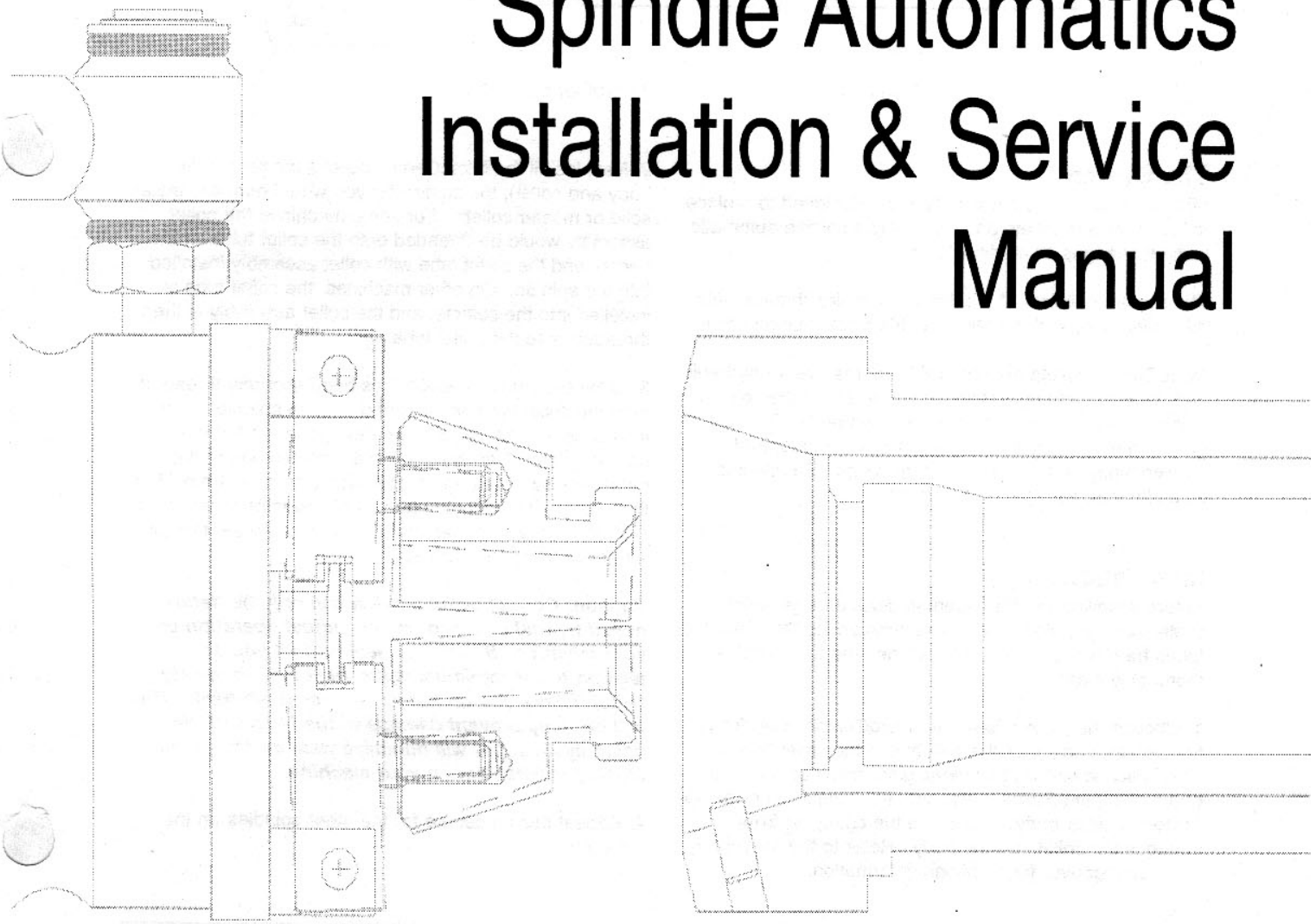
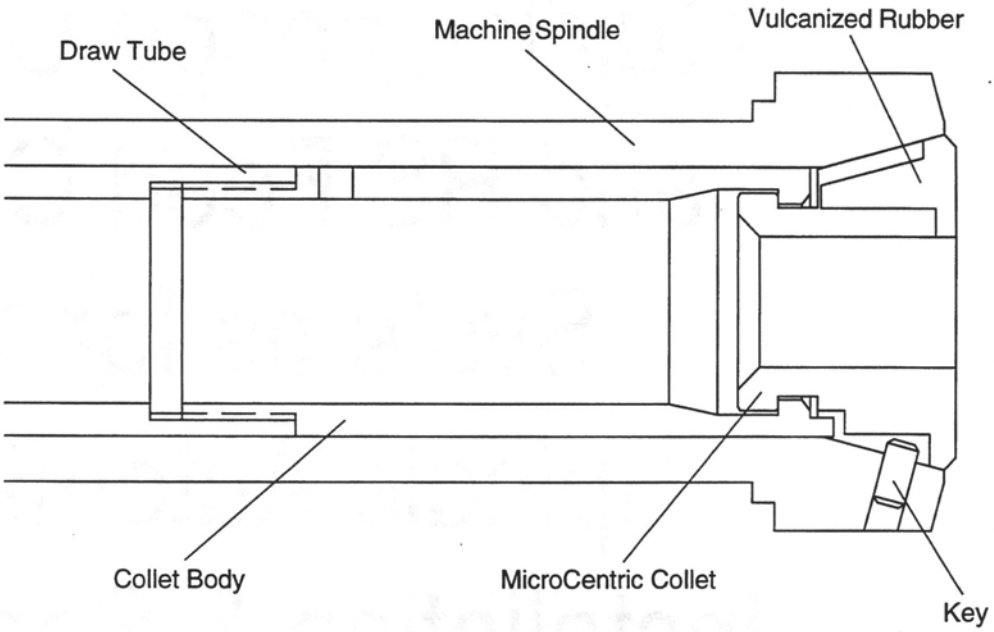
MicroCentric

