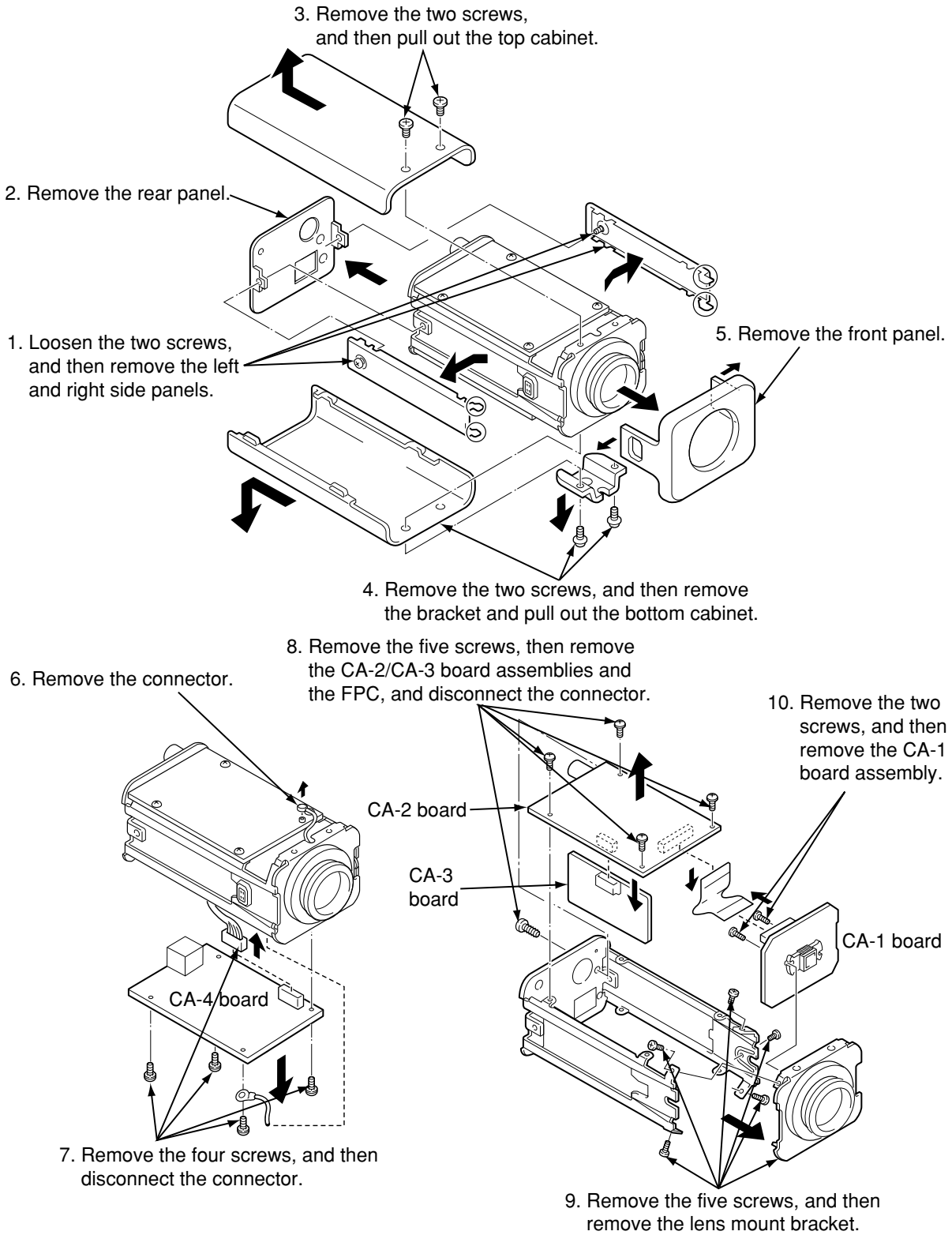
