

HIL-C3

SERVICE MANUAL

US Model

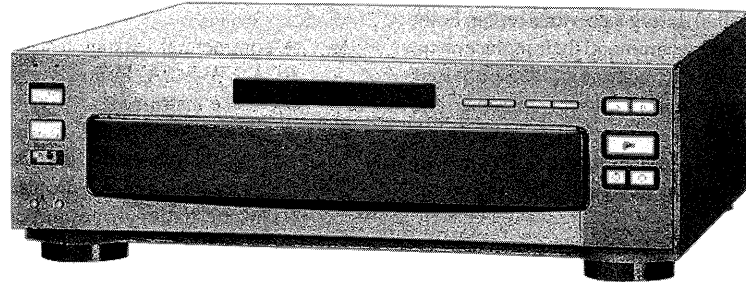


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SONY®

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. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. 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 TW-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 0.75V, 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 2V AC range are suitable. (See Fig. A)

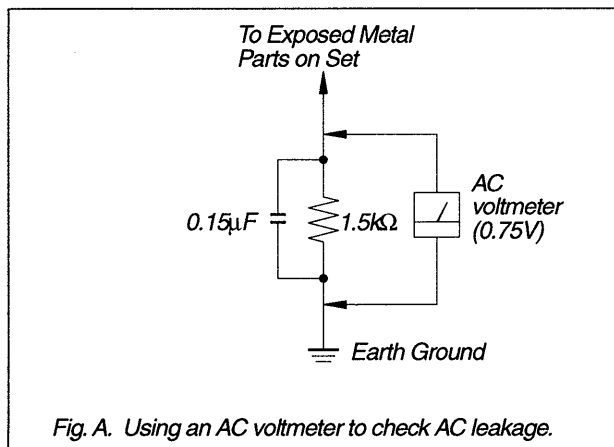


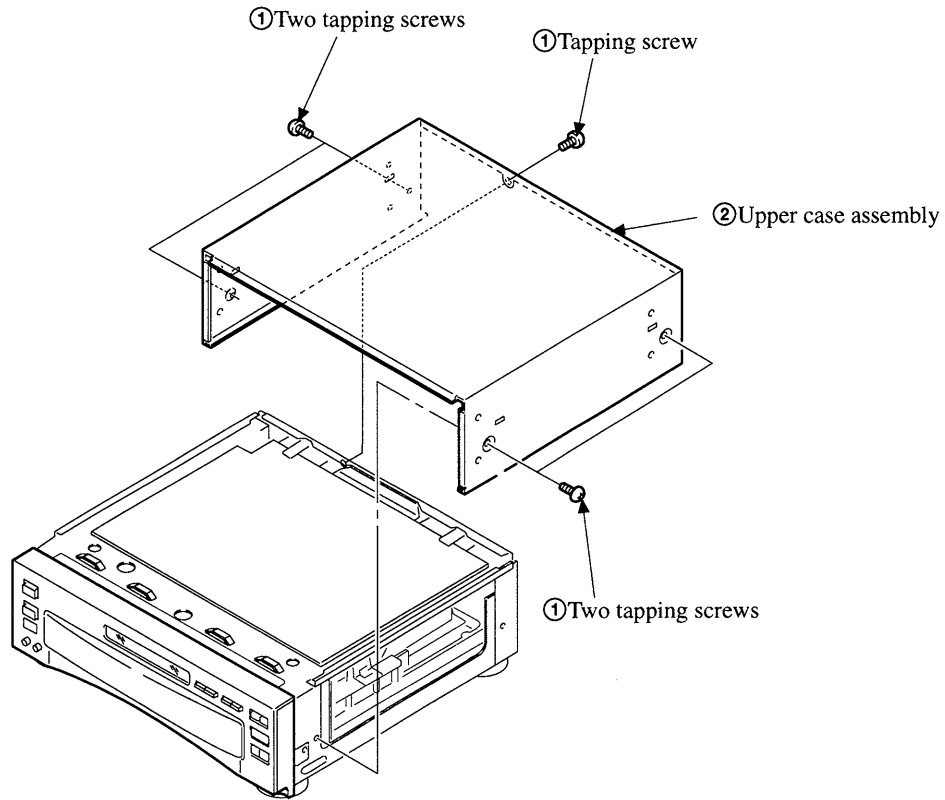
Fig. A. Using an AC voltmeter to check AC leakage.

