

Roland DGA Service Bulletin

MODEL: SC-540, SJ-540, SJ-740	BULLETIN DATE: 10/31/2003
BULLETIN NUMBER: HU-0003R2	AUTHOR: Rick Rivera
SUBJECT: Heater Installation Procedures for SOLJET Printers (PRO II)	REVISION: Revision 2

Overview:

The following information gives instructional information for the HU-540/740 Heater Unit Kit for the Roland PRO II SOLJET Printers (SC-540, SJ-540 and SJ-740). Please read the following information prior to doing any work on the machine to ensure that the upgrade is performed smoothly and by specification. Failure to do so may result in delays in the installation process or possible damage to machine components or to self. If further assistance is needed, please contact Technical Support or Service at (800) 542-2307.

Roland SC-540, SJ-540 and SJ-740 Heater Unit Installation Procedures



Before



After

Rick Rivera
Service Training Technician

Built with precision. Backed with passion.

Differences between factory and field EX Models

EX Machines which come from Japan:

1. The Heater Controller mounts on the Lower Right side of the machine.
2. The machine has **NO** EX badge on the cover (has the SOLJet label like the non-EX machines).

EX Machines upgraded in the field:

1. The Heater Controller mounts on the Upper Right side of the machine.
2. The machine has **NO** EX badge label in the kit.

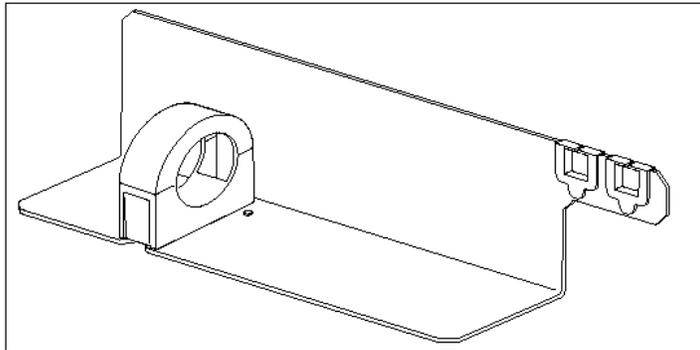
EX Machines upgraded by Roland DGA Service:

1. The Heater Controller mounts on the Upper Right side of the machine.
2. The machines are re-badged with a new SOLJet EX model label (which is produced in-house).

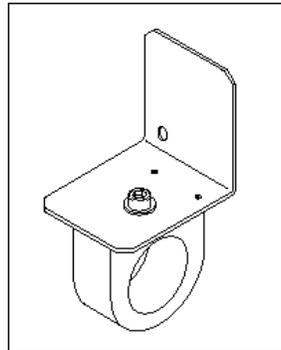
NOTE:

All EX Machines are equivalent and considered new machines if upgraded in Japan or Roland DGA Service. These are not considered refurbished or retrofitted due to the difference in Heater Controller location and labeling.

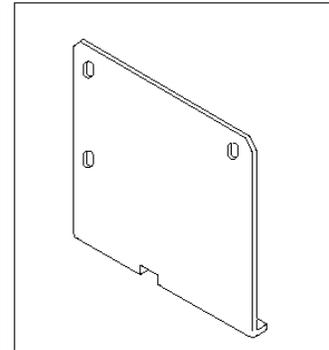
HU-540/740 Kit Components



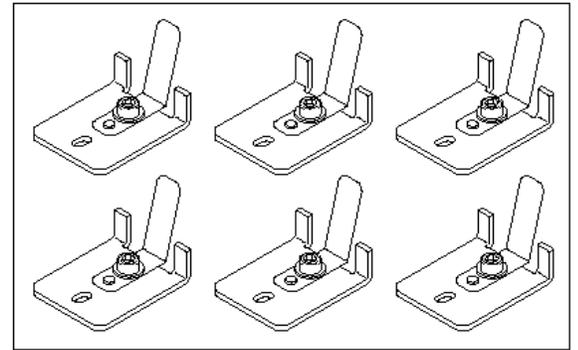
PLATE, DUCT STAY 1



PLATE, DUCT STAY 2



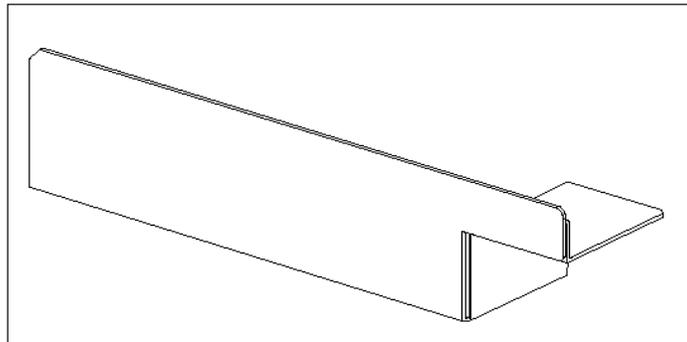
CONTROLLER BRACKET



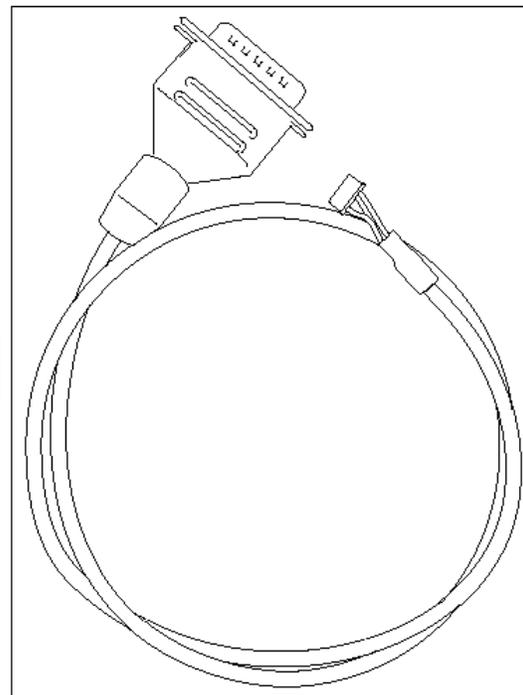
SPRING, BED ASSY

HU-540 : 4 pcs.

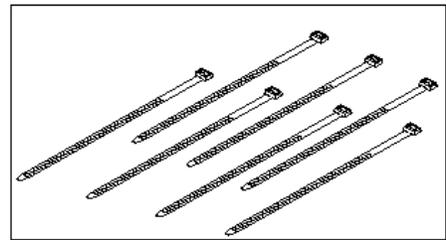
HU-740 : 6 pcs.



COVER, DUCT STAY 1



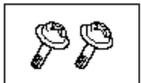
CONNECTION CABLE



CLAMP, INSULOCK T-18S

HU-540 : 7 pcs.

HU-740 : 9 pcs.



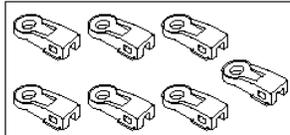
CUP SCREW 4x8

2 pcs.



CUP SCREW 3x6

2 pcs.



CLAMP, BASE SKM-1

HU-540 : 5 pcs.

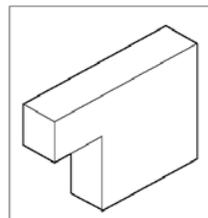
HU-740 : 7 pcs.



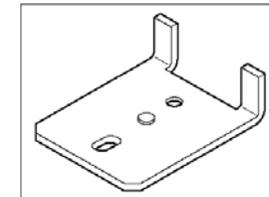
BIND 3x12 BC

HU-540 : 5 pcs.

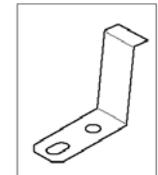
HU-740 : 7 pcs.



SHUTTER, PLATEN



STAY, SPRING



SPRING, US-602

HU-540/740 Kit Components, cont.

SOL Pump Assemblies x3 w/ Pump Plates Installed.

