PRODUCTION CELL

G.1 PROFI BOF612/34/13/2K

CNC-controlled gantry processing centre for production of panels made of wood or material similar to wood.

1.BASIC MACHINE:

stable steel frame construction in gantry execution

- lacquering grey RDS 240 80 05
- linear guiding systems with dust protection
- rack and pinion drives for X and Y axis
- recirculating ball screws for Z-axis
- maintenance- free drives with digital AC servo motors for exact contours
- 2 unit beams single-sided mounted on the back side of the gantry traverse
- unit beams are mechanically coupled with a synchronous distance of:
  - matrix table = 840 mm
  - console table = 900 mm
- each unit beam is prepared for two separate Z-axes (Z1, Z2). Enables rapid and alternate use of the boring head and main spindle
- travelling way Z-axis = 600 mm
  enables use of long tools also in case of high panels
- travelling speeds:
  - vector speed = 84 m/min
  - X and Y axis = 60 m/min
  - Z-axis = 30 m/min
- separate suction hood for trimming spindle and boring head with central connecting piece for connection through the customer
- central lubrication automatic for a secure lubrication of all drives and linear guidances
- pneumatic connection R 1/2 inch, 7 bar
- connecting loads for suction, pneumatic, compressed air and electricity are to be taken from the separate installation plan
- floor conditions must correspond to the foundation plan

2. PANEL PARAMETERS:

Max. panel lengths in case of 1 spindle-operation:

BOF 612/ K	all units: individ.	all units: Pendulum	tool diam. 25 mm: individ.	tool diam. 25 mm: Pendulum
	3470mm	1700 mm	--------	--------

- Max. panel lengths in case of 2 spindle-operation:

BOF 612/ K	synchronous processing 4-fold occupation
	700 mm

- panel width max:

BOF 612/	all units	trimming processing tool diam. 25 mm
34/13	1300 mm	1550 mm

- panel thickness:
  - max. 300 mm incl. clamping means
  - up to max. 60 mm with standard clamping means without any restriction for units and suction

- the indicated panel dimensions are not to be equated with the max. possible processing sizes per unit, see separate tables
- the min. panel size depends on: clamping devices, panel surface and contour

3. CLAMPING TABLE:

- CONSOLE TABLE: K
  Clamping table with consoles and tubeless vacuum guidance for flexible positioning of an arbitrary number of vacuum clamps

BOF 612/	consoles incl. stop in front	lifting rails
34/131	8 pcs. (4 per table)	4 pcs.

- console length 1490 mm
- stroke of stop pins: 140 mm

- lateral stops:

BOF	table 1 (place 1)	table 2 (place 2)
612/ 34/13	2 x 2 pcs.	2 x 2 pcs.

BOF	vacuum clamps 160x115x100mm	vacuum clamps 125x75x100 mm
612 34/131	16 pcs.	8 pcs.

- pneumatic connections for clamping elements:
  - 2 per processing place
- vacuum connections for templates:
  - 2 per processing place

- 2 displaceable console tables
- 1 processing place per table
- for charging and unloading, the table moves forward out of the processing area of the machine
- working height 950 mm lower edge of panel
- linear guidances for exact and torsion-resistant adjustment of the clamping consoles
- table construction with a lot of non-obstructed space below the consoles for removal of chips and residual pieces
- control of the final position of the stops in order to omit collisions during processing
- vacuum clamps 100 mm high, enable also processing of the panel lower side
- patented double sealing of the vacuum clamps for a continuous vacuum transmission from the console to the vacuum clamp independent from the position or alignment of the vacuum clamps
- pendulum processing in order to increase productivity
- working zone and position of the stop pins accord. to technical data sheet
- extreme panel dimensions are to be clamped with templates or with mechanical panel

clamping means
machine zero point is on the left side in front
- panels are put on manually from the front side

4.VACUUM SYSTEM:

- vacuum system with liquid ring pump for a low-noise and wear-resistant operation:

BOF 612/	liquid ring pump	corresponds the output of a rotary slide-valve pump
34/13	2x 66m3/h	2x 100 m3/h
34/34	2x 100m3/h	2x 140 m3/h

- for processings with increased vacuum demand, upgraded to a reinforced vacuum system.

