



MODEL M1023 QUICK CHANGE COLLET ATTACHMENT



INSTRUCTION MANUAL

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INVENTORY

The following is a description of the main components shipped with the **SHOP FOX®** Model M1023. Lay the components out to inventory them.

Box Contents (Figure 1)	QTY
A. Collet Attachment Assembly	1
B. Collet Adapter	1
C. Handle	1
D. Lever	1

If any parts appear to be missing, examine the packaging carefully to be sure those parts are not among the packing materials. If any parts are missing, find the part number in the back of this manual and contact Woodstock International, Inc. at (360) 734-3482 or at tech-support@shopfox.biz

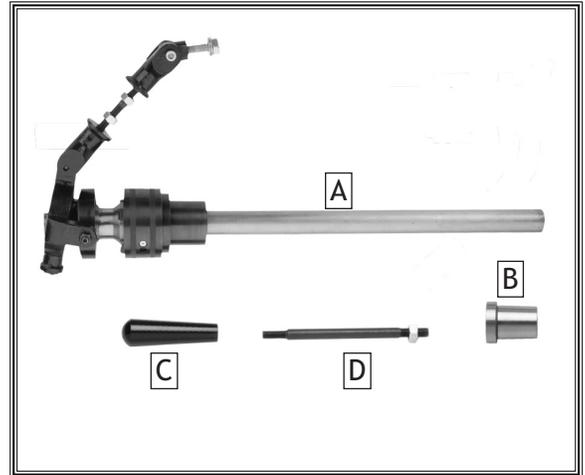


Figure 1. Model M1023 Inventory.

NOTICE

When ordering replacement parts, refer to the parts list and diagram in the back of the manual.

ASSEMBLY

The Model M1023 Quick Change Collet Attachment allows you to quickly change workpieces on your Model M1020 Gear Head Lathe. The positive-locking handle clamps standard 5-C collets safely and securely for precision turning.

WARNING

Disconnect power to your lathe before beginning installation of the Model M1023 Quick Change Collet Attachment.

Preparation

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 Model M1020 Gear Head Lathe owner's manual.)
3. Make sure the 5-C Collet/Morse Taper Adapter and the spindle opening are clean and free of oil. Use a soft cloth or rag to wipe up any contaminants.

Pivot Stud

To install the pivot connector onto the headstock, do these steps:

1. Open the lathe cover as shown in **Figure 2**.
2. Unscrew the M12-1.75 x 40 hex bolt and two flat 12mm washers from the end of the pivot connector on the collet attachment assembly.
3. Unscrew the cap screw in the pivot connector to remove the pivot stud from the collet attachment assembly.
4. Insert the hex bolt through the bottom of the hole shown in **Figure 3**. Slide both washers over the hex bolt and thread the pivot stud onto the bolt, as shown in **Figure 4**.



Figure 2. Opening cover.

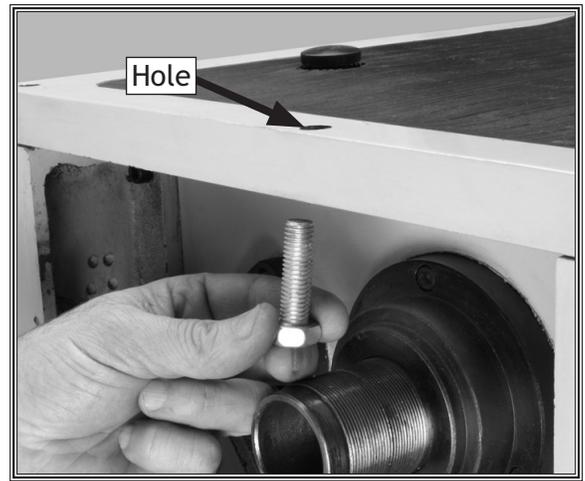


Figure 3. Installing hex bolt on headstock.