Wiper Blades x 2

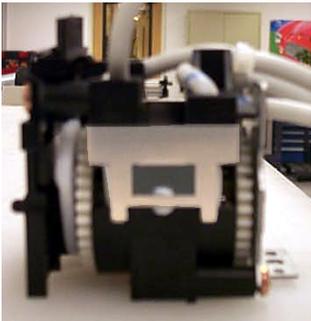
SOL Cleaning Cartridges x4

ECO Ink, Starter Set - 2 per color (12 Total)

3 mil High Gloss White x1 Roll

3.5 mil Matte White x1 Roll

3.5 mil Clear x1 Roll



Pre-installation Checklist.

The following is a checklist that should be followed to ensure that the Heater Upgrade goes without any issues. Failure to follow this process could result in longer install time and possible damage to the unit and or self.

- 1. Run print tests prior to installing the heater kit to ensure that all nozzles are firing and that the unit is functioning up to factory specifications. If the machine has any hardware issues, do not install the heater upgrade until the machine is back to factory specifications.
- 2. Using the included Cleaning Cartridges, perform head wash to evacuate and clean the SOL Inks from the system to prepare it for the ECO-SOL Inks (Refer to PRO II Service Notes for details).
- 3. Perform the Heater Upgrade using the provided instructions.
- 4. Update the Firmware and System Switch Setting using the provided instructions.
- 5. Perform Ink Conversion and adjustments.
- 6. Configure the Heater Controller.
- 7. *Replace the Pump Assemblies, Wiper Blades and perform associated adjustments (refer to the PRO II Service Notes for installation and adjustment procedures).

* Check Pump Hours, If under 100 Hours, there is no need to replace them.

Installing the Heater Bed

1. Confirm that the voltages which are printed on the backside of the Heater Controller, printed on the Heater Platen cable and printed on the Heater Bed cable match up as shown in Fig. 1.

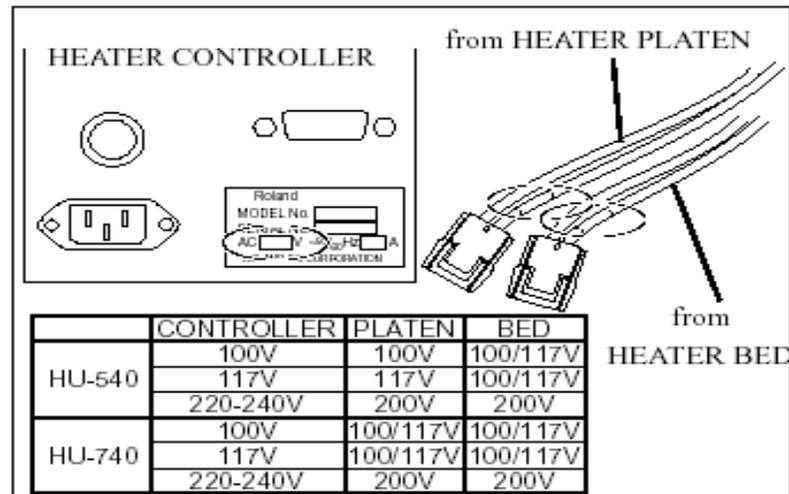


Fig. 1

Installing the Heater Bed, cont.

2. Turn off the Primary Power Switch from the back of the unit and remove the following covers as shown in Fig. 2 & Fig. 3.

- a. Left Cover
- b. Right Cover
- c. Rail F Cover
- d. Top R Cover
- e. Chassis Cover

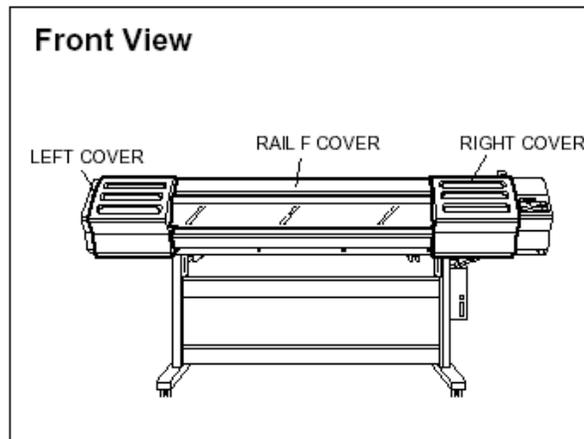


Fig. 2

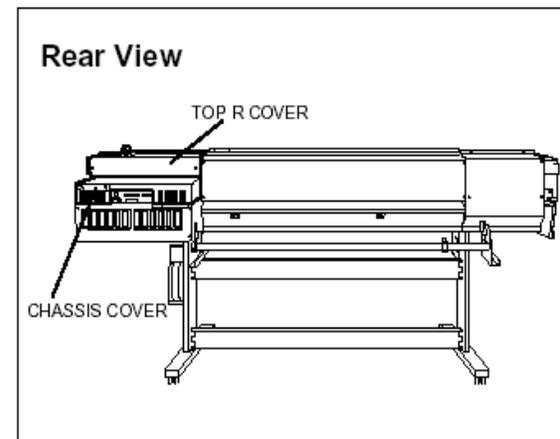


Fig. 3

Installing the Heater Bed, cont.

3. Remove all of the Platen Plates, Media Clamp Stopper and Media Clamps as shown in Fig. 4.

Note: for the SC-540, also remove the Film Spacers located under the Platen Plates.

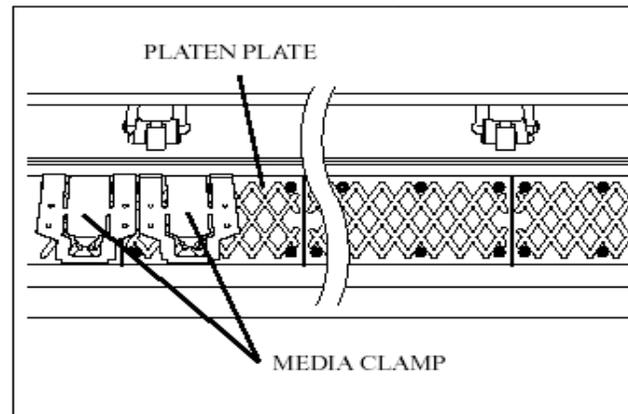


Fig. 4

4. Remove the Shutter, Platen (Sponge material on the right side, Fig. 5).

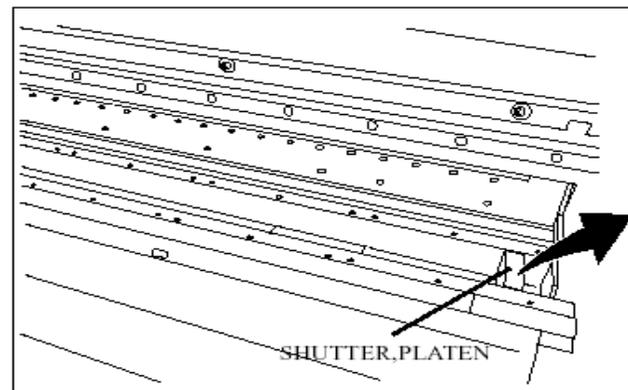


Fig. 5

Installing the Heater Bed, cont.

5. Clean the rear vertical wall of the bed unit using a cloth and alcohol and then attach the Bed Heater to the rear vertical wall of the bed unit. When installing, keep at least 2mm clearance from the top edge and at least 10mm of clearance from the left edge.

(Make sure to orient the Bed Heater as shown in Fig. 6)

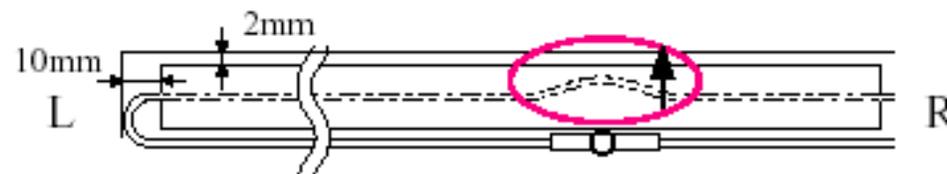
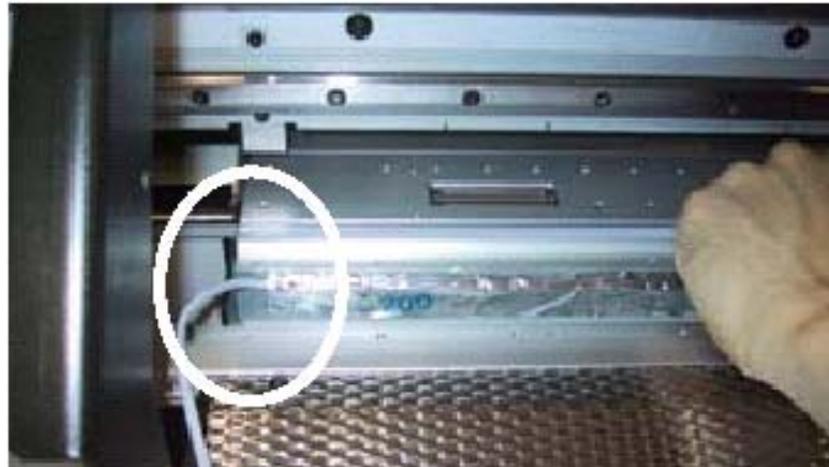


Fig. 6

Installing the Heater Bed, cont.

