

1. SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

<Required measuring equipment>

Signal generator (Programmable video generator)..... Leader 1604A
 DC voltmeter (300V DC range)
Note: Digital multimeter can also be used.
 High voltage probe (0-30kV DC)
 Color analyzer..... Minolta CA-100
 Photometer..... Minolta LS-100
 Electric field meter..... Combinova EFM 100
 Scale (Two 50cm scales put together so that no visual aberration occurs.)
 Frequency counter
 Digital wattage meter
 Landing meter..... LSS LND-070 or 072
 Degausser
 Interface adapter (Iiyama handmade)
 Short-connector (Iiyama handmade)

<Preparation>

1. Place the monitor without tilting.
2. Connect the signal cable from the signal generator to the monitor.
3. Face the CRT screen to east so as not to be influenced by magnetic force.
4. Turn ON the Power Switch, and degauss the entire screen with degausser. See "EXTERNAL DEGAUSS".
5. Perform adjustment by setting the brightness to center and the contrast to maximum, except where specifically indicated.
6. Receive MODE 5 and turn ON the Power Switch. Perform adjustment after a warm-up of at least an hour.
7. Adjustment data is automatically saved in the memory when the on screen display disappears, when another signal is received, or pressing the Menu and – Buttons at the same time.

Note: This monitor should be checked and adjusted by connecting it to a signal generator, then entering and running the timing charts both below and of Chapter 2.

fH / fV (kHz / Hz)	Resolution*	Sync polarity			Sync on green	Horizontal (μsec)					Vertical (msec)				
		H	V	Comp		A	B	C	D	E	O	P	Q	R	S
fH 27.2	600×480	N	N	–	–	36.77	4.41	2.30	27.58	2.48	20.407	0.074	1.985	17.650	0.698
30.0 / 52	608×520	N	N	–	–	33.33	3.79	3.71	25.33	0.50	19.333	0.067	1.000	17.333	0.933
30.0 / 60	712×475	N	N	–	–	33.33	1.00	1.00	29.66	1.67	16.665	0.067	0.600	15.832	0.166
fH 31.5	640×400	N	P	–	–	31.778	3.813	1.907	25.422	0.636	14.268	0.064	1.112	12.711	0.381
fH 47.6	1024×720	N	N	O	O	21.00	2.00	2.36	15.76	0.88	16.695	0.084	0.420	15.115	1.076
fH 128.7	–	N	P	–	–	7.77	0.61	1.08	5.62	0.46	12.500	0.023	0.527	11.942	0.008
130.0/160	328×760	P	P	–	–	7.69	0.79	1.03	5.53	0.34	6.251	0.023	0.376	5.844	0.008
fH 135.0	320×1411	P	P	–	–	7.41	0.77	1.05	5.45	0.14	11.111	0.022	0.635	10.447	0.007
fV 51	–	N	N	–	–	32.16	4.41	2.33	25.20	0.20	19.993	0.064	0.967	18.866	0.096

* The resolutions are only for your reference when using Leader 1604A.

ADJUSTMENT MODE

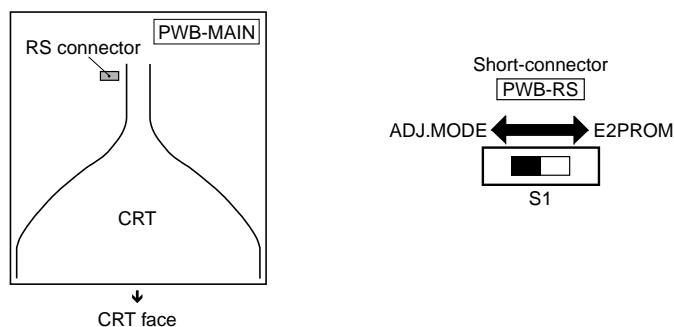
There are two different modes available to adjust the monitor as described below. The adjustment with 'o' in front of the title are only available under User Mode. The adjustments with 'n' in front of the title are only available under Factory Mode. You can perform the other adjustments by either User or Factory Mode. Please change the mode as required.

USER MODE:

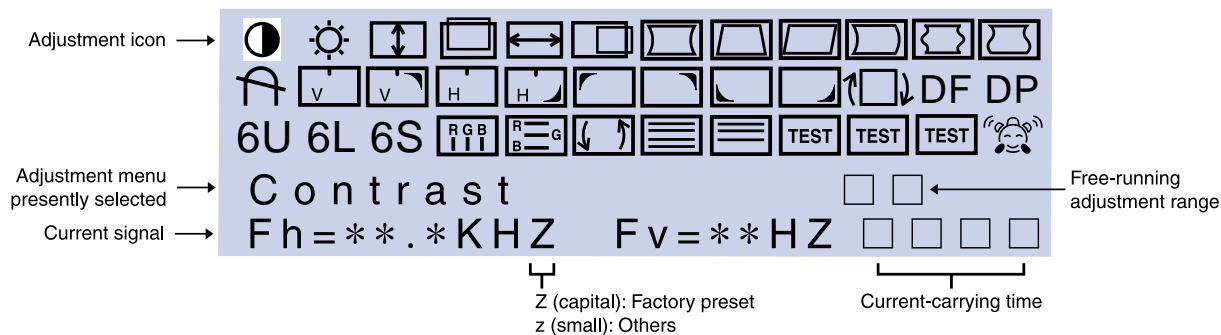
Turn ON the Power Switch and you are in the User Mode.

