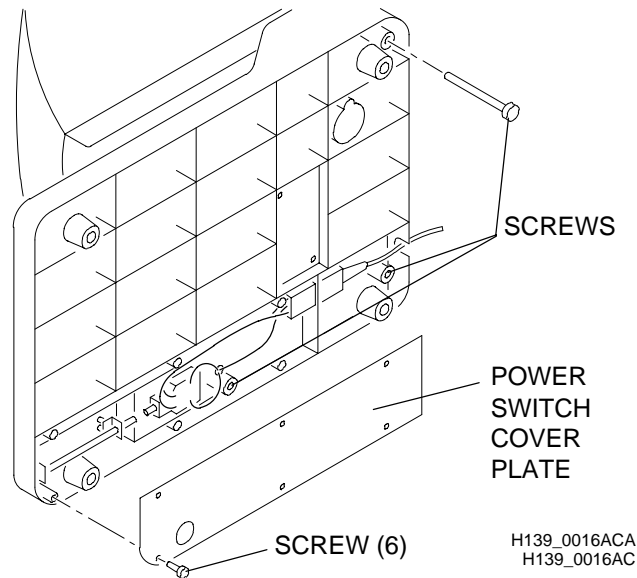


Section 6: Electrical Adjustments

COVER Removal Procedure

Figure 6–1 Removing the Power Switch Cover Plate



Do the following steps to de-energize the camera and to remove the COVER. This allows you to adjust or replace components inside the camera. If it is necessary to disconnect any wires during a service procedure, record the colors and locations of the wires before you disconnect them.

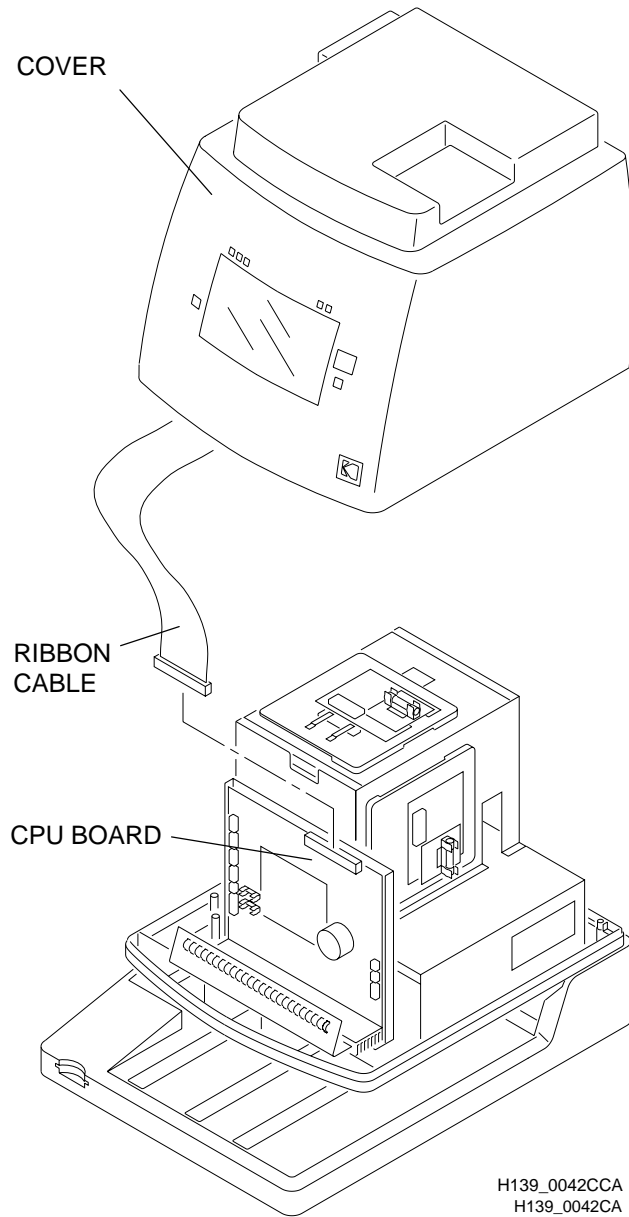


Warning

Dangerous Voltage

- [1] Disconnect the main power.
- [2] Turn the ID CAMERA on its side.
- [3] Remove the 6 SCREWS and the POWER SWITCH COVER PLATE.
- [4] Use a metric ALLEN WRENCH to remove the 3 SCREWS from the bottom of the ID CAMERA.
- [5] Turn the ID CAMERA upright.

Figure 6-2 Removing the Cover



Caution

- Possible damage from electrostatic discharge.
- Do not damage the RIBBON CABLE.

- [6] Remove the COVER from the camera without stretching the RIBBON CABLE.
- [7] Disconnect the RIBBON CABLE from the CPU BOARD.
- [8] Turn the COVER upside down and place it next to the CAMERA.

Selecting the Correct Voltage

Figure 6–3 Removing the FUSE CAP and FUSE

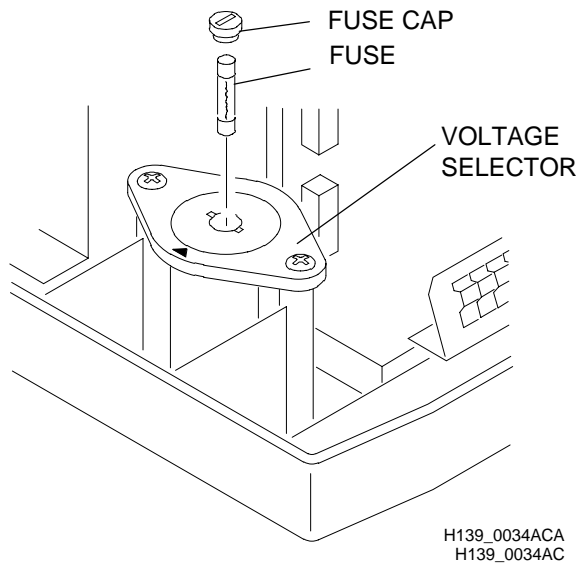
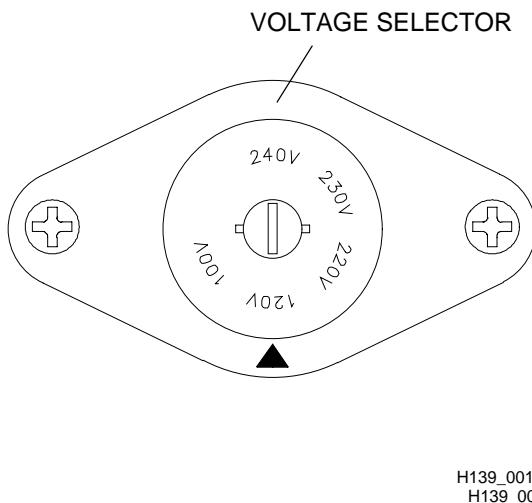


