### Adjustments

**No.** | **Item** | **Input Settings** | **Output Settings** | **Player Settings** | **Alignment Points** | **Align For** | **FIG.**
---|---|---|---|---|---|---|---
1 | Laser Power | – | Apply the sensor section of optical power meter on the pickup lens. | While pressing the TIME DISP. key, turn the AC ON. (Test mode) Press the PLAY/PAUSE key, then confirm that the display is "03". | – | On the power from 0.08 to 0.15 mW, when the diffraction grating is correctly aligned with the RF level of 1.0 Vp-p or more. | (a) |

1. Press the STOP key.
2. Press the OPEN key.
3. Load a disc, then press the CLOSE key.
4. Press the PLAY key.
5. Press the OPEN key to open the tray.
6. Turn the power off. (Player stops as the tray is opened while the disc clamped.)
7. While pressing the TIME DISP. key, turn the power ON to enter the Test mode.

**2** | Tracking Error Balance | Test disc Type 4 | Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6) | Press the PLAY/PAUSE key, then confirm that the display is "03". | TE BALANCE VR2 | Symmetry between upper and lower patterns | (c) |

**3** | Focus Error Balance | Test disc Type 4 | Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6) | Press the PLAY/PAUSE key, then confirm that the display is "05". | FE BALANCE VR1 | Optimum eye pattern | (b) or (d) |

**4** | Tracking Gain | Test disc Type 4 | Apply signal of 1.2 kHz, 50 mVRms to CN2 pin 5-6. | Connect a LPF to CN2 pin 5-6 to which you connect an oscilloscope or AC voltmeters. | Press the PLAY/PAUSE key, then confirm that the display is "06". | TRACKING GAIN VR3 | Two VTVMs should read the same value. | (e) |

---

**Note:**
- Type 4 disc: SONY YEDS-18 Test Disc or equivalent.
- LPF: Around 47 kΩ 390 pF or so.
- Step 1-4 are in Test Mode.

---

**Figure (a): Laser power**

---

**Figure (e): Tracking gain**

---

---

---

---

---

---
FIG. (b)
- RF signal and TE signal in test mode (PLAY).
- If the diffraction grating has been adjusted correctly, the influence of triggering is observed on the TE waveform of approx. 18 μs from RF signal trigger point, in the form of a projection.

FIG. (c)
- RF signal and TE signal in test mode (Focusing servo ON / Tracking servo OFF). (Disc Type 4)
- Adjust TE signal so that the waveform is symmetrical in relation to VC. (TE BALANCE)

FIG. (d)
- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset are focused into one point on the display. The crossing points above and below the center shall also be looked clearly.
(FE BALANCE)
Refer to the schematic diagram for the value of resistors and capacitors.
PC BOARD (Component side view)

Refer to the schematic diagram for the value of resistors and capacitors.
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). A indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instrument used or on the product. Refer to the voltage during PLAY unless otherwise specified. The value shown in ( ) is the voltage measured at the moment of STOP.
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). A indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during PLAY unless otherwise specified. The value shown in ( ) is the voltage measured at the moment of STOP.
Parts with the exploded numbers larger than 700 are not supplied.
**EXPLODED VIEW (MECHANISM)**

Parts with the exploded numbers larger than 700 are not supplied.
SPECIFICATIONS

[Format]
System ........................................Compact disc digital audio system
Laser ..............................................Semiconductor laser

[D/A Convertors]
D/A Conversion ..................................1 Bit
Oversampling ....................................8 fs (352.8 kHz)

[Audio]
Frequency response ..........................4 Hz – 20 kHz, ± 0.5 dB
Signal to noise ratio ...........................More than 95 dB
Dynamic range ..................................More than 95 dB
Total harmonic distortion +noise .................Less than 0.008 % (at 1 kHz)
Wow & flutter ..................................Unmeasurable Limit
Output level / impedance
Fixed (DP-R3090) .................................2.0 V / 0.8 kΩ
Variable (DP-R4090) .........................(max.) 2.0 V / 0.8 kΩ
Headphone output (max.) ....................(DP-R4090 only) 20 mW (32 Ω)

[General]
Power consumption ................................13 W
Dimensions .......................................W : 440 mm (17-5/16")
..................................................H : 125 mm (4-15/16")
..................................................D : 397 mm (15-5/8")
Weight (Net) .....................................5.0 kg (11.0 lb)

Note:
We follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.