

# ***HyIntensity Fiber Laser<sup>™</sup> Preventative Maintenance Schedule***

## **Field Service Bulletin**

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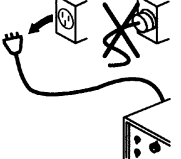
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		<b>DANGER!</b> <b>ELECTRIC SHOCK CAN KILL</b>
		<p><b>Disconnect electrical power before performing any maintenance.</b></p> <p><b>All work requiring removal of the power supply cover must be performed by a qualified technician.</b></p> <p><b>See the Safety section of the system's manual for more safety precautions.</b></p>

## Introduction

### Purpose

This Field Service Bulletin provides the preventative maintenance schedule for the HyIntensity Fiber Laser (HFL010, HFL015, HFL020, and HFL030). For more information on how to perform these tasks, see the *HyIntensity Fiber Laser Instruction Manual* (807090).

## Preventative maintenance master schedule HyIntensity Fiber Laser

### Daily

- Verify proper inlet gas pressure.
  - Oxygen – 800 kPa/8 bar (116 psi)
  - Nitrogen – 2.7 MPa/27 bar (400 psi)
  - Air – 900 kPa/9 bar (130 psi)
- Inspect focus lens and protective window, and clean or replace as needed.
- Calibrate capacitive height sensor.
- Inspect nozzle and replace as needed.
- Center beam using the “tape shot” method.

### Weekly

Week	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1												
2												
3												
4												
5												

- Clean focus lens and protective window.

## Preventative Maintenance Schedule

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- Verify laser stack light is working properly.
  - Green – Power on. Safe.
  - Yellow – Safety switch is on. The laser may come on at any time. All safety precautions must be followed.
  - Red – Laser is on. All safety precautions must be followed.
- Verify chiller coolant level.
- Verify chiller flow rate at the chiller return flow.
  - HFL010 – 20L/min (5 g/min) ± 10%.
  - HFL015, HFL020, and HFL030 – 40 L/min (10 g/min) ± 10%.
- Verify chiller water pressure at the chiller output flow is not higher than 5.4 bar (80 psi).
- Verify chiller temperature is 25° C ± 5° C (77° F ± 9° F).
 

**Note:** Temperature must be non-condensing. Some climates require a higher chiller temperature.
- Verify air pressure on the gas console regulator is 0.5 MPa ± 0.05 MPa (75 psi ± 7.5 psi).
- Inspect gas console air filter and bowl, and drain if water is visible.

### Semi-annually

Year	1st Service	2nd Service

- Replace chiller coolant filter.
- Replace gas console air filter.
- Verify fiber laser water flow rates are correct.
  - Process fiber flow – 0.8 L/min (0.21 g/min)
  - Fiber coupling unit flow rate – 1.5 L/min (0.4 g/min)
  - Input flow rate
    - HFL010 – 20 L/min (5g /min)
    - HFL015, HFL020, HFL030 – 36 L/min (9.51 g/min)
- Inspect laser cabinet for water and dust.
- Inspect laser cabinet door seals.

### Annually

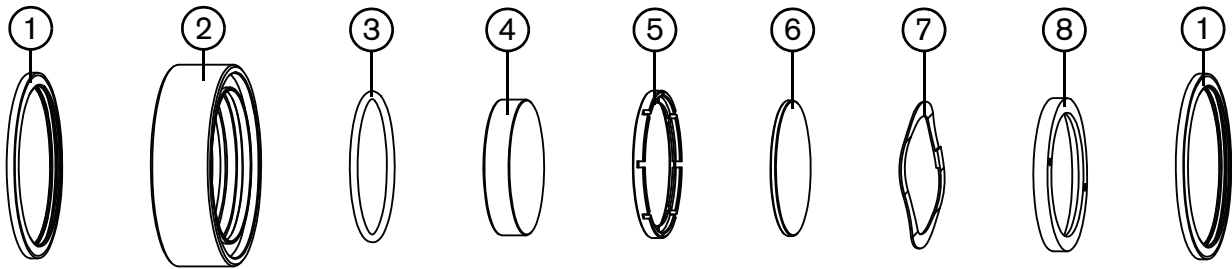
Year									
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- Replace chiller coolant.