6. Remove the 5 screws connected to the Bed F and install 4 Spring Bed Assy and 1 Stay, Spring.

(**NOTE:** When removing the screws to install the Spring Bed Assy and Stay, Spring, please do so one by one. For details, refer to Fig. 7)

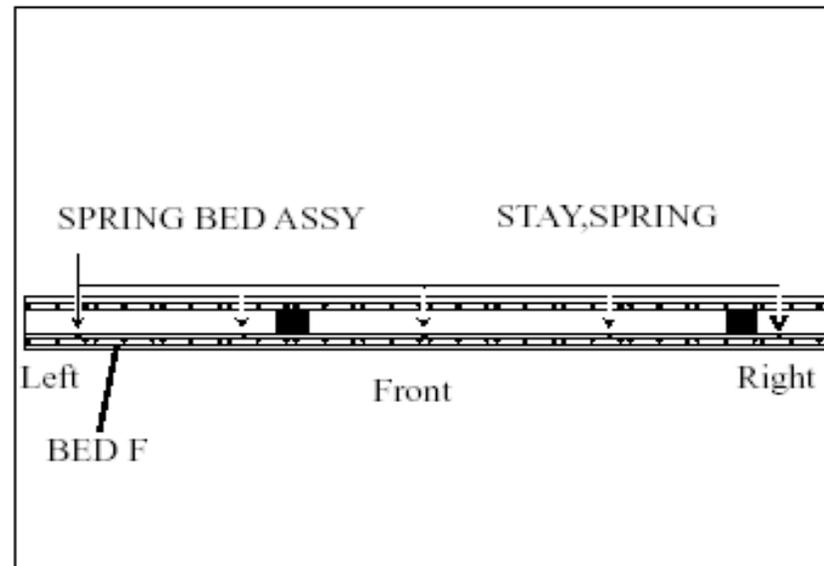


Fig. 7

Installing the Heater Bed, cont.

7. Install the Clamp, Base and Insulock Tie to the Spring Bed Assy as shown in Fig. 8 & Fig. 9

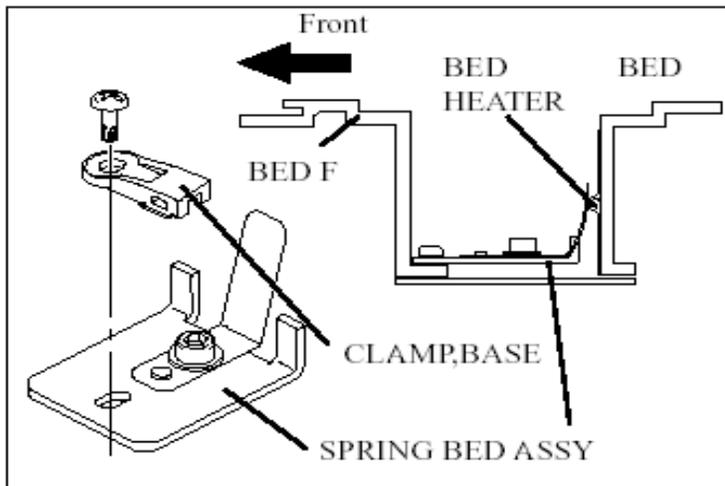


Fig. 8

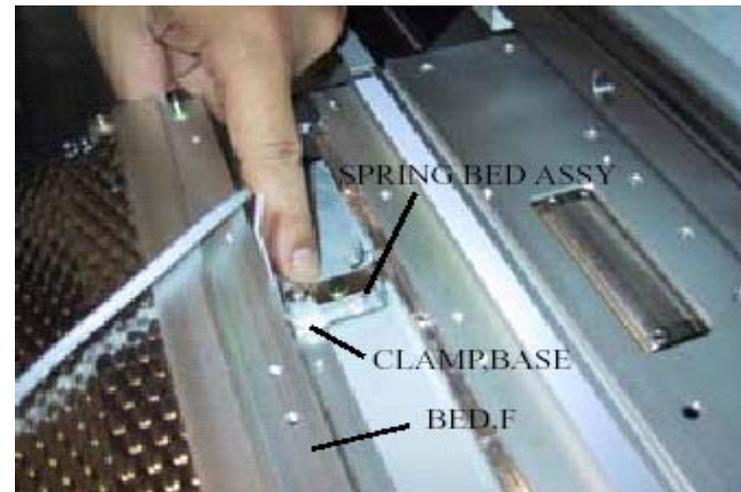


Fig. 9

Installing the Heater Bed, cont.

8. In order to mount the Thermostat properly, mount it at the 2nd screw position from the right side using double sided tape as shown in Fig. 10 & Fig. 11.

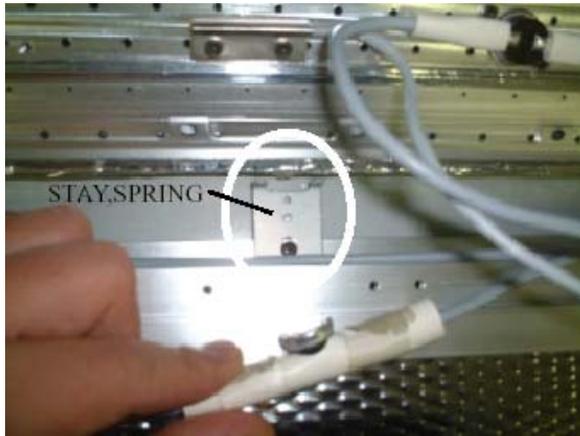


Fig. 10

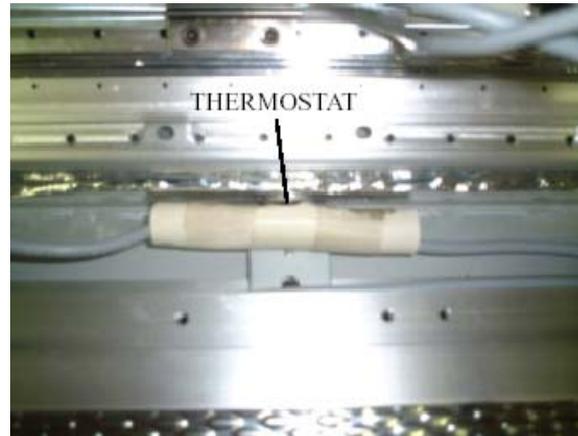


Fig. 11

9. Remove the screw holding the Stay, Spring for the Thermostat and install the Spring, US-602 by fitting it into the projection on the Stay, Spring and together with the Clamp, Base and Insulock Tie (Fig. 12).

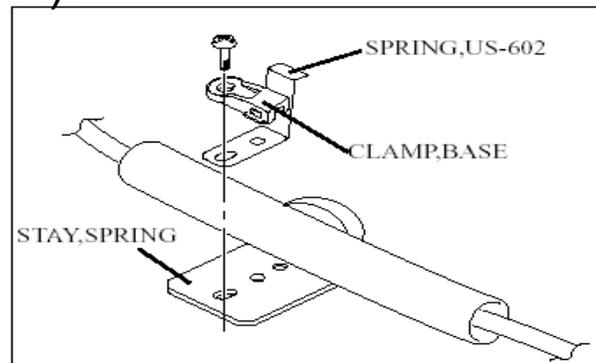


Fig. 12

Installing the Heater Platen

10. Place the Heater Platen onto the bed of the unit and align the cables from the Thermistor and Thermostat as shown the Fig. 1 and Fig. 2.



