

## HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

# ***SERVICE MANUAL***

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## ***AZ1-K Chassis***

***ORIGINAL MANUAL ISSUE DATE: 1/2010***

<b>Version</b>	<b>Date</b>	<b>Subject</b>
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1.0	1/5/2010	No revisions or updates
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2.0	4/19/2010	Added Safety Related Warning. Replaced page 5. Corrected instructions for Accessing Factory Mode. Replaced page 19.
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**LCD Digital Color TV**

**SONY®**

# ***SERVICE MANUAL***

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***AZ1-K Chassis***

**LCD Digital Color TV**

**SONY®**

# MODEL LIST

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<i>MODEL</i>	<i>COMMANDER</i>	<i>DESTINATION</i>
<b>KDL-32EX500</b>	<i>RM-YD034</i>	<i>CND</i>
<b>KDL-32EX500</b>	<i>RM-YD034</i>	<i>US</i>
<b>KDL-40EX500</b>	<i>RM-YD034</i>	<i>CND</i>
<b>KDL-40EX500</b>	<i>RM-YD034</i>	<i>US</i>
<b>KDL-40EX501</b>	<i>RM-YD034</i>	<i>CND</i>
<b>KDL-40EX501</b>	<i>RM-YD034</i>	<i>US</i>

<i>MODEL</i>	<i>COMMANDER</i>	<i>DESTINATION</i>
<b>KDL-46EX500</b>	<i>RM-YD034</i>	<i>CND</i>
<b>KDL-46EX500</b>	<i>RM-YD034</i>	<i>US</i>
<b>KDL-46EX501</b>	<i>RM-YD034</i>	<i>CND</i>
<b>KDL-46EX501</b>	<i>RM-YD034</i>	<i>US</i>

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# SPECIFICATIONS

System	
Television system	NTSC: American TV standard ATSC (8VSB terrestrial): ATSC compliant 8VSB QAM on cable: ANSI/SCTE 07 2000 (Does not include CableCARD functionality)
Channel coverage	Analog terrestrial: 2 - 69 / Digital terrestrial: 2 - 69 Analog Cable: 1 - 135 / Digital Cable: 1 - 135
Panel system	LCD (Liquid Crystal Display) Panel
Speaker output	10 W + 10 W
Input/Output jacks	
CABLE/ANTENNA	75-ohm external terminal for RF inputs
VIDEO IN 1/2	VIDEO: 1 Vp-p, 75 ohms unbalanced, sync negative AUDIO: 500 mVrms (Typical) / Impedance: 47 kilohms
COMPONENT IN 1/2	YPbPr (Component Video): Y: 1.0 Vp-p, 75 ohms unbalanced, sync negative / PB: 0.7 Vp-p, 75 ohms PR: 0.7 Vp-p, 75 ohms / Signal format: 480i, 480p, 720p, 1080i, 1080p AUDIO: 500 mVrms (Typical) / Impedance: 47 kilohms
HDMI IN 1/2/3/4	HDMI: Video: 480i, 480p, 720p, 1080i, 1080p, 1080/24p Audio: Two channel linear PCM 32, 44.1 and 48 kHz, 16, 20 and 24bits, Dolby Digital
AUDIO OUT	500 mVrms (typical)
DIGITAL AUDIO OUT (OPTICAL)	PCM/Dolby Digital optical signal
PC IN	D-sub 15-pin, analog RGB, 0.7 Vp-p, 75 ohms, positive
PC/HDMI IN 1 AUDIO INPUT	Stereo mini jack, 500 mVrms, (Typical) / Impedance: 47 kilohms

## Licensing Information

Macintosh is a trademark of Apple Inc., registered in the U.S. and other countries.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing, LLC.


Ferguson Patent Properties, LLC:

U.S. Patent No. 5,717,422

U.S. Patent No. 6,816,141

Manufactured under license from Dolby Laboratories. Dolby, Pro Logic, and the double-D symbol are trademarks of Dolby Laboratories.

Blu-ray Disc is a trademark.

“BRAVIA” and BRAVIA, Motionflow, BRAVIA Sync, and  are trademarks or registered marks of Sony Corporation.

“PlayStation” is a registered trademark and “PS3” is a trademark of Sony Computer Entertainment Inc.



Your BRAVIA TV is ENERGY STAR® qualified in the “Home” mode. It meets strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and Department of Energy.

ENERGY STAR is a joint program of these government agencies, designed to promote energy efficient products and practices. Changes to certain features, settings, and functionalities of this TV (i.e. Picture/Sound, Power Savings) can increase or change the power consumption. Depending upon such changed settings, the power consumption may exceed the limits required for the ENERGY STAR qualification in the “Home” mode.



# SPECIFICATIONS

Model name KDL-	46EX500 46EX501	40EX500 40EX501	32EX500	
Power requirement	110-240 V AC, 50/60 Hz (U.S.A./Canada 120 V AC, 60 Hz)			
Power consumption	in use 255 W	180 W	140 W	
	in standby Less than 0.23 W with 120 V AC and with 240 V AC less than 0.4 W			
Screen size (inches measured diagonally)	46	40	31.5 (32 class)	
Display resolution	1,920 dots (horizontal) × 1,080 lines (vertical)			
Speaker/Full range (2) (mm) (inches)	45 × 145 (1 <sup>13</sup> / <sub>16</sub> × 5 <sup>3</sup> / <sub>4</sub> )	45 × 130 (1 <sup>13</sup> / <sub>16</sub> × 5 <sup>1</sup> / <sub>8</sub> )		
Dimensions	with stand (mm) (inches)	1,127 × 713 × 281 44 <sup>3</sup> / <sub>8</sub> × 28 <sup>1</sup> / <sub>8</sub> × 11 <sup>1</sup> / <sub>8</sub>	992 × 636 × 260 39 <sup>1</sup> / <sub>8</sub> × 25 <sup>1</sup> / <sub>8</sub> × 10 <sup>1</sup> / <sub>4</sub>	800 × 534 × 250 31 <sup>1</sup> / <sub>2</sub> × 21 <sup>1</sup> / <sub>8</sub> × 9 <sup>7</sup> / <sub>8</sub>
	without stand (mm) (inches)	1,127 × 676 × 101 44 <sup>3</sup> / <sub>8</sub> × 26 <sup>5</sup> / <sub>8</sub> × 4	992 × 599 × 99 39 <sup>1</sup> / <sub>8</sub> × 23 <sup>5</sup> / <sub>8</sub> × 4	800 × 497 × 96 31 <sup>1</sup> / <sub>2</sub> × 19 <sup>5</sup> / <sub>8</sub> × 3 <sup>7</sup> / <sub>8</sub>
	wall-mount hole pattern (mm)	300 × 300		200 × 200
	wall-mount screw size (mm)	M6 (length)		
Mass	with stand (kg) (lb.)	21.6 47.6	16.4 36.2	11.9 26.3
	without stand (kg) (lb.)	18.7 41.2	14.2 31.3	9.9 21.9
Supplied accessories	Remote control RM-YD034 (1)/Size AAA batteries (2)/ Operating Instructions (1)/Quick Setup Guide (1)/Warranty Card (1)/Safety and Regulatory Booklet (1)/ Software License (1)/Stand installation guide Table-Top Stand (1 set)			
	common to all models			
	individual models	AC power cord (1)/ Screw (4)	Screw (8)	
Optional accessories	Connecting cables / Support Belt Kit / Wall-Mount Bracket: SU-WL500			

# WARNINGS AND CAUTIONS

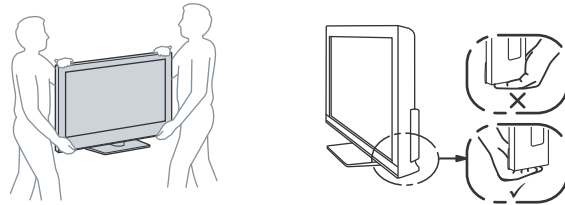
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## CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

## CARRYING THE TV

- Carry the TV with the adequate number of people; larger size TVs require two or more people.
- Correct hand placement while carrying the TV is very important for safety and to avoid damage.




## WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the AC power line.



## SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and  mark on the exploded views are critical for safe operation. Replace all components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. It is essential that all critical parts be replaced only with the part number specified in this manual to prevent electric shock, fire, or other hazard. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

NOTE: Do not modify the original design without obtaining written permission from the manufacturer or you will void the original parts and labor guarantee.

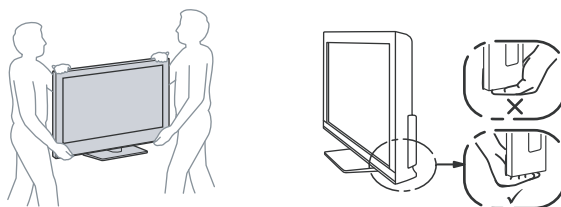
# WARNING AND CAUTIONS

## ATTENTION!!

Ces instructions de service sont à l'usage du personnel de service qualifié seulement. Pour prévenir le risque de choc électrique, ne pas faire l'entretien autre que celui contenu dans le Mode d'emploi à moins que vous soyez qualifié faire ainsi.

## POUR TRANSPORTER LE TÉLÉVISEUR

- Transportez le téléviseur avec le nombre de personnes approprié ; un téléviseur de grande taille doit être transporté par au moins deux personnes.
- Lors du transport du téléviseur, l'emplacement des mains est très important pour votre sécurité, ainsi que pour éviter de causer des dommages.



## ALERTE!!

Afin d'éviter tout risque d'électrocution provenant d'un châssis sous tension, un transformateur d'isolement doit être utilisé lors de tout dépannage. Le châssis de ce récepteur est directement raccordé à l'alimentation du secteur.

