

S-01: Perform Thermal Imaging

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.

EQUIPMENT

- Agema 570 Thermovision Camera
- IRwin Report 5.3 or better

RESOURCES

- Agema Training Manual
- Thermovision 570 Operating Manual
- Experienced Maintenance Personnel

Perform Thermal Imaging

Set Up Thermovision 570

1. Obtain the Agema Thermovision 570 (camera) from the locked cabinet in the Predictive Maintenance office.

Agema® 570
Thermovision Camera

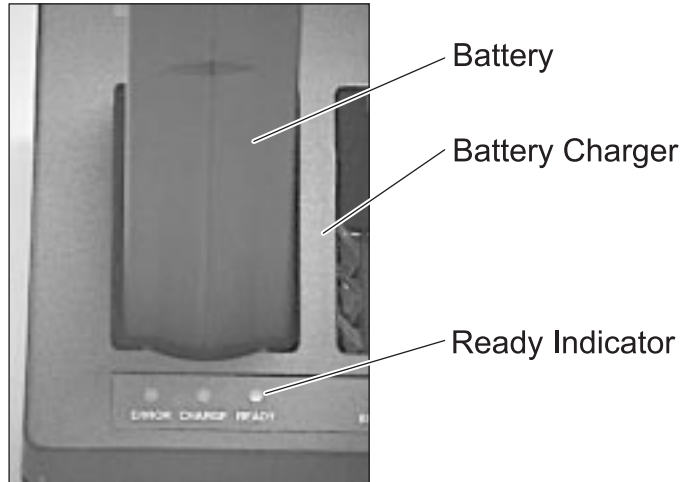


Joystick Button

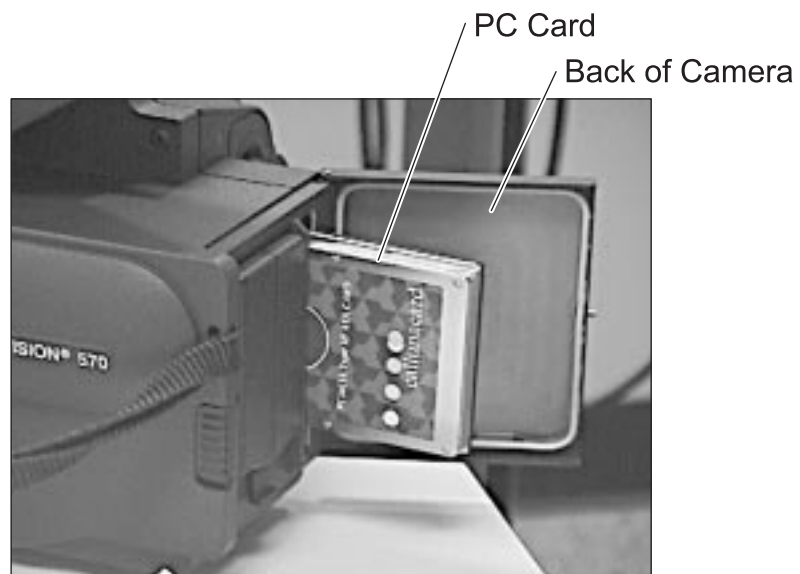
Power Button

2. Check the battery and PC card.

- Make sure the battery is charged.



- Make sure the PC card is installed.