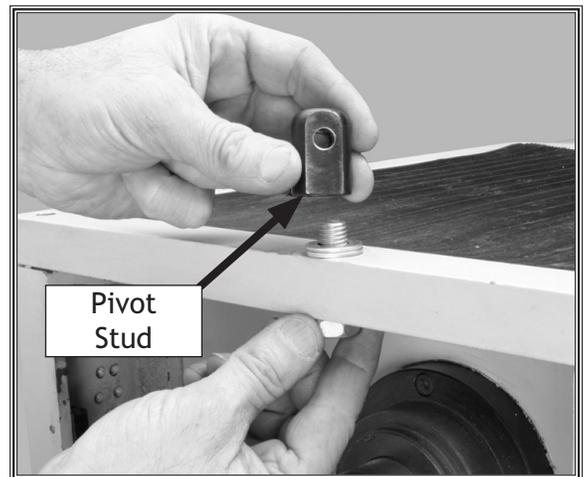


Figure 4. Threading pivot stud onto the hex bolt.

5. Align the stud so its flat surfaces are parallel to the lathe spindle, and tighten the hex bolt and pivot stud.
6. Close the end cover.

Hub Adapter

To install the hub adapter to the outboard spindle, do these steps:

1. Remove the hub adapter from the draw tube assembly.
2. Thread the hub adapter completely into the outboard end of the spindle and tighten securely (see **Figure 5**).

Draw Tube Assembly

The draw tube assembly comes attached to the locking yoke and connecting rod.

To install the draw tube assembly into your lathe, do these steps:

1. Slide the draw tube assembly (**Figure 6**) all the way into the outboard spindle until it engages around the hub adapter.
2. Thread the handle into the lever.
3. Thread the lever onto the end of the locking yoke and tighten the locknut.
4. Slide the pivot connector at the end of the connecting rod over the pivot stud, as shown in **Figure 7**. Insert the M8-1.25 x 45 cap screw through the hole in the pivot connector and pivot stud.
5. Check the handle alignment to make sure it is vertical; if it is, go to **Step 7**. If the handle alignment is not vertical, remove the M8-1.25 x 45 cap screw and adjust the connecting rod until the lever is approximately vertical.

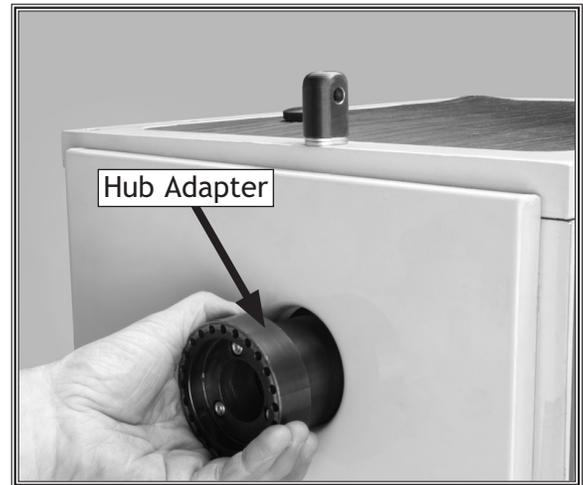


Figure 5. Threading hub adapter onto spindle.

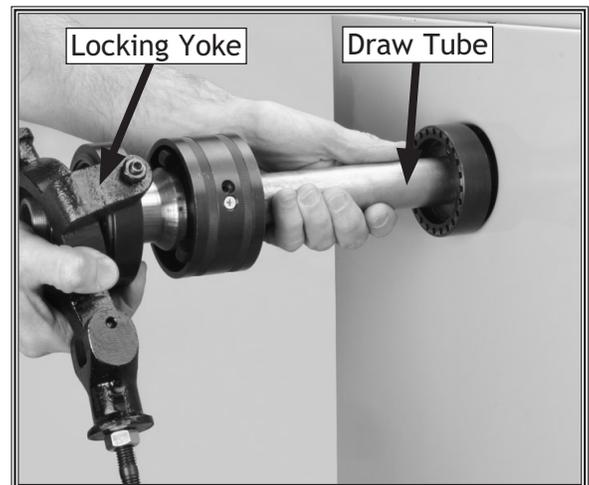


Figure 6. Inserting draw tube assembly.