Quick Change Collet and RS Feed Collet Systems for Multi Spindle Automatics Installation & Service Manual



Quick Change Collets



The System

MicroCentric quick change collets are designed to replace solid, or master collets on your multiple spindle automatic without changes or modifications.

The system consists of a collet body, which threads onto the collet tube, and the MicroCentric quick change collet.

MicroCentric collets are changed with manual, or hydraulically operated changing fixtures. The rear of the collet is compressed to release it from the collet body. The collet can then be removed from the machine spindle, and subsequently replaced by a different size MicroCentric collet for your next job on the machine.

Installation

Before installing the MicroCentric quick change collet system on your machine, it is recommended that the collet tubes be removed from the machine, and the spindles thoroughly cleaned.

1. Choose the appropriate size MicroCentric collet for your first set-up, and install the collets into the collet bodies. This is accomplished be inserting the collet onto the pins of the changing fixture, collapsing the collet, and inserting it into the collet body. Releasing the changing fixture engages the collet into the body. Refer to the section on collet changeover for additional information.

2. Next install the MicroCentric collet assembly (collet body and collet), the same way you would normally install solid or master collets. For some machines the collet assembly would be threaded onto the collet tube on the bench, and the collet tube with collet assembly installed into the spindle. On other machines, the collet tube is installed into the spindle, and the collet assembly is then threaded onto the collet tube.

3. Once the collet assembly has been securely threaded onto the collet tube and inserted into the spindle, collet tension is set. MicroCentric collets generate higher chucking force than solid or master collets due to the parallel clamping design of the MicroCentric system. For this reason, it is recommended that you initially set collet tension slightly less than you would normally set tension with solid or master collets.

Caution: Correct collet tension can only be determined by trial end error during actual operation of your machine. It is recommended that you set tension to the minimum value, plus a slight safety factor, where you do not experience push-back. This will not only prevent damage to the MicroCentric collet system, but will minimize wear on the collet closing mechanism on your machine.

