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# FIELD SERVICE BULLETIN

**DATE ISSUED:** March 26, 2013

**NUMBER:** 693

## Factory Switchover to CoolFlow IGE Corrosion Inhibitor

### PRODUCT

All 80 MHz & 90 MHz Chameleon Series Lasers

### PURPOSE

To inform Field Service Engineers, Representatives, and Coherent Subsidiaries of a change of corrosion inhibitor now applicable to all 80 MHz & 90MHz Chameleon laser systems.

This bulletin also details a step by step process for changing over to CoolFlow IGE within the field network.

This bulletin supersedes FSB 689 'Switching to CoolFlow IGE Corrosion Inhibitor'.

### DESCRIPTION

From 25/02/2013, **ALL** 80 MHz & 90 MHz Chameleon Series Lasers shipped from DPSS Glasgow will be configured for 'Coolflow IGE' (this includes new, advance replacement and customer owned lasers).

CoolFlow IGE is based on ethylene glycol blended with proven corrosion, scale and biological inhibitors.

CoolFlow IGE is supplied pre-mixed, therefore unlike Optishield Plus it does not require to be mixed with distilled water.

A container of CoolFlow IGE will be provided with each laser system and laser head/PSU that ships from DPSS Glasgow (with the exception of some import restriction zones).

There are three sections to this document;

1. **Label fitting instruction.**
2. **Field change over process.**
3. **Parts required.**

## **1.0 Label fitting instruction**

This instruction outlines the application of labels to ensure that the Chameleon laser head and chiller both have a matching coolant type identifier.

A 'CoolFlow' label will be provided with the laser system or laser head/PSU supplied within the shipping crate.

The CoolFlow label must be applied to the Thermotek chiller by Field Service, unless otherwise directed by this FSB.

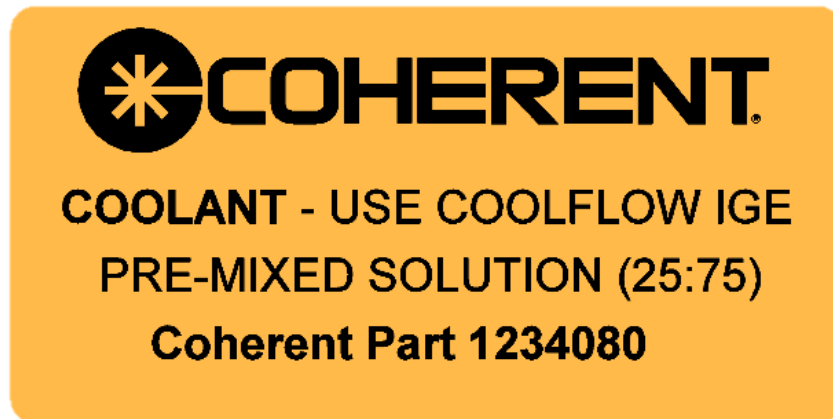


Figure 1 - CoolFlow IGE label

### **1.1 For complete new build laser systems:**

A **NEW** laser system will have a CoolFlow label fitted to the back of the head as indicated in Figure 2.

When un-packing the chiller for the installation, the CoolFlow label provided (Figure 1) should be applied to the Thermotek T255P chiller as indicated in Figure 3.

The “Distilled water only” sticker, if fitted, should be removed from the chiller.



Figure 2 - Positioning of CoolFlow Label on back of laser head



Figure 3 - Positioning of CoolFlow label on Chiller

## **1.2 New Head/PSU only shipments:**

New head/PSU-only systems will have been manufactured using CoolFlow IGE. Verify that the back of the laser head has a Coolflow IGE label attached.

Optishield Plus coolant should **NOT** be used with them.

Field Service must identify if the customers' existing chiller has previously used CoolFlow IGE or Optishield Plus by checking the label applied to the chiller. If there is no label, the chiller can be assumed to be running Optishield Plus. There are now two possible courses of action:

### **1. If the customers' existing chiller has used CoolFlow IGE:**

- No further action should be required. Ensure CoolFlow labels are applied as in section 1.1.

### **2. If the customers' existing chiller has used Optishield Plus:**

- Flush out the chiller and hose assemblies using distilled water. Fill the chiller with distilled water and run in a closed loop (see Un-valved connector tube under 'Parts required' later in this document) for at least 10 minutes, and then discard the water.
- Repeat this process again for at least another 10 minutes.
- Remove any 'coolant type' labels from the chiller.
- Fill the chiller with CoolFlow IGE and apply the label to the chiller as per Figure 3.

