

**THOMSON CONSUMER ELECTRONICS**  
**Color Television**  
**Basic Service Data**



Technical Publications  
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**SAFETY NOTICE**

**USE ISOLATION TRANSFORMER WHEN SERVICING**

Components having special safety characteristics are identified by stars ★ on schematics in this Service Data and its bulletins. Before servicing instrument, it is important that the service technician read and follow the "Safety Precautions" and "Product Safety Notices" in the Basic Service

## SAFETY PRECAUTIONS

**DO NOT OPERATE THIS INSTRUMENT OR PERMIT IT TO BE OPERATED WITHOUT ALL PROTECTIVE DEVICES INSTALLED AND FUNCTIONING. SERVICERS WHO DEFEAT SAFETY FEATURES OR FAIL TO PERFORM SAFETY CHECKS MAY BE LIABLE FOR ANY RESULTING DAMAGE, AND MAY EXPOSE THEMSELVES AND OTHERS TO POSSIBLE INJURY.**

**READ AND COMPLY WITH ALL CAUTION AND SAFETY-RELATED NOTES ON OR INSIDE THE RECEIVER CABINET, AND THE RECEIVER CHASSIS, OR ON THE PICTURE TUBE.**

**SAFETY GLASSES SHOULD BE USED WHEN SERVICING ELECTRONIC INSTRUMENTS. INADVERTENTLY OVERSTRESSING COMPONENTS MAY CAUSE THEM TO SHATTER, DISCHARGING SMALL PARTICLES.**

**DESIGN ALTERATION WARNING** - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions may alter the safety characteristics of this receiver and create a hazard to the user. Design alterations or additions may void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

**BEFORE RETURNING AN INSTRUMENT TO THE CUSTOMER,** always make a safety check of the entire instrument, including, but not limited to, the following items:

### FIRE AND SHOCK HAZARD

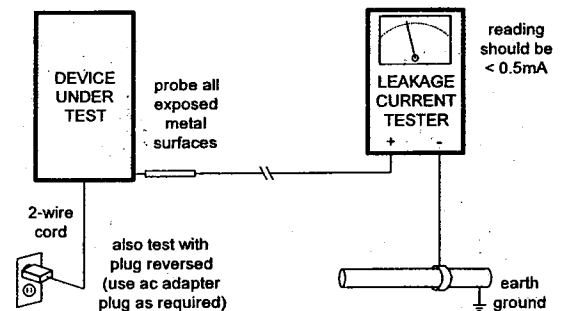
1. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs and other protective hardware have been installed in accordance with the original design.
2. Be sure that there are no cabinet openings through which an adult or a child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to: (a) spacings between picture tube and cabinet mask, (b) excessively wide cabinet ventilation slots, and (c) an improperly fitted or incorrectly secured back cover.
3. Observe original lead dress. Take care to restore leads to their original dress. Make sure that leads are not in contact with sharp edges or thermally hot parts. Always inspect in all areas for pinched, out-of-place or frayed wiring. Do not change spacing between adjacent components, or between components and printed-circuit board. Check AC power cord for damage.
4. Be certain to remove loose solder balls and all other loose foreign particles.
5. Check components, parts and/or wiring for physical evidence of damage, overheating or deterioration, and replace if necessary. Determine the cause of damage and/or overheating and, if necessary, take corrective action to remove any potential safety hazard.
6. Parts Replacement - Many TV electrical and mechanical parts have special safety-related characteristics, some of which are often not evident from visual inspection, and the protection they give cannot necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by a ( $\Delta$  or  $\star$ ) on schematics and in the parts list. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part in the service data parts list may create shock, fire and/or other hazards. Always consult the appropriate current service literature for the latest information.
7. Some TV receiver chassis' normally have 85VAC (RMS) between chassis and earth ground, regardless of the AC plug polarity. Some TV receiver chassis' are electrically connected directly to one conductor of the AC power cord. Some TV receiver chassis' have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered. Thus, when servicing any unit always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose the servicer to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized AC line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.

**PICTURE TUBE IMPLOSION WARNING** - The picture tube in this receiver employs integral implosion protection. For continued implosion

protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

**X-RADIATION AND HIGH VOLTAGE LIMITS** - Because the picture tube is the primary source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, a replacement picture tube must be the same type as the original. The picture shields, mounting hardware and lenses (projection TV) may also perform an X-radiation protection function, and they must be correctly in place. Anode connectors contain an X-radiation shield - use only the manufacturer's specified anode connectors. High voltage must be measured each time servicing that involves power supply, horizontal deflection or high voltage circuits is performed. Correct operation of the X-radiation circuits must also be confirmed each time these circuits are serviced (X-radiation circuits may also be called "horizontal disable" or "hold-down" circuits). Read and apply high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications. These limits and specifications are given on instrument labels and are included in this service data. High voltage is maintained within specified limits by close-tolerance safety-related components (and adjustments) in the high voltage circuit. If high voltage exceeds specified limits, check each component specified (by a star) on the schematic and take corrective action.

**ANTENNA LEAKAGE RESISTANCE CHECK** - With the instrument AC plug removed from the AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch (if applicable) in the "on" position. Connect one lead of an ohmmeter to the AC plug prongs and touch the other ohmmeter lead, in turn, to each (exposed) antenna input terminal screw and/or coaxial connector. If the measured resistance is less than 1.0 Megohm, or greater than 5.2 Megohm, an abnormality exists which must be corrected before the instrument is returned to the customer. Repeat this test with the AC switch in the "off" position.



**LEAKAGE CURRENT HOT CHECK FOR 2-WIRE OR 3-WIRE GROUNDED CORD SETS** - With the instrument completely reassembled, plug the AC line cord into the mains AC outlet at normal line voltage via a non-polarized adapter. **DO NOT GROUND THE 3RD PRONG OF THE ADAPTER AND DO NOT USE AN ISOLATION TRANSFORMER.** Use a leakage current tester or metering system that complies with American National Standards Institute (ANSI) *C101.1 Leakage Current for Appliances* and with Underwriters Laboratories (UL) *1492 (Section 67)*. With the instrument AC switch first in the "on" position and then in the "off" position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.). Any current measured must not exceed 0.5 milliamperes. Reverse the adapter plug in the outlet and repeat the test. **ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.** If a leakage current tester is not available, connect a 1.5 Kohm, 10 Watt resistor, in parallel with a 0.15 $\mu$ F, 150V capacitor, between earth ground and each exposed metal part of the instrument (as shown above). Use an AC voltmeter with at least 5000 ohm/volt sensitivity to measure the potential across the resistor. The potential measured for any exposed metal surface must not exceed 0.75 volts.

