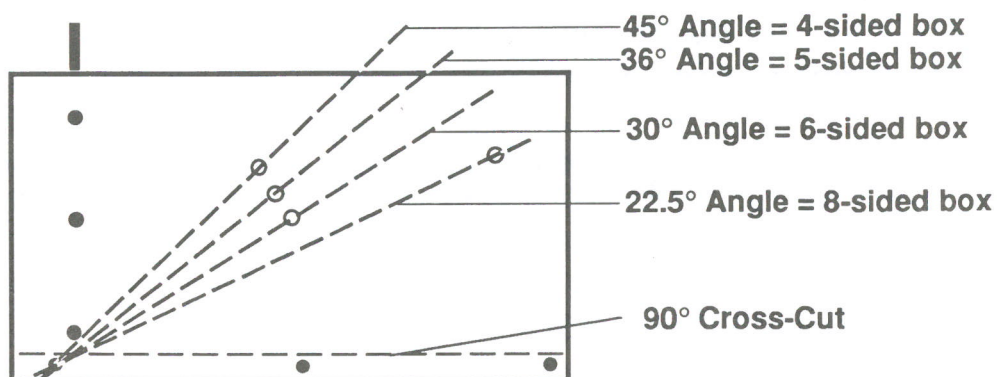




# Cross-Cut Sliding Table

516524

## PRESET ANGLES FOR CUTTING WITH THE CROSS-CUT SLIDING TABLE



## Introduction

The Cross-Cut Sliding Table is designed for use with Shopsmith Mark V table saw. It allows you to safely and easily cut precise angles of 22.5, 30, 36, 45 and 90 degrees. The above illustration shows the locations of the angle settings and which angle you need to make various-sided boxes.

## Safety

Here are some safety warnings for the Cross-Cut Sliding Table which you should read and follow:

### General Safety

#### WARNING

- Read, understand, and follow all the instructions in the manuals provided with the power equipment you are using.
- Always wear eye protection when you use power equipment.
- Use hearing protectors to avoid prolonged exposure to high noise levels.
- Use respiratory protection and dust collection to avoid respiratory injury and fire hazards.
- Always keep the appropriate protective guards in place when operating power equipment.
- Do not wear loose clothing, ties, gloves, or jewelry. Roll sleeves up above your elbows, wear non-slip footwear, and tuck long hair up, out of the way.

### Set Up

#### WARNING

- Read, understand, and follow all instructions in your table saw Owner's Manual before using the Cross-Cut Sliding Table.

- Turn off and unplug the table saw before performing Assembly and Alignment instructions.

- Check the table saw and Cross-Cut Sliding Table alignment before performing any operation.

- Store the Cross-Cut Sliding Table on its fence edge and off the floor, away from moisture.

### Operations

#### WARNING

- Always keep the guide bar of the Cross-Cut Sliding Table in the right miter gauge slot during operations.
- Always use an extension table when operating the Cross-Cut Sliding Table.
- Always support the workpiece on both the infeed and outfeed side of the table saw.
- Do not cut through the Cross-Cut Sliding Table.
- Always use the Cross-Cut Sliding Table with the fence behind the workpiece. Never have the fence in front of the board leading into the saw blade.
- Never try to cut a board shorter than 12" long, wider than 15" across, or longer than 8' in length.

## PARTS LIST

Ref. No.	Part No.	Description	Qty.
1	514393	Button head cap screw, 1/4"-20 x 1/2"	6
2	516407	Fence	1
3	516406	Table	1
4		Guide Bar* (Shopsmith)	1

\* Optional Purchase

## Assembly and Alignment

Tools Needed:

- 5/32" Allen wrench
- Precision square
- Pencil or non-smearing pen

Please follow these instructions:

### ATTACH THE GUIDE BAR\*

1. Turn the table (3) so that the **long** side with three holes is **away** from you, and the **short** side with three holes is to your **left**.

2. Align the three holes in the guide bar (4) with the holes in the left side of the table, as seen in Fig. 1. Make sure the the guide bar's counterbored holes face up so they can accommodate the screw (1) heads.

3. Thread three cap screws (1) through the guide bar (4) and into the table's insert holes. Finger tighten.

### ALIGN THE GUIDE BAR TO THE TABLE

4. Place a precision square against the guide bar and table. See Fig. 2.

5. When aligned, use a 5/32" Allen wrench to securely tighten the screw nearest the square, then do the same for the remaining two screws. Re-check the squareness and correct it, if needed by repeating Steps 4 and 5.

### ATTACH THE FENCE

6. Turn the table over. Place the guide bar in the right miter gauge slot.

7. Place the fence (2) so that its short, drilled "leg" is toward you.

8. Align the three holes in the fence with the three holes along the edge of the table.

### EXPLODED VIEW

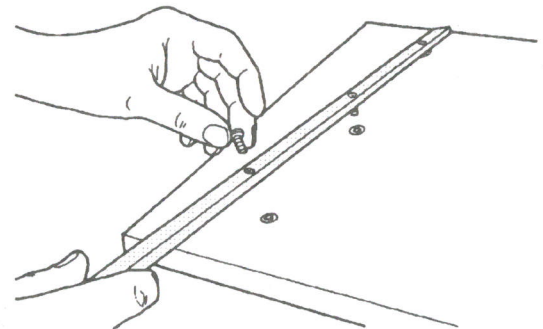
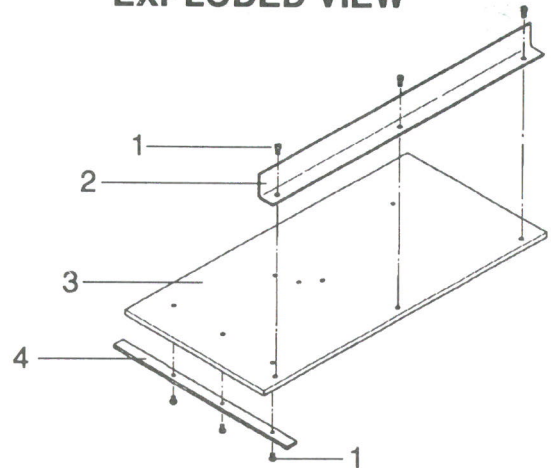


