HISTORY

<u>Model Name: KDL-32/40BX400</u>
SERVICE MANUAL

Click on Page Number to display details of change

Date	Part Number	Description of Revisions	Version
2010.01	9-883-479-01	Original Manual	1.0
2010.10	9-883-479-02	How to reset (OSD Menu errors) (P8)	2.0
2010.12	9-883-479-03	Add Screw Part Number (Base / Stand) (P18)	3.0

SERVICE MANUAL

AZ1-N(5-2) CHASSIS

MODEL	DEST	MODEL	DEST
KDL-32BX400	*AEP / UK*	**KDL-40BX400**	*AEP / UK*

RM-ED022

FLAT PANEL COLOR TV

SONY®

TABLE OF CONTENTS

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS, THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED ⚠ ON THE EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.
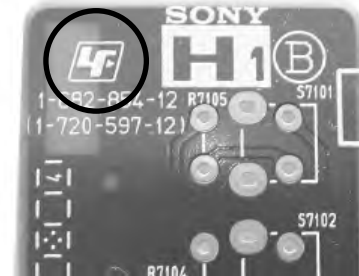
SECTION 1 GENERAL

CAUTION

Lead Free Soldered Boards

example

The circuit boards used in these models have been processed using Lead Free Solder. The boards are identified by the LF logo located close to the board designation e.g. H1 etc [see example]. The servicing of these boards requires special precautions to be taken as outlined below.

Lead Free Solder material must be used to comply with environmental requirements of new solder joints. Lead Free Solder is available under the following part numbers :

Partnumber	Diameter	Remarks
7-640-005-19	0.3mm	0.25Kg
7-640-005-20	0.4mm	0.50Kg
7-640-005-21	0.5mm	0.50Kg
7-640-005-22	0.6mm	0.25Kg
7-640-005-23	0.8mm	1.00Kg
7-640-005-24	1.0mm	1.00Kg
7-640-005-25	1.2mm	1.00Kg
7-640-005-26	1.6mm	1.00Kg

Due to the higher melting point of Lead Free Solder the soldering iron tip temperature needs to be set to 370 degrees centigrade. This requires soldering equipment capable of accurate temperature control coupled with a good heat recovery characteristics.

For more information on the use of Lead Free Solder, please refer to *http://www.sony-training.com*

UK PLUG WARNING

WARNING (UK Models only)

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of the correct rating for the set. Should the fuse need to be replaced, use a fuse of the same rating approved by ASTA to **BS 1362**, ie one that carries the ⬦ASA⬦ mark.

IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

When an alternative type of plug is used, it should be fitted with the correct rating fuse, otherwise the circuit should be protected by the same rating fuse at the distribution board.
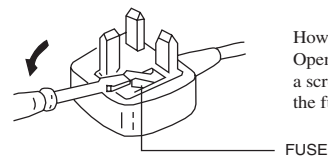
How to replace the fuse.
Open the fuse compartment with a screwdriver blade and replace the fuse.

FUSE

LCD PANEL CAUTION

Whilst working on this product, it is not recommended to lay the TV set face down when powered up, as this can result in panel problems. If it is necessary to power up the TV set when face down, the time should be minimised as much as possible.

SPECIFICATIONS

| Model name	KDL-46EX4xx	KDL-40BX4/EX4/NX5xx	KDL-37EX4xx	KDL-32BX3/BX4/EX3/EX4/NX5xx	KDL-26EX3xx	KDL-22EX3xx
System						
Panel System	LCD (Liquid Crystal Display) Panel					
TV System	Depending on your country/region selection Analogue: B/G/H, D/K, L, I Digital: DVB-T, DVB-C					
Colour/Video System	Analogue: PAL, PAL60 (only video input), SECAM, NTSC3.58, NTSC4.43 (only video input) Digital: MPEG-2 MP@ML/HL, H.264/MPEG-4 AVC HP@L4.0, MP@L3.0					
Channel Coverage	Analogue: 46.25 - 855.25 MHz Digital: VHF/UHF					
Sound Output	10 W + 10 W (RMS)				8 W + 8 W (RMS)	5 W + 5 W (RMS)
Input/Output jacks						
Aerial	75 ohm external terminal for VHF/UHF					
⊡⁄S AV1* 1	21-pin scart connector including audio/video input, RGB input, S-Video input, and Analogue TV audio/video output.					
⊡⁄S AV2* 2	21-pin scart connector including audio/video input, RGB input, S-Video input, and audio/video output.					
COMPONENT IN	Supported formats: 1080p, 1080i, 720p, 576p, 576i, 480p, 480i Y: 1 Vp-p, 75 ohms, 0.3V negative sync/P ᴮ/Cᴮ: 0.7 Vp-p, 75 ohms/ Pᴿ/Cᴿ: 0.7 Vp-p, 75 ohms					
COMPONENT IN	Audio input (phono jacks)					
HDMI IN 1, 2, 3, 4	Video: 1080p, 1080p24, 1080i, 720p, 576p, 576i, 480p, 480i Audio: Two channel linear PCM 32, 44.1 and 48 kHz, 16, 20 and 24 bits, Dolby Digital PC (see page 6) Analogue audio (minijack) (HDMI 1 only)					
AV3	Video input (phono jack)					
AV3	Audio input (phono jacks)					
DIGITAL AUDIO OUT (OPTICAL)	Digital optical jack (Two channel linear PCM, Dolby Digital)					
⊙	Audio output (Left/Right) (phono jacks)					
PC IN	PC Input (15 Dsub) (see page 6) G: 0.7 Vp-p, 75 ohms, non Sync on Green/B: 0.7 Vp-p, 75 ohms/ R: 0.7 Vp-p, 75 ohms, H/V Sync: TTL level PC audio input (minijack)					
⌂	Headphones jack					
⟿	USB port					
⊡	CAM (Conditional Access Module) slot					
Power and others						
Power Requirements	220–240 V AC, 50 Hz					
Screen Size (measured diagonally)	46 inches / Approx. 117 cm	40 inches / Approx. 102 cm	37 inches / Approx. 94 cm	32 inches / Approx. 81 cm	26 inches / Approx. 66 cm	22 inches / Approx. 55 cm
Display Resolution	1,920 dots (horizontal) × 1,080 lines (vertical) (KDL-46EX4xx, KDL-40BX4/EX4/NX5xx, KDL-37EX4xx, KDL-32BX4/EX4/NX5xx) 1,366 dots (horizontal) × 768 lines (vertical) (KDL-32BX3/EX3xx, KDL-26EX3xx, KDL-22EX3xx)					

