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**HOFFMANN  
Machine  
Company, Inc.**

Operating and Maintenance Manual  
PP2-NCF programmable Dovetail  
Routing Machine  
Version: SO 7.267

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## 2 Warning and Safety Symbols used in this manual

Operator must read, understand and follow all safety rules, symbols and operating instructions at all times.

The following symbols are used in this operating manual:



### **Danger Symbol**

This symbol warns of a serious danger. Ignoring the safety instructions will lead to serious bodily harm and/or death!



### **Warning Symbol**

This symbol warns of a possible danger. Ignoring the safety instructions can lead to serious bodily harm and/or death!



### **Important Instructions**

Instructions listed with this symbol must be strictly adhered to.



### **Safety Warning Symbol**

This symbol warns of a possible danger. Ignoring the safety instructions can lead to serious bodily harm and/or damage to the equipment and/or material being processed.



This symbol does not include a warning. It is used to denote helpful hints and tips to improve the operation and performance of the equipment.

## 2.1 Warning and Safety Labels attached to machine

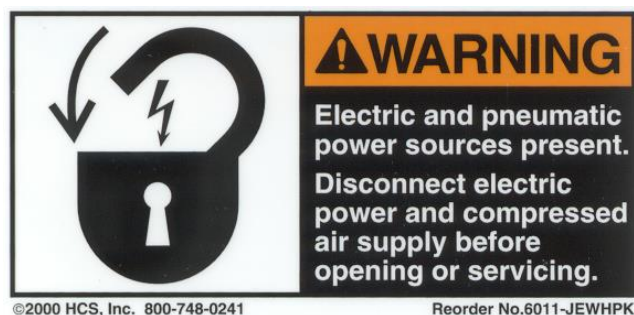
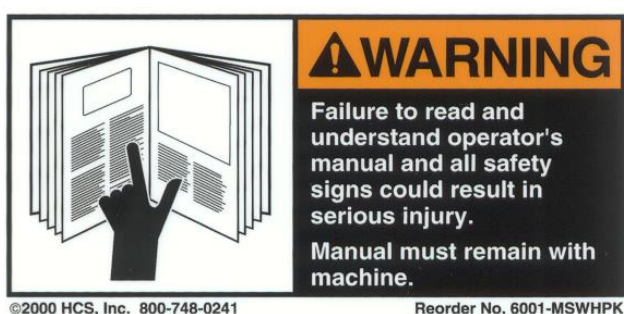
A number of important warning labels have been attached to this PP2-NCF dovetail routing machine for your information and protection.

For your own safety, please take a moment to locate and read all warning labels before operating this machine.

If a label has been removed, defaced or is illegible, please contact Hoffmann Machine Company, Inc. to request a free replacement.

Please note that not every label shown may be attached to the machine and labels are subject to change.

### **NEVER REMOVE ANY SAFETY OR WARNING LABEL!**





**⚠ WARNING****Do NOT operate this machine.**

A safety guard has been removed. Replace guard before operating.

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**SAFETY  
INSTRUCTIONS**

1. Only a trained person is to be permitted to operate this equipment. Training should include instruction in operation under normal conditions and emergency situations.
2. Where safety is dependent upon stopping devices or starting devices or both, they are to be kept free of obstructions that could endanger personnel.
3. The areas around loading and unloading points are to be kept clear of obstructions that could endanger personnel.
4. Personnel working on or near this equipment shall be instructed as to the location and operation of pertinent stopping devices.
5. This equipment is to be used only for the purpose for which it is constructed. See operator's manual for the proper use of this equipment.
6. Under no circumstances are the safety characteristics of this equipment to be altered.
7. Routine inspections and corrective/preventative maintenance measures are to be conducted to ensure that all guards and safety features are retained and function properly.
8. All personnel are to be alerted to the potential hazards indicated by the safety labels on this equipment.
9. As a general rule this equipment is not to be cleaned while in operation. Where proper cleaning requires the equipment to be in motion and a hazard exists, personnel should be made aware of the associated hazard.

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### 3 Intended Use and Operation

The HOFFMANN PP2-NCF is designed solely for automatic routing of dovetail keyways into solid wood and wood-related materials.

The machine may not be used for any other processes or materials.

All work pieces must fall within the following dimensional parameters:

Dimension	MIN (mm)	MAX (mm)
Width	10	125
Thickness	10	125
Length	100	unlimited



**Using the HOFFMANN PP2-NCF for any other operation or material can result in unforeseen dangers and is hereby forbidden!**

The manufacturer is not liable for any damages resulting from unapproved use or operation of the equipment.  
The operator is solely responsible for any such risks and dangers.

The equipment may not be copied or dismantled for the purpose of duplication of all or part of the design or operation.

Technical changes to this equipment require the prior written consent of the manufacturer.

Any changes, additions, removal of components, etc. not expressly permitted in writing by the manufacturer will immediately void the warranty. Any risks, dangers or damages resulting from unauthorized modifications are solely the responsibility of the user/operator.

Adjustments on moveable components of the HOFFMANN PP2-NCF during the operating process are only permitted if such adjustments are required for the proper operation of the equipment and if such adjustment procedures are outlined in this manual. All pertinent safety rules and regulations are to be strictly adhered to.

#### 3.1 Transportation and Installation

Only trained and qualified personnel may transport, set-up and install this equipment and any auxiliary components.

You are required to assure a safe, clean and suitable environment for this equipment and its operation.

## 3.2 Technical Changes and Maintenance

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Technical changes or alterations of any kind are only permitted if the prior written authorization from Hoffmann Machine Company, Inc. has been secured.

Never remove safety guards and shields, remove or by-pass safety devices, switches, sensors, use or install tooling other than originally supplied.

The manufacturer is not liable for any injuries or damages caused by unauthorized changes, removal or add-ons to this equipment.

Only trained, qualified personnel may perform installation, set-up and maintenance procedures as well as replacement of parts or components of any kind.

## 3.3 Operator and Maintenance Personnel

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Machine operator and maintenance personnel may only perform activities described in this manual.

Persons working on or with this machine must be at least 18 years old, they must be thoroughly familiar with this operating manual and they must adhere to all local safety rules and regulations. All OSHA specified rules must be followed if applicable.

Persons working on or with this machine must wear suitable clothing designed to avoid entrapment in rotating machine components.

No loose fitting clothes e.g. ties or shawls, or bracelets, wristwatches, necklaces, etc. may be worn when operating this machine.

Persons with long hair must tie their hair securely and wear an appropriate hair covering to avoid entanglement.

## 3.4 Equipment Owner's Responsibilities

---

The owner of the equipment must make this operator manual available to all machine operators and maintenance personnel.

The equipment owner must assure that all operators and maintenance personnel are qualified to work on this equipment and that they have read and fully understand this operator manual, especially all sections pertaining to possible dangers and safety rules.

The owner must assure that all areas of responsibility, including set-up, operation, maintenance, etc. – are clearly defined and explained.

All responsibilities must be assigned to and understood by all involved persons to avoid the risk of injury and /or damage to material.

The owner is responsible for the adherence to all applicable safety rules and regulations.

The owner is responsible for the proper and safe condition of the machine; he is further responsible for the proper installation and set-up and he must provide a safe and secure work environment.

The owner must be familiar with and is responsible for the adherence to any and all local and national safety rules and regulations pertaining to this equipment.

The manufacturer is not liable for any injuries or damages as a result of non-compliance with, or adherence to, applicable safety rules and regulations.

If the operator and/or maintenance personnel do not understand English, the owner must provide a properly translated operator manual to assure the safety of all personnel.



### 3.5 Change of Ownership

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In case of sale of this equipment all components, tools, manuals, safety instructions, accessories as well as any electronic or software updates you have originally received with the machine must be included.

This includes any and all operator manuals, maintenance instructions, equipment or components replacement parts, etc.

## 4 Machine Description

### 4.1 Terminology used in this manual

- MS PP2-NCF = **HOFFMANN PP2-NCF Dovetail Routing Machine**
- Bit = Hoffmann dovetail router bits in sizes W-1 / W-2 / W3
- Workpiece = User supplied moulding profiles made of wood or wood related materials
- Dovetail Key = HOFFMANN Dovetail Keys

### 4.2 Machine Description

**HOFFMANN PP2-NCF** consists of:

- HOFFMANN PP2-NCF dovetail routing machine
- 45 degree center fence plate
- Left and right hand inside corner fences (45 degree)
- Operator console and touchscreen
- Toolkit
- Operating manual

The HOFFMANN PP2-NCF is designed to rout up to three dovetail keyways into the mitered ends of pre-cut moulding made of wood or wood-related material.

Adjustments for position of dovetail keyways and length of routing strokes allow the operator to process different moulding styles.

#### Machine performance:

- Up to 60 cycles per hour (depending on operator performance, material condition, routing heights and number of keyways, work flow, etc.)

#### Work stations

- 2x router motor, single phase @ 1,000W

#### Accessories and Options:

- Center fence plate with angles other than 45 degrees
- Left and right hand inside corner fences (other than 45 degree)
- Fence height extensions (for tall material)
- Bar and QR Code Scanner

## 5 Technical Data and Specifications

### Electrical Power Supply

Supply voltage	230 V / 3 phase / ground    supply wires: 3x 4mm <sup>2</sup>
Frequency	60 Hz
Input Amperage	8 A
Total power requirement	2.5 kVA
Safety Code	IP 54
Supply line breaker	16 A slow acting
Router motors	2x router motor Type UAD-33 1,000 watt – 230 volt
Router bits	2x Hoffmann Dovetail Router Bits, size W1 / W2 / W3

### Pneumatics

Compressed air supply	6 bar – 90 psi (max. 8 bar)
Volume requirement	Approx. 0.2 cubic feet per cycle
Air	lubricated
Filter mesh size	5μ

### Other Specifications

Work piece material	Wood and wood related materials
Machine performance	Up to 60 cycles/hour (depending on operator, material flow, material quality, etc.)
Weight	approx. 528 lbs.
Dim. Length x depth x height	approx. 47" x 51" x 59"
<u>Noise emissions:</u>	
Sound Pressure Level (SPL):	85 dB
Sound Pressure Level at the Source:	102,1 dB

### Machine Environment

Temperature range for operation	59.... + 104 F
Temperature for storage / transport	32.... + 140 F
Temperature change during operation	max. 20 F
Temperature change during storage / transport	max. 40 F
Relative humidity according to DIN 40040	15... 80 % without condensation at 95 F
Air pressure during operation	860-1060 hPA (bar)
Air pressure during storage / transport	860-1060 hPA (bar)

## 6 Operator Environment

The work areas for the operator have been designed with ergonomic principles in mind.

The machine owner is responsible for ease of access, adequate lighting, fresh air supply, etc.

### **Specific work areas for this machine are:**

- ⇒ In front of the machine to load and unload work pieces and to adjust settings.
- ⇒ In front of the operator panel to start the machine and to initiate the machining cycle.
- ⇒ At the back of the machine for maintenance procedures only.

### **Rules for safe work areas:**

- ⇒ The work area must be free from clutter and must be kept neat and unobstructed. Local and national safety rules, including but not limited to all applicable OSHA Rules must be adhered to.
- ⇒ Access space of no less than 24" shall be available on all sides of the machine for set-up and maintenance procedures.
- ⇒ All electrical and compressed air supply lines must be securely fastened in accordance with all local and national safety codes. Secure all wires, hoses and lines and do not allow lines to lie on the floor as they may present a trip hazard to the operator. Supply lines, wires and hoses must be inspected periodically and replaced if any damage is observed.
- ⇒ The environmental conditions must meet the guide lines given under section 5 "Technical Data and Specifications".

## 7 Potentially Dangerous Areas

**Especially dangerous areas of the machine are:**

- Areas around the dovetail routing operations

**During set-up and maintenance procedures, the following dangers exist in the above areas:**



**Danger of entanglement and pinching!**

During set-up and maintenance work, especially when access doors must be opened, additional dangers of entanglement or pinching on belts, sprockets, router station, etc. are present. Do not wear loose fitting clothing. Long hair must be covered with a hair net.



**Danger of cutting of hands and fingers!**

All routing areas present dangers of cutting of hands and fingers.

## 8 Potential Sources of Danger

### 8.1 Unapproved Use

Unapproved procedures are:



- Processing work pieces made of material other than solid wood or wood related material such as MDF, particle board, plywood, etc.
- Operating of the machine by more than one operator at the same time.

Unapproved use and/or misuse of the machine can result in the following:

- ⇒ Minor to severe injuries to the machine operator and/or bystanders.
- ⇒ Damage to the machine and/or work pieces.

### 8.2 Mechanical Dangers



- ⇒ During operation of this machine router bits and drive belts rotate and sections or components of the machine are being moved and adjusted pneumatically, mechanically and/or electronically. These components can cause severe injury or death if hair, clothing or extremities become entangled.  
**Never reach into the machine during operation!!**
- ⇒ Only make adjustments during operation if these adjustments are absolutely necessary and if the procedure is fully outlined and approved in this operator manual.



## 8.3 Defective equipment

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If the machine does not function properly and if the fault cannot be rectified immediately, the equipment must be shut down by the person responsible for the operation.

Signs of defective are:

- ⇒ The machine shows signs of mechanical damage.
- ⇒ Electrical wires or cables are damaged.
- ⇒ Pneumatic air lines are damaged.
- ⇒ The machine was stored or has not been in use for an extended period of time in an unsuitable environment, for example in high relative humidity or too high or too low temperature.

## 8.4 Electrical Dangers

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- ⇒ Dangerous electrical current is present in many different locations inside of the machine when the main power is switched on. Do not remove any covers or components unless the written guidelines instruct you to do so and you can do so without the use of a key or a tool. Warning symbols show areas and terminals where electrical currents may be present.
- ⇒ Be aware that if an uninterruptable power supply (UPS) is installed, some areas inside the machine may have electrical current present even if the main power is switched off.
- ⇒ Never use damaged or worn cables, wires, supply lines or electrical components or parts on this machine.
- ⇒ Only trained and authorized Service Technicians shall be allowed to replace parts on this machine.
- ⇒ Switch off and lock the main power supply before starting any maintenance procedures. Always follow proper Lock-Out / Tag-Out Protocol and all applicable OSHA Rules and Regulations.

## 8.5 Cleaning agents and chemicals

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- ⇒ Review and observe all safety rules provided by the chemicals manufacturer while working with cleaning agents and other chemicals. Read and understand the Material Safety Data Sheets (MSDS) provided by the manufacturer and follow all safety precautions described therein.
- ⇒ Always wear proper protective gear, including safety glasses and gloves, when using cleaning agents, degreaser, etc.
- ⇒ Do not eat, drink or smoke when using chemicals.
- ⇒ Dispose of used cleaning agents and other chemicals in accordance with all State and local laws.

## 8.6 Remaining Risks

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If the operator does not pay attention, it is possible to squeeze ones' fingers when loading and pre-clamping a work piece. Never place your fingers under the clamp pads of the pneumatic material clamping cylinders!

## 9 Noise Emissions



The machine generates a work place Sound Pressure Level (SPL) of 84.1 dB(A) when processing a work piece.

The Sound Pressure Level at the Source (L<sub>w</sub>) is 102.1 dB(A) when processing a work piece.

Local conditions could increase the SPL, which could cause hearing damage or loss.

The machine owner must provide suitable protective gear to protect employees from hearing damage, as required by local and state laws and OSHA regulations.

Measurement margin of error = 4dB

Noise emission was measured according to EN3746

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### Notes:

All listed values are measured noise emission levels – they are not necessarily safe working environment levels.

Local conditions, the proximity of walls and ceilings, the type of wall, ceiling and floor material as well other equipment in close proximity could affect the total noise emissions at the work place.

The SPL values are provided as information only and it is recommended that the machine owner measure the actual local noise levels after installation.

Machine is owner is responsible for providing suitable protective gear depending on total noise emissions and local and state laws and regulations.

All OSHA regulations pertaining to noise protection are to be adhered to.

## 10 General Safety Rules in accordance with DIN 1870-9



**DANGER: The following safety rules must be followed at all times!**

Read and understand this operator manual thoroughly and store it in a safe place for future reference.

Heed all safety warnings and all applicable rules and regulations, including but not limited to all applicable OSHA rules, when operating or performing maintenance or set-up procedures on this equipment.

1. HOFFMANN Service Technicians will instruct machine operators in the proper use of this equipment upon installation and set-up.
2. The HOFFMANN PP2-NCF dovetail routing machine may only be operated by trained personnel who have read and understood the operator manual. The manual shall be kept in a safe location, easily accessible for future reference.
3. Only trained and authorized persons may be allowed to operate the HOFFMANN PP2-NCF dovetail routing machine. Untrained or unauthorized persons are to be kept away from the machine area. The operator(s) must disconnect the electrical and pneumatic power supplies when the machine is not under their control.
4. All applicable Safety Rules, including all applicable OSHA rules, are to be adhered to.
5. Only trained and qualified persons may perform work on the electrical components of the machine.
6. Before connecting the HOFFMANN PP2-NCF dovetail routing machine to the electrical power supply, all electrical specifications must be confirmed with the machine's data sheet.
7. Never disable, remove or bypass any safety features, guards or devices!
8. HOFFMANN PP2-NCF dovetail routing machine may only be energized if no danger for persons or materials is present.
9. All safety features, guards and safety devices must be checked for proper function at least every three months (always follow recommended maintenance schedule).
10. Upon discovery of any damage to any part or component of HOFFMANN PP2-NCF dovetail routing machine, the machine must be shut off and locked to prevent further operation until all damager and/or faults are repaired.
11. The operator must inform his or her supervisor immediately upon notice of any damage or fault on the machine.

