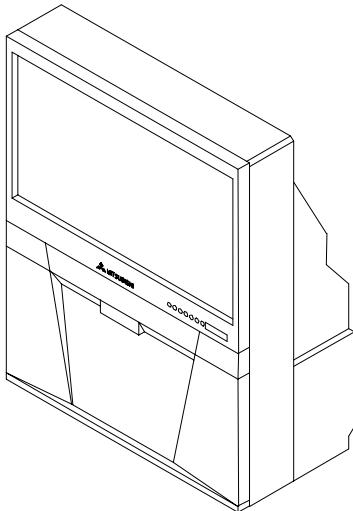


WS-48515



PROJECTION TELEVISION

V25 / V25+ / V25++ CHASSIS

V25 MODELS

WS-48515
WS-55515
WS-65515

V25+ MODELS

WS-55615
WS-65615
WS-73615

V25++ MODELS

WS-55815
WS-65815

CAUTION:

Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

SPECIFICATIONS

| | | | |
|---|--|---------------------|---|
| • Power Input | : AC 120V, 60Hz | • Input Level | : VIDEO IN JACK (RCA Type) 1.0Vp-p 75Ω unbalanced |
| • Power Usage | : 275W 300W [WS-65815/ WS-73615 only] | • Output Level | : AUDIO IN JACK (RCA Type) -4.7dBm 43kΩ unbalanced |
| • Frequency Range | : VHF 54 ~ 470MHz UHF 470 ~ 806MHz | • Digital Interface | : S-VIDEO IN JACK (Y/C separate type) Y: 1.0 Vp-p C: 0.286Vp-p(BURST) 75Ω unbalanced |
| • Antenna Input | : VHF/UHF 75Ω unbalanced 1 NTSC /ATSC /QAM 1 NTSC for PIP | | : COMP / Y, Cr, Cb (RCA Type) Y: 1.0 Vp-p Cr, Cb: 700mVp-p |
| • CRT Size | : [7 inches] : [9 inches] WS-65815/ WS-73615 only | | : VIDEO OUT JACK (RCA Type) 1.0Vp-p 75Ω unbalanced |
| • High Voltage | : 32.0kV (at 0A) | | : AUDIO OUT JACK (RCA Type) -4.7dBm 4.7kΩ unbalanced |
| • Cabinet Weight and Dimensions (Refer to page 5) | | | |
| • Speakers (8 Ohms 10W) | : 2-5" full range [WS-48515] : 2-6" full range [WS-55515 / WS-65515] : 2-6" coaxials [WS-55615 / WS-65615 / WS-73615] : 2-5"x7" coaxial [WS-55815 / WS-65815] | | : IEEE-1394 I/O Jacks : AC-3 Digital Audio Output : HDMI : 4 Memory Card Reader Inputs (V25++ Only) : CableCARD : System 5 IR : USB Service Port |

- Design specifications are subject to change without notice.

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.

9351 Jeronimo Road, Irvine, CA 92618-1904

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INTRODUCTION

This service manual provides service instructions for the V25, V25+ and V25++ PTV chassis types. The specific models for each chassis type are listed below. Service personnel should read this manual thoroughly before servicing these chassis.

| V25 Chassis | V25+ Chassis | V25++ Chassis |
|--------------------|---------------------|----------------------|
| WS-48515 | WS-55615 | WS-55815 |
| WS-55515 | WS-65615 | WS-65815 |
| WS-65515 | WS-73615 | |

This service manual includes:

1. Assembly and disassembly instructions for the front and rear cabinet components.
2. Servicing of the Lenticular Screen and Fresnel Lens.
3. Servicing printed circuit boards (PCBs).
4. CRT replacement procedure.
5. Electrical adjustments.
6. Chip parts replacement procedures.
7. Circuit path diagrams.

The parts list section of this service manual includes:

1. Electrical parts.
2. Cabinet and screen parts.

Schematic and block diagrams of the above listed models are included in this service manual for better understanding of the circuitry. PCB drawings are also included for easy location of parts and test points.

Cabinet Weight and Dimensions

| Model | Weight | Height | Width | Depth | Spkrs |
|-----------------|---------------|---------------|--------------|--------------|--------------|
| WS-48515 | 172 lbs | 49 in | 44.5 in. | 24 in. | 5" 10W |
| WS-55515 | 213 lbs | 53 in | 56 in | 34 in | 6" 10W |
| WS-55615 | 213 lbs | 50.5 in | 51 in | 28 in | 6" 10W |
| WS-55815 | 195 lbs | 50.5 in | 51 in | 27 in | 5x7" 10W |
| WS-65515 | 327 lbs | 62 in | 59 in | 28 in | 6" 10W |
| WS-65615 | 327 lbs | 62 in | 59 in | 28 in | 6" 10W |
| WS-65815 | 276 lbs | 62 in | 58 in | 28 in | 5x7" 10W |
| WS-73615 | 313 lbs | 66 in | 66 in | 30 in | 6" 10W |

- Weight and Dimensions are approximate

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have special safety characteristics are identified in this service manual.

Electrical components having such features are identified by shading  on the schematic diagram and by **bold type** in the parts list of this service manual. **The replacement for any safety part should be identical in value and characteristics.**

SAFETY PRECAUTIONS

NOTICE: Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING:

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver's power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
2. Do not install, remove or handle the picture tubes in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

X-Radiation warning

The surface of the cathode ray tubes (CRTs) may generate X-Radiation, so take proper precautions when servicing. It is recommended that a lead apron be used for shielding while handling the CRT. Use this method if possible.

When replacing the CRTs, use only the designated replacement part since it is a critical component with regard to X-Radiation. High voltage must be set as prescribed under the section titled Electrical Adjustments.

Leakage current check

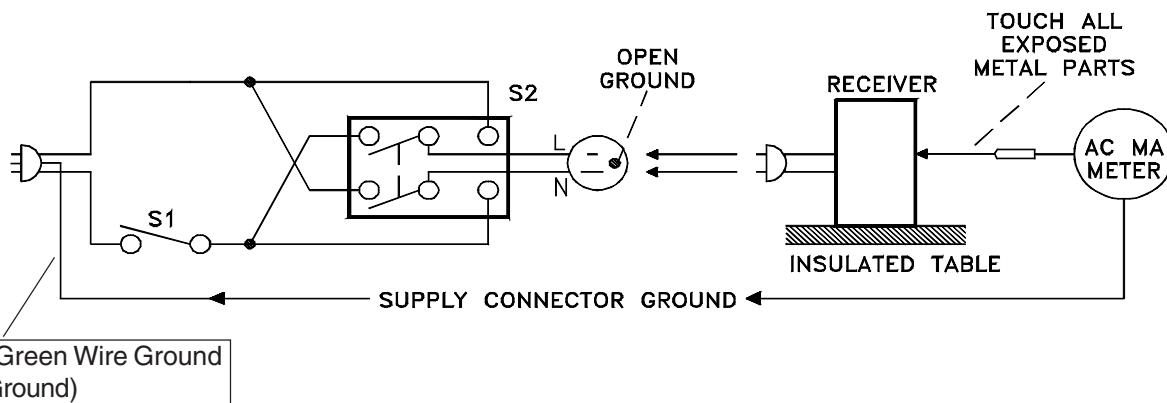
Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. Cold Check

With the alternating current (AC) plug removed from the AC source, place a jumper across the two AC plug prongs. Connect one lead of an ohm meter to the AC plug and touch the other lead to each exposed metal part (i.e. antennas, handle bracket, metal cabinet, screw heads, metal overlay, control shafts, etc.), particularly any exposed metal part that has a return path to the chassis. The resistance of the exposed metal parts having a return path to the chassis **should be a minimum of 1Mega Ohm**. Any resistance below this value indicates an abnormal condition and requires corrective action.

2. Hot Check ...Use the circuit shown below to perform the hot check test.

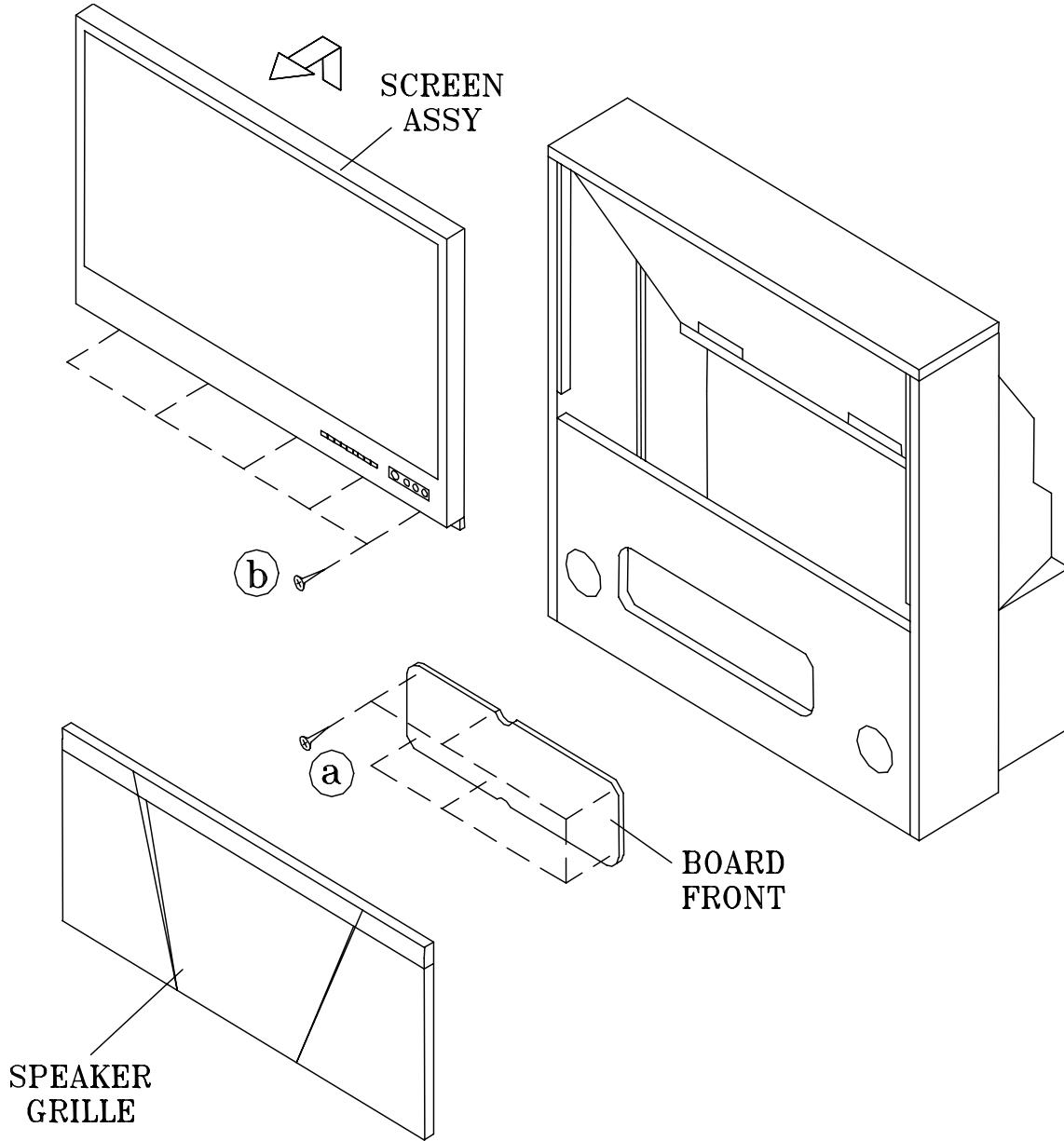
1. Keep switch S1 open and connect the receiver to the measuring circuit. Immediately after connection, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2.
2. Close switch S1, energizing the receiver. Immediately after closing switch S1, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2. Repeat the current measurements of items 1 and 2 after the receiver has reached thermal stabilization. **The leakage current must not exceed 0.5 milliampere (mA).**



CABINET DISASSEMBLY (FRONT VIEW)

WS-48515

*Refer to the Parts List for Part Numbers

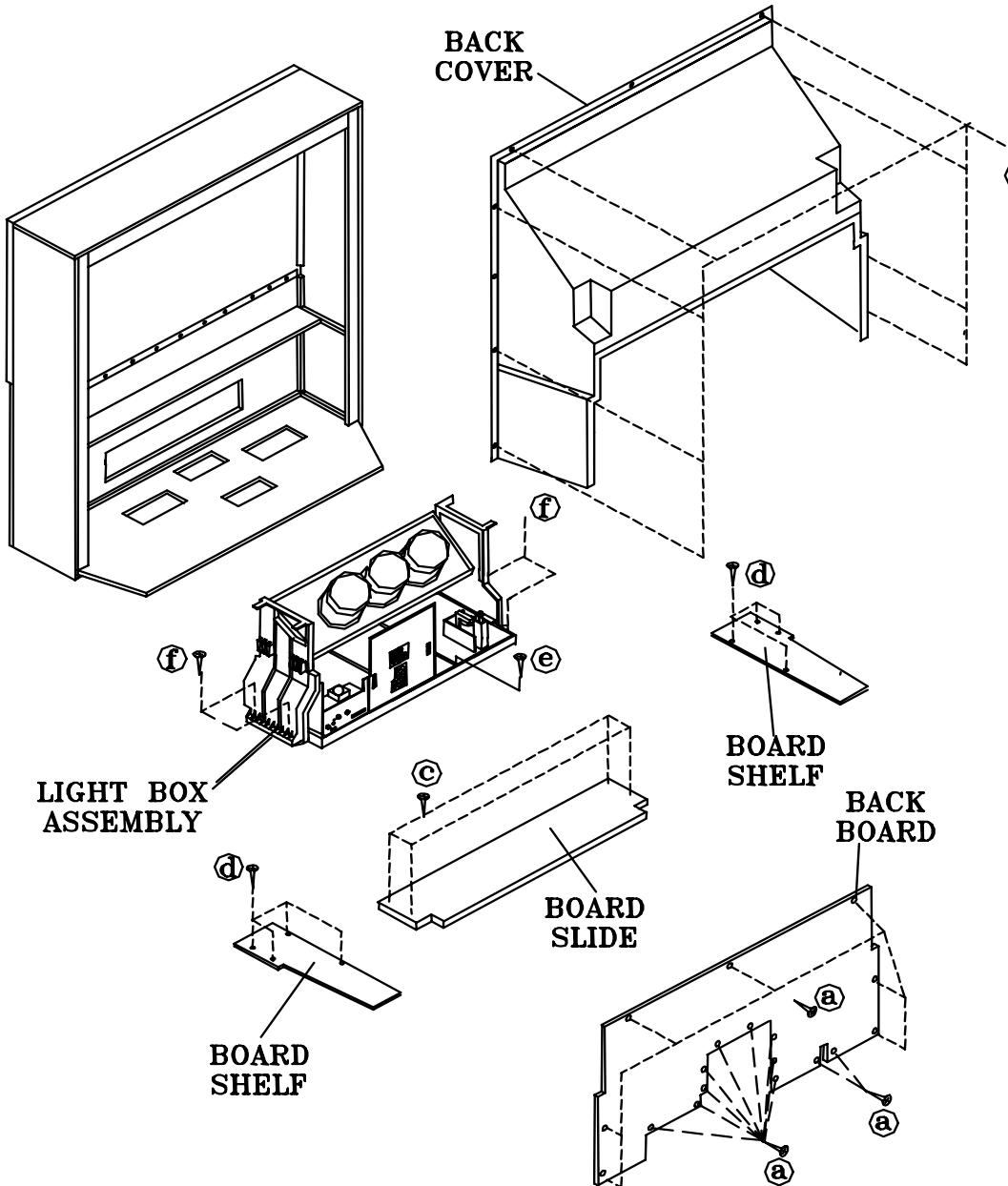


Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Remove the Board Front by removing 6 screws (a).
3. Remove 4 screws (b) holding the Screen Assembly.
4. Lift the Screen Assembly up and away from the cabinet.

CABINET DISASSEMBLY (REAR VIEW)**WS-48515**

*Refer to the Parts List for Part Numbers

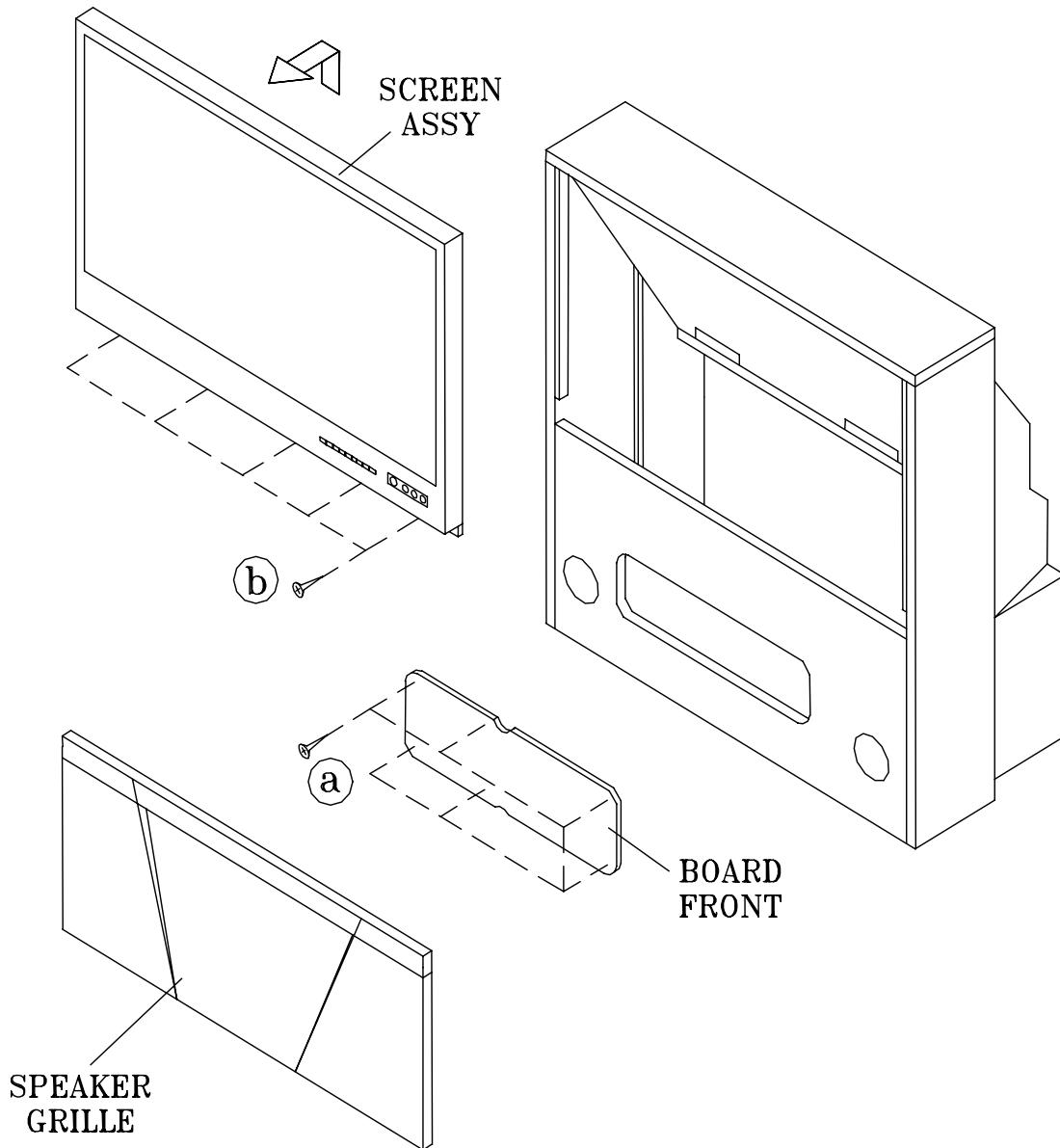
**Rear Cabinet Disassembly**

1. Remove the Back Board by removing 18 screws (a).
2. Remove the Back Cover by removing 8 screws (b).
3. Remove 4 screws (c) to remove the Board Slide.
4. Remove 4 screws (d) to remove the Board Shelves.
5. Remove screw (e) holding the chassis.
6. Remove 4 screws (f) securing the Light Box Assembly.
7. Be certain that all cables and connectors between the Light Box Assembly and external items are disconnected (e.g. speaker plugs, etc.), including the USB and 1394 connectors from the Card Reader to the DM.
8. Slide the Light Box Assembly from the cabinet.

CABINET DISASSEMBLY (FRONT VIEW)

WS-55515 / WS-65515 / WS-55615 / WS-65615

*Refer to the Parts List for Part Numbers

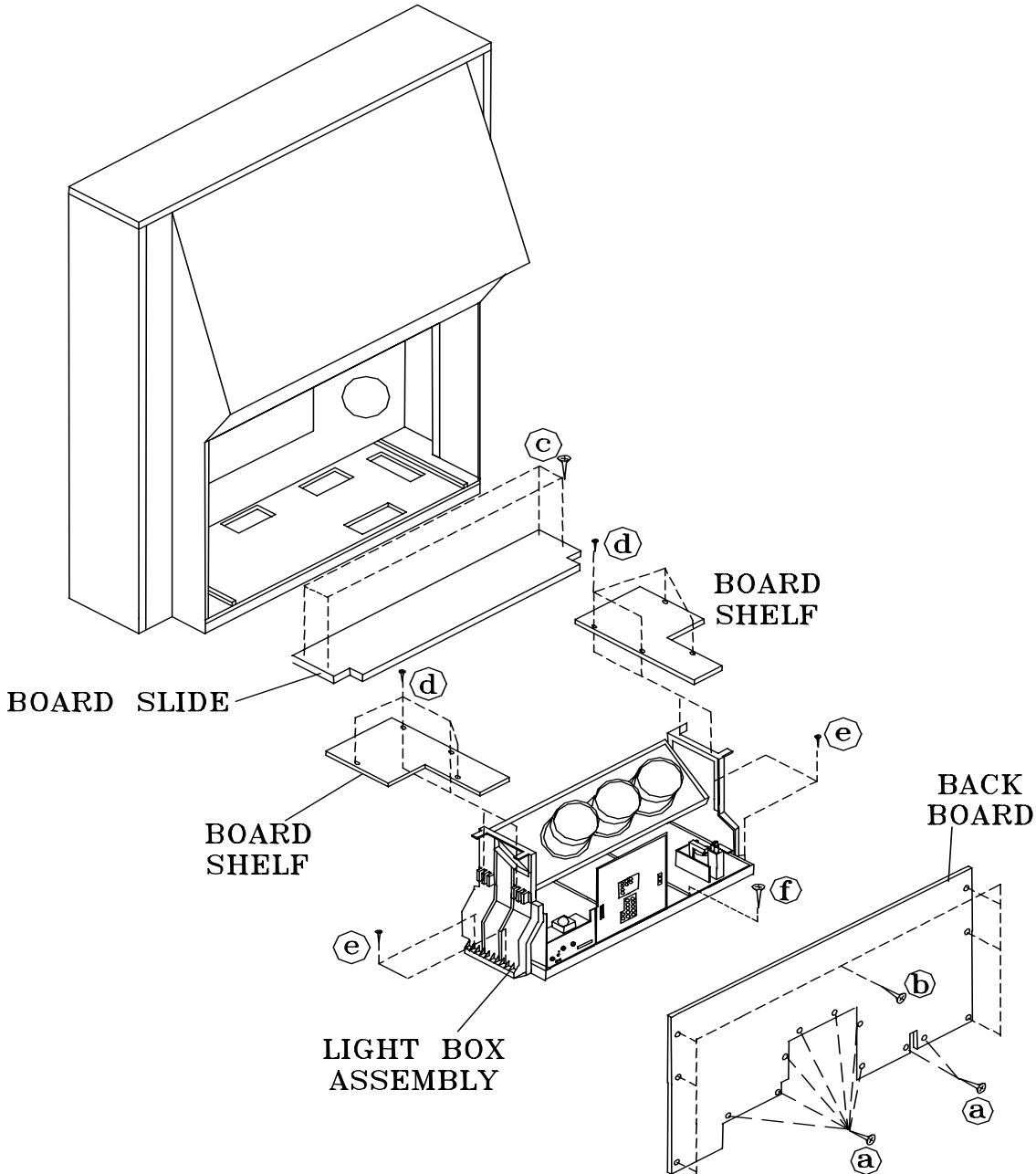


Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Remove the Board Front by removing 6 screws (a).
3. Remove the 5 screws (b) holding the Screen Assembly.
4. Unplug the cables to the Control Panel and the Front Panel Inputs.
4. Lift the Screen Assembly up and away from the cabinet.

CABINET DISASSEMBLY (REAR VIEW)**WS-55515 / WS-65515 / WS-55615 / WS-65615**

*Refer to the Parts List for Part Numbers

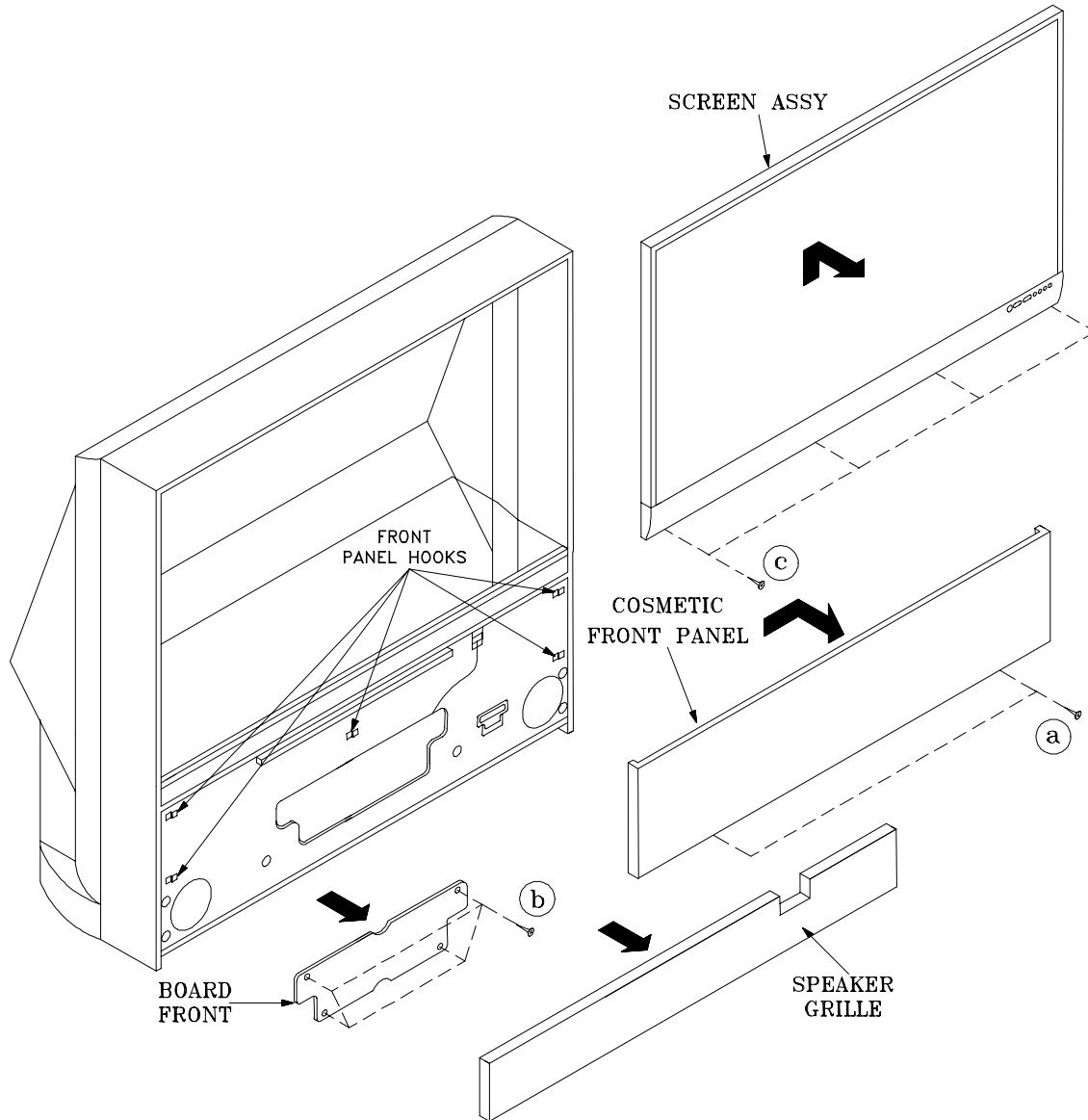
**Rear Cabinet Disassembly**

1. Remove 9 screws (a) and 6 screws (b) holding the Back Board.
2. Remove 4 screws (c) holding the Board Slide
3. Remove the 4 screws (d) holding each Board Shelf.
4. Remove 1 screw (f) holding the chassis.
5. Remove 4 screws (e) securing the Light Box Assembly.
6. Be certain that all cables and connectors between the Light Box Assembly and external items are disconnected (e.g. speaker plugs, etc.), including the USB and 1394 cables from the Card Reader.
7. Slide the Light Box out the rear of the Cabinet.

CABINET DISASSEMBLY (FRONT VIEW)

WS-55815

*Refer to the Parts List for Part Numbers



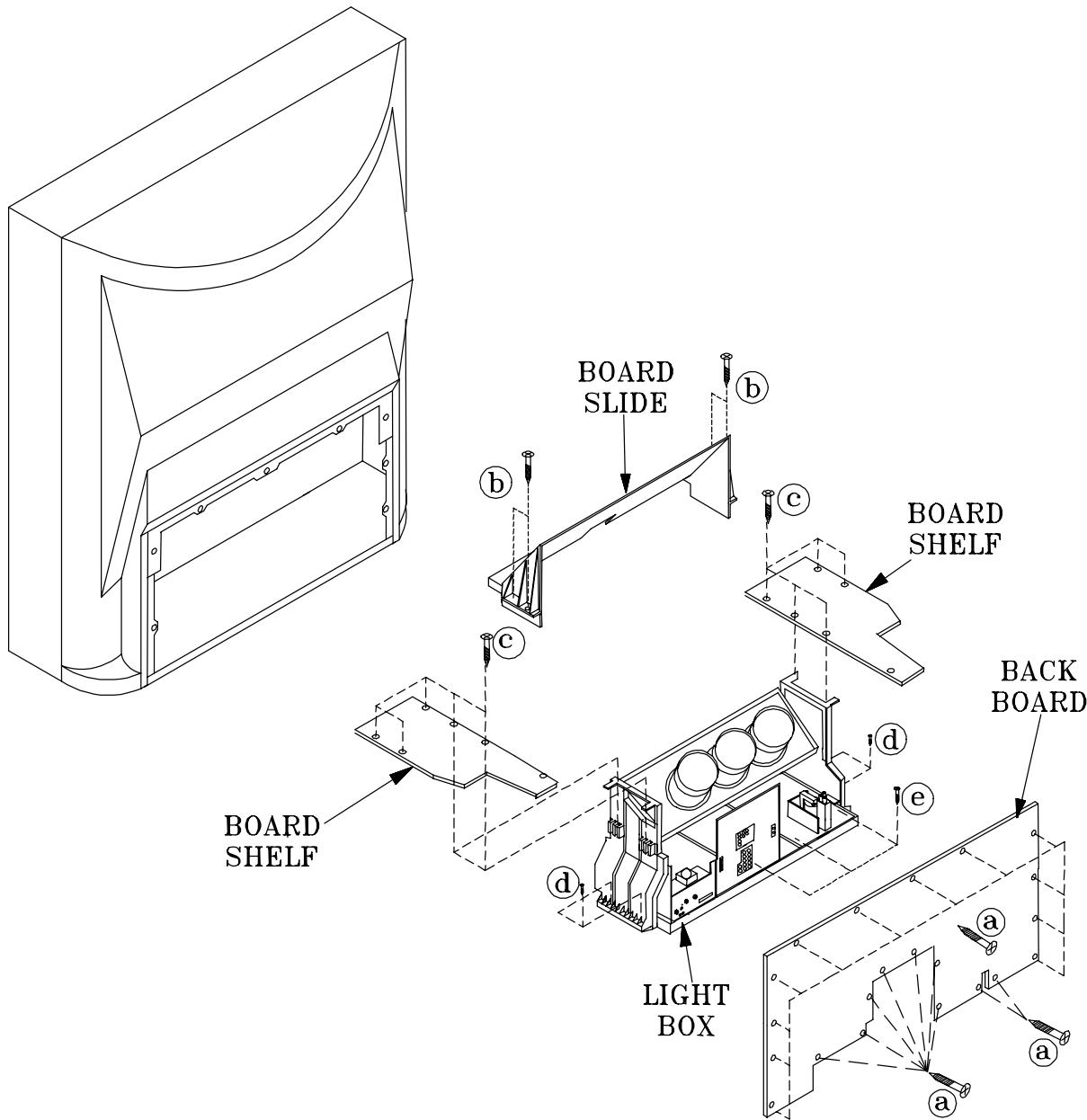
Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Remove 2 screws (a) securing the Front Panel.
3. Slide the Front Panel 1 inch to the right, then pull away from the TV.
4. Remove 4 screws (b) to remove the Board Front.
5. Unplug the the connectors to the Control Panel.
6. Remove the 4 screws (c) securing the Screen Assembly.
7. Pull screen bottom away from cabinet 15deg, then up and away from the cabinet.

CABINET DISASSEMBLY (REAR VIEW)

WS-55815

*Refer to the Parts List for Part Numbers



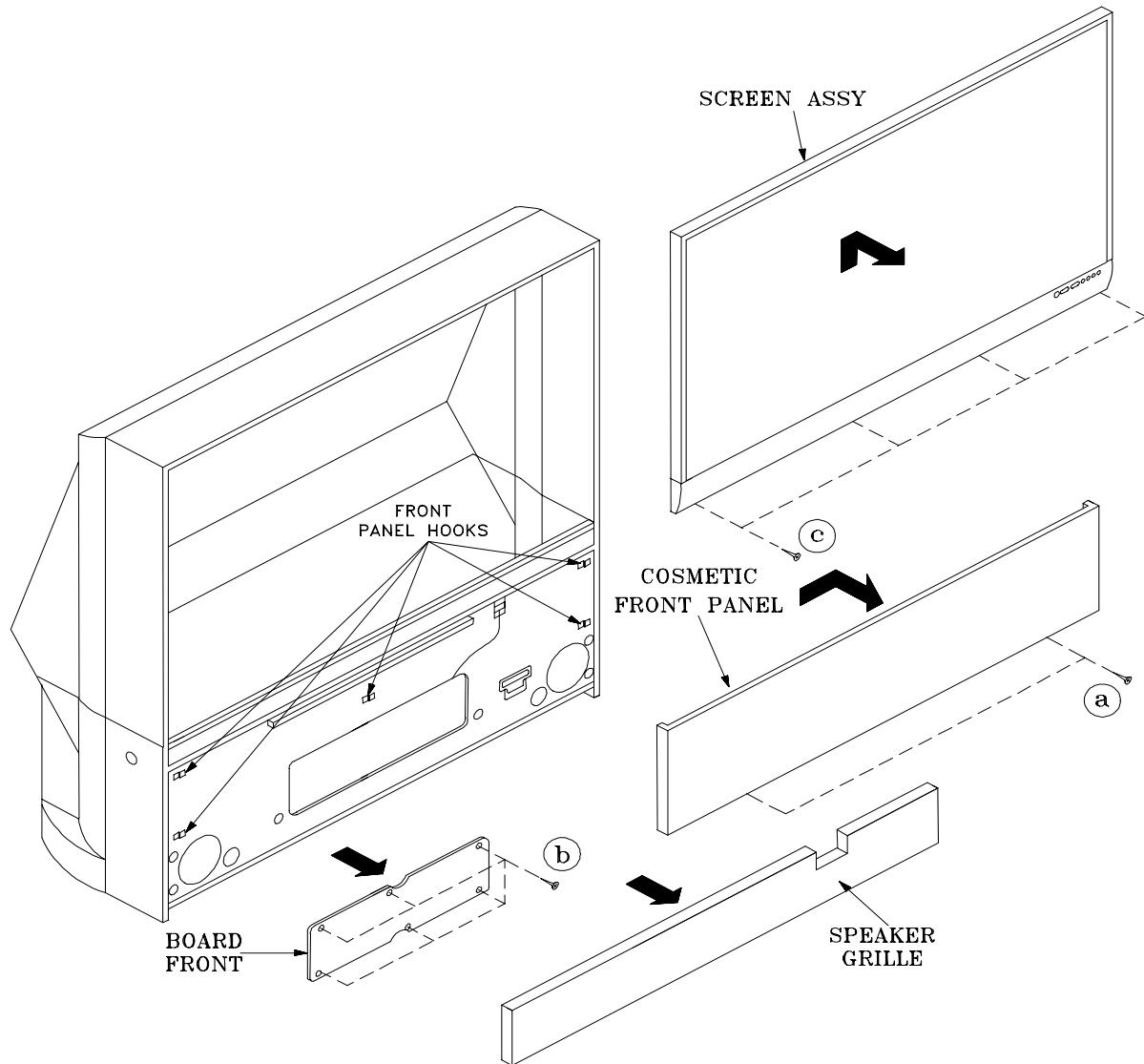
Rear Cabinet Disassembly

1. Remove 21 screws (a) holding the Back Board.
2. Remove 4 screws (b) holding the Board Slide
3. Remove the 5 screws (c) holding each Board Shelf.
4. Remove 4 screws (d) and 3 screws (e) securing the Light Box Assembly.
5. Be certain that all cables and connectors between the Light Box Assembly and external items are disconnected (e.g. speaker plugs, etc.), including the USB and 1394 cables from the Card Reader..
6. Slide the Light Box out the rear of the Cabinet.

CABINET DISASSEMBLY (FRONT VIEW)

WS-65815

*Refer to the Parts List for Part Numbers



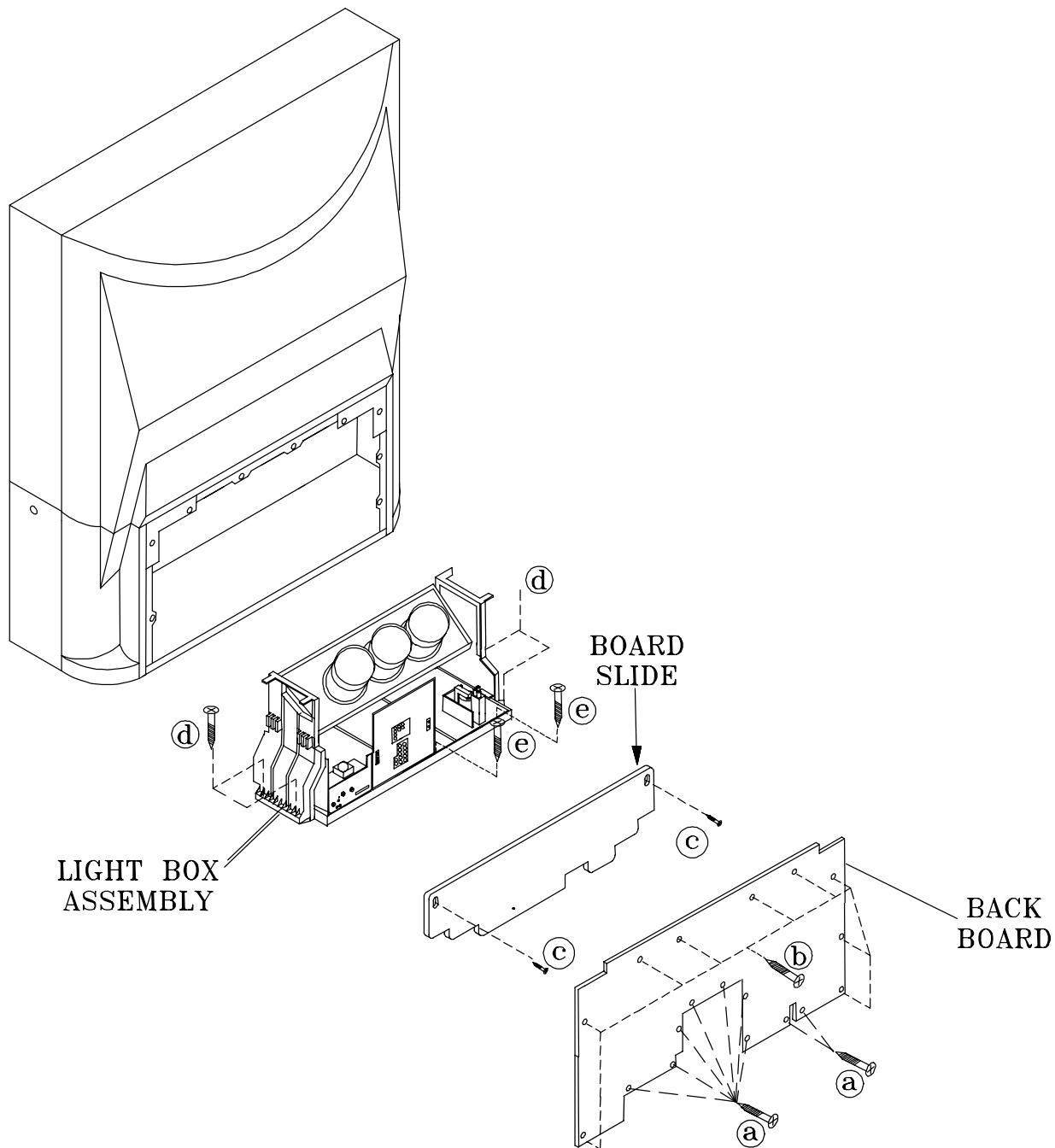
Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Remove 2 screws (a) securing the Front Panel.
3. Slide the Front Panel 1 inch to the right, then pull away from the TV.
4. Remove 6 screws (b) to remove the Board Front.
5. Unplug the connectors to the Screen Assembly.
6. Remove the 4 screws (c) securing the Screen Assembly.
7. Pull screen bottom away from cabinet 15deg, then up and away from the cabinet.

CABINET DISASSEMBLY (REAR VIEW)

WS-65815

*Refer to the Parts List for Part Numbers



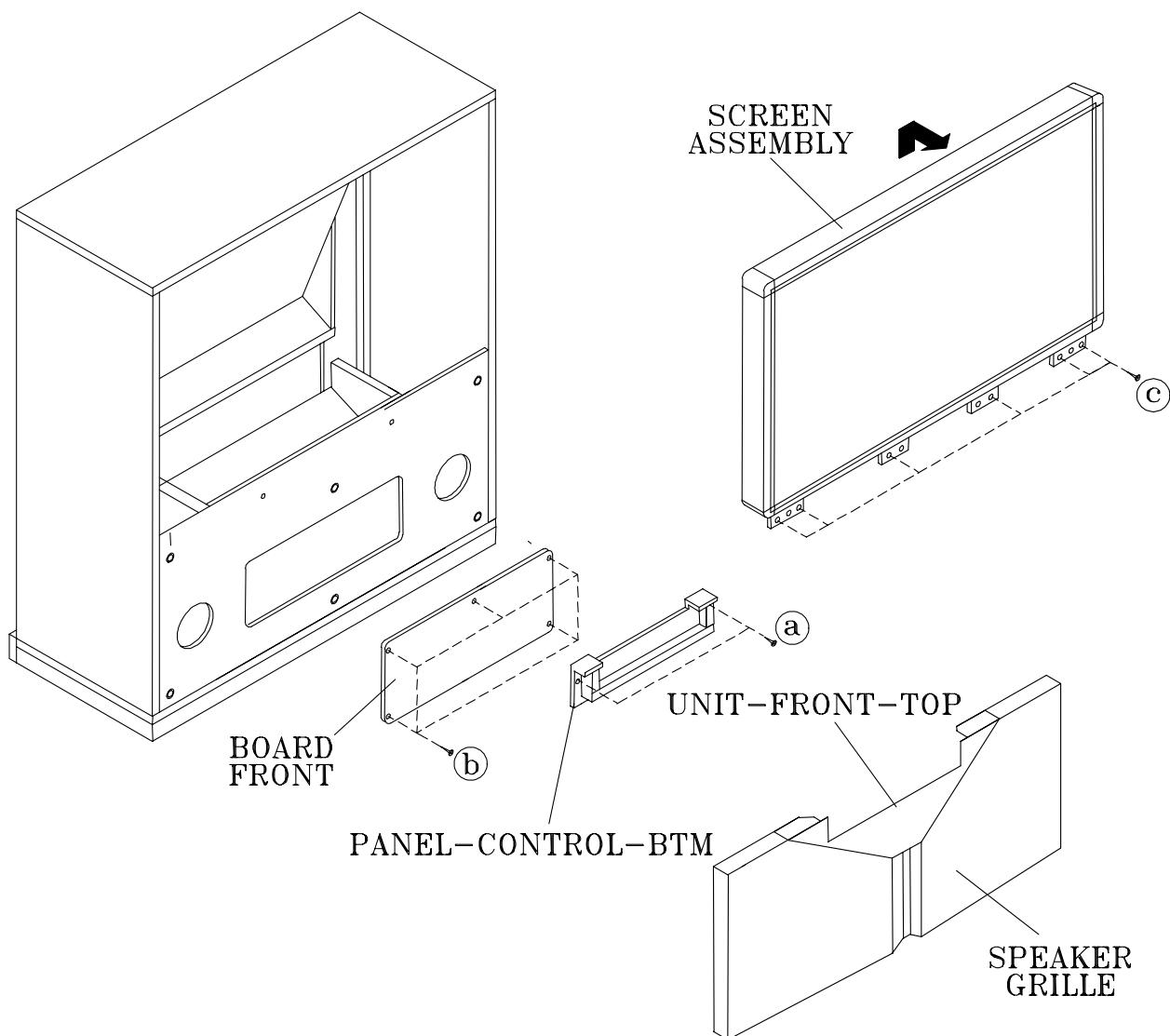
Rear Cabinet Disassembly

1. Remove 9 screws (a) and 9 screws (b) holding the Back Board.
2. Remove the 2 screws (c) holding the Board Slide.
3. Remove the 3 screws (d) and 2 screws (e).