Model name		KDL-46EX4xx	KDL-40BX4/EX4/NX5xx	KDL-37EX4xx	KDL-32BX3/BX4/EX3/EX4/NX5xx	KDL-26EX3xx	KDL-22EX3xx
Power consumption	in "Home"/ "Standard" mode	142 W	110 W	95 W	74 W	52 W	39 W
	in "Shop"/ "Vivid" mode	183 W	144 W (KDL-40NX5xx) 146 W (KDL-40EX4/BX4xx)	120 W	93 W (KDL-32BX4/EX4/NX5xx) 94 W (KDL-32BX3/EX3xx)	62 W	46 W
Standby Power Consumption*3		0.19 W					
Off mode Power Consumption		0.18 W					
Average anual energy consumption*4		207 kWh	161 kWh	139 kWh	108 kWh	76 kWh	57 kWh
Dimensions (w × h × d)	(with stand)	112.7 x 71.1 x 29.4 cm	102.3 x 66.5 x 31.0 cm (KDL-40NX5xx) 99.6 x 63.5 x 25.0 cm (KDL-40BX4xx) 99.2 x 63.5 x 25.0 cm (KDL-40EX4xx)	92.1 x 59.9 x 25.1 cm	82.5 x 55.4 x 26.0 cm (KDL-32NX5xx) 80.4 x 53.2 x 22.0 cm (KDL-32BX3/BX4xx) 80.0 x 53.2 x 22.0 cm (KDL-32EX3/EX4xx)	67.2 x 45.9 x 22.0 cm	55.1 x 40.2 x 21.5 cm
	(without stand)	112.7 x 67.4 x 10.2 cm	102.3 x 62.8 x 10.0 cm (KDL-40NX5xx) 99.6 x 59.8 x 9.9 cm (KDL-40BX4xx) 99.2 x 59.8 x 10.0 cm (KDL-40EX4xx)	92.1 x 56.4 x 9.8 cm	82.5 x 51.7 x 10.2 cm (KDL-32NX5xx) 80.4 x 49.7 x 9.6 cm (KDL-32BX3/BX4xx) 80.0 x 49.7 x 9.7 cm (KDL-32EX3/EX4xx)	67.2 x 42.3 x 9.9 cm	55.1 x 36.7 x 8.2 cm
Mass	(with stand)	20.4 kg	22.4 kg (KDL-40NX5xx) 15.6 kg (KDL-40BX4xx) 15.9 kg (KDL-40EX4xx)	13.6 kg	15.5 kg (KDL-32NX5xx) 10.7 kg (KDL-32BX3/BX4xx) 11.0 kg (KDL-32EX3/EX4xx)	8.8 kg	6.6 kg
	(without stand)	18.1 kg	19.2 kg (KDL-40NX5xx) 13.6 kg (KDL-40BX4xx) 13.9 kg (KDL-40EX4xx)	11.6 kg	13.0 kg (KDL-32NX5xx) 9.2 kg (KDL-32BX3/BX4xx) 9.5 kg (KDL-32EX3/EX4xx)	7.3 kg	6.0 kg

*1 AV1 outputs available only for analogue TV.
*2 AV2 outputs watching screen (except PC, HDMI, Component, USB).
*3 Specified standby power is reached after the TV finishes necessary internal processes.
*4 4 hours a day and 365 days a year.

Design and specifications are subject to change without notice.

PC Input Signal Reference Chart for PC IN ⊶⊡

Signals	Horizontal (Pixel)	Vertical (Line)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Standard
VGA	640	480	31.5	60	VGA
SVGA	800	600	37.9	60	VESA Guidelines
XGA	1024	768	48.4	60	VESA Guidelines
WXGA	1280	768	47.4	60	VESA
WXGA	1280	768	47.8	60	VESA
WXGA	1360	768	47.7	60	VESA
SXGA	1280	1024	64	60	VESA
UXGA	1600	1200	75	60	VESA
HDTV	1920	1080	67.5	60	EIA

- This TV's PC input does not support Sync on Green or Composite Sync.
- This TV's PC input does not support interlaced signals.
- This TV's PC input supports signals in the above chart with a 60 Hz vertical frequency.

PC Input Signal Reference Chart for HDMI IN 1, 2, 3 and 4

Signals	Horizontal (Pixel)	Vertical (Line)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Standard
VGA	640	480	31.5	60	VGA
SVGA	800	600	37.9	60	VESA Guidelines
XGA	1024	768	48.4	60	VESA Guidelines
WXGA	1280	768	47.4	60	VESA
WXGA	1280	768	47.8	60	VESA
WXGA	1360	768	47.7	60	VESA
SXGA	1280	1024	64	60	VESA

CONNECTORS

21 Pin Connector (SCART)
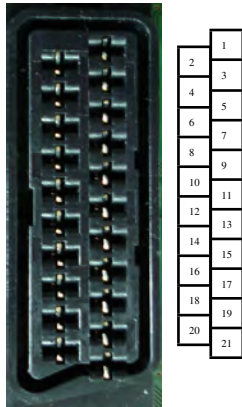
Pin No	AV-1	AV-2	Signal	Signal Level
1	•	•	Audio Output B (Right)	Standard Level: 0.5V rms Impedance: less than 1KΩ*
2	•	•	Audio Input B (Right)	Standard Level: 0.5V rms Impedance: more than 10KΩ*
3	•	•	Audio Output A (Left)	Standard Level: 0.5V rms Impedance: less than 1KΩ*
4	•	•	Ground (Audio)	
5	•	•	Ground (Blue)	
6	•	•	Audio Input A (Left)	Standard Level: 0.5V rms Impedance: more than 10KΩ*
7	•	•	Blue Input	0.7V +/- 3dB, 75Ω, positive
8	•	•	Function Select (AV control)	High State (9.5–12V): AV mode Low State (0–2V): TV mode Impedance: more than 10KΩ* Capacitance: less than 2nF
9	•	•	Ground (Green)	
10	-	•	AV Link	
11	•	•	Green Input	0.7V +/- 3dB, 75Ω, positive
12	-	•	Open	
13	•	•	Ground (Red)	
14	•	•	Ground (Blanking)	
15	•	•	Red Input	0.7V +/- 3dB, 75Ω, positive
15	•	•	S signal Chroma Input	0.3V +/-3dB, 75Ω, positive
16	•	•	Blanking Input (Y Signal)	High State (1–3V) Low State (0–0.4V) Impedance: 75Ω
17	•	•	Ground (Video Output)	
18	•	•	Ground (Video Input)	
19	•	•	Video Output	1V +/-3dB, positive sync 0.3V (-3+10dB)
20	•	•	Video Input	1V +/-3dB, positive sync 0.3V (-3+10dB)
20	•	•	Video Input Y (S Signal)	1V +/-3dB, positive sync 0.3V (-3+10dB)
21	•	•	Common Ground (Shield)	

HDMI Connector

Pin No	Signal Assignment	Pin No	Signal Assignment
1	TMDS Data2+	11	TDMS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS Data2-	13	CEC
4	TMDS Data1+	14	Reserved (N.C. on device)
5	TMDS Data1 Shield	15	SCL
6	TMDS Data1-	16	SDA
7	TMDS Data0+	17	DDC/CEC Ground
8	TMDS Data0 Shield	18	+5V power
9	TMDS Data0-	19	Hot Plug Detect
10	TMDS Clock+		

15 Pin D Sub Connector (PC)

Pin No	Signal Assignment	Pin No	Signal Assignment	Pin No	Signal Assignment
1	Red Output	6	Red Return	11	Monitor IDO in display
2	Green Output	7	Green Return (Ground)	12	DCC Serial Data
3	Blue Output	8	Blue Return (Ground)	13	Horizontal Sync
4	Unused	9	+5V DC	14	Vertical Sync
5	Ground	10	Sync Return (Ground)	15	DCC Serial Clock

AZ1-N SELF DIAGNOSTIC SOFTWARE

The identification of errors within the AZ1-N chassis is triggered in one of two ways :- 1: Busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED (Series of flashes which must be counted).

LED Error Codes and Descriptions

Number of LED Flashes	Error Description	Checked	Action
02	Power Supply Protection error.	In normal and factory mode.	Goes into standby.
03	Audio error.	In normal and factory mode.	Goes into standby.
04	Balancer error.	In normal and factory mode.	Goes into standby.
05	Panel Error & Panel ID error	In normal and factory mode.	Goes into standby.
06	Inverter error.	In normal and factory mode.	Goes into standby.
13	NVM error.	In initialisation state.	Adds error to error menu.
14	I2C error.	In normal and factory mode.	Adds error to error menu.
15	Tuner error.	In initialisation state.	Adds error to error menu.
16	DVB-T/C Demod error.	In initialisation state.	Adds error to error menu.
18	USB error.	In normal and factory mode.	Adds error to error menu.
19	CI error.	In normal and factory mode.	Adds error to error menu.