12. If the HOFFMANN PP2-NCF dovetail routing machine has been moved, or has been out of service for an extended period of time, all safety features, guards and safety devices must be checked and repaired or replaced if necessary before the machine is put back into operation.
13. Operator must always wear tight fitting clothes without loose straps, ties, etc. to avoid the danger of entanglement. Long hair must be tied together and covered with a hair net.
14. Always wear eye and ear protection when operating this equipment! Do not wear gloves when operating this equipment – danger of entanglement!
15. Ensure adequate light conditions on and around the machine, with an ambient temperature of around 70 degrees Fahrenheit.
16. Keep the floor around the machine free from debris, saw dust or wood chips, etc. Larger cut-offs and waste material may not be left in the machine and must be removed manually in compliance with all applicable safety rules!
17. Tooling Change:

Danger – cutting tools can injure and cut! Safety gloves are recommended when handling router bits.

Do not change motor speeds or tooling speeds on router heads.

All tooling (router bits) is to be inspected daily for sharpness and breakage – dull and/or defective tooling is to be replaced before operating the machine. Use only ORIGINAL HOFFMANN ROUTER BITS!
18. Do not expose this machine to moisture or water and do not expose this machine to flammable liquids or gases.
19. Route and place all electrical and pneumatic supply lines to avoid the possibility of creating a trip hazard. All supply lines shall be adequately protected from accidental mechanical damage.
20. Disconnect the machine from all electrical and pneumatic power sources when performing any maintenance, repair or set-up procedures. Follow all applicable OSHA Lock-Out – Tag-Out Procedures.

**Guidelines for safe work practices in accordance with DIN1870-9:2000 sub-section B:**

It is important for all machine operators to be:

- a) Adequately trained in all set-up and operational procedures of the machine
- b) Informed about factors which influence the noise emission of equipment,  
e.g.
  - i) Router bits and motors
  - ii) Optimum router motor speed (rpm)
  - iii) Maintenance of router bits and machine
- c) Informed about factors which could contribute to a dust explosion, e.g.
  - i) Type of material being processed
  - ii) Importance of the individual dust collection ports
  - iii) Proper adjustment of dust collection guide panels
  - IV) Activation of the central dust collection system before starting the machine
- d) Informed about the condition of the environment around the machine, e.g.
  - i) Floor shall be level, clean and free from debris, cut-off and other trash.
  - ii) There shall be adequate common as well as task lighting in place.
  - iii) The raw material and the finished material shall be placed close to the machine in a position to allow for proper work flow.

The operator shall always wear suitable personal protective gear, e.g.

- Hearing protection
  - Breathing protection to avoid breathing of wood dust
  - Gloves should be worn whenever tooling is handled or changed.
  - Saw blades should be transported in a saw blade carrier.
- iv) The machine should be switched-off when not in use.
  - v) Any faults, error messages or damage to the machine must be reported to a supervisor immediately.
  - vi) The operator shall be trained in the proper procedures to remove cut-off, waste, dust and debris from the machine to reduce the risk of fire.
  - vii) The operator shall follow all rules and guidelines in regards to tooling maintenance, sharpening and installation.
  - viii) The operator shall not exceed the maximum speed engraved on the saw blades.
  - ix) The operator shall only use correctly sized and properly sharpened saw blades.
  - x) The operator shall assure that all saw spindle discs and nuts are of adequate size and condition.
  - xi) The operator shall not remove cut-offs or debris while the machine is in operation.
  - xii) The operator shall assure that all safety features, guards and safety devices are checked and repaired or replaced if necessary before the machine is put into operation.



## 11 Safety Devices

A number of safety devices have been designed and installed on the HOFFMANN PP2-NCF dovetail routing machine to provide the best possible protection for the operator.



**Warning: Strictly follow all safety rules!**

1. The machine features safety shields, doors and guards which must be in place and locked when operating the equipment.
2. Danger of personal injury and/or death exists if the safety shields, doors and guards are not place during operation.
3. Safety devices shall not be removed, damaged or by-passed.
4. Any unauthorized modifications, including but limited to by-passing of safety switches or sensor, immediately void the warranty on the equipment.
5. All safety features, guards and safety devices must be checked every time for proper operation before the machine is started and operated.
6. If any damage or malfunction on any safety feature, guard and safety device is found, it must be repaired or replaced before the HOFFMANN PP2-NCF dovetail routing machine is put into operation

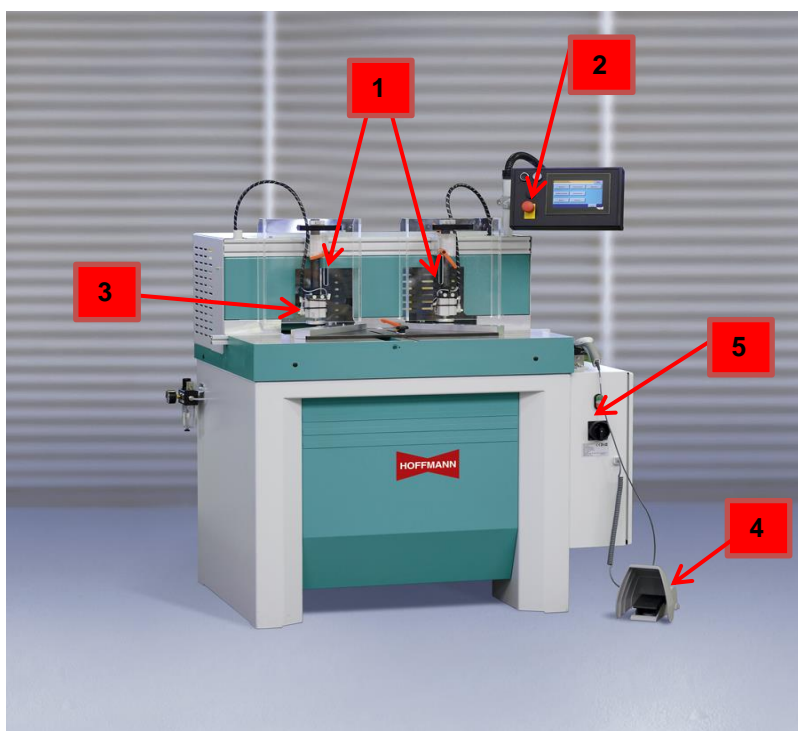
## 11.1 Safety Devices

The machine is equipped with a variety of safety guards, shields, switches and sensors. These devices are for the protection of the operator and other persons near the machine.

**NEVER REMOVE OR DISABLE ANY SAFETY DEVICES!!**

Safety devices may only be temporarily removed if necessary for approved maintenance or set-up procedures.

If safety devices have been removed or deactivated, they must immediately be re-installed and re-activated. Before the machine is put back into operation, all safety devices must be thoroughly checked for proper operation.



Pos.	Description
1	Clear acrylic material clamp covers
2	Emergency-Stop button on front console. Pushing the E-Stop immediately stops the machine. The material clamps stay in place. The E-Stop button remains in a locked position until unlocked by operator. To unlock, turn and pull-out knob
3	Material clamps with low-pressure pre-clamp circuit
4	Safety cover on foot switch
5	Lockable main power switch



**In an emergency, one can also use the power switch (on front of right side electrical cabinet) to stop the machine!**

## 11.2 What to do in an Emergency?

**In an emergency situation, push the E-Stop button (see red arrow) of the HOFFMANN PP2-NCF dovetail routing machine!**



The fault or danger must be rectified or removed after emergency-stop activation and before the machine is put back into operation.

Use the E-Stop button **ONLY** in an emergency!  
Do not use the E-Stop button for regular or controlled shut-down as this may cause operational faults in the control system.





## 12 Safety device check list

All safety devices must be checked for proper function. upon installation and sign-off and according to the maintenance schedule in this operator manual.

All safety switches, interlocks, sensors and emergency-stop buttons must be checked and tested daily.

**Never damage, remove or by-pass any safety device, interlock switch, sensor or guard.**



- ⇒ The machine is equipped with a red E-Stop button on the control panel.
- ⇒ Pushing the button in will active the emergency stop sequence.
- ⇒ Use the E-Stop button only in an actual emergency and to test the function of the button.
- ⇒ Do not use the E-Stop button for a regular and controlled shut-down of the machine.
- ⇒ The machine is equipped with safety switches, interlock and sensors which will interrupt the machine operation if triggered.

### Testing the Emergency-Stop Button:

- ⇒ Start the machine and press the red E-Stop button. All functions of the machines must cease immediately and the saw blades must return to their home position. The material clamps must remain in the extended (clamped) position.
- ⇒ Release the E-Stop button before restarting the machine.

## 13 Warranty and Liability

The „Hoffmann Machine Company, Inc. Terms and Conditions of Sale“ are the basis for all dealings between the manufacturer and the customer. These Terms have been made available to the customer during the proposal and order processing stage.

In addition to the complete Terms and Conditions of Sale, any of the following conditions immediately voids the warranty and releases the manufacturer from any and all liability.

- ⇒ Unapproved use of the machine.
- ⇒ Improper installation, start-up, maintenance or operation of the machine.
- ⇒ Operation of machine with defective, missing or by-passed safety devices of any kind.
- ⇒ Non adherence to any rule or regulation in this operator manual.
- ⇒ Unauthorized changes to the machine or any of its components as well as unauthorized changes to control parameter (changes to PLC program, etc.)
- ⇒ Insufficient supervision and maintenance of parts subject to normal wear and tear.
- ⇒ Damage due to unforeseen circumstances, acts of God, etc.
- ⇒ Improper or unauthorized repairs or use of tooling (router bits<sup>0</sup> not supplied by Hoffmann Machine Company, Inc.



## 14 Transportation and Installation



This machine may only be transported, set-up and installed by qualified service technicians having received written authorization from Hoffmann Machine Company, Inc. to perform such work.



**Danger of Injury!**  
HOFFMANN PP2-NCF can tilt or fall over during transportation!

Only use properly equipped and sufficiently sized equipment to lift and transport the PP2-NCF. Refer to the machine weight under section „Technical Data“



### When transporting the PP2-NCF

- Wear approved safety shoes with steel toes!
- Wear safety gloves!
- Consider the weight of the machine and use appropriate equipment!
- Lift PP2-NCF only as high as necessary!
- Lift PP2-NCF only on lift points marked on drawing below!

## 15 Transportation

The PP2-NCF may be lifted and moved with a pallet jack or fork lift having a lifting capacity of at least 1,000 lbs.

Only lift the machine at the marked lift points and secure it against tipping or tilting during transport if necessary.



**Electrical wires and compressed air supply lines as well as mechanical components on the underside of the machine shall not be damaged during lifting or transportation!!**

### Removal of shipping bracing

The machine is shipped secured to shipping timbers and covered with shrink-wrap. All manuals, toolkits and machine components are included.

The machine may be secured to a shipping pallet with angle brackets and bolts.

Remove machine covers on both sides and remove all angle brackets and bolts securing the machine base to the shipping timbers and/or pallets.

Remove shipping straps and brackets securing the electrical enclosure.

#### Check immediately upon receipt:

- ⇒ Does the shipment correspond to the packing list?
- ⇒ Does the shipment correspond to the purchase order and order confirmation?
- ⇒ Is the shipment complete and without any damage?



**Immediately report any shipping damage in writing to the carrier and to the manufacturer.**

## 15.1 Installation and Set-Up



**HOFFMANN PP2-NCF must be installed plumb and level in all directions.**

**The load capacity of the floor must be at least 2 t/m<sup>2</sup>. One machine leg has a leveling bolt and must be adjusted to have full contact with the floor.**

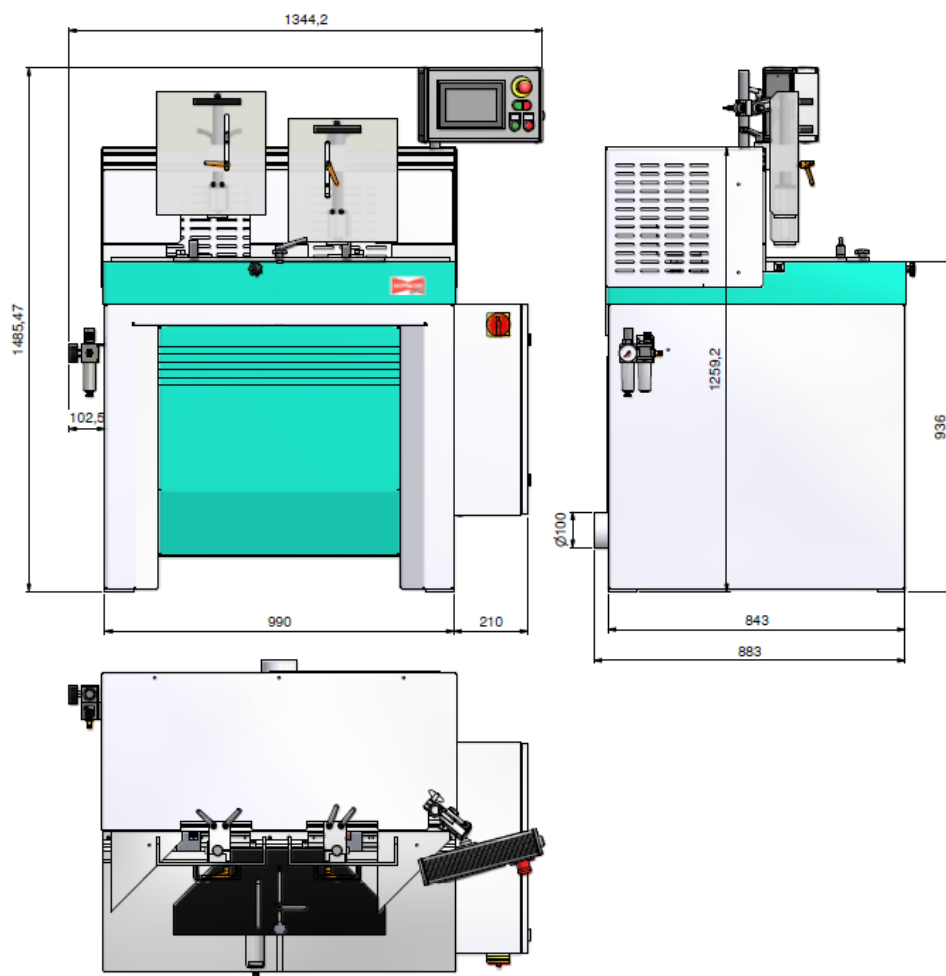
Check floor leveler and adjust if necessary.

Using a machinist's level, the machine must set plumb and level in all directions.

Make all electrical and pneumatic connections per the enclosed circuit diagrams and according to all local and state laws.

Pallet truck may be used from front or rear of machine.

See section „Electrical and compressed air connections“



## 15.2 Electrical and compressed air connections

HOFFMANN PP2-NCF dovetail routing machine is delivered pre-wired and ready for on-site connections



**Danger:**  
**Follow these safety instructions!**

**Trip Hazard!**

**Lose wires and cables must be secured and covered with an appropriate cable cover to reduce the risk of tripping and falling.**

**The machine is equipped with separate electrical and pneumatic circuits, which must be connected and disconnected separately.**



The proper resistance of the safety loop and the correct sizing of the supply breakers/fuses must be checked and verified on site.

1. Verify proper supply voltage and wire gauges before connecting HOFFMANN PP2-NCF to electrical supply lines.
2. Only trained technicians are authorized to perform work on this equipment.
3. Main power may not be connected until all electrical assemblies have been installed and tested.
4. Always disconnect and lock main power supply prior to working on any electrical circuit. Use proper „Lock-Out / Tag-Out “procedures.
5. Separate circuit sections if possible and bleed off any residual compressed air before working on pneumatic circuits.

## 15.3 Compressed air connections



**Compressed air in proper Quality and Quantity is to be supplied by plant owner – see technical data section.**

The air regulator-filter-lubricator assembly is installed on the left side of the machine base frame.

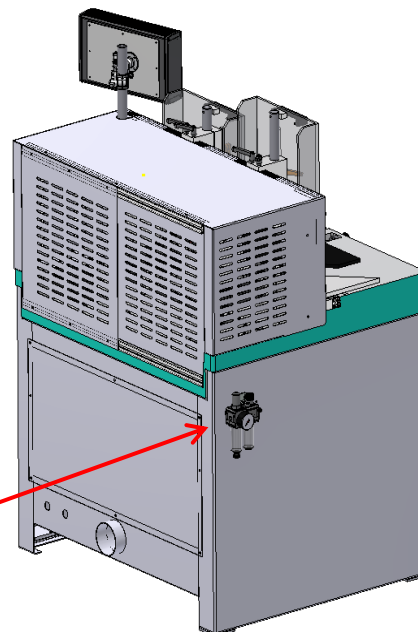


**Hoffmann PP2-NCF requires approx. 1.5 cubic feet per cycle.**

**Supply pressure must be 90 psi +/- 7 psi**

**Maximum supply pressure 115 psi.**

- ⇒ Connect compressed air supply line with a quick-connect hose fitting (fitting supplied by customer)
- ⇒ Verify air pressure is set to 90 psi – 6 bar (check gauge )
- ⇒ If necessary, adjust air pressure by raising the adjustment knob and turning clockwise to increase pressure or counterclockwise to decrease pressure.
- ⇒ Push knob down to lock after adjusting pressure.
- ⇒ Drain condensate (water) from condensate bowl in regular intervals as needed.
- ⇒ Refill oil reservoir bowl with quality oil tool lubricant as needed.
- ⇒ For service and maintenance work, always disconnect compressed air supply line.



