

# HOFFMANN

Version: 05-2018



**HOFFMANN**  
**Machine**  
**Company, Inc.**

Operating and Maintenance Manual  
HOFFMANN X – 18  
manual dovetail routing machine

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## Safety and Warning Labels

A number of important warning labels have been attached to this 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.

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





## **2. Safety Rules**

### **Read and understand these safety rules before operating this machine!**

1. Always disconnect the machine from the electrical power supply before attempting any adjustment, repair or maintenance procedure (change of router bit, depth-of-cut adjustment, removal of wood dust, etc.).
2. Do not allow power cord to lie on the floor, in the way of passing personnel or the machine operator. They may cause a trip hazard.
3. Always wear eye and ear protection as well as a respirator suitable for wood dust.
4. Remove or confine loose hair, clothing and jewelry to avoid entanglement.
5. Avoid a dangerous environment. Do not expose electrical equipment to rain. Do not use in presence of flammable liquids or gases.
6. Keep the area around the machine clean and free from scrap, sawdust, wood chips, oil and grease to avoid the danger of slipping.
7. Always use a suitable dust collection system. Duct must be properly connected to the dust extraction port at the back of the machine.
8. Use only sharp and flawless original Hoffmann router bits.
9. Check the machine upon receipt as well as before every use for improper functioning and worn or damaged parts. Make sure the appropriate router bit is securely installed.
10. Broken or defective parts must not be used until replaced or repaired by a qualified technician.
11. When interrupting work or upon leaving the area, machine must be switched off.
12. Only trained and qualified personnel must be allowed to use machine.
13. Only original Hoffmann replacement parts must be used to rebuild machine.



### **3. Operator Training**

The Hoffmann Dovetail Routing Machine model X-18 is to be operated, maintained and repaired only by properly trained and qualified personnel. It is imperative that the operator has carefully read and understood these operating instructions, and that he or she is aware of all potential risks resulting from operating this machine.

If the operator does not possess sufficient English language skills to completely understand all sections of this manual, especially the sections on Warning Labels and Safety Rules, it is the responsibility of the purchaser to retain a qualified translator to translate this entire manual.

All applicable safety procedures and rules, including but not limited to all OSHA Rules and Regulations, are to be adhered to.

Any unauthorized modification or alteration to this machine by the operator or owner, including the use of router bits other than Original Hoffmann Dovetail Router Bits, will immediately void the machine warranty. The manufacturer cannot be held liable if the machine is used for any operations other than outlined in this manual or if the machine is modified or altered.

Please refer to the complete Hoffmann Machine Company, Inc. warranty in the back of this operating manual.

### **4. General Machine Description**

The Hoffmann Dovetail Routing Machine model X-18 is designed solely to process material for the Hoffmann Dovetail Joining System.

This machine is to be used only to process material for Hoffmann Dovetail Keys, size W-0, W-1, W-2 and W-3.

**USE OF THIS MACHINE FOR ANY OTHER OPERATION IS DANGEROUS AND WILL VOID THE WARRANTY.** The manufacturer cannot be held liable if the machine is used for any operations other than outlined in this manual.

The Hoffmann Dovetail Routing Machine model X-18 is designed to rout dovetail shaped keyways in hard and softwoods as well as wood related sheet goods, such as particleboard, MDF, plywood, MDO, etc.

The material is placed on the machine table and the proper location is established with either a steel fence plate for miter joints, or with square stops for butt joints.

Pulling the hand lever downward lowers the hold-down pad onto the workpiece. Further downward pulling raises the router motor and the router bit up into the material. A height adjustment rod is used to set the routing height. When the pre-set height is reached, the hand lever is slowly returned to its resting position and the workpiece is removed.

#### **WARNING:**

The machine is equipped with an automatic ON/OFF feature, pulling the lever starts the router motor immediately and releasing the lever to its home position stops the motor.



## **5. Potential Risks and Dangers**

Even when the machine is used as designed, and when the aforementioned safety rules are adhered to, the potential risk of injury must always be considered.

It is especially important to be aware of the following:

- ❑ The risk of pinching between stationary and moveable parts of the machine.
- ❑ The risk of pinching on the clamping devices of the machine.
- ❑ The risk of injury from sharp edges when handling, adjusting or changing the tooling.
- ❑ The risk of injury due to the inhalation of wood dust when operating the machine.
- ❑ The potential risk of injury on the electrical parts of the machine.

## **6. Toolkit**

The machine is shipped with a Hoffmann toolkit, consisting of:

- Hex key 2.5mm
- Hex key 3.0mm
- Hex key 4.0mm
- Hex key 5.0mm
- Hex key 6.0mm
- Wrench 14mm
- Wrench 17mm
- One Safety Equipment Starter Kit (safety glasses, ear plugs, dust mask)  
**This starter kit is included as a courtesy to allow the machinery owner to start using this machine upon receipt. It is the machine owner's responsibility to supply additional safety equipment as needed, and the machine operator's responsibility to use all safety equipment as instructed.**

## **7. Technical Data**

Number of motors	one
Motor type	115 Volt, 60 Hz, 530 watt
Rotation	CCW (counter clockwise)
Revolutions per minute	29,000 rpm (idle)
Collet size	1/4" = 6.35mm
Air supply	none
Max. routing height	2 1/4" – 57mm
Max. material thickness	3 1/2" – 89mm
Dovetail Key sizes	W-1, W-2, W-3
Dust collection port	2 3/8" dia. = 60mm
Operating noise	75.3 dB (A)
Machine dimensions	19 3/4" x 21 1/4" x 30 1/4" (handle extended)
Weight:	38 lbs.



## **8. Machine Installation**

### **8.1 Unpacking – Inspection**

Upon receipt, check the machine and shipping container for any damage. Report any transportation damage to the delivering carrier and indicate it on the bill of lading. Request an immediate inspection for assessment of damage. Claim should then be entered with the carrier. The carrier is solely responsible for any loss or damage during transit.

### **8.2 Placement**

After unpacking, select a suitable location with enough room around the machine for safe and unobstructed workflow, cleaning and maintenance.

It is best to place the machine on a sturdy workbench of comfortable height.

### **8.3 Cleaning**

Clean the machine and remove the applied rust preventive coating with a cotton rag and thin oil (WD-40 or similar). Be careful when using liquids containing silicones – the finishing process of your material could later be impaired.

Never use thinner or solvents to clean machine, damage could result.

### **8.4 Electric Connection**

The machine power cord is equipped with a standard 115 Volt plug. Be sure the receptacle is in good working condition. Also, be sure the power cord does not obstruct any walkways. If applicable, use only three wire extension cords of the proper size. Replace damaged or worn power cords immediately. NEVER ATTEMPT TO REPAIR A DAMAGED POWER CORD.

### **8.5 Compressed Air**

The Hoffmann X-18 Dovetail Routing Machine is not equipped with pneumatic operation.