2 per machine Elmo-Reitschle 2BL 2341 liquid ring vacuum pumps, 15hp each 340 cu meters/hr

5.power control PC85:

Modern control system based on a Windows PC

Hardware:

- PLC control accord. to International Standard IEC 61131
- operating system Windows XP (US) embedded
- industrial PC with at least 2 GHz and 512 MByte RAM
- TFT flat screen 17 inch
- PC keyboard and mouse
- 1 hard disk fixed
- 1 hard disk for data securing
- 1:1 data securing (cloning)
- USB connection
- hand control for set-up mode
- digital drive technology via light conductor for trouble-free operation independent from electromagnetic influences
- decentral, digital field bus system
- virus protection
- network connection ETHERNET via additional card and network software

- UPS (uninterruptible power supply), protects the computer from damages in case of mains interrruption, overload and short circuit. In case of net disruption the computer is controlled shut down after 1 minute and data loss omitted

Software:
- PC85 CNC cernel with:
  - control for continuous line operation in all axes and parallel operations through multiple-channel technology
  - look-ahead function for optimum speeds at the transition points
  - dynamic look-ahead-control for accurate contours
  - intelligent process optimization (IPO) for efficient use of the processing units in case of multi-channel machines
- PC85 software kit with grafic operating programs:
  - woodWOP for grafic and interactive creation of CNC-programs. Great program library with example programs for contours, carcase furniture, worktops, doors etc., incl. post processor
  - grafic tool data base
  - production list administration
  - CNC operation
  - grafic presentation of the clamping places
  - error message in plain text
  - diagnostic system woodScout (option)
  - Schuler MDE basic for machine data acquisition
  - woodDesign for office PC:
    software with modern 3D surface for the interactive creation of carcase furniture with output of woodWOP programs with components for the individual processing steps, which are executed one after the other

Remote diagnosis via modem:
- invoicing accord. to separate teleservice contract
- telephone line (analogue) is to be installed on part of the customer

- Interferences in the machine control by non- authorised persons release HOMAG from any warranty commitments and product liability.

6. ELECTRIC EQUIPMENT:
- operating voltage 400 volt, 50/60 Hz
- separate switch cabinet for a positioning on the right side in front of the processing table
- operation terminal 180° swivelling, installed on the switch cabinet
- installed accord. to European Standard EN 60204
- country- specific adaptation of operating voltage by transformer
- FI- safety switching only permitted in connection with an all-mains sensitive/- selective FI- safety switch; if the perfor- mance of this device is not sufficient, a differential current monitor is recommended to be provided by the customer
- prescibed environmental temperature: + 10 degrees up to + 40 degrees Celsius

7. SAFETY AND PROTECTION FACILITIES:
- safety surveillance with safety mats for an effective protection of the operating staff without any restriction of the travelling speeds
- safety barriers of the right machine side with safety door
- further requested safety facilities such as second side wall and back wall must additionally be sold in case of need
- CE-plate in accordance with EC machine Directive 98/37/EG, Appendix IA for machines

of the EC member countries
- attention: it is not allowed to run the machine without all-around safety barriers
- wood dust protection TRK max. 2 mg/m3, subject to the fact that the extraction capacity to be provided by the customer is in compliance with the extraction plan

8. PROGRAMMING ACCORD. TO CNC DRAWING:
- programming and run-in for 2 panels
- condition are CNC-dimensioned drawings, tools and test material (edges and boards) on part of the customer
- a work-piece must be processable in one clamping step
- run-in of further panels is optionally possible

9. HOMAG QUALITY PACK:
- energy guiding chains (cable trail) in Z direction in closed execution in order to prevent cable damages by residual pieces, chips and so on
- TUv certificate accord. to DIN EN ISO 9001:2000

10. DOCUMENTATION:
- documentation as CD-ROM
- operation and maintenance manual also in printed form

Modification
1. standard vacuum cups 160 x 115 mm supplied with lifting pins (sea)

2. operating voltage 600 volt, 60 hz.