FACTORY MODE: There are two ways to enter the Factory Mode.

1. Turn OFF the Power Switch. Connect the Iiyama short-connector to the RS connector on the PWB-MAIN and set S1 switch on the PWB-RS of the short-connector to ADJ.MODE side. Turn ON the Power Switch and you are in the Factory Mode. The following menu appears on the screen when you press the MENU Button. Turn OFF the Power Switch and remove the short-connector from the RS connector to exit.



2. Turn ON and OFF the Power Switch while pressing the MENU Button. Turn ON the Power Switch again while pressing the – Button and you are in the Factory Mode. The following menu appears on the screen when you press the MENU Button. Turn OFF the Power Switch to exit.



The menu items in the Factory Mode are as follows:

Contrast	Pin-cushion	DEGAUSS	Landing-TR	6H-PU	V-linear-S
Brightness	Trapezoid	Uniform-VCENT	Landing-BL	6H-PL	V-linear-C
V-size	Parallelogram	Uniform-V-TB	Landing-BR	6H-S	Auto-da-test1
V-position	Side-pin-balance	Uniform-HCENT	N-S RRC	H-convergence	Auto-da-test2
H-size	Side-pin-corner	Uniform-H-RL	DBF-Para	V-convergence	Auto-da-test3 *
H-position	Cushion-side	Landing-TL	DBF-Phase	Tilt-dy	CRT Check

* Auto-da-test3 helps you to perform H/V-BLANKING and H/V-CONVERGENCE confirmations in this SET-UP ADJUSTMENTS. The following items are displayed automatically in turn.

1. H/V-convergence
2. Tilt-dy
3. N-S RRC
4. Landing-TL/TR/BL/BR
5. H/V-blanking

EXTERNAL DEGAUSS

Make sure you disable the Landing-TL/TR/BL/BR and N-S RRC settings before performing the external degauss. Follow the procedure below depending on the adjustment mode you are in.

PROCEDURE

○ USER MODE

- 1) Select Degauss and press the MENU Button so that the Landing-TL/TR/BL/BR and N-S RRC will be disabled.
- 2) Degauss the entire screen with degausser while the Degauss is activated (approx. 6 seconds).

□ FACTORY MODE

- 1) Select CRT Check and press the MENU Button so that the Landing-TL/TR/BL/BR and N-S RRC will be disabled.
- 2) Confirm that the OSD stays displayed on the screen.
Note: If the OSD disappears, restart from 1).
- 3) Degauss the entire screen with degausser.
- 4) Press the MENU Button twice to turn off the OSD.

LOCK OUT FACILITY

User adjustable items can be restricted to the following three lock out types by setting the lock out facility as described below.

Lock out type	Menu * / Adjustment item available
A	Menu 1
B	Menu 1, 3, 5
C	Contrast, Brightness

* It shows the number of the standard menu page.

PROCEDURE

1. To make the lock out facility available

- 1) Minimize the contrast with the front buttons.
- 2) Turn OFF and ON the Power Switch.
- 3) When degaussing starts, press the MENU, – and + Buttons in turn so that the lock out facility is activated.
Lock out type is switched in alphabetical order when you repeat the button operation.

2. To cancel the lock out facility

- 1) Minimize the contrast with the front buttons.
- 2) Turn OFF and ON the Power Switch.
- 3) When degaussing starts, press the MENU, + and – Buttons at the same time. Then, press the MENU, – and + Buttons in turn so that the lock out facility is canceled.

Note: This button operation should be performed while degaussing.

REWRITE E²PROM DATA IN IC301 (MAIN MICROPROCESSOR)

<Required equipment>

Short-connector (Iiyama handmade)
E²PROM writing cable (Iiyama handmade)
E²PROM disk (Iiyama original)
Computer

In case of that you need to rewrite E²PROM data in IC 301, follow the procedure below.

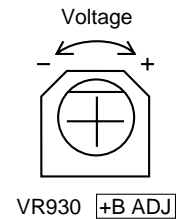
PROCEDURE

- 1) Connect the E²PROM writing cable from the printer connector of the computer to the PWB-RS of the short-connector from the RS connector on the PWB-MAIN.
- 2) Set S1 switch on the PWB-RS of the short-connector to E²PROM side.
- 3) Insert the E²PROM disk to the disk drive and start the computer.
- 4) Turn ON the Power Switch of the monitor.
- 5) Press any key when the monitor enters into Stand-by mode so that rewriting starts.
- 6) "WRITE Completed !!" appears on the screen to inform that rewriting is completed.