CABINET DISASSEMBLY (FRONT VIEW)

WS-73615

*Refer to the Parts List for Part Numbers



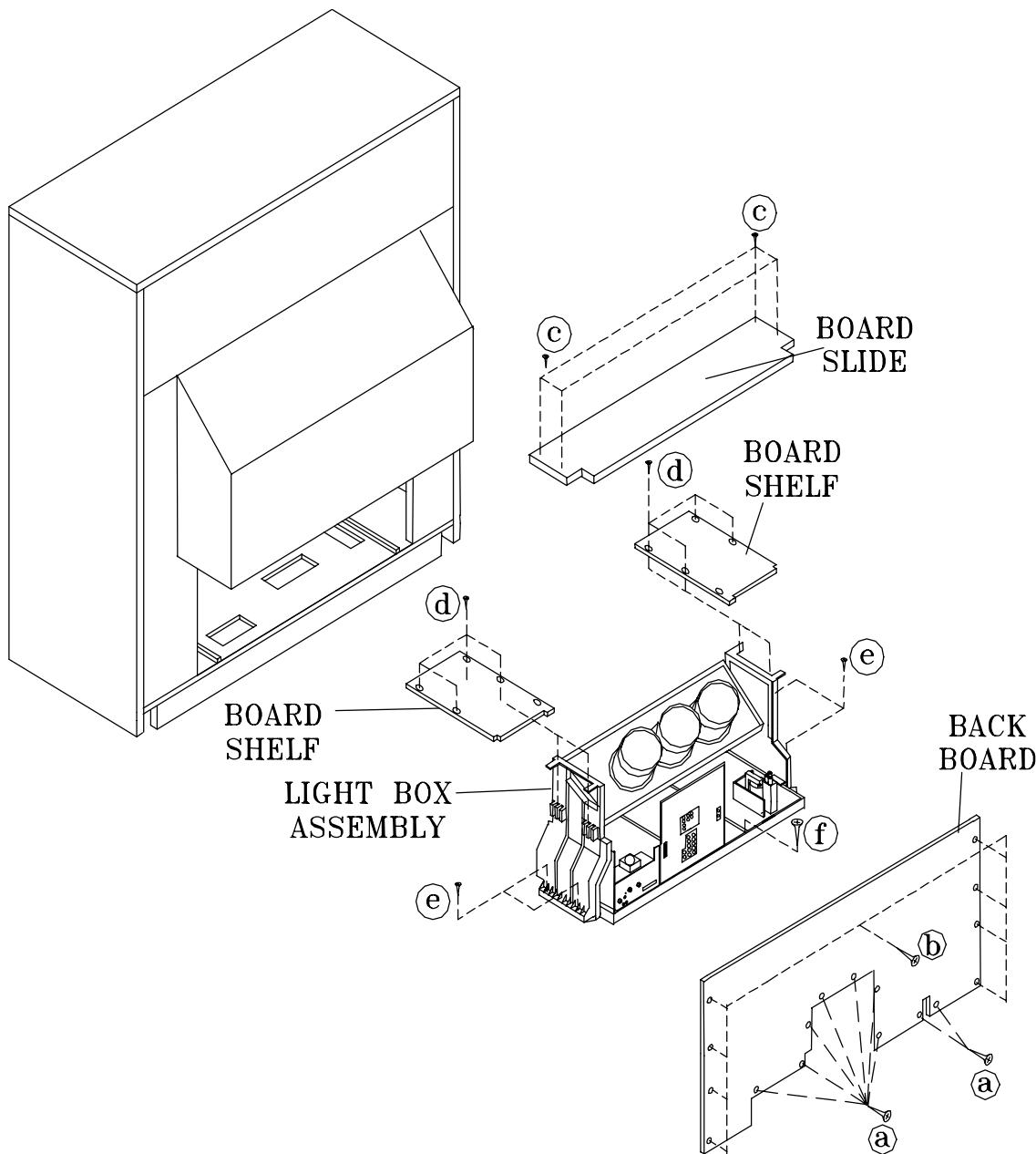
Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Remove 2 screws (a) securing the PANEL-CONTROL-BTM
3. Remove 5 screws (b) to remove the Board Front.
4. Remove the 6 screws (c) securing the Screen Assembly.
5. Lift the Screen Assembly up and away from the cabinet.

CABINET DISASSEMBLY (REAR VIEW)

WS-73615

*Refer to the Parts List for Part Numbers



Rear Cabinet Disassembly

1. Remove 9 screws (a), 6 screws(b) holding the Back Board.
2. Remove the 4 screws (c) holding the Board Slide.
3. Remove 4 screws (d) securing each Board Shelf.
3. Remove the 4 screws (e) and a screw (f) securing the Light Box Assembly.
4. Disconnect cabling to the front panel (Control Panel, Speakers, Inputs, etc.), including the USB and 1394 cables from the Card Reader.
4. Slide the Light Box out the rear of the Cabinet.

SERVICING THE LENTICULAR SCREEN AND FRESNEL LENS

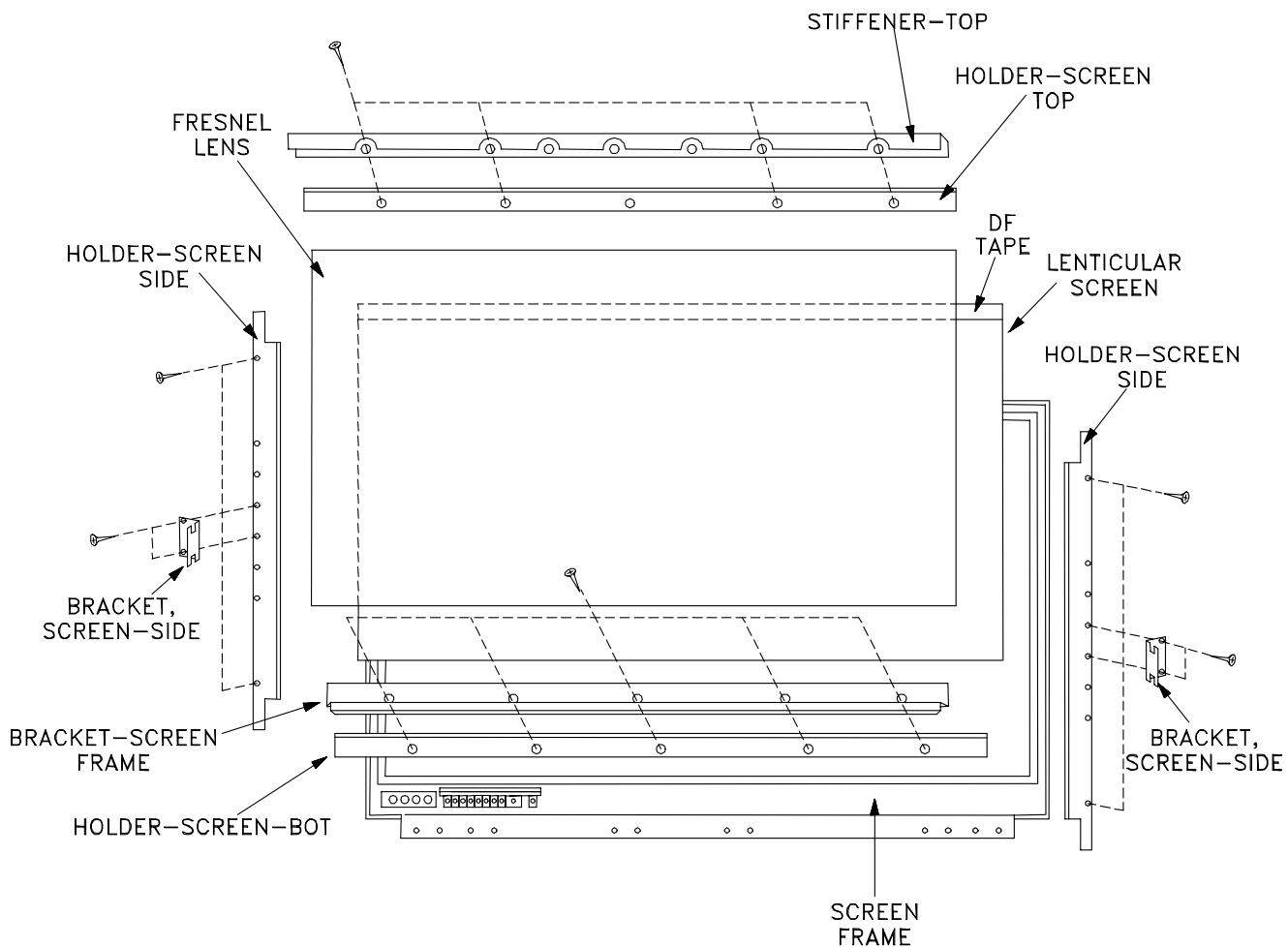
CAUTION: **Wear gloves** when handling the Lenticular Screen and Fresnel Lens.
 This prevents cuts and finger prints. **Do not place Fresnel Lens in the sun.**
 This may cause fire and heat related injuries.

WS-48515

Lenticular Screen and Fresnel Lens Removal

1. Remove the screen assembly shown in the Cabinet Disassembly procedure.
2. Remove the Top, Bottom and Side Screen Holders.
3. Carefully lift the Lenticular Screen and Fresnel Lens combination from the Screen Frame assembly.

Note: When separating the Lenticular Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive double sided tape.



SERVICING THE LENTICULAR SCREEN AND FRESNEL LENS

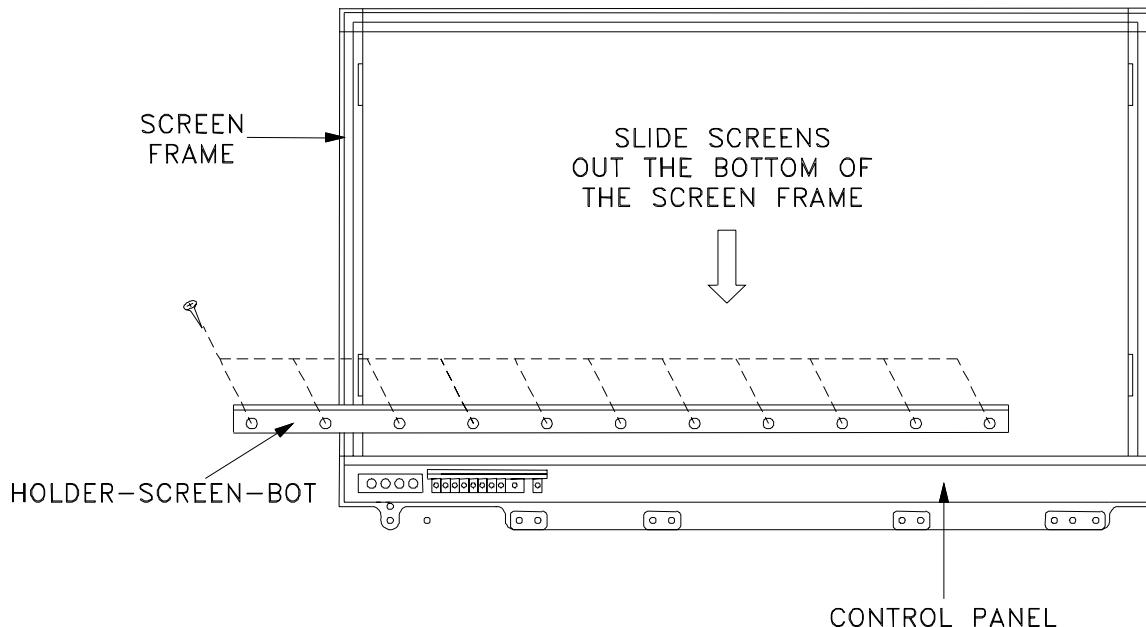
WS-55515 / WS-65515

CAUTION: Wear gloves when handling the Lenticular Screen and Fresnel Lens.
This prevents cuts and finger prints. **Do not place Fresnel Lens in the sun.**
This may cause fire and heat related injuries.

1b. Lenticular Screen and Fresnel Lens Removal

1. Remove the screen assembly as shown in the Cabinet Disassembly procedure.
2. Remove the HOLDER-SCREEN-BOTTOM.
3. Carefully slide the Lenticular Screen and Fresnel Lens combination from the upper Screen Frame Assembly.

Note: When separating the Lenticular Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive double sided tape.



1b. Installing the Fresnel Lens and Lenticular Screen

1. Insert the Lenticular Screen and Fresnel Lens combination into the upper Screen Frame.
2. Install the HOLDER-SCREEN-BOTTOM, install the end screws first. .

SERVICING THE LENTICULAR SCREEN AND FRESNEL LENS

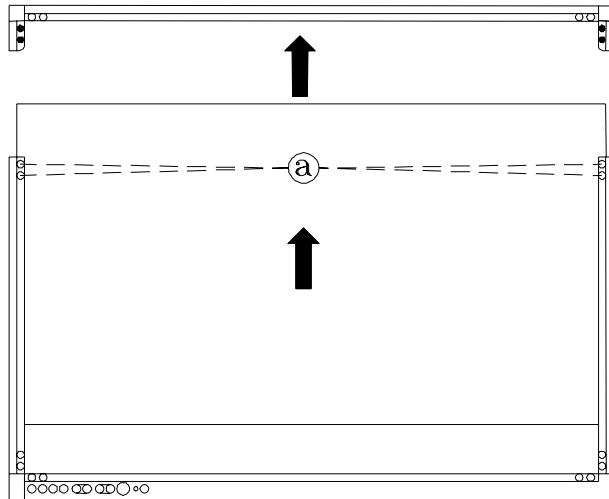
CAUTION: **Wear gloves** when handling the Lenticular Screen and Fresnel Lens.
This prevents cuts and finger prints. **Do not place Fresnel Lens in the sun.**
This may cause fire and heat related injuries.

WS-55815 / WS-65815

Lenticular Screen and Fresnel Lens Removal

1. Remove the screen assembly shown in the Cabinet Disassembly procedure.
2. Remove the Screen Frame top section by removing 4 screws (a).
3. Carefully grasp the Lenticular Screen and Fresnel Lens combination and pull upward and out of the Screen Frame Assembly.

Note: When separating the Lenticular Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive double sided tape.



Rear View

SERVICING THE LENTICULAR SCREEN AND FRESNEL LENS

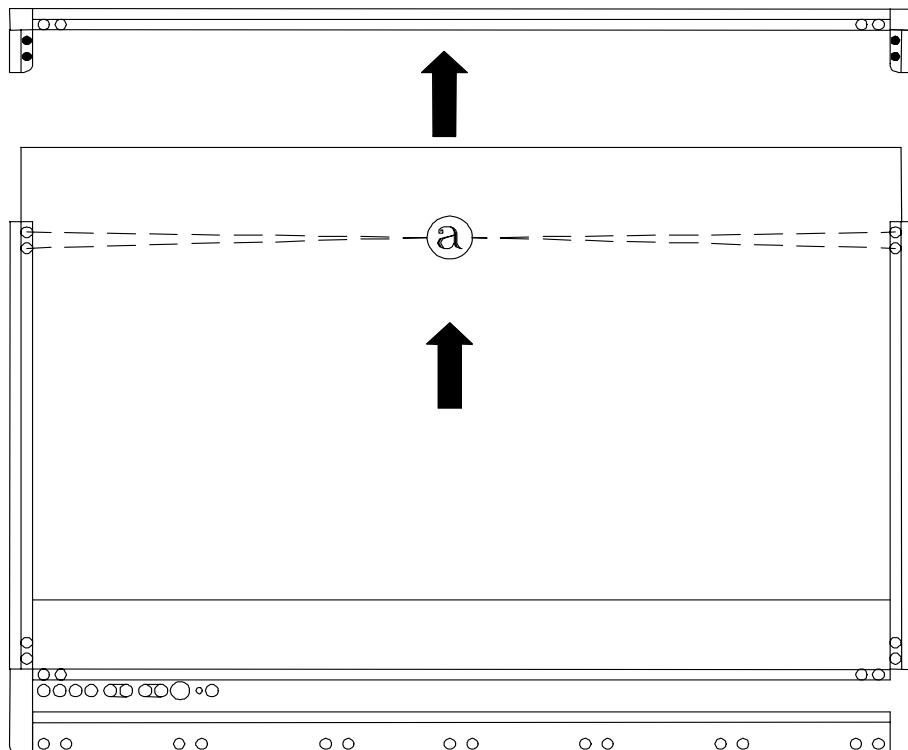
CAUTION: **Wear gloves** when handling the Lenticular Screen and Fresnel Lens.
This prevents cuts and finger prints. **Do not place Fresnel Lens in the sun.**
This may cause fire and heat related injuries.

WS-55615 / WS-65615 / WS-73615

Lenticular Screen and Fresnel Lens Removal

1. Remove the screen assembly shown in the Cabinet Disassembly procedure.
2. Remove the Screen Frame top section by removing 4 screws (a).
3. Carefully grasp the Lenticular Screen and Fresnel Lens combination and pull upward and out of the Screen Frame Assembly.

Note: When separating the Lenticular Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive double sided tape.



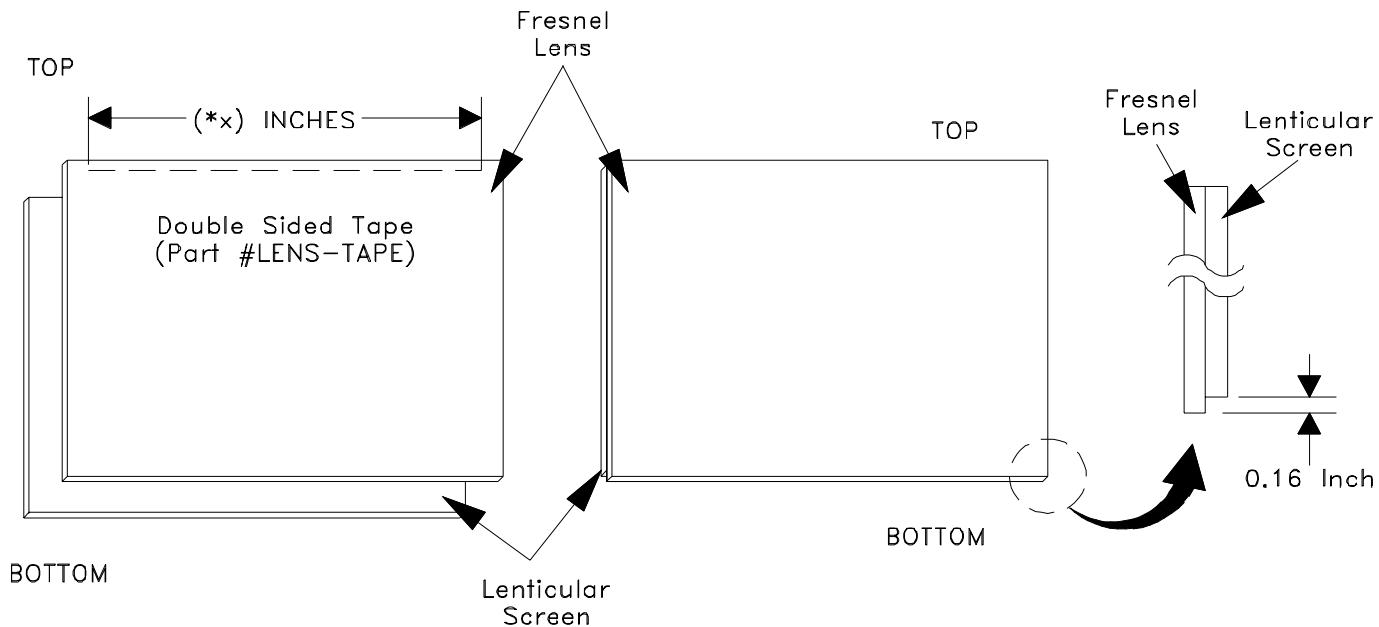
Rear View

SERVICING THE LENTICULAR SCREEN AND FRESNEL LENS

2. Lenticular Screen and Fresnel Lens Installation.

Note: Store the Lenticular Screen and Fresnel Lens in a cool dry place. High humidity may deform the Lenticular Screen and Fresnel Lens.

1. Apply double coated tape (Part # LENS-TAPE) along the top front edge of the Fresnel Lens as shown below. Refer to the Table below for proper tape length.
2. Place the Fresnel Lens on top of the Lenticular Screen and apply pressure at the top edge to bond them together as shown below.



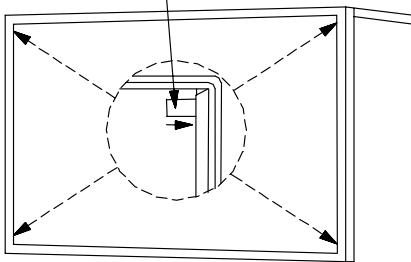
| Model | Screen Size | Tape Length |
|----------|-------------|-------------|
| WS-48515 | 48" | 41.8" |
| WS-55515 | 55" | 47.8" |
| WS-55615 | " | " |
| WS-55815 | " | " |
| WS-65515 | 65" | 56.5" |
| WS-65615 | " | " |
| WS-65815 | " | " |
| WS-73615 | 73" | 63.5" |

SERVICING THE DIAMONDSHIELD™**1. DiamondShield™ Removal Procedure**

The appropriate disassembly procedure given below.

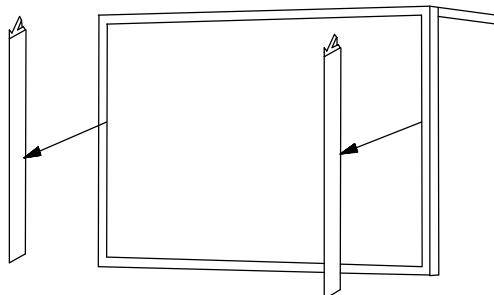
Note: *Wear gloves when handling the DiamondShield™ to prevent finger prints.*

PLASTIC CARD

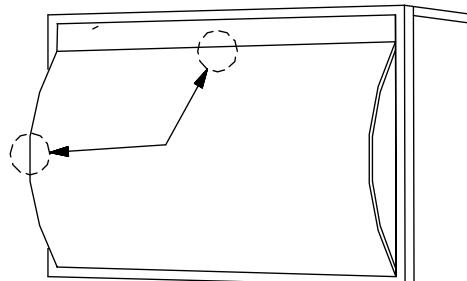


1. Gently insert a small plastic card (such as a credit card or a plastic putty knife) between the DiamondShield™ and one end of the clip to pry the clip loose.

WS-48515 / WS-55515 / WS-55815 / WS-65515 / WS-65815



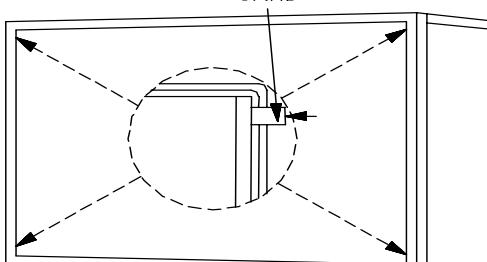
2. Remove both clips by pulling them toward you.



3. Carefully insert the small plastic card (or plastic putty knife) into the gap at the side/center point of the Shield and pull the Shield slightly away from the unit. Place your hands at the points shown and gently bow the Shield toward you and remove from the unit.

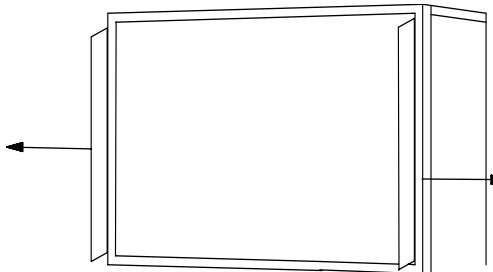
WS-48515 (ONLY)

PLASTIC CARD

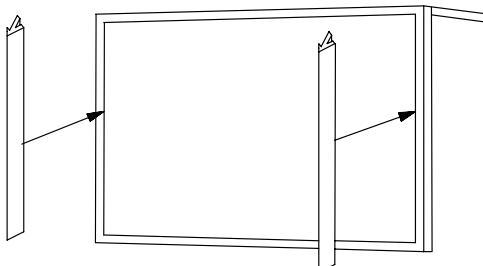


1. Gently insert a small plastic card (such as a credit card or a plastic putty knife) between the notch of the bracket and one end of the clip to pry the clip loose.

WS-55615 / WS-65615 / WS-73615



2. From edge of trim, pull bracket outward to open like a hinge.



4. Reinstall the two clips

2. DiamondShield™ Installation Procedure

*(See the Parts List for DiamondShield™ part numbers)

To install the DiamondShield™, reverse the above Removal Procedure.

CABINET SEPARATION

Mitsubishi 65 and 73 inch Projection TVs have been assembled in two pieces. These pieces may be separated for easier delivery and setup. The cabinet separation procedure requires two persons and varies between models.

WS-65815 Cabinet Separation Procedure

Figure 1

1. Remove the Speaker Grille by pulling forward.
2. Remove the two Front Cover screws (a).
3. To remove the Front Cover, slide to the right approximately 1", then pull away from the TV.

Figure 2

4. Remove Screw (b) from the front board.
5. Disconnect the LF connector.

Figure 3

6. Remove the plastic cover on each side.
7. Remove screw (c) on each side of the cabinet.

Figure 4

8. Slide the top of the cabinet top forward.

Figure 5

9. Carefully lift the cabinet top until the interlock tabs clear the cabinet bottom

Figure 6

10. Carefully place the cabinet top on the floor as shown.

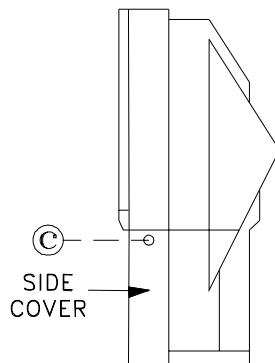


Figure 3

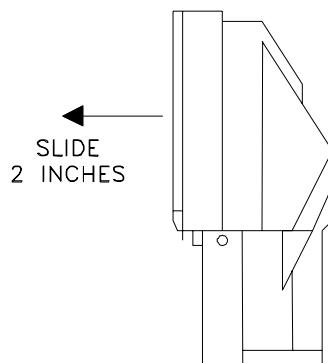


Figure 4

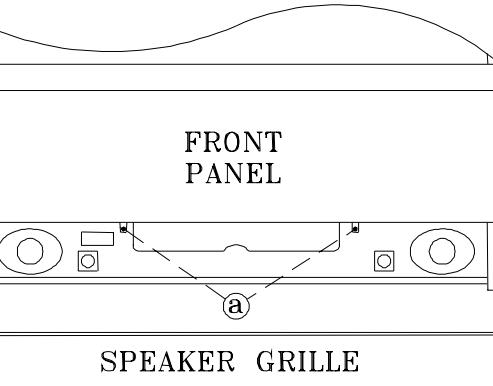


Figure 1

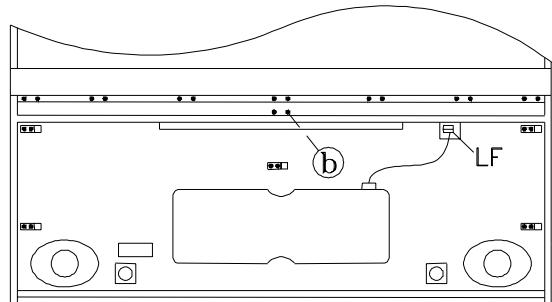


Figure 2

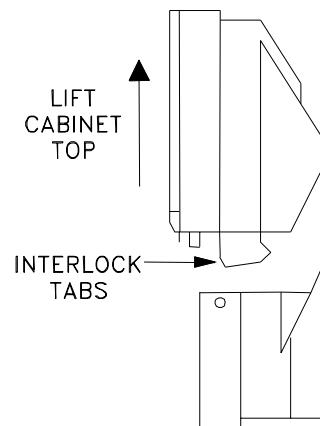


Figure 5

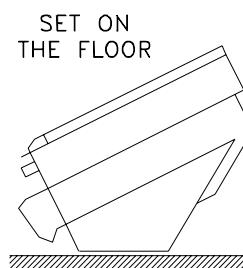


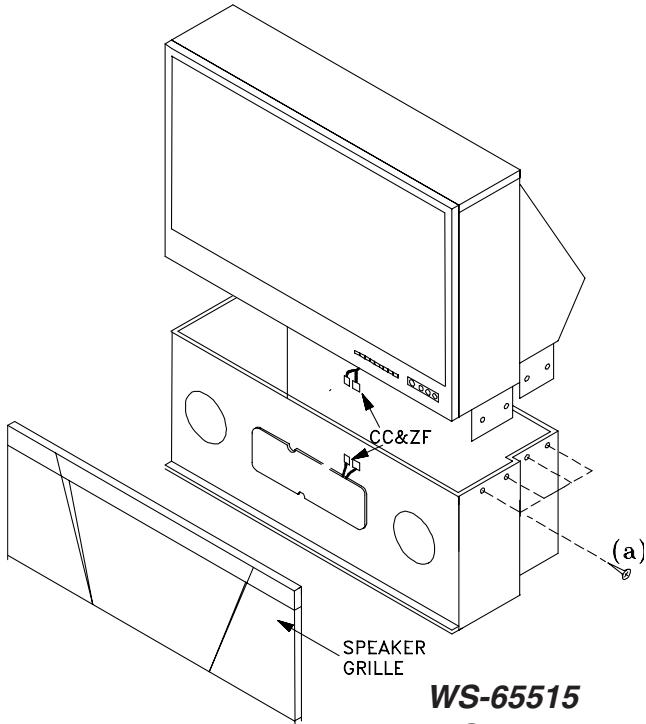
Figure 6

CABINET SEPARATION PROCEDURE (WS-65515 / WS-65615 / WS-73615)

WS-65515 / WS-65615

Cabinet Separation Procedure

1. Pull the Speaker Grill from the cabinet.
2. Unplug the CC and ZF connectore
3. Remove 4 plastic covers and screws (a) from each side of the cabinet.
4. Carefully lift the cabinet top and place it on the floor.
5. Place the cabinet bottom in the desired location.
6. Reverse the procedure and mount the cabinet top on the cabinet bottom.

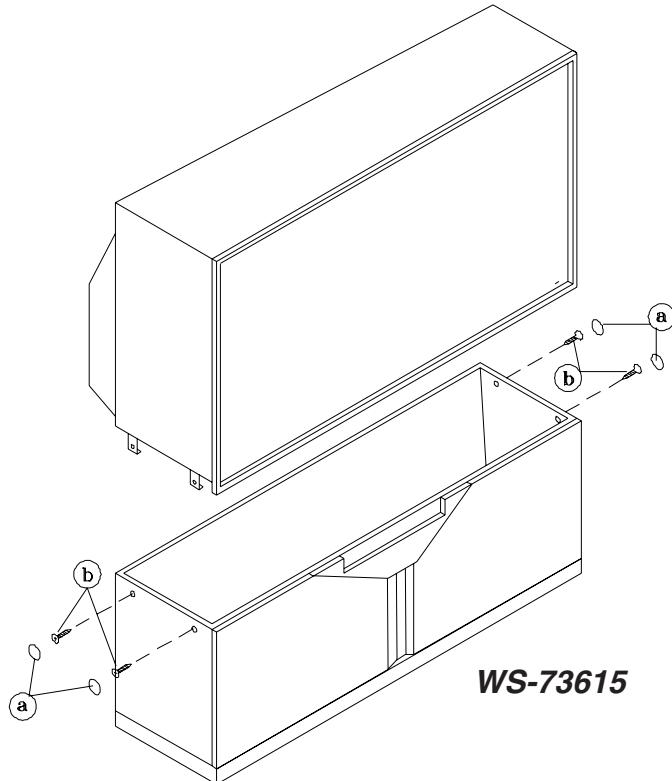


**WS-65515
WS-65615**

WS-73615

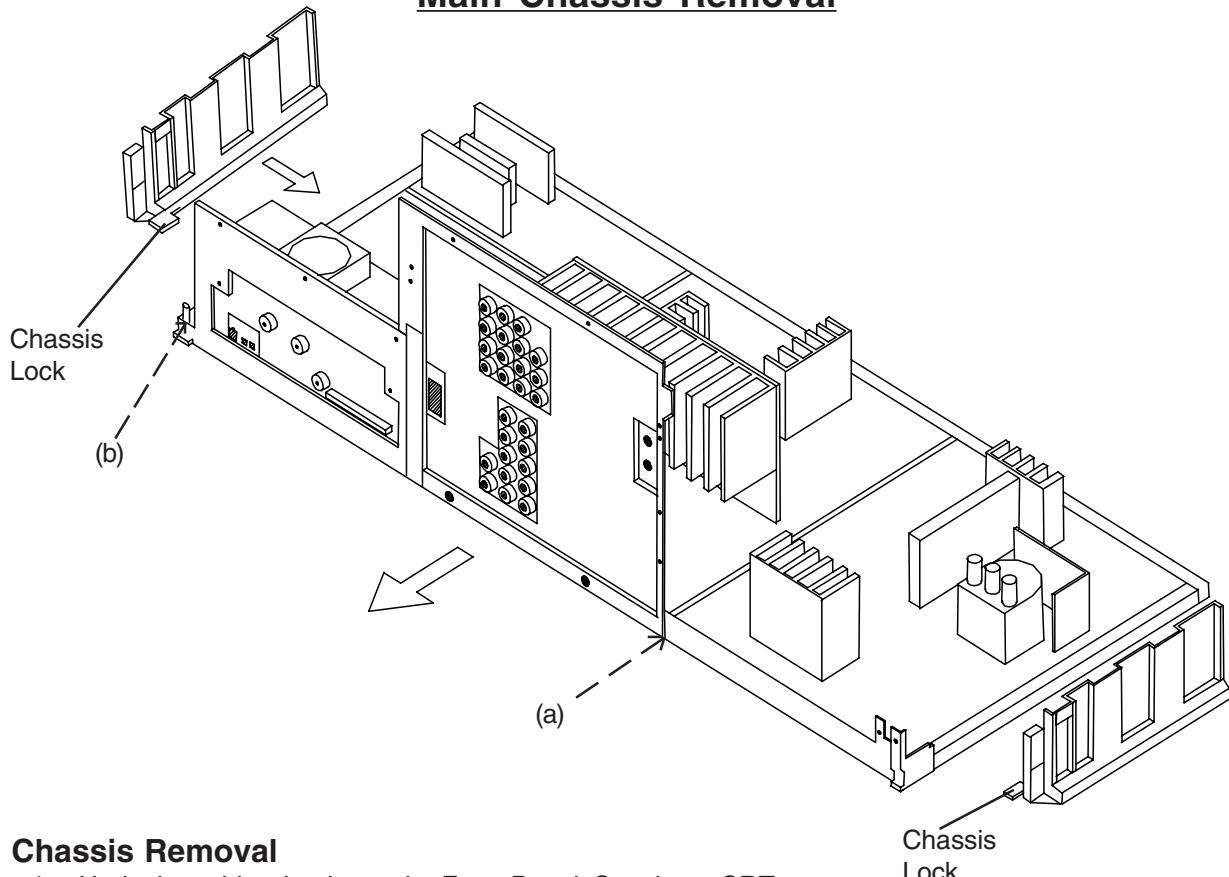
Cabinet Separation Procedure

1. Remove the 4 screw covers (a).
2. Remove 4 screws (b) securing the top and bottom cabinet sections .
3. Carefully lift the cabinet top and place it on the floor.
4. Place the cabinet bottom in the desired location.
5. Reverse the procedure and mount the cabinet top on the cabinet bottom.



WS-73615

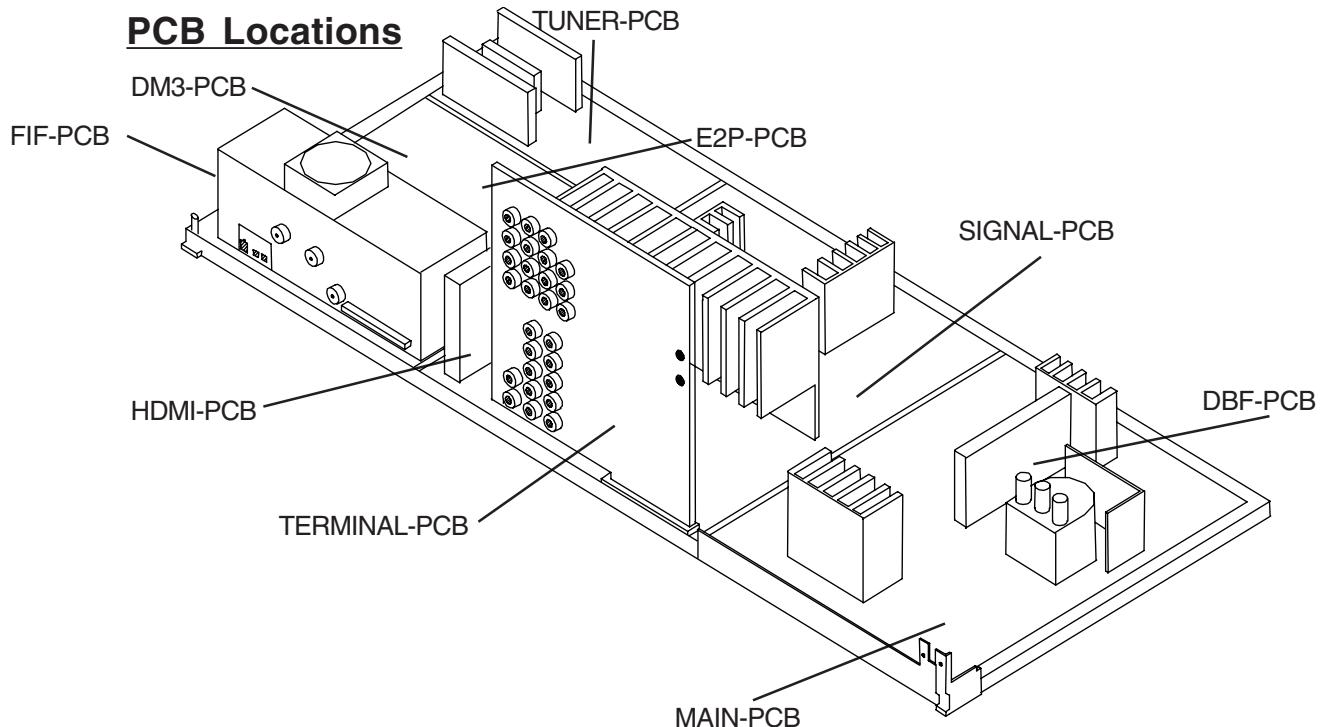
Main Chassis Removal



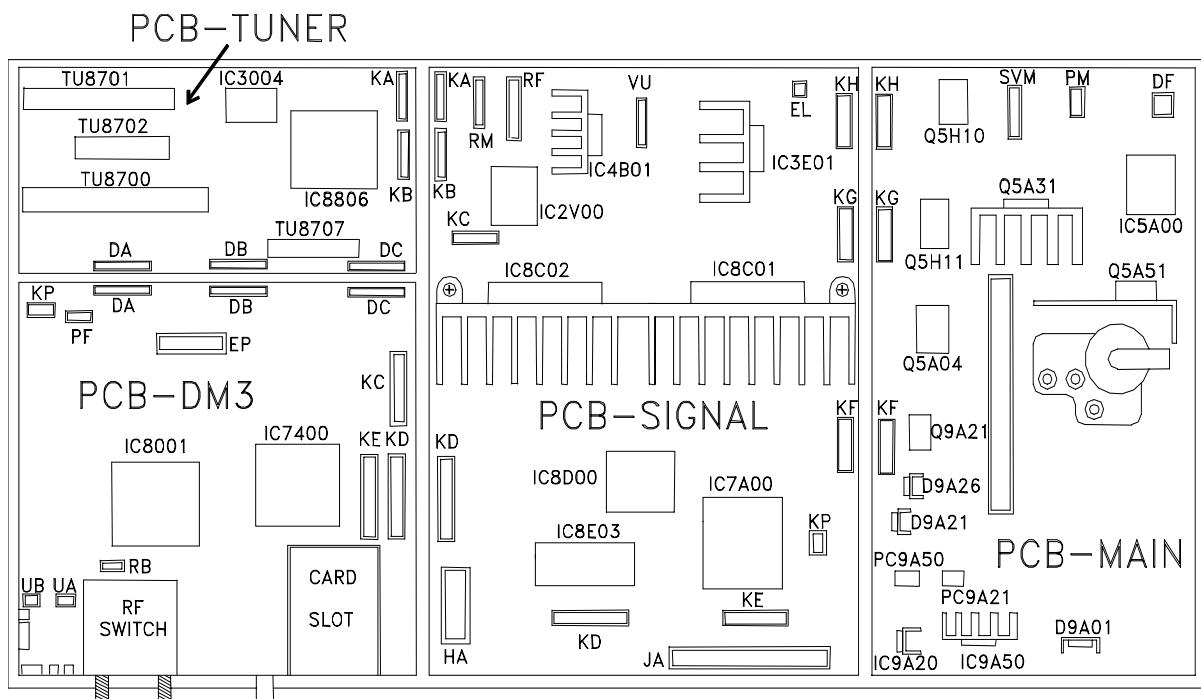
Chassis Removal

1. Undo the cable wire ties to the Front Panel, Speakers, CRTs, etc.
2. Unplug the Card Reader USB and 1394 cables from the DM PCB.
2. Remove screw (a) securing the Main Chassis and screws (b) in models WS-55815 and WS-65815 .
3. Release the Chassis Locks on each side of the chassis.
4. Slide the Chassis out the rear of the unit.
5. Tilt upward to access the bottom of the main chassis.