### Check Connections



**Check all electrical and pneumatic connections again prior to initial startup.**

**Verify that all wires are connected to the correct electrical terminals and that no stray wire strands are present.**

**Check all air pressure lines and hoses for tightness and leak-proof fittings.**

**Correct any problems prior to initial start-up!**

#### **WARNING!**

Shutting off machine or disconnecting electrical power supply will not disconnect compressed air supply. Pneumatic circuit remains under pressure even when main power switch is switched-off and locked!

## 15.4 Dust collection connections



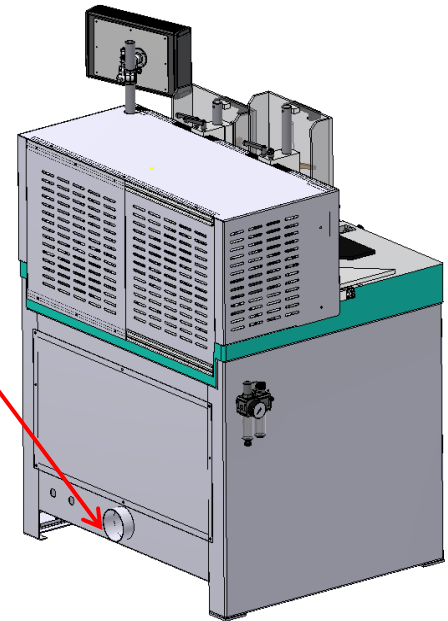
**The Hoffmann PP2-NCF must be connected to a suitable central dust collection system prior to use.**

One dust collection ports (100mm = 4" diameter) is located at the rear of the machine.

Internal dust collection hoses are routed directly to both routing stations.

### Dust collections System requirements

- Min. collection volume = 450 cft/min = 750m<sup>3</sup>/h
- Pressure = 4.25 inches water column = 1050 Pa at 20ms-1
- Minimum velocity at dust collection port:
  - Dry wood chips: 65 ft/s = 20ms-1
  - Wet wood chips: 90 ft/s = 28ms-1
  - Wet chips are chips with moisture content greater than 18%.





## 16 Operation – Warnings and Safety Rules

Additional hazards exist during set-up and maintenance work, including:



### **Cutting and Amputation Hazard!**

Router bits are sharp and can cut fingers easily.  
Saw blades are sharp and can cut and amputate fingers easily.  
Never reach into cutting areas during operation!



### **Entanglement and Pinching Hazard!**

When safety covers, shields, guards or access panels are open during set-up and maintenance additional dangers of entanglement and/or pinching hazards on rotating components (belts, sprockets, etc.) may be present.

Do not wear loose fitting clothing – always cover long hair with a hair net.



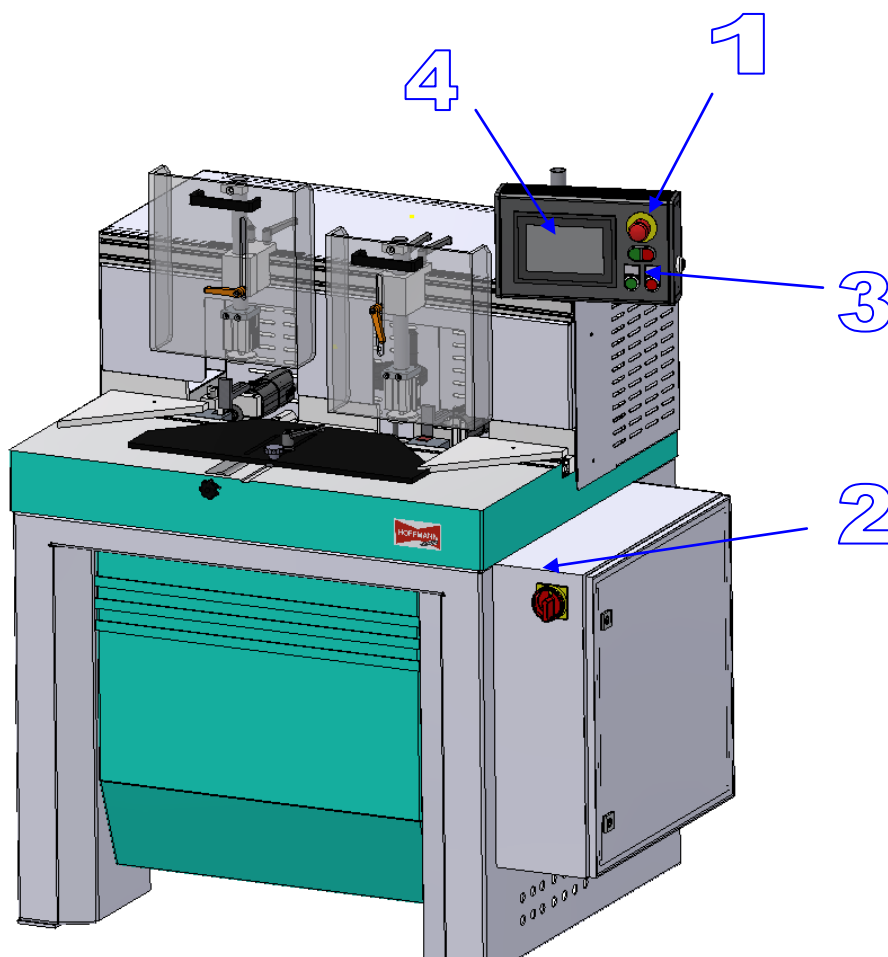
■ **Follow all safety rules during set-up and maintenance work.**

■ **Only trained and authorized personal may perform set-up and maintenance work.**

■ **Control parameters are adjusted at the factory for optimal performance and may not be changed or tampered with.**

## 16.1 Initial start-up

- ⇒ Once all connections have been made, all covers, shields and access panels must be reinstalled.
- ⇒ Pull to release Emergency-Stop button (1)
- ⇒ Switch-on the main power switch (2)
- ⇒ Switch-on operator console with white button (3).
- ⇒ Touch screen (4) will boot up and indicate when machine ready for operation.
- ⇒ Initiate initial reference sequence – see separate instructions



## 16.2 Tooling (router bit) change



Router bits are sharp and can cut – wear safety gloves when handling router bits.

Collet must always sit flush in collet nut.

Use sharp router bits only – dull bits result in unsatisfactory results and increase strain on router motors.

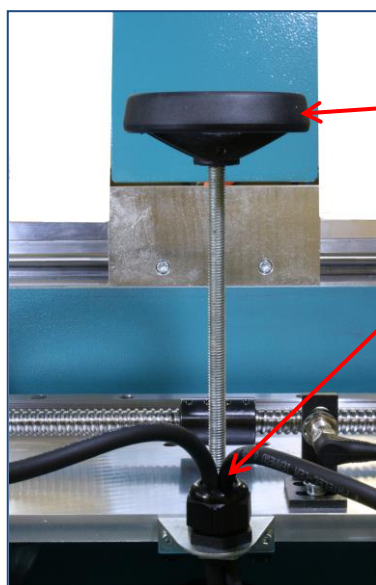
**Note: New chip breakers should be installed every time router bits are changed or replaced.**

Use only original Hoffmann solid carbide router bits!

- W-1 Part number W2016350
- W-2 Part number W2026350
- W-3 Part number W2036350

### Follow these step-by-step instructions to change router bits correctly:

1. Switch off electrical power and lock-out main power switch
2. Disconnect compressed air line from air regulator-lubricator assembly.
3. Open rear access panel and loosen lock-nut on threaded rod with 17mm open-end wrench



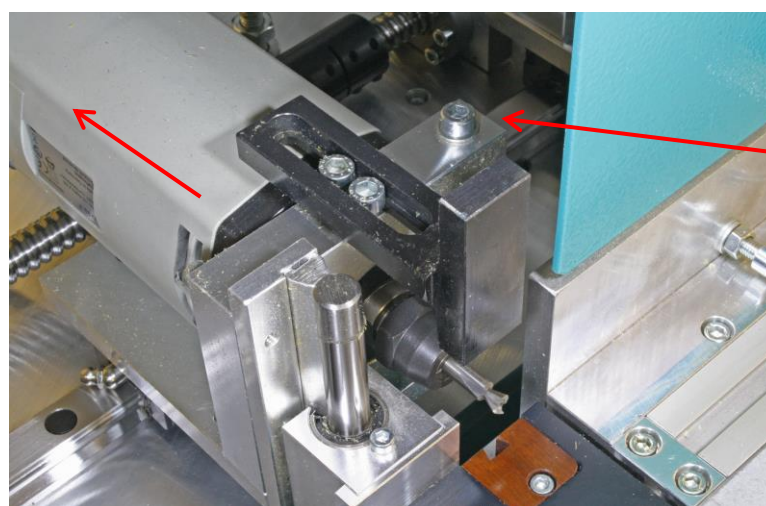
hand wheel

(lock nut not shown, hidden behind cables)

4. Turn hand wheel to raise motor carriage until router bits are approx. 1" (25mm) above machine table.

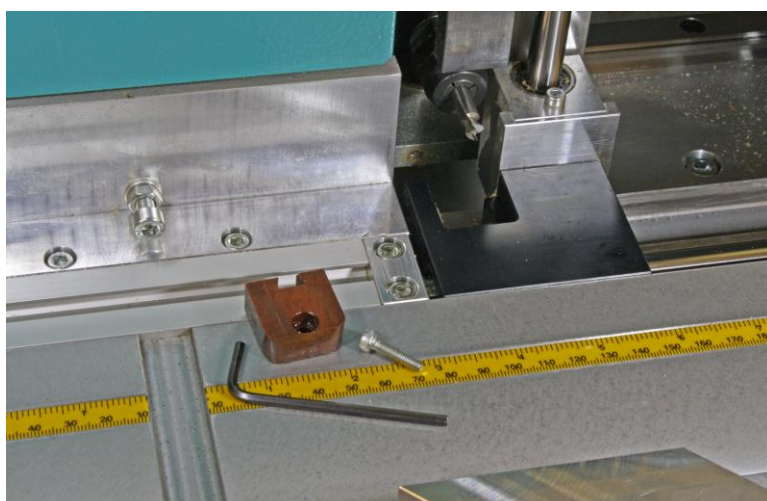


5. Loosen clamp bolt in motor bracket with 6mm Allen key and slide motor backward and out of bracket.

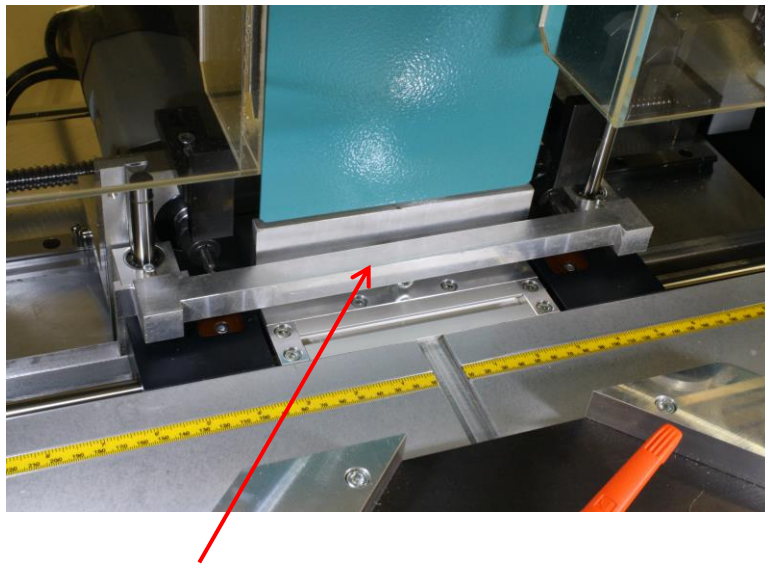


Clamp bolt

6. Using 3mm Allen key, remove M4x16mm bolt and remove old chip breaker.



7. Open motor collet with one 18mm and one 22mm open-end wrench and remove router bit.
8. Install new router bit and tighten collet. New bit should extend approx. 13/16" (20mm).
9. Slide motor back into motor bracket, tighten clamp bolt lightly to take up slack. Motor must still be loose enough to be moved in and out.
10. Select the correct side and place machined aluminum set-up jig above center fence bolt against rear fence. Set-up jig is machined on three sides in different depths as follows:  
W-1 bits 3.5mm = 0.1378"  
W-2 bits 5.1mm = 0.2008"  
W-3 bits 6.9mm = 0.2717" **These are the factory recommended router bit depth settings.**
11. Carefully slide motor forward until tip of router bit touches set-up jig.



Aluminum set-up jig in place to set correct projection of router bits

12. Tighten clamp bolt and repeat procedure on other motor if applicable.
13. Lower motor carriage below table with hand wheel.
14. Using sample material, make tests cut in two pieces of moulding (without chip breakers installed) and check the resulting joint by inserting a Hoffmann Dovetail Key.
15. If setting is correct, raise carriage approx. 50mm (2") with hand wheel and install new chip breakers in table recess (you will have to round corners of standard chip breakers before installation).
16. Place a piece of 3/4" (19mm) scrap moulding on new chip breaker and while one person is holding the material tightly, the second person shall slowly lower the spinning router motor down through the scrap and through the new chip breaker until the motors shut off.

**The scrap moulding is used to avoid any tearing on the top of the new chip breaker during the initial cut.**



## 16.3 Router bit adjustments

Hoffmann Dovetail Keys are designed to create permanent and reliable joints in a wide range of wood products.

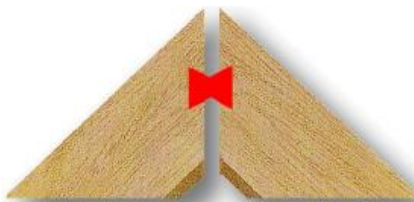
For optimum strength and reliability, it is important to adjust the router bits properly.



The minimum cutting depth into the miter face is

Size W1	3.5 mm
Size W2	5.1 mm
Size W3	6.9 mm

This is the minimum setting at which the Keys will still create a tight joint. If the material allows, a deeper setting will increase the “draw” or “pull” of the Key.



**Incorrect:**

If the router bit projection is set too shallow, the Key is not able to pull the miter faces together. An open joint is the result.



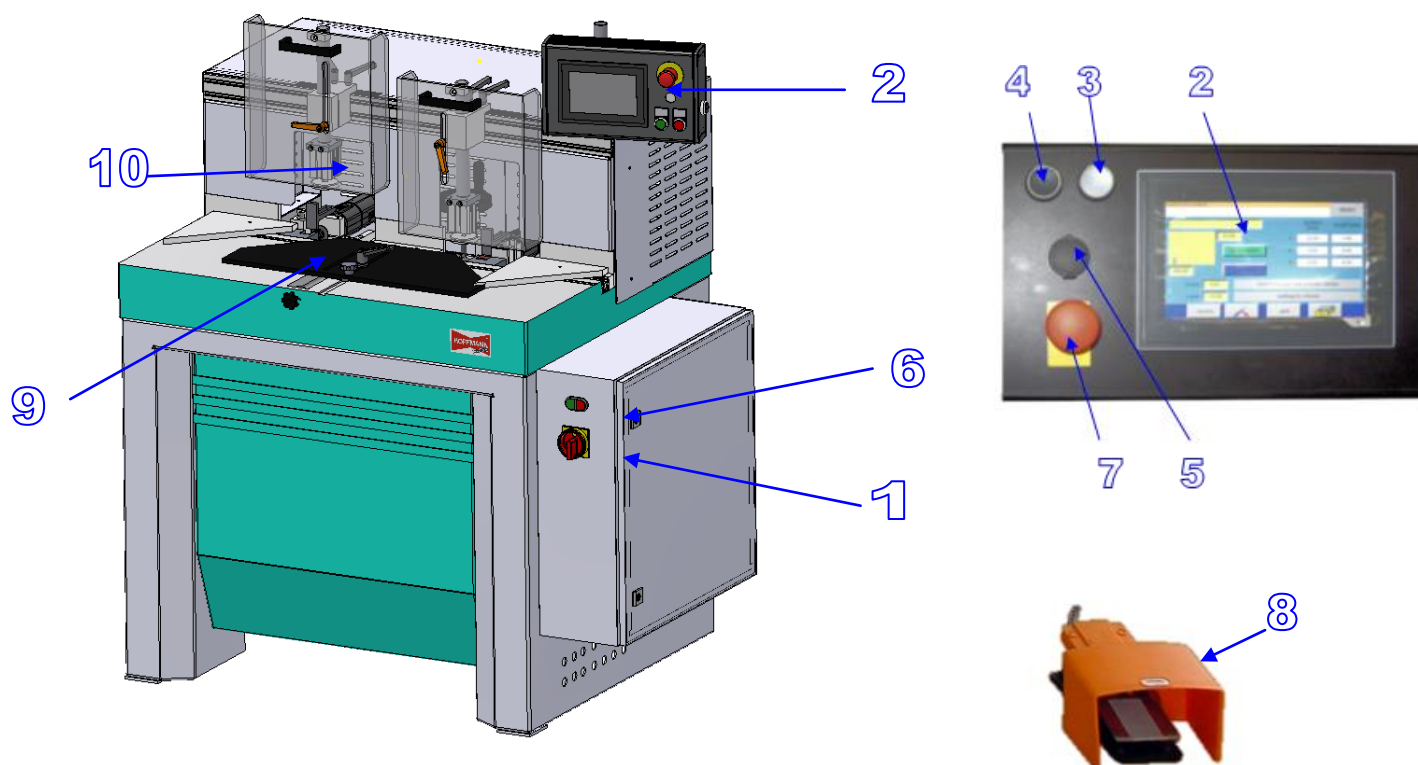
**Incorrect:**

If the router bit projection is set too far, the Key and/or the material can split resulting in damage to the material.