Figure 6–4 Selecting the Voltage



- [1] Do the “Cover Removal Procedure” on Page [6–1](#).
- [2] Use a FLATHEAD SCREWDRIVER to remove the FUSE CAP and the FUSE.
 - (a) Measure the source voltage to be used.

- [3] Use a flat WIDEBLADE SCREWDRIVER, or COIN, to turn the VOLTAGE SELECTOR to the correct voltage.
- [4] Insert the correct FUSE.

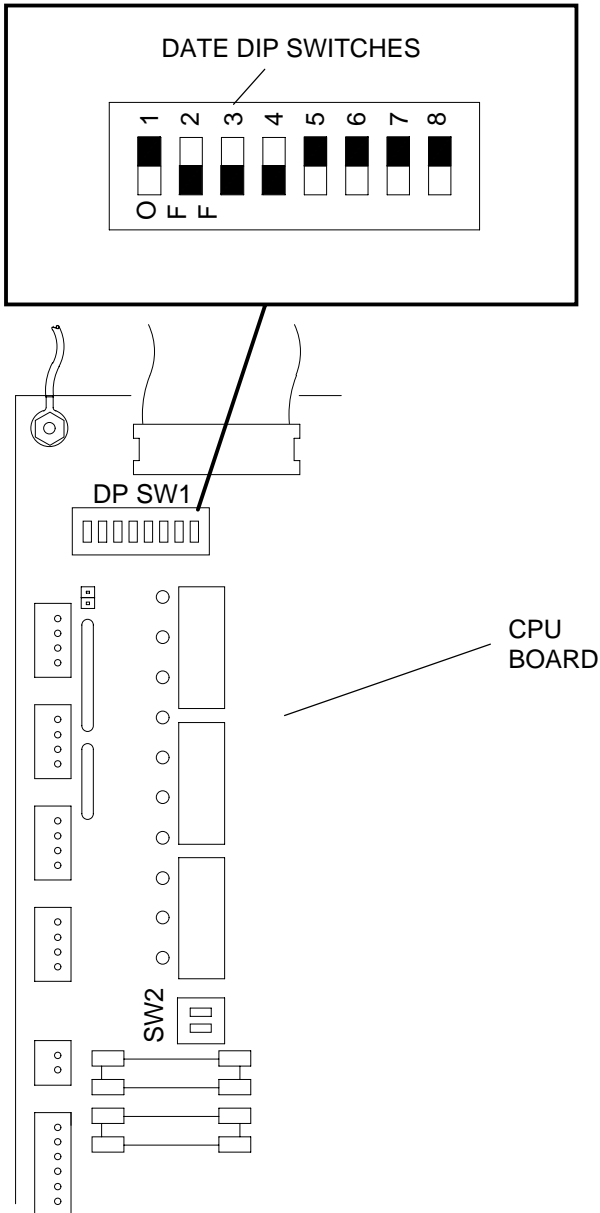
Note

Install a 3 A FUSE for 100 and 120 V AC.
Install a 1 A FUSE for 200, 220 and 240 V AC.

- [5] Install the FUSE CAP.
- [6] Use a FLATBLADE SCREWDRIVER to press and rotate the FUSE CAP clockwise.
- [7] To complete the assembly of the CAMERA, reverse the “Cover Removal Procedure” on Page [6–1](#).

Setting the Date Format

Figure 6-5 Locating the DATE DIP SWITCHES



H139_0033CCA
H139_0033CC

SWITCHES 1 and 2 on DP SW1 control the date format.

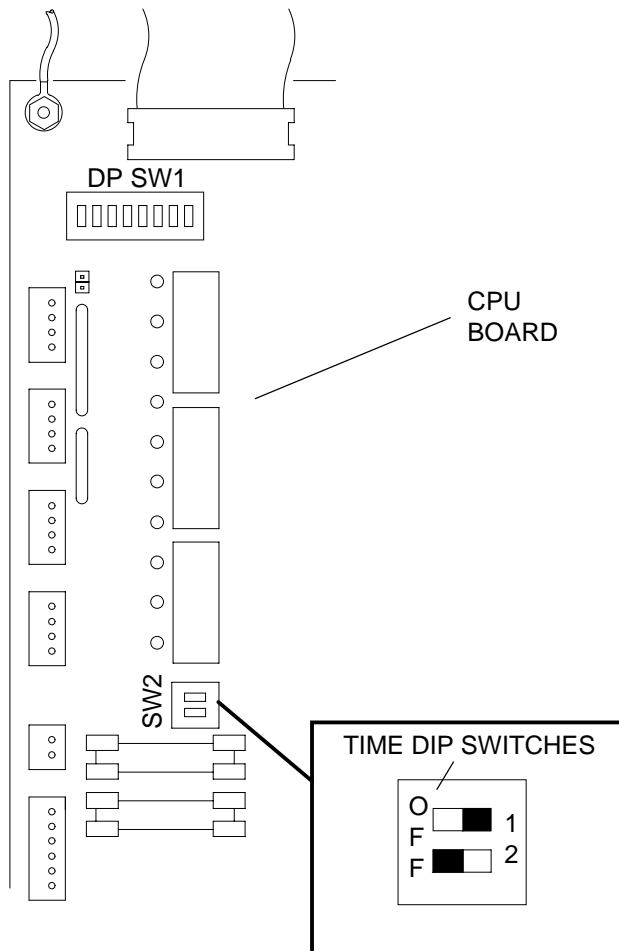
- [1] Do the "Cover Removal Procedure" on Page [6-1](#).
- [2] To select the month-day-year format, set:
 - (a) DIP SWITCH 1 to ON and
 - (b) DIP SWITCH 2 to OFF
- [3] To select the day-month-year format, set:
 - (a) DIP SWITCH 1 to OFF and
 - (b) DIP SWITCH 2 to ON
- [4] To select the year-month-day format, set:
 - (a) DIP SWITCH 1 to ON and
 - (b) DIP SWITCH 2 to ON
- [5] To complete the assembly of the CAMERA, reverse the "Cover Removal Procedure" on Page [6-1](#).
- [6] Press the DENSITY DECREASE BUTTON and then the POWER BUTTON. This will reset the microprocessor.

