WOODSTOCK INTERNATIONAL

SHOP FOX®

MODEL W1743

MORTISING MACHINE

OWNER'S MANUAL

Phone: (360) 734-3482 • On-Line Technical Support: tech-support@shopfox.biz

#7886JK

Printed in Taiwan

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine/equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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USE THE QUICK GUIDE PAGE LABELS TO SEARCH OUT INFORMATION FAST!

INTRODUCTION

Woodstock Technical Support

We stand behind our machines! In the event that questions arise about your machine, parts are missing, or a defect is found, please contact Woodstock International Technical Support at (360) 734-3482 or send e-mail to: **tech-support@shopfox.biz**. Our knowledgeable staff will help you troubleshoot problems and send out parts for warranty claims.

If you need the latest edition of this manual, you can download it from **http://www.shopfox.biz**.
If you still have questions after reading the latest manual, or if you have comments please contact us at:

Woodstock International, Inc.
Attn: Technical Support Department
P.O. Box 2309
Bellingham, WA 98227

About Your New Mortising Machine

Your new **SHOP FOX®** Mortising Machine has been specially designed to provide many years of trouble-free service. Close attention to detail, ruggedly built parts and a rigid quality control program assure safe and reliable operation.

Woodstock International, Inc. is committed to customer satisfaction in providing this manual. It is our intent to include all the information necessary for safety, ease of assembly, practical use and durability of this product.

Specifications

Motor	1½ H.P., 110V/220V, Single-Phase
Amperage	14A/7A
Prewired	110V, 14A
Motor Speed	1725 RPM
Maximum Chisel Stroke	6¼"
Maximum Stock Width	9"
Distance (Chisel to Table)	5-11"
Distance (Fence to Chisel Center)	3"
Chuck Capacity	½"
Chisel Capacity	¼"—1"
Table Height	36½"
Table Size	19"W x 12"D
Table Longitudinal Traverse	14"
Table Cross Traverse	5"
Head Vertical Traverse	3"
Column Tilt	30° Left and 30° Right
Footprint	17½" x 20½"
Overall Dimensions	36" W x 24"D x 72"H
Approximate Machine Weight w/Cabinet	267 lbs.

Controls and Features

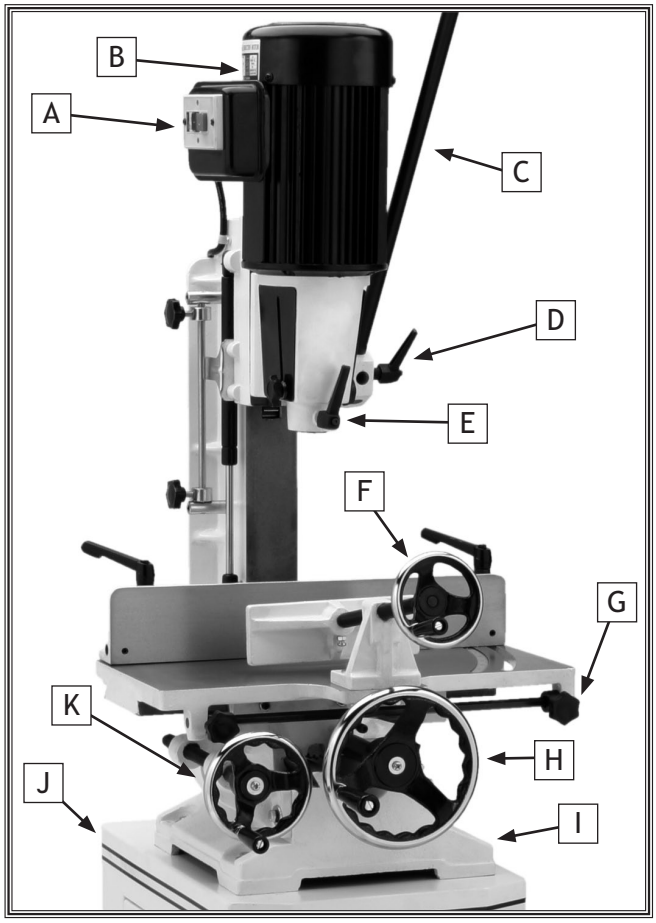


Figure 1. W1743 front controls.

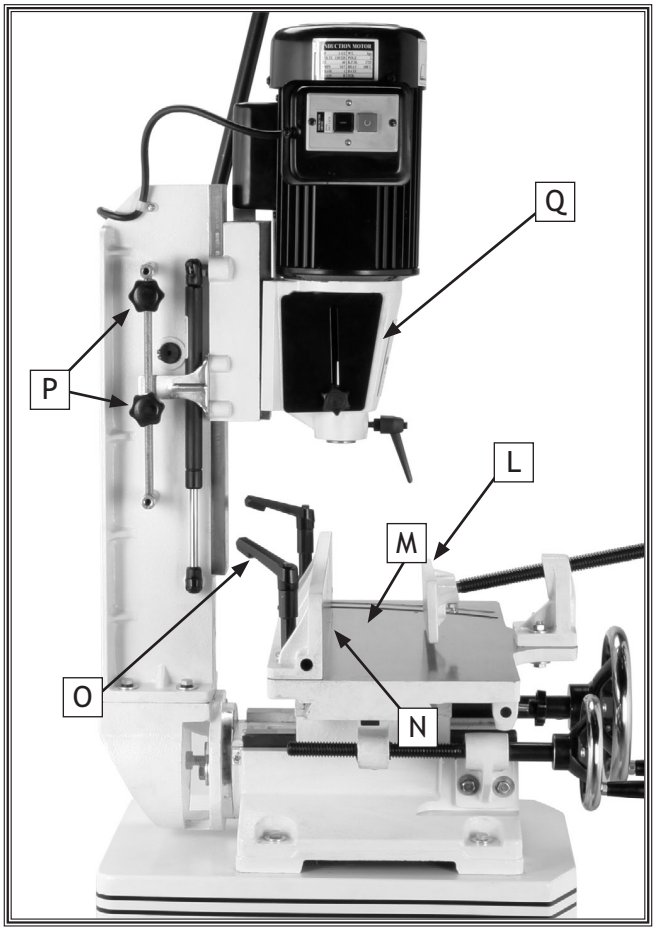


Figure 2. Left side view.

A. ON/OFF Switch
B. Motor
C. Operating Handle
D. Universal Handle Hub and Lock Lever
E. Chisel Lock Handle
F. Vise Handwheel
G. Table Stop Knob
H. Right/Left Handwheel
I. Base
J. Cabinet
K. Forward/Backward Handwheel
L. Vise
M. Table
N. Fence
O. Fence Angle Lock Handle
P. Depth Stop Knobs
Q. Chuck Cover

SAFETY

READ MANUAL BEFORE OPERATING MACHINE. FAILURE TO FOLLOW INSTRUCTIONS BELOW WILL RESULT IN PERSONAL INJURY.

⚠DANGER Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

⚠WARNING Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

⚠CAUTION Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

NOTICE This symbol is used to alert the user to useful information about proper operation of the equipment, and/or a situation that may cause damage to the machinery.

Standard Safety Instructions

1. **READ THROUGH THE ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.

2. **ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are NOT safety glasses.

3. **ALWAYS WEAR AN ANSI APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Wood dust is a carcinogen and can cause cancer and severe respiratory illnesses.

4. **ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing damage.

5. **WEAR PROPER APPAREL.** DO NOT wear loose clothing, gloves, neckties, rings, or jewelry which may get caught in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.

6. **NEVER OPERATE MACHINERY WHEN TIRED, OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.

7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.

8. **KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.

9. **MAKE WORKSHOP CHILD PROOF.** Use padlocks, master switches, and remove start switch keys.

10. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power off and allow all moving parts to come to a complete stop before leaving machine unattended.

11. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.

12. **KEEP WORK AREA CLEAN AND WELL LIT.** Clutter and dark shadows may cause accidents.

13. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Undersized cords overheat and lose power. Replace extension cords if they become damaged. DO NOT use extension cords for 220V machinery.

14. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY.** Make sure switch is in OFF position before reconnecting.

15. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**

17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery ON.

18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding and alignment of parts, broken parts, part mounting, loose bolts, and any other conditions that may affect machine operation. Repair or replace damaged parts.

19. **USE RECOMMENDED ACCESSORIES.** Refer to the instruction manual for recommended accessories. The use of improper accessories may cause risk of injury.

20. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.

21. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.

22. **DO NOT OVERREACH.** Keep proper footing and balance at all times.

23. **MANY MACHINES WILL EJECT THE WORKPIECE TOWARD THE OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."

24. **ALWAYS LOCK MOBILE BASES (IF USED) BEFORE OPERATING MACHINERY.**

25. **BE AWARE THAT CERTAIN DUST MAY BE HAZARDOUS** to the respiratory systems of people and animals, especially fine dust. Make sure you know the hazards associated with the type of dust you will be exposed to and always wear a respirator approved for that type of dust.

Additional Safety for Mortising Machines

⚠WARNING

READ and understand this entire instruction manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

⚠CAUTION

USE this and other machinery with caution and respect. Always consider safety first, as it applies to your individual working conditions. No list of safety guidelines can be complete—every shop environment is different. Failure to follow guidelines could result in serious personal injury, damage to equipment or poor work results.

1. **HAND PROTECTION.** Do not place your hands under an installed chisel at any time or near the chisel while the spindle is in motion. Chisels may become hot during operation! Allow chisels to cool before handling. Chisels are sharp! Always use caution when handling, especially when installing or removing.

2. **USING CORRECT MATERIALS.** Do not use the machine for anything except mortising in wood. Materials such as metals, plastics, and glass can damage the machine, resulting in personal injury.