Final router bit adjustments are always made by moving the router motor in or out of the motor bracket as needed. A small movement will make a noticeable difference (0.1 – 0.2mm). You can check the depth of cut in the miter faces with digital calipers, often times only one of the two motors requires an adjustment.

Do not try to fine tune the router bit projection by moving the bit in or out of the collet – it is much easier, more precise and faster to move the whole motor instead of only the bit.

## 17 Machine Controls



Pos.	Description	Function
01	Power Switch	Main Power Switch
02	Touch-Screen	See separate instruction manual
03	START button	To activate automatic routing sequence
04	STOP button	To stop automatic routing sequence
05	USB-port	USB-port
06	ON – OFF button	To start or stop machine controls
07	Emergency Stop	E-stop to immediately stop all machine functions and movements
08	Foot switch	To activate material clamps
09	Center Fence Plate	Standard 45 degree fence plate, other angles optional
10	Material clamp cylinder	Short-stroke cylinder to clamp work piece securely on machine table

## 17.1 Machine Operation – Start-up of machine

---



**WARNING!**  
**Clamping cylinders can pinch  
and injury fingers!**

The machine is equipped with two pneumatic hold-down cylinders, one on each side. For safe and proper operation the cylinders must be lowered to within 1/8" of the moulding surface.

**Warning:**

Never operate the machine without operational clamping cylinders. Serious injury could result if the work piece is not securely clamped during the routing operation.

Replace the felt pads as needed – replacement parts are available from Hoffmann, Inc.

### **Start-up of machine**

1. Release Emergency-Stop button by pulling red button out.
2. Turn main power switch to ON (I) position
3. Press green ON button above main power switch.
4. Wait for computer boot-up sequence to complete (approx. 20 seconds), touch-screen will switch from black to color background.
5. Initiate homing reference sequence by pressing blue "reference" field on touch screen
6. Place material on machine table and adjust material hold-down cylinders to within 1/8" above moulding surface.
7. Enter desired keyway locations and routing heights or select previously stored data set on touch screen.
8. Press foot switch to activate material clamps.
9. Press white, illuminated START button next to touch screen to start routing sequence.
10. Remove moulding after routing sequence has ended and material clamps have released moulding.

## 17.2 Machine Operation – Shut-Down of machine

---

1. Switch off red ON-OFF button above main power switch.
2. Switch off main power switch (O)
3. Disconnect compressed air supply line at air regulator for additional safety.



## 18 Faults – Errors - Emergencies



■ Only qualified and trained personnel may perform troubleshooting and testing procedures!

■ Person not involved with trouble shooting shall remain a safe distance from machine until normal operation is restored.



**In case of emergency press Emergency Stop Button.**

Activating the emergency stop button will stop saw and router motors and return all carriages back to their home positions.

The material clamping cylinders remain under pressure and must be deactivated separately.

### **WARNING!**

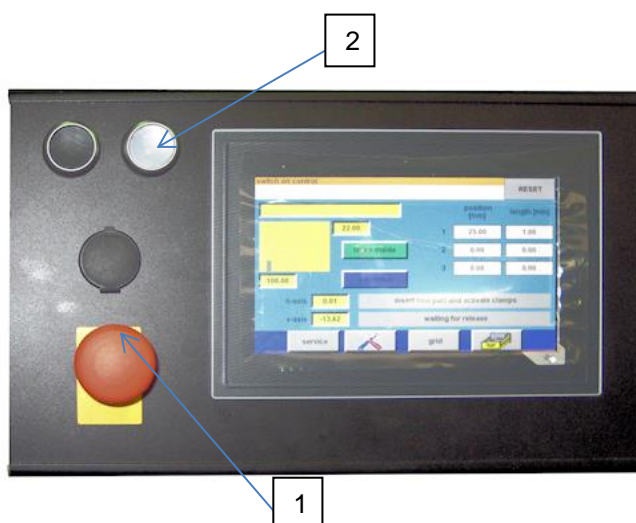
Shutting off machine or disconnecting electrical power supply will not disconnect compressed air supply. Pneumatic circuit remains under pressure even when main power switch is switched-off and locked!

## Emergency Stop reset



Upon activating the Emergency Stop Switch (1) follow these steps to re-set the machine controls:

1. Release red E-Stop button (1).
2. Switch on machine control panel (2).



## 19 Troubleshooting Chart

Error #	Indication	Reason	Remedy
1	Router motors will not start	Motors have not been switched on No power to motors	Check switches on motors Check power cords for internal damage. Check for proper connection
2	Router speed (rpm's) decrease	Dull tooling Feed rate too high	Check and replace tooling (router bits) Adjust feed rates with flow control valves on main cylinder
3	Loud noise during machining cycle.	Dull or damaged tooling.	Check and replace tooling (router bits)
4	Router won't move freely.	Guides and/or tracks dirty.	Clean tracks and guide rods.
5	Keyway location offset from left to right hand work piece	Router reference points not adjusted properly	Adjust reference points in touchscreen menu
6	Dovetail Key too tight when inserted – wood splitting	Router bits cut too deep into miter face	Move motor(s) back by 0.2- 0.5mm
7	Dovetail Key not tight enough when inserted – miter faces do not touch	Router bits do not cut deep enough into miter face	Move motor(s) forward by 0.2- 0.5mm

## 20 Maintenance

**During set-up and maintenance procedures, the following dangers exist in the above areas:**



**Danger of entanglement and pinching!**

During set-up and maintenance work, especially when access doors must be opened, additional dangers of entanglement or pinching on belts, sprockets, router station, etc. are present. Do not wear loose fitting clothing. Long hair must be covered with a hair net.



**Danger of cutting of hands and fingers!**

All routing areas present dangers of cutting of hands and fingers.



Machine operator and maintenance personnel may only perform activities described in this manual.

Persons working on or with this machine must be at least 18 years old, they must be thoroughly familiar with this operating manual and they must adhere to all local safety rules and regulations. All OSHA specified rules must be followed if applicable.

Persons working on or with this machine must wear suitable clothing designed to avoid entrapment in rotating machine components.

No loose fitting clothes e.g. ties or shawls, or bracelets, wristwatches, necklaces, etc. may be worn when operating this machine.

Persons with long hair should tie their hair securely and wear an appropriate hair covering to avoid entanglement.

## 21 Maintenance Schedule

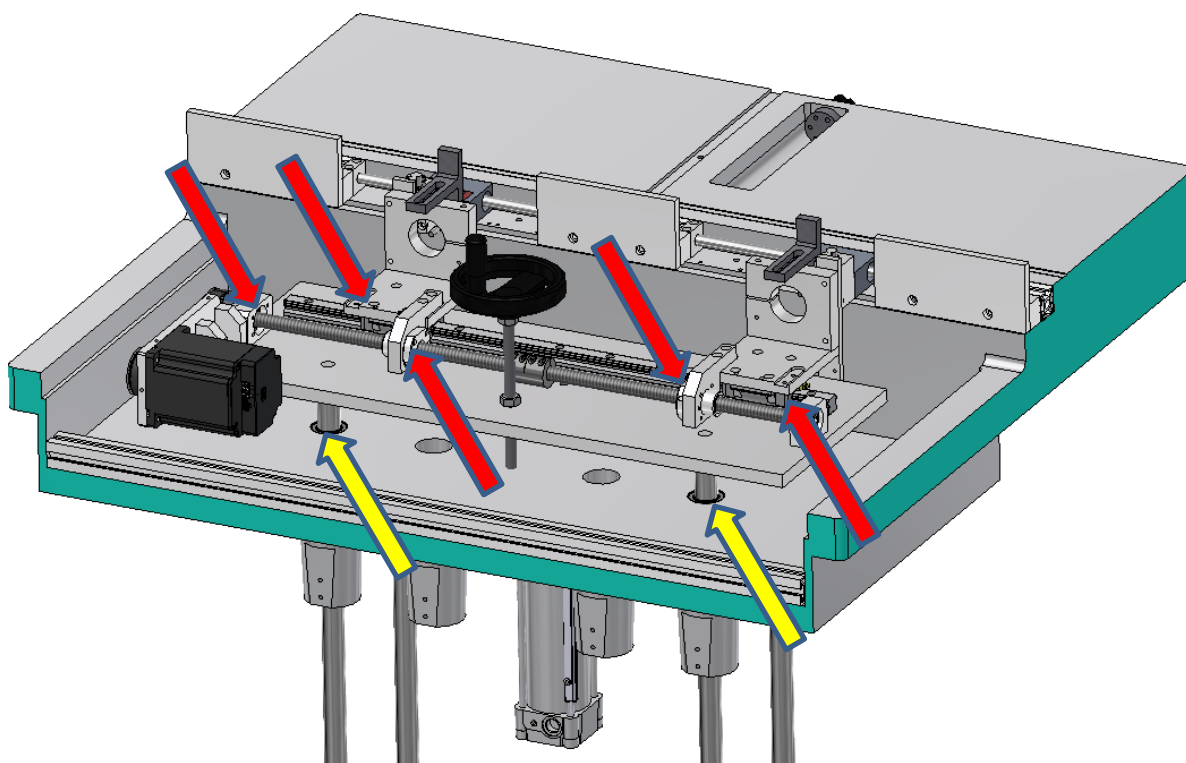




**Warning – Safety Hazard!**  
Always disconnect electrical and compressed air supply and follow proper Lock-Out/Tag-Out procedures



To access the inside of the machine open the rear sliding door.

### Lubrication points - Locations of grease fittings



POS	Location	Procedure	Lubricant	Frequency
	Linear Bearings (THK-type)	Fill grease fitting with appropriate grease	Semi-Synthetic high performance multi-use grease DIN 51825 / KP 2 P-30 (e.g.. ESSO / Grease LT2) (kinematic viscosity at 40°C = 80mm²/s(cSt) - ISO-VG 68 → ISO-VG 100	Every 3 months or 500 hrs – whichever comes first.
	Linear bearings Guide rod blocks	The guide rod bearings are filled with grease at the factory.	No additional lubrication is necessary	Maintenance free

Frequency	Description
daily	Check tooling for wear and damage.
	Check all safety devices for proper function.
weekly	Clean debris from machine.
	Check wires, cable, switches, hoses, lines for damages.
	Drain condensate from air filter assembly.
	Check cylinder switches and sensor for proper function.
monthly	Remove dust and debris from all machine components.
	Clean cooling vents on all motors.
	Check belt tension and re-tighten is necessary
quarterly	Remove grease expelled from grease fitting or bearings.
	Refill linear bearing with grease.
	Refill air lubricator with BOSCH S OL 20 pneumatic lubricant.
Semi-annually	Check pneumatic circuit for leaks and repair if necessary.

## 22 Pneumatic air regulator-filter-lubricator assembly

The machine is equipped with pneumatic components for various operating movements and sequences.



**Warning – Safety Hazard!**  
**Always disconnect electrical and compressed air supply and follow proper Lock-Out/Tag-Out procedures**



POS	Description	Info
1	Air pressure adjustment cap	Factory set to 90 psi(6 bar)
2	Lubricant control screw	Factory set
3	Lubricant filler plug	Use a 6mm Allen key to remove plug and refill lubricant.  <b><u>Warning:</u></b> <b>Air pressure must be switched-off and locked out!</b>  <b>Note: Only use BOSCH Type: S OL 20 lubricant</b>
4	Condensate separator	See maintenance schedule
5	Shut-Off valve	Must be shut-off and locked with padlock during maintenance procedures.

### **Cleaning:**

**Air pressure must be switched-off and locked out!**

Use only water, mineral spirits or WD 40 to clean pneumatic filters and bronze exhaust mufflers.

Clean or replace filters if pressure drop is noted in system.

## 23 EG-Conformity Certification



### EG-Konformitätserklärung nach 2006/42/EG, Anhang II, Nr.1 A

**Firmenanschrift:** Hoffmann Maschinenbau GmbH  
Mergelgrube 5, 76646 Bruchsal  
Deutschland

Herr Arnd Wenz ist bevollmächtigt, die technischen Unterlagen zusammenzustellen.  
Anschrift: Hoffmann GmbH, Arnd Wenz, Mergelgrube 5, 76646 Bruchsal

#### Hiermit erklären wir, dass die Maschine

Bezeichnung: **PP2-NCF**  
Type: **Dovetail Routing Machine**  
Typennummer: **7.267**  
Seriennummer: \_\_\_\_\_  
Baujahr: **2016**

mit allen einschlägigen Bestimmungen der EG-Maschinenrichtlinie 2006/42/EG in  
Übereinstimmung ist.  
Die Maschine ist auch in Übereinstimmung mit allen einschlägigen Bestimmungen  
der folgenden EG-Richtlinien:

2004/108/EG EG-EMV-Richtlinie

**Benannte Stelle:** **BG-PRÜFZERT**  
**Fachausschuss Holz**

Anschrift: Vollmoellerstraße 11  
70563 Stuttgart  
Kenn-Nummer : 0392  
Zertifikat-Nummer: XXXXXXXXXXXX

#### Folgende harmonisierten Normen oder Teile dieser Normen wurden berücksichtigt:

EN 12100-1:2004-04 Sicherheit von Maschinen: Grundsätzliche Terminologie  
EN 12100-2:2004-04 Sicherheit von Maschinen: Technische Leitsätze  
EN 1870-16:2005-07 Sicherheit von Holzbearbeitungsmaschinen -  
Klinkschnitt-Kreissägemaschinen

Ort / Datum: Bruchsal, 01.01.2016

**Unterschrift:**



Martin Hoffmann, Leiter der Technik

## 24 Terms and Conditions of Sale and Warranty

### 1. Application and Scope:

The terms and conditions contained herein apply to proposals made, and to purchase orders received, by HOFFMANN MACHINE COMPANY, INC. (hereinafter called "Seller"), and sets forth the entire agreement between the parties hereto, and supersedes all communication, representations or agreements, whether oral or written, between the parties hereto with respect to the subject matter herein, and no agreement or understanding varying or extending the terms or conditions hereof will be binding unless expressly agreed to in writing by Seller. No conditions stated by Buyer in its purchase order or orders shall be binding upon Seller if in conflict with, inconsistent with, or in addition to, the terms and conditions contained herein, unless expressly accepted in writing by Seller. Seller's failure to object to any provision contained in any communication or purchase order from Buyer shall not be deemed a waiver of the terms and conditions herein. All orders or contracts are subject to approval and acceptance by Seller at its main office in North Carolina. These Terms and Conditions are within the sole discretion of Seller and are subject to change with or without prior notice.

### 2. Quotations and F.O.B. Point:

Prices are quoted and all sales are made F.O.B. Sellers facility and, unless otherwise indicated in the proposal, prices quoted are effective for a maximum thirty (30) days after the date of any proposal.

### 3. Terms of Payment:

All invoices are due and payable as set forth on the front of the invoice. Each delivery shall be considered a separate and independent transaction and payment thereof shall be made on terms set forth on invoice covering same. If delivery is delayed by Buyer, payment shall become due when Seller is prepared to make delivery. If, in the sole judgment of the Seller, the financial condition of Buyer at any time does not justify continuation of manufacture or of delivery as originally specified, Seller may vary terms of payment by requiring full or partial payment in advance, or otherwise, or may ship to Buyer's order against sight draft with bill of lading attached.

If payment is not received on or before payment due date and as set forth in terms on proposal and/or invoice, or if payment is delayed, or if payment amount is reduced, seller reserves the right to reduce or revoke equipment warranty, at seller's sole discretion. Eventual payment of outstanding amount does not automatically reinstate warranty. Warranty can only be reinstated by seller and reinstatement must be confirmed by seller in writing to be valid.

### 4. Taxes:

Unless the quotation expressly provides otherwise, the amount of any present or future Federal, State or local sales, excise or other tax applicable to the products purchased hereunder, or to the manufacture or sale thereof (including, without limitation, state or local privilege or excise taxes based on gross revenue), and any taxes or amounts in lieu thereof paid or payable by Seller in respect of the foregoing (excluding, however, taxes based on net income), shall be added to the purchase prices and shall be paid by Buyer. In lieu thereof, Buyer may provide Seller with an appropriate tax exemption certificate acceptable to the taxing authorities.

### 5. Warranty:

The products covered herein are warranted, for a period of twelve (12) months from date of shipment, against defects in material and workmanship under normal use and service by Buyer. The liability of Seller under its warranty is limited to adjustment, in accordance with the Warranty Adjustment Terms set forth below, for products which are found to be defective by Seller in the form in which they were originally shipped. In no event will Seller be liable for collateral, consequential or other damages of any kind.

Parts replaced under Warranty are covered for a period of six (6) months from the date of shipment, unless otherwise specified on invoice, subject to the warranty adjustment terms set forth below.