Note: FREE-RUNNING adjustment should be performed after rewriting E²PROM data.

1-1. 80V-ADJ adjustment [PWB-MAIN]

- 1) Receive a cross-hatch inverted signal of MODE 5 when applying the AC voltage of $110 \pm 10V$.
- 2) Connect the DC voltmeter between CONNECTOR TP and GND (chassis).
- 3) Adjust the voltage to $DC\ 80 \pm 0.5V$ with VR930 (+B ADJ).

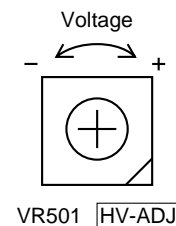


1-2. ANODE VOLTAGE adjustment [PWB-MAIN]

WARNING !

VR501 (HV-ADJ) has been carefully factory-adjusted for each unit in order to satisfy regulations regarding X-radiation. Further adjustment on VR501 shall not be performed. In case of adjustment, the adjusted position of VR501 must be fixed by a soldering iron to prevent it from rotating.

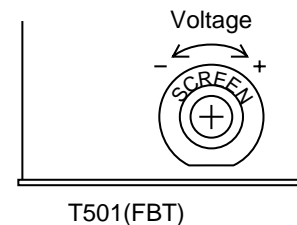
- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Turn OFF the Power Switch.
- 3) Connect a high-voltage probe between CRT anode and GND (chassis).
- 4) Turn ON the Power Switch.
- 5) Adjust the high-voltage to $27.0 \pm 0.1kV$ with VR501 (HV-ADJ).
- 6) Confirm the variation of high-voltage is within $\pm 0.2kV$ when receiving MODE 1 and fH 128.7kHz respectively.
- 7) Turn OFF the Power Switch and remove the high-voltage probe.



1-3. SCREEN VOLTAGE adjustment [PWB-MAIN]

- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Turn ON the Power Switch.
- 3) Connect a high-voltage probe between LEAD-CONNECTOR SC on the PWB-MAIN / CONNECTOR SC on the PWB-VIDEO and GND (chassis).
- 4) Adjust the screen voltage to $630 \pm 10V$ with SCREEN VR located lower of T501 (FBT).

Note: SCREEN VR should not be turned after the adjustment above.

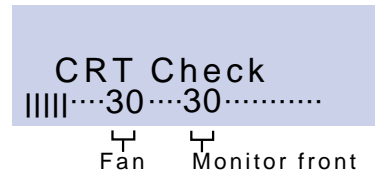


1-4. POWER FACTOR CIRCUIT confirmation [PWB-MAIN]

- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Turn OFF the Power Switch.
- 3) Connect the DC voltmeter between TP4 and TP0.
- 4) Turn ON the Power Switch.
- 5) Confirm that the voltage is $DC\ 400 \pm 10V$.
- 6) Remove the DC voltmeter.

n 1-5. TEMPERATURE SENSOR confirmation

- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Select CRT Check and press the MENU Button.
- 3) Confirm that respective temperature of fan and monitor front displayed on the screen is as follows: actual temperature $\pm 5^{\circ}\text{C}$.



n 1-6. FREE-RUNNING adjustment

- 1) Receive a cross-hatch inverted signals of MODE 4, fH 30.0kHz (fV 52Hz) and 130.0kHz respectively.
- 2) Confirm that FREE-RUNNING adjustment is automatically performed and the picture is synchronized normally.

n 1-7. FV-LIMITER confirmation

- 1) Receive a cross-hatch inverted signals of fV 51Hz and 160Hz respectively.
- 2) Confirm that the picture is synchronized normally.

n 1-8. FH-LIMITER confirmation

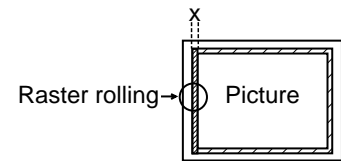
- 1) Receive a cross-hatch inverted signal of fH 27.2kHz.
- 2) Confirm that the picture disappears. Also, make sure the horizontal oscillation frequency is within the specified range: 72-75kHz.
- 3) Receive fH 30.0kHz (fV 60Hz) and confirm that the picture is synchronized.
- 4) Receive fH 135.0kHz and confirm that the picture disappears. Also, make sure the horizontal oscillation frequency is within the specified range above.
- 5) Receive fH 130.0kHz and confirm that the picture is synchronized.
- 6) Turn OFF the power of signal generator and confirm that the picture disappears. Also make sure the horizontal oscillation frequency is within the specified range above.
- 7) Remove the frequency counter.

n 1-9. H-SIZE LIMIT adjustment

- 1) Receive a cross-hatch inverted signals of fH 130.0kHz and 30.0kHz (fV 60Hz) respectively.
- 2) Adjust the horizontal size (H-size) to make it full-scan.

