Trendsetter 3244

Upgrading to a 1.7x Water-cooled Thermal Head

Document Number
72-3489A-A-PR01

January 29, 1999

Creo Products Inc.
3700 Gilmore Way
Burnaby, BC
Canada V5G 4M1

(604) 451-2700

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Revision History

Revision	Date	Author	Comments
	Feb 01, 99	Gary Edge	

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1. SCOPE

This document describes the installation procedure for upgrading to a 1.7 water cooled Thermal Head. Upon installation, the Thermal Head Code also needs upgrading.

Reference drawings:

11-0588 Water Cooling Kit

11-0442 Imaging Device, Model Trendsetter

02-4155 Exposure Head Power Wiring

Reference Documents:

73-3238 Neslab CFT33D Chiller Installation and Operation

73-3324A Polyscience Model 6305P Chiller Installation and Operation

77-0051 Thermal Exposure Head Installation Procedure Trendsetter 3244/3230?

77-0056 TEH Mounting Conversion Procedure

2. TOOLS

- ♦ - 1" open ended wrench
- ♦ - 15/16" open ended wrench
- ♦ - Metric Hex Key Set
- ♦ - #1 Blade screwdriver
- ♦ - Six inch adjustable wrench
- ♦ - Phillips Stubby screwdriver
- ♦ - small tie wraps

3. PROCEDURE

3.1 Critical Requirements Prior to Installation

There are four areas to inspect before beginning this installation :

- **PCB on the keyswitch SIO.** The board must be **10-3701C**. If you do not have this Version of PCB, you must order and **install a new keyswitch (11-0556A)** or order the correct version of the PCB before proceeding with this upgrade.

- **Thermal Head Carriage.** The carriage must be **50-1211C**. If you do not have this Version of Carriage, you must order and install a new carriage before proceeding with this upgrade.
- **TEE Board.** The Trendsetter must have a TEE Board before proceeding with this upgrade. Order upgrade kit **11-0565** if necessary.
- **FDPE Board 10-3762.**
- **Engine on hard mounts.** Trendsetter serial numbers S150 or lower **require upgrade kit 05-0054**.

3.2 Preparation of the 3244 Trendsetter Frame

Remove the painted filler panel from the left rear of the machine.

Remove the blanking plate on the left rear of the machine.

Remove the back panel, and open the fanbox and powerbox. Remove the cover plate for the backplane.

3.3 Preparing for Installation of the Chiller

Trendsetter Internal Assembly for Hoses

1. Assemble the following parts according to drawing 11-0588:

   Items 0130,0170,0200,0210,0235.

Attach internal hoses (item 0030) to item 0210 ensuring that the plastic shut-off valve on the hose fittings are at the Thermal Head end.

Attach cover 0230 and tighten the hose clamp from Assy 50-1632 (Water hose, internal) to secure the 1.75" ID hose to cover 0230.

Attach the above assembly to the frame.

Attach fittings 0220 to 0200 using Teflon tape.

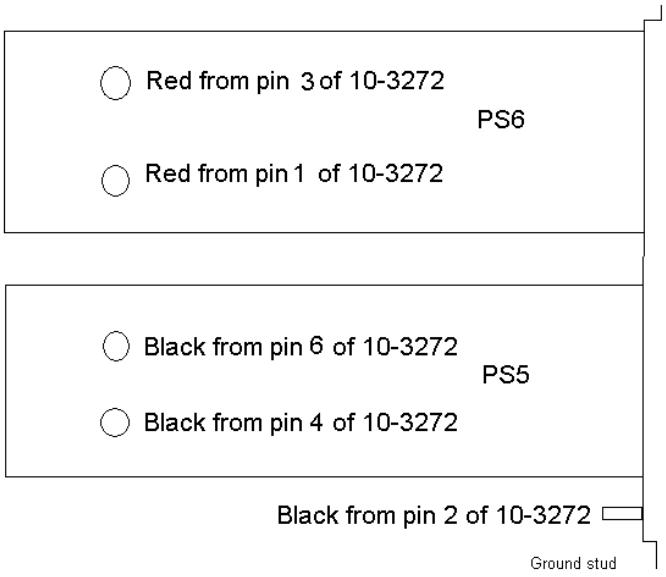
Attach spacer and washer as per Note 2 on the drawing.

