

SECTION 4 ADJUSTMENT

4.1 ADJUSTMENT PREPARATION

- (1) You can make the necessary adjustments for this unit with either the Remote Control Unit or with the adjustment tools and parts as given below.
- (2) Adjustment with the Remote Control Unit is made on the basis of the initial setting values, however, the new setting values which set the screen to its optimum condition may differ from the initial settings.
- (3) Make sure that AC power is turned on correctly.
- (4) Turn on the power for set and test equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
- (5) Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
- (6) Never touch any adjustment parts which are not specified in the list for this adjustment - variable resistors, transformers, condensers, etc.
- (7) Presetting before adjustment.
Unless otherwise specified in the adjustment instructions, preset the following functions with the remote control unit:

Setting item	Setting value
BRIGHTNESS	CENTRE
CONTRAST	
COLOUR	
SHARPNESS	
COLOUR TEMP	NORMAL
ZOOM	AUTO

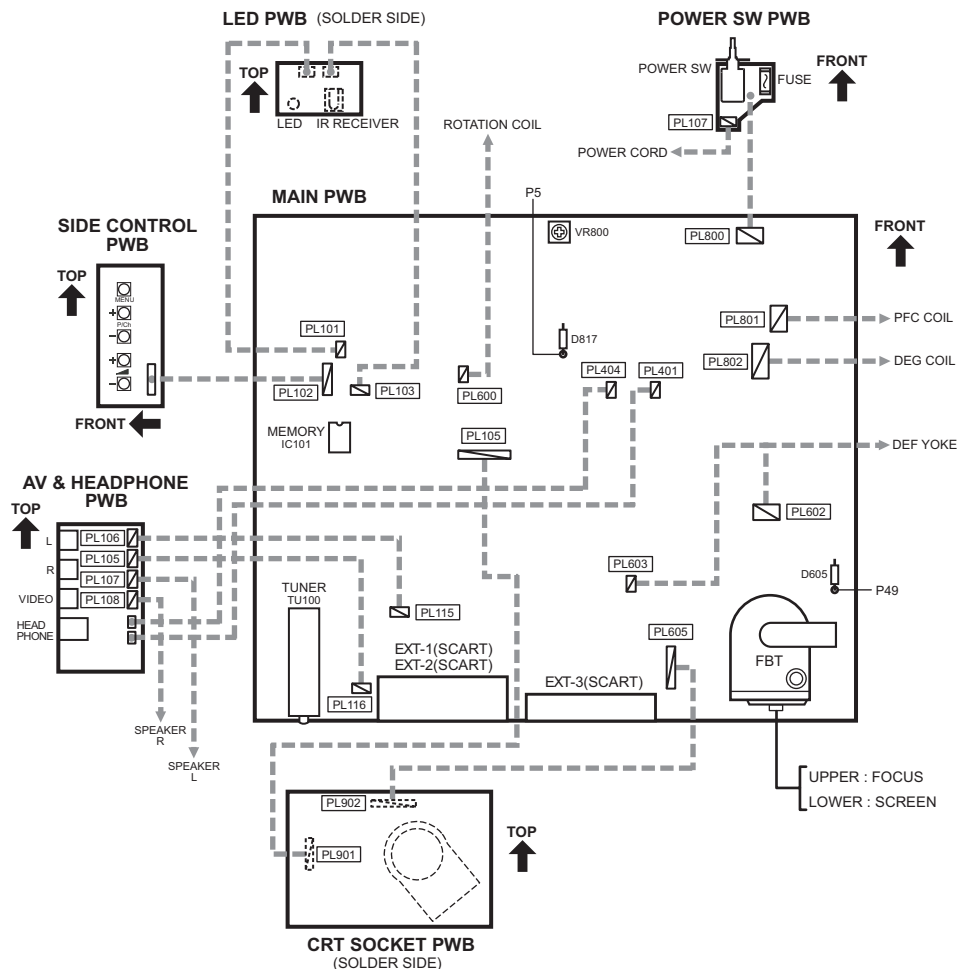
4.2 MEASURING EQUIPMENT

- (1) DC voltmeter (Digital voltmeter)
- (2) Signal generator (Pattern generator)
[PAL / NTSC]
- (3) Remote control unit