## **9. Machine Operation**

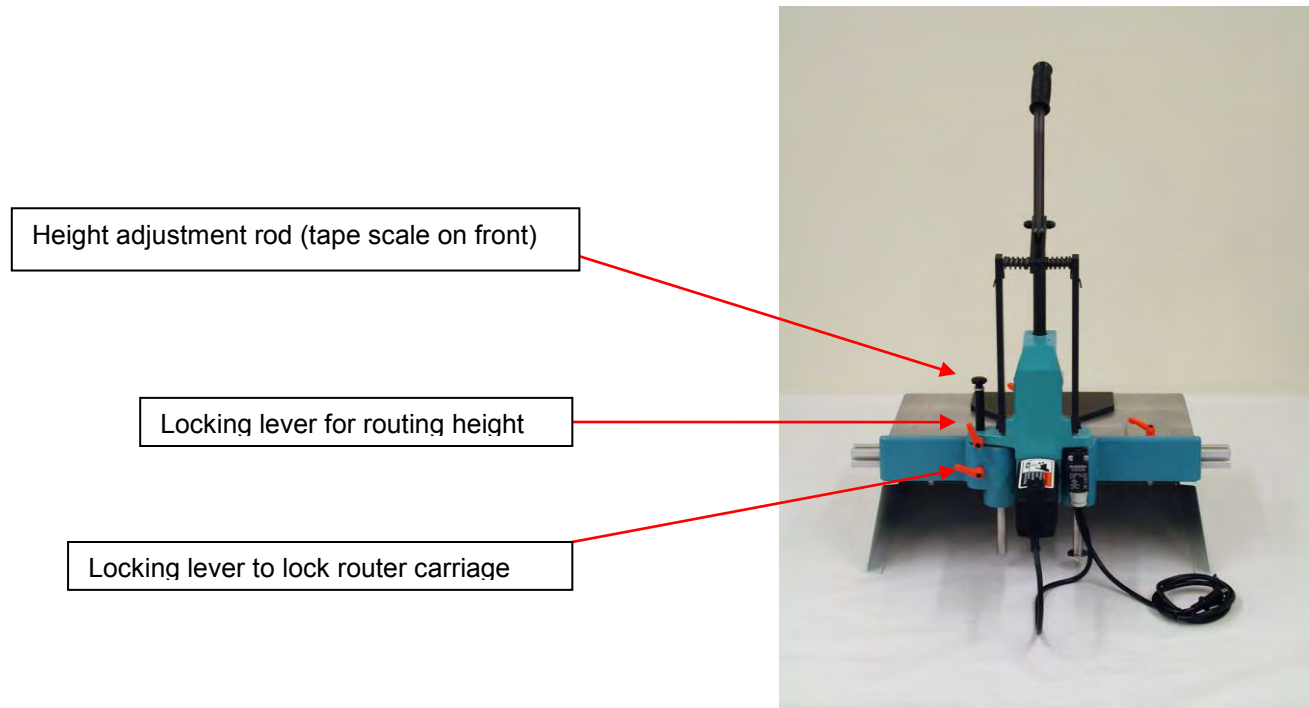
### **9.1 Standard 45-degree miters with one key per joint**

The machine is equipped with a routing height tape scale attached to the routing height adjustment rod. The scale indicates the height the router bit will travel into the material.

To adjust the height, simply loosen the top locking lever and move the bar to the desired height.

Always use the longest key possible to achieve a tight joint on the face side of the workpiece.

The lower locking lever is used to lock the router carriage for transport and to keep the router bit in a raised position when changing the router bit (see “Changing the router bit”).



(Hoffmann X-20 model shown)

With the routing height and the keyway position set, place the material on the table and pull the hand lever downward to clamp the material and to raise the router bit.

Pull the handle in a slow and consistent motion.

The motor is switched on automatically and the router bit cuts the keyway. When the pre-set routing height is reached, return the handle to its home position and remove the workpiece.

Before routing the material make sure the orange handle securing the steel fence plate on the table is properly tightened, and do not change the setting until both parts are routed.



## **9.2 Step-by-Step Instructions for standard 45-degree miter joints (shown on MU-3D model)**

1. Select proper Dovetail Keys for the material being joined by always using the longest Keys possible.

For example, for 1/2" thick material use 3/8" long Keys, for 3/4" thick material use 5/8" long Keys, for 1" thick material use 7/8" long Keys, etc.

If correct Key size is not available, it is better to stack multiple Keys than to use a single, short Key.



2. Set the routing height by adjusting the height adjustment bar to the desired setting.

TIP: Hold a Dovetail Key against the bar for quick setting.



3. Select the key locations along the mitered end, depending on the material being joining.

For profiled moulding, try to place Keys in thicker portions for best results.

Generally, moulding over 1 1/4" (32mm) wide should be joined with two Dovetail Keys for added strength.

4. Place workpiece on table and adjust Center Fence Plate by moving it in or out until desired keyway location is set. Use the Center Line Locator and/or digital display if so equipped.

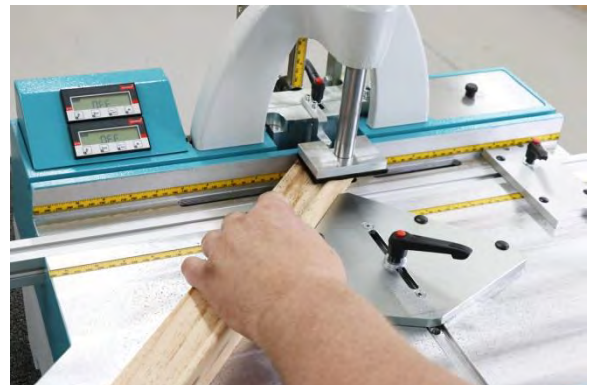


5. Lock the Center Fence Plate in place with the locking lever and place workpiece tightly against fence plate while pushing mitered end against back fence.

6. Slowly and consistently pull main handle down to press workpiece on table. Continued pulling will raise router motor up until preset height is reached.

7. Return main handle to lower motor to its home position and remove workpiece

**Note: Motor will switch on and off automatically.**



**MU3-D routing machine shown!**





### **9.3 Compound Miter Joints**

Moulding joined with a compound miter is machined almost like a standard, flat moulding. To achieve a tight and correctly aligned joint, the mitered face must be placed tight against the machine back fence and the moulding edge must rest against the black steel fence plate.

The machine is set for the first Key location and routing height. After all moulding parts are processed the set-up is changed for the second Key location and routing height.



(Hoffmann X-20 model shown)

**Note:** Depending on moulding width, use two or more Keys for tight joints.  
Use of good quality glue is important.  
For best results, use a shop-made jig to hold moulding steady while routing (jig can be mounted to recessed aluminum fence rail).

Place first Key close to inside corner and second Key close to outside corner - choose thick moulding sections and use longest Key possible.



## **10. Change of router bit**

**ALWAYS DISCONNECT THE ELECTRICAL POWER SUPPLY BEFORE ATTEMPTING ANY SERVICE, MAINTENANCE OR REPAIR WORK!**

Follow proper "Lock-Out / Tag-Out" procedures as specified by the Occupational Safety and Health Administration "OSHA".

