

HARDINGE®

INSTALLATION BOOKLET FOR:



**Quick-Change Dead-Length®
Collet Adaptation Chucks**



Read the enclosed instructions and
recommendations before any installations

CONTENTS

Quick-Change Dead-Length® Collet Adaptation Chucks

Table of Contents

- Pg. 3-4 • Mounting Instructions
- Pg. 5 • QC Parts Breakdown
- Pg. 6 • Replacing Collet Head Inserts
- Pg. 7 • Trimming Collet Head Inserts
- Pg. 8 • Trouble Shooting Guide
- Pg. 9 • Frequently Asked Questions
- Pg. 10 • Care and Maintenance Guide
- Pg. 11 • Warranty and Return Procedures

Box Contents

- Mounting Plate
- Mounting Hardware
- Collet Chuck Assembly
- Drawtube Adapter (*DTA*)
- Collet Wrench

For Parts and Service Call:

PH: (800) 843-8801 In Canada: (800) 468-5946

Other: (607) 734-2281 Fax: (607) 734-3886

Mounting Instructions for:

Quick-Change Dead-Length®

Collet Adaptation Chucks

American Standard and Select Flat-Nose Spindles

1. Remove existing chuck, fixtures and any face plate attachments. Thoroughly clean the mounting surface of the spindle free from any chips or debris.
2. **For shipping purposes, the drawtube adapter may already be threaded into the collet actuator. Make sure that the drawtube adapter is completely tightened into the collet actuator.** If the drawtube adapter is shipped unassembled with the system or packaged separately, place the collet chuck assembly down, mounting flange end up, thread the drawtube adapter into the collet actuator, completely tighten.
3. Unthread the 6 mounting bolts that attach the mounting plate to the quick-change collet chuck body. Remove the mounting plate from the backside of the quick-change collet chuck body.
4. Clean both the spindle side and the chuck side of mounting plate.
5. **AMERICAN STANDARD SPINDLES:**
Line up the machine's drive pin, located on the machine's spindle, with one of the drive pinholes located on the mounting plate. Place the mounting plate onto the machine's spindle. Secure the mounting plate onto the machine's spindle with the supplied mounting bolts. Install and completely tighten the mounting bolts in an alternating sequence, (crisscross). Verify proper installation of the mounting plate; place a .0001" dial indicator on the face of the mounting plate to ensure a .0001" indicator reading.

SELECT FLAT-NOSE SPINDLES:
Most select flat-nose spindles **WILL NOT** have a drive pin located on the machine's spindle or a drive pinhole located on the collet chuck mounting plate. For select flat-nose spindles, do not completely tighten mounting bolts, this allows the mounting plate to be properly indicated to the spindle. With a .0001" dial indicator, indicate the mounting plate into the machine's spindle to have a near zero TIR. Once properly adjusted and indicated, completely tighten the mounting bolts.
6. Extend the machine's drawtube to a forward/open position.
7. Turn the machine's drawtube pressure down just enough to actuate the collet chuck system.
8. Place the collet chuck assembly (body and drawtube adapter) onto the machine's drawtube, turning clockwise. Just before the collet chuck assembly is fully threaded onto the machine's drawtube, turn back the collet chuck assembly to the nearest bolt hole location on the mounting plate.

Continued...

Mounting Instructions – Cont'd

9. Retract the machine's drawtube making sure that all the mounting holes are aligned.
10. Install all the mounting bolts firmly, (finger tight). **DO NOT** completely tighten. This allows the collet chuck assembly to be properly adjusted and indicated to the machine's spindle.
11. To ensure proper installation, place a .0001" dial indicator on the OD of the collet chuck nose. Use the four adjusting screws to adjust and indicate the collet chuck to the desired TIR.
12. Fully tighten all the mounting bolts in an alternating sequence (crisscross). Use a .0001" dial indicator to maintain desired TIR when fully tightening the mounting bolts.

