

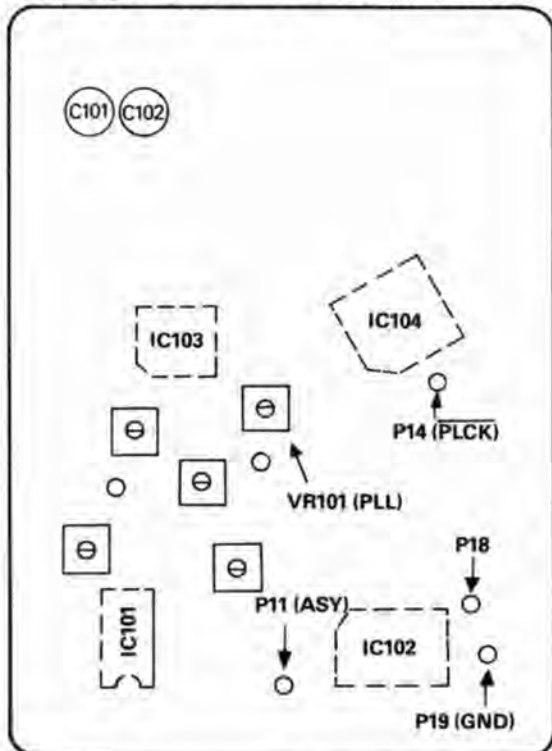
Alignment Procedures

1. Before Starting Adjustments

- Make the adjustment with a numeric order.
- Use the dualtrace oscilloscope whth high impedance (more than 10M ohm)
- Test Disc : SONY YEDS-7, SONY YEDS-4
- How to enter into the TEST MODE.
 - 1) Power off.
 - 2) Short between Pin 18 and Pin 19 on the Main P.C Board.
 - 3) Power on.
 - 4) Repair the short between Pin 18 and Pin 19
 - 5) Then, "0" signal appears in the display panel and "0" signal means the TEST MODE 0.
 - 6) If you press the PLAY button for an instant, the TEST MODE changes to the TEST MODE 1.
 - 7) If you press the PLAY button again, the TEST MODE changes to the TEST MODE 2.
- Tentative Setting of Volume
 - Set the semi-fixed resistance tentatively as follows;

VR 101 (PLL Free Run)	Center Position
VR 102 (F. Bias)	Center Position
VR 103 (EF. Balance)	Center Position
VR 104 (F. Gain)	Turn to the first counterclockwise
VR 105 (T. Gain)	Turn to the end counterclockwise

Adjusting Part: Main P.C Board (RF PLL Free Run)

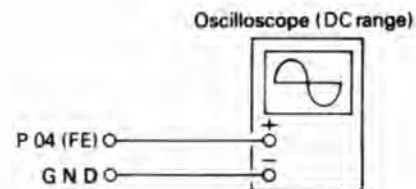


TOP VIEW (Front Side)

2. RF PLL Free Run Adjustments

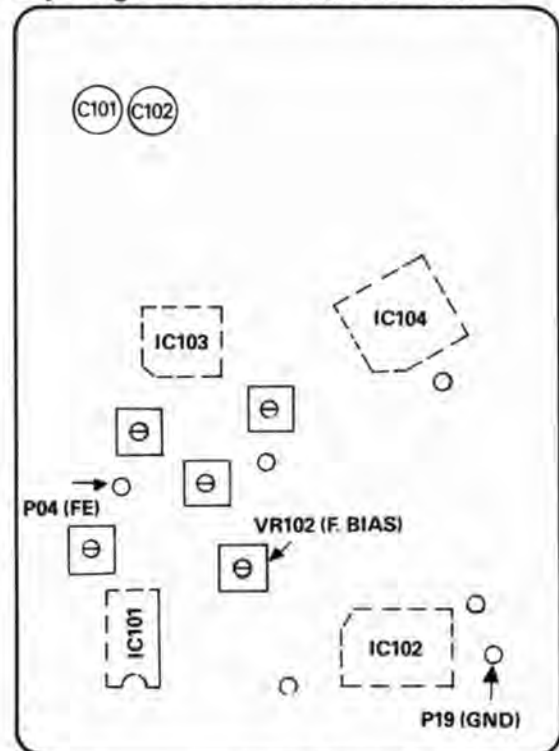
- 1) Enter into the TEST MODE 0.
- 2) Earth Pin 11 (ASY) on the Main P.C Board.
- 3) Connect the frequency counter to between Pin 14 (PLCK) and Pin 19 (GND) by using a probe.
- 4) Adjust VR 101 (PLL) with a plastic screwdriver for getting a indication in the range of 4.3218 MHz on the frequency counter.
- 5) Remove the earth connection from Pin 11 (Ass'y)
- 6) Set the player to TEST MODE 2, and confirm the PLL frequency is 4.3218 MHz.