### **1.3 Repair systems:**

Repair systems have been converted to use CoolFlow IGE. Verify that the back of the laser head has a Coolflow IGE label attached.

Optishield Plus coolant should **NOT** be used with them.

Field Service must identify if the customers' existing chiller has previously used CoolFlow IGE or Optishield Plus by checking the label applied to the chiller. If there is no label, the chiller can be assumed to be running Optishield Plus.

There are now two possible courses of action:

1. If the customers' existing chiller has used CoolFlow IGE:

- No further action should be required. Ensure CoolFlow labels are applied as in section 1.1.

2. If the customers' existing chiller has used Optishield Plus:

- Flush out the chiller and hose assemblies using distilled water. Fill the chiller with distilled water and run in a closed loop (see Un-valved connector tube under 'Parts required' later in this document) for at least 10 minutes, and then discard the water.
- Repeat this process again for at least another 10 minutes.
- Remove any 'coolant type' labels from the chiller.
- Fill the chiller with CoolFlow IGE and apply the label to the chiller as per Figure 3.

## **2.0 Field change over process:**

Existing Chameleon systems in the field that currently use Optishield Plus can be converted to use CoolFlow IGE following the procedure below, as and when required. Remaining service stock which was shipped before the factory switch over may still use Optishield Plus. These systems should be converted to use CoolFlow IGE following the procedure below.

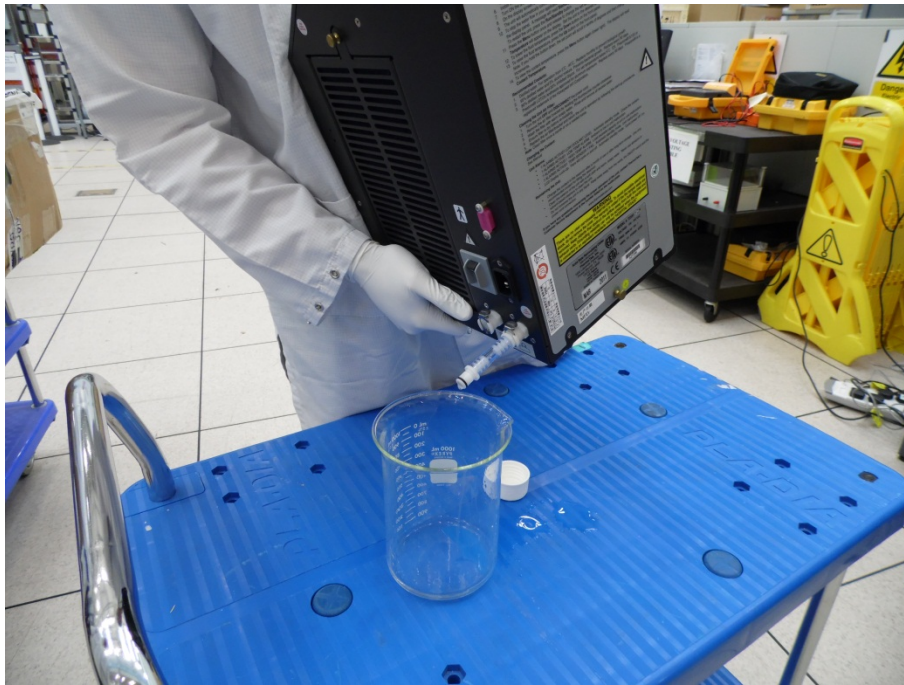
The following process details a step by step guide to perform a field conversion to CoolFlow IGE. Please follow carefully:

**Wear appropriate PPE (Gloves, eye protection, overalls etc.) It is extremely important to wear clean gloves whilst performing any task involving the cooling channels or fluids. The bacteria and yeasts present on bare hands will greatly accelerate the consumption of inhibitors within the coolant and reduce system life.**