Fig. 1

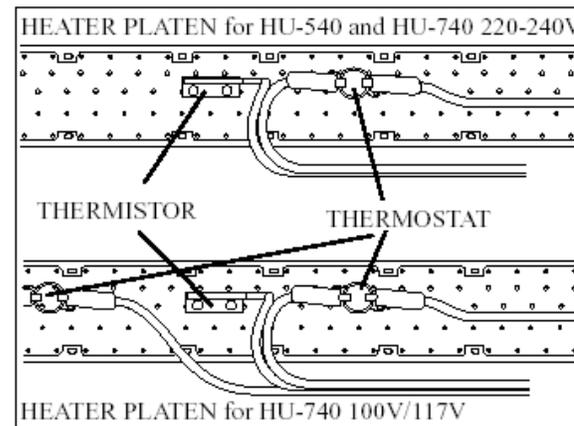


Fig. 2

Installing the Heater Platen, cont.

11. Tighten the cable from the Heater Bed at the left side of the machine with the Insulock Tie. Then tighten the cable from the Heater Bed at the A position and tighten the cable from the Heater Platen together with the Heater Bed cable at the B position with the Insulock Ties (Fig. 3 and Fig. 4).

NOTE: Ensure that the cables do not make contact with the fan.



Fig. 3

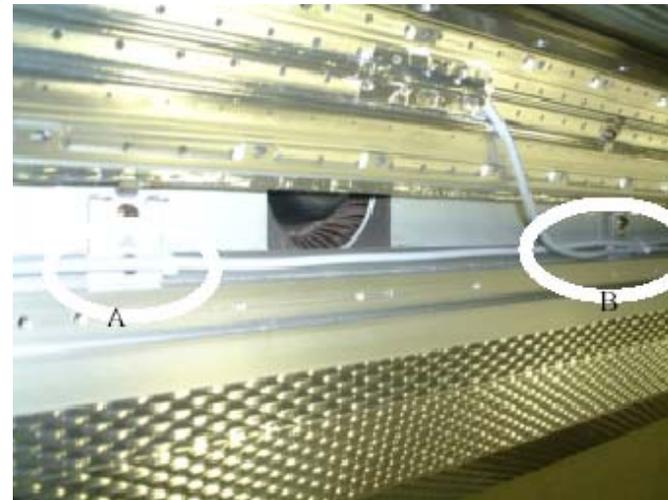


Fig. 4

Installing the Heater Platen, cont.

12. Tighten the 3 cables at the Stay, Spring for the HU-540 (5 cables for the HU-740) as shown in Fig. 5 and Fig. 6.



Fig. 5

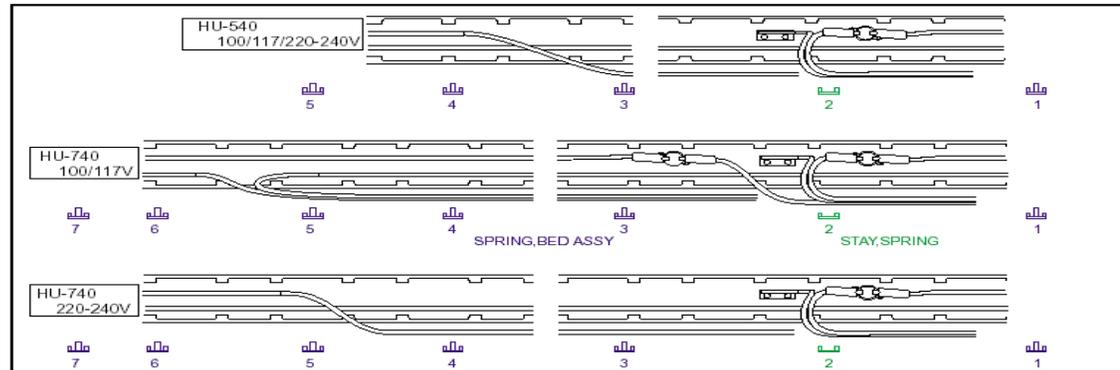


Fig. 6

13. Tighten the 4 cables (HU-540) or 6 cables (HU-740) as shown in Fig. 7. Make sure that the cables don't make contact with the fan and cut the Insulock Ties to a suitable length.

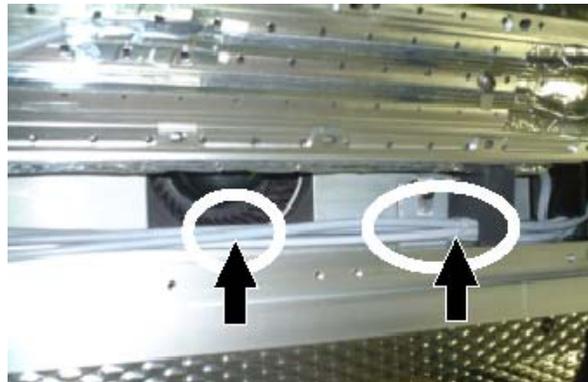


Fig. 7

Installing the Heater Platen, cont.

14. Install the new Shutter, Platen (not necessary to install with double sided tape) as shown on Fig. 8. Also, transfer the Media Clamps from the old Platen Plates to the Heater Platen and reinstall the Media Clamp Stopper (Fig. 9).

NOTE: When transferring the Media Clamps, ensure that you also include the plastic guide pins.



Fig. 8

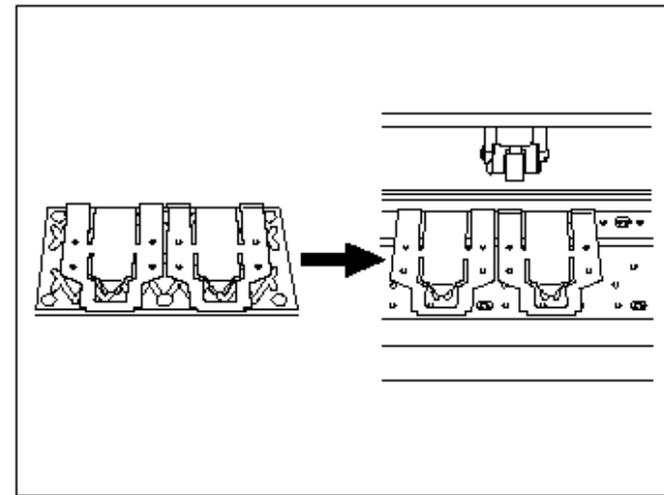


Fig. 9

Installing the Heater Platen, cont.

15. If you install the HU-740 on the Roland SJ-740, you have to change the position of the Stopper for the Media Clamps as shown in Fig. 10.

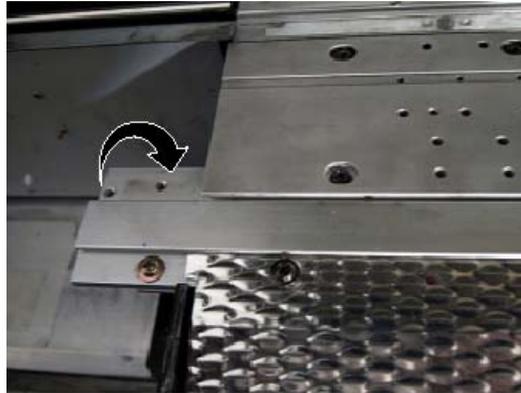


Fig. 10

16. While pressing the Heater Platen towards the front of the machine, install the Heater Platen with the screws that were previously used with the plastic Platen Plates.

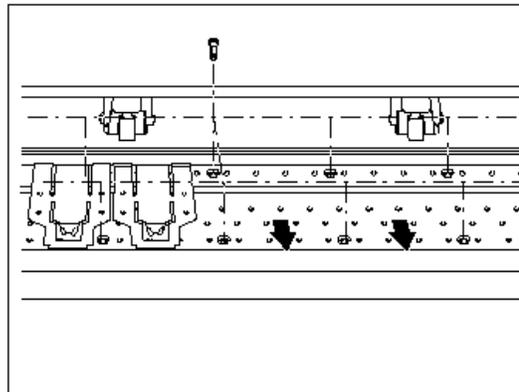


Fig. 11

Installing the Heater Platen, cont.