## SPECIFICATIONS

<b>Power Consumption:</b>	240 watts	<b>Screen Size:</b>	46 inch diagonal
<b>Antenna Impedance:</b>		46GW950	46 inch diagonal
ANT A	75 ohms unbalanced	P46100TN	46 inch diagonal
ANT B	75 ohms unbalanced	P46150WK	52 inch diagonal
CONVERTER	75 ohms unbalanced	P52150WK	
<b>Channels Received:</b>		<b>Video Inputs:</b>	
Off-Air VHF	2 thru 13	INPUT 1	1Vp-p at 75 ohms
Off-Air UHF	14 thru 69	INPUT 2	1Vp-p at 75 ohms
Cable-Low VHF	4A (1)	S-VIDEO	1Vp-p at 75 ohms
Cable-Low Midband	A-2 (98), A-1 (99)	<b>Video Outputs:</b>	
Cable-Midband	A thru I (14 thru 22)	SELECT OUT	1Vp-p into 75 ohms
Cable-Superband	J thru W (23 thru 36)	<b>Audio Inputs:</b>	
Cable-Hyperband	W + 1 thru W + 28 (37 thru 64)	INPUT 1	400mVRMS > 10K input impedance
	W + 29 thru W + 53 (65 thru 89)	INPUT 2	400mVRMS > 10K input impedance
Cable-Ultraband	W + 54 thru W + 56 (126 thru 128)	<b>Audio Outputs:</b>	
	W + 57 (93), W + 58 (94)	HI-FI OUT	400mVRMS < 2K output impedance variable level
	W + 59 thru W + 84 (100 thru 125)	SELECT OUT	2VRMS maximum 400mVRMS at nom. volume setting
<b>IF Frequencies:</b>		<b>EXTERNAL SPEAKERS</b>	10W/ch. RMS into 8 ohms 50-20,000 Hz, <1.5% THD
Pix Carrier	45.75MHz		
Sound Carrier	41.25MHz		
Color Subcarrier	42.17MHz		

Specifications subject to change without notice.

## INSTALLATION

The upper backcover (which holds the mirror assembly) is placed in a shipping position at the factory and must be properly positioned for in-home use. If not properly positioned, the raster will be distorted and convergence will appear to be misadjusted. Refer to the label on the upper backcover for assembly instructions.

## CLEANING

### Screen

Use a soft, clean cloth moistened in water only. Wipe the front of the screen in a up/down motion, following the vertical black stripes. Wipe the rear of the screen in a circular motion, following the concentric circles of the fresnel lens. If the screen cannot be cleaned with water, use a neutral detergent cleanser (less than 20% concentration).

### Picture Tube Lenses

Clean the faces of the picture tube lenses with a soft cloth and a small amount of liquid glass cleaner or anti-static cleaner (stock no. AH035).

### Mirror Assembly

To clean the mirror, use a non-abrasive, neutral detergent cleanser (less than 20% concentration). Wipe with a soft, clean cloth; do not apply excessive pressure.

To reduce scratches on the mirror surface, use a small amount of carnauba wax. Wipe with a soft, clean cloth; do not apply excessive pressure.

**SERVICING PRECAUTIONS**

Due to differences in picture tube design, projection television instruments present the servicer with safety concerns that do not apply to standard direct-view instruments. The following procedures **must** be observed when servicing the instrument:

1. The picture tube lens assemblies provide shielding to prevent exposure to x-ray emissions. **DO NOT OPERATE THE INSTRUMENT WITH ONE OR MORE LENS ASSEMBLIES REMOVED.**
2. The picture tube anode cups provide shielding to prevent exposure to x-ray emissions, and are not meant to be replaced by the servicer. **DO NOT REMOVE THE ANODE CUP FROM THE PICTURE TUBE ASSEMBLY.** Replacement part picture tube assemblies include an anode lead.
3. The **High Voltage Check** procedure (see **SERVICE ADJUSTMENTS**) must be performed prior to any servicing procedure to assure that the x-ray protection circuit is operating properly.

**COMPONENT NUMBERING SYSTEM**

Serviceability of this chassis is enhanced by prominent roadmapping on the top and bottom of the circuit boards. The component numbering system relates to general circuit areas as follows:

- |   |  |
|---|--|
| 0000 Series - External Speaker Jack                                     | 4500 Series - Vertical Deflection  |
| 1000 Series - Luma/Chroma/Deflection (1-chip)                           | 4600 Series - Standby Supplies   |
| 1100 Series - Audio DNR   | 4700 Series - Secondary Supplies   |
| 1200 Series - Audio FM Detector   | 4800 Series - Pincushion   |
| 1400 Series - Video Input Switching/Hi-Fi Audio Output                  | 4900 Series - X-Ray Shutdown   |
| 1600 Series - Digital Audio Processing                                  | 5000 Series - Kine Driver  |
| 1900 Series - Audio Output  | 6400 Series - Digital Comb Filter, PIP Adapter   |
| 2300 Series - Audio/Video IF  | 7000 Series - PTV Auxiliary Circuits:<br>Aux Power Supply<br>Convergence Output Drivers<br>Dynamic Focus<br>Scan Loss Protection |
| 2600 Series - Analog Comb Filter  | 7100 Series - PTV Auxiliary Circuits:<br>Aux Power Supply<br>Convergence Output Drivers<br>Dynamic Focus<br>Scan Loss Protection |
| 2700 Series - Luminance Processing                                      | 7200 Series - PTV Auxiliary Circuits:<br>Convergence Output Drivers  |
| 2800 Series - Chrominance Processing                                    | 8000 Series - Pix-In-Pix (S-PIP)   |
| 2900 Series - RGB Bias/Drive and OSD                                    | 8100 Series - Convergence Generator, S-PIP   |
| 3100 Series - System Control:<br>Keyboard/IR Input<br>Chassis Interface | 8200 Series - Convergence Generator, S-PIP   |
| 3200 Series - System Control:<br>Digital Memory                         | 8300 Series - Convergence Generator, S-PIP   |
| 3300 Series - System Control:<br>Tuning Control<br>Chassis Interface    | 8400 Series - Convergence Generator, S-PIP   |
| 3400 Series - Front Panel Switching/IR Preamp                           | 8500 Series - S-PIP  |
| 3600 Series - Tuner Interface   | 8900 Series - S-PIP Micro  |
| 4000 Series - AC Input  |  |
| 4100 Series - Power Supply Regulator                                    |  |
| 4200 Series - Degaussing  |  |
| 4300 Series - Horizontal Oscillator/On-Off Switching                    |  |
| 4400 Series - Horizontal Output   |  |

