HUFFMAN®
A Contour Precision Group Company

# Preventive Maintenance Checklist

## HP Series Laser Systems (HP-205, HP-115CL and HP-244)


**Customer:** _____ **Work Order No.** _____

**Model N°** _____ **Date** _____

Form - Preventive Maintenance Laser-Rev 2 0313

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## 1. Perform Initial Baseline Tests.

Vision Calibration _____

Beam Alignment _____

Power Check _____

## 2. Inspect Waycovers.

X-Axis = _____

Y-Axis = _____

Z-Axis = _____

## 3. Replace Axes Timing Belts and Inspect Pulleys/Couplings for Wear or Damage, Annually.

X-Axis = _____ A-Axis = _____

Y-Axis = _____ B-Axis = _____

Z-Axis = _____ C-Axis = _____

## 4. Clean and Check Wear on Ballscrews.

X-Axis = _____ A-Axis = _____

Y-Axis = _____ B-Axis = _____

Z-Axis = _____ C-Axis = _____

## 5. Clean and Check Wear on Rails.

X-Axis = _____ A-Axis = _____

Y-Axis = _____ B-Axis = _____

Z-Axis = _____ C-Axis = _____

## 6. Inspect Lubrication Lines, Fittings and Delivery System.

_____

_____

_____

## 7. Check Lubrication Timers for Proper Setting and Record Settings.

Pressure at Lube Unit = _____ Target is 30 psi (lbs./in²) _____

In Cycle Timer = _____

## 8. Measure Linear Axis Backlash & Record Results.

X Axis error = _____ U Axis error = _____

Y Axis error = _____ V Axis error = _____

Z Axis error = _____

## 9. Measure and Adjust Rotary Axis Backlash and Record Results After Adjustment.

A Axis error = _____ @ _____ inches from centerline.

B Axis error = _____ @ _____ inches from centerline.

C Axis error = _____ @ _____ inches from centerline.

## 10. Inspect Counterweight, Guide Shafts, Chains, Sprockets and Bearings.

Set Pressure (target 90psi) = _____ Working Pressure (target 80 -100psi) = _____

_____

_____

**11. Check Oil Level and Quality of Rotary Axes.**

**12. Check Voltage Levels on Line, 24v Power Supply & Distribution Transformers.**

Bus L1, L2 = _____ Bus L1, Gnd = _____

Bus L3, L2 = _____ Bus L2, Gnd = _____

Bus L1, L3 = _____ Bus L3, Gnd = _____

24 V. PS = _____

Dist. trans. per schematic = _____

**13. Check Function of Door Switches and /or Interlocks, Enclosure Safety Mats & Two hand Control.**

**14. Check Worklights, Stack Lights and Operator Panel Lamps.**

**15. Check Door Operation and Clean Rails/ Hinges.**

**16. Check Water Cooling Circuit(s).**

| | | |
|---|---|---|
| Chiller Water Level OK? | ☐ | |
| Elec. Cabinet Fan Operating? | ☐ | |
| Check AC Voltage | ☐ | |
| Check 24 V | ☐ | |
| Set temperature: | ☐ | |
| Operating Temperature: | ☐ | |
| Check / Clean Filter | ☐ | |
| Replace DI Cartridge (IPG Only) | ☐ | |
| Flush & Change Water | ☐ | |

**17. Check Air Conditioner / Heat Exchanger.**

Set Temperature: _____ Working Temperature _____

Clean Filter: _____ Inspect and Clean Coils if Accessible: _____

Cabinet Temperature _____

**18. Check for Proper Function of Pushbuttons and Control Knobs.**

**19. Check for Damaged Doors and Windows.**

**20. Clean Beam Delivery Optics ($CO_2$ Only)**
**Check Fiber Shielding Condition (IPG Only)**
Check air purge (if present)

**21. Perform Laser Beam Alignment**

**22. Check Laser Power Calibration**

**23. Perform Camera and Vision System Checks**
Check Camera Alignment
Run Vision Calibration Program

**24. Calibrate Machine and Record Offsets.**

| | | | | |
|---|---|---|---|---|
| X Axis: Old Offset | | New Offset | | |
| Y Axis: Old Offset | | New Offset | | |
| Z Axis: Old Offset | | New Offset | | |
| A Axis: Old Offset | | New Offset | | |
| B Axis: Old Offset | | New Offset | | |
| C Axis: Old Offset | | New Offset | | |

**25. Check for Proper Operation of Overtravel Switches.**

| | | | |
|---|---|---|---|
| X-Axis = | | A-Axis = | |
| Y-Axis = | | B-Axis = | |
| Z-Axis = | | C-Axis = | |

**26. Verify Analog phone Line is Connected to Modem (Test if Possible).**

**27. Powder Delivery System**
Change Lines
Measure Powder Flow
Check Heater Operation

**Huffman Representative** **Customer Representative**

Comments:

***Attach additional notes or comments if needed.***