17. Tighten the Heater cables with the Insulock Ties and run the Heater cables through to the back of the machine as shown in Fig. 12. Once the cables are put through, pull any slack from the rear (Fig. 13).

NOTE: Prior to running the cables through, remove the Flushing Unit Plate as to not cut your fingers and/or hand.

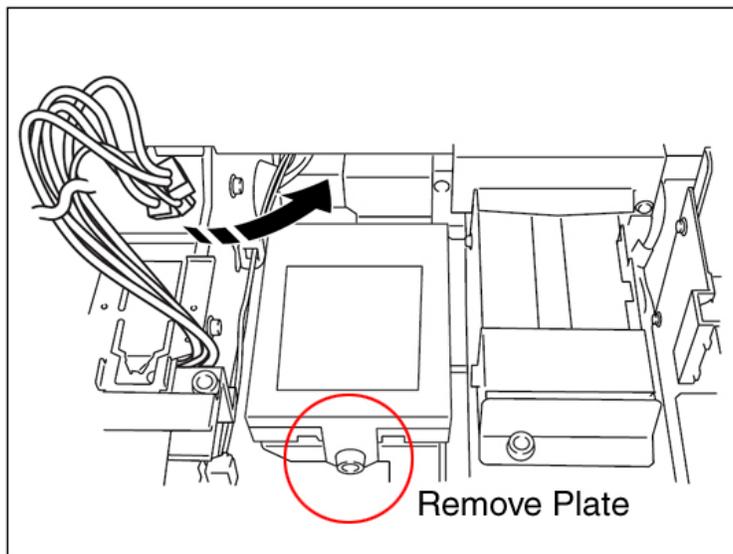


Fig. 12



Fig. 13

Installing the Heater Controller

1. Take the Connection cable and connect to CN9 located on the Servo Board. Next, route the cable through the clamps as shown in Fig. 1, Fig. 2 and Fig. 3.

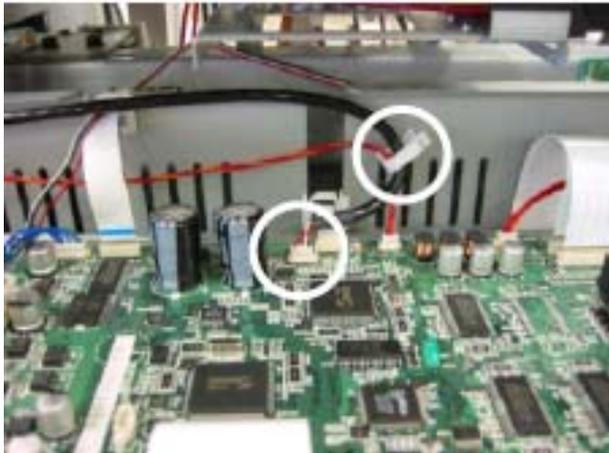


Fig. 1

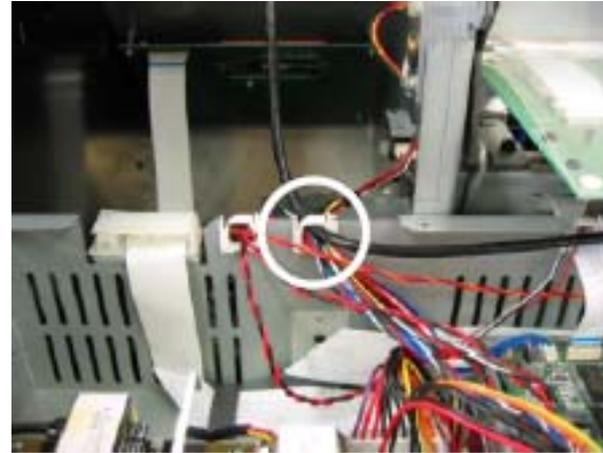


Fig. 2

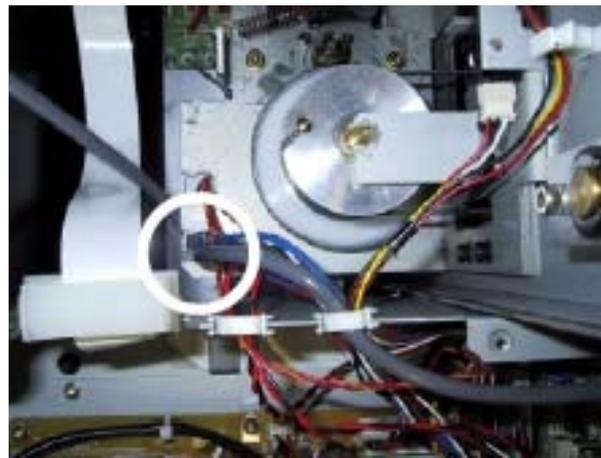


Fig. 3

Installing the Heater Controller, cont.

2. Install the Chassis Cover and Top R Cover (Fig. 4).

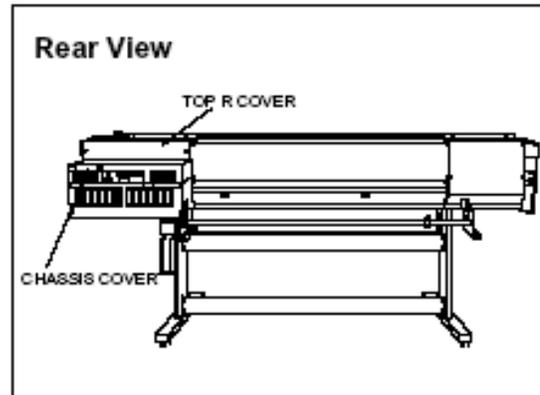


Fig. 4

3. Mount the front side of the Heater Controller to the Top R Cover. Also, mount the Controller Bracket to the Heater Controller and the Top R Cover and connect the Connection cable to the Heater Controller as shown in Fig. 5 and Fig. 6.



Fig. 5



Fig. 6

Installing the Heater Controller, cont.

4. Remove the 2 screws located at the bottom of the Chassis Cover (Fig. 7).



Fig. 7

5. Place the Heater cables through the 2 clamps on the Plate Duct, Stay 1 (Fig. 8).

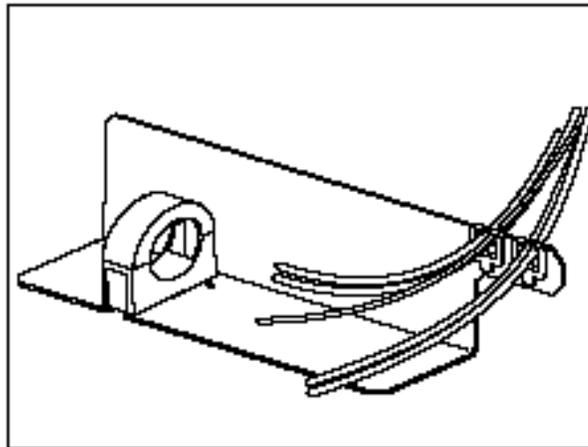


Fig. 8

Installing the Heater Controller, cont.

6. Mount the Plate, Duct Stay 1 to the right and the Plate, Duct Stay 2 to the left as shown in Fig. 9.



Fig. 9

Installing the Heater Controller, cont.

7. Loosen the screw connecting the Tube Holder and take it off along with the Hex screw from the Plate, Duct Stay 1 (Fig. 10)



Fig. 10

8. Mount the Duct Tube from the Heater Controller to the Tube Holder as shown in Fig. 11.



Fig. 11

Installing the Heater Controller, cont.

9. Mount the Tube Holder back to the original location and connect the cables from the Heater Controller and the Heater Platen as shown in Fig. 12.

NOTE: The SC/SJ-540 will have a large connector from the Duct Tube left over, Please attach the included dummy connector to keep the connection from shorting as shown in Fig. 13.