4.3 ADJUSTMENT ITEM

- FOCUS ADJUSTMENT
- SCREEN ADJUSTMENT
- B1 ADJUSTMENT
- DEFLECTION CIRCUIT ADJUSTMENT

4.4 ADJUSTMENT LOCATIONS



4.5 BASIC OPERATION OF SERVICE MODE

4.5.1 HOW TO ENTER THE SERVICE MODE

- (1) Press the [INFORMATION] key and [MUTING] key simultaneously.
- (2) The SERVICE MENU screen will be displayed.(Fig.1)

AK49-0.0.103-JVC-GRA		
224	SAVEFS	000
225	LOADFS	000
226	DCXO	079
227	DCXOA	OFF
001	FAPS	OFF
002	ISPM	OFF
003	INIT	OFF
005	AGCSPD	001
006	AGCTO	033

ADJUSTMENT ITEM SETTING VALUE

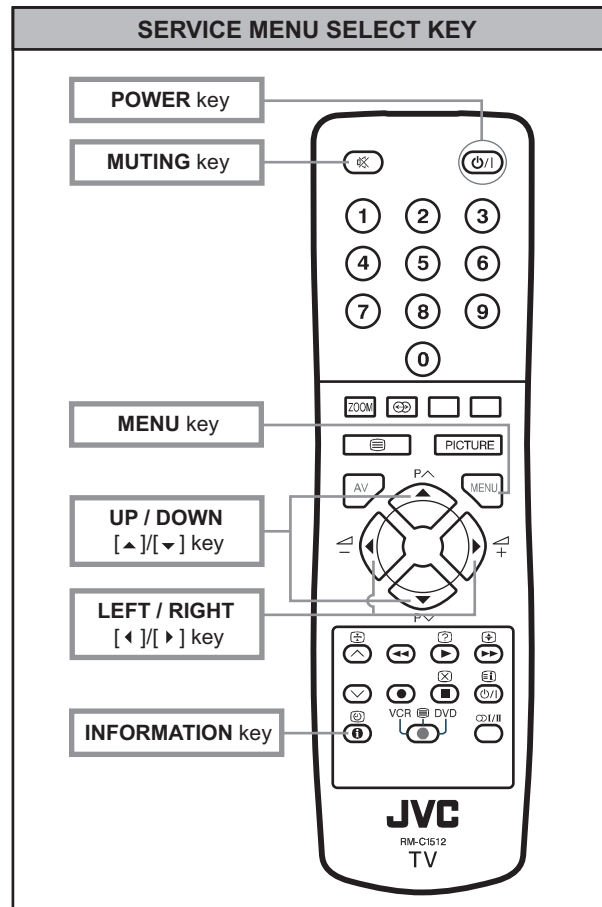
Fig.1

4.5.2 SELECTION OF ADJUSTMENT ITEMS

- (1) Enter the SERVICE MODE
- (2) Press the FUNCTION [▲]/[▼] key to select the adjustment item.
- (3) Press the FUNCTION [◀]/[▶] key to set the setting value.

4.5.3 HOW TO EXIT SERVICE MODE

- (1) Press the [MENU] key.