Number : 7021 1 x left
PROTECTIVE ENCLOSURE LEFT FOR B600/ ../13

Number : 7023 1 x left
PROTECT. ENCLOSURE REAR WALL F. B600/34

Number : 7077 2 x left
REINFORCED VACUUM PUMP 250 M3/H
- instead of the standard vacuum pump
- rotary slide-valve vacuum pump, type: Becker

- for improving the pump's total capacity
- for large open-pore work-pieces or multiple processing of thin open-pore boards (e.g. MDF)

Number : 7206 4 x left
LIFTING RAIL FOR CONSOLE TABLE SLIDEWAY LINING
- Lifting rail with plastic slide-way lining laterally installed on the console
- Lifting device for 100 mm free space below the work-piece support
- Total elevation approx. 105 mm
- Lifting power of each lifting rail 35 kg

Number : 7209 2 x left
CONSOLE FOR ADJUSTABLE LATERAL STOP
Aluminum profile with grooves for mounting of adjustable lateral stop pins.
Adjusting range see Technical Data. Without stop pins.
The position at the consoles must be appointed according to Technical Data.

Number : 7255 8 x left
MAXIFLEX SYSTEM BASE PLATE FOR K TABLE
- for being put on the console table for flexible positioning of MaxiFlex vacuum clamps
- base plate 200x200 mm
- incl. 3 sealing magnets
- system height 100 mm

Number : 7256 16 x left
VACCUM CLAMP MAXIFLEX 80X80 MM FOR K TABLE
Modification
- vacuum cups fitted with lifting pins (sea)

Number : 7301 10 x left
LATERAL AND LONGITUDINAL STOP PINS
individual call, control of final position with electro-mechanic control, elevation 140 mm The position on the clamping table has to be appointed according to Technical Data.

Number 7307 1 x left
4 OPERATION PLACES FOR BXXX
- Extension for 2 x 2 clamping positions,
- Separate vacuum systems, individually controlled
- Including 2 additional foot switches for vacuum activation and adaptation of the PLC
- Vaccum clamps, stop pins, if necessary

consoles are to be sold separately
Execution is machine- specific, see Technical Data

Number : 7313 2 x left
ADDITIONAL CONNECTIONS FOR CLAMPING DEVICES
2 x 4 controlled compressed air connections for mechanical clamping devices
Operation via existing foot switch.

- for vacuum connection above table working with manual clamping jigs. (sea)

Number : 7395 1 x left
REMOVAL OF CHIPS AND RESIDUAL PIECES FOR B600+700/32+42
- machine- integrated system consisting of sliders, with chip conveyor behind the processing tables for automatic removal of chips and wasters
- removal of bigger residual pieces is effected manually
- suction hood or ascending conveyor at the end of the belt to be provided by the customer
- conveying direction to the right up to the outer edge of the machine bed

Note: conveying direction to the left

Number 1 x left
MACHINE BED EXTENSION
Note
- machine bed extension for working with TBP 370 feeding system. (sea)

Number : 7440 2 x left
MAIN SPINDLE 15KW

- with interface for HSK F63 - DIN 69893
- for precise chuck of tools and units for high processing forces
- three-phase asynchronous motor with current control for a high torque already in case of low numbers of revolution, e.g. when using sanding units
- liquid cooling with temperature surveillance in order to avoid thermal damages and to increase service life
- spindle with hybrid bearing for highest precision and long service life in case of high numbers of revolutions
  - 15 KW for S6 operation (cyclical power output in practical operation)
  - 12 KW for S1 operation (permanent operation)
- frequency converter for electronic regulation of the number of revolutions from 1000 - 24000 rpm
- total torque from 1000 - 12000 rpm
- total nominal power from 12000 rpm
- tool weight max. 6 kg incl. chuck
- tool length max. 200 mm from lower edge of motor spindle
- tool diameter:
  max. 180 mm for trimming tools
  max. 200 mm for sanding tools
- vibration sensor for surveillance of the spindle during processing
  - protects the spindle from damages through tool imbalance or improper use
  - when the threshold value is exceeded, the machine stops and an error message occurs
- automatic feed reduction when the spindle speed falls
- without tool chuck and tooling

Number : 7441 2 x left

C-AXIS WITH UNIT INTERFACE FOR PROF!

