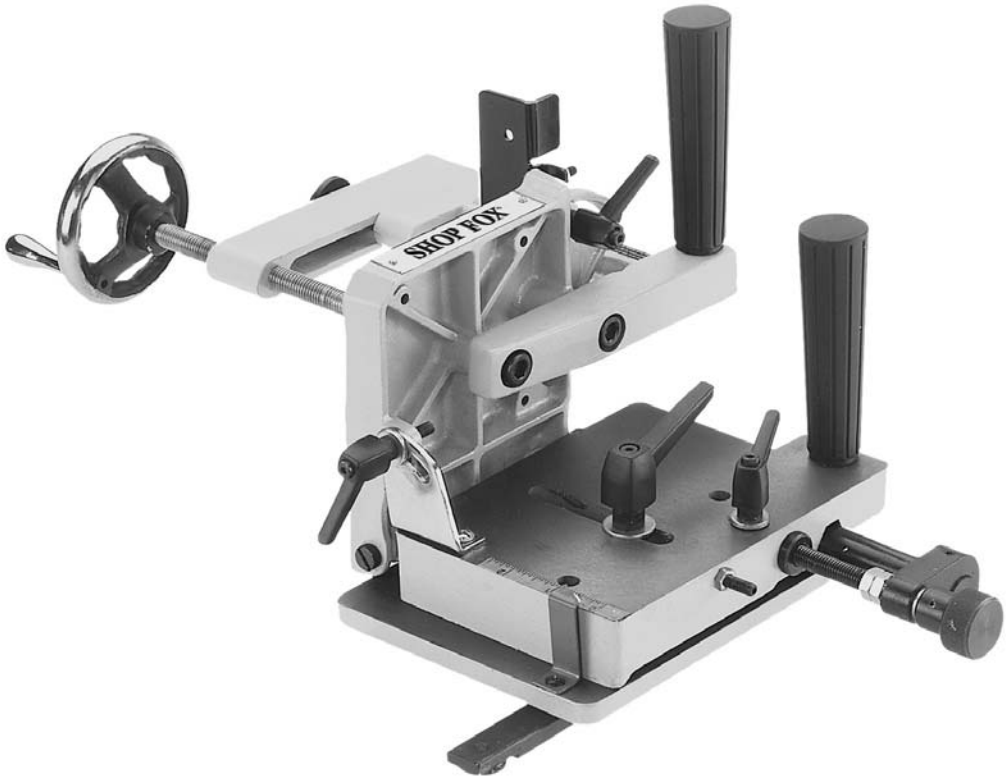
WOODSTOCK

SHOP FOX®

INTERNATIONAL

MODEL D3246
TENONING JIG



OWNER'S MANUAL

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

#5447CR

Printed in China

⚠ 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.

Contents

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

INTRODUCTION

Woodstock Technical Support

This 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. Our intent with this manual is to include the basic information for safety, setup, operation, maintenance, and service of this product.

We stand behind our machines! In the event that questions arise about your machine, 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 process warranty claims.

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

Woodstock International, Inc.
Attn: Technical Documentation Manager
P.O. Box 2309
Bellingham, WA 98227
Email: manuals@woodstockint.com

Functional Overview

The tenoning jig is designed to work with your table saw to make a tenon, such as shown in **Figure 1**, which will be part of a mortise and tenon joint.

With the tenoning jig mounted into the miter slot of the table saw, the workpiece is clamped upright to the jig in various configurations so that the tenon cheek cuts can be made. Then, the jig is removed and the workpiece is laid flat on the table saw to make the shoulder cuts.

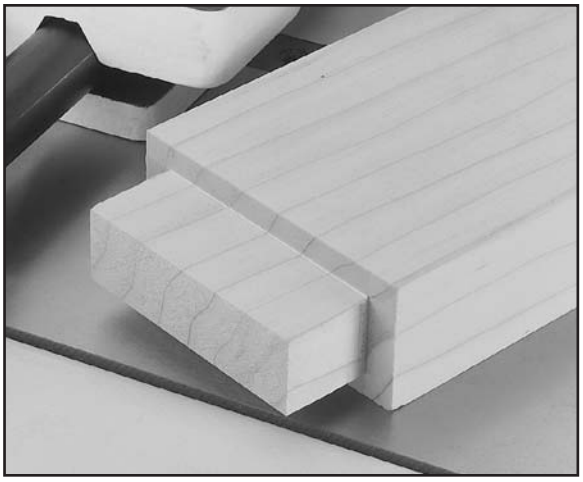


Figure 1. Example of a completed basic tenon.

Controls and Features

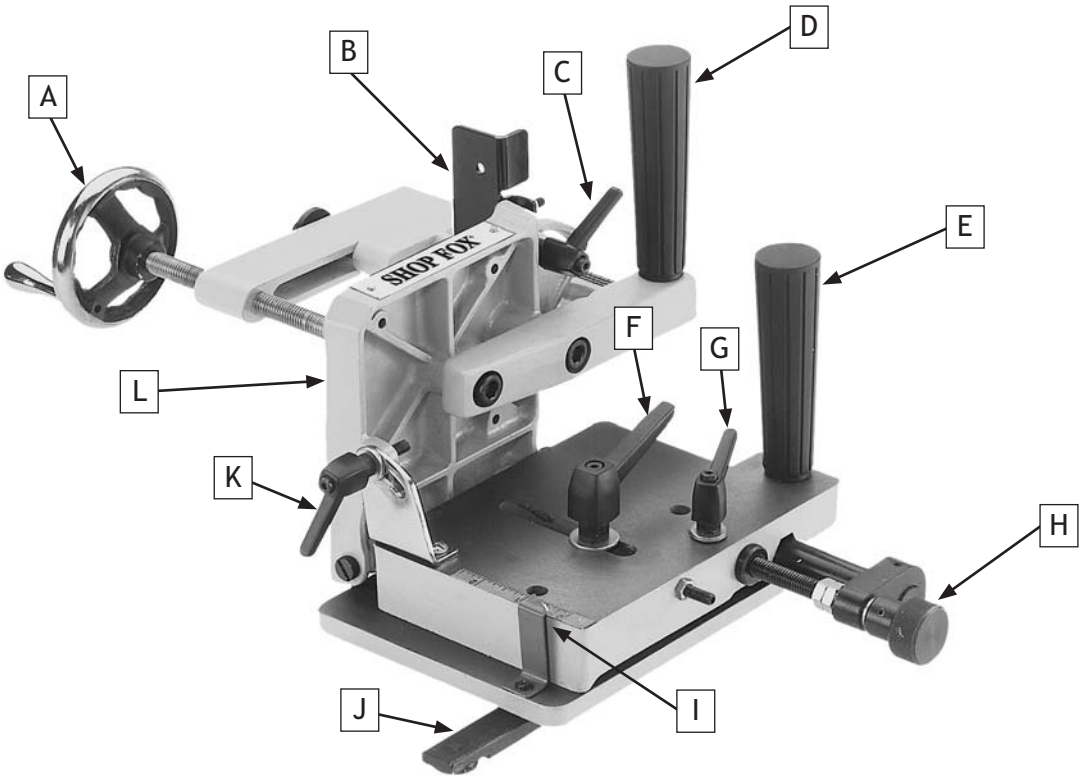


Figure 1. Model D3246 control identification.

A. Clamp Handwheel
B. Back Support
C. Back Support Lock Lever
D. Clamp Handle
E. Slide Plate Handle
F. Slide Plate Lock Lever
G. Micro-Adjust Lock Lever
H. Micro-Adjust Knob
I. Depth of Cut Scale & Pointer
J. Guide Bar
K. Side Support Tilt Lock Lever
L. Side Support

Table Saw Requirements

The Model D3246 Tenoning Jig is designed to work with most table saws. Use these specifications to verify that your table saw will work with this tenoning jig.