3. **RESPIRATOR AND SAFETY GLASSES.** Always wear a respirator and safety glasses while operating the machine. Dust and chips are created when mortising. Some debris will be ejected, becoming hazards to the eyes and lungs.

4. **CHISEL COMPATIBILITY.** Make sure the mortising bit fits a minimum of 1/2" into the chuck.

5. **ADJUSTMENTS.** Do not adjust the machine or workpiece while the mortiser is running. Wait for the spindle to come to a complete stop and unplug the machine before continuing.

6. **INSPECTING MACHINE.** Inspect the machine for smooth and safe head tilting and vertical head movement, loose drill bits/chisel housing, and loose nuts/bolts before connecting the machine to power and operating. Correct any problems before use.

ELECTRICAL

110V/220V Operation

The **SHOP FOX®** Model W1743 is prewired for 110V operation, but may be rewired for 220V operation. To do this, consult the wiring diagram in the back of this manual. The motor supplied with your new mortising machine is rated at 1½ HP and wilL draw the following amp loads:

110V Operation .....14 Amps
220V Operation.....7 Amps

Always connect this machine to a dedicated circuit with a verified ground, using a 15 amp circuit breaker and the plugs/receptacles listed below:

110V Operation ..... NEMA 5-15
220V Operation..... NEMA 6-15

Never replace a circuit breaker with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or plan to connect your machine to a shared circuit, you may create a fire hazard—consult a qualified electrician to reduce this risk.**

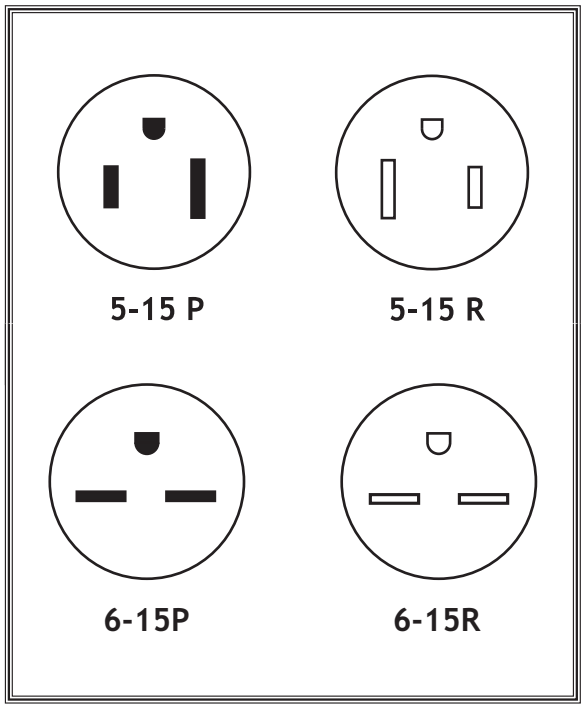


Figure 3. NEMA 5-15 and 6-15 plugs and receptacles.

Extension Cords

We do not recommend using an extension cord for 220V operation. When it is necessary to use an extension cord, use the following guidelines:

- Use cords rated for Standard Service
- Never exceed a length of 50 feet
- Use cords with 12 ga. wire or bigger
- Ensure cord has a ground wire and pin
- Do not use cords in need of repair

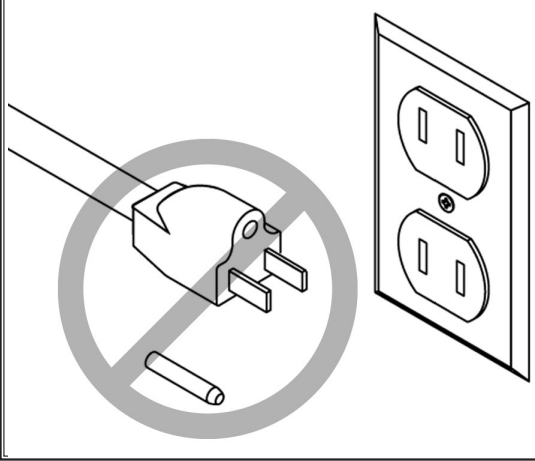
Grounding

This machine must be grounded! The electrical cord supplied with this machine comes with a grounding pin. Do not remove it. If converting to 220V operation, always use a plug with a ground pin. If your outlet does not accommodate a ground pin, have it replaced by a qualified electrician or have an appropriate adapter installed.

Note: *When using an adapter, the adapter must be grounded.*

⚠WARNING

This equipment must be grounded. Verify that any existing electrical outlet and circuit you intend to plug into is actually grounded. If it is not, it will be necessary to run a separate 12 AWG copper grounding wire from the outlet to a known ground. Under no circumstances should the grounding pin be removed from any three-pronged plug or serious injury may occur.



SET UP

Unpacking

The **SHOP FOX®** Model W1743 has been carefully packaged for safe transporting. If you notice the machine has been damaged, please contact your authorized **SHOP FOX®** dealer immediately.

Items Needed for Setup

The following items are needed to complete the set up process, but are not included with your machine:

Description	Qty
• People for Lifting Help	2-3
• Permanent Marker	1
• Hex Wrench 5/16	1
• Solvent (for cleaning)	As needed
• Shop Rags	As needed
• Safety Glasses	1 pair/person

Inventory

The following is a description of the main components shipped with the **SHOP FOX®** Model W1743. Lay the components out to inventory them.

Note: *Some parts and hardware may already be installed on the machine. Make sure to check the machine when you use this inventory list.*

Box 1 Inventory

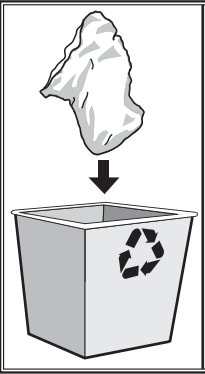
A. Cabinet (not shown) 1

Box 2 Inventory (Figure 4)	Qty
A. Operating Handle	1
B. Extendable Workstop	1
C. Handwheel Handle 3/8-16	1
D. Handwheel Handles 5/16-18	2
E. Mortiser (not shown)	1

Hardware and Tools

—Hex Wrenches 3, 4 and 5mm ..... 1 ea.
—Flat Washers 5/16 (mounting mortiser) 8
—Hex Bolts 5/16-18 x 2" (mounting mortiser) 4
—Hex Nuts 5/16-18 (mounting mortiser) 4
—Chuck Key 1
—Collets 5/8", 3/4" ..... 1 ea.

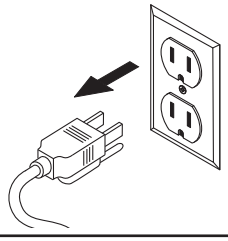
If any parts are missing, examine the packaging for the missing parts. For any missing parts, find the part number in the back of this manual and contact Woodstock International, Inc. at (360) 734-3482 or at **tech-support@shopfox.biz**



⚠WARNING

SUFFOCATION HAZARD! Immediately discard all plastic bags and packing materials to eliminate choking/suffocation hazards for children and animals.

⚠WARNING



UNPLUG power cord before you do any assembly or adjustment tasks! Otherwise, serious personal injury to you or others may occur!

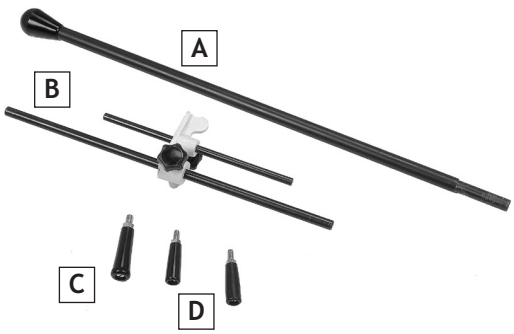
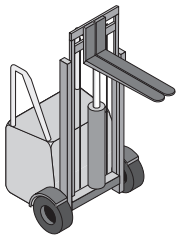


Figure 4. Box 2 Inventory.

Machine Placement

- **Working Clearances:** Consider existing and anticipated needs, size of material to be processed through the machine, and space for auxiliary stands, work tables or other machinery when establishing a location for your Mortising Machine.

- **Lighting:** Lighting should be bright enough to eliminate shadow and prevent eye strain.



⚠WARNING

USE helpers or power lifting equipment to lift this mortising machine. Otherwise, serious personal injury may occur.

⚠CAUTION

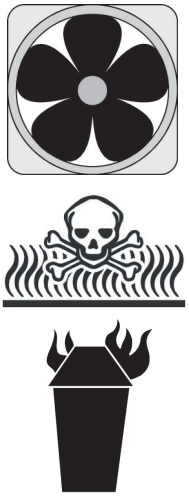
MAKE your shop "child safe." Ensure that your workplace is inaccessible to youngsters by closing and locking all entrances when you are away. NEVER allow untrained visitors in your shop when assembling, adjusting or operating equipment.

Cleaning Machine

The table and other unpainted parts of your mortising machine are coated with a waxy grease that protects them from corrosion during shipment. Clean this grease off with a solvent cleaner or citrus-based degreaser. DO NOT use chlorine-based solvents such as brake parts cleaner or acetone—if you happen to splash some onto a painted surface, you will ruin the finish.

⚠WARNING

NEVER use gasoline or other petroleum-based solvents to clean with. Most have low flash points, which make them extremely flammable. A risk of explosion and burning exists if these products are used. Serious personal injury may occur if this warning is ignored!



⚠CAUTION

ALWAYS work in well-ventilated areas far from possible ignition sources when using solvents to clean machinery. Many solvents are toxic when inhaled or ingested. Use care when disposing of waste rags and towels to be sure they DO NOT create fire or environmental hazards.

Mounting to Shop Floor

This mortising machine is very top heavy and will tip when the mortising head is tilted. Mount this machine to the floor to prevent injury. Because floor materials may vary, floor mounting hardware is not included. Two popular options are described below. Whichever option you choose it will be nessesary to use a precison level to level your machine.

