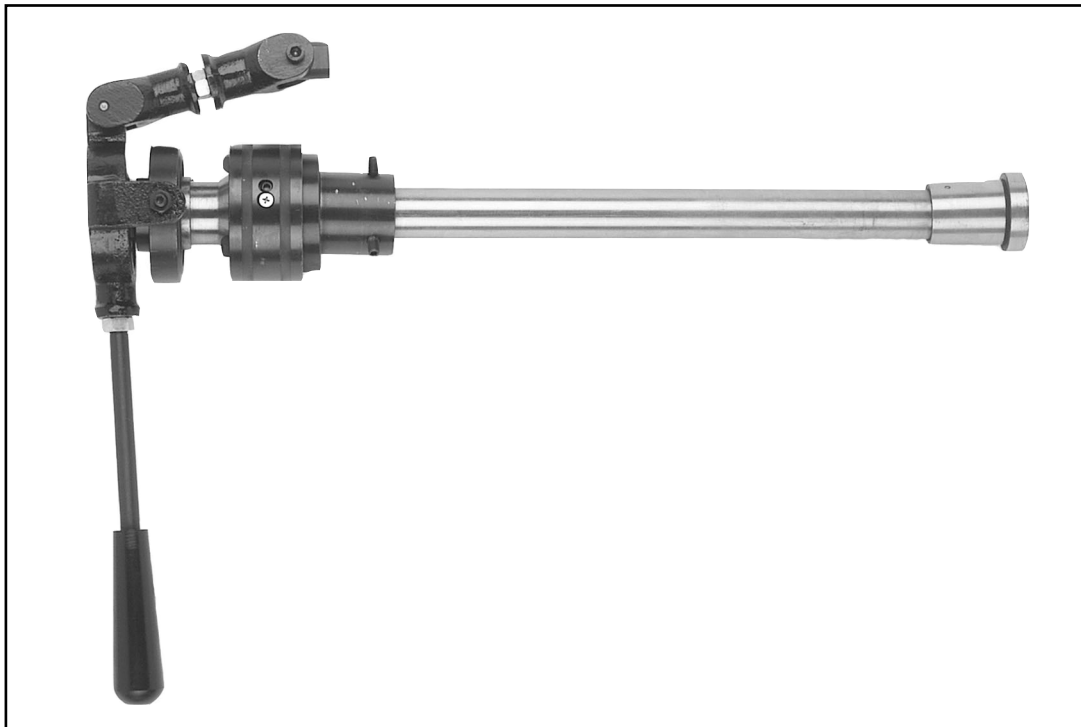


# *Grizzly* *Industrial, Inc.*®

## **COLLET CLOSER** **MODEL G8143** **INSTRUCTION MANUAL**

*FOR USE WITH METAL CUTTING LATHE MODEL G5960 AND G7958*



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PRINTED IN CHINA

#### **ONLINE MANUAL DISCLAIMER**

THE INFORMATION IN THIS MANUAL REPRESENTS THE CONFIGURATION OF THE MACHINE AS IT IS CURRENTLY BEING SHIPPED. THE MACHINE CONFIGURATION CAN CHANGE AS PRODUCT IMPROVEMENTS ARE INCORPORATED. IF YOU OWN AN EARLIER VERSION OF THE MACHINE, THIS MANUAL MAY NOT EXACTLY DEPICT YOUR MACHINE. CONTACT CUSTOMER SERVICE IF YOU HAVE ANY QUESTIONS ABOUT DIFFERENCES. PREVIOUS VERSIONS ARE NOT AVAILABLE ONLINE.

# 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.

# METALWORKING EQUIPMENT SAFETY INSTRUCTIONS

## WARNING

### For Your Own Safety Read Instruction Manual Before Operating This Equipment

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

 **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 or property damage hazards.

## WARNING

### Safety Instructions For Metalworking Machines

1. **READ AND UNDERSTAND MACHINE OWNERS MANUAL FOR YOUR LATHE.**
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form a habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.
3. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **DO NOT USE IN DANGEROUS ENVIRONMENT.** DO NOT use power tools in damp or wet locations, or where any flammable or noxious fumes may exist. Keep work area well lighted.
5. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept at a safe distance from work area.
6. **MAKE WORK SHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.
7. **DO NOT FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** DO NOT force tool or attachment to do a job for which it was not designed.