PCB Locations



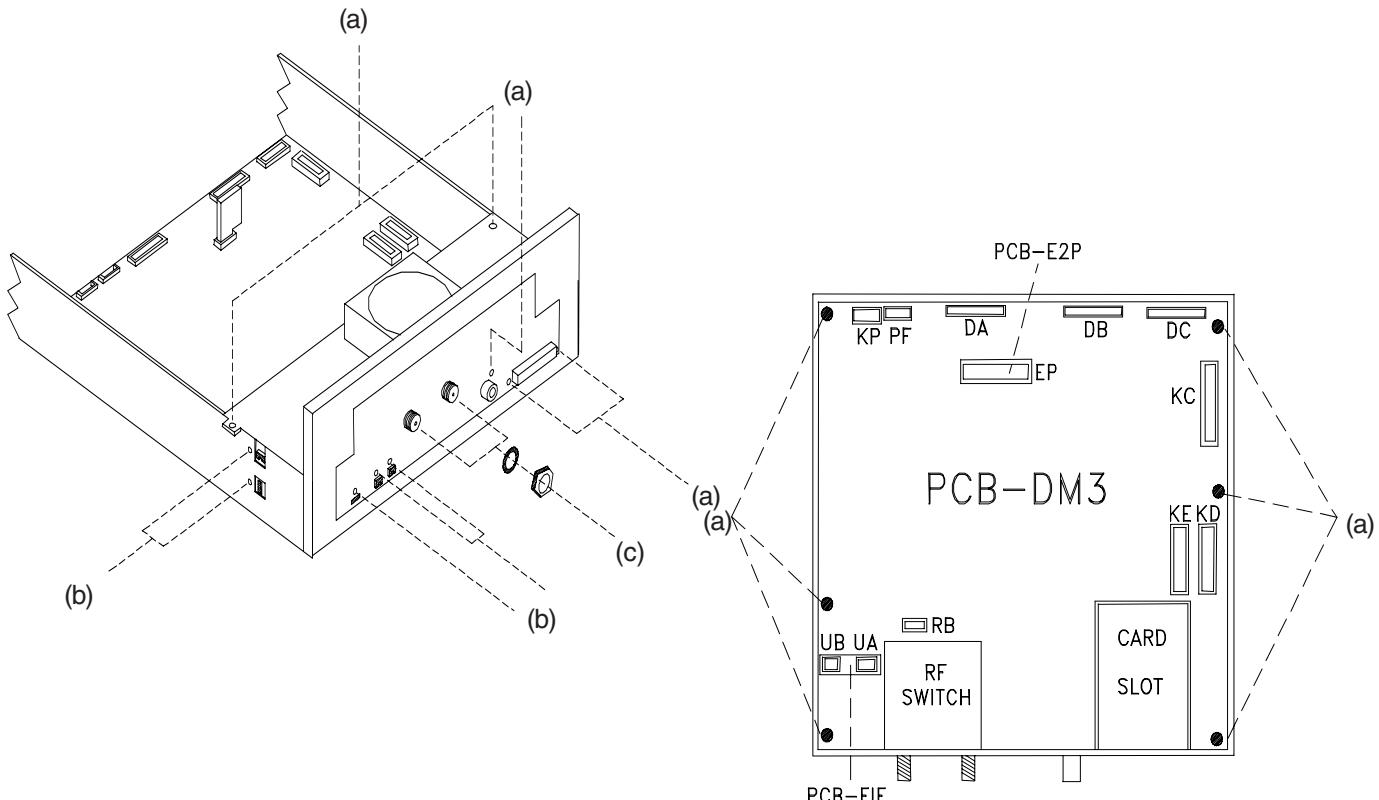
Main Components Location (Top View)



DM Module Replacement

1. Unplug the Card Reader USB and 1394 cables from the DM module, and refer to the Chassis Removal Procedure to slide the chassis towards the rear of the set.
2. Remove screws (a) and remove DM cover.
3. Remove screws (b) and nuts (c).
4. Remove the PCB-E2P from the original DM and plug it into the replacement DM.
5. Remove the PCB-FIF from the DM and install into the replacement DM (V25+ and V25++ only).
6. If CableCard™ is installed, remove.
7. Disconnect all wiring and connectors.

NOTE: After replacement notify customer to contact cable company to reprogram CableCard™.



CRT REPLACEMENT

1. Removal of the CRT

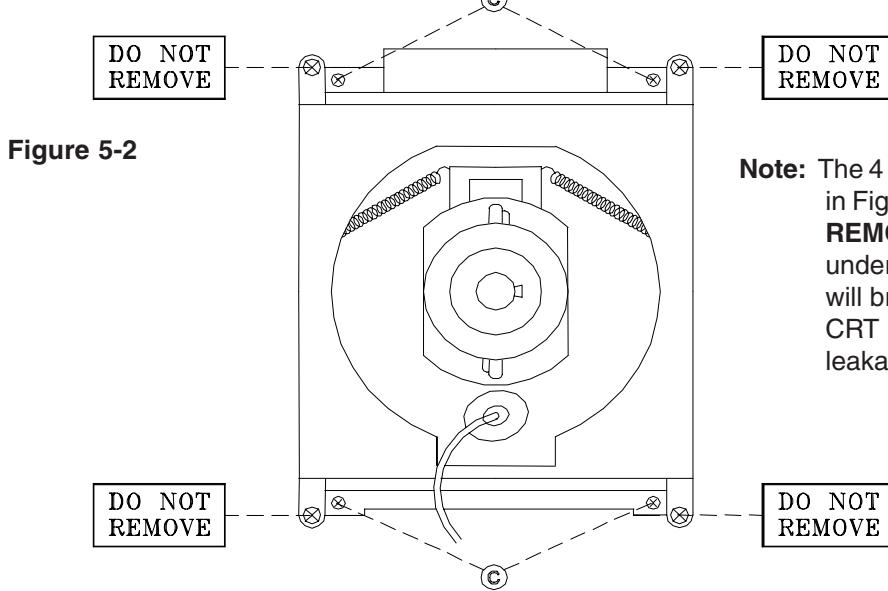
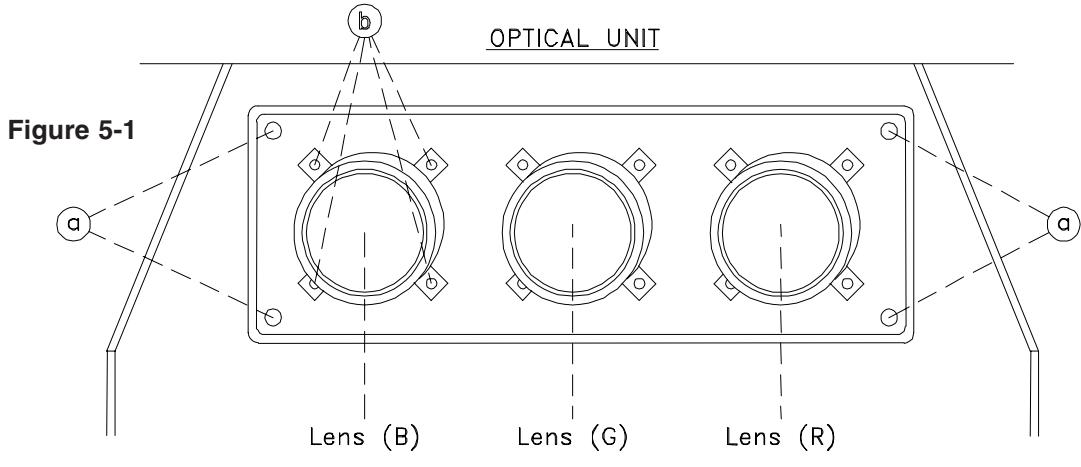
Caution! High voltage should be completely discharged prior to CRT removal. Since The CRTs receive high voltage from the HV Block, discharge by shorting the open end of the respective high voltage cable to chassis ground.

Note: Refer to the Cabinet Disassembly Procedures when performing steps 1 through 4.

1. Remove the Speaker Grille, Front Board, and Screen Assy.
2. Remove the Back Board.
3. Remove the Anode Lead Wire from the CR Block.
4. Remove the PCB-CRT.
5. Remove 4 hex-screws "a" retaining the Optical Unit. [Figure 5-1]
6. Remove 4 screws "b" retaining the Lens.

Note: **DO NOT loosen the RED screws.** Doing so will break the seal between the C-Element and the # 6 Lens, causing leakage of the CRT Coolant.

7. Remove 4 screws "c" retaining the CRT. [Figure 5-2]
8. Remove the Deflection Yoke from the neck of the CRT. [Figure 5-7]



Note: The 4 spring-loaded screws shown in Fig 5-2 and labeled as "**DO NOT REMOVE**", should not be loosened under any circumstance. Doing so will break the seal between the CRT and the CRT-Spacer, causing leakage of the CRT Coolant.

2. Installation of the CRT

Note: The replacement CRT is supplied as an assembly comprised of the CRT and the Inner Lens with the space between them filled with ethylene glycol. Care should be taken during handling and installation to prevent shock from disrupting the seal or alignment between the CRT and Inner Lens. [Figure 5-3]

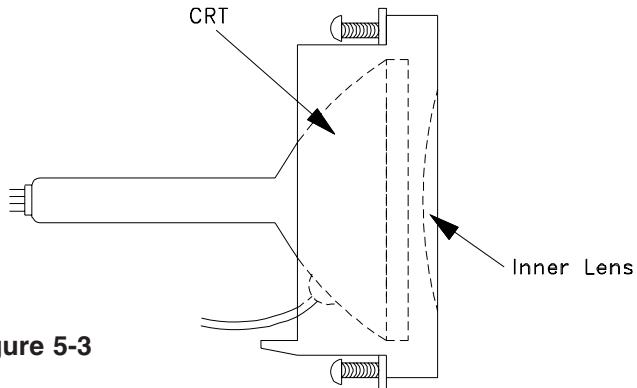


Figure 5-3

Note: The CRT fixing screws should not be loosened nor should they be removed. [Figure 5-4]

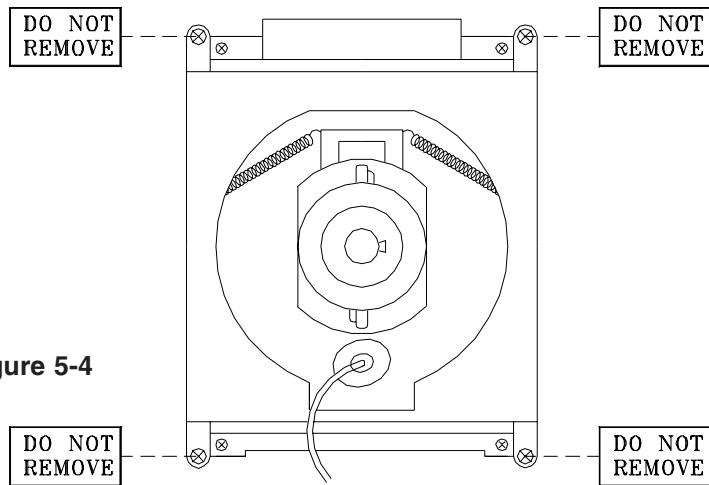


Figure 5-4

1. Carefully position the replacement CRT and fasten in place using 4 screws "d". [Figure 5-6]

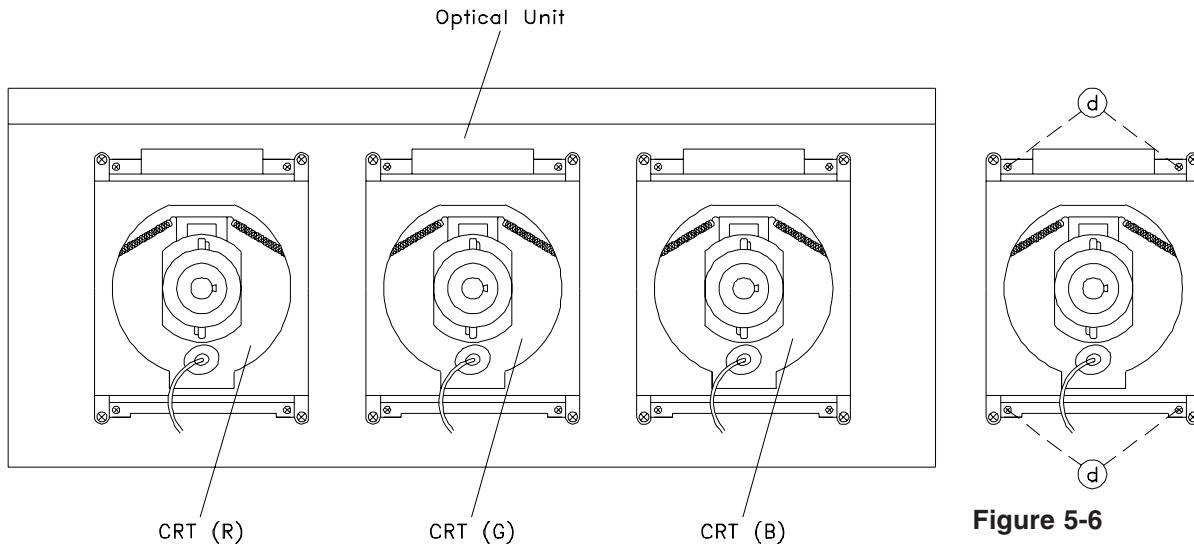


Figure 5-5

Figure 5-6

2. Install the Deflection Yoke on the CRT neck. [Figure 5-7]
3. Install the Lens that was removed in step 6 of Removal Of The CRT. [Figures 5-1 and 5-2]
 - a) Position the Lens so that the Label faces the direction shown in Figure 5-8.
 - b) Install the mounting screws. [Figure 5-1]
4. Connect the PCB-CRT.
5. Insert the Optical Unit into the Light Box Assembly.
6. Insert the Anode Lead Wire into the Flyback Transformer.
7. Re-clamp the Lead Wire in its original position.

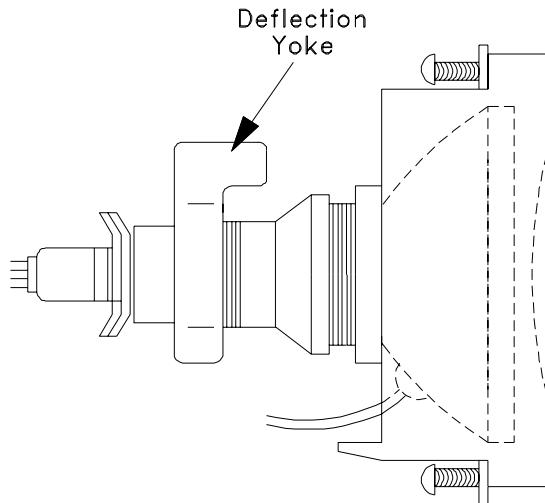
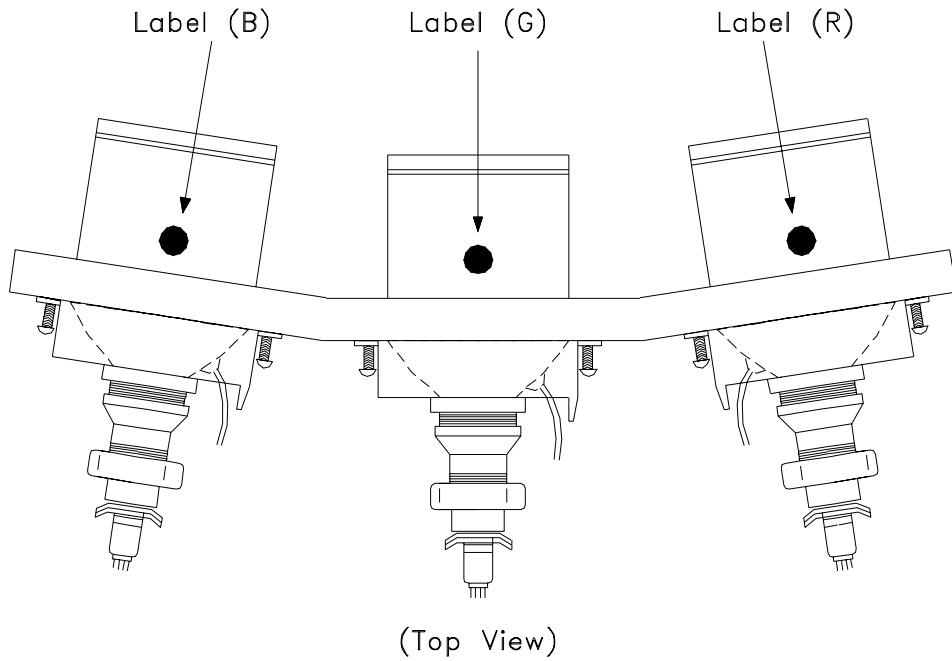


Figure 5-7



(Top View)

Figure 5-8

Adjustment procedures after replacing the CRT(s)

- CRT Cut Off / White Balance Adjustment
- Static Convergence Adjustment
- Dynamic Convergence Adjustment

ELECTRICAL ADJUSTMENTS

Note: Perform only the adjustments required.
Do not attempt an alignment if proper equipment is not available.

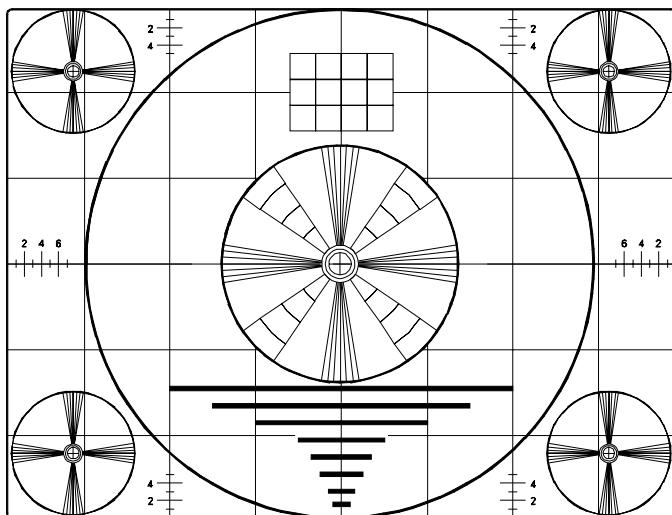
Test Equipment

- Oscilloscope (Unless otherwise specified, use 10:1 probes)
- Signal Generator (both SD and HD capable)
- Frequency Counter
- Direct Current Voltmeter
- Direct Current Power Supply
- Multiplex Audio Signal Generator
- Direct Current Ampere Meter

Test Signal

A. Monoscope Signal

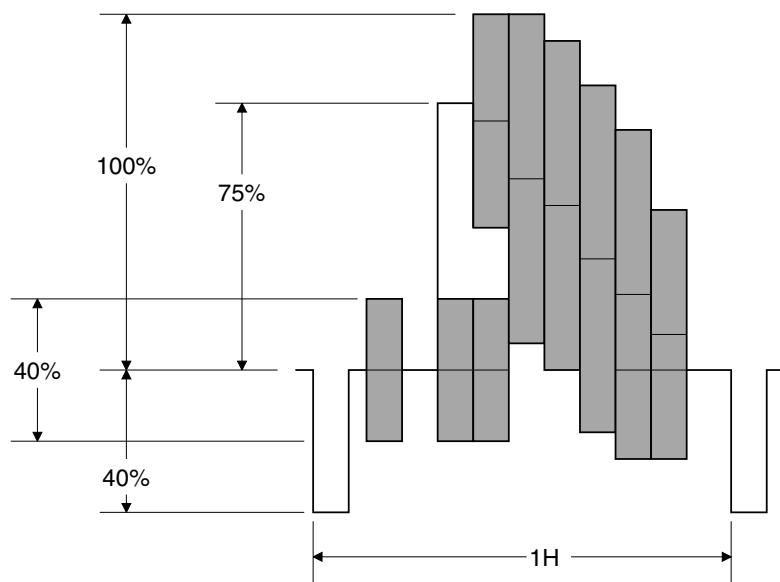
Note: If you do not have a monoscope signal source, connect the unit to a VCR and play a Monoscope *alignment tape.
(* Part Number: 859C568060)



Monoscope Signal

B. Color Bar Signal

Use the color bar signal shown below, unless otherwise specified in this manual.



Split-Field Color Bars (100% window)

Initial Setup**A. Option Menu Setup**

Follow the steps below for the initial set-up:

1. Select the "MENU" display by pressing the "MENU" button once.
2. Press the number buttons "2", "4", "7", "0" in sequence to select the "OPTION MENU" display.
3. Press the "ADJUST" button to select "INITIAL."
4. Press "ENTER."

NOTE: At this time channel 3 is automatically selected.

| (MENU-2-4-7-0) | | |
|-----------------|-------|--|
| OPTION MENU | | |
| Initial | | |
| Power restore | :OFF | |
| DTV Port | :Auto | |
| Direct Key Mode | :OFF | |

B. Default Settings**MAIN MENU DEFAULT SETTINGS**

| SETUP | | TIME | | Audio | |
|------------------------------------|-------------|-------------------|----------|--------------------------|--------------|
| Edit Setup | | Clock Setting | Manual | Volume | 30% |
| Review | | Time | 12:00 AM | Bass | 50% |
| Antenna 1 | (✓) Enabled | Date | 01/01/01 | Treble | 50% |
| Antenna 2 | (✓) Enabled | Daylight Saving | Applies | Balance | 50% |
| Input 1 | (✓) Enabled | | | Surround | Off |
| Input 2 | (✓) Enabled | | | Listen to | Stereo |
| Input 3 | (✓) Enabled | | | Level Sound | On |
| Component 1 | (✓) Enabled | | | TV Speakers | On |
| Component 2 | (✓) Enabled | | | Audio 2 Out | Main |
| HDMI | (✓) Enabled | | | | |
| Card 1 (V25++) | (✓) Enabled | | | | |
| Card 2 (V25++) | (✓) Enabled | | | | |
| Card 3 (V25++) | (✓) Enabled | | | | |
| Card 4 (V25++) | (✓) Enabled | | | | |
| Icon Position | As above | | | | |
| Ant-1, Ant-2, ComFlash | | | | | |
| Input-1, Input-2, Input-3, Comp-1, | | | | | |
| Comp-2, HDMI, Cards 1...4 | | | | | |
| Transport Menu | On | | | | |
| Energy Mode | Standard | | | | |
| Language | English | | | | |
| Digital Record Device | PVR | | | | |
| Channel View | OFF | | | | |
| ANTENNA | | Lock By Time | | Video | |
| Antenna | ANT 1 | Lock by Time | Off | Contrast | 100% |
| Memorize Channels | Air | Lock Time | NA | Brightness | 50% |
| Channel | Ch-3 | Unlock Time | NA | Sharpness | 50% |
| Memory | Deleted | Front Button Lock | Off | Color | 50% |
| Prefer Digital | --- | | | Tint | 50% |
| | | | | Color Temp. | High |
| | | | | Video Noise | Standard |
| | | | | Film Mode | On |
| | | | | VSM Sharpness | On |
| | | | | Video Mute | On |
| | | | | Black Enhancement | On |
| | | | | Advanced | |
| | | | | Color Balance | Manual |
| | | | | PerfectColor™ | |
| | | | | A/V Memory for Ant-A | All Centered |
| AUDIO/VIDEO SETTINGS | | PIP/POP | | | |
| | | Source | | Ant 1 Ch 3 | |
| | | PIP Position | | Lower Right | |
| | | POP Position | | Right Half | |
| | | PIP/POP Format | | Dble. Window | |
| | | Format | | Stretched | |

A/V RESET DEFAULT SETTINGS (By Input)

| A/V Memory | Ant 1/2 | INPUTS 1/2/3 | Compon. 1/2 | 1394 (If connected) | HDMI | Card 1~4 (V25++ Only) |
|-----------------|----------|--------------|-------------|---------------------|----------|-----------------------|
| Contrast | Max. | Max. | Max. | Max. | Max. | Max. |
| Brightness | Center | Center | Center | Center | Center | Center |
| Sharpness | Center | Center | Center | Center | Center | Center |
| Color | Center | Center | Center | Center | Center | Center |
| Tint | Center | Center | Center | Center | Center | Center |
| Color Temp. | High | High | High | High | High | High |
| Video Noise | Standard | Standard | Standard | N/A | Standard | N/A |
| Image Type | On | On | On | N/A | On | N/A |
| Define Edge VSM | On | On | On | On | On | On |
| Bass | Center | Center | Center | Center | Center | Center |
| Treble | Center | Center | Center | Center | Center | Center |
| Balance | Center | Center | Center | Center | Center | Center |
| Surround | OFF | OFF | OFF | OFF | OFF | OFF |
| Listen To | Stereo | N/A | N/A | N/A | N/A | N/A |
| Level Sound | On | On | On | On | On | On |

C. A/V Memory

Each of the external inputs has its' own Audio/Video Memory. A change in an A/V setting at a specific input is stored in memory for that specific input.

A/V Reset

1. The front panel AV Reset button initializes all A/V Memories.
2. The AV Reset in the user's menu initializes only the selected input's A/V Memory except for Balance and Listen to.

LED Indicator Diagnostics

The "Power ON LED" provides an indication of the sets operation, and the possible cause of a malfunction.

1. Initial Control Circuitry Check

Immediately after the TV is connected to an AC power source:

| LED Indications | Conditions | Probable Cause |
|---------------------------|---------------------|---|
| Off | After AC is applied | No Standby Power or TV µPC not running |
| Fast Blink for 70 sec. | After AC is applied | Normal - DM µPC is booting up. |
| Fast Blink (Doesn't stop) | After AC is applied | TV µPC is running, but DM failed to boot up |
| Slow Blink | Set is Off | Normal - Timer is set for Auto Turn On |

2. Error Code Operational Check

Note: The TV must be in "Shut Down" and not have been switched Off, to perform the Error Code Operational Check. When the TV is switched Off, the code automatically resets to "12" No Error.

Pressing the front panel "DEVICE" and "MENU" buttons at the same time, and holding for 5 seconds, activates the Error Code Mode. The LED flashes denoting a two digit Error Code, or indicating no problem has occurred since the last Initialization.

Note: The front panel buttons must be used, NOT those on the Remote Control.

- The number of flashes indicates the value of the MSD (tens digit) of the Error Code.
- The flashing then pauses for approximately 1/2 second.
- The LED then flashes indicating the value of the LSD (ones digit) of the Error Code.
- The Error Code is repeated a total of 5 times.

Example: If the Error Code is "23", the LED will flash two times, pause, and then flash three times.

3. Error Codes

The Error Code designations indicating malfunction, or no malfunction, are listed below:

| Error Code | Probable Cause |
|------------|--------------------|
| 12 | No error detected |
| 21 | X-Ray Protect |
| 22 | Short Protect |
| 23 | Loss of Deflection |
| 35 | Fan Failure |

Remote Control Operational Modes

There are two Remote Hand Unit Operational Modes, "Standard" and "NetCommand™". The Remote is initially in the "Standard" mode. The "NetCommand™" mode is used when controlling Home Theater devices using NetCommand™. To change the Remote Operational Mode:

- Set the Remote to the TV Layer

- To change to "Netcommand™" ... Hold the "Power" button and press "9-3-5" in sequence.
- To change to "Standard" ... Hold the "Power" button and press "0-0-0" in sequence.

Circuit Adjustment Mode

Most of the adjustments can only be performed using the remote hand unit. Many of the adjustments must be performed in both the 480i and 1080i modes. Video/Color adjustments must be performed in the 480i and 1080i modes, and data must be preset in the 480P (DVD) mode.

Note: Set the Remote Operational Mode to "NetCommandTM". (Hold the "Power" button and press "9-3-5" in sequence.) This slows the remote's response and makes adjustments easier. When adjustments are complete, **set the Remote to its' original Operational Mode.** (Hold the "Power" button and press "0-0-0" in sequence)

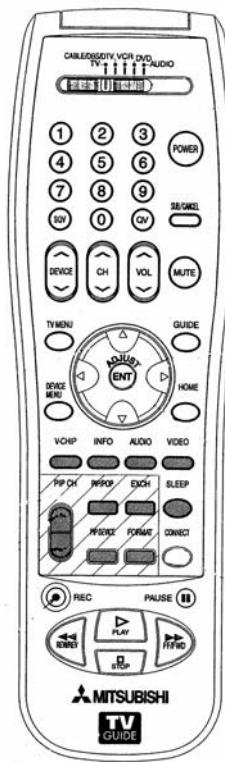
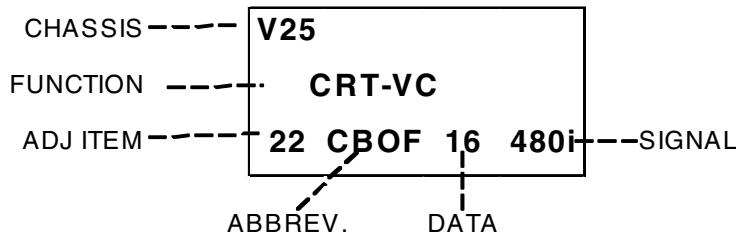
A. Activating the Circuit Adjustment Mode

The current signal source determines if the activated Adjustment Mode is 480i or 1080i.

1. Select the signal source (480i or 1080i).
2. Press the "MENU" button on a remote hand unit.
3. Press the number buttons "2", "4", "5", "7" in sequence.

The screen will change to the Adjustment Mode.

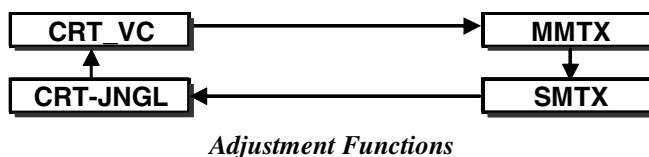
Note: Repeat steps 1 and 2 if the circuit adjustment mode does not appear on screen.



B. Selection of adjustment Functions and Adjustment Items

To select an adjustment item in the circuit adjustment mode, first select the adjustment function that includes the specific adjustment item to be selected. Then select the adjustment item. Refer to the following pages for the listing of adjustment functions and adjustment items.

1. Press the "AUDIO" button on a remote hand unit to select an adjustment function. Each time the button is pressed, the Function changes in the following sequence:



2. Press the "VIDEO" button to select a specific Adjustment Item. The Item number increases each time the "VIDEO" button is pressed.

C. Changing Data

After selecting an adjustment Item, use the "ADJUST UP/DOWN" buttons to change data.

- Press "ADJUST DOWN" to decrease the data value.
- Press "ADJUST UP" to increase the data value.

D. Saving Adjustment Data

Press "ENTER" to save adjustment data in memory. The character display turns red for approximately one second in this step.

Note: If the circuit adjustment mode is terminated without pressing "ENTER", changes in adjustment data are not saved.

E. Terminating the Circuit Adjustment Mode

Press the "MENU" button on the remote hand unit twice to terminate the adjustment mode.

Note: The circuit adjustment mode can also be terminated by turning power OFF.

F. Toggle Between Reception Modes

Pressing "3" when in the Adjustment Mode CRT-VC Function toggles between 480i, 480p and 1080i. However data changes are not automatically saved. **Press "ENTER" to save data before pressing "3".**

G. Service Mode Reset

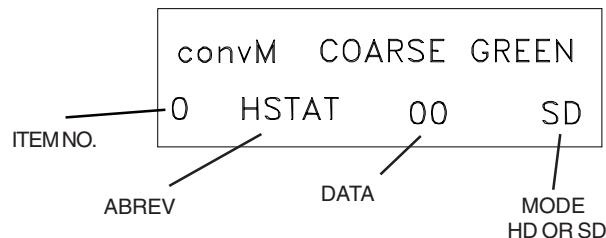
To reset items in the Service Mode to their factory values:

1. Press MENU-2-4-5-7 to enter the Service Mode.
2. Press the "0,1,2,3," in sequence to Reset to the Factory settings.

On Screen Display Position Adjustment Mode

Activation

1. Select 480i or 1080i source.
2. Press MENU-2-4-8-8



Convergence Adjustment Mode

The Convergence mode is used to perform raster geometry correction, and convergence adjustments. These adjustments must be made in both the SD (NTSC) and HD modes.

Note: Before activating the Convergence mode, turn "Video Mute" Off. The internal crosshatch pattern will not be displayed with "Video Mute" On, only a blue background is displayed.

A. Convergence Mode Activation

1. Press MENU-2-4-5-9
2. When the Convergence Mode is activated, this display appears on a Green Crosshatch.

B. Selecting the HD or SD Mode

1. **Select the Signal Source** before entering the Convergence Mode, either an NTSC or HD source.
2. **Enter the Convergence Mode**
 - If the signal source is NTSC, the SD mode is activated.
 - If the signal source is HD, the HD mode is activated.

C. Convergence Mode Functions

In the Convergence Mode there are three main Functions (Categories).

- Pressing "6" activates CONV MISC
- Pressing "5" activates COARSE CONV
- Pressing "4" activates FINE CONV

D. CONVERGENCE MISC (Press 6)

This mode is used to preset data values controlling the Convergence Generator, and to perform the HV Regulation adjustment.

1. Use the VIDEO button to select an item.
2. Use the ADJUST buttons to change data.

NOTE: When Item "1 HVOL" is selected the screen goes black except for the data display. This occurs since a black screen is required when making the HV Regulation adjustment.

E. COARSE CONVERGENCE (Press 5)

There are four Sub Functions in the Coarse mode, COARSE GREEN, COARSE RED, COARSE BLUE and DF.

- COARSE GREEN used to make Coarse Raster Geometry Adjustments.
- COARSE RED ... used to make Coarse Red Convergence Adjustments.
- COARSE BLUE ... used to make Coarse Blue Convergence Adjustments.
- DF ... used to preset data values controlling the Dynamic Beam Focus circuit drive signal.

1. Use AUDIO button to select a Sub Function
2. Use the VIDEO button to select an Adjustment Item.
3. Use the ADJUST buttons to change data.

F. FINE CONVERGENCE (Press 4)

Sub Functions

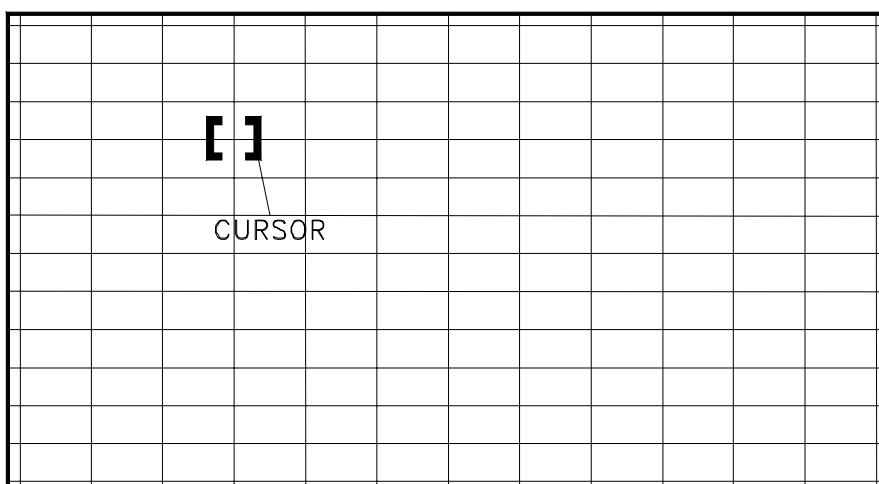
This mode is used to perform Fine Raster Correction, and Fine Red and Blue Convergence Adjustments. There are three Sub Adjustment Functions, selected with the AUDIO button:

- FINE GREEN a Green Crosshatch is displayed, to make Fine Raster Corrections.
- FINE RED a White Crosshatch is displayed, to make Fine Red Convergence Adjustments.
- FINE BLUE a White Crosshatch is displayed, to make Fine Blue Convergence Adjustments.

Cursor

In the Fine mode a Cursor is added to the Crosshatch. The ENTER button toggles the Cursor between two modes:

- MOVE (blinking Cursor) use the ADJUST buttons to select any of 64 points on the Crosshatch.
- ADJUST (Non blinking Cursor) the ADJUST buttons adjust the active color at the current Cursor position, horizontally or vertically.

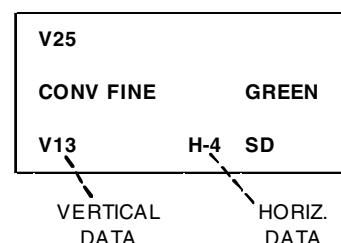


Display

The on-screen display changes in the Fine mode, as shown at the right. The display shows the vertical and horizontal data for the current Cursor Position, and the horizontal and vertical coordinates for that position.

G. Saving Data and Exiting the Convergence Mode

Press MENU twice to exit the Convergence mode, data is automatically saved.



E2PROM Replacement

Data accessed in the Convergence Adjustment Mode is stored in IC8D01 on the PCB-SIGNAL and on the PCB-E2P. Replacement PCB's are supplied pre-aligned by model size so that only fine adjustments should be necessary after replacement. Other service data is stored on the PCB-E2P located on the DM assembly. When replacing the DM assembly, retaining the original PCB-E2P will eliminate the need for any realignment. The following tables are provided as a guide in case of total data loss.

List of Adjustment Items.

CRT-VC (Video Color)

IC2V00

| Function Display | | Adjustment Description | Data Range | Initial Data | | | | Notes | | | |
|------------------|---------|-------------------------|------------|--------------|-----------|------|-------|---------------|--|--|--|
| NO. | Abbrev. | | | 480i | | 480p | 1080i | | | | |
| | | | | ANT/INPUT | Component | | | | | | |
| 1 | SBRT | Sub Brightness Adjust | 0~63 | 20 | | 20 | 20 | Black Level | | | |
| 2 | SCT | Picture Gain Adjust | 0~63 | 31 | | 42 | 42 | Sub Contrast | | | |
| 3 | SCON | Sub Contrast Adjust | 0~15 | 7 | | 7 | 7 | Preset | | | |
| 4 | RDRH | R-Drive (high) | 0~15 | 31 | | 31 | 31 | White Balance | | | |
| 5 | GDRH | G-Drive (high) | 0~15 | 37 | | 41 | 41 | " | | | |
| 6 | BDRH | B-Drive (high) | 0~63 | 31 | | 31 | 31 | White Balance | | | |
| 7 | CTRH | R-Cutoff (high) | 0~63 | 31 | | 31 | 31 | " | | | |
| 8 | CTGH | G-Cutoff (high) | 0~63 | 25 | | 31 | 31 | " | | | |
| 9 | CTBH | B-Cutoff (high) | 0~63 | 31 | | 31 | 31 | " | | | |
| 10 | RDRL | R-Drive (low) | 0~63 | 31 | | 31 | 31 | " | | | |
| 11 | GDRL | G-Drive (low) | 0~63 | 37 | | 41 | 41 | " | | | |
| 12 | BDRL | B-Drive (low) | 0~63 | 31 | | 31 | 31 | " | | | |
| 13 | CTRL | R-Cutoff (low) | 0~63 | 31 | | 31 | 31 | " | | | |
| 14 | CTGL | G-Cutoff (low) | 0~63 | 25 | | 31 | 31 | " | | | |
| 15 | CTBL | B-Cutoff (low) | 0~63 | 31 | | 31 | 31 | " | | | |
| 16 | GMMA | RGB Gamma correction | 0~3 | 2 | | 2 | 2 | " | | | |
| 17 | GAML | Gamma Differ. Sw. | 0~1 | 0 | | 0 | 0 | Preset | | | |
| 18 | BRT | Brightness Control | 0~63 | 28 | 32 | 33 | 36 | User | | | |
| 19 | COL | Color Control | 0~63 | 34 | 34 | 35 | 32 | User | | | |
| 20 | TNT | Hue Control | 0~63 | 26 | 29 | 30 | 29 | User | | | |
| 22 | CBOF | Cb sub signal DC cancel | 0~63 | 31 | | 31 | 31 | Preset | | | |
| 23 | CR0F | Cr sub signal DC cancel | 0~63 | 31 | | 31 | 31 | " | | | |
| 38 | DCTR | Y DC trans. Ration | 0~3 | 1 | | 1 | 2 | " | | | |
| 56 | ASBL | S-ABL gain setting | 0~3 | 0 | | 0 | 0 | " | | | |

CRT-JNGL Function (Jungle)

| Display | | Adjustment Description | Data Range | WS-48515 | | WS-55515 | | WS-55815 WS-55615 | | WS-65515 WS-65615 | | WS-73615 | | WS-65815 | |
|---------|-------|------------------------|------------|----------|----|----------|----|----------------------|----|----------------------|----|----------|----|----------|----|
| No. | Item | | | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD |
| 1 | HWID | Horizontal Width | 0~63 | 32 | 31 | 29 | 30 | 21 | 21 | 26 | 26 | 28 | 28 | 25 | 25 |
| 2 | HKEY | Horizontal Keystone | 0~63 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 |
| 7 | VHGT | Vertical Height | 0~63 | 27 | 30 | 25 | 21 | 21 | 25 | 33 | 38 | 38 | 41 | 28 | 31 |
| 8 | VLIN | Vertical Linearity | 0~15 | 6 | 6 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 9 | VSCN | Vertical S-Correction | 0~15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | H-POS | Horizontal Position | 0~63 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 |
| 36 | PINA | Pin Distortion | 0~63 | 3 | 3 | 10 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

CONV GREEN Items

(MENU-2-4-5-9-5)

| No. | Abbrev. Name | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | |
|-----|-----------------|-----------------------------|----------|------|----------|------|----------------------|------|----------------------|------|----------|------|----------|------|
| | | | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD |
| 1 | HSTA* | Horizontal Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | VSTA* | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | TILT | Tilt (X axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | HWID | Horisontal Width | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 6 | HLIN | Horizontal Linearity | 12 | 12 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 7 | SPCC | Side Pin Cushion Correction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | HKEY | Horizontal Keystone | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | TBPC | Top/Bottom PC Correction | -180 | -150 | -110 | -110 | -195 | -180 | -200 | -170 | -210 | -180 | -210 | -180 |
| 10 | VKEY | Vertical Keystone | 0 | 0 | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | VWID | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*HSTA and VSTA must not exceed ±200

CONV RED Items

(MENU-2-4-5-9-5)

| No. | Abbrev. Name | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | |
|-----|-----------------|------------------------------|----------|------|----------|------|----------------------|------|----------------------|------|----------|------|----------|------|
| | | | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD |
| 1 | HSTA | Horizontal Position | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 100 | 100 | 10 | 100 |
| 2 | VSTA | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | TILT | Tilt (X axix rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | HLIN | Horixontal Linearity | -210 | -190 | -165 | -165 | -210 | -150 | -180 | -160 | -230 | -210 | -230 | -210 |
| 6 | HWID | Horizontal Width | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | VKEY | Vertical Keystone Correction | -140 | -120 | -85 | -85 | -100 | -100 | -100 | -90 | -170 | -140 | -140 | -110 |
| 8 | VWID | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | TPPC | Top/Bottom PC Correction | 20 | 20 | 30 | 30 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 11 | SDBW | Horizontal Side Bow | 30 | 30 | 20 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

*HSTA and VSTA must not exceed ±200

CONV BLUE Items

(MENU-2-4-5-9-5)

| No. | Abbrev. Name | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | |
|-----|-----------------|------------------------------|----------|-----|----------|-----|----------------------|-----|----------------------|-----|----------|------|----------|------|
| | | | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD |
| 1 | HSTA | Horizontal Position | -50 | -50 | -50 | -50 | -50 | -50 | -50 | -50 | -100 | -100 | -100 | -100 |
| 2 | VSTA | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | TILT | Tilt (X axix rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | HLIN | Horixontal Linearity | 210 | 190 | 165 | 165 | 180 | 180 | 180 | 160 | 250 | 220 | 230 | 200 |
| 6 | HWID | Horizontal Width | 0 | 0 | -20 | -20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | VKEY | Vertical Keystone Correction | 110 | 100 | 85 | 85 | 100 | 100 | 100 | 70 | 70 | 90 | 70 | 90 |
| 8 | VWID | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | TPPC | Top/Bottom PC Correction | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 |
| 11 | HSBW | Horizontal Side Bow | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 |

*HSTA and VSTA must not exceed ±200

OSD Horizontal Centering (MENU-2-4-8-8)

| Abbrev. Name | Description | Data |
|-----------------|---------------------------------|------|
| HR | Display horiz. Centering (NTSC) | 120 |

DYNAMIC FOCUS (MENU-2-4-5-9-5)

| Item Number | Abbrev. Name | Description | V25 | V25+ V25++ |
|----------------|-----------------|--------------------------|------|---------------|
| 1 | DFH | Dynamic Focus Horizontal | -375 | -450 |
| 2 | DFV | Dynamic Focus Vertical | 200 | 200 |

CONV MISC (MENU-2-4-5-9-6)

| Item Number | Abbrev. Name | Data | | Notes |
|----------------|-----------------|------|-----|---------|
| | | SD | HD | |
| 1 | HVOL | 228 | 216 | HV Adj. |

* Do not change "1 HVOL" if it has been previously set.