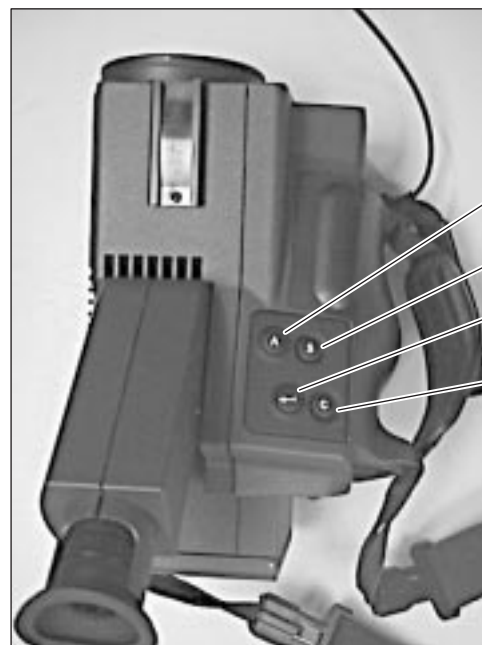


3. Turn on the camera and allow it to recalibrate.

Recalibration Message Displayed
When Camera is Turned on



4. Press the Enter button to view the menu screen.

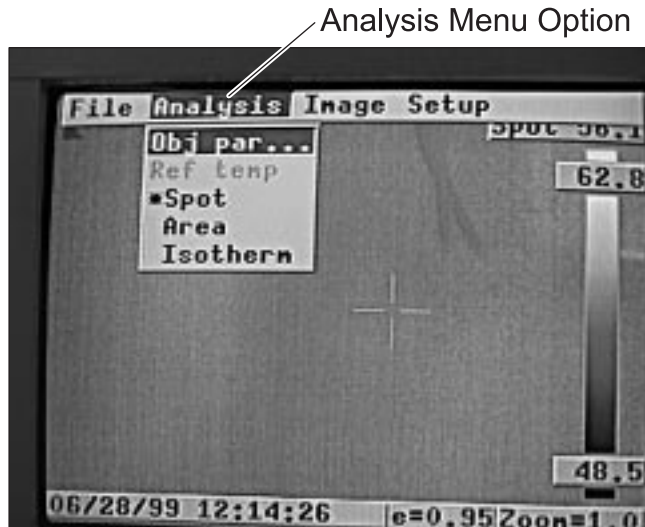


Auto Button
Store Button
Enter Button
Clear Button

Note: Use the joystick button to toggle left and right between menus and up and down to move to items within the menu. Press the Enter button to select an item.

5. Set the Object Parameters.

- Select the Analysis menu.



- Select Object parameters (Obj par..).
- Set the Emissivity (emiss) to 0.95 or according to the Emissivity Chart, if available.
- Set the Distance according to the range between the object and where the image is taken.



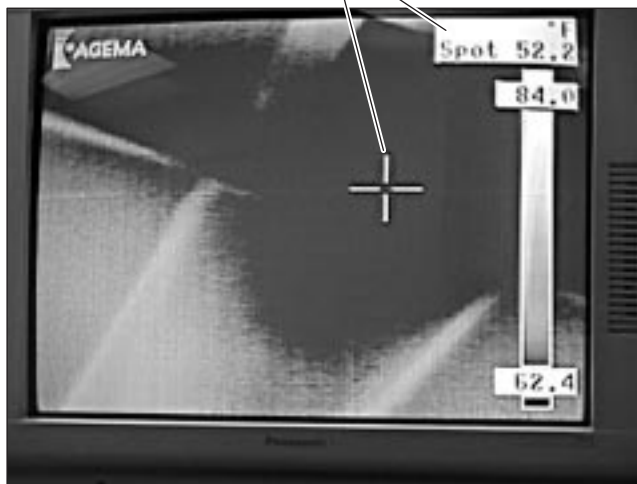
- Emissivity Setting
- Distance Setting
- Ambient Temperature
- Relative Humidity
- Reference Temperatures

- Change the Ambient temperature (T_{amb}) as shown in the Operator's Manual, if required.
- Change the Relative humidity (Rel hum) to 50% unless otherwise specified.