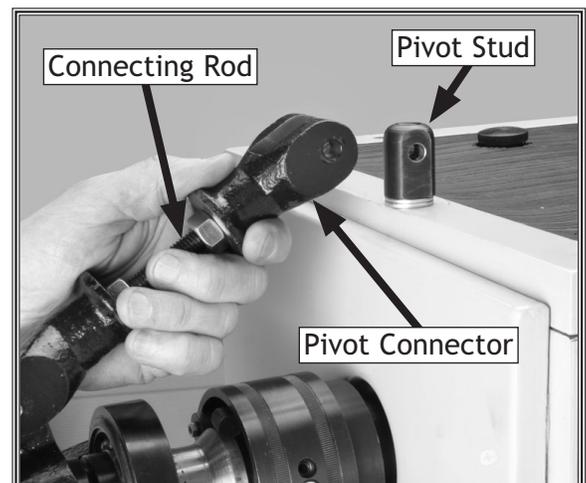


Figure 7. Pivot connector inserted over pivot stud.

6. Reinsert the M8-1.25 x 45 cap screw that connects the pivot connector and pivot stud and tighten with a 6 mm hex wrench.
7. Tighten the two jam nuts on the connecting rod in **Figure 8** so they are snug against each of the pivot connectors.
8. Place a collet in the collet adapter, so the collet threads are exposed out of the back end of the collet adapter, as shown in **Figure 9**.

⚠ CAUTION

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

9. Insert the collet and collet adapter into the draw tube. While holding the collet with one hand (**Figure 10**), turn the end of the draw tube clockwise 5 to 8 complete revolutions with the other hand, to thread the collet onto the spindle.



Figure 8. Tightening jam nuts.



Figure 9. Collet in collet adapter.

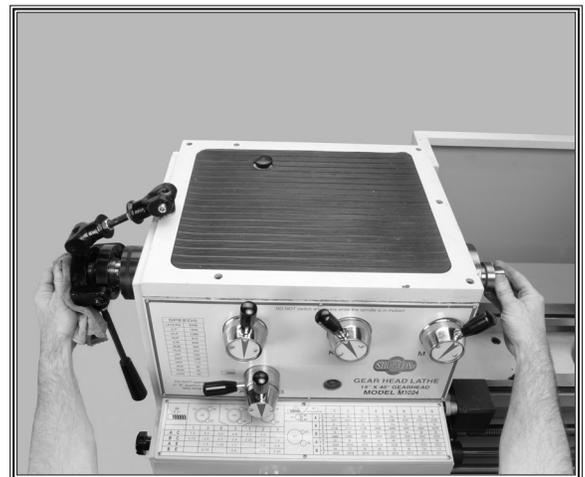


Figure 10. Threading collet onto spindle.

Main Adjustments

It is essential to make the following adjustments to the collet attachment so it works properly.

To adjust the collet attachment, do these steps:

1. Place a piece of correctly sized metal stock in the collet.
2. Disengage the hub locking pin (**Figure 11**) by pulling the pin out and turning it so the flat part of the pin is turned toward the outer rim of the hub adjusting sleeve. The mechanism that locks the collet is depicted in detail in **Figure 12**.
3. Turn the hub adjusting sleeve in or out so the locking pawls align properly on the flat surface of the cam lobe (see **Figure 13**).
4. Turn the hub adjusting sleeve clockwise until you start to feel resistance.
5. Engage the hub locking pin.

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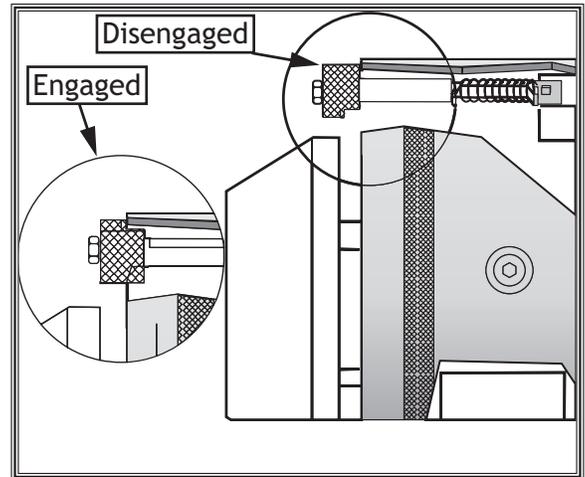


Figure 11. Hub locking pin positions.