Note

Both date and time will be all zeros on the DISPLAY.

Setting the Time Format

Figure 6-6 Locating the TIME DIP SWITCHES



SWITCHES 1 and 2 on SW2 control the time format.

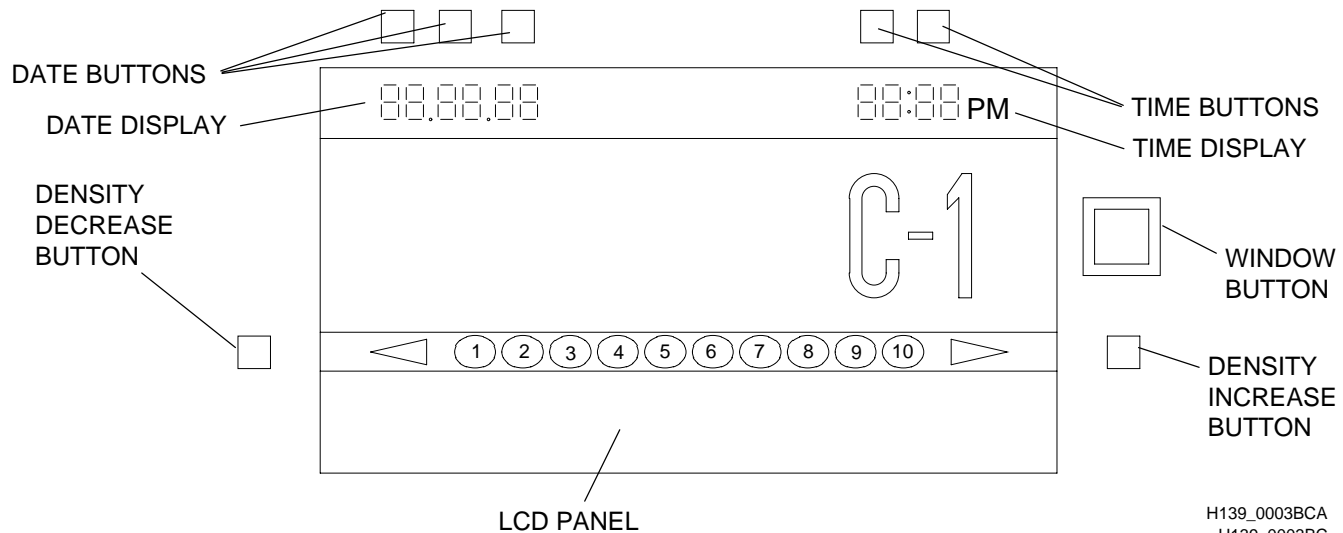
- [1] Do the "Cover Removal Procedure" on Page 6-1.
- [2] To select the 12-hour time format, set:
 - (a) DIP SWITCH 1 to OFF and
 - (b) set DIP SWITCH 2 to OFF
- [3] To select the 24-hour time format, set:
 - (a) DIP SWITCH 1 to ON and
 - (b) DIP SWITCH 2 to OFF
- [4] To complete the assembly of the CAMERA, reverse the "Cover Removal Procedure" on Page 6-1.
- [5] Press the DENSITY DECREASE BUTTON and then the POWER BUTTON. This will reset the microprocessor.

Note

Both date and time will be all zeros on the DISPLAY.

