ILLUST is DP-R4090.

* Refer to parts list on page 19.

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

DANGER : Laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.
Open the tray (Normal mode), then turn the power off.

<table>
<thead>
<tr>
<th>No.</th>
<th>ITEM</th>
<th>INPUT SETTINGS</th>
<th>OUTPUT SETTINGS</th>
<th>PLAYER SETTINGS</th>
<th>ALIGNMENT POINTS</th>
<th>ALIGN FOR</th>
<th>FIG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LASER POWER</td>
<td>—</td>
<td>Apply the sensor section of optical power meter on the pickup lens.</td>
<td>While pressing the TIME DISP. key, turn the AC ON. (Test mode) Press the PLAY/PAUSE key, then confirm that the display is &quot;03&quot;.</td>
<td>—</td>
<td>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.</td>
<td>(a)</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>2</th>
<th>TRACKING ERROR BALANCE</th>
<th>Test disc Type 4</th>
<th>Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)</th>
<th>Press the PLAY/PAUSE key, then confirm that the display is &quot;03&quot;.</th>
<th>TE BALANCE VR2</th>
<th>Symmetry between upper and lower patterns</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>FOCUS ERROR BALANCE</td>
<td>Test disc Type 4</td>
<td>Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)</td>
<td>Press the PLAY/PAUSE key, then confirm that the display is &quot;05&quot;.</td>
<td>FE BALANCE VR1</td>
<td>Optimum eye pattern</td>
<td>(b) or (d)</td>
</tr>
<tr>
<td>4</td>
<td>TRACKING GAIN</td>
<td>Test disc Type 4</td>
<td>Apply signal of 1.2 kHz, 50mVRms to CN2 pin 5-6. Connect a LPF to CN2 pin 5-6 to which you connect an oscilloscope or AC voltimeters.</td>
<td>Press the PLAY/PAUSE key, then confirm that the display is &quot;05&quot;.</td>
<td>TRACKING GAIN VR3</td>
<td>Two VTVMs should read the same value.</td>
<td>(e)</td>
</tr>
</tbody>
</table>

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.

(a) Laser power  
(e) Tracking gain

![Laser power diagram](image-url)

![Tracking gain diagram](image-url)
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)
PC BOARD (Component side view)

CD player unit
X32-328X-XX

0-10 : 1050CD (K, P)  0-7
0-11 : 104CD (K, P)   0-8
0-12 : 103CD (K, P)   0-9
DP-R797 (K, P)

(c) Tracking error balance
Symmetry between upper and lower patterns.
(b or d) Focus error balance
Optimum eye pattern
Table of Components:

- **50CD (K, P)**
- **4CD (K, P)**
- **3CD (K, P)**
- **P-R797 (K, P)**

- **0-21**: 1050CD (Y)
- **0-22**: DP-R4090 (M)
- **103CD (Y)**
- **104CD (Y)**
- **DP-R797 (Y)**

- **0-23**: DP-R3090 (M)
- **2-71**: DP-R4090 (E, T, X)
- **2-72**: DP-R3090 (E, T, X)

---

(c) Tracking error balance:
Symmetry between upper and lower patterns.

(b or d) Focus error balance:
Optimum eye pattern.

(e) Tracking gain:
Two VTVMs should read the same value.

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). 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.

KAN03

CXD2507AQ1

LA6641D
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). \( \Delta \) 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.
103CD/104CD/1050CD/DP-R797/R3090/R4090

SPECIFICATIONS

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

[D/A Convertors]
D/A Conversion ................................1Bit
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.

KENWOOD CORPORATION
14-6,Dogenzaka 1-chome, Shibuya-ku, Tokyo, 150 Japan
KENWOOD SERVICE CORPORATION
P.O BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745, U.S.A.
KENWOOD ELECTRONICS CANADA INC.
6700 Kestrel Road, Mississauga, Ontario, Canada L5T 1P8
KENWOOD ELECTRONICS LATIN AMERICA S.A.
P.O BOX 55-2971, Paseo 6 plaza Chaves, Cl 47 y Aviacion de la Guardia, Panama, Republica de Panama
KENWOOD ELECTRONICS U.K. LIMITED
KENWOOD House, Dwight Road, Watford, Herts., WD1 8EB., United Kingdom
KENWOOD ELECTRONICS BENELUX N.V.
Meuchelzeestraat 413, B-1930 Zaventem, Belgium
KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Reinbrucker Str. 16, 63150 Heusenstamm, Germany
KENWOOD ELECTRONICS FRANCE S.A.
13 Boulevard Ney, 75018 Paris, France
KENWOOD ELECTRONICS ITALIA S.p.A.
Via G. Sironi, 79 20129, Milano, Italy
KENWOOD IBERICA S.A.
Bolivia, 239-36020 Barcelona, Spain
KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.
(A.C.N. 001499 074)
P.O Box 504, 8 Flynn Drive, Australia Centre, Homebush, N.S.W. 2140, Australia
KENWOOD & LEE ELECTRONICS, LTD.
Unit 311-312, Level 17, Tower 1, Metropolis, 223 Hing Fong Road, Kwai Fong N.T., HongKong
KENWOOD ELECTRONICS GULF FZE
P.O.Box 61316, Jebel Ali, Dubai, UAE
KENWOOD ELECTRONICS SINGAPORE PTE LTD.
No. 1 Genting Lane #02-02, KENWOOD Building, Singapore, 349544
KENWOOD ELECTRONICS (MALAYSIA) SDN BHD.
44.01 Level 4, Wisma Academy Lot 4A, Jalan 19/1 46300 Petaling Jaya Selangor Darul Ehsan Malaysia