MODEL-TO-MAJOR ASSEMBLY CROSS REFERENCE

KEY TO MAJOR ASSEMBLIES

- C1- 10W Analog Audio (2F26017-513)
- C2- 10W Analog Audio (2F26017-518)
- C3- 10W Analog Audio (2F26020-511)
- C4- 10W Analog Audio (2F26020-513)
- C5- 10W Analog Audio (2F35039-511)
- C6- 10W Analog Audio (2F35039-513)
- C7- 5W Analog Audio (2F35044-511)
- C8- 5W Analog Audio (2F35046-511)
- C9- 5W analog Audio (2F35046-514)
- C10- Audio Crossover (2F26003-501)
- C11- Audio Crossover (2F26003-508)
- C12- Audio DNR (2F26007-501)
- C13- Audio TVB (2F26013-501)
- C14- Black Stretch (2F25006-503)
- C15- Black Stretch (2F25006-504)
- C16- Black Stretch (2F25006-513)
- C17- Black Stretch (2F25006-514)
- C18- Black Stretch (2F25006-516)
- C19- Black Stretch (2F25006-520)
- C20- Black Stretch (2F25006-521)
- C21- Convergence (2F45001-501)
- C22- Convergence (2F45009-501)
- C23- CRT Driver (2F30008-501)
- C23a- CRT Driver (2F30008-502)
- C24- D-PIP (2F43004-501)
- C25- Digital Audio (2F35023-525)
- C26- Digital Audio (2F35023-575)
- C27- Digital Comb (2F35019-504)
- C28- Ext Speaker (2F26005-504)
- C29- Ext Speaker (2F26005-505)
- C30- Ext Speaker (2F27004-502)
- C31- Front Panel (2F42008-501)
- C32- Front Panel (2F42009-502)
- C33- Front Panel (2F42015-501)
- C34- Front Panel (2F42018-501)
- C35- HV Regulator HV Regulator (2F47001--501)
- C36- HV Splitter (2F25001-501)

- C37- Pincusion (2F40011-501)
- C38- PIP Adaptor (2F25002-501)
- C39- PIP Adaptor (2F25002-502)
- C40- Preamp (2F34003-501)
- C41- Preamp (2F34006-501)
- C42- PTV Adapter (2F25011-501)
- C43- PTV Amplifier (2F27039-501)
- C44- PTV Auxiliary (2F27009-501)
- C45- PTV Power Supply (2F33013-501)
- C46- S-PIP (2F43005-501)
- C47- S-PIP (2F43005-502)
- C48- S-PIP (2F43005-511)
- C49- S-PIP Micro (2F35033-501)
- C50- S-PIP Micro (2F35033-502)
- C51- SRS Audio (2F26009-502)
- C52- SRS Audio (2F26009-503)
- C53- Surround Sound (2F26018-503)
- C54- Crossover (2F26019-502)

- R1- Remote (CRK59A)
- R2- Remote (CRK59B)
- R3- Remote (CRK59C)
- R4- Remote (CRK59G)
- R5- Remote (CRK59K)
- R6- Remote (CRK60A)
- R7- Remote (CRK61A)
- R8- Remote (CRK62A)
- R9- Remote (CRK62B)
- R10- Remote (CRK62D)
- R11- Remote (CRK62K)
- R12- Remote (CRK70D)
- R13- Remote (CRK70G)
- R14- Remote (CRK74F)
- R15- Remote (CRK74H)
- R16- Remote (CRK83D)
- R17- Remote (CRK84C)
- T1- Tuner (MTP-M-2030)

MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES
46GW939DX1	169PB	3	C8,C16,C21,C23,C29,C32, C35,C36,C40,C44,R3,T1
46GW940CG1	169PV	2	C7,C16,C21,C23,C29,C32, C35,C36,C40,44,R3,T1
46GW943LG1	169PF	4	C8,C20,C22,C23,C24, C29,C34C35,C36,C37,C41, C42,C43,C45,R17,T1
46GW944DX2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R17
46GW944LG1	169PF	4	C8,C20,C22,C23,C24,C29 C34C35,C36,C37,C41,C42, C43,C45,R17,T1
46GW944LG2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
46GW950NO1	169BL	1	C12,C21,C23,C25,C27, C30,C31,C35,C36,C44, R3,T1
46GW950NO2	169BN	1	C12,C21,C23,C25,C30, C31, C35,C36,C39,C44, R3,T1

MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES
46GW950NO3	169HN	1	C13,C21,C23,C26,C30, C31,C35,C36,C39,C44, R3,T1
46GW951CG1	169BU	2	C5,C10,C14,C21,C23, C29,C32,C35,C36,C40, C44,R3,T1
46GW951CG1	169PU	2	C3,C10,C16,C21,C23, C29,C32,C35,C36,C40, C44,R3,T1
49GW952CG1	169BW	2	C5,C10,C15,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,R4,T1
	169PW	2	C3,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,R4,T1
49GW952DG1	169BW	2	C5,C10,C15,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,R4,T1
	169PW	2	C3,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,R4,T1

## MODEL-TO-MAJOR ASSEMBLY CROSS REFERENCE (Continued)

MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES	MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES
M46GE944EG1	169PF	4	C8,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41, C42,C43,C45,R17,T1	P46151WKDGI	169PT	2	C4,C10,CC17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
M52732EG1	169PG	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R12	P46159WKCG1	169BT	2	C6,C10,C15,C21,C23, C29,C32,C35,C36,C40, C44,C47,C50,C51,R8,T1
P46100TNDO1	169BN	1	C12,C21,C23,C25,C30, C31,C35,C36,C39,C44, R2,T1	P46159WKDGI	169BT	2	C6,C10,C15,C21,C23, C29,C32,C35,C36,C40, C44,C47,C50,C51,R8,T1
P46100TNDO3	169HN	1	C13,C21,C23,C26,C30, C31,C35,C36,C39,C44, R2,T1	P46160WKCG1	169PT	2	C4,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P46100TNNO1	169BL	1	C12,C21,C23,C25,C27, C30,C31,C35,C36,C44, R2,T1	P46160WKDGI	169PT	2	C4,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P46100TNNO2	169BN	1	C12,C21,C23,C25,C30, C31,C35,C39,C44,R2,T1	P46720BADX1	169PF	4	C8,C20,C22,C23,C24,C29 C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P46100TNNO3	169HN	1	C13,C21,C23,C26,C30, C31,C35,C36,C39,C44, R2,T1	P46720BADX2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P46101WKCG1	169BU	2	C5,C10,C14,C21,C23, C29,C32,C35,C36,C40, C44,R2,T1	P46720BALG1	169PF	4	C8,C20,C22,C23,C24,C29 C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
	169PU	2	C3,C10,C16,C21,C23, C29,C32,C35,C36,C40, C44,R2,T1	P46720BALG2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P46101WKDGI	169BU	2	C5,C10,C14,C21,C23, C29,C32,C35,C36,C40, C44,R2,T1	P46720LVLG1	169PF	4	C8,C20,C22,C23,C24,C29 C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
	169PU	2	C3,C10,C16,C21,C23, C29,C32,C35,C36,C40, C44,R2,T1	P46720LVLG2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P46130WKCG1	169PX	2	C7,C18,C21,C23,C24, C29,C32,C35,C36,C40, C44,R1,T1	P46721BADX1	169PF	4	C8,C20,C22,C23,C24,C29 C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P46130WKDGI	169PX	2	C7,C18,C21,C23,C24, C29,C32,C35,C36,C40, C44,R1,T1	P46721BADX2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P46150WKNO1	169BM	1	C12,C21,C23,C25,C30, C31,C35,C36,C38,C44, C46,C49,R1,T1	P46721LVLG1	169PF	4	C8,C20,C22,C23,C24,C29 C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P46150WKNO2	169HM	1	C13,C21,C23,C26,C30, C31,C35,C36,C38,C44, C46,C49,R1,T1	P46721LVLG2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P46151WKCG1	169BT	2	C6,C10,C15,C21,C23, C29,C32,C35,C36,C40, C44,C47,C50,C51,R8,T1	P46725SKLG1	169PF	4	C8,C20,C22,C23,C24,C29 C34C35,C36,C37,C41,C42, C43,C45,R14,T1
	169PT	2	C4,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1	P46726BADX1	169PF	4	C8,C20,C22,C23,C24,C29 C34C35,C36,C37,C41,C42, C43,C45,R14,T1
P46151WKCG2	169PT	2	C4,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1	P46727BADX1	169PB	4	C8,C16,C21,C23,C29,C32, C35,C36,C40,C44,R6,T1
P46151WKDGI	169PT	2	C6,C10,C15,C21,C23, C29,C32,C35,C36,C40, C44,C47,C50,C51,R8,T1	P46728WKLGI	169PC	3	C9,C18,C21,C23,C24, C29,C32,C35,C36,C40, C44,C52,R9,T1
	169PT	2	C4,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1	P46729BADX1	169PC	3	C9,C18,C21,C23,C24, C29,C32,C35,C36,C40, C44,C52,R9,T1