**SELLER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**



#### 6. Warranty Adjustment Terms:

- (a) Adjustments will be limited to claims which are presented promptly after the product is found to be defective, and within the aforesaid warranty period.
- (b) All products claimed to be defective will be subject to inspection and test by Seller. Normally, Seller will request return of products for inspection and test, however, Seller reserves the right to make inspection and test on Buyer's premises. Returns are to be made only as and if authorized in writing by Seller.
- (c) Buyer will pay all packaging, inspection, labor and transportation costs involved. Credit for the transportation costs only will be issued by Seller provided adjustment subsequently is allowed.
- (d) No adjustments will be allowed for products which have been subjected to abuse, improper installation or application, alteration, accident or negligence in use, storage, transportation or handling; nor for products on which original identification markings have been removed, defaced or altered.
- (e) Final determination as to whether any adjustment is allowable, and as to the extent thereof, rests with Seller. Full adjustment, if allowed, normally will be made by replacement in kind on an exchange basis. Pro rate adjustment, if allowed, normally will be made by the issuance of credit. In all cases, however, Seller reserves the right to make adjustment by repair, replacement or credit.
- (f) Replacement for products found subject to adjustment, whether new or repaired, will be shipped F.O.B. city of destination with transportation charges prepaid by Seller.

#### 7. Installation:

Buyer shall install machinery purchased from Seller at Buyer's cost and expense, unless otherwise expressly stipulated in writing.

#### 8. Packaging and Shipment:

All products shipped hereunder will be packaged in accordance with standard commercial practice for domestic shipment. Seller's liability as to delivery ceases upon making delivery of products purchased hereunder to carrier at Seller's facility, in good condition, the carrier acting as Buyer's agent. All claims for damages must be filed with the carrier or Buyer's insurer as appropriate. Seller will select the method of shipment unless Buyer does so in writing at least ten (10) days in advance of the scheduled delivery date. Equipment held for Buyer because of Buyer's delay in acceptance, shall be at Buyer's risk and expense. Seller does not assume liability for shipping in the least expensive manner.

#### 9. Deliveries:

It is the desire of Seller to meet requested delivery schedules, however, Seller shall not incur any liability, consequential, collateral or otherwise, due to any delay or failure to deliver for any reason, other than arbitrary refusal by Seller to perform. Any delivery indication furnished by Seller only represents the best estimate of the time required to make shipment.

#### 10. Assignment:

Buyer shall not assign this purchase order or any interest herein or any rights thereunder, without the prior written consent of Seller

#### 11. Termination:

Seller may terminate the purchase order or any part thereof herein referred to or any other purchase order or orders then outstanding by written, telegraphic or electronic mail notice to Buyer if Buyer becomes insolvent or is subject to proceedings under any law relating to bankruptcy, insolvency or relief of debtors. Upon such termination Seller shall be entitled to receive reimbursement for reasonable termination charges.

#### 12. Cancellations or Returns:

Buyer shall not cancel any order nor return any equipment without first obtaining the written consent of Seller. In any event, in case of refusal or inability of Buyer to accept a delivery, the Buyer shall nevertheless be liable for freight, express, storage, handling, restocking and any other expense resulting. In no event are orders for machines or parts built to customers' specification subject to cancellation and Buyer shall be liable for work done and materials used.

#### 13. Specifications:

- (a) Phone order specifications are filled at Buyer's risk unless confirmed in writing prior to commencement of manufacture.
- (b) If equipment is found not to meet original specifications, Seller shall have a reasonable time to make adjustments.

#### 14. Law Governing:

Buyer's purchase order shall be governed by and construed according to the laws of the State of North Carolina. The courts of the State of North Carolina shall have jurisdiction over any controversy that may arise out of the dealings between Buyer and Seller.

**15. Force Majeure:**

Seller shall not be liable under this agreement by reason of its delay in the performance of or failure to perform any of its obligations hereunder if such delay or failure is caused by acts of God or the public enemy, riots, incendiaries, interference by civil or military authority, compliance with government laws, rules and regulations or any fault beyond its control.

**16. Acceptance:**

Payment for or a deposit made for the products shall constitute a contract embodying all of terms and conditions stated herein.

**17. Ownership:**

All products remain the sole property of the Seller until all charges, including all transportation, crating and installation costs, are paid in full.

**18. Severability:**

The provisions of these Terms and Conditions are intended to be severable. If, for any reason, any of the above provisions should be found unenforceable or invalid in whole or in part, in any jurisdiction, such provision be ineffective only to the extent the determination of invalidity or unenforceability in that jurisdiction. Any such determination shall not affect the enforceability or validity of the remaining provisions.

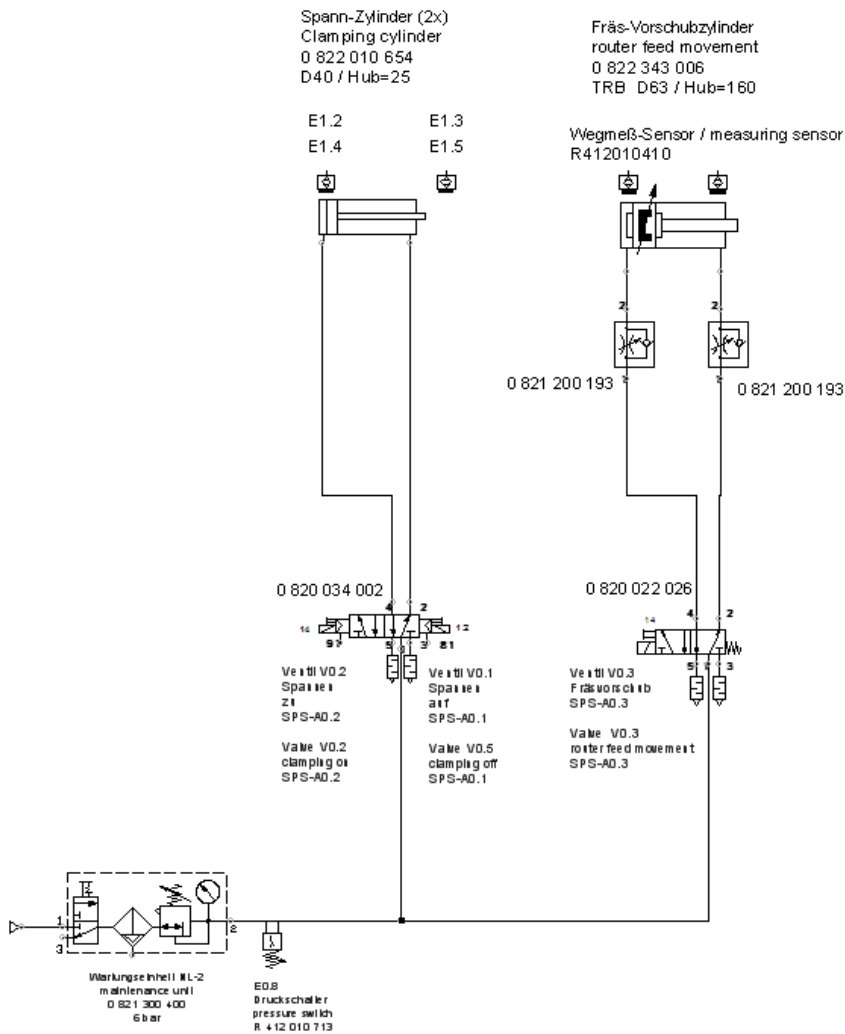
## 25 Technical Support Documentation - Addendum

### a. Addendum Overview

Enclosed with the Machine Manual are the following documents:

- ⇒ Machine parts list
- ⇒ Electronic circuit diagrams
- ⇒ Pneumatic circuit diagrams
- ⇒ Machine drawings

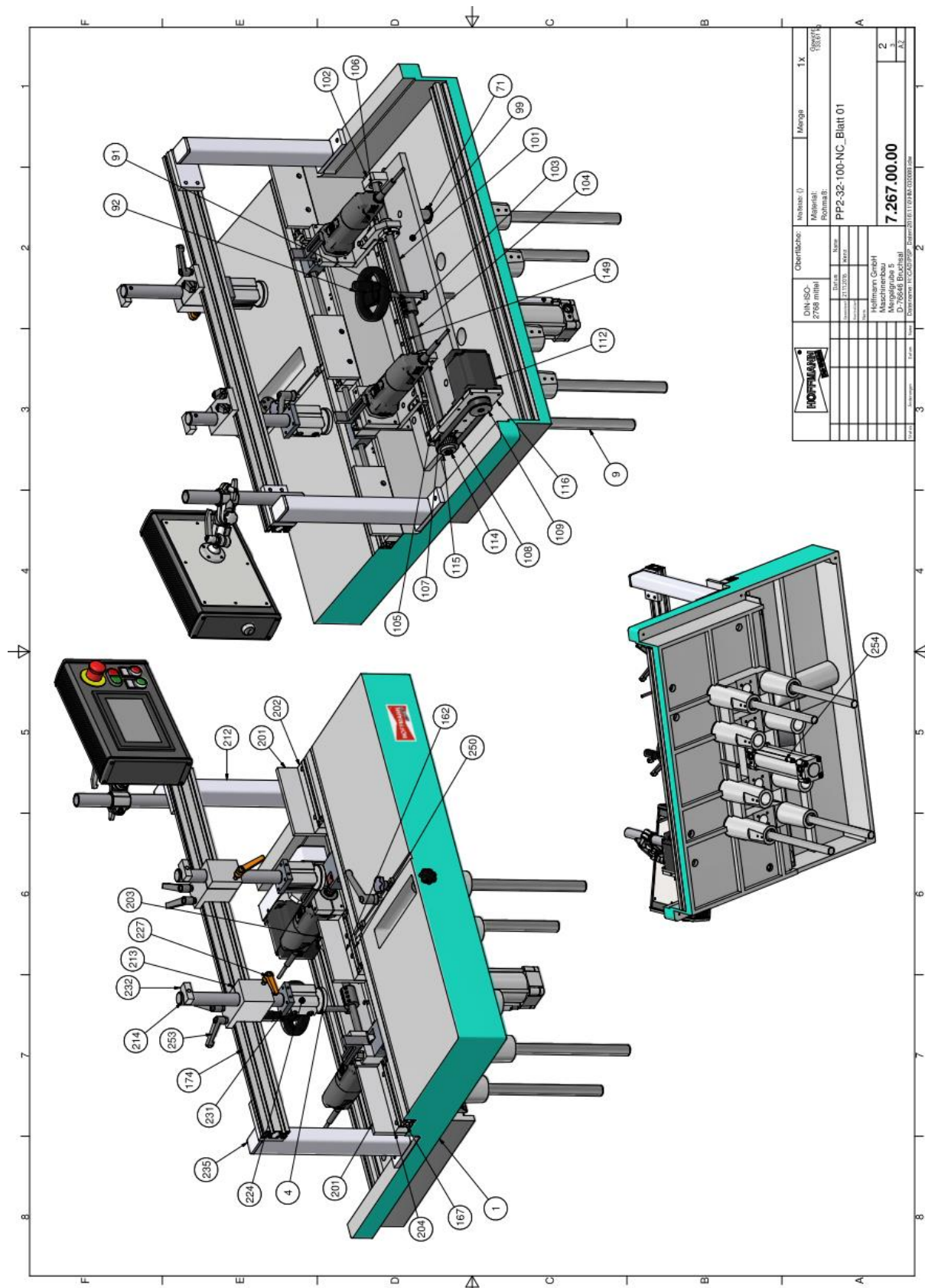
## 26 Pneumatic Circuit Diagram PP2-NCF



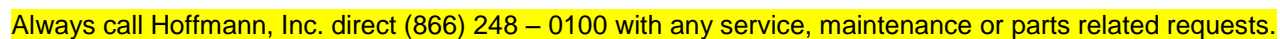
Fabrikat der pneumatischen Bauteile soweit nicht anders angegeben= BOSCH / Aventics  
All prefabricated pneumatic parts are manufactured by BOSCH / Aventics.

Always call Hoffmann, Inc. direct (866) 248 – 0100 with any service, maintenance or parts related requests.

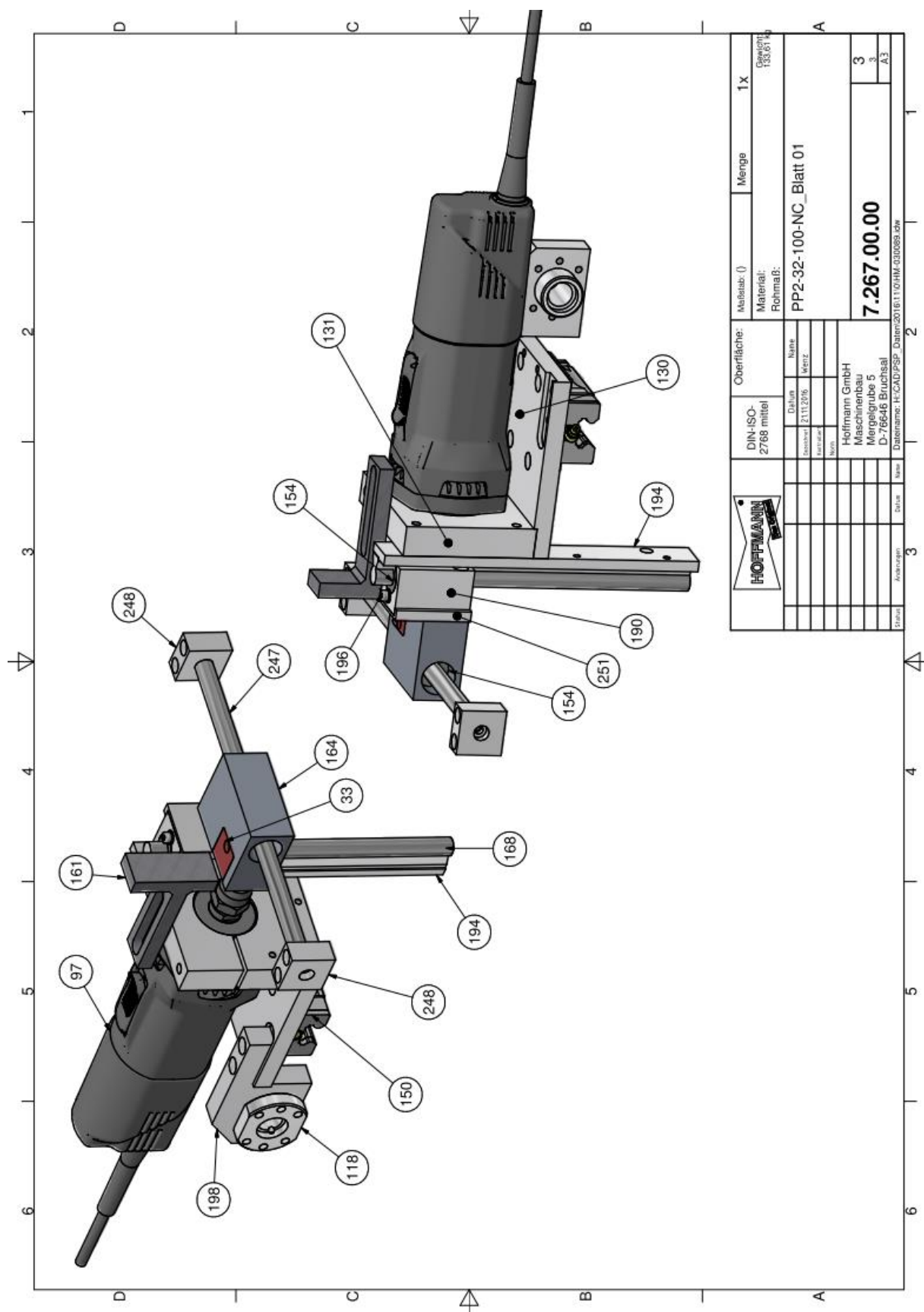
## 27 Machine Detail Drawings PP2-NCF



Always call Hoffmann, Inc. direct (866) 248 – 0100 with any service, maintenance or parts related requests.







Always call Hoffmann, Inc. direct (866) 248 – 0100 with any service, maintenance or parts related requests.