4.6 INITIAL SETTING VALUES IN THE SERVICE MODE

Item No.	Item name	Variable range	Setting value
001	FAPS	---	---
002	ISPM	ON/OFF	OFF
003	INIT	ON/OFF	OFF
005	AGCSPD	000 - 003	001
006	AGCTO	000 - 063	033
007	COFF	---	---
008	VSD	000 - 063	031
009	VG2	000 - 063	031
010	TUBE	000 = 16:9 001 = 4:3	000
011	VERT ZOOM	000 - 063	005
012	VERT SLOP	000 - 063	037
013	VERT SHIFT	000 - 063	025
014	VERT AMP	000 - 063	033
015	SCORRECTION	000 - 063	032
016	V-LINC	000 - 002	000
017	V-LINEARTY	000 - 063	032
018	EW WIDTH	000 - 063	048
019	HOR SHIFT	000 - 063	031
020	EW PARAB	000 - 063	025
021	TRAPEZ	000 - 063	026
022	UC PARAB	000 - 063	001
023	LC PARAB	000 - 063	005
024	HOR BOW	000 - 063	028
025	PARALLEL	000 - 063	034
026	WBF	000 - 015	014
027	WBR	000 - 015	010
028	WBF14	000 - 015	014
029	WBR14	000 - 015	013
030	60HZ EWW	000 - 063	034
031	60HZ HSH	000 - 063	037
032	60HZ VSH	000 - 063	031
033	60HZ VZ	000 - 063	035
034	ROT	000 - 063	032
035	ROT-M	000 - 001	001
036	OIF	000 - 063	032
037	IF	000 - 007	002
038	OFR	000 - 001	000
039	FFI	000 - 001	000
040	BS1	000 - 015	001
041	BS2	000 - 015	002
042	BS3	000 - 015	004
043	CB	000 - 255	142
044	B1-H	000 - 255	012
045	B1-L	000 - 255	032
046	B2-H	000 - 255	030
047	B2-L	000 - 255	002
048	FRAV	000 - 003	000

Item No.	Item name	Variable range	Setting value
049	YSCM	000 - 015	012
050	YNTS	000 - 015	002
051	YPAL	000 - 015	002
052	YAV1	000 - 015	004
053	YAV2	000 - 015	004
054	Y_S1	000 - 015	004
055	Y_S2	000 - 015	004
056	COMB	000 = Not active 001 = Active	001
058	BLCS	000 = Disable 001 = Enable	000
059	BLUS	000 = Disable 001 = Enable	000
060	WHTS	000 - 003	000
061	CLPR	000 - 003	000
062	OVSH	000 - 003	000
063	TNTD	000 - 063	032
064	SVMA	ON/OFF	OFF
065	SVM	000 - 007	004
066	VMA	000:OFF 001:0.8 Vp-p 002:1.2 Vp-p 003:1.8 Vp-p	001
067	SMD	000:OFF 001:Video 002:TXT/OSD 003:Video/OSD	001
068	SOPW	000 - 003	003
069	SOTM	000 - 007	007
070	WPRC	000 - 063	032
071	WPGC	000 - 063	032
072	WPBC	000 - 063	031
073	BLORC	000 - 063	033
074	BLOGC	000 - 063	033
075	WPRN	000 - 063	037
076	WPGN	000 - 063	032
077	WPBN	000 - 063	019
078	BLORN	000 - 063	033
079	BLOGN	000 - 063	033
080	WPRW	000 - 063	049
081	WPGW	000 - 063	040
082	WPBW	000 - 063	025
083	BLORW	000 - 063	033
084	BLOGW	000 - 063	033
085	WPR-RGB	000 - 063	032
086	WPG-RGB	000 - 063	040
087	WPB-RGB	000 - 063	032
088	OSO	ON/OFF	ON

Item No.	Item name	Variable range	Setting value
089	FSL	000 - 001	000
090	MUS	ON/OFF	OFF
091	PWL	000 - 015	008
092	BPS	ON/OFF	ON
093	CLPL	000 - 003	000
094	CL	000 - 015	008
095	AKB	ON/OFF	ON
096	COR	000 - 003	002
098	SSL	000 - 001	001
099	AV2SI	000 = Disable 001 = Enable	001
100	AV3I	000 = Disable 001 = Enable	001
101	FAVI	000 = Disable 001 = Enable	001
102	BAVI	000 = Disable 001 = Enable	000
103	VESI	000 = Disable 001 = Enable	000
104	FSVI	000:Disable Front SVHS if Op_SVHS is enabled 001:Enable Front SVHS if Op_SVHS is enabled	000
105	BSVI	000:Disable Back SVHS if Op_SVHS is enabled 001:Disable Back SVHS if Op_SVHS is enabled	000
106	DVDI	000 = Disable 001 = Enable	000
107	SSTDBG	000 = Disable 001 = Enable	000
108	SSTD I	000 = Disable 001 = Enable	001
109	SSTDDK	000 = Disable 001 = Enable	000
110	SSTD L	000 = Disable 001 = Enable	000
111	NICAM	ON/OFF	ON
112	CNFG	000 = Mono 001 = AV-Stereo 002 = Stereo	002
113	CMUTE	ON/OFF	ON
114	BLNG	000 = Disable 001 = Enable	000
116	OPHP	000 = Disable 001 = Enable	000

