Hardinge FlexC™ Dead-Length® Collet System Style DL

Installation Instructions

and Parts Lists

Part No. B -0009500-0152

General Safety Information

Before installing the Hardinge® FlexC™ Collet System on your machine tool, thoroughly read this manual and understand the information. If you are uncertain about any of the information, see your immediate supervisor. Also make certain that you understand the information in your machine tool operator's, programmer's and maintenance manuals.

NOTICE

Damage resulting from misuse, negligence or accidents is not covered by the Hardinge FlexC warranty.

Information in this document is subject to change without notice.

In no event will Hardinge Inc. be responsible for indirect or consequential damage resulting from the use or application of the product, or any of the information in this document.

This product is only to be used by trained machinists skilled in the use and operation of collet systems and collet chucks on metal cutting machines.

Safety Requirements to the Turning Machine:

Check to see that the workpiece is properly gripped and seated in the collet head before beginning the machining cycle.

Do not unclamp the workpiece until the machining cycle has come to a complete stop.

Observe all safety precautions indicated in the machine manual when operating the machine including the use of guards and keeping the door closed during machining.

Do not exceed the maximum operating force and rpm for the Hardinge FlexC Collet Systems indicated below:

Maximum operating force: 10,100 lb (45KN)
Maximum RPM: 6,000

Product Description and Use:

The Hardinge FlexC style DL Collet System consists of a spindle mount assembly. Vulcanized collet heads and wrenches are purchased separately. The style DL Dead-length® Collet System can be used with a thru-hole for bar work or with a work stop for chucking. The clamping heads consist of hardened steel segments that are joined together by a vulcanization process. Their outstanding characteristics include parallel workpiece clamping, superb accuracy with a minimum of deformation of the work piece, and quick-change capability. If the Hardinge FlexC style DL Collet System is used as a dead-length system the work stop is inserted into the body with a custom-manufactured work stop. When part length control is not required the work stop can be removed.

The Hardinge FlexC style DL Collet Systems use a push-to-close design with an axially-fixed collet head. They are used for workpieces with short chucking length in which axial movement of the clamping head would interfere in clamping, for long workpieces which are machined in sections, each section being machined after pulling the work piece forward, as well

Part No. B -0009500-0152

as for workpieces which are picked up by the sub-spindle for machining the second side in order to avoid axial stress on the spindles. The collet head and the work stop are both fixed in the spindle mount without moving. When you move the drawbar forward the collet seat moves forward and closes the collet head.

CAUTION: Make sure that the workpiece is adequately gripped so that the workpiece will not come loose during the machining process. When clamping very short workpieces, the minimum clamping lengths must be observed. They depend on the selected clamping head size and shape. Do not clamp tapered work pieces. In general the collet system should never be rotated without a clamped workpiece. When actuating the changing wrench, never reach inside the moving parts for risk of severely damaging your hand.

Drawbar Linkup

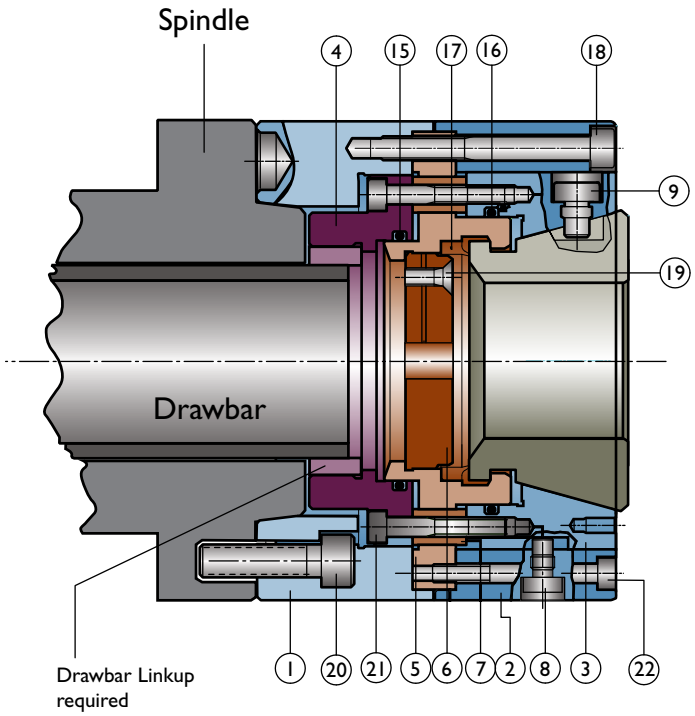
The Hardinge FlexC Collet System requires a drawbar linkup to mate the specific machine drawbar (varies by machine brand and model) to the FlexC body. This linkup can be ordered from Hardinge or can be made by the customer. The linkup should be screwed on the end of the drawbar before beginning installation of the FlexC Collet system.