## 28 Machine Parts List PP2-NCF

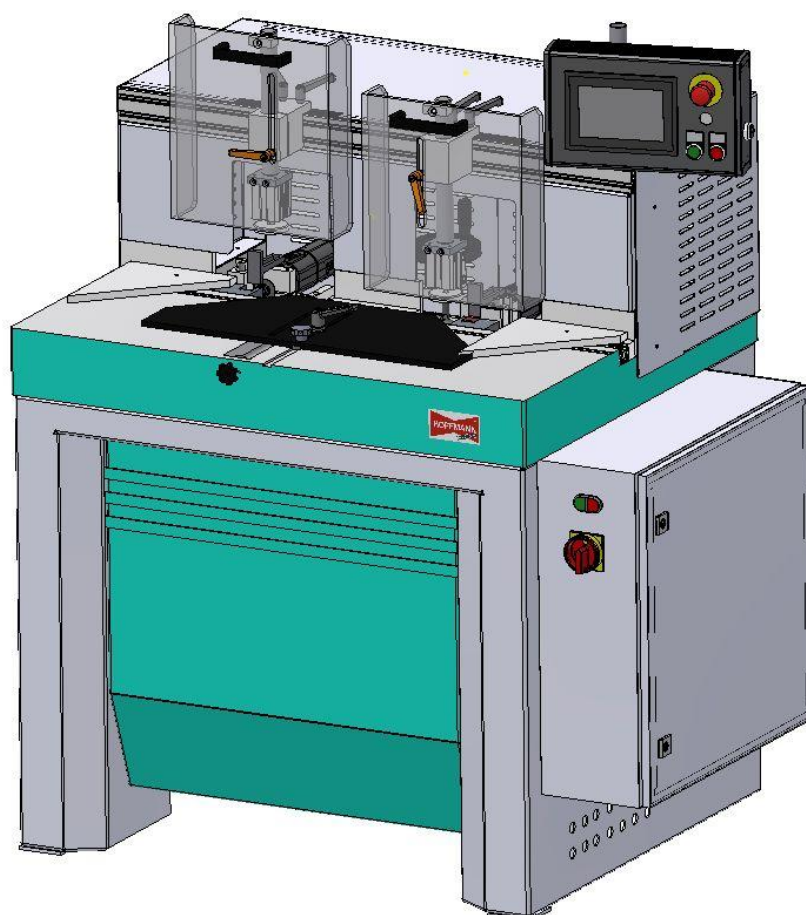
Pos	Part Number in Drawing	Description	Qty
1	900902-09-0	SO-cast table top	1
2	900970-04-1	SO-machien base	1
3	0 821 300 400	Air regulator unit PU2-PP2	1
4	310012-00-4	Spannplatte	2
8	KBS-2528-PP-AS	Kugelbuchse	8
9	7.195.01.08	Führungswelle D25x550mm M8	4
17	GN300-63-M8-50-SW	KT-Klemmhebel-M8*50	1
19	101108	Nutenstein M6	1
20	310003-01-4	Führungskeil-vorne	1
21	310004-00-4	Führungskeil-hinten	1
22	7.135005-02-2	Absaugung	1
29	7.135017-00-3	Anschlagrevolver	1
32	L459-BB-1217-DU	Gleitlager-Bundbuchse	1
33	200015-02-4	Spanbrecher MU2	1
40	822343006	Pneumatic-Zylinder	1
43	1827001631	Ausgleichskupplung M16x1,5	1
53	M20x1,5	Kabelverschraubung	1
65	HM-Fräser-W2	Schwalbenfräser	2
71	DLR 25	Wellen-Abstreifring D=25	4
74	L478-06220-208	Sterngriff-M8-Innen	1
79	320002-01-2	Anschlagplatte 45° PP2	1
91	M12x300mm	Gewindestange M12 für Fräserwechsel	1
92	GN 522-125-B12-D	ELESA - Speichenhandrad D125	1
93	DIN 934 - M12	Sechskantmutter DIN 934 - M12	2
94	L478-06220-4081x15	Sterngriff-M8x15	1
97	UAG-33 F	Fräsmotor 1000 Watt	2
99	7.267.00.02	Hubplatte	1
101	7.267.00.21	Y-Gewindekugelspindel-D16x5-LH	1
102	7.219.00.09	Loslager für D16	1
103	600 710 00	Geschlitzte Schalenkupplungen	1
104	7.267.00.20	Y-Gewindekugelspindel-D16x5-RH	1
105	7.219.00.08	Festlager für D16	1
106	DIN 625-6200-2Z	Rillenkugellager, D10x30x9	1
107	ZKLFA1050-2RS	Festlager	1
108	173 326 00	HTD-5M Zahnriemen WL=500 Z=100 B=15	1
109	17233000-B12,7	HTD-5M / RB=15mm / z=30 / B=D12,7	1
110	7.219.00.42-02	Schutzblech	1
111	7.219.00.07-01	Motorhalterung-Strebe	2
112	80MPH4.500S014-01	B+R Schrittmotor	1
113	HIR10x0.75	Nutmutter M10x0.75	1
114	61510800	Spannsätze Typ SIG, D8-D14	1
115	17233000-B14	HTD-5M für Riemenbreite 15mm z30 Bohrung=D14	1
116	7.219.00.06-03	Motorhalterung	1
118	ST1-R16-05T3-FSIDIN	ST-1	2
126	P1-25/VSVB	Hauptschalter kpl.	1

Always call Hoffmann, Inc. direct (866) 248 – 0100 with any service, maintenance or parts related requests.



130	7.267.00.03	Wagenplatte-rechts	1
131	7.267.00.05	Motoraufnahme	2
137	11512	VHM-Hoffmann-Keilnutfräser W3	1
141	7.267.00.50	Haube PP2-NCF	1
142	7.267.00.51	Rückwand-Tür	1
143	7.267.00.52	Rückwand	1
144	7.267.00.53	Frontblech	1
146	7.267.00.54	Schutzscheibe-rechts	1
147	7.267.00.55	Schutzscheibe-links	1
149	BRH20A LS 650-25-25	Profilschienenführungen BRH	1
150	BRH20A	Laufwagen	2
154	KBS-1232-PP-AS	Kugelbuchse	3
161	7.135028-01-3	Getriebeanschlag	2
162	7.267.00.28	Anschlagdistanz, Mitte	1
164	7.267.00.10	Spanbrecherwagen-rechts	1
167	30-30-165	Strebenprofil-30-30-165mm	2
168	WUN-12-210-30-30	Wellenunterstützung WUN mit Welle	2
173	30-30-900	Strebenprofil 30x30x900mm	2
174	101-3060	Bauer-Profil 30x60	1
190	7.267.00.14	Buchsenaufnahme	2
194	7.267.00.18	Mitnehmer-rechts	1
196	DIN 912 - M4 x 10	Zylinderkopfschraube DIN 912 - M4 x 10	1
197	DIN 125 - A 4,3	Unterlegscheibe DIN 125 - A 4,3	1
198	7.267.00.06	Spindelmutter-Aufnahme	2
201	7.267.00.27	Anschlagkante	2
202	7.267.00.25	Anschlagdistanz, rechts	1
203	7.267.00.29	Anschlagkante, Mitte	1
204	7.267.00.26	Anschlagdistanz, links	1
205	7.267.00.11	Spanbrecherwagen-links	1
206	7.267.00.08	Zylinderdistanz	1
212	7.267.00.60	Spannbrückenarm-rechts	1
213	7.267.00.35-01	Druckstangen-Halterung-links	1
214	7.267.00.36	Druckstange für Scheibe	2
216	06929-12001	Gerätegriffe	2
217	PP2-NCF Panel	PP2-NCF Bedienpult mit Touch-Screen 7"	1
221	M22-QDDL	Doppeldrucktaster-beleuchtet	1
224	822010654	KHZ-Zylinder D40-H25-A	2
227	GN 300-63-M8-32-OR	Verstellbare Klemmhebel M8	2
231	7.267.00.37	Scheibenhalter-unten	2
232	7.267.00.38	Scheibenhalter-oben	2
233	7.267.00.34-01	Druckstangen-Halterung-rechts	1
235	7.267.00.61	Spannbrückenarm-links	1
237	7.267.00.19	Mitnehmer-links	1
238	7.267.00.04	Wagenplatte-links	1
247	7.267.00.20-01	Präzisionsstahlwelle D12 x 248mm / 2x M5	2
248	7.267.00.30	Wellenhalterung	4
250	HM-30-30-135	Strebenprofil-30-30-135mm	1
251	7.267.00.31	Distanzplättchen	1
252	7.267.00.41	Innenanschlag 45°-links	2
253	GN300-63-M6-16-SW	Klemmhebel M6-16	4
254	R412010410	Wegmeßsensor 160mm	1

Always call Hoffmann, Inc. direct (866) 248 – 0100 with any service, maintenance or parts related requests.



## Touch Screen Instructions

Hoffmann Dovetail Routing Machine  
PP2-NCF

SO-Nr. 7.267  
Version: 12-2017

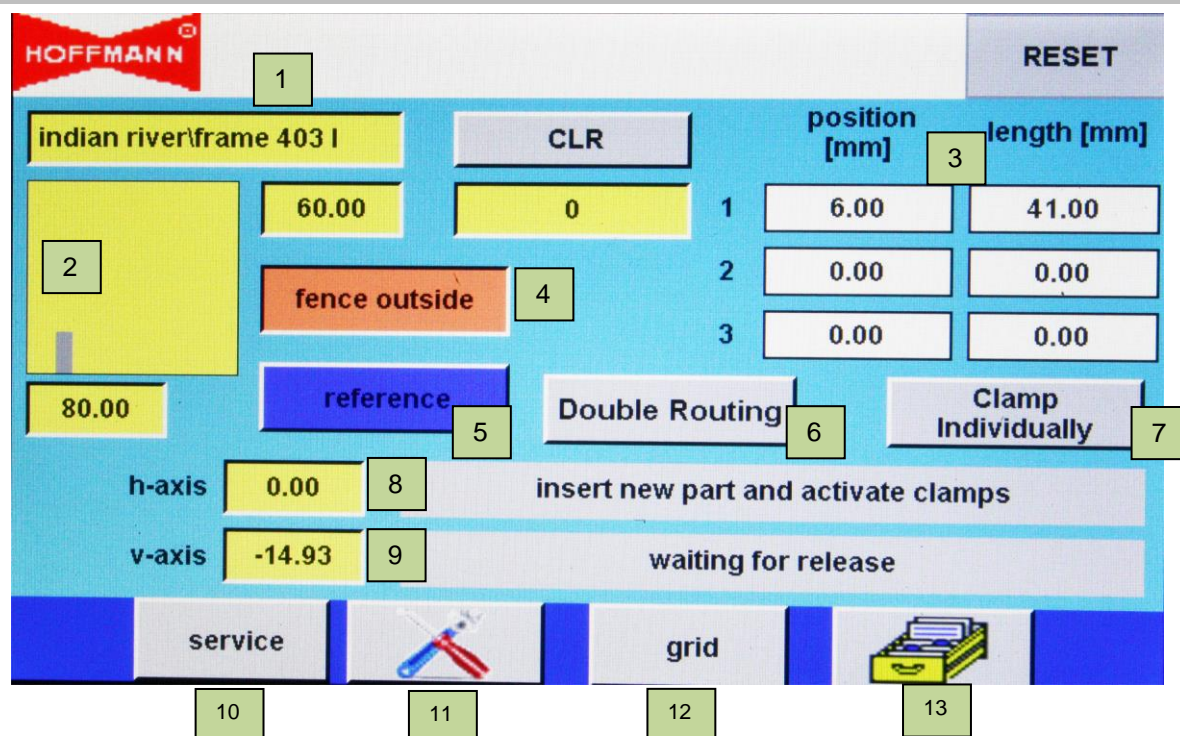
# SO 7.267



## 1 Table of Contents

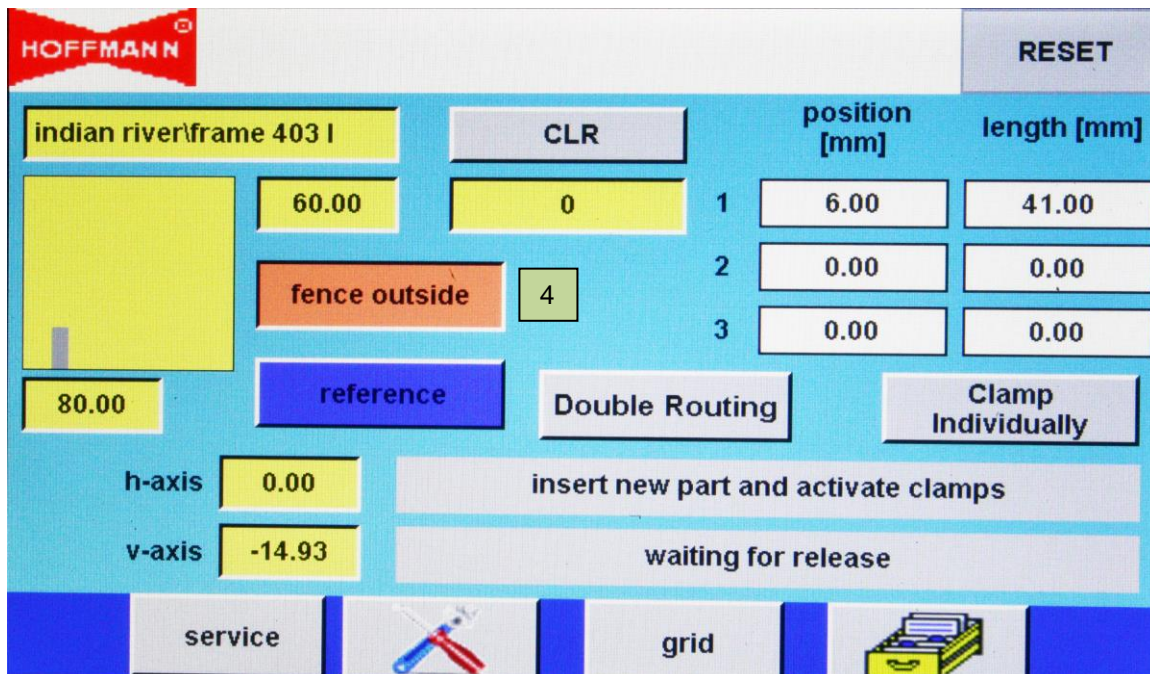
1	TABLE OF CONTENTS.....	2
2	MAIN MENU.....	3
3	SUB MENU MATERIAL DIMENSIONS.....	5
4	SUB MENU KEYWAY POSITIONS.....	6
5	SUB MENU FILES .....	7
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## 2 Main Menu



- |    |                |  |
|----|----------------|--|
| 1  | Text Field     | displays current file name   |
| 2  | Display Field  | displays pictogram of selected operation (# of keyways)              |
| 3  | Number Field   | displays keyway location(s) and routing height(s)                    |
| 4  | Selector Field | to toggle between Inside reference point and outside reference point |
| 5  | Selector Field | push to start referencing sequence                                   |
| 6  | Selector Field | to toggle between single and double routing when processing PVC      |
| 7  | Selector Field | to toggle between individual clamp operation or both sides together  |
| 8  | Number Display | displays current position of H-axis                                  |
| 9  | Number Display | displays current position of V-axis                                  |
| 10 | Selector Field | to move to sub-menu SERVICE  |
| 11 | Selector Field | to move to sub-menu TOOLS  |
| 12 | Selector Field | to move to sub-menu GRID   |
| 13 | Selector Field | to move to sub-menu FILES  |

## Selecting between inside and outside reference points



The screenshot shows the Hoffmann control interface with the following elements:

- Top Bar:** Hoffmann logo on the left, a 'RESET' button on the right.
- Material Field:** 'indian river\frame 403 I'.
- CLR Button:** A button labeled 'CLR'.
- Position and Length Table:**

	position [mm]	length [mm]
1	6.00	41.00
2	0.00	0.00
3	0.00	0.00
- Measurement Fields:**
  - 60.00 (yellow box)
  - 0 (yellow box)
  - 80.00 (yellow box)
  - h-axis 0.00 (yellow box)
  - v-axis -14.93 (yellow box)
- Selector Field:** A green box containing the number '4'.
- Buttons:** 'fence outside' (orange), 'reference' (blue), 'Double Routing' (light blue), 'Clamp Individually' (light blue).
- Status Bar:** 'insert new part and activate clamps' and 'waiting for release'.
- Bottom Bar:** 'service' button, a wrench and screwdriver icon, 'grid' button, and a yellow box icon.

Selector field 4

### Fence Inside

Both router motors move to their home position at the center of the machine.  
Machine measures keyway locations from miter tip with material placed against center fence plate.

### Fence Outside

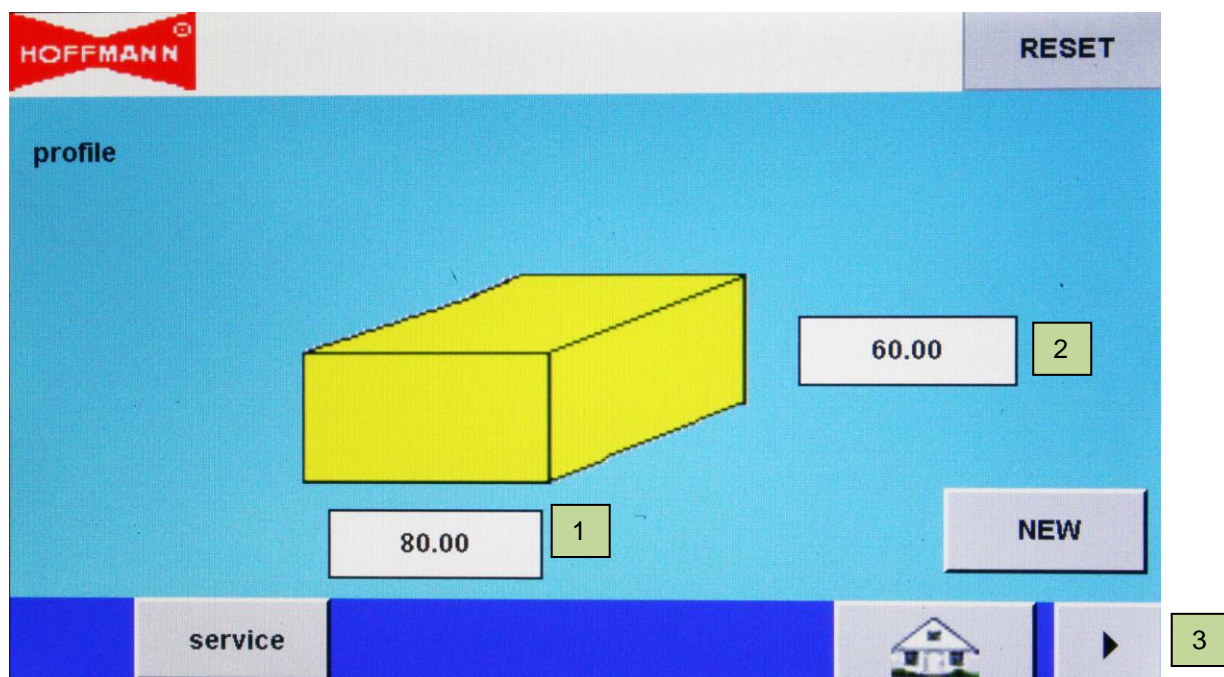
Both router motors move to their home position at the far left and far right of the machine.  
Machine measures keyway locations from inside corner with material placed against left and right hand inside corner fences.