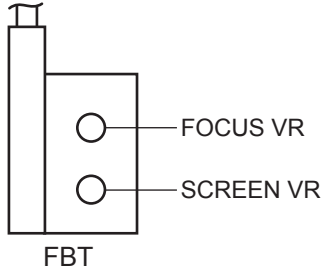
Item No.	Item name	Variable range	Setting value
117	OPEQ	000 = Disable 001 = Enable	000
118	---	---	000
119	V-3D	000 - 063	000
120	---	---	000
121	ODUB	000 - 005	000
122	AVLL	000 - 015	002
123	AVLW	000 - 001	000
124	AVLM	000 - 005	003
125	OPAVL	000 - 001	001
126	AVL	000 - 001	001
127	DECL	000 - 031	015
128	MNLV	000 - 031	015
129	ADCAM	000 - 031	010
130	ADCAV	000 - 031	013
131	NICL	000 - 031	015
132	AV1 PRESCL	000 - 031	015
133	AV2 PRESCL	000 - 031	015
134	E2D	ON/OFF	OFF
135	TXSPLT	000 = Full screen 001 = Split screen	001
136	TXHPOS	000 - 063	000
137	TXEWW	000 - 063	048
138	TXHPA	000 - 063	000
139	TXHPB	000 - 063	000
140	TXHBB	000 - 127	073
141	PATVA	000 - 063	016
142	PATVZ	000 - 063	016
143	PATPARAB	000 - 063	016
144	PATHS	000 - 063	032
145	TXTBRI	000 - 063	032
146	---	---	OFF
147	TXTCN	000 - 001	000
148	LSEL-1	000 - 255	255
149	LSEL-2	000 - 031	031
150	PWPRF	000 = Fast 015 = Perfect	015
151	PWRES	000 = Disable 001 = Enable	001
152	MAXCOL	000 - 063	045
153	MAXBRI	000 - 063	045
154	MAXCON	000 - 063	028
155	PVBRSP	000 - 063	032
156	PVCTSP	000 - 063	032
157	PVCLSP	000 - 063	032
158	PVSHSP	000 - 063	032
159	PVBRMV	000 - 063	032
160	PVCTMV	000 - 063	032
161	PVCLMV	000 - 063	032

Item No.	Item name	Variable range	Setting value
162	PVSHMV	000 - 063	032
163	PVBRWK	000 - 063	032
164	PVCTWK	000 - 063	032
165	PVCLWK	000 - 063	032
166	PVSHWK	000 - 063	032
167	PABAMM	000 - 063	031
168	PATRMM	000 - 063	015
169	PAB1MM	000 - 063	042
170	PAB2MM	000 - 063	058
171	PAB3MM	000 - 063	045
172	PAB4MM	000 - 063	040
173	PAB5MM	000 - 063	058
174	PABAMU	000 - 063	039
175	PATRMU	000 - 063	034
176	PAB1MU	000 - 063	040
177	PAB2MU	000 - 063	050
178	PAB3MU	000 - 063	055
179	PAB4MU	000 - 063	060
180	PAB5MU	000 - 063	063
181	PABATH	000 - 063	034
182	PATRTH	000 - 063	036
183	PAB1TH	000 - 063	030
184	PAB2TH	000 - 063	055
185	PAB3TH	000 - 063	063
186	PAB4TH	000 - 063	050
187	PAB5TH	000 - 063	040
188	PABASP	000 - 063	034
189	PATRSP	000 - 063	036
190	PAB1SP	000 - 063	036
191	PAB2SP	000 - 063	044
192	PAB3SP	000 - 063	044
193	PAB4SP	000 - 063	040
194	PAB5SP	000 - 063	024
198	CTI1	000 - 255	032
199	CTI2	000 - 255	008
200	CTI3	000 - 255	228
201	P BS1	000 - 015	001
202	P BS2	000 - 015	002
203	P BS3	000 - 015	004
204	P CB	000 - 255	142
205	P B1H	000 - 255	012
206	P B1L	000 - 255	032
207	P B2H	000 - 255	030
208	P B2L	000 - 255	002
209	P BRI	000 - 015	007
210	P CON	000 - 015	010
211	P AGC	000 - 255	023
212	P YPAL	000 - 015	000
213	P YSCM	000 - 015	000