Cleaning and Maintenance

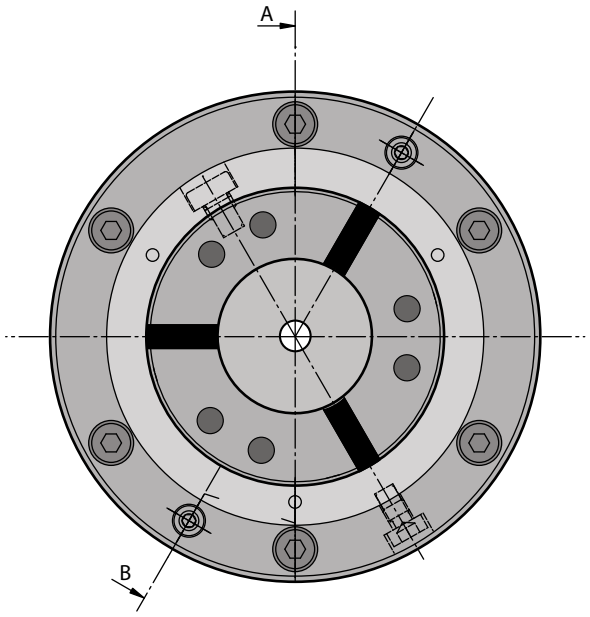
The spindle, collet head and the spindle mount mating surfaces must be cleaned and free of chips and sludge whenever mounting to the spindle or changing out a collet head. Do NOT clean an open spindle with an air hose as chips and sludge may be forced into the spindle drawbar area. Clean and lubricate all moving parts with Chevron Ultra-Duty EP NLGI 2, Dow Corning BR-2-Plus, or Kluber ALTEMP Q NB 50 grease. Store all unused products properly to prevent corrosion and keep free of dust and environmental particles.

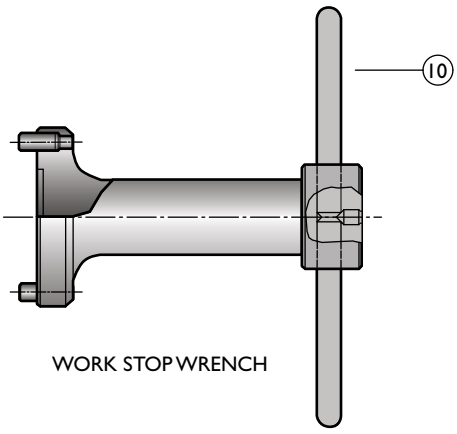
Check to see that all mounting screws are in good condition and replace when worn. All components must be replaced with original Hardinge replacement parts.

Part No. B -0009500-0152



SECTION A-B





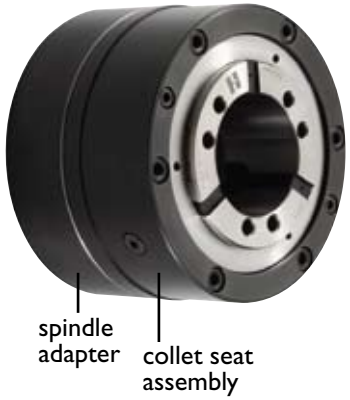
WORK STOP WRENCH

Assembly #V65-6DL05900 Parts List:

ITEM	PART NUMBER	QTY	DESCRIPTION
1	V65-6DL05901	1	Spindle Adapter
2	V65-6DL05802	1	Body
3	V65-6DL05803	1	Collet Seat
4	V65-6DL05904	1	Drawbar Adapter
5	V65-6DL05805	1	Coupling Stop
6	V65-6DL05806	1	Work Stop
7	V65-6DL05807	6	Spacer
9	V65-01207	1	Key for Collet Head
10	V65-6DL05810	1	Work Stop Wrench
15	CE 00094318288	1	O-Ring
16	CE 000943197104	1	O-Ring
17	V65-6DL11601	1	Seal
18	MS-0103828	6	M8x70 SHCS
19	MS-0313617	1	M6x16 Flathead Screw
20	MS-0104222	4	M12x40 SHCS
21	MS-0103622	6	M6x40 SHCS
22	MS-0103625	2	M6x55 SHCS

Part No. B -0009500-0152

Installation



The spindle adapter and collet seat assembly are shipped assembled. The spindle adapter must be separated from the body by removing the six mounting screws #18. Inspect the six fastening screws #21 to ensure a torque of 7.375 ft-lb (10Nm). Tighten if necessary.

Clean, inspect and grease the machine spindle and the spindle adapter. Mount the spindle adapter to the machine spindle using the four fastening screws #20, orienting the flange with the drive button. Tighten the fastening screws #20 to 90 ft-lb (122Nm) torque.

Check the concentricity and face runout of the spindle adapter before mounting the collet seat assembly. Neither should exceed .0002" (5µm). If the indicator reading is more than .0002" (5µm), remove the spindle adapter and clean the surfaces again before remounting.

Reduce the clamping pressure of the machine to a minimum and extend the drawbar to the forward position. Carefully screw the collet seat assembly onto the drawbar clockwise until it bottoms out. **DO NOT TIGHTEN.** Rotate the body counterclockwise until the clearance holes in the body line up with the threaded holes on the spindle adapter. Carefully move the drawbar backwards and seat the collet seat assembly into the spindle adapter. Insert and tighten the six mounting screws #18 equally to 26 ft-lb (36Nm) torque.

Increase the clamping pressure to sufficient force for the job.

Checking the Final Concentricity of the Collet Closing Taper

Locate the probe to touch the inside closing taper of the body to verify concentricity. This should not exceed .0002" (5µm). If the indicator reading is more than .0002" (5µm), remove the body and clean the surfaces of the spindle adapter and the body again before remounting. Check the concentricity again and repeat this step until the desired reading is met. Concentricity may be affected if using stock beyond the nominal gripping range.