## ⚠ ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

Les composants identifiés par une trame et par une marque ⚠ sur les schémas de principe, les vues explosées et les listes de pièces sont d'une importance critique pour la sécurité du fonctionnement. Ne les remplacer que par des composants Sony dont le numéro de pièce est indiqué dans le présent manuel ou dans des suppléments publiés par Sony. Les réglages de circuit dont l'importance est critique pour la sécurité du fonctionnement sont identifiés dans le présent manuel. Suivre ces procédures lors de chaque remplacement de composants critiques, ou lorsqu'un mauvais fonctionnement suspecte.

# SAFETY-RELATED WARNING

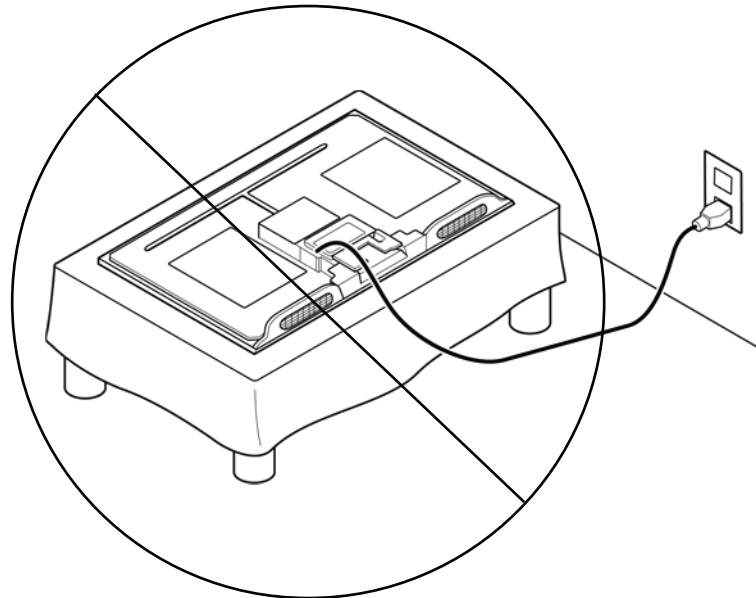
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## USE CAUTION WHEN HANDLING THE LCD PANEL

**When repairing the LCD panel, be sure you are grounded by using a wrist band.**

**When installing the LCD panel on a wall, the LCD panel must be secured using the 4 mounting holes on the rear cover.**

- 1) Do not press on the panel or frame edge to avoid the risk of electric shock.
- 2) Do not scratch or press on the panel with any sharp objects.
- 3) Do not leave the module in high temperatures or in areas of high humidity for an extended period of time.
- 4) Do not expose the LCD panel to direct sunlight.
- 5) Avoid contact with water. It may cause a short circuit within the module.
- 6) Disconnect the AC power when replacing the inverter circuit.  
(High voltage occurs at the inverter circuit at 650Vrms.)
- 7) Always clean the LCD panel with a soft cloth material.
- 8) Use care when handling the wires or connectors of the inverter circuit. Damaging the wires may cause a short.
- 9) Protect the panel from ESD to avoid damaging the electronic circuit (C-MOS).
- 10) During the repair, DO NOT leave the Power On for more than 1 hour while the TV is face down on a cloth.



# SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

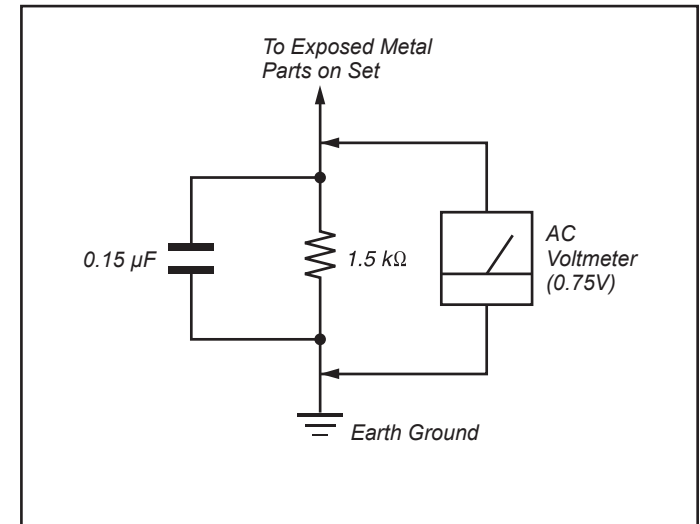


Figure A. Using an AC voltmeter to check AC leakage.

## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale.

The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

## HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground.

If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60-to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

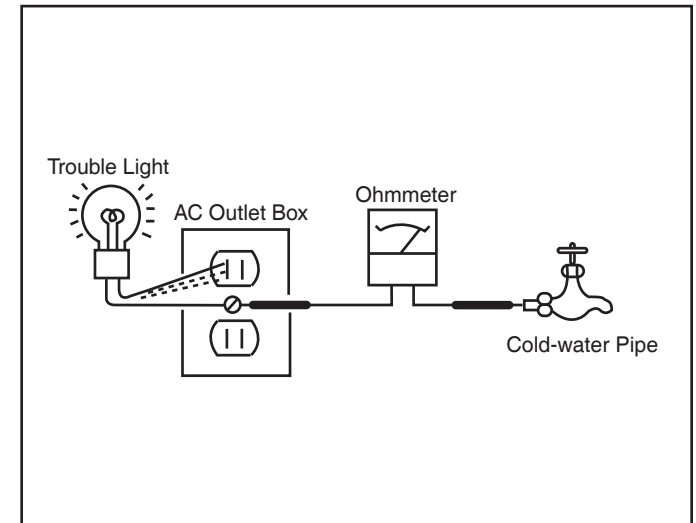


Figure B. Checking for earth ground.

# SELF DIAGNOSIS FUNCTIONS



## SELF DIAGNOSIS FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY LED flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

## DIAGNOSTIC TEST INDICATORS

When an error occurs, the STANDBY LED will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the LED will identify the first of the problem areas. Result for all of the following diagnostic items are displayed on screen.

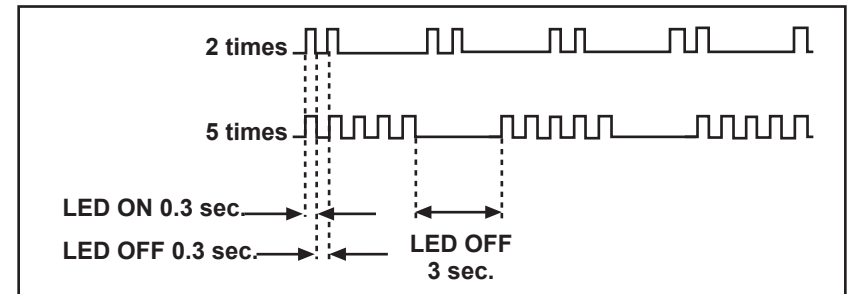
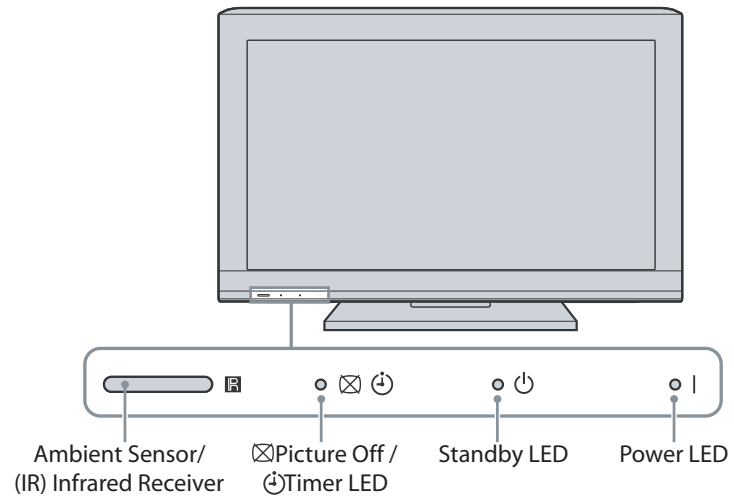
If the screen displays a "0", no error has occurred .

Diagnostic Item Description	Number of times Standby LED blinks	Possible Location
Main Power Error	2	G2HE/GD2 (Power) Board
Audio Error	3	A (Main) Board
Balancer	4	LCD Panel Inverter Board (ETC-Inverter MT Board) for 32" & 40" Models
TCON Error	5	LCD Panel TCON Control MT Board
HFR Error	5	LCD Panel
Backlight Error	6	LCD Panel Inverter Board (ETC-Inverter MT Board) for 32" & 40" Models
Temperature Error	7	A (Main) Board



# SELF DIAGNOSIS FUNCTIONS

## STANDBY LED FLASH COUNT



# SELF DIAGNOSIS FUNCTIONS

## VIEWING THE SELF CHECK DIAGNOSTIC LIST

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of a failure for confirmation on the Self Check diagnostic screen:

1. TV must be in standby mode. (Power off).
2. Press the following buttons on the Remote Commander within a second of each other:

**DISPLAY** → Channel **5** → Volume **-** → **POWER**.

↑ \* NOTE: This differs from accessing Service Adjustments Mode (Volume +)

SELF CHECK			
Back		<<	
002	MAIN_POWE	001	← 001 indicates an error was detected
003	AUD_PORT	000	← 000 indicates no error was detected
003	DC_ALERT	000	
004	BALANCER	000	
005	TCON_ERR	000	
005	HFR_ERR	000	
005	P_ID_ERR	000	
005	PANEL_POWE	000	
006	BACKLITE	000	
007	TEMP_ERR	000	
00000	00010	00000	[Menu] Exit
↑	↑	↑	
Total Operation Time by Hour (max 99999)	Boot Count (max 99999)	Panel Operation Time by Hour (max 99999)	

# ***SELF DIAGNOSIS FUNCTIONS***

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## **CLEARING THE SELF CHECK DIAGNOSTIC LIST**

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen after you have completed the repairs to be sure you have cleared the result display to "0".