1. Verify that electrical power has been disconnected.
2. Tighten the upper locking lever and loosen the lower locking lever on the back of the machine.
3. Pull the main lever to raise the carriage until the router bit is approx. 1/4" above the machine table.
4. Tighten the lower locking lever to lock router carriage.
5. Remove the old chip breaker from the table recess and discard.
6. Loosen the hex head screw on the underside of the motor bracket and carefully slide the motor out.
7. Use the included metric wrenches (14mm, 17mm) to open the 1/4" collet and remove the old router bit.
8. Install new bit and tighten collet securely.

Distance between tip of router bit and top of collet should be:

For W-1 router bit: 15.5 mm = 0.610"

For W-2 router bit: 17.0 mm = 0.669"

For W-3 router bit: 19.0 mm = 0.749"

9. Slide the motor back into the bracket and use the square stop to set the proper distance. The stop has three steps in one side (W1, W2, W3) and one large step machined in the opposite for W4 router bits (W-4 bits can only be used on MU-3 and larger machines, not on the X-18).

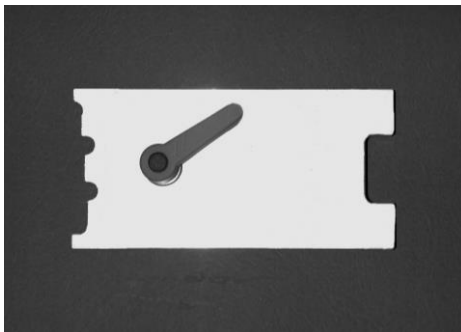
Slide the square stop out of the fence rail and remove the locking lever, washer and square nut. Place the stop upside down on the table to use.

Use the smallest step for W-1, the middle step for W-2 and the deepest step for W-3.

10. Lower the carriage to its home position.
11. Make a test cut and verify proper settings by inserting a Hoffmann key.
12. Raise the carriage again and install a new chip breaker insert. Place a piece of scrap wood over the insert and slowly lower the running router bit down through the wood. The scrap wood eliminates tearout on the surface of the chip breaker.

Hold the scrap wood securely in place and be aware of the turning bit at all times. Lower the router carriage slowly.

SQUARE STOP WITH STEPS FOR W1 - W4 BITS



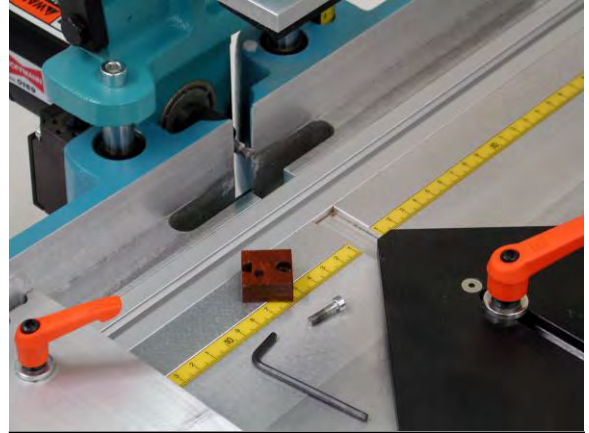


### 10.1 Change of router bit

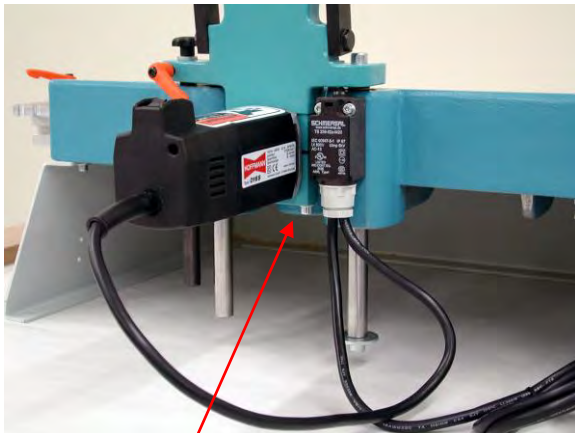
**ALWAYS DISCONNECT THE ELECTRICAL POWER SUPPLY BEFORE ATTEMPTING ANY SERVICE, MAINTENANCE OR REPAIR WORK!**



Upper and lower locking lever



Old chip breaker and mounting screw



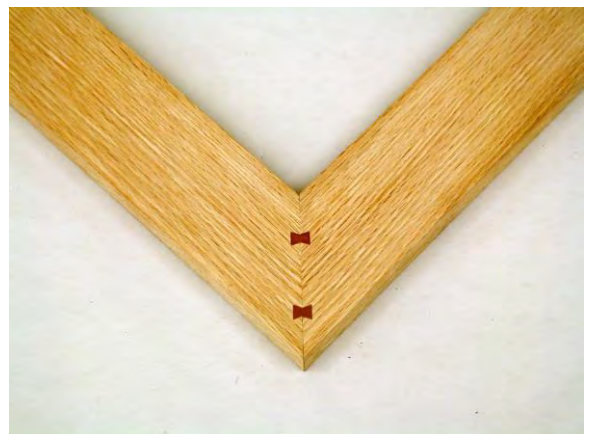
Hex head screw in motor bracket



Square-stop used as set-up jig (center notch = W2)



Scrap wood for initial cut though new chip breaker



The finished test piece



## **11.2 Router Bit Fine Adjustment**

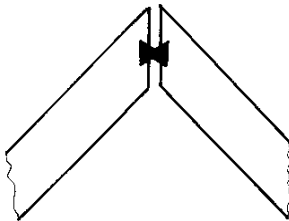
The operator can adjust the tightness of an assembled joint as well as the clamping force exerted by the key.

**ALWAYS DISCONNECT THE ELECTRICAL POWER SUPPLY BEFORE ATTEMPTING ANY SERVICE, MAINTENANCE OR REPAIR WORK!**

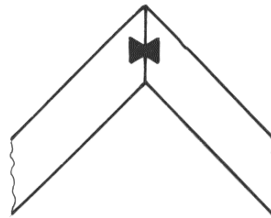
Follow proper "Lock-Out / Tag-Out" procedures as specified by the Occupational Safety and Health Administration "OSHA".

1. Verify that electrical power has been disconnected.
1. Raise the motor carriage as described before.
2. Loosen the hex head screw in the motor collet.
3. Carefully move the motor further toward the operator to increase the routing depth, or move the motor away from the operator to decrease the routing depth. **Do not try to adjust the bit in the collet – always move the router motor for fine adjustments!**
4. Only a small movement (0.1 – 0.5mm = 0.004 – 0.020") is necessary to make a noticeable difference. Increasing the depth will increase the "draw" or pull of the Key, resulting in a tighter joint.
5. Tighten the hex cap screw and lower the carriage.
6. Re-connect the electrical power supply and make a test cut. If the new setting is unsatisfactory, the above steps are repeated.

To re-set the machine to the factory setting, use the included aluminum set-up jig.