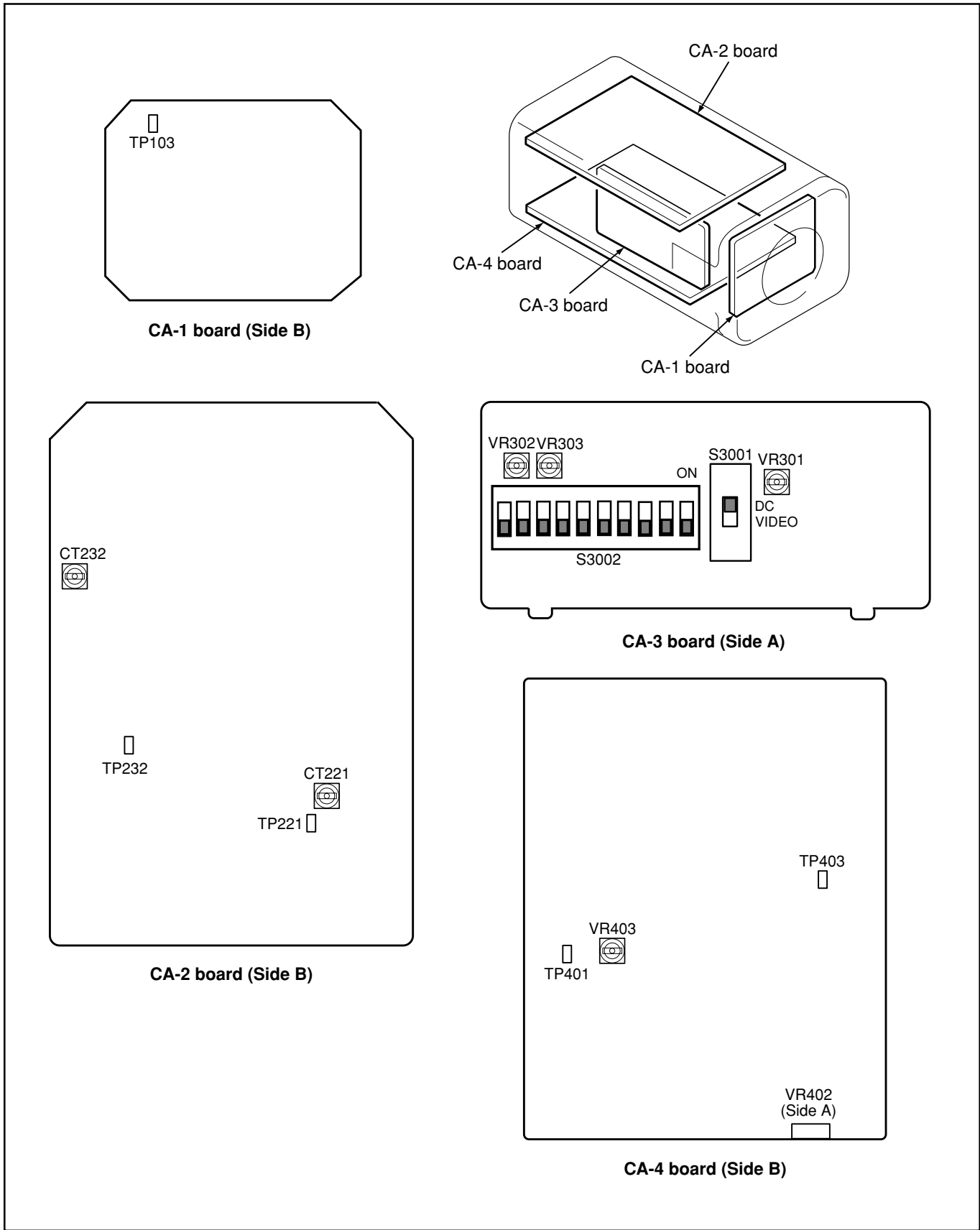


