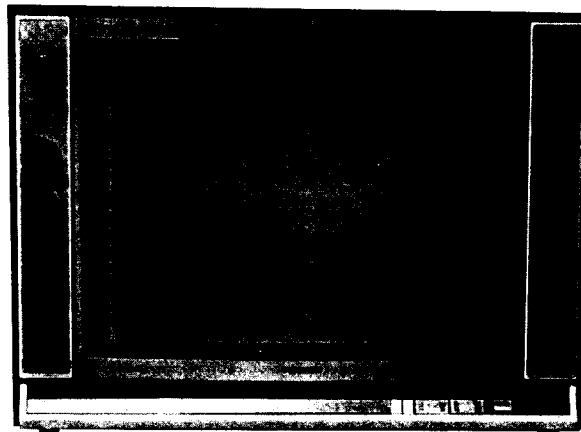


# KV-2791R

## RM-731

## SERVICE MANUAL

*US Model*  
Chassis No. SCC-648S-A



May, 1986

# P3 CHASSIS

### SPECIFICATIONS

Television system	American TV standards
Channel coverage	VHF: 2-13 UHF: 14-69 Cable TV: 1-125
Picture tube	Microblack Trinitron tube 27-inch picture measured diagonally
Input	Audio R/L phono jack, 408 mVrms (100% modulation), more than 47 k ohms Video phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Power requirements	120 V ac, 60 Hz
Power consumption	165 W (max.) 8 W (in standby condition)
Accessories supplied	Remote Commander RM-731 with 2 size AA batteries Antenna connector (300 ohm to 75 ohm matching transformer)
Optional accessories	TV stand U/V mixer EAC-66 Connecting cord RK-74A VMC-2P3

Design and specifications are subject to change without notice.



# TRINITRON® COLOR TV

# SONY®




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### WARNING !!

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

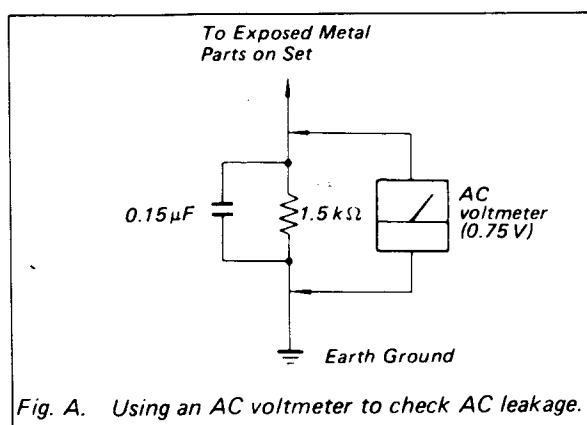
### SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

## SAFETY CHECK-OUT

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

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).  
Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.



