
- TK diameter 90 mm, M5 8 x 45°
- to be used in connection with the Saw Tool Chuck (Unit #7942 or #7943)

16-Spindle Boring Head: 12 Vert., 4 Horiz., 0°/90° Saw

Homag Unit #7472 (1 of)

- one (1) frequency-controlled 2.2 kW motor
- programmable to 7,500 rpm max. for quick processing or for boring small diameter holes

- with 12 High-Speed Vertical Boring Spindles
  - twelve (12) spindles with up to a maximum of 35 mm (1-3/8") hole diameter (alternating positions)
  - individual spindle selection
  - vertical spindles with "quick change" system for reduction of set-up time
  - boring spindles are locked in the retraction stroke in order to reach the programmed drill depth reliably
  - for vertical drilling with a stroke of 60 mm (2-11/32")
  - arrangement of the spindles in L-Shaped Arrangement:
    - six (6) spindles in the X-direction
    - seven (7) spindles in the Y-direction
  - distance between spindles is 32 mm (1-1/4") pitch
    drill length is 70 mm (2-3/4")
    shank diameter is 10 mm
  - with clamping surface and adjusting screw
  - rotation direction: right/left-hand rotation, alternately
  - supplied without tooling
- with 4 Horizontal Boring Spindles with Grooving Saw - 0°/90° Indexing
  - for horizontal drilling in four (4) directions (X+, X-, Y+, and Y-)
  - direction of rotation: three (3) left-hand, one (1) right-hand
  - one (1) boring spindle prepared for a grooving saw blade for grooving in X- and Y-directions
  - driven by the drilling head; pneumatically swiveling from 0° to 90°

retraction stroke in Z-direction	113.5 mm (4-15/32")
drill chuck diameter	10 mm
drill length (total)	70 mm (2-3/4")
drill depth maximum	34 mm / 43 mm
maximum drill diameter	10 mm
maximum grooving saw diameter	125 mm (4-29/32")
maximum grooving saw width	6 mm (7/32")
maximum saw cutting depth	28 mm (1-3/32")
maximum rotations	7500 rpm

  - drill adapter supplied with clamping surface and adjusting screw
  - the saw mounting arbor is 30 mm diameter with four (4) M5 countersunk head screws on a 48 mm (LL) bolt circle
  - left-hand direction of rotation
  - one (1) free space for add-on of optional auxiliary router spindle
  - includes separate Z-axis module and separate dust hood
  - supplied without tools

K-Type Vacuum/Fixturing Console Table

- vacuum/fixturing table integrated in the machine base as a torsion-free construction with linear guide-ways in the longitudinal direction for manual positioning of the vacuum/fixturing consoles, with:
  - eight (8) vacuum consoles with tubeless double-circuit vacuum supply to the vacuum pods
  - sixteen (16) double-action vacuum pods, 160 mm x 115 mm, 100 mm high
  - eight (8) double-action vacuum pods, 125 mm x 75 mm, 100 mm high
  - six (6) lifting rails of low friction material (HPL execution), laterally installed at console for aid of loading and unloading large panels; lifting power of each lifting rail is 35 kg (77 lbs.)
  - eight (8) recessed longitudinal locating (pop-up) stops in the front, stroke 140 mm
  - four (4) recessed adjustable lateral locating (pop-up) stops – two (2) on left, and two (2) on right for mirror position
  - five (5) auxiliary locating (pop-up) stops at the rear of the table (fixed) for panels with extreme dimensions, with overhang at the table front edge
  - 2 x 2 plug-type connections with single-circuit compressed-air system for connecting pneumatic clamping devices
  - 2 x 2 plug-type connections with vacuum system for connecting customer-provided vacuum fixtures or clamping devices
- table designed for two (2) operation places, and includes alternate (pendulum) operation
- the dynamic space occupation enables the optimal exploitation of the available processing field of the machine in alternate operation; the machine automatically controls the maximum possible part dimension by means of the program occupation; the consoles are firmly assigned to the individual processing fields; the necessary safety range is 1260 mm; through the dynamic space occupation, it is possible to create variable asymmetrical pendulum fields
- working field and position of the stop pins are according to the technical data sheet
- patented double sealing of the vacuum pods for continuous vacuum transmission from console to vacuum pod, independent from position or alignment of the vacuum pods
- stop pins can be selected in groups
- control of the final position of the stops in order to omit collisions during processing
- six (6) swing-open stops to be manually installed for panels with surface (laminate) overhang
- workpieces with extreme dimensions must be clamped using fixtures or mechanical clamping devices
- the machine's zero point is placed at the front, left side
- workpieces are fed into the machine manually from the front side