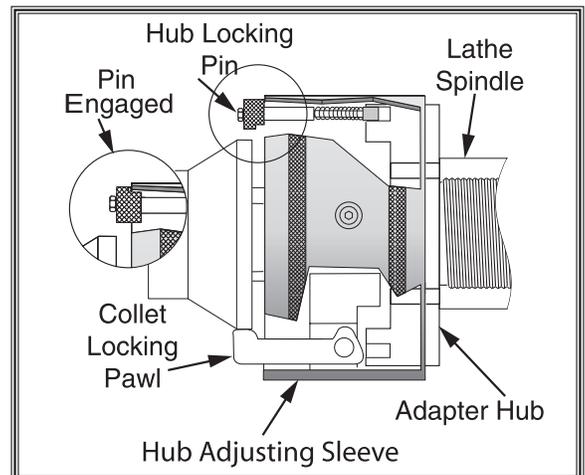


Figure 12. Collet locking mechanism.

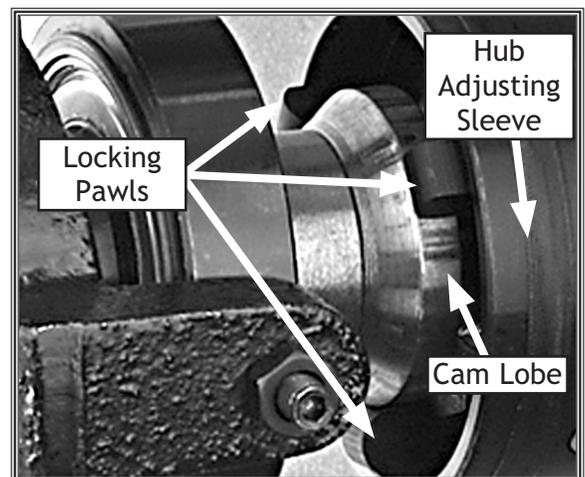


Figure 13. Locking pawls in locked position on the cam lobe.

6. Turn the two 30mm collars clockwise on the draw tube until they contact the shoulder on the threaded portion of the cam lobe, as shown in **Figure 14** and **Figure 15**. **Figure 14** is shown without the 30mm collars to more clearly show the cam lobe shoulder.

7. Tighten the set screw on the outer 30 mm collar to ensure the locking pawls stay in place.

Note: If you do not make this adjustment, the locking pawls could fall off the cam lobe when the lever is engaged. If this should happen, use a screwdriver to raise the locking pawls back onto the cam lobe.

8. Engage the lever and see if the workpiece moves.

9. To tighten the workpiece more, disengage the lever.

10. Pull the hub locking pin out (see **Figure 16**). While holding the pin with one hand, rotate the hub adjusting sleeve clockwise with your other hand until the pin engages into the next hole on the hub adapter.

Note: If the hub locking pin will not engage with the hub adapter, see the **Hub Locking Pin Adjustments Section** on **Page 9**.

11. Repeat **Steps 8-10** until the workpiece is tight in the collet.

12. Push the lever toward the machine to release the workpiece.

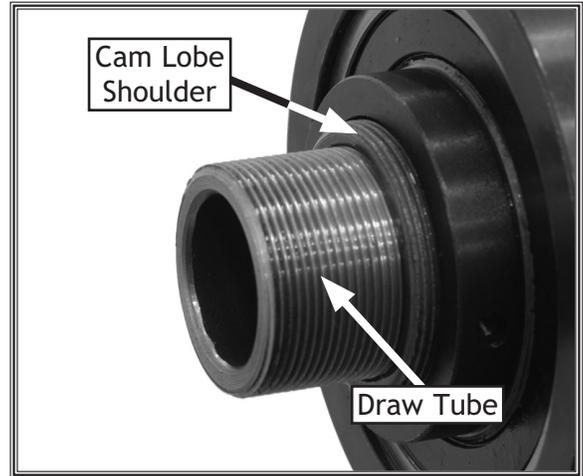


Figure 14. Shoulder on threaded cam lobe and draw tube.