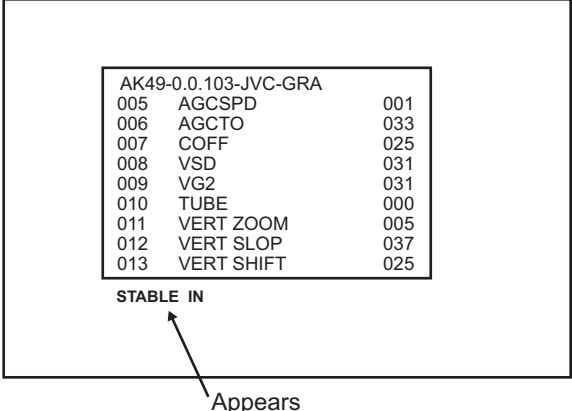
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214	OFB	000 - 063	001
215	PGR	000 - 127	070
216	PGG	000 - 127	080
217	PGB	000 - 127	070
218	REMOTE	---	---
219	PIPPAP	---	---
220	CABINE	---	---
221	ZOOME	---	---
222	---	---	---
223	---	---	---
224	SAVEFS	000 - 001	000
225	LOADFS	000 - 001	000
226	DCXO	000 - 127	079
227	DCXOA	ON/OFF	OFF

4.7 ADJUSTMENTS PROCEDURE

4.7.1 FOCUS ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
FOCUS adjustment	Signal generator Remote control unit		FOCUS VR [On the FBT]	(1) Receive a crosshatch signal. (2) Adjust FOCUS VR on the FBT for the lines to become as thin as possible. 

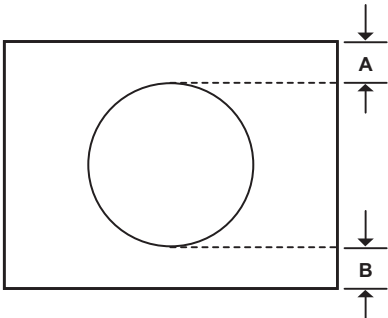
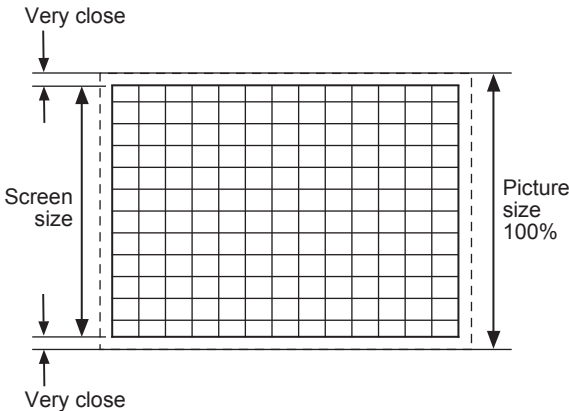
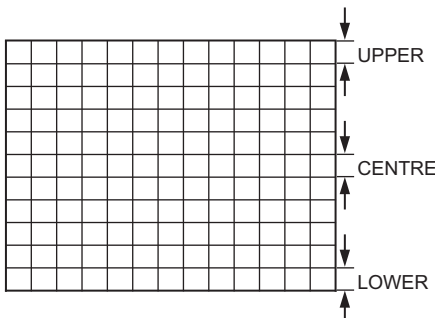
4.7.2 SCREEN ADJUSTMENT