Fig. 1

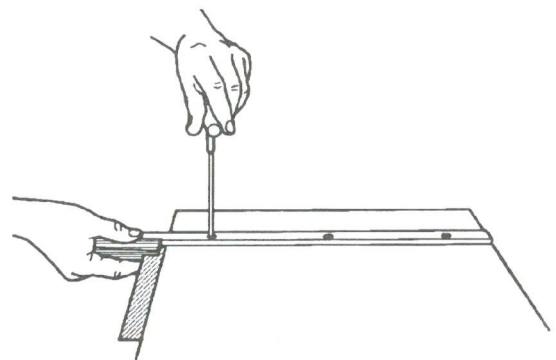


Fig. 2



9. Thread three socket head cap screws through the fence and into the table inserts. See Fig. 3. Finger tighten.

10. Expose as much of the saw blade as you can.

**WARNING**

The table saw should be turned off and unplugged when performing Steps 10- 13.

11. Place a precision square against both the fence and the side of the saw blade. See Fig. 4.

12. When the fence is perpendicular to the saw blade, use a 5/32" Allen wrench to securely tighten the closest screw to the square, then do the same for the remaining two screws. See Fig. 5. Re-check for squareness and repeat this step, if needed.

13. Lower the saw blade to the proper working height.

**MAKE A PRACTICE CUT**

14. Plug in the table saw.

15. To double-check the Cross-Cut sliding Table's fence alignment, use a board which has been squared on all four sides.

16. Place the back edge of the board against the fence, as seen in Fig. 6. Keep your hands and fingers on the side of the guide bar which is opposite the blade, as illustrated in Fig. 7. Turn on the table saw and make the cut. Fig. 8 shows the board being cut, and Fig. 9 shows the board being removed after the cut is made.

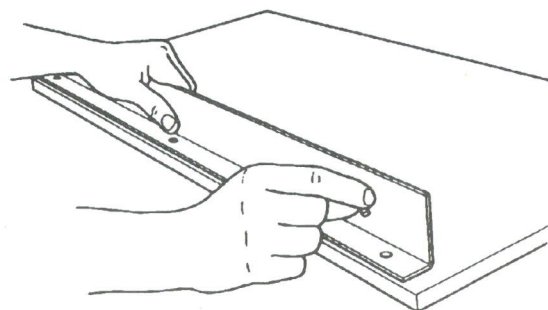


Fig. 3

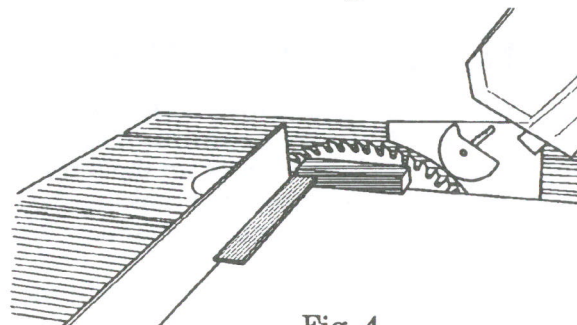


Fig. 4

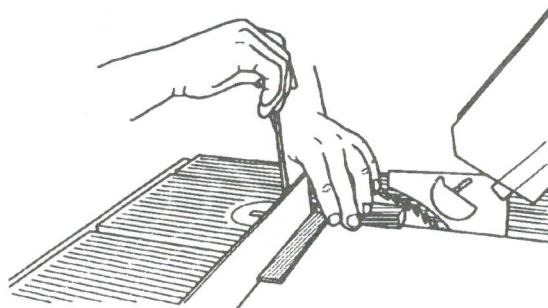


Fig. 5

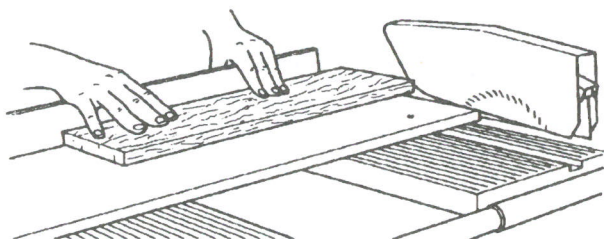


Fig. 6

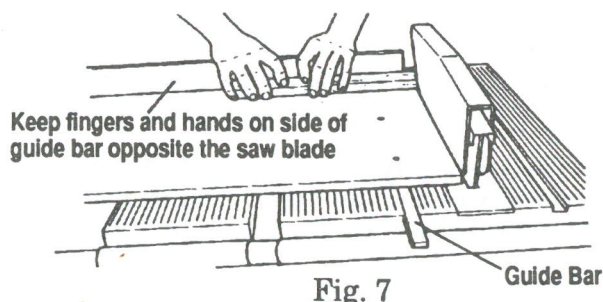


Fig. 7

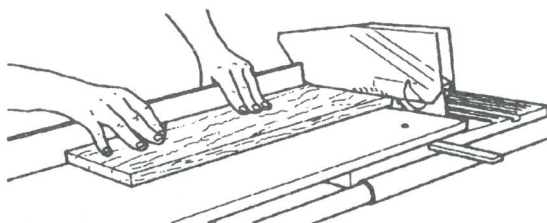


Fig. 8

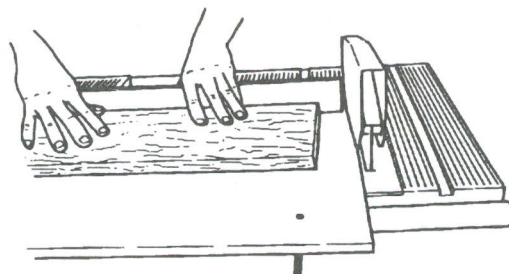


Fig. 9

17. Turn off the table saw.

18. Place a precision square against the cross-cut end and the edge, as seen in Fig. 10. If the board is not square, repeat Steps 10–17.