H139_0032CCA
H139_0032CC

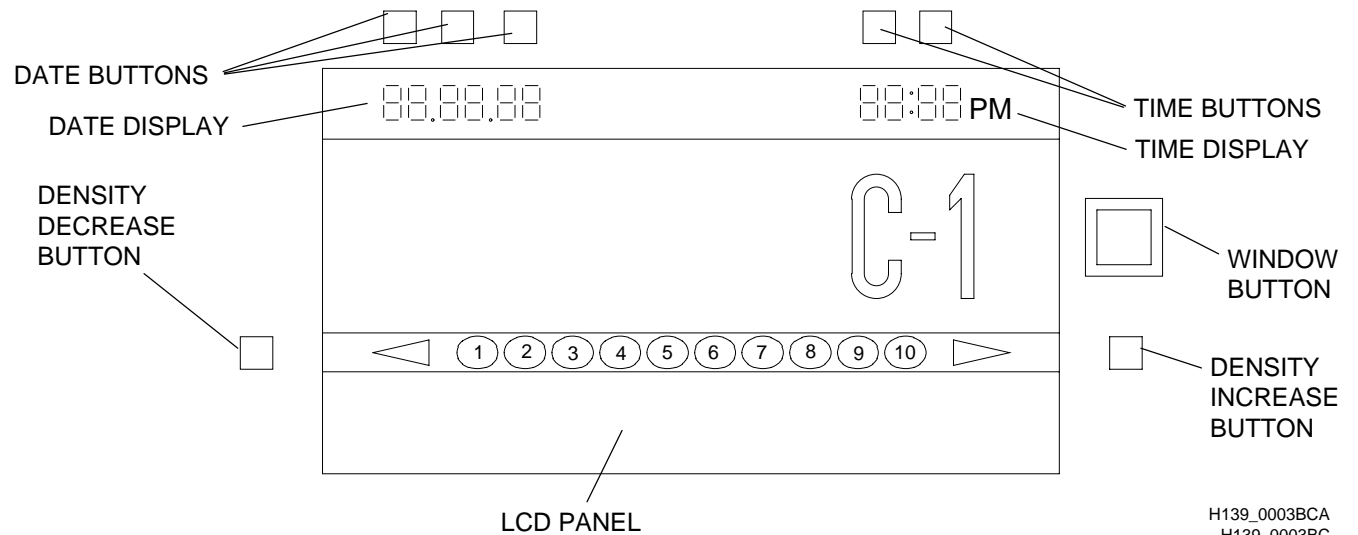
Setting the Date and Time



- [1]** Check that the ID CAMERA is connected to a power source with a reliable earth ground. Energize the ID CAMERA.
- [2]** Set the date and time:
 - (a)** Press the DENSITY INCREASE and DENSITY DECREASE BUTTONS at the same time. The values in the DATE and TIME DISPLAYS will flash.
 - (b)** Press the DATE BUTTONS to select the date you want. The DATE BUTTONS are programmed to the date format selected earlier.
 - For example, if your date format is month/day/year, the left DATE BUTTON controls the month, the middle DATE BUTTON controls the day, and the right DATE BUTTON controls the year.
 - If your date format is day/month/year, the left DATE BUTTON controls the day, the middle DATE BUTTON controls the month, and the right DATE BUTTON controls the year.
 - If your date format is year/month/day, the left DATE BUTTON controls the year, the middle DATE BUTTON controls the month and the right DATE BUTTON controls the day.
 - (c)** Continue to press the appropriate DATE BUTTONS until the correct date is on the LCD PANEL.
 - (d)** Press the TIME BUTTONS to select the time. The TIME BUTTONS are programmed to the time format selected earlier, either a 12- or 24-hour clock.
 - In both the 12- and 24-hour time formats, the left TIME BUTTON controls the hour, and the right TIME BUTTON controls the minutes.
 - (e)** Continue to press the TIME BUTTONS until the correct time is displayed on the LCD PANEL.
 - (f)** Press the DENSITY INCREASE BUTTON only, approximately 2 - 3 seconds, until the DATE and TIME DISPLAYS stop flashing.

Note

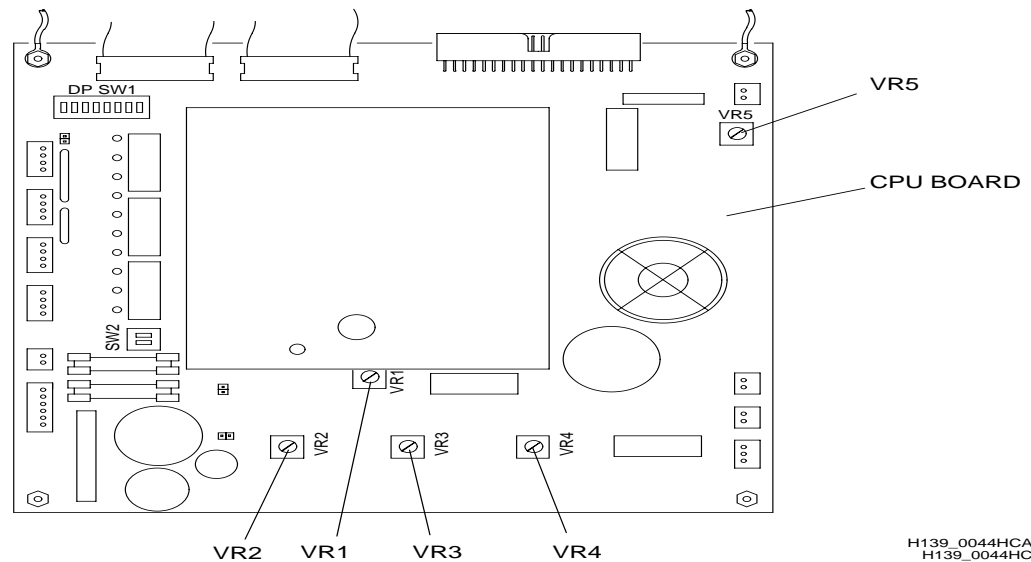
- The DENSITY BOTTONS are deactuated while the DATE and TIME DISPLAYS are flashing.
- The time or date cannot be changed if a PATIENT ID CARD is in either the P-A or A-P CARD SLOT.

Clearing the Date and Time

To clear the date and time, or set the date and time to "0", de-energize the CAMERA, press the DENSITY DECREASE BUTTON, and then press the POWER BUTTON. This clears, or resets, the microprocessor.

Adjusting POTENTIOMETERS

Figure 6-7 Locating the POTENTIOMETERS on the CPU BOARD



There are 5 POTENTIOMETERS on the CPU BOARD. Use the ALIGNMENT TOOL TL-1481 to adjust each POTENTIOMETER.

Here is a list of what each POTENTIOMETER controls:

- VR1 - Adjusts all LAMPS in the ID CAMERA at the same time
- VR2 - Adjusts the brightness of the P-A CLOCK LAMP
- VR3 - Adjusts the brightness of the A-P CLOCK LAMP
- VR4 - Adjusts the brightness of the MAIN EXPOSURE LAMPS
- VR5 - Adjusts the volume of the ALARM

Note

When installing a new CPU BOARD, adjust VR2, VR3, and VR4 so that the brightness of the LAMPS is equal and then adjust VR1. Adjust VR1 until the density is 1.2 on normally used film, when the density setting is at 5. See the following Pages for the adjustment procedures.