Internal Chiller Filter Cable

1. Attach cable 10-3770 to Bulkhead plate 0130 and route to TEE board.
2. Disconnect cable 10-3668(J19) from the TEE board and connect it to the 12 -pin mini fit on cable 10-3668. Connect the 12 pin Male mini fit to the TEE board (J19).
3. Connect the 16- pin amp connector into J8 of the TEE board. Connect the red wire from the 2 -pin mini into pin 12 of J20 on the TEE board and the black wire into pin 25 of J20 on the TEE board.

3.4 Power Supplies and Related Cabling - Kit 10-3939 (PS5/PS6)

1. Disconnect all the AC and DC wiring and remove it along with Flat Pack power supply **PS5 - 10-3295**. Only the 6 DC wires will be reused.
2. Install the new dual Aztec power supply assembly **PS5/PS6 - 10-3919** into the same location using the hardware supplied.
3. Remove and discard twisted AC supply cable **10-3330 PS5-PS Relay** from K5.
4. Open the backplane cover, remove the plug in J27, and cut and pull from the harness a single wire cable, **10-3331 PS RELAY - BP (J27**). Retain the ferrite bead.
5. Disconnect **10-3260**, a fabric loom covered cable, from the PDB and attach it to **10-3916**, the new eight-pin connector from **K10**.
6. Attach **10-3618** the other eight-pin connector from **K10**, to the location on the PDB left open by the prior step.
7. Using an ohmmeter, identify and mark the six ring terminal wires at the powerbox end of the 24 volt harness to the laser head. Attach the wiring to the output of PS5/PS6 as per the wiring sketch shown below. Black from 10-3272 pin 2 is attached to the stud on the power supply mounting plate. When all wires are connected, you will have **a single red wire from 10-3272 pin 5 left over**. It is no longer needed, so cut off the ring terminal and fold it back into the wiring harness fabric loom.



Wiring sketch of 10-3919 PS5 and PS6

8. Connect the wiring between PS5/PS6 and K5 as per drawing 11-0442.
9. Cut and remove from the harness the single orange wire cable assy 10-3331 PS, from K5 relay to the Keyswitch PCB Write Laser Disable connector.

10. Connect the AC wiring between PS5/PS6 and K5 as follows: White neutral in – pin 2, White neutral out – pin 4, Black hot in – pin 6, Black hot out – pin 8. Reference drawing 11-0442 if available.
11. Attach the orange wire of cable 10-3917 from K5 pin 0 to Write Laser Disable on the key switch PCB.
12. Attach the black wire of cable 10-3917 from K5 pin 1 to the backplane (J27). Reinstall the ferrite bead removed earlier, and close the backplane cover.
13. Connect cable 10-3915 from K10 to WL RELAY COIL on the keyswitch PCB.
14. Attach the three-pin AC input connector on TB1 of Assy 10-3919 to Cable 10-3210 J-PS REL of PS5/PS6.
15. If this procedure was part of a replacement of an air cooled head to a water cooled version, disconnect the electrical cable supplying power to the thermal head blower (10-3624 WT-FANBOX).
16. Secure all remaining loose wires to their respective harnesses in a workman like manner.

3.5 Head and Carriage Replacement

1. Remove the air hoses that previously moved air to and from the air-cooled head. Store or discard.
2. To remove the old thermal head, refer to *document 77-0051 Thermal Head Installation Procedure*.

1. Replace the Carriage or install the conversion kit if required. See document *77-0056 TEH Mounting Conversion Procedure.*
2. To install the new water-cooled thermal head, refer to to *document 77-0051 Thermal Head Installation Procedure*.
3. Connect internal cooling hoses to the Thermal Head.

3.6 Connecting the Chiller and Filling with Coolant

Refer to document *73-3238 Neslab CFT##D Chiller Installation and Operation.*

***** CAUTION *****

Never turn on the chiller pump with the hoses disconnected. This will result in a pressure build-up in the pump. Refer to the chiller installation document.

3.7 Loading New Head Firmware

Load firmware which supports the 1.7X water cooled thermal head:

- Thermal Head firmware – version 1.30 or higher

- MPE – version 2.20 or higher