19. Use a pencil or non-smearing pen to mark a line along the fence onto the table. This will enable you to easily re-set the fence after you have moved it to another angle setting.

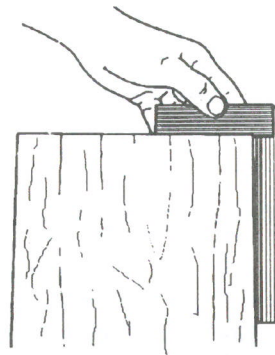


Fig. 10

## Operations— Setting Alternative Angles

The Cross-Cut Sliding Table has four inserts in which you can adjust the fence for angles cuts of 22.5, 30, 36, 45 and 90 degree angles, as illustrated on the first page. While the Assembly and Alignment instructions detail how to set up the fence to a 90° cross-cut, and the procedure is the same for each of the other angles. Instead of making the final alignment with a 90° precision square, you will use a precision multi-angle gauge, as illustrated in Fig. 12.

To set up the Cross-Cut Sliding Table for 22.5°, 30°, 36° or 45° angles, follow these instructions:

### WARNING

The table saw must be turned off and unplugged before doing the alignment instructions below.

1. Make sure the Cross-Cut Sliding Table is installed properly in the right miter slot on the table saw.

2. Remove the two fence screws farthest from the saw blade, and slightly loosen the screw nearest the saw blade.

3. Swing the fence so it lines up with the table holes for the angle you wish to cut.

4. Re-install the two fence screws, and finger tighten.

5. Place the multi-angle gauge against both the fence and the side of the saw blade. See Fig. 11.

6. When properly aligned, use a 5/32" Allen wrench to securely tighten the screw nearest the gauge, then do the same for the two remaining screws.

7. Use a pencil or non-smearing pen to mark a line along the fence onto the table. This will enable you to easily re-set the fence after you have moved it to another angle setting.

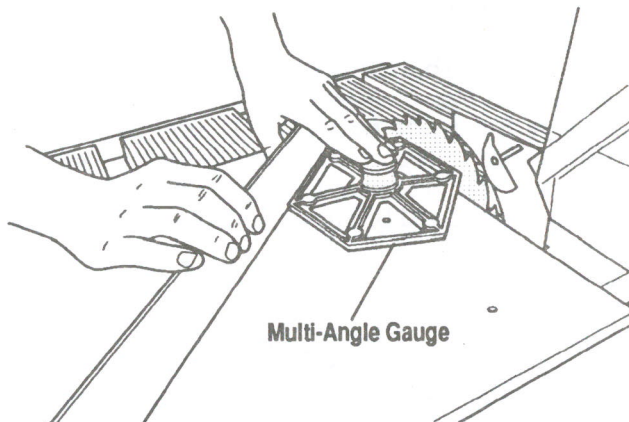


Fig. 11



**Shopsmith Inc.**  
6530 Poe Avenue  
Dayton, Ohio 45414

**Note:** If you have further questions or need help, visit the Shopsmith Store in your area, or call Customer Service:  
Toll Free 1-800-762-7555

845298 12/95  
©1995 Shopsmith, Inc.  
All Rights Reserved  
Printed in U.S.A.





# CROSS CUT DOUBLE-STOP

**556464 For Models 500, 505 and 510**

**556466 For Models 520 and Mark 7**

## **INTRODUCTION**

The Adjustable Double Stop is mounted to your rip fence and used for repetitive cuts. It can be used for crosscutting multiple pieces to the same size or for cutting two slots or dados in the same board or even increasing the width of a dado past its normal capacity. This Cross Cut Double-Stop comes with three different length Stop Screws that mount in two different height Inserts for a multitude of positions for your workpiece.



## **SAFETY**

### **WARNING**

Please read, understand and follow:

- ◆ **ALL** of the assembly and alignment procedures covered in this instruction sheet prior to installing your Cross Cut Double-Stop.
- ◆ Make sure the machine is turned off and unplugged before assembling and installing the Stop.
- ◆ Always use proper Safety Equipment and Procedures when operating machines.
- ◆ Be sure to tighten all hardware securely before using.
- ◆ We list **WARNINGS**, **CAUTIONS**, and **NOTES**. We advise that when you come to one of these listings, please read and understand it fully. Their meanings are:

### **WARNING**

- ◆ A **WARNING** is given when failure to follow the directions is likely to result in injury, loss of limb, or life.

### **CAUTION**

A **CAUTION** is given when failure to follow the directions is likely to result in damage to the equipment.