Wrong Setting



Correct Setting

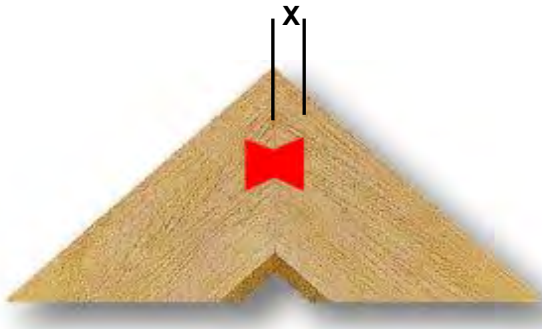




## 11.2. Router Bit Fine Adjustment - continued

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 medium or factory settings for the router bit projection (measurement "X") are:

Size W0	2.3 mm	0.0906"
Size W1	3.5 mm	0.1378"
Size W2	5.1 mm	0.2008"
Size W3	6.9 mm	0.2717"
Size W4	12.1 mm	0.4764"

These are 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 as needed.

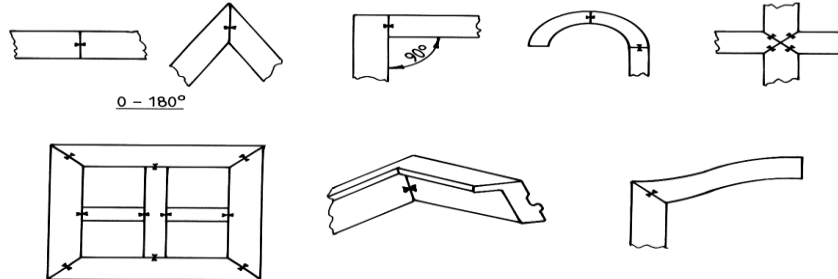
A small movement will make a noticeable difference!

We recommend the use of our Digital Multi Gauge (W20001300) for precise adjustments.





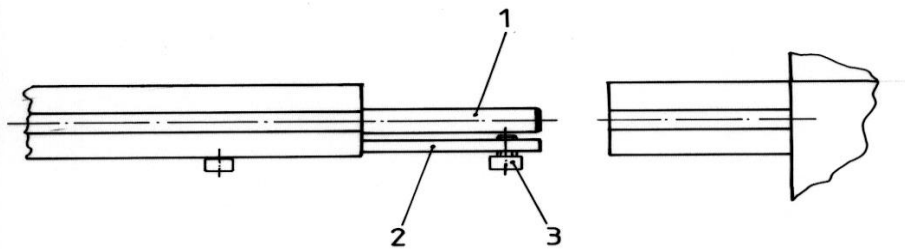
## 12. Applications for the Hoffmann Dovetail Joining System



## 13. Installation of fence extensions

If accessory fence extensions have been ordered with the machine please follow these assembly instructions:

1. Push the left and right hand side fence with the steel connector plate (2) and bolt (1) into the machine fence profile.
2. Tighten the screw (3) on the connector plate.
3. Attach the self-adhesive tape scale to the fence extension.  
Proper line-up with the table scale is important!



Please visit our website [www.hoffmann-usa.com](http://www.hoffmann-usa.com) for a wide variety of accessories for your X-18 dovetail routing machine.

You will also find detailed information on all available Hoffmann Dovetail Keys and router bits.





## **14. Maintenance**

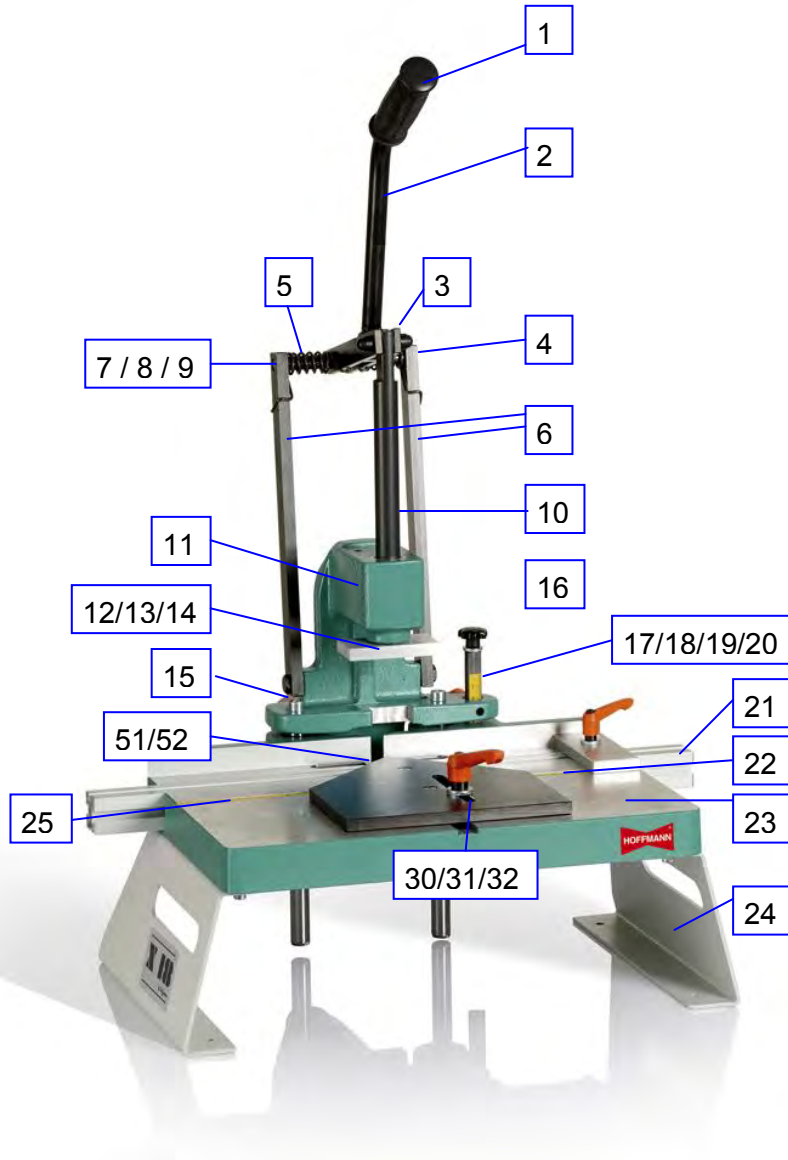
**ALWAYS DISCONNECT THE ELECTRICAL POWER SUPPLY BEFORE ATTEMPTING ANY SERVICE, MAINTENANCE OR REPAIR WORK!**

Follow proper "Lock-Out / Tag-Out" procedures as specified by the Occupational Safety and Health Administration "OSHA".

- All moving parts should be cleaned weekly and lubricated as necessary.
- The cooling vents in the motor housing must be kept free from dust and debris.
- Promptly replace damaged or worn router bits. Use only Original Hoffmann Dovetail Router Bits for best performance.
- All fasteners, nuts and bolts should be checked periodically and re-tightened as necessary.
- Periodically check the machine for damage or unusual wear. Never operate the machine if damaged.
- Do not modify the machine. Any modification will void the warranty and may cause a hazardous condition.

