SERVICE MANUAL

Cassette Deck
RS-M22

Front-Loading Vertical Hold Stereo Cassette Deck with
FL Bar Graph Peak Meters, Rewind Auto-Play,
and Separate 3-Position Bias and Equalization Selectors

RS-631 MECHANISM SERIES

Specifications (Catalog specifications for sales)

- **Power requirement:** AC; 110/125/220/240V, 50/60Hz
  - Preset power voltage: 220V
  - 240V, 50Hz only for England

- **Power consumption:** 13W

- **Motor:** Electronic control DC motor

- **Track system:** 4-track 2-channel stereo recording and playback

- **Tape speed:** 4.8 cm/s (1-7/8 ips.)

- **Wow and flutter:** 0.05% (WRMS), ±14% (DIN)

- **Frequency response:**
  - CrO2/FeCr tape: 25 – 16,000 Hz
  - 30 – 15,000 Hz (DIN)
  - Normal tape: 25 – 14,000 Hz
  - 30 – 13,000 Hz (DIN)

- **Signal-to-noise ratio:**
  - Dolby NR in: 67 dB (above 5 kHz)
  - Dolby NR out: 57 dB (signal level = max. recording level, FeCr/CrO2 type tape)

- **Fast forward and rewind time:** Approx. 90 seconds with C-60 cassette tape

**Input:**
- MIC: sensitivity 0.25 mV, input impedance 7.2 kΩ
- Applicable microphone impedance 400 Ω – 10 kΩ
- LINE: sensitivity 60 mV, input impedance 47 kΩ

**Output:**
- LINE: output level 650 mV, output impedance 2.2 kΩ or less, load impedance 22 kΩ over HEADPHONE: output level 100 mV, load impedance 8 Ω

**Rec/pb connection:** 5-P DIN type: input sensitivity 0.21 mV, impedance 5.7 kΩ, output level 650 mV, impedance 6 kΩ

**Bias frequency:** 83 kHz

**Head:**
- 2-head system
- 1-SP head for record/playback
- 1-double-gap ferrite head for erase

**Dimensions:**
- 43.0 cm(W) × 14.2 cm(H) × 26.7 cm(D)
- [16-7/8"(W) × 5-1/8"(H) × 10-1/2"(D)]

**Weight:** 7.1 kg (15 lbs. 11 oz)

Specifications are subject to change without notice.
* ‘Dolby’ and the double-D symbol are trademarks of Dolby Laboratories.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan
LOCATION OF CONTROLS AND COMPONENTS

Fig. 1

1. Power switch
2. Headphones jack
3. Cassette holder
4. Tape counter and reset button
5. Recording indication lamp
6. Fluorescent level meters
7. Pause button
8. Record button
9. Playback button
10. Rewind/review button
11. Fast forward/cue button
12. Stop button
13. Eject button
14. Timer stand-by button
15. Dolby noise-reduction switch
16. Input selector
17. Bias selector
18. Equalization selector
19. Input level controls
20. Microphone jacks
21. Line output jacks
22. Record/playback connection socket
23. Line input jacks
## DISASSEMBLY INSTRUCTIONS

### Fig. 2
![Fig. 2](image)

### Fig. 3
![Fig. 3](image)

### Fig. 4
![Fig. 4](image)

### Fig. 5
![Fig. 5](image)

### Fig. 6
![Fig. 6](image)

### Fig. 7
![Fig. 7](image)

### Fig. 8
![Fig. 8](image)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>To remove</th>
<th>Remove</th>
<th>Shown in fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Case cover</td>
<td>6 black screws (A)</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Bottom cover</td>
<td>6 screws (B)</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Front panel</td>
<td>2 control knobs (C), Cassette lid (D), 3 red screws (E)</td>
<td>2, 4</td>
</tr>
<tr>
<td>3</td>
<td>Rear board</td>
<td>10 black screws (F), 2 red screws (G)</td>
<td>3, 4</td>
</tr>
<tr>
<td>5</td>
<td>Meter cover</td>
<td>3 red screws (H)</td>
<td>4, 5</td>
</tr>
<tr>
<td>5</td>
<td>Control button assembly and cassette holder</td>
<td>4 red screws (I), Stop ring (J), Cassette holder spring (K)</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Meter unit</td>
<td>3 red screws (L)</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Mechanism</td>
<td>2 headphones jack holding screw (M), 6 red screws (N)</td>
<td>7, 6</td>
</tr>
<tr>
<td>8</td>
<td>Main circuit board</td>
<td>12 red screws (O)</td>
<td>6, 8</td>
</tr>
</tbody>
</table>
# MEASUREMENT AND ADJUSTMENT METHOD

**NOTE:**
1. Make sure heads are clean.
2. Make sure capstan and pressure roller are clean.
4. Dolby NR switch: OUT.
5. Bias selector: LOW.
6. Equalizer selector: 120μS.
7. Input selector: LINE.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>MEASUREMENT &amp; ADJUSTMENT</th>
<th>REMARKS</th>
</tr>
</thead>
</table>
| Pressure of pressure roller | 1. Place UNIT into playback mode.  
2. Hook the tension gauge to pressure roller lever and pull it in the direction of the arrow as shown in fig. 10.  
3. Measure the tension at the moment when the pressure roller moves away from the capstan.  