LED Position Indication System for 1300-1600 mm Consoles

Homag Unit #7877 (8 of)

- optical LED indication system for manual positioning of vacuum clamps and consoles
- the consoles which have been programmed in WoodWOP and the vacuum pod positions are optically indicated in an LED grid of 5 mm in the X and Y directions on the table
- with the aid of intermediate distances, a position accuracy of ± 2.5 mm can be achieved

Vacuum System

Homag Unit #7074 (2 of)

- rotary slide valve vacuum pumps, approximately **108 M^3/hr (59 cfm) each**, or 216 M^3/hr total
- in case of large open surfaces on porous workpieces, an optional, more powerful vacuum system may be necessary

Pneumatic Kit for PowerClamp Clamping Element for K+A Table

Homag Unit #7260 (1 of)

- two-circuit pneumatic system for use of PowerClamp clamping elements
- automatically switching low-pressure/high-pressure control for inserting/clamping the squared timber
- pneumatic connections for one (1) PowerClamp clamping element per console
- if a second clamping row with separate control is foreseen, a second pneumatic kit is required
- production in pendulum operation is effected by activating the available foot switch
- for curved parts production, the operation is directly effected at the clamping element
- supplied without clamping elements (must be ordered separately)

Chip Conveyor Belt (Main) for BMG/../12

Homag Unit #7226 (1 of)

- removal of chips and residual pieces by means of integrated chip conveyor belt
- conveyor height for BMG - 225 mm (8-27/32")
- for chips and small waste products; removal of larger remaining pieces must be done manually by the operator
- suction hood or ascending conveyor at the end of this conveyor belt must be provided by the customer
- conveying direction to the right outer edge of the machine bed
- additional chip guiding sheets along the transport belt lead the chips and residual pieces safely onto the belt; thus, an accumulation of chips and residual pieces below the transport belt is prevented, and damage of the belt material and drive motor is avoided

Machine Technical Specifications

controlled axes	**six (6) X, Y, Z1, Z2, C, A**
axis strokes	**X-axis - 4700 mm (185-1/32")** **Y-axis - 2450 mm (96-7/16")** **Z1-axis - 435 mm (17-1/8")** **Z2-axis - 425 mm (16-23/32")** **C-axis - ±361°** **A-axis - ±100°**
axis rapid traverse rate	**X-axis - 35 M/min (1378 in./min.)** **Y-axis - 60 M/min (2362 in./min.)** **Z-axes - 25 M/min (984 in./min.)**
table size	**4200 mm x 1340 mm (165-11/32" x 52-3/4")**
shank size	**25 mm (1") maximum**
tooling length (from spindle nose)	**230 mm (9-1/32") – for 20 mm dia. tools** **165 mm (6-1/2") – for 80 mm dia. tools** **A dim. = 50 mm (1-31/32") – for 350 mm dia. saw blade**
cutter diameter	**max. 180 mm (7-3/32") for routing tools** **max. 350 mm (13-3/4") for saw blade (with A dim. = 50 mm)**
tool holder* - HSK-63F	**one (1) right-hand**
collet* - RDO-35	**one (1) 3/4"**
main spindle power	**10 kW (13.4 hp) – *S1 rated*** **12 kW (16 hp) – *S6 rated***
spindle speed (variable)	**1,500 to 24,000 rpm**
spindle speed control	**one (1) solid-state frequency inverter with transmitter**
boring unit adapter (size/type)	**10 mm (straight)**
boring unit drill length	**70 mm (2-3/4")**
boring unit power	**2.2 kW (3 hp)**
boring unit speed	**7,500 rpm maximum**