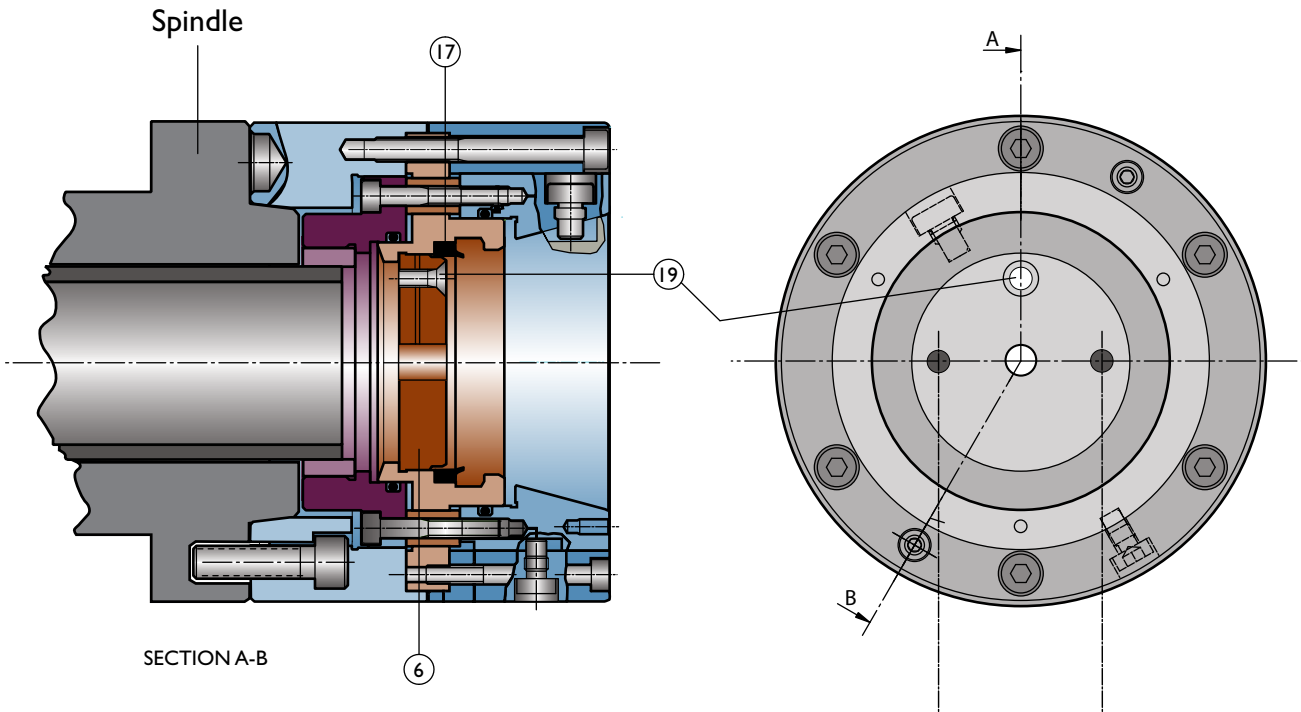
Installing a Collet Head

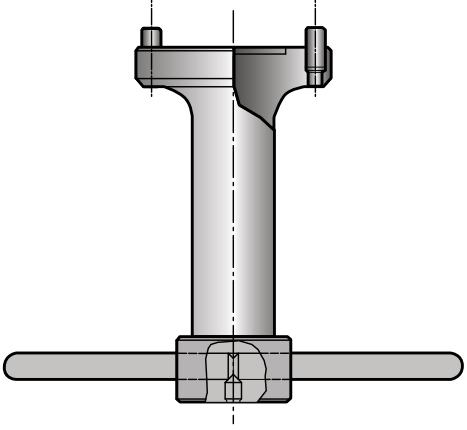
Installing or changing of the collet head is possible only when the chuck is in the unclamped position. Prior to inserting the collet head you must clean the taper of the collet seat and the mating taper of the collet head.

Fully insert the pins of the manual wrench into the holes in the face of the collet head. Actuate or pull the lever to collapse the segments before inserting it into the collet seat. Insert applying light pressure. Orient the keyway in the collet head with the key #9 in the collet seat. To release the collet head from the manual wrench you must press on the release button.

CAUTION: When actuating the manual wrench never reach inside the moving parts where there is risk of injury to your hand. Clean and lightly oil the collet head and the body before installing.

Part No. B -0009500-0152





10 WORK STOP WRENCH

Removing or Changing the Work Stop

Follow the previous instructions to remove the collet head before changing the work stop. The collet head must be in the unclamp position. Reach in and remove the seal #17 and set it aside.

Turn the locking screw #19 counterclockwise to loosen the threads to allow the removal of the work stop #6. It is not necessary to remove the locking screw.

A work stop wrench #10 is supplied with the spindle mount assembly to remove the work stop. Align and insert the pins of the wrench into the holes in the face of the work stop. Turn the wrench counterclockwise to unscrew the work stop. If you feel resistance you must go back and loosen the locking screw #19.

An M12 screw can be threaded into the hole in the center of the work stop to secure a custom work stop for required workpiece applications. The tapped holes on the face of the body can also be used to assemble a frontal work stop.

To reassemble, simply follow the same instructions in reverse order. Insert the work stop with the two pin holes facing out. Tighten the locking screw by hand to ensure that there will be no movement in the dead-length® work stop. Remember to replace the seal #17 before inserting your collet head. Failure to use the seal may cause malfunction of the collet system.

Part No. B -0009500-0152