

VERTICAL DEVIATION TEST CD

For Checking CD Players and CD Drives TCD-731RA/ -732RA

1. Purpose of use, Features

These are Vertical Deviation Test Discs designed for confirmation of focus servo ability, evaluation, measurement and adjustment of CD Drives and Players etc..

- Vertical deviation of TCD-731RA is 1.00mm at Track 15. Eccentricity is made less than $20\mu\text{m}$ (0-p) by raising the precision of center hole dimension to scale back the influence of eccentricity.
- TCD-732RA is suitable for checking of thin type mechanism.
Vertical deviation of TCD-732RA is 1.00mm at Track 16.
Vertical deviation spreading and Eccentricity are the same specification as TCD-731RA.

2. Specifications

- Disc type : Vertical deviation CD-DA Disc
- Basic parameters

| Model name | Material disc | Recorded time | Scanning velocity (for reference) | Track pitch (for reference) |
|------------|---------------|--------------------|-----------------------------------|-----------------------------|
| TCD-731RA | TCD-791 | 43min. 5sec. | 1.25 m/sec | 1.6 μm |
| TCD-732RA | TCD-793 | 1hr. 14min. 42sec. | 1.20 m/sec | 1.6 μm |

- Disc dimension

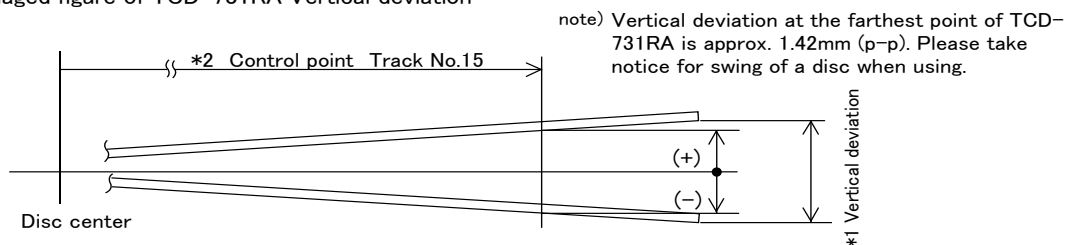
| Model name | Outer diameter | Center hole diameter | Disc thickness | Eccentricity |
|-------------------|------------------|----------------------|---|-------------------------|
| TCD-731RA/ -732RA | 120 \pm 0.3 mm | 15 +0.04/ -0 mm | 1.2 +0.3/ -0.1 mm, including label and protective layer | <20 μm (0-p) |

- Specification of Vertical deviation

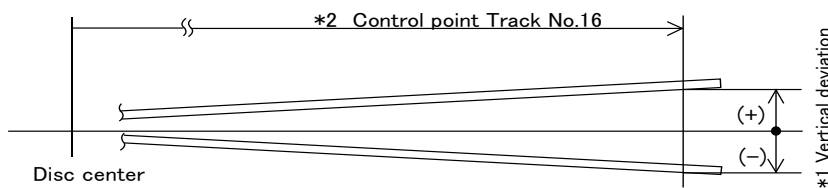
| Model name | *1 Vertical deviation mm | Vertical deviation spreading mm | | *2 Control point mm |
|------------|--------------------------|---------------------------------|------------------|---------------------------|
| | | (+) | (-) | |
| TCD-731RA | 1.00 \pm 0.05 | 0.50 \pm 0.05 | -0.50 \pm 0.05 | Track No.15 (ϕ 93) |
| | | 0.50 \pm 0.05 | -0.50 \pm 0.05 | |
| TCD-732RA | 1.00 \pm 0.05 | 0.50 \pm 0.05 | -0.50 \pm 0.05 | Track No.16 (ϕ 116) |
| | | 0.50 \pm 0.05 | -0.50 \pm 0.05 | |

- *1 We define Vertical deviation here is the difference between max. and min. shift value of the recorded layer at the control point in vertical direction when a disc rotating one revolution.
Therefore, the Vertical deviation of this table is indicated as p-p.

Imaged figure of TCD-731RA Vertical deviation



Imaged figure of TCD-732RA Vertical deviation



Values in this sheet are measured by the equipments ALMEDIO-owned. Appearance and specifications are subject to change without notice.