CAUTION

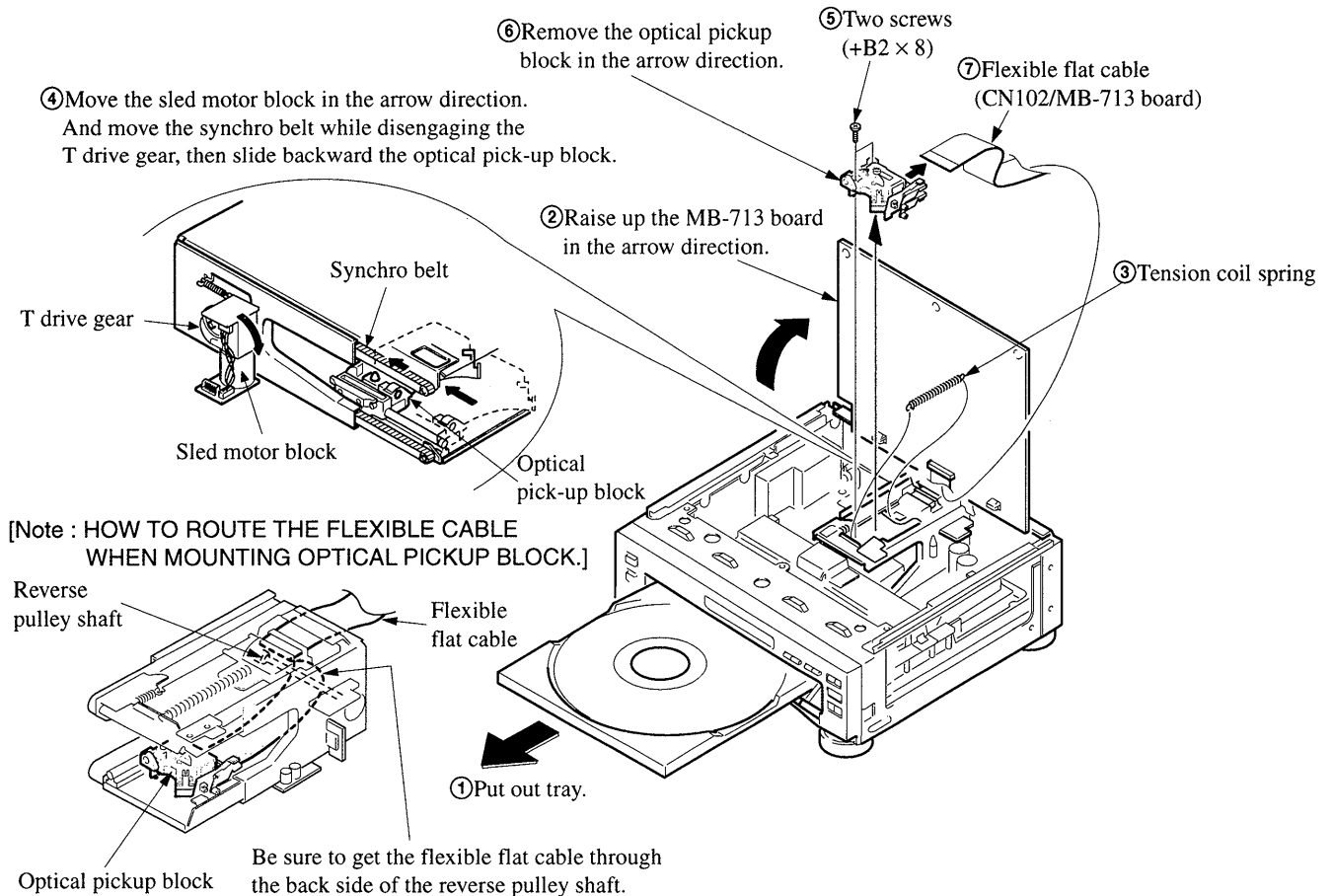
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**SECTION 1
DISASSEMBLY**