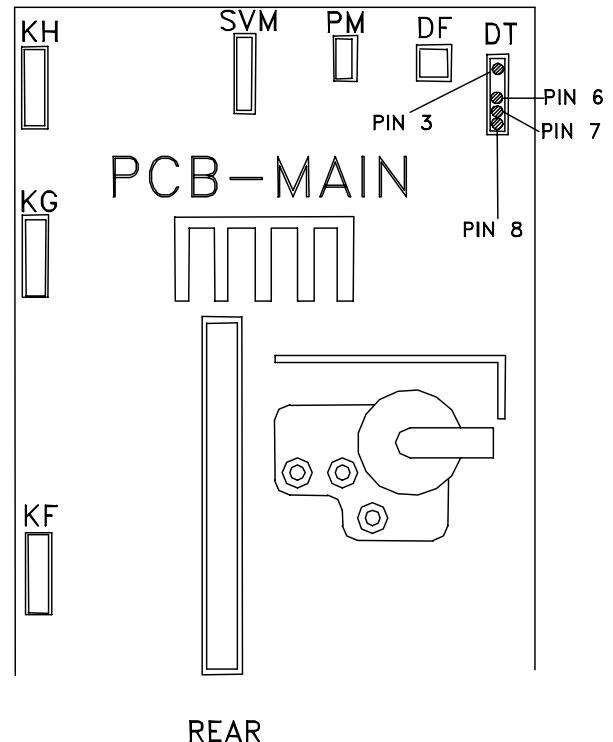
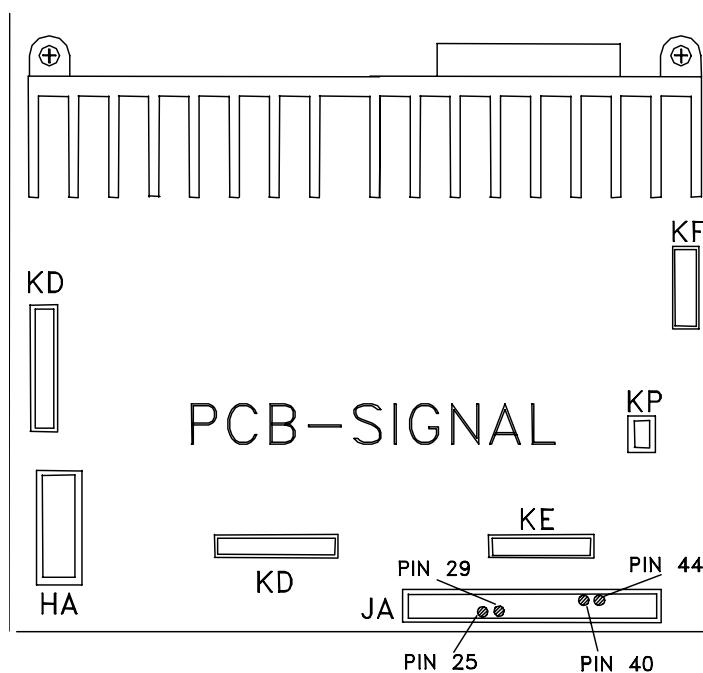
MAIN MATRIX (MENU-2-4-5-7)

| Item Number | Abbrev. Name | Description | Range | Initial |
|----------------|-----------------|----------------------|-------|---------|
| 4 | COLM | COLOR GAIN CONTROL | 0-63 | 17 |
| 15 | YDRM | Y DRIVE GAIN CONTROL | 0-31 | 5 |

SUB MATRIX (MENU-2-4-5-7)

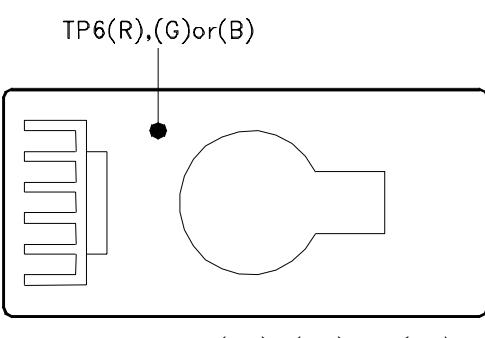
| Item Number | Abbrev. Name | Description | Range | Initial |
|----------------|-----------------|----------------------|-------|---------|
| 4 | COLS | COLOR GAIN CONTROL | 0-63 | 17 |
| 15 | YDRS | Y DRIVE GAIN CONTROL | 0-31 | 5 |

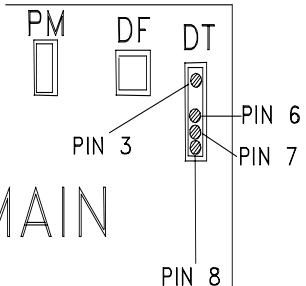
Adjustment Test Point Location

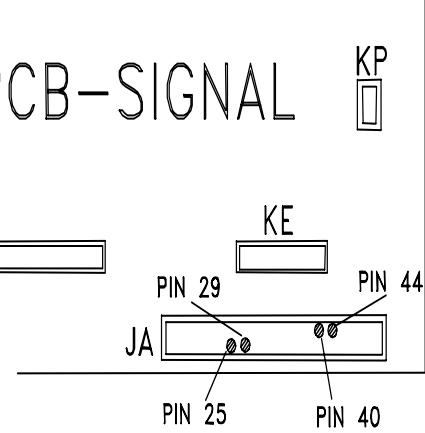


Test Points

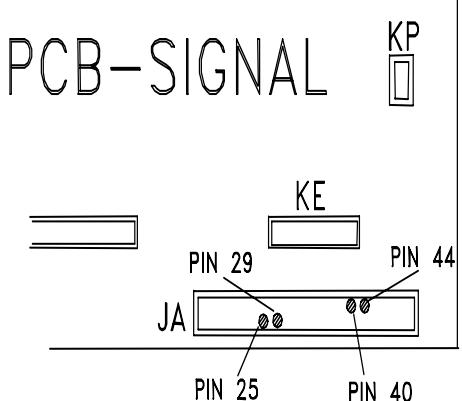
- DT pin 3 - HV Adjust
- DT pin 6 - Ground
- DT pin 7 - 12 Volts
- DT pin 8 - ACL
- JA pin 25 - Main Picture (Y)
- JA pin 29 - Main Picture (Cr)
- JA pin 40 - Sub Picture (Y)
- JA pin 44 - Sub Picture (Cr)
- TP6(R, G or B) - CRT Cathode



| | | | | | | | | | | | | | |
|--|---------------------------|--|-----------------------------|----------------|----------------------------|-------------------|------------------------|---------------------|-----------------------|--------------|---------------------------|----------------|-------------|
| [HV Circuit] 1. HV Regulation | | <p>Purpose: To set the CRT Anode voltage.</p> <p>Symptom: Dark Picture</p> | | | | | | | | | | | |
| <table border="1"> <tr> <td>Measuring Instrument</td><td>DC Voltmeter</td></tr> <tr> <td>Test Point</td><td>DT connector pins 3 & 6</td></tr> <tr> <td>Ext. Trigger</td><td>-----</td></tr> <tr> <td>Measuring Range</td><td>-----</td></tr> <tr> <td>Input Signal</td><td>Video Signal Monoscope</td></tr> <tr> <td>Input Terminal</td><td>Video Input</td></tr> </table> | | Measuring Instrument | DC Voltmeter | Test Point | DT connector pins 3 & 6 | Ext. Trigger | ----- | Measuring Range | ----- | Input Signal | Video Signal Monoscope | Input Terminal | Video Input |
| Measuring Instrument | DC Voltmeter | | | | | | | | | | | | |
| Test Point | DT connector pins 3 & 6 | | | | | | | | | | | | |
| Ext. Trigger | ----- | | | | | | | | | | | | |
| Measuring Range | ----- | | | | | | | | | | | | |
| Input Signal | Video Signal Monoscope | | | | | | | | | | | | |
| Input Terminal | Video Input | | | | | | | | | | | | |
| <p>Note: This adjustment must be rechecked following Adjustment 4 CRT Cutoff.</p> <ol style="list-style-type: none"> Supply a video monoscope signal. Set Contrast to maximum, and Brightness to mid position. Connect a DC volt meter between pins 3 and 6 of the DT connector. (Positive lead to pin 3) Activate the Conv-Misc Mode. Select Item "1 HVOL" (screen goes black). Adjust Item "1 HVOL" for 15.4V ±0.2V on the meter. Save data and exit the Conv-Misc mode. Confirm that the voltage does not change more than 0.15V. | | | | | | | | | | | | | |
| <p>Note: This adjustment must be performed if E2RESET or Convergence E2RESET are activated.</p> | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | |
| <table border="1"> <tr> <td align="center">CONVERGENCE MODE</td></tr> <tr> <td>ActivateMEN U-2-4-5-9</td></tr> <tr> <td>Misc. "6"</td></tr> <tr> <td>Color (R,G or B).....AUDIO</td></tr> <tr> <td>Item No.....VIDEO</td></tr> <tr> <td>Adjust/Move.....ADJUST</td></tr> <tr> <td>Save Data.....ENTER</td></tr> <tr> <td>Exit.....MENU (twice)</td></tr> </table> | | CONVERGENCE MODE | ActivateMEN U-2-4-5-9 | Misc. "6" | Color (R,G or B).....AUDIO | Item No.....VIDEO | Adjust/Move.....ADJUST | Save Data.....ENTER | Exit.....MENU (twice) | | | | |
| CONVERGENCE MODE | | | | | | | | | | | | | |
| ActivateMEN U-2-4-5-9 | | | | | | | | | | | | | |
| Misc. "6" | | | | | | | | | | | | | |
| Color (R,G or B).....AUDIO | | | | | | | | | | | | | |
| Item No.....VIDEO | | | | | | | | | | | | | |
| Adjust/Move.....ADJUST | | | | | | | | | | | | | |
| Save Data.....ENTER | | | | | | | | | | | | | |
| Exit.....MENU (twice) | | | | | | | | | | | | | |

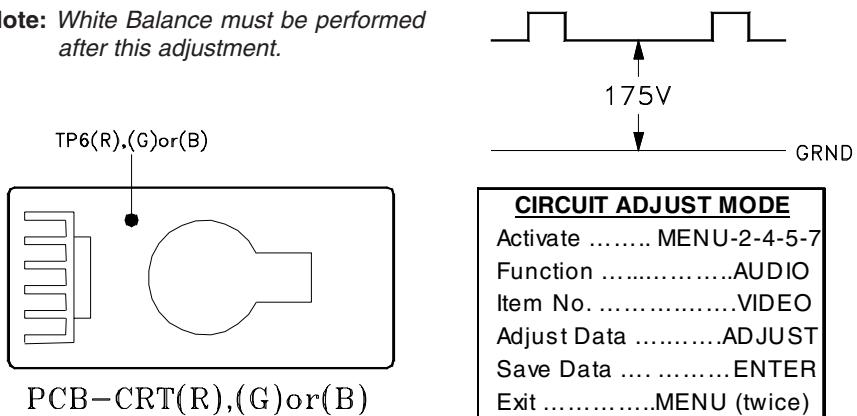
| | | | | | | | | | | | | | |
|---|---------------------------|--|-----------------------------|---------------------|---------------------------|-------------------------|----------------------|------------------------|-------|--------------|------------|----------------|-------------|
| [Video Circuit] 2. Main/Sub Y Level | | <p>Purpose To set picture luminance</p> <p>Symptom: Excess or insufficient brightness.</p> | | | | | | | | | | | |
| <table border="1"> <tr> <td>Measuring Instrument</td><td>Oscilloscope</td></tr> <tr> <td>Test Point</td><td>JA connector pins 25 & 40</td></tr> <tr> <td>Ext. Trigger</td><td>-----</td></tr> <tr> <td>Measuring Range</td><td>-----</td></tr> <tr> <td>Input Signal</td><td>Color Bars</td></tr> <tr> <td>Input Terminal</td><td>Video Input</td></tr> </table> | | Measuring Instrument | Oscilloscope | Test Point | JA connector pins 25 & 40 | Ext. Trigger | ----- | Measuring Range | ----- | Input Signal | Color Bars | Input Terminal | Video Input |
| Measuring Instrument | Oscilloscope | | | | | | | | | | | | |
| Test Point | JA connector pins 25 & 40 | | | | | | | | | | | | |
| Ext. Trigger | ----- | | | | | | | | | | | | |
| Measuring Range | ----- | | | | | | | | | | | | |
| Input Signal | Color Bars | | | | | | | | | | | | |
| Input Terminal | Video Input | | | | | | | | | | | | |
| <p>1. Supply a color bar signal to a Video Input (not an RF input).</p> <p>2. Select the color bar signal for both the main and sub pictures.</p> <p>3. Connect the oscilloscope to connector JA pin 25.</p> <p>4. Activate the Adjustment Mode</p> <p>5. Select Item "15 YDRM" in the MAIN MTRX function.</p> <p>6. Adjust the data for 0.66 Vp-p ~ 0.71 Vp-p. (If it cannot be adjusted within this range, set to the lower value)</p> <p>7. Move the oscilloscope to JA pin 40.</p> <p>8. Select Item "15 YDRS" in the SUB MTRX function.</p> <p>9. Adjust the data to equal the MAIN-Y Gain (+0.0V -0.05V).</p> | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | |
| <table border="1"> <tr> <td align="center">CIRCUIT ADJUST MODE</td></tr> <tr> <td>Activate MENU-2-4-5-7</td></tr> <tr> <td>FunctionAUDIO</td></tr> <tr> <td>Item NoVIDEO</td></tr> <tr> <td>Adjust DataADJUST</td></tr> <tr> <td>Save DataENTER</td></tr> <tr> <td>ExitMENU (twice)</td></tr> </table> | | CIRCUIT ADJUST MODE | Activate MENU-2-4-5-7 | FunctionAUDIO | Item NoVIDEO | Adjust DataADJUST | Save DataENTER | ExitMENU (twice) | | | | | |
| CIRCUIT ADJUST MODE | | | | | | | | | | | | | |
| Activate MENU-2-4-5-7 | | | | | | | | | | | | | |
| FunctionAUDIO | | | | | | | | | | | | | |
| Item NoVIDEO | | | | | | | | | | | | | |
| Adjust DataADJUST | | | | | | | | | | | | | |
| Save DataENTER | | | | | | | | | | | | | |
| ExitMENU (twice) | | | | | | | | | | | | | |

| | | |
|-------------------------|-----------------------|---|
| [Video Circuit] | | Purpose: To match the sub picture color to that of the main picture. |
| 3. Main/Sub Color Level | | Symptom: Main and sub pictures colors differ. |
| Measuring Instrument | Oscilloscope | |
| Test Point | JA pin 29 & JA pin 44 | |
| Ext. Trigger | ----- | |
| Measuring Range | ----- | |
| Input Signal | Color Bars | |
| Input Terminal | Video | |
| | | <ol style="list-style-type: none"> Supply an NTSC signal to an External Video Input. Select the NTSC signal as the source for both the main and sub pictures. Connect an oscilloscope to connector JA pin 29. Activate the Adjustment mode. Select Item “04 COLM” in the Main Matrix Function. Adjust data so the signal is 0.66 Vp-p ~ 0.71 Vp-p. (If it cannot be adjusted within this range, set to the lower value) Connect an oscilloscope to connector JA pin 44. Select item “04 COLS” in the Sub Matrix Function. Adjust so Sub = Main (+0.0V - 0.05V). |



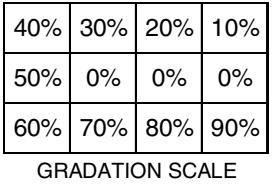
CIRCUIT ADJUST MODE
 Activate MENU-2-4-5-7
 FunctionAUDIO
 Item No.VIDEO
 Adjust DataADJUST
 Save DataENTER
 ExitMENU (twice)

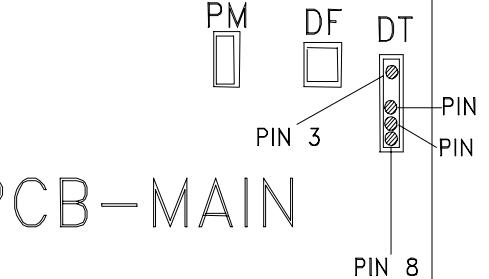
| | | |
|--|---------------------|---|
| [CRT Circuit] | | Purpose To set the cutoff point for all three CRTs. |
| 4. CRT Cutoff | | Symptom: Monochrome has a color tint, or incorrect brightness. |
| Measuring Instrument | Oscilloscope | Note: Use the Expand mode (full screen) |
| Test Point | TP6R, TP6G, TP6B | <ol style="list-style-type: none"> Select an External Input with no signal. Enter the Adjustment Mode, VC Function. Press “1”, automatically blanks the screen and sets COL to 0. Note: If the screen goes blue, turn off Video Mute. Set the data to the values given in the table below. Connect the oscilloscope to TP6R. Adjust the Red Screen VR so the black level is 175V, as shown below, or 179V ±1VDC using an DC Voltmeter. Repeat Steps 4 and 5 to set the Blue and Green Screen VRs, using TP6G and TP6B. |
| Ext. Trigger | ----- | |
| Measuring Range | 50V/Div. 2msec/Div. | |
| Input Signal | None | |
| Input Terminal | Video Input | |
| CRT Cutoff Presets VC Function | | Note: White Balance must be performed after this adjustment. |
| Item | Abbr. | Setting |
| 1 | SBRT | 20 |
| 2 | SCT | 31 |
| 3 | SCON | 7 |
| 4 | RDRH | 31 |
| 5 | GDRH | 37 |
| 6 | BDRH | 31 |
| 7 | CTRH | 31 |
| 8 | CTGH | 25 |
| 9 | CTBH | 31 |



| [CRT Circuit] 5. White Balance (NTSC) | | <p>Purpose: To set the CRTs white level in the NTSC mode.</p> <p>Symptom: Monochrome has a color tint.</p> | | | | | | | | | | | | |
|---|--|--|-----|--|----------------------|-----|-------|-------|-------|-------|-------|------|-------|-------|
| Measuring Instrument | | | | | | | | | | | | | | |
| Test Point | ----- | | | | | | | | | | | | | |
| Ext. Trigger | ----- | | | | | | | | | | | | | |
| Measuring Range | ----- | | | | | | | | | | | | | |
| Input Signal | NTSC White Raster | | | | | | | | | | | | | |
| Input Terminal | RF or Video | | | | | | | | | | | | | |
| | | <p>Note: Use the "FORMAT" button to activate the Expand mode (full screen).</p> <ol style="list-style-type: none"> Supply a full White Raster Signal Activate the Service Mode, VC function. Adjust Items "4 RDRH" and "6 BDRH" for optimum white at the center of the screen. Reduce the input luminance level to 25%. Adjust Items "7 CTRH" and "9 CTBH" for optimum white. Insert a Milliammeter in series with each CRT Cathode. The maximum allowable current for each CRT is given in the table below. Set the white raster to 100% and adjust Items "10 RDRL" and "12 BDRL" for optimum white at the center of the screen. Reduce the luminance level to 25%. Adjust Item "13 CTRL" and "15 CTBL" for optimum white. Set the data for Item "19 COL" back to 31. | | | | | | | | | | | | |
| CIRCUIT ADJUST MODE Activate MENU-2-4-5-7 FunctionAUDIO Item No.VIDEO Adjust DataADJUST Save DataENTER ExitMENU (twice) | | <p>Maximum CRT Current</p> <table border="1"> <thead> <tr> <th>CRT</th> <th>WS-48515 WS-55615 WS-65615 WS-55815 WS-55515 WS-65515</th> <th>WS-65815 WS-73615</th> </tr> </thead> <tbody> <tr> <td>RED</td> <td>580ua</td> <td>900ua</td> </tr> <tr> <td>GREEN</td> <td>580ua</td> <td>900ua</td> </tr> <tr> <td>BLUE</td> <td>580ua</td> <td>900ua</td> </tr> </tbody> </table> | CRT | WS-48515 WS-55615 WS-65615 WS-55815 WS-55515 WS-65515 | WS-65815 WS-73615 | RED | 580ua | 900ua | GREEN | 580ua | 900ua | BLUE | 580ua | 900ua |
| CRT | WS-48515 WS-55615 WS-65615 WS-55815 WS-55515 WS-65515 | WS-65815 WS-73615 | | | | | | | | | | | | |
| RED | 580ua | 900ua | | | | | | | | | | | | |
| GREEN | 580ua | 900ua | | | | | | | | | | | | |
| BLUE | 580ua | 900ua | | | | | | | | | | | | |

| | | |
|---|-----------------|---|
| [CRT Circuit] 6. White Balance (HD) | | <p>Purpose To set the CRTs white level in the HD mode.</p> <p>Symptom: Monochrome pictures have a color tint.</p> |
| Measuring Instrument | ----- | |
| Test Point | ----- | |
| Ext. Trigger | ----- | |
| Measuring Range | ----- | |
| Input Signal | HD White Raster | |
| Input Terminal | Component | |
| CIRCUIT ADJUST MODE Activate MENU-2-4-5-7 FunctionAUDIO Item No.VIDEO Adjust DataADJUST Save DataENTER ExitMENU (twice) | | |

| | | | | | | | | | | | | | | |
|---|-------------|--|-----|-----|-----|-----|-----|----|----|----|-----|-----|-----|-----|
| [Video Circuit] 7. Black Level | | Purpose: To set the black level of the picture. Symptom: Excess or insufficient brightness. | | | | | | | | | | | | |
| Measuring Instrument | ----- | 1. Supply a Monoscope signal to a Video Input. 2. Activate the Adjust Mode, VC Function. 3. Adjust Item "1 SBRT" so the 0% and 10% black levels on the gradation scale are the same. 4. Press ENTER to save data. 7. Exit the Service Mode. | | | | | | | | | | | | |
| Test Point | ----- | | | | | | | | | | | | | |
| Ext. Trigger | ----- | | | | | | | | | | | | | |
| Measuring Range | ----- | | | | | | | | | | | | | |
| Input Signal | Monoscope | | | | | | | | | | | | | |
| Input Terminal | Video Input | | | | | | | | | | | | | |
| CIRCUIT ADJUST MODE Activate MENU-2-4-5-7 FunctionAUDIO Item No.VIDEO Adjust DataADJUST Save DataENTER ExitMENU (twice) | | <table border="1"> <tr><td>40%</td><td>30%</td><td>20%</td><td>10%</td></tr> <tr><td>50%</td><td>0%</td><td>0%</td><td>0%</td></tr> <tr><td>60%</td><td>70%</td><td>80%</td><td>90%</td></tr> </table>  | 40% | 30% | 20% | 10% | 50% | 0% | 0% | 0% | 60% | 70% | 80% | 90% |
| 40% | 30% | 20% | 10% | | | | | | | | | | | |
| 50% | 0% | 0% | 0% | | | | | | | | | | | |
| 60% | 70% | 80% | 90% | | | | | | | | | | | |

| [Video Circuit] 8. Sub Contrast | | Purpose To set overall beam current to its' optimum level. Symptom: Excess or insufficient contrast. | | | | | | |
|---|-------------------------|--|-------|---------|---------------------|----------|------------------|----------|
| Measuring Instrument | DC ma meter | Note: Activate the Stretch mode for this alignment. 1. Supply a Grayscale signal to a RF Input. 2. Activate the Adjust Mode, CRT-VC Function. 3. Select Item "2 SCT", signal level automatically reduces. 4. Connect a 3ma DC meter between DT connector pins 7 and 8 . Positive lead to pin 7. 5. Adjust Item "2 SCT" to the values given in the Table below. | | | | | | |
| Test Point | DT connector pins 7 & 8 | | | | | | | |
| Ext. Trigger | ----- | | | | | | | |
| Measuring Range | ----- | | | | | | | |
| Input Signal | Grayscale | | | | | | | |
| Input Terminal | RF Input | | | | | | | |
| CIRCUIT ADJUST MODE Activate MENU-2-4-5-7 FunctionAUDIO Item No.VIDEO Adjust DataADJUST Save DataENTER ExitMENU (twice) | | <table border="1"> <thead> <tr> <th>MODEL</th><th>CURRENT</th></tr> </thead> <tbody> <tr><td>WS-65815 & WS-73615</td><td>525 ±5ua</td></tr> <tr><td>All Other Models</td><td>480 ±5ua</td></tr> </tbody> </table> <ol style="list-style-type: none"> Remove the meter. Save data and Exit the Service Mode.  | MODEL | CURRENT | WS-65815 & WS-73615 | 525 ±5ua | All Other Models | 480 ±5ua |
| MODEL | CURRENT | | | | | | | |
| WS-65815 & WS-73615 | 525 ±5ua | | | | | | | |
| All Other Models | 480 ±5ua | | | | | | | |

| | | |
|--|-------------|--|
| [Focus Circuit] 9. Dynamic Focus Preset | | Purpose: To improve edge focus. Symptom: Poor focus at the edges of the screen. |
| Measuring Instrument | ----- | |
| Test Point | ----- | |
| Ext. Trigger | ----- | |
| Measuring Range | ----- | |
| Input Signal | Monoscope | |
| Input Terminal | Video Input | |

CONVERGENCE MODE

ActivateMENU-2-4-5-9
 Misc."6"
 Coarse....."5"
 Fine"4"
 Color (R,G or B).....AUDIO
 Item No.....VIDEO
 Adjust/Move.....ADJUST
 Cursor Toggle.....ENTER
 Save & Exit.....MENU (twice)

DF
(MENU-2-4-5-9-5)

| Item | Abbr. | Function | Data | | | |
|------|-------|--------------------------|----------|----------|----------|----------|
| 1 | DFH | Dynamic Focus Horizontal | WS-48515 | WS-55615 | WS-55815 | WS-65515 |
| 2 | DFV | Dynamic Focus Vertical | WS-55515 | WS-65615 | WS-65815 | WS-73615 |
| | | | -375 | 200 | -450 | 200 |

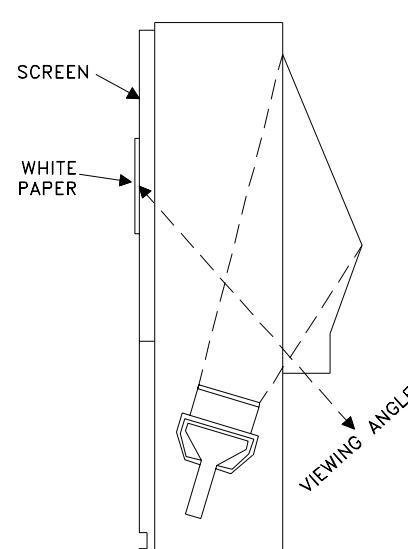
| | | |
|---|-------------|--|
| [Video Circuit] 10. Lens Focus | | Purpose To set the Lens position for optimum focus. Symptom: Poor focus |
| Measuring Instrument | ----- | |
| Test Point | ----- | |
| Ext. Trigger | ----- | |
| Measuring Range | ----- | |
| Input Signal | Monoscope | |
| Input Terminal | Video Input | |

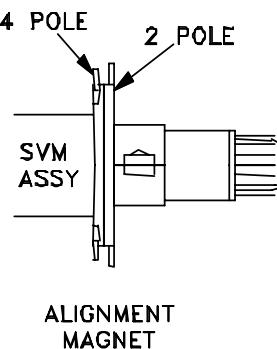
Note: This adjustment must be done before Electrostatic Focus. Perform this adjustment for RED, GREEN, and BLUE monochrome pictures.

- Supply a VIDEO signal (Monoscope).
- Cover the Red and Blue Lens (producing a green raster).
- Adjust the Green Lens for best focus at the center of the Monoscope pattern.

Note: Attach a white paper to the screen center. During adjustment, observe the picture on the screen from inside for easier adjustment.

- Repeat Steps 2 and 3 for the Red and Blue monochrome pictures.

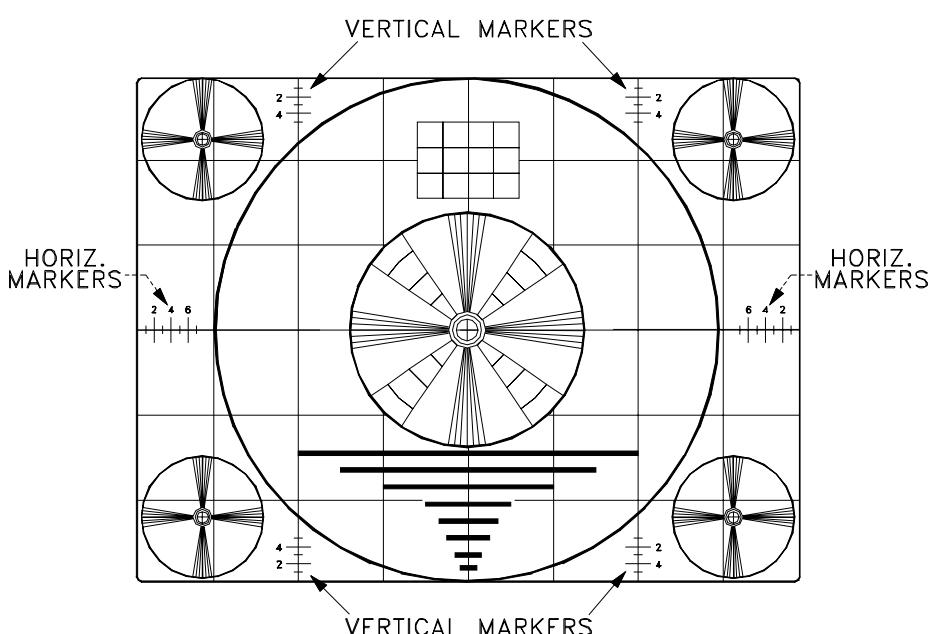


| [CRT Circuit] | | Purpose: To set electrostatic focus to the optimum point. Symptom: Poor focus. | | | | | | | | | |
|--|-----------------------|--|--|--------------|-----------------|-----|----------------|-------|----------------|------|----------------|
| 11. Electrostatic Focus & (Alignment Magnet) | | | | | | | | | | | |
| Measuring Instrument | ----- | Note: This adjustment must be performed after the Sub Contrast adjustment. | | | | | | | | | |
| Test Point | ----- | Alignment Magnet Adjustment This adjustment must be performed before Static Focus Adjustment | | | | | | | | | |
| Ext. Trigger | ----- | <ol style="list-style-type: none"> Supply a Crosshatch with Center Dot signal to a Video Input. Set the display format to Standard (Format button) Select a Green raster using the table below. Roughly adjust Green Focus VR. Rotate Green Focus VR CCW so the center dot is about 10mm diameter. Adjust the Green 4 Pole Magnet for the roundest center dot. Set the Green Focus VR for optimum focus. Repeat the procedure with a Red raster and adjust the Red 4 Pole Magnet. Use silicon to lock the magnets in place. | | | | | | | | | |
| Measuring Range | ----- | | | | | | | | | | |
| Input Signal | Monscope & Crosshatch | | | | | | | | | | |
| Input Terminal | Video Input | | | | | | | | | | |
|  | | Static Focus Adjustment (All Models) <ol style="list-style-type: none"> Supply a Monoscope signal to a Video Input Activate A/V Reset Select Red, Green or Blue rasters using the table below. Set the Red, Green and Blue Focus VRs for optimum focus in the center of the picture. <table border="1"> <thead> <tr> <th>Color Raster</th> <th>Activation Code</th> </tr> </thead> <tbody> <tr> <td>Red</td> <td>MENU-2-4-5-9-1</td> </tr> <tr> <td>Green</td> <td>MENU-2-4-5-9-2</td> </tr> <tr> <td>Blue</td> <td>MENU-2-4-5-9-3</td> </tr> </tbody> </table> | | Color Raster | Activation Code | Red | MENU-2-4-5-9-1 | Green | MENU-2-4-5-9-2 | Blue | MENU-2-4-5-9-3 |
| Color Raster | Activation Code | | | | | | | | | | |
| Red | MENU-2-4-5-9-1 | | | | | | | | | | |
| Green | MENU-2-4-5-9-2 | | | | | | | | | | |
| Blue | MENU-2-4-5-9-3 | | | | | | | | | | |

| | | |
|------------------------------|--|--|
| [On Screen Display] | | Purpose To position the character display horizontally. |
| 12.Character Position | | Symptom: Incorrect display position |
| Measuring Instrument | | |
| Test Point | | |
| Ext. Trigger | | |
| Measuring Range | | |
| Input Signal | | |
| Input Terminal | | |
| | | <ol style="list-style-type: none"> Supply an NTSC signal to Ant-1 and select Ant-1 as the source. Enter the OSD Position Mode, press "MENU-2-4-8-8". Adjust "OSDSD" to center the OSD horizontally. Press "MENU" to save data and exit the mode. |

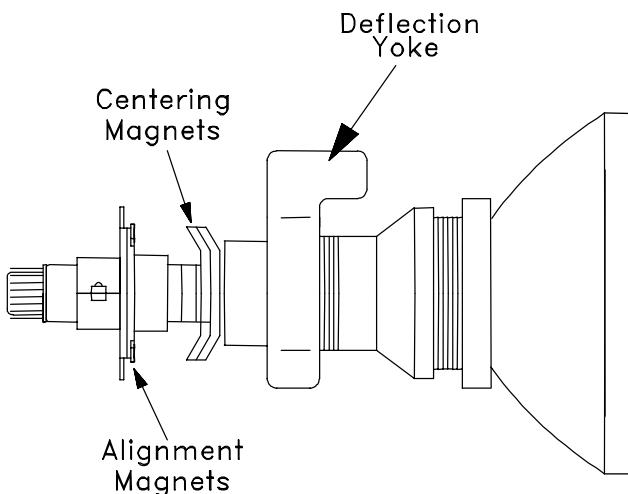
MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 /WS-65815 / WS-73615

| [Conv/Defl] 13. Geometry Preset | | Purpose: To preset data controlling raster geometry Symptom: Raster distortion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------|--|-----------------|-------------|-------------|----------|----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------|----------|----------|----------|----|-----|------|----|----|----|----|----|----|----|----|----|-------|---------------------|-----|-----|-----|-----|-----|------|-----|-----|------|------|------|------|----|-------|-------------------|----|----|----|---|------|------|----|----|----|----|----|----|----|------|------------------------|----|----|----|---|------|------|----|----|----|----|----|----|----|------|------------------------|----|----|----|---|------|------|---|---|---|---|---|---|---|------|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|---|------|----------------------|----|----|-----|-----|-------|------|----|----|----|----|----|----|----|------|------------------------------|------|------|-----|-----|------|------|------|-----|------|------|------|------|---|------|---------------------|---|---|----|----|---|---|---|---|---|---|---|---|---|------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|----|------|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|------|--------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Measuring Instrument Test Point Ext. Trigger Measuring Range Input Signal Input Terminal | | Procedure In the Circuit Adjustment and Coarse Convergence Modes pre-set the data to the values given in the Tables below. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | CRT-JNGL Function (Jungle) <table border="1"> <thead> <tr> <th colspan="2">Display</th> <th colspan="2">Data Range</th> <th colspan="2">WS-48515</th> <th colspan="2">WS-55515</th> <th colspan="2">WS-55815 WS-55615</th> <th colspan="2">WS-65515 WS-65615</th> <th colspan="2">WS-73615</th> <th colspan="2">WS-65815</th> </tr> <tr> <th>No.</th> <th>Item</th> <th>SD</th> <th>HD</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>HWD</td> <td>0-63</td> <td>32</td> <td>31</td> <td>29</td> <td>30</td> <td>21</td> <td>21</td> <td>26</td> <td>26</td> <td>28</td> <td>28</td> <td>25</td> <td>25</td> </tr> <tr> <td>2</td> <td>HKEY</td> <td>0-63</td> <td>24</td> <td>25</td> <td>24</td> <td>25</td> <td>24</td> <td>25</td> <td>24</td> <td>25</td> <td>24</td> <td>25</td> <td>24</td> <td>25</td> </tr> <tr> <td>7</td> <td>VHGT</td> <td>0-63</td> <td>27</td> <td>30</td> <td>25</td> <td>21</td> <td>21</td> <td>25</td> <td>33</td> <td>38</td> <td>38</td> <td>41</td> <td>28</td> <td>31</td> </tr> <tr> <td>8</td> <td>VLIN</td> <td>0-15</td> <td>6</td> <td>6</td> <td>4</td> <td>4</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> </tr> <tr> <td>9</td> <td>VSCN</td> <td>0-15</td> <td>0</td> </tr> <tr> <td>13</td> <td>H-POS</td> <td>0-63</td> <td>23</td> <td>24</td> <td>23</td> <td>24</td> <td>23</td> <td>24</td> <td>23</td> <td>24</td> <td>23</td> <td>24</td> <td>23</td> <td>24</td> </tr> <tr> <td>36</td> <td>PINA</td> <td>0-63</td> <td>3</td> <td>3</td> <td>10</td> <td>8</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | Display | | Data Range | | WS-48515 | | WS-55515 | | WS-55815 WS-55615 | | WS-65515 WS-65615 | | WS-73615 | | WS-65815 | | No. | Item | SD | HD | SD | HD | SD | HD | 1 | HWD | 0-63 | 32 | 31 | 29 | 30 | 21 | 21 | 26 | 26 | 28 | 28 | 25 | 25 | 2 | HKEY | 0-63 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | 7 | VHGT | 0-63 | 27 | 30 | 25 | 21 | 21 | 25 | 33 | 38 | 38 | 41 | 28 | 31 | 8 | VLIN | 0-15 | 6 | 6 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 9 | VSCN | 0-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | H-POS | 0-63 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | 36 | PINA | 0-63 | 3 | 3 | 10 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Display | | Data Range | | WS-48515 | | WS-55515 | | WS-55815 WS-55615 | | WS-65515 WS-65615 | | WS-73615 | | WS-65815 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. | Item | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | HWD | 0-63 | 32 | 31 | 29 | 30 | 21 | 21 | 26 | 26 | 28 | 28 | 25 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | HKEY | 0-63 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | 24 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | VHGT | 0-63 | 27 | 30 | 25 | 21 | 21 | 25 | 33 | 38 | 38 | 41 | 28 | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | VLIN | 0-15 | 6 | 6 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | VSCN | 0-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | H-POS | 0-63 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | 23 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | PINA | 0-63 | 3 | 3 | 10 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONV GREEN Items (MENU-24-5-9-5) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th rowspan="2">No.</th> <th rowspan="2">Abbrev. Name</th> <th rowspan="2">Description</th> <th colspan="2">WS-48515</th> <th colspan="2">WS-55515</th> <th colspan="2">WS-55615 WS-55815</th> <th colspan="2">WS-65515 WS-65615</th> <th colspan="2">WS-65815</th> <th colspan="2">WS-73615</th> </tr> <tr> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>HSTA*</td> <td>Horizontal Position</td> <td>0</td> </tr> <tr> <td>2</td> <td>VSTA*</td> <td>Vertical Position</td> <td>0</td> </tr> <tr> <td>3</td> <td>SKEW</td> <td>Skew (Y axis rotation)</td> <td>0</td> </tr> <tr> <td>4</td> <td>TILT</td> <td>Tilt (X axis rotation)</td> <td>0</td> </tr> <tr> <td>5</td> <td>HWD</td> <td>Horizontal Width</td> <td>20</td> </tr> <tr> <td>6</td> <td>HLIN</td> <td>Horizontal Linearity</td> <td>12</td> <td>12</td> <td>0</td> <td>0</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> </tr> <tr> <td>7</td> <td>SPCC</td> <td>Side Fln Cushion Correction</td> <td>0</td> </tr> <tr> <td>8</td> <td>HKEY</td> <td>Horizontal Keystone</td> <td>0</td> <td>0</td> <td>10</td> <td>10</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>9</td> <td>TBPC</td> <td>Top/Bottom PC Correction</td> <td>-180</td> <td>-150</td> <td>-110</td> <td>-110</td> <td>-195</td> <td>-180</td> <td>-200</td> <td>-170</td> <td>-210</td> <td>-180</td> <td>-210</td> <td>-180</td> </tr> <tr> <td>10</td> <td>VKEY</td> <td>Vertical Keystone</td> <td>0</td> <td>0</td> <td>15</td> <td>10</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>11</td> <td>VWD</td> <td>Vertical Height</td> <td>0</td> </tr> <tr> <td>12</td> <td>VLIN</td> <td>Vertical Linearity</td> <td>0</td> </tr> </tbody> </table> | | No. | Abbrev. Name | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | 1 | HSTA* | Horizontal Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | VSTA* | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | TILT | Tilt (X axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | HWD | Horizontal Width | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 6 | HLIN | Horizontal Linearity | 12 | 12 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 7 | SPCC | Side Fln Cushion Correction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | HKEY | Horizontal Keystone | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | TBPC | Top/Bottom PC Correction | -180 | -150 | -110 | -110 | -195 | -180 | -200 | -170 | -210 | -180 | -210 | -180 | 10 | VKEY | Vertical Keystone | 0 | 0 | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | VWD | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. | Abbrev. Name | | | | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | SD | HD | SD | | HD | SD | HD | SD | HD | SD | HD | SD | HD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | HSTA* | Horizontal Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | VSTA* | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | TILT | Tilt (X axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | HWD | Horizontal Width | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | HLIN | Horizontal Linearity | 12 | 12 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | SPCC | Side Fln Cushion Correction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | HKEY | Horizontal Keystone | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | TBPC | Top/Bottom PC Correction | -180 | -150 | -110 | -110 | -195 | -180 | -200 | -170 | -210 | -180 | -210 | -180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | VKEY | Vertical Keystone | 0 | 0 | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | VWD | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONV RED Items (MENU-24-5-9-5) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th rowspan="2">No.</th> <th rowspan="2">Abbrev. Name</th> <th rowspan="2">Description</th> <th colspan="2">WS-48515</th> <th colspan="2">WS-55515</th> <th colspan="2">WS-55615 WS-55815</th> <th colspan="2">WS-65515 WS-65615</th> <th colspan="2">WS-65815</th> <th colspan="2">WS-73615</th> </tr> <tr> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>HSTA</td> <td>Horizontal Position</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>100</td> <td>100</td> <td>10</td> <td>100</td> </tr> <tr> <td>2</td> <td>VSTA</td> <td>Vertical Position</td> <td>0</td> </tr> <tr> <td>3</td> <td>SKEW</td> <td>Skew (Y axis rotation)</td> <td>0</td> </tr> <tr> <td>4</td> <td>TILT</td> <td>Tilt (X axis rotation)</td> <td>0</td> </tr> <tr> <td>5</td> <td>HLIN</td> <td>Horizontal Linearity</td> <td>-210</td> <td>-190</td> <td>-165</td> <td>-165</td> <td>-210</td> <td>-150</td> <td>-180</td> <td>-160</td> <td>-230</td> <td>-210</td> <td>-230</td> <td>-210</td> </tr> <tr> <td>6</td> <td>HWD</td> <td>Horizontal Width</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>10</td> <td>10</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>7</td> <td>VKEY</td> <td>Vertical Keystone Correction</td> <td>-140</td> <td>-120</td> <td>-85</td> <td>-85</td> <td>-100</td> <td>-100</td> <td>-100</td> <td>-90</td> <td>-170</td> <td>-140</td> <td>-140</td> <td>-110</td> </tr> <tr> <td>8</td> <td>VWD</td> <td>Vertical Height</td> <td>0</td> </tr> <tr> <td>9</td> <td>VLIN</td> <td>Vertical Linearity</td> <td>0</td> </tr> <tr> <td>10</td> <td>TPPC</td> <td>Top/Bottom PC Correction</td> <td>20</td> <td>20</td> <td>30</td> <td>30</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> </tr> <tr> <td>11</td> <td>SDBW</td> <td>Horizontal Side Bow</td> <td>30</td> <td>30</td> <td>20</td> <td>30</td> <td>30</td> <td>30</td> <td>30</td> <td>30</td> <td>30</td> <td>30</td> <td>30</td> <td>30</td> </tr> </tbody> </table> | | No. | Abbrev. Name | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | 1 | HSTA | Horizontal Position | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 100 | 100 | 10 | 100 | 2 | VSTA | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | TILT | Tilt (X axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | HLIN | Horizontal Linearity | -210 | -190 | -165 | -165 | -210 | -150 | -180 | -160 | -230 | -210 | -230 | -210 | 6 | HWD | Horizontal Width | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | VKEY | Vertical Keystone Correction | -140 | -120 | -85 | -85 | -100 | -100 | -100 | -90 | -170 | -140 | -140 | -110 | 8 | VWD | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | TPPC | Top/Bottom PC Correction | 20 | 20 | 30 | 30 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 11 | SDBW | Horizontal Side Bow | 30 | 30 | 20 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | | | | | | | | | | | | | | |
| No. | Abbrev. Name | | | | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | SD | HD | SD | | HD | SD | HD | SD | HD | SD | HD | SD | HD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | HSTA | Horizontal Position | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 100 | 100 | 10 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | VSTA | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | TILT | Tilt (X axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | HLIN | Horizontal Linearity | -210 | -190 | -165 | -165 | -210 | -150 | -180 | -160 | -230 | -210 | -230 | -210 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | HWD | Horizontal Width | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | VKEY | Vertical Keystone Correction | -140 | -120 | -85 | -85 | -100 | -100 | -100 | -90 | -170 | -140 | -140 | -110 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | VWD | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | TPPC | Top/Bottom PC Correction | 20 | 20 | 30 | 30 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | SDBW | Horizontal Side Bow | 30 | 30 | 20 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONV BLUE Items (MENU-24-5-9-5) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th rowspan="2">No.</th> <th rowspan="2">Abbrev. Name</th> <th rowspan="2">Description</th> <th colspan="2">WS-48515</th> <th colspan="2">WS-55515</th> <th colspan="2">WS-55615 WS-55815</th> <th colspan="2">WS-65515 WS-65615</th> <th colspan="2">WS-65815</th> <th colspan="2">WS-73615</th> </tr> <tr> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> <th>SD</th> <th>HD</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>HSTA</td> <td>Horizontal Position</td> <td>-50</td> <td>-50</td> <td>-50</td> <td>-50</td> <td>-50</td> <td>-50</td> <td>-50</td> <td>-50</td> <td>-100</td> <td>-100</td> <td>-100</td> <td>-100</td> </tr> <tr> <td>2</td> <td>VSTA</td> <td>Vertical Position</td> <td>0</td> </tr> <tr> <td>3</td> <td>SKEW</td> <td>Skew (Y axis rotation)</td> <td>0</td> </tr> <tr> <td>4</td> <td>TILT</td> <td>Tilt (X axis rotation)</td> <td>0</td> </tr> <tr> <td>5</td> <td>HLIN</td> <td>Horizontal Linearity</td> <td>210</td> <td>190</td> <td>165</td> <td>165</td> <td>180</td> <td>180</td> <td>180</td> <td>160</td> <td>250</td> <td>220</td> <td>230</td> <td>200</td> </tr> <tr> <td>6</td> <td>HWD</td> <td>Horizontal Width</td> <td>0</td> <td>0</td> <td>-20</td> <td>-20</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>7</td> <td>VKEY</td> <td>Vertical Keystone Correction</td> <td>110</td> <td>100</td> <td>85</td> <td>85</td> <td>100</td> <td>100</td> <td>100</td> <td>70</td> <td>70</td> <td>90</td> <td>70</td> <td>90</td> </tr> <tr> <td>8</td> <td>VWD</td> <td>Vertical Height</td> <td>0</td> </tr> <tr> <td>9</td> <td>VLIN</td> <td>Vertical Linearity</td> <td>0</td> </tr> <tr> <td>10</td> <td>TPPC</td> <td>Top/Bottom PC Correction</td> <td>-20</td> </tr> <tr> <td>11</td> <td>HSBW</td> <td>Horizontal Side Bow</td> <td>-30</td> </tr> </tbody> </table> | | No. | Abbrev. Name | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | SD | HD | 1 | HSTA | Horizontal Position | -50 | -50 | -50 | -50 | -50 | -50 | -50 | -50 | -100 | -100 | -100 | -100 | 2 | VSTA | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | TILT | Tilt (X axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | HLIN | Horizontal Linearity | 210 | 190 | 165 | 165 | 180 | 180 | 180 | 160 | 250 | 220 | 230 | 200 | 6 | HWD | Horizontal Width | 0 | 0 | -20 | -20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | VKEY | Vertical Keystone Correction | 110 | 100 | 85 | 85 | 100 | 100 | 100 | 70 | 70 | 90 | 70 | 90 | 8 | VWD | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | TPPC | Top/Bottom PC Correction | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | 11 | HSBW | Horizontal Side Bow | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | | | | | | | | | | | | | | | |
| No. | Abbrev. Name | | | | Description | WS-48515 | | WS-55515 | | WS-55615 WS-55815 | | WS-65515 WS-65615 | | WS-65815 | | WS-73615 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | SD | HD | SD | | HD | SD | HD | SD | HD | SD | HD | SD | HD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | HSTA | Horizontal Position | -50 | -50 | -50 | -50 | -50 | -50 | -50 | -50 | -100 | -100 | -100 | -100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | VSTA | Vertical Position | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | SKEW | Skew (Y axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | TILT | Tilt (X axis rotation) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | HLIN | Horizontal Linearity | 210 | 190 | 165 | 165 | 180 | 180 | 180 | 160 | 250 | 220 | 230 | 200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | HWD | Horizontal Width | 0 | 0 | -20 | -20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | VKEY | Vertical Keystone Correction | 110 | 100 | 85 | 85 | 100 | 100 | 100 | 70 | 70 | 90 | 70 | 90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | VWD | Vertical Height | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | VLIN | Vertical Linearity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | TPPC | Top/Bottom PC Correction | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | HSBW | Horizontal Side Bow | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CIRCUIT ADJUST MODE <ul style="list-style-type: none"> Activate MENU-2-4-5-7 FunctionAUDIO Item No.VIDEO Adjust DataADJUST Save DataENTER ExitMENU (twice) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONVERGENCE MODE <ul style="list-style-type: none"> ActivateMENU-2-4-5-9 Misc."6" Coarse"5" Fine"4" Color (R,G or B).....AUDIO Item No.VIDEO Adjust/Move.....ADJUST Cursor Toggle.....ENTER Save & Exit....MENU (twice) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|---|--------------------------|---|
| [Deflection Circuit] 14: Deflection Geometry Height & Width Adjustment | | Purpose: To set the height, width and linearity of the raster. Symptom: Incorrect height, width and/or linearity. |
| Measuring Instrument | ----- | Note: Always use the <i>Standard Format</i> when aligning Geometry and Convergence. |
| Test Point | ----- | |
| Ext. Trigger | ----- | |
| Measuring Range | ----- | |
| Input Signal | Monoscope (NTSC & HD) | Preliminary: 1. <u>DO NOT</u> change the initial values for "#8 VLIN" in the CRT-JUNGLE Function. 2. <u>DO NOT</u> exceed the following VHGT adjustment ranges: NTSC ... from -4 to +10 HD ... from -10 TO +5 |
| Input Terminal | Video & Component Inputs | |
| CIRCUIT ADJUST MODE Activate MENU-2-4-5-7 FunctionAUDIO Item No.VIDEO Adjust DataADJUST Save DataENTER ExitMENU (twice) | | NTSC Mode 1. Supply an NTSC Monoscope signal to a Video Input. 2. Select the Monoscope as the signal source. 3. Activate the Adjustment Mode, CRT-JNGL Function. 4. Select and adjust each of the following items. • "7 VHGT" ... so the vertical marker sum = 4 • "1 HWD" ... so the horizontal marker sum = 7 5. Save data and Exit the Service Mode. |
| | | HD Mode 1. Supply an HD Monoscope signal to the Component HD Inputs. 2. Select the Component Inputs as the signal source (Input button) 3. Activate the Service Mode, CRT-JNGL Function. 4. Select and adjust each of the following items. • "7 VHGT" ... so the vertical marker sum = 2 • "1 HWD" ... so the horizontal marker sum = 5 5. Save data and Exit the Service Mode. |
|  | | |