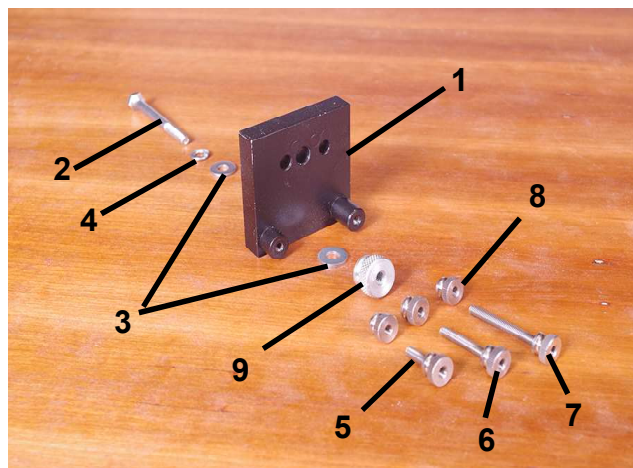
### **NOTE**

A **NOTE** is used to highlight an important procedure, practice or condition.

## **EYE PROTECTION**

- ◆ Always wear eye protection when you use power tools. Use goggles, safety glasses or a face shield to protect your eyes.

### **556464 - Cross Cutter for Mark V 500, 505 & 510**

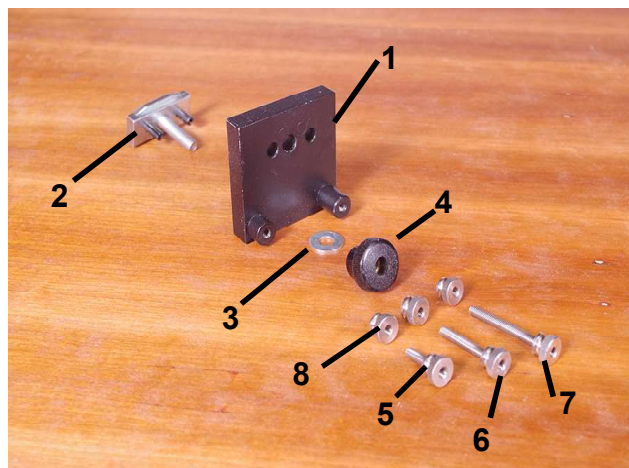


### **PARTS LIST**

#### *Mark V Model 500, 505 and 510 Parts List*

Ref No.	Part No.	Item Description	Qty.
1	523156	Block with Inserts .....	1
2	522481	Hex Bolt, 1/4-20x2-1/2 .....	1
3	120392	Flat Washer, 1/4" .....	2
4	120380	Split Lock Washer , 1/4" .....	1
5	523157	1" Stop, 10-32 x 1" .....	1
6	523158	1-1/2" Stop, 10-32 x 1-1/2" .....	1
7	523159	2" Stop, 10-32 x 2" .....	1
8	523161	Thumb Nut , 10-32 .....	3
9	503782	Knurled Nut, 1/4-20 .....	1

### **556466 - Cross Cutter for Mark V 520 & Mark 7 (M7)**



### **PARTS LIST**

#### *Mark V Model 520 and Mark 7 Parts List*

Ref No.	Part No.	Item Description	Qty.
1	523156	Block with Inserts .....	1
2	521715	T-Bolt Assy .....	1
3	513739	Flat Washer, 5/16" .....	1
4	521662A	Knob, 5/16-18 .....	1
5	523157	1" Stop, 10-32 x 1" .....	1
6	523158	1-1/2" Stop, 10-32 x 1-1/2" .....	1
7	523159	2" Stop, 10-32 x 2" .....	1
8	523161	Thumb Nut , 10-32 .....	3

## **ASSEMBLY**

The assembly of the Cross Cutter described below is for either model machine. This set-up creates the greatest difference, or position off-set, between the two Stop locations. Start by using the 2" Stop and the 1" Stop. When this is too great of a difference, replace one of these Stops with the 1-1/2" Stop.

#### ***TIP:***

To make accurately adjusting the Stop and counting revolutions easier and thus

more accurate, use paint, a center punch or marker to put a dot on the face of each Stop, as shown in Figure 1.

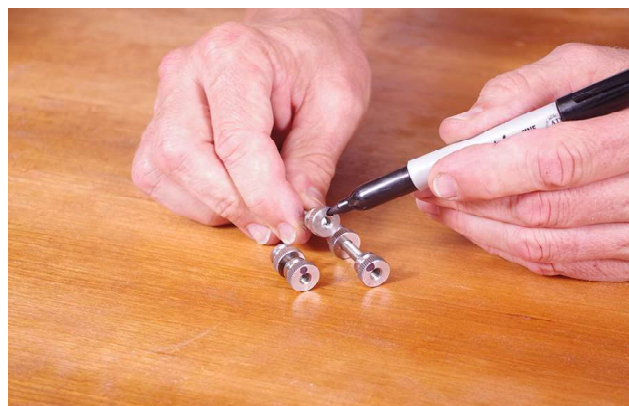


Figure 1

## ***For Mark V Models 500, 505 and 510***

### **NOTES:**

The best practice is to thread each Stop in as far as possible, then adjust it outward. Always make sure the Stop is threaded in a minimum of 4-revolutions or 1/8" to ensure proper thread engagement.

- Always tighten the Thumb Nut against the insert to secure the Stop and ensure its position will not change.
- Thread a Thumb Nut on to each Stop with the small diameter of the Thumb Nut facing the threaded end of the Stop. This face will lock against the insert when the end of the Stop is properly positioned, see Figure 2.



Figure 2

- Thread 1" long Stop Screw (5) in the short insert as far as it will go.
- Thread 2" long Stop Screw (7) in the long insert as far as it will go without going through the Block Assembly (1).
- Slip the 1/4" Split Lock Washer (4) on to the 2-1/2" long Hex Bolt,
- Slide a 1/4" Flat Washer (3) on to the 2-1/2" long Hex Bolt.