1. Error history and Error count :Press the Channel **[8]** ➡ Channel **[0]** .
2. Panel operation time :Press the Channel **[7]** ➡ Channel **[0]** .

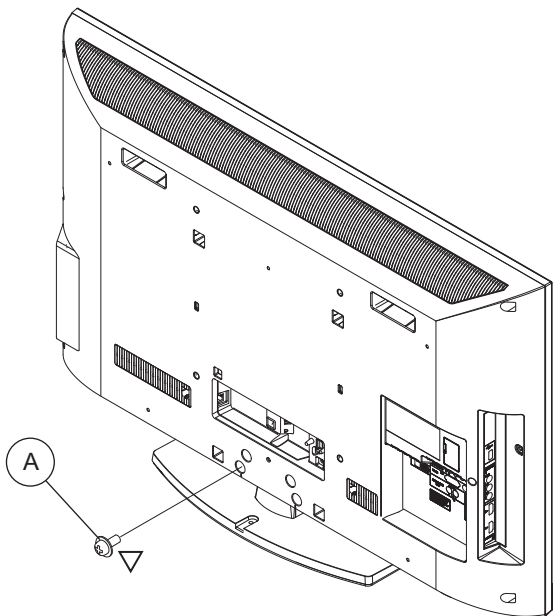
## **EXITING THE SELF CHECK DIAGNOSTIC SCREEN**

1. To exit the Self Diagnostic screen, turn off the power to the TV by pressing the POWER button on the remote or the POWER button on the TV.

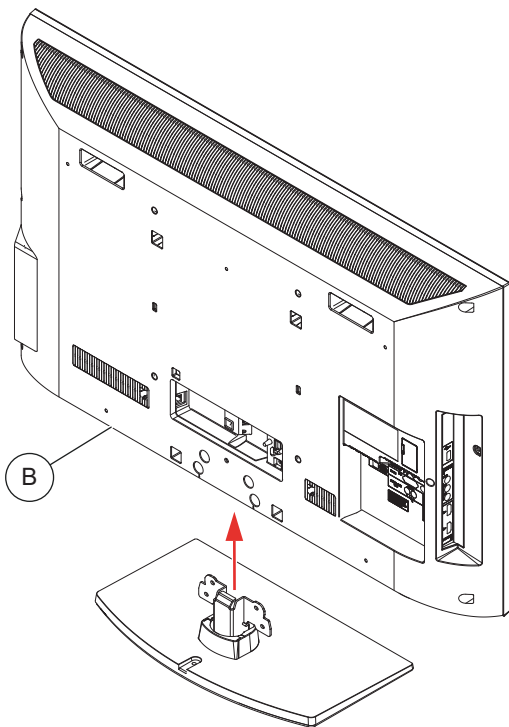
# SEC 1. DISASSEMBLY/PART NUMBER INFORMATION

## 1-1. TABLE-TOP STAND ASSEMBLY REMOVAL

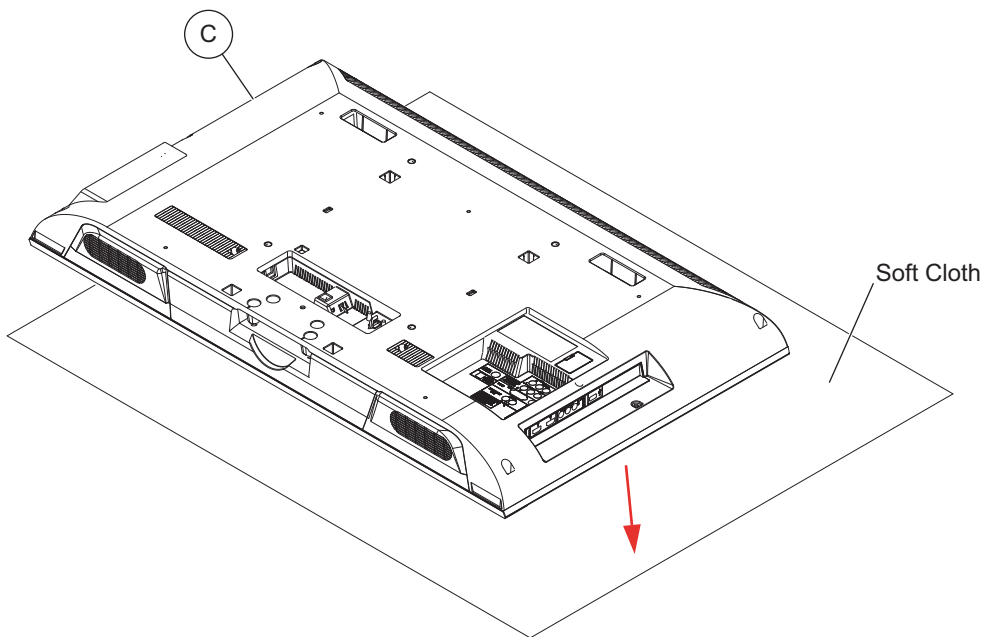
Ⓐ Remove 4 screws from Table-Top Stand Assembly



Ⓑ Lift up TV set to detach from Table-Top Stand Assembly




Ⓒ Gently place the TV set face down onto a soft cloth





Components not identified by a part number or description are not stocked because they are seldom required for routine service.

The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

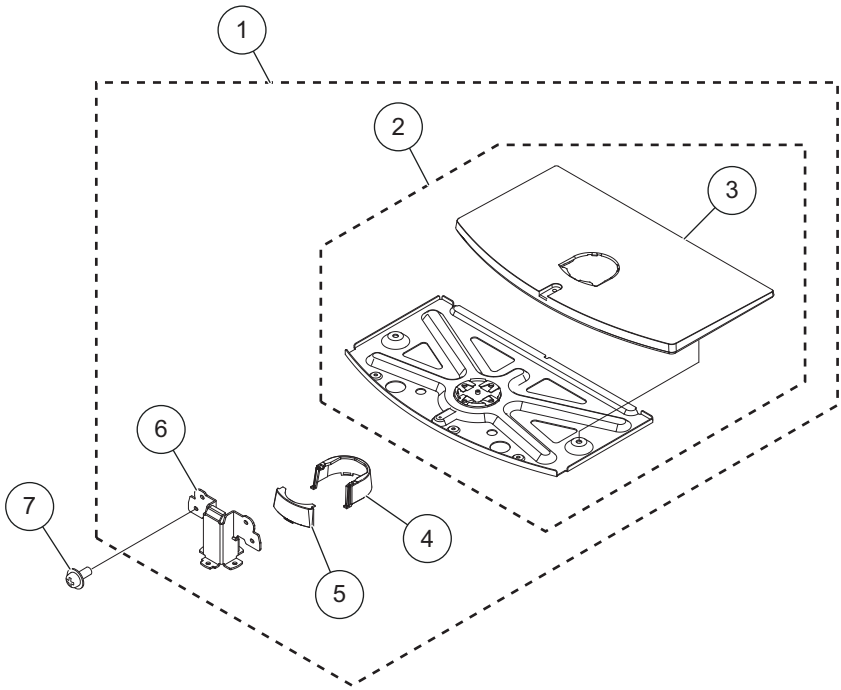
\* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)