* *Combination of tool holder and collet balanced to G2.5 at 24,000 rpm.*

Panel Specifications

maximum workpiece length (single operation) with spindle in the vertical position for all router processing units or with spindle in the horizontal position, with panel aligned with side stop pins	**4200 mm (165-11/32")**
maximum workpiece length (alternating or pendulum operation) with spindle in the vertical position and tooling dia. of 25 mm (1"), with panel aligned with side stop pins	**1645 mm (64-3/4")** *2615 mm (102-15/16") max. / 500 mm (19-21/32") min. with dynamic space occupation*
maximum workpiece length (alternating or pendulum operation) with spindle in the vertical position for all router processing units or with spindle in the horizontal position, with panel aligned with side stop pins	**1470 mm (57-7/8")** *2440 mm (96-1/16") max. / 500 mm (19-21/32") min. with dynamic space occupation*
maximum workpiece width with spindle in the vertical position and tooling dia. of 25 mm (1"), using standard front stop pins	**1050 mm (41-5/16")**
maximum workpiece width with spindle in the vertical position for all router processing units or with spindle in the horizontal position, using standard front stop pins	**950 mm (37-3/8")**
maximum workpiece width with spindle in the vertical position and tooling dia. of 25 mm (1"), using rear stop pins, and with 150 mm panel overhang at front of consoles	**1550 mm (61")**
maximum workpiece width with spindle in the horizontal position, using rear stop pins, and tool (& holder) length of 150 mm maximum	**1400 mm (55-3/32")**
maximum workpiece width with full coverage of the drilling head, using the rear stop pins	**1050 mm (41-5/16")**
maximum workpiece thickness to the consoles, including any vacuum pod or optional clamping units or customer-provided-fixtures, with tool (& holder) length of 230 mm max.	**270 mm (10-5/8")**
maximum workpiece thickness to the standard 100 mm vacuum pods, with tool (& holder) length of 230 mm max.	**170 mm (6-11/16")**
maximum workpiece thickness with standard vacuum pods, without restriction for units & suction	**60 mm (2-11/32")**
minimum workpiece size	**depends on clamping devices, workpiece surface and contour**
working height to lower edge of workpiece	**960 mm (37-25/32")**

Facility Requirements of Processing Center

floor	**10" minimum concrete with rebar reinforcements** *(Note: A **single, level pad** is required for maintaining machine levelness over time.)*
compressed air	**103 psi and 18 cfm**
dust extraction for working spindle	**volume - approx. 2914 cfm** **air velocity - 92 ft/sec** **negative air pressure in - 7.87 in/WS** **outlet diameter - 250 mm (9.85")** *(Note: Please contact your dust extraction supplier to determine exact requirements for your facility.)*
machine power*	**voltage: 480 volt; 3-phase, 4-wire grounded, 60 cycle** **amps required: 35 nominal (50 amp fuse)**

** Note: Customer voltage supplied must not fluctuate in excess of ± 5% of its stated value, otherwise a voltage stabilizer will need to be installed at the customers expense.*

PowerControl PC86 PowerTouch - Hardware

- operating panel with 21.5" full HD multi-touch display in widescreen format
- PLC control according to International Standard IEC 61131
- modern industrial PC with Windows® 7 operating system
- back-up manager and storage medium for comfortable data back-up
- USB connection
- PC keyboard: English (#6201)
- hand operation for run-in mode
- digital drive technology
- decentral, digital field bus system
- network connection Ethernet via additional network card & software. Within the machine or machine line, Homag uses the data networks with the identification 192.2.x.x or 192.168.1.x. If the address range is also used in the customer network, a special project planning has to be effected and, if necessary, additional hardware has to be provided by the customer
- uninterruptible power supply (UPS) protects the computer from damage in case of mains interruption, overloads, and short circuit

PowerControl PC86 PowerTouch - Software

- standardized Homag Group operating surface – PowerTouch
- ergonomic touch operation with gestures such as zooming, scrolling, and swiping
- simple navigation for standardized and intuitive operation of the machine
- intelligent display of readiness of production by light function
- Windows® 7 and virus protection
- control for continuous line operation in all axes and parallel operations through multi-channel technology
- look-ahead function, to achieve optimum feed speed at transition points
- dynamic look-ahead control for accurate contours
- WoodWOP 7 for graphic and interactive creation of CNC programs; great program library with example programs for contours, carcass furniture, worktops, doors, etc. – available for free download from www.homag.com
- inclusive CAD Plug-In for creating CAD contours and for the import of existing CAD drawings in DXF format
- a graphic tool database: a software kit for assistance of any Homag units delivered with the machine; consisting of WoodWOP processing macros, NC sub programs, and administration of unit data
- production list administration
- CNC operation
- graphic representation of clamping locations