Bolting to Concrete Floors

Lag shield anchors with lag bolts (**Figure 5**) and anchor studs (**Figure 6**) are two popular methods for anchoring an object to a concrete floor. We suggest you research the many options and methods for mounting your machine and choose the best that fits your specific application.

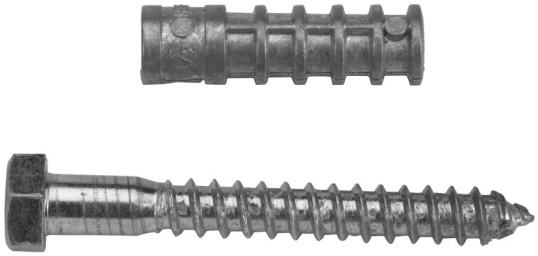


Figure 5. Typical lag shield anchor and lag bolt.

NOTICE

Anchor studs are stronger and more permanent alternatives to lag shield anchors; however, they will stick out of the floor, which may cause a tripping hazard if you decide to move your machine at a later point.

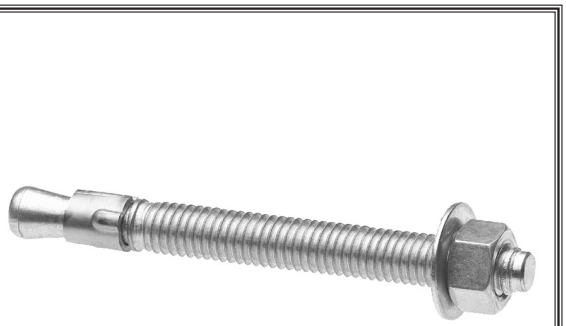


Figure 6. Typical anchor stud.

⚠CAUTION

This machine is very top heavy, and may tip over when the head is tilted. This machine MUST be mounted to a shop floor before use. Failure to do so may cause serious personal injury!

Mounting Mortiser on Cabinet

To install the mortising unit on the cabinet, do these steps:

1. Place the cabinet in its permanent location (once the unit is assembled it will be difficult to move).

2. Get assistance and lift the mortising unit on top of the cabinet.

3. Align the holes in the mortising unit with the holes in the cabinet, insert the $^{5}/_{16}$-18 x 2" hex bolts with washers, and secure with the remaining washers and the hex nuts.

⚠WARNING

The Model W1743 is a very heavy machine (267 lbs). DO NOT over-exert yourself while unpacking or moving your machine—get assistance.

Installing Handles

To install the handles, do these steps:

1. Screw the handle with the $^{3}/_{8}$" thread into the left/right handwheel shown in **Figure 7**, and tighten the jam nut against the handwheel.

2. Screw the remaining handles into the smaller handwheels (**Figure 7**) and tighten the locknuts against the handwheels.

3. Slide the operating handle into the hub shown in **Figure 8** and tighten the lock handle.

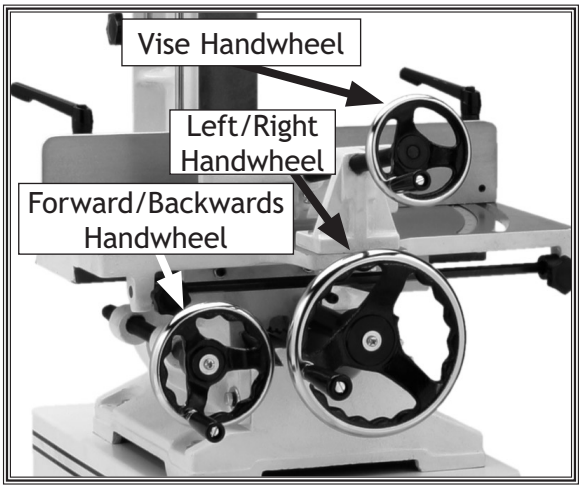


Figure 7. Installing the handwheels.

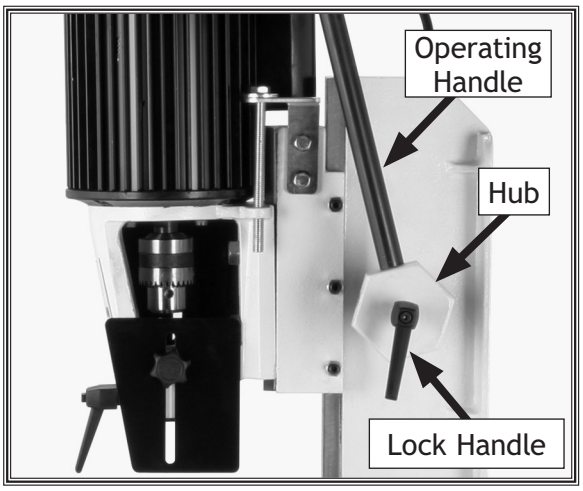


Figure 8. Installing the operating handle.

Installing Extendable Workstop

To install the extendable workstop, do these steps:

1. Slide the larger rod of the workstop into the mounting hole (**Figure 9**) on either end of the fence and tighten the setscrew.

   Note: *The setscrew may need to be loosened before the workstop rod will fit into the hole.*

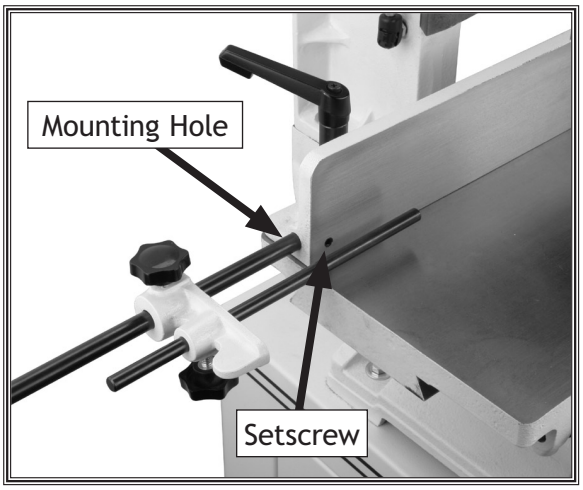


Figure 9. Installing the extendable workstop.

Test Run

Test run the machine before installing the chisel to isolate any problems that may occur.

1. Plug the mortising machine into the power supply.

2. Turn the mortising machine ***ON***.

   Note: *Make sure your finger is poised over the switch, just in case there is a problem.*

The mortising machine should run smoothly, with little or no vibration or rubbing noises. Strange or unusual noises should be investigated and corrected before operating the machine further. Refer to **Page 24** for troubleshooting instructions.

Recommended Adjustments

For your convenience, the adjustments listed below have been performed at the factory and no further setup is required to operate your machine.

However, because of the many variables involved with shipping, some of these adjustments may need to be repeated to ensure optimum results. Keep this in mind as you start to use your new mortising machine.

Step-by-step instructions for these adjustments can be found in SERVICE.

1. **Gib Adjustments (Page 19).**

2. **Head Tilt Calibration (Page 20).**

3. **Fence Calibration (Page 21).**

OPERATIONS

General

The Model W1743 will perform many types of operations that are beyond the scope of this manual. Many of these operations can be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. **If at any time you are experiencing difficulties performing any operation, stop using the machine!**

If you are an inexperienced operator, we strongly recommend that you read books, trade articles, and/or seek training from an experienced mortising machine operator before performing any unfamiliar operations. **Above all, your safety should come first!**

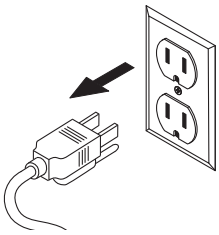
⚠WARNING

READ and understand this entire instruction manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

⚠WARNING

Always wear safety glasses when operating the mortising machine. Failure to comply may result in serious personal injury.

⚠WARNING



DO NOT investigate problems or adjust the mortising machine while it is running. Wait until the machine is turned off, unplugged and all working parts have come to a complete stop before proceeding!

Installing Mortising Chisel

This mortiser uses 1 1/8" shank chisels and comes with bushings for 5/8" and 3/4" shank chisels.

To install a mortising chisel, do these steps:

1. DISCONNECT THE MACHINE FROM THE POWER SOURCE!

2. Loosen the lock handle (**Figure 10**), insert a bushing into the socket with the hole facing forward, then tighten the lock handle.

3. Slide the chisel into the bushing, move the fence against the chisel face to square the chisel to the fence, then tighten the fence lock handle.

   Note: *If you are mortising a rectangular slot, orient the chisel so chips are expelled into the first hole cut.*

4. Install and tighten the drill bit in the chuck so it extends 1/16—3/16" beyond the chisel (**Figure 11**). The correct distance depends on the wood type and operation.

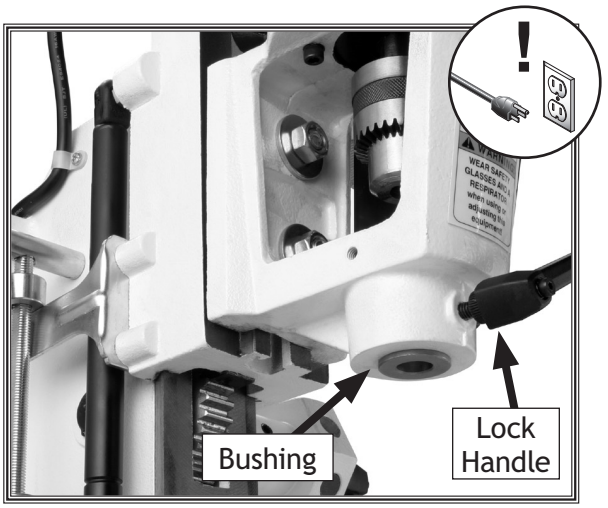


Figure 10. Chisel bushing.