### Important Note:

Due to the varying size of shutter frame material and the need for special support plates, when processing shutter frames the material is referenced against the **center fence plate** but the selector must be set to **Fence Outside** !

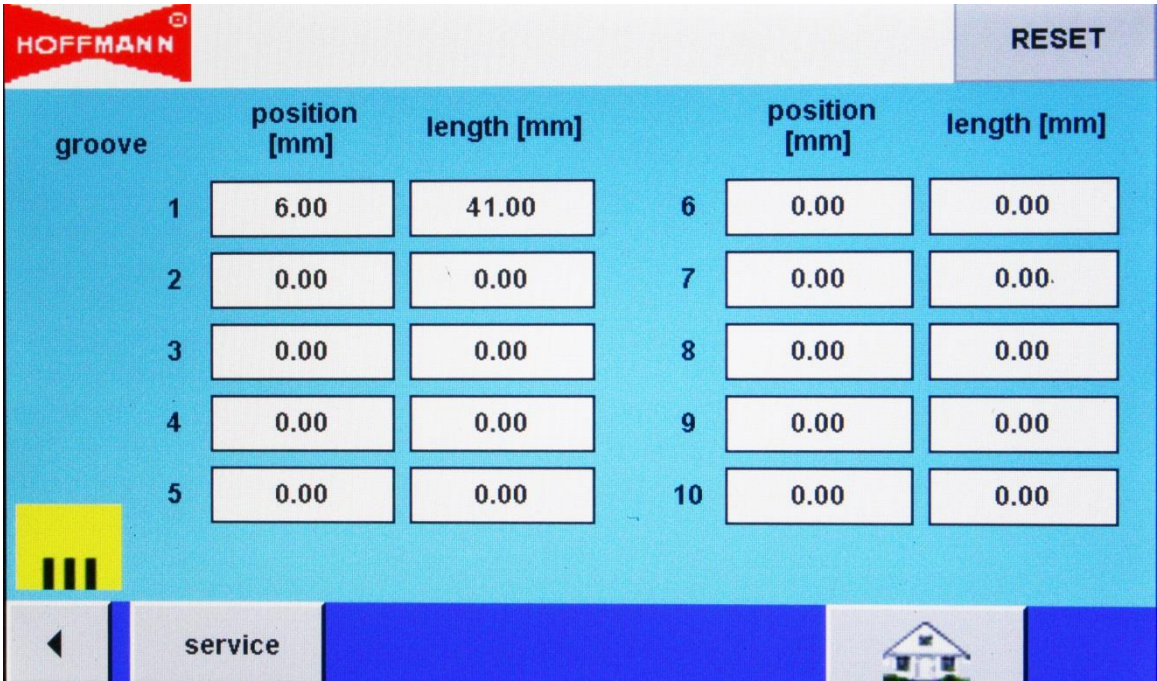


### 3 Sub Menu Material Dimensions



1	Number Field	To enter material width
2	Number Field	To enter material thickness
3	Selector Field	Press arrow to switch to sub-menu for keyway position entry

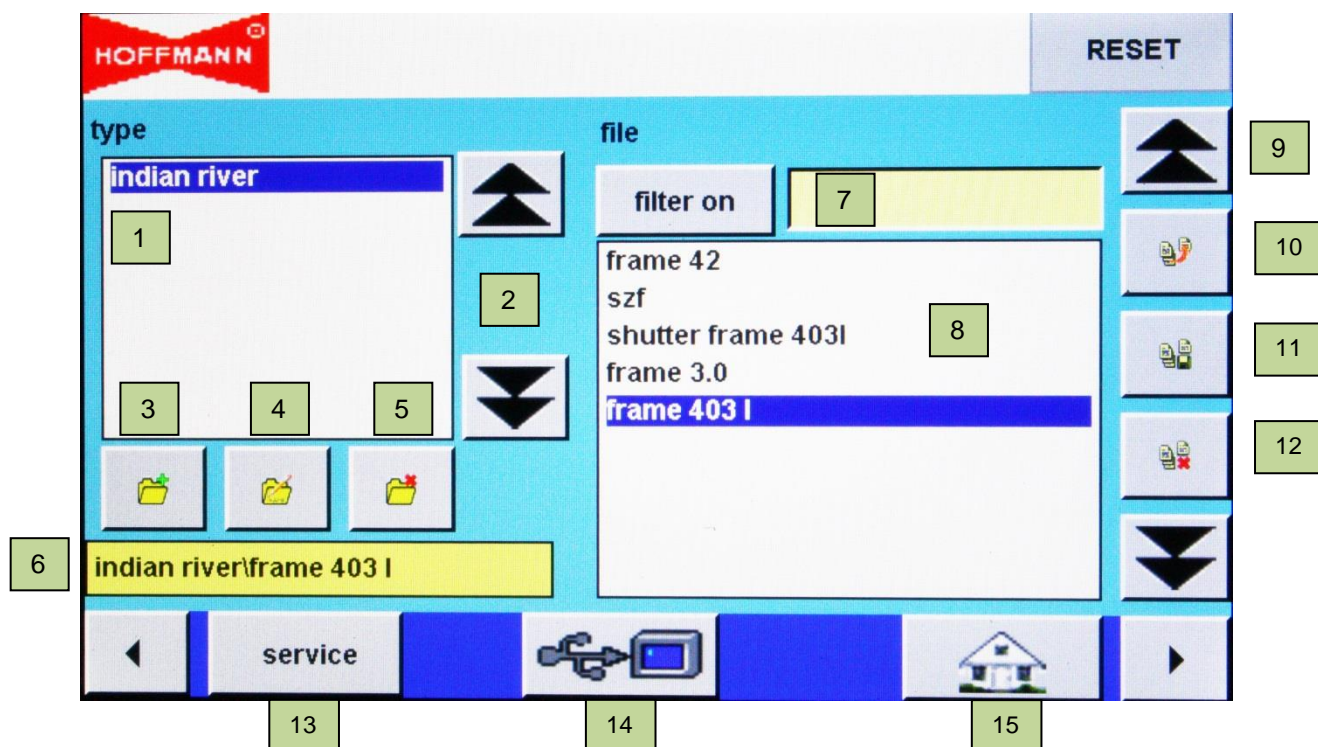
4 Sub Menu Keyway Positions



groove	position [mm]	length [mm]	position [mm]	length [mm]
1	6.00	41.00	6	0.00
2	0.00	0.00	7	0.00
3	0.00	0.00	8	0.00
4	0.00	0.00	9	0.00
5	0.00	0.00	10	0.00

	Number Field	To enter keyway position(s) and keyway length(s) -- routing heights
--	--------------	---

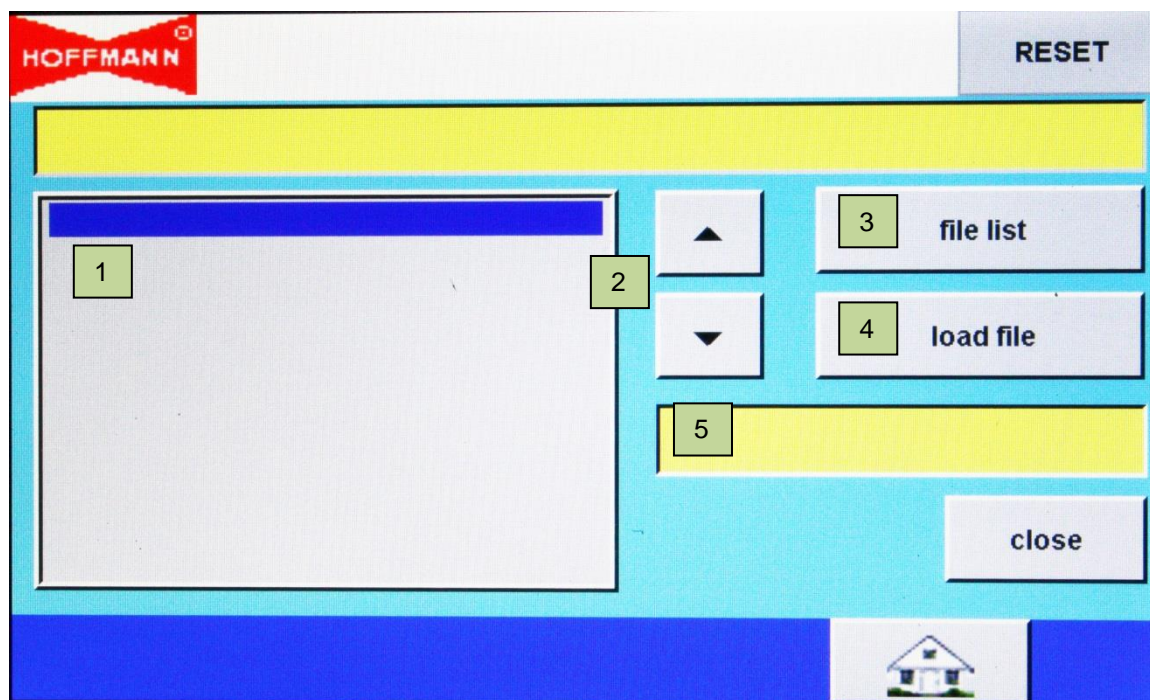
## 5 Sub Menu Files



1	Display Field	Displays all saved data folders
2	UP – DOWN arrows	To move folders selection up and down
3	Selector Field	NEW FOLDER – to create new folder
4	Selector Field	RENAME FOLDER – to rename current folder
5	Selector Field	DELETE FOLDER – to delete current folder
6	Display Field	CURRENT FOLDER – displays current folder
7	Display Field	Displays currently loaded program file
8	Display Field	Displays files in currently open folder
9	UP – DOWN arrows	To move files selection up and down
10	Selector Field	To transfer selected file to machine control unit
11	Selector Field	To create new file
12	Selector Field	To delete file
13	Selector Field	To move to sub menu SERVICE
14	Selector Field	To move to sub menu USB
15	Selector Field	To return to home screen



## 6 Sub Menu Loading from USB port (1)



**Data folder can be down loaded from a connected USB thumb drive.**

1	Display Field	Displays list of data folders
2	UP – DOWN arrows	To move files selection up and down
3	Selector Field	Press to select data
4	Selector Field	Press to download file from USB drive
5	Display Field	Displays file name selected with up and down arrows

## 7 Sub Menu Loading from USB port (2)



1	Selector Field	To transfer data from USB drive to machine PLC
2	Selector Field	To transfer data from machine PLC to USB drive

## 8 Data Entry Table



1	Number Field	File Number
2	Text Field	Material Description and/or Profile Name
3	Number Field	Workpiece quantity
4	Number Field	Workpiece width
5	Number Field	Workpiece thickness
6	Number Field	Position of first keyway
7	Number Field	Length (routing height) of first keyway
8	Number Field	Position of second keyway
9	Selector Field	Enter
10	Text Field	File name
11	Selector Field	To enter new data set
12	Selector Field	To switch to sub menu USB

## 9 Sub Menu Service

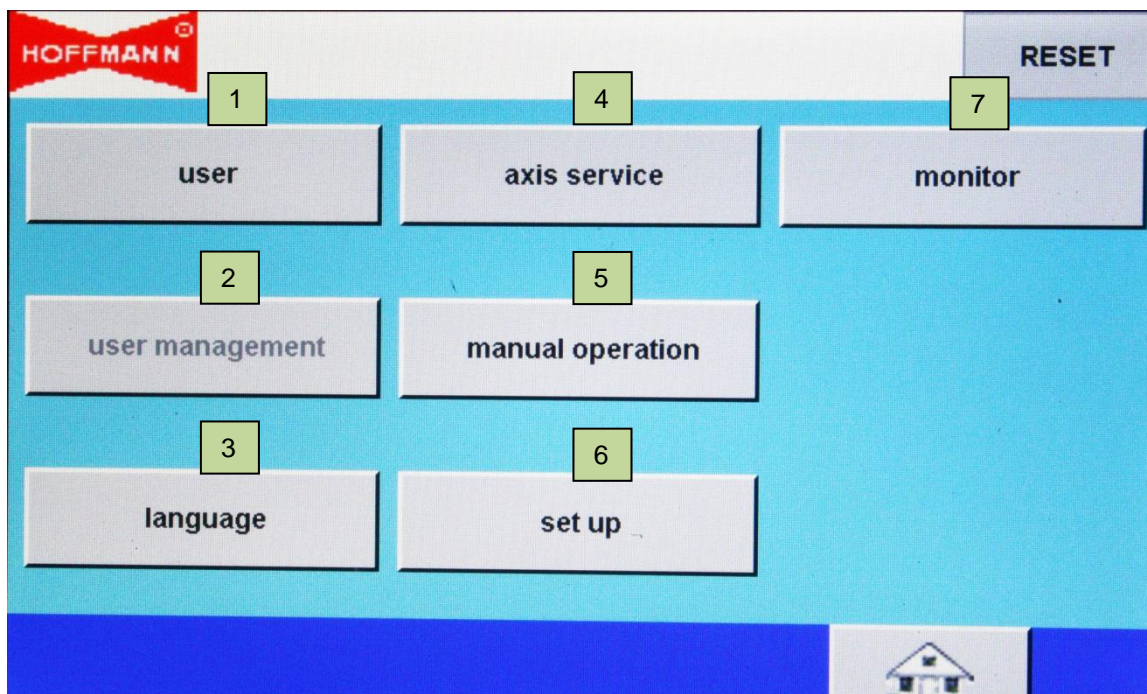
Sub Menu SERVICE is used to access machine specific parameter which in normal use do not require frequent changes.

All setting have been entered at the facotry and are to be considered „facotry base settings“.

Any changes to paramter values should be performed carefully, we recommend accurate record keeping and photos prior to making any changes.

This menu is passowrd protected (1961).

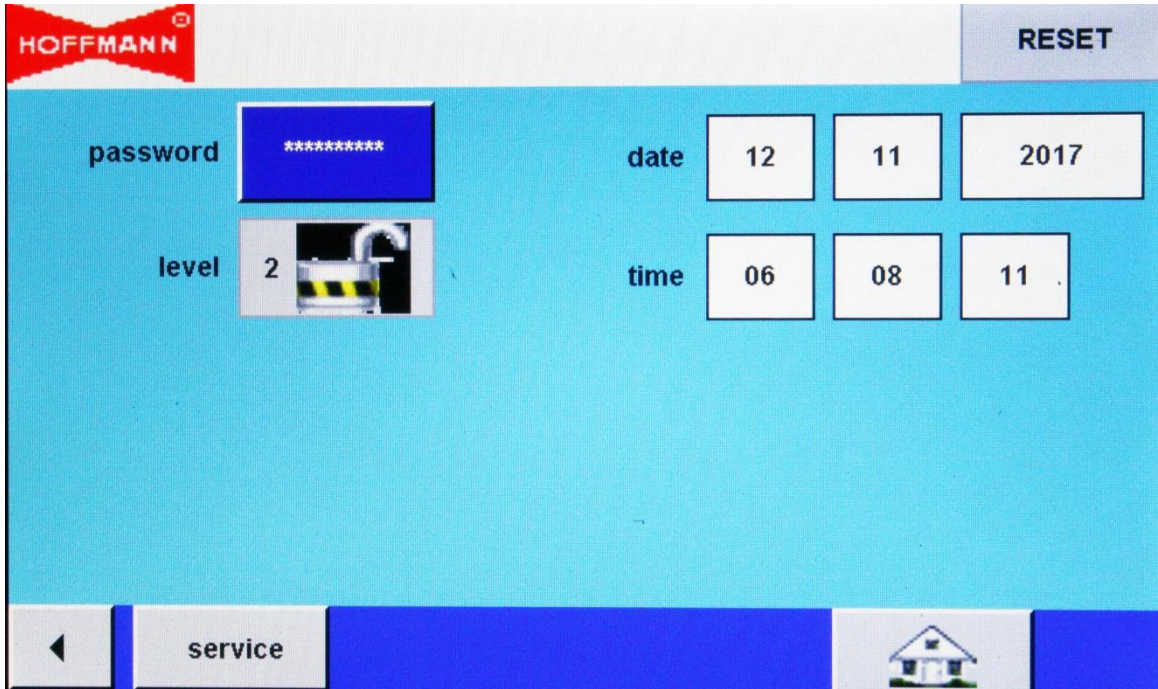
Please contact Hoffmann Machine Company, Inc. if assistance is required.