# WARNING

## Safety Instructions For Metalworking Tools

9. **USE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. Conductor size should be in accordance with the chart below. The amperage rating should be listed on the motor or tool nameplate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Your extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords if they become damaged.

Minimum Gauge for Extension Cords

AMP RATING	LENGTH		
	25ft	50ft	100ft
0-6	16	16	16
7-10	16	16	14
11-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No

10. **WEAR PROPER APPAREL.** DO NOT wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
11. **ALWAYS USE SAFETY GLASSES.** Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. **SECURE WORK.** Use properly secured clamps or vises to hold work while performing the machining operation
13. **DO NOT OVER-REACH.** Keep proper footing and balance at all times.
14. **MAINTAIN TOOLS AND MACHINERY WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury.

16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** On machines with magnetic contact starting switches there is a risk of starting if the machine is bumped or jarred. Always disconnect from power source before adjusting or servicing. Make sure switch is in OFF position before reconnecting.

17. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

18. **NEVER LEAVE MACHINE RUNNING UNATTENDED. TURN POWER OFF.** DO NOT leave machine until it comes to a complete stop.

19. **SOME COOLANTS USED FOR MACHINING MAY CONTAIN HAZARDOUS CHEMICALS.** Read and understand all user information on the coolant container and protect yourself accordingly.

20. **NEVER OPERATE A MACHINE WHEN TIRED, OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Full mental alertness is required at all times when running a machine.

### CAUTION

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

# INTRODUCTION

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## Commentary

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The Model G8143 Collet Closer allows you to quickly interchange 5-C collets on your Model G5860 or Model G7958 Metal-Cutting Lathe. The positive-locking handle clamps standard 5-C collets safely and securely for precision turning. Grizzly also offers an extensive line of precision-ground 5-C collets, ideal for use with the Model G8143 Collet Closer. See the latest Grizzly Catalog or visit our web site at [www.grizzly.com](http://www.grizzly.com) for price and ordering information.

Most importantly, we stand behind our tools. If you have any service questions or parts requests, please call or write us at the location listed below.

Grizzly Industrial, Inc.  
1203 Lycoming Mall Circle  
Muncy, PA 17756  
Phone: (570) 546-9663  
Fax: (800) 438-5901  
e-Mail: [support@grizzly.com](mailto:support@grizzly.com) Site:  
<http://www.grizzly.com>

### **WARNING**

**Disconnect power to your lathe before beginning installation of the Model G8143 Collet Closer.**

**To begin assembly, follow these initial safety instructions.**

- 1. Disconnect the lathe from the power source!**
2. Remove the chuck or any other device that is mounted to the spindle. (Refer to your owner's manual.)
3. Make sure the 5-C Collet/Morse Taper Adapter (included in the kit) and the spindle opening are clean and free of oil. Use a soft cloth or rag to wipe up any contaminant.



G8143 Collet Closer

## Cover Removal

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Mounting the Model G8143 requires the use of a few simple tools.

### **Tools Required:**

- Adjustable wrench
- 3MM hex key
- 4MM hex key

### **To remove the lathe cover and the mounting studs:**

Remove the end cover from the lathe by unscrewing the cover knobs on the left end of the lathe as shown in **Figure 1**.