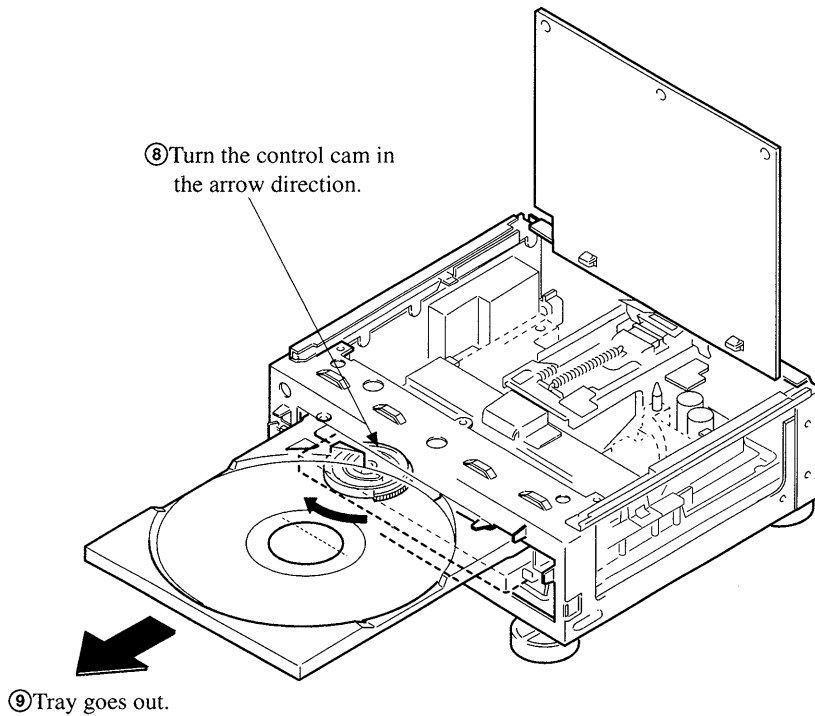
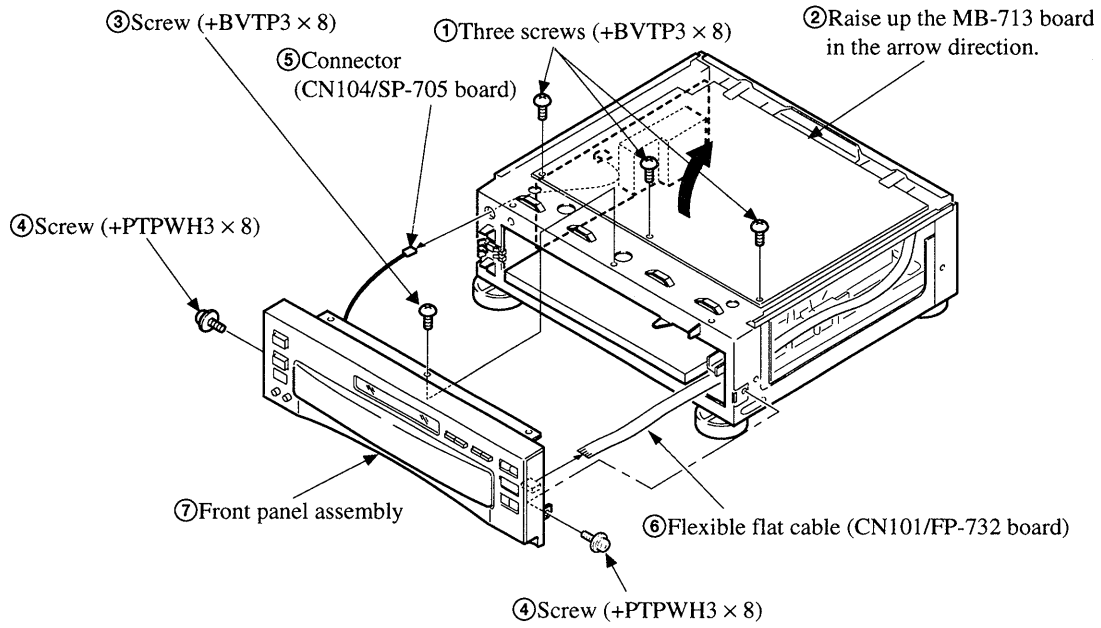
1-1. UPPER CASE ASSEMBLY