Ver 2.0 **Resetting Error Codes (OSD Service Menu)**

1. If Software version of the set is older than M8R31 (M8.311), update to latest version.
2. Power Off / Power ON.
3. Apply TT19.
4. Apply TT08. TV switches off and then restarts.
5. Confirm error had disappears.

Note: TT19 is necessary if Factory mode is not enabled.
When Factory Mode is enabled "F" is shown on top right of the screen in TT mode.
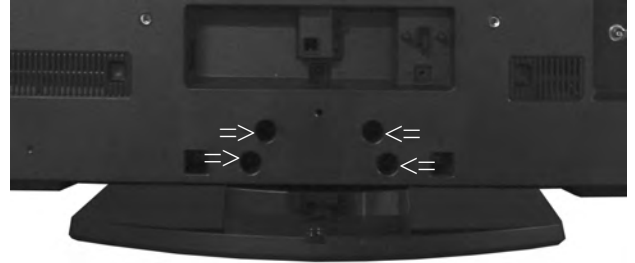
SECTION 2 DISASSEMBLY

2-1. Rear Cover Removal

Remove the rear cover fixing screws indicated and then carefully pull the 'Rear Cover' away from the back of the TV set.

Screw Part number(s) and Description(s)
1) 2-580-640-01 SCREW, +BVTP2 4X16 (32" = 10pcs, 40" = 8pcs)
2) 7-685-648-79 SCREW, +BVTP 3X12   (32/40" = 2pcs)
3) 2-580-595-01 SCREW, +PSW M3X12   (32" = 2pcs)
4) 4-159-298-01 SCREW, +PSW M4X10   (40" = 4pcs)

2-2. Stand Assy Removal

Remove the 4 stand fixing screws indicated and lift the TV set up and away from the 'Stand Assy'.

Screw Part number(s) and Description(s)
2-580-608-01 SCREW, +PSW M5X16

2-3. Speaker Bracket Removal

Screw

To remove the 'Speaker Bracket' remove the 1 screw circled. Then gently pull the 'Speaker Bracket' away from the back of the TV set.
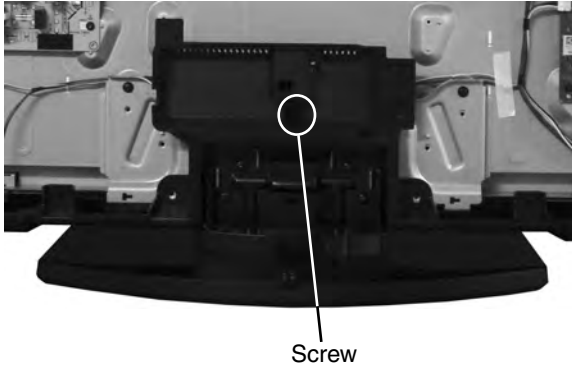
2-4. Loudspeaker Removal

Screws

To remove the 'Loudspeaker' first disconnect the loudspeaker connectors and then remove the 2 screws circled. Finally gently pull the 'Loudspeaker' out of the speaker bracket.
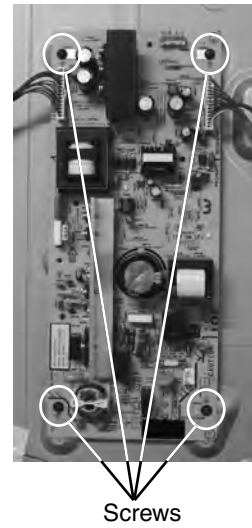
2-5. Under Cover Removal

Screw

To remove the 'Under Cover' first remove the 'Rear Cover' (See Sec 2-2-1) and then the 'Stand Assy' (See Sec 2-2-2). Then remove the 1 screw circled and gently pull the 'Under Cover' away from the back of the TV set.

Screw Part number(s) and Description(s)
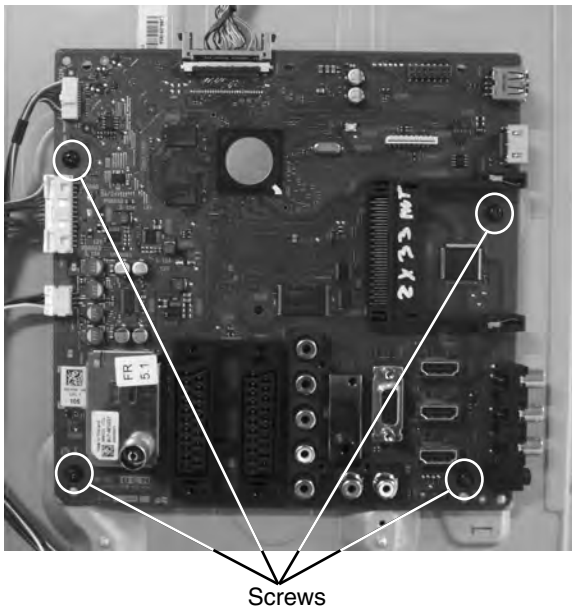2-580-640-01 SCREW, +BVTP2 4X16

2-6. Static Converter Board Removal

Screws

To remove the 'Static Converter' board disconnect all connectors and then remove the 4 screws circled and ease the board gently away from the back of the TV set.

Screw Part number(s) and Description(s)
2-580-592-01 SCREW, +PSW M3X8

2-7. BEN Board Removal

Screws

To remove the 'BEN' board disconnect all connectors and then remove the 4 screws circled and ease the board gently away from the back of the TV set.

Screw Part number(s) and Description(s)
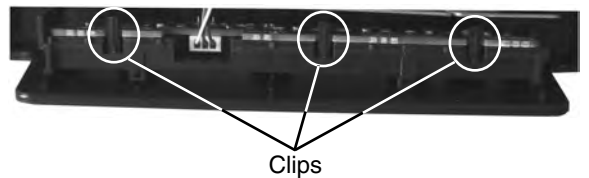2-580-592-01 SCREW, +PSW M3X8

2-8. H2LS Board Removal

Clips

To remove the 'H2LS' board disconnect the 1 connector and release the 3 clips circled and ease the board gently away from the TV set.

2-9. HLR Board Removal
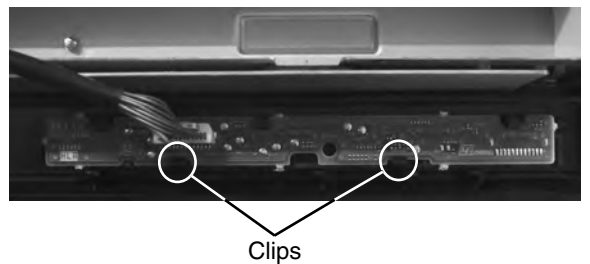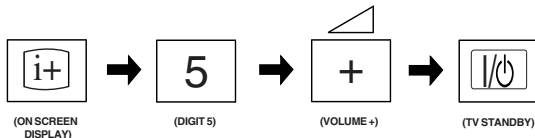

Clips

To remove the 'HLR' board first remove the 'Speaker Bracket' (See 2-2-3), then disconnect the 1 connector on the 'HLR' board and release the 2 clips circled and ease the board gently away from the back of the TV set.

SECTION 3 SERVICE MENUS
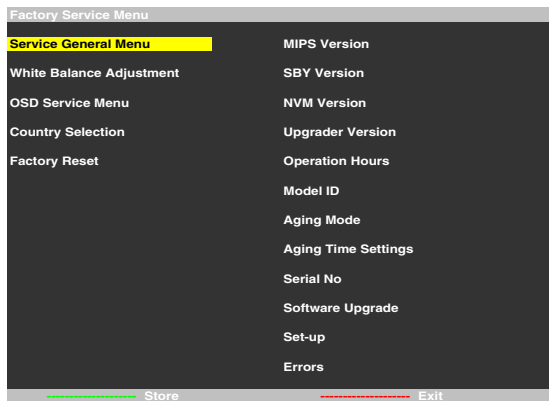
3-1. How to enter the Service Mode

Service adjustments to this model can be performed using the supplied Remote Commander (See front cover).