MMR Basic

Homag Unit #0780 (1 of)

- integrated counters and predefined maintenance intervals always inform the machine operator about necessary maintenance works in due time
- through the need-based maintenance, the availability of the machine increases and the downtimes of the machine is significantly reduced
- besides the maintenance data, the amount of produced workpieces and the total run time of the machine is gathered
- therefore, information about the productivity is constantly available

Visualization of Main Spindle Vibration Data

Homag Unit #6376 (1 of)

- in order to recognize critical vibrations and oscillation during the process
- indication of a warning and disengagement limit
- enables control of the tool quality
- service costs are reduced
- enables higher operating security
- available only in the English, German, and French languages

MMR Professional for Individual Machines

Homag Unit #6367 (1 of)

- software module for automatic capturing of machine states and operating figures via timer and event counter integrated in the machine control
- possibility of manual explanation of machine waiting states
- maintenance messages on each machine indicate the necessary service duties
- logging and analysis of shifts
- evaluation of the operating figures as day and shift values and via the machine's operating hours counters
- graphical evaluation of the machine states in intervals in form of Pareto, Gantt, and line diagrams
- down-time analysis using the machine error messages
- possibility of connecting to MMR Office for central evaluation of the data in

IPC PowerPack

Homag Unit #6349 (1 of)

- upgrade of the machine's PC from a single processor to a dual processor
- for the processing of very large programs, e.g., in the case of comprehensive nesting programming or window machines with dynamic place optimization, waiting times up to several minutes can occur; with IPC PowerPack, the waiting times can be reduced up to 50%
- application examples"
  - very large WoodWOP programs (window and nesting programs, etc.)
  - additional applications, e.g., Collision Control, Window Interface, etc.
  - external software on the machine's computer
  - compulsorily prescribed in case of the use of an external software kit (e.g., NC-Hops, etc.)

Documentation and Control Texts: English

Homag Unit #8322 (1 of)

- production instructions consisting of operator's manual and maintenance guidelines on DIN A4 paper and CD-ROM
- on-screen operator control texts for machine operators for the PC85
- spare parts designations on CD-ROM
- available for delivery at the same time as machine's delivery

WoodScout Diagnosis System for BMG300/KAL300

Homag Unit #6382 (1 of)

- a software kit for the graphical diagnosis of the machine's condition
- enables systematic trouble-shooting, which could lead to a considerable increase in the factory's productivity
- graphical PLC diagnosis in different levels
- a "learning" system, due to the possibility of entering the reasons of a fault, and then the corrective action(s) to remove them
- optimum support for the elimination of machine down-time

TeleServiceNet-Soft

- remote diagnosis via the internet
- invoicing according to separate TeleService contracts
- access to the internet is to be provided by the customer
- access to only one (1) machine PC is possible

Technical Phone Support and Remote Diagnostics

- provided with the purchase of this machine for the period of two (2) years:
  - 24-hour technical phone support
  - Machine embedded software (e.g., WoodWOP) phone support - 8:00 am to 5:30 pm
  - Remote/WebEx/phone diagnostics - 8:00 am to 5:30 pm
- additional Technical Support packages or contracts are optionally available

WoodWOP 7 Software Package for BOF/BMG (Single-Seat License)

Homag Unit #6620 (1 of)

- CNC programs for the PC86 control on an Office PC can be created and graphically simulated with this software kit; contains the following functions:

WoodWOP 7:

- user-friendly, completely menu-guided operating interface
- 3D view of the panel, processes, consoles, and clamping devices
- graphic indication of arbitrary working levels
- contour creation by integrated contour programming
- dimension are input as absolute values or as variables
- interactive setting of drillings and contour lines with the mouse
- includes automatic suction suggestion with 3D view
- includes WoodType for engraving texts
- includes "Mosaic", a file explorer for quick and simple administration of the WoodWOP programs
- includes software for reducing remaining surfaces to small pieces, for automatic recognition of the remaining surfaces between a panel and the raw panel and generation of the routing paths