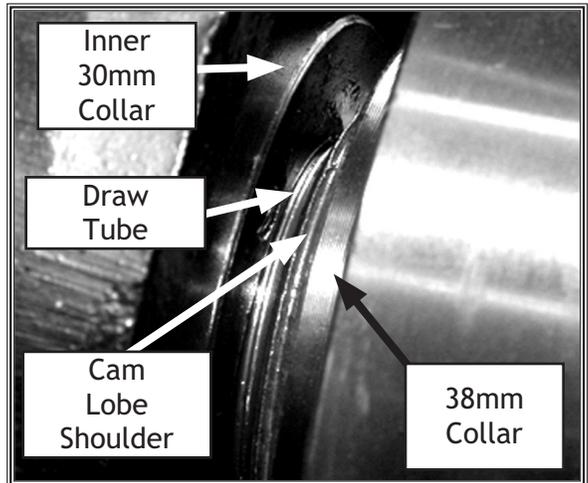


Figure 15. Inner 30mm collar nearly touching threaded cam lobe shoulder.

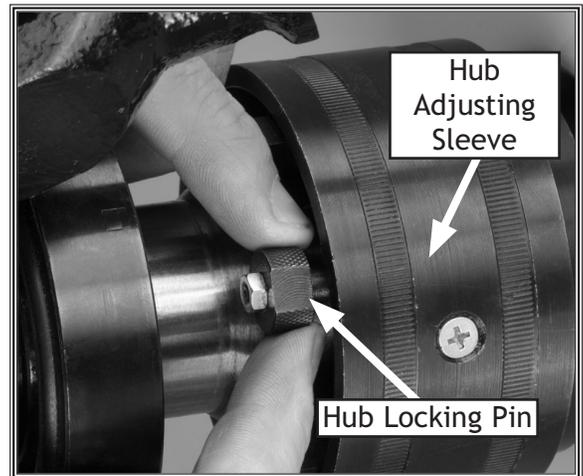


Figure 16. Hub locking pin disengaged.

Hub Locking Pin Adjustments

If the hub locking pin will not engage with the hub adapter holes, do these steps:

1. Disengage the hub locking pin.
2. Thread the hex nut to the end of the hub locking pin. Turn the knurled nut until it touches the hex nut, as shown in **Figure 17** and tighten.
3. Reengage the hub locking pin.

Removing or Changing 5-C Collet

CAUTION

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

To remove or replace your 5-C collet in the collet attachment assembly, do these steps:

1. Disengage the hub locking pin so the flat part of the pin is turned toward the outer rim of the adjusting hub as shown in **Figure 11** on **Page 7**.
2. To unthread the collet, rotate the draw tube counterclockwise, in the location shown in **Figure 10**.
3. Remove the current collet from the collet adapter and insert a new 5-C collet.
4. Rotate the draw tube clockwise five to eight turns to engage the new collet threads. Engage the hub locking pin back into place as shown in **Figure 11**.
5. Adjust the collet attachment per **Steps 8-11** on **Page 8** if necessary.

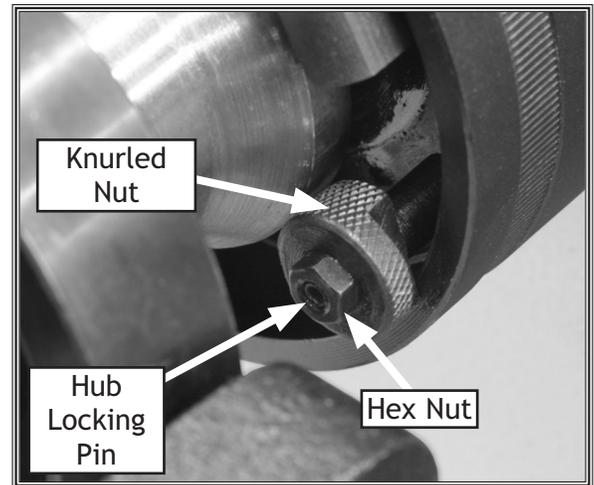


Figure 17. Hex nut and knurled nut adjusted.

Removing Collet Attachment

To remove the collet attachment from the lathe, do these steps:

1. Remove the collet as described in the section above.
2. Disengage the connecting rod by removing the M8-1.25 x 45 cap screw inserted between the pivot connector and pivot stud.
3. Pull the collet attachment out of the spindle.
4. Unthread the hub adapter.
5. Insert a brass rod through the outboard end of the spindle and tap it against the collet adapter. Catch the collet adapter with your other hand when it pops out.
6. Unscrew and remove the pivot stud, the M12-1.75 x 40 hex bolt, and the two flat 12mm washers.