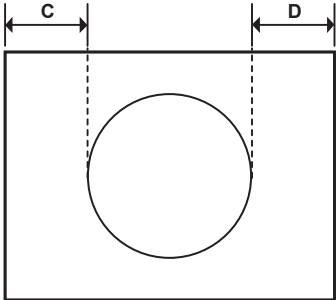
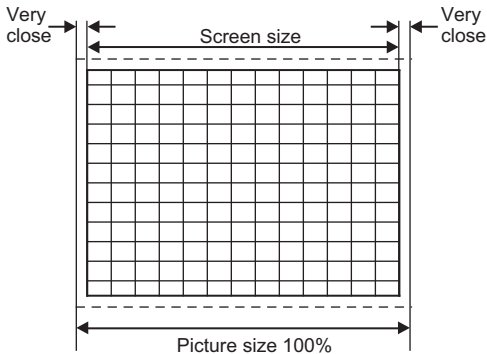
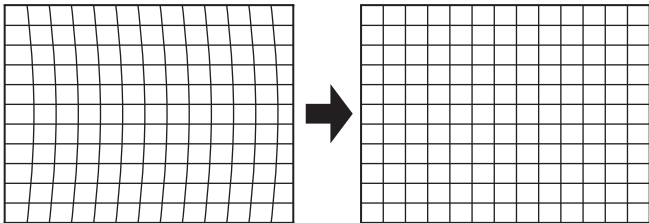
Item	Measuring instrument	Test point	Adjustment part	Description
SCREEN adjustment	Remote control unit		SCREEN VR [On the FBT] 009 VG2 [SERVICE MODE]	(1) Enter the SERVICE MODE. (2) Select VG2. (3) Adjust the SCREEN VR until the "STABLE IN" sign appears on the screen. 

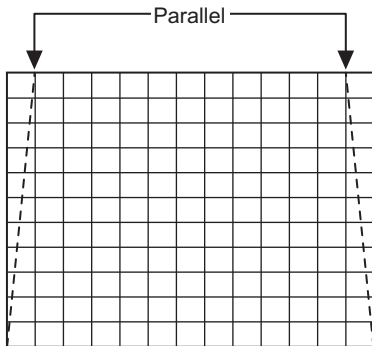
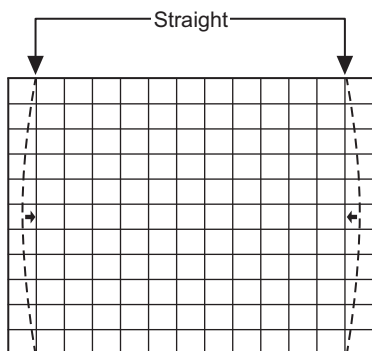
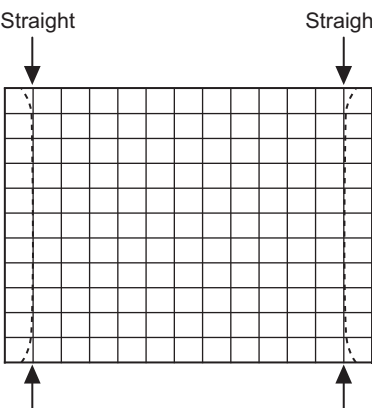
4.7.3 B1 ADJUSTMENT

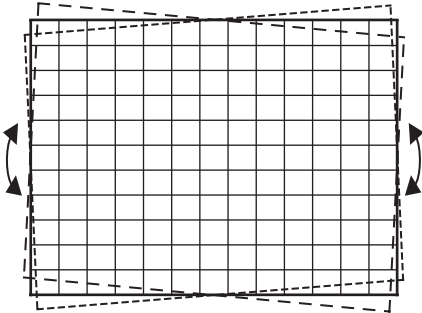
Item	Measuring instrument	Test point	Adjustment part	Description
B1 adjustment	DC volt meter	P5(B+) P49(GND) [MAIN PWB]	SCREEN VR FORCUS VR [On the FBT] VR800 [On the MAIN PWB]	(1) SCREEN VR and FORCUS VR should be set to middle position. (2) Connect a DC voltmeter to P5 and P49 on the MAIN PWB. (3) If the voltage is different from DC145V $\pm$0.5V, adjust it by VR800.

4.7.4 DEFLECTION CIRCUIT ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
VERTICAL SHIFT adjustment	Signal generator Remote control unit		013 VERT SHIFT	(1) Receive a circle pattern signal. (2) Enter the SERVICE MODE. (3) Select VERT SHIFT. (4) Adjust VERT SHIFT to make A=B. (5) Check and readjust VERT SHIFT item if the adjustment becomes improper after some other geometric adjustments are done.
				