- for connection of processing units
- including interface pneumatic and swivelling drive C-axis with torque taking
- 3-point support system for a definite force transmission in case of high hogging forces drive for all units with swivelling axis
- unlimited swivelling range
- tubeless compressed air supply e.g. for traced units

Number : 7448 2 x left

PLATE-TYPE TOOL CHANGER 10 TOOLS D=120

- for tools and units with HSK F63
- plate-type tool changer for 10 tool places/ unit places, ride-along with the main spindle
- tool weight max. 6 kg incl. chuck for units max. 10 kg
- the following tool and unit equipments are possible:
  - 10 x diameter max. 120 mm or
    5 x diameter max. 180 mm and
    5 x diameter max. 70 mm
- tool diameter max. 190 mm
- not appropriate for Easy-Edge
- during equipment with units, restrictions occur on the adjacent places

Number : 7474 2 x left

BORING HEAD 13 SPINDLES: V9 / H4

- 1 motor 1,5 kW, frequency controlled
- number of revolutions max. 7500 rpm can be selected by program for quick processing also in case of small diameters

9 VERTICAL SPINDLES HIGH-SPEED:

- spindles can individually be called up
- spindle retraction stroke 60 mm
- drill spindles locked in the retraction

stroke in order to obtain the drill depth in any case
- arrangement of the spindles in L form
- in case of cantilever machines:
  - 6 drill spindles X direction
  - 4 drill spindles Y direction
- in case of gantry machines:
  - 4 boring spindles X direction
  - 6 boring spindles Y direction
- spindle distance 32 mm
- drill diameter max. 35 mm
- total length of drill 70 mm
- shaft diameter 10 mm
- with clamping surface and adjusting screw
- direction of rotation: right, left alternately
- without tools

4 HORIZONTAL SPINDLES:
- 1 x 2 drill spindles X-direction
- 1 x 2 drill spindles Y-direction
- spindle retraction stroke 60 mm
- drill diameter: max. 10 mm
- total length of drill 70 mm
- shaft diameter 10 mm
- with clamping surface and adjusting screw
- direction of rotation: right, left alternately
- incl. suction
- no add-on units possible
- without tools

Number 7495 2 x left

BLOWING-OFF NOZZLES WORK-PIECE SURFACE FOR MAIN SPINDLE
- for improvement of the suction capacity when trimming in the work-piece surface, e.g. Nesting
- 3 manually adjustable blowing nozzles, circularly arranged, individually selectable
- volume per nozzle max. 300 NL/min in case of permanent operation

- ATTENTION: The compressed air consumption of the whole plant increases when using the blowing-off nozzle

Number : 7523 2 x left
BORING/TRIMMING UNIT 4 SPNDLS F. TOOL-CHANGER
- For automatic change-over into the main spindle
- For horizontal boring and simple trimming works such as grooving, oblong holes, notching and trimming of edges
- Four-sided spindle exit
- Collet chuck ER25 DIN 6499 up to a shaft diameter of max. 16 mm
- tool projection max. 55 mm
- Rotations max. 13500 rpm
- Standard collet chuck diameter 10 mm
- Unlimited swivelling via C-axis
- Without tools

Number : 7568 1 x left
FLEX-5 SAWING, TRIMMING, BORING UNIT FOR TOOL CHANGER
- for automatic exchange into the main spindle
- for sawing, trimming or boring works
- automatically swivelling unit in the A-axis
- the adjustment of the A-axis is effected via C-axis
- positioning is effected in idle position, not during operation
- swivelling range A-axis 0-100 degrees for shaft tools
- swivelling range A-axis 0- 90 degrees for sawing blades
- in case of trimming works the max. hogging cross section is approx. 150 mm2 for derived timber products
- revolutions max. 12000 rpm

- tool interfaces:
- 1 collet chuck ER 25 DIN 6499 for shaft tools

up to 16 mm diameter
- standard collet chuck diam. 10 mm
- effective tool length max. 65 mm for tools with a diam. of up to 20 mm
- hogging cross section max. approx. 150 mm2 in case of 5 m/min feed
- collet flange 40 mm diam. for saw blades
- 8 countersunk head screws MS
- limb diameter 52 mm right-hand direction
- saw blade diameter max. 240 mm, width max. 6 mm (basic blade 5 mm)
  hogging cross section max. approx. 120 mm2 in case of 10 m/min feed
- without tools

Number : 7569 2 x left
EXTENSION C-AXIS FOR FLEX-5 UNIT
- coupling element for C-axis
- for automatic exchange of a Flex-5 unit