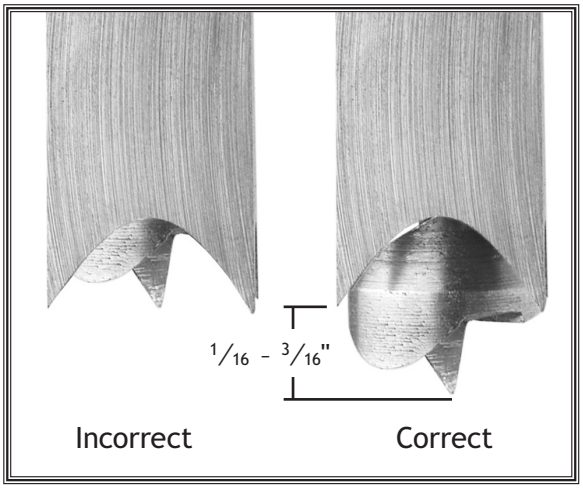


Figure 11. Drill bit extension.

Adjusting the Depth Stop

Adjusting the lower depth stop will make sure the mortise cuts are not too deep and are consistent. Adjusting the upper depth stop prevents the head from raising any farther than necessary. Always make the mortise at least an 1/8" deeper than the tenon to allow room for excess glue to squeeze out.

To adjust the depth stop, do these steps:

1. Lower the mortising chisel to the desired depth of cut.

2. Tighten the lower depth stop against the bottom of the stop plate as shown in **Figure 12**.

3. Raise the mortising chisel until it is clear of the workpiece and tighten the upper depth stop against the top of the stop plate.

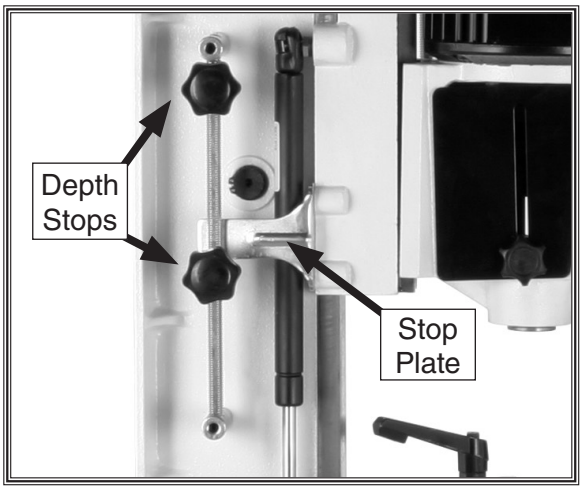


Figure 12. Depth stop adjustment.

Table Controls

Moving the table allows you to create a perfectly straight rectangular mortise with a series of cuts.

To control the table, do these steps:

1. Move the forward/back handwheel (**Figure 13**) to move the table toward or away from the operator.

2. Move the left/right handwheel (**Figure 13**) to move the table horizontally.

3. Use the table stop knobs (**Figure 13**) to control how far the table moves to the left and right.

   Note: *Use the table stop knobs when setting up to cut a mortise to set the left and right ends of the mortise.*

4. Use the table forward/back lock handle (under the right side of the table) to prevent the table from moving forward and back when cutting a horizontal mortise.

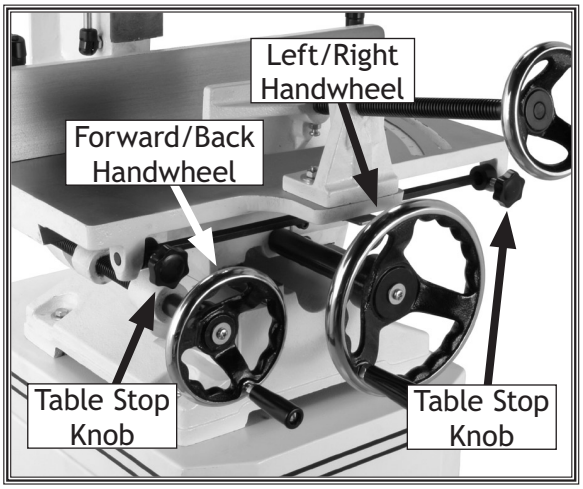


Figure 13. Table controls.

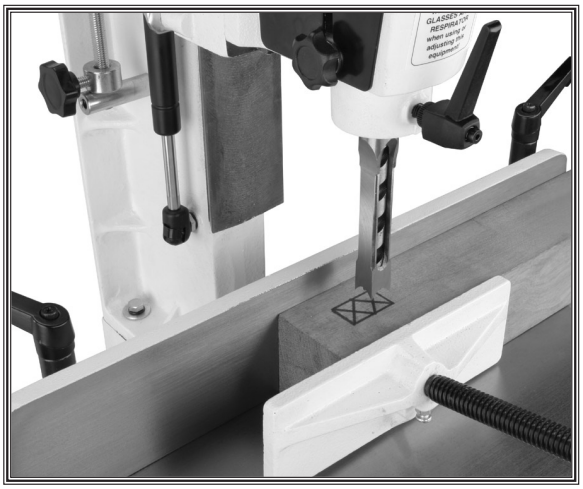


Figure 14. Aligning the mortising chisel.

Mortising Operations

To make a mortise, do these steps:

1. Layout the desired mortise on the workpiece and clamp the workpiece in place with the vise.

   Note: *When making mortises that extend through the workpiece, it is necessary to place a sacrificial board between the workpiece and the table. This board must be at least 3/4" thick to prevent damage to the table and slightly narrower than the workpiece to allow the vise to clamp the workpiece.*

2. Use the table controls to align the mortising chisel with the layout lines (see **Figure 14**) and set the depth and table stops.

3. Turn the mortising machine ***ON*** and use the operating handle to steadily feed the mortising chisel into the workpiece.

NOTICE

This mortising machine will create a moderate amount of chisel noise and smoke from the workpiece, which can cause alarm in novice users. This is normal. If you are concerned about the level of noise and/or smoke, consult the Troubleshooting section of this manual on Page 24.

Continued on next page

—The feed rate must be fast enough to prevent the tip of the bit from burning, but slow enough to prevent the motor from stalling. This speed will vary depending on the wood type.

—When cutting deep mortises, make a 1" deep cut, then back off and allow the chips to clear before cutting deeper.

Extendable Workstop

The extendable workstop allows you to cut a mortise in the same place on multiple identical parts.

To use the extendable workstop, do these steps:

1. Insert the extendable workstop into the socket in the fence and secure it with the set screw.

2. Align the mortising chisel with the layout lines of the workpiece and clamp it in place.

3. Loosen the lock knobs on the extendable workstop and slide the smaller rod against the end of the workpiece as shown in **Figure 15**, then tighten the lock knobs.

4. After the initial mortise is completed, remove the workpiece and slide the new workpiece against the extendable workstop to create an identical mortise.

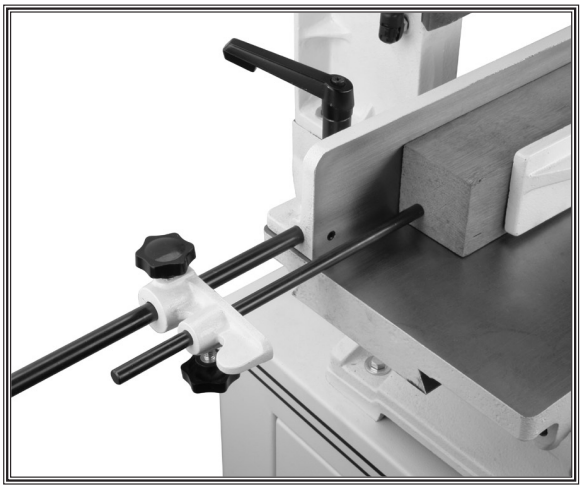


Figure 15. Using the extendable workstop.

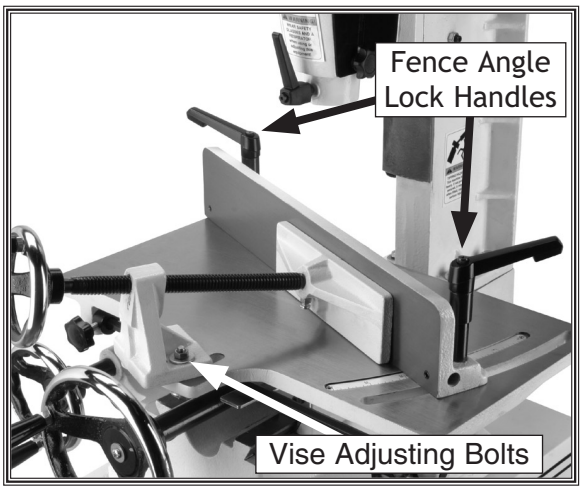


Figure 16. Controls for fence angling.

Angling Fence

The fence can be angled from 0˚–30˚. The fence angling controls are shown in **Figure 16**.

To angle the fence, do these steps:

1. Loosen the fence angle lock handles.

2. Pivot the fence to the necessary angle as shown on the scale located on the top of the table and tighten the fence angle lock handles.

3. Loosen the two vise adjusting bolts.

4. Place the vise face flush against the fence, as shown in **Figure 16.** This helps to ensure the vice face is parallel to the fence.

5. Tighten the two vise adjusting bolts.

Tilting Head

The head can be tilted 30° to the left and 30° to the right for angled mortises. When tilting the head, make sure to hold onto it so it does not fall. The head tilt controls are shown in **Figure 17**.

⚠ CAUTION: The head will fall when the head tilt bolts are loosened. Always hold onto the head with your free hand when loosening the head tilt bolts!