Fig. 12

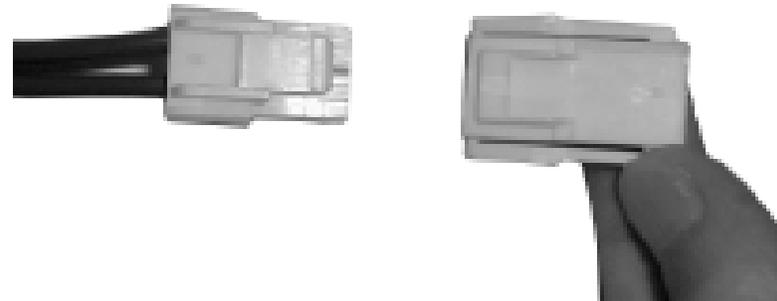


Fig. 13

Installing the Heater Controller, cont.

10. Attach the Cover, Duct Stay 1 with the Cup Screws 3x6 as shown in Fig. 14.



Fig. 13

Head Height Adjustment

1. Enter Service Mode by turning on Sub-Power while pressing [**◀**], [**▼**] and [**▶**]. Once in Service Mode, navigate to the [**CAP&WIPER CTRL**], press Enter, select [**CAP**], press Enter and select [**OPEN**] to open the cap assembly as Shown in Fig. 1 and Fig. 2.

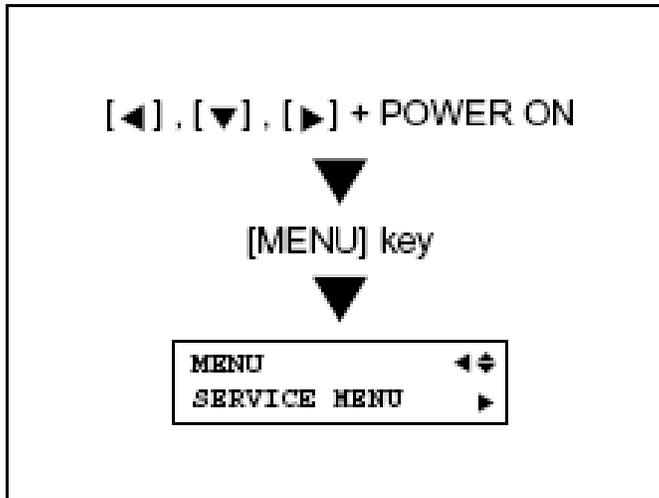


Fig. 1

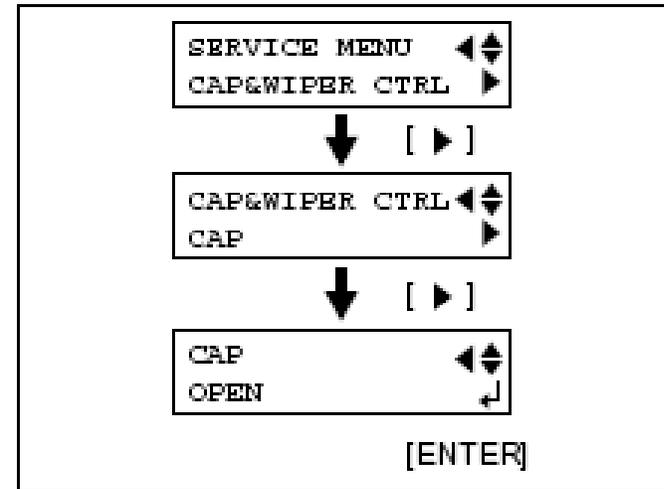


Fig. 2

Head Height Adjustment

2. Raise the Head Height Lever (Fig. 3) and Manually move the Carriage to the Head Height Adjustment position (Fig. 4).

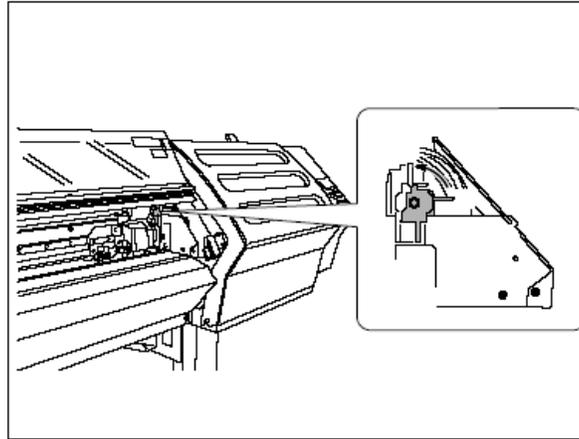


Fig. 3

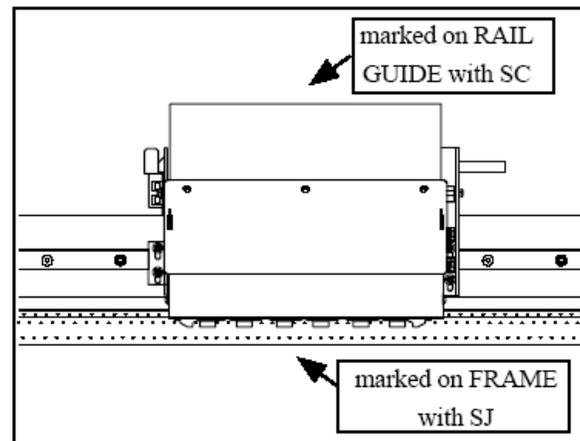


Fig. 4

Head Height Adjustment

3. Place the Adjustment Plate which came with the HU-540/740 Heater Kit under the Head Carriage ensuring that you do not strike the Head. On the SC-540, do not sit the Plate on top of the Cutter Protection Strip (Fig. 5).

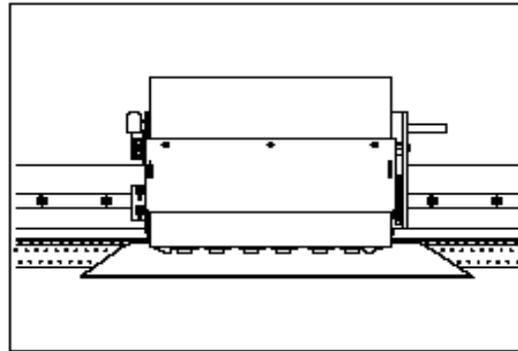


Fig. 5

4. Loosen the 4 black screws connecting the Head Unit to the Carriage by a half turn. Then , lower the Head Carriage to the Adjustment Plate by lowering the Head Height Lever (Fig. 6).

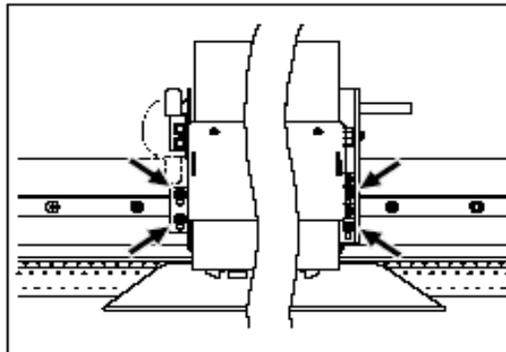


Fig. 6

Head Height Adjustment

5. Check the gap between the Head and the Plate (Fig. 7). If it is uneven, carryout the Head Height Adjustment procedure once again. If the adjustment is fine, tighten the Carriage screws, change the Head Height back to the highest position using the Head Height Lever and manually move the Carriage back to the home position and close the Cap following the display menu (Fig. 8). Then, remove the Adjustment Plate.