1-2. FEED BASE BLOCK (WITH REAR PANEL ASSEMBLY)



1-3. PUTTING OUT DISC (OR TRAY) WHEN THE PLAYER GOES WRONG WITH THE DISC IN



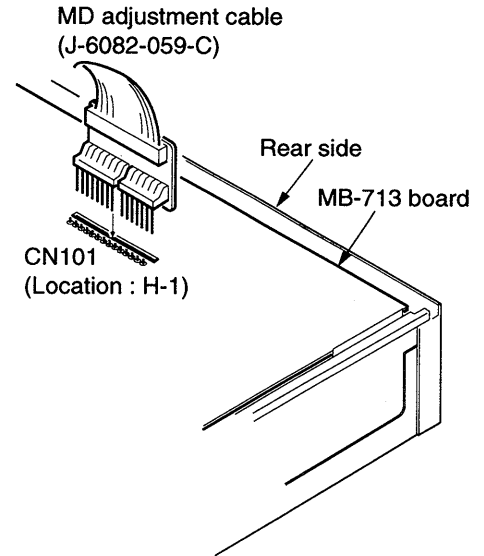
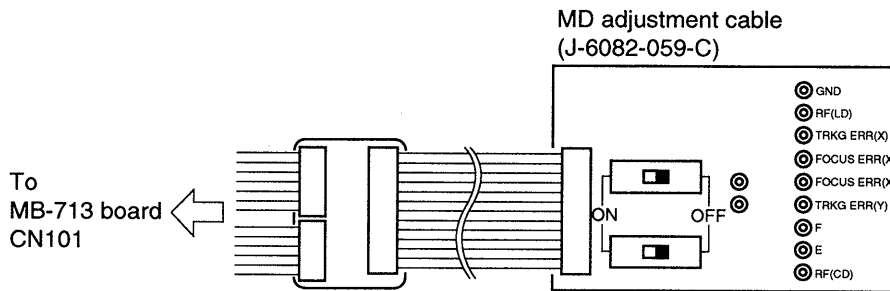
SECTION 2 ADJUSTMENT AFTER REPLACING OPTICAL BLOCK

LIST OF SERVICING JIGS AND MEASURING EQUIPMENT

- Oscilloscope (30 MHz or more, dual trace)
- Hi-vision monitor (with MUSE input)
- Audio oscillator (10 MHz, 5 V p-p or more)
- MUSE reference disk (NEC specification)
- Remote commander, RMT-M28 (1-473-008-11)
- MD adjustment cable (J-6082-059-C)
- Eccentric driver (J-6095-029-A)

Connection before starting adjustment

- Connect the MD adjustment cable jig to the disc player.



