PREVENTIVE MAINTENANCE

This is only a guide. Actual production conditions may require more or less preventive maintenance. A good maintenance program requires the cooperation of all. Preventive maintenance can become a cost savings measure by reducing “down time”, rejected parts, and avoiding mechanical failures.

OPERATORS CARE OF THE MACHINE:

1. Check lube oil in sight glass at the beginning of each shift. Fill to maximum capacity.

2. Oil all of the oil fittings with the oil gun at the beginning of every shift.

3. At the beginning of each shift, check to be sure that there is adequate coolant flow to all of the tooling cutting edges and coolant flow is directed away from the work spindles.

4. Wipe the bars clean of dirt and grit before leading them into the machine. Wipe with an oily rag to reduce noise and load on the feed mechanism.

5. Be sure that both ends of the bars are chamfered before loading them into the machine for easier entry into the feed fingers and collets (chucks).

6. At the end of each shift, enter the maintenance mode or press an E-STOP, and wipe or brush all chips and grit away from the slides, gibs, and tool holders. Do not use an air hose! High pressure air is dangerous and drives the grit into the slides, gibs, and other mechanisms, which prevents proper operation and may shorten the life of certain components.

7. NEVER ATTEMPT TO FORCE THE MACHINE TO OPERATE IF IT DOES NOT CYCLE PROPERLY. In case of hang up, twisted cam shaft, or any other malfunction, turn the machine off and notify your supervisor.

8. Check collet (chuck) adjustment when loading new bars and re-adjust if necessary. Always check for variation in bar diameter before loading.

9. Check condition of cam rolls and pins each time the cams are changed.

10. Keep the machine and floor area around the machine free from accumulated oil, dirt, and other debris.

11. You should perform a weekly check of the feed finger tension. (See following page for chart):

Feed Finger Tension vs. Stock Size

Stock Size (inches)	Tension (lbs.)
3/16	30
7/32	40
1/ 4	50
5/16	66
3/8	72
7/16	78
1/ 2	87
9/16	94
5/8	98
11/16	105
3/ 4	113
13/16	124
7/8	128

A general guideline for brass bar stock is the feed finger tension is approximately 25% less than the steel tension listed in the table.

A general guideline for aluminum bar stock is the feed finger tension is approximately 50% less than the steel tension listed in the table.

DAILY MAINTENANCE

CHECK:

1. Lubricating oil level in lube pump reservoir.

2. Coolant level in the machine pan reservoir.

3. Coolant intake pipe (or pump) screen, clean if necessary.

4. Condition and alignment of the stock reel and the stock reel support. (THIS SHOULD BE LAGGED TO THE FLOOR).

5. Lubricating oil delivery to the work spindle bearings.

MONTHLY MAINTENANCE

Remove the following items from the revolving head, clean thoroughly, inspect and replace (if necessary):

1. Collets (chucks)
2. Feed tubes
3. Feed fingers (check for proper tension)
4. Inner spindles

Inspect condition/wear of :

1. Outer spindles and clean internally with a boiler brush
2. Stop screws
3. Cross slides and gib adjustments
4. Stock reel and stand
5. Locating lever (to assure it is locking correctly and that the roll is turning)
6. Chuck slides, rolls, and pins
7. Cam levers, rolls, and pins
8. Spanner nuts
9. Bearings
10. Gears (tooth wear and mounting)
11. Shafts (Check for a twisted front cam shaft. The locating lever must clear the locating blocks on index and make contact on the angle side first when locking, with approximately 0.012” push back).
12. Locking nuts and set screws on the spindle change gear shafts
13. Check the revolving head for end play and adjust the thrust ring if necessary

Check the condition and the torque settings of the Servo couplings:

Cam Axis Servo Motor Coupling	221 in-lbs
Main Spindle Servo Motor Coupling	221 in-lbs
Threading Spindle Servo Motor Coupling	53 in-lbs
Rear Timing Coupling	170 in-lbs
Absolute Encoder Coupling	18 in-lbs

QUARTERLY MAINTENANCE

1. Remove coolant from the pan and thoroughly clean the pan of sediment and fine chips. Add new coolant.

2. On long runs, where the cams are seldom changed, remove the cross slides and clean, then check for proper gib adjustments.

3. The plugs on the bottom of the worm gear housings should be removed and the housing flushed with OSHA approved solvent. Replace the plugs and fill with fresh oil.

SEMI-ANNUAL MAINTENANCE

1. Drain, clean, flush, and refill the main lube pump reservoir. Check the condition of the filter.

2. Check for excessive end play of the revolving head.

3. Check for excessive looseness of the work spindles.

4. Check for excessive looseness of the tool spindles.

5. Check for excessive end play of the thrust bearings.

6. Check general condition of the electrical controls: switches, solenoid valves, wiring, panel box, cables, motors, etc. (electrical maintenance should be performed by authorized personnel only).

7. Check general condition of any pneumatics: air lines, valves, cylinder, fitting, etc.

ANNUAL MAINTENANCE

1. Thoroughly clean and inspect the over-all condition of the machine.

2. Check alignment of tool spindles to the work spindles.

3. Check any special attachments for alignment to the work spindles.

4. Check for cracked or broken cross slides.

5. Check the condition of all of the levers, rolls, and pins.

6. Check the condition of the chip conveyor.

7. Check the condition of the lubricating and the coolant systems:
   - Lube pump
   - Coolant pump
   - Lube lines and meter units
   - Coolant screens
   - Coolant hoses and valves