Table Saw Miter Slot:
—Left Hand Standard w/T-Slot.... $^{3}/_{8}$" x $^{3}/_{4}$"

Distance from Miter Slot Center to Blade:
—Minimum ..... $3^{3}/_{4}$"
—Maximum ..... $6^{3}/_{4}$"

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 A NIOSH 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 Tenoning Jig

⚠WARNING

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

⚠WARNING

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. **OWNER'S MANUAL.** Read and understand this manual and the one for your table saw before using this jig.

2. **KICKBACK.** Be familiar with kickback. Kickback happens when the blade grabs the workpiece and launches it toward the operator at a high rate of speed. *Until you have a clear understanding of kickback and how it occurs, DO NOT use this tenoning jig with your table saw!*

3. **REACHING OVER THE BLADE.** If kickback should occur while reaching over the blade, your body could be pulled into the spinning blade. NEVER reach behind or over the saw blade with either hand while the saw is running.

4. **OPERATOR POSITION.** Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the spinning saw blade. NEVER have any part of your body directly in-line with the cutting path of the saw blade.

5. **SECURING WORKPIECE.** ALWAYS securely clamp the workpiece in the jig, and make sure all fasteners and lock levers are tight before you start the saw. ALWAYS make sure that the jig will not make contact with the saw blade during operation.

6. **JIG CONTROL.** To maintain safe control of the jig, ALWAYS firmly hold both jig handles when performing the cutting operation. NEVER hold the jig with just one hand.

7. **ADJUSTING JIG.** To avoid the risk of an unexpected start-up, disconnect the saw from power BEFORE installing or adjusting the jig or workpiece.

8. **REMOVE TOOLS.** To avoid the risk of personal injury from flying objects, ALWAYS remove tools and other items from the jig and table saw before connecting the saw to power.

9. **AVOIDING ENTANGLEMENT.** DO NOT wear loose clothing, gloves, jewelry, or other items that can be become entangled with the jig and draw you into the spinning blade. Tie back long hair and roll up sleeves.

10. **BLADE GUARD & RIVING KNIFE.** ALWAYS re-install the blade guard and any other safety features for the table saw when the tenoning jig is removed. To reduce the risk of kickback, ALWAYS use a riving knife properly installed on the table saw when using the jig.

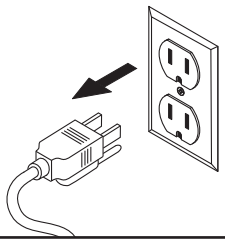
11. **TABLE SAW ACCESSORIES.** Make sure other accessories used with the table saw do not interfere with the safe movement of the jig.

SETUP

Unpacking

This machine has been carefully packaged for safe transportation. If you notice the machine has been damaged during shipping, please contact your authorized Shop Fox dealer immediately.

⚠WARNING



Keep table saw disconnected from power until instructed otherwise.

Inventory

The following is a description of the main components shipped with the Model D3246. Lay the components out to inventory them.

Note: *If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for safer shipping.*

Inventory (Figure 3)	**Qty**
A. Tenoning Jig Assembly	1
B. Clamp Handwheel	1
C. Clamp Shoe & Bracket	1
D. Clamp Brace	1
E. Handles	2

Hardware & Tools (not shown)	**Qty**
• Lock Washers 10mm	2
• Fender Washer 8mm	1
• Cap Screw M8-1.25 x 50	1
• Cap Screw M10-1.5 x 25	1
• Cap Screw M10-1.5 x 20	1
• Hex Wrenches 2.5, 3, 4, 6, 8mm	1 Each

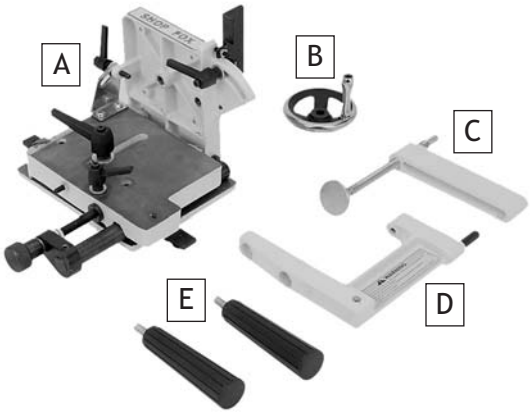


Figure 3. Model D3246 inventory.

Cleaning Machine

The unpainted surfaces of your tenoning jig 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 clean with gasoline or other petroleum-based solvents. 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!

⚠WARNING

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.

Table Saw Preparation

The Model D3246 Tenoning Jig is designed to work with a table saw that has a 3/8" x 3/4" miter T-slot on the left side of the blade. To help ensure safe and accurate tenons, follow these rules to properly prepare your table saw before using it with the jig.

- **Table Saw Operation:** Make sure that you read and understand your table saw owner's manual, and take all instructed safety precautions.
- **Riving Knife:** You must use a riving knife that is properly installed behind the blade to ensure the kerf does not close on the blade and cause kickback.
- **Saw Blades:** Make sure that your saw blades are not damaged and that the teeth are sharp.
- **Saw Adjustments:** When using the tenoning jig, the accuracy of the cuts depend upon the accuracy of the saw blade. Make sure that your saw blade is perpendicular to the table and parallel with the miter slots.
- **Miter Slot and Table:** Make sure the miter slots and table are free from burrs or debris that may interfere with the smooth operation of the jig.
- **Lighting:** Make sure the top of your table has adequate lighting so that the tenoning jig and workpiece are properly illuminated without shadows.

Tenoning Jig Preparation

You must successfully complete the following procedures to properly assemble and adjust your tenoning jig before using it. You will perform many of these procedures again each time you set up the tenoning jig for an operation.

- Assembly.
- Guide Bar Mounting Configuration (**Page 10**).
- Guide Bar Adjustment (**Page 12**).
- Side Support Adjustment (**Page 13**).
- Back Support Adjustment (**Page 14**).
- Blade Clearance Adjustment (**Page 15**).

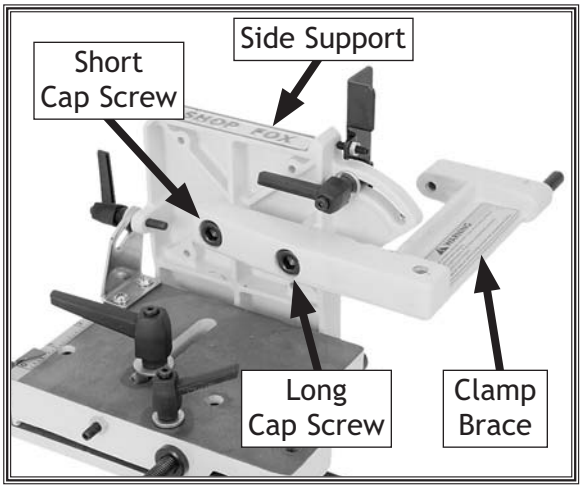


Figure 4. Clamp brace installed.

Assembly

To assemble your tenoning jig, do these steps:

1. Attach the clamp brace to the back of the side support with the M10-1.5 cap screws and 10mm lock washers, as shown in **Figure 4**.

   Note: *These cap screws are different lengths and must go into the correct holes, as shown in **Figure 4**.*

2. Install the handles into the threaded holes on the clamp brace and slide plate, as shown in **Figure 5**.

3. Slide the clamp bracket over of the clamp brace rod, as shown in **Figure 6**, then secure it with the M8-1.25 x 50 cap screw and the 8mm fender washer.