Adjusting POTENTIOMETER VR1

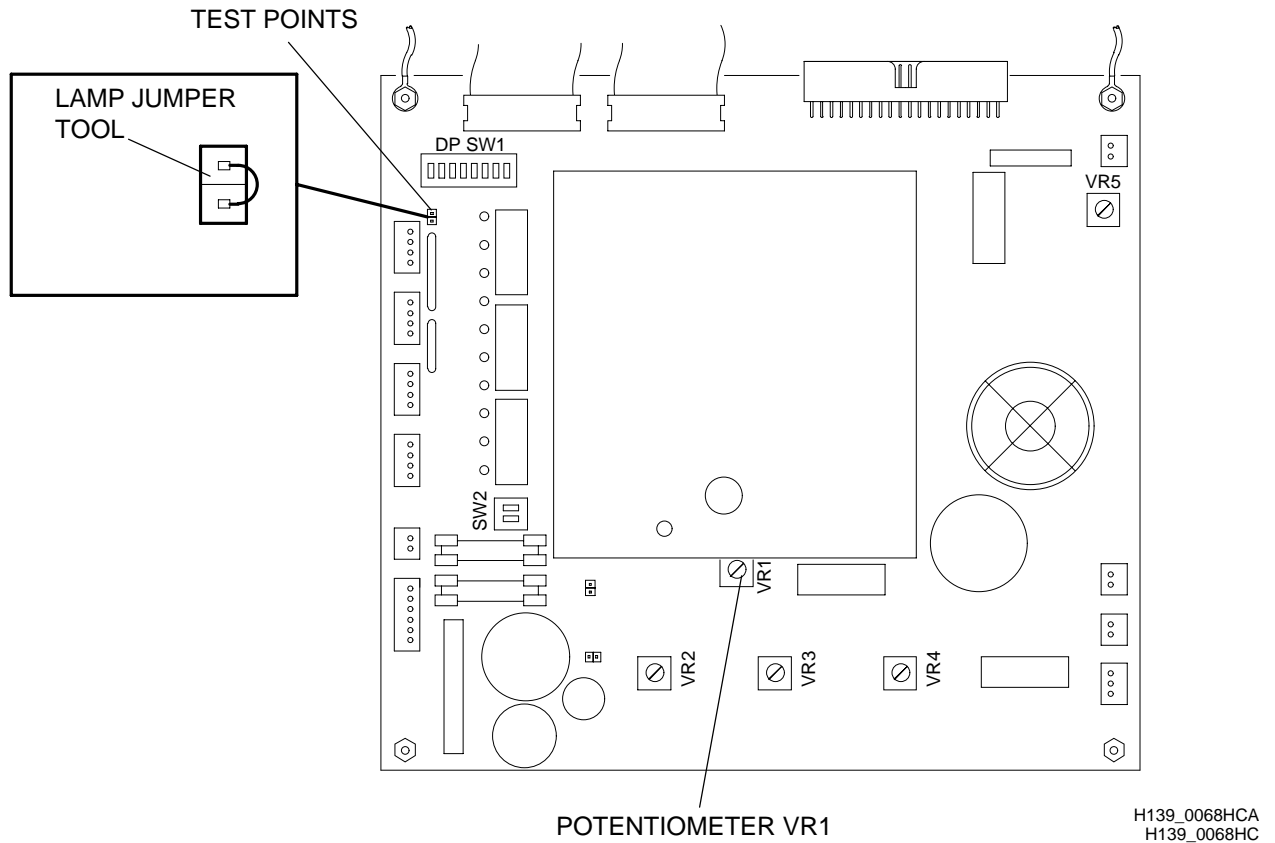
This POTENTIOMETER allows you to adjust the intensity of all LAMPS in the ID CAMERA at the same time.



Important

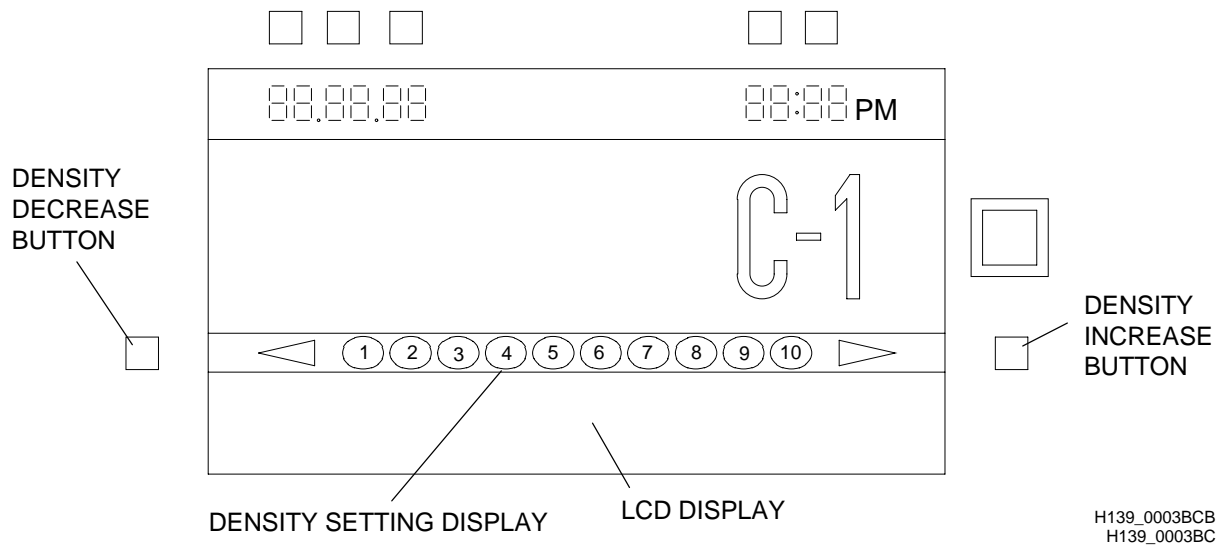
- Do not disconnect the RIBBON CABLE at the end of the “Cover Removal Procedure”. The CABLE must be connected to load the boot routine into memory.
- When installing a new CPU BOARD, adjust VR2, VR3, and VR4 so that the brightness of the LAMPS is equal and then adjust VR1.