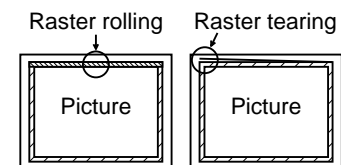
n 1-10. H-BLANKING confirmation

- 1) Receive a cross-hatch inverted signal of fH 128.7kHz.
- 2) Minimize the horizontal size (H-size) with the front buttons.
- 3) Select Auto-da-test3 and press the MENU Button so that the automatic confirmation program starts.
- 4) Confirm that X of the right hand side figure is as follows: $X \leq 3.0\text{mm}$.
- 5) Adjust the horizontal size roughly with the front buttons.



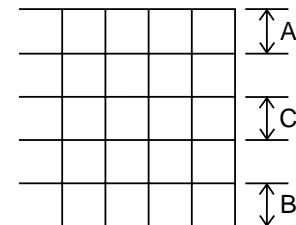
n 1-11. V-BLANKING confirmation

- 1) Receive a cross-hatch inverted signal of fH 128.7kHz.
- 2) Adjust the vertical size and position (V-size and V-position) of the picture roughly with the front buttons.
- 3) Select Auto-da-test3 and press the MENU Button so that the automatic confirmation program starts.
- 4) Confirm that the back-raster is not rolling or tearing at the top.
- 5) Confirm that no retrace line is over the picture.



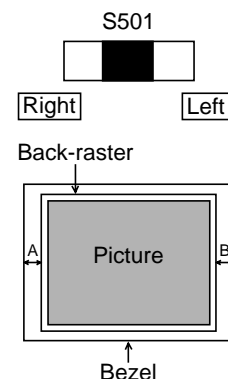
n 1-12. V-LIN adjustment

- 1) Receive a cross-hatch inverted signal of MODE 4.
- 2) Adjust the vertical size so that the size is $295 \pm 4\text{mm}$.
- 3) Adjust the vertical linear corner (V-linear-C), so that difference between A and B of the right hand side figure is as follows: $|A - B| \leq 0.5\text{mm}$
- 4) Adjust the vertical linear side (V-linear-S), so that A, B and C are almost equal.



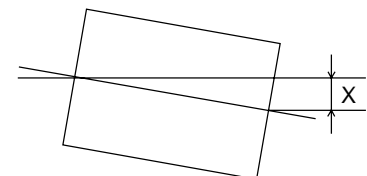
n 1-13. H-CENT adjustment [PWB-MAIN]

- 1) Receive a cross-hatch inverted signal of fH 128.7kHz.
- 2) Adjust the horizontal size and position of the picture roughly with the front buttons.
- 3) Maximize the brightness so that the back-raster appears on the screen.
- 4) Set S501 to the right, center or left so that A and B in the right hand side figure are almost equal.
- 5) Return the brightness to center indication.



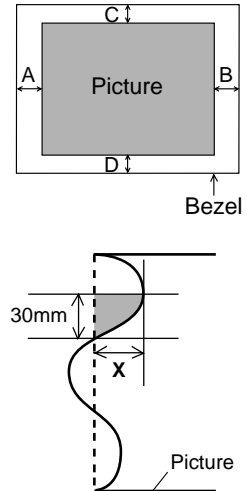
n 1-14. TILT-DY adjustment

- 1) Receive a cross-hatch inverted signal of MODE 4.
- 2) Adjust the tilt deflection yoke (Tilt-dy) with the +/- Buttons so that X of the right hand side figure is as follows: $|X| \leq 0.5\text{mm}$.



n 1-15. PICTURE SIZE, POSITION AND DISTORTION adjustment (Criteria)

- 1) Receive a cross-hatch inverted signal of MODE 4.
- 2) Adjust the picture size and position to the specified setting below.
 H-size: $395 \pm 4\text{mm}$ H-position: $|A-B| < 4\text{mm}$
 V-size: $295 \pm 4\text{mm}$ V-position: $|C-D| < 4\text{mm}$
- 3) Correct the side distortion with the front buttons so that X of the right hand side figure is as follows: $|X| \leq 0.5\text{mm}/30\text{mm}$ when selecting the most remarkable distortion with the naked eye.
 Pin-cushion Parallelogram
 Trapezoid Side-pin-corner
 Side-pin-balance Cushion-side



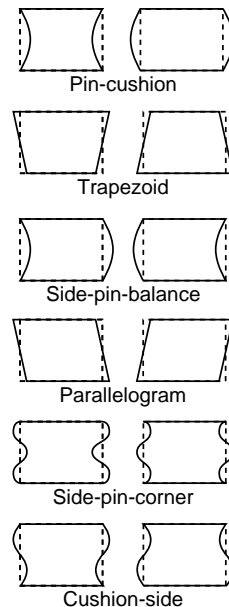
n 1-16. PICTURE SIZE, POSITION AND DISTORTION adjustment

- 1) Receive a cross-hatch inverted signal of fH 31.5kHz.
- 2) Adjust the picture size, position and distortion roughly with the front buttons to the reference settings below.
 H-size: $395 \pm 10\text{mm}$ H-position: $|A-B| < 8\text{mm}$
 V-size: $295 \pm 10\text{mm}$ V-position: $|C-D| < 8\text{mm}$
 $|X| \leq 1.0\text{mm}/30\text{mm}$ when selecting the most remarkable distortion with the naked eye.