Note: You can leave the pivot stud attached to the headstock to more quickly reinstall the collet attachment in the future.

Rough Adjustments

If rough adjustments need to be made to the collet attachment assembly, do these steps:

1. If the adjustments from installing the 5-C collet do not allow the collet to lock onto the material or the draw tube fails to touch the collet, adjust the hub adapter in or out.
2. Pull out on the lever and back the draw tube assembly away so you can access the hub adapter.
3. Turn the hub adapter in a clockwise direction if the draw tube does not contact the back of the collet.
4. Turn the hub adapter counterclockwise if the work material cannot be locked by the collet.

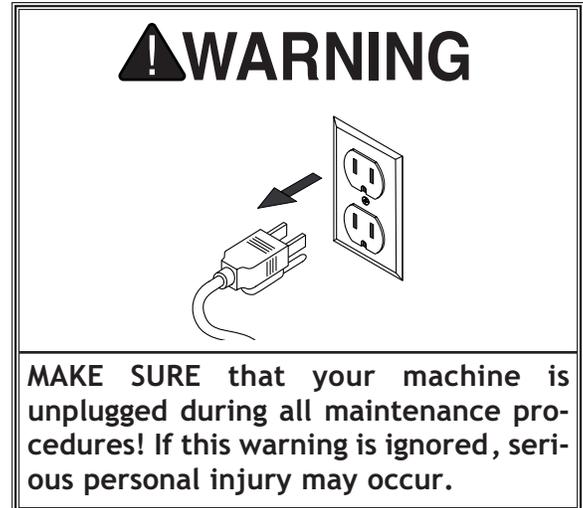
The Model M1023 Quick Change Collet Attachment is adjusted properly when the three locking pawls are tight on the cam and the workpiece will not twist in the collet. **Figure 13** on **Page 7** shows the proper locked position of the locking pawls around the cam.