- Slide the bolt with washers through the hole closest to the 5/8" Stop, in the Block with Inserts. Feed it from the side with the stops, toward the back, see Figure 3.

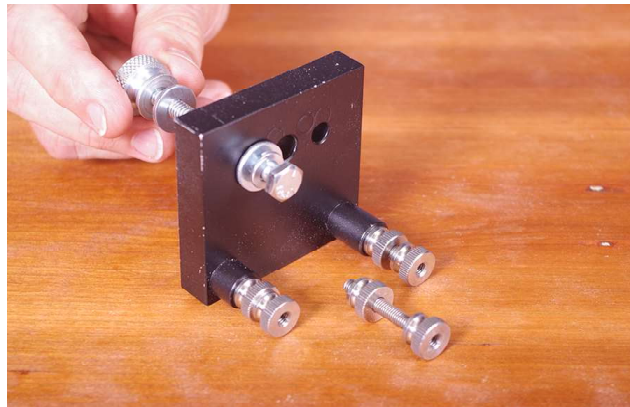


Figure 3

- Slip the Bolt with Double-Stop through the fence hole closest to the fence locking handle, as shown in Figure 4.



Figure 4

- Add the second 1/4" washer and 1/4-20 knob to the hex bolt. Level the Double Stop so neither Stop Screw rubs the table when adjusted.



### ***For Mark V Model 520 and Mark 7***

- Always tighten the Thumb Nut against the insert to secure the Stop and ensure its position will not change.
- Thread a Thumb Nut on to each Stop with the small diameter of the Thumb Nut facing the threaded end of the Stop. This face will lock against the insert when the end of the Stop is properly positioned, as shown in Figure 5.



Figure 5

- Thread 3/4" long Stop (5) in the short insert as far as it will go.
- Thread 1-1/2" long Stop (7) in the long insert as far as it will go without going through the block assembly.
- Slide the 5/16" threaded stud of the T-Nut Assembly (2) through the Block Assembly (1) from the side opposite the threaded receivers, see Figure 6.



Figure 6

- Align the two pins of the T-Nut Assembly (2) with the matching pin-holes in the Base Assembly and slide the pins into the Block Assembly (1).

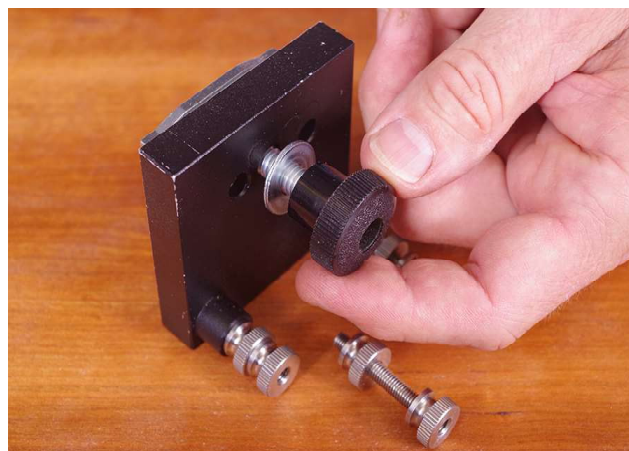


Figure 7

- Slide the Washer (3) over the stud then thread the Knob (4) onto the stud but do not tighten until mounted on your Rip Fence, see Figure 7.

## **OPERATIONS**

The Adjustable Double Stop mounts to your rip fence and used to set your workpiece at an exact position for cross-cutting multiple pieces of stock to exactly the same length. This stop provides space between the Rip Fence and your workpiece to prevent kick-back. This kick-back only happens when your cut-off workpiece becomes trapped between the saw blade and the rip fence. Mount the Double-Stop on the in-feed side of the blade, and positioned far enough in front of the blade so the wood does not touch the Stop at the end of the cut.

### **WARNING**

- ◆ Always use your upper and lower saw guards. Not only will they protect you from coming in contact with the high speed saw blade, preventing injury, they provide dust collec-



tion, and the weight of the upper saw guard helps hold small blocks to the table, keeping them from vibrating and moving around.

**The Double-Stop feature allows you to set:**

- Two different lengths when you need it.
- Or one stop for the initial cut-off for stock with a rough or split end. Then flip it around, Use the second stop to make the second cut to the final length needed for your project.
- The two stop positions can also be used to make two cross-grooves, side-by-side in a board.
- The Double-Stop can also be used to make two passes with a dado head to widen this cut beyond the capacity of the dado head.
- Two Stop Screws can be threaded together to make a longer stop and create a greater difference between the two stop positions, as seen in Figure 8.

**NOTE:**

There are 32-threads per-inch on each Stop. This allows you to make very fine and extremely accurate stop adjustments.



Figure 8

- One revolution of the stop equals 1/32" (.0312") adjustment.
- One-half revolution of the stop equals 1/64" (.0156") adjustment.
- One-quarter revolution of the Stop equals 1/128" (.008") adjustment.

***Installing the Double-Stop on Models 500, 505 and 510 Rip Fence***

1. Remove the knob from the hex bolt.
2. Position the Double-Stop so the low stop is closest to the blade, refer to Figure 9.



Figure 9

3. Slip the threaded end of the bolt, with the stop, through the hole in the rip fence, closest to the infeed locking handle, as shown in Figure 10.



Figure 10

4. Install the knob on the back side of the fence. Make sure both stops turn freely without rubbing table and tighten the knob securely against the rip fence.