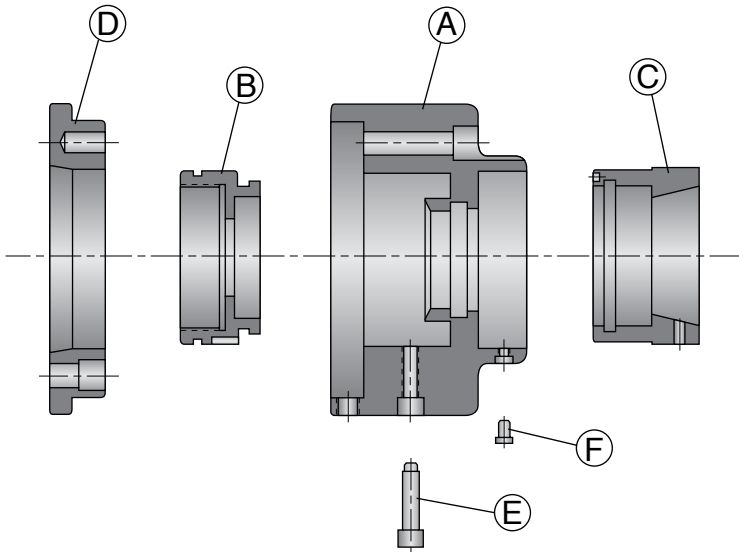
INSTALLING THE QUICK-CHANGE COLLETS

See page 9
RE: SHORT CHUCKING

1. The Hardinge QC Manual Changing Wrench accepts a $\frac{3}{8}$ " square drive ratchet. Turn the ratchet wrench clockwise to bring the pins perpendicular to the face of the unit.
2. Thoroughly clean the Collet Head. Clean out the wrench pin holes on the face of the collet and the closing taper on the collet chuck. Use a lint free cloth to insure the surfaces are completely free of lint.
3. Align the pin holes in the Collet Head with the pins of the changing wrench. Assemble so that the face of the Collet Head and the face of the wrench are flush.
4. Firmly hold the knurled portion of the Quick-Change Wrench. Turn the wrench counter-clockwise to compress the QC collet. Once the QC collet is compressed, align the key-way groove (marked on the face of the collet "key") with the pin located in the QC collet chuck closing sleeve. Insert the QC collet into the QC collet chuck body. Fully seat the Collet Head into the chuck body.
5. Maintain forward pressure against the mount while turning the $\frac{3}{8}$ " drive wrench clockwise to release the QC collet. The QC collet will expand and lock into the collet retainer of the collet chuck body holding it stationary. Remove the wrench.
6. Set the machine for ID chucking. Insert a workpiece into the collet then actuate the drawtube. Adjust the machine's drawtube pressure to the desired pressure needed to hold the workpiece.

**NEVER ACTUATE THE SYSTEM
WITHOUT A WORKPIECE IN THE COLLET**

QC PARTS BREAKDOWN



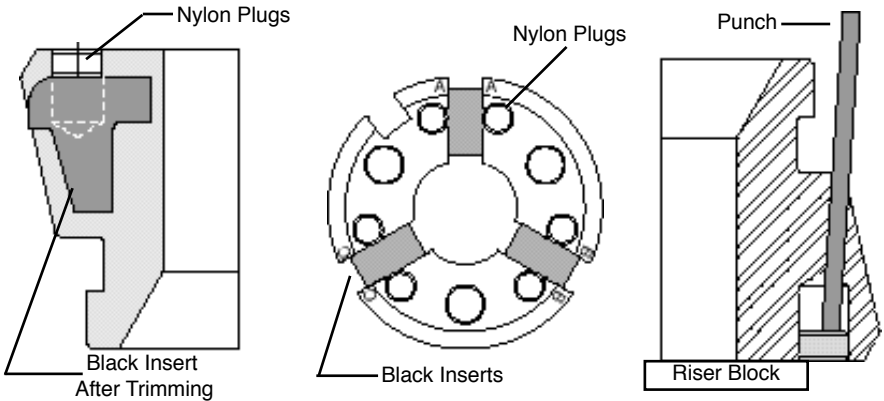
To Disassemble:

1. Remove collet.
2. Remove the system from the machine.
3. Remove two actuator anti-rotation screws (E), rotate actuator (B) to disengage with the body (A) and remove.
4. Remove two sleeve anti-rotation screws (F) located in the nose of the body and push sleeve (C) out of the body through the front.

To Reassemble:

1. Be sure to clean each item thoroughly before reassembly.
2. Install sleeve into the body.
3. Re-install two set screws into slots in the sleeve (tighten completely).
4. Turn body up on its nose and orientate the ears on the actuator to fit down into cutout of sleeve fingers. Carefully insert the actuator into the body (This is a ground slip-fit).
5. Rotate actuator so as to line up slots with side holes in the body. Re-install screws.
6. Check assembly by pushing the actuator forward to check movement. Then pull back to insure interlock with actuator and sleeve.