Number : 7582 2 x left
CUTTER COLLET 0=30/105 WITH CHIP CONDUCTION
- for mounting trimming tools with borings
- holding-arbor length 105 mm, D=30 mm
- with chip-guiding plate for optimizing the chip removal in case of considerable hogging action on the panel outer contour
- chip-guiding plate controlled via C-axis
- requested for each tool
- space requirement in the tool changer 140 mm diameter
- direction of rotation of the tool is to be determined:
- tool interface must be determined:
  - direction of rotation right-hand or left-hand rotation
  - system with borings and driving pins or
  - system with keynut and freather key
  - execution according to technical data sheet
- number of revolutions max. 11000 rpm

Modification
- tooling according to Gladu drawing no. 100204P01, with modified chip guiding plate. (sea)

Number : 7877 8 x left
LED POSITION INDICATION SYSTEM FOR CONSOLE 1300-1600 MM
- optical LED indication system for manual positioning of vacuum clamps and consoles
- the consoles and vaccum clamp positions which have been programmed in woodWOP are optically indicated in a LED grid of 5 mm in X and Y direction on the table
- with the aid of intermediate distances, a position accuracy of +/- 2,5 mm can be achieved

Number : 7888 1 x left
PLC COUPLING FOR FEEDER
- for stationary cells with feeder without data coupling
- application: automatic feeding of a processing centre in the serial production
- there is a signal exchange between feeder and CNC processing centre
- by means of potential-free contacts the coordinated putting on and unloading of workpieces by the feeder is controlled on all places of the machine table
- the operation of the plant is effected separately at the processing centre as well as at the feeder
- technical clarification and further software is required for data coupling (central operation)

Attention:
if an automatic feeding device respect. manual feeder is used, the following points have to be especially considered:
·cleaning the panels before stacks are formed

- rest pieces and chips on the operating table
- processing times
- supervision respect. quality control in particular in the edge banding and finishing process

Number : 6172 1 x left
COOLING UNIT FOR SWITCH CABINET
will be necessary if the environmental temperature at the machine is higher than 35 degrees or machines with servo drives and frequency-adjusted drives.

Service: 6373 1 time
SCHULER-MDE PROFESSIONAL
collecting and evaluating machine states via time meter and event meter
- per announced shift the following information is automatically seized:
  - number of pieces
  - ACTUAL working time (on-time of the machine)
  - production time
  - set-up time
  - malfunction period
  - interruption time
- the reason of an interuptance, as for example a tool change, can be detected by manual input and thus be evaluated
- the evaluation of the data is effected graphically at the operating monitor or via extensive protocol lists
- coupling to schuler-MOS (evaluation system of several machines) is possible
- the necessary service works which meet customer's requests are indicated by maintenance hints

Service: 63831 time DIAGNOSIS SYSTEM WOODSCOUT

Software kit for the graphical diagnosis of the machine condition. With the woodScout system it is possible to systematically eliminate troubles, which leads to a considerable increase of the plant availability.

- Graphical PLC diagnosis in different levels
- Learning system due to the possibility of entering the reasons for disturbances and the measures to eliminate them
- Optimum support for the elimination of machine down-times

Service: 8322 1 time

DOCUMENTATION AND CONTROL TEXTS: ENGLISH

Scope of delivery:

1. production instructions consisting of operator's manual and maintenance guidelines on DIN A4 paper and CD-ROM
2. on-screen operator control texts for machine operators, for NC21, PC22, PC52, PC83 and PC85
3. spare parts designations on CD-ROM

- delivery time: Together with delivery of the machine

G.1 PROFI TBP370/100/G

CNC-controlled feeding gantry for feeding HOMAG processing centres with panels.

1. BASIC MACHINE:

- feeding gantry in stable steel construction
- lacquering grey RDS 240 80 05
- linear guidance systems with dust protection
- drives via toothed belt for X and z axis
- maintenance-free drives with digital AC servo motors
- travelling ways:

TBP370/!	x-axis	Z-axis	span width
100	8500 mm	1200 mm	10220 mm

- travelling speeds:
  - X-axis = 90 m/min
  - z-axis = 45 m/min
- the feeding time is at least 35 sec. per panel. It extends depending on feeder length, arrangement of the stacking places and additional functions such as blowing-off the panels, separating panels which stick together etc.
- the feeding time is the time for removing and putting down the finished part and taking and putting on the raw part
- automatic central lubrication for a secure lubrication of all drives and linear guidances
- work-piece handling unit with vacuum clamps for mounting and adjusting the work-pieces on the working table
- the vacuum is created by means of compressed air (Venturi principle) for gripping the panels
- compressed-air demand of the plant depending on the equipment of the suction cup traverse