**Figure 1.** Lathe cover removal.



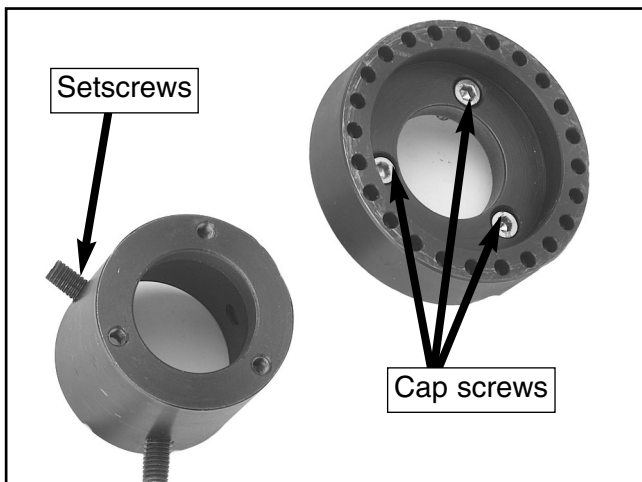
# Hub Separation

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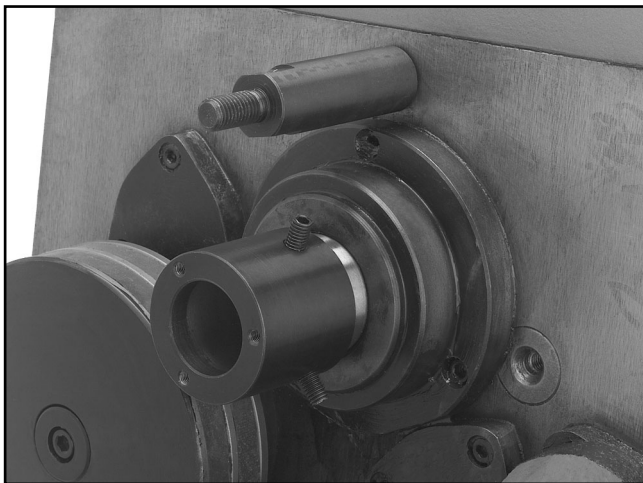
## To install the hub adapter to the outboard spindle

1. Remove the hub adapter from the draw tube assembly.
2. Unscrew the cap screws, shown in **Figure 2**, holding the two pieces of the hub adapter together. Note—*The hub adapter halves are machined for a very tight fit. Once the cap screws are removed, hit them apart with a rubber mallet.*



**Figure 2.** Hub separation.

3. Install the half of the hub adapter with the setscrews onto the outboard spindle shaft shown in **Figure 3**.



**Figure 3.** Installing hub adapter.

4. Tighten all three setscrews.
5. Replace the lathe cover and secure the bottom knob. Note—*You may have to bore out the lathe cover spindle hole to a larger diameter for the hub adapter to fit through and operate correctly.*
6. Install the outer half of the hub adapter back into place (**Figure 4**) and install and tighten the cap screws.



**Figure 4.** Installing hub adapter.



## Pivot Connector

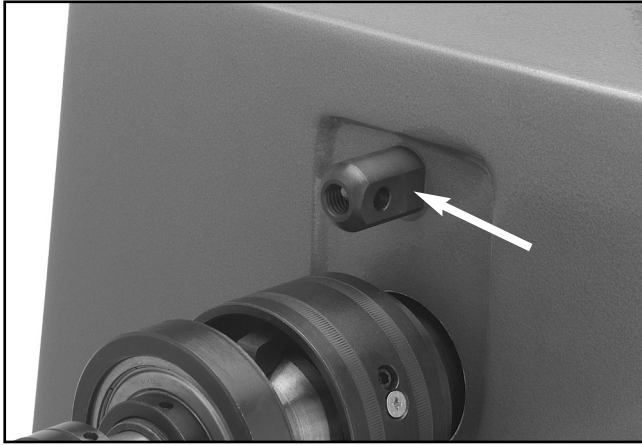
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### To install the pivot connector:

Remove the pivoting rod connector from the draw tube assembly by removing the 8mm cap screw and threading it onto the replacement stud as shown in **Figure 5**. *Make sure you have replaced the lathe cover!*

This pivot will allow the locking yoke to be secured to the lathe while providing a range of motion to engage the locking mechanism. The pivot connector should be secured tightly to the stud and the pivot pin should be in a horizontal position, allowing the pivot to move up and down.



**Figure 5.** Pivot connector.

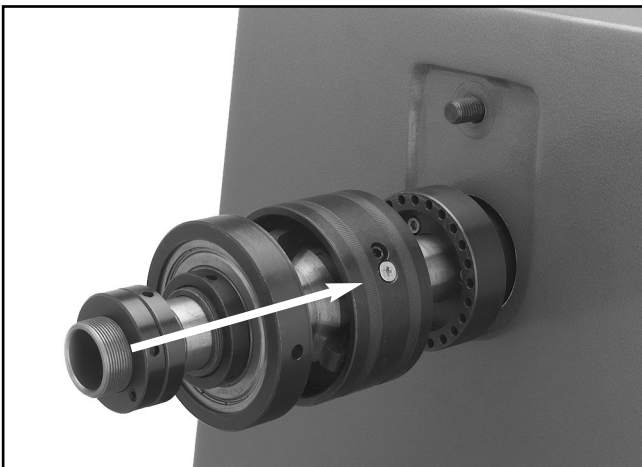


## Tube Assembly

The draw tube assembly comes attached to the locking yoke and connecting rod. Remove the locking yoke and connecting rod by unscrewing the setscrews that connect the locking yoke to the bearing housing.