4. Align the set screw in the hub of the handwheel with the flat of the clamp shaft, then slide the handwheel onto the shaft and tighten the set screw to secure it in place (see **Figure 6**).

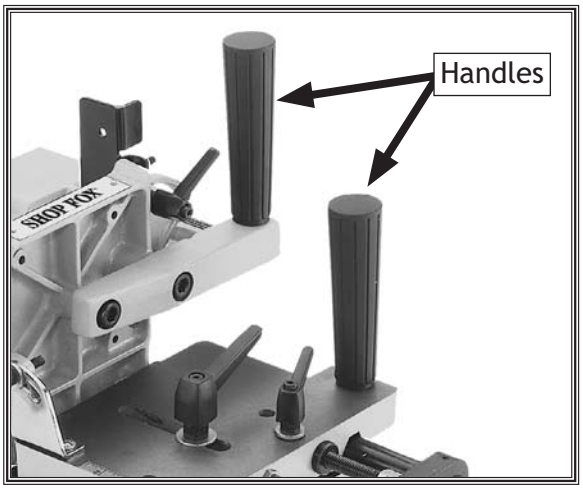


Figure 5. Handles installed.

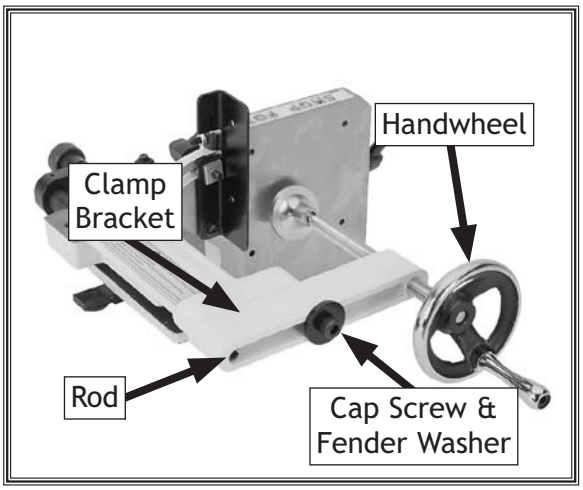


Figure 6. Clamp shoe, bracket, and handwheel installed.

Guide Bar Mounting Configuration

The tenoning jig guide bar can be mounted to the base plate in two positions, depending on the distance between the table's left-hand miter slot and the blade. The jig ships with the guide bar mounted in the inward position. If the jig needs to be closer to the blade, you need to mount the guide bar in the outward position.

To mount the guide bar in the outward position, do these steps:

1. Remove the slide plate lock lever and flat washer, then unthread the long set screw that the lock lever was attached to (see **Figure 7**).

   Note: *When you unthread the long set screw, if it falls down between the slide and base plates it will be accessible in the following steps.*

2. Loosen the micro-adjust lock lever, then rotate the micro-adjust knob counterclockwise to force the slide plate to move and separate from the micro-adjust screw, as shown in **Figure 7**.

⚠WARNING

The jig must be mounted on the table so that the side support cannot come in contact with the blade. The jig side support must stay at least 1/2" away from the blade at all times during operation. If the side support should make contact with the blade during operation, serious personal injury could result. At best, the blade and jig will be damaged.

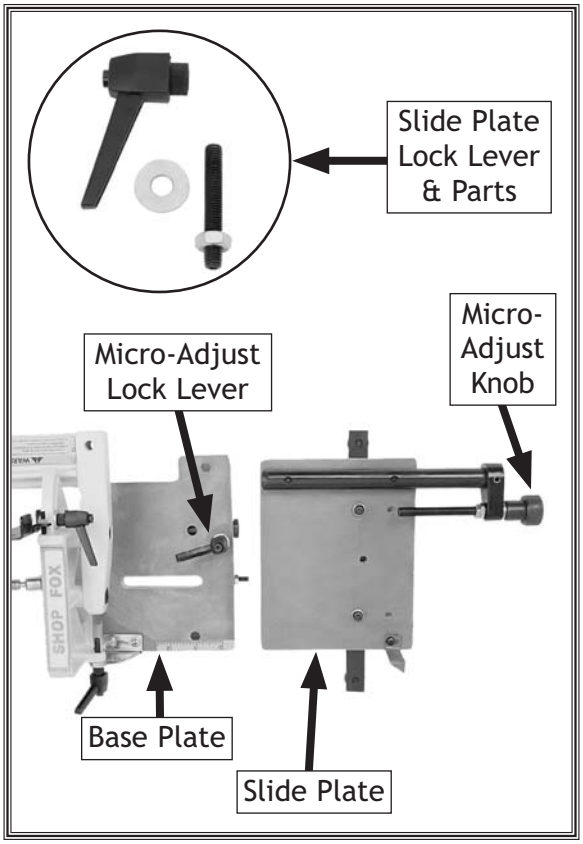


Figure 7. Slide and base plates separated.

3. Loosen the set screw on the micro-adjust collar, then remove the micro-adjust assembly from the rod, as shown in **Figure 8**.

4. Remove the cap screws and washers securing the guide bar to the base plate, then re-install the bar in the outward mounting position, as shown in **Figure 8**.

5. Thread the long set screw removed in **Step 1** back into the middle, inward hole on the base plate, then tighten down the jam nut to secure it.

6. Loosen the pointer screw and swing the pointer out of the way for the next step.

7. Place the slide plate over the long set screw, as shown in **Figure 9**.

8. Slide the micro-adjust collar onto the rod, align the micro-adjust screw with the threaded guide shaft of the slide plate, then rotate the knob clockwise until the collar is even with the rod, as shown in **Figure 10**.

9. With one hand pressing the slide plate flat against the base plate to properly align the micro-adjust assembly, fully tighten the set screw on the micro-adjust collar to secure it to the rod.

10. Re-position and secure the pointer, then re-install the slide plate lock lever and flat washer removed in **Step 1**.

To mount the guide bar on the inward side, perform the above steps but install the guide bar using the mounting holes closest to the side support.

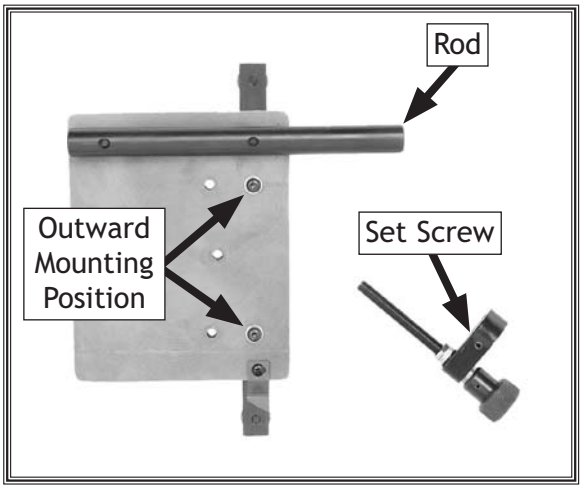


Figure 8. Guide bar mounted in the outward position.

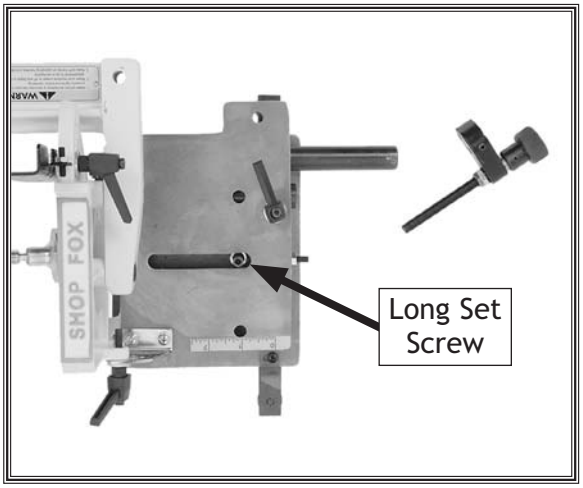


Figure 9. Slide plate mounted on the base plate.