Figure 6–8 **Adjusting POTENTIOMETER VR1 on the CPU BOARD**



- [1] Do the “Cover Removal Procedure” on Page [6–1](#).
- [2] Install a LAMP JUMPER on the 2 TEST POINTS.
- [3] Use ALIGNMENT TOOL TL-1481 on POTENTIOMETER VR1 to set the gross adjustment for all LAMPS to the mid-range intensity.
- [4] Remove the LAMP JUMPER TOOL.
- [5] To complete the assembly of the camera, reverse the “Cover Removal Procedure” on Page [6–1](#).

Figure 6-9 Using the DENSITY BUTTONS



- [6] Use the DENSITY DECREASE or DENSITY INCREASE BUTTONS to set the density at 5.
- [7] Make test exposures.
- [8] Find the mid-range points for each film. For example, RP type film=5 or RA type film=4.
- [9] Record this information.



Important

Ideal density for the background of a pure white card is 1.20.

Adjusting POTENTIOMETER VR2

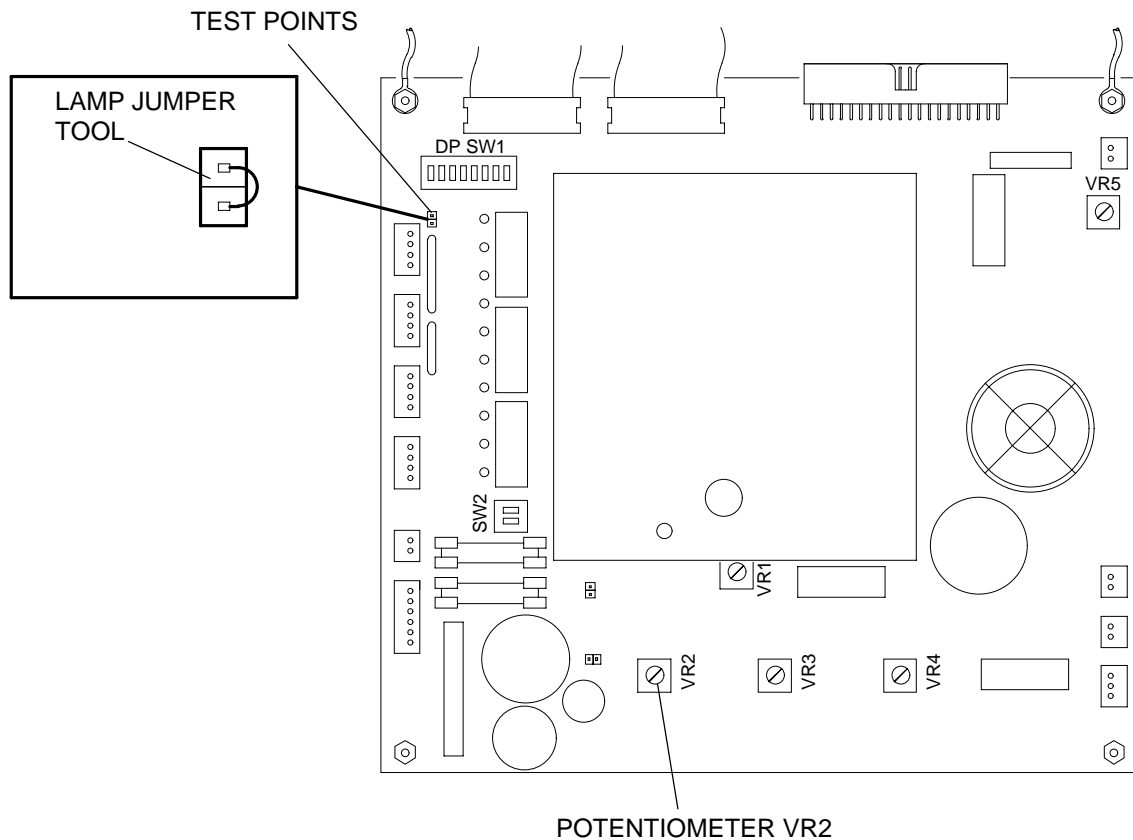
This POTENTIOMETER allows you to adjust the brightness of the P-A CLOCK LAMP.



Warning

Dangerous Voltage

Figure 6-10 Adjusting POTENTIOMETER VR2 on the CPU BOARD



H139_0068HCB
H139_0068HC

- [1] Do the "Cover Removal Procedure" on Page [6-1](#). Leave the RIBBON CABLE connected.
- [2] Install the LAMP JUMPER on the 2 TEST POINTS.
- [3] Check that the adjustment for POTENTIOMETER VR1 is correct.
- [4] Use ALIGNMENT TOOL TL-1481 on POTENTIOMETER VR2 to adjust the brightness of the P-A CLOCK LAMP.
- [5] Remove the LAMP JUMPER TOOL.
- [6] To complete the assembly of the CAMERA, reverse the "Cover Removal Procedure" on Page [6-1](#).
- [7] Run a film test.



Important

The clock image on film is positive (no background). Adjust the LAMP intensity for adequate readability instead of 1.20 density.