Note: The picture should be within the bezel.

- 3) Receive a cross-hatch inverted signal of all preset modes respectively.
- 4) Adjust the picture size and position to the specified setting below.
 H-size: $395 \pm 4\text{mm}$ H-position: $|A-B| < 4\text{mm}$
 V-size: $295 \pm 4\text{mm}$ V-position: $|C-D| < 4\text{mm}$
- 5) Correct the Pin-cushion and Trapezoid distortion with the front buttons so that X of the right hand side figure is as follows: $|X| \leq 0.5\text{mm}/30\text{mm}$ when selecting the most remarkable distortion with the naked eye.

Note: No other adjustment items for distortion than the above should be adjusted.



o 1-17. RESET confirmation


- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Change the horizontal position (H-Position) roughly with the front buttons.
- 3) Perform Reset.
- 4) Confirm that the adjustment data above is reset to the factory setting.

n 1-18. Automatic COLOR adjustments

WARNING: Do not change the horizontal and vertical sync signal or the frequency while the automatic COLOR adjustments are underway.

Color analyzer setting:

- 1 Luminance unit switch: cd/m²
- 1 B.P.S. DIP switch: 9600 (1000)
- 1 Turn ON the color analyzer switch and press 0-CAL switch before use.

cd/m²  fL
Luminance unit switch



B. P. S. DIP switch

- 1) Be sure to enter the Factory Mode by using the short-connector.
- 2) Connect the interface adapter from RS-232C of the color analyzer to the PWB-RS of the short-connector.
- 3) Select BNC for the signal input and receive a white window signal of MODE 4.
- 4) Turn OFF the R, G and B outputs on the signal generator.
- 5) Apply a color analyzer probe to the center of the screen.
- 6) Turn ON the Remote Switch of the color analyzer so that "G" will appear on the screen to inform that automatic CUT-OFF adjustment starts.
- 7) Turn ON the R, G and B outputs on the signal generator when "GBRIN" appears on the screen so that the COLOR TEMPERATURE and CONTRAST LIMIT adjustments start automatically.

<COLOR TEMPERATURE>

The X and Y specified readings of the color analyzer are as follows:

CT 1 (9300K)	CT 2 (6500K)	CT 3 (5000K)
X: 0.283±0.006	X: 0.313±0.006	X: 0.345±0.006
Y: 0.297±0.006	Y: 0.329±0.006	Y: 0.352±0.006

<CONTRAST>

The specified contrast range is 110±5cd/m².

Note: "G" appears again on the screen to indicate the contrast is not within the specified range above. In that case, repeat 4) to 7).

- 8) "END" appears on the screen to inform that the adjustments are completed.
- 9) Turn OFF the Remote Switch of the color analyzer.

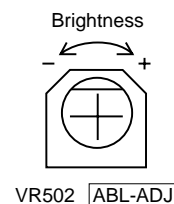
Note: The adjustments above can be repeated by turning OFF and ON the Power Switch.

n 1-19. GRAY SCALE confirmation

- 1) Receive a 16-gradation gray scale signal of MODE 4.
- 2) Make sure the 15th gradation on the gray scale is barely visible when the 16th gradation (back raster) is not visible at all.

n 1-20. BRIGHTNESS adjustment [PWB-MAIN]

- 1) Receive an entire white raster signal of MODE 4.
- 2) Apply a photometer to the screen center.
- 3) Adjust VR502 (ABL-ADJ) so that photometer reads $105 \pm 5 \text{cd/m}^2$.



n 1-21. SYNC SIGNAL INPUT confirmation

- 1) Receive a cross-hatch inverted signal of fH 47.6kHz.
- 2) Select composite and sync on green signal inputs respectively by the signal generator.
- 3) Confirm that the picture is displayed normally.

1-22. SIGNAL SELECT confirmation

- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Switch the signal input to BNC and D-SUB respectively.
- 3) Confirm that the picture is displayed normally.

o 1-23. POWER MANAGEMENT confirmation

- 1) Turn OFF the Power Switch and connect a digital wattage meter.
- 2) Turn ON the Power Switch.
- 3) Receive a cross-hatch inverted signal of MODE 5.
- 4) Turn OFF the R, G and B outputs on the signal generator.
- 5) Disconnect the H/HV and V cables.
- 6) Confirm that the input wattage is 5W or less and the Power Indicator turns to orange.
- 7) Connect the H/HV and V cables and confirm that the picture appears.
- 8) Turn OFF the Power Switch and remove the digital wattage meter.
- 9) Turn ON the Power Switch.