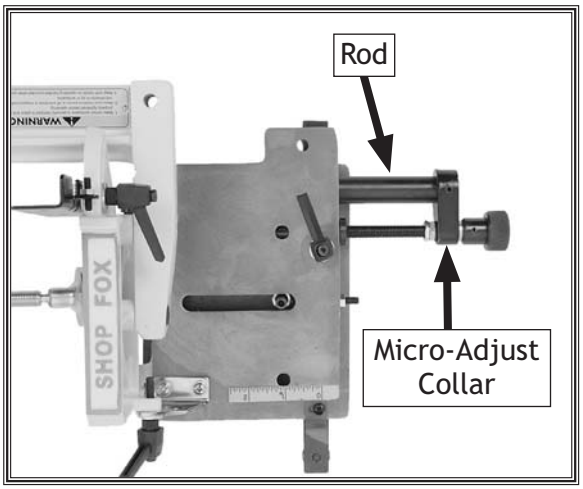


Figure 10. Micro-adjust assembly properly installed.

Guide Bar Adjustment

In this procedure you will adjust the guide bar so that it slides back-and-forth in the table saw miter slot without side-to-side play or tilt that could make the operation unsafe or produce poor cutting results.

To adjust the guide bar, do these steps:

1. DISCONNECT TABLE SAW FROM POWER!

2. Clean away any debris from the left-hand table saw miter slot and table surface, then insert the tenoning jig guide bar into the T-slot.

3. Slide the jig back-and-forth along the full length of the T-slot.

— If the guide bar fits snugly, but slides freely in the miter slot, no adjustment is necessary. Continue with the **Side Support Adjustment** procedure on **Page 13**.

— If side-to-side play or tilt exists, continue with **Step 4**.

4. Remove the jig from the table saw and turn it upside down, as shown in **Figure 11**.

5. Evenly adjust the set screws shown in **Figure 11** the same amount so that they protrude from the guide bar enough to take up the side-to-side play experienced in **Step 3**.

6. Make sure the cap screws that secure the T-slot washers are tight.

7. Repeat **Steps 3-6** until you are satisfied with the movement of the guide bar in the table miter slot.

⚠WARNING

DO NOT remove the T-slot washers from the ends of the tenoning jig guide bar. Removal of these washers could allow the jig to come loose from the table during a cutting operation, which could cause serious personal injury or property damage.

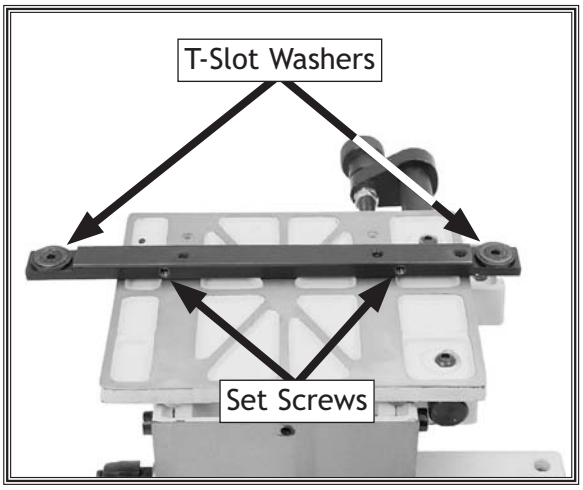


Figure 11. Guide bar and T-slot washers.

Side Support Adjustment

In this procedure you will adjust the side support so it is perpendicular to the saw table. Then, you will set the 90° positive stop so that the support can be quickly returned to the perpendicular position after an angle cut.

To adjust the side support, do these steps:

1. DISCONNECT TABLE SAW FROM POWER!

2. Completely lower the saw blade so that it will not interfere with the measurements.

3. Clean away any debris from the table and jig that could affect the measurements, then insert the jig into the left-hand miter slot.

4. Thread the positive stop set screw far enough away from the side support so that it will not interfere with the next step (see **Figure 12**).

5. Position a machinist's square flat on the table and up against the jig side support, as shown in **Figure 12**.

6. Loosen the support lock lever, position the side support flat against the machinist's square, then, without moving the support, re-tighten the lock lever.

7. Remove the square and tighten the stop set screw until it just meets resistance. The 90° positive stop is now set for quick perpendicular positioning of the side support.

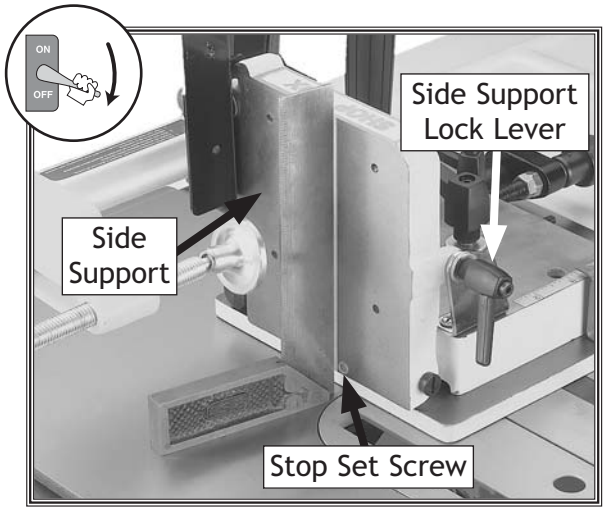


Figure 12. Using a machinist's square to adjust the side support to 90°.

Back Support Adjustment

In this procedure you will adjust the back support perpendicular to the saw table, then set the 90° positive stop so that the back support can be returned to the perpendicular position after an angle cut.

To adjust the back support, do these steps:

1. DISCONNECT TABLE SAW FROM POWER!

2. Completely lower the saw blade so that it will not interfere with the measurements.

3. Clean away any debris from the table or jig that could affect the measurements, then insert the jig into the left-hand table miter slot.

4. Loosen the jam nut on the positive stop set screw shown in **Figure 13**, then back off the set screw to allow adjustment to the back support.

5. Position a machinist's square flat on the table and up against the jig's back support, as shown in **Figure 13**.

6. Loosen the support lock lever, position the back support flat against the machinist's square, then, without moving the support, re-tighten the lock lever.

7. Remove the square and re-tighten the stop set screw until it just meets resistance, then re-tighten the jam nut to secure the setting. The 90° positive stop is now set for quick perpendicular positioning of the back support.

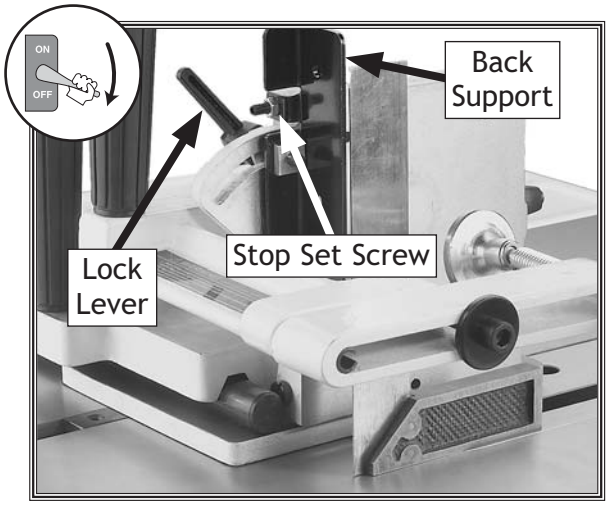


Figure 13. Adjusting the back support to be 90° with the saw table.