To tilt the head, do these steps:

1. DISCONNECT THE MACHINE FROM THE POWER SOURCE!

2. Slightly loosen the two head tilt bolts.

3. Tilt the head in the desired direction.

   Note: *When tilting the head to the right, the tilt pin must be pulled out and allowed to clear the 0˚ positive stop block, and then pushed back in to make contact with the 30˚ R positive stop.*

4. Tighten the two head tilt bolts.

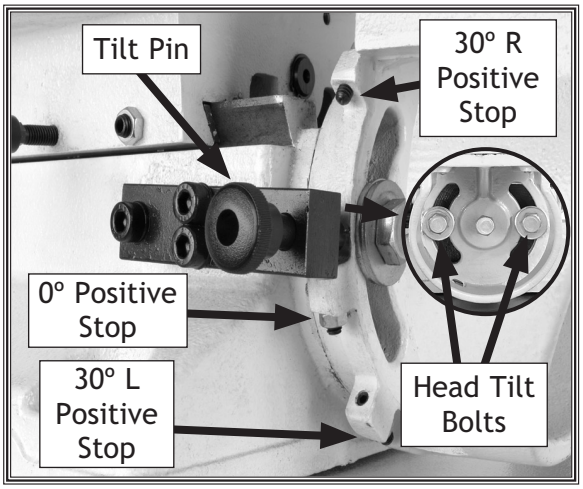


Figure 17. Head tilt controls.

Adjusting Head Height

The head can be raised an additional 2 7/8" to accommodate larger workpieces.

To adjust the head height, do these steps:

1. DISCONNECT THE MACHINE FROM THE POWER SOURCE!

2. Loosen the chuck cover knob and slide the chuck cover down to provide access to the hex nuts inside.

3. Loosen the two large hex nuts on the inside of the head (see **Figure 18**).

4. Adjust the headstock elevation hex bolt, shown in **Figure 18**, to raise or lower the head. Turning the hex bolt clockwise raises the head, and turning the hex bolt counterclockwise lowers the head.

5. Tighten the two large hex nuts on the inside of the head, and replace the chuck cover.

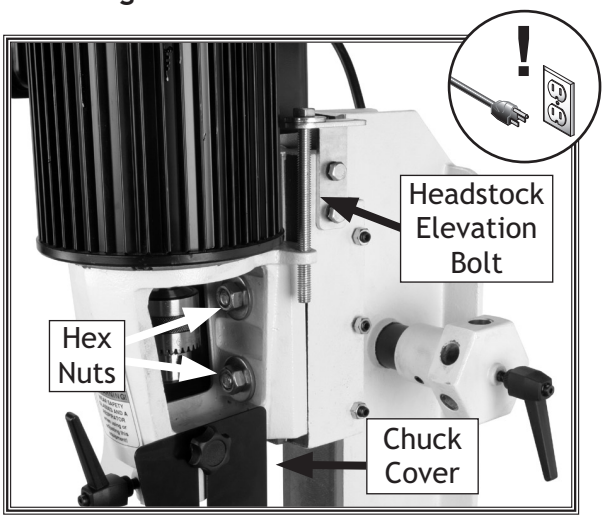


Figure 18. Head height controls.

MAINTENANCE

General

Regular periodic maintenance on your **SHOP FOX®** Model W1743 will ensure its optimum performance. Make a habit of inspecting your machine each time you use it.

Check for the following conditions and repair or replace when necessary:

- Loose mounting bolts.
- Worn switch.
- Worn or damaged cords and plugs.
- Gas spring connections.
- Any other condition that could hamper the safe operation of this machine.

Cleaning

Cleaning the Model W1743 is relatively easy. Vacuum excess wood chips and sawdust, and wipe off the remaining dust with a dry cloth. If any resin has built up, use a resin dissolving cleaner to remove it. Treat all unpainted cast iron and steel with a non-staining lubricant after cleaning.

Unpainted Cast Iron

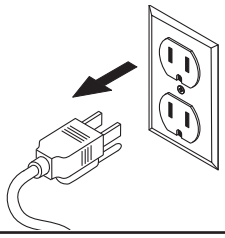
Protect the unpainted cast iron surfaces on the table, fence, and steel chisels/bits by wiping them clean after every use—this ensures moisture from wood dust does not remain on bare metal surfaces.

Keep metal surfaces rust-free with regular applications of products such as G96® Gun Treatment, SLIPIT®, or Boeshield® T-9.

Mortising Chisel Drill Bits

The drill bits for mortising chisels operate under extreme conditions. A small amount of beeswax applied to the drill bit can aid in reducing heat and expelling chips. It is important that a small amount is used and none is applied to the chisel. Beeswax coming into contact with the finished surfaces will impede adhesion of glues and finishes.

⚠WARNING



MAKE SURE that your machine is unplugged during all maintenance procedures! If this warning is ignored, serious personal injury may occur.

Lubrication

Since all bearings are sealed and permanently lubricated, simply leave them alone until they need to be replaced. Do not lubricate them.

For other items on this machine, such as the gear, base, and columns, an occasional application of light machine oil is all that is necessary. Before applying lubricant, clean off sawdust and wood chips.

Your goal is to achieve adequate lubrication. Too much lubrication will attract dirt and sawdust. Various parts of your machine could lose their freedom of movement as a result.

SERVICE

General

This section covers the most common service adjustments or procedures that may need to be made during the life of your machine.

If you require additional machine service not included in this section, please contact Woodstock International Technical Support at (360) 734-3482 or send e-mail to: **tech-support@shopfox.biz**.

Adjusting Gibs

The Model W1743 has three gibs. One gib is located on the side of the headstock and the other two gibs are located under the table (see **Figures 19** & **20**).

The gibs control the accuracy of the sliding parts and keep them stable during operation. The goal of adjusting the gibs is to remove unnecessary play when the slides are moved, without tightening them so much that they bind. Each gib can be tightened or loosened by using the adjustment screws.

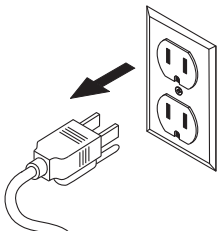
To adjust the gibs, do these steps:

1. Loosen the hex nuts on the set screws.

2. Evenly adjust the setscrews while moving the sliding part until you feel a slight amount of resistance.

3. Tighten the hex nuts against the casting while holding the setscrews in place so they do not move when the hex nut is tightened.

⚠WARNING



MAKE SURE that your machine is unplugged during all service procedures! If this warning is ignored, serious personal injury may occur.

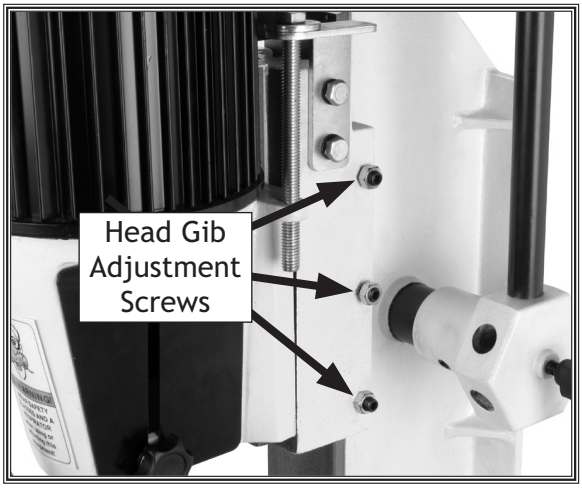


Figure 19. Adjustment locations for the head gib.

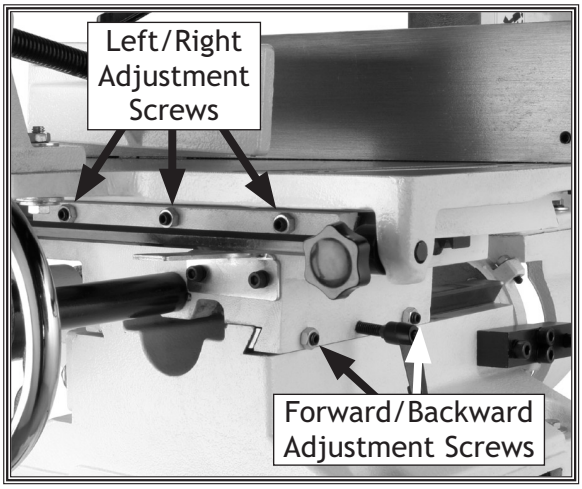


Figure 20. Adjustment screws for forward/backward and left/right table travel gibs.

Calibrating Head Tilt

The tilting mechanism features positive stops (see **Figure 21**) for calibrating the head position accurately to each of the tilting positions. In addition to setting these positive stops during calibration, the scale pointer (see **Figure 22**) should also be aligned with the 0° mark.

To check the head tilt calibration, do these steps:

1. DISCONNECT THE MACHINE FROM THE POWER SOURCE!

2. Insert a mortising chisel in the chuck and lower it close to the table.

3. Use the 90° square and bevel gauge at 30° (**Figure 23**) to check the chisel angle to the table when the head is in each of the three positions (30° L, 0°, 30°R).

   —If the chisel angle is correct in all three positions, then calibration is unnecessary.

   —If the chisel angle is incorrect in any of three locations, then those stops must be calibrated.