VERTICAL SIZE adjustment	Signal generator Remote control unit		014 VERT AMP	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select VERT AMP. (4) Adjust VERT AMP until horizontal black lines on both the upper and lower part of the crosshatch pattern become very close to the upper and lower horizontal sides of picture size and nearly about to disappear. (5) Check and readjust VERT AMP item if the adjustment becomes improper after some other geometric adjustments are done.
				
VERTICAL S-CORRECTION & LINEARITY adjustment	Signal generator Remote control unit		015 SCORRECTION 017 V-LINEARITY	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select SCORRECTION. (4) Adjust SCORRECTION until the size of squares on both the upper and lower part of crosshatch pattern become equal to the squares laying on the vertical centre of the crosshatch pattern. (5) Check and readjust SCORRECTION item if the adjustment becomes improper after some other geometric adjustments are done. (6) Select V-LINEARITY. (7) Adjust V-LINEARITY until all the size of squares of the crosshatch pattern become in equal size from the top of the screen to its bottom of the whole screen. (8) Check and readjust V-LINEARITY item if the adjustment becomes improper after some other geometric adjustments (especially after than SCORRECTION adjustment) are done.
				

Item	Measuring instrument	Test point	Adjustment part	Description
HORIZONTAL SHIFT adjustment	Signal generator Remote control unit		019 HOR SHIFT	(1) Receive a circle pattern signal. (2) Enter the SERVICE MODE. (3) Select HOR SHIFT . (4) Adjust HOR SHIFT to make C=D . (5) Check and readjust HOR SHIFT item if the adjustment becomes improper after some other geometric adjustments are done.
				
HORIZONTAL SIZE adjustment	Signal generator Remote control unit		018 EW WIDTH	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select EW WIDTH . (4) Adjust EW WIDTH until no white bars on both the left and right sides of the crosshatch will be visible nor screen will be so wide. (5) Check and readjust EW WIDTH item if the adjustment becomes improper after some other geometric adjustments are done.
				
BOW adjustment	Signal generator Remote control unit		024 HOR BOW	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select HOR BOW . (4) Adjust HOR BOW until the vertical lines become straight. (5) Check and readjust HOR BOW item if the adjustment becomes improper after some other geometric adjustments are done.
				NOTE : In case where there is a bow-shaped distortion of images on the screen. (Figure)

Item	Measuring instrument	Test point	Adjustment part	Description
TRAPEZIUM adjustment	Signal generator		021 TRAPEZ	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select TRAPEZ. (4) Adjust TRAPEZ until vertical lines, especially lines at the sides of the picture frame become parallel to the both sides of picture tubes as close as possible. (5) Check and readjust TRAPEZ item if the adjustment becomes improper after some other geometric adjustments are done.
	Remote control unit			
				
SIDE PIN adjustment	Signal generator		020 EW PARAB	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select EW PARAB. (4) Adjust EW PARAB until vertical lines close to the both sides of the picture frame become straight to vertical sides of picture tube without any bending to left or to right side of the screen. (5) Check and readjust EW PARAB item if the adjustment becomes improper after some other geometric adjustments are done.
	Remote control unit			
				
CORNER adjustment	Signal generator		022 UC PARAB 023 LC PARAB	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select UC PARAB. (4) Adjust UC PARAB until vertical lines at the upper corners of the picture frame become vertical and parallel to vertical corner sides of picture tube. (5) Check and readjust UC PARAB item if the adjustment becomes improper after some other geometric adjustments are done. (6) Select LC PARAB. (7) Adjust LC PARAB until vertical lines at the lower corners of the picture frame become vertical and parallel to vertical corner sides of picture tube. (8) Check and readjust LC PARAB item if the adjustment becomes improper after some other geometric adjustments are done.
	Remote control unit			
				

Item	Measuring instrument	Test point	Adjustment part	Description
ROTATION adjustment	Signal generator		034 ROT	(1) Receive a crosshatch signal. (2) Enter the SERVICE MODE. (3) Select ROT . (4) Adjust ROT to rotate the complete raster clockwise and counter clockwise depending on the CRT. (5) Check and readjust ROT item if the adjustment becomes improper after some other geometric adjustments are done.
	Remote control unit			
				

SECTION 5 TROUBLESHOOTING

This service manual does not describe TROUBLESHOOTING.



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