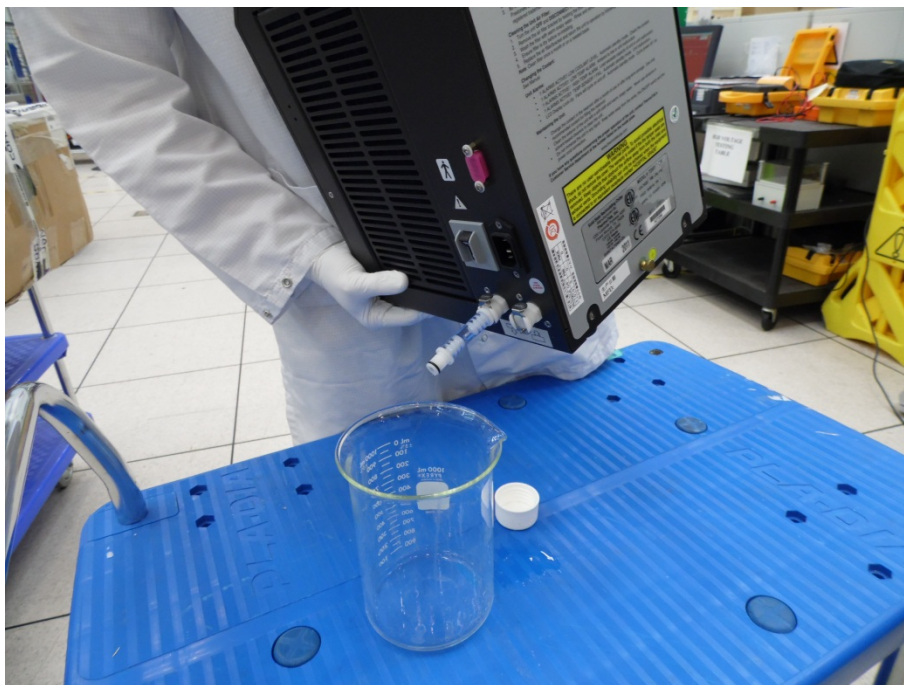
1. Ensure the laser head, chiller and hoses are fully drained of any fluid. Within the chiller, some fluid will still remain within the internal pipes. With the chiller lid off, fit the **Un-valved connector tube** (see section 3.0 'Parts Required' for p/n) to the **inlet** of the chiller and tip to drain (Figure 1 & 2). Repeat this step on the **outlet** (Figure 3).



**Figure 1 - Un-valved connector tube**



**Figure 2 - Use the Un-valved connector to drain chiller inlet**



**Figure 3 - Use the Un-valved connector to drain chiller outlet**



2. Connect the **In-line filter** (see section 3.0 'Parts Required' for p/n) to the **inlet** of the chiller. The direction of flow as indicated by the arrow on the filter must flow into the chiller (Figure 4).



Figure 4 - Connect In-line filter to chiller inlet in direction of flow



3. Reconnect the hoses to the chiller, noting which direction the flow will operate (Figure 5).

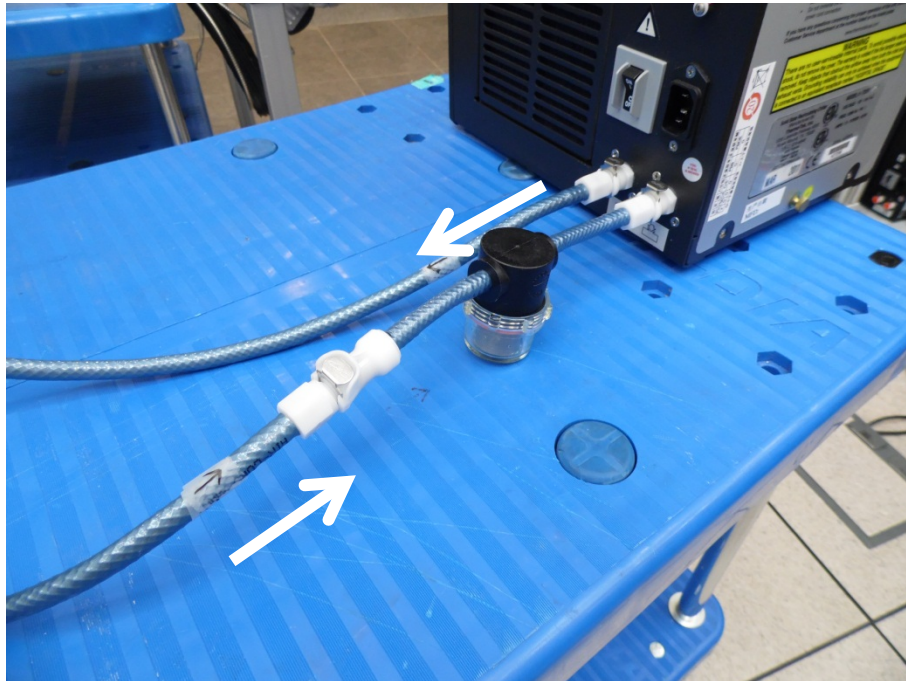


Figure 5 - Hoses reconnected, noting flow direction

4. Connect the hoses to the laser head in the **reverse** flow direction. (i.e. connect the 'Out' from the Chiller to the 'Out' from the laser head.) This will help agitate any particles of contamination which may be present within the laser head (Figure 6).