Adjusting POTENTIOMETER VR3

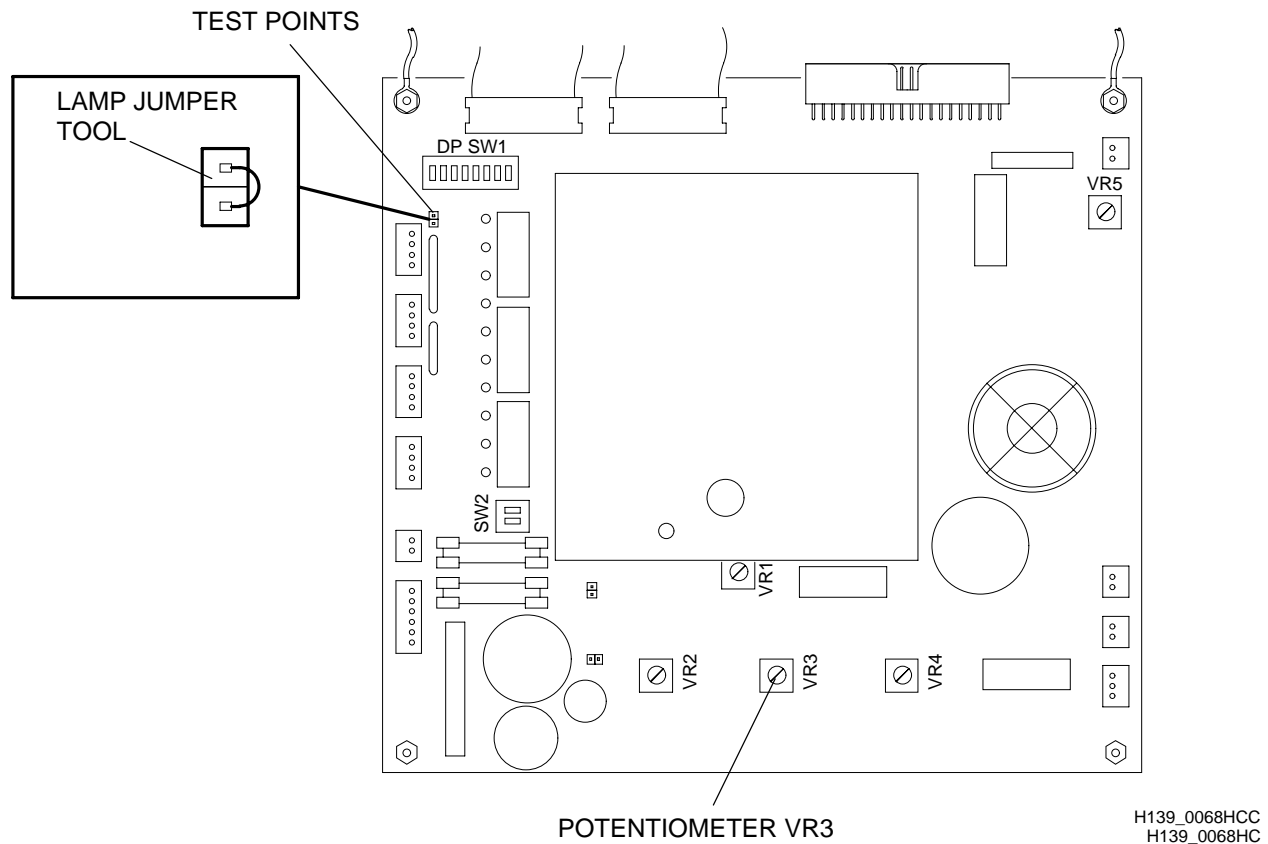
This POTENTIOMETER allows you to adjust the brightness of the A-P CLOCK LAMP.



Warning

Dangerous Voltage

Figure 6-11 Adjusting POTENTIOMETER VR3 on the CPU BOARD



- [1] Install the LAMP JUMPER on the 2 TEST POINTS.
- [2] Check that the adjustments for POTENTIOMETERS VR1 and VR2 are correct.
- [3] Use ALIGNMENT TOOL TL-1481 on POTENTIOMETER VR3 to adjust the brightness of the A-P CLOCK LAMP.
- [4] Remove the LAMP JUMPER TOOL.
- [5] To complete the assembly of the CAMERA, reverse the "Cover Removal Procedure" on Page [6-1](#).
- [6] Run a film test.



Important

This adjustment is complete when the print density of the A-P CLOCK is the same as the density of the P-A CLOCK, and both densities are the same as the "A-P" and "P-A".

Adjusting POTENTIOMETER VR4

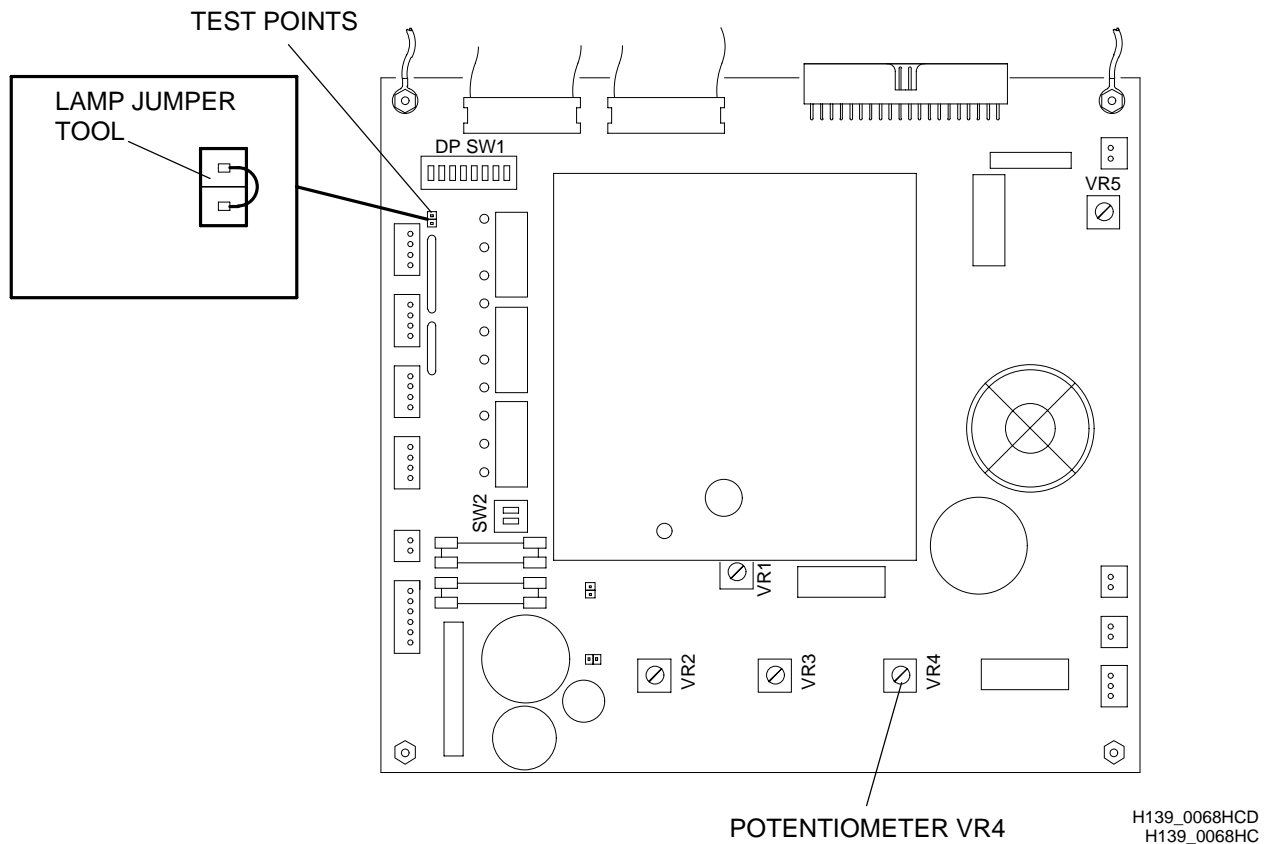
This POTENTIOMETER allows you to adjust the brightness of both MAIN EXPOSURE LAMPS.



