



STEADY REST 555639

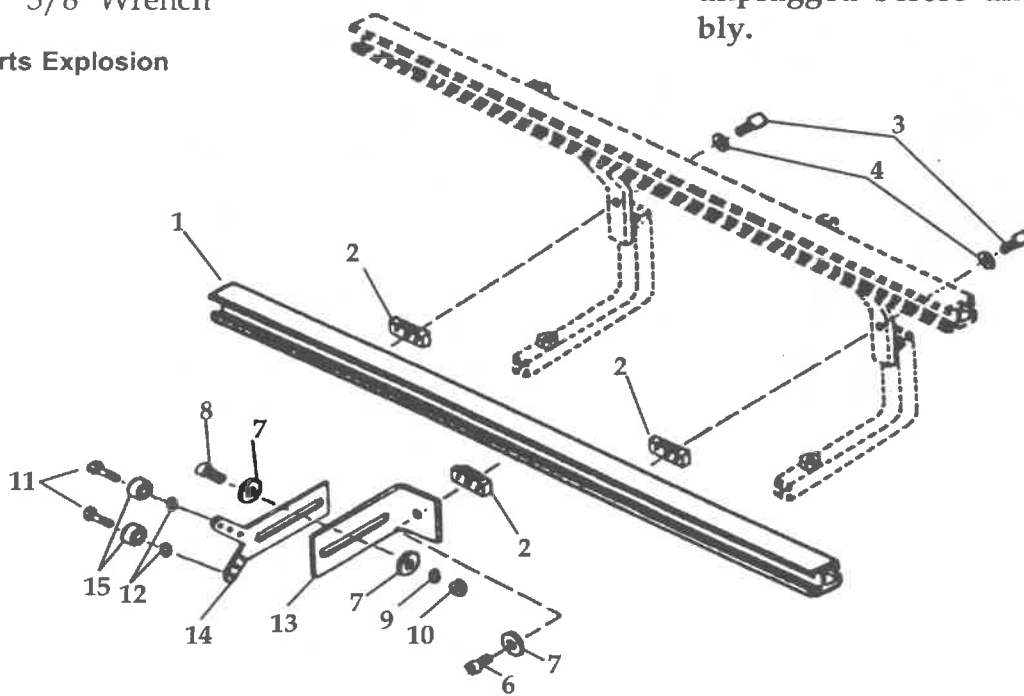
INTRODUCTION

The Lathe Steady Rest attaches to the Shopsmith Lathe Duplicator. It reduces "whip" and vibration of a spindle as it rotates against a lathe chisel. The result is a safer and smoother cut. Use the Steady Rest with spindle stock measuring from 3/16" to 3-1/2" in diameter.

TOOLS REQUIRED

- 5/16" Allen Wrench
- 3/8" Wrench

Parts Explosion



SAFETY

WARNING

- ◆ READ, FOLLOW, AND UNDERSTAND all instructions in this Owner's Manual and in the Lathe Duplicator Owner's Manual.
- ◆ Wear and use safety equipment.
- ◆ Make sure the machine is turned off and unplugged before undergoing assembly.

PARTS LIST

Ref No.	Part No.	Item Description	Qty	Ref No.	Part No.	Item Description	Qty
—	555639	Lathe Steady Rest		7	120394	.. Flat Washer, 3/8"	3
1	517938	.. Channel	1	8	514744	.. Socket Head Cap Screw, 3/8" - 16 x 7/8"	1
2	514491	.. T-Nut	3	9	120382	.. Lock Washer, 3/8"	1
—	517984	.. Hardware Pack (Incl. 3-12)		10	120377	.. Hex Nut, 3/8"-16	1
3	513201	.. Socket Head Cap Screw, 1/4"-20 x 3/4", black finish	2	11	515282	.. Shoulder Screw	2
4	120392	.. Flat Washer, 1/4"	2	12	120380	.. Lock Washer	2
5	not used			13	514708	.. Bracket	1
6	517940	.. Socket Head Cap Screw, 3/8"-16 x 5/8"	1	14	515281	.. Y-Support Bracket	1
				15	514007	.. Ball Bearing	2

ASSEMBLY

Install the Channel

1. Setup your Lathe Duplicator according to its Owner's Manual.
2. Slide a T-nut (2) into the channel (1). Attach the T-nut to the Lathe Duplicator's support bracket with a black cap screw (3) and flat washer (4), as shown in Figure 1. Do the same for the other side of the channel. When attached, the Lathe Duplicator should look like Figure 2.

