

## RINGTECH SERVICE MAINTENANCE

Machines: RTL-2000 RTL-3000 RTL-4000

Procedure: Remove & Replace Spindle Encoder Belt

### *Remove Left machine cover.*

The cover is held by 2 M5 screws on the left side panel and 5 nuts on the inside lip. (8mm hex)

Remove the cover by lifting up and over the hydraulic gages and bar feed assembly.

### *Over view of the hydraulic collet closer.*

The hydraulic collet closer has 2 clear hoses on the bottom of the closer 1 is for coolant return the other is for oil return, they are held by hose clamps.

The bracket that they pass through is an anti-rotation bracket, this bracket is secured to the machine with 2 M8 SHCS.

There are 2 hydraulic lines feeding oil to the closer on the left of the cylinder.

Mark them 1 & 2 to aid reassembly

### **With the power off to the machine.**

Loose the hydraulic hoses, loosen and remove the 2 clear hoses and unscrew the anti-rotation bracket.

Mark the location of the hydraulic hoses and undo the connections.

### *Main motor belt.*

The main motor is held in place to the adjuster plate by 4 bolts, the adjuster plate has 2 screws that provide screw adjustment of the belt tension. (See section 10 of the machine Manual)

Loosen the 2 adjuster bolts. Loosen the 4 motor plate bolts. **(Not the bolts that mount the motor to the adjuster plate.)**

Rotate the main motor until the belt can be taken off the pulley.

### *Encoder belt replacement.*

Please see section 10 of the machine manual for adjustment of the encoder belt.

Loosen the encoder retaining bolts to allow adjustment of the new belt.

The belt has to pass over the main drive belt and then over the collet closer assembly.

The belt is long enough to allow this.

Replace the old belt with the new belt in the reverse process of taking the old belt off.

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### *Re-assembly.*

Rotate the main spindle to place the motor power belt back on the pulley.

Adjust the tension on the belt and check that the motor is in alignment with the belt.

Adjust the tension on the encoder belt, there should be give of about ¼" (6mm) on the belt when pinched in the center of the belt.

Re-attach the anti-rotation bracket and the 2 clear hoses. Tighten the hose clamps.

Re-attach the 2 hydraulic hoses.

Power up the machine and using MDI set the spindle rpm at 200rpm (S200 M3)

Check rotation of the encoder belt and main spindle belt. Check clearance and noise.

Let run for 5 minutes. Check JOG screen for spindle rotation feedback the rpm should be 200rpm.

Increase spindle rpm in 500rpm increments up to 4000rpm check for noise from the encoder bearing and belt.

Stop the spindle, Activate the collet closer, check for leaks on the hoses.

If all is satisfactory replace the machine cover. (Place the cover on and add a nut to the center bolt on the inside top of the cover.)

Continue adding nuts, place 2 side screws in to threaded holes and then tighten the 5 nuts.