1. Turn on the power to the TV set.
2. Press the following sequence of buttons on the Remote Commander.

i+	→	5	→	+	→	I/⏻
(ON SCREEN DISPLAY)		(DIGIT 5)		(VOLUME +)		(TV STANDBY)

3. The following menu appears on the screen (See Pic.1).

Pic.1

```
Factory Service Menu
Service General Menu            MIPS Version

White Balance Adjustment        SBY Version

OSD Service Menu                NVM Version

Country Selection               Upgrader Version

Factory Reset                   Operation Hours

                                Model ID

                                Aging Mode

                                Aging Time Settings

                                Serial No

                                Software Upgrade

                                Set-up

                                Errors

---------------- Store        ------------------- Exit
```

4. Move to the corresponding adjustment item using the '↑' or '↓' arrow buttons on the Remote Commander.
5. Press the '→' arrow button to enter into the required menu item.
6. Adjust the data value using the '↑' or '↓' arrow buttons on on the Remote Commander.
7. To go back at any time press the 'Return' button on the Remote Commander.
8. **Ensure you return to the top level menu, shown above in Pic 1, and press the Green button on the Remote Commander to Store all the adjustments.**
9. Press the Red button or 'Menu' button on the Remote Commander to quit the Service Mode when all adjustments have been completed.

After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON again.
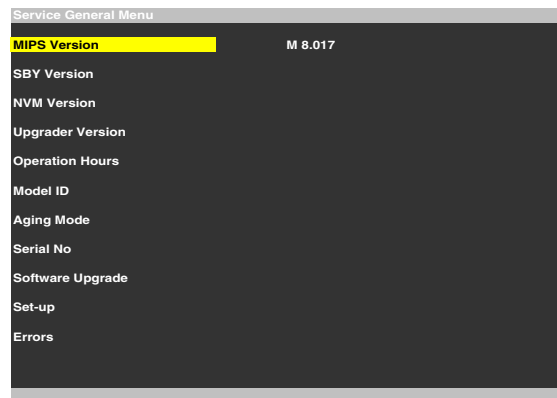
3-2. Service Menu Structure

The following descriptions show the items that can be viewed and/or adjusted using the Service Menu.

3-2-1. Service General Menu

The following menu appears on the screen when you enter the 'Service General Menu' (See Pic.2). This menu allows you to view the product information, set the TV into Aging Mode and perform Software Upgrade to the TV set.

Pic.2

```
Service General Menu
MIPS Version                    M 8.017

SBY Version

NVM Version

Upgrader Version

Operation Hours

Model ID

Aging Mode

Serial No

Software Upgrade

Set-up

Errors
```

3-2-2. White Balance Adjustment

The following menu appears on the screen when you enter the 'White Balance Adjustment' menu (See Pic.3). This menu allows adjustment of the TV picture levels. These adjustments are set during manufacture and should not normally require further adjustment.

Pic.3

```
White Balance Adjustment
WB init

WB Adjustment Level

Red Value

Green Value

Blue Value

Save Level

End Adjustment
```
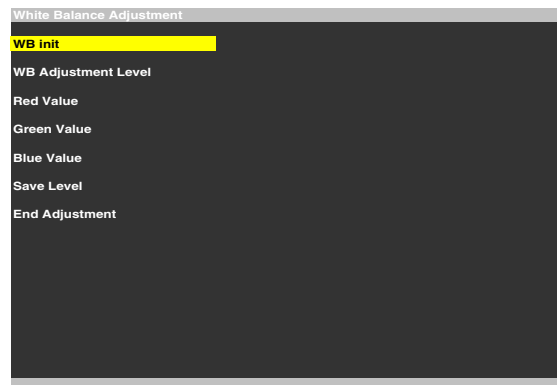
3-2-3. OSD Service Menu

The following menu appears on the screen when you enter the 'OSD Service Menu' (See Pic.4). This menu allows viewing and adjustment of the AGC and viewing of the Sound Status.
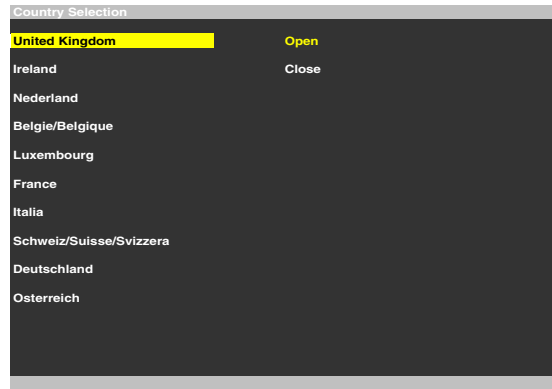
Pic.4

OSD Service Menu
DVB Basic
DVB Detail
Panel Backlight
Sound Status
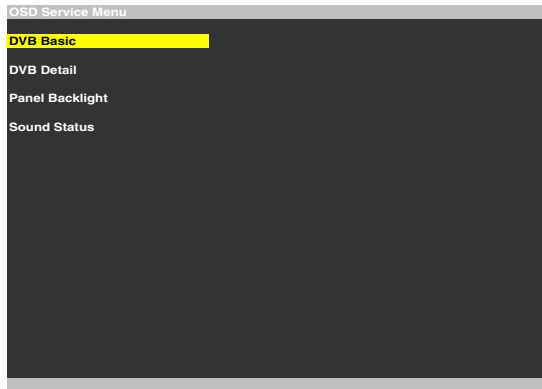
3-2-4. Country Selection

The following menu appears on the screen when you enter the 'Country Selection' menu (See Pic.5). Using this menu the destination country of the TV can be set.
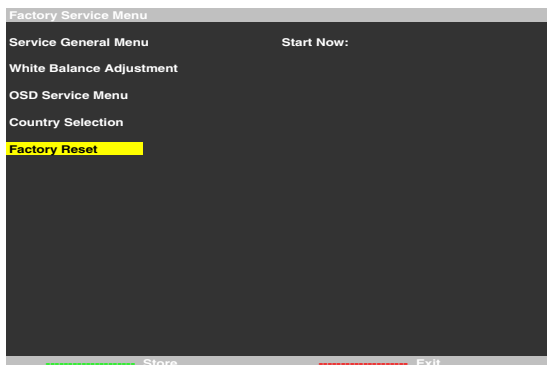
Pic.5

Country Selection	
United Kingdom	**Open**
Ireland	**Close**
Nederland	
Belgie/Belgique	
Luxembourg	
France	
Italia	
Schweiz/Suisse/Svizzera	
Deutschland	
Osterreich	

3-2-5. Factory Reset

Selection of 'Factory Reset' (See Pic.6) allows the TV to be reset to factory shipping condition. This will restore all settings to those which were contained in the TV on first shipment.

Pic.6

Factory Service Menu	
Service General Menu	Start Now:
White Balance Adjustment	
OSD Service Menu	
Country Selection	
Factory Reset	
---------------- Store	---------------- Exit

The TT modes described below are available by selecting the two relevant digits. You can exit the 'TT Mode' by entering 00, by pressing the 'Analog' or the 'Digital' button, by switching the TV set into stand-by mode, or by powering the TV set off.