## MODEL-TO-MAJOR ASSEMBLY CROSS REFERENCE (Continued)

MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES
P46729BALG1	169PC	3	C9,C18,C21,C23,C24, C29,C32,C35,C36,C40, C44,C52,R9, T1
P46730WKLG1	169PC	3	C9,C18,C21,C23,C24, C29,C32,C35,C36,C40, C44,C52,R9, T1
P46731ATDX1	169PG	4	C9,C20,C22,C23,C24, C29,C34,C35,C36,C37, C41,C42,C43,C45,C52, R9,T1
P46731ATLG1	169PG	4	C9,C20,C22,C23,C24, C29,C34,C35,C36,C37, C41,C42,C43,C45,C52, R9,T1
P46732BADX1	169PG	4	C9,C20,C22,C23,C24, C29,C34,C35,C36,C37, C41,C42,C43,C45,C52, R9,T1
P46732BALG1	169PG	4	C9,C20,C22,C23,C24, C29,C34,C35,C36,C37, C41,C42,C43,C45,C52, R9,T1
P46738ATLG1	169PG	4	C9,C20,C22,C23,C24, C29,C34,C35,C36,C37, C41,C42,C43,C45,C52, R9,T1
P46770CKDX1	169PA	3	C4,C11,C17,C21,C23, C29,C33,C35,C36,C40, C44,C48,C50,C51,R8,T1
P46770CKLG1	169PA	3	C4,C11,C17,C21,C23, C29,C33,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52100EBLG1	169PE	4	C1,C19,C22,C23,C29, C34,C35,C36,C37,C41, C42,C43,C45,C50,C51, R8,T1
P52150CPDO1	169BM	1	C12,C21,C23,C25,C30, C31,C35,C36,C38,C44, C46,C49,R1, T1
P52150CPDO2	169HM	1	C13,C21,C23,C26,C30, C31,C35,C36,C38,C44, C46,C49,R1, T1
P52150CPNO1	169BM	1	C12,C21,C23,C25,C30, C31,C35,C36,C38,C44, C46,C49,R1, T1
P52150CPNO2	169HM	1	C13,C21,C23,C26,C30, C31,C35,C36,C38,C44, C46,C49,R1, T1
P52151WKCG1	169BT	2	C6,C10,C15,C21,C23, C29,C32,C35,C36,C40 C44,C47,C50,C51,P1, P2,P3,R8,T1
	169PT	2	C4,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52151WKDG1	169BT	2	C6,C10,C15,C21,C23, C29,C32,C35,C36,C40, C44,C47,C50,C51,R8,T1
	169PT	2	C4,C10,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1

MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES
P52152STCG1	169PT	2	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52152STDG1	169PT	2	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52720BADX1	169PF	4	C8,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P52720BADX2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P52720BALG1	169PF	4	C8,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P52720BALG2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P52720LVLG1	169PF	4	C8,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P52720LVLG2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P52721BADX1	169PF	4	C8,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P52721BADX2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P52721LVLG1	169PF	4	C8,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42 C43,C45,R14,T1
P52721LVLG2	169PK	4	C8,C20,C22,C23A,C24, C29,C34,C37,C41,C42,C43 C45,R14
P52730CKLG1	169PC	3	C9,C18,C21,C23,C24, C29,C33,C35,C36,C40, C44,C52,R9,T1
P52731WKLG1	169PG	4	C9,C20,C22,C23,C24, C29,C33,C35,C36,C37 C41,C42,C43,C45,C52, R9,T1
P52732BADX1	169PG	4	C9,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42, C43,C45,C52,R12,T1
P52732BALG1	169PG	4	C9,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42, C43,C45,C52,R12,T1
P52738WKLG1	169PG	4	C9,C20,C22,C23,C24,C29, C34,C35,C36,C37,C41,C42, C43,C45,C52,R12,T1
P52750WKLG1	169PA	3	C4,C10,C17,C21,C23, C29,C33,C35,C36,C40, C44,C48,C50,C51,P1, P2,P3,R8,T1
P52753ATLG1	169PE	4	C1,C10,C19,C22,C23, C29,C34,C35,C36,C37, C41,C42,C43,C45,C48, C50,C51,R8,T1

MODEL-TO-MAJOR ASSEMBLY CROSS REFERENCE (Continued)

MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES
P52755STD1	169PA	3	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52755STL1	169PA	3	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52756SBD1	169PE	4	C1,C10,C19,C22,C23, C29,C34,C35,C36,C37, C41,C42,C43,C45,C48, C50,C51,R8,T1
P52756SBD2	169PE	4	C1,C19,C22,C23,C29,C34, C35,C36,C37,C41,C42,C43, C45,C48,C50,C51,R13,T1
P52756SBL1	169PE	4	C1,C10,C19,C22,C23, C29,C34,C35,C36,C37, C41,C42,C43,C45,C48, C50,C51,R8,T1
P52756SBL2	169PE	4	C1,C19,C22,C23,C29,C34, C35,C36,C37,C41,C42,C43, C45,C48,C50,C51,R13,T1
P52770EBD2	169PA	4	C1,C17,C21,C23,C29,C33, C35,C36,C40,C44,C48,C50, C51,R8,T1
P52770EBD1	169PA	3	C4,C10,C17,C21,C23, C29,C33,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52770EBD2	169PA	3	C4,C10,C17,C21,C23, C29,C33,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52770EBL1	169PA	3	C4,C10,C17,C21,C23, C29,C33,C35,C36,C40, C44,C48,C50,C51,R8,T1
P52770EBL2	169PA	3	C4,C10,C17,C21,C23, C28,C33,C35,C36,C40, C44,C48,C50,C51,R8,T1
P56720LVL2	169PM	4	C8,C20,C21,C23A,C24, C29,C34,C37,C41,C42,C43, C45,R14
P60100EBL1	169PE	4	C1,C19,C22,C23,C29, C34,C35,C36,C37,C41, C42,C43,C45,C48,C50, C51,R8,T1