4. Repeat this procedure for the other spindles on the machine.

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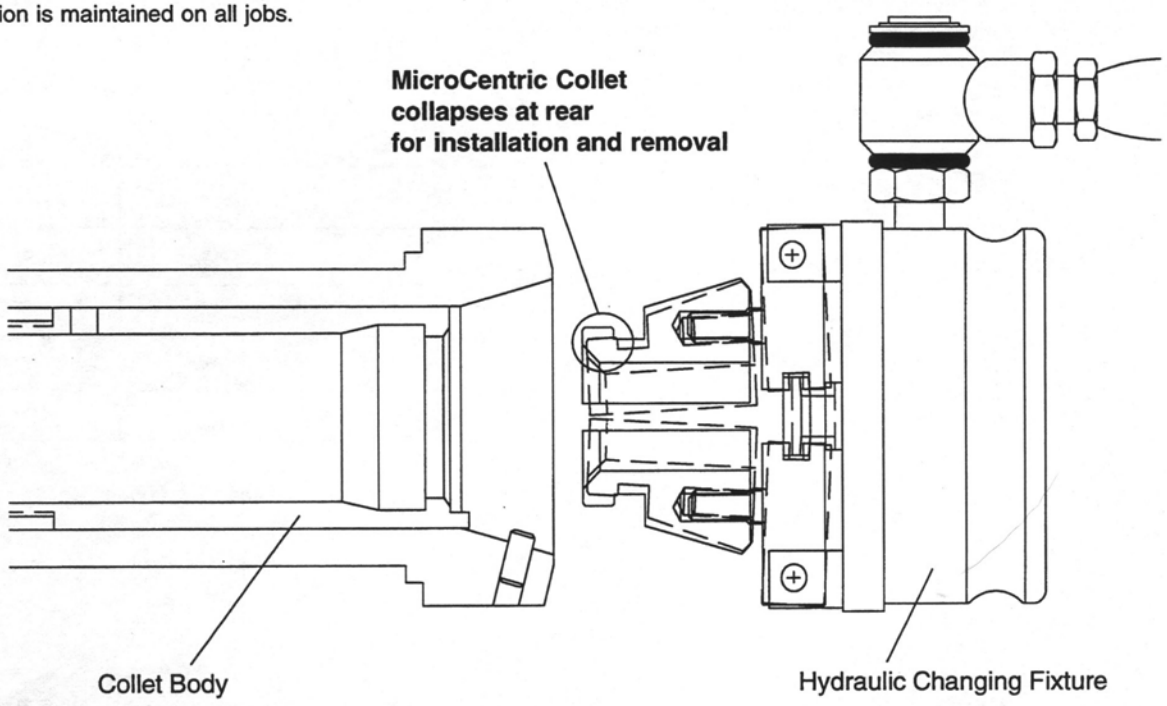
Collet Changeover

One of the features of the MicroCentric collet system is that tension adjustment is not necessary during changeover. Once collet tension has been set, MicroCentric collets are changed and the same collet tension is maintained on all jobs.



Collet Removal

1. With the changing fixture in its open position, insert the pins on the changing fixture's jaws into the holes on the face of the collet. The head of the pins should seat on the face of the collet.

2. Actuate the changing fixture to collapse the MicroCentric collet.

3. Remove the MicroCentric collet from the spindle. If the collet does not disengage from the spindle, the collet is not fully collapsing. First make sure the changing fixture is operating properly (check pressure setting on hydraulic units) and is correctly inserted into the collet. Also check that chips which may have accumulated in the spindle are not preventing the collet from collapsing fully. Never force the collet out of the spindle since damage to the collet and/or changing fixture may result.

4. After the collet has been removed from the spindle, open the changing fixture to release the collet. Remove the collet from the fixture.

Collet Installation

1. With the changing fixture in the open position, insert the pins into the holes on the face of the MicroCentric collet. The head on the pins should seat on the face of the collet.

2. Actuate the changing fixture to collapse the MicroCentric collet. The collet is fully collapsed when the rear of all segments are touching.

3. With the collet fully collapsed, insert the collet into the spindle. Make certain to align the slot on the O.D. of the collet with the key in the collet seat.

4. While holding the collet firmly in the collet seat, release the collet to engage it into the collet body in the machine spindle.