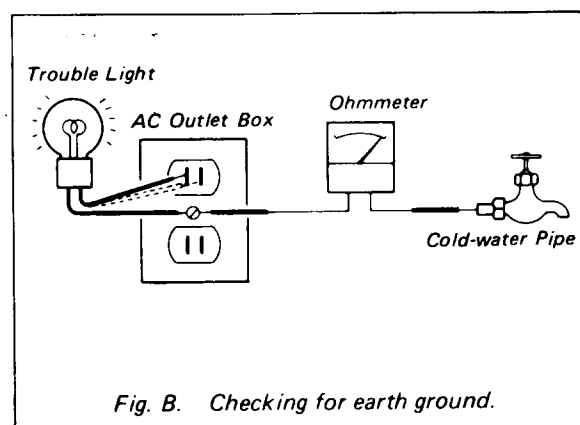
## LEAKAGE TEST

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

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

## HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)



## **SECTION 1**

### **GENERAL**

#### **1-1. FEATURES**

- **New Microblack™ Trinitron picture tube** with more finely pitched aperture grille for higher resolution, higher contrast picture.
- **Multi-band VHF/UHF/CATV tuner** receives up to 125 cable channels for a total of 181 possible off-air and cable channels.
- **Built-in MTS (Multichannel TV Sound) decoder** enables reception of stereo programs and SAP (Second Audio Program) broadcasts.\*
- **Timer/Block** features automatic program starting and channel blocking.
- **External-audio selector** enables you to receive FM simulcasted programs with the addition of optional equipment.
- **Built-in video and R/L audio line inputs** provide direct hook-up to VCRs.
- **Jump button** makes it possible to switch quickly between channels and monitor two different programs alternately.
- **Sleep timer** automatically turns off the TV after one hour.
- **Remote Commander** for convenient operation
- **On-screen display**
- **Dynamic Color™ system** for superior color reproduction with natural facial color tones and dazzling whites
- **Dynamic Picture™ system**, which adjusts picture contrast automatically to produce more detail in both bright and dark areas of every scene
- **Colorpure Filter™**, which produces fine picture detail without color spill or color noise

\*Depends on the availability of off-air stereo broadcasts.

## 1-2. LOCATION OF CONTROLS

### Front

#### On-screen display indicates

- Channel numbers
- "MUTING" or "SLEEP" indications
- "VIDEO" mode
- "MAIN", "SAP", or "BOTH" modes
- "EXT-A" mode
- TIMER/BLOCK settings

#### Item display indicates

- the item being adjusted
- the time according to the internal clock

**Adjustment display** indicates the level of adjustment being made to the sound and picture.

Press to open the panel.

- STEREO indicator
- TIMER indicator
- VIDEO indicator
- SLEEP indicator
- Remote control detector
- POWER switch
- CHANNEL scan button
- VOLUME button
- TV/VIDEO button
- TIMER/BLOCK button

BALANCE control

BASS control

TREBLE control

AUTO STEREO selector

CABLE selector

ERASE button

ADD button

PICTURE buttons

HUE control

COLOR control

BRIGHT (brightness) control

SHARP (sharpness) control

MTS (Multichannel TV Sound) button

### Rear

AUDIO IN R/L jacks

EXT (external)-AUDIO/VIDEO selector

VIDEO IN jack

VHF/UHF antenna terminal

### 1-3. TIMER/BLOCK

#### Internal clock

Once the internal clock is set, the current time will appear on the screen. It is necessary to set the clock correctly to activate the program start TIMER and channel BLOCK.

#### Program start TIMER

Makes a program of your choice appear on the screen automatically.

#### Channel BLOCK

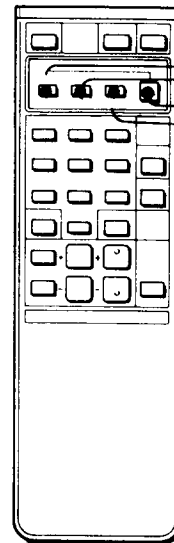
Blocks a channel from appearing on the screen for 12 hours. Use channel BLOCK to prevent children from watching undesirable programs.

The buttons used for setting the internal clock, program start TIMER and channel BLOCK are located on the Remote Commander.

#### Notes

- All settings will be erased from the set's memory if the set is unplugged, or if a power failure occurs.
- The TIMER and BLOCK will operate only if the clock is set correctly.
- If the TIMER and BLOCK are set for overlapping times on the same channel, the blocked channel will appear on the screen at the time set on the TIMER.

#### Remote Commander



**TIMER OFF/REPEAT button**  
Used to deactivate or reactivate the program start TIMER.

**CLEAR button**  
Used to erase the time and channel number from the set's memory.

**TIMER/BLOCK button**  
Used to change the "pages". See next page. This button and the TIMER/BLOCK button on the TV are operated in the same way.