3. Content

• TCD-731RA

| Track No. | Time | | Contents | Start Radius * mm | Vertical * Deviation mm |
|-----------------------------------|------|-----|---|----------------------|----------------------------|
| | min | sec | | | |
| 1 | 3 | 15 | Minuetto | 24.9 | (0.54) |
| 2 | 2 | 32 | 2 ère Gymnopédie | 27.3 | (0.59) |
| 3 | 3 | 02 | Ouverture Miniature (Casse-noisette Op. 71a) | 29.0 | (0.63) |
| 4 | 2 | 36 | Marche (Casse-noisette Op. 71a) | 30.9 | (0.67) |
| 5 | 3 | 09 | Clair de Lune | 32.5 | (0.71) |
| 6 | 3 | 12 | Nocturne (Op. 9-2) | 34.3 | (0.74) |
| 7 | 2 | 26 | Danse de la Fée-Dragée (Casse-noisette Op. 71a) | 36.0 | (0.78) |
| 8 | 2 | 29 | Danse Arabe (Casse-noisette Op. 71a) | 37.3 | (0.81) |
| 9 | 2 | 51 | Fantaisie-Impromptu (Op. 66) | 38.5 | (0.84) |
| 10 | 2 | 02 | Hungarian Dance No.5 | 39.9 | (0.87) |
| 11 | 3 | 38 | Prélude < Raindrop > | 40.9 | (0.89) |
| 12 | 3 | 15 | Maiden's Prayer | 42.5 | (0.92) |
| 13 | 3 | 08 | Valse des Fleurs (Casse-noisette Op. 71a) | 43.9 | (0.96) |
| 14 | 2 | 54 | 1 ère Gymnopédie | 45.3 | (0.98) |
| 15 | 2 | 06 | Danse des Mirlitons (Casse-noisette Op. 71a) | 46.5 | 1.0 |
| TOTAL TIME (Including pause time) | | | 43min 5sec | | |

• TCD-732RA

| Track No. | Time | | Contents | Start Radius * mm | Vertical * Deviation mm |
|-----------------------------------|------|-----|------------------|----------------------|----------------------------|
| | min | sec | | | |
| 1 | 2 | 01 | 1 ère Gymnopédie | 24.9 | (0.43) |
| 2 | 2 | 10 | 1 ère Gymnopédie | 26.4 | (0.45) |
| 3 | 2 | 17 | 1 ère Gymnopédie | 27.9 | (0.48) |
| 4 | 2 | 24 | 1 ère Gymnopédie | 29.4 | (0.50) |
| 5 | 2 | 32 | 1 ère Gymnopédie | 30.9 | (0.53) |
| 6 | 2 | 40 | 1 ère Gymnopédie | 32.4 | (0.56) |
| 7 | 2 | 47 | 1 ère Gymnopédie | 33.9 | (0.58) |
| 8 | 5 | 34 | 1 ère Gymnopédie | 35.4 | (0.61) |
| 9 | 3 | 46 | 1 ère Gymnopédie | 38.2 | (0.65) |
| 10 | 4 | 25 | 1 ère Gymnopédie | 40.0 | (0.69) |
| 11 | 5 | 37 | 1 ère Gymnopédie | 42.0 | (0.72) |
| 12 | 6 | 56 | 1 ère Gymnopédie | 44.4 | (0.76) |
| 13 | 12 | 22 | 1 ère Gymnopédie | 47.1 | (0.81) |
| 14 | 8 | 22 | 1 ère Gymnopédie | 51.7 | (0.89) |
| 15 | 9 | 45 | 1 ère Gymnopédie | 54.6 | (0.94) |
| 16 | 0 | 04 | 1kHz -20dB L&R | 57.8 | 1.0 |
| TOTAL TIME (Including pause time) | | | 74min 42sec | | |

* Start Radius and Vertical Deviation (dimension) at respective tracks are calculated reference value.

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<Proper handling of the disc>

Do not write on the surface with a pen and others, nor put a sticker on it.

Do not expose the disc to direct sunlight, nor leave it in the place of high temperature and high humidity.

After playing, store the disc in its own case.

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