### ***Installing the Double-Stop on Models 520 and Mark-7 Rip fence***

1. Loosen the knob holding the t-nut in the Double-Stop.
2. Position the Double-Stop so the low stop is closest to the blade, as shown in Figure 11.

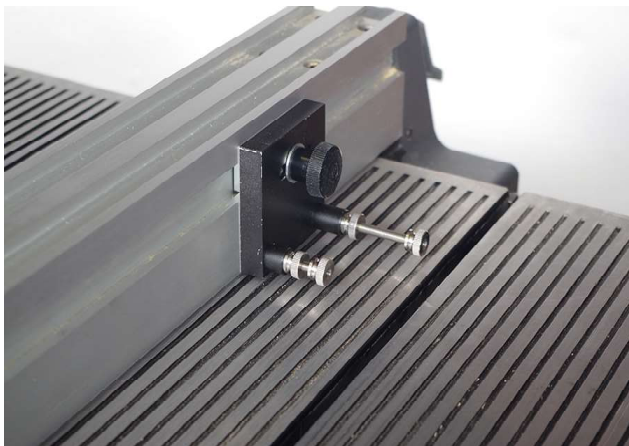


Figure 11

3. Slide the t-nut into the side t-slot in the rip fence, see Figure 12.



Figure 12

4. Locate the Double-Stop a minimum of 4" from the blade and securely tighten the lock knob.

## **MAKING CUTS WITH THE DOUBLE-STOP**

### **NOTE:**

- For model 500, 505, and 510 machines: To set each Stop location, position the mounting bolt through the center hole in the rip fence, as shown in Figure 13. Measure from the stop to the blade. Then move the Double-Stop to the hole closest to the locking knob that secures the fence to your table to make your cuts, see Figure 14.



Figure 13

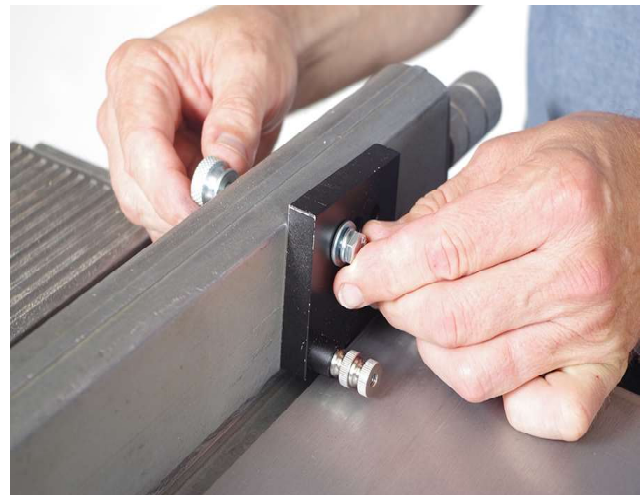


Figure 14

- For model 520 and Mark-7 machines: To set each Stop location, from the blade to the stop, slide the stop even with the front teeth of the blade and measure directly from the



stop to the tooth of the blade, as shown in Figure 15. Then slide the stop back on the fence to the normal cutting position, see Figure 16.



Figure 15



Figure 16

### ***Cutting multiple pieces less than 7" long from the same board.***

To cut multiple pieces less than 7" long, the miter gauge and the rip fence with stop are working together on opposite sides of the blade.

## **CAUTION**

There must be sufficient room for the cut-off pieces to rest between the blade and the fence without binding between the fence and the blade.

Insufficient clearance will causing a kick-back. To create the most clearance possible, use the stop that is furthest from the

fence for this operation whenever possible.

In order to create sufficient clearance for cutting wide stock, two stop screws can be combined to make a longer stop, as shown in Figure 17.



Figure 17

- Set the rip fence to the right of the blade and the miter gauge to the left of the blade.
- Position the Stop the desired distance away from the blade.
- Using a scrap piece of wood, square the first end of the stock.
- Place the scrap stock against the appropriate stop screw, squeeze the miter gauge safety grip to hold the stock securely to in the miter gauge and make the first cut, see Figure 18.



Figure 18

- Check that this cut-off piece is the correct length. Make adjustments to the stop as required to cut the correct length. Make a second test cut to confirm that the Stop setting is correct.
- Square the end of the project stock and make the pieces you need for your project, see Figure 19.



Figure 19

### ***Cutting boards into equal pieces greater than 7" long.***

The miter gauge and the rip fence with the Double-Stop are working together on the same side of the blade and there must be sufficient room for the miter gauge to slide freely past the stop. A piece of wood 7" long will be the minimum that will fit between the stop and the miter gauge. Determine the amount of extra stock to leave on the board for the rough or split end. This is the difference you will set between the two stop screws, use a combination square to set the difference between the two stop screws, see Figure 20.

- Set the miter gauge to the right of the blade and the rip fence also to the right of the blade.
- Position the stop screw closest to the blade to the desired distance from the blade for your project.

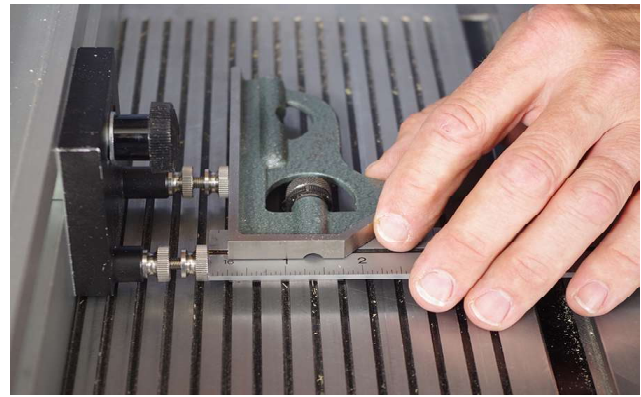


Figure 20



Figure 21

- Use the stop furthest from the blade for the initial cut to cut off the board with the bad end, as shown in Figure 21.