Blade Clearance Adjustment

In this procedure you will adjust the side support to be parallel with the saw blade, then set the safety stop set screw so that the side support cannot come into contact with the saw blade when adjusting for different cuts.

To adjust the blade clearance, do these steps:

1. DISCONNECT TABLE SAW FROM POWER!

2. Make sure the saw blade is perpendicular to the table and parallel with the miter slot (refer to your table saw owner's manual for instructions).

3. Make sure the jig side support is perpendicular to the saw table (refer to the **Side Support Adjustment** procedure on **Page 13** for detailed instructions).

4. Loosen the jam nut on the safety stop set screw shown in **Figure 14**, then back the set screw out so that it will not interfere with adjustments.

5. Fully raise the saw blade.

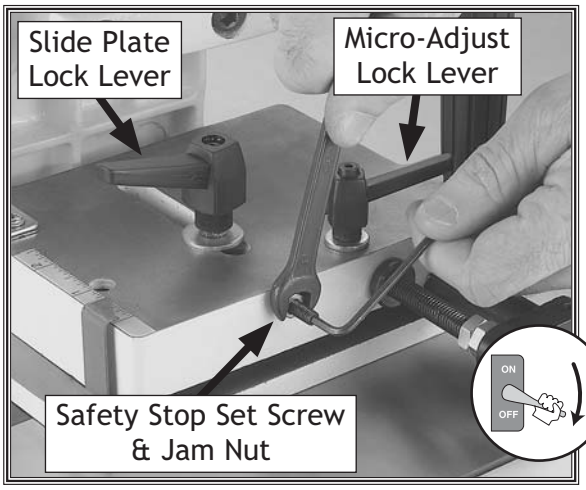


Figure 14. Adjusting the side support safety set screw.

⚠WARNING

The side support safety stop must be properly set so that the side support will not make contact with the saw blade when adjusting for different cuts and during cutting operations. The side support must stay at least 1/2" away from the blade at all times during operation. If the side support and blade should make contact during operation, serious personal injury could occur. At best, the blade and jig will be damaged.

6. Loosen the slide plate and micro-adjust lock levers, then use the clamp handwheel to move the clamp screw and shoe out of the way for the next step (see **Figure 15**).

7. Use the micro-adjust knob to move the side support against the saw blade.

   Note: *If the side support will not reach the blade, you may need to mount the guide bar in the inward or left mounting position (refer to the **Guide Bar Mounting Configuration** procedure on **Page 10** for detailed instructions).*

   *If it still does not reach the blade after changing the guide bar mounting position, the difference can usually be made up when attaching the side support backing board (refer to **Step 5** of the **Basic Tenon Cutting** procedure beginning on **Page 19** for detailed instructions).*

   — If the side support is parallel with the saw blade, no adjustments are necessary.

   — If the side support is not parallel to the saw blade, note the difference from front-to-back, then continue with **Step 8**.

   Note: *If the side support does not quite reach the blade, use a precise ruler to compare the distance between the support and the blade from front-to-back.*

8. Use the micro-adjust knob to align the guide bar access hole of the slide plate over the cap screw of the guide bar, then loosen the cap screw (see **Figure 15**).

9. Shift the jig assembly one way or the other so that the side support is parallel with the blade, then re-tighten the guide bar cap screw.

10. Repeat **Steps 7–9** until you are satisfied that the side support and the saw blade are parallel.

11. Use the micro-adjust knob to move the side support at least 1/2" away from the saw blade.

12. Tighten the safety set screw toward the slide plate lock set screw until it just meets resistance, then re-tighten the jam nut to secure the setting. The safety set screw is now correctly set to prevent the side support from contacting the saw blade.

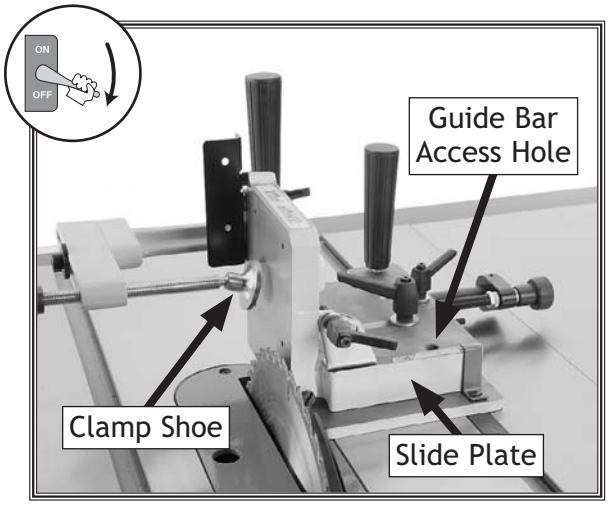


Figure 15. Checking for side support parallelism with the saw blade.

OPERATIONS

General

The Model D3246 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.

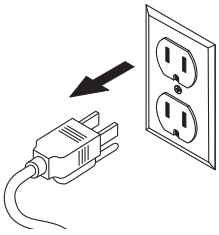
The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate the table saw with the tenoning jig. **If at any time you are experiencing difficulties performing any operation, stop using the machine!**

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

WARNING

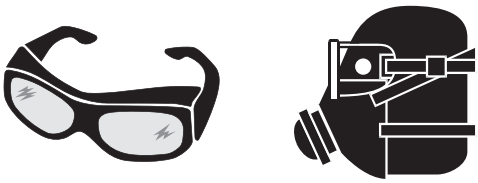
READ and understand this entire instruction manual before using this tenoning jig. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

WARNING



DO NOT investigate problems or adjust the jig or table saw while the saw is running. Wait until the table saw is turned *OFF*, unplugged and all working parts have come to a complete stop before proceeding!

WARNING



Damage to your eyes and lungs could result from using the table saw without proper protective gear. Always wear safety glasses and a respirator when operating this machine.

Basic Tenon Cutting

Your tenoning jig is designed to only make tenon cheek cuts. Generally, cheek cuts are made before the shoulder cuts, which are then made without the use of the jig (see **Figure 16**).

The following three procedures will guide you through the process of cutting a basic tenon using your tenoning jig and table saw.

Preparing Jig & Workpiece

1. DISCONNECT TABLE SAW FROM POWER!

2. Select the stock for your mortise and tenon joint, then draw the cutting lines, as shown in **Figures 16-17**.

— Select joint locations that are free from knots and grain twists that could break when stressed.

— Tenons need structural and cosmetic shoulders to strengthen the joint and hide gaps that may occur as the wood shrinks with age.

— When the thickness of the mortise and tenon stock are the same, make the tenon width the same thickness as the mortise walls.

— When jointing stock where the mortise piece is thicker than the tenon piece, make the tenon as thick as possible without making the mortise walls too thin.

— Make sure there is a slight space between the bottom of the tenon and the bottom of the mortise for glue squeeze out. If you use a mortise chisel and bit to make the mortise, generally the indents from the bit tip at the bottom of the mortise are sufficient.

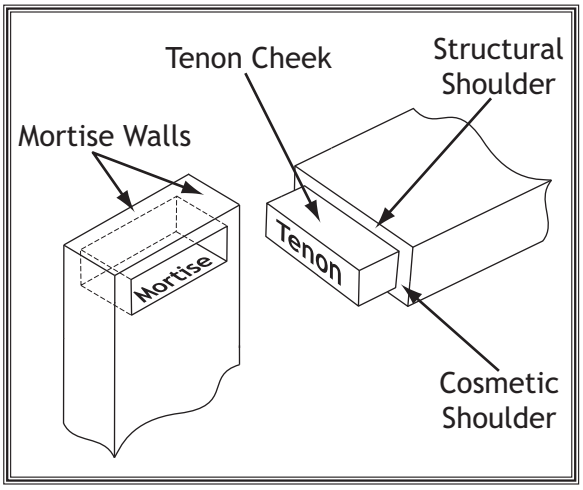


Figure 16. Illustration of basic mortise and tenon.