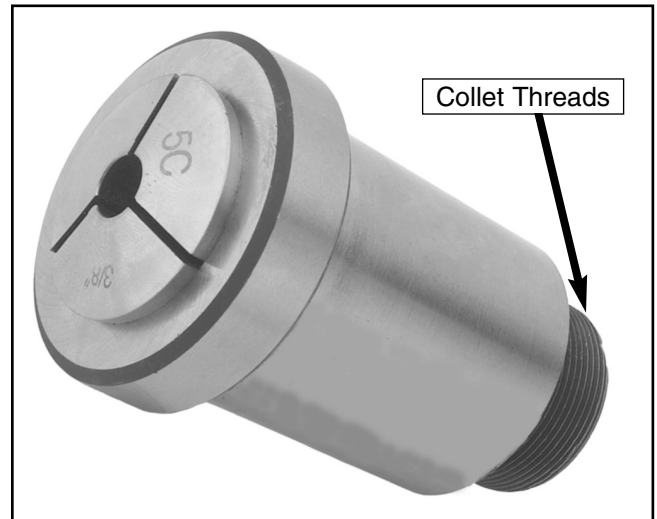
### To install the draw tube assembly into your lathe:

1. Insert the draw tube assembly into the outboard spindle as shown in **Figure 6**. Slide the draw tube assembly all the way into the outboard spindle until it engages around the hub adapter.



**Figure 6.** Draw tube assembly inserted.

2. Place the collet in the collet adapter, so the collet threads are exposed out of the back end of the collet adapter as shown in **Figure 7**.



**Figure 7.** Collet in collet adapter.

3. Hold the adjusting hub with your left hand and thread the collet and adapter into the front spindle with your right hand to engage the draw tube, as shown in **Figure 8**.



**Figure 8.** Rotating collet in spindle to engage with adjusting hub.

4. Turn the collet 4 to 5 complete revolutions. Additional fine adjustments will be covered later.

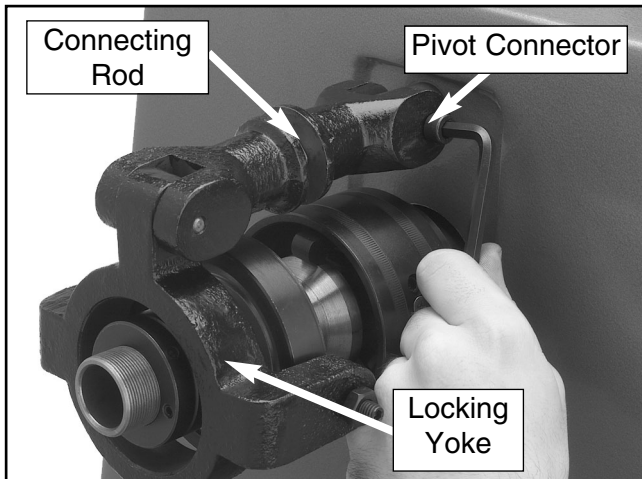




# Locking Yoke

To secure the locking yoke to your lathe:

1. Align the connecting rod and locking yoke assembly onto the pivoting rod connector and secure them together with the 8mm cap screw as shown in **Figure 9**.



**Figure 9.** Connecting rod and locking yoke installed on pivot connector.

2. Please note that the rod connector is supplied with jam nuts. It may be necessary to remove these nuts to allow for the proper fit of the assembly on some lathes.
3. Install the handle to the yoke. Note—*If you have trouble positioning the locking yoke so it is aligned with the draw tube in the next two steps, adjust the length of the connecting rod by threading it more or less into the pivot connectors and try again.*
4. Make sure the locking yoke and the rod connector are secured to the mounting stud and the pivoting rod connector.
5. Position the locking yoke back inline with the setscrew holes on the draw tube assembly, then secure the setscrews and the jam nuts as shown in **Figure 10**.



**Figure 10.** Tightening yoke setscrews.

6. Thread the setscrews on both sides of the locking yoke into the holes on both sides of the bearing housing. Make sure the setscrews are completely and evenly engaged into the holes, without being tight.
7. The yoke should have no play from side-to-side, but still pivot freely. Tighten the jam nuts.
8. The ideal locked position for the collet closer is shown in the completed assembly diagram in **Figure 11**.