00	'TT' mode off
03	Set volume to 35%
04	Set volume to 50%
05	Set volume to 65%
06	Set volume to 80%
07	Ageing mode on
08	Shipping Condition
09	WB Levels Check
11	Panel_id A
12	Panel_id B
15	Speaker_id A
16	Speaker_id B
19	Factory toggle mode (ON/OFF)
27	CBA mode toggle (ON/OFF)
31	ECS mode toggle (ON/OFF)
32	Set DVB-T channel table
33	Set DVB-C channel table
36	Full HD HDMI EDID Write
37	WXGA HDMI EDID Write
41	Re-initialise NVM
43	Select Dual Sound "A"
44	Select Dual Sound "B"
45	Select Dual Sound "Mono"
46	Select Dual Sound "Stereo"
48	Set NVM as non-virgin
49	Set NVM as virgin
51	Clear authenticated CAM History
52	Clear service shunning cache
53	Enable/Disable DVB-C manual tuning
75	Set Centred Balance
76	Set Volume to Max
77	Set Volume to Min
78	Set Balance Full Left
79	Set Balance Full Right
81	Digital BER Display
84	TS CI Path Through
87	Front Panel Button Test
89	LED Test
92	TS CI Path Through With Reed Solomon Off

Note :

To place the Remote Commander in 'TT Mode' press the following buttons together for approximately five seconds.
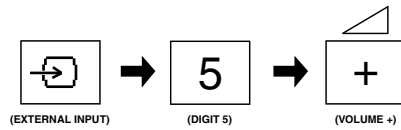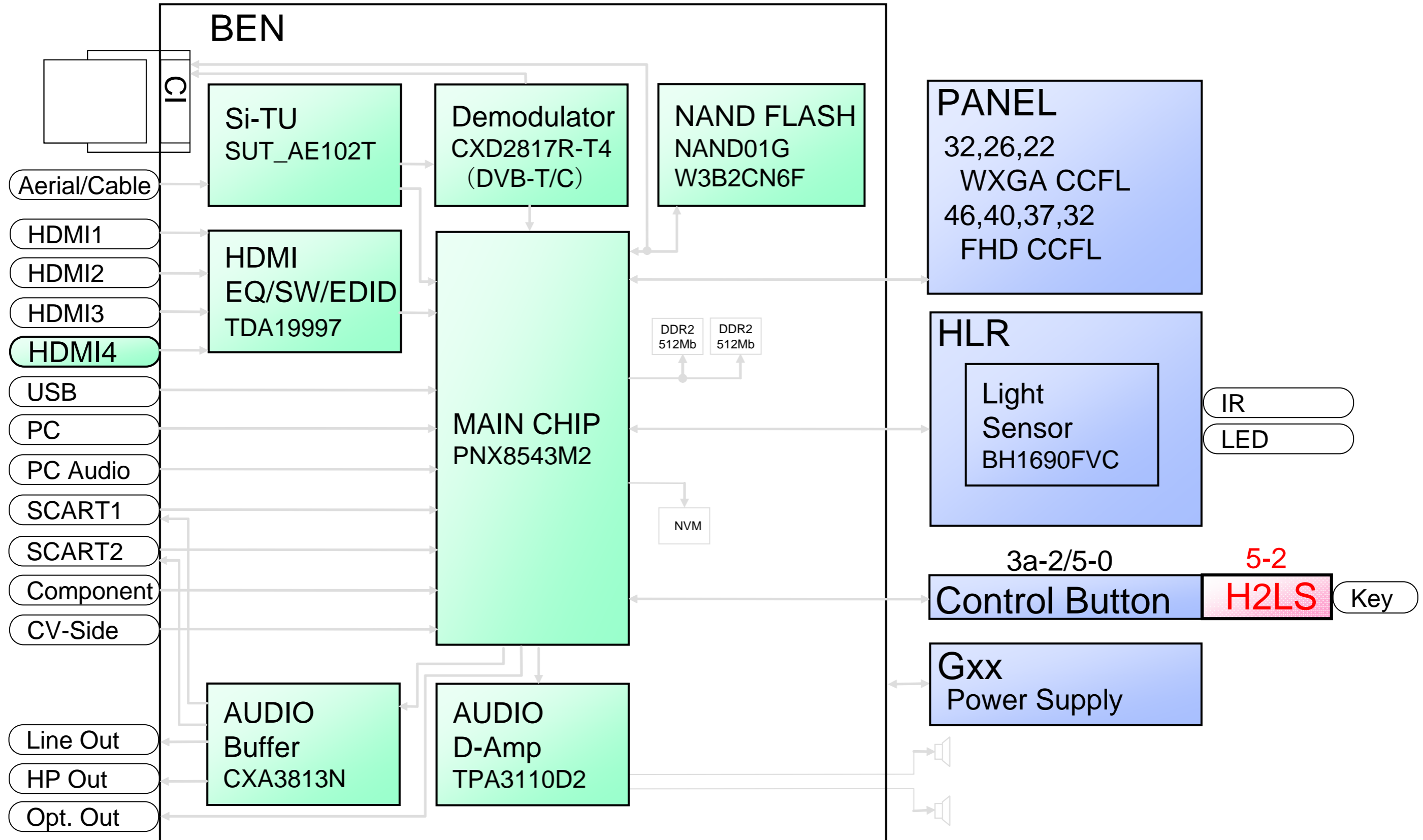

To use the Remote Commander in 'TT Mode' press the 'Rewind' button on the Remote Commander twice.
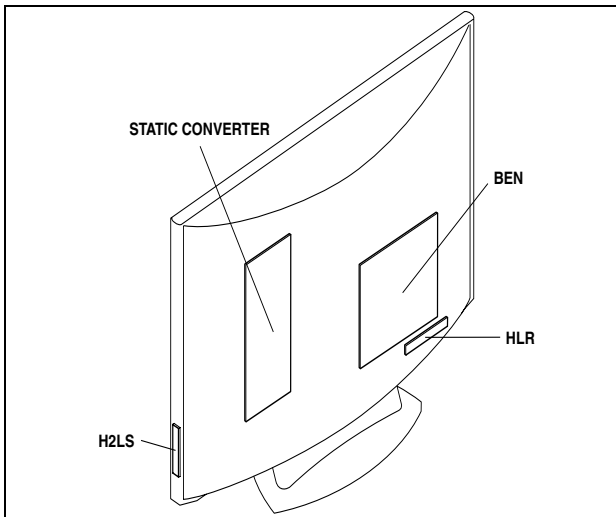

Rewind Button
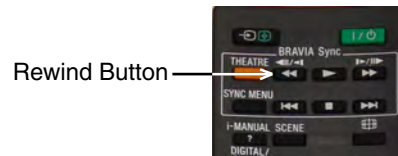
TT will then appear in the bottom right hand corner of the TV.

To take the Remote Commander out of 'TT Mode' press the same buttons together for approximately five seconds.

BEN

CI

Si-TU
SUT_AE102T

Demodulator
CXD2817R-T4
（DVB-T/C）

NAND FLASH
NAND01G
W3B2CN6F

PANEL
32,26,22
WXGA CCFL
46,40,37,32
FHD CCFL

Aerial/Cable

HDMI1

HDMI2

HDMI3

HDMI4

USB

PC

PC Audio

SCART1

SCART2

Component

CV-Side

HDMI
EQ/SW/EDID
TDA19997

MAIN CHIP
PNX8543M2

DDR2
512Mb

DDR2
512Mb

NVM

HLR

Light
Sensor
BH1690FVC

IR

LED

3a-2/5-0

5-2

Control Button

H2LS

Key

Gxx
Power Supply

Line Out

HP Out

Opt. Out

AUDIO
Buffer
CXA3813N

AUDIO
D-Amp
TPA3110D2

4-2. CIRCUIT BOARD LOCATION

4-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :
* All capacitors are in µF unless otherwise noted.
* pF : µµF 50WV or less are not indicated except for electrolytic types.
* Indication of resistance, which does not have one for rating electrical power, is as follows.