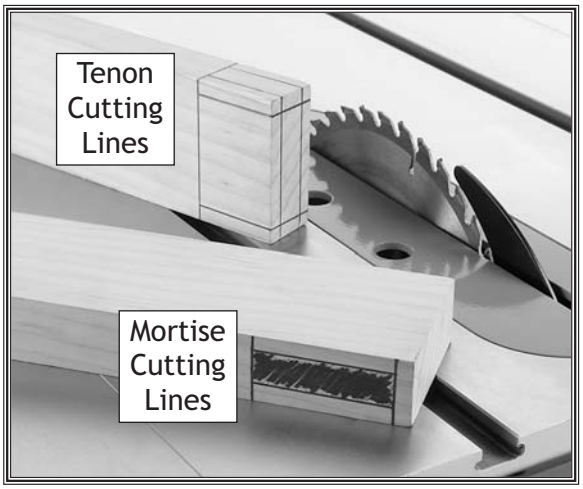


Figure 17. Mortise and tenon cutting lines drawn on the workpieces.

⚠WARNING

ALWAYS make sure the table saw is turned *OFF*, disconnected from power, and all moving parts have come to a complete stop before making adjustments to the jig, workpiece, or table saw to avoid serious personal injury should you come in contact with the spinning blade.

3. Plane a piece of wood approximately 3/8" thick to match the thickness of the jig base plate, then clamp it to the front of the saw table and even with the right side of the jig base, as shown in **Figure 18**.

Note: *This additional base piece provides a level surface with the jig base plate to set the workpiece on when clamping it to the jig in later steps. This configuration reduces the risk of the workpiece bottom binding with the table as it slides through the blade during a cut.*

4. Cut a piece of 3/4" plywood approximately 2" wide by 9" tall, then mount it on the back support using either wood screws through the back of the support or recessed cap screws and hex nuts through the front, as shown in **Figure 19**.

— If your operation requires the back support be at an angle, make sure the bottom of this backing board is cut at an angle so that it is parallel with the saw table. You will also need to make accommodations when making the side support backing board in the next step.

Note: *The back support backing board will prevent tear out when making the tenon cuts.*

5. Cut a piece of plywood that is approximately 5" wide by 9" tall and a minimum of 3/4" thick, then mount it to the jig side support, as shown in **Figure 20**.

Note: *The thickness of the side support backing board can vary, depending upon any distance you need to make up between the jig and the saw blade. However, keep in mind that this backing board provides a safety barrier between the jig and the saw blade.* ***Make sure you use it!***

Figure 18. Example of the additional base piece clamped to the saw table.

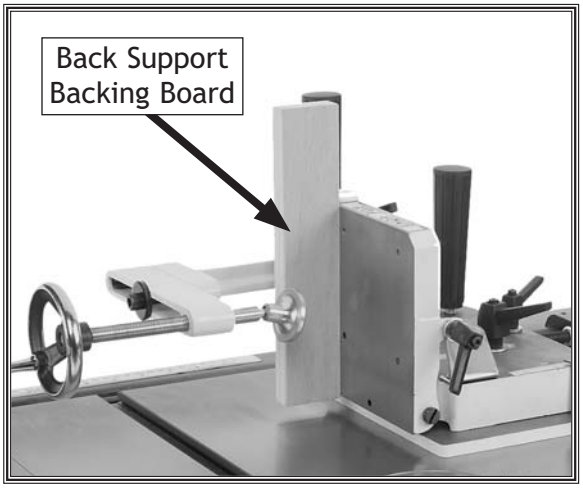


Figure 19. Example of the back support backing board installed.

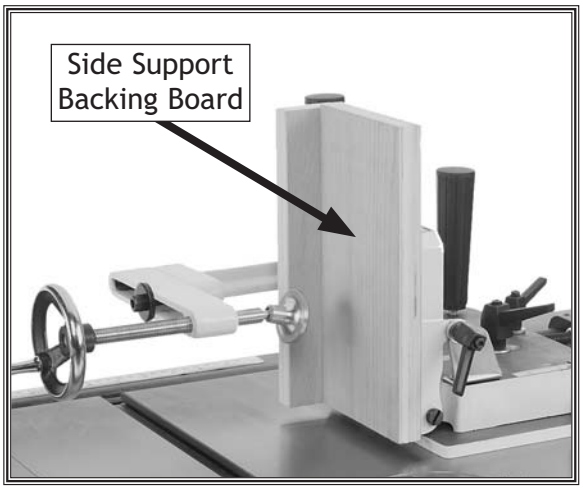


Figure 20. Example of the side support backing board installed.

6. Place the workpiece firmly against the back and side backing boards, as shown in **Figure 21**, then use the clamp shoe to securely hold it in place.

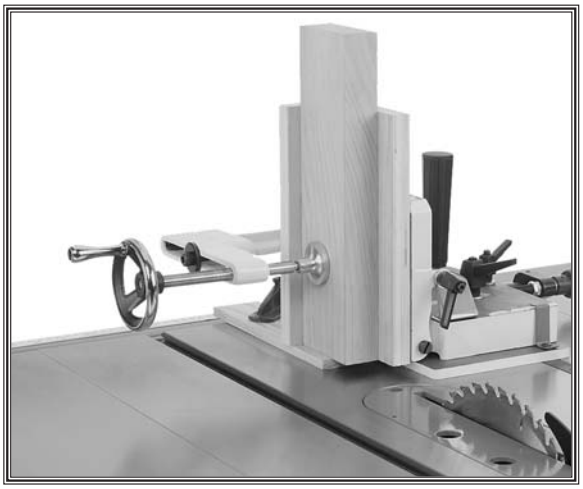
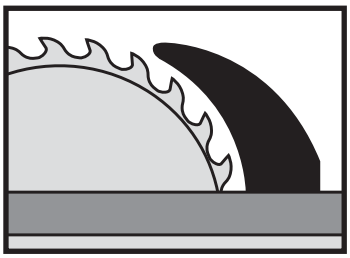


Figure 21. Example of a workpiece correctly mounted on the jig.

WARNING



ALWAYS use a riving knife that is correctly installed on the table saw when making the tenon cuts to avoid the kerf binding behind the blade, which could cause kickback and possible serious personal injury.

Cutting Tenon Cheeks

1. DISCONNECT TABLE SAW FROM POWER!

2. Make sure the workpiece is properly mounted to the jig and all of the jig lock levers are fully tightened.

3. Slide the jig and workpiece up to the saw blade, then use the micro-adjust knob to correctly align the first structural cheek cut mark with the saw blade.

Note: *Remember to allow for the width of the kerf when aligning the workpiece. Also, keep the cuts close to the side support backing board, as shown in* ***Figure 22****, to support the waste piece and reduce the risk of it breaking off during the cut.*

4. Raise the saw blade to the correct depth of cut for the tenon cheek.

5. Move the jig and workpiece back away from the blade, then connect the table saw to power and turn it ***ON***.

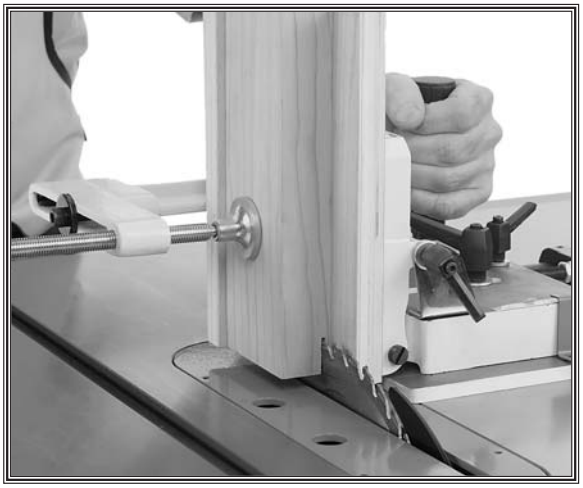


Figure 22. Making the first structural cheek cut.

