

3D

INSPECTION SERVICES & PREVENTIVE MAINTENANCE

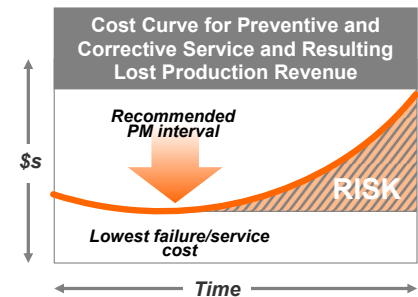
Mazak

OPTONICS CORP.

Preventive Maintenance can dramatically reduce equipment failures and loss of production revenue.



The Preventive Maintenance schedules recommended by OEMs are calculated based on a comprehensive analysis of machine performance in the production environment. They take into consideration the life expectancies of all mechanisms and components, and apply a special focus on consumable items.



There is a direct correlation between the value of parts produced and lost production revenue.

An effectively managed Preventive Maintenance program delivers the following benefits:

- Increase confidence in production reliability
- Reduce the total cost of operating your assets
- Prevent labor and material costs resulting from unscheduled equipment failures, as well as the resulting loss of production revenue
- Maximize production consistency & quality, and minimize scrap
- Extend the asset life of your machine investment

INSPECTION SERVICES

PRICE SCHEDULE

Machine	Inspection
FG	\$2,250
SG/SGU	\$2,250

A full report of the services performed, including any potential recommended repairs and/or adjustments, will be provided upon completion.

FG

- Visual condition/machine cleanliness
- Backup all parameters
- Teach-Box Operation
- Side-blow operation
- Rotational axis set-up
– L1 - angle A, L2 - angle B
- Cable and connector condition
- Safety mechanisms and interlocks
- Machine level and alignment
- Chuck centering
- Chuck jaw inspection
- Touch Probe calibration
- Chip conveyor adjustment
- Exhaust duct inspection
- Loader/unloader inspection
- Profiler calibration
- Machine lighting
- Way Covers
- Lubrication systems
- Oil leaks
- Vacuum integrity
- High voltage tests/calibration
- Verify gas circuit operation
- Optical path bellows
- Ball screw covers
- Laser gas supply line and external circuits for leakage
- Chiller

SG/SGU

- Visual condition/machine cleanliness
- Backup all parameters
- Teach-Box Operation
- Side-blow operation
- Rotational axis set-up
– L1 - angle A, L2 - angle B, and C-axis
- X-Y accuracy by running coupons
– Verify axis positioning and indentify any potential mechanical and/or servo related issues. Examples of mechanical components include ball screws, thrust and support bearings, etc.
- Cable and connector condition
- Safety mechanisms and interlocks
- Machine level and alignment
- Chip conveyor adjustment
- Profiler calibration
- Machine lighting
- Way Covers
- Lubrication systems
- Oil leaks
- Vacuum integrity
- High voltage tests/calibration
- Verify gas circuit operation
- Optical path bellows
- Ball screw covers
- Laser gas supply line and external circuits for leakage
- Chiller

Fabri Gear 150



FG

- Mirror cleanings
- Optic and O-ring replacement (for T8 resonators)
- Laser refurbishment

Each of these services include:

- Backup all parameters and verify software revision levels
- Mirror alignments
- Rotational axis adjustments
 - L1 - Rotation A, L2 - Rotation B, and C axis
- Chuck seal lubrication
- Repair chuck jaws
- Chuck centering
- Chuck positioning
- Touch probe calibration
- Set work support positions
- Clean spark trap for exhaust
- Clean pusher
- Machine lubrication
- Chip conveyor adjustment
- Calibrate profiler
- Inspect/Replace Optical Bellows
- Blow out chiller condenser and filters
- Replace pump seal as needed
- Replace air filters as needed
- Software updates
- This agreement does not include the following items:
 - Parts
 - Turbo and Vacuum Pump Oil changes
 - Chiller flushing

These items must be maintained by the customer as per the their respective published schedules.

SG/SGU

- Mirror cleanings
- Optic and O-ring replacement (for T8 resonators)
- Laser refurbishment

Each of these services include:

- Backup all parameters and verify software revision levels
- Mirror alignments
- Rotational axis adjustments
 - L1 - Rotation A, L2 - Rotation B, and L3 - C axis
- Verification of machine level
 - Re-leveling will be performed as indicated
- Lubrication
- Chip conveyor adjustment
- Calibrate profiler
- Inspect/Replace Optical Bellows
- Blow out chiller condenser and filters
- Replace pump seal as needed
- Replace air filters as needed
- Software updates
- FMS and LUL material handling
 - Lubrication
 - Replace air filters as needed
- This agreement does not include the following items:
 - Parts
 - Turbo and Vacuum Pump Oil changes
 - Chiller flushing

These items must be maintained by the customer as per the their respective published schedules.

PREVENTIVE MAINTENANCE			
PRICE SCHEDULE			
Machine	Mirrors	Optics & O-Rings	Refurbish
FG 2.5kW	\$4,000	\$4,500	\$4,750
FG 4.0kW	\$4,000	\$4,750	\$5,000
SG 2.0kW	\$3,500	-	\$3,750
SG/SGU 1.5kW	\$3,750	\$4,250	\$4,500
SG/SGU 2.5kW	\$3,750	\$4,500	\$4,750
SG/SGU 4.0kW	\$3,750	\$4,750	\$5,000

OTHER MAZAK SERVICES

Mazak Optonics offers a complete range of technical services not noted in this brochure including:

- Resonator Super Clean
- Resonator Super Overhaul
- Machine Relocation
- Prep for removal
- Re-Installation
- FG Re-Leveling

Please call the Mazak Customer Support Department at 847.252.4600 or e-mail service@mazaklaser.com for further details.

All prices subject to change without notice .



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