MODEL/ SERVICE NO.	CHASSIS CTC	CHASSIS FAMILY	MAJOR ASSEMBLIES
P60152CKCG1	169PT	2	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P60153EBL1	169PT	2	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P60750CKL1	169PA	3	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P60751EBD1	169PA	4	C1,C17,C21,C23,C29,C33, C35,C36,C40,C44,C48,C50, C51,R8,T1
P60751EBL1	169PA	3	C4,C11,C17,C21,C23, C29,C32,C35,C36,C40, C44,C48,C50,C51,R8,T1
P60752EBD1	169PE	4	C1,C10,C19,C22,C23, C29,C34,C35,C36,C37, C41,C42,C43,C45,C48, C50,C51,R8,T1
P60752EBL1	169PE	4	C1,C10,C19,C22,C23, C29,C34,C35,C36,C37, C41,C42,C43,C45,C48, C50,C51,R8,T1
P60752EBL2	169PJ	4	C1,C19,C22,C23A,C29, C34,C37,C41,C42,C43,C45, C48,C51,R13
PS52650DX1	169PH	4	C2,C19,C22,C23,C28,C34, C35,C36,C37,C41,C42,C43, C45,C48,R50,C53,C54,R7, R16,T1
PS52650LG1	169PH	4	C2,C19,C22,C23,C28,C34, C35,C36,C37,C41,C42,C43, C45,C48,R50,C53,C54,R7, R16,T1
PS52652DX1	169PD	4	C1,C17,C21,C23,C29,C33, C35,C36,C40,C44,C48,C50, C51,R6,R10,T1
PS52652LG1	169PD	3	C2,C11,C17,C21,C23, C28,C33,C35,C36,C40, C44,C48,C50,C53, R6,R10,T1



**INSTRUMENT DISASSEMBLY**

**Speaker Grille Removal/Convergence Control Access**

- 1a. Pull the lower edge of the speaker grille out and down to remove. (46GW940/950, P46100/150)
- 1b. Pull the metal tabs located along the upper edge of the speaker grille out to remove the grille. (P52150)
- 1c. Pull upper edge of speaker grille out and up to remove. (46GW951/952, P46101/130/151/159/160, P52151, P60152/153)
2. All convergence controls can be adjusted through the control panel using a standard alignment tool. Refer to the **Convergence Alignment** procedure in the **Alignment Procedures** section.

**Screen Assembly Removal**

(46GW950, P46100/150, P52150)

1. Identify the two metal retaining tabs (A), located along the bottom edge of the cabinet top rail (see Fig. 1a).
2. Insert a small flat-blade screwdriver between the screen and cabinet top rail to release the metal retaining tabs (see Fig. 2a).
3. Tilt the top edge of the screen out and lift to remove.

**Screen Assembly Removal**

(46GW940/951/952, P46101/130/151/159/160, P52151, P60152/153)

- 1a. Remove speaker grille (see procedure).
- 1b. To remove wooden rail at bottom edge of screen, grasp on both sides and pull out (P60152/153).
2. Loosen screws A and pull slide tab down (Fig. 1b.).
3. Pull screen out from bottom and drop down to remove.

**Backcover Removal**

1. Remove eight screws to release the backcover.
2. Lift the backcover up and out to remove.

**Front Panel Circuit Board Removal**

**Button Assembly Removal**

(46GW950, P46100/150, P52150)

1. Remove the screen assembly.
2. Remove four screws (A) to release the front panel assembly (see Fig. 1).

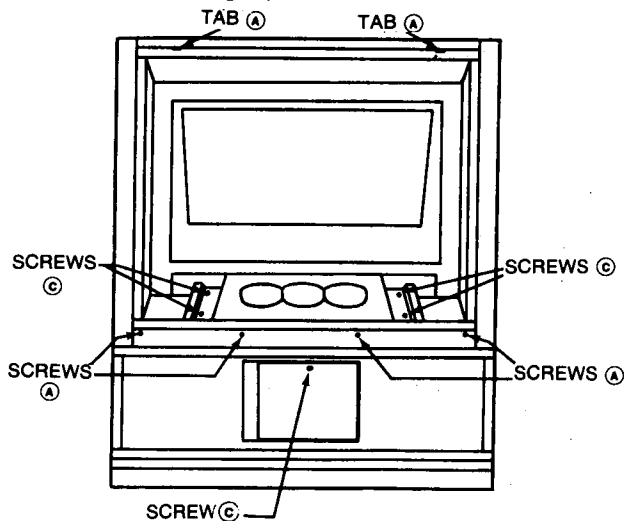


Fig. 1a - Cabinet Front View (Speaker Grille and Screen Removed) Models: 46GW950, P46100/150, P52150

3. Release six tabs to remove the keyboard retaining plate and release the Front Panel circuit board.
4. Release four tabs to remove the button assembly.
5. To replace the Front Panel circuit board, remove the backcover, slide the Main Circuit Board out slightly, and disconnect P3001 from the Main Circuit Board.

**Front Panel Assembly Removal**

(46GW951/952, P46101/151/159, P52151)

1. Remove Speaker Grille (see procedure).
2. Remove screen assembly (see procedure).
3. Remove two (2) screws B and remove FPA.