**AM/PM button**  
Each time this button is pressed, the on-screen "AM" and "PM" indications will appear alternately.

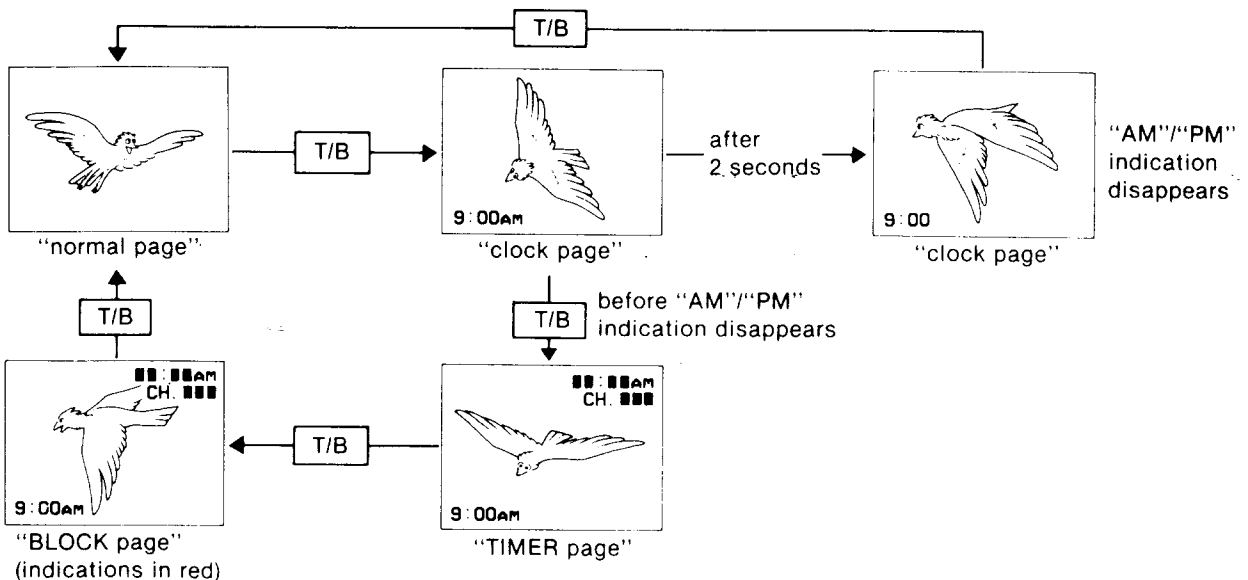
To set the internal clock, program start TIMER and channel BLOCK, you must summon the corresponding "pages":

"clock page", "TIMER page" and "BLOCK page".

To change the "pages", press the TIMER/BLOCK button as illustrated below.

The illustration shows how to change the "pages" after the clock has been set.

**T/B** stands for "Press the TIMER/BLOCK button."



**1-4. HOW TO SET THE INTERNAL CLOCK**

Ex. To set the clock to 8:05 PM, follow the steps below.

- 1 Press TIMER/BLOCK once to change from "normal page" to "clock page".



"clock page"

- 2 Press 0, 8, 0, 5, AM/PM (0 necessary).



- 3 If you have made a mistake, press CLEAR and return to step 2.

If you have performed the operation correctly, press ENTER.

The numbers will "wink" to indicate that the clock has been set.

(The 0 in front will disappear.)



The "AM"/"PM" indication will disappear after 2 seconds.

To summon "TIMER page", press TIMER/BLOCK before the "AM"/"PM" indication disappears.

To return to "normal page", press TIMER/BLOCK after the "AM"/"PM" indication has disappeared.

To reset the clock, summon "clock page" and press CLEAR before the "AM"/"PM" indication disappears. Then follow the steps above from step 2.

**Note**

12:00 AM stands for midnight.

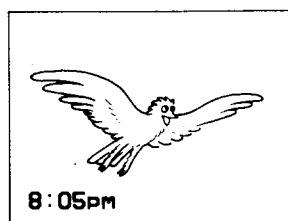
12:00 PM stands for noon.

**1-5. HOW TO SET THE PROGRAM START TIMER**

Make sure that the clock has been set correctly before setting the program start TIMER.

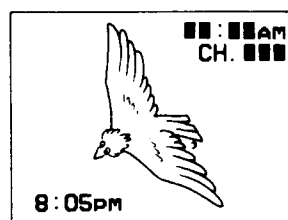
Ex. To set the TIMER for a program which begins at 10:30 PM on channel 12, follow the steps below.