| | | | |
|--|-------------------------------|--|----------------|
| [Convergence Circuit] 15. Convergence Geometry Adjustment | | Purpose: To set the Convergence circuit geometry adjustments. Symptom: Raster distortion at the top, bottom or sides of the picture. | |
| Measuring Instrument | ---- | | |
| Test Point | ----- | | |
| Ext. Trigger | ----- | | |
| Measuring Range | ---- | | |
| Input Signal | NTSC -- None HD -- HD sync | | |
| Input Terminal | Video & Component Inputs | | |
| | | Note: <i>Deflection Circuit Geometry must be performed before this adjustment.</i> Note: Always use the <i>Standard Format</i> when aligning Geometry and Convergence. NTSC mode 1. Select a Video Input with no signal. 2. Activate the Convergence Mode, Coarse Green. 3. Adjust the Coarse Green Items shown below for straight crosshatch lines. 4. Select the Fine Green Mode, a Cursor is displayed on the crosshatch. 5. Use the Cursor to adjust for straight crosshatch lines. 6. Exit the Convergence Mode. HD mode 1. Supply horizontal and vertical HD sync to the Components Input and select the Component Inputs as the source. 2. Repeat NTSC Steps 3 through 6 from NTSC mode above in HD mode. | |
| CONVERGENCE MODE ActivateMENU-2-4-5-9 Misc."6" Coarse....."5" Fine"4" Color (R,G or B).....AUDIO Item No.....VIDEO Adjust/Move.....ADJUST Cursor Toggle.....ENTER Save & Exit.....MENU (twice) | | | |
| COARSE GREEN ADJUSTMENTS | | | |
| 3 SKEW | 4 TILT | 6 HLIN | 7 SPCC |
| | | | |
| 8 HKEY | 9 TBPC | 10 VKEY | 12 VLIN |
| | | | |

| | | | | | | | | | | | |
|---|--------------------------------------|---|--------------|------------|-------------|----------|-----------|------------|----------|----------|----------|
| [Convergence Circuit] 16. Centering and Static Convergence | | Purpose: To converge red, green and blue at the center of the screen Symptom: Color edging over the entire picture. | | | | | | | | | |
| Measuring Instrument | ----- | Preliminary Degauss the shield cover and bracket unit of the CRT assembly and chassis. DO NOT degauss the CPM Assemblies. | | | | | | | | | |
| Test Point | ----- | CAUTION: Do Not adjust the Alignment Magnets instead of the Centering Magnets. | | | | | | | | | |
| Ext. Trigger | ----- | | | | | | | | | | |
| Measuring Range | ----- | NOTE: Confirm that Item #13 HPOS, in the CRT-JNGL function of the MENU-2-4-5-7 Adjustment mode is set to the following values: HD=34 SD=23 | | | | | | | | | |
| Input Signal | NTSC -- Monoscope HD -- Monoscope | HD mode (The following steps must be performed in the HD mode) 1. Supply an HD Monoscope signal to the Component Input. 2. Select the Component Input as the signal source (Input button). 3. Enter the Convergence Coarse mode. 4. Set the data for the "HSTA" and "VSTA" items to: <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">GREEN</td> <td style="text-align: center;">RED</td> <td style="text-align: center;">BLUE</td> </tr> <tr> <td style="text-align: center;">HSTS = 0</td> <td style="text-align: center;">HSTA = 50</td> <td style="text-align: center;">HSTA = -50</td> </tr> <tr> <td style="text-align: center;">VSTA = 0</td> <td style="text-align: center;">VSTA = 0</td> <td style="text-align: center;">VSTA = 0</td> </tr> </table> 5. In the Coarse Green mode: <ul style="list-style-type: none"> • Center the Green Raster using the Green Centering Magnet. • Rotate the Green Deflection Yoke to correct any tilt. 6. In the Coarse Red mode, use the Red Centering Magnet to converge red on the green at the center of screen. Correct any red tilt with the Red Deflection Yoke. 7. In the Coarse Blue mode, repeat Step 6 using the Blue Centering magnet and the Blue Deflection Yoke. 8. Exit the Convergence mode. | GREEN | RED | BLUE | HSTS = 0 | HSTA = 50 | HSTA = -50 | VSTA = 0 | VSTA = 0 | VSTA = 0 |
| GREEN | RED | BLUE | | | | | | | | | |
| HSTS = 0 | HSTA = 50 | HSTA = -50 | | | | | | | | | |
| VSTA = 0 | VSTA = 0 | VSTA = 0 | | | | | | | | | |
| Input Terminal | Video & Component Inputs | SD mode 1. Supply an NTSC Monoscope signal to a Video Input. 2. Select the Monoscope as the signal source (Input button). 3. Enter the Convergence Coarse Green mode. 4. Confirm that the Green Raster is centered. | | | | | | | | | |



| | | | |
|--|-------------------------------|--|---------------|
| [Convergence Circuit] 17. Coarse Convergence | | Purpose: To converge red and blue on green at the edges of the screen. Symptom: Color edging at the top, bottom and sides of the screen. | |
| Measuring Instrument | ---- | | |
| Test Point | ----- | | |
| Ext. Trigger | ----- | | |
| Measuring Range | ----- | | |
| Input Signal | NTSC -- None HD -- HD sync | | |
| Input Terminal | Video & Component Input | | |
| CONVERGENCE MODE ActivateMENU-2-4-5-9 Misc."6" Coarse....."5" Fine"4" Color (R,G or B).....AUDIO Item No.....VIDEO Adjust/Move.....ADJUST Cursor Toggle.....ENTER Save & Exit.....MENU (twice) | | Note: Always use the <i>Standard Format</i> when aligning Geometry and Convergence. SD mode 1. Select an External Input with no signal. 2. Activate the Convergence Mode, Coarse Red. 3. Adjust the Items shown below to converge the red on the green. 4. Select Coarse Blue mode. 5. Adjust the Items shown below to converge the blue on the green. Note: If center convergence shifts, use red and blue Items "0 HSTA" and "1 VSTA" to correct the shift. 6. Exit the Convergence Mode. HD mode 1. Supply horizontal and vertical HD sync to the Component Input and select the Component Input as the source. 2. Repeat SD Steps 2 through 5 in the From the SD mode in HD mode. 3. Exit the Convergence mode. | |
| COARSE CONVERGENCE RED & BLUE ADJUSTMENTS | | | |
| 1 HSTA* | 2 VSTA* | 3 SKEW | 4 TILT |
| | | | |
| 5 HLIN | 6 HWID | 7 VKEY | 8 VVID |
| | | | |
| 9 VLIN | 10 TBPC | 11 HSBW | |
| | | | |
| * Data should not exceed ±100 | | | |

| | | |
|--|-------------------------------|--|
| [Convergence Circuit] | | Purpose: To converge red, green and blue at the edges of the screen Symptom: Color edging at the edges of the picture. |
| 18. Fine Convergence | | |
| Measuring Instrument | ----- | |
| Test Point | ----- | |
| Ext. Trigger | ----- | |
| Measuring Range | ----- | |
| Input Signal | NTSC -- None HD -- HD sync | |
| Input Terminal | Video & Component Input | |
| CONVERGENCE MODE ActivateMENU-2-4-5-9 Misc."6" Coarse....."5" Fine"4" Color (R,G or B).....AUDIO Item No.....VIDEO Adjust/Move.....ADJUST Cursor Toggle.....ENTER Save & Exit.....MENU (twice) | | Note: Always use the <i>Standard Format</i> when aligning Geometry and Convergence. SD Fine Adjustment <ol style="list-style-type: none"> 1. Select an External Input, no signal. 2. Activate the Convergence Mode, Fine Red. 3. Use the Cursor to converge red on the green. 4. Select the Fine Blue mode. 5. Use the Cursor to converge blue on the green. 6. Exit the Convergence mode. HD Fine Adjustment <ol style="list-style-type: none"> 1. Supply an HD signal (sync only) to the Component input and select Component Input as the input source. 2. Repeat SD Fine Adjustment Steps 2 through 6, in the HD mode. 3. Exit the Convergence mode. |

CHIP PARTS REPLACEMENT

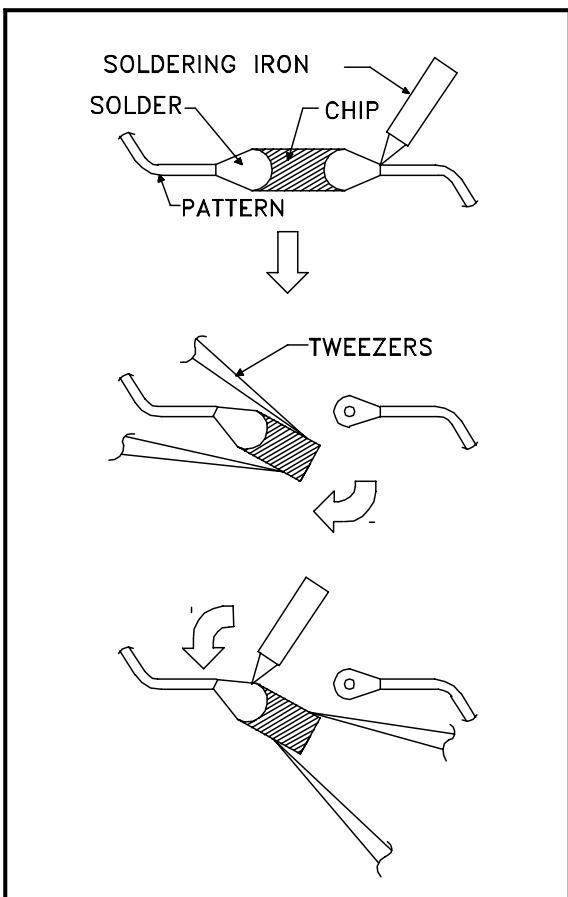
Some resistors, shorting jumpers (0 Ohm resistors), ceramic capacitors, transistors and diodes are chip parts. The following precautions should be taken when replacing these parts.

Cautions:

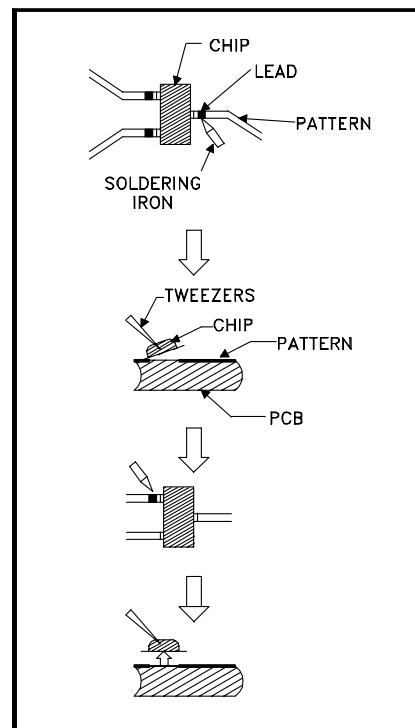
1. Use a fine tipped, well insulated soldering iron (approximately 30 watts), and tweezers.
2. Melt the solder and remove the chip parts carefully so as not to tear the copper foil from the printed circuit board.
3. Discard removed chips; do not reuse them.
4. Do not apply heat for more than 3 (three) seconds to new chip parts.
5. Avoid using a rubbing stroke when soldering.
6. Take care not to scratch, or damage the chip parts when soldering.
7. Supplementary cementing is not required.

Chip Parts Removal (Resistors, Capacitors, etc.)

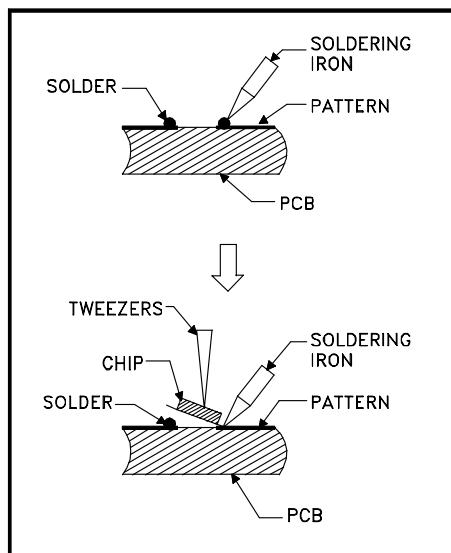
1. Grasp the part with tweezers. Melt the solder at both sides alternately, and remove one side of the part with a twisting motion.
2. Melt the solder at the other side and remove the part.


Chip Parts Removal (Transistors)

1. Melt the solder of one lead and lift the side of that lead upward.
2. Simultaneously melt the solder of the other two leads and lift the part from the PCB.


Replacement

1. Presolder the contact points on the circuit pattern.
2. Press the part downward with tweezers and apply the soldering iron as shown.



REPLACEMENT PARTS

Parts Ordering

To expedite delivery of replacement parts orders, specify the following:

1. Model Number/Serial Number
2. Part Number and description
3. Quantity

Note: Unless complete information is supplied, delay in processing of orders will result.

Critical and Warranty Parts Designation

Critical Electrical Components are indicated in the parts data base and by **Bold Type** in the Parts List.

Parts Tolerance Codes

Refer to the following chart for tolerance characteristics of electrical components.

| MARK | B | C | D | F | G | J | K |
|-------------|-----------|------------|-----------|---------|---------|---------|----------|
| Tolerance % | ± 0.1 | ± 0.25 | ± 0.5 | ± 1 | ± 2 | ± 5 | ± 10 |

| MARK | M | N | V | X | Z | P | Q |
|-------------|----------|----------|----------|-------------|-------------|--------------|-------------|
| Tolerance % | ± 20 | ± 30 | ± 10 | + 40 -20 | + 80 -20 | + 100 - 0 | + 30 -10 |

| MARK | M | N | V | X | Z |
|----------------|-----------|------------|-----------|---------|---------|
| Tolerance (pF) | ± 0.1 | ± 0.25 | ± 0.5 | ± 1 | ± 2 |

QUICK REFERENCE FOR COMMON REPLACEMENT PARTS

CRT ASSEMBLIES

| MODEL | ASSY-CRT-RED | ASSY-CRT-GREEN | ASSY-CRT-BLUE |
|----------|--------------|----------------|---------------|
| WS-48515 | 251C227010 | 251C227020 | 251C227030 |
| WS-55515 | 251C227040 | 251C227050 | 251C227060 |
| WS-55615 | 251C228010 | 251C228020 | 251C228030 |
| WS-55815 | 251C228040 | 251C228050 | 251C228060 |
| WS-65515 | 251C228070 | 251C228080 | 251C228090 |
| WS-65615 | 251C330010 | 251C330020 | 251C330030 |
| WS-65815 | 251C227070 | 251C227080 | 251C227090 |
| WS-73615 | " | " | " |

REMOTE CONTROL

| | | |
|------------|---------------------------|--|
| 290P122010 | REMOTE-CONTROL - V25/V25+ | WS-48515 / WS-55515 / WS-55615 WS-65515 / WS-65615 / WS-73615 |
| 290P123010 | REMOTE-CONTROL - V25++ | WS-55815 / WS-65815 |

HIGH VOLTAGE / DEFLECTION COMPONENTS

| | | | |
|-------|------------|---------------------|--|
| Q5A31 | 261P122010 | HORIZ-OUT 2SC5778 | |
| Q5A51 | 261P142010 | HV-OUT 2SK2847 | |
| T5A51 | 334P288010 | TRANS-FLYBACK | |
| | 129P070020 | VR-FOCUS | |
| | 338P054010 | SVM COIL | WS-48515 / WS-55515 / WS-65515 |
| | 338P054020 | SVM COIL | WS-55615 / WS-55815 / WS-65615 WS-65815 / WS-73615 |
| | 330P294010 | DEFL-YOKE 840uH | WS-48515 / WS-55515 |
| | 330P294020 | DEFL-YOKE 720uH | WS-55615 / WS-55815 / WS-65515 / WS-65615 WS-65815 / WS-73615 |
| | 453B036010 | CAP-ANODE-LONG-RED | WS-48515 / WS-55515 / WS-55615 / WS-55815 WS-65515 / WS-65615 |
| | 453B036020 | CAP ANODE-LONG-G&B | " " " " " |
| | 453B036070 | CAP-ANODE-SHORT-RED | WS-65815 / WS-73615 |
| | 453B036080 | CAP ANODE-LONG-G&B | " " " |

MISCELLANEOUS

| MODEL | MIRROR | LENTICULAR SCREEN | FRESNEL LENS |
|----------|------------|-------------------|--------------|
| WS-48515 | 767D072040 | 491P138030 | 491P139020 |
| WS-55515 | 767D072050 | 491P180010 | 491P181010 |
| WS-55615 | 767D072030 | " | " |
| WS-55815 | 767D072060 | " | " |
| WS-65515 | 767D048090 | 491P182010 | 491P183010 |
| WS-65615 | " | " | " |
| WS-65815 | " | 491P182020 | 491P183020 |
| WS-73615 | 767C031020 | 491P185010 | 491P186010 |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|--------|------------|------------------------------|-----|--------|------------|--------------------------------|-----|
| | | TUBES | | | | | |
| | 251C227010 | ASSY-CRT-R(P16LZA00RFA) | a | IC7A00 | 276P087010 | IC-C-MOS - M306V7MG-086FP | |
| | 251C227020 | ASSY-CRT-GR(P16LZA00HHA) | a | IC7A02 | 270P706020 | IC - MAX823REUK | |
| | 251C227030 | ASSY-CRT-BL(P16LZA00BMB) | a | IC7D00 | 275P278010 | IC-C-MOS - TC74LVX14FT | |
| | 251C227040 | ASSY-CRT-R(P16MAC03RJA) | b | IC7D01 | 270P818020 | IC - CXA3506R | |
| | 251C227050 | ASSY-CRT-GR(P16MAC03HKA) | b | IC7DA1 | 267P176010 | HIC - AF-9412 | |
| | 251C227060 | ASSY-CRT-BL(P16MAC03BMB) | b | IC7DB0 | 271P072020 | IC - LD29150DT33 | |
| | 251C227070 | ASSY-CRT-R(P21LUB05RJA) | gh | IC7DC0 | 271P072040 | IC - LD29150DT18R | |
| | 251C227080 | ASSY-CRT-GR(P21LUB05HKA) | gh | IC7E01 | 275P894010 | IC-C-MOS - AD9883AKST-110 | |
| | 251C227090 | ASSY-CRT-BL(P21LUB05BMB) | gh | IC7EA0 | 275P663030 | IC-C-MOS - M4A3-32/32-5VC-48 | |
| | 251C228010 | ASSY-CRT-R(P16MAC03RJA) | c | IC7H00 | 276P106010 | IC-C-MOS - MB87M1823PFV-ES-BND | |
| | 251C228020 | ASSY-CRT-GR(P16MAC03HKA) | c | IC7K21 | 270P831010 | IC-C-MOS - OPA2350PA | |
| | 251C228030 | ASSY-CRT-BL(P16MAC03BMB) | c | IC7M00 | 276P091010 | IC-C-MOS - M12L64322A-6T | |
| | 251C228040 | ASSY-CRT-R(P16MAC03RJA) | d | IC7N00 | 270P997010 | IC-C-MOS - SM5301AS | |
| | 251C228050 | ASSY-CRT-GR(P16MAC03HKA) | d | IC7P01 | 275P943030 | IC-C-MOS - PIC18F252T-I/SO030 | |
| | 251C228060 | ASSY-CRT-BL(P16MAC03BMB) | d | IC7P02 | 271P023010 | IC - SN74CBTD1G125DBVR | |
| | 251C228070 | ASSY-CRT-R(P16MAC03RJA) | e | IC7P03 | 263P154010 | IC-C-MOS - SN74HC132DB | |
| | 251C228080 | ASSY-CRT-GR(P16MAC03HKA) | e | IC7Q01 | 275P533010 | IC-C-MOS - M24C64WM6T | |
| | 251C228090 | ASSY-CRT-BL(P16MAC03BMB) | e | IC8001 | 276P030020 | IC-C-MOS - 215H31AGA12 | |
| | 251C330010 | ASSY-CRT-R(P16MAC03RJA) | f | IC8002 | 270P706020 | IC - MAX823REUK | |
| | 251C330020 | ASSY-CRT-GR(P16MAC03HKA) | f | IC8003 | 276P064010 | IC-C-MOS - SN74LVC1G125DBVR | |
| | 251C330030 | ASSY-CRT-BL(P16MAC03BMB) | f | IC80E1 | 275P657050 | IC-C-MOS - 24LC256T-I/SN | |
| | | INTEGRATED CIRCUITS | | IC80E3 | 270P880010 | IC - 24LC64I/SN | |
| IC2000 | 276P090010 | IC-C-MOS - SiI9993 | | IC8101 | 271P033010 | IC - LP2996MRX | |
| IC2010 | 261P829010 | TR-CHIP - NDC7002N | | IC8102 | 276P029020 | IC-C-MOS - NT5DS16M16BT-5T | |
| IC2020 | 275P981010 | IC-C-MOS - 24LCS22AT/SN | | IC8103 | 276P029020 | IC-C-MOS - NT5DS16M16BT-5T | |
| IC2030 | 271P069010 | IC-C-MOS - CM1210-08MS | | IC8104 | 276P029020 | IC-C-MOS - NT5DS16M16BT-5T | dg |
| IC2040 | 271P072020 | IC - LD29150DT33 | | IC8105 | 276P029020 | IC-C-MOS - NT5DS16M16BT-5T | dg |
| IC2050 | 271P099010 | IC - LD29150PT50R | | IC81A1 | 270P991010 | IC - IRU3037CS | |
| IC2300 | 276P109010 | IC-C-MOS - CS4334-KS | | IC81A2 | 261P135010 | FET-HEX - IRF7313 | |
| IC2K01 | 271P061010 | IC - CXA2189Q | | IC81A3 | 270P879020 | IC - SC156615M-1.8.TR | |
| IC2L01 | 271P078010 | IC - MM1566AJBE | | IC81A4 | 270P992010 | IC - BA18BC0FP | |
| IC2L41 | 271P078010 | IC - MM1566AJBE | | IC81A5 | 270P879020 | IC - SC156615M-1.8.TR | |
| IC2M01 | 275P947010 | IC-C-MOS - UPD64083 | | IC81A6 | 270P037020 | IC - MIC29150-X.X BU | |
| IC2M02 | 272P379020 | IC - LM1881MX (NSC) | | IC81A7 | 270P999010 | IC - NJM2370R09 | |
| IC2N01 | 270P658030 | IC - CXA2019AQ/T4 | | IC81A8 | 271P081010 | IC - BA00CC0WFP | |
| IC2N41 | 270P703010 | IC - BA7657F | | IC8205 | 276P042010 | IC-C-MOS - MIC2544-1BM | |
| IC2P01 | 270P658030 | IC - CXA2019AQ/T4 | | IC8211 | 276P029020 | IC-C-MOS - NT5DS16M16BT-5T | |
| IC2P41 | 270P703010 | IC - BA7657F | | IC8212 | 276P029020 | IC-C-MOS - NT5DS16M16BT-5T | |
| IC2V00 | 275P733010 | IC-C-MOS - CXA2150AQ | | IC8280 | 275P955010 | IC-C-MOS - RTC-8564JE | |
| IC2V01 | 271P068010 | IC - LM324AD | | IC8301 | 275P677010 | IC-C-MOS - SN74LVC573APWR | |
| IC3002 | 276P109010 | IC-C-MOS - CS4334-KS | | IC8302 | 275P677010 | IC-C-MOS - SN74LVC573APWR | |
| IC3003 | 270P938010 | IC - MC33202D | | IC8303 | 275P677010 | IC-C-MOS - SN74LVC573APWR | |
| IC3004 | 275P731020 | IC-C-MOS - MSP3445G-QI-B8-V3 | | IC8305 | 275P956010 | IC-C-MOS - MD2811-D16-V3 | |
| IC3005 | 275P278010 | IC-C-MOS - TC74LVX14FT | | IC8307 | 275P983020 | IC-C-MOS - ST16C650ACQ48 | |
| IC3006 | 270P838010 | IC-C-MOS - NJM2520M | | IC8308 | 276P077010 | IC-C-MOS - ST013T | dg |
| IC3007 | 270P838010 | IC-C-MOS - NJM2520M | | IC8309 | 275P660020 | IC-C-MOS - CS4341-KSR | |
| IC3E01 | 270P750010 | IC - LA4663 | | IC8310 | 275P270010 | IC-C-MOS - M66010GP | |
| IC3J01 | 271P060010 | IC - CXA2188Q | | IC8311 | 275P769010 | IC-C-MOS - TC74AC157FT | dg |
| IC4B01 | 270P261020 | IC - TDA8177 | | IC8312 | 270P938010 | IC - MC33202D | |
| IC5A00 | 267P163010 | HIC - MSPAD401 | | IC8313 | 275P731020 | IC-C-MOS - MSP3445G-QI-B8-V3 | |
| IC5A01 | 271P068010 | IC - LM324AD | | IC8314 | 275P677010 | IC-C-MOS - SN74LVC573APWR | |
| IC5A02 | 271P067010 | IC - LM339AD | | IC8315 | 275P464010 | IC-C-MOS - TC7WH14FK | |
| IC5A03 | 270P704010 | IC - LM4040BIZ-10.0 | | IC8316 | 276P064010 | IC-C-MOS - SN74LVC1G125DBVR | dg |
| IC5A04 | 271P062010 | IC - BA9759F | | IC8401 | 275P624010 | IC-C-MOS - TSB42AA4 | |
| IC6B01 | 270P667010 | IC - TDA6120Q | | IC8402 | 275P686010 | IC-C-MOS - TSB41AB3PFP | |
| IC6G01 | 270P667010 | IC - TDA6120Q | | IC8501 | 275P679010 | IC-C-MOS - TC74LCX74FT | |
| IC6R01 | 270P667010 | IC - TDA6120Q | | IC8502 | 275P124040 | IC-C-MOS - SN74LVC245APWR | |
| | | | | IC8503 | 275P677010 | IC-C-MOS - SN74LVC573APWR | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] |
|---------------|-------------------|---------------------------|-----|
| IC8504 | 271P036020 | IC - TPS2221PWPR | |
| IC8505 | 275P677010 | IC-C-MOS - SN74LVC573APWR | |
| IC8506 | 276P065020 | IC-C-MOS - CMAX(103563) | |
| IC8507 | 275P680010 | IC-C-MOS - TC74VCX257FT | |
| IC8508 | 275P675010 | IC-C-MOS - SN74LV125APWR | |
| IC8509 | 271P036020 | IC - TPS2221PWPR | |
| IC8708 | 271P072030 | IC - LD29150DT50 | |
| IC8709 | 271P082010 | IC - LD1117DT12 | |
| IC8710 | 271P072010 | IC - LD29150DT25 | |
| IC8719 | 271P023010 | IC - SN74CBTD1G125DBVR | |
| IC8720 | 271P023010 | IC - SN74CBTD1G125DBVR | |
| IC8721 | 270P677030 | IC - BAO9FP | |
| IC8800 | 270P877010 | IC - UPC3217GV | |
| IC8801 | 270P877010 | IC - UPC3217GV | |
| IC8802 | 275P464010 | IC-C-MOS - TC7WH14FK | |
| IC8805 | 271P064010 | IC - TA75S01F | |
| IC8806 | 271P039010 | IC-C-MOS - NXT2003 100C | |
| IC8C01 | 267P173010 | HIC - STK394-250 | |
| IC8C02 | 267P173010 | HIC - STK394-250 | |
| IC8D00 | 276P088010 | IC-C-MOS - CM0038AF | |
| IC8D01 | 275P222020 | IC-C-MOS - M24C32MN6T | |
| IC8E00 | 270P751010 | IC - TL084CD | |
| IC8E01 | 270P751010 | IC - TL084CD | |
| IC8E02 | 270P751010 | IC - TL084CD | |
| IC8E03 | 275P721020 | IC-C-MOS - CD0031CM | |
| IC9A20 | 267P175010 | HIC - STR-W6735 | |
| IC9A21 | 270P816010 | IC - NJM431L | |
| IC9A50 | 267P161010 | HIC - STR-F6428S | |
| IC9C01 | 271P071020 | IC - BA09SFP | |
| IC9C02 | 271P099010 | IC - LD29150PT50R | |
| IC9C03 | 271P099010 | IC - LD29150PT50R | |
| IC9C04 | 271P071010 | IC - BA033SFP | |
| IC9C05 | 271P071020 | IC - BA09SFP | |
| IC9C21 | 271P072020 | IC - LD29150DT33 | |
| IC9C41 | 271P072030 | IC - LD29150DT50 | |
| IC9C61 | 271P072010 | IC - LD29150DT25 | |
| IC9M01 | 270P677010 | IC - BA033FP | |
| IC9M02 | 270P992020 | IC - BA25BC0FP | |

TRANSISTORS

CHIP Type Transistors (Listed by Part No.)

| Part No. | Description |
|------------|---------------------------|
| 260P806010 | DTA124EK/UN2112 |
| 260P817030 | 2SA1037K-S |
| 260P817050 | 2SA1037K-R,S/2SB709AI-R,S |
| 260P817080 | 2SA1037K-R,S |
| 260P818010 | 2SC2412K-Q |
| 260P818030 | 2SC2412K-S |
| 260P818050 | 2SC2412K-R,S/2SD601AI-R,S |
| 260P818080 | 2SC2412K-R,S |
| 260P836090 | 2SC3326-A,B |
| 260P846030 | DTC143ZKAT146 |

| Ref # | Part # | Part Name & Description | [#] |
|-------------------------------------|-------------------|--------------------------------|-----|
| TRANSISTORS | | | |
| Conventional Transistors (By Ref #) | | | |
| Q2V30 | 260C004020 | TR - 2SC1740S-R,S/2SC3311A-R,S | |
| Q5A04 | 261P149010 | TR - 2SJ585LS | |
| Q5A07 | 260C416030 | TR - 2SC2274-F/2SC2274K-F | |
| Q5A09 | 260C255040 | TR - 2SA950-Y | |
| Q5A31 | 261P122010 | TR - 2SC5778 | |
| Q5A32 | 261P155010 | TR - 2SK2169 | |
| Q5A34 | 261P150010 | TR - 2SA1207 | |
| Q5A36 | 260P630010 | TR - 2SD2012 | |
| Q5A41 | 261P151010 | TR - 2SC2909 | |
| Q5A51 | 261P142010 | TR - 2SK2847 | |
| Q5H03 | 260C001040 | TR - 2SC2603-G/2SC1740S-E | |
| Q5H04 | 260C001040 | TR - 2SC2603-G/2SC1740S-E | |
| Q5H05 | 260C001040 | TR - 2SC2603-G/2SC1740S-E | |
| Q5H06 | 260C001060 | TR - 2SA1115-F/2SA933S-S | |
| Q5H09 | 260C001030 | TR - 2SC2603-F,G/2SC1740S | |
| Q5H10 | 260C001060 | TR - 2SA1115-F/2SA933S-S | |
| Q5H11 | 260P644040 | TR - 2SA1535-R | |
| Q5H12 | 260P647040 | TR - 2SC3944-R | |
| Q5K01 | 260C004050 | TR - 2SA933S-R,S/2SA1309A-R,S | |
| Q5K02 | 261P151010 | TR - 2SC2909 | |
| Q5K03 | 260C004010 | TR - 2SC1740S-R,S/2SC3311A-R,S | |
| Q5K04 | 261P151010 | TR - 2SC2909 | |
| Q5K05 | 261P150010 | TR - 2SA1207 | |
| Q5K06 | 261P152010 | TR - 2SC3116 | |
| Q5K07 | 261P152010 | TR - 2SC3116 | |
| Q5K08 | 260C004050 | TR - 2SA933S-R,S/2SA1309A-R,S | |
| Q5K09 | 261P214010 | TR - 2SC4634LS | |
| Q5K50 | 261P214010 | TR - 2SC4634LS | |
| Q6B01 | 260C001010 | TR - 2SC2603-E,F | |
| Q6B02 | 260C001050 | TR - 2SA1115-E,F/2SA933S | |
| Q6B03 | 260C001050 | TR - 2SA1115-E,F/2SA933S | |
| Q6G01 | 260C001010 | TR - 2SC2603-E,F | |
| Q6R01 | 260C001010 | TR - 2SC2603-E,F | |
| Q7K21 | 260C004010 | TR - 2SC1740S-R,S/2SC3311A-R,S | |
| Q7P22 | 261P114010 | TR - 2SA1585STPR | |
| Q8701 | 261P026010 | TR - 2SC3356 | |
| Q9A21 | 260P630010 | TR - 2SD2012 | |
| Q9A50 | 260C416030 | TR - 2SC2274-F/2SC2274K-F | |
| DIODES | | | |
| D2760 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D2761 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D2770 | 262P805050 | D-CHIP - UDZS5.1B | |
| D2771 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D2W01 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D2W02 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D2W03 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D2W04 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D4B01 | 264D056020 | DIODE - S5500D/EM1Z/ERB12-02RK | |
| D4B04 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D4B05 | 264P828010 | D-CHIP - DAN202U/MA142WK | |
| D5A01 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A02 | 264P045080 | DIODE - 1S2076A/1S2471OM | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|--------------|-------------------|--------------------------------|-----|-------|------------|---------------------------|-----|
| D5A03 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A04 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A04 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A20 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A05 | 264P466040 | DIODE - EQA02-15AB/RD16EB1 | | D9A21 | 264P899010 | DIODE - BYV26E | |
| D5A06 | 262P085010 | DIODE - 11EFS2N-TA2B5 | | D9A22 | 264P825040 | DIODE - ERA15-08 | |
| D5A12 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A23 | 262P085010 | DIODE - 11EFS2N-TA2B5 | |
| D5A13 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A24 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A14 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A25 | 262P085010 | DIODE - 11EFS2N-TA2B5 | |
| D5A33 | 262P129010 | DIODE - 30PRA20-FC5 | | D9A26 | 262P128010 | DIODE - FSH05A06 | |
| D5A34 | 264P460060 | DIODE - EQA02-05C/RD5.1EB1 | | D9A27 | 262P127010 | DIODE - FSH05A03L | |
| D5A35 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A28 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A36 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A29 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A37 | 264D056020 | DIODE - S5500D/EM1Z/ERB12-02RK | | D9A30 | 264P470070 | DIODE - EQA02-32B/RD33EB3 | |
| D5A51 | 262P039010 | DIODE - BYW96E/20 | | D9A31 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A52 | 264P899010 | DIODE - BYV26E | | D9A50 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A53 | 264P466040 | DIODE - EQA02-15AB/RD16EB1 | | D9A51 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A54 | 262P085010 | DIODE - 11EFS2N-TA2B5 | | D9A52 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A55 | 262P085010 | DIODE - 11EFS2N-TA2B5 | | D9A53 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A56 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A54 | 262P085010 | DIODE - 11EFS2N-TA2B5 | |
| D5A57 | 262P085010 | DIODE - 11EFS2N-TA2B5 | | D9A55 | 264P045080 | DIODE - 1S2076A/1S2471OM | |
| D5A58 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A56 | 262P083010 | DIODE - FSF05A20 | |
| D5A60 | 264P463040 | DIODE - RD9.1EB1 | | D9A57 | 264P899010 | DIODE - BYV26E | |
| D5H01 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A58 | 262P088010 | DIODE - 31DF4-FC5 | |
| D5H02 | 264P045080 | DIODE - 1S2076A/1S2471OM | | D9A60 | 262P129010 | DIODE - 30PRA20-FC5 | |
| D5K00 | 264P528030 | DIODE - RP 1H | | D9A61 | 262P129010 | DIODE - 30PRA20-FC5 | |
| D5K01 | 264P528030 | DIODE - RP 1H | | D9A68 | 264P469070 | DIODE - EQA02-28A/RD27EB4 | |
| D6B00 | 262P063010 | DIODE - 1SS244 | | D9A69 | 264P527020 | DIODE - AK04 | |
| D6B07 | 262P063010 | DIODE - 1SS244 | | | | | |
| D6B08 | 262P063010 | DIODE - 1SS244 | | | | | |
| D6G00 | 262P063010 | DIODE - 1SS244 | | | | | |
| D6G07 | 262P063010 | DIODE - 1SS244 | | | | | |
| D6G08 | 262P063010 | DIODE - 1SS244 | | | | | |
| D6R00 | 262P063010 | DIODE - 1SS244 | | | | | |
| D6R07 | 262P063010 | DIODE - 1SS244 | | | | | |
| D6R08 | 262P063010 | DIODE - 1SS244 | | | | | |
| D7K21 | 268P100010 | DIODE-PHOTO - SFH235FA | | | | | |
| D7K22 | 264P045080 | DIODE - 1S2076A/1S2471OM | | | | | |
| D7L21 | 264P212020 | D-LED - LN31GPH | | | | | |
| D7L41 | 264P212020 | D-LED - LN31GPH | | | | | |
| D7R03 | 264P828010 | D-CHIP - DAN202U/MA142WK | | | | | |
| D81A1 | 264P828010 | D-CHIP - DAN202U/MA142WK | | | | | |
| D81A2 | 264P828010 | D-CHIP - DAN202U/MA142WK | | | | | |
| D81A3 | 264P828010 | D-CHIP - DAN202U/MA142WK | | | | | |
| D81A4 | 262P090010 | DIODE - M1FP3 | | | | | |
| D81A5 | 264P458050 | DIODE - RD3.9EB1 | | | | | |
| D8201 | 264P846010 | DIODE-CHIP - MA732 | | | | | |
| D8202 | 264P846010 | DIODE-CHIP - MA732 | | | | | |
| D8203 | 264P846010 | DIODE-CHIP - MA732 | | | | | |
| D8204 | 264P846010 | DIODE-CHIP - MA732 | | | | | |
| D8280 | 264P808010 | DIODE-CHIP - DAN202K | | | | | |
| D8800 | 262P089010 | DIODE - MA2S728 | | | | | |
| D8802 | 262P071070 | DIODE-LE - SML-210FT | | | | | |
| D8803 | 262P071070 | DIODE-LE - SML-210FT | | | | | |
| D8805 | 262P089010 | DIODE - MA2S728 | | | | | |
| D8C03 | 262P817010 | DIODE-CHIP - PTZ9.1B | | | | | |
| D8C04 | 262P817010 | DIODE-CHIP - PTZ9.1B | | | | | |
| D9A01 | 262P031010 | DIODE - D6SB80 | | | | | |
| D9A02 | 264P045080 | DIODE - 1S2076A/1S2471OM | | | | | |
| D9A03 | 264P461050 | DIODE - EQA02-06B/RD5.6EB3 | | | | | |
| COILS | | | | | | | |
| L1H01 | 321C114010 | COIL-RF - 2200MH-J | | | | | |
| L1H02 | 325C461030 | COIL-PEAKING - 10MH-K | | | | | |
| L1H51 | 321C114010 | COIL-RF - 2200MH-J | | | | | |
| L1H52 | 325C461030 | COIL-PEAKING - 10MH-K | | | | | |
| L2011 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2012 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2061 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2071 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2111 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2121 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2141 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2151 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2231 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2271 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2300 | 409P923060 | EMI-F-CHIP - BLM21B272S | | | | | |
| L2301 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2311 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2321 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2331 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2341 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2711 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2721 | 409P865020 | EMI-F-CHIP - BLM11A601S | | | | | |
| L2761 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2801 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2821 | 409P777080 | EMI-F-CHIP - BLM21P221S | | | | | |
| L2K01 | 325C461030 | COIL-PEAKING - 10MH-K | | | | | |
| L2K09 | 325C461030 | COIL-PEAKING - 10MH-K | | | | | |
| L2K58 | 325C461030 | COIL-PEAKING - 10MH-K | | | | | |
| L2K67 | 325C461030 | COIL-PEAKING - 10MH-K | | | | | |

MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 /WS-65815 / WS-73615
[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|-------|------------|---------------------------|--------|-------|------------|---------------------------------|-----|
| L2L01 | 325C461030 | COIL-PEAKING - 10MH-K | | L7H04 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2L61 | 325C461030 | COIL-PEAKING - 10MH-K | | L7H23 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M21 | 325C461030 | COIL-PEAKING - 10MH-K | | L7H29 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M31 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L7H49 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M35 | 325C461050 | COIL-PEAKING - 15MH-K | | L7H66 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M36 | 325C461030 | COIL-PEAKING - 10MH-K | | L7H76 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M38 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L7H95 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| L2M40 | 325C461030 | COIL-PEAKING - 10MH-K | | L7H96 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| L2M41 | 325C461030 | COIL-PEAKING - 10MH-K | | L7J13 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M45 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L7J23 | 325C420070 | COIL-CHIP - 10MH-K | |
| L2M46 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L7J38 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M50 | 325C461000 | COIL-PEAKING - 5.6MH-K | | L7J44 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M53 | 325C461030 | COIL-PEAKING - 10MH-K | | L7K01 | 325C121030 | COIL-PEAKING - 10MH-K | |
| L2M70 | 325C461030 | COIL-PEAKING - 10MH-K | | L7M90 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2M71 | 325C461030 | COIL-PEAKING - 10MH-K | | L7N24 | 325C420070 | COIL-CHIP - 10MH-K | |
| L2M77 | 325C461030 | COIL-PEAKING - 10MH-K | | L7P14 | 409P777050 | EMI-F-CHIP - BLM21B201S | |
| L2M81 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L7P20 | 409P777050 | EMI-F-CHIP - BLM21B201S | |
| L2N03 | 325C461030 | COIL-PEAKING - 10MH-K | | L7Q31 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2N25 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L7R08 | 409P777050 | EMI-F-CHIP - BLM21B201S | |
| L2N60 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8001 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2P03 | 325C461030 | COIL-PEAKING - 10MH-K | | L8002 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2P25 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8003 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2P60 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8004 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2V19 | 325C461010 | COIL-PEAKING - 6.8MH-K | | L8005 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2V55 | 325C461010 | COIL-PEAKING - 6.8MH-K | | L8006 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2V61 | 325C461010 | COIL-PEAKING - 6.8MH-K | | L8007 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2W02 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L8008 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L2W03 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L8009 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L2W04 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L8012 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L3020 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L8013 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L3034 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L81A1 | 321C140060 | COIL-RF - 2.7MH-M | |
| L3048 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L81A2 | 351P250010 | COIL-CHOKE - GSTC6018-100M | |
| L3049 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L81A3 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L3050 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L81A4 | 321C140060 | COIL-RF - 2.7MH-M | |
| L3054 | 409P923060 | EMI-F-CHIP - BLM21B272S | | L81A5 | 321C140060 | COIL-RF - 2.7MH-M | |
| L4B01 | 321C140060 | COIL-RF - 2.7MH-M | | L81A6 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L5A01 | 321C141070 | COIL-RF - 22MH-K | | L81A7 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L5A02 | 411D009020 | FERRITE-CORE - ZBF503D-01 | | L81A8 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L5A03 | 411D009020 | FERRITE-CORE - ZBF503D-01 | | L8202 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L5A22 | 333P059020 | COIL-HORIZ-LIN | cdefgh | L8203 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L5A34 | 321C140060 | COIL-RF - 2.7MH-M | | L8204 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L5A51 | 321C151010 | COIL-RF - 6.8MH-M | | L8205 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L5A54 | 411D009020 | FERRITE-CORE - ZBF503D-01 | | L8206 | 351P265010 | COIL-CHOKE-CHIP | |
| L7A16 | 409P777050 | EMI-F-CHIP - BLM21B201S | | L8207 | 351P265010 | COIL-CHOKE-CHIP | |
| L7A19 | 409P777050 | EMI-F-CHIP - BLM21B201S | | L8280 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L7A88 | 409P777050 | EMI-F-CHIP - BLM21B201S | | L8301 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L7A90 | 409P777050 | EMI-F-CHIP - BLM21B201S | | L8304 | 325C501010 | COIL-CHIP - ALQM21NNR47K10 | |
| L7A91 | 409P777050 | EMI-F-CHIP - BLM21B201S | | L8305 | 325C501010 | COIL-CHIP - ALQM21NNR47K10 | |
| L7A99 | 409P777050 | EMI-F-CHIP - BLM21B201S | | L8307 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L7D16 | 325C420070 | COIL-CHIP - 10MH-K | | L8309 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | dg |
| L7DA7 | 325C420070 | COIL-CHIP - 10MH-K | | L8310 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | dg |
| L7DF4 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8311 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | dg |
| L7DF8 | 325C420070 | COIL-CHIP - 10MH-K | | L8312 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | dg |
| L7E34 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8313 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L7E42 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8314 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L7E69 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8315 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L7EB7 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8316 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |
| L7H01 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L8320 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|-------|------------|---------------------------------|-----|--------------|-------------------|----------------------------------|-----|
| L8321 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L8D05 | 325C461030 | COIL-PEAKING - 10MH-K | |
| L8322 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L8D06 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L8323 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L8D07 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L8324 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L8D08 | 325C461030 | COIL-PEAKING - 10MH-K | |
| L8326 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L8D09 | 325C461030 | COIL-PEAKING - 10MH-K | |
| L8329 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L8G00 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L8331 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L8G01 | 409P777080 | EMI-F-CHIP - BLM21P221S | |
| L8332 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L9A21 | 321C141010 | COIL-RF - 6.8MH-M | |
| L8401 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L9A22 | 321C141030 | COIL-RF - 10MH-K | |
| L8403 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L9A23 | 321C141030 | COIL-RF - 10MH-K | |
| L8404 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L9A50 | 411D009020 | FERRITE-CORE - ZBF503D-01 | |
| L8411 | 351P265020 | COIL-CHIP - ACM2012-201-2P | | L9A51 | 321C141010 | COIL-RF - 6.8MH-M | |
| L8412 | 351P265020 | COIL-CHIP - ACM2012-201-2P | | L9A52 | 411D009020 | FERRITE-CORE - ZBF503D-01 | |
| L8413 | 351P265020 | COIL-CHIP - ACM2012-201-2P | | L9A53 | 321C141010 | COIL-RF - 6.8MH-M | |
| L8414 | 351P265020 | COIL-CHIP - ACM2012-201-2P | | L9A54 | 411D009020 | FERRITE-CORE - ZBF503D-01 | |
| L8415 | 351P265020 | COIL-CHIP - ACM2012-201-2P | | L9A55 | 321C142030 | COIL-RF - 68MH-K | |
| L8416 | 351P265020 | COIL-CHIP - ACM2012-201-2P | | L9A56 | 411D009020 | FERRITE-CORE - ZBF503D-01 | |
| L8501 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L9A57 | 321C141010 | COIL-RF - 6.8MH-M | |
| L8502 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L9A62 | 321C141010 | COIL-RF - 6.8MH-M | |
| L8503 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L9A63 | 321C141070 | COIL-RF - 22MH-K | |
| L8504 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L9A64 | 321C141070 | COIL-RF - 22MH-K | |
| L8505 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | L9D00 | 351P266010 | LINE-FILTER - ELF22V050BN | |
| L8506 | 409P777080 | EMI-F-CHIP - BLM21P221S | | L9D01 | 351P266010 | LINE-FILTER - ELF22V050BN | |
| L8507 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | LC2H40 | 409P777020 | EMI-F-CHIP - BLM21A05 | |
| L8508 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | LC2H41 | 409P777020 | EMI-F-CHIP - BLM21A05 | |
| L8509 | 409P865080 | EMI-FILTER-CHIP - BLM18PG600SN1 | | LC2H42 | 409P777020 | EMI-F-CHIP - BLM21A05 | |
| L8510 | 409P777080 | EMI-F-CHIP - BLM21P221S | | LC2H43 | 409P777020 | EMI-F-CHIP - BLM21A05 | |
| L8511 | 409P777080 | EMI-F-CHIP - BLM21P221S | | LC2H44 | 409P777020 | EMI-F-CHIP - BLM21A05 | |
| L8512 | 409P777080 | EMI-F-CHIP - BLM21P221S | | LC2H45 | 409P777020 | EMI-F-CHIP - BLM21A05 | |
| L8701 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC81A1 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8702 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8301 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8703 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8302 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8704 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8303 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8706 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8304 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8711 | 325C414030 | COIL-CHIP - 0.22MH-J | | LC8305 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8717 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8306 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8718 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8307 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8723 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8308 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8725 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8309 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8726 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8310 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8727 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8311 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8736 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8312 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8802 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8313 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8803 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8314 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8804 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8315 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8805 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8316 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8808 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8317 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8809 | 325C410040 | COIL-CHIP - 1.8MH-J | | LC8318 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8810 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8319 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8811 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8501 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8814 | 325C141070 | COIL-CHIP - 22MH-K/J | | LC8502 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8815 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8503 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8824 | 409P923060 | EMI-F-CHIP - BLM21B272S | | LC8504 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8C01 | 321C141070 | COIL-RF - 22MH-K | | LC8505 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8C02 | 321C141070 | COIL-RF - 22MH-K | | LC8506 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8D01 | 409P777080 | EMI-F-CHIP - BLM21P221S | | LC8507 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8D02 | 409P777080 | EMI-F-CHIP - BLM21P221S | | LC8508 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8D03 | 409P777080 | EMI-F-CHIP - BLM21P221S | | LC8509 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| L8D04 | 409P777080 | EMI-F-CHIP - BLM21P221S | | LC8511 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] |
|---------------------------------------|------------|------------------------------|-----|
| LC8512 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8514 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8515 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8516 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8517 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8518 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8519 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8520 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8521 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8522 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8523 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8524 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8525 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8526 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8527 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8528 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8529 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8530 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LC8531 | 409P945010 | EMI-F-CHIP - NFL21SP506X13CD | |
| LF7D02 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D04 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D06 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D08 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D10 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D12 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D14 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D16 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D18 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D20 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D22 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7D24 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7H02 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7H04 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7H06 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7H08 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7H10 | 409P944010 | EMI-F-CHIP - NFL21SP107X1 | |
| LF7H13 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| LF7H14 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| LF7H18 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| LF7H20 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| LF7H22 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| LF7H24 | 409P865020 | EMI-F-CHIP - BLM11A601S | |
| TRANSFORMERS | | | |
| T5A31 | 349P223010 | TRANS-HORIZ | |
| T5A32 | 349P224010 | TRANS-HORIZ-DRIVE | |
| T5A51 | 334P288010 | TRANS-FLYBACK | |
| T5K01 | 349P222010 | TRANS-DBF | |
| T9A20 | 350P819010 | TRANS-POWER | |
| T9A50 | 350P818010 | TRANS-POWER | |
| VARIABLE RESISTORS | | | |
| 129P070020 VR-FOCUS | | | |
| RESISTORS | | | |
| CHIP Type Resistors (Listed by Value) | | | |

| Ref # | Part # | Part Name & Description | [#] |
|------------|--------------|-------------------------|--------------|
| Part No. | Value | Part No. | Value |
| 103P509050 | 1/16W 0OHM | 103P493020 | 1/16W 2K-F |
| 103P409050 | 1/8W 0OHM | 103P493030 | 1/16W 2.2K-F |
| 103P508040 | 1/16W 2.2-J | 103P502090 | 1/16W 2.2K-J |
| 103P509000 | 1/16W 6.8-J | 103P493040 | 1/16W 2.4K-F |
| 103P500010 | 1/16W 10-J | 103P493050 | 1/16W 2.7K-F |
| 103P793020 | 1/16W 20F | 103P503000 | 1/16W 2.7K-J |
| 103P500050 | 1/16W 22-J | 103P493060 | 1/16W 3K-F |
| 103P400050 | 1/10W 22-J | 103P493070 | 1/16W 3.3K-F |
| 103P500060 | 1/16W 27-J | 103P503010 | 1/16W 3.3K-J |
| 103P910070 | 1/16W 33-J | 103P503020 | 1/16W 3.9K-J |
| 103P500070 | 1/16W 33-J | 103P494000 | 1/16W 4.3K-F |
| 103P793080 | 1/16W 36F | 103P494010 | 1/16W 4.7K-F |
| 103P500080 | 1/16W 39-J | 103P503030 | 1/16W 4.7K-J |
| 103P794010 | 1/16W 47-F | 103P494020 | 1/16W 5.1K-F |
| 103P500090 | 1/16W 47-J | 103P494030 | 1/16W 5.6K-F |
| 103P911000 | 1/16W 56-J | 103P503040 | 1/16W 5.6K-J |
| 103P501000 | 1/16W 56-J | 103P814040 | 1/16W 6.2K-D |
| 103P501010 | 1/16W 68-J | 103P503050 | 1/16W 6.8K-J |
| 103P509090 | 1/16W 75-J | 103P494050 | 1/16W 6.8K-F |
| 103P794060 | 1/16W 75-F | 103P494070 | 1/16W 8.2K-F |
| 103P489090 | 1/4W 75-J | 103P503060 | 1/16W 8.2K-J |
| 103P501020 | 1/16W 82-J | 103P494080 | 1/16W 9.1K-F |
| 103P794080 | 1/16W 91F | 103P494090 | 1/16W 10K-F |
| 103P490010 | 1/16W 100F | 103P503070 | 1/16W 10K-J |
| 103P401030 | 1/10W 100-J | 103P495010 | 1/16W 12K-F |
| 103P501030 | 1/16W 100-J | 103P503080 | 1/16W 12K-J |
| 103P501040 | 1/16W 120-J | 103P495020 | 1/16W 13K-F |
| 103P810050 | 1/16W 150-D | 103P495030 | 1/16W 15K-F |
| 103P501050 | 1/16W 150-J | 103P503090 | 1/16W 15K-J |
| 103P401050 | 1/10W 150-J | 103P495040 | 1/16W 16K-F |
| 103P501060 | 1/16W 180-J | 103P504000 | 1/16W 18K-J |
| 103P490080 | 1/16W 200-F | 103P495050 | 1/16W 18K-F |
| 103P501070 | 1/16W 220-J | 103P504010 | 1/16W 22K-J |
| 103P481070 | 1/4W 220-J | 103P495070 | 1/16W 22K-F |
| 103P471010 | 1/8W 270-F | 103P495080 | 1/16W 24K-F |
| 103P491020 | 1/16W 300-F | 103P495090 | 1/16W 27K-F |
| 103P501090 | 1/16W 330-J | 103P496000 | 1/16W 30K-F |
| 103P491040 | 1/16W 360-F | 103P504030 | 1/16W 33K-J |
| 103P502000 | 1/16W 390-J | 103P496010 | 1/16W 33K-F |
| 103P491050 | 1/16W 390-F | 103P496040 | 1/16W 43K-F |
| 103P502010 | 1/16W 470-J | 103P504050 | 1/16W 47K-J |
| 103P491070 | 1/16W 470-F | 103P496050 | 1/16W 47K-F |
| 103P491080 | 1/16W 510-F | 103P504060 | 1/16W 56K-J |
| 103P502020 | 1/16W 560-J | 103P496080 | 1/16W 62K-F |
| 103P492000 | 1/16W 620-F | 103P504070 | 1/16W 68K-J |
| 103P492010 | 1/16W 680-F | 103P496090 | 1/16W 68K-F |
| 103P502030 | 1/16W 680-J | 103P504080 | 1/16W 82K-J |
| 103P492020 | 1/16W 750-F | 103P497030 | 1/16W 100K-F |
| 103P502040 | 1/16W 820-J | 103P504090 | 1/16W 100K-J |
| 103P492030 | 1/16W 820-F | 103P505000 | 1/16W 120K-J |
| 103P492050 | 1/16W 1K-F | 103P497070 | 1/16W 150K-F |
| 103P502050 | 1/16W 1K-J | 103P505030 | 1/16W 220K-J |
| 103P492060 | 1/16W 1.1K-F | 103P498020 | 1/16W 240K-F |
| 103P502060 | 1/16W 1.2K-J | 103P505050 | 1/16W 330K-J |
| 103P402070 | 1/8W 1.5K-J | 103P505070 | 1/16W 470K-J |
| 103P472090 | 1/8W 1.5K-F | 103P505090 | 1/16W 680K-J |
| 103P502070 | 1/16W 1.5K-J | 103P506000 | 1/16W 820K-J |
| 103P492090 | 1/16W 1.5K-F | 103P506010 | 1/16W 1M-J |
| 103P502080 | 1/16W 1.8K-J | 103P506070 | 1/16W 3.3M-J |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|-----------------------------------|-------------------|------------------------------|--------|-------|------------|-------------------------|-----|
| RESISTORS | | | | | | | |
| Conventional Resistors (By Ref #) | | | | | | | |
| Ref # | Part # | Part Name & Description | [#] | R5K00 | 103P760060 | R-FUSE - 1/2W 27-J | |
| R2J03 | 103P719090 | R-CARBON - 1/4W 75-J | | R5K01 | 103P760060 | R-FUSE - 1/2W 27-J | |
| R2J05 | 103P719090 | R-CARBON - 1/4W 75-J | | R5K02 | 103P143070 | R-CARBON 1/2W 10K-J | |
| R2J07 | 103P719090 | R-CARBON - 1/4W 75-J | | R5K03 | 103P143070 | R-CARBON 1/2W 10K-J | |
| R2V96 | 109D151050 | R-CARBON - 1/4W 75-J | | R5K04 | 103P760060 | R-FUSE - 1/2W 27-J | |
| R3E09 | 109D151010 | R-CARBON - 1/4W 2.2-J | | R5K05 | 103P712080 | R-CARBON - 1/4W 1.8K-J | |
| R3E11 | 109D151010 | R-CARBON - 1/4W 2.2-J | | R5K06 | 103P712030 | R-CARBON - 1/4W 680-J | |
| R3E12 | 109D151010 | R-CARBON - 1/4W 2.2-J | | R5K07 | 109D151090 | R-CARBON - 1/4W 33-J | |
| R3E14 | 109D151010 | R-CARBON - 1/4W 2.2-J | | R5K08 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R4B04 | 103C178060 | R-METAL - 1W 3.3-J | | R5K09 | 109D151090 | R-CARBON - 1/4W 33-J | |
| R4B10 | 103C188040 | R-METAL - 2W 2.2-J | cdefgh | R5K10 | 109D031070 | R-COMP - 1/2W 10K-K | |
| R4B12 | 103C188040 | R-METAL - 2W 2.2-J | | R5K11 | 103P713070 | R-CARBON - 1/4W 10K-J | |
| R4B16 | 109P095010 | R-METAL-LIN - 1/4W 5.1K-J | | R5K12 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R4B18 | 103P338020 | R-CARBON-25 - 1/4W 1.5-J | | R5K13 | 103P712030 | R-CARBON - 1/4W 680-J | |
| R4B23 | 109D151080 | R-CARBON - 1/4W 220-J | | R5K15 | 103P144070 | R-CARBON - 1/2W 68K-J | |
| R5A16 | 103P144010 | R-CARBON 1/2W 22K-J | | R5K16 | 103P143070 | R-CARBON 1/2W 10K-J | |
| R5A20 | 103P144050 | R-CARBON 1/2W 47K-J | | R5K17 | 103P145050 | R-CARBON - 1/2W 330K-J | |
| R5A26 | 103P761030 | R-FUSE - 1/2W 100-J | | R5K18 | 103P145050 | R-CARBON - 1/2W 330K-J | |
| R5A32 | 103P145030 | R-CARBON - 1/2W 220K-J | | R5K19 | 103P145050 | R-CARBON - 1/2W 330K-J | |
| R5A34 | 103P143070 | R-CARBON 1/2W 10K-J | | R5K20 | 103P145050 | R-CARBON - 1/2W 330K-J | |
| R5A35 | 103P143030 | R-CARBON - 1/2W 4.7K-J | | R5K21 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R5A36 | 103P143070 | R-CARBON 1/2W 10K-J | | R5K22 | 103P714010 | R-CARBON - 1/4W 22K-J | |
| R5A37 | 103C393010 | R-METAL-P - 3W 3.3K-J | cdefgh | R5K23 | 103P713070 | R-CARBON - 1/4W 10K-J | |
| R5A37 | 103C393030 | R-METAL-P - 3W 4.7K-J | ab | R5K24 | 103P713050 | R-CARBON - 1/4W 6.8K-J | |
| R5A38 | 103C187020 | R-METAL - 2W 0.22-J | | R5K25 | 103P712090 | R-CARBON - 1/4W 2.2K-J | |
| R5A39 | 103P140090 | R-CARBON - 1/2W 47-J | | R5K26 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R5A45 | 109D151090 | R-CARBON - 1/4W 33-J | | R5K27 | 103P713070 | R-CARBON - 1/4W 10K-J | |
| R5A46 | 103C391050 | R-METAL-P - 3W 150-J | | R5K28 | 103P143070 | R-CARBON 1/2W 10K-J | |
| R5A50 | 103P711000 | R-CARBON - 1/4W 56-J | | R5K29 | 103P146010 | R-CARBON - 1/2W 1M-J | |
| R5A62 | 103P711070 | R-CARBON - 1/4W 220-J | | R5K30 | 103P146010 | R-CARBON - 1/2W 1M-J | |
| R5A64 | 103P712010 | R-CARBON - 1/4W 470-J | | R5K31 | 103P713070 | R-CARBON - 1/4W 10K-J | |
| R5A65 | 103P141030 | R-CARBON - 1/2W 100-J | | R5K32 | 103P714090 | R-CARBON - 1/4W 100K-J | |
| R5A80 | 109P180010 | R-WIRE - 2W 0.16-G | | R5K33 | 103P711080 | R-CARBON - 1/4W 270-J | |
| R5A82 | 103P370090 | R-FUSE - 1/4W 47-J | | R5K34 | 103P143020 | R-CARBON - 1/2W 3.9K-J | |
| R5A85 | 109D151030 | R-CARBON - 1/4W 4.7-J | | R5K35 | 109D151030 | R-CARBON - 1/4W 4.7-J | |
| R5A87 | 103P142060 | R-CARBON - 1/2W 1.2K-J | | R5K36 | 109D151030 | R-CARBON - 1/4W 4.7-J | |
| R5A90 | 103P711060 | R-CARBON - 1/4W 180-J | | R5K37 | 109D151090 | R-CARBON - 1/4W 33-J | |
| R5A93 | 103P140090 | R-CARBON - 1/2W 47-J | | R5K38 | 109D151090 | R-CARBON - 1/4W 33-J | |
| R5A94 | 103C390060 | R-METAL-P - 3W 27-J | | R5K50 | 103P714010 | R-CARBON - 1/4W 22K-J | |
| R5B04 | 103P711030 | R-CARBON - 1/4W 100-J | | R5K51 | 103P713030 | R-CARBON - 1/4W 4.7K-J | |
| R5H02 | 103P758000 | R-FUSE - 1/4W 1-J | | R5K52 | 109D031090 | R-COMP - 1/2W 470K-K | |
| R5H07 | 103P461060 | R-METAL - 1/4W 430-F | | R6B01 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R5H11 | 103P712020 | R-CARBON - 1/4W 560-J | | R6B02 | 103P713090 | R-CARBON - 1/4W 15K-J | |
| R5H12 | 103P712020 | R-CARBON - 1/4W 560-J | | R6B03 | 103P464020 | R-METAL - 1/4W 2.4K-F | |
| R5H13 | 103P712020 | R-CARBON - 1/4W 560-J | | R6B04 | 103P713000 | R-CARBON - 1/4W 2.7K-J | |
| R5H16 | 103P710020 | R-CARBON - 1/4W 12-J | | R6B05 | 103P411010 | R-CARBON - 1/4W 68-J | |
| R5H17 | 103P710020 | R-CARBON - 1/4W 12-J | | R6B06 | 103P462050 | R-METAL - 1/4W 1K-F | |
| R5H47 | 103C392010 | R-METAL-P - 3W 470-J | | R6B07 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R5H49 | 103P714070 | R-CARBON - 1/4W 68K-J | | R6B08 | 103P710010 | R-CARBON - 1/4W 10-J | |
| R5H50 | 103P714070 | R-CARBON - 1/4W 68K-J | | R6B09 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R5H55 | 103P140070 | R-CARBON - 1/2W 33-J | | R6B10 | 103P713030 | R-CARBON - 1/4W 4.7K-J | |
| R5H56 | 103P140070 | R-CARBON - 1/2W 33-J | | R6B11 | 103C194020 | R-METAL - 3W 27K-J | |
| R5H58 | 103P148000 | R-CARBON - 1/2W 1-J | | R6B13 | 103P331030 | R-CARBON - 1/4W 100-J | |
| R5H59 | 103C191050 | R-METAL - 3W 150-J | | R6B15 | 103P714090 | R-CARBON - 1/4W 100K-J | |
| R5H60 | 103C178080 | R-METAL - 1W 4.7-J | | R6B16 | 103P411000 | R-CARBON - 1/4W 56-J | |
| | | | | R6B17 | 101P221030 | R-COMP - 1/2W 220-K | |
| | | | | R6B18 | 103P713040 | R-CARBON - 1/4W 5.6K-J | |
| | | | | R6B19 | 103P713050 | R-CARBON - 1/4W 6.8K-J | |
| | | | | R6B20 | 101P221030 | R-COMP - 1/2W 220-K | |

MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 /WS-65815 / WS-73615
[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] |
|-------|------------|-------------------------|-----|
| R6B21 | 103P467030 | R-METAL - 1/4W 100K-F | |
| R6B22 | 103P467030 | R-METAL - 1/4W 100K-F | |
| R6B23 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6B24 | 103P713030 | R-CARBON - 1/4W 4.7K-J | |
| R6B25 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6B26 | 103P713050 | R-CARBON - 1/4W 6.8K-J | |
| R6B27 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6B31 | 103P712060 | R-CARBON - 1/4W 1.2K-J | |
| R6G01 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6G02 | 103P713090 | R-CARBON - 1/4W 15K-J | |
| R6G03 | 103P464020 | R-METAL - 1/4W 2.4K-F | |
| R6G04 | 103P463040 | R-METAL - 1/4W 2.4K-F | |
| R6G05 | 103P411010 | R-CARBON - 1/4W 68-J | |
| R6G06 | 103P462030 | R-METAL - 1/4W 820-F | |
| R6G07 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6G08 | 103P710010 | R-CARBON - 1/4W 10-J | |
| R6G09 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6G10 | 103P713030 | R-CARBON - 1/4W 4.7K-J | |
| R6G11 | 103C194020 | R-METAL - 3W 27K-J | |
| R6G13 | 103P331030 | R-CARBON - 1/4W 100-J | |
| R6G15 | 103P714090 | R-CARBON - 1/4W 100K-J | |
| R6G16 | 103P411000 | R-CARBON - 1/4W 56-J | |
| R6G17 | 101P221030 | R-COMP - 1/2W 220-K | |
| R6G20 | 101P221030 | R-COMP - 1/2W 220-K | |
| R6G21 | 103P467010 | R-METAL - 1/4W 82K-F | |
| R6G22 | 103P467010 | R-METAL - 1/4W 82K-F | |
| R6G23 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6G31 | 103P712060 | R-CARBON - 1/4W 1.2K-J | |
| R6R01 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6R02 | 103P713090 | R-CARBON - 1/4W 15K-J | |
| R6R03 | 103P464020 | R-METAL - 1/4W 2.4K-F | |
| R6R04 | 103P713000 | R-CARBON - 1/4W 2.7K-J | |
| R6R05 | 103P411010 | R-CARBON - 1/4W 68-J | |
| R6R06 | 103P462050 | R-METAL - 1/4W 1K-F | |
| R6R07 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6R08 | 103P710010 | R-CARBON - 1/4W 10-J | |
| R6R09 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6R10 | 103P713030 | R-CARBON - 1/4W 4.7K-J | |
| R6R11 | 103C194020 | R-METAL - 3W 27K-J | |
| R6R13 | 103P331030 | R-CARBON - 1/4W 100-J | |
| R6R15 | 103P714090 | R-CARBON - 1/4W 100K-J | |
| R6R16 | 103P411000 | R-CARBON - 1/4W 56-J | |
| R6R17 | 101P221030 | R-COMP - 1/2W 220-K | |
| R6R20 | 101P221030 | R-COMP - 1/2W 220-K | |
| R6R21 | 103P467030 | R-METAL - 1/4W 100K-F | |
| R6R22 | 103P467030 | R-METAL - 1/4W 100K-F | |
| R6R23 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R6R31 | 103P712060 | R-CARBON - 1/4W 1.2K-J | |
| R7K01 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R7K02 | 103P713010 | R-CARBON - 1/4W 3.3K-J | |
| R7K21 | 103P710090 | R-CARBON - 1/4W 47-J | |
| R7K22 | 103P715030 | R-CARBON - 1/4W 220K-J | |
| R7K23 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R7K24 | 103P713080 | R-CARBON - 1/4W 12K-J | |
| R7K25 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R7K26 | 103P715030 | R-CARBON - 1/4W 220K-J | |
| R7K27 | 103P713070 | R-CARBON - 1/4W 10K-J | |
| R7K28 | 103P711050 | R-CARBON - 1/4W 150-J | |
| R7K29 | 103P712060 | R-CARBON - 1/4W 1.2K-J | |

| Ref # | Part # | Part Name & Description | [#] |
|--------------|-------------------|---------------------------|-------|
| R7K30 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R7K31 | 103P715030 | R-CARBON - 1/4W 220K-J | |
| R7K32 | 103P713030 | R-CARBON - 1/4W 4.7K-J | |
| R7K33 | 103P712050 | R-CARBON - 1/4W 1K-J | |
| R7K34 | 103P713000 | R-CARBON - 1/4W 2.7K-J | |
| R7K35 | 103P711030 | R-CARBON - 1/4W 100-J | |
| R7K36 | 103P710090 | R-CARBON - 1/4W 47-J | |
| R7L26 | 103P462090 | R-METAL - 1/4W 1.5K-F | abdeg |
| R7L27 | 103P463030 | R-METAL - 1/4W 2.2K-F | abdeg |
| R7L28 | 103P463070 | R-METAL - 1/4W 3.3K-F | abdeg |
| R7L29 | 103P464030 | R-METAL - 1/4W 5.6K-F | abdeg |
| R7L30 | 103P465010 | R-METAL - 1/4W 12K-F | abdeg |
| R7L31 | 103P466010 | R-METAL - 1/4W 33K-F | abdeg |
| R7L32 | 103P466070 | R-METAL - 1/4W 56K-F | abdeg |
| R7L42 | 103P466070 | R-METAL - 1/4W 56K-F | cth |
| R7L44 | 103P462090 | R-METAL - 1/4W 1.5K-F | cth |
| R7L45 | 103P463030 | R-METAL - 1/4W 2.2K-F | cth |
| R7L46 | 103P463070 | R-METAL - 1/4W 3.3K-F | cth |
| R7L47 | 103P464030 | R-METAL - 1/4W 5.6K-F | cth |
| R7L48 | 103P465010 | R-METAL - 1/4W 12K-F | cth |
| R7L49 | 103P466010 | R-METAL - 1/4W 33K-F | cth |
| R7P22 | 109D151010 | R-CARBON - 1/4W 2.2-J | |
| R7P28 | 109D151010 | R-CARBON - 1/4W 2.2-J | |
| R8798 | 103C288040 | R-METAL-CP - 2W 2.2-J | |
| R8C05 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C06 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C07 | 103C391050 | R-METAL-P - 3W 150-J | |
| R8C13 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C14 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C15 | 103C391050 | R-METAL-P - 3W 150-J | |
| R8C21 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C22 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C23 | 103C391050 | R-METAL-P - 3W 150-J | |
| R8C29 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C30 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C31 | 103C391050 | R-METAL-P - 3W 150-J | |
| R8C37 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C38 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C39 | 103C391050 | R-METAL-P - 3W 150-J | |
| R8C45 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C46 | 103C288070 | R-METAL-CP - 2W 3.9-J | |
| R8C47 | 103C391050 | R-METAL-P - 3W 150-J | |
| R8C60 | 103C191090 | R-METAL - 3W 330-J | |
| R8C61 | 103C191090 | R-METAL - 3W 330-J | |
| R9A02 | 109P179010 | R-CEMENT-PLATE - 6.8-J | |
| R9A03 | 109C010010 | R-COMP - 1/2W 1M-K | |
| R9A05 | 109C010010 | R-COMP - 1/2W 1M-K | |
| R9A06 | 109C010010 | R-COMP - 1/2W 1M-K | |
| R9A09 | 103P145030 | R-CARBON - 1/2W 220K-J | |
| R9A11 | 103P145030 | R-CARBON - 1/2W 220K-J | |
| R9A20 | 103P144020 | R-CARBON - 1/2W 27K-J | |
| R9A21 | 103P144020 | R-CARBON - 1/2W 27K-J | |
| R9A22 | 109P175030 | R-WIRE - 2W 0.39-J | |
| R9A25 | 103P142050 | R-CARBON - 1/2W 1K-J | |
| R9A26 | 109D151090 | R-CARBON - 1/4W 33-J | |
| R9A27 | 109D151050 | R-CARBON - 1/4W 75-J | |
| R9A36 | 103P142070 | R-CARBON - 1/2W 1.5K-J | |
| R9A38 | 103P144090 | R-CARBON - 1/2W 100K-J | |
| R9A50 | 103P143010 | R-CARBON - 1/2W 3.3K-J | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|--|-------------------|-----------------------------|------------------|-------|------------|-------------------------|-----|
| R9A52 | 103P140090 | R-CARBON - 1/2W 47-J | | C1H03 | 181P352040 | C-ELEC - 16V 100M-M | |
| R9A54 | 109P175020 | R-WIRE - 2W 0.15-J | | C1H05 | 172P262010 | C-M-POLY - 50V 0.047M-J | |
| R9A55 | 109P175010 | R-WIRE - 2W 0.12-J | | C1H53 | 181P352040 | C-ELEC - 16V 100M-M | |
| R9A59 | 109D151030 | R-CARBON - 1/4W 4.7-J | | C1H55 | 172P262010 | C-M-POLY - 50V 0.047M-J | |
| R9A60 | 109D151090 | R-CARBON - 1/4W 33-J | | C2014 | 181P355060 | C-ELEC - 50V 22M-M | |
| R9A64 | 103P713030 | R-CARBON - 1/4W 4.7K-J | | C2016 | 181P352040 | C-ELEC - 16V 100M-M | |
| R9A67 | 103P710050 | R-CARBON - 1/4W 22-J | | C2019 | 181P351070 | C-ELEC - 10V 470M-M | |
| R9A68 | 103C390020 | R-METAL-P - 3W 12-J | | C2051 | 181P352040 | C-ELEC - 16V 100M-M | |
| R9A70 | 109D151090 | R-CARBON - 1/4W 33-J | | C2054 | 181P743040 | C-ELEC - 16V 330M-M | |
| R9A71 | 103P145030 | R-CARBON - 1/2W 220K-J | | C2064 | 181P355060 | C-ELEC - 50V 22M-M | |
| R9C01 | 103C298040 | R-METAL-CP - 3W 2.2-J | | C2081 | 181P355050 | C-ELEC - 50V 10M-M | |
| R9D00 | 109D036020 | R-COMP - 1/2W 4.7M-K | | C2114 | 181P355060 | C-ELEC - 50V 22M-M | |
| CAPACITORS | | | | | | | |
| CHIP Type Capacitors (Listed by Value) | | | | | | | |
| Part No. | Value | Part No. | Value | C2144 | 181P355060 | C-ELEC - 50V 22M-M | |
| 154P340040 | 50V 3P-C | 141P140050 | B50V 470P-K | C2173 | 181P355060 | C-ELEC - 50V 22M-M | |
| 141P142090 | B25V 0.047M-K | 141P139090 | B16V 0.47M-K | C2213 | 181P355060 | C-ELEC - 50V 22M-M | |
| 141P143010 | B25V 0.068M-K | 141P146080 | B10V 0.47M-K | C2233 | 181P355050 | C-ELEC - 50V 10M-M | |
| 154P340090 | CH50V 8P-C | 154P345030 | CH25V 560P-J | C2242 | 181P355050 | C-ELEC - 50V 10M-M | |
| 141P143020 | B16V 0.082M-K | 154P345050 | CH25V 680P-J | C2762 | 181P355050 | C-ELEC - 50V 10M-M | |
| 154P341010 | CH50V 10P-C | 154P345070 | CH25V 820P-J | C2803 | 181P355050 | C-ELEC - 50V 10M-M | |
| 141P142010 | B50V 0.01M-K | 141P140090 | B50V 1000P-K | C2824 | 181P355060 | C-ELEC - 50V 22M-M | |
| 141P143080 | F50V 0.01M-Z | 154P345090 | CH25V 1000P-J | C2K06 | 181P355050 | C-ELEC - 50V 10M-M | |
| 154P341030 | CH50V 12P-J | 141P143050 | F50V 1000P-Z | C2K10 | 181P355050 | C-ELEC - 50V 10M-M | |
| 154P341050 | CH50V 15P-J | 141P134070 | B16V 1M-K | C2K52 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P341070 | CH50V 18P-J | 141P147020 | B10V/6.3V 1M-K | C2K59 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P341090 | CH50V 22P-J | 181P526010 | 50V 1M-M | C2K62 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P342010 | CH50V 27P-J | 141P144060 | F16V 1M-Z | C2K68 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P342030 | CH50V 33P-J | 141P141010 | B50V 1500P-K | C2K72 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P342050 | CH50V 39P-J | 141P141050 | B50V 3300P-K | C2K73 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P342070 | CH50V 47P-J | 181P506030 | 50V 3.3M-M | C2L01 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P340080 | CH50V 47P-J | 141P141070 | B50V 4700P-K | C2L08 | 181P352010 | C-ELEC - 16V 22M-M | |
| 154P342070 | CH50V 47P-J | 181P524090 | 35V 4.7M-M 105C | C2L12 | 181P352010 | C-ELEC - 16V 22M-M | |
| 154P352080 | SL50V 47P-J | 141P141090 | B50V 6800P-K | C2L13 | 181P352040 | C-ELEC - 16V 100M-M | |
| 154P342090 | CH50V 56P-J | 141P142000 | B50V 8200P-K | C2L31 | 181P355050 | C-ELEC - 50V 10M-M | |
| 154P343030 | CH50V 82P-J | 181P502030 | 16V 10M-M | C2L32 | 181P122070 | C-ELEC-NP - 25V 10M-M | |
| 154P343050 | CH50V 100P-J | 181P532030 | 16V 10M-M | C2L33 | 181P355050 | C-ELEC - 50V 10M-M | |
| 141P139030 | B25V 0.1M-K | 181P522030 | 16V 10M-M 105C | C2L34 | 181P122070 | C-ELEC-NP - 25V 10M-M | |
| 141P143030 | B16V 0.1M-K | 181P525000 | 35V 10M-M 105C | C2L51 | 181P355050 | C-ELEC - 50V 10M-M | |
| 141P144020 | F25V 0.1M-Z | 181P522040 | 16V 22M-M 105C | C2L52 | 181P122070 | C-ELEC-NP - 25V 10M-M | |
| 141P134090 | F50V 0.1M-Z | 181P520010 | 6.3V 22M-M 105C | C2L53 | 181P355050 | C-ELEC - 50V 10M-M | |
| 141P135080 | F50V/25V 0.1M-Z | 181P500030 | 6.3V 47M-M | C2L54 | 181P122070 | C-ELEC-NP - 25V 10M-M | |
| 154P343070 | CH50V 120P-J | 181P520030 | 6.3V 47M-M | C2L61 | 181P352030 | C-ELEC - 16V 47M-M | |
| 154P343090 | CH50V 150P-J | 181P522060 | 6V 47M-M | C2L67 | 181P352010 | C-ELEC - 16V 22M-M | |
| 141P139050 | B25V 0.15 M-K | 181P502070 | 16V 100M-M | C2L69 | 181P352040 | C-ELEC - 16V 100M-M | |
| 154P344030 | CH50V 220P-J | 181P528000 | 4V 100M-M 105C | C2L70 | 181P352010 | C-ELEC - 16V 22M-M | |
| 141P140010 | B50V 220P-K | 181P520040 | 6.3V 100M-M | C2L72 | 181P352040 | C-ELEC - 16V 100M-M | |
| 154P344050 | CH50V 270P-J | 181P528010 | 4V 220M-M 105C | C2L73 | 181P352010 | C-ELEC - 16V 22M-M | |
| 141P138080 | B25V 0.33M-K | 181P520050 | 6.3V 220M-M 105C | C2M26 | 181P352040 | C-ELEC - 16V 100M-M | |
| 154P345010 | CH50V 470P-J | | | C2M28 | 181P351080 | C-ELEC - 10V 1000M-M | |
| | | | | C2M29 | 181P351080 | C-ELEC - 10V 1000M-M | |
| | | | | C2M31 | 181P352030 | C-ELEC - 16V 47M-M | |
| | | | | C2M33 | 181P352030 | C-ELEC - 16V 47M-M | |
| | | | | C2M36 | 181P352040 | C-ELEC - 16V 100M-M | |
| | | | | C2M38 | 181P352030 | C-ELEC - 16V 47M-M | |
| | | | | C2M39 | 181P352030 | C-ELEC - 16V 47M-M | |

MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 /WS-65815 / WS-73615
[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | | Ref # | Part # | Part Name & Description | [#] |
|-------|------------|-------------------------|-----|--|--------------|-------------------|-----------------------------------|--------|
| C2M39 | 181P352030 | C-ELEC - 16V 47M-M | | | C3070 | 181P352030 | C-ELEC - 16V 47M-M | |
| C2M43 | 181P352030 | C-ELEC - 16V 47M-M | | | C3E01 | 181P354050 | C-ELEC - 35V 47M-M | cdefgh |
| C2M44 | 181P352030 | C-ELEC - 16V 47M-M | | | C3E01 | 181P354050 | C-ELEC - 35V 47M-M | ab |
| C2M54 | 181P355050 | C-ELEC - 50V 10M-M | | | C3E02 | 181P355010 | C-ELEC - 50V 1M-M | |
| C2M56 | 181P355050 | C-ELEC - 50V 10M-M | | | C3E03 | 172P331010 | C-POLY - 50V 6800P-J | |
| C2M59 | 181P352030 | C-ELEC - 16V 47M-M | | | C3E04 | 181P355010 | C-ELEC - 50V 1M-M | |
| C2M64 | 181P352030 | C-ELEC - 16V 47M-M | | | C3E05 | 172P331010 | C-POLY - 50V 6800P-J | |
| C2M73 | 181P355050 | C-ELEC - 50V 10M-M | | | C3E06 | 181P355050 | C-ELEC - 50V 10M-M | |
| C2M75 | 181P212060 | C-ELEC - 16V 47M-M | | | C3E07 | 181P353090 | C-ELEC - 5V 2200M-M | |
| C2M77 | 181P352040 | C-ELEC - 16V 100M-M | | | C3E09 | 172P262050 | C-M-POLY - 50V 0.1M-J | |
| C2M80 | 181P352030 | C-ELEC - 16V 47M-M | | | C3E11 | 172P262050 | C-M-POLY - 50V 0.1M-J | |
| C2M88 | 181P355010 | C-ELEC - 50V 1M-M | | | C3E12 | 172P262050 | C-M-POLY - 50V 0.1M-J | |
| C2M89 | 181P352030 | C-ELEC - 16V 47M-M | | | C3E14 | 172P262050 | C-M-POLY - 50V 0.1M-J | |
| C2M98 | 181P355050 | C-ELEC - 50V 10M-M | | | C3J08 | 181P352030 | C-ELEC - 16V 47M-M | |
| C2N01 | 181P355040 | C-ELEC - 50V 4.7M-M | | | C3J26 | 181P352030 | C-ELEC - 16V 47M-M | |
| C2N04 | 181P352030 | C-ELEC - 16V 47M-M | | | C3J38 | 181P355050 | C-ELEC - 50V 10M-M | |
| C2N24 | 181P352030 | C-ELEC - 16V 47M-M | | | C4B01 | 172P261030 | C-M-POLY - 50V 0.01M-J | |
| C2N33 | 181P355040 | C-ELEC - 50V 4.7M-M | | | C4B02 | 181P358000 | C-ELEC - 35V 1000M-M | |
| C2N41 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C4B03 | 172P383030 | C-ELEC - 35V 0.47M-K | |
| C2N45 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C4B04 | 181P184020 | C-ELEC - 35V 100M-M | |
| C2N47 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C4B06 | 172P330090 | C-ELEC - 50V 4700P-J | |
| C2N48 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C4B07 | 172P383030 | C-ELEC - 100V 0.47M-K | |
| C2N50 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C4B08 | 172P263070 | C-ELEC - 100V 0.47M-K | |
| C2N52 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C4B09 | 181P355060 | C-ELEC - 50V 22M-M | |
| C2N60 | 181P352030 | C-ELEC - 16V 47M-M | | | C4B10 | 181P354050 | C-ELEC - 35V 47M-M | cdefgh |
| C2P01 | 181P355040 | C-ELEC - 50V 4.7M-M | | | C4B10 | 181P354050 | C-ELEC - 35V 47M-M | ab |
| C2P04 | 181P352030 | C-ELEC - 16V 47M-M | | | C4B11 | 181P353090 | C-ELEC - 5V 2200M-M | |
| C2P24 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A01 | 181P355050 | C-ELEC - 50V 10M-M | |
| C2P33 | 181P355040 | C-ELEC - 50V 4.7M-M | | | C5A02 | 154P345090 | C-CER-CHIP - CH25V 1000P-J | |
| C2P42 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C5A03 | 141P140090 | C-CER-CHIP - B50V 1000P-K | |
| C2P45 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C5A04 | 172P262010 | C-ELEC - 50V 0.047M-J | |
| C2P47 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C5A07 | 181P354050 | C-ELEC - 35V 47M-M | |
| C2P48 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C5A09 | 181P355060 | C-ELEC - 50V 22M-M | |
| C2P50 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C5A10 | 172P331070 | C-ELEC - 50V 0.022M-J | |
| C2P52 | 181P121070 | C-ELEC - 16V 47M-M NP | | | C5A12 | 181P354090 | C-ELEC - 35V 47M-M | |
| C2P60 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A14 | 172P434010 | C-ELEC - 35V 47M-M | |
| C2V14 | 181P352040 | C-ELEC - 16V 100M-M | | | C5A15 | 189D185010 | C-ELEC - 160V 100M-M | |
| C2V17 | 181P355040 | C-ELEC - 50V 4.7M-M | | | C5A21 | 172P262050 | C-ELEC - 160V 100M-M | ab |
| C2V19 | 181P352040 | C-ELEC - 16V 100M-M | | | C5A22 | 181P355050 | C-ELEC - 50V 10M-M | |
| C2V29 | 181P352040 | C-ELEC - 16V 100M-M | | | C5A23 | 181P355050 | C-ELEC - 50V 10M-M | |
| C2V30 | 181P118010 | C-ELEC - 50V 0.68M-M | | | C5A31 | 172P571050 | C-ELEC - 50V 10M-M | ab |
| C2V32 | 181P355000 | C-ELEC - 50V 0.47M-M | | | C5A31 | 172P571070 | C-ELEC - 50V 10M-M | cdefgh |
| C2V48 | 172P166030 | C-TF - 50V 0.1M-J | | | C5A32 | 172P571010 | C-TF - 50V 0.1M-J | |
| C2V49 | 172P166030 | C-TF - 50V 0.1M-J | | | C5A34 | 172P434010 | C-TF - 50V 0.1M-J | |
| C2V55 | 181P352040 | C-ELEC - 16V 100M-M | | | C5A36 | 172P436070 | C-ELEC - 16V 100M-M | |
| C2V57 | 181P355060 | C-ELEC - 50V 22M-M | | | C5A39 | 142P011030 | C-ELEC - 16V 100M-M | |
| C2V61 | 181P352040 | C-ELEC - 16V 100M-M | | | C5A40 | 142P011000 | C-ELEC - 16V 100M-M | |
| C2V62 | 181P355050 | C-ELEC - 50V 10M-M | | | C5A41 | 181P352080 | C-ELEC - 16V 100M-M | |
| C2W02 | 181P352080 | C-ELEC - 16V 1000M-M | | | C5A42 | 181P354050 | C-ELEC - 35V 47M-M | |
| C2W05 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A43 | 181P780030 | C-ELEC - 35V 47M-M | |
| C2W09 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A52 | 172P571030 | C-ELEC - 35V 47M-M | |
| C2W14 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A53 | 185D120020 | C-ELEC - 35V 47M-M | |
| C3007 | 181P353020 | C-ELEC - 25V 10M-M | | | C5A55 | 172P082090 | C-ELEC - 25V 10M-M | |
| C3012 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A56 | 181P354050 | C-ELEC - 35V 47M-M | |
| C3022 | 181P353020 | C-ELEC - 25V 10M-M | | | C5A60 | 172P262050 | C-ELEC - 50V 0.1M-J | |
| C3025 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A61 | 181P355040 | C-ELEC - 50V 4.7M-M | |
| C3026 | 181P355030 | C-ELEC - 50V 3.3M-M | | | C5A64 | 181P355060 | C-ELEC - 50V 22M-M | |
| C3061 | 181P352030 | C-ELEC - 16V 47M-M | | | C5A65 | 181P355050 | C-ELEC - 50V 10M-M | |
| | | | | | C5A68 | 181P123070 | C-ELEC - 50V 0.47M-M | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|-------|------------|-----------------------------|-----|--------------|-------------------|--------------------------------------|-----|
| C5A70 | 172P264010 | C-M-POLY - 50V 2.2M-J | | C6R11 | 154P400010 | C-CER - B1KV 220P-K | |
| C5A71 | 172P262050 | C-M-POLY - 50V 0.1M-J | | C6R12 | 155P231050 | C-CER - CH50V 15P-J | |
| C5A72 | 181P355010 | C-ELEC - 50V 1M-M | | C6R13 | 155P231090 | C-CER - CH50V 22P-J | |
| C5H01 | 181P354080 | C-ELEC - 35V 330M-M | | C6R14 | 154P405000 | C-CER - B3KV 1000P-K | |
| C5H16 | 172P186030 | C-PLA-PP - 200V 0.01M-K | | C7A00 | 154P345050 | C-CER-CHIP - CH25V 680P-J | |
| C5H17 | 172P261030 | C-M-POLY - 50V 0.01M-J | | C7B02 | 181P355020 | C-ELEC - 50V 2.2M-M | |
| C5H19 | 181P352040 | C-ELEC - 16V 100M-M | | C7B16 | 181P352030 | C-ELEC - 16V 47M-M | |
| C5H20 | 181P352040 | C-ELEC - 16V 100M-M | | C7B88 | 181P355050 | C-ELEC - 50V 10M-M | |
| C5H21 | 181P780060 | C-ELEC - 160V 10M-M | | C7B96 | 181P355020 | C-ELEC - 50V 2.2M-M | |
| C5H24 | 181P192060 | C-ELEC - 200V 22M-M/Q | | C7B99 | 181P352030 | C-ELEC - 16V 47M-M | |
| C5K00 | 172P572090 | C-M-PLA-PP - 1500V 0.015M-J | | C7DF3 | 181P350060 | C-ELEC - 3V 1000M-M | |
| C5K01 | 172P572090 | C-M-PLA-PP - 1500V 0.015M-J | | C7K01 | 181P352030 | C-ELEC - 16V 47M-M | |
| C5K03 | 142P024060 | C-CER - BF50V 0.1M-Z | | C7K20 | 155P314040 | C-CER - SL50V 220P-J | |
| C5K04 | 181P191000 | C-ELEC - 160V 22M-M/Q | | C7K21 | 181P355050 | C-ELEC - 50V 10M-M | |
| C5K05 | 172P383030 | C-M-POLY - 100V 0.47M-K | | C7K23 | 181P355010 | C-ELEC - 50V 1M-M | |
| C5K06 | 154P260080 | C-CER - R1KV 3300P-K | | C7K25 | 172P262050 | C-M-POLY - 50V 0.1M-J | |
| C5K07 | 172P261030 | C-M-POLY - 50V 0.01M-J | | C7K26 | 172P262050 | C-M-POLY - 50V 0.1M-J | |
| C5K08 | 155P239040 | C-CER - CH50V 100P-J | | C7K27 | 181P355010 | C-ELEC - 50V 1M-M | |
| C5K09 | 172P262010 | C-M-POLY - 50V 0.047M-J | | C7K28 | 181P352040 | C-ELEC - 16V 100M-M | |
| C5K10 | 181P354050 | C-ELEC - 35V 47M-M | | C7K30 | 172P261030 | C-M-POLY - 50V 0.01M-J | |
| C5K11 | 181P355050 | C-ELEC - 50V 10M-M | | C7M92 | 181P350040 | C-ELEC - 6.3V 330M-M | |
| C5K12 | 172P262010 | C-M-POLY - 50V 0.047M-J | | C7N06 | 181P350040 | C-ELEC - 6.3V 330M-M | |
| C5K13 | 154P270050 | C-CER - SL1KV 22P-J | | C7P15 | 181P212060 | C-ELEC - 16V 47M-M | |
| C5K51 | 142P023080 | C-CER - BF50V 0.01M-Z | | C7P19 | 181P352030 | C-ELEC - 16V 47M-M | |
| C6B02 | 181P195050 | C-ELEC - 350V 10M-M/Q | | C7P22 | 181P352050 | C-ELEC - 16V 220M-M | |
| C6B03 | 155P231090 | C-CER - CH50V 22P-J | | C7Q02 | 181P352040 | C-ELEC - 16V 100M-M | |
| C6B04 | 142P023080 | C-CER - BF50V 0.01M-Z | | C7Q03 | 181P352030 | C-ELEC - 16V 47M-M | |
| C6B05 | 181P352080 | C-ELEC - 16V 1000M-M | | C7Q52 | 181P352040 | C-ELEC - 16V 100M-M | |
| C6B06 | 142P023080 | C-CER - BF50V 0.01M-Z | | C7Q53 | 181P352030 | C-ELEC - 16V 47M-M | |
| C6B07 | 172P532050 | C-M-POLY - 400V 0.1M-J | | C7R08 | 181P355050 | C-ELEC - 50V 10M-M | |
| C6B08 | 142P020030 | C-CER - B50V 330P-K | | C81A2 | 181P182030 | C-ELEC - 16V 1000M-M 105C | |
| C6B09 | 142P023080 | C-CER - BF50V 0.01M-Z | | C81A3 | 181P182030 | C-ELEC - 16V 1000M-M 105C | |
| C6B10 | 172P532050 | C-M-POLY - 400V 0.1M-J | | C81B3 | 181P182030 | C-ELEC - 16V 1000M-M 105C | |
| C6B11 | 154P400010 | C-CER - B1KV 220P-K | | C81B4 | 181P182030 | C-ELEC - 16V 1000M-M 105C | |
| C6B12 | 155P231050 | C-CER - CH50V 15P-J | | C8281 | 189P197020 | C-ELE-DBL-LA - FM0H473Z/EECS5R5T473Z | |
| C6B13 | 155P231090 | C-CER - CH50V 22P-J | | C8705 | 181P185060 | C-ELEC - 50V 10M-M 105C | |
| C6B14 | 154P405000 | C-CER - B3KV 1000P-K | | C8710 | 181P181000 | C-ELEC - 10V 330M-M 105C | |
| C6G02 | 181P195050 | C-ELEC - 350V 10M-M/Q | | C8717 | 181P352060 | C-ELEC - 16V 330M-M | |
| C6G03 | 155P232010 | C-CER - CH50V 27P-J | | C8719 | 181P732000 | C-ELEC - 10V 680M-M 105C | |
| C6G04 | 142P023080 | C-CER - BF50V 0.01M-Z | | C8720 | 181P185060 | C-ELEC - 50V 10M-M 105C | |
| C6G05 | 181P352080 | C-ELEC - 16V 1000M-M | | C8725 | 181P182010 | C-ELEC - 16V 330M-M 105C | |
| C6G06 | 142P023080 | C-CER - BF50V 0.01M-Z | | C8727 | 181P181000 | C-ELEC - 10V 330M-M 105C | |
| C6G07 | 172P532050 | C-M-POLY - 400V 0.1M-J | | C8729 | 181P732000 | C-ELEC - 10V 680M-M 105C | |
| C6G09 | 142P023080 | C-CER - BF50V 0.01M-Z | | C8730 | 181P352060 | C-ELEC - 16V 330M-M | |
| C6G10 | 172P532050 | C-M-POLY - 400V 0.1M-J | | C8733 | 181P182010 | C-ELEC - 16V 330M-M 105C | |
| C6G11 | 154P400010 | C-CER - B1KV 220P-K | | C8751 | 181P355090 | C-ELEC - 50V 100M-M | |
| C6G12 | 155P231050 | C-CER - CH50V 15P-J | | C8761 | 181P352060 | C-ELEC - 16V 330M-M | |
| C6G13 | 155P231090 | C-CER - CH50V 22P-J | | C8764 | 181P352060 | C-ELEC - 16V 330M-M | |
| C6G14 | 154P405000 | C-CER - B3KV 1000P-K | | C8771 | 181P353060 | C-ELEC - 25V 330M-M | |
| C6G20 | 172P532050 | C-M-POLY - 400V 0.1M-J | | C8772 | 181P732000 | C-ELEC - 10V 680M-M 105C | |
| C6R02 | 181P195050 | C-ELEC - 350V 10M-M/Q | | C8780 | 181P352060 | C-ELEC - 16V 330M-M | |
| C6R03 | 155P231090 | C-CER - CH50V 22P-J | | C8783 | 181P350040 | C-ELEC - 6.3V 330M-M | |
| C6R04 | 142P023080 | C-CER - BF50V 0.01M-Z | | C8795 | 181P350040 | C-ELEC - 6.3V 330M-M | |
| C6R05 | 181P352080 | C-ELEC - 16V 1000M-M | | C8797 | 181P350040 | C-ELEC - 6.3V 330M-M | |
| C6R06 | 142P023080 | C-CER - BF50V 0.01M-Z | | C8798 | 181P350040 | C-ELEC - 6.3V 330M-M | |
| C6R07 | 172P532050 | C-M-POLY - 400V 0.1M-J | | C8889 | 181P350040 | C-ELEC - 6.3V 330M-M | |
| C6R09 | 142P023080 | C-CER - BF50V 0.01M-Z | | C8C03 | 181P358000 | C-ELEC - 35V 1000M-M | |
| C6R10 | 172P532050 | C-M-POLY - 400V 0.1M-J | | C8C05 | 181P358000 | C-ELEC - 35V 1000M-M | |
| | | | | C8C18 | 181P358000 | C-ELEC - 35V 1000M-M | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] |
|--------------|-------------------|----------------------------------|-----|
| C8C20 | 181P358000 | C-ELEC - 35V 1000M-M | |
| C8D12 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D16 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D20 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D21 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D22 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D30 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D31 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D39 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8D40 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E01 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E03 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E05 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E07 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E09 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E12 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E14 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8E16 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8G00 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8G01 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8G03 | 181P352020 | C-ELEC - 16V 33M-M | |
| C8G05 | 181P352030 | C-ELEC - 16V 47M-M | |
| C8G06 | 181P352030 | C-ELEC - 16V 47M-M | |
| C9A01 | 181P352030 | C-ELEC - 16V 47M-M | |
| C9A05 | 189P185070 | C-CER - AC250V E1000P-M | |
| C9A06 | 189P185070 | C-CER - AC250V E1000P-M | |
| C9A08 | 189P185090 | C-CER - AC250V E2200P-M | |
| C9A09 | 189P185090 | C-CER - AC250V E2200P-M | |
| C9A10 | 189P185090 | C-CER - AC250V E2200P-M | |
| C9A11 | 189P185090 | C-CER - AC250V E2200P-M | |
| C9A13 | 189P152070 | C-M-POLY - 250VAC 0.01M-M | |
| C9A14 | 189P152070 | C-M-POLY - 250VAC 0.01M-M | |
| C9A20 | 154P400050 | C-CER - B1KV 1000P-K | |
| C9A21 | 181P355050 | C-ELEC - 50V 10M-M | |
| C9A25 | 172P138010 | C-POLY - 50V 4700P-J | |
| C9A26 | 185D122050 | C-ELEC - H200V 1000M-M | |
| C9A29 | 181P355050 | C-ELEC - 50V 10M-M | |
| C9A30 | 181P355050 | C-ELEC - 50V 10M-M | |
| C9A32 | 181P735020 | C-ELEC - 25V 1000M-M 105C | |
| C9A33 | 181P735020 | C-ELEC - 25V 1000M-M 105C | |
| C9A34 | 154P400050 | C-CER - B1KV 1000P-K | |
| C9A35 | 181P735010 | C-ELEC - 25V 470M-M | |
| C9A37 | 181P734000 | C-ELEC - 16V 2200M-M 105C | |
| C9A38 | 181P734000 | C-ELEC - 16V 2200M-M 105C | |
| C9A41 | 181P732010 | C-ELEC - 10V 1000M-M 105C | |
| C9A43 | 172P262050 | C-M-POLY - 50V 0.1M-J | |
| C9A45 | 189P185090 | C-CER - AC250V E2200P-M | |
| C9A50 | 142P020050 | C-CER - B50V 470P-K | |
| C9A51 | 181P355090 | C-ELEC - 50V 100M-M | |
| C9A52 | 154P260080 | C-CER - R1KV 3300P-K | |
| C9A54 | 154P260080 | C-CER - R1KV 3300P-K | |
| C9A56 | 181P355080 | C-ELEC - 50V 47M-M | |
| C9A57 | 142P010090 | C-CER - B500V 470P-K | |
| C9A58 | 185D122040 | C-ELEC - H200V 820M-M | |
| C9A59 | 185D122040 | C-ELEC - H200V 820M-M | |
| C9A60 | 154P400030 | C-CER - B1KV 470P-K | |
| C9A61 | 142P010090 | C-CER - B500V 470P-K | |
| C9A62 | 189D183010 | C-ELEC - 400V 100M-KC | |

| Ref # | Part # | Part Name & Description | [#] |
|--------------|-------------------|---------------------------------|-----|
| C9A63 | 185D120020 | C-ELEC - H160V 470M-M 105C | |
| C9A65 | 181P194000 | C-ELEC - 250V 10M-M/Q | |
| C9A66 | 142P012050 | C-CER - B500V 0.01M-K | |
| C9A68 | 142P010090 | C-CER - B500V 470P-K | |
| C9A69 | 181P736070 | C-ELEC - 35V 330M-M | |
| C9A72 | 181P736070 | C-ELEC - 35V 330M-M | |
| C9A74 | 142P010090 | C-CER - B500V 470P-K | |
| C9A75 | 181P355080 | C-ELEC - 50V 47M-M | |
| C9A79 | 181P736070 | C-ELEC - 35V 330M-M | |
| C9A80 | 181P736070 | C-ELEC - 35V 330M-M | |
| C9A85 | 181P735020 | C-ELEC - 25V 1000M-M 105C | |
| C9A86 | 181P735020 | C-ELEC - 25V 1000M-M 105C | |
| C9C02 | 181P352040 | C-ELEC - 16V 100M-M | |
| C9C03 | 181P743040 | C-ELEC - 16V 330M-M | |
| C9C06 | 181P352040 | C-ELEC - 16V 100M-M | |
| C9C07 | 181P743040 | C-ELEC - 16V 330M-M | |
| C9C10 | 181P743040 | C-ELEC - 16V 330M-M | |
| C9C13 | 181P352040 | C-ELEC - 16V 100M-M | |
| C9C14 | 181P743040 | C-ELEC - 16V 330M-M | |
| C9C16 | 181P352040 | C-ELEC - 16V 100M-M | |
| C9C19 | 181P743040 | C-ELEC - 16V 330M-M | |
| C9C22 | 181P352030 | C-ELEC - 16V 47M-M | |
| C9C42 | 181P352040 | C-ELEC - 16V 100M-M | |
| C9C44 | 181P352040 | C-ELEC - 16V 100M-M | |
| C9C62 | 181P352030 | C-ELEC - 16V 47M-M | |
| C9D00 | 189P153040 | C-M-POLY - 250VAC 0.1M-M | |
| C9D02 | 189P153040 | C-M-POLY - 250VAC 0.1M-M | |
| C9M01 | 181P352030 | C-ELEC - 16V 47M-M | |
| C9M04 | 181P352030 | C-ELEC - 16V 47M-M | |
| C9M05 | 181P212060 | C-ELEC - 16V 47M-M | |
| C9M08 | 181P352030 | C-ELEC - 16V 47M-M | |

SWITCHES

| | | | |
|-------|------------|--------------------------|-------|
| S7L20 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L21 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L22 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L23 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L24 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L25 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L26 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L27 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L28 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L29 | 432P109010 | SW-KEY BOARD - KSHS611BT | abdeg |
| S7L40 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L41 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L42 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L43 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L44 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L45 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L46 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L47 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L48 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |
| S7L49 | 432P109010 | SW-KEY BOARD - KSHS611BT | ctfh |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|--|---|-------------------------|--------|--|----------------------------|----------------------------------|--------|
| MISCELLANEOUS | | | | | | | |
| 096Z465030 | TAPE-LENS | | bcdfh | 669D633010 | SCREW-LIQUID - M6*1.0-17.5 | | abcdef |
| 096Z465080 | TAPE-LENS | | ag | 685D039010 | SCREW-LIQUID | | gh |
| 242D535010 | CABLE-EXTENSION - 1394 | | g | 702A447011 | ASSY-PANEL-TERMINAL | | |
| 242D535040 | CABLE - 1394:300mm | | cfh | 703D124010 | CAP - SCREW GLOSSY BLACK | | g |
| 242D535050 | CABLE - 1394:1000mm | | cfh | 703D125010 | CAP - SCREW GRAY | | efh |
| 242D536010 | CABLE-MEMORY - USB/5P-JS | | dg | 703D125020 | CAP - SCREW BLACK | | ef |
| 242D540010 | CABLE-IF - F-CONN 250mm | | | 750A449010 | COVER-BACK - TOP | | a |
| 242D540020 | CABLE-IF - PIN-PLUG 325mm | | | 761C725010 | COVER-BTM - CARD READER | | dg |
| 242D540030 | CABLE-IF - PIN-PLUG 375mm | | | 761C726010 | COVER-TOP - CARD READER | | dg |
| 242D535020 | CABLE - 1394:700mm | | dg | 767C031020 | MIRROR - 73" | | h |
| 299P103060 | FAN-COOLING | | | 767D048090 | MIRROR - 65" | | efg |
| 299P254020 | IR-EMITTER, 4-HEAD - T-IR-02 W/FERRITE CO | | | 767D072030 | MIRROR - 55" | | c |
| 299P271010 | MEMORY-CARD-READER-PWB | | dg | 767D072040 | MIRROR - 48" | | a |
| 305P703010 | 2RF-SWITCH | | | 767D072060 | MIRROR - 55" | | d |
| 330P294010 YOKE-DEFL - 840UH | | | ab | 767D072050 | MIRROR - 55" | | b |
| 330P294020 YOKE-DEFL - 720UH | | | cdefgh | 850C089020 | INLAY DM | | dg |
| 338P054010 SVM-ASSY | | | abe | 850C089010 | INLAY DM | | abcefh |
| 338P054020 SVM-ASSY | | | cdgfh | 955C238003 | ASSY-MEMORY CARD READER | | dg |
| 411D033010 | CORE-FERRITE - R15 L18 | | | AG6B01 | 224D019090 | AIR GAP - 1.5+-0.5KV | |
| 411D044020 | CORE-FERRITE - R19.5 L32 | | | AG6B02 | 224D019090 | AIR GAP - 1.5+-0.5KV | |
| 411D062010 | CORE-FERRITE - R15 L18 | | | AG6G01 | 224D019090 | AIR GAP - 1.5+-0.5KV | |
| 411D063030 | CORE-FERRITE - ZCAT2032-0930 | | | AG6G02 | 224D019090 | AIR GAP - 1.5+-0.5KV | |
| 411D064010 | FERRITE CORE - HF57SH35X0.8 | | | AG6R02 | 224D019090 | AIR GAP - 1.5+-0.5KV | |
| 411D064020 | FERRITE CORE - HF57SH28X0.7 | | | AG6R01 | 224D019090 | AIR GAP - 1.5+-0.5KV | |
| 453B036010 | CAP-ANODE - [R] | | abcdef | RV9D00 265P100020 VAR - ERZV10D271CS | | | |
| 453B036020 | CAP-ANODE - [GB] | | abcdef | F5A00 283P144070 FUSE - 125V 3A | | | |
| 453B036070 | CAP-ANODE - [R] | | gh | F9A01 283P144060 FUSE - 125V 7A | | | |
| 453B036080 | CAP-ANODE - [BG] | | gh | F9A02 283P144090 FUSE - 125V 10A | | | |
| 480P053010 | SPEAKER - 5" | | a | F9A03 283P144080 FUSE - 125V 5A | | | |
| 480P063010 | SPEAKER - 6" | | be | F9A04 283P144080 FUSE - 125V 5A | | | |
| 480P066010 | SPEAKER - 6" | | cfh | F9A05 283P144080 FUSE - 125V 5A | | | |
| 480P074010 | SPEAKER - 5"x7" | | dg | F9A21 283P144090 FUSE - 125V 10A | | | |
| 490P154010 LENS-BARREL:RED | | | a | F9A22 283P144090 FUSE - 125V 10A | | | |
| 490P154020 LENS-BARREL:BLUE/GREEN | | | a | F9A23 283P144070 FUSE - 125V 3A | | | |
| 490P172070 LENS-BARREL:RED | | | e | F9D00 283D131040 FUSE - S10A 125A | | | |
| 490P172080 LENS-BARREL:GREEN | | | e | SF8800 | 296P171010 | SAW-FILTER - X6892D | |
| 490P172090 LENS-BARREL:BLUE | | | e | SF8801 | 296P172010 | SAW-FILTER - X7303P | |
| 490P205040 LENS-BARREL:RED | | | cf | CF2N01 | 299P128010 | OSC-CERAMIC - CSB500F2 | |
| 490P205050 LENS-BARREL:GREEN | | | cf | CF2P01 | 299P128010 | OSC-CERAMIC - CSB500F2 | |
| 490P205060 LENS-BARREL:BLUE | | | cf | CF2V01 | 299P259010 | OSC-CERAMIC - CSALA2M6964ZF01-B0 | |
| 490P210040 LENS-BARREL:RED | | | d | T2830 | 409P961010 | CHIP-FILTER - ACM2012D-9002P | |
| 490P210050 LENS-BARREL:GREEN | | | d | T2860 | 409P961010 | CHIP-FILTER - ACM2012D-9002P | |
| 490P210060 LENS-BARREL:BLUE | | | d | T2910 | 409P961010 | CHIP-FILTER - ACM2012D-9002P | |
| 490P220010 LENS-BARREL:BLUE | | | b | T2961 | 409P961010 | CHIP-FILTER - ACM2012D-9002P | |
| 490P220040 LENS-BARREL:RED/GREEN | | | b | J2J21 | 452C401010 | CONNECTOR-USB | |
| 490P226010 LENS-BARREL:ALL | | | gh | J2J22 | 451P246010 | JACK-1394 - MINI | |
| 598D456010 | BRACKET-MIRROR - TOP | | a | J8202 | 452C401010 | CONNECTOR-USB | |
| 598D651010 | COVER - DM | | | J8301 | 440C393030 | PIN-JACK-BOARD-1P | |
| 589C063010 | CASTOR - DUAL WHEEL | | | J8402 | 451P246010 | JACK-1394 - MINI | |
| 594C932010 | SHEILD-CRT - TRAY | | gh | J8403 | 451P246010 | JACK-1394 - MINI | |
| 598D417020 | PLATE-RF SWITCH | | | K9A50 287P111030 RELAY-POWER - LKS1AF-12V | | | |
| 622B009020 | TRAY - CRT-COOLANT | | | PC9A21 268P058020 PHOTO-COUPLER - ON3131-R/ON3161-R | | | |
| 622C086010 | CLIP-MIRROR - TOP | | a | PC9A50 268P106010 PHOTO-COUPLER - CNZ3133 | | | |
| 642C340010 | BRACKET-MIRROR - TOP | | ef | PJ2J00 | 440C407010 | PIN-JACK-BOARD-6P | |
| 642C352010 | CLIP-MIRROR - TOP | | bc | PJ2J01 | 440C412020 | PIN-JACK-BOARD-3P-1S | |
| | | | | PJ2J02 | 440C421010 | PIN-JACK-BOARD-2P | |
| | | | | PJ2J03 | 440C410010 | PIN-JACK-BOARD-5P | |
| | | | | PJ2J04 | 440C410010 | PIN-JACK-BOARD-5P | |

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] |
|-------------------------------|-------------------------------|---------------------------|-------|
| PJ2J05 | 440C421010 | PIN-JACK-BOARD-2P | |
| PJ2J06 | 451C259010 | JACK-MICROPHONE | |
| PJ2J07 | 451C259010 | JACK-MICROPHONE | |
| PJ2J11 | 440C421010 | PIN-JACK-BOARD-3P | |
| SKT6B1 449C141030 | SOCKET-CRT | | |
| SKT6R1 449C141030 | SOCKET-CRT | | |
| SKT6G1 449C141030 | SOCKET-CRT | | |
| TU8700 | 295P490040 | TUNER-TV - ENA46914P4A | |
| TU8701 | 295P523010 | TUNER-NTSC/ATSC | |
| TU8702 | 295P524010 | TUNER-OOB | |
| TU8704 295P527010 | TUNER-NTSC DEMODULATOR | | |
| X2K51 | 285P426020 | QTZ-CRYST - 4.000000MHZ | |
| X2M47 | 285P426040 | QTZ-CRYST - 20.000MHZ | |
| X2N26 | 285P426010 | QTZ-CRYST - 3.579545MHZ | |
| X2P26 | 285P426010 | QTZ-CRYST - 3.579545MHZ | |
| X3001 | 285P413010 | QTZ-CRYST - 18.432MHZ | |
| X7A13 | 285P434020 | QTZ-CRYST - 16.000MHZ | |
| X7J10 | 285P335050 | QTZ-CRYST - 80.000MHZ | |
| X7P09 | 285P434010 | QTZ-CRYST - 8.000MHZ | |
| X8001 | 285P441040 | QTZ-CRYST - 26.1621MHZ | |
| X8301 | 285P434020 | QTZ-CRYST - 16.000MHZ | |
| X8302 | 285P441030 | QTZ-CRYST - 14.31818MHZ | dg |
| X8303 | 285P413030 | QTZ-CRYST - 18.432MHZ | |
| X8401 | 285P431020 | QTZ-CRYST - 54.000MHZ | |
| X8402 | 285P410020 | QTZ-CRYST - 24.576MHZ | |
| X8800 | 285P410080 | QTZ-CRYST - 25.14MHZ | |
| Z7K01 | 939P617010 | UNIT-PREAMP - GP1U283Q | |
| Z81A1 | 283P128050 | FUSE-CHIP - AC125/100V 4A | |
| Z81A2 | 283P128050 | FUSE-CHIP - AC125/100V 4A | |
| Z81A3 | 283P128050 | FUSE-CHIP - AC125/100V 4A | |
| Z81A4 | 283P128050 | FUSE-CHIP - AC125/100V 4A | |
| PRINTED CIRCUIT BOARDS | | | |
| 930B918001 | ASSY-PWB-MAIN | | ab |
| 930B918002 | ASSY-PWB-MAIN | | cdef |
| 930B918003 | ASSY-PWB-MAIN | | gh |
| 930B919001-48 | ASSY-PWB-SIGNAL | | a |
| 930B919001-55 | ASSY-PWB-SIGNAL | | b |
| 930B919002-55 | ASSY-PWB-SIGNAL | | c |
| 930B919002-65 | ASSY-PWB-SIGNAL | | ef |
| 930B919003 | ASSY-PWB-SIGNAL | | h |
| 930B919006 | ASSY-PWB-SIGNAL | | d |
| 930B919007 | ASSY-PWB-SIGNAL | | g |
| 930B920001 | ASSY-PWB-TERMINAL | | abcef |
| 930B920002 | ASSY-PWB-TERMINAL | | dg |
| 934C106001 | ASSY-PWB-CRT | | |
| 934C107001 | ASSY-PWB-HDMI | | |
| 934C108001 | ASSY-PWB-DM3 | | abe |
| 934C108002 | ASSY-PWB-DM3 | | dg |
| 934C108003 | ASSY-PWB-DM3 | | cfh |
| 934C109001-48 | ASSY-PWB-E2P | | a |
| 934C109001-55 | ASSY-PWB-E2P | | bcd |
| 934C109001-65 | ASSY-PWB-E2P | | efg |
| 934C109001-73 | ASSY-PWB-E2P | | h |
| 934C110001 | ASSY-PWB-TUNER | | |
| 935D762001 | ASSY-PWB-PREAMP | | |

| Ref # | Part # | Part Name & Description | [#] |
|-----------------------|-------------------|----------------------------|-------|
| | 935D763001 | ASSY-PWB-FRONT | abcef |
| | 935D763002 | ASSY-PWB-FRONT | dg |
| | 935D764001 | ASSY-PWB-CONTROL | abdeg |
| | 935D767001 | ASSY-PWB-DBF | |
| | 935D770001 | ASSY-PWB-FIF | cdfgh |
| | 935D772001 | ASSY-PWB-CONTROL | cth |
| COSMETIC PARTS | | | |
| | 703B038010 | DOOR - A/V | abcef |
| | 703B044010 | PANEL-CARD READER - FRONT | dg |
| | 716C040A20 | BADGE-BRAND - GOLD | cfh |
| | 716C040010 | BADGE-BRAND - SILVER | abe |
| | 716C041010 | BADGE-BRAND - ALUMINUM | dg |
| | 720C188050 | COVER-FRONT | ag |
| | 720C250020 | COVER-FRONT | ef |
| | 720C254010 | COVER-FRONT | bc |
| | 720C257020 | COVER-FRONT | d |
| | 761A209030 | GRILLE - SPEAKER | a |
| | 761A210010 | GRILLE - SPEAKER | b |
| | 761A211010 | GRILLE - SPEAKER | e |
| | 761A224010 | GRILLE SPEAKER | c |
| | 761A225010 | GRILLE SPEAKER | f |
| | 761A226010 | GRILLE SPEAKER | h |
| | 761A199020 | GRILLE-SPEAKER - 65" | g |
| | 761A223010 | GRILLE-SPEAKER - 55" | d |
| | 762B375020 | PANEL-FRONT - WOOD | g |
| | 762B384010 | PANEL-FRONT - WOOD | d |
| | 775B140010 | NAME-PLATE - WS-55515 | b |
| | 775B140060 | NAME-PLATE - WS-48515 | a |
| | 775B140070 | NAME-PLATE - WS-65515 | e |
| | 775B140080 | NAME-PLATE - WS-55615 | c |
| | 775B140090 | NAME-PLATE - WS-65615 | f |
| | 775B141010 | NAME-PLATE - WS-73615 | h |
| | 775B141020 | NAME-PLATE - WS-55815 | d |
| | 775B141030 | NAME-PLATE - WS-65815 | g |
| ACCESSORIES | | | |
| | 242D525010 | CABLE - AUDIO | |
| | 242D527010 | CABLE - IR | dg |
| | 246C351030 | CORD-AC - POWER | |
| | 290P122010 | REMOTE-CONTROL - V25/V25+ | abcef |
| | 290P123010 | REMOTE-CONTROL - V25++ | dg |
| | I/QR WS48515 | GUIDE - QUICK REF:V25/V25+ | abcef |
| | I/QR WS55815 | GUIDE - QUICK REF:V25++ | dg |
| | I/B WS48515 | GUIDE - OWNERS:V25/V25+ | abcef |
| | I/B WS55815 | GUIDE - OWNERS:V25++ | dg |

MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 / WS-65815 / WS-73615

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] |
|-------------------|------------|---------------------------|-----|
| WS-48515 | | | |
| (Figure 1) | | | |
| (1) | 491P138030 | SCREEN-LENTICULAR - 48" | a |
| (2) | 491P139020 | LENS-FRESNEL - 48" | a |
| (3) | 597C027010 | BRACKET-SCREEN FRAME | a |
| (4) | 598D339010 | BRACKET-SCREEN-SIDE | a |
| (5) | 622B010010 | HOLDER-SCREEN - TOP | a |
| (6) | 622B011010 | HOLDER-SCREEN - BOTTOM | a |
| (7) | 622B012010 | HOLDER-SCREEN - SIDE | a |
| (8) | 622B013030 | CLIP-DIAMOND SHIELD - 48" | a |
| (9) | 635B109010 | STIFFENER-SCREEN - TOP | a |
| (10) | 751A005080 | BEZEL-FRONT 48" | a |
| (11) | 760D628090 | DIAMOND SHIELD-48" | a |

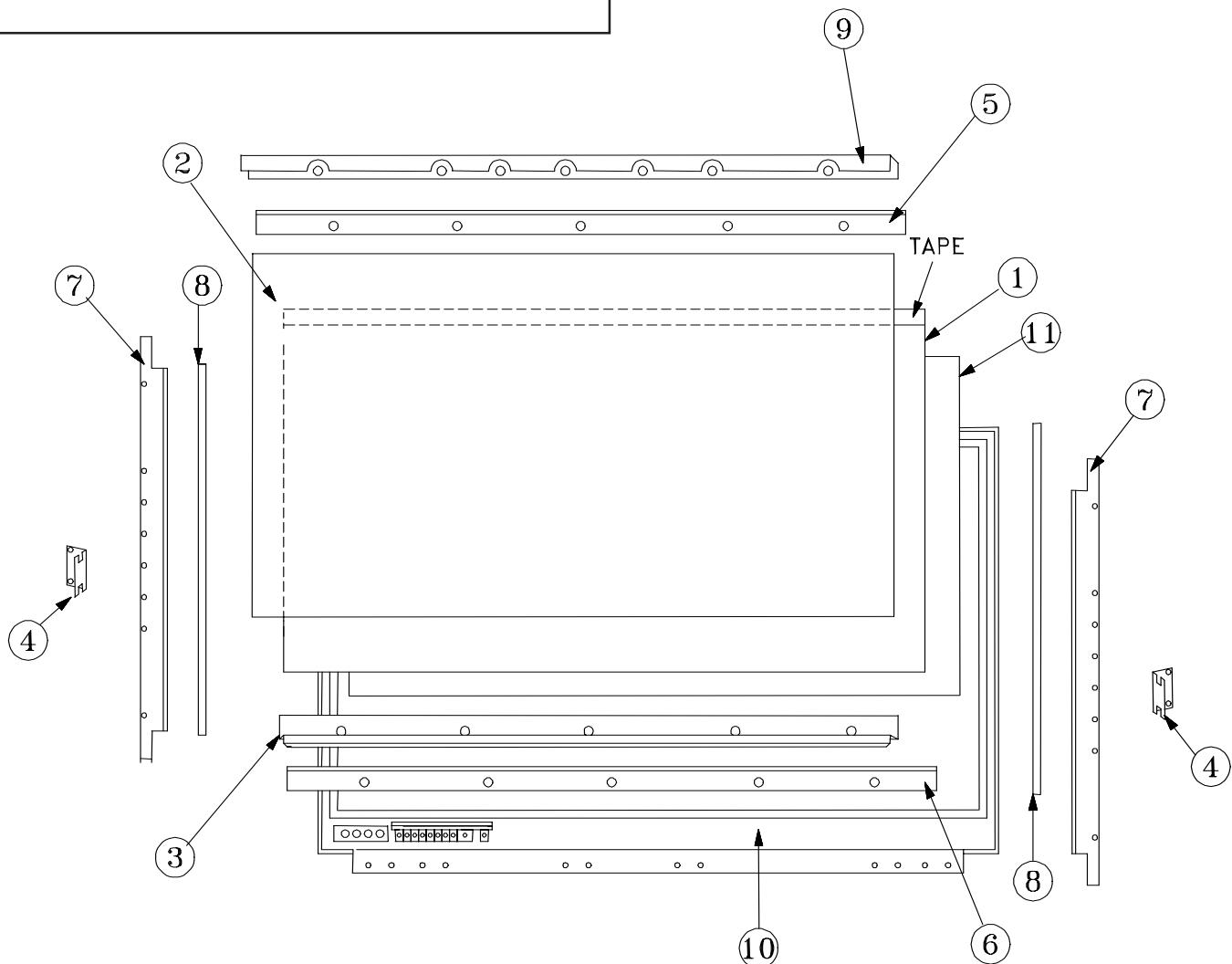


Figure 1: WS-48515

MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 / WS-65815 / WS-73615

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|----------------------------|------------|---------------------------|-----|-------|------------|----------------------------|-----|
| WS-55515 (Figure 2) | | | | | | WS-65515 (Figure 2) | |
| (1) | 491P180010 | SCREEN-LENTICULAR - 55" | b | (1) | 491P182010 | SCREEN-LENTICULAR - 65" | e |
| (2) | 491P181010 | LENS-FRESNEL - 55" | b | (2) | 491P183010 | LENS-FRESNEL - 65" | e |
| (3) | 622B016010 | CLIP-DIAMOND SHIELD - 55" | b | (3) | 622B016020 | CLIP-DIAMOND SHIELD - 65" | e |
| (4) | 622C104010 | HOLDER-SCREEN | b | (4) | 622C104020 | HOLDER-SCREEN | e |
| (5) | 701B481010 | FRAME-SCREEN-TOP | b | (5) | 701B481020 | FRAME-SCREEN-TOP | e |
| (6) | 701B482010 | FRAME-SCREEN-SIDE | b | (6) | 701B482020 | FRAME-SCREEN-SIDE | e |
| (7) | 702A446010 | CAP-CORNER - TOP | b | (7) | 702A446010 | CAP-CORNER - TOP | e |
| (8) | 702A436050 | PANEL-CONTROL - BTM FRAME | b | (8) | 702A437050 | PANEL-CONTROL - BTM FRAME | e |
| (9) | 760D628080 | DIAMOND SHIELD - 55" | b | (9) | 760D627070 | DIAMOND SHIELD - 65" | e |
| (11) | 598D491010 | BRACKET-SCREEN SIDE | b | (10) | 594C988010 | BRACKET-SCREEN FRAME | efh |
| | | | | (11) | 598D491010 | BRACKET-SCREEN SIDE | e |