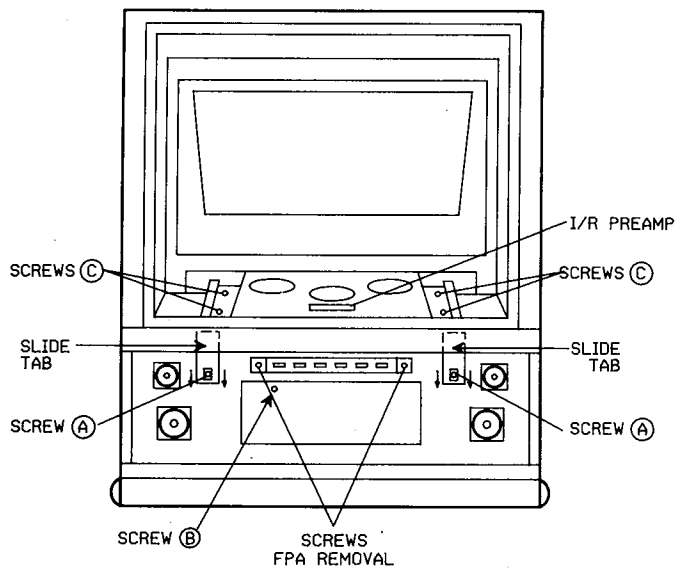


Fig. 1b - Cabinet Front View (Speaker Grille and Screen Removed) (46GW951/952, P46101/151/159, P52151)

**Picture Tube Removal**

**Yoke Assembly Removal**

1. Remove the backcover.
2. Disconnect the deflection yoke cable (P7009, P7010 or P7011, depending upon the picture tube being removed) from the PTV Auxiliary circuit board. Remove the yoke cable from the wire guide at the rear of the PTV Auxiliary circuit board.
3. Disconnect the convergence yoke cable (P7016, P7017 or P7018, depending upon the picture tube being removed) from the PTV Auxiliary circuit board. Remove the yoke cable from the wire guides along the side of the PTV Auxiliary circuit board.
4. Remove the speaker grille.
5. Remove one screw (B) to release the convergence control panel and gain access to the picture tubes and HV Splitter assembly (see Fig. 1).
6. Remove the deflection yoke cable and convergence yoke cable from the wire guide near the Kine Driver circuit board.
7. Disconnect the picture tube ground cable (P5002) from the Kine Driver circuit board.
8. Disconnect the anode lead and the picture tube ground lead from the HV Splitter assembly.

**INSTRUMENT DISASSEMBLY (Continued)**

**Caution:** The picture tube anode cups provide shielding to prevent exposure to x-ray emissions, and are not meant to be replaced by the servicer. **DO NOT REMOVE THE ANODE CUP FROM THE PICTURE TUBE ASSEMBLY.** Replacement part picture tube assemblies include an anode lead.

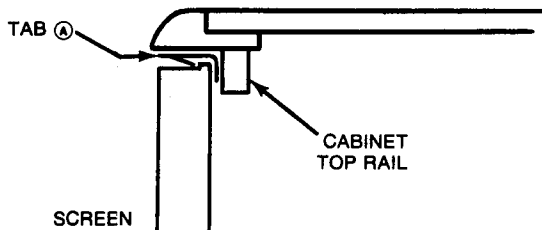


Fig. 2a - Cabinet Detail (Screen Removal) Models: 46GW950, P46100/150, P52150

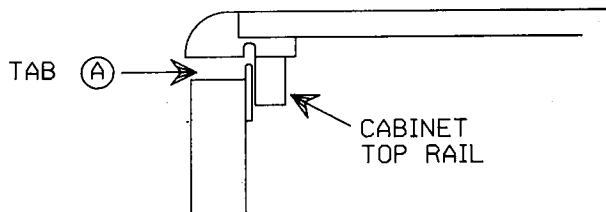


Fig. 2b - Cabinet Detail (Screen Removal) (46GW940/951/952, P46101/130/151/159/160, P52151, P60152/153)

**Caution:** To remove the anode lead, release the tab on the HV Splitter housing, then pull the lead and collar out of the HV Splitter housing. To reinstall the cable, first slide the collar into the HV Splitter housing until the first "click" is heard. Then insert the lead through the collar into the HV Splitter housing until the wire tie contacts the collar (see Fig. 3). Finally, slide the collar (and lead) into the HV Splitter housing until a second "click" is heard.

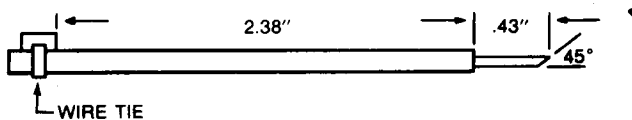


Fig. 3 - HV Cable Reassembly

9. Remove the screen assembly.
10. Remove four screws (C) to release the top lens barrier (see Fig. 1).
11. Remove four screws to release the picture tube/lens assembly from the optics frame.
12. Carefully lift the picture tube/lens assembly up and out of the cabinet.
13. Loosen the yoke clamp and carefully slide the yoke off of the picture tube neck.
14. Remove four Phillips-head screws to release the lens assembly from the picture tube assembly.

**Chassis/Optics Kit Removal**

1. Remove the screen assembly.
2. Release the Front Panel circuit board and rest it on the top lens barrier.

3. Remove the backcover.
4. Disconnect the speaker cable assembly (P1904) from the Digital Audio circuit board.
- 5a. Remove two screws (D) and two bolts (A) to release the cabinet back brace (see Fig. 4). (46" models only)
- 5b. Remove six screws (D) to release the cabinet back brace (see Fig. 4). (52" models)
6. Remove four screws (E) to release the chassis/optics kit (see Fig. 4).
7. Lift the rear edge of the chassis/optics kit slightly, then slide out to remove.

**Convergence Control Panel Release****Convergence Generator Circuit Board Access/Removal**

1. Remove the speaker grille.
2. Remove one screw (B) (see Fig. 1). Slide the convergence panel to the left and out to release.
3. Remove four screws to access the component side of the Convergence Generator circuit board.
4. Disconnect cable assemblies P8104, P8202 and P8203 from the Convergence Generator circuit board to remove.

**Focus/Screen Assembly Removal**

1. Remove the speaker grille.
2. Release the convergence control panel.
3. Disconnect the red, green and blue focus and screen cables and the dynamic focus cable from the Focus/Screen assembly.
4. Disconnect the ground lead from the Focus/Screen assembly.
5. Disconnect the HV focus cable from the HV Splitter assembly.

**Caution:** To remove the HV focus cable, release the tab on the HV Splitter housing, then pull the lead and collar out of the HV Splitter housing. To reinstall the cable, first slide the collar into the HV Splitter housing until the first "click" is heard. Then insert the lead through the collar into the HV Splitter housing until the wire tie contacts the collar (see Fig. 3). Finally, slide the collar (and lead) into the HV Splitter housing until a second "click" is heard.

6. Remove two screws to release the Focus/Screen assembly.

**Kine Driver Circuit Board Removal**

1. Remove the speaker grille.
2. Release the convergence control panel.
3. Carefully pull the Kine Driver circuit board off the picture tube and remove cable assemblies from wire guides as necessary to access both sides of the circuit board.
4. Disconnect cable assemblies P5001 and P5002 from the Kine Driver circuit board and disconnect the focus and screen cables from the Focus/Screen assembly to remove the circuit board.

