

3 ALIGNMENT INSTRUCTIONS

3.1 MICROCONTROLLER CONFIGURATION : SERVICE MODE

To switch the TV set into service mode please see instruction below.

- 1 - Select PR. number 91
- 2 - Adjust sharpness to minimum and exit all menus.
- 3 - Within 2 seconds press the key sequence : **RED - GREEN - menu**

The software version is displayed beside the word Service, e.g. "SERVICE V1.00".

To exit SERVICE menu press menu key or **Std By** key.

3.2 SERVICE MODE NAVIGATION

- Pr Up/Down remote keys : cycle through the service items available.
 Vol -/+ remote keys : Dec./Increment the values within range - Cycle trough option bits.
 OK key : Toggle bits in option byte

Order	Item	Default setting
1	HOR CEN	
2	RED GAIN	
3	GRN GAIN	
4	BLUE GAIN	
5	RED BIAS	
6	GRN BIAS	
7	AGC LEVEL	
8	G2 - SCREEN	
9	AFT	
10	OPTION1	
11	OPTION2	
12	PARABOLA	
13	HOR WIDTH	
14	CORNER T	
15	CORNER B	
16	HOR. PARAL	
17	V. LINEAR	
18	EW TRAPEZ	
19	S CORRECT	
20	VERT CENT	
21	VERT SIZE	

3.3 MICROCONTROLLER CONFIGURATION : OPTION BITS

There are two option bytes available (16 bits in all). These option bits are available from Service mode. First find the OPTION1 or OPTION2 control, and then use the Volume PLUS/MINUS buttons on the remote control keypad to locate the bits, and OK key to toggle them. The table below shows the two option bytes available;

2 SAFETY INSTRUCTION

WARNING: Only competent service personnel may carry out work involving the testing or repair of this equipment.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 25-26 KV (20" -21") or 26 KV (25" - 28") at max beam current. The high voltage must not, under any circumstances, exceed 27.5 KV (20"), 29KV (21"), 29.5 KV (25") or 30 KV (28"). Each time a receiver requires servicing, the high voltage should be checked. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY Radiation in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

SAFETY PRECAUTION

Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back board removed involves a shock hazard from the receiver. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions

necessary when working on high voltage equipment.

Discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.

If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.

When replacing a high wattage resistor (metal oxide film resistor) in the circuit board, keep the resistor 10 mm away from circuit board.

Keep wires away from high voltage or high temperature components.

This receiver must operate under AC 230 volts, 50 Hz. NEVER connect to a DC supply or any other voltage or frequency.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this equipment have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are identified by designated symbol on the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitutes replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY Radiation.

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3.3.1 OPTION 1

	B7	B6	B5	B4	B3	B2	B1	B0
1	TOP text OFF	FASTEXT (FLOF) OFF	TUBE 4:3	Headphone Volume/Balance control OFF	Dolby Virtual OFF	SVHS 3 disable	Tuner options 00 = Philips 01 = not used 10 = ALPS 11 = PARTSNIC (DW)	
0	TOP text ON	FASTEXT (FLOF) ON	TUBE 16:9	Headphone Volume/Balance control ON	Dolby Virtual ON	SVHS 3 enable		

3.3.2 OPTION 2

	B7	B6	B5	B4	B3	B2	B1	B0
1	Fixed to '0'	JVC remote control	AVL control OFF	PICTURE TILT ON	Program list enabled	See table below.		
0		Daewoo Remote control	AVL control ON	PICTURE TILT OFF	Program list disabled			

Tube	Beam Current (mA)		B2	B1	B0
	Nominal	Max			
	0.95	1.10	0	0	0
	1.00	1.15	0	0	1
4/3 - Super Flat, 16/9 – Super Flat	1.05	1.20	0	1	0
	1.10	1.25	0	1	1
	1.20	1.35	1	0	0
	1.25	1.40	1	0	1
4/3 - Real Flat, 16/9 – Real Flat	1.30	1.45	1	1	0
	1.35	1.50	1	1	1

All values modified are immediately memorised in eeprom.

3.4 TV SET ALIGNMENT

3.4.1 LOCAL OSCILLATOR ALIGNMENT

Tune a colour bar pattern. The frequency of the signal carrier must be accurate (Max +/- 10KHz deviation from the nominal channel frequency).