**Figure 11.** Completed collet closer assembly.





## ⚠ WARNING

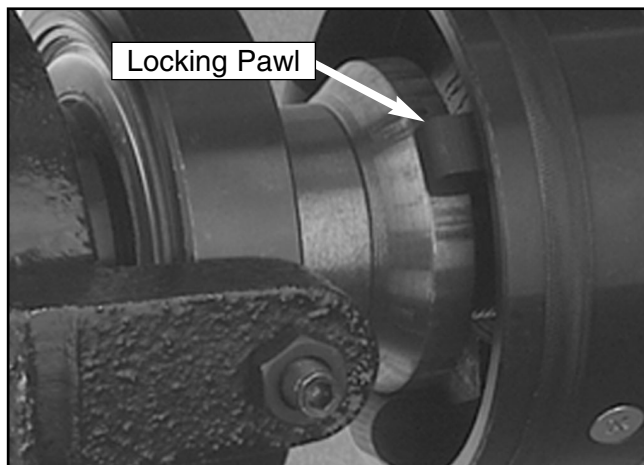
Make sure proper turning clearance exists between the bearing casing and the locking yoke before operation. Serious personal injury or damage to the lathe and collet closer can occur if there is contact. Rotate draw tube and check for clearance. DO NOT make adjustments, remove workpiece or open back cover of lathe while the machine is in motion.



# Locking Stroke

To adjust the locking stroke on your collet closer:

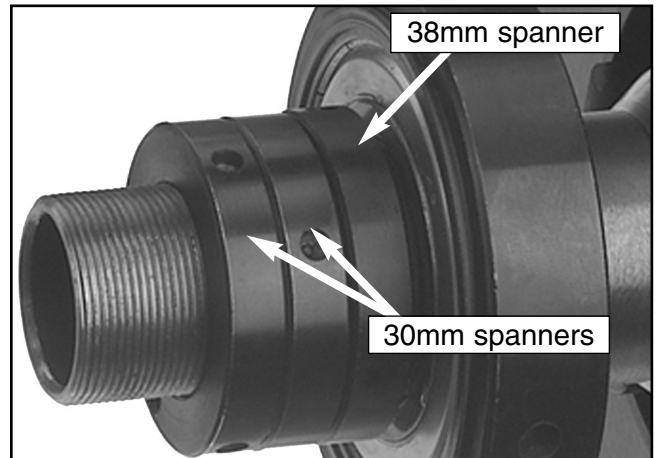
1. Position the locking pawls so they are in the correct position on the cam as shown in **Figure 12**.



**Figure 12.** Locking pawls in locked position on the cam lobe.

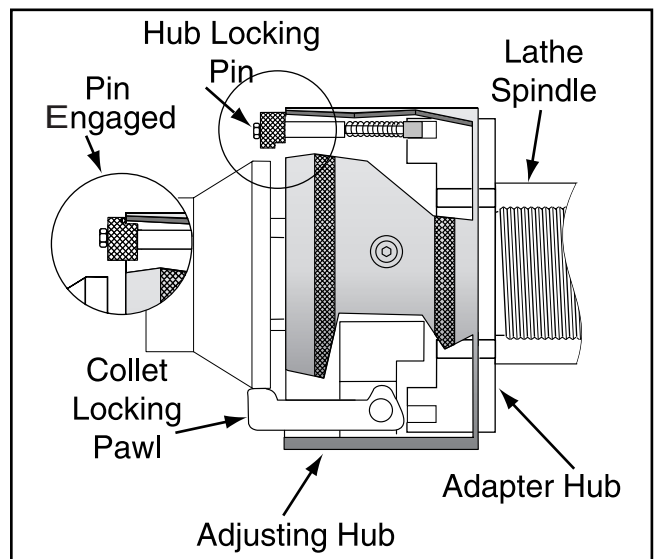
2. Secure the 38mm spanner nut against the outboard side of the bearing housing and then secure the 30mm spanner nuts against the 38mm spanner nut as shown in **Figure 13**. Note—*Be sure that the 30mm spanner with the setscrew is on the outside, with the setscrew accessible.*

3. The two 30mm spanners define the stroke distance. Secure the setscrew in the outer 30mm spanner nut to lock the stroke distance.



**Figure 13.** Spanner nut positioning for locking stroke adjustment.

The mechanism that controls the stroke is depicted in detail in **Figure 14**.