To calibrate any of the positive stops, do these steps:

1. Loosen the hex nut securing the set screw.

2. Adjust the set screw position and check the new chisel angle, repeating as necessary until the angle is correct.

3. Hold the set screw in position and tighten the hex nut, so the set screw cannot move.

To adjust the scale pointer, do these steps:

1. Make sure the head is calibrated to 90°.

2. Loosen the pointer screw, and adjust the 0° mark on the pointer even with the 0° mark on the scale.

3. Tighten the pointer screw.

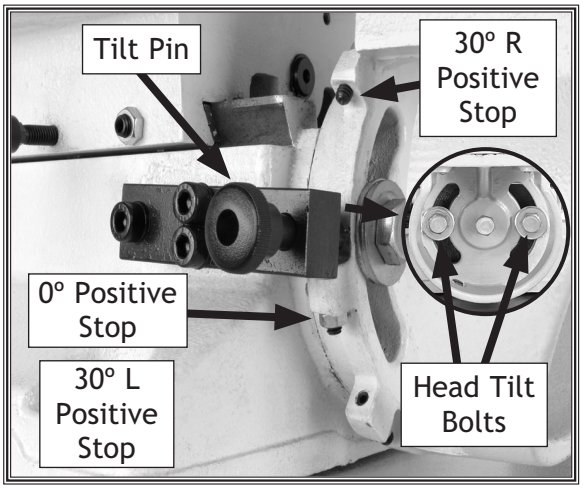


Figure 21. Head tilt controls.

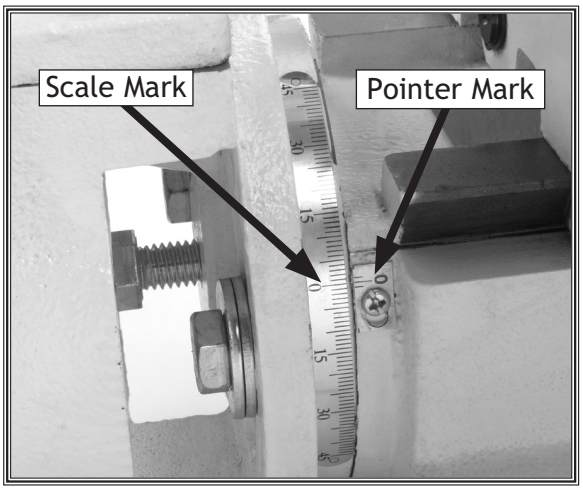


Figure 22. Aligning scale and pointer 0° marks.

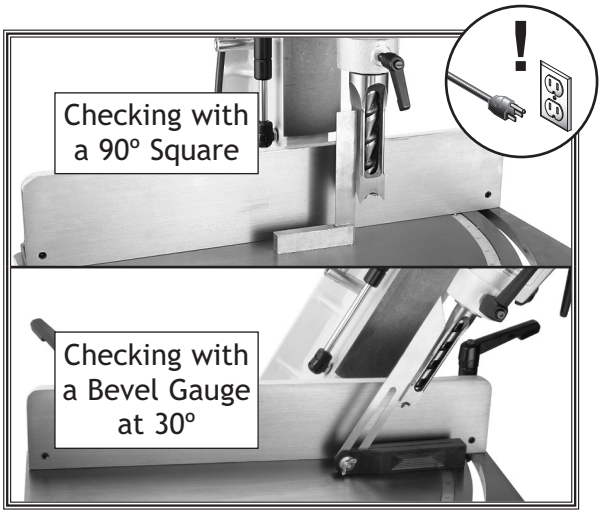


Figure 23. Checking head tilt angles.

Calibrating Fence

The fence features a positive stop that allows it to return to 0° on the scale. Having the 0° setting accurate is important because it keeps holes parallel as the table is moved sideways.

To calibrate the fence, do these steps:

1. DISCONNECT THE MACHINE FROM THE POWER SOURCE!

2. Set the fence angle to the 0° mark.

3. Install a chisel and square it to the fence.

4. Move the table all the way to the right so the chisel is near the left end of the fence.

5. Use the 3mm hex wrench as a feeler gauge between the fence and chisel, and adjust the table front to back until there is a slight drag on the hex wrench when the table is moved left to right.

6. Remove the hex wrench and move the table all the way to the left.

7. Using the hex wrench, check the gap between the chisel and fence (see **Figure 24**).

   —If the gap is the same as the other side, then the fence is calibrated correctly.

   —If the gap is different, adjust the fence adjustment set screw as necessary until the gap is the same on both sides.

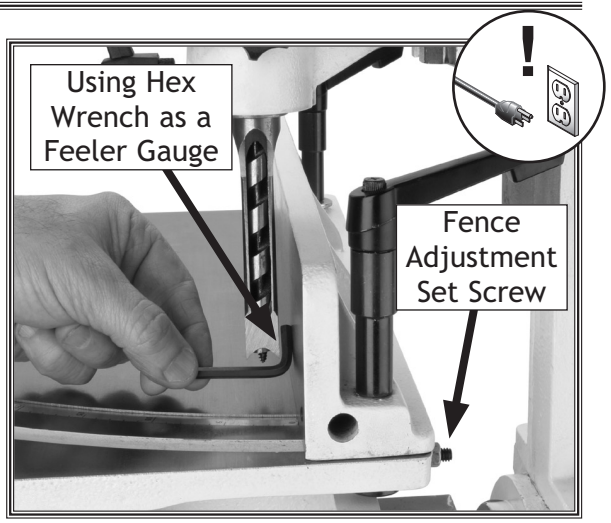


Figure 24. Checking fence parallelism.

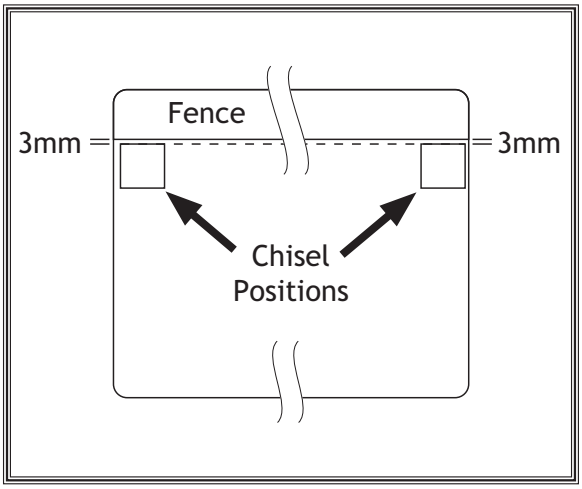


Figure 25. Chisel positions for checking parallellism.

Replacing Gas Spring

The gas spring shown in **Figures 26** & **27** keeps the headstock under pressure so it does not drop when the operating handle is released. If you ever notice that the gas spring stops working correctly, then it should be promptly replaced.

To replace the gas spring, do these steps:

1. DISCONNECT THE MACHINE FROM THE POWER SOURCE!

2. Remove the mortising chisel and drill bit as a safety precaution.

3. Raise the headstock as far as it will go and set the bottom depth stop as high as it will go to keep the head from falling, as shown in Figure **26**.

   ⚠ WARNING: DO NOT remove the gas spring without it being fully extended. An unextended gas spring can suddenly extend when released, causing serious personal injury!

3. Pry the clips off the end of the gas spring, as shown in **Figure 27**.

4. Pull the gas spring off of the ball joints.

5. Replace the gas spring on the ball joints and reinstall the clips.

   Note: *The easiest way to reinstall the clips is to slip them on the end of the gas spring pocket and slide them into place.*

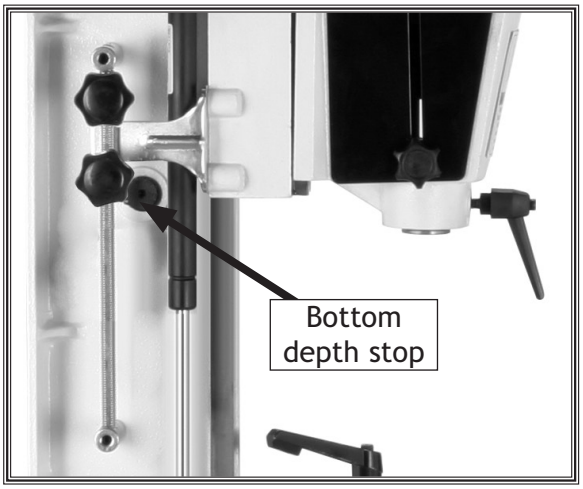
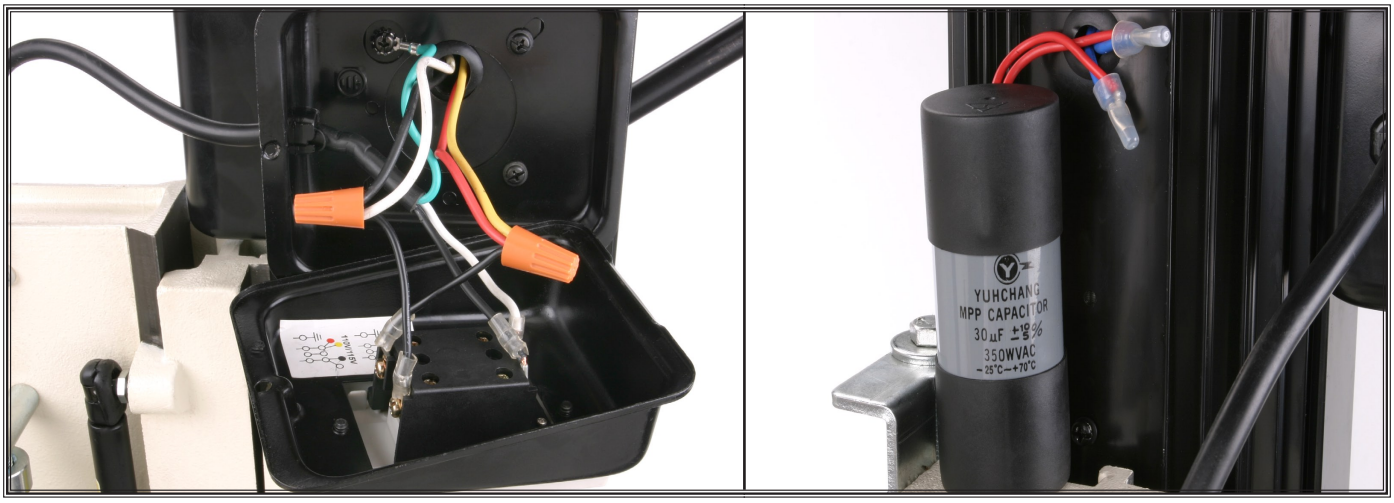