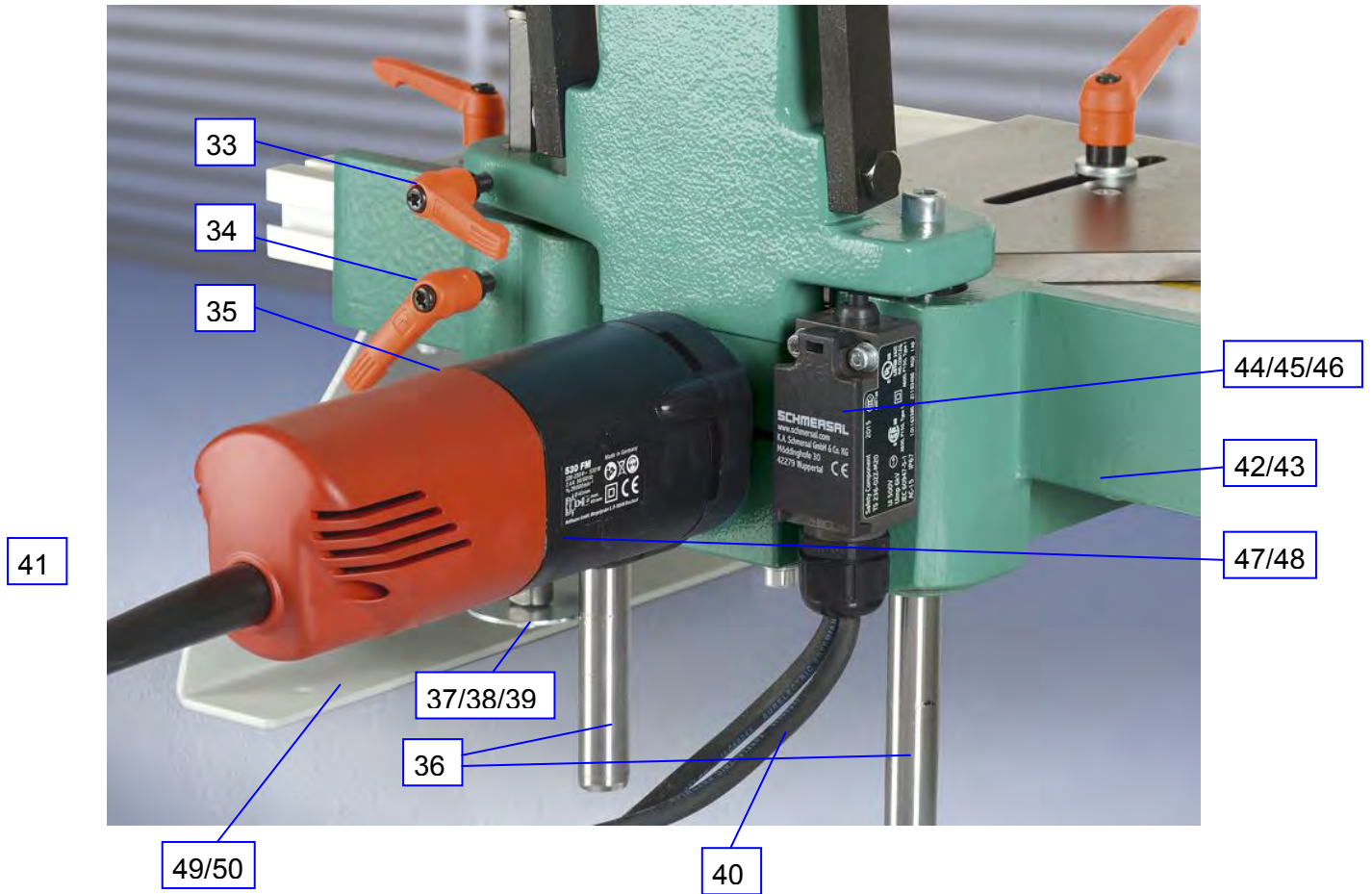


### 15. X-18 machine details





### 15.1 X-18 machine details





## 16. Parts list

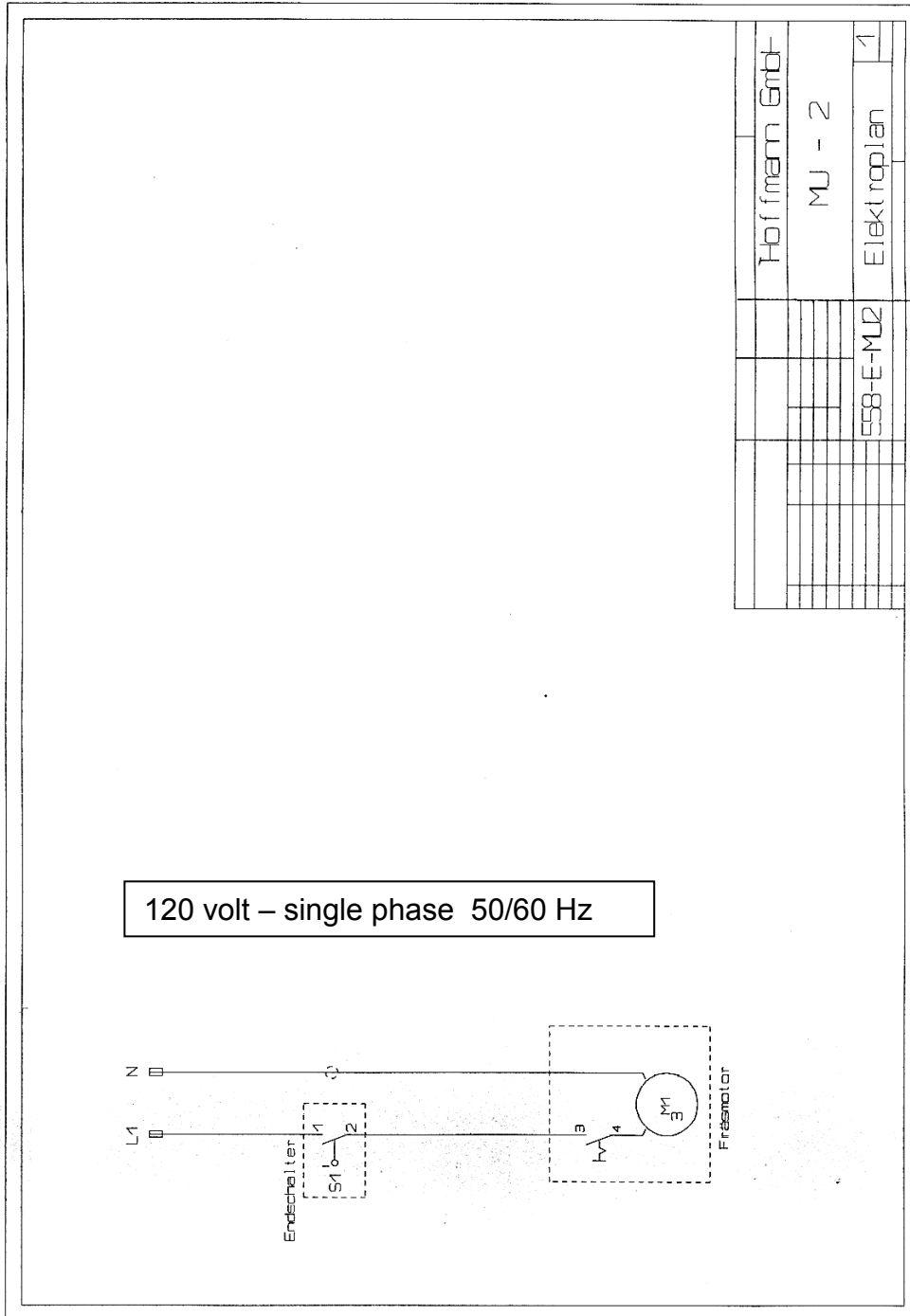
Please always call Hoffmann Main Office at 866-248-0100 with any questions regarding parts and equipment repairs – we are here to help!