MAINTENANCE

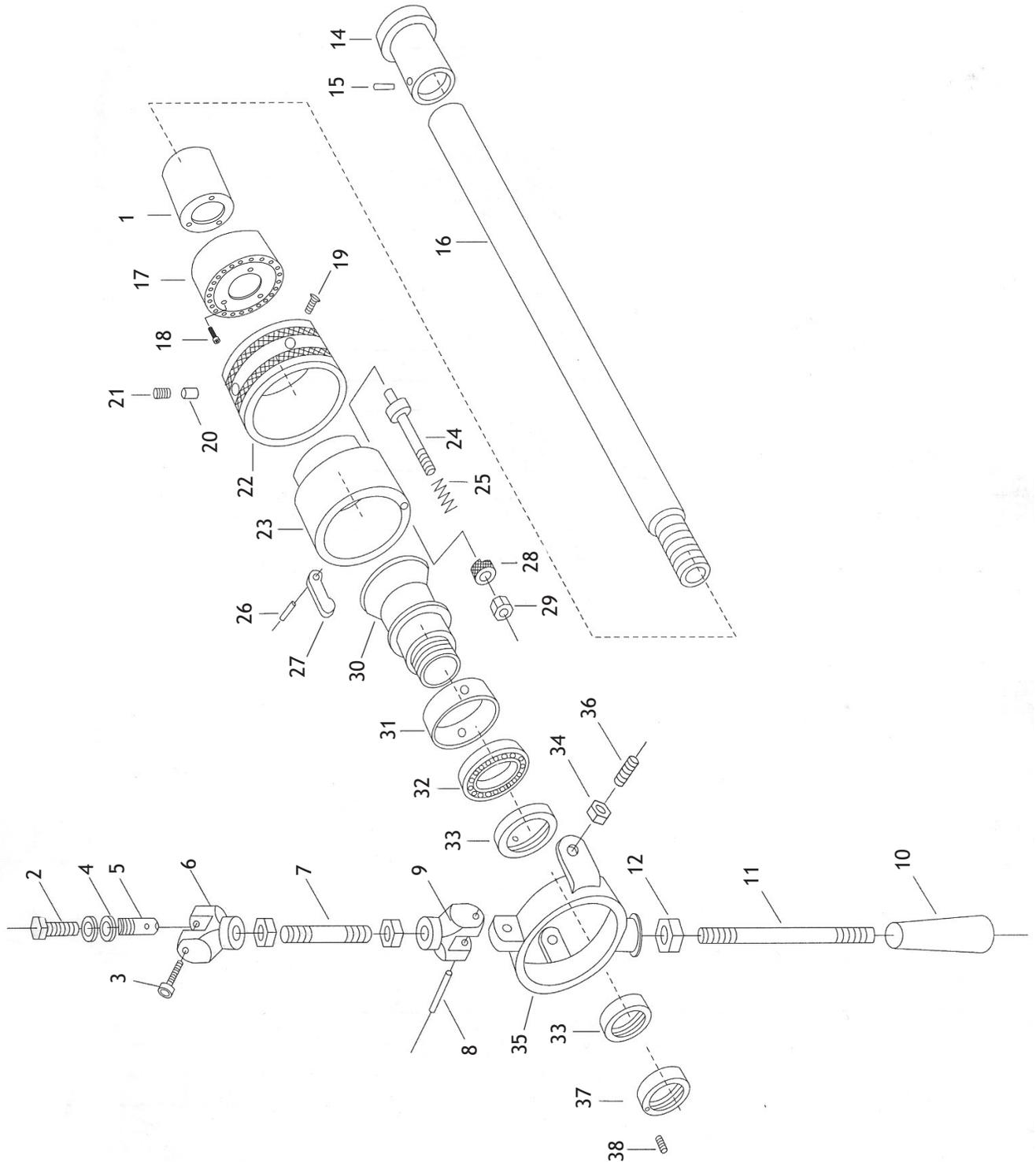
General

The Model M1023 Quick Change Collet Attachment is essentially a maintenance free tool; however, some things to keep in mind are:

- Make sure that all the components of your collet attachment are assembled correctly, according to this manual.
- Ensure that your locking mechanism is working properly before you start any projects on your lathe.
- Check the locking stroke for proper placement of locking pawls on the cams.
- The bearings are non-serviceable. If you have problems with your bearings, you must order a new bearing pack.
- The hub adapter must be removed in order to change gears or access V-Belts.



PARTS



Parts List

REF	PART #	DESCRIPTION
1	XM1023001	HUB ADAPTER SLEEVE
2	XPB35M	HEX BOLT M12-1.75 X 40
3	XPSB45M	CAP SCREW M8-1.25 X 45
4	XPW06M	FLAT WASHER 12MM
5	XM1023005	PIVOT STUD
6	XM1023006	PIVOT CONNECTOR
7	XM1023007	CONNECTING ROD
8	XM1023008	PIN
9	XM1023009	PIVOT CONNECTOR
10	XM1023010	HANDLE
11	XM1023011	LEVER
12	XPN09M	HEX NUT M12-1.75
14	XM1023014	COLLET ADAPTER
15	XPRP14M	ROLL PIN 3 X 6
16	XM1023016	DRAW TUBE
17	XM1023017	HUB CONNECTOR SLEEVE
18	XPSB33M	CAP SCREW M5-.8 X 12
19	XPFH07M	FLAT HEAD SCREW M5-.8 X 10

REF	PART #	DESCRIPTION
20	XM1023020	SUPPORT
21	XPSS14M	SET SCREW M8-1.25 X 12
22	XM1023022	HUB ADJUSTING SLEEVE
23	XM1023023	SLIDING SLEEVE
24	XM1023024	SPECIAL BOLT
25	XM1023025	SPRING
26	XM1023026	PIN
27	XM1023027	CAM LEVER
28	XM1023028	KNURLED NUT
29	XPN04M	HEX NUT M4-.7
30	XM1023030	SLEEVE
31	XM1023031	BEARING RACE
32	XM1023032	BALL BEARING 40 X 80 X 18
33	XM1023033	COLLAR 38 MM
34	XPN03M	HEX NUT M8-1.25
35	XM1023035	LOCKING YOKE
36	XPSS44M	SET SCREW M8-1.25 x 40
37	XM1023037	COLLAR 30 MM
38	XPSS01M	SET SCREW M6-1 X 10

Warranty

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

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

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

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