6. Select spot or area analysis, from the Analysis Menu, depending upon reading requirements.

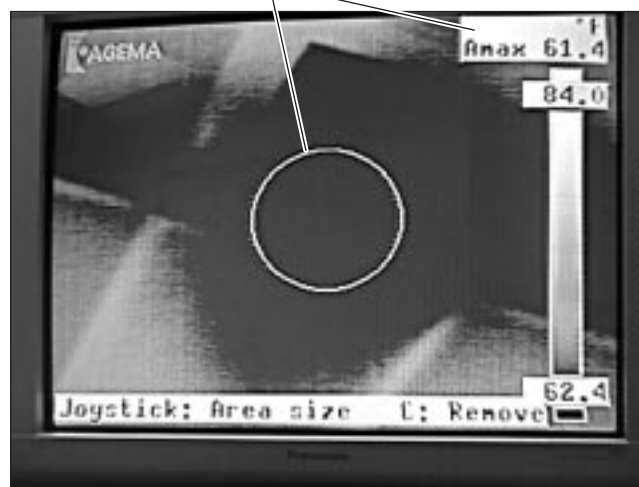
- Spot analysis allows a specific reading of temperature on a part of the object you are imaging.

Set for Spot Analysis



- Area analysis provides an average temperature on the object you are imaging.

Set for Area Analysis



7. **Select the isotherm analysis setting, if desired, to detect specific temperatures that fall within a certain range.**
8. **Press the <A> control button to set the automatic image settings.**
9. **Change the Image properties according to the Operator's Manual, if needed.**

Capture an Image

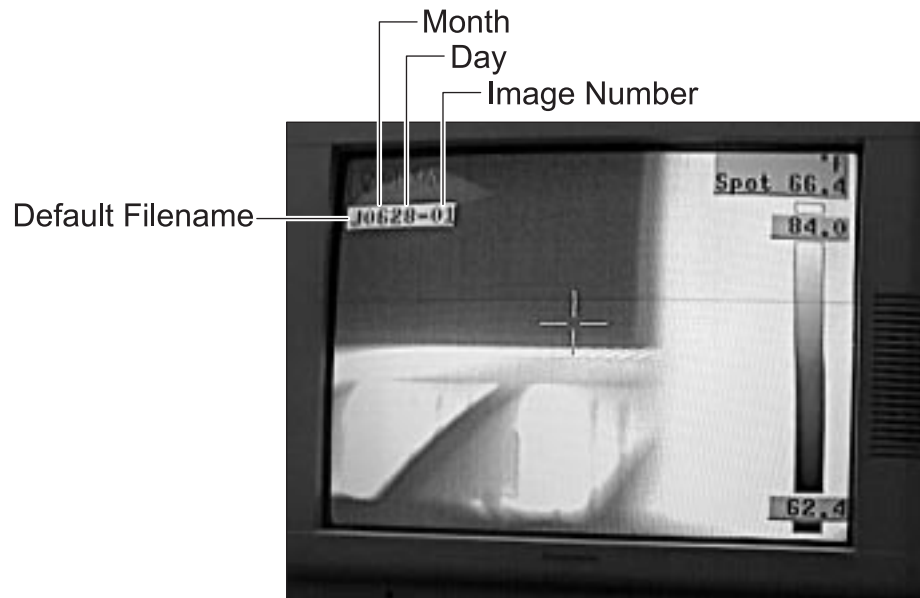
1. **Focus on the image.**
 - Use the joystick to zoom the image in and out until crisp edges form on the object.

Note: Be aware of reflective heat. This occurs when heat is radiated from another area.

2. **Press the <S> control button and hold for 2 seconds to store the image.**
3. **Save the image.**
 - Press Enter.
 - Toggle to the File menu.
 - Toggle to Save.



- Press Enter.
- Notice the file name is defaulted to the month, the day, and the sequence of the image.



4. **Press the <Enter> control button, toggle to the Image menu, and select Live.**
5. **Continue capturing and saving the images until all images have been captured.**
6. **Turn off the camera.**
7. **Remove the PC card.**
8. **Install the PC card into a PC with an adapter and the IRwin Report 5.3 software loaded.**
9. **Copy the images onto the PC.**
10. **Compare the images with previous thermal images, if available, to detect any discrepancies.**