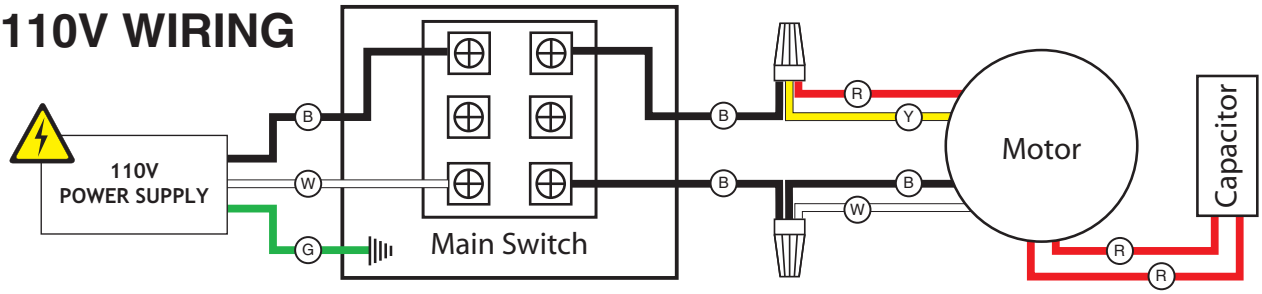
Figure 26. Raising the headstock.

Figure 27. Removing clips from gas spring.

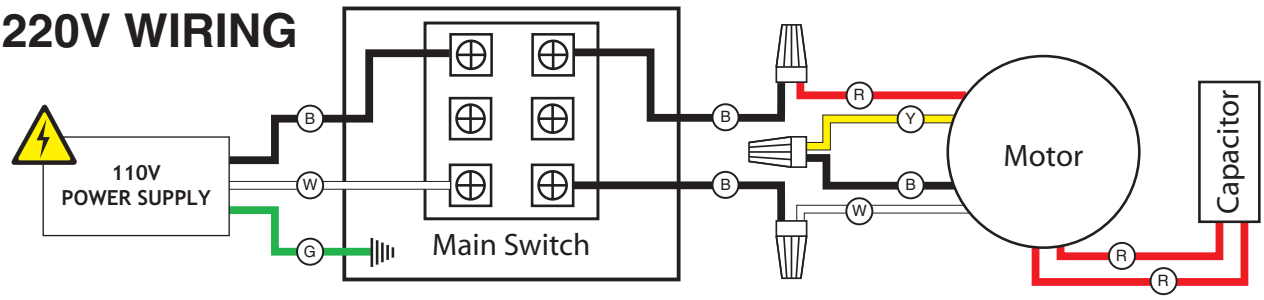
Electrical Components and Wiring Diagrams



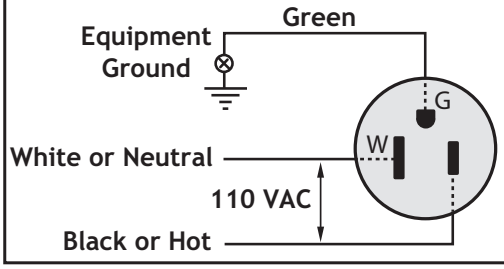
110V WIRING



220V WIRING



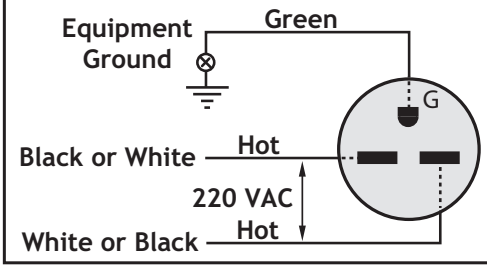
110V NEMA 5-15 PLUG WIRING



COLOR KEY

BLACK	B
WHITE	W
GREEN	G
RED	R
YELLOW	Y

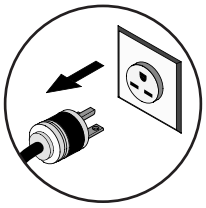
220V NEMA 6-15 PLUG WIRING



NOTICE: These motor wiring diagrams are current at the time of printing; however, always use the diagram on the inside of the junction box cover when rewiring your motor!

SERVICE

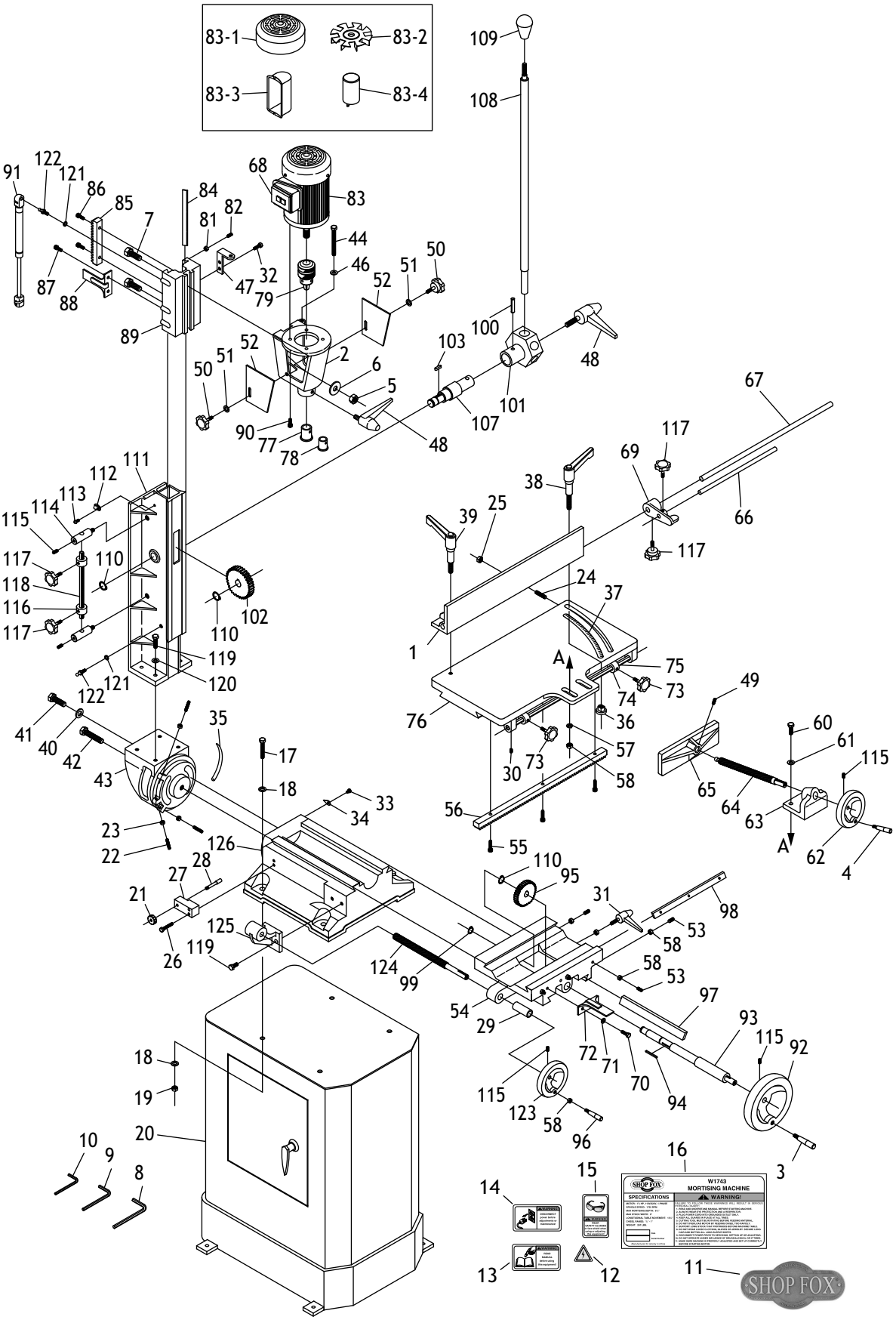
Troubleshooting



This section covers the most common problems and corrections with this type of machine. **WARNING! DO NOT make any adjustments until power is disconnected and moving parts have come to a complete stop!**

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Motor will not start.	1. Short circuit in line cord or plug. 2. Start capacitor bad. 3. Open circuit in motor or loose connections. 4. Low voltage.	1. Repair/replace cord/plug for damaged insulation and shorted wires. 2. Replace capacitor. 3. Inspect all motor lead connections for loose or open connections. 4. Check power for proper voltage.
Motor overheats or stalls (resulting in blown fuses or tripped circuit).	1. Motor overloaded. 2. Incorrect size fuses or circuit breakers.	1. Reduce load on motor by reducing feed rate or using a smaller mortising set. 2. Install correct fuses or circuit breakers.
Loud repetitious noise coming from machine.	1. Motor fan is hitting cover.	1. Adjust cover mounting position, tighten fan, or shim fan cover.
Difficult to pull lever down during machine operation.	1. Drill bit does not protrude enough from end of chisel. 2. Chisel or drill bit is dull. 3. Mortising operating handle is not positioned for maximum leverage. 4. Wood is wet or has defects such as knots.	1. Adjust the drill bit extension as shown on **Page 14**. 2. Sharpen/replace bit and chisel. 3. Adjust the handle for maximum length, and for maximum leverage at the hardest mortising depth. 4. Use dry, defect-free stock.
Mortising bit and chisel are extremely noisy and produce a lot of smoke. (An average amount of noise and smoke are normal for any mortising machine.)	1. Drill bit out of alignment with chisel. 2. Chisel mounting bushing is loose or damaged causing poor bit-to-chisel alignment. 3. Chisel or drill bit is bent.	1. Reinstall chisel in different position. 2. Replace bushing, using care not to overtighten chisel retaining lock bolt. 3. Replace chisel and drill bit as a matched set.
Moritising bit and chisel generate smoke and burn the workpiece.	1. The drill bit is dull. 2. Drilling pressure is too aggressive and overheats drill bit. 3. Wood chips load up in chisel and overheat drill bit. 4. Wood has high moisture content, or is pressure treated.	1. Sharpen or replace drill bit. 2. Adjust drill bit depth, reduce drilling pressure, clear chips often. 3. Apply small amount of bees wax to drill bit; face chisel slot sideways; clear chips often. 4. Only mortise dry, untreated wood.