5. Remove the changing fixture from the collet.

6. Insert a workpiece or nominal size test bar to check that the collet is clamping properly.

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Caution: On some multiple spindle automatics, the collet tube is loose and free to push back when there is no tension on the collet. On these machines it is necessary to construct a wedge (usually made from wood) to prevent the collet tube from pushing back while installing a MicroCentric collet. After the collet is removed from the spindle, the wedge is inserted behind the collet tube while the next size MicroCentric collet is installed. The wedge is to be removed after the collet has been installed.

Changing Fixture Operation

Manual Fixture

The manual collet changing fixture is operated by turning the hand wheel clockwise to collapse the collet, and counter-clockwise to release the collet.

Hydraulic Fixture

The hydraulic fixture is operated by the EN162 air driven hydraulic pump.

It is important that all hydraulic connections are secured properly to prevent leakage which will result in loss of hydraulic pressure.

Actuating the EN162 pump will collapse the collet. Releasing the air pressure in the pump will release the collet. The EN162 pump is preset to generate the correct hydraulic pressure for the changing fixture supplied for your machine. When using a different model changing fixture it is important to reset the pressure according to the following table. Refer to the operating and maintenance manual supplied with the pump unit for further information.

Caution: Do not exceed the hydraulic pressure recommended for your changing fixture.

Hydraulic Pressure Recommendations

Fixture Model	Pressure Range Min	Max
WH19 *	500	600
WH25	350	450
WH32	350	450
WH42	450	550
WH50	500	600
WH57	500	600
WH67	500	600
WH90	600	750
WH100	600	750

** WH19 fixture requires more hydraulic pressure than larger units because of a smaller cylinder.*

Collet & System Maintenance

The vulcanized rubber on the MicroCentric system will keep the machine spindles cleaner than with solid or master collets. However, it is recommended that on long running jobs a MicroCentric collet be periodically removed to determine whether there is any clip buildup beginning in the spindles. If excessive buildup is noticed, each collet should be removed from its' spindle for cleaning. By allocating time for this type of maintenance, the time for collet change will be kept to a minimum when the job is finished and changeover is required.

When MicroCentric collets are not in use on the machine, they should be lubricated and wrapped to prevent oxidation during storage. Applying a petroleum jelly to the vulcanized rubber during storage will maximize the performance and long term life of the MicroCentric Collet.

Caution: Do not degrease MicroCentric collets in solvents since the rubber will become dry and brittle, and is then subject to failure.

MicroCentric collet vulcanizing fixtures are designed to minimize the chance of the rubber becoming abraded or damaged by chips during use. However, if the rubber on a collet becomes worn, damaged, or torn it can be revulcanized. Contact your MicroCentric distributor, or our sales department for more information.

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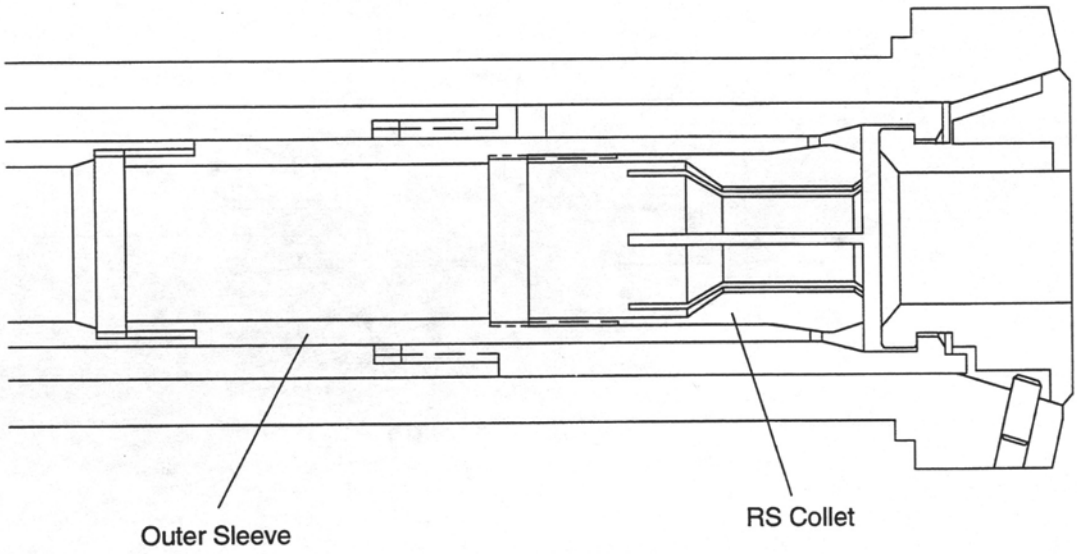
RS Adjustable Feed Collets



The System

MicroCentric RS feed collets are designed to replace conventional feed fingers and pushers on your multiple spindle automatic without changes or modifications.