n 1-24. H-CONVERGENCE confirmation

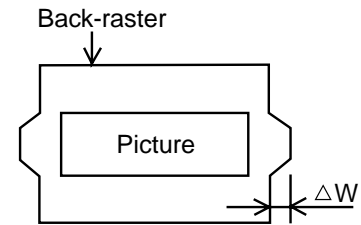
- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Select Auto-da-test3 and press the MENU Button so that the automatic confirmation program starts.
- 3) Confirm that the horizontal line is diverged.

n 1-25. V-CONVERGENCE confirmation

- 1) Receive a cross-hatch inverted signal of MODE 5.
- 2) Select Auto-da-test3 and press the MENU Button so that the automatic confirmation program starts.
- 3) Confirm that the vertical line is diverged.

n 1-26. RASTER REGULATION (DYNAMIC) confirmation

- 1) Receive an entire white signal of MODE 5.
- 2) Set the input signal by the signal generator as follows:
V-DISP-TIME: 150 V-POSI-TIME: 450
- 3) Maximize the brightness or set the signal level to 0.9Vp-p by the signal generator.
- 4) Confirm that ΔW of the right hand side figure is 1.0mm or less when turning the luminance volume on the signal generator to the maximum and "1" respectively.
- 5) Return the brightness to center indication.



n 1-27. FOCUS [PWB-MAIN]

- 1) Receive a green cross-hatch signal of MODE 5.
- 2) Adjust FOCUS-A VR of T501 (FBT) to make the vertical lines sharpest at points L, M and R as shown in Fig 1.
- 3) Adjust FOCUS-B VR of the T501 to make the horizontal center line sharpest at points L, M and R as shown in Fig. 1.
- 4) If the focus at points T and M is as shown in Fig. 2, adjust VR503 (V-DBF) to make the horizontal lines have the same thickness at points T, M and B. And adjust the FOCUS-B VR again to make the horizontal lines sharpest at points T, M and B. (VR503 should not be adjusted when focus at points T and M is optimum.)
- 5) If the focus at points L and M is as shown in Fig. 3 or vice versa, adjust DBF-Para to make the horizontal center line have the same thickness at points L, M and R. And adjust the FOCUS-B VR again to make the horizontal center line sharpest at points L, M and R. (DBF-Para should not be adjusted when focus at points L and M is optimum.)
- 6) Repeat 2) to 5) until the focus is optimum.
- 7) Confirm no focus variation on the entire screen.
- 8) Check the focus with red and blue respectively.
- 9) Receive a H-character signal and repeat 7).
- 10) Repeat the FOCUS adjustments until the focus with red, green and blue is optimum.

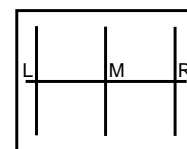
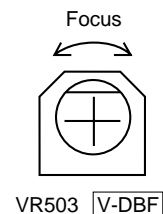
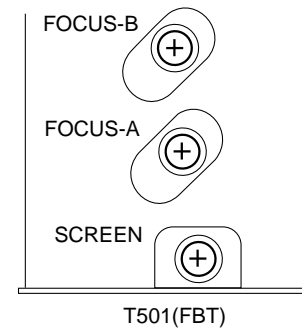


Fig.1

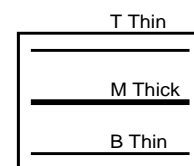


Fig.2

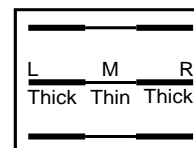


Fig.3

n 1-28. LUMINANCE DIFFERENCE adjustment

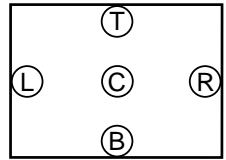
- 1) Receive an entire white signal of MODE 4.
- 2) Apply a photometer to C (center), T (top), B (bottom), L (left) and R (right) in the right hand side figure.
- 3) Confirm that the luminance difference between C and T, C and B, C and L, C and R is within $\pm 10 \text{cd/m}^2$ respectively.
- 4) If the luminance difference is not within the specified range above, perform the following adjustments:

<Point T or B>

1. Adjust Uniform-VCENT first to increase the brightness of T and B.
2. Adjust Uniform-V-TB so that the luminance difference between C and T or C and B is within $\pm 10 \text{cd/m}^2$.

<Point R or L>

1. Adjust Uniform-HCENT first to increase the brightness of point L and R.
2. Adjust Uniform-H-RL so that the luminance difference between C and L or C and R is within $\pm 10 \text{cd/m}^2$.