1. Focus Gain Adjustment

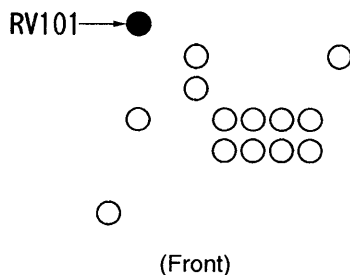
Mode	Playback PAUSE of CAV with side-A
Signal	HMV-302A (CAV)
Measurement point	CH-1: FOCUS ERR (X). Input 2.5 kHz, 2.5 V p-p signal. CH-2: FOCUS ERR (Y). (X-Y mode)
Measuring equipment	Oscilloscope
Adjusting element	RV101
Specified value	Lissajous's figure of as round as possible

Adjustment method:

- 1) Playback the CAV side of the MUSE reference disc with side-A and enter PAUSE.
- 2) Search the frame No. 4000.
(Reference 1: When playback is not possible, go to item "4. Tracking Balance Adjustment" and perform coarse adjustment of the tracking balance until center of the traverse waveform becomes 0 V dc at start up.
- 3) Adjust RV101 so that the Lissajous's figure becomes as round as possible.

[Location of adjusting element]

(Conductor side)



2. Tracking Gain Adjustment

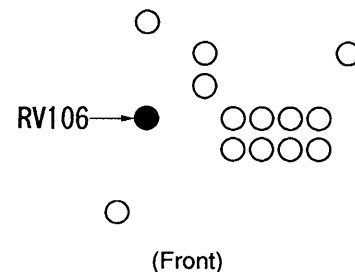
Mode	Playback PAUSE of CAV with side-A
Signal	HMV-302A (CAV)
Measurement point	CH-1: TRKG ERR (X). Input 3.5 kHz, 2.5 V p-p signal. CH-2: TRKG ERR (Y). (X-Y mode)
Measuring equipment	Oscilloscope
Adjusting element	RV106
Specified value	Lissajous's figure of as round as possible

Adjustment method:

- 1) Playback the CAV side of the MUSE reference disc with side-A and enter PAUSE.
- 2) Search the frame No. 4000.
- 3) Adjust RV106 so that the Lissajous's figure becomes as round as possible.

[Location of adjusting element]

(Conductor side)



3. Focus Bias Adjustment

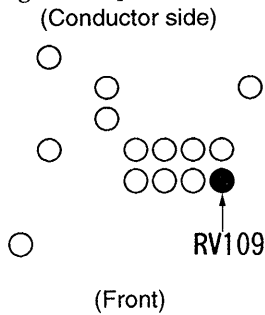
Mode	Playback PAUSE of CAV with side-A then playback PAUSE of CAV with side-B
Signal	HMV-302A (CAV)
Measurement point	RF (LD) terminal — CH-1. Approx. 500 mV p-p
Measuring equipment	Oscilloscope
Adjusting element	RV109 (MUSE side A) and RV107 (MUSE side B)
Specified value	Maximum RF signal amplitude

Adjustment method:

[MUSE Side-A]

- 1) Playback the CAV side of the MUSE reference disc with side-A and enter PAUSE.
- 2) Search the frame No. 16395.
- 3) Adjust RV109 for the maximum amplitude of the RF signal.

[Location of adjusting element]



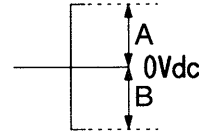
4. Tracking Balance Adjustment

Mode	Playback PAUSE of CAV with side-A then playback PAUSE of CAV with side-B
Signal	HMV-302A (CAV)
Measurement point	TRKG ERR (X) — CH-1. Approx. 1 V p-p
Measuring equipment	Oscilloscope
Adjusting element	RV112 (side A) and RV114 (side B)
Specified value	Center of track jump signal must be 0 V dc.