> Pitch : 5mm
> Electrical power rating : 1/4W

* Chip resistors are 1/10W
* All resistors are in ohms.
  k = 1000 ohms, M = 1000,000 ohms

* ⊣⟦〰⟧⊢ : nonflammable resistor.

* ⊣⟦〰⟧⊢ : fusible resistor.

* △ : internal component.

* ⬜ : panel designation or adjustment for repair.

* All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
* All voltages are in Volts.
* Readings are taken with a 10Mohm digital mutimeter.
* Readings are taken with a color bar input signal.
* Voltage variations may be noted due to normal production tolerences.

* ▬▬ : B + bus.

* ▬ ▬ ▬ : B - bus.

* ⟹ : RF signal path.

* ⊥ : earth - ground.

* ⊥⊥ : earth - chassis.

Reference Information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
	⬓	: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

> **Note :** The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

> **Note :** Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié. specified.

> **Note :** The components identified by mark 🔒 contain confidential information. Strictly follow the instructions whenever the components are repaired and/or replaced.

SECTION 5
EXPLODED VIEWS

NOTE :

- Non-serviceable items with no part number and no description are not stocked because they are not required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note : Les composants indentifies par une trame et par une marque △ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.
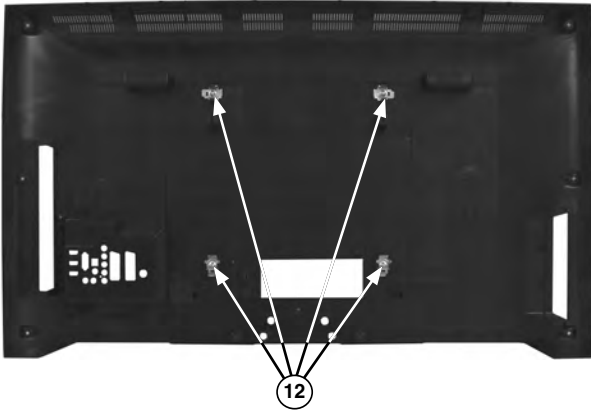
Note : The components identified by shading and marked △ are critical for safety. Replace only with the part numbers specified in the parts list.