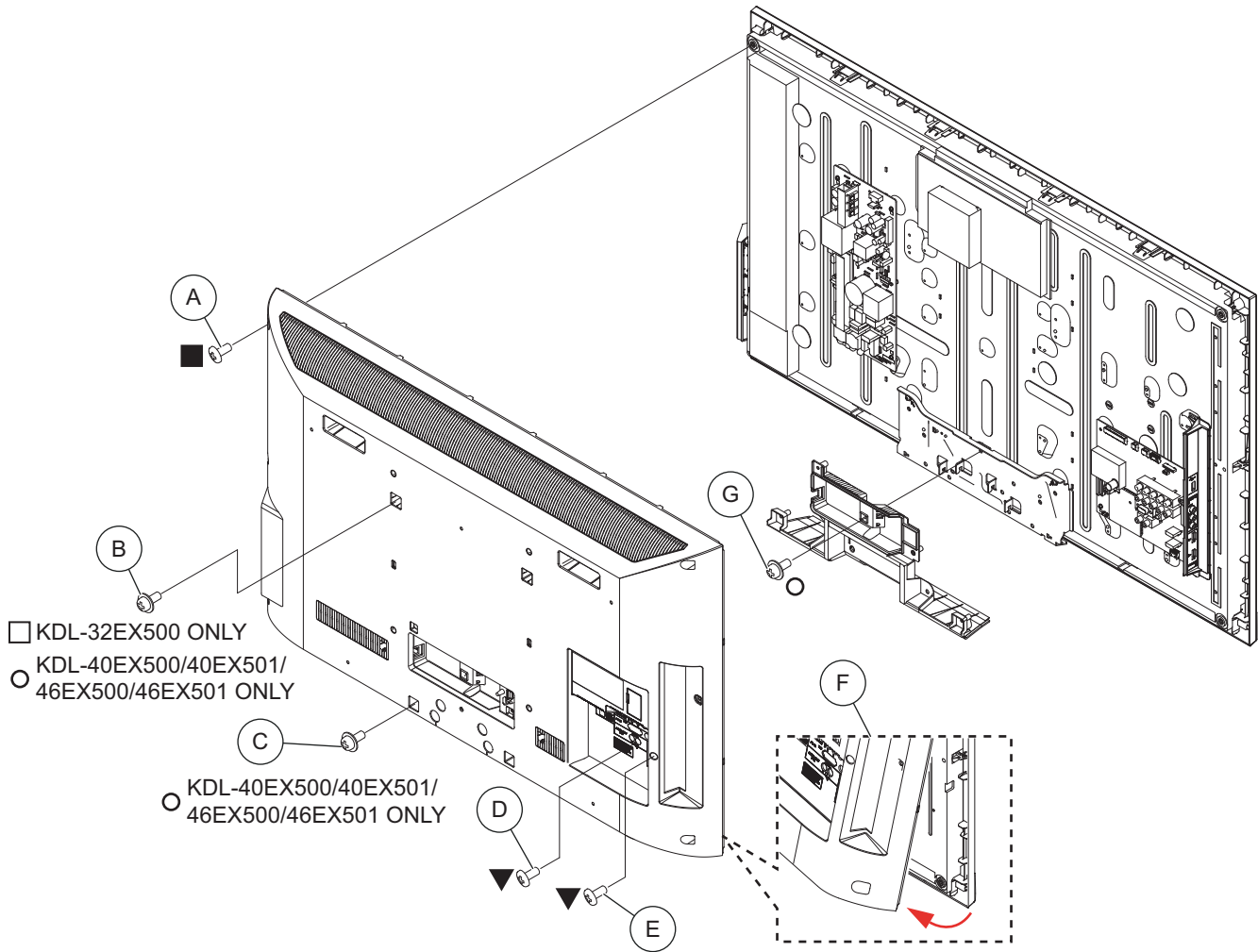



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
1	X-2546-644-1	TABLE-TOP STAND ASSEMBLY (L3) (KDL-46EX500/46EX501 ONLY)	[2-6]	4	4-166-875-01	COVER,NECK(M3 FRONT)	
2	X-2546-642-1	BASE (M3) ASSEMBLY (KDL-32EX500 ONLY)	[3]	5	4-166-876-01	COVER,NECK(M3 REAR)	
2	X-2546-643-1	BASE (ML3) ASSEMBLY (KDL-40EX500/40EX501 ONLY)	[3]	6	4-166-872-01	NECK(M3) (KDL-32EX500 ONLY)	
3	4-166-874-01	COVER,STAND(M3) (KDL-32EX500 ONLY)		6	4-166-882-01	NECK(ML3) (KDL-40EX500/40EX501/46EX500/46EX501 ONLY)	
3	4-166-884-01	COVER,STAND(ML3) (KDL-40EX500/40EX501 ONLY)		7	2-580-608-01	SCREW, +PSW M5X16 For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV	
3	4-167-476-01	COVER, STAND (L3) (KDL-46EX500/46EX501 ONLY)		▽	2-580-608-01	SCREW, +PSW M5X16	


# DISASSEMBLY/PART NUMBER INFORMATION


## 1-2. REAR COVER AND UNDER COVER REMOVAL

- Ⓐ Remove screws from Rear Cover
  - 10 from KDL-32EX500 ONLY
  - 8 from KDL-40EX500/40EX501 ONLY
  - 11 from KDL-46EX500/46EX501 ONLY
- Ⓑ Remove 2 screws from Rear Cover Top-Center
- Ⓒ Remove 2 screws from Rear Cover Bottom-Center (KDL-40EX500/40EX501/46EX500/46EX501 ONLY)
- Ⓓ Remove 1 screw from Terminal position
- Ⓔ Remove 1 screw from Side Jack position
- Ⓕ Lift up Rear Cover from bottom to remove from Bezel Assembly
- Ⓖ Remove 1 screw from Under Cover Position and lift up Under Cover to detach from Bottom Frame

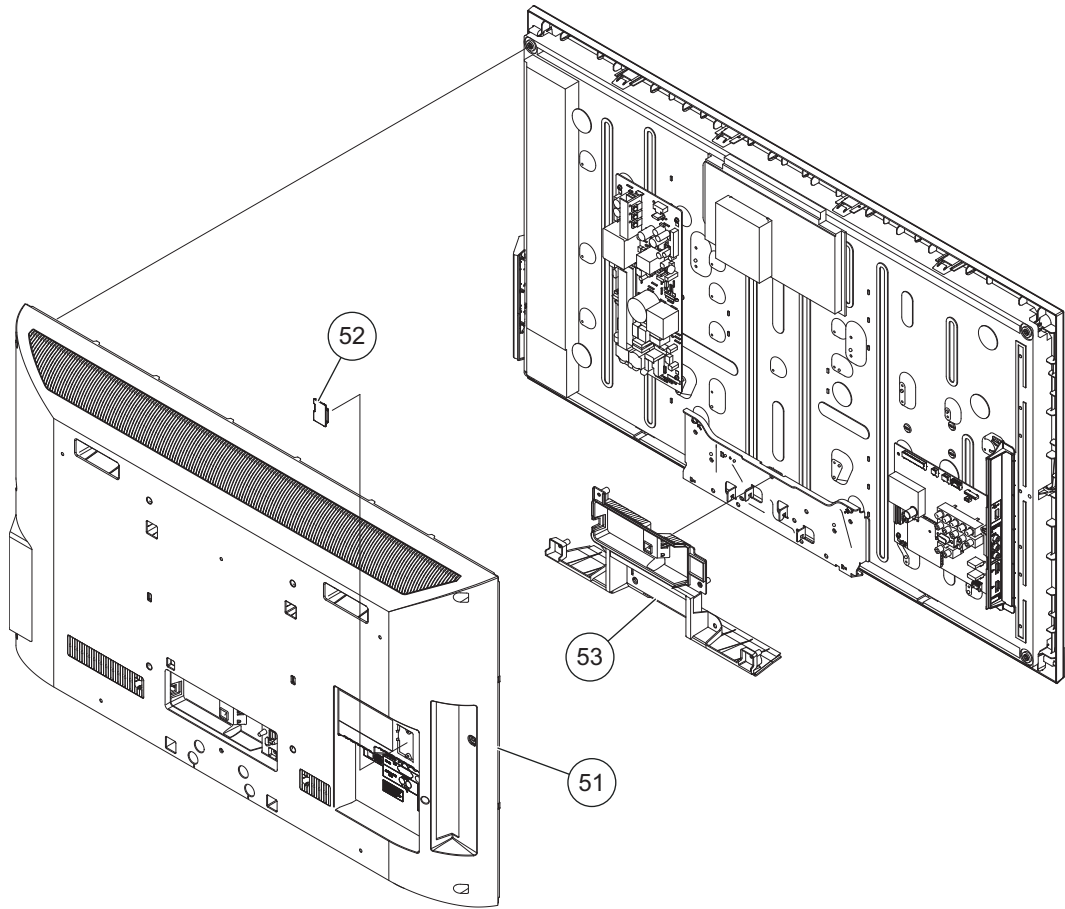






NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)



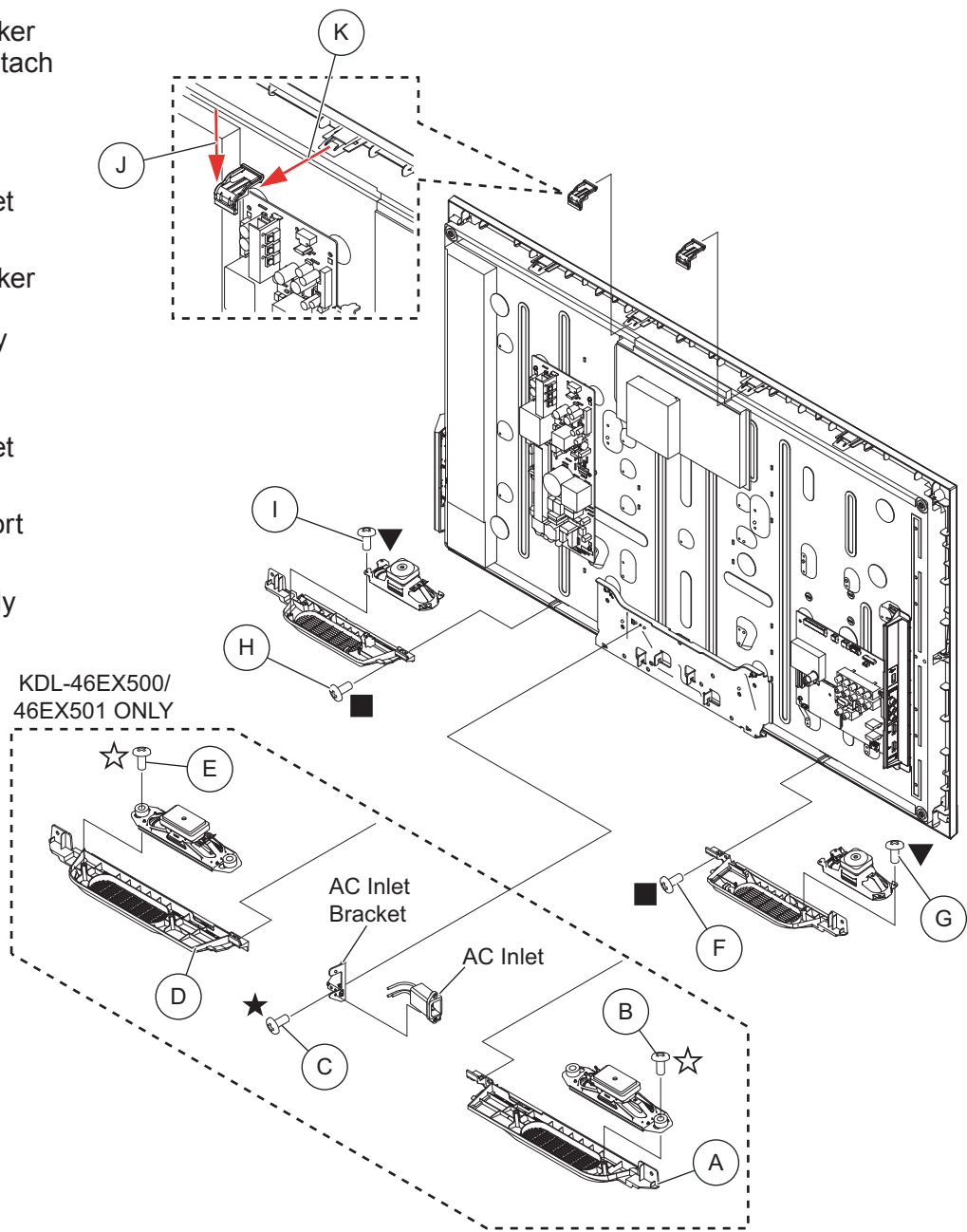
REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
51	X-2546-683-1	REAR COVER (32) ASSEMBLY (KDL-32EX500 ONLY)		53	4-163-783-01	COVER, UNDER (32) (KDL-32EX500 ONLY)	
51	X-2546-684-1	REAR COVER (40) ASSEMBLY (KDL-40EX500/40EX501 ONLY)		53	4-163-784-01	COVER, UNDER (40) (KDL-40EX500/40EX501 ONLY)	
51	X-2546-685-1	REAR COVER (46) ASSEMBLY (KDL-46EX500/46EX501 ONLY)		53	4-163-784-11	COVER, UNDER (40) (KDL-46EX500/46EX501 ONLY)	
52	4-163-809-01	COVER, ECS			2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	
					2-580-595-01	SCREW, +PSW M3X12 (KDL-32EX500 ONLY)	
					7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
					4-159-298-01	SCREW, +PSW M4X10	