1. DISASSEMBLY



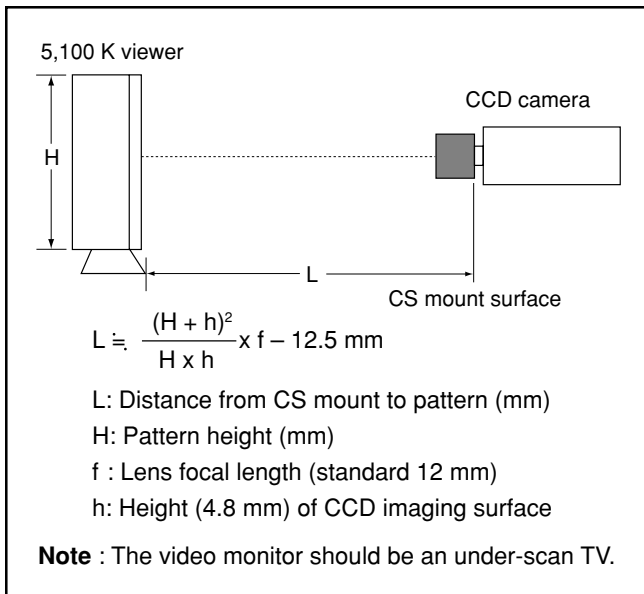
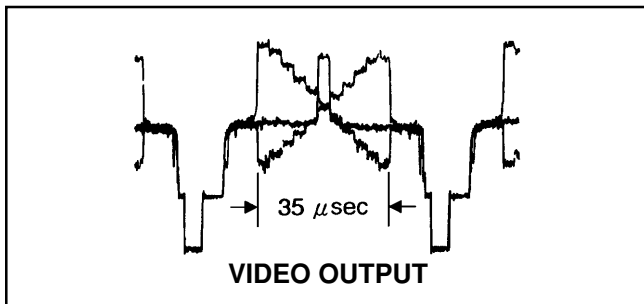
2. BOARD LOCATION



3. ADJUSTMENT

3-1. ADJUSTMENT CONDITION

1. Use the 5,100K viewer for the subject.
2. Set the trigger signal of oscilloscope to VIDEO OUT, and apply H sync unless specified.
3. Set S3002 to the "all OFF" position and S3001 to the "DC" position.
4. In adjustments without direction to display charts, shield light with a lens cap to provide dark condition. The amount of light is to be stable.
5. Connect the video output to a video monitor with an input impedance of 75 Ω.
6. Ground test point are TP103 (CA-1) and TP401 (CA-4).
7. Set the distance from the subject to about 60 cm and adjust the camera position so that the picture frame size becomes as shown below when performing the adjustment with the gray scale chart (ITE gray scale chart/ $\gamma = 0.45$).
8. Apply 24 V AC to the 24 V AC terminal on the camera.

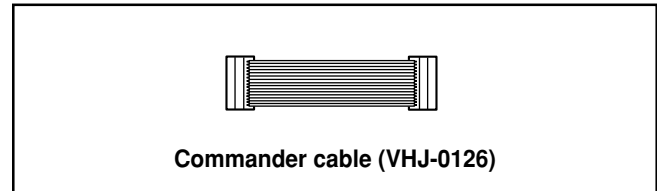


3-2. PREPARATION

1. Install the adjustment software (VHJ-0133) in a computer running the Windows operating system.
2. Use the adjustment tool (VHJ-0127) to connect the camera to be adjusted to the serial port of the computer, and then turn on the power for the computer and the camera.