- 1 Press TIMER/BLOCK once to change from "normal page" to "clock page".



"clock page"

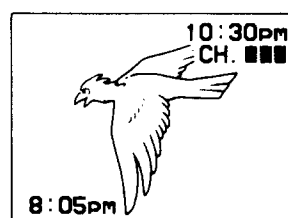
- 2 Press TIMER/BLOCK before the "AM"/"PM" indication disappears and summon "TIMER page".



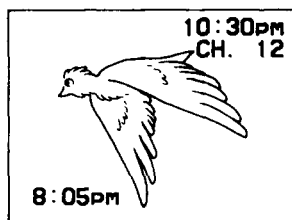
"TIMER page"

- 3 Press 1, 0, 3, 0, AM/PM, ENTER.

Numbers will "wink" to indicate that the time has been set.



- 4 Press 1, 2, ENTER (0 not necessary).  
Numbers will "wink" to indicate that the channel has been set.



The TIMER indicator will light up to indicate that the TIMER has been set.  
If you have made a mistake, press CLEAR and return to step 3.

At the preset time, the selected channel will appear on the screen and the TIMER indicator will go out. The TIMER will operate whether you are watching a TV program or a VCR playback, or even if you have turned off the TV.

If no button \* is pressed within 2 hours after the preset time, an "OFF" indication will appear on the screen for 1 minute. If a button \* is still not touched during the 1 minute, the TV will turn off automatically as a safety precaution.

\*AUTO STEREO selector and HUE, COLOR, BRIGHT, SHARP, TREBLE, BASS and BALANCE controls excepted.

The TIMER operates only once, but the time and the channel will remain in the set's memory.

If, at a future date, you want to see the same channel at the same time, press TIMER OFF/REPEAT. The TIMER indicator will light up to indicate that the TIMER has been reactivated.

If you want to deactivate the TIMER, press TIMER OFF/REPEAT again so that the TIMER indicator goes out.

It is not necessary to summon "TIMER page" to use the TIMER OFF/REPEAT button. Furthermore, this button is effective even if the TV has been turned off.

To clear the TIMER setting, summon "TIMER page" and press CLEAR.

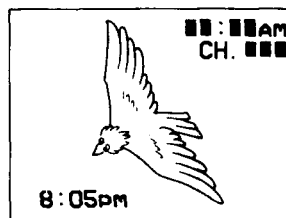
To reset, clear the setting and follow the steps on the previous page from step 3.

## 1-6. HOW TO SET THE CHANNEL BLOCK

Make sure that the clock has been set correctly before setting the channel BLOCK.

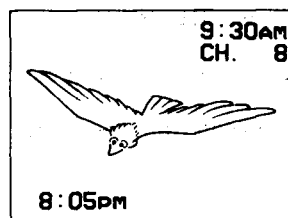
Ex. To set the BLOCK for a program which begins at 9:30 AM on channel 8, follow the steps below.

- 1 Press TIMER/BLOCK three times to change from "normal page" to "BLOCK page".



"BLOCK page"  
(indications in red)

- 2 Press 0, 9, 3, 0, ENTER (0 necessary).  
Numbers will "wink" to indicate that the time has been set.  
Press 8, ENTER (0 not necessary).  
Number will "wink" to indicate that the channel has been set.



The BLOCK has now been set.

If you have made a mistake, press CLEAR and return to step 2.

At the preset time, the picture of the selected channel will be blocked from view and the sound will be muted. A red "BLOCKED" indication will appear on the screen while the channel is blocked.

Normal reception will be resumed after 12 hours.

To return to normal reception while the channel is blocked, recall "BLOCK page" and press CLEAR.

The BLOCK setting blocks a specified channel for the same 12-hour period everyday.

To clear the BLOCK setting, summon "BLOCK page" and press CLEAR.

To reset, clear the setting and follow the steps above from step 2.