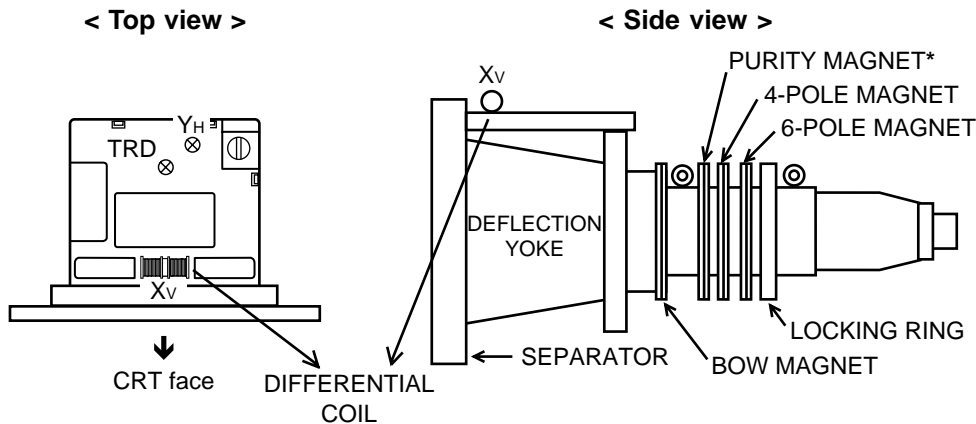
n 1-29. ITC (Integrated Tube Component) adjustments

The following ITC adjustments should be made only when a new picture tube is installed, or convergence is poor. All set-up adjustments above-mentioned must be completed before any further ITC adjustment is attempted. Receive an entire white raster signal and turn ON the Power Switch. Perform adjustment after a warm-up of at least an hour.

Perform the following adjustments by setting H-convergence and V-convergence to center indication.

Notes: See Chapter 5 concerning parts list for the ITC adjustments.

* PURITY MAGNET should not be turned during the ITC adjustments.



1-29-1. LANDING correction

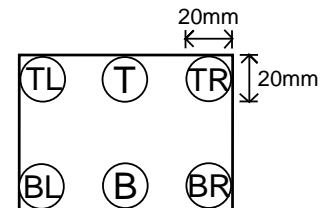
Landing meter setting:

- 1 Mode Select Switch: Monitor Normal

Note: Mode Select Switch should be set before turning on the power switch of the landing meter.

- 1 Volt: 2V
- 1 Time: 50ms
- 1 Gain: 7
- 1 Unit: % for LND-070, 0.8 μ m (1%=0.8 μ m) for LND-072

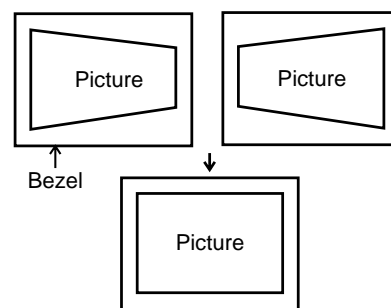
- 1) Face the CRT screen to east and set it vertically.
- 2) Degauss the entire screen with degausser. \Rightarrow See "EXTERNAL DEGAUSS".
- 3) Select DEGAUSS and press the MENU Button.
- 4) Receive an entire green signal.
- 5) Adjust the horizontal size to make it full-scan.
- 6) Apply the landing meter to TL (top-left), TR (top-right), BL (bottom-left) and BR (bottom-right) in the right hand side figure.
- 7) Confirm that "H" reading of the landing meter is within $\pm 20\%$ at each point.
- 8) Adjust N-S RRC with the front buttons so that the "H" reading difference between T (top) and B (bottom) in the right hand side figure is as follows:
 $|T-B| = \pm 3\%$.
- 9) Adjust Landing-TL, TR, BL and BR respectively with the front buttons so that "H" reading of the landing meter at each point is -3 to $+3\%$.



1-29-2. TOP-BOTTOM DISTORTION adjustment

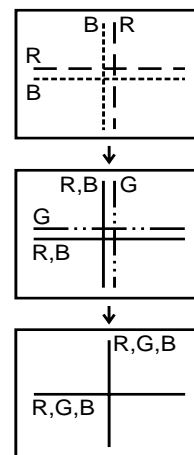
Notes: 1. This adjustment should be performed only when the picture distortion in the right hand side figure is permitted.
2. Be sure to perform the 1-29-6. YV adjustment after this adjustment because the convergence adjusted by TRD volume is changed at the same time during this adjustment.

- 1) Receive a cross-hatch inverted signal.
- 2) Adjust the specified TRD volume so that the picture distortion is corrected.



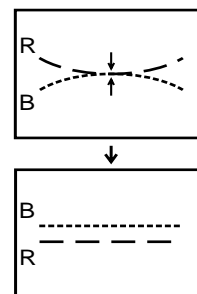
1-29-3. STATIC CONVERGENCE adjustments

- 1) Receive a red and blue cross-hatch signal.
- 2) Select Brightness of the MENU and press the MENU, + and – Buttons at the same time so that “Digital conv off” appears on the screen to inform that the H/V-convergence is disabled.
- 3) Adjust the 4-POLE MAGNET so that red and blue beams converge on the center cross lines.
- 4) Add green to the red and blue cross-hatch signal.
- 5) Adjust the 6-POLE MAGNET so that red and blue beams converge with green beam on the center cross lines.
- 6) Repeat the adjustment until red, blue and green beams converge each other.
- 7) Fix the 4-POLE MAGNET and the 6-POLE MAGNET by turning the LOCKING RING.
- 8) Turn OFF and ON the Power Switch so that the H/V-convergence is enabled.