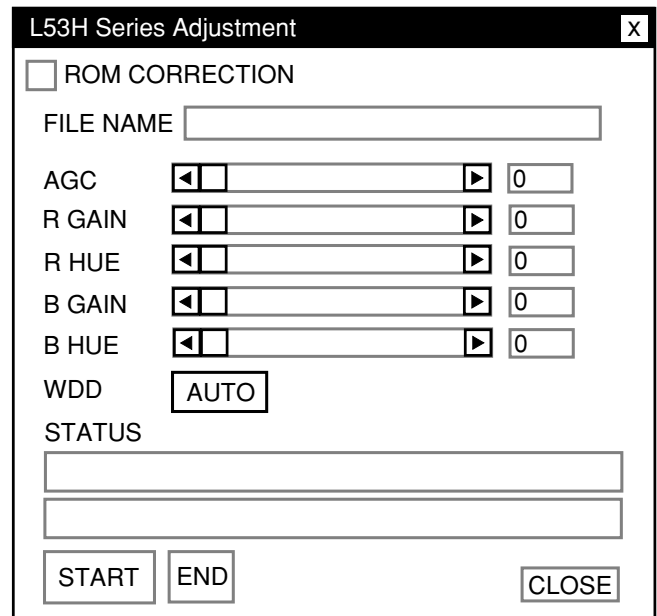
3-3. TABLE FOR SERVICING TOOLS

Ref. No.	Name	Part code
J-1	Color viewer	VJ8-0007
J-2	Gray scale chart	VJ8-0010
J-3	Color bar chart	VJ8-0009
J-4	Commander cable	VHJ-0126
J-5	Adjustment jig	VHJ-0127
J-6	Calibration software	VHJ-0133



Connect the adjustment jig and camera with commander cable (VHJ-0126)

3-3-1. Computer screen during adjustment



3-4. Power Voltage Adjustment

Adjustment location: VR403 (CA-4)

Measuring location: TP403 (CA-4)

Measuring equipment: Digital voltmeter

Subject: No designation

Adjusting method:

1. Adjust with VR403 to $3.42 \pm 0.02 \text{ V}$.

3-5. Sub Carrier Frequency Adjustment

Adjustment location: CT221 (CA-2)

Measuring location: TP221 (CA-2)

Measuring equipment: Frequency counter

Subject: No designation

Adjusting method:

1. Adjust with CT221 to $4433619 \text{ Hz} \pm 10 \text{ Hz}$.

3-6. 28 MHz VCO Voltage ADJUSTMENT

Adjustment location: CT232 (CA-2)

Measuring location: TP232 (CA-2)

Measuring equipment: Digital voltmeter

Subject: No designation

Adjusting method:

1. Adjust with CT232 to 8.0 ± 0.2 Vp-p.

3-7. AGC Level ADJUSTMENT

Adjustment location: Computer screen

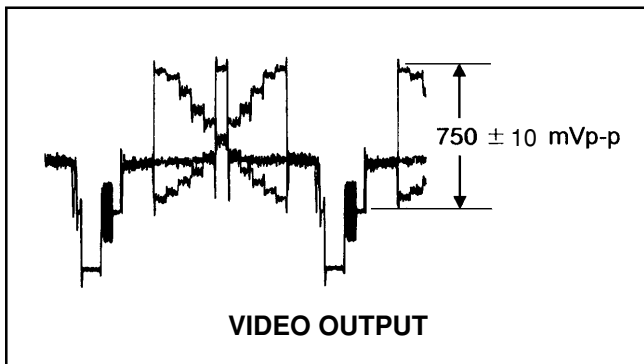
Measuring location: VIDEO OUT

Measuring equipment: Oscilloscope

Subject: Gray scale chart

Adjusting method:

1. Click the adjustment software installed from the personal computer, and the adjustment window will be displayed.
2. Display the grayscale chart on full screen.
3. Gradually move the lens aperture from the CLOSE side to the OPEN side, and secure the aperture at the point where the AGC starts to drop from the MAX setting.
4. Use the computer's mouse to adjust the AGC in the adjustment window so that the video out terminal is 750 ± 10 mVp-p.