## Recommended spare parts

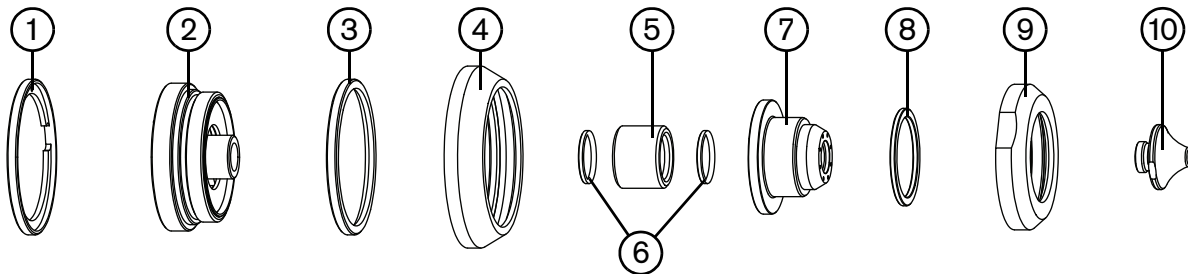
Part Number	Description	Quantity
104558	Washer: upper guard	1
104559	Washer: lower guard	1
228802	Guard	1
104565	Bushing; lower guard	1
026913	O-ring; lower guard bushing	2
104516	Nozzle adapter	1
104517	Washer: nozzle adapter	1
104553	Bushing; upper guard	1
026912	O-ring; upper guard bushing	2
127275	Variseal	2
026910	O-ring; lens holder	2
104656	Vented lens holder	1
021105	Lens	2
021108	Window	3
127359	Wave ring	1
104567	Side jet tube	1
015760	Side jet fitting	1
021096	Nozzle 1.0	5
021097	Nozzle 1.2	5
021098	Nozzle 1.5	5
021099	Nozzle 2.0	5
021100	Nozzle 2.5	5
021101	Nozzle 3.0	5
021102	Nozzle 1.2 D	5
021103	Nozzle 1.5 D	5
021104	Nozzle 2.0 D	5
021106	Nozzle 2.5 D	5
127306	Lens tissue	2
027991	Lens wipes	2
021112	Lens cleaning solution	2
028872	Hypertherm coolant	1
011110	Air filter	1

**Lens assembly parts**



Item	Part Number	Description	Quantity
1	127275	Seal: 1.875 inch OD variseal	2
2	104540	Lens holder: LF150 150 mm EFL/35 mm diameter/red	1
3	026910	O-ring: silicone 70 duro 35 mm x 2 mm	1
4	021105	Lens: 150 mm EFL/35 mm OD fused silica plano-convex	1
5	104519	Washer: LF150 lens holder (for use without window)	1
	104656	Washer: LF150 lens holder (for use with the window)	1
6	021108	Window: 35 mm OD x 1.5 mm (TA/R 1070 nm)	1
7	127293	Wave ring: 1.5 inch OD stainless steel (for use without the window)	1
	127359	Wave ring: 1.5 inch OD stainless steel (for use with the window)	1
8	104542	Retaining ring: LF150	1

**LF150 cutting head – lower parts**



Item	Part Number	Description	Quantity
1	104558	Washer: upper guard	1
2	228802	Guard	1
3	104559	Washer: lower guard	1
4	104563	Retaining nut	1
5	104565	Bushing	1
6	026913	O-ring	2
7	104516	Nozzle adapter	1
8	104517	Washer: nozzle adapter	1
9	104564	Nozzle adapter retaining nut	1
10	See Recommended spare parts on page 5	Nozzle	1