

MAINTAIN YOUR OLDER OMNITURN



If you have had your OmniTurn for a number of years you might want to take a few hours and go over your investment to make sure it is running at its best. There are a number of simple items to check and adjust that can effect the system's performance. OmniTurn's technical support staff is always on hand to help with either walking you through procedures over the phone or arranging a technician to perform the work

for you. Here is a list of items that should be checked periodically:

- **Clean and lubricate linear ways and ball screws:** Every system that generate chips should be cleaned once in a while, OmniTurn is not an exception. A few minutes every week or at least once a month you should clean away any buildup of chips and junk from the system. These few minutes

will prevent chips from building up causing miss-positioning and servo errors. (30 minutes) (Monthly if using water soluble oil, Semi- Annually if using oil coolant)



- **Balance Servo amps:** Servo amps and motors are calibrated at the factory. Over time the tachometer and armature slowly change. Rebalancing this loop will help keep your motion smooth and arcs more accurate. The

- **Clean floppy disk drive:** The dirt and oily air of a shop will eventually work its way into the floppy disk drive. It take only a few minutes to clean the drive and protect your



procedures for this operation are posted on the web site under technical support. All you will need is a simple electrical meter and a small flat screw driver. The documentation is simple to follow. Give us a call if you get confused. (15 minutes) (Semi-Annually)

- **Clean and adjust the monitor:** Of all the maintenance procedures, this is the one that give the most immediate noticeable results. Just clean the screen. The screen acts like a dust magnet in the control. Since it has a static charge the oil and dust in the air are attracted to the face of the screen. Cleaning it off and adjusting the pots on the monitor for brightness, sharpness, focus, and contrast will make your control feel years younger. (5 minutes) (Semi-Annually)

backup disk in the drive. Stop by a Radio Shack or computer store and pick up a Cleaner kit. (5 minutes) (Semi-Annually)

- **Replace Pneumatic regulator/filter element or assembly:** keeping dirt out of the pneumatic valves used for the collet closer and spindle purge can only be a good thing. (5 minutes) (Semi-Annually or as needed)

- **Replace thrust bearings:** The axis thrust bearings are important in getting good finishes and maintaining close tolerances. The bearing on each axis that does this is located in a block on the motor end of the axis. The ball screw goes through this bearing and is used to keep the ball screw in location. If the bearing breaks down, the ball screw can move





axially. If the bearing is not completely blown, just damaged, it will create bad finishes. The thrust bearing is replaced as a unit, it does not require a great deal of skill. The pre-load is administered by a spacer, no special tools are required. (15 minutes per axis) (Semi-Annually)

- **Encoder pulley and belts:** The encoder belt and pulleys are subject to wear. Older systems have plastic pulleys that have teeth that wear off. Cutting fluid has been found to effect the teeth of the belts. OmniTurn now supplies metal pulleys that will last much longer. Check these items before you run into a threading issue. (5 minutes) (monthly)

- **Spindle drive belt and tension:** While checking the belt and pulley condition, make sure the pulley on the motor lines up

with the spindle pulley. Sometimes they move on the shaft and cause excessive belt wear. (5 minutes) (Semi-Annually)



- **Inverter output RPM at 0 and max rpm:** Changes can slowly occur to the settings for spindle RPM outputs. The changes can come from the motion control card in the computer. A small screw driver and spindle tachometer are all you need to tackle this. Check the website under technical support for making these adjustments. (5 minutes) Another issue with attachment



machines is the location of the Vari-Shiv belt drive intermediate shaft. Speed changes will occur if the shaft drops lower. Either readjust the location or consider replacing the assembly with a direct drive belt and pulley kit. (Annually)

- **Braking resistor condition:** The braking resistor dissipates a great deal of heat over the years. The more you stop and start the spindle, the more energy it has to dissipate. Check to make sure the resistor is not cracked or breaking. If you have to replace the unit, check into larger resistors from OmniTurn. The larger the resistor, the more aggressive you can be with spindle stopping and starting. (2 minutes) (monthly)

- **Adjust spindle drive Accell and Decel rates:** This check goes with the brake resistor check. The acceleration and deceleration of the spindle drive is set with parameters in the spindle drive (2 and 5 hp analog spindle drives). These parameters can be adjusted by the end user as needed. Some times when a part cycle is very short or the mass of a work holding device is large we have to adjust the changes in spindle speed to be made more slowly. Otherwise the inverter faults out. In most cases this parameter is never adjusted back to the more aggressive possibilities with other types of work. You might want to learn how to adjust these settings yourself so you can get the most out of your

system. The worst case is you will set the parameters to short. The drive will protect itself and shut down. (10 minutes) (Annually)

- **Check axis motor cables, no cracks or breaks:** Unplug the axis motor cables



from the control and make sure there are no cracks that will allow coolant to enter the cable. If the outside jacket is degrading it is possible to replace it in the field. Contact technical support for the jackets and tools required to remove the pins for the cable end. (10 minutes to replace the cable jacket, each.) (Monthly)

- **Replace X axis brake bumper:** The GT-75's and GT-Jr's have pneumatic brakes on the X axis ball screw. When the servos are turned off a small spring loaded bumper is pressed against the motor/ballscrew coupling. With time the bumper wears out and the slide and drop when the servos are turned off. This is very simple to replace. (5 minutes) (Semi- Annually)