5-1. CHASSIS
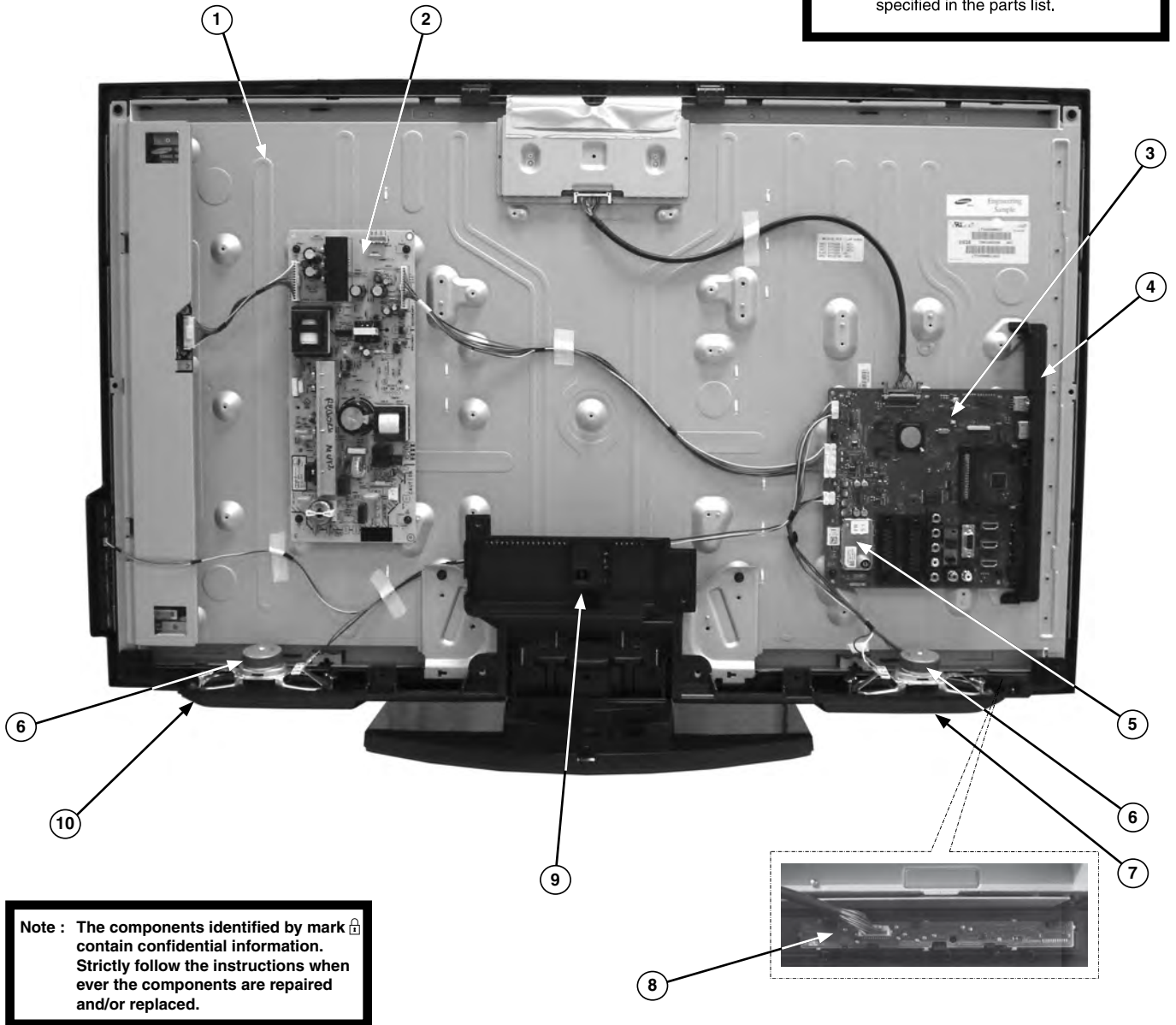
Note : The components identified by mark 🔒 contain confidential information. Strictly follow the instructions when ever the components are repaired and/or replaced.
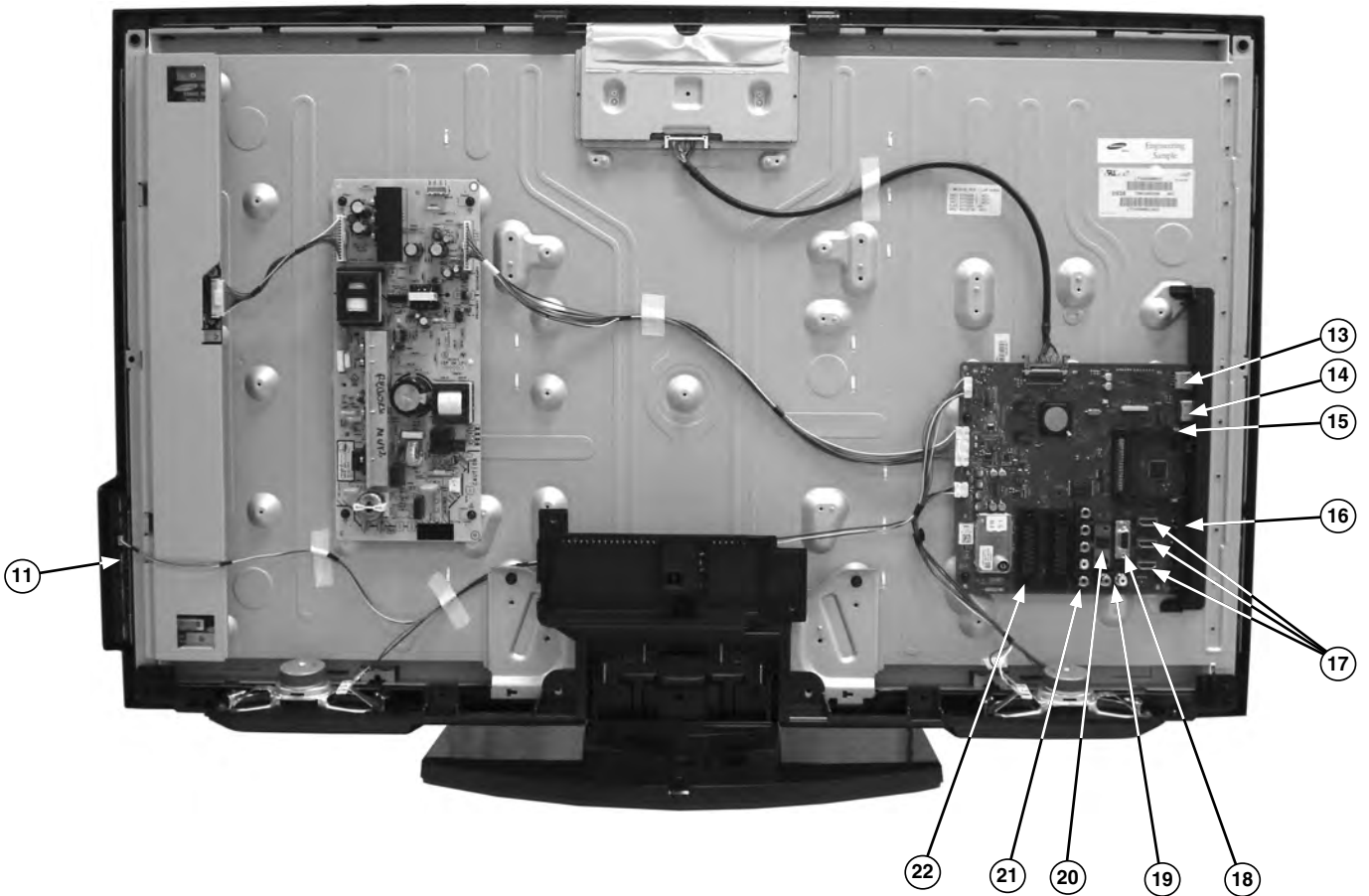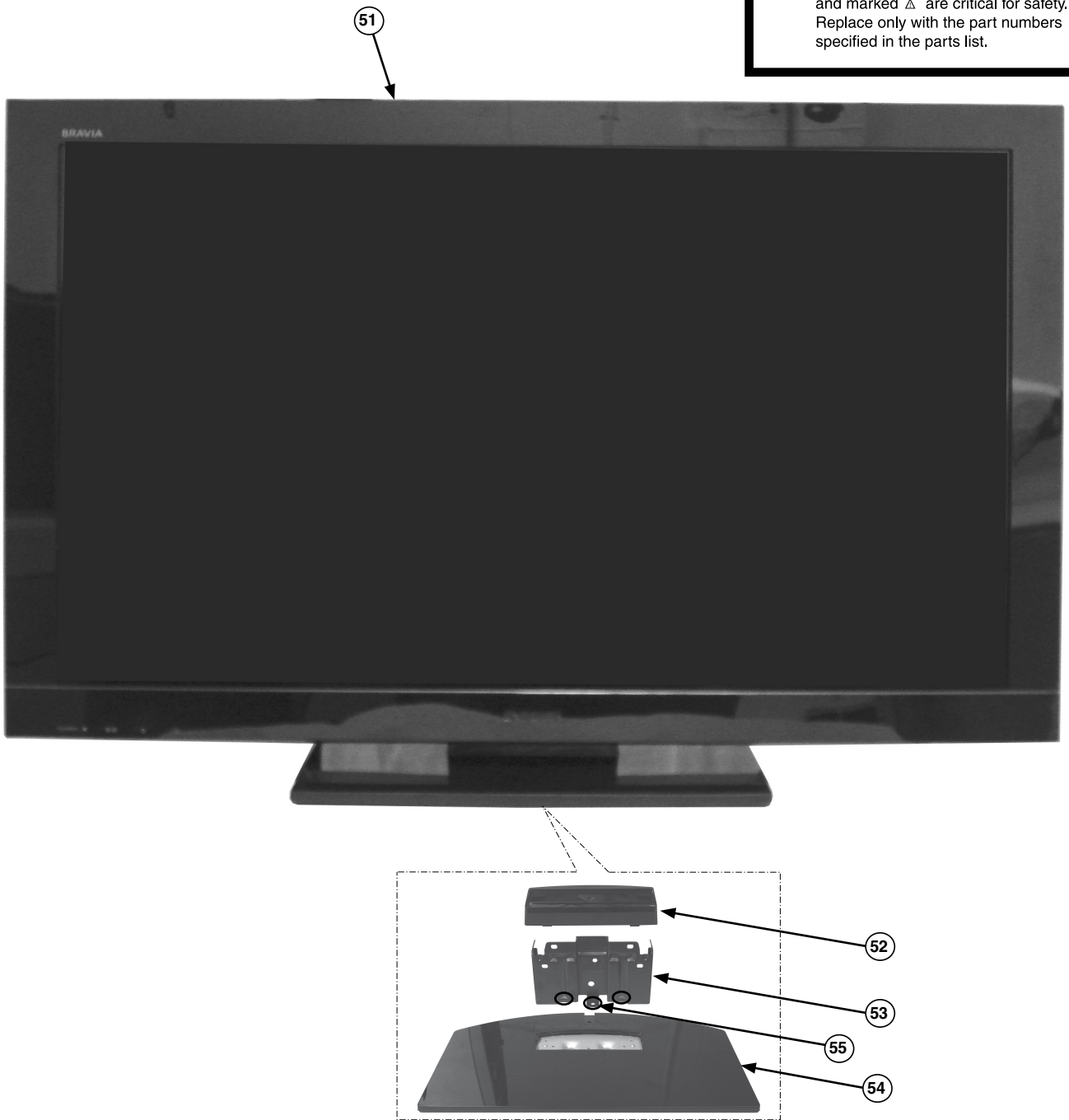
REF.NO.		PART.NO	DESCRIPTION	REMARK		REF.NO.	PART.NO	DESCRIPTION	REMARK
1	△	1-811-059-11	LCD PANEL (S32TSP)	32 inches		7	4-164-507-01	BRACKET, SP (32L)	32 inches
	△	1-811-060-11	LCD PANEL (S40TSP)	40 inches			4-166-119-11	BRACKET, SP (40L)	40 inches
2		1-474-208-11	STATIC CONVERTER(TV)	32 inches		8	A-1763-559-A	HLR BOARD, COMPLETE	
		1-474-201-21	STATIC CONVERTER(TV)	40 inches		9	4-164-509-02	COVER, UNDER (32)	32 inches
3	🔒	A-1763-564-A	BEN BOARD, COMPLETE				4-166-123-11	COVER, UNDER (37)	40 inches
4		4-166-268-22	BRACKET, SIDE JACK			10	4-164-506-01	BRACKET, SP (32R)	32 inches
5		8-597-735-00	UNIVERSAL SIL-TU SUT-AE102T				4-166-120-11	BRACKET, SP (40R)	40 inches
6		1-858-364-11	LOUDSPEAKER(4.5x12.5cm)						

5-1. CHASSIS Cont.