# DISASSEMBLY/PART NUMBER INFORMATION

## 1-3. SPEAKER BRACKETS, LOUDSPEAKERS, AC INLET, AND PANEL SUPPORTS REMOVAL

- Ⓐ Lift up Speaker Bracket Left to remove from Bezel Assembly (KDL-46EX500/46EX501 ONLY)
- Ⓑ Remove 2 screws from Loudspeaker and lift up to detach from Speaker Bracket Left (KDL-46EX500/46EX501 ONLY)
- Ⓒ Remove 1 screw from AC Inlet Bracket to detach from Bottom Frame (KDL-46EX500/46EX501 ONLY)
- Ⓓ Lift up Speaker Bracket Right to remove from Bezel Assembly (KDL-46EX500/46EX501 ONLY)
- Ⓔ Remove 2 screws from Loudspeaker and lift up to detach from Speaker Bracket Right (KDL-46EX500/46EX501 ONLY)
- Ⓕ Remove 1 screw from Speaker Bracket Left and lift up to detach from Bezel Assembly
- Ⓖ Remove 2 screws from Loudspeaker and lift up to detach from Speaker Bracket Left
- Ⓗ Remove 1 screw from Speaker Bracket Right and lift up to detach from Bezel Assembly
- Ⓘ Remove 2 screws from Loudspeaker and lift up to detach from Speaker Bracket Right
- Ⓙ Press down on Panel Support
- Ⓚ Slide out Panel Support to remove from Bezel Assembly

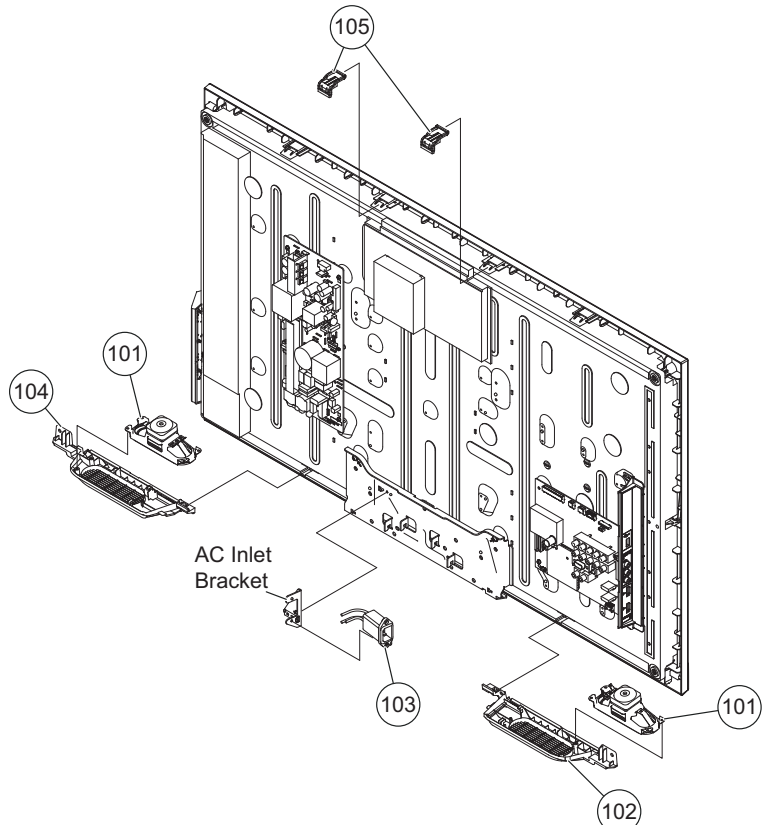


NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifiés par un trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE: The components identified by a red outline and a Ⓚ mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)



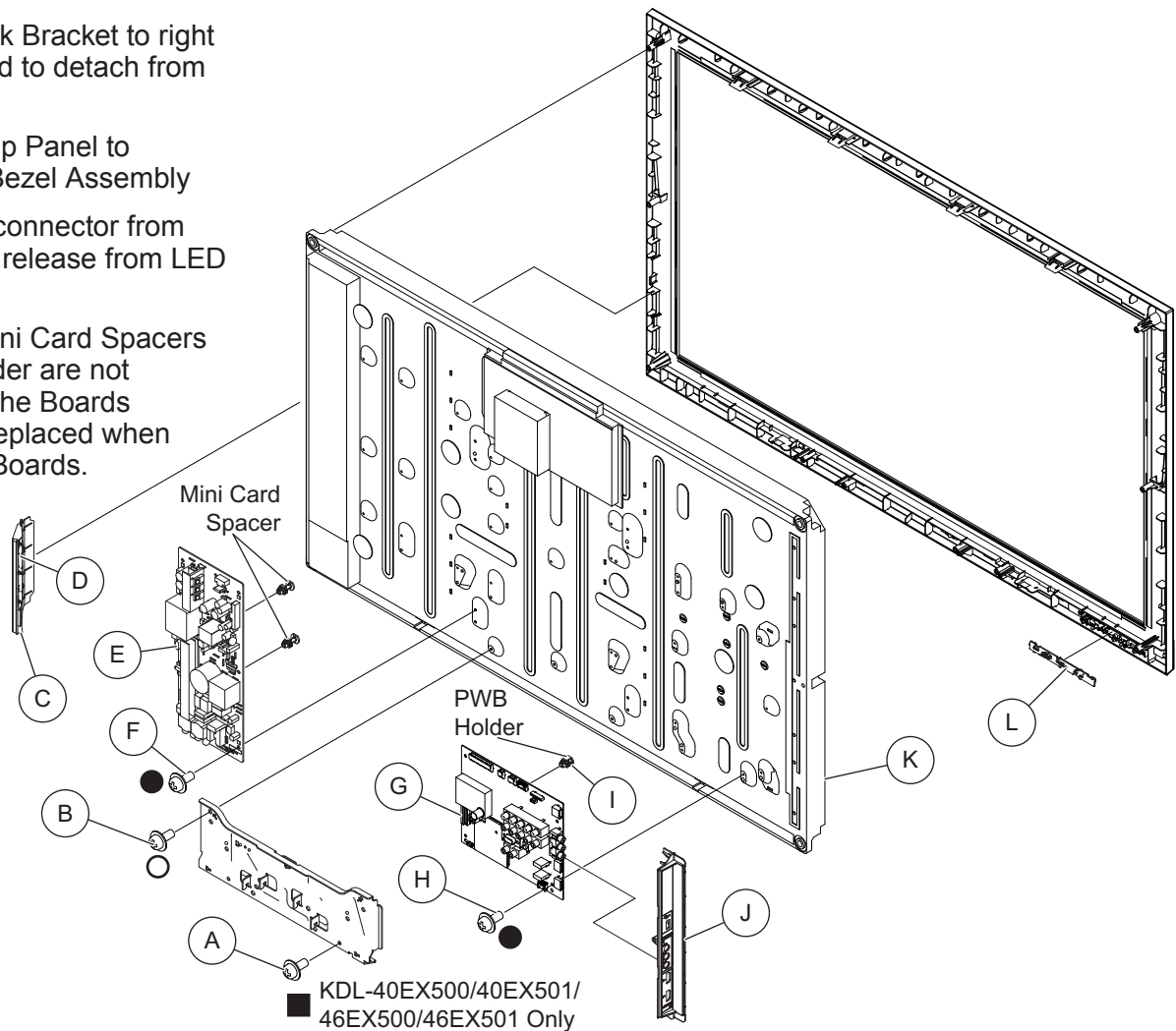
REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
101	1-858-340-11	LOUDSPEAKER (4.5X12.5CM) (KDL-32EX500/40EX500/40EX501 ONLY)		105	NA	PANEL SUPPORT (A) FOR ALL PANEL SUPPORT PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL	
101	1-858-371-11	LOUDSPEAKER (4.5X20CM) (KDL-46EX500/46EX501 ONLY)		105	NA	PANEL SUPPORT (B) FOR ALL PANEL SUPPORT PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL	
102	4-163-786-01	BRACKET, SP (32L) (KDL-32EX500 ONLY)		■	2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	
102	4-163-788-01	BRACKET, SP (40L) (KDL-40EX500/40EX501 ONLY)		▼	7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3 (KDL-32EX500/40EX500/40EX501 ONLY)	
102	4-166-129-01	BRACKET, SP (46L) (KDL-46EX500/46EX501 ONLY)		★	2-580-629-01	SCREW, +BVST 3X8 (KDL-46EX500 / 46EX501 ONLY)	
⚠ 103	1-842-008-11	AC INLET FILTER (KDL-46EX500/46EX501 ONLY)		☆	4-167-964-01	SCREW, +PWTP2 4X16 (KDL-46EX500 / 46EX501 ONLY)	
104	4-163-787-01	BRACKET, SP (32R) (KDL-32EX500 ONLY)					
104	4-163-789-01	BRACKET, SP (40R) (KDL-40EX500/40EX501 ONLY)					
104	4-166-130-01	BRACKET, SP (46R) (KDL-46EX500/46EX501 ONLY)					