Figure 22

- Turn the board around, butt the good end against the other Stop to cut it to length, see Figure 22.
- Then repeat-cuts against the second Stop will give you as many pieces as you need, all the same length, see Figure 23.





Figure 23

### ***Cutting grooves for double spline joint.***

A double-spline joint is a good way to connect the front to the sides of a drawer or other boxes, as shown in Figure 24. The distance between the two grooves required is equal to the distance between the position of the two stops plus the thickness of the blade. Because of this it is easiest to lay out the features of the joint on a piece of wood and set the stops to the lay-out lines.

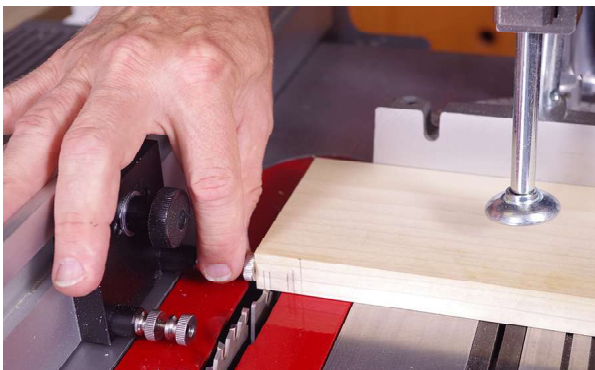


Figure 24

- Lay-out the location of the cross-grooves on a scrap piece of wood.
- Place the miter gauge in the left miter slot and set the scrap-board with joint location against the face of the miter gauge.
- Position the line on the board indicating the cross-groove closest to the end of the stock at the tip of the saw blade, see Figure 25.

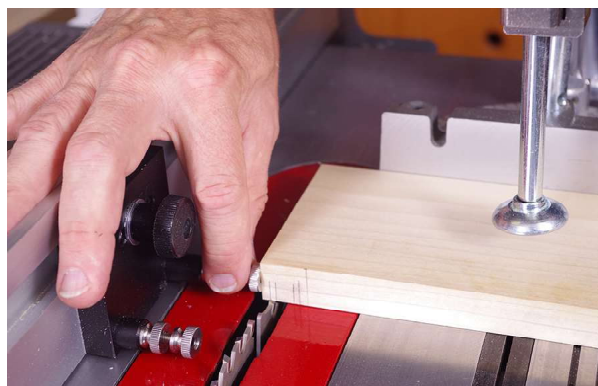


Figure 25

- Position the Double-Stop so the Stop closest to the blade is touching the end of the stock.
- Set the location of the second stop screw, furthest from the blade, so the blade aligns with the cross-groove furthest from the end of the wood, as shown in Figure 26.

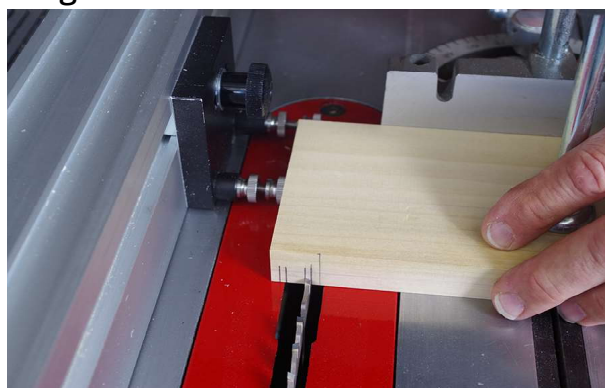


Figure 26

- Make both cuts, positioning the workpiece first against the tallest stop screw then against the short stop screw, see Figure 27.

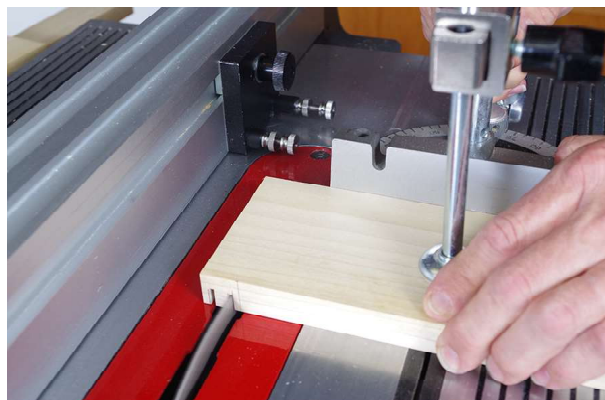


Figure 27

## ***Cutting dado for exact fit to Plywood***

The thickness of plywood is always thinner than the nominal size of the plywood so a dado head set to 1/2" wide for 1/2" plywood will cut a sloppy fitting dado. With the Double-Stop a precise dado can be cut to fit the plywood without shimming and adjusting the dado head.

- Set the dado head so it cuts a dado greater than half the desired width. For example, if cutting a dado for 1/2" plywood, set the dado head to make a 3/8" wide cut.
- Accurately measure the thickness of the plywood.
- Use the head of a combination square to set both Stops on the Double-Stop to the same height, as shown in Figure 28.



Figure 28

- Subtract the thickness of the dado head from the actual thickness of the plywood. This is the amount the second Stop must be off-set from the first Stop in order to get a tight fit of the plywood in the dado.
- For example: 23/32" thick plywood minus 1/2" dado head equals 7/32" offset. ( $23/32" - 1/2" = 7/32"$ ).

- Rotate the second stop 7-revolutions (7/32") in, toward the rip fence.
- Make a trial cut on a piece of scrap wood, as shown in Figure 29.