## INSTRUMENT DISASSEMBLY (Continued)

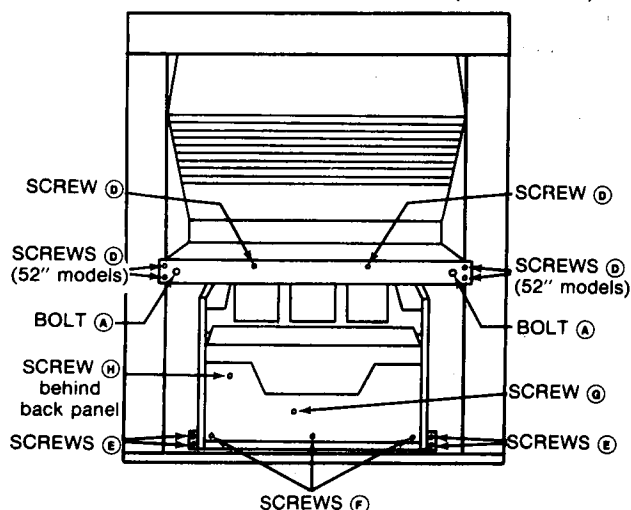


Fig. 4a - Cabinet Rear View (Backcover Removed) Mod-els: 46GW950, P46100/150, P52150

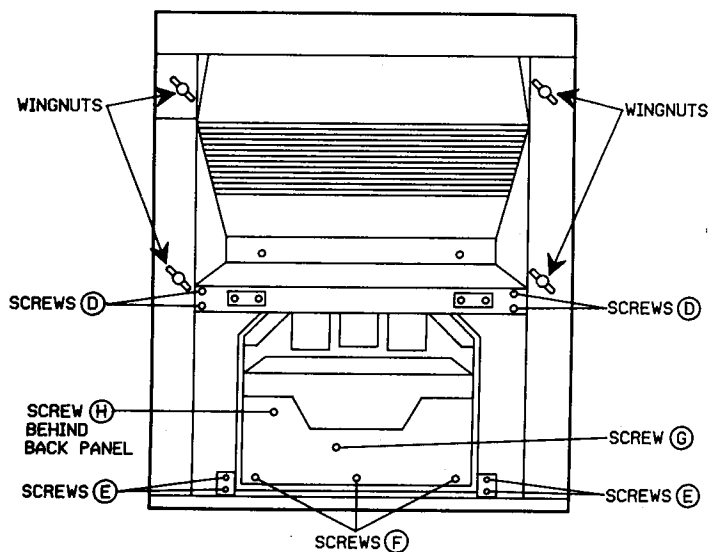


Fig. 4b - Cabinet Rear View (Back Cover Removed)  
(46GW940/951/952, P46101/130/151/159/  
160, P52151/152, P60152/153)

### Lens Assembly Removal

1. Remove the screen assembly.
2. Remove the top lens barrier.
3. Remove four Phillips-head screws to release the lens assembly.

### Yoke Assembly Removal

1. Remove the backcover.
2. Disconnect the deflection yoke cable (P7009, P7010 or P7011, depending upon the picture tube being removed) from the PTV Auxiliary circuit board. Remove the yoke cable from the wire guide at the rear of the PTV Auxiliary circuit board.
3. Disconnect the convergence yoke cable (P7016, P7017 or P7018, depending upon the picture tube being removed) from the PTV Auxiliary circuit board. Remove the yoke cable from the wire guides along the side of the PTV Auxiliary circuit board.

4. Remove the speaker grille.
5. Release the convergence control panel.
6. Remove the deflection yoke cable and convergence yoke cable from the wire guide near the Kine Driver circuit board.
7. Carefully pull the Kine Driver circuit board off the picture tube.
8. Loosen the yoke clamp and carefully slide the yoke off the picture tube neck.

### HV Splitter Assembly Removal

1. Remove the speaker grille.
2. Release the convergence control panel.
3. Remove the screen assembly.
4. Remove the top lens barrier.
5. Disconnect the three picture tube anode leads, the HV focus cable and the chassis HV cable from the HV Splitter assembly.

**Caution:** To remove a HV cable, release the tab on the HV Splitter housing, then pull the lead and collar out of the HV Splitter housing. To reinstall the cable, first slide the collar into the HV Splitter housing until the first "click" is heard. Then insert the lead through the collar into the HV Splitter housing until the wire tie contacts the collar (see Fig. 3). Finally, slide the collar (and lead) into the HV Splitter housing until a second "click" is heard.

6. Disconnect the six ground leads from the HV Splitter assembly.
7. Disconnect cable assembly P4751 from the HV Splitter circuit board.
8. Remove two screws to release the HV Splitter assembly.

### Chassis Rear Panel Removal

1. Remove the backcover.
2. Remove three screws (F) to release the chassis back panel from the PTV kit frame (see Fig. 4).
3. Remove one screw (G) to release the chassis rear panel from the AC Line Input assembly (see Fig. 4).
4. Slide the Main circuit board out (with the chassis rear panel) and remove one screw (H) to release the chassis rear panel from the External Speaker Jack assembly (see Fig. 4).

### PTV Auxiliary Circuit Board Access/Removal

1. Remove the backcover.
2. Remove the chassis rear panel.
3. Remove cable assemblies from wire guides as necessary to allow the PTV Auxiliary circuit board to slide out of the chassis frame.
4. Tilt the rear edge of the PTV Auxiliary circuit board up to access the copper side of the board.
5. Disconnect cable assemblies P7001, P7005, P7006, P7007, P7009, P7010, P7011, P7012, P7013, P7014, P7015, P7016, P7017, P7018 and P7019 to remove the PTV Auxiliary circuit board.

**INSTRUMENT DISASSEMBLY (Continued)****Main Circuit Board Service Position**

1. Remove the backcover.
2. Remove the chassis rear panel.
3. Remove cable assemblies from the wire guides located on the chassis/optics barrier.
4. Remove four screws to release the chassis/optics barrier.
5. Remove cable assemblies from wire guides as necessary to allow the Main circuit board to slide out of the chassis frame.
6. Tilt the rear edge of the Main circuit board up to access the copper side of the board. Tilt the rear edge of the board down to access all areas of the component side of the board.

**HV Regulator Circuit Board Access/Removal**

1. Remove the backcover.
2. Remove the chassis rear panel.
3. Place the Main circuit board in the service position.
4. Release four tabs and tilt the HV Regulator circuit board to access the copper side of the board.
5. To remove the HV Regulator circuit board, disconnect cable assembly P4701 from the HV Regulator circuit board, disconnect four interconnect wires from the HV Regulator board and cut the HV return wire at the splice.

**Caution:** When replacing the HV Regulator circuit board (or T4751), be sure to add sleeving to the splice in the HV return wire.