# DISASSEMBLY/PART NUMBER INFORMATION

## 1-4. BOTTOM FRAME, SWITCH UNIT, G2HE/GD2 (POWER) BOARD, A BOARD, SIDE JACK BRACKET, LCD PANEL, AND H2 BOARD REMOVAL

- Ⓐ Remove 2 screws from Bottom Frame to detach from Bezel Assembly (KDL-40EX500/40EX501/46EX500/46EX501 ONLY)
- Ⓑ Remove 2 screws from Bottom Frame to detach from LCD Panel
- Ⓒ Lift up Switch Unit to remove from Bezel
- Ⓓ Disconnect 1 connector from Switch Unit
- Ⓔ Disconnect 4 connectors from G2HE (Power) Board (KDL-32EX500/40EX500/40EX501 ONLY)  
Disconnect 6 connectors from GD2 (Power) Board (KDL-46EX500/46EX501 ONLY)
- Ⓕ Remove 4 screws from G2HE/GD2 (Power) Board
- Ⓖ Disconnect 6 connectors from A Board
- Ⓗ Remove 4 screws from A Board
- Ⓘ Remove 1 PWB Holder to detach A Board from LCD Panel
- Ⓙ Slide Side Jack Bracket to right side of A Board to detach from position
- Ⓚ Carefully Lift up Panel to remove from Bezel Assembly
- Ⓛ Disconnect 1 connector from H2 Board and release from LED Guide

NOTE: The Mini Card Spacers and PWB Holder are not included with the Boards and must be replaced when replacing the Boards.

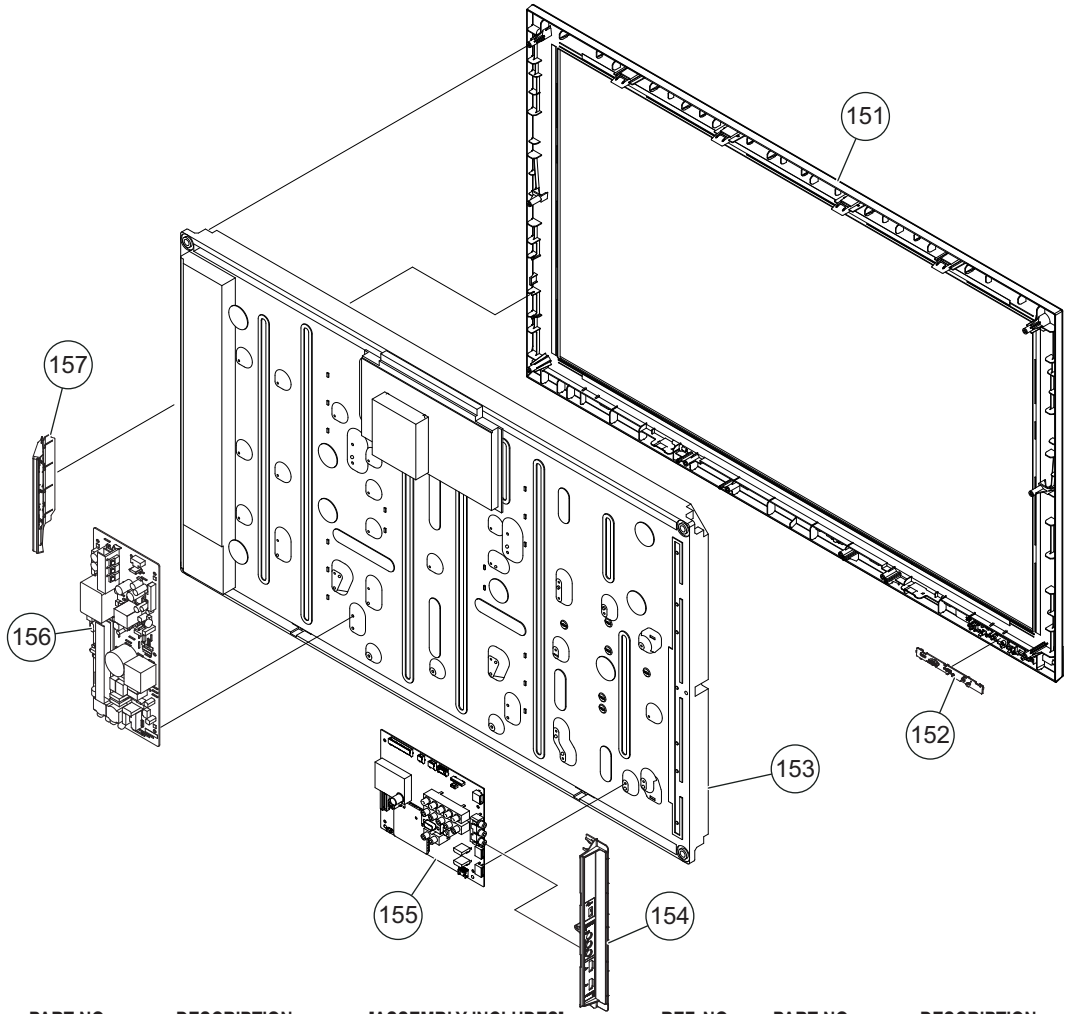


NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifiés par un trame et ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
151	X-2546-668-1	BEZEL (TR32) ASSEMBLY (KDL-32EX500 ONLY)		154	4-163-796-01	BRACKET, SIDE JACK	
151	X-2546-670-1	BEZEL (TR40) ASSEMBLY (KDL-40EX500 ONLY)		🔒 155	1-857-593-31	A BOARD, COMPLETE	
151	X-2546-678-1	BEZEL (TR40)D ASSEMBLY (KDL-40EX501 ONLY)		156	1-474-201-11	G2HE (POWER) BOARD, COMPLETE (KDL-32EX500 ONLY)	
151	X-2546-672-1	BEZEL (TR46) ASSEMBLY (KDL-46EX500 ONLY)		156	1-474-202-11	G2HE (POWER) BOARD, COMPLETE (KDL-40EX500/40EX501 ONLY)	
151	X-2546-680-1	BEZEL (TR46)D ASSEMBLY (KDL-46EX501 ONLY)		156	1-474-205-11	GD2 (POWER) BOARD, COMPLETE (KDL-46EX500/46EX501 ONLY)	
152	1-857-594-11	H2 BOARD, COMPLETE		157	1-487-889-11	SWITCH UNIT	
153	NA	LCD PANEL		■	2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3 (KDL-40EX500/40EX501/46EX500/46EX501 ONLY)	
FOR ALL LCD PANEL PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL				●	2-580-592-01	SCREW, +PSW M3X8	
				○	4-159-298-01	SCREW, +PSW M4X10	

# DISASSEMBLY/PART NUMBER INFORMATION

## 1-5. CLEANING THE LCD PANEL

**CAUTION:** When cleaning the TV, be sure to unplug the power cord to avoid any chance of electric shock.

Clean the cabinet of the TV with a dry soft cloth.

Wipe the LCD screen gently with a soft cloth.

- ◆ Stubborn stains may be removed with a cloth slightly moistened with a solution of mild soap and warm water.
- ◆ If using a chemically pretreated cloth, please follow the instruction provided on the package.
- ◆ Never use strong solvents such as a thinner, alcohol or benzine for cleaning.
- ◆ Periodic vacuuming of the ventilation openings is recommended to ensure to proper ventilation.

## 1-6. SCREW LEGEND AND CONNECTORS

### KDL-32EX500


P/N	DESCRIPTION	REMARKS	TOTAL
■ 2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	RC(10), SPKR BRKT LEFT(1), SPKR BRKT RIGHT(1)	12
□ 2-580-595-01	SCREW, +PSW M3X12	RC TOP-CENTER(2)	2
▼ 7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	RC to SIDE JACK(1), RC to TRMNL AREA(1), SPKR LEFT(2), SPKR RIGHT(2)	6
▽ 2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
● 2-580-592-01	SCREW, +PSW M3X8	G2HE BOARD(4), A BOARD(4)	8
○ 4-159-298-01	SCREW, +PSW M4X10	UNDER COVER(1), BTM FRAME(2)	3
★ 2-580-629-01	SCREW, +BVST 3X8	NOT IN THIS MODEL	0
☆ 4-167-964-01	SCREW, +PWTP2 4X16	NOT IN THIS MODEL	0


### KDL-40EX500 / KDL-40EX501


P/N	DESCRIPTION	REMARKS	TOTAL
■ 2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	RC(8), SPKR BRKT LEFT(1), SPKR BRKT RIGHT(1), BTM FRM to BEZ ASSY(2)	12
□ 2-580-595-01	SCREW, +PSW M3X12	NOT IN THIS MODEL	0
▼ 7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	RC to SIDE JACK(1), RC to TRMNL AREA(1), SPKR LEFT(2), SPKR RIGHT(2)	6
▽ 2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
● 2-580-592-01	SCREW, +PSW M3X8	G2HE BOARD(4), A BOARD(4)	8
○ 4-159-298-01	SCREW, +PSW M4X10	RC TOP-CENTER(2), RC BTM-CENTER(2), UNDER COVER(1), BTM FRM(2)	7
★ 2-580-629-01	SCREW, +BVST 3X8	NOT IN THIS MODEL	0
☆ 4-167-964-01	SCREW, +PWTP2 4X16	NOT IN THIS MODEL	0