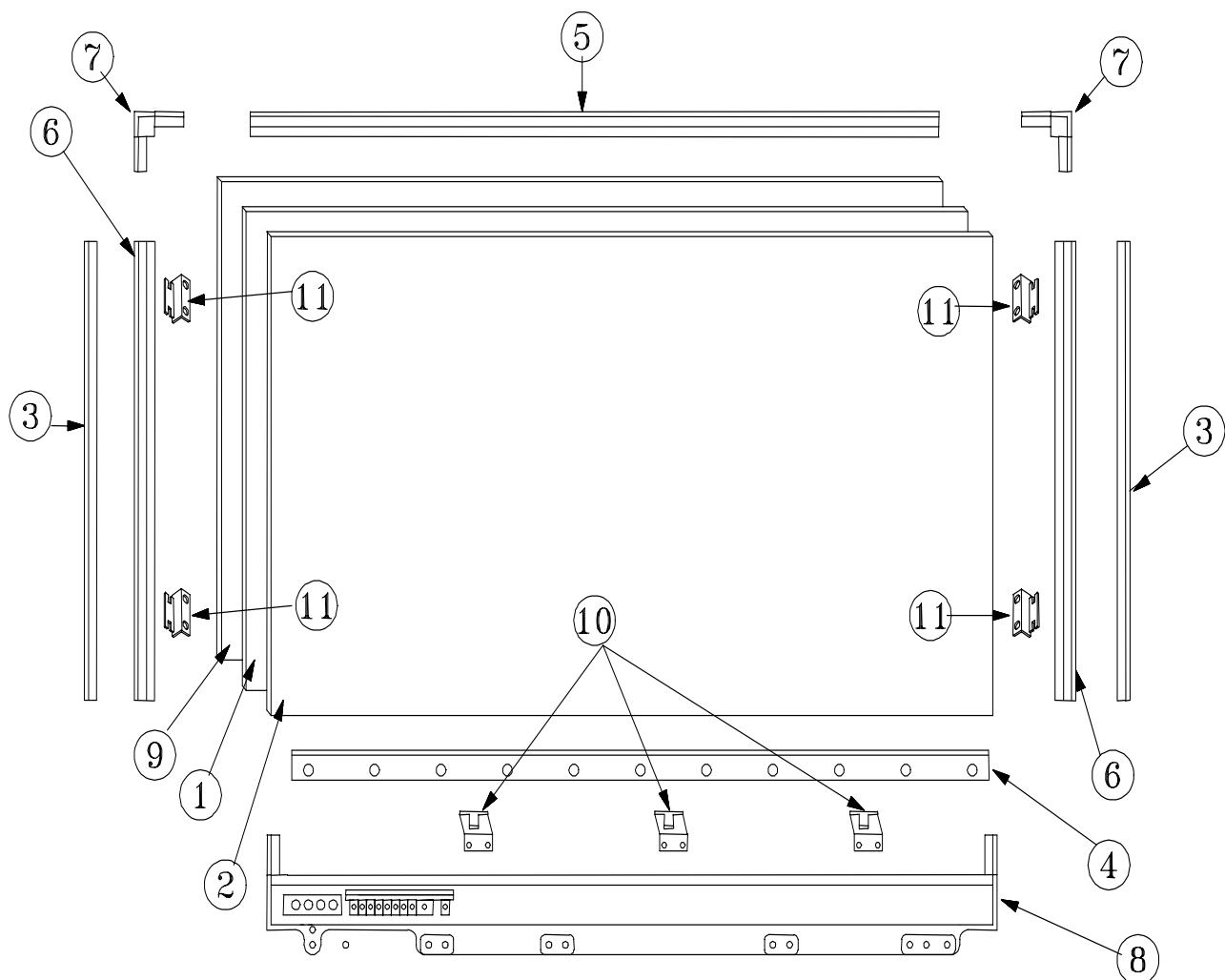


Figure 2: WS-55515 / WS-65515

MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 / WS-65815 / WS-73615

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|----------------------------|------------|---------------------------|-----|-------|------------|----------------------------|-----|
| WS-55815 (Figure 3) | | | | | | WS-65815 (Figure 3) | |
| (1) | 491P180010 | SCREEN-LENTICULAR - 55" | d | (1) | 491P182020 | SCREEN-LENTICULAR - 65" | g |
| (2) | 491P181010 | SCREEN-FRESNEL - 55" | d | (2) | 491P183020 | SCREEN-FRESNEL - 65" | g |
| (3) | 622C090020 | CLIP-DIAMOND SHIELD - 55" | d | (3) | 622C090010 | CLIP-DIAMOND SHIELD - 65" | g |
| (4) | 702A408010 | CAP-CORNER - TOP | dg | (4) | 702A408010 | CAP-CORNER - TOP | dg |
| (6) | 702A409020 | CAP-CORNER-BOTTOM - LEFT | dg | (6) | 702A409020 | CAP-CORNER-BOTTOM - LEFT | dg |
| (7) | 760D646010 | DIAMOND SHIELD - 55" AR | d | (7) | 760D644020 | DIAMOND SHIELD - 65" AR | g |
| (8) | 701B466020 | FRAME-SCREEN-SIDE | d | (8) | 701B466030 | FRAME-SCREEN-SIDE | g |
| (9) | 701B467020 | FRAME-SCREEN-TOP | d | (9) | 701B467030 | FRAME-SCREEN-TOP | g |
| (10) | 701B468050 | FRAME-SCREEN-BTM | d | (10) | 701B468040 | FRAME-SCREEN-BTM | g |
| (11) | 702A409010 | CAP-CORNER-BOTTOM - RIGHT | dg | (11) | 702A409010 | CAP-CORNER-BOTTOM - RIGHT | dg |

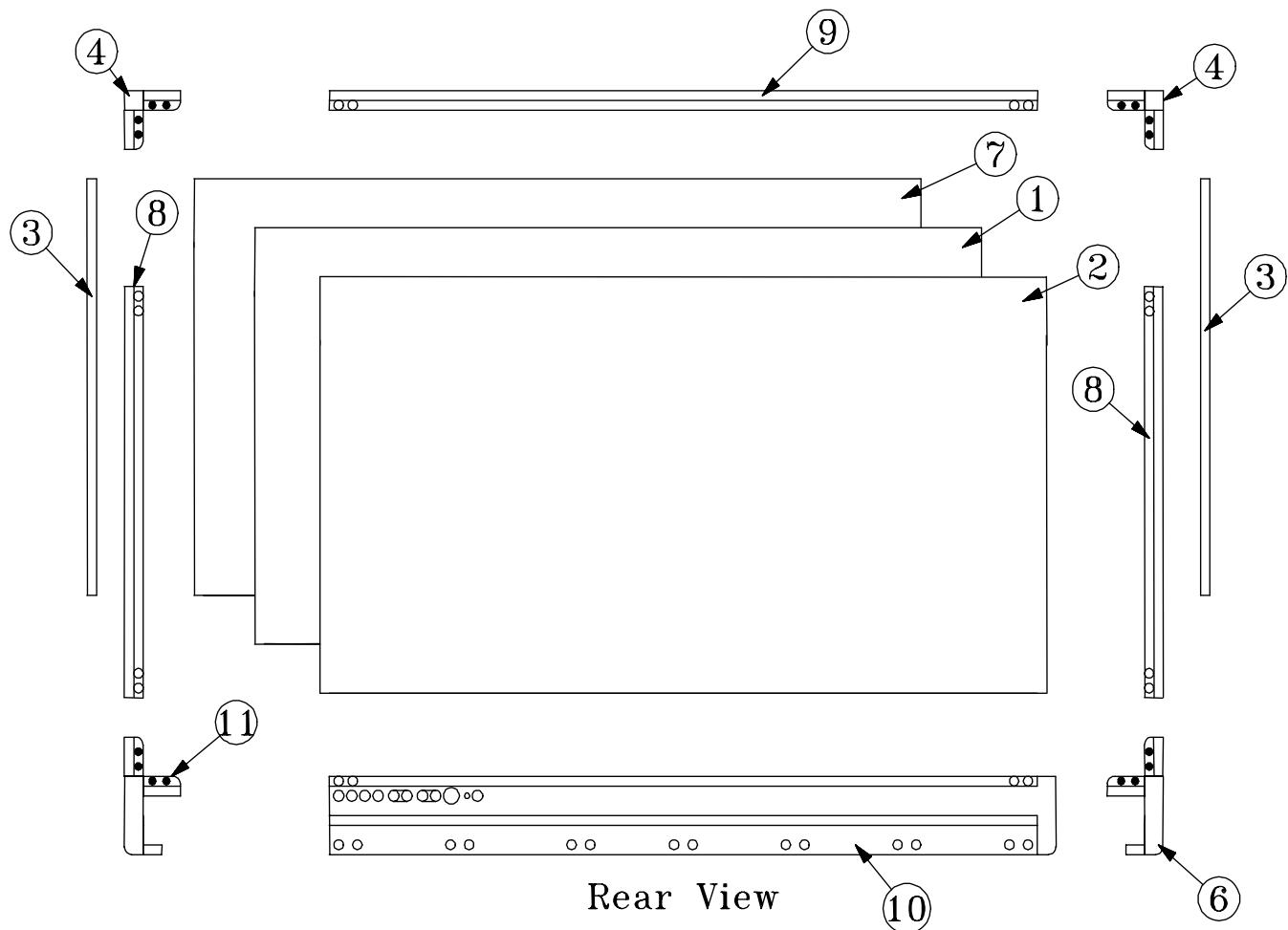


Figure 3: WS-55815 / WS-65815

MODELS: WS-48515 / WS-55515 / WS-55615 / WS-55815 / WS-65515 / WS-65615 / WS-65815 / WS-73615

[#] Model Legend:

(a) WS-48515, (b) WS-55515, (c) WS-55615, (d) WS-55815, (e) WS-65515, (f) WS-65615, (g) WS-65815, (h) WS-73615

| Ref # | Part # | Part Name & Description | [#] | Ref # | Part # | Part Name & Description | [#] |
|----------------------------|------------|-------------------------|-----|-------|------------|-------------------------|-----|
| WS-55615 (Figure 4) | | | | | | | |
| (1) | 491P181010 | LENS-FRESNEL | bcd | (6) | 635B113020 | FRAME TOP - SUPPORT | efh |
| (2) | 491P180010 | SCREEN-LENTICULAR | bcd | (7) | 760D627070 | DIAMOND SHIELD | f |
| (3) | 702A449010 | FRAME SCREEN TOP | c | (8) | 622C104040 | HOLDER SCREEN | ef |
| (4) | 701B498010 | FRAME SCREEN SIDE | c | (9) | 702A452010 | CONTROL PANEL | f |
| (5) | 598D619010 | BRACKET SCREEN SIDE | cfh | (10) | 594C988010 | BRACKET - FRAME | efh |
| WS-65615 (Figure 4) | | | | | | | |
| (1) | 491P183010 | LENS-FRESNEL | ef | (1) | 491P186010 | LENS-FRESNEL | h |
| (2) | 491P182010 | SCREEN-LENTICULAR | ef | (2) | 491P185010 | SCREEN-LENTICULAR | h |
| (3) | 702A453010 | FRAME SCREEN TOP | f | (3) | 702A454010 | FRAME SCREEN TOP | h |
| (4) | 701B498020 | FRAME SCREEN SIDE | f | (4) | 701B498030 | FRAME SCREEN SIDE | h |
| (5) | 598D619010 | BRACKET SCREEN SIDE | cfh | (5) | 598D619010 | BRACKET SCREEN SIDE | cfh |
| WS-73615 (Figure 4) | | | | | | | |
| (1) | 491P183010 | LENS-FRESNEL | efh | (6) | 635B113030 | FRAME TOP - SUPPORT | efh |
| (2) | 491P182010 | SCREEN-LENTICULAR | efh | (7) | 760D638010 | DIAMOND SHIELD - 73" | h |
| (3) | 702A453010 | FRAME SCREEN TOP | h | (8) | 622C214010 | HOLDER SCREEN | h |
| (4) | 701B498020 | FRAME SCREEN SIDE | h | (9) | 702A450010 | CONTROL PANEL | h |
| (5) | 598D619010 | BRACKET SCREEN SIDE | efh | (10) | 594C988010 | BRACKET - FRAME | efh |

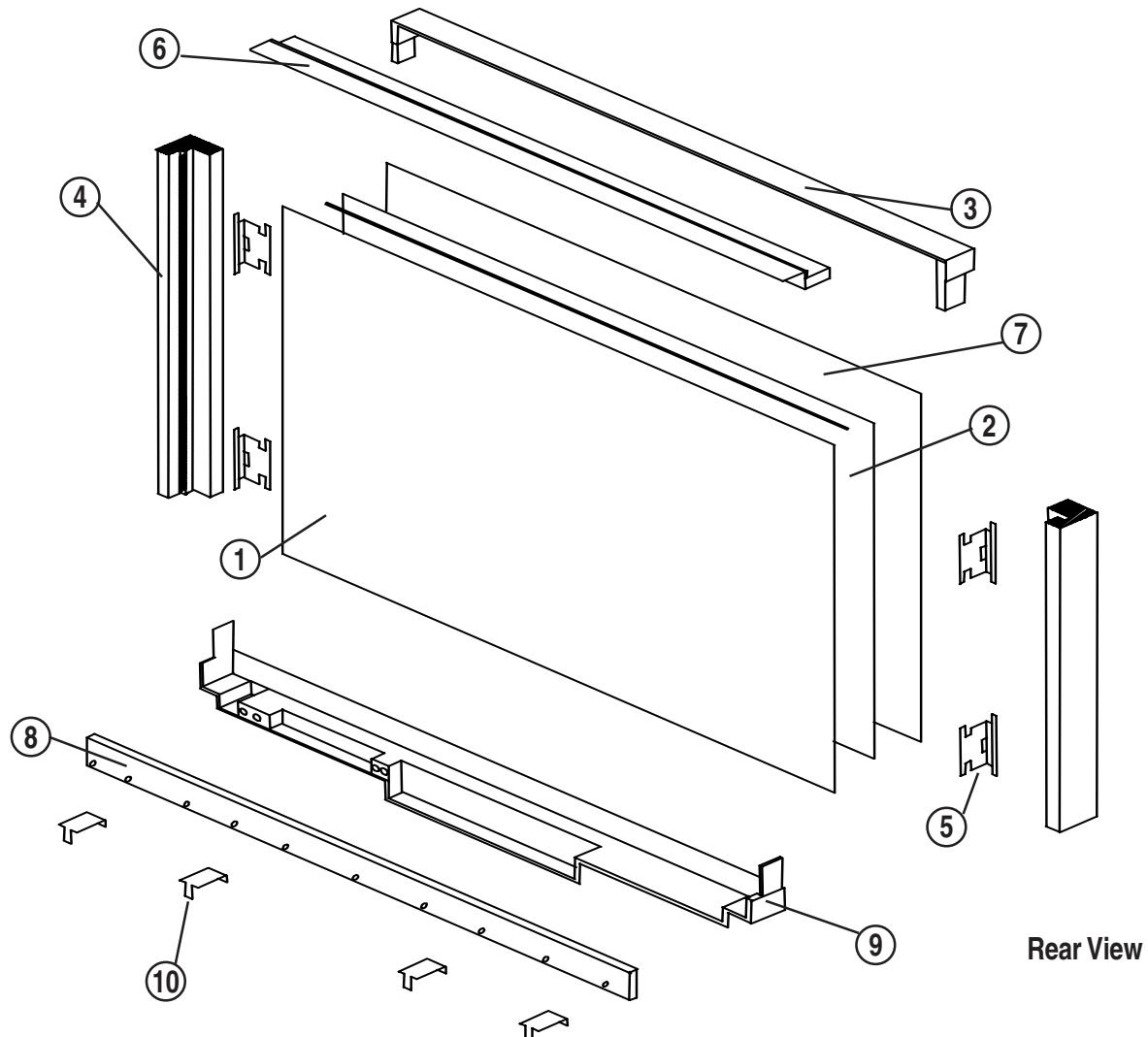
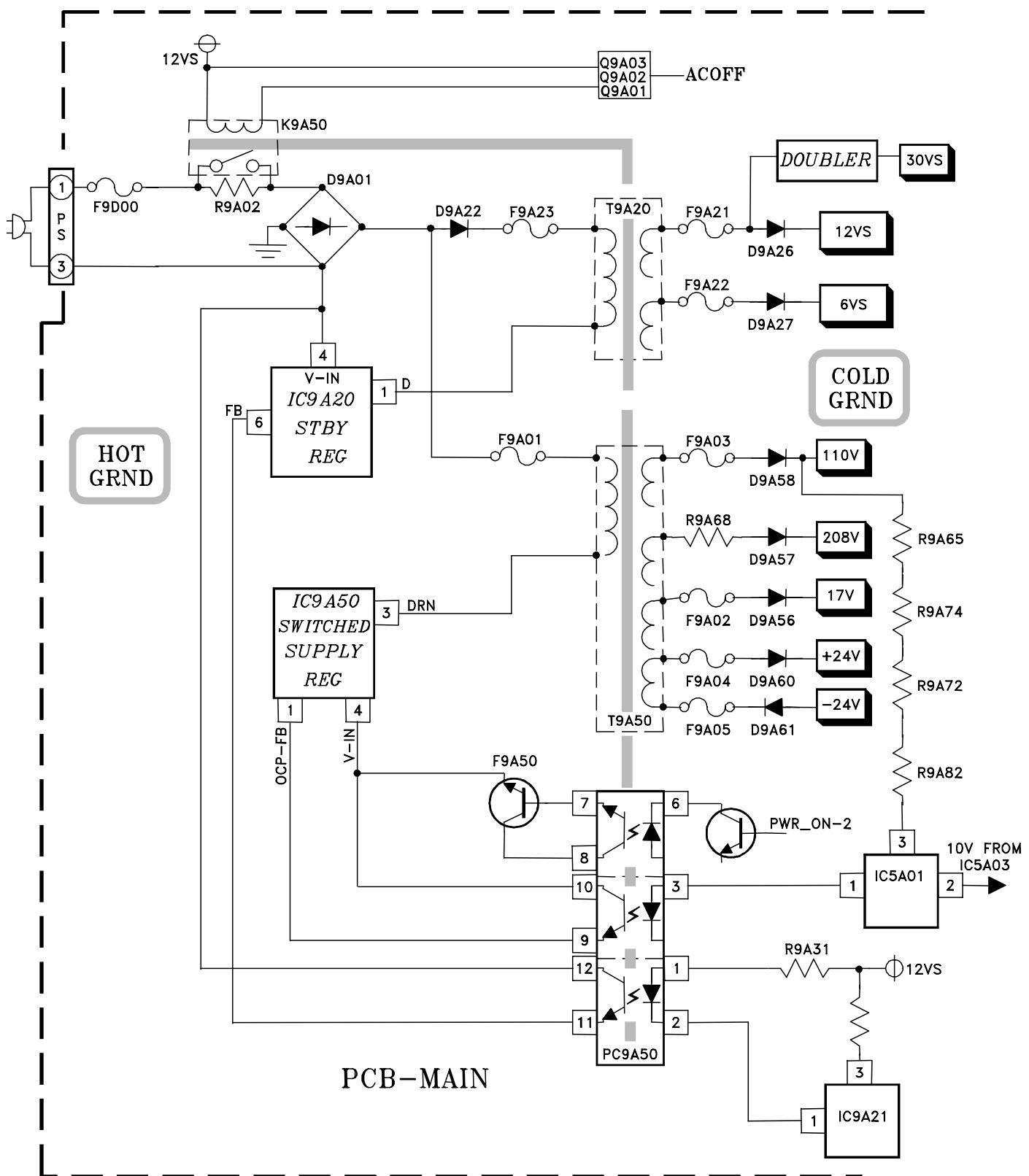
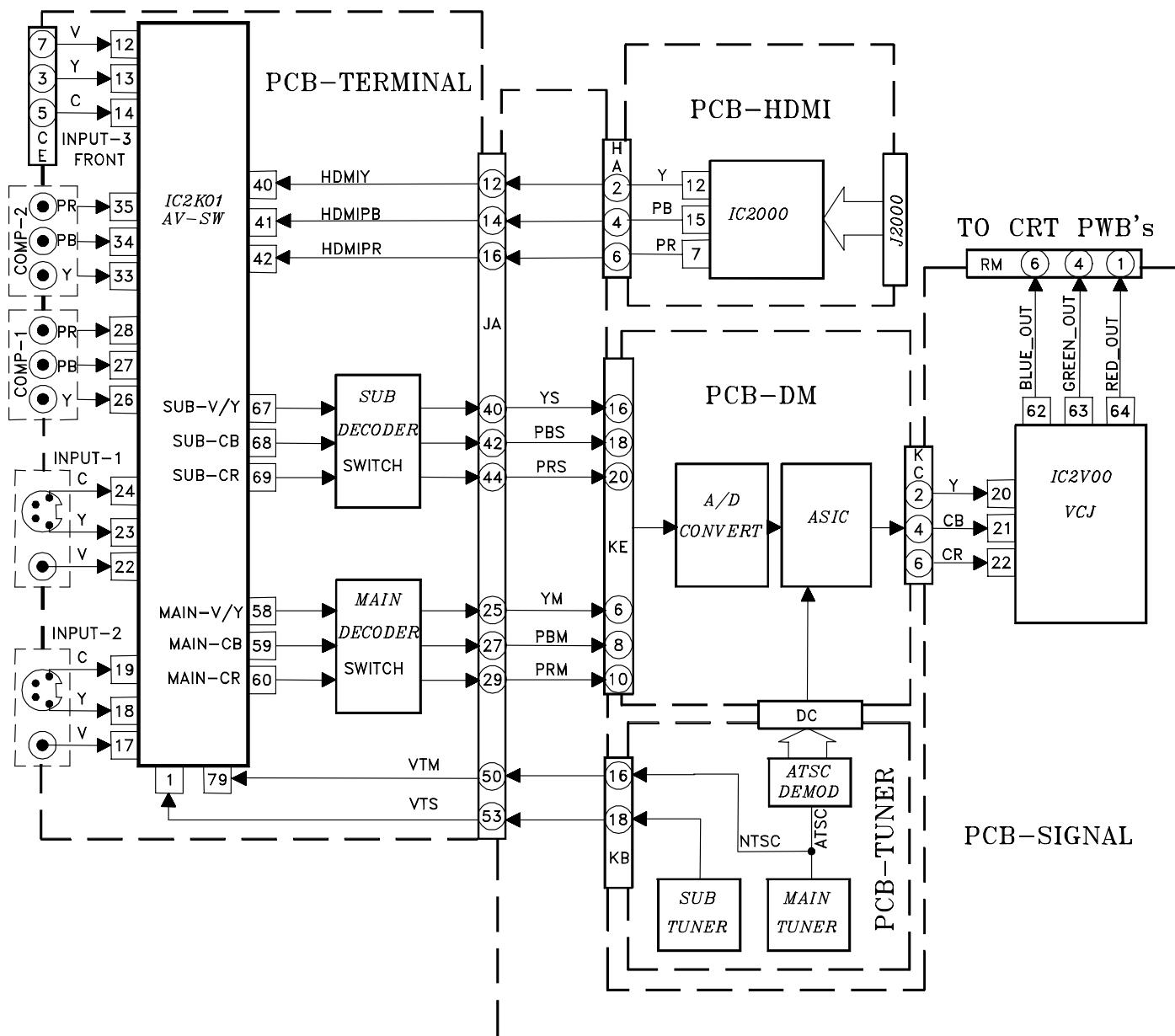


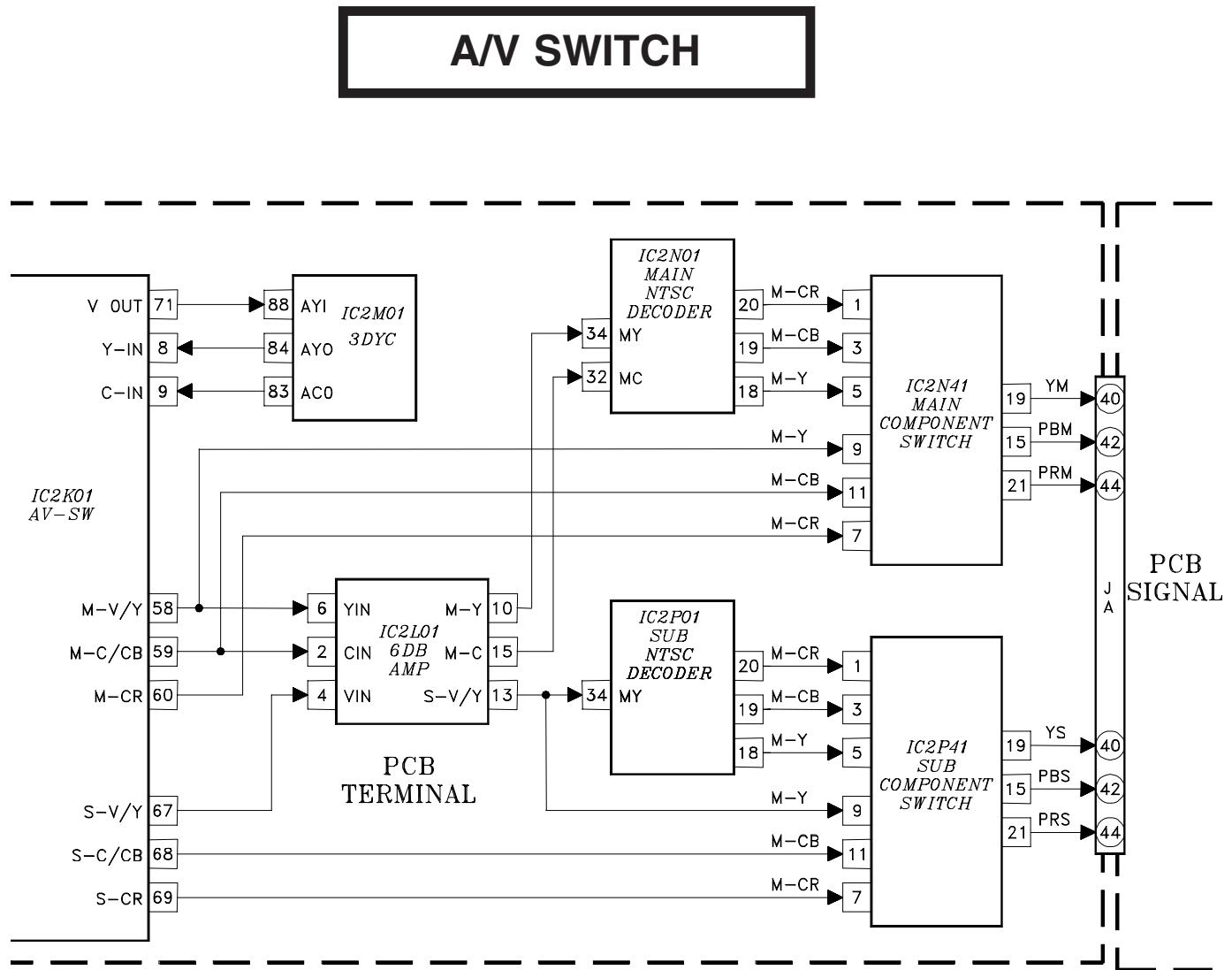
Figure 4: WS-55615 / WS-65615 / WS-73615

POWER SUPPLY

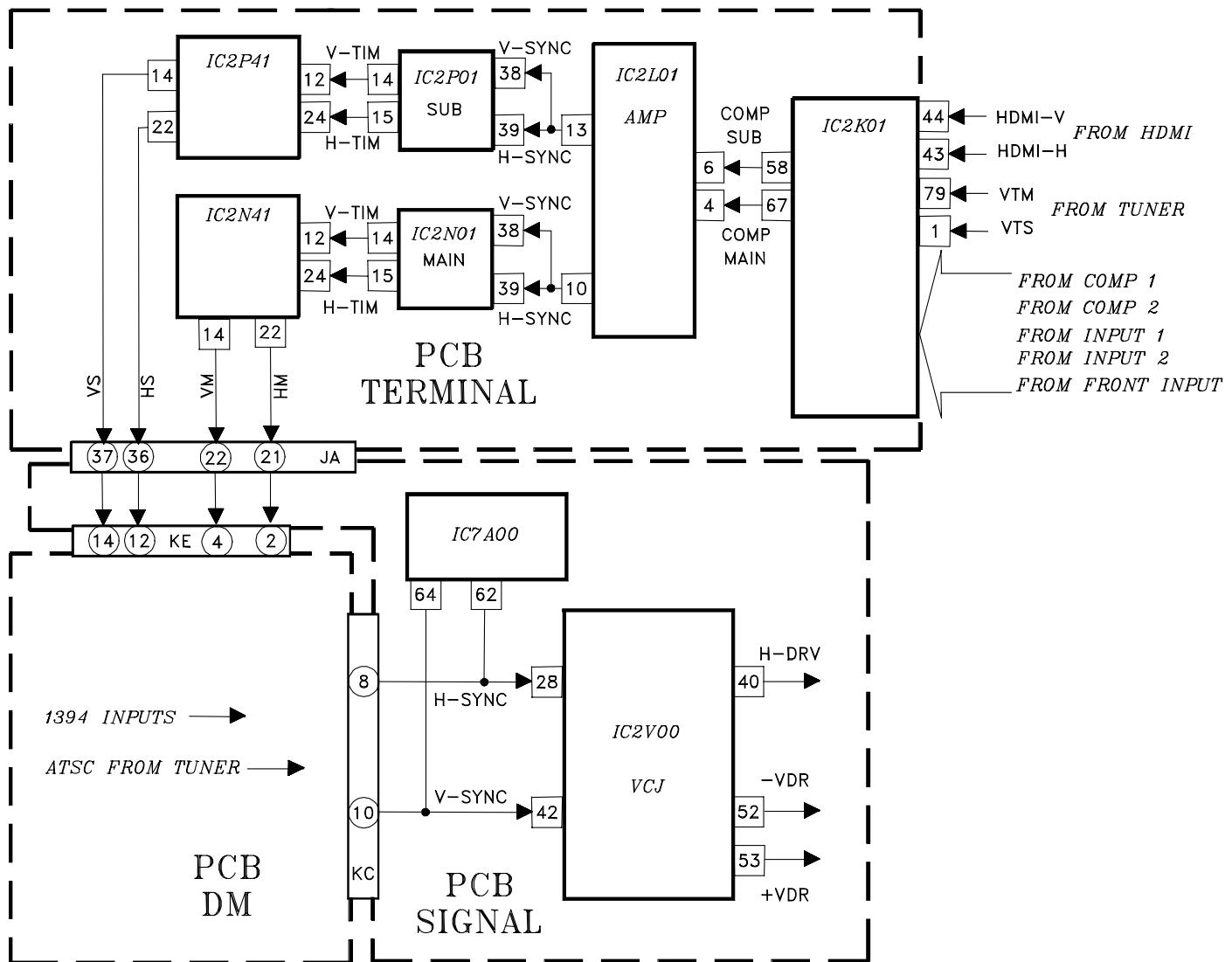


VIDEO SIGNAL PATH

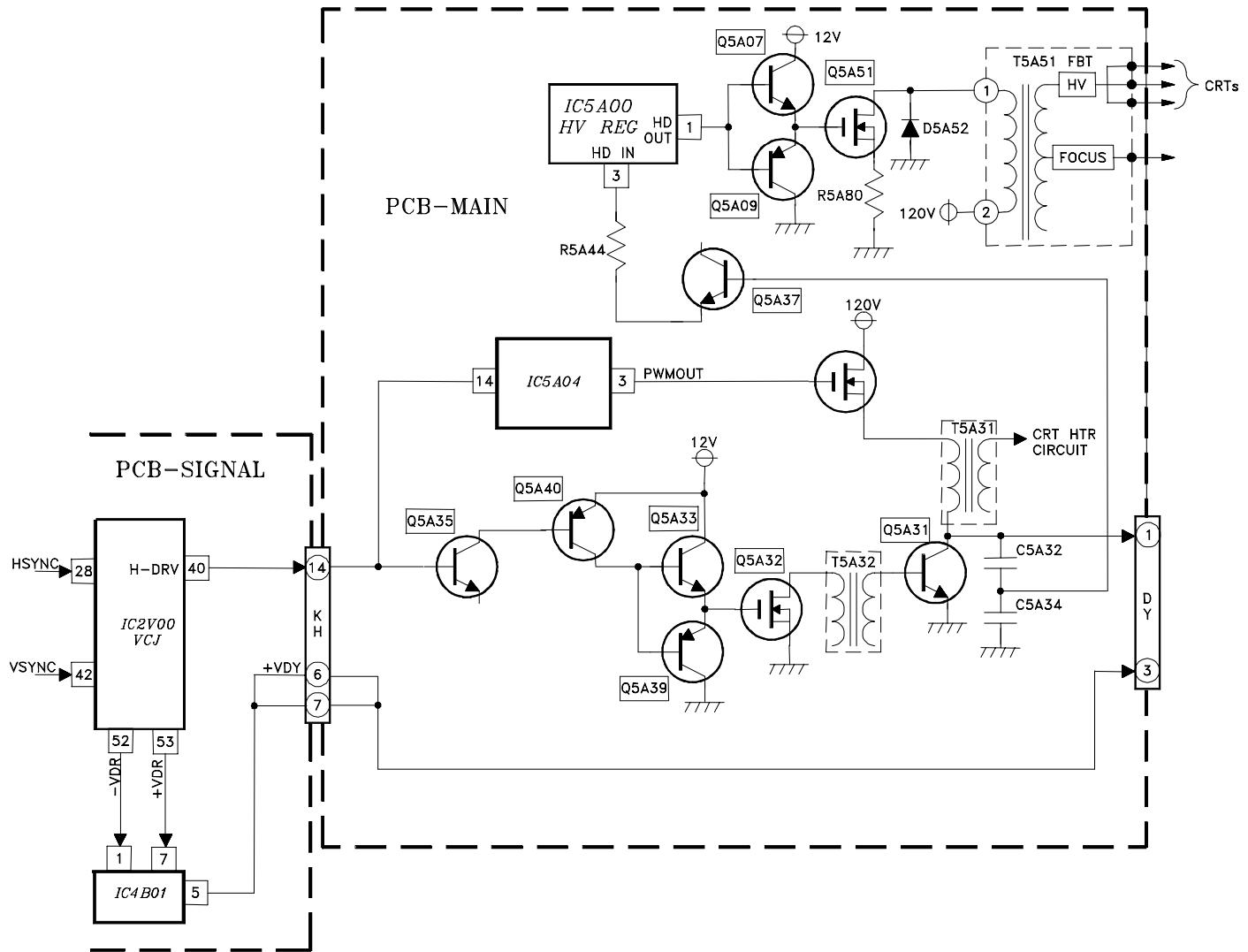




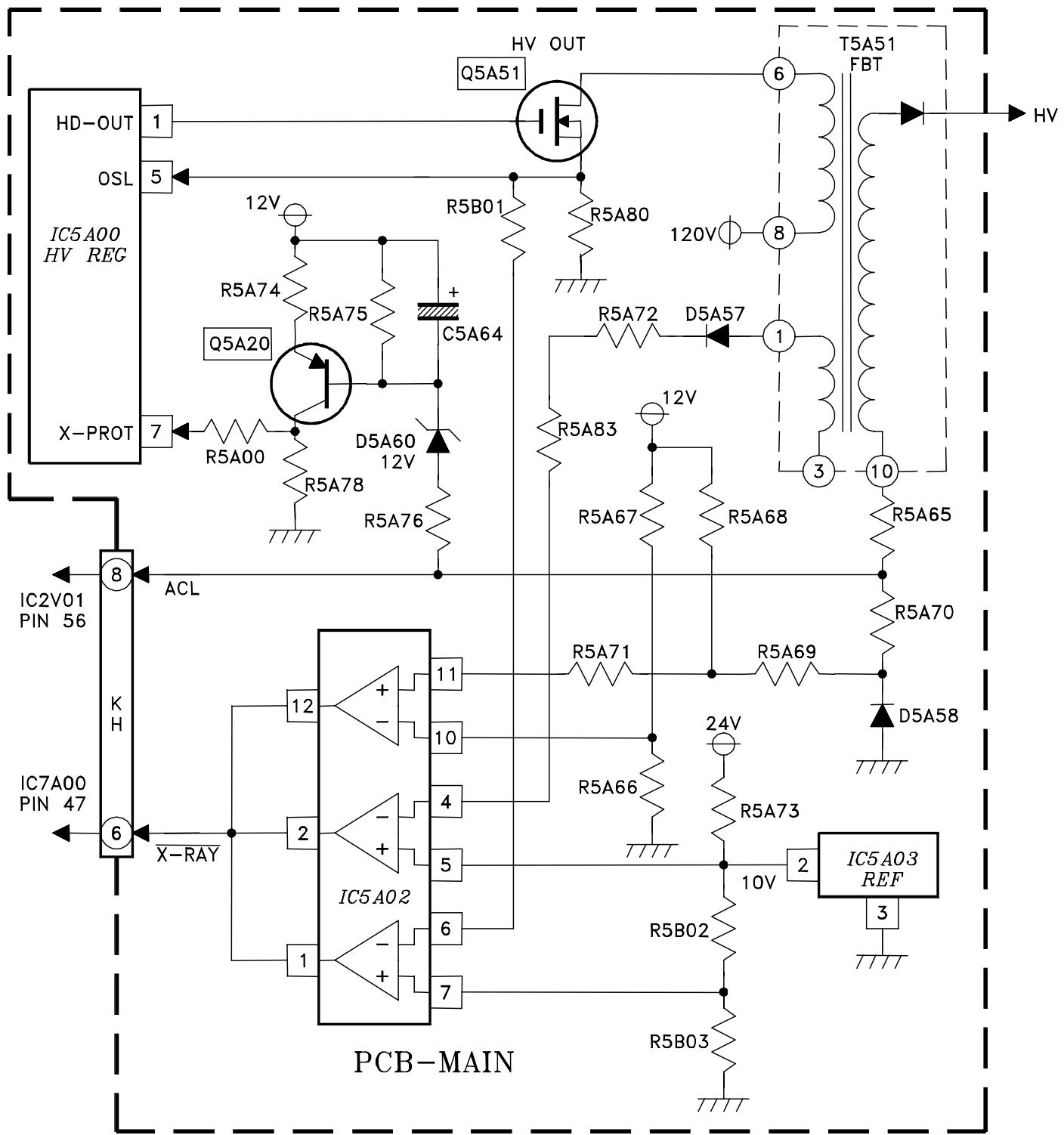
SYNC PATH



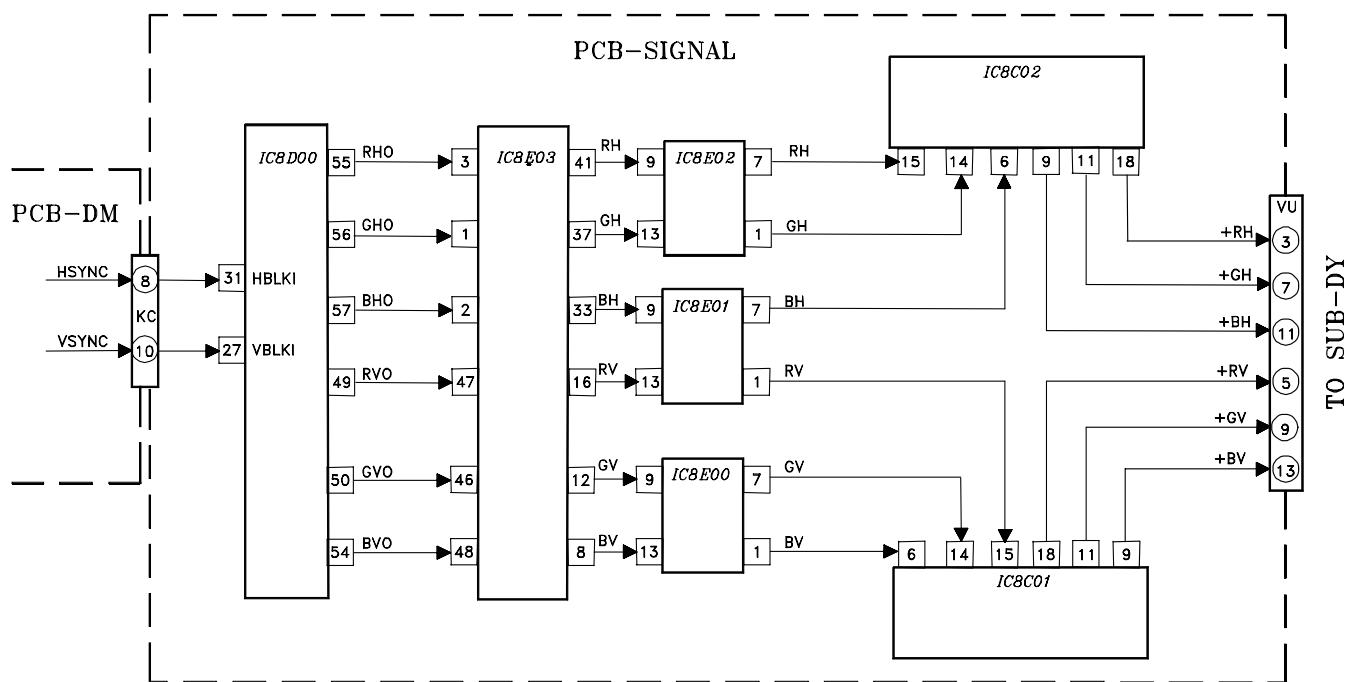
DEFLECTION / HV



X-RAY PROTECT



CONVERGENCE CIRCUIT



SOUND CIRCUIT