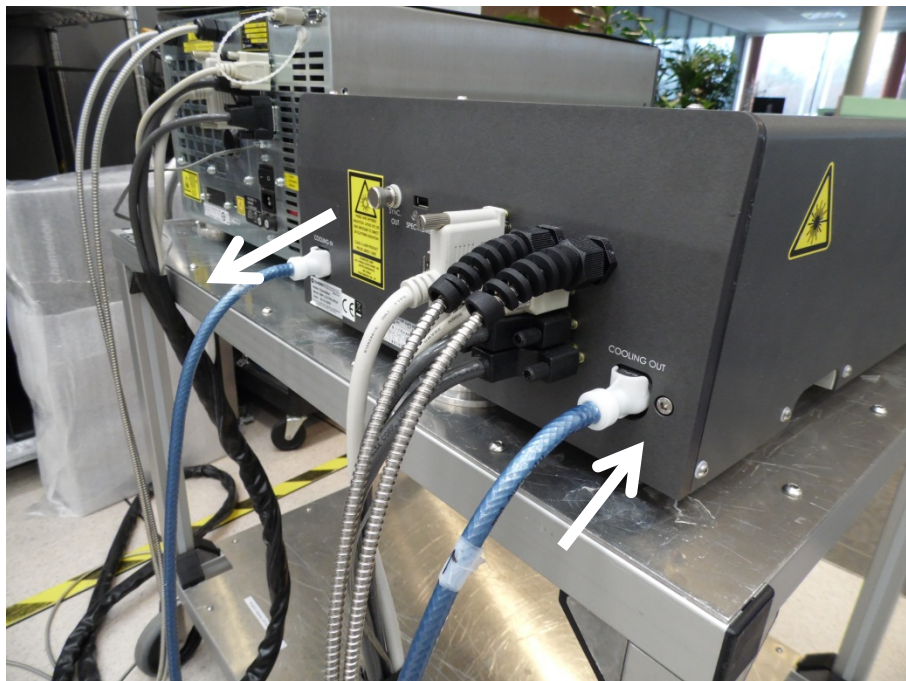


Figure 6 - Hoses connected to head in reverse direction

5. Fill the chiller reservoir with distilled water and switch on. You may need to top up the chiller as the water in the reservoir fills the head. Run the system in this configuration for a minimum of 1 hour (Figure 7).

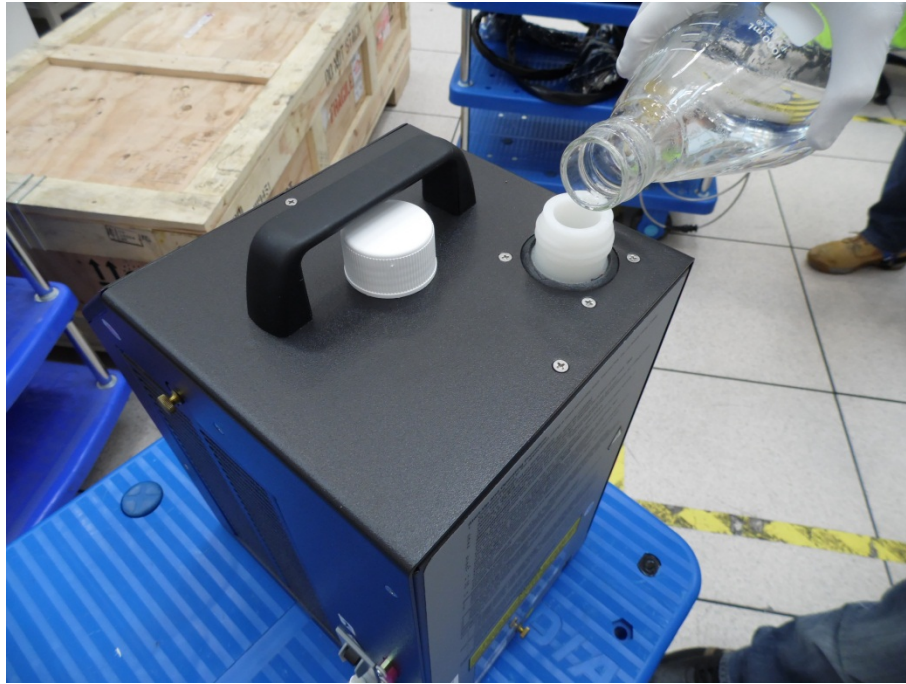


Figure 7 - Fill chiller with distilled water only

6. Repeat step 1.

7. Disassemble the filter by unscrewing the base from the top part (Figure 8). Remove the metal mesh and rinse out the filter housing. Visually check the inner area of the