### KDL-46EX500 / KDL-46EX501

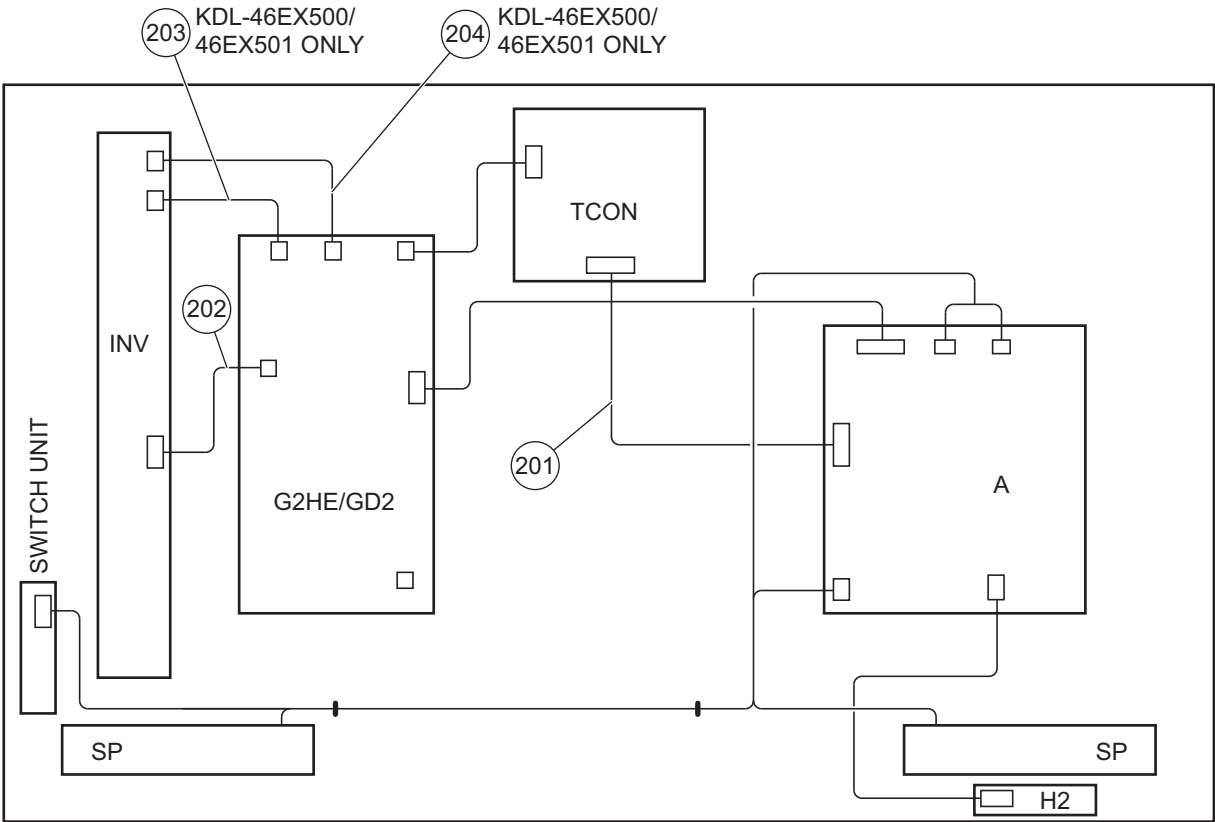
P/N	DESCRIPTION	REMARKS	TOTAL
■ 2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	RC(11), BTM FRM to BEZ ASSY(2)	13
□ 2-580-595-01	SCREW, +PSW M3X12	NOT IN THIS MODEL	0
▼ 7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	RC to SIDE JACK(1), RC to TRMNL AREA(1)	2
▽ 2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(4)	4
● 2-580-592-01	SCREW, +PSW M3X8	GD2 BOARD(4), A BOARD(4)	8
○ 4-159-298-01	SCREW, +PSW M4X10	RC TOP-CENTER(2), RC BTM-CENTER(2), UNDER COVER(1), BTM FRM(2)	7
★ 2-580-629-01	SCREW, +BVST 3X8	AC INLET FILTER to BTM FRAME	1
☆ 4-167-964-01	SCREW, +PWTP2 4X16	SPKR LEFT(2), SPKR RIGHT(2)	4

NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifiés par un trame et une marque  sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
201	1-910-060-90	LVDS CONNECTOR ASSY 32-II (KDL-32EX500 ONLY)		203	1-910-060-97	CONNECTOR ASSY HV CABLE-I (KDL-46EX500/46EX501 ONLY)	
201	1-910-060-91	LVDS CONNECTOR ASSY 40-II (KDL-40EX500/40EX501 ONLY)		204	1-910-060-98	CONNECTOR ASSY HV CABLE-II (KDL-46EX500/46EX501 ONLY)	
201	1-910-060-92	LVDS CONNECTOR ASSY 46-II (KDL-46EX500/46EX501 ONLY)					
202	1-910-060-94	CONNECTOR ASSY INVERTER 32 (KDL-32EX500 ONLY)					
202	1-910-060-95	CONNECTOR ASSY INVERTER 40 (KDL-40EX500/40EX501 ONLY)					
202	1-910-060-96	CONNECTOR ASSY FOR PANEL (KDL-46EX500/46EX501 ONLY)					





# DISASSEMBLY/PART NUMBER INFORMATION

## 1-7. ACCESSORIES & PACKING

	A-1758-127-A	ACCESSORY ASSY (KDL-32EX500/40EX500/40EX501 ONLY)
	A-1758-145-A	ACCESSORY ASSY (KDL-46EX500/46EX501 ONLY)
*	4-170-418-11	GUIDE, QUICK SET UP (ENGLISH VERSION)
*	4-170-418-21	GUIDE, QUICK SET UP (FRENCH VERSION)
*	4-170-418-31	GUIDE, QUICK SET UP (SPANISH VERSION)
	4-170-417-12	MANUAL, INSTRUCTION (ENGLISH VERSION)
	4-170-417-22	MANUAL, INSTRUCTION (FRENCH VERSION)
	4-170-417-32	MANUAL, INSTRUCTION (SPANISH VERSION)
	X-2547-211-1	PACKING MATERIAL KIT TR32 (KDL-32EX500 ONLY)
	X-2547-213-1	PACKING MATERIAL KIT TR40 (KDL-40EX500 ONLY)
	X-2547-215-1	PACKING MATERIAL KIT TR46 (KDL-46EX500 ONLY)
	X-2547-220-1	PACKING MATERIAL KIT TR40_D (KDL-40EX501 ONLY)
	X-2547-221-1	PACKING MATERIAL KIT TR46_D (KDL-46EX501 ONLY)
*	4-175-277-11	SUPPLEMENT(STAND INSTALLATION)

## 1-8. MISCELLANEOUS

	1-836-501-21	AC POWER SUPPLY CORD WITH CONN (KDL-32EX500/40EX500/40EX501 ONLY)
	4-163-802-01	BRACKET, VESA (S)
	1-823-512-12	POWER SUPPLY CORD (KDL-46EX500/46EX501 ONLY)
	X-2348-140-1	SUPPORT BELT KIT

## 1-9. REMOTE COMMANDER

1-487-830-11	REMOTE COMMANDER (RM-YD034)
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# SEC 2. SERVICE ADJUSTMENTS

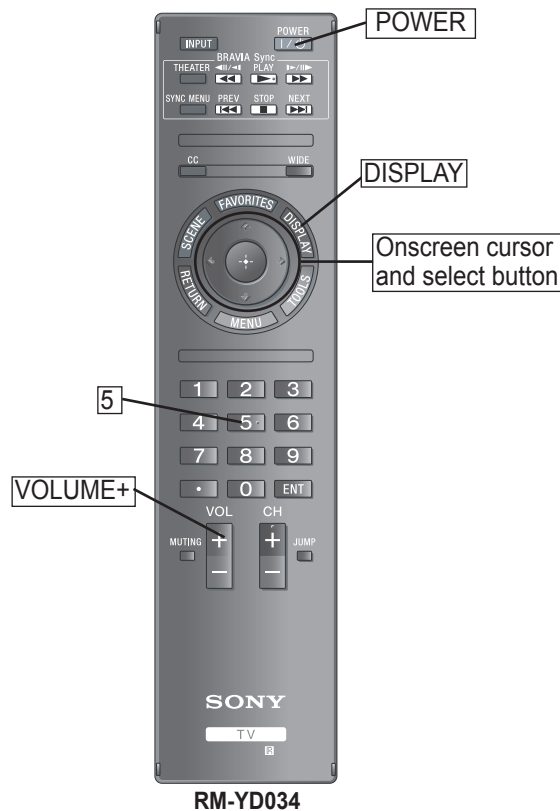
## 2-1. ACCESSING SERVICE ADJUSTMENT MODE

There are 2 modes that can be accessed for service. The **Service Mode** screen is for informational purposes and will be covered in the training manual for these models. The **Factory Mode** screen, is similar to 2009

### 2-1-1. ACCESSING SERVICE MODE

1. TV must be in standby mode. (POWER off).
2. Press the following buttons on the Remote Commander within a second of each other:

**DISPLAY** → Channel **5** → Volume **+** → **POWER**.



RM-YD034

Service Mode			
Sound Adjust...		>>	
Wide Band Tuning		>>	
Range Scan...		>>	
Self daignosis history		>>	
Status Information...		>>	
LVDS Spectrum(%0)	<[	20	]>
DPMS	<[	Off	]>
Low of HPD	<[	5	]>
TVD_MCDONE_CNT	<[	20	]>
Demo Special		>>	
Bypass AVI Info Detect	<[	Off	]>
Panel Selection	<[	No Define	]>
[</>]Set [Menu] Exit			

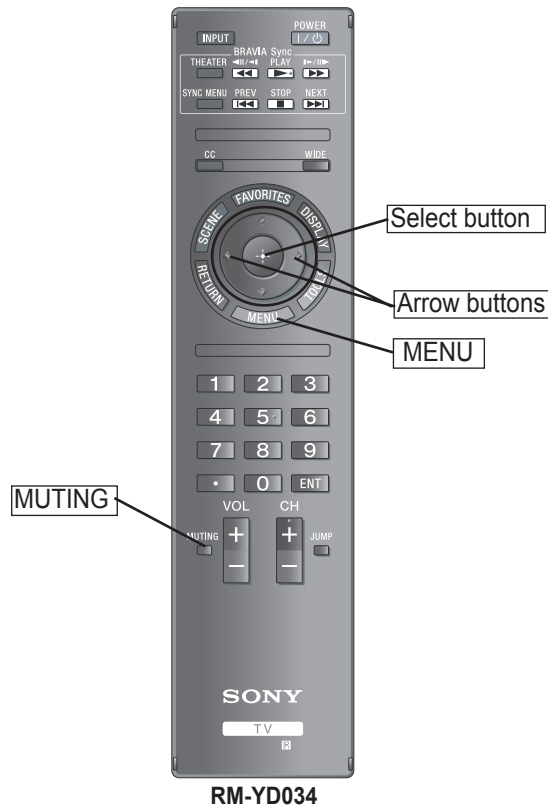
**NOTE:** The Service Mode information will be covered in the training manual for these models.