Figure 29

- Make a second cut with the stock against the short stop, see Figure 30.



Figure 30

- Check the fit and make final adjustments to the second stop to fine tune the fit, see Figure 31.





Figure 31

### ***Cutting a dado wider than the capacity of the dado head***

If you need to cut a dado that is wider than the capacity of the dado set the Double-Stop will make this easy. For example, if you want to cut 1" wide dados with a 3/4" wide cutter, follow the steps below.

- Set the dado head so it cuts a dado to its maximum capacity.
- Use the head of a combination square to set both stops on the Double-Stop to the same height, as shown in Figure 32.



Figure 32

- Subtract the final width of the cut from the width of the dado. This is the amount the second stop must be off-set from the first in order to get the over-size dado.

- For example: 1-3/8" wide dado cut minus 3/4" dado head equals 5/8" offset. ( $1-3/8" - 3/4" = 5/8"$ ).

- Rotate the second stop 20-revolutions ( $20/32"=10/16"=5/8"$ ) in, toward the rip fence.
- Make a cut starting with the wood against the tall stop, see Figure 33.

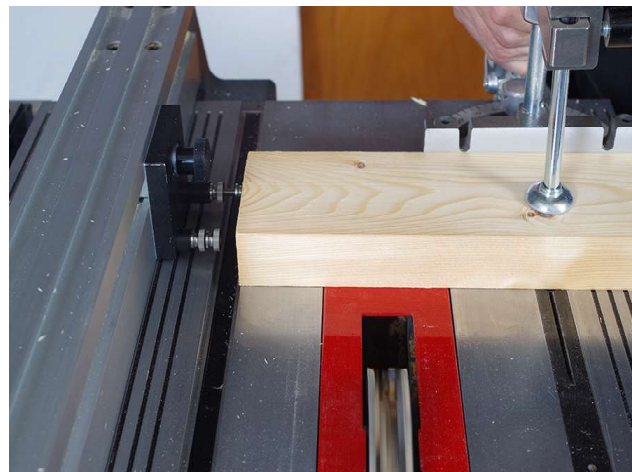


Figure 33

- Then make a second cut after moving the stock to the low stop, see Figure 34.



Figure 34

- Make a trial cut on a piece of scrap wood. Check the cut and make final adjustments to the second stop to fine-tune the width of the cut, see Figure 35.



Figure 35







# Additional Information on the Cross-Cut Sliding Table

This supplement to the Cross-Cut Sliding Table Owner's Manual (PL-5298 10/90) has additional information on: **1.** Extra support of stock which protrudes **12"** or more beyond the left side of the saw blade. **2.** Extra support of stock which protrudes **24"** or more beyond the left side of the saw blade.

## • Extra support of stock which protrudes 12" or more beyond the left side of the saw blade.

### WARNING

If stock protrudes 12" or more beyond the left side of the saw blade, you must use the Auxiliary Table for the Cross-Cut Sliding Table (or a self-made table according to the instructions below), to support wood on the left side of the saw blade while using the Cross-Cut Table. Failure to do so could cause the cut board to fall down and pinch the saw blade, causing kickback. This could result in bodily injury and damage to equipment.

You can purchase the *Auxiliary Table for the Cross-Cut Sliding Table* (Part No. 555526), or you can build your own. Here's how:

**1.** Cut two boards. **Board "A"** is 1/2" thick (the thickness of the Cross-Cut Sliding Table) x 6" wide x 16" to 18" long. **Board "B"** is 1/4" thick x 3/4" wide x 18" to 20" long.

**2.** Place Board "B" in the left miter gauge slot (width-wise), leaving about 1" to extend over the front of the worktable, as illustrated in Figs. 1 and 2. It should be flush with the worktable surface.

**3.** Place Board "A" on the left side of the worktable on top of Board "B", even with the front of the worktable, and parallel with the saw blade, as shown in Fig. 1.

**4.** Use a pencil to mark on both ends where Board "B" meets Board "A".

**5.** Remove the two boards and turn both of them upside down.

**6.** Re-align the two boards according to the pencil marks, then use glue, nails or screws to attach the two boards. Make sure no nails or screws protrude from the surfaces of either board.

**7.** Make a "stop pin" on the bottom overhang of Board "B". Screw in a small woodscrew, nail a small nail, or counter bore and glue in a thin dowel piece. See Figs. 1 and 2. Make sure the "stop pin" does not go all the way through. The purpose of the stop pin is to prevent the table from possibly moving as the board moves when guided by the Cross-Cut Sliding Table.

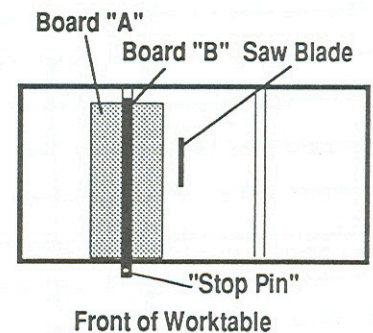


Fig. 1

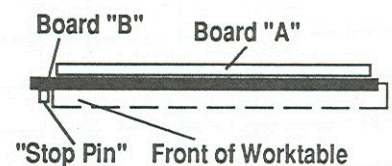


Fig. 2

## • Extra support of stock which protrudes 24" or more beyond the left side of the saw blade.

### WARNING

If the board protrudes 24" or more beyond the left side of the saw blade, you must use additional support (such as floating tables, fixed extension tables, or roller stands) to support it at the same height plane as the protruding stock. Failure to use the additional support may cause a kickback. This could result in bodily injury and damage to equipment.