3-8. White Balance Adjustment

Adjustment location: S3002-8, VR302, VR303 (CA-3)

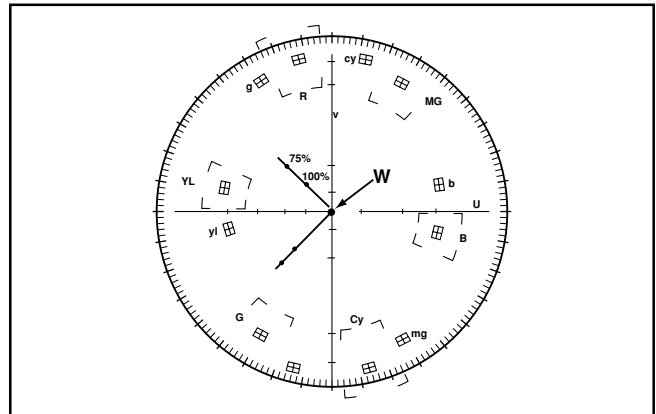
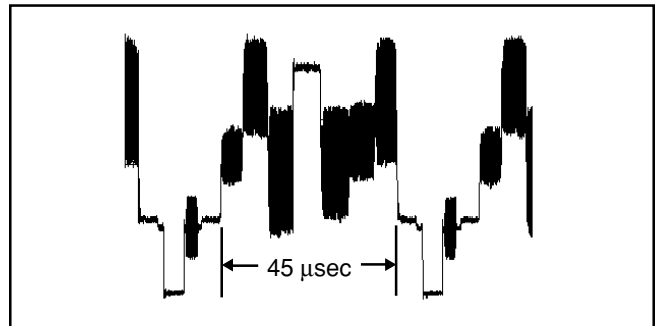
Measuring location: VIDEO OUT

Measuring equipment: Oscilloscope, Vectorscope

Subject: Color bar chart

Adjusting method:

1. Set the S3002 (white balance switch) to the "MANU" (ON) position.
2. Display the grayscale chart on full screen.
3. Gradually move the lens aperture from the CLOSE side to the OPEN side, and secure the aperture at the point where the AGC starts to drop from the MAX setting.
4. Adjust VR302 and VR303 so that the luminescent spot representing white is overlapping with the crosshair mark in the center of the vectorscope.



3-9. Hue and Chroma Adjustment

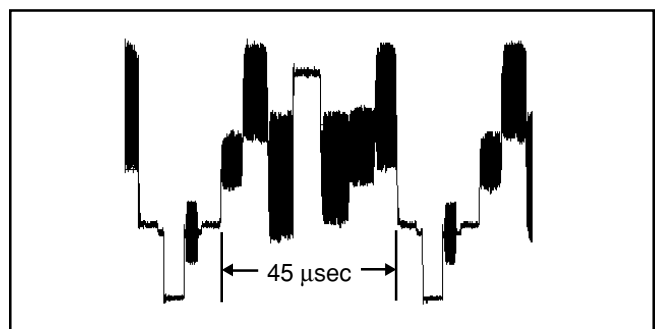
Adjustment location: S3002-8 (CA-3), computer screen