3. To exit service mode, turn the POWER off.

# SERVICE ADJUSTMENTS

## 2-1-2. ACCESSING FACTORY MODE

1. TV must be turned On. (POWER On).
2. Press the following buttons on the Remote Commander within a second of each other:



	Factory Mode	Off
Input Source	<[ Video 1 ]>	
Aging Mode	<[ Off ]>	
Internal Pattern	<[ Off ]>	
EDID WP	<[ Protection ]>	
Site Air Channels	<[ Off ]>	
Site Cable Channels	<[ Off ]>	
White Balance	<[ Off ]>	
Color Temp	>>	
ADC Calibration	>>	
Factory Reset (limited)	<[ Off ]>	
Auto Phase	<[ Off ]>	
Factory Reset (default)	<[ Off ]>	
System FW	1	
Model Name	KDL-40EX400	
Serial number	See rear or side of TV	
Picture Quality	PQ0.5000	
Audio Quality	AQ1.000	
MCU Version	SM1.00W00AA	
Panel Info	MT001.0000.0000?LT	
EDID Version	79	
[</>]Set [Menu] Exit		

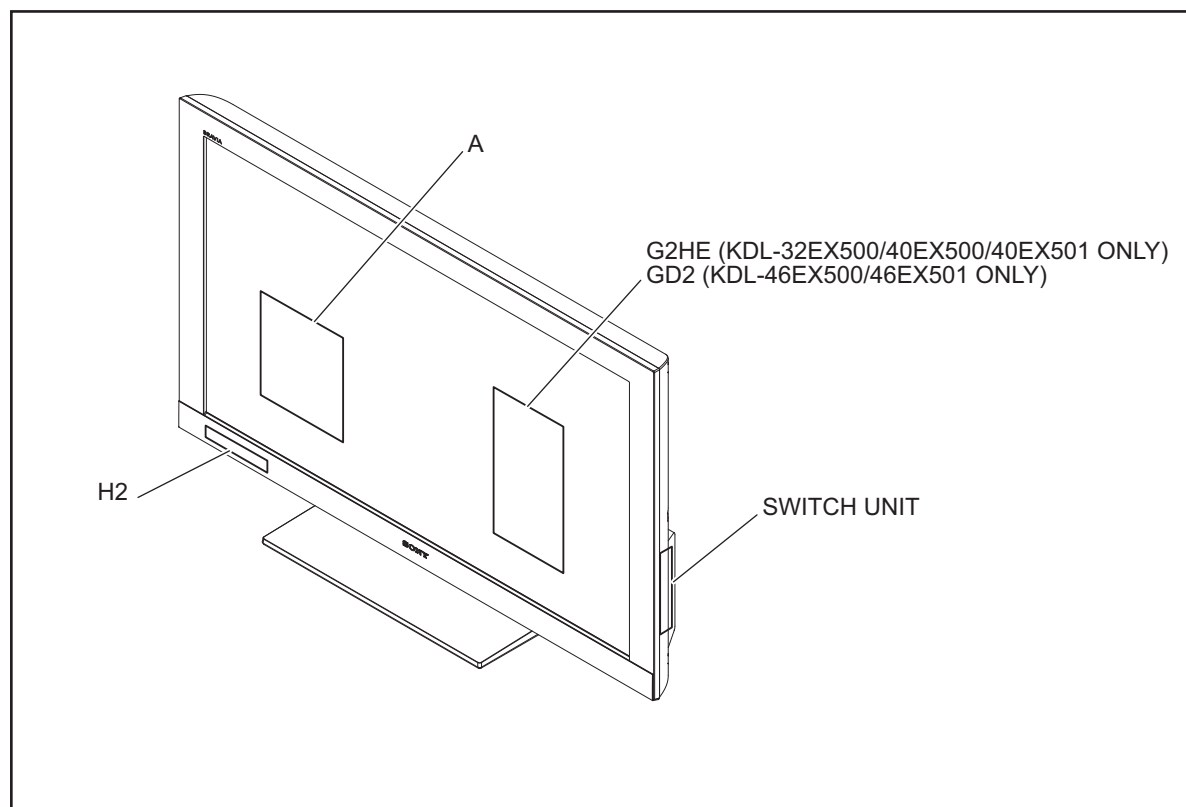
**NOTE:** The Factory Mode information will be covered in the training manual for these models.

3. To exit service mode, turn the POWER off.

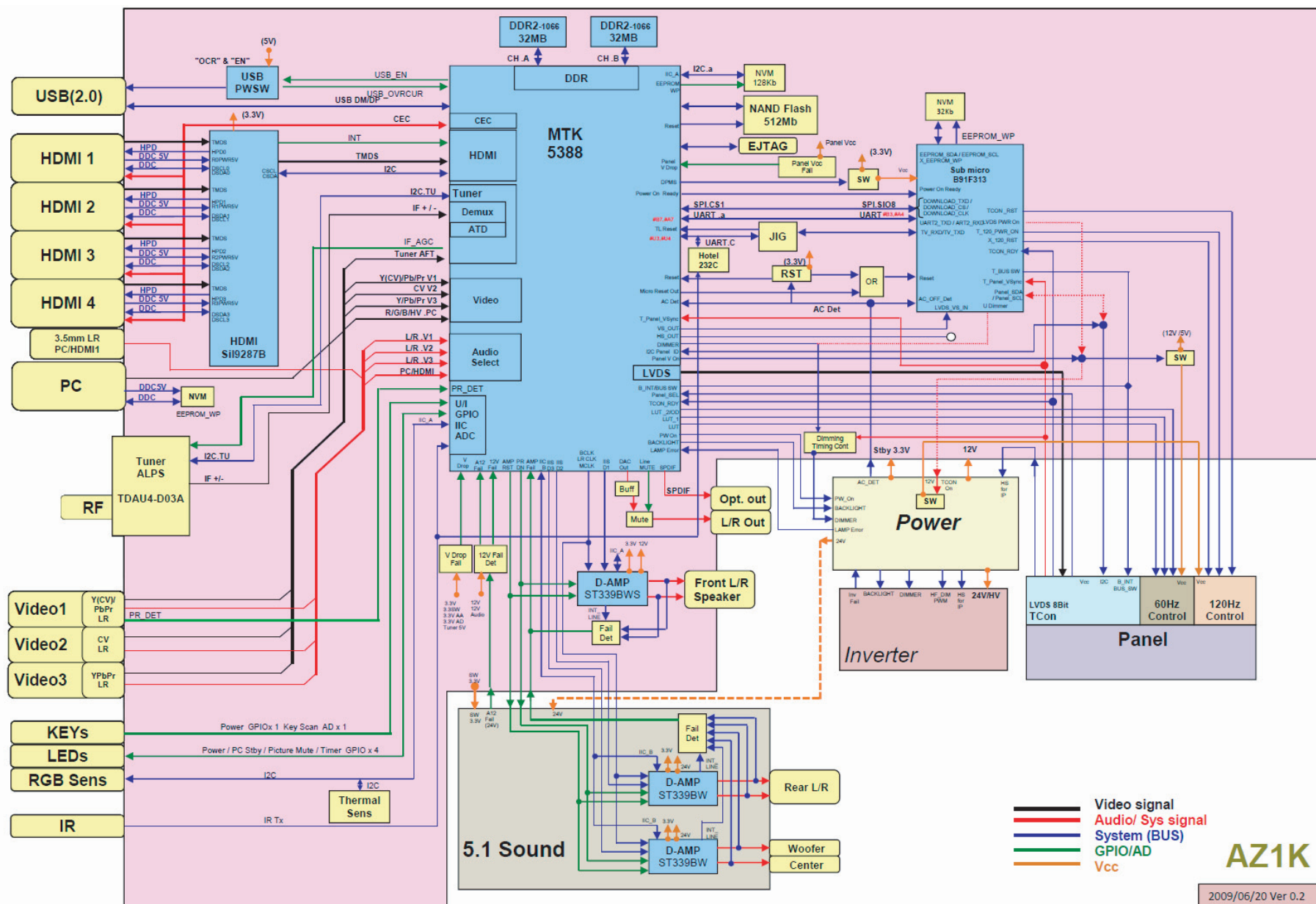
# SEC 3. DIAGRAMS


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## 3-1. CIRCUIT BOARDS LOCATION



### 3-2. BLOCK DIAGRAM





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KDL-32EX500/40EX500/40EX501/46EX500/46EX501

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