mesh; this is where any debris should be caught. Clean the mesh by running the outer circumference under a tap at pressure (i.e. fully open the tap - Figure 9). Visually re-check the inner area of the mesh to ensure all debris has been removed. **Now rinse the filter housing and mesh in distilled water to remove any contaminants from tap water.** Assembly is the reverse of removal (Figure 8 & Figure 10).

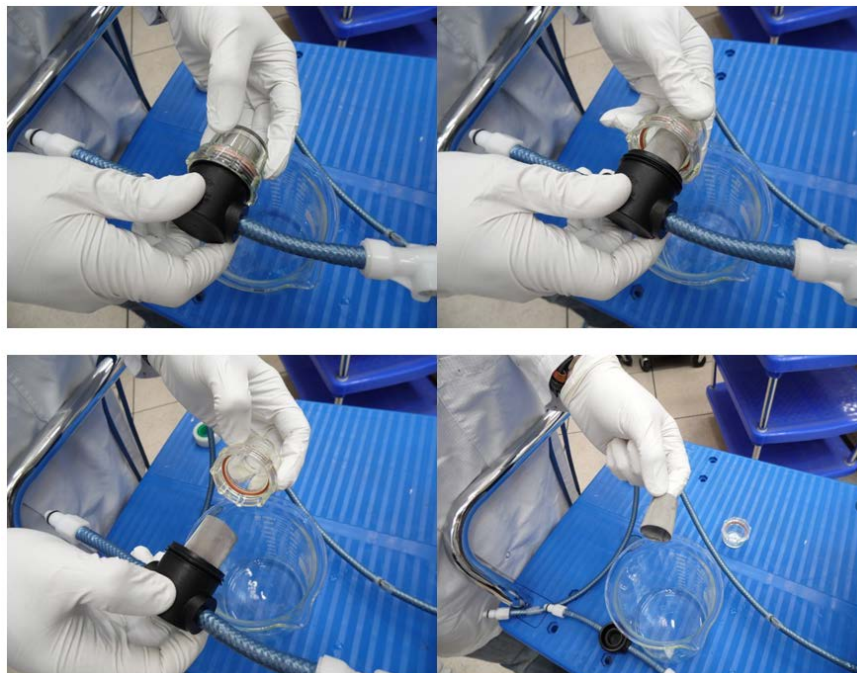


Figure 8 - Disassembly of filter and removal of mesh



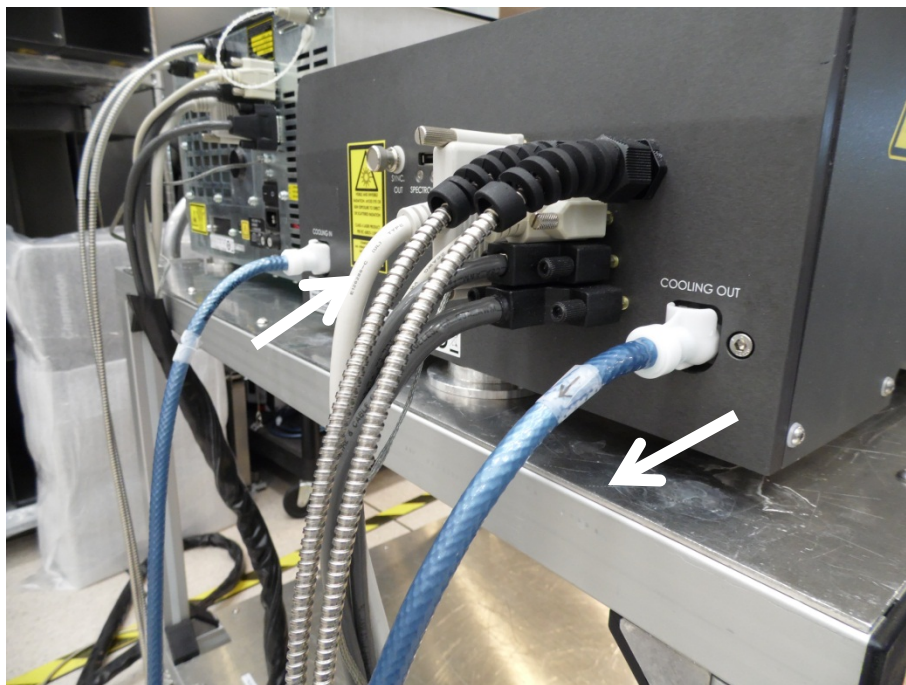
Figure 9 - Cleaning of mesh under fast flowing tap