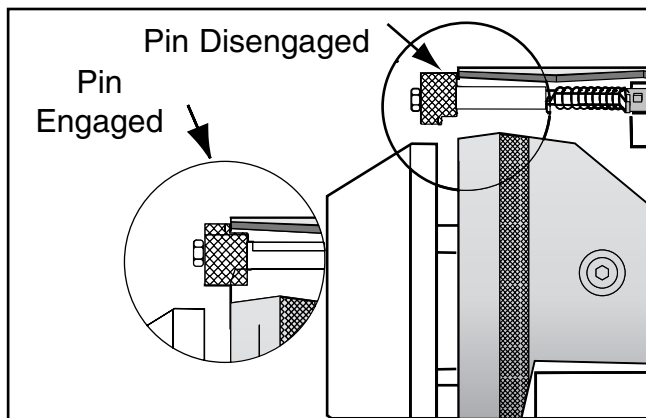
**Figure 14.** Stroke adjustment assembly.



# Removal of 5-C Collet

To remove or replace your 5-C collet in the collet closer assembly:

1. Choose a 5-C collet that is suitable for the intended stock size to be turned.
2. Disengage the hub locking pin so the flat is turned toward the outer rim of the hub adapter as shown in **Figure 15**.



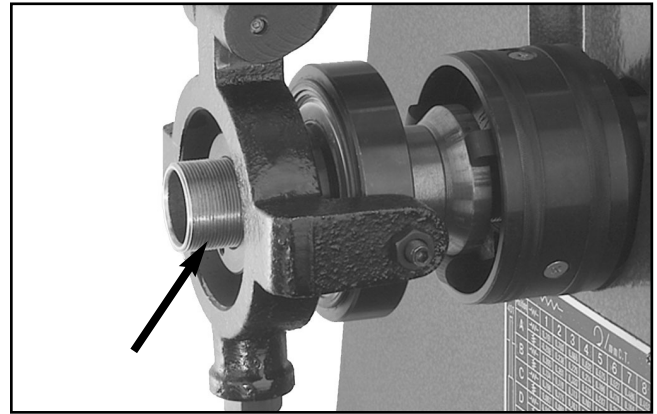
**Figure 15.** Locking pin positions.

3. Rotate the draw tube counter-clockwise at the end of the collet closer (**Figure 16**) to unthread the collet.

## **CAUTION**

The draw tube threads may be sharp. To avoid cutting your hands, use a clean rag to rotate the draw tube.

4. Remove the collet from the collet adapter and insert the new 5-C collet.
5. Rotate the draw tube clockwise at the end of the collet closer to engage the new collet threads.
6. Engage the hub locking pin back into place as shown in **Figure 15**.



**Figure 16.** Location to rotate draw tube to remove or replace 5-C collets.



# Installing 5-C Collet

To adjust your 5-C collet in the collet closer assembly:

1. Choose a 5-C collet that is suitable for the intended stock size to be turned.
2. Line up the collet keyway with the collet adapter pin and insert the collet until it stops, then gently rotate it for final alignment.
3. Gently push on the end of the draw tube until it engages the collet threads in the spindle, and rotate the adjusting hub in a clockwise fashion (as viewed from the outboard end of the lathe in **Figure 8**).

— If the draw tube fails to touch the collet, remove the collet and look into the spindle to see if the draw tube is accessible for proper engagement. If the collet cannot touch the draw tube when inserted into the spindle, see the following section on “Rough Adjustment.” If the collet does reach, try again to thread the collet and adapter into the spindle by following the guidelines in the “Tube Assembly” sub-section of this manual.



# Rough Adjustment

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If rough adjustments need to be made to the collet closer assembly:

1. In the event that the previous adjustments fail to allow the collet to lock onto the material or the draw tube fails to touch the collet, adjust the adapter hub in or out.
2. Loosen the setscrews and turn the hub adapter in a clockwise direction if the draw tube does not contact the back of the collet.
3. Turn the hub adapter counter-clockwise if the work material cannot be locked by the collet.
4. Tighten the setscrews.

The Model G8143 Collet Closer is adjusted properly when the 3 collet locking pawls are tight on the cam and the workpiece will not twist in the collet. Again, **Figure 12** on **page 7** shows the proper locked position of the collet locking pawls around the cam.