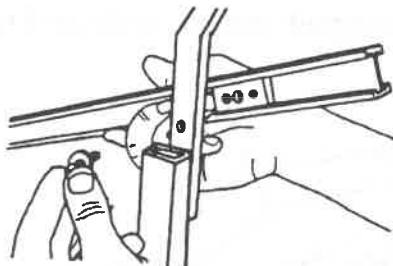


Figure 1

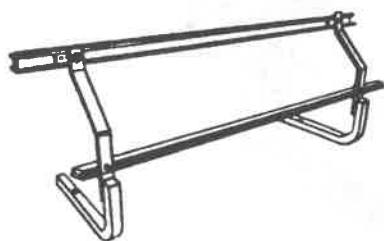


Figure 2

Attach the Bracket

3. Place a $3/8$ " washer (7) on a $5/8$ " long cap screw (6). Thread the screw through the bracket (8) and into the T-nut (2), as shown in Figure 3. Do not tighten.

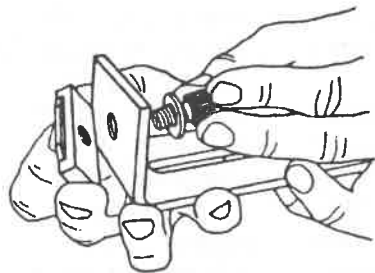


Figure 3



Figure 4

4. Slide the T-nut into the front side of the channel, see Figure 4. Make sure the bracket's slotted side faces to the left.

Attach the Y-support Bracket

5. Place a flat washer (7) on a $7/8$ " long cap screw (8) and insert the screw through the Y-Support (14) and the bracket (13). Attach it with a flat washer (7), lock washer (9) and a hex nut (10). See Figure 5.

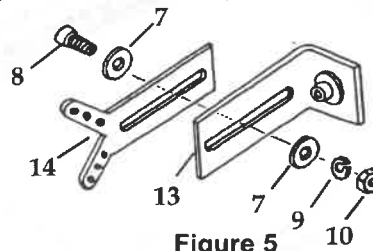


Figure 5

6. Slide shoulder screws (11) through ball bearings (15) and lock washer (12), then thread into the Y-bracket support (14), as illustrated in Figure 6.

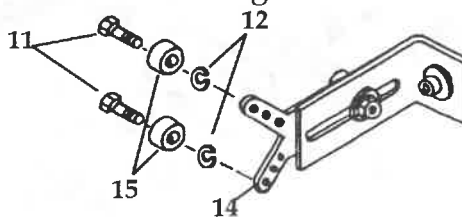


Figure 6

7. Use a $5/16$ " Allen wrench to tighten the cap screw (8), as shown in Figure 7.

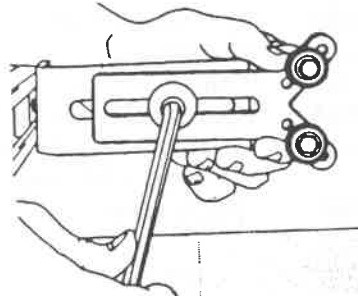


Figure 7

OPERATIONS

Safety

WARNING

- ◆ Follow all the information in your Mark V and Lathe Duplicator Owner's Manuals, when you use the Steady Rest.
- ◆ Do not mount the Steady Rest to the channel until after the spindle stock has already been rounded.
- ◆ The lathe turning speed must be set at "Slow" before positioning the Steady Rest bearings against the stock.
- ◆ When turning thin spindle stock, do not place the Steady Rest so that the support bearings press against and bend the stock. If the stock is bent, it could snap and be thrown from the lathe. Also, if the stock is bent, the final profile of the spindle will be reduced in diameter.
- ◆ Remove the Steady Rest from the Mark V before you start to turn additional spindles.
- ◆ Before sanding the spindle on the lathe, remove the Lathe Duplicator w/Steady Rest channel attached, from the Mark V.
- ◆ Maximum diameter of a spindle used with the Steady Rest is 3-1/2".

Instructions

Follow these instructions each time you use the Steady Rest with the Lathe Duplicator.