The system consists of an RS collet and outer sleeve, which thread onto your feed tubes. The RS collet is changed and adjusted with a specially designed wrench. The wrench is engaged onto the RS collet in order to thread the RS collet into the outer sleeve.

Installation

Remove the feed tubes from the machine spindles and clean them prior to installing the RS feed collet system.

1. Thread the outer sleeve onto the feed tube. This is usually done with the feed tube held in a vise.

2. Select the appropriate size RS collet for your first job, and insert it into the outer sleeve, turning it clockwise to engage the thread. Thread the RS collet until the three alignment pins begin to contact the outer sleeve.

3. Engage the Adjusting Wrench onto the RS collet.

Caution: The three segments on the RS collet with alignment pins must be engaged by the adjusting wrench.

4. With the adjusting wrench engaged onto the RS collet, continue threading the collet into the outer sleeve (turn wrench clockwise) until the scribed line on the RS collet lines up with the number one (#1) on the reference scale of the outer sleeve.

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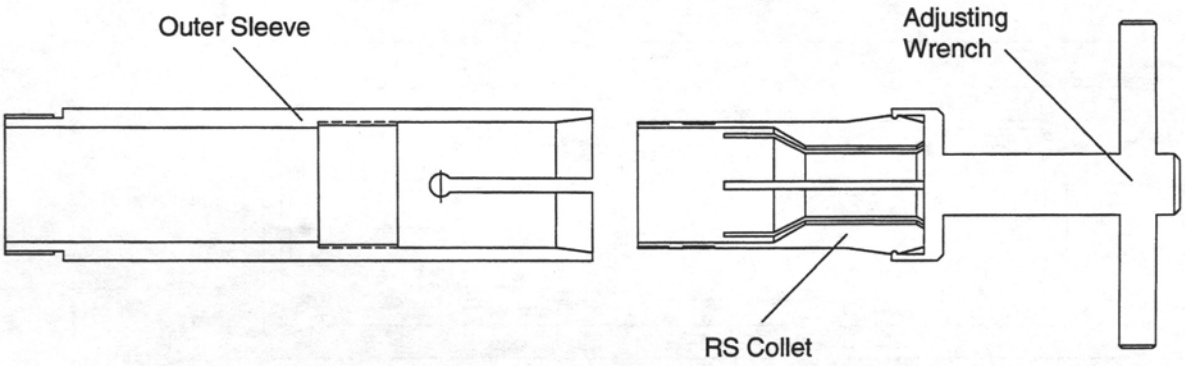

Tension Setting

1. Feed tension of an RS collet is adjusted by threading or unthreading the collet in the outer sleeve. Threading the RS collet further into the outer sleeve (clockwise) increases feed tension. Threading the RS collet out of the outer sleeve (counterclockwise) reduces feed tension.

2. Feed tension is usually adjusted by feel. Tension setting gauges are available to quantify tension adjustment. Contact your MicroCentric dealer or our sales department for further information.

3. Once the correct tension has been set, note the reading on the reference scale of the outer sleeve. Use this as a guideline to set tension for the RS collets on the other spindles.

Caution: Use the scale on the outer sleeve only as a reference for tension setting. Actual tension should be set either by feel or with a tension setting gauge.

Tension Adjustment

As the RS collet wears tension adjustment will become necessary. The feed tube should be removed from the machine spindle, and set in a vise similar to the installation procedure for the feed collet system.

1. Engage the adjusting wrench onto the RS collet.

Caution: The three segments on the RS collet with alignment pins must be engaged by the adjusting wrench.

2. With the adjusting wrench engaged onto the RS collet, thread the RS collet further into the outer sleeve (turn wrench clockwise) until correct feed tension is achieved.

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