# Maintenance

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The Model G8143 Collet Closer is **essential-ly a maintenance free tool**; however, some things to keep in mind are:

1. Make sure that all the components of your collet closer are assembled correctly, according to this manual.
2. Once the replacement stud and hub adapter are installed, they will not need to be removed.
3. Ensure that your locking mechanism is working properly before you start any projects on your lathe.
4. Check the locking stroke for proper placement of locking pawls on the cams.
5. The bearings are non-serviceable. If you have problems with your bearings, you must order a new bearing pack.
6. The hub adapter must be removed in order to change gears occasionally.



# Aftermarket Accessories

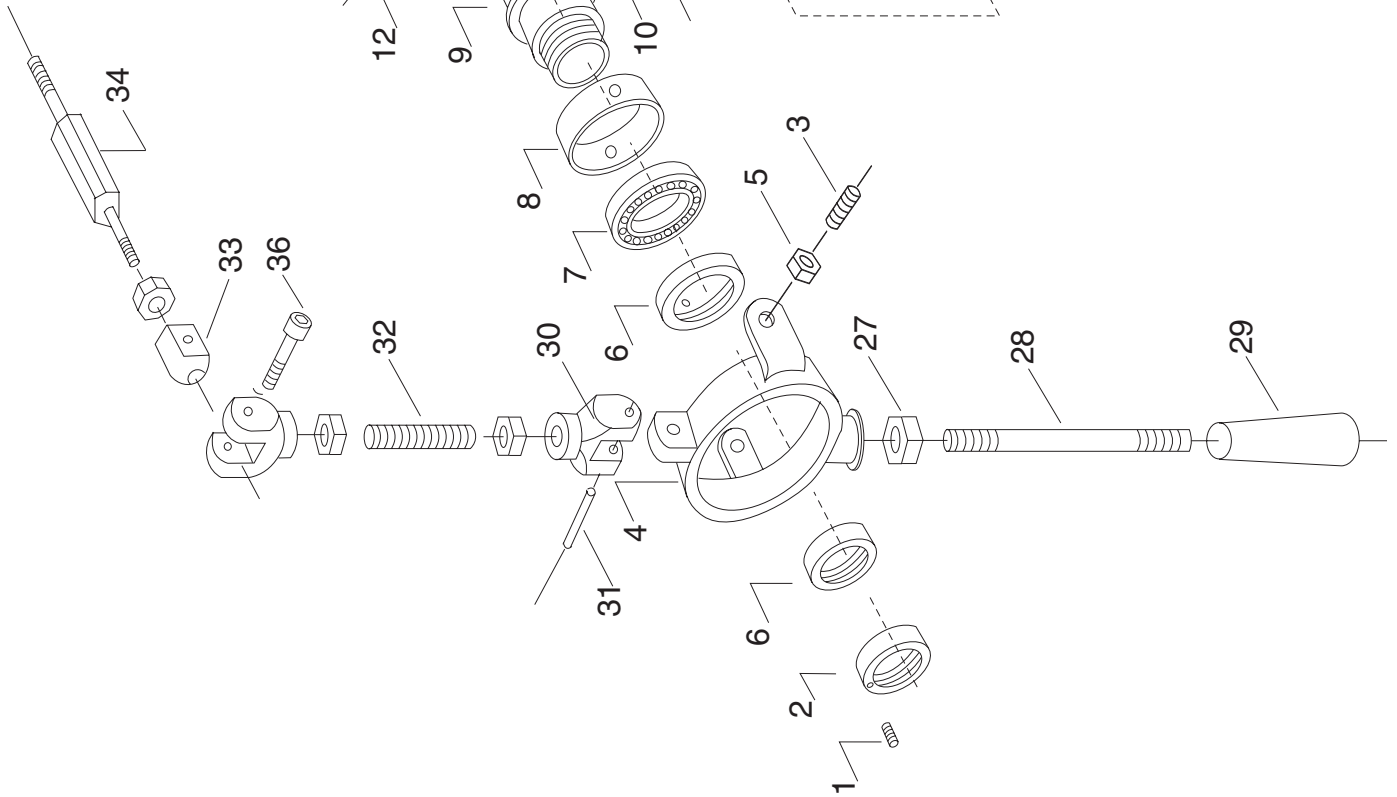
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5-C collets do not come with the Model G4026 Collet Closer. However, they are available in the current Grizzly Catalog:

- Model G1238 15 piece collet set, ranging in diameters from 1/8" to 1".
- Collets are also sold separately in individual sizes.