3. Focus Bias Adjustments



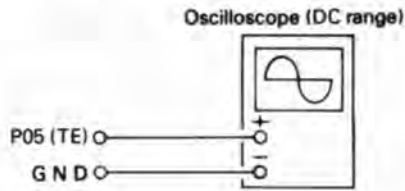
- 1) Enter into the TEST MODE 0.
- 2) Connect an oscilloscope between Pin 04 (FE. Focus Error) and Pin 19 (GND) on the Main P.C Board.
- 3) Adjust VR102 (F. Bias) so that the focus error signal becomes $0V \pm 10mV$ on the oscilloscope.

Adjusting Part: P.C Board (Focus Bias)

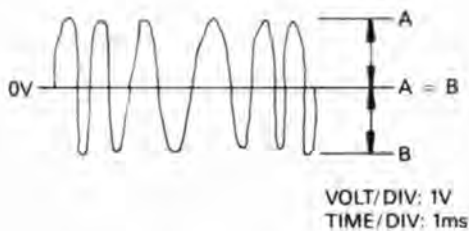


TOP VIEW (Front Side)

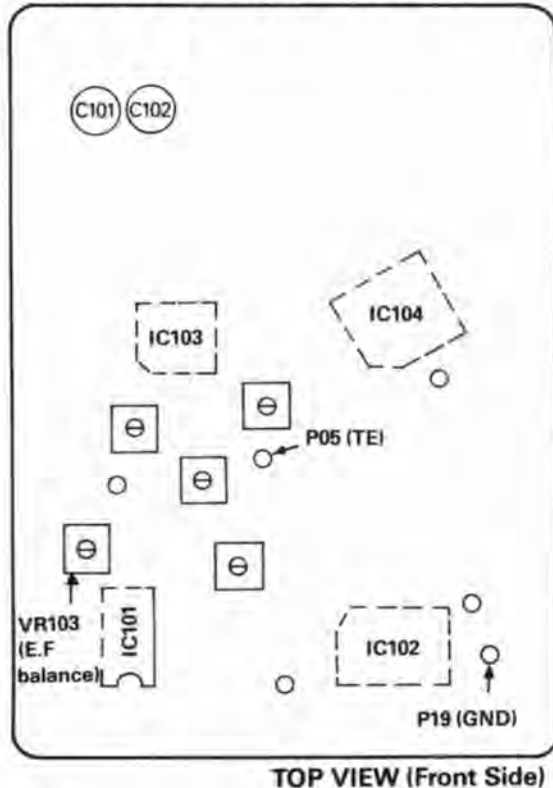
4. EF Balance (Tracking Bias) Adjustments



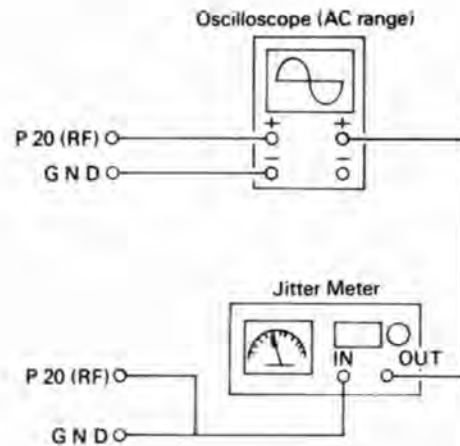
- 1) Set the player to the TEST MODE 1.
- 2) Connect an oscilloscope between Pin 05 (TE, Tracking error) and Pin 19 (GND) on the Main P.C Board.
- 3) Turn a disc softly with a finger and adjust VR 103 (EF.Balance) so that the center of the TE (Tracking error) signal sets on 0V DC as like a following figure.



Adjusting Part: Main P.C Board (EF Balance)