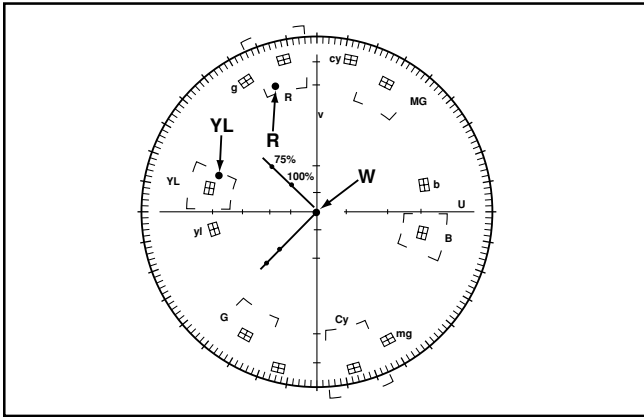
Measuring location: VIDEO OUT

Measuring equipment: Oscilloscope, Vectorscope

Subject: Color bar chart

1. Display the grayscale chart on full screen.
2. Gradually move the lens aperture from the CLOSE to OPEN side, and secure the aperture at the point where the AGC starts to drop from the MAX setting.
3. Shield light with a lens cap, and then remove it.
4. Use the computer's mouse to adjust each of the R GAIN, B GAIN, R HUE and B HUE until the luminescent spot representing red is aligned with the [R] position on the vectorscope and the luminescent spot representing yellow is aligned with the [YL] position on the vectorscope.
5. Set the S3002 (white balance switch) to the "ATW" (OFF) position.





3-10. Iris Level Adjustment

Adjustment location: S3001, VR301 (CA-3)

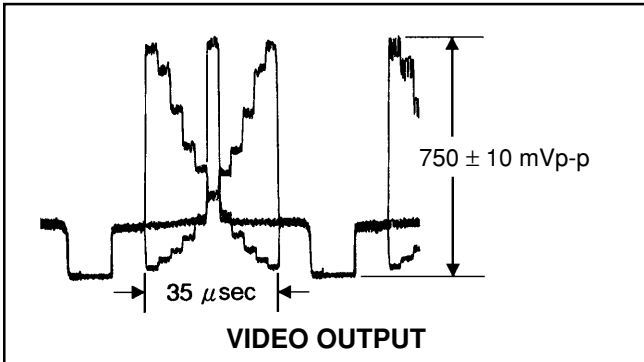
Measuring location: VIDEO OUT

Measuring equipment: Oscilloscope

Subject: Gray scale chart

Adjusting method:

1. Set S3001 to the DC type lens side.
2. Attach the DC type automatic iris lens. (Use a VCL-CS8LY or equivalent as the lens).
3. Display the gray scale chart on full screen.
4. Turn the VR301 to the right so that the white level is maximum.
5. Turn the VR301 to the left so that the output level is 750 ± 10 mVp-p.



3-11. Line Phase Adjustment

Adjustment location: S3002-9 (CA-3), VR402 (CA-4)

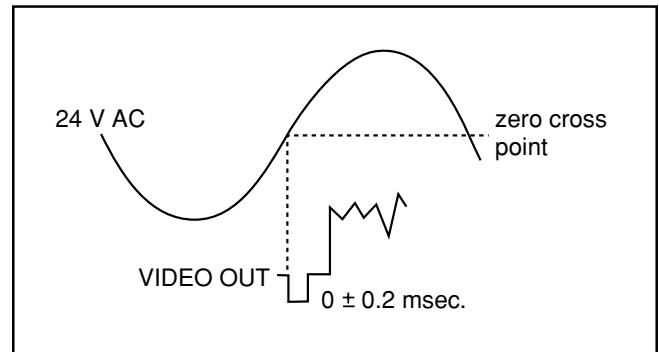
Measuring location: VIDEO OUT, 24 V AC/GND terminals

Measuring equipment: Oscilloscope

Subject: Attach the lens cap

Adjusting method:

1. Connect the camera to a 24 V AC /50 Hz power source.
2. Set S3002-9 switch to the "L-L" (ON) position.
3. The HOT (signal) side and the COLD (GND) side of the oscilloscope probe connect to the right side and the left side of the 24 VAC terminals respectively. (rear view)
4. Turn VR402 (LINE PHASE) to adjust the leading edge of the vertical sync signal and zero-cross shift of the AC 24 V power supply to 0 ± 0.2 msec.
5. Set S3002-9 to the "INT" (OFF) position before shipment.



3-12. CCD White Point Defect Detect Adjustment

Measuring location: VIDEO OUT

Measuring equipment: Monitor display

Adjustment method:

1. Shield light with a lens cap to provide dark condition.
2. Set the camera mode, and click the "AUTO" at the WDD on the adjustment software.
3. After completing this adjustment, it confirms that white point can not be seen on the monitor display.
4. Click the End button.