Post Processor and Tool Data Base Editor:

- includes one (1) post processor for creating of programs in DIN 66025 for one (1) machine at one (1) production location
- administration of tools and tool data
- simple creation of own profile tools, including a 3D tool generator

DXF Interface:

- includes WoodWOP DXF Import Basic Interface for the transfer of drawings from CAD systems in DXF format for further processing
- special drawing guidelines (e.g., layer occupation) must be adhered to

WoodWOP 7 Software Package for BOF/BMG (continued)

System Requirements (Office PC Provided by the Customer):

- operating system: Windows® 7 or 8
- processor: Intel, AMD, or similar Dual-Core processor (Quad-Core recommended) in the range of 2.5 to 3 GHz minimum
- main memory: at least 2 GB RAM available for WoodWOP; additional required for system functions
- graphics card: minimum of OpenGL 2.1 support with at least 1 GB of memory (e.g., NVidia)
- when using Intel Onboard graphics cards, at least GMA X4500 or better Intel HD graphics

Additional Notes:

- license is valid for a single installation on one (1) Office PC
- virtual servers and terminal servers are not supported
- on an Office PC, all software products are protected by a single-seat license or a floating license; an installation with different types of licenses is technically not possible
- the installation of the software and the integration of the machine into the customer network is effected by the customer; assistance is available optionally from Stiles Technical Support or Homag Software Support for an additional cost
- the product must be activated by contacting Stiles Technical Support by phone at 616-698-6615 following the installation

WoodWOP CAD/CAM Interface Standard

Homag Unit #6661 (1 of)

- software module (universal macro) **required** for data take-over of processing paths as NC code from one of the following CAD/CAM systems: AlphaCAM, Compass staircase software, TopSolid, Wegemeyer, EasyWOOD (DDX), CAM MAX (imos), or NC-Hops
- when using any other CAD/CAM software package, the interface must be newly developed and tested (Homag Unit #6662 is then required)
- the data must be issued by the CAD/CAM system in the Homag format
- for this, a corresponding postprocessor from the software house must be purchased by the customer and installed in the CAD/CAM system
- the software house is responsible for the functional scope of the CAD/CAM software, the postprocessor, and the quality of the data
- set-up of the CAD/CAM software is effected at the customer's facility after acceptance of the machine
- if a Homag technician is necessary for set-up of the CAD/CAM software, this will be invoiced for time and expenses at the normal Homag service rates

WoodWOP CAD/CAM Interface Standard (continued)

- Homag must receive the information about the software supplier at least eight (8) weeks before completion of the machine
- the machine is run-in at Homag with a 5-axis test program defined by Homag drawing #3-061-16-5110 for machines with a Drive5+/Drive5C+ router spindle or drawing #3-058-16-7281 for machine with a Drive5C router spindle
- requirements of the customer: transfer is effected by the CAD/CAM system

Electric Equipment

- machine electrical components according to U.L. specification
- separate switch cabinet on rollers for positioning on the right or left side in front of the processing table (right side is standard)
- operation terminal is integrated in the switch cabinet
- installed according to European Standard EN 60204
- permissible environmental temperature is 50°F to 104°F; if temperature will exceed the 104°F maximum, an optional air conditioner for the switch cabinet must be purchased by the customer (Homag #6171)
- permissible environmental humidity is 30% to 90%; if humidity will exceed the 90% maximum, an optional switch cabinet heater must be purchased by the customer (Homag #6173)
- FI-safety switching only permitted in connection with an all-mains sensitive/-selective FI-safety switch; if the performance of this device is not sufficient, a differential current monitor is recommended to be provided by the customer

Air Conditioning Unit for Switch Cabinet for BMG 300/FKF 200

Homag Unit #6171 (1 of)

- this unit will be necessary if the environmental temperature at the machine exceeds 40° C (104° F)

Surge Suppressors

Studies have shown that only 20% of all voltage surges are generated by sources outside a given facility (lightning strikes, crossed electric wires, etc.), while 80% of all transient voltage spikes originate inside a given facility from the normal operation of equipment, often causing damage to equipment's electronic components. Surge suppressors will prevent voltage surges, spikes, and electrical noise from damaging the sensitive electronic components of your equipment. Note: surge suppressors are not to be used as voltage regulators.