1. Prepare the spindle stock according to the Lathe Duplicator instruction manual. Round the stock into a cylinder. Shape the largest diameter profile nearest the cen-

ter of the stock. The largest diameter profile must be as smooth as possible because this is where the bearings will contact the spindle. Any rough spots will cause the stock to vibrate against the Steady Rest and will affect the quality of the cut.

2. Turn the Mark V speed to "Slow". Then turn off and unplug the Mark V.
3. Install the Steady Rest on its channel (1). Position the Steady Rest's bearings at the turned profile on the stock, then use a 5/16" Allen wrench to tighten down the bracket (13) in the channel.

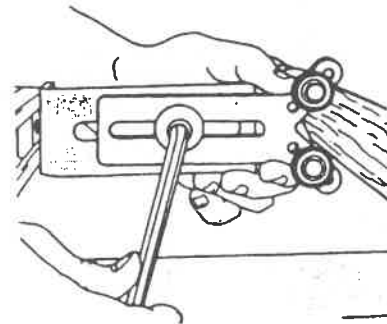


Figure 8

4. Adjust the bearings to fit the diameter of the spindle stock. See Figure 9 for which holes to use for the size spindle. Apply light pressure against the stock. Then use the 5/16" Allen wrench to tighten the cap screw (8) attaching the Y-support to the bracket (13), as illustrated in Figure 8.

DIAMETER RANGE
FOR EACH SET OF
HOLES

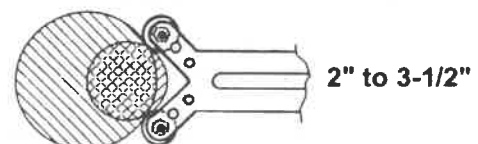
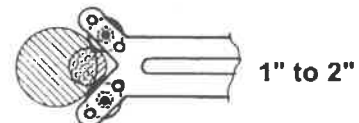
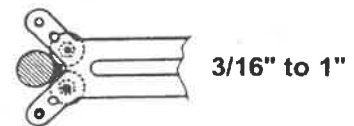


Figure 9

5. Test the setting of the bearings by plugging in the Mark V (with the speed dial still set at "Slow") and quickly turn the Mark V on, then off. Check the spindle. If the corners of the bearings are marking the stock, loosen the Y-support's cap screw (8) and readjust the bearings against the spindle. Repeat this step to recheck, until the bearings do not mark the spindle. However, a slight polishing of the stock will happen where the bearings roll against it. This is normal. The polished surface will be removed during sanding.
6. Turn on the Mark V and set it at the proper speed referred to in the Lathe Turning Speed Chart. See Figure 10.
7. Perform normal operations with the Lathe Duplicator and Steady Rest, as shown in Figure 11. Shape the profile of the spindle. When turning long spindles, keep the Steady Rest at its original position and reposition the Lathe Duplicator table and the tool rest, as needed. There are exceptions to this guideline, especially for long, very small diameter stock-then it may be necessary to reposition the Steady Rest bearings along the spindle as it is turned.
8. After completing the spindle, turn the speed dial to "Slow" and turn off the Mark V.
9. Use a 5/16" Allen wrench to loosen the bracket and remove the Steady Rest from its channel.
10. Continue sanding and finishing the spindle.

NOTE

Leave the channel permanently attached to the Lathe Duplicator.

LATHE TURNING SPEED CHART			
<u>Size of Stock</u>	<u>Rounding</u>	<u>Shaping</u>	<u>Sanding</u>
Up to 2" dia	C (950 rpm)	F (1300 rpm)	K (2050 rpm)
2" to 4" dia	B (850 rpm)	E (1150 rpm)	J (1900 rpm)
4" to 6" dia	A (750 rpm)	D (1050 rpm)	H (1600 rpm)
Over 6" dia*	Slow (700 rpm)	A (750 rpm)	B (850 rpm)

* Large heavy stock requires slower speeds.

Figure 10

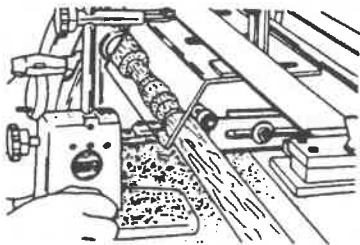


Figure 11

NOTE

If you have further questions or need additional help, call our Customer Service Department: Toll Free 1-800-762-755. Or visit our website: www.shopsmith.com.