1	Selector Field	To select sub menu USER
2	Selector Field	To select sub menu USER MANAGEMENT
3	Selector Field	To select sub menu LANGUAGE
4	Selector Field	To select sub menu AXIS SERVICE
5	Selector Field	To select sub menu MANUAL OPERATION
6	Selector Field	To select sub menu SET-UP
7	Selector Field	To select sub menu MONITOR



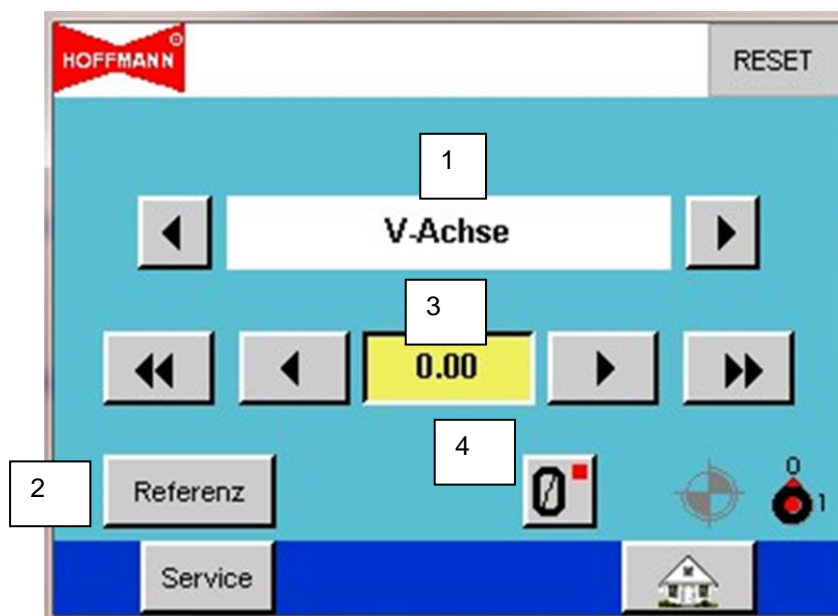
10 Sub Menu User



1	password	Enter password here.
2	Level	Displays current access level. Level 4 allows creation of new lower level passwords.

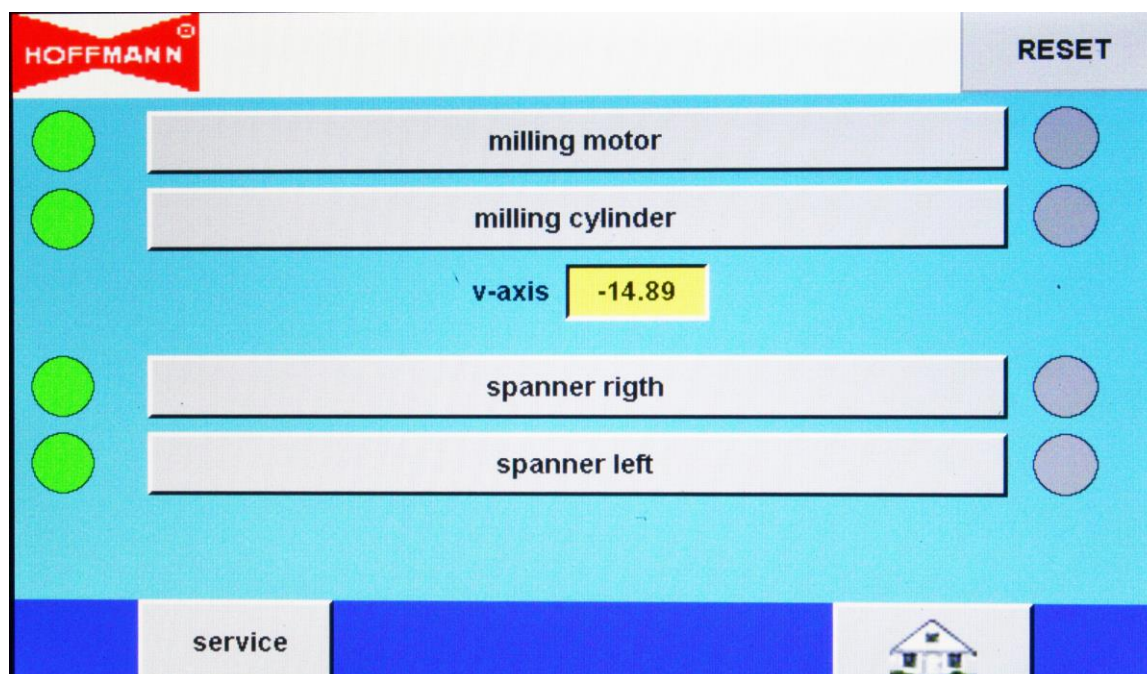
LEVEL	Permissions	password
1	Manual data entry and loading of files	1
2	Additional changes to parameter	1234
3	All permissions except creation of new passwords	1961
4	Full access (Hoffmann factory only)	****

## 11 Sub Menu Service Axis



1	Selector Field	Use arrows to select axis
2	Selector Field	Push to start axis reference process
3	Selector Field	Jog buttons to manually move axis in increments. Double arrows for increased speed.
4	Display Field	Red dot signals axis has not been referenced. Dot will change to green after successful reference sequence.

## 12 Sub Menu Manual Operation



Allows for manual operation of pneumatic cylinders and router motors.

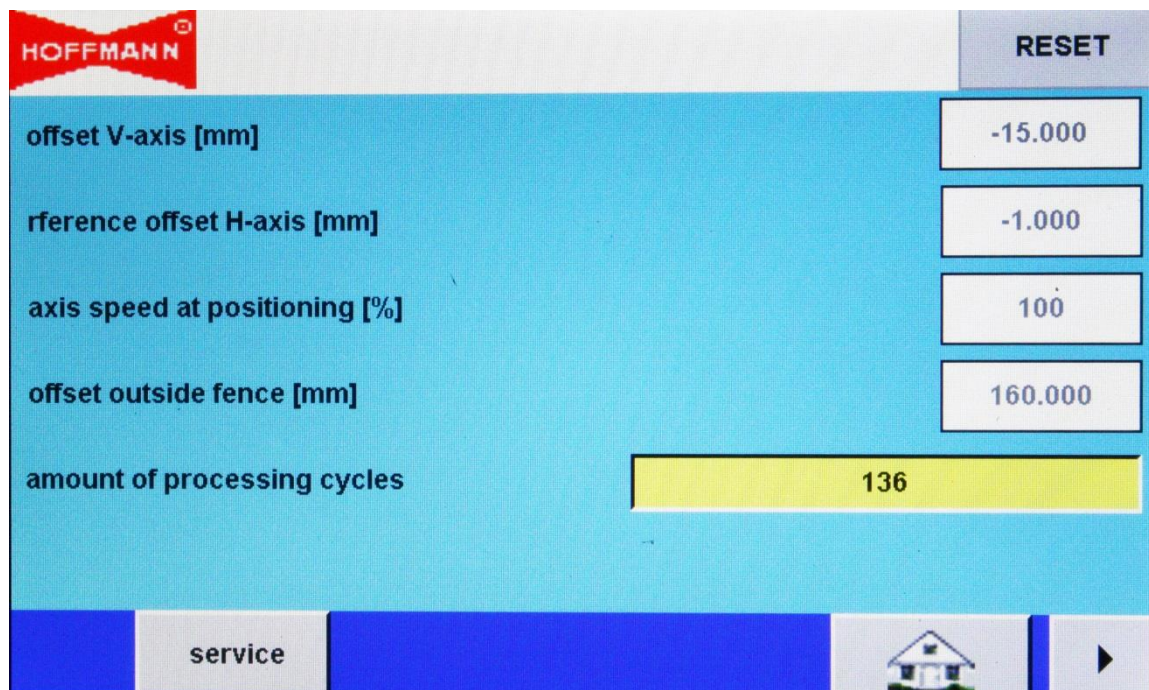
Round indicators shows current status:

Left side green – pneumatic piston in home position or router motor OFF

Right side green – pneumatic piston in fully extended position or router motor ON




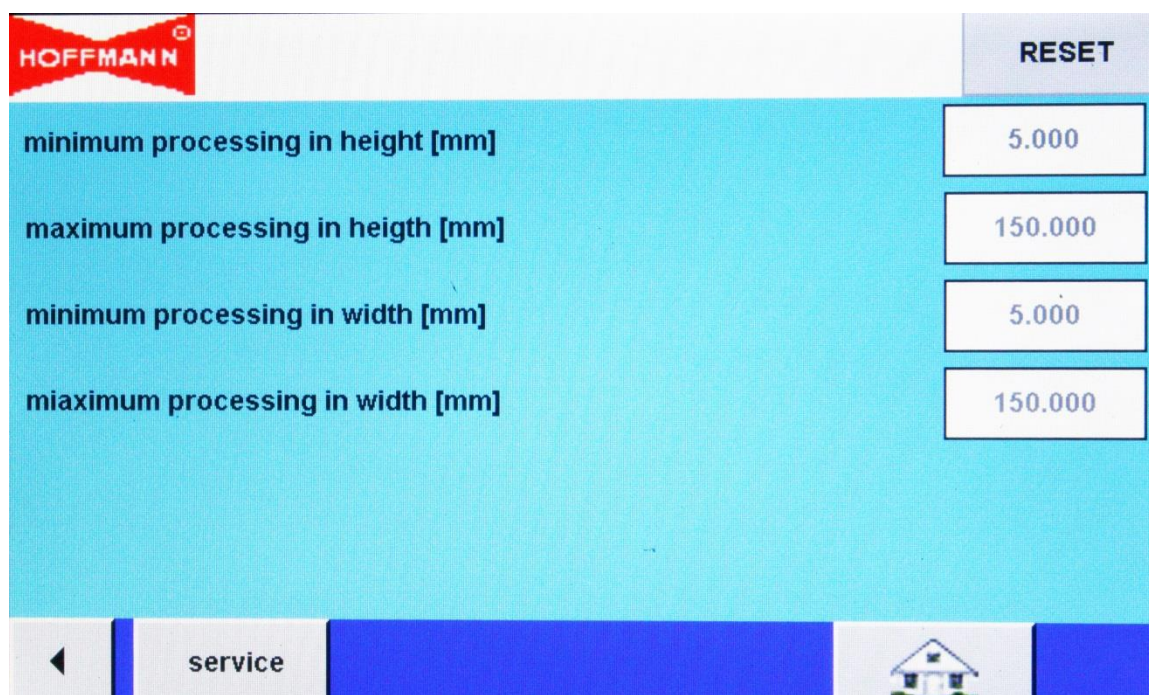
## 13 Sub Menu Set-Up



**HOFFMANN** **RESET**



offset V-axis [mm]	-15.000
reference offset H-axis [mm]	-1.000
axis speed at positioning [%]	100
offset outside fence [mm]	160.000
amount of processing cycles	136

service 



**HOFFMANN** **RESET**

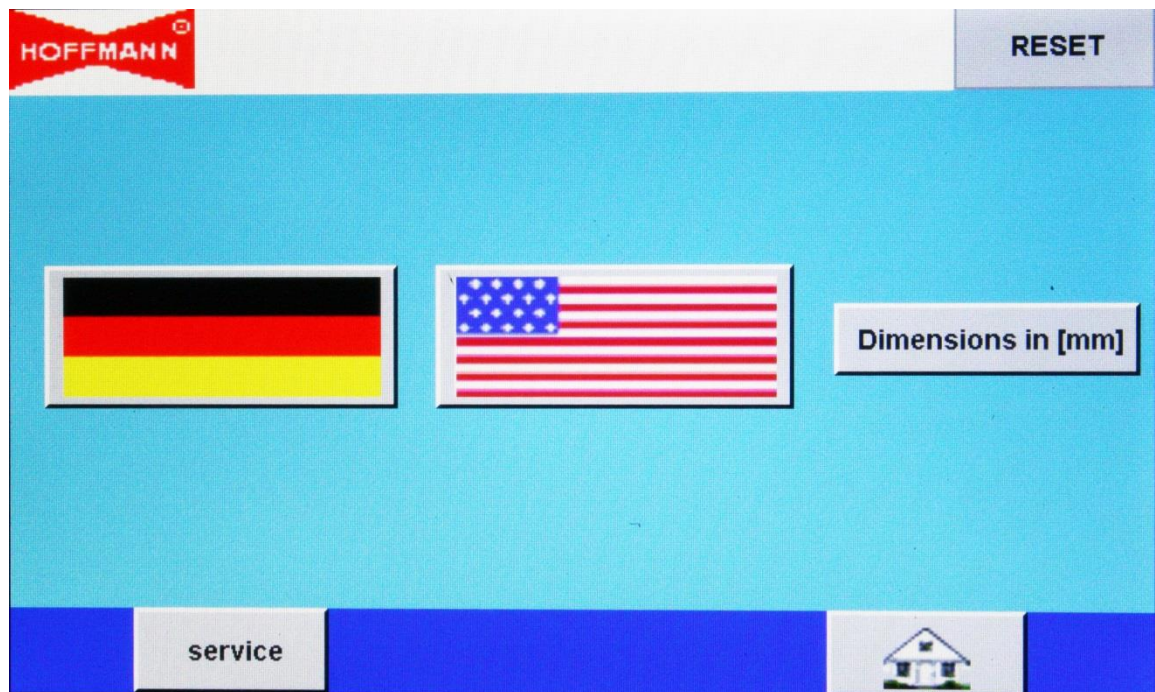
minimum processing in height [mm]	5.000
maximum processing in height [mm]	150.000
minimum processing in width [mm]	5.000
maximum processing in width [mm]	150.000

 service 

All values are factory set parameters and should only be changed if directed by a Hoffmann technician.



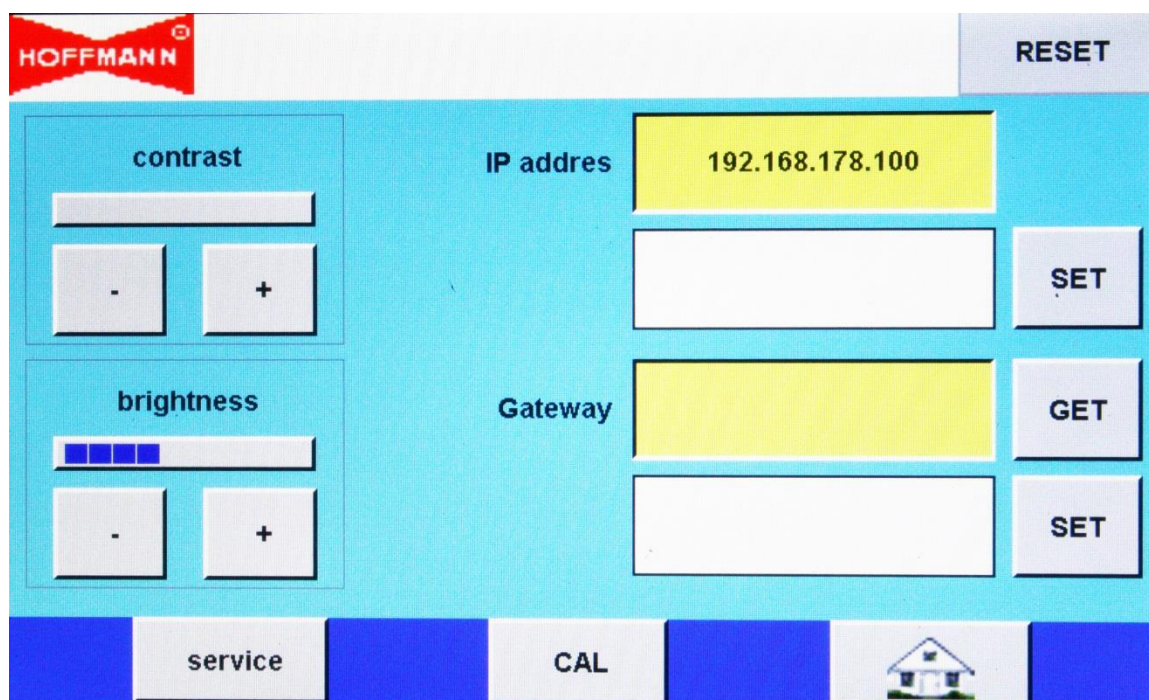
## 14 Sub Menu Language



Switch between German and English display language.

Press button Dimensions to switch between millimeter and inches.

## 15 Sub Menu Monitor



1	Contrast	To adjust screen contrast
2	Brightness	To adjust screen brightness
3	IP-Address / Gateway	For service tech only – to connect PLC to external network or laptop
5	CAL	To calibrate touch screen response

## 16 Step-by-Step Instructions – entering a new profile

1. Select access Level 2 (1234) or Level 3 (1961) on **Password Menu**

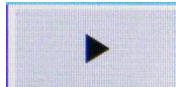


2. Press TOOLS



to get to sub menu **Material Dimension**

3. Press right hand ARROW



to get to sub menu **Keyway Locations**

4. Enter desired keyway location(s) and keyway length(s)

*There are ten available entry fields but machine can only process a maximum of three different keyway locations per part.*

5. Press HOME



to return to main screen

6. Press FILE CABINET



to get to sub menu FILES

7. Press SAVE FILE

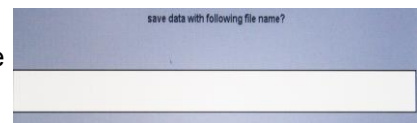


(middle button in the far right column)

*Make sure you selected correct password level, this button will not work in Level 1.*

8. Make sure you select an empty line in file cabinet list to avoid over-writing existing file.

9. In pop-up window „save data with following file name?“ press empty line



- 10 Use virtual keyboard to enter new file name



11. Press SAVE button



on keyboard

12. Press YES to save file



13. Press TRANSFER button to transfer data to home screen



14. Press HOME button to return to home screen