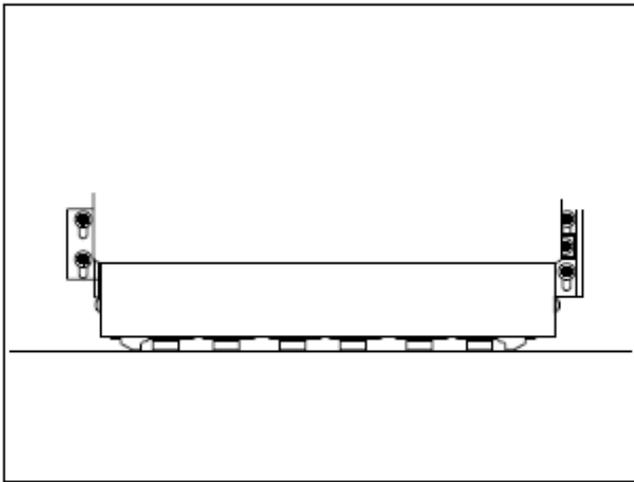


Fig. 7

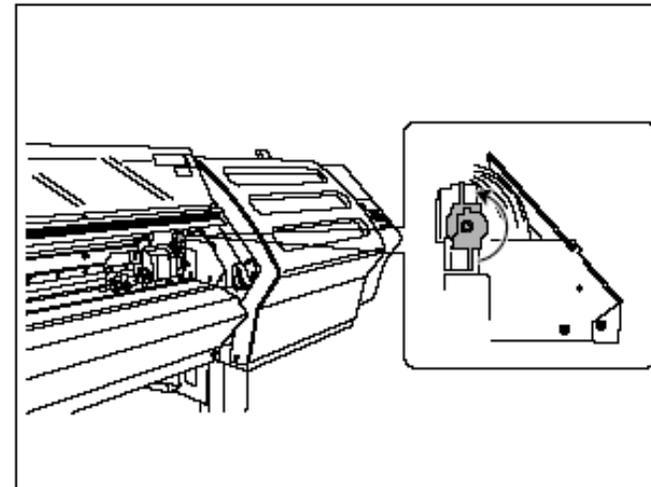


Fig. 8

Firmware Update and System Switch Change

1. Connect the Windows based PC to the SC-540, SJ-540 or SJ-740 via Parallel Cable. Ensure that you have the following items prepared.
 - A. Firmware (Ver. 4.2 or higher). Firmware is located on R-Net (www.rolanddga.com/r-net/) or Roland Web Site (www.rolanddga.com).
 - B. PC with MS-DOS.
 - C. Parallel Cable
2. While holding down the [▲], [▼] and [◀], turn on the Sub-Power. Once you get the message asking “Version Up Sure?” (Fig. 1), press the Enter key .

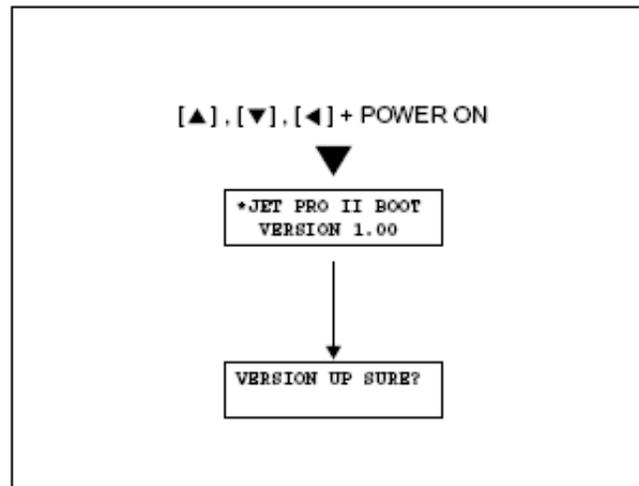


Fig. 1

Firmware Update and System Switch Change

3. From the DOS Prompt, navigate to the directory to where the Firmware is located and run the DOWNLOAD.BAT file (Fig. 2). This will begin the Firmware download process to the machine. When the Upgrade is completed, turn the Sub-Power off from the machine.

```
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:/> a:

A:/> download
```

Fig. 2

Firmware Update and System Switch Change

4. Enter Service Mode by pressing the [◀], [▼] and [▶] keys while turning on Sub-Power.

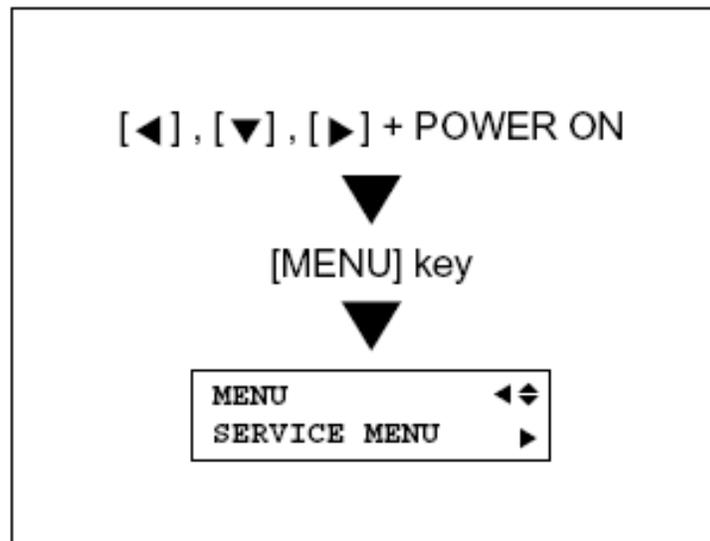


Fig. 3

Firmware Update and System Switch Change

4. Scroll to the **[System Switch]** menu and using the **[▶]** key, navigate to **[Page3]**. Convert Bit1 from 0 to 1 and press Enter. This will activate the menus for the Heater via the User's Menu. Once the change has been made, turn off both the Sub-Power and Main Power Switches.

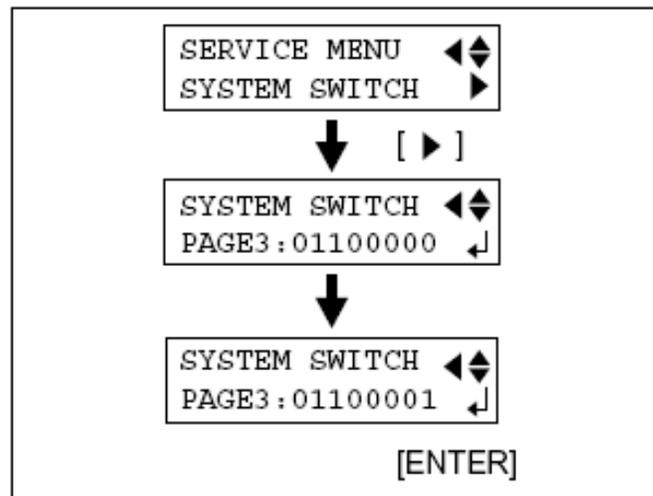


Fig. 4

Ink Conversion and Adjustments

1. Enter Service Mode by pressing the [**◀**], [**▼**] and [**▶**] keys while turning on Sub-Power (Fig. 1). Select the [**Sleep**] menu and change the value to [**30 min**] (Fig. 2).

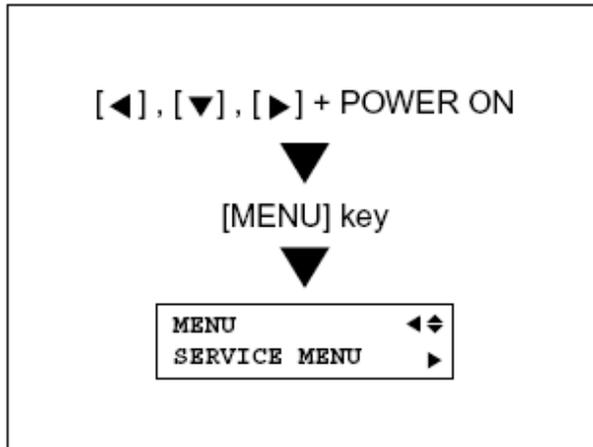


Fig. 1

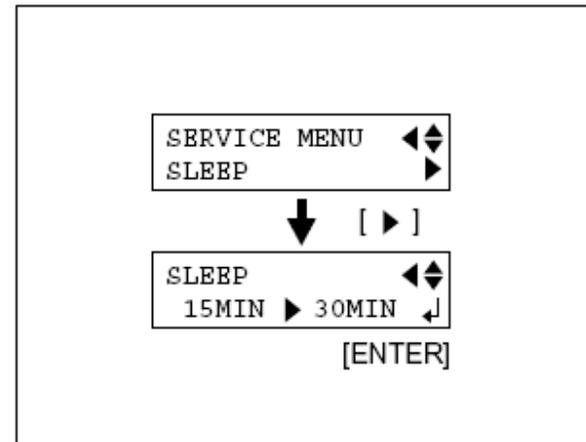


Fig. 2

2. From the User's menu, select [**Full Width S**] and change the value to [**Full**] (Fig. 3).

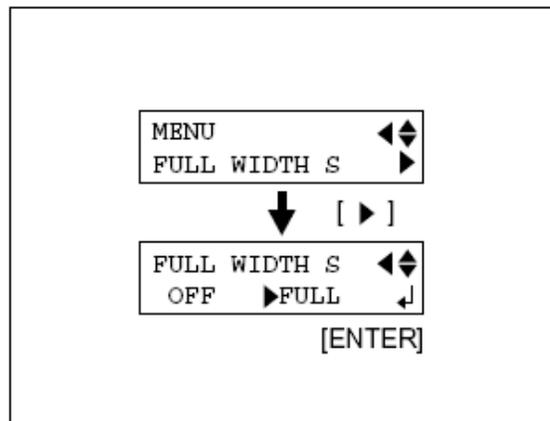


Fig. 3

Ink Conversion and Adjustments

3. Enter the **[Ink Control]** menu and select **[Change Ink Set]** and select **[Eco-SOL LcLm]**. Then, follow the messages displayed on the LCD panel to change inks (Fig. 4).