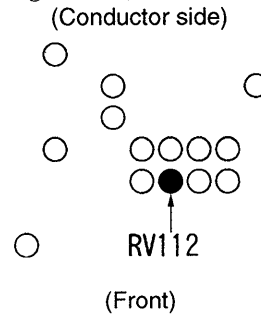
Adjustment method:

[MUSE Side-A]

- 1) Playback the CAV side of the MUSE reference disc with side-A and enter PAUSE.
- 2) Search the frame No. 16395.
- 3) Adjust RV112 so that center of track jump signal becomes 0 V dc. (A = B)



[Location of adjusting element]



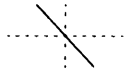
5. Side-A RD Adjustment

Mode	Playback PAUSE of CAV with side-A
Signal	HMV-302A (CAV)
Measurement point	CH-1: E terminal CH-2: F terminal (X-Y mode)
Measuring equipment	Oscilloscope
Adjusting element	RD adjustment plate
Specified value	Lissajous's figure of 180° straight line

Adjustment method:

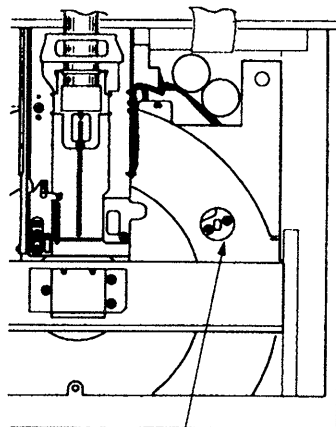
[MUSE Side-A]

- 1) Playback the CAV side of the MUSE reference disc with side-A and enter PAUSE.
- 2) Search the frame No. 15.
- 3) Loosen the fixing screw.
- 4) Set the tracking servo to OFF.
(Set the TRKG switch of the MD adjustment cable to OFF.)
- 5) Insert an eccentric driver into the hole of the RD adjustment plate and turn the eccentric driver until the Lissajous's figure becomes 180° straight line.

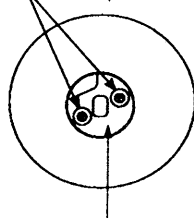


- 6) After adjustment is completed, tighten the fixing screw.
- 7) Stop the disc player and set the tracking servo to ON.

[Location of adjusting element]



Fixing screw



RD adjustment plate

6. Side-A TILT Adjustment

Mode	Playback PAUSE of CAV with side-A
Signal	HMV-302A (CAV)
Measurement point	VIDEO output
Measuring equipment	MUSE monitor
Adjusting element	RV105
Specified value	Minimum and balanced crosstalk (moire)

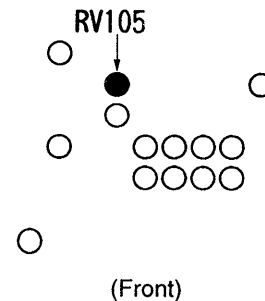
Adjustment method:

[MUSE Side-A]

- 1) Playback the CAV side of the MUSE reference disc with side-A and enter PAUSE.
- 2) Search the frame No. 15.
- 3) Press the Frame Advance button of a remote control unit to show the STILL picture from the memory picture.
(Show the frame No. 15 vertical bar signal.)
- 4) Adjust RV105 until crosstalks (moire) in the right and left are in the same level and minimum.

[Location of adjusting element]

(Conductor side)



(Front)

7. RF Level Adjustment

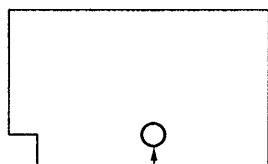
Mode	Playback PAUSE of CAV
Signal	HMV-302A (CAV)
Measurement point	RF (LD) terminal
Measuring equipment	Oscilloscope
Adjusting element	RV701
Specified value	RF signal must be 0.7 V p-p.

Adjustment method:

- 1) Playback the CAV side of the MUSE reference disc and enter PAUSE.
- 2) Search the frame No. 18000.
- 3) Adjust RV701 until amplitude of the RF signal is 0.7 V p-p.

[Location of adjusting element]

(Component side)



RV701
(Front)