G8143 Collet Closer

REF	PART #	DESCRIPTION
1	PSS01M	SETSCREW M6-1 X 10
2	P4026033	SPANNER NUT M30-1.25 W/ SS
3	P4026009	DOGPOINT SETSCREW M8-1.25 X 38
4	P4026007	LOCKING YOKE
5	PN03M	HEX NUT M8-1.25
6	P4026034	SPANNER NUT M30-1.25
7	P6208	CARTRIDGE BALL BEARING 6208ZZ
8	P4026023	BEARING SUPPORT
9	P4026024	CAM
10	PN04M	HEX NUT M4-0.7
11	P4026027	KNURLED KNOB M4-0.7
12	P4026030	COLLET LOCKING PAWL
13	P4026031	PIN
14	P4026029	SPRING
15	P4026026	LOCKING PIN
16	P4026040	SLIDING HUB SLEEVE
17	P4026041	HUB SLEEVE
18	PSS14M	SET SCREW M8-1.25 X 12
19	P4026043	BRASS SUPPORT PIN
20	PFH07M	FLAT HD SCR M5-.8 X 10
21	PSS03M	SETSCREW M6-1 X 8
22	P8143022	FRONT HUB ADAPTER
23	P8143023	DRAW TUBE
24	P4026047	COLLET ADAPTER PIN 3 X 6
25	P4026025	COLLET ADAPTER
27	PN09M	HEX NUT M12-1.75
28	P4026011	HANDLE ROD
29	P4026012	HANDEL
30	P4026018	ROD CONNECTOR
31	P4026017	PIVOT PIN
32	P8143032	STUD
33	P8143033	ROD CONNECTOR
34	P8143034	MOUNTING STUD
36	PSB45M	CAP SCREW M8-1.25 X 45
37	P8143037	HUB ADAPTER SLEEVE
38	PSS60M	SET SCREW M8-1.25 X 14

# WARRANTY AND RETURNS

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Grizzly Imports, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly'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 or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly 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.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

# WARRANTY CARD

NAME \_\_\_\_\_ PHONE NUMBER \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
MODEL# G8143 Collet Closer SERIAL# \_\_\_\_\_ INVOICE# \_\_\_\_\_

The following information is given on a voluntary basis. This information will be used for marketing purposes to help Grizzly develop better products. Your name will be included in our mailing **list** only. It will not be sold to other companies. of course, all information is strictly confidential.

1. How did you find out about us?

Advertisement       Friend       Website  
 Catalog       Card deck       Other \_\_\_\_\_

2. Do you think your machine represents good value?  YES       NO

3. Would you allow us to use your name as a reference for Grizzly customers in your area?  YES       NO  
**(Note: Your name will be used a maximum of three times.)**

4. To which of the following publications do you subscribe? Check all that apply.

Home Shop Machinist       Rifle Magazine      Other \_\_\_\_\_  
 Projects in Metal       Hand Loader Magazine  
 Modeltec       Precision Shooter  
 Live Steam       RC Modeler  
 Shotgun News       Model Airplane News

5. What is your annual household income?

\$20,000-\$30,000       \$50,001-\$60,000       \$80,000-\$90,000  
 \$30,001-\$40,000       \$60,001-\$70,000       +\$90,000  
 \$40,001-\$50,000       \$70,001-\$80,000

6. To which age group do you belong?

20-30     41-50     61-70  
 31-40     51-60     +70

7. Which of the following machines or accessories do you own? Check all that apply.

Engine Lathe       Abrasive Cutoff       Sheet Metal Machine  
 Band Saw (Metal)       Arc Welder       Other \_\_\_\_\_  
 Band Saw (Wood)       Oxy/Ac. Outfit  
 Milling Machine       Air Compressor  
 Bench Grinder       Drill Press

8. How many of the machines you checked in Question 7 are Grizzly machines? \_\_\_\_\_

9. Which of the following tooling and accessories do you own? Check all that apply.

Milling Vises       Collet Closer       Digital Readout  
 Indexing Head       Taper Attachment       Tool Post Grinder  
 Rotary Table       Boring Head       Other \_\_\_\_\_

10. In the space below, list three tools you would like Grizzly to carry.

11. Of all the mail order metalworking company's you have purchased from, how do you rate Grizzly in terms of overall customer satisfaction?

The best       Above average       Average  
 Below average       The worst

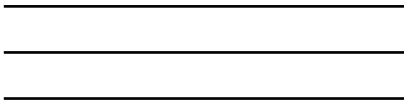
12. Comments \_\_\_\_\_  
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G8143 Collet Closer

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