Replacing the Collet Head Inserts

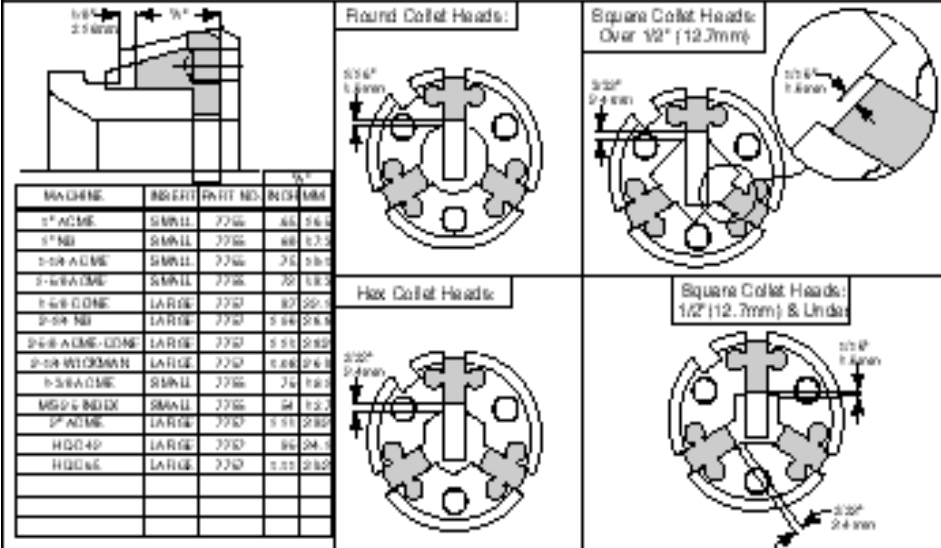


Quick Start

- a. Remove collet from **Quick-Change** system
 - b. Remove black slot seal/retainer inserts
 - c. Remove *nylon plugs*
 - d. Align segments A-A, B-B, C-C
 - e. Trim new inserts (See chart on page 7)
 - f. Install inserts
 - g. Install new *nylon plugs* (flush to face)
1. Remove the **Collet Head** from the *Quick-Change* System.
 2. Remove the **black inserts** from the collet head. It is not necessary to remove the white nylon plugs first. Pulling on the collet head segments will remove one end of each black insert. Pliers may be necessary to grip the insert when removing the other end from its segment.
 3. Remove the six **nylon retaining plugs**. The plugs in the small collets may be removed by prying with a screw driver. When removing the plugs from the large collet head, it is suggested that the segment be placed on a riser and a small punch be used.
 4. Thoroughly clean the segments. Make certain there are no chips, grease or dirt in the two holes for each segment.
 5. Align the collet head segments: The "A" on one segment is placed next to the "A" on the second segment. The "B" on the second segment is placed next to the "B" on the third segment as shown in the above illustration.
 6. Place the tapered side of the insert toward the outside of the head and put it into the space between the segments. Press the round tabs into the holes until they bottom out.

Trimming the Collet Head Inserts

HQC™ "Insert" Trimming Instructions



MACHINE	INSERT	PART NO.	QTY	MM
1" ACME	SMALL	7766	60	2.62
1" NPT	SMALL	7766	60	2.73
1.5" ACME	SMALL	7766	75	3.01
1.5" NPT	SMALL	7766	75	3.12
1.75" CONE	LARGE	7767	80	3.23
2" NPT	LARGE	7767	90	3.53
2.5" ACME - CONE	LARGE	7767	110	3.83
2.5" WORMAN	LARGE	7767	110	3.94
3" SWACME	SMALL	7766	75	3.01
MSP & BEVEL	SMALL	7766	90	3.23
3" ACME	LARGE	7767	110	3.83
HQC 40	LARGE	7767	80	3.23
HQC 6	LARGE	7767	110	3.83

- Trim the **inserts** as indicated by the above drawings.
- Mark each part as indicated.
- Carefully remove the **insert**.
- Cut the tabs as marked.
- Replace all the black **inserts** and press the round tabs fully into the bottom of 6 mating holes.
- Cover each of the round insert tab holes with a **NEW** round nylon retaining **plug**.
- Use a soft-faced hammer and tap each **plug** only until it is flush with the face of the collet head. *Do not press below the collet face.*

TROUBLE SHOOTING

The Collet Head does not lock in place:

- The Collet Head was not held firmly against the face of the **spindle mount** while the wrench was being released.
- The **draw bar adapter** was not set to the proper dimension from the **spindle face**.
 - This can be checked without removing the spindle mount.
 - Set a feeler gage to .030" (.76mm).
 - Make certain the draw bar is in its full forward position.
 - Check this dimension between the face of the **draw bar adapter** and the back face of the **spindle mount**. **NOTE:** *The dimension should not be greater than indicated. It is acceptable to have the dimension less than indicated especially when chucking oversize stock.*
 - If adjustment is necessary:
 - Jog spindle until key screw is in the 12 o'clock position and remove **key screw #1**
 - Remove the **spindle mount**.
 - Turn the **draw bar adapter** until the proper dimension is obtained, then align closest keyway to the 12 o'clock position. (Dimension will change slightly)
 - Re-install the **spindle mount & key screw #1** (If necessary, refer to pages 3 & 4).

The Collet Head does not fully seat into the Spindle Mount:

- The neck of the Collet Head has not been compressed enough.
- The ratchet wrench was not turned counter-clockwise (closed) sufficiently.
- The face of the Collet Head was not flush with the face of the **changing wrench**.

Must Grip At Least $\frac{2}{3}$ the Length of the Collet Head

See Page 9

Frequently Asked Questions

- ***What is the operating range of a quick change collet?***

The operating range is $\pm \frac{1}{64}$ " ($\pm .393\text{mm}$) when used on multi-spindle automatics for bar stock work. The operating range of the collets when used on CNC lathes is $\pm \frac{1}{64}$ " ($\pm .393\text{mm}$) to $+.008$ " ($+.20\text{mm}$). Note that the best grip is with a full bearing, which is at the rated size of the collet. As the stock gets larger, the collet will grip at the edges of the slots; as the stock gets smaller, the gripping will be at the center of the gripping surface.

- ***Do I need to lubricate the quick change collets?***

Yes. We suggest using Dow Corning BR-2+ or Kluber Altemp Q NB 50 grease on both the collet seat in the spindle or spindle mount and the outside diameter of the collet. This should be repeated every 8 hours.

- ***We continually have breakage of closer fingers and pins. Will this continue with the quick change?***

Considerably less breakage will occur when the QC system is used on automatic screw machines. This is a result of being able to use less force to hold the bar. Because there is no shank on the collet, less draw bar force is required for the same gripping force. The collet can handle a wide chucking range, therefore, you won't have to change collets when the stock varies or overtighten your closing mechanism.

- ***I machine many short parts. Are there problems short chucking with the Quick Change collets?***

When gripping parts that are larger than $\frac{1}{2}$ the length of the bearing of the collet, you should have no problems. You may experience problems when your parts are shorter. Because the collet does not have a shank, it will have a tendency to collapse in the back when there is no stock to grip on. Gripping a part that is only $\frac{1}{4}$ " long will be very difficult. You can help the situation by making a stop with a diameter the same as the low tolerance on the chucking diameter of the part. With the chucking diameter of $.500$ " that has a tolerance of $-.005$ ", the work stop bore should be $.495$ " to $.4945$ ". This will help stop the collet from collapsing in the back.

- ***What happens when the seals which hold the pads together break?***

You quickly replace the seal and the plug that holds it in. With other brands of quick change systems, the entire head has to be sent back to be re-vulcanized. This requires an inventory of extra collets to make certain your production is not interrupted. This additional expense is not required with the Hardinge QC System. The only item required is an extra set of seals and about five minutes of time. The cost of an extra set of QC seals is approximately ten dollars.

Care & Maintenance

Store all Hardinge collet chucks in a clean, dry environment when not in use

Style "C" & "J" Pullback Systems

- 1) Thoroughly clean the closing tapers of your collet and collet chuck.*
- 2) When changing collets, ensure that all threads are clean and free from any debris.
- 3) Remove the collet chuck system,* wipe it clean and ensure the "O" ring seal(s) on the drawtube adapter are in good working condition.
- 4) When reassembling the collet chuck system, apply a generous amount of all purpose grease to the "O" ring(s) on the drawtube adapter.

Style "S" Pullback Systems

- 1) Thoroughly clean the closing tapers of your master collet and collet chuck **FREQUENTLY.***
- 2) When installing and reinstalling the master collet, ensure that all surfaces are clean and free from any debris. Adjust the master collet, with collet pads installed, approximately .020" - .030" over the diameter size of the desired workpiece.
- 3) When changing collet pads, ensure that all surfaces are clean and free of any debris.
- 4) When installing and reinstalling collet pads, be certain that the collet pads are installed in the same numeric or alphabetical sequence.