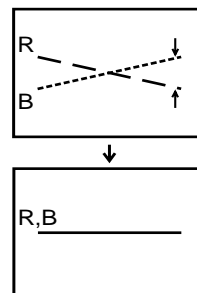
1-29-4. BOW MAGNET adjustment

- 1) Receive a red and blue cross-hatch signal.
- 2) Adjust the BOW MAGNET so as to straighten an arched horizontal line.
Note: Must be careful not to misconverge vertical lines by this adjustment.
- 3) Perform the 1-29-3. STATIC CONVERGENCE adjustment so as to converge the red and blue lines.
- 4) Fix the BOW MAGNET with paint (090Z020A01).



1-29-5. DIFFERENTIAL COIL adjustment (XV adjustment)

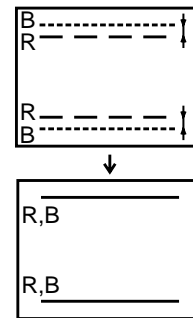
- 1) Receive a red and blue cross-hatch signal.
- 2) Adjust the DIFFERENTIAL COIL so that the horizontal cross line converge each other.



1-29-6. YV adjustment

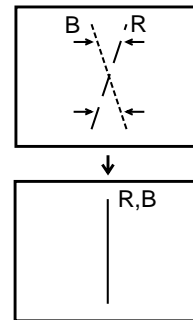
- 1) Receive a red and blue cross-hatch signal.
- 2) Adjust the specified TRD volume so that red and blue beams converge each other at the upper and lower edges of the horizontal line.

Note: Be sure that the distortion adjusted by TRD volume is changed at the same time during this adjustment.



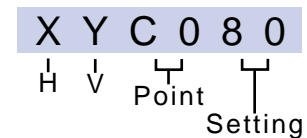
1-29-7. YH adjustment

- 1) Receive a red and blue cross-hatch signal.
- 2) Adjust the specified YH volume so that vertical cross lines converge each.



1-29-8. DIGITAL CONVERGENCE adjustments

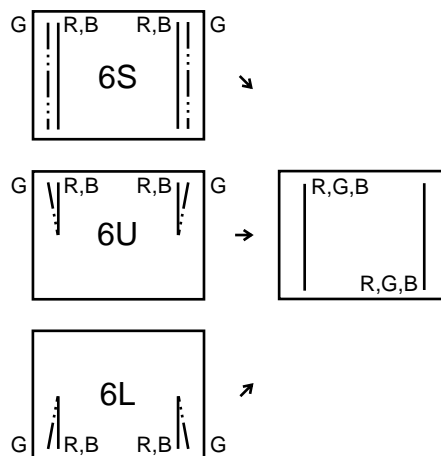
- 1) Receive a red and blue cross-hatch signal.
- 2) Adjust the horizontal convergence (H-convergence) and the vertical convergence (V-convergence) with the front buttons so that red and blue beams converge.
- 3) Select Contrast of the MENU and press the MENU, + and – Buttons at the same time so that the OSD as shown in the right hand side figure appears and the Digital H/V-convergence is enabled.
- 4) Confirm the horizontal/vertical convergence at the points: C0 to C8, B0 to B8, A0 to A8, D0 to D8, E0 to E8 in the right hand side figure.
- 5) If the horizontal/vertical line is diverged, select the adjustment point with the +/- Buttons and switch to X (H) or Y (V) with the MENU Button.
- 6) Press the +/- Buttons while the OSD is displayed to make red and blue beams converged.
- 7) Receive another signal or turn OFF the Power Switch so that the Digital H/V-convergence is disabled.
- 8) Add green to the red and blue cross-hatch signal.
- 9) Turn ON the Power Switch.



A0	A1	A2	A3	A4	A5	A6	A7	A8
B0	B1	B2	B3	B4	B5	B6	B7	B8
C0	C1	C2	C3	C4	C5	C6	C7	C8
D0	D1	D2	D3	D4	D5	D6	D7	D8
E0	E1	E2	E3	E4	E5	E6	E7	E8

Points

- 10) Select 6S of the MENU and adjust the vertical convergence so that red and blue beams converge with green beam on the vertical edge lines.
- 11) Select 6U of the MENU and adjust the vertical convergence so that red and blue beams converge on the upper vertical edge lines.
- 12) Select 6L of the MENU and adjust the vertical convergence so that red and blue beams converge on the lower vertical edge lines.
- 13) Mark the 4-POLE MAGNET and the 6-POLE MAGNET with paint marker (090Z029A01) so that adjusted position is understandable.



Note: Select H-convergence of the MENU and press the MENU, + and Buttons at the same time so that the adjustment data for the Digital H/V-convergence is reset.