WARNING

ALWAYS move the workpiece completely through the blade to reduce the risk of kickback. ALWAYS turn the saw *OFF*, disconnect it from power, and wait for the blade to come to a complete stop before removing the workpiece or moving the jig to reduce the risk of kickback or to avoid coming into contact with the spinning blade.

6. Firmly grasp ***BOTH*** handles of the jig, then slowly slide the workpiece through the blade to make the first structural cheek cut, as shown in **Figure 22**.

Note: *Do not move the workpiece into the blade quickly or the force of the blade will attempt to lift the jig up and away from the table.*

7. Turn the saw ***OFF***, disconnect it from power, then wait for the blade to come to a complete stop.

8. Loosen the clamp shoe, remove the workpiece, then move the jig back to the front of the table.

9. Rotate the workpiece 180°, correctly clamp it to the jig, verify the blade alignment for the second structural cheek cut, then repeat **Steps 5-8** to complete the cut, as shown in **Figure 23**.

10. Repeat **Steps 5-8** for the third and fourth cosmetic cheek cuts, as shown in **Figure 24**.

11. Turn the saw ***OFF***, disconnect it from power, wait for the blade to come to a complete stop, then remove the jig and the additional base piece from the table.

⚠WARNING

If it is necessary to remove the side support backing board to correctly perform a cut, make sure the metal side support of the jig stays at least 1/2" away from the saw blade at all times. If the jig should make contact with the saw blade during operation, serious personal injury could result and damage will occur to the saw and jig.

Figure 23. Making the second structural cheek cut.

Figure 24. Making the third and fourth cosmetic cheek cuts.

Cutting Tenon Shoulders

The final set of cuts will remove the waste pieces from the previous cheek cuts to produce the shoulders and complete the tenon.

To cut the tenon shoulders, do these steps:

1. DISCONNECT TABLE SAW FROM POWER!

2. Install a cross-cut saw blade.

3. Adjust the blade height to remove the waste pieces of the shoulder, as shown in **Figure 25**.

4. Install the table saw fence and clamp a stop block to it so that the workpiece can be placed against it to properly align the cut without using the fence during the cut, as shown in **Figure 26**.

   Note: *Make sure the stop block is far enough behind the blade so that the workpiece will not contact it as it reaches the blade. Otherwise, the workpiece could bind, causing kickback.*

5. Attach a backing board to the miter gauge that is aligned even with the end of the workpiece, as shown in **Figure 26**.

   Note: *This backing board will prevent blade tear out on the workpiece when making the cut.*

6. Connect the saw to power, turn it ***ON***, then carefully and slowly push the miter gauge and workpiece forward to make the shoulder cut.

7. Turn the saw ***OFF***, wait for the blade to come to a complete stop, then remove the workpiece.

8. Repeat **Steps 3-7** for the remaining three shoulder cuts.

When you have successfully performed all three of the above procedures, your basic tenon is complete.

⚠WARNING

ALWAYS use a cross-cut saw blade when making the tenon shoulder cuts to avoid the risk of the blade aggressively grabbing the workpiece, which could cause kickback and possible serious personal injury.

Figure 25. Blade height adjusted for a shoulder cut.

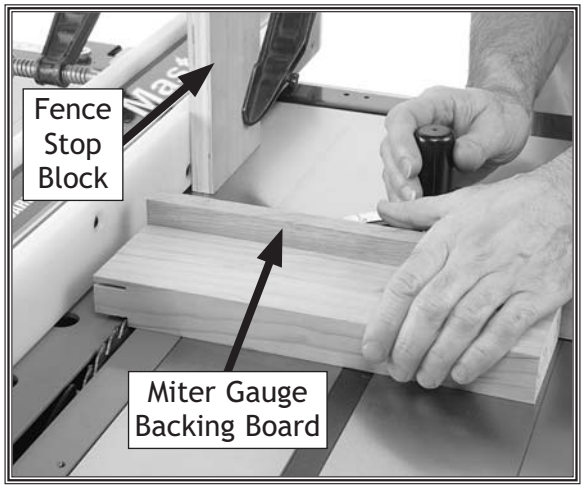
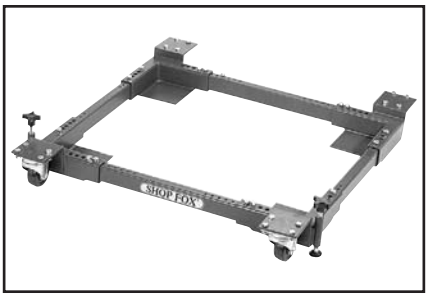


Figure 26. Making the tenon shoulder cut.

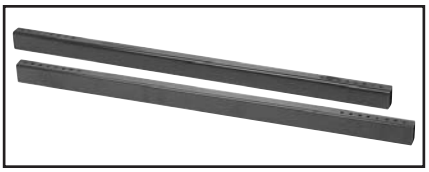
ACCESSORIES

The following accessories may be available through your local Woodstock International Inc. Dealer. If you do not have a dealer in your area, these products are also available through online dealers. Please call or e-mail Woodstock International Inc. Customer Service to get a current listing of dealers at: 1-800-840-8420 or at sales@woodstockint.com.

The Model **D2058** Shop Fox **Super Heavy-Duty Mobile Base** supports your table saw so you can move it easily and lock it in place. Designed for long term and frequent moving of heavy machinery. All Shop Fox Adjustable Mobile Bases are strong enough to move heavy machines on a continual basis. The stands are adjustable to fit a variety of machines and can be leveled without the use of shims or tools.



The Model **D2246** Shop Fox 36" Extension Bars replace the standard length side rails on the Model **D2058** Super Heavy-Duty Mobile Base. This allows the base to be assembled with a minimum capacity of 18" x 34" to a maximum capacity of 3½" x 44" to handle table saws with leg supported extension tables.



The Model **W1748** 10" Left-Tilt Hybrid Cabinet Saw is a cross between heavy-duty cabinet saws and contractor-style table saws. The motor has been moved inside the cabinet stand and this saw is packed with features designed to increase performance and safety: Shop Fox Alumina-Classic Fence, left tilting blade, standard and dado inserts, splitter with clear blade guard, precision cast iron miter gauge and nearly 300 pounds of vibration dampening mass. The list of standard equipment keeps going: a 4" dust port, precision-ground cast iron table and handwheels, 2 HP motor, enclosed cabinet and magnetic switch with thermal overload protection.

MAINTENANCE

General

Regular periodic maintenance on your machine 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 locks or stop bolts.
- Damaged or worn saw blade.
- Worn or damaged table saw wires.
- Any other condition that could hamper the safe operation of the table saw and this jig.