Dead-Length® Collet Adaptation Chuck – Stationary Collet Systems

- 1) Thoroughly clean the closing tapers of your master collet/collets and collet chuck closing sleeve **FREQUENTLY.***
- 2) Remove the nose cap, master collet and or collets **FREQUENTLY.*** Clean any debris from the master collet and or collets, closing sleeve, and nose cap.
- 3) When installing and reinstalling the master collet/collets, ensure that all surfaces are clean from any debris.
- 4) Disassemble the collet chuck system **FREQUENTLY,*** or as needed. Replace the "O" Ring(s) located on the collet closing sleeve, then reassemble the system. Be certain all parts are clean from chips and debris.
- 5) Once reassembled check the collet chuck system for proper concentricity.
- 6) Apply a small amount of all purpose grease to the zerk fitting weekly or as needed.

Dead-Length® Collet Adaptation Chuck – Low Profile Collet Systems

- 1) Thoroughly clean the closing tapers of your master collet/collets, collet chuck closing sleeve, and the collet retainer threads **FREQUENTLY.***
- 2) When installing and reinstalling the master collet/collets, ensure that all surfaces are clean from any debris.
- 3) Depending on the application and system usage, additional maintenance may be required. If the system loses stroke or any such related issue, please contact our applications department for further assistance.

NOTE: IT IS EXTREMELY IMPORTANT TO KEEP THIS SYSTEM CLEAN AND FREE OF CHIPS AND DEBRIS.

Hardinge® - Sjogren Speed Collet Chuck Systems

- 1) Thoroughly clean the closing tapers of your collet and closing sleeve **FREQUENTLY.***
- 2) When changing collets, ensure that all threads of the collet and ring gear are clean and free from any debris.
- 3) Remove the speed collet chuck system **FREQUENTLY,*** wipe the entire system clean from chips and debris.
- 4) Apply a small amount of all purpose grease to the grease fitting weekly or as needed.

**Frequency is determined by the production quantities and types of materials used: e.g., brass, aluminum, various steels, etc. The use of these materials may require more frequent maintenance schedules.*

Warranty & Return Procedures

1. Warranty Terms:

Hardinge warrants that all Hardinge products are free from defects in material and workmanship for a period of twelve months (1 year) from date of original purchase.

2. Warranty Conditions:

- A. Should abnormal function or damage occur during the warranty period, the abnormal functioning portion or damaged portion of our product will be repaired or replaced without charges to our customer. Hardinge will replace warranted defects, but will not service them on-site.

The following considerations apply:

1. The warranty claim is made to Hardinge within the warranty period.
 2. Hardinge must acknowledge that the abnormal function or damage was caused by fault in material or the manufacturing process.
 3. The product was installed, used and maintained according to specifications of Hardinge and its vendors. See document: (Care and Maintenance of Hardinge Collet Chuck Systems).
 4. The warranty items may be repaired or replaced at the discretion of Hardinge.
 5. The purchaser must call Hardinge to report the warranty claim.
 6. Upon acknowledgment of warranty claim, Hardinge will assign a Returned Merchandise Authorization (RMA) number, and ship a replacement product to the purchaser.
 7. After receiving the replacement product, the purchaser must ship the defective or damaged product back to Hardinge. The purchaser must use the packaging in which the replacement product arrived and clearly mark all returning packages and documents with the assigned RMA number.
 8. All returned items must be properly packed before return shipping. Hardinge is not liable for damaged goods caused by careless or improper packaging.
- B. Should abnormal function or damage occur as a result of incorrect application of the product, non-compliance to Hardinge and or the vendor's product specifications, wrong mounting or installation, unauthorized product or modifications, careless handling and so forth, Hardinge's warranty will not apply.
- C. The loss of accuracy caused by normal wear and tear is not covered by this warranty.

3. Restocking Fee:

- A. A restocking fee may apply if an item is returned due to customer error.

DISCLAIMERS: The foregoing is the complete warranty for the products and supersedes all other warranties and representations, whether oral or written. All other warranties, whether expressed or implied are disclaimed, including, without limitation, any implied warranty of merchantability or fitness for any intended specific use. Under no circumstances will Hardinge be liable to the purchaser, or to any user, for any damages, expenses, lost profits, lost savings, damage to or replacement of equipment and property, costs of recovering, reprogramming, or reproducing any material, or other damages arising out of use or inability to use the Hardinge products.



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