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
11	A-1765-913-A	H2LS BOARD, COMPLETE		17	1-822-638-11	HDMI CONNECTOR	
12	4-164-279-01	BRACKET, VESA (S)		18	1-842-087-11	D SUB CONNECTOR	
13	1-821-834-12	USB CONNECTOR		19	1-822-524-31	PHONO JACK 2P	
14	1-822-637-11	HDMI CONNECTOR		20	1-822-954-11	PHONO BLOCK, OPTICAL OUT	
15	1-822-579-31	CARD CONNECTOR (PCMCIA CARD)		21	1-822-523-11	PHONO JACK 5P	
16	1-822-581-22	MULTIPLE PHONO JACK 4P		22	1-822-580-21	CONNECTOR DUAL SCART	

5-2. BEZEL ASSY & STAND ASSY

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
51	X-2547-156-1	BEZEL (CON32) ASSY	32 inches	53	4-158-354-01	NECK (M3B)	32 inches
	X-2547-123-1	BEZEL (CON40) ASSY	40 inches		4-171-686-01	NECK (ML3B)	40 inches
52	4-158-400-11	COVER, NECK (M3B)	32 inches	54	X-2541-850-1	BASE (M3B) ASSY	32 inches
	4-171-690-01	COVER, NECK (ML3B)	40 inches		X-2541-851-1	BASE (ML3B) ASSY	40 inches
				55 Ver 3.0	4-159-298-01	SCREW, +PSW M4X10	

5-3. REAR COVER ASSY & POWER SUPPLY CORDS

UK MODELS ONLY
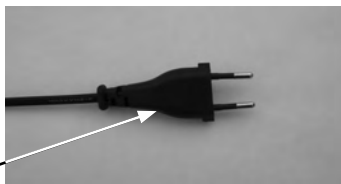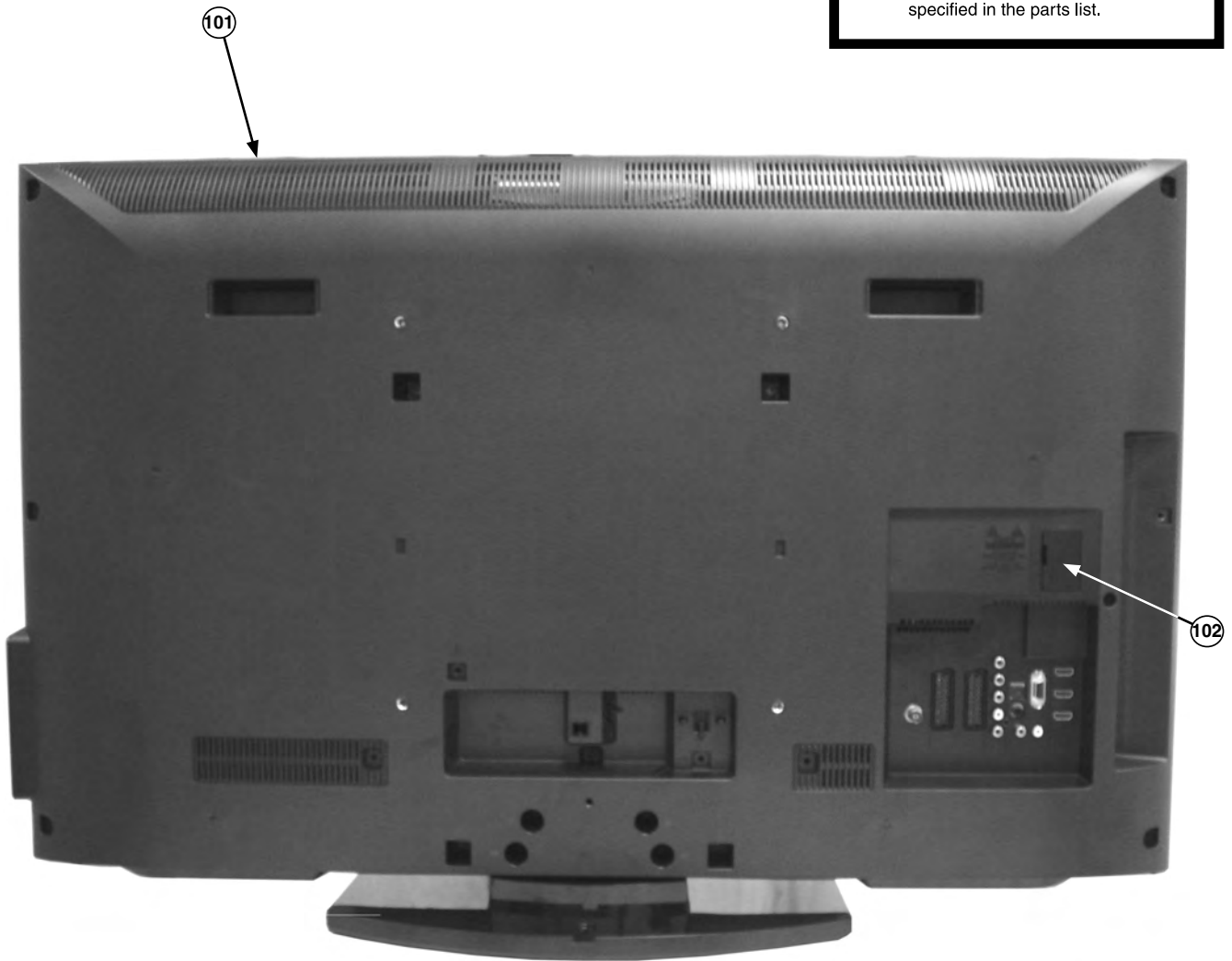
REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
101	X-2547-155-1	REAR COVER (CON32) ASSY	32 inches	103 △	1-837-454-11	POWER-SUPPLY CORD (AEP)	32/40 inches
	X-2547-124-1	REAR COVER (CON40) ASSY	40 inches	104 △	1-837-455-11	POWER-SUPPLY CORD (UK)	32/40 inches
102	*3-106-546-51	ECS COVER					

SECTION 6
PARTS LIST

Note: To ensure safety and reliability it is Sony policy that boards should not be repaired in the field, as a result all boards are regarded as non service items for exchange only and are not indicated in the parts list of this service manual.

Note : Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK

ACCESSORIES AND CONNECTORS

32 INCHES

```
 1-837-622-11  FLEXIBLE FLAT CABLE (TCON-BEN(CN4301))
*1-910-060-73  CONNECTOR ASSY 15P (G2L(CN6401-BEN(CN6006))
*1-910-060-76  MULTI HARNESS SPEAKER BEN(CN6007/7901)-
                              HLR-H2LS-SPEAKERS)
*1-910-060-77  CONNECTOR ASSY 14P (G2L(CN6402)-INVERTER)
```

40 INCHES

```
 1-837-624-11  FLEXIBLE FLAT CABLE (TCON-BEN(CN4301))
*1-910-060-80  CONNECTOR ASSY 15P (G2M(CN6401-BEN(CN6006))
*1-910-060-83  MULTI HARNESS SPEAKER BEN(CN6007/7901)-
                              HLR-H2LS-SPEAKERS)
*1-910-060-84  CONNECTOR ASSY 14P (G2M(CN6402)-INVERTER)
```

INSTRUCTION MANUALS

```
*4-168-148-11  INSTRUCTION MANUAL (UK) ENGLISH
*4-168-148-21  INSTRUCTION MANUAL (AEP) GERMAN/SPANISH/
                          FRENCH/ITALIAN/DUTCH/PORTUGUESE
*4-168-148-31  INSTRUCTION MANUAL (AEP) BULGARIAN/CZECH/
               DANISH/FINNISH/GREEK/HUNGARIAN/NORWEGIAN/
               POLISH/ROMAINIAN/SWEDISH/SLOVAK/TURKISH
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REMOTE COMMANDER

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 1-487-828-11  REMOTE COMMANDER (RM-ED022)
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