Cleaning

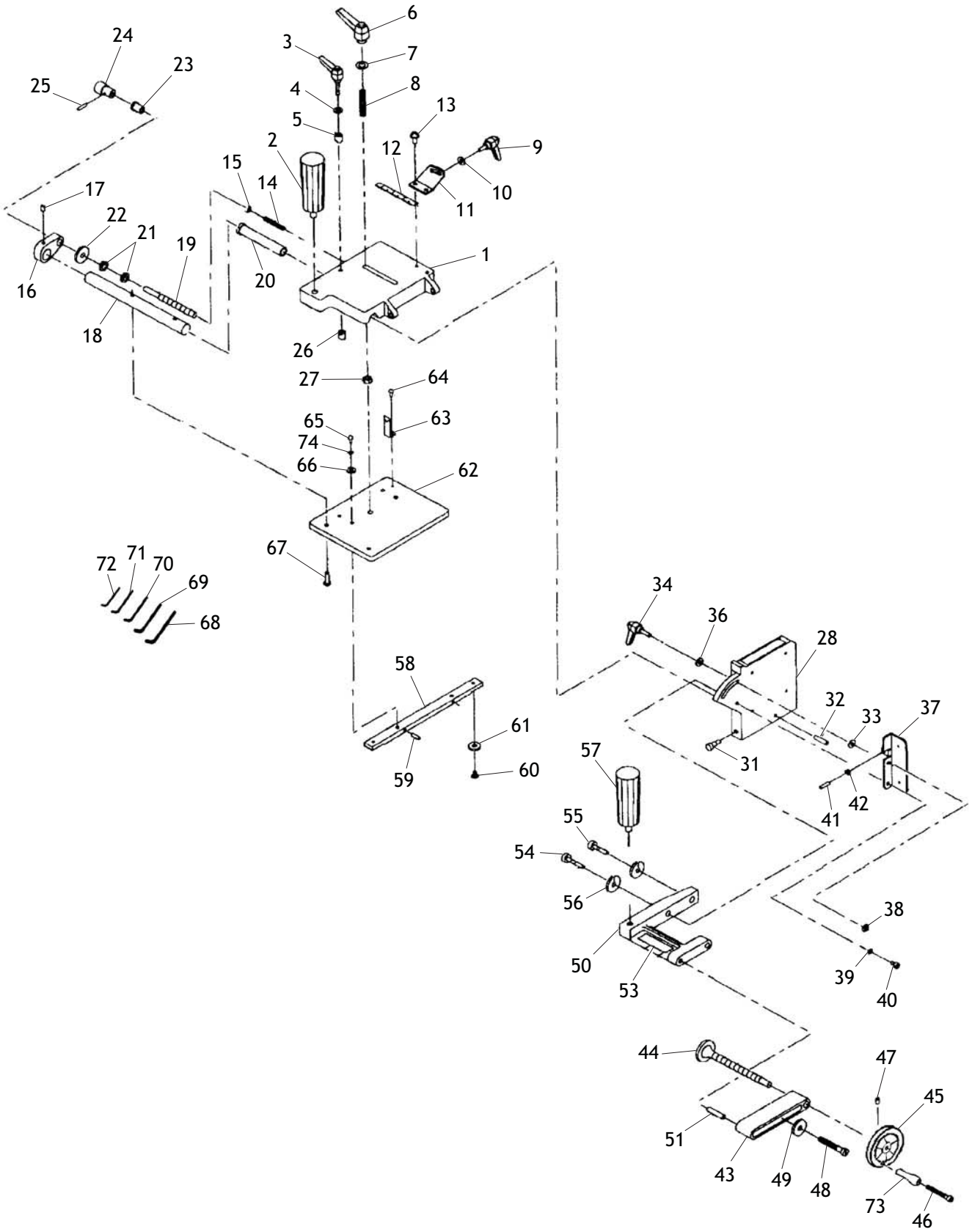
Cleaning the Model D3246 is relatively easy. Clean off the wood chips and sawdust with a clean cloth. If any resin has built up, use a resin dissolving cleaner to remove it. Treat all unpainted cast iron surfaces with a non-staining rust-protectant after cleaning.

Lubrication & Storage

After thoroughly cleaning the tenoning jig, use a light machine oil to lubricate all of the pivot points on the jig, then wipe away the excess to avoid sawdust build-up at these locations.

When not in use, store the jig on a flat, dry surface that is protected from adverse elements. Cover the jig to prevent dust build-up between uses.

PARTS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Parts List

REF	PART #	DESCRIPTION
1	XD3246001	SLIDE TABLE
2	XD3246002	HANDLE
3	XD3246009	LOCK LEVER MALE
4	XPW03M	FLAT WASHER 6MM
5	XD3246005	LOCK BUSHING
6	XD3246006	LOCK LEVER FEMALE
7	XPW01M	FLAT WASHER 8MM
8	XPSS102M	SET SCREW M8-1.25 X 55
9	XD3246009	LOCK LEVER MALE
10	XPW03M	FLAT WASHER 6MM
11	XD3246011	BRACKET
12	XD3246012	SCALE
13	XPS06M	PHLP HD SCR M5-.8 X 20
14	XPSS85M	SET SCREW M6-1 X 45
15	XPN01M	HEX NUT M6-1
16	XD3246016	BRACKET
17	XPSS01M	SET SCREW M6-1 X 10
18	XD3246018	GUIDE ROD
19	XD3246019	SHAFT
20	XD3246020	GUIDE BUSHING
21	XPN02M	HEX NUT M10-1.5
22	XD3246022	NYLON WASHER 8.2
23	XD3246023	BUSHING
24	XD3246024	KNOB
25	XPRP42M	ROLL PIN 3 X 20
26	XD3246026	BUSHING
27	XPN03M	HEX NUT M8-1.25
28	XD3246028	SIDE SUPPORT
31	XD3246031	SPECIAL SCREW M8-1 X 21
32	XPSS12M	SET SCREW M6-1 X 25
33	XPW03M	FLAT WASHER 6MM
34	XD3246009	LOCK LEVER MALE
36	XPW03M	FLAT WASHER 6MM
37	XD3246037	BACK SUPPORT
38	XPN01M	HEX NUT M6-1

REF	PART #	DESCRIPTION
39	XD3246039	WAVE WASHER 6MM
40	XD3246040	SPECIAL SCREW M6-.8 X 14
41	XPSS57M	SET SCREW M5-.8 X 20
42	XPN06M	HEX NUT M5-.8
43	XD3246043	CLAMP ARM
44	XD3246044	CLAMP SCR M12-1.75 X 134
45	XD3246045	HANDWHEEL
46	XD3246046	SPECIAL SCREW M6-.08 X 55
47	XPSS01M	SET SCREW M6-1 X 10
48	XPSB05M	CAP SCREW M8-1.25 X 50
49	XD3246049	SPECIAL FLAT WASHER 8MM
50	XD3246050	CLAMP BRACKET
51	XD3246051	ROLL PIN 3/8" x 2"
53	XD3246053	WARNING LABEL
54	XPSB64M	CAP SCREW M10-1.5 X 25
55	XPSB61M	CAP SCREW M10-1.5 X 20
56	XPLW06M	LOCK WASHER 10MM
57	XD3246002	HANDLE
58	XD3246058	GUIDE BAR
59	XPSS34M	SET SCREW M5-.8 X 16
60	XPFH9M	FLAT HD SCR M6-1 X 6
61	XD3246061	SPECIAL FLAT WASHER 7MM
62	XD3246062	BASE
63	XD3246063	POINTER
64	XPS07M	PHLP HD SCR M4-.7 X 8
65	XPS26M	PHLP HD SCR M6-1.0 X 20
66	XPW03M	FLAT WASHER 6MM
67	XPS26M	PHLP HD SCR M6-1.0 X 20
68	XPAW08M	HEX WRENCH 8MM
69	XPAW06M	HEX WRENCH 6MM
70	XPAW04M	HEX WRENCH 4MM
71	XPAW03M	HEX WRENCH 3MM
72	XPAW02.5M	HEX WRENCH 2.5MM
73	XD3246073	HANDLE
74	XPLW03M	LOCK WASHER 6MM

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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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 a Shop Fox factory service center 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.

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