**Figure 10 - Reassembly of filter**

8. Repeat steps 2 and 3.
9. Connect the hoses to the laser head in the standard configuration for operation as described in the user manual (i.e. the 'Out' from the chiller connects to the 'In' on the laser head) (Figure 11).



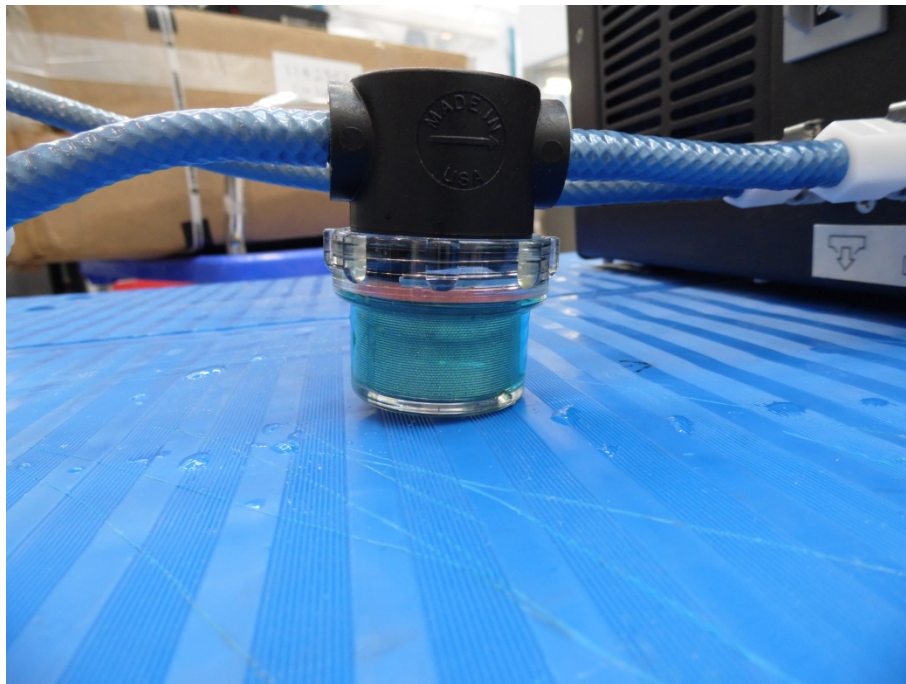
**Figure 11 - Hoses connected with correct flow**

10. Repeat step 5.
11. Repeat steps 6, 7 and 8.

12. Fill the chiller reservoir with ready mixed Coolflow IGE and switch on. You may need to top up the chiller as the water in the reservoir fills the head.



**Figure 12 - Fill chiller with Ready-mixed Coolflow IGE**



**Figure 13 - Filter connected with chiller running with Coolflow IGE**

13. Remove any labels which indicate the use of distilled water or Optishield Plus, and fit the supplied label to the Chiller and laser head as indicated in figures 14 and 15.





Figure 14 - Location of label on chiller after changeover process



Figure 15 - Location of label on laser head after changeover process




14. The laser should now be ready to operate as normal. Regularly monitor the filter for signs of contamination. For the first 3 weeks following this process the filter should be checked at least weekly. After this period, monthly maintenance should be all that is required. If the filter shows signs of contamination, clean it as per step 7 and re-insert it into the loop as per steps 2 and 3.



### **3.0 Parts required**

To perform the Field change over to CoolFlow, the following parts are required.

- CoolFlow IGE – FRU #1234080
- In line filter – FRU #1256763
- Un-Valved connector – FRU #1256762
- Distilled water (only for use when rinsing or flushing is required).

		
CoolFlow IGE	In line filter	Un-Valved connector

**PSE Initials OJM**