Find "AFT" item in service mode.

Adjust the coil L150 to bring the cursor to central position : 32.

3.4.2 G2 ALIGNMENT

- Tune a colour bar pattern.

- Find the "G2 - SCREEN" item in service mode.

- Adjust screen volume (on FBT) to bring the cursor to central position : 32.

3.4.3 WHITE BALANCE

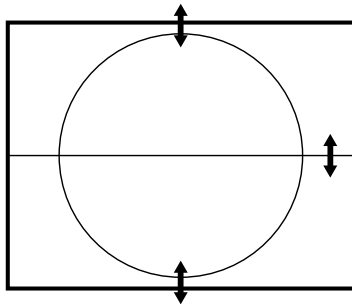
- Select a dark picture and adjust RED BIAS and GRN BIAS to the desired colour temperature.
- Select a bright picture and adjust RED, GRN and BLUE GAIN to the desired colour temperature.

3.4.4 FOCUS

Adjust the Focus volume (on FBT) to have the best resolution on screen.

3.4.5 VERTICAL GEOMETRY

Adjust V. LINEAR (linearity), S CORRECT (S. Correction), VERT SIZE (Vertical amplitude), VERT CENT (vertical centring) to compensate for vertical distortion.

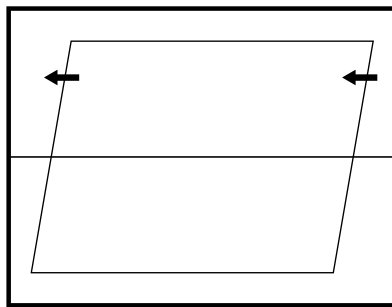


3.4.6 HORIZONTAL PICTURE CENTRING

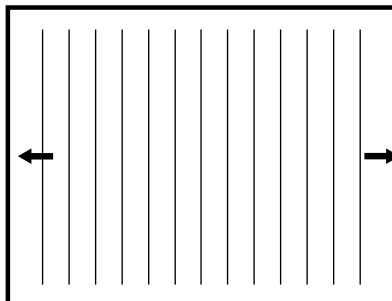
Adjust HOR CEN (Horizontal centre) to have the picture in the centre of the screen.

3.4.7 EAST / WEST CORRECTION

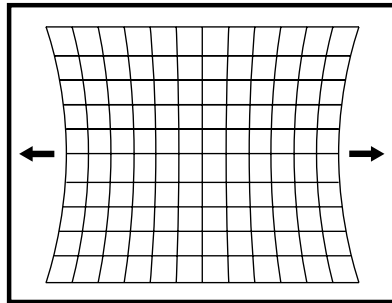
Adjust the PARABOLA, HOR WIDTH, CORNER, HOR PARAL, EW TRAPEZ, to compensate for geometrical distortion.



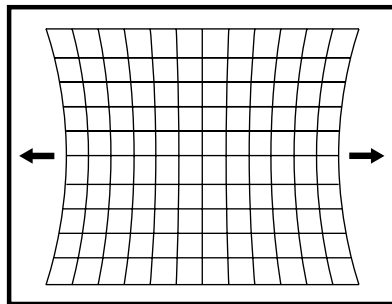
HOR PARAL



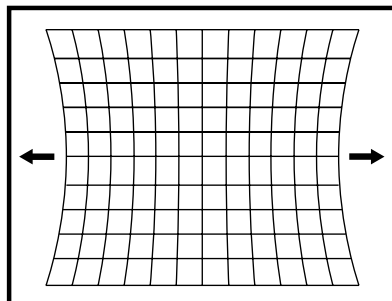
HOR WIDTH
adjust for 93% overscan.



PARABOLA



CORNER B & CORNER T



EW TRAPEZ

3.4.8 AGC

- Make sure option bits are correct for the tuner fitted on the chassis (See above how to change option bits).
- Adjust the antenna signal level at $64 \text{ dB } \mu\text{V} \pm 2$
- Tune a colour bar pattern.
- Find the "AGC" item in service mode.
- Press the key "OK" on the remote keypad and wait until AGC level stabilise to the optimum value.
- Alternatively, use "Vol Up/Dwn" keys to adjust manually to the desired Tuner Take Over Point (TOP).