NOTE: Failure to change the inks from SOL to Eco-SOL will result in poor print quality and ink control issues.

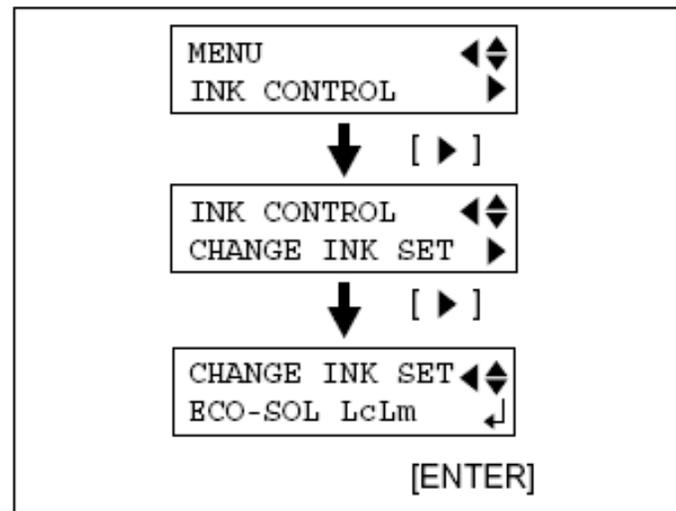


Fig. 4

Ink Conversion and Adjustments

4. Enter the **[Head Adjust]** menu and select **[Test Print]** from the **[Bias]**, **[Vertical]** and **[Horizontal]** for confirmation. Also, carry out the Bi-directional adjustment in the **[Bi-Dir. Default]** menu.

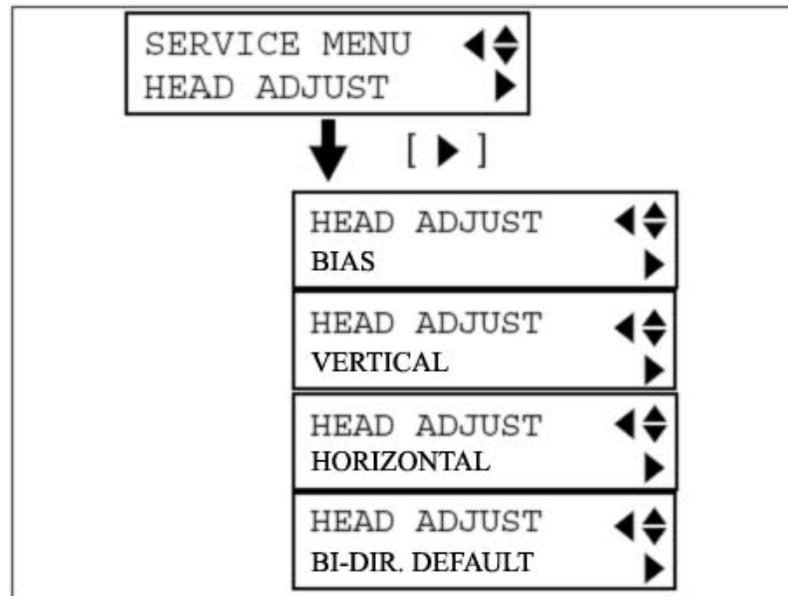


Fig. 5

Configuration of the Heater Controller, Key Lock Release.

1. Press and hold the **[SEL]** key until the the display shows the following (Fig. 1).

NOTE: The “7” shown in the image is actually reversed on the display of the Controller.



Fig. 1

2. Press **[▼]** key twice to display the following (Fig. 2).



Fig. 2

Configuration of the Heater Controller, Key Lock Release.

3. Press the **[SEL]** key and the value will start to blink as shown (Fig. 3).



Fig. 3

4. Press **[▼]** key twice to change the parameter to 0 (Fig. 4).



Fig. 4

Configuration of the Heater Controller, Key Lock Release.

5. Press the **[SEL]** key to save the parameter (Fig. 5).



Fig. 5

6. Press and hold the **[SEL]** key to get back to the Normal Display menu (Fig. 6).



Fig. 4

Configuration of the Heater Controller, Changing the P.I.D. Parameters

1. Press and hold the **[SEL]** key to enter the parameter change mode (Fig. 1).



Fig. 1

2. Press the **[SEL]** key so the value blinks (Fig. 2).



Fig. 2

Configuration of the Heater Controller, Changing the P.I.D. Parameters

3. Using the [▼] or [▲]key to change the parameter to 3.0 (Fig. 3)



Fig. 3

4. Press the [SEL] key to save the parameter (Fig. 4).



Fig. 4

Configuration of the Heater Controller, Changing the P.I.D. Parameters

5. Press the [▼] key to move to the next menu item (Fig. 5).



Fig. 5

6. Press the [SEL] key so the value blinks (Fig. 6).



Fig. 6

Configuration of the Heater Controller, Changing the P.I.D. Parameters

7. Press the [▲] or [▼] key to change the value to 100 (Fig. 7).



Fig. 7

8. Press the [SEL] key save the parameter (Fig. 8).



Fig. 8

Configuration of the Heater Controller, Changing the P.I.D. Parameters

9. Press the [▼] key to select the following parameter (Fig. 9).



Fig. 9

10. Press the [SEL] key so the value blinks (Fig. 10).



Fig. 10

Configuration of the Heater Controller, Changing the P.I.D. Parameters

11. Press the [▼] or [▲] key to change the parameter to 20.0 (Fig. 11).



Fig. 11

12. Press the [SEL] key to save the parameter (Fig. 12).



Fig. 12

Changing the Control System

1. Press the [▼] until the following display is shown (Fig. 1).



Fig. 1

2. Press the [SEL] key so the value blinks (Fig. 2).



Fig. 2

Changing the Control System

3. Press the [▼] change the value to the following (Fig. 3).



Fig. 3

4. Press the [SEL] key to save the parameter (Fig. 4).



Fig. 4

Changing the Control System

5. Press and hold the **[SEL]** key until the Normal Menu is displayed (Fig. 5).



Fig. 5

Key Lock Setting

1. Press and hold the **[SEL]** key until the following menu is displayed (Fig. 1).



Fig. 1

2. Press the **[▼]** key until the following menu is displayed (Fig. 2).



Fig. 2

Key Lock Setting

3. Press the **[SEL]** to the value blinks (Fig. 3).



Fig. 3

4. Press the **[▲]** key to change the parameter to 2 (Fig. 4).



Fig. 4

Key Lock Setting

5. Press the **[SEL]** to save the parameter (Fig. 5).



Fig. 5

6. Press and hold the **[SEL]** key until the Normal Display shows indicating that you have exited Parameter Change Mode. (Fig. 6).



Fig. 6

Additional Upgrade Items:

Once the Heater Upgrade is completed and the machine has been tested, please inspect and replace the *Pump Assemblies and Wiper Blades. Please refer to the PRO II Service Notes for detailed replacement and adjustment procedures.

* Check hours via Service Mode. If under 100 hours, there is no need to replace the Pumps, only the Pump Plates (which are transferable from the new pumps to the old).

*Thank you on behalf
of Roland University*