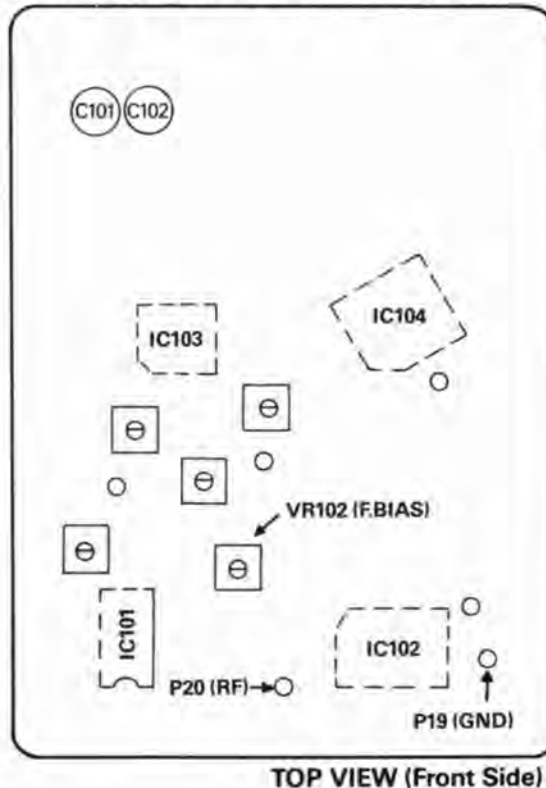


5. Adjustment of Jitter Level

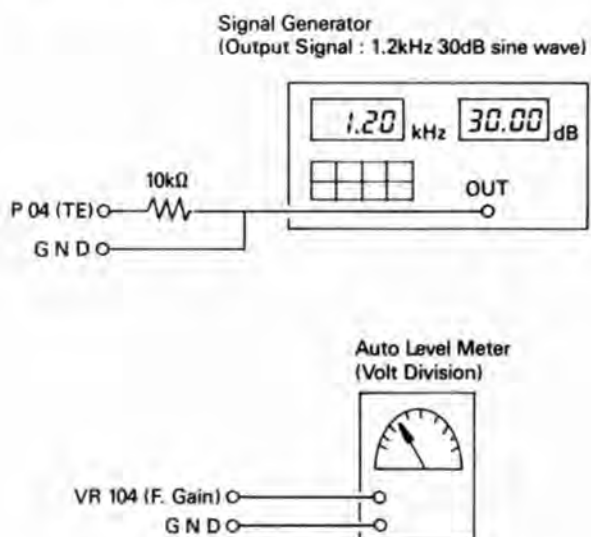


- 1) Set the player to the TEST MODE 2.
- 2) Connect the oscilloscope and jitter meter as like the upper figure.
- 3) Adjust VR 102 (F. Bias) so that the level of jitter on the jitter meter becomes the least value. Then a RF waveform will get with the largest amplitude and a sharp waveform on the oscilloscope.

Adjusting Part: Main P.C Board (Jitter Level)

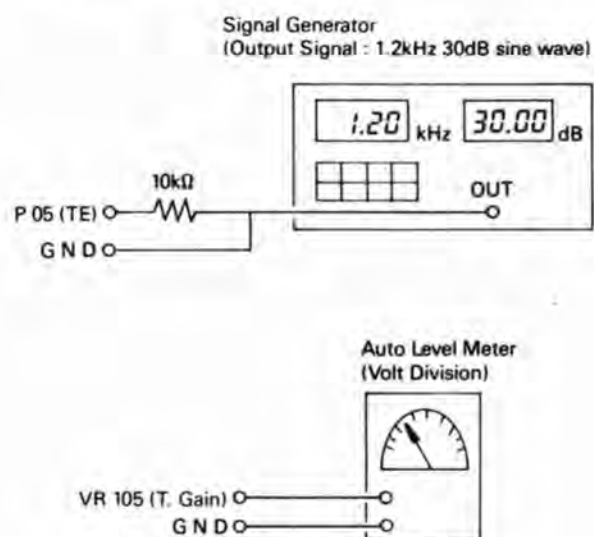


6. Focus Gain Adjustment



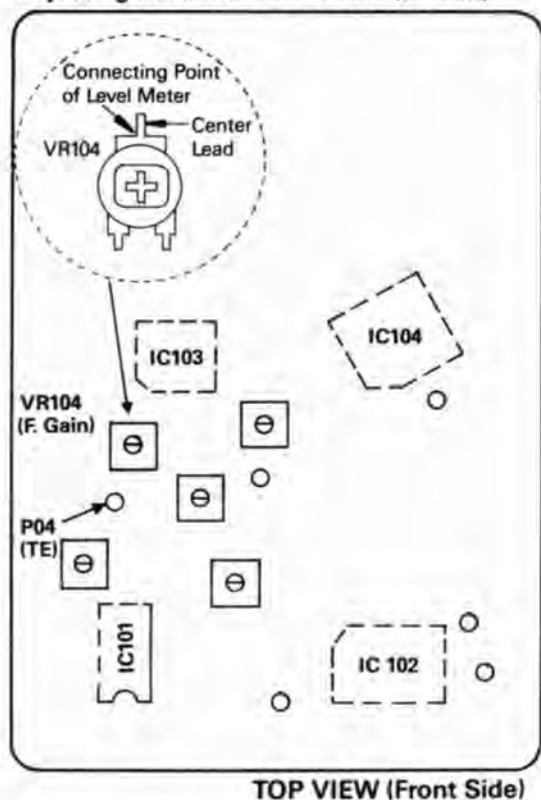
- 1) Set the player to the TEST MODE 2.
- 2) Connect the signal generator and auto level meter as like the upper figure.
- 3) Adjust VR104 to make DC voltage in the range of $55\text{mV} \pm 1\text{mV}$.

7. Tracking Gain Adjustment



- 1) Set the player to the TEST MODE 2.
- 2) Connect the signal generator and auto level meter as like the upper figure.
- 3) Adjust VR105 to make DC voltage in the range of $52\text{mV} \pm 1\text{mV}$.

Adjusting Part: Main P.C Board (F. Gain)



Adjusting Part: Main P.C Board (T. Gain)