**Digital Audio Circuit Board Access/Removal**

1. Remove the backcover.
2. Remove the chassis rear panel.
3. Place the Main circuit board in the service position (copper side up).
4. Twist one tab to release the audio heatsink from the Main circuit board.
5. Turn the Main circuit board over to access the component side of the board.
- 6a. Twist one tab to release the audio heatsink from the Digital Comb circuit board. (CTC169BL,BP)
- 6b. Twist one tab to release the audio heatsink from the PIP Adapter circuit board. (CTC169BM,BN)
7. Remove cable assembly P1903 from the wire tie located on the system control shield.
8. Remove the External Speaker Jack assembly wires from the wire ties located along the top edge of the Digital Audio circuit board.
9. Remove one screw to release the Digital Audio circuit board from the External Speaker Jack assembly.
10. Using a small pair of wire cutters, carefully cut the break-away sections along the bottom edge of the

Digital Audio circuit board. Take care to avoid cutting the jumper wires which connect the Digital Audio circuit board to the Main circuit board.

11. Carefully tilt the Digital Audio circuit board out from the Main circuit board to gain access to all areas of the component side of the board.

**Caution:** Do not allow the audio heatsink to contact component leads on the copper side of the Digital Comb (or PIP Adapter) circuit board.

12. To remove the Digital Audio circuit board, disconnect cable assemblies J1903 and J1904 from the Digital Audio circuit board and unsolder the jumper wires at JS1900 from the Main circuit board.

**Digital Comb Circuit Board Removal (CTC169BL,BP)**

1. Remove the backcover.
2. Remove the chassis rear panel.
3. Place the Digital Audio circuit board in the service position.
4. Remove three screws to release the section of audio heatsink located behind the Digital Comb circuit board.
5. To remove the Digital Comb circuit board, disconnect cable assemblies P6401, P6402, P6403 and P6404 from the Digital Comb board and unsolder the jumper wires at JS6400 from the Main circuit board.

**PIP Adapter Circuit Board Removal (CTC169BM,BN)**

1. Remove the backcover.
2. Remove the chassis rear panel.
3. Place the Digital Audio circuit board in the service position.
4. Remove three screws to release the section of audio heatsink located behind the PIP Adapter circuit board.
5. To remove the PIP Adapter circuit board, disconnect cable assemblies P6401, P6402, P6403 and P6404 from the PIP Adapter board and unsolder the jumper wires at JS6400 from the Main circuit board.

**Pix-In-Pix Module Removal (CTC169BM,BP)**

1. Remove two screws holding the Pix-In-Pix module.
2. Disconnect cable assemblies P8001, P8002 and P8003 from the Pix-In-Pix module.

**Speaker Removal**

1. Remove the speaker grille.
2. Remove the speaker wires from the wire guides located just below the Convergence Control panel cutout.
3. Remove the backcover.
4. Remove four screws to release each speaker assembly.

## INSTRUMENT DISASSEMBLY (Continued)

### Screen Removal

Note: This procedure applies to the following models-

46GW940	P46729	P46738	P52753
46GW941	P46730	P52730	P52100*
P46130	P46731	P52731	P60100*
P46728	P46732	P52750	

\* In the wall units, omit Step 1.

1. Remove the grille cloth, pull away from the instrument to release from velcro.
2. Loosen both screws securing the screen holding brackets, slide the brackets down.
3. Pull the screen out at the bottom and let it slide down gently until there is enough space at the top to get hold of it.
4. Secure screen with both hands and remove.
5. To install the screen, make sure that the long side with slots is at the bottom. Reverse removal instructions.

Note: For access to convergence adjustments follow Step 1.

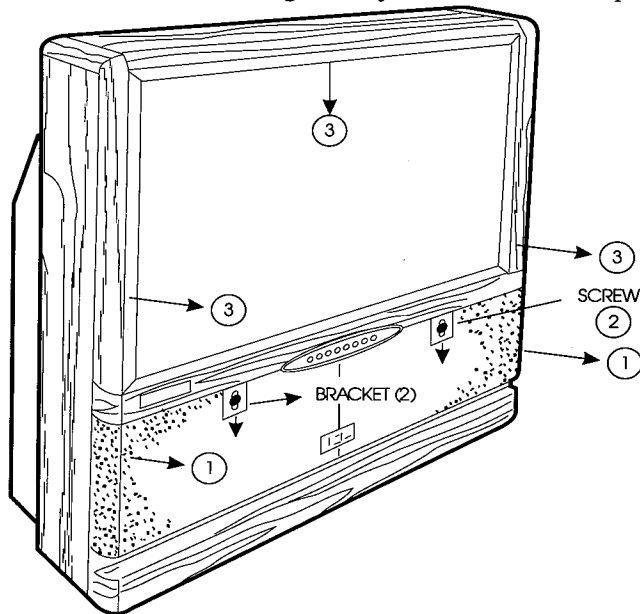


Fig. 6- Screen Removal multiple models.

### Screen Removal

Note: This procedure applies to the following model-

P46770

1. Open glass doors and remove two (2) screws and screen holding brackets.
2. Pull screen out at bottom and let it slide down gently until there is enough space at the top to get a hold of it.
3. Grasp screen securely with both hands and remove.
4. To install, make sure that the long side with slots is at the bottom. Reverse removal instructions.

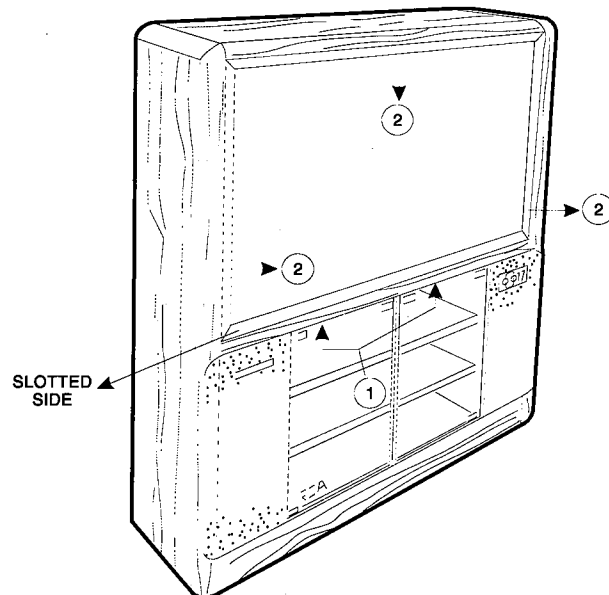


Fig. 7- Screen removal Model P46770

### Screen Removal

Note: This procedure applies to the following model-  
P52756

1. Remove grille cloth from each side by pulling away from instrument to release from velcro.
2. Remove four (4) screws from each side of the plastic front bottom half (Do Not remove speaker mounting screws).
3. Remove plastic front bottom half.

Caution: FPA is attached to plastic front, tilt top of plastic front outward to gain access to the FPA. Release the PC Board snaps and remove plastic front bottom half.

4. Remove three (3) screws securing the lower flange of the screen.
5. Remove the back cover (15 screws).
6. Remove three (3) screws at the top and two (2) screws from each side.
7. Grasp screen frame with both hands and pull straight away from instrument.
8. To install, reverse removal instructions.

Note: For access to convergence adjustments follow Steps 1, 2 and 3.