Number	Order Number	Description	
1	W5000001	rubber handle cover	
2	W5000002	main handle	
3	W3990019	springs (L+R)	
4	W4050515	socket head cap screw	M5 x 15
5	W5000003	sleeve	
6	W5000004	connecting arm (L+R)	
7	W4030630	hex head cap screw	M6 x 30
8	W4020666	lock nut	M6
9	W4021116	cover plug (L+R)	M6
10	W5000005	main stem	
11	W5000006	cast aluminum arm	
12	W5000007	hold down plate	
13	W4040616	flat head cap screw	M6 x 16
14	W5000008	foam pad	
15	W4050820	socket head cap screw	M8 x 20
16	W4060000	shoulder screw	
17	W5000009	height adjustment rod	
18	W5000010	tape scale, vertical	0-170
19	W4015100	hand knob	M5 x 10
20	W4010005	washer, heavy	M5
21	W5000011	aluminum fence rail	603
22	W3900007-L	self-adhesive tape scale L-R	0-250
23	W5000012	cast aluminum machine table top	
24	W5000013	machine base	
25	W3900007-R	self-adhesive tape scale R-L	0-250
26	W3900004	square stop	
27	W4016200	lever handle	M6 x 20
28	W4010006	washer, heavy	M6
29	W4026666	bottom plate	M6
30	W3060000	45° center fence plate	
31	W4018300	lever handle	M8 x 30
32	W4010008	washer, heavy	M8
33	W4016300	lever handle	M6 x 30
34	W4016300	lever handle	M6 x 30
35	W3900015	ON-OFF switch for router motor	
36	W5000014	guide rods (L+R)	16 x 190
37	W4050820	socket head cap screw	M8 x 20
38	W4010168	washer	16mm
39	W4010348	washer	34mm
40	W5000015	power cord, 120 volt	
41	W3900005	HOFFMANN router motor	
42	W4050616	socket head cap screw	M6 x 16
43	W4010066	washer	M6
44	W3990028	limit switch with plunger	
45	W4050425	socket head cap screw	M4 x 25
46	W4010044	washer	M4
47	W4050650	socket head cap screw	M6 x 50
48	W4010066	washer	M6
49	W4050616	socket head cap screw	M6 x 16
50	W4010066	washer	M6
51	W2000015	chip breaker, square	
52	W4050416	socket head cap screw	M4 x 16



### 17. Electric Schematic

Note: All x-18 machines for the USA, Canada and Mexico are shipped for 115 Volt, single phase electrical power supply.



Hoffmann GmbH
MU - 2
Elektroplan
1
558-E-MU2








## 18. Hoffmann Dovetail Keys

**NOTE: Longest Key Length for use with X-18 is 2 1/4"**

**W-4 Keys cannot be processed on X-line machines.**

### HOFFMANN Dovetail Keys, medium brown plastic polymer

Order Number	Size	Size in mm	Packaging	material
 W9000900	W0 - 3/8"	W0 - 10mm	1,000 pcs. carton	medium brown polymer
W9002200	W0 - 7/8"	W0 - 22mm	1,000 pcs. carton	medium brown polymer
W9003500	W0 - 1 3/8"	W0 - 35mm	1,000 pcs. carton	medium brown polymer
W9100600	W1 - 1/4"	W1 - 6.0mm	1,000 pcs. carton	medium brown polymer
W9101000	W1 - 3/8"	W1 - 10mm	1,000 pcs. carton	medium brown polymer
W9101400	W1 - 9/16"	W1 - 14mm	1,000 pcs. carton	medium brown polymer
W9101800	W1 - 3/4"	W1 - 18mm	1,000 pcs. carton	medium brown polymer
 W9102200	W1 - 7/8"	W1 - 22mm	1,000 pcs. carton	medium brown polymer
W9103000	W1 - 1 3/16"	W1 - 30mm	1,000 pcs. carton	medium brown polymer
W9104000	W1 - 1 9/16"	W1 - 40mm	1,000 pcs. carton	medium brown polymer
W9105000	W1 - 2"	W1 - 50mm	1,000 pcs. carton	medium brown polymer
W9106000	W1 - 2 3/8"	W1 - 60mm	1,000 pcs. carton	medium brown polymer
W9206000	W2 - 1/4"	W2 - 6.0mm	1,000 pcs. carton	medium brown polymer
W9200900	W2 - 3/8"	W2 - 9.5mm	1,000 pcs. carton	medium brown polymer
W9201200	W2 - 1/2"	W2 - 12mm	1,000 pcs. carton	medium brown polymer
W9201400	W2 - 9/16"	W2 - 14mm	1,000 pcs. carton	medium brown polymer
W9201500	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	medium brown polymer
 W9202000	W2 - 13/16"	W2 - 20.6mm	1,000 pcs. carton	medium brown polymer
W9202200	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	medium brown polymer
W9202500	W2 - 1"	W2 - 25.4mm	1,000 pcs. carton	medium brown polymer
W9203200	W2 - 1 1/4"	W2 - 32mm	1,000 pcs. carton	medium brown polymer
W9203800	W2 - 1 1/2"	W2 - 38mm	1,000 pcs. carton	medium brown polymer
W9204600	W2 - 1 13/16"	W2 - 46mm	1,000 pcs. carton	medium brown polymer
W9206000	W2 - 2 3/8"	W2 - 60mm	1,000 pcs. carton	medium brown polymer
W9301200	W3 - 1/2"	W3 - 12.7mm	1,000 pcs. carton	medium brown polymer
W9301500	W3 - 5/8"	W3 - 15.8mm	1,000 pcs. carton	medium brown polymer
W9301700	W3 - 11/16"	W3 - 17mm	1,000 pcs. carton	medium brown polymer
W9301900	W3 - 3/4"	W3 - 19mm	1,000 pcs. carton	medium brown polymer
 W9302500	W3 - 1"	W3 - 25.4mm	1,000 pcs. carton	medium brown polymer
W9303100	W3 - 1 1/4"	W3 - 31.7mm	1,000 pcs. carton	medium brown polymer
W9303800	W3 - 1 1/2"	W3 - 38.1mm	1,000 pcs. carton	medium brown polymer
W9304600	W3 - 1 13/16"	W3 - 46mm	1,000 pcs. carton	medium brown polymer
W9305200	W3 - 2"	W3 - 52mm	1,000 pcs. carton	medium brown polymer
W9302600	W3 - 2 3/8"	W3 - 60mm	1,000 pcs. carton	medium brown polymer
W9308000	W3 - 3 1/8"	W3 - 80mm	1,000 pcs. carton	medium brown polymer
W9301000	W3 - 4"	W3 - 100mm	1,000 pcs. carton	medium brown polymer
W9404000	W4 - 1 9/16"	W4 - 40mm	100, 500, 1000 pcs.	medium brown polymer
W9406000	W4 - 2 3/8"	W4 - 60mm	100, 500, 1000 pcs.	medium brown polymer
W9408000	W4 - 3 1/8"	W4 - 80mm	100, 500, 1000 pcs.	medium brown polymer
 W9401000	W4 - 4"	W4 - 100mm	100, 500, 1000 pcs.	medium brown polymer