Warning

Dangerous Voltage

Figure 6-12 Adjusting POTENTIOMETER VR4 on the CPU BOARD



- [1] Do the “Cover Removal Procedure” on Page [6-1](#). Leave the RIBBON CABLE connected.
- [2] Install the LAMP JUMPER on the 2 TEST POINTS.
- [3] Use ALIGNMENT TOOL TL-1481 on POTENTIOMETER VR4 to adjust the brightness of both MAIN EXPOSURE LAMPS up or down as determined by the test exposures.
- [4] Remove the LAMP JUMPER TOOL.
- [5] To complete the assembly of the CAMERA, reverse the “Cover Removal Procedure” on Page [6-1](#).
- [6] Run a film test.



Important

Ideal density for the background of a pure white card is 1.20.

Adjusting POTENTIOMETER VR5

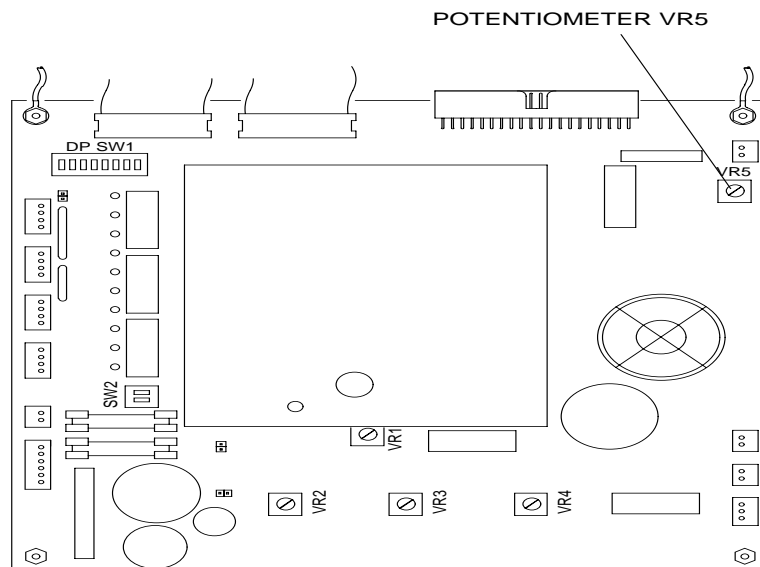
This POTENTIOMETER allows you to adjust the volume of the ALARM.



Warning

Dangerous Voltage

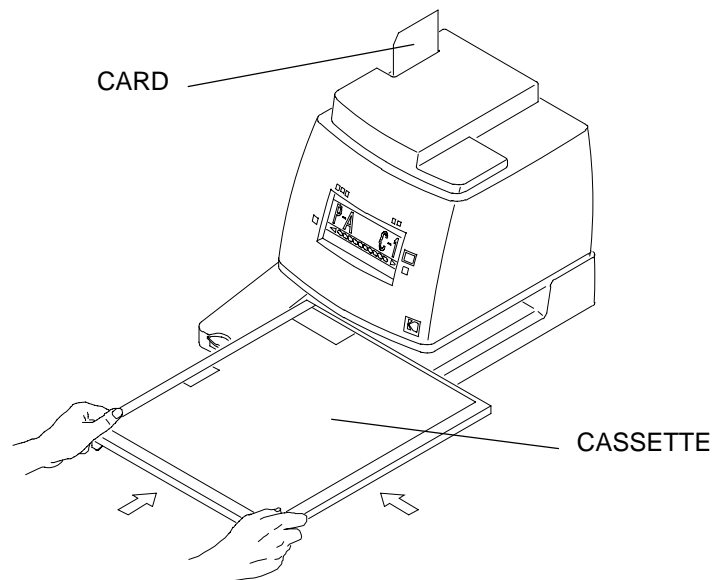
Figure 6-13 Adjusting POTENTIOMETER VR5 on the CPU BOARD



H139_0044HCB
H139_0044HC

- [1] Do the "Cover Removal Procedure" on Page [6-1](#). Leave the RIBBON CABLE connected.
- [2] Use ALIGNMENT TOOL TL-1481 on POTENTIOMETER VR5 to adjust the volume of the ALARM.

Figure 6-14 Inserting a CASSETTE and a CARD

H139_0063BCA
H139_0063BC

- [3] Insert a CASSETTE and a CARD into the ID CAMERA to check the volume of the ALARM.
- [4] If necessary, do Step 2 again.
- [5] To complete the assembly of the CAMERA, reverse the "Cover Removal Procedure" on Page [6-1](#).