- Surge suppressor for 480 V, 3 Phase equipment (#70-650-00148)

Note that the surge suppressor does not include installation and is shipped F.O.B., Place of Inventory.

Basic Equipment

- rigid processing center in heavy, stress-relieved steel construction with a high-precision linear guide systems with dust protection
- precision, backlash-free rack and pinion for X- and Y-axis
- re-circulating ball screw and digital AC servo motors for positioning of the Z-axes
- Siemens drive technology with digital control methods for high dynamics and precise contours
- single-sided working unit beam with linear THK guide system, mounted on the right side of the gantry crossbar
- unit beam prepared for two (2) separate Z-axes (Z1, Z2); enables rapid and alternate use of the main router spindle and the drilling unit
- the traveling way of the Z1-axis = 435 mm; enables the usage of long tools, or in case of tall panels or parts
- separate dust collection hoods for router spindle and drilling unit with central connection port for connection to customer's dust collection system
- **automatic centralized lubrication** for all drives and linear guides
- paint: grey lacquer RDS 240 80 05
- connecting load for dust collection, pneumatic, compressed air, and electricity are to be taken from the separate installation plan drawing
- customer's floor conditions must correspond to the foundation plan

Safety Features

- safety surveillance with pressure-sensitive safety cushions (according to EN1760-3) for an effective protection of the operating staff
- accessibility of the working zones:
  - the machine has two working fields; selectable empty-running modes permit that the individual fields can be run empty
  - for loading and unloading panels with maximum possible processing length in individual operation, the panel must be fed under the safety housing
- additional barriers will be required to be purchased optionally if the customer does not have the facilities to protect the other two (2) open sides of machine
- if the customer explicitly desires that the machine is delivered and installed without safety barriers, the customer is obliged to guarantee the safety at the corresponding machine sides by proper safety measures; this also applies for later modifications, especially in the case of later modifications at the site of installation, in the case of installation of the machine at another site, or in the case of the resale of the machine
- the customer waives guarantee and damage compensation rights concerning the fact if the machine was delivered and installed without full safety barriers; the customer is obliged to indemnify the deliverer against any claims of third parties which might be raised due to this circumstance
- EC conformity (CE) according to the currently valid Machinery Directive for individual machines in operation

Safety Features (continued)

- wood dust protection TRK-value maximum 2 mg/m^3 subject to the required extraction capacity to be provided by the customer as indicated
- condition of our warranty/product liability is the unrestricted observance of the original production instructions delivered along with the machine, including the safety instructions

Protective Grid - Lateral Wall Right-Hand with Door

Homag Unit #0593 (1 of)

- includes gridded panels on supports for securing to the floor
- height is 1800 mm (70-7/8")
- includes one (1) safety (interlocked) door

Protective Grid - Lateral Wall Left-Hand

Homag Unit #7107 (1 of)

- includes gridded panels on supports for securing to the floor
- height is 1800 mm (70-7/8")

Protective Grid - Back Wall B../30-42

Homag Unit #7108 (1 of)

- includes gridded panels on supports for securing to the floor
- height is 1800 mm (70-7/8")

Note: It is not allowed to run this machine without full safety barriers.

Homag Quality Pack

- includes energy guiding chains (cable trail) in X and Y direction in closed execution in order to prevent cable damage by residual pieces, chips, etc.
- linear guide-ways in X and Y directions are covered with a steel band in order to avoid dirt intrusion
- TÜV certified according to DIN EN ISO 9001:2000
- energy-efficient drives according to the EU no. 640/2009
- the machine is run-in and delivered using a standard Homag program
- energy saving functions:
  - ECO Plus button for start of the stand-by mode, which can be activated during the last operation; after program end the button starts the following:
    - the drives stop running
    - the vacuum pumps are switched off
  - when machine is not producing parts, the control voltage is disconnected by means of a preset time
  - when no panel is clamped, the vacuum pump is disconnected by means of a preset time
  - gate control for reduction of the necessary dust collection energy by automatic switching between router spindle and boring head