### HOFFMANN Dovetail Keys, white plastic polymer

 W9206000-22	W2 - 1/4"	W2 - 6.0mm	1,000 pcs. carton	solid white polymer
W9200900-22	W2 - 3/8"	W2 - 9.5mm	1,000 pcs. carton	solid white polymer
W9201200-22	W2 - 1/2"	W2 - 12mm	1,000 pcs. carton	solid white polymer
W9201400-22	W2 - 9/16"	W2 - 14mm	1,000 pcs. carton	solid white polymer
W9201500-22	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	solid white polymer
W9202000-22	W2 - 13/16"	W2 - 20.6mm	1,000 pcs. carton	solid white polymer
W9202200-22	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	solid white polymer
W9202500-22	W2 - 1"	W2 - 25.4mm	1,000 pcs. carton	solid white polymer





**18. Hoffmann Dovetail Keys – continued**

**NOTE: Longest Key Length for use with X-18 is 2 1/4"**

**W-4 Keys cannot be processed on X-line machines.**

**HOFFMANN Dovetail Keys, white plastic polymer**

	W9203200-22	W2 - 1 1/4"	W2 - 32mm	1,000 pcs. carton	solid white polymer
	W9203800-22	W2 - 1 1/2"	W2 - 38mm	1,000 pcs. carton	solid white polymer
	W9204600-22	W2 - 1 13/16"	W2 - 46mm	1,000 pcs. carton	solid white polymer
	W9206000-22	W2 - 2 3/8"	W2 - 60mm	1,000 pcs. carton	solid white polymer
	W9301200-22	W3 - 1/2"	W3 - 12.7mm	1,000 pcs. carton	solid white polymer
	W9301500-22	W3 - 5/8"	W3 - 15.8mm	1,000 pcs. carton	solid white polymer
	W9301700-22	W3 - 11/16"	W3 - 17mm	1,000 pcs. carton	solid white polymer
	W9301900-22	W3 - 3/4"	W3 - 19mm	1,000 pcs. carton	solid white polymer
	W9302500-22	W3 - 1"	W3 - 25.4mm	1,000 pcs. carton	solid white polymer
	W9303100-22	W3 - 1 1/4"	W3 - 31.7mm	1,000 pcs. carton	solid white polymer
	W9303800-22	W3 - 1 1/2"	W3 - 38.1mm	1,000 pcs. carton	solid white polymer
	W9304600-22	W3 - 1 13/16"	W3 - 46mm	1,000 pcs. carton	solid white polymer
	W9305200-22	W3 - 2"	W3 - 52mm	1,000 pcs. carton	solid white polymer

**HOFFMANN Dovetail Keys, "wood-match" polymer**

	W9201500-1041	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	light maple color
	W9202200-1041	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	light maple color
	W9201500-8011	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	maple color
	W9202200-8011	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	maple color
	W9201500-8041	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	cherry color
	W9202200-8041	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	cherry color
	W9201500-8065	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	walnut color
	W9202200-8065	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	walnut color
	W9201500-8003	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	dark walnut color
	W9202200-8003	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	dark walnut color
	W9201500-55	W2 - 5/8"	W2 - 15.8mm	1,000 pcs. carton	solid black
	W9202200-55	W2 - 7/8"	W2 - 22mm	1,000 pcs. carton	solid black

**HOFFMANN Dovetail Keys, solid hardwood**

	W8210000-CHE	W - 2 solid cherry	12" long	solid hardwood
	W8210000-MAH	W - 2 solid mahogany	12" long	solid hardwood
	W8210000-MAP	W - 2 solid maple	12" long	solid hardwood
	W8210000-OAK	W - 2 solid oak	12" long	solid hardwood
	W8210000-WAL	W - 2 solid walnut	12" long	solid hardwood
	W8210000-WEN	W - 2 solid wenge	12" long	solid hardwood
	W8310000-CHE	W - 3 solid cherry	12" long	solid hardwood
	W8310000-MAH	W - 3 solid mahogany	12" long	solid hardwood
	W8310000-MAP	W - 3 solid maple	12" long	solid hardwood
	W8310000-OAK	W - 3 solid oak	12" long	solid hardwood
	W8310000-WAL	W - 3 solid walnut	12" long	solid hardwood
	W8310000-WEN	W - 3 solid wenge	12" long	solid hardwood
	W8410000-CHE	W - 4 solid cherry	12" long	solid hardwood
	W8410000-MAH	W - 4 solid mahogany	12" long	solid hardwood
	W8410000-MAP	W - 4 solid maple	12" long	solid hardwood
	W8410000L-OAK	W - 4 solid oak	12" long	solid hardwood
	W8410000-OAK	W - 4 oak 3-ply	12" long	3-ply laminated
	W8410000-WAL	W - 4 solid walnut	12" long	solid hardwood
W8410000-WEN	W - 4 solid wenge	12" long	solid hardwood	



## 19. Hoffmann Dovetail Key Sample Cases

Dovetail Key Sample Cases are intended to give product designers, machine operators, workshop personnel and frame assemblers a “hands-on” overview of all available Dovetail Keys in a given size. Enough Keys are included to produce a few corner samples and even complete frames for product testing.

### Part Number: W9000111

W-1 Hoffmann Dovetail Key Sample Case is a sturdy, securely latching plastic case with approx. 20 pieces each of all W-1 Dovetail Keys. Inside label clearly indicates each Key size with dimension and part number. Case contains approx. 180 Keys.



### Part number: W9000222

W-2 Hoffmann Dovetail Key Sample Case is a sturdy, securely latching plastic case with approx. 20 pieces each of all W-2 Dovetail Keys. Inside label clearly indicates each Key size with dimension and part number. Case contains approx. 255 Keys.