2. PANEL PARAMETERS:

- Panel dimensions for standard execution:
  - min. 400 x 400 x 16 mm (X,Y,Z)

- max. 2000 x 1600 x 36 mm (X,Y,Z)
  - max. 2650 x 1600 x 36 mm (X,Y,Z) when the base unit is extended, as option
- the panel dimensions must be equalized with those of the processing centre

- Raw parts:
  - the panel must show 2 sides which are right-angled to each other, forming the reference edges
  - flat-surface work-pieces with plane and smooth air-impermeable surface
  - the work-piece surfaces and edges must be suitable for the exterior influences which occur during the process
  - weight of the raw panel max. 60 kg

- Finished parts:
  - after the operation the work-piece must show a geometry which the suction cup traverse can grab
  - ATTENTION MUST BE PAID WITH: panels with through holes, dowels, laminate overhang and uncoated boards
  - depending on the process previous cleaning in the processing machine is necessary. Suitable devices and sequences are then necessary. The processing periods are accordingly longer.

- Stack arrangement:
  - 1 stack of raw parts
  - 1 stack of finished parts
  - stack height max. 1250 mm incl. roller track or pallet
  - height of pallets or roller track min. 150 mm
  - the stack is provided at a defined zero position in X and Y (marking on the floor)
  - alignment of the longitudinal panel sides in X direction
  - accuracy of the stack +/- 20 mm the defined zero position is placed on the

left side in front when looking in direction to the processing centre
- the work-pieces are aligned the same way: when they are provided, processed and stacked (work-pieces are not turned)

3. PANEL HANDLING UNIT;

- 2 base elements consisting of aluminum profiles with T grooves for manual adjust - ment of the carrier units in X direction
- 4 carrier units in Y direction (length: 1300 mm) for collet of vacuum grippers and alignment unit
- base equipment:
  - 1 alignment unit with suction plate D = 125 mm
  - 4 vacuum grippers D=100 mm on the carrier unit, can be manually positioned
  - 16 plug-type connections for vacuum grippers
  - 1 sensor which checks that only one panel is taken by the gripper
    - with pneumatic adjusting stroke
    - manually adjustable
  - 1 cleaning device for blowing off chips and other particles (not dust) from the finished parts. Cleaning is effected while the gripper moves towards the panel
  - 1 sensor for measuring the stack height
  - 4 pressing pestles

4. DESCRIPTION OF FUNCTION AND SEQUENCE:

- raw parts are individually picked up from a raw part stack by means of the work-piece handling unit and put against the X and Y stops on a free space of the processing centre
- finished panels are picked up in one layer and put down
- this step is repeated until the stack is processed
- if the feeding cantilever is parked, the processing centre can be manually operated without any limitations

- During inward and outward transport the aligning unit must be occupied by the panel
- no handling of the remaining parts (removal takes place by partially or complete hogging in the processing machine), as option
- the parts can only individually be put on resp. withdrawn from the table (multiple handling as option)
- the same panel thickness on both tables

- the operational sequence of the workpiece feeding can not be changed
- when feeding raw parts, lift-off rails or vacuum clamps with lift-off must be used on the machine table

5. CONTROL:
- By means of the processing centre's machine control (power control PC85)

6. ELECTRIC EQUIPMENT:
- operating voltage 400 volt, 50/60 Hz
- switch cabinet for the drive components
- input unit integrated in the user interface of the processing centre
- installed according to European Norm EN 60204
- country-specific adaptation of operating voltage by transformer
- permissible environmental temperature: + 10 up to 40 degrees Celsius

7. SAFETY AND PROTECTION FACILITIES:
- safety supervision of the operating area by light barriers
- safety barrier for operator's left side
- further necessary safety facilities are to be additionally sold if required
- all machines destined for EC member countries are fitted with CE plates in accordance with EC-Machine Directive 98/37/EC, Appendix IIA

8. DOCUMENTATION:
- documentation as CD-ROM
- operating and maintenance instruction additionally in printed form

Note:
- as feeding system to BOF 612/34/13/2K on the left side, machine no. 0-201-05-0880

Modification
- operating voltage 600 volt, 60 Hz.