W1743 Breakdown



Parts List

REF	PART #	DESCRIPTION
1	X1743001	FENCE
2	X1743002	HEAD
3	X1743003	HANDLE
4	X1743004	HANDLE
5	XPN13	HEX NUT 1/2-13
6	XPW01	FLAT WASHER 1/2
7	XPB55	HEX BOLT 1/2-13 X 1 1/2
8	XPAW05M	HEX WRENCH 5MM
9	XPAW04M	HEX WRENCH 4MM
10	XPAW03M	HEX WRENCH 3MM
11	X1743011	SHOP FOX LOGO PLATE
12	XLABEL-14	ELECTRICITY LABEL
13	XLABEL-12	READ MANUAL 2 X 3 5/16
14	XLABEL-26	UNPLUG 110V 2 X 3 5/16
15	XLABEL-11	SAFETY GLASSES 2 X 3 5/16
16	X1743016	MACHINE ID LABEL
17	XPB06	HEX BOLT 5/16-18 X 2
18	XPW07	FLAT WASHER 5/16
19	XPN02	HEX NUT 5/16-18
20	X1743020	CABINET STAND
21	X1743021	SPECIAL KNOB
22	X1743022	SET SCREW 1/4-20 X 1
23	XPN05	HEX NUT 1/4-20
24	X1743024	SET SCREW 1/4-20 X 1
25	XPN05	HEX NUT 1/4-20
26	XPSB03	CAP SCREW 5/16-18 X 1
27	X1743027	BAR
28	X1743028	PIN
29	X1743029	SLEEVE
30	XPSS03	SET SCREW 1/4-20 X 3/8
31	X1743031	LOCK HANDLE M8-1.25 X 35
32	XPB03	HEX BOLT 5/16-18 X 1
33	XPS06	PHLP HD SCR 10-24 X 3/8
34	X1743034	POINTER
35	X1743035	SCALE
36	X1743036	SPECIAL NUT M10-1.5
37	X1743037	SCALE
38	X1743038	LOCK HANDLE M10-1.5 X 45
39	X1743039	LOCK HANDLE M10-1.5 X 45
40	XPW01	FLAT WASHER 1/2
41	XPB27	HEX BOLT 1/2-13 X 2 1/2
42	XPB56	HEX BOLT 1/2-13 X 1 3/4
43	X1743043	BRACKET
44	XPB08	HEX BOLT 3/8-16 X 5
46	XPW02	FLAT WASHER 3/8
47	X1743047	ADJUSTING BRACKET
48	X1743048	LOCK HANDLE M8-1.25 X 30
49	XPSS06	SET SCREW 1/4-20 X 3/4
50	X1743050	KNOB 1/4-20 X 1/2
51	XPW06	FLAT WASHER 1/4

REF	PART #	DESCRIPTION
52	X1743052	CHUCK COVER
53	XPSS38	SET SCREW 5/16-18 X 5/8
54	X1743054	SLIDE BODY
55	XPSB09	CAP SCREW 5/16-18 X 5/8
56	X1743056	RACK
57	XPLW01	LOCK WASHER 5/16
58	XPN02	HEX NUT 5/16-18
60	XPB22	HEX BOLT 5/16-18 X 1 3/4
61	XPW07	FLAT WASHER 5/16
62	X1743062	HANDWHEEL
63	X1743063	VISE BODY
64	X1743064	SCREW ROD
65	X1743065	VISE PLATE
66	X1743066	LONG STOP BAR B
67	X1743067	LONG STOP BAR A
68	X1743068	SWITCH
69	X1743069	LONG STOP BODY
70	XPSB01	CAP SCREW 1/4-20 X 5/8
71	XPLW02	LOCK WASHER 1/4
72	X1743072	LONG STOP PLATE
73	X1743073	KNOB 5/16-18 X 3/4
74	X1743074	ADJUSTING SLEEVE
75	X1743075	THREADED SHAFT
76	X1743076	TABLE
77	X1743077	BUSHING 3/4
78	X1743078	BUSHING 5/8
79	X1743079	CHUCK 13MM X 20 UNF
81	XPN02	HEX NUT 5/16-18
82	XPSS18	SET SCREW 5/16-18 X 3/4
83	X1743041	MOTOR 13MM X 20 UNF SHAFT
83-1	X1743083-1	FAN COVER
83-2	X1743083-2	FAN
83-3	X1743083-3	CAPACITOR COVER
83-4	XPC050B	CAPACITOR 50M 350VAC
84	X1743084	GIB
85	X1743085	RACK
86	XPS12	PHLP HD SCR 1/4-20 X 5/8
87	XPS02	PHLP HD SCR 1/4-20 X 3/4
88	X1743088	STOP PLATE
89	X1743089	HEAD BODY
90	XPS19	PHLP HD SCR 1/4-20 X 1
91	X1743091	GAS SPRING
92	X1743092	HANDWHEEL
93	X1743093	GEAR SHAFT
94	XPK08M	KEY 5 X 5 X 16
95	X1743095	GEAR
96	X1743096	HANDLE
97	X1743097	GIB
98	X1743098	GIB
99	XPR05M	EXT RETAINING RING 15MM

REF	PART #	DESCRIPTION
100	XPSS03	SET SCREW 1/4-20 X 3/8
101	X1743101	HANDLE BODY
102	X1743102	GEAR
103	X1743103	SHAFT KEY
107	X1743107	HANDLE SHAFT
108	X1743108	HANDLE
109	X1743109	HANDLE GRIP
110	XPR08M	EXT RETAINING RING 19MM
111	X1743111	COLUMN
112	X1743112	CORD CLAMP
113	XPS07	PHLP HD SCR 1/4-20 X 3/8
114	X1743114	BAR

REF	PART #	DESCRIPTION
115	XPSS03	SET SCREW 1/4-20 X 3/8
116	X1743116	ADJUSTING SLEEVE
117	X1743117	KNOB 5/16-18 X 3/4
118	X1743118	DEPTH STOP BAR
119	XPB12	HEX BOLT 5/16-18 X 1 1/4
120	XPW07	FLAT WASHER 5/16
121	XPLW01	LOCK WASHER 5/16
122	X1743122	BALL FITTING
123	X1743123	HANDWHEEL
124	X1743124	ROD SCREW
125	X1743125	ADJUSTING BAR
126	X1743126	BASE

Warranty

Woodstock International, Inc. warrants all **SHOP FOX®** machinery to be free of defects from workmanship and materials for a period of two years from the date of original purchase by the original owner. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, lack of maintenance, or reimbursement of third party expenses incurred.

Woodstock International, Inc. will repair or replace, at its expense and at its option, the **SHOP FOX®** machine or machine part which in normal use has proven to be defective, provided that the original owner returns the product prepaid to the **SHOP FOX®** factory service center or authorized repair facility designated by our Bellingham, WA office, with proof of their purchase of the product within two years, and provides Woodstock International, Inc. reasonable opportunity to verify the alleged defect through inspection. If it is determined there is no defect, or that the defect resulted from causes not within the scope of Woodstock International Inc.'s warranty, then the original owner must bear the cost of storing and returning the product.

This is Woodstock International, Inc.'s sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant that **SHOP FOX®** machinery complies with the provisions of any law or acts. In no event shall Woodstock International, Inc.'s liability under this warranty exceed the purchase price paid for the product, and any legal actions brought against Woodstock International, Inc. shall be tried in the State of Washington, County of Whatcom. We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of our products.

Every effort has been made to ensure that all **SHOP FOX®** machinery meets high quality and durability standards. We reserve the right to change specifications at any time because of our commitment to continuously improve the quality of our products.

Warranty Registration

Name_____

Street _____

City _____ State_____ Zip_____

Phone #_____ Email _____ Invoice #_____

Model #_____ Serial #_____ Dealer Name_____ Purchase Date_____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?
_____ Advertisement ____ Friend ____ Local Store
_____ Mail Order Catalog ____ Website ____ Other:

2. How long have you been a woodworker/metalworker?
_____ 0-2 Years _____ 2-8 Years ____ 8-20 Years _____ 20+ Years

3. How many of your machines or tools are **Shop Fox®**?
_____ 0-2 _____ 3-5 ____ 6-9 _____ 10+

4. Do you think your machine represents a good value? _____ Yes ____ No

5. Would you recommend **Shop Fox®** products to a friend? _____ Yes ____ No

6. What is your age group?
_____ 20-29 ____ 30-39 ____ 40-49
_____ 50-59 ____ 60-69 ____ 70+

7. What is your annual household income?
_____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
_____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

8. Which of the following magazines do you subscribe to?

____ Cabinet Maker
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Modeltec
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Practical Homeowner
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

9. Comments:_____

_____

_____

_____

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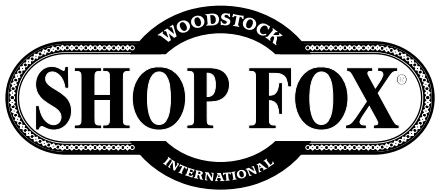

WOODSTOCK INTERNATIONAL INC.
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