### Part Number: W9000333

W-3 Hoffmann Dovetail Key Sample Case is a sturdy, securely latching plastic case with approx. 20 pieces each of all W-3 Dovetail Keys. Inside label clearly indicates each Key size with dimension and part number. Case contains approx. 175 Keys.



Tip: Be sure to order matching router bits!



## 20. Hoffmann Dovetail Router Bits

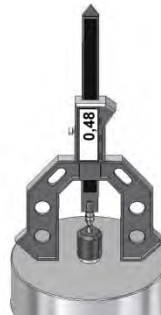
<b>Standard HOFFMANN Dovetail Router Bits</b>		
W-0 solid carbide dovetail bit with 1/4" shank	W2006350	
W-1 solid carbide dovetail bit with 1/4" shank	W2016350	
W-2 solid carbide dovetail bit with 1/4" shank	W2026350	Factory installed bit
W-3 solid carbide dovetail bit with 1/4" shank	W2036350	
W-4 dovetail bit with 8mm shank	W2048000	<b>Cannot be used in X-Line machines</b>
<b>Oversized HOFFMANN Dovetail Router Bits</b>		
W-1 solid carbide oversized dovetail bit with 1/4" shank	W2016352	Slightly oversized bit to reduce pressure in thinner material
W-2 solid carbide oversized dovetail bit with 1/4" shank	W2026352	Slightly oversized bit to reduce pressure in thinner material
W-3 solid carbide oversized dovetail bit with 1/4" shank	W2036352	Slightly oversized bit to reduce pressure in thinner material
<b>Ti-AL-N coated HOFFMANN Dovetail Router Bits</b>		
W-1 Ti-AL-N coated carbide dovetail bit with 1/4" shank	W2016351	Ti-AL-N coated for longer life
W-2 Ti-AL-N coated carbide dovetail bit with 1/4" shank	W2026351	Ti-AL-N coated for longer life
W-3 Ti-AL-N coated carbide dovetail bit with 1/4" shank	W2036351	Ti-AL-N coated for longer life
W-4 Ti-AL-N coated carbide dovetail bit w. 8mm shank	W2048001	<b>Cannot be used in X-Line machines</b>

Every new bit is shipped with a new, un-cut phenolic chip breaker included. Chip breakers should be replaced every time a new bit is installed and whenever they are worn or damaged. Additional chip breakers can be ordered under part number W20000



### HOFFMANN Digital Multi Gauge

Instead of using the steps in the square-stop (see page 16), the HOFFMANN Digital Multi Gauge can be used to set precise router bit projections on the machines. The digital read-out allows precise setting of router bits which is especially helpful in cases where a little less or more draw (or clamping force) is required. For example, when joining small floater frames the draw can be reduced and on large, heavy moulding the draw can be increased to suit individual needs. The gauge features a large, easy-to-read display which can be switched from millimeter to inches. Aside from setting router bits on Hoffmann machines, the gauge is used in woodworking shops to set sawblades on table saws, bits in router tables, to measure dado and groove depths, etc.



• Total measuring range:	• 5" (3" up and 2" down)
• Resolution:	• 0.0005", 1/64"
• Accuracy:	• 0.001" per 1"
• Battery:	• 3 volt, type CR2032 (included)



## 21. Troubleshooting

Problem	Possible Causes	Solution
Motor does not start when lever is pulled.	Motor is not switched on Power supply is interrupted Motor is overheated	Set motor switch to ON Check to make sure power cord is securely plugged in, check extensions cords, check fuses/breaker in line with wall outlet. Unplug motor until it has cooled down.
Decreasing RPM (motor speed)	Router bit is dull or broken. Material being processed is too hard. Motor brushes are worn or damaged.	Replace router bit with Original HOFFMANN bit. Only process material listed under heading 3 – page 6 Replace brushes with Original HOFFMANN brushes
Difficulty or resistance when raising router carriage up.	Guide roads dirty. Height Adjustment Bar is set and locked at "0"	Clean rods with light oil and clean rag. Set height adjustment bar to desired height.
Difficulty inserting Dovetail Keys Dovetail Keys slide into keyway too easy	Motor and router bit projection setting incorrect.	Adjust motor and/or router bit as shown under heading 11 and 12
Keyway position offset on left and right side workpiece (square or butt joints)	Square Stop and/or Flip Stops are not set correctly.	Adjust stops for proper alignment.
Keyway position offset on miter joint	Miter cut not precisely 45 degree on one or both parts Material was not properly placed on machine Material was not properly held during routing operation Motor not installed correctly	Check and adjust miter saw – all four parts for a frame must fit perfectly without Dovetail Keys. Make sure table is free of dust and material is placed tightly against fences. Hold material steady to keep it from moving during routing operation Motor must be installed all the way in motor carriage – follow instructions under heading 11

Please contact Hoffmann Technical Support at any time with any questions, concerns or other issues. We are here to help you get the most out of your Hoffmann Dovetail Joining Machine.



Toll-free: 866 – 248 – 0100

International: 001 – 828 – 430 – 4510

Email: [Info@Hoffmann-USA.com](mailto:Info@Hoffmann-USA.com)



## **21. Hoffmann Machine Company, Inc. Warranty**

Hoffmann Machine Company, Inc. (hereinafter called "seller") guarantees all machines and parts of its own manufacture against defects in material and workmanship for a period of twelve (12) months from the date of shipment, under normal use and service by buyer (one eight hour production period per day). No other warranties are to be implied with respect thereto. 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 or nature.

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

It is buyer's sole responsibility to test, approve and authorize the use of the Hoffmann Dovetail Joining System and the Hoffmann Dovetail Keys or "Schwalbe" for any and all applications.

### **Warranty Adjustment Terms**

1. Adjustments will be limited to claims which are presented promptly after the product is found to be defective, and within the aforesaid warranty period.
2. 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 by seller.
3. 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.
4. 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.
5. Final determination as to whether any adjustment is allowable, and as to the extent thereof, rests with the seller. Full adjustment, if allowed, normally will be made by replacement in kind on an exchange basis. Pro rata adjustment, if allowed, normally will be made by issuance of credit. In all cases, however, the seller reserves the right to make adjustments by repair, replacement or credit.
6. 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.

### **Installation**

Buyer shall install machinery purchased from seller at buyer's cost and expense, unless otherwise expressly stipulated in writing. At the request of buyer, seller will recommend competent engineers to supervise the installation, and to instruct buyer in the proper operation of the machinery and equipment. During such period of supervision and instruction, such personnel shall be deemed to be employees of the buyer who shall pay the wages, remuneration, board and traveling expenses of such personnel and shall not make seller liable, directly or indirectly, in any manner whatsoever, for any damages resulting from any act of commission or omission or any misfeasance or malfeasance, on the part of said personnel.



## **22. Terms and Conditions of Sale**

### 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.

### 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.

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





## **22. Terms and Conditions of Sale (continued)**

### 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.



## **22. Terms and Conditions of Sale (continued)**

### 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.

This manual was created to the best of our knowledge at time of writing – subject to future updates.