Number : 0846 1 time
INSTALLATION ACCORDING TO CSA SPECIFICATIONS
installed according to CSA specifications
600 Volt, 60 eye., 3 Ph

Number 1 x left
EXTENSION OF WORKING HEIGHT
- extension of working height of top beam to allow panel stacks 1,750 mm high from floor

Number : 5348 2 times
ADDITIONAL CARRIER PROFILE
- carrier profile 1300 mm, for the arrangement of additional vaccum grippers
- incl. 2 round vacuum grippers D=lOO mm

Number : 5350 4 times
VACCUM GRIPPER D=lOO MM
- in order to grip smooth surfaces

Number : 5352 2 x left

VACUUM GRIPPER WITH SEPARATING FUNCTION D=30 MM

- for use of boards up to 12 kg
- 4 separating grippers with d=30 mm for separating coated raw panels which stick together
- suitable for uncoated MDF boards as of a density of 750 kg/m^3 and a minimum panel thickness of 19 mm
- the separating grippers must be manually positioned along the narrow side of the panel on the suction beam
- lifting power per suction gripper approx. 3 kg

Homag will adjust suction cup diameter and number for panel thicknesses from 16-25 mm based on test panels supplied by the customer prior to machine completion.

Number 5353 1 time

SYNCHRONOUS FEEDING 2 WORKPIECES PROFI TBP

for feeding 2 identical workpieces during a positioning run consisting of:

second aligning station with vacuum grippers D=l25 mm

- additional blowing-off nozzle
- drop-off sensor
- 4 vacuum grippers D=lOO mm
- detachable suction crossbar extension
- 4 aluminium carrier profiles

Sequence:

- from 2 raw part stacks 2 raw parts are picked up and put onto 2 processing places on the processing table
- when positioning the raw and finished part stacks, the spindle distance of the

processing machine is to be taken into account
- after processing 2 finished parts are taken away together and de-stacked

Number : 5355 1 x left
PRESSING DEVICE FOR WARPED PANELS
- for pressing slightly warped panels against the vacuum clamps of the clamping table
- consisting of 4 individual pressing elements
- according to their panel geometry they can be positioned on the suction crossbar
- pressing force approx. 80 N per pressing element

Number 1 x left
WASTE DISPOSAL
for collecting finished and waste parts in one unloading operation.
- finished and waste parts are collected together - the position of the waste disposal is previously fixed.
- whilst the finished parts are transported to the stacking position and stacked, waste parts are dropped into the collecting bin.
- suction carriage with separated pneumatic circuits controlled by M-function, with 12 plug-in connections for the vacuum grippers.

Service: 6480 1 time
PC85 EXTENSION STATIONARY CELL: SEVERAL STACKS
- software kit for processing up to 4 raw part piling places and up to 4 finished part piling places
- in woodWOP programming the corresponding raw part piling place and finished part piling place can be elected
- in this way, a big raw part piling place can also be divided into several small piling places

- the coordinates of the zero points of the stacks are fixed
- by means of offset values in woodWOP-programming the values can still be influenced in X direction

Service: 6483 1 time
PC85 EXTENSION STATIONARY CELL: 4 OPERATION PLACES TBP

- Software kit for feeding a processing centre with 4 operation places
- both panels for one table operation are picked-up from the same raw part stack
- both panels are then layed down on a certain finished part stack
- Process: first finished part is taken away, first raw part is brought, second finished part is taken away, second raw part is brought
- Note: Depending on the process, the panels are to be positioned against the left-hand stops on the machine table

Service: 6487 1 time
SOFTWARE EXTENSION FOR ADDITIONAL FUNCTION FEEDER

- software extension for an additional function of the feeder
- for example:
  disposal of residual pieces
  - change in the stacking process
  - integration of a barcode reader
- condition is an exact description of the function and clarification with the technical department of Homag
- additional costs may occur
- necessary additional facilities must be sold separately

Service: 8322 1 time

DOCUMENTATION AND CONTROL TEXTS: ENGLISH

Scope of delivery:

1. production instructions
   consisting of operator's manual and maintenance guidelines on DIN A4 paper and CD-ROM
2. on-screen operator control texts
   for machine operators, for NC21, PC22, PC52, PC83 and PC85
3. spare parts designations on CD-ROM

- delivery time: Together with delivery of the machine