**Standard value: 350±50 gr**  
Adjustment method  
Bend the part (A) of the pressure roller spring in either direction shown by the arrow until the correct pressure is attained. | *Playback mode* |
| Takeup tension | 1. Mount cassette torque meter on UNIT.  
2. Place UNIT into playback mode and read takeup torque.  
3. Measure several times and determine the mean value.  

**Standard value: 50±15 gr·cm** | *Playback mode* |
| Head azimuth adjustment | Record/playback head adjustment:  
1. Test equipment connection is shown below.  

![Fig. 11](image)  
2. Play azimuth tape (QZZCFM 8kHz)  
3. Adjust record/playback head angle adjustment screw (B) in fig. 12 so that output level at LINE OUT becomes maximum.  
4. Measure both channels, and adjust levels for equal output.  
5. After adjustment lock head adjustment screw with lacquer. | *Playback mode* |
| Tape speed | Tape speed accuracy  
1. Test equipment connection is shown below.  

![Fig. 13](image) | *Playback mode* |
<table>
<thead>
<tr>
<th>ITEM</th>
<th>MEASUREMENT &amp; ADJUSTMENT</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Play test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Measure this frequency.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. On the basis of 3,000Hz, determine value by following formula:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[ \text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 \text{ (%)} ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>where, ( f ) = measured value</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Take measurement at middle section of tape.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Standard value: ( \pm 1.5 % )</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Adjustment method</strong></td>
<td>1. Play the test tape (middle).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Adjust tape speed adjustment VR (shown in fig. 28) so that frequency becomes 3,000Hz.</td>
<td></td>
</tr>
<tr>
<td><strong>Tape speed fluctuation</strong></td>
<td>Make measurements in same manner as above (beginning, middle and end of tape), and determine difference between maximum and minimum values and calculate as follows:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[ \text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100 \text{ (%)} ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( f_1 ) = maximum value</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( f_2 ) = minimum value</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Standard value: ( 1 % )</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Wow and flutter</strong></td>
<td>1. Test equipment connection is shown below.</td>
<td></td>
</tr>
<tr>
<td><strong>Equipment:</strong></td>
<td>• Wow meter</td>
<td>• Playback mode</td>
</tr>
<tr>
<td></td>
<td>• Test tape — QZZCWAT</td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Wow and flutter diagram" /> ( \text{Fig. 14} )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Use wow test tape (3,000Hz) and measure its playback signal on wow meter.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Wow and flutter is expressed in percentage and that measurement can be weighted by JIS network (WRMS).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Measure at middle section of test tape.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Standard value: 0.07 (WRMS)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Playback frequency response</strong></td>
<td>1. Test equipment connection is as same as &quot;Head azimuth adjustment&quot; but use the test tape instead of head azimuth tape (See fig. 11).</td>
<td></td>
</tr>
<tr>
<td><strong>Equipment:</strong></td>
<td>• VTVM</td>
<td>• Playback mode</td>
</tr>
<tr>
<td></td>
<td>• Oscilloscope</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Test tape — QZZCFM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Place UNIT into playback mode.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Playback frequency response test tape.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Measure output level at 8kHz, 4kHz, 1kHz, 315Hz, 250Hz, 125Hz and 63Hz, and compare each output level with standard frequency 315Hz at LINE OUT.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Make measurement for both channels.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Make sure that the measured value is within the range specified in the frequency response chart.</td>
<td></td>
</tr>
</tbody>
</table>
### ITEM

<table>
<thead>
<tr>
<th><strong>MEASUREMENT &amp; ADJUSTMENT</strong></th>
<th><strong>REMARKS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Playback frequency response chart</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fig. 15</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Adjustment method</strong></td>
<td></td>
</tr>
<tr>
<td>If the measured value is not standard, adjust VR1 (L-CH), VR2 (R-CH).</td>
<td></td>
</tr>
</tbody>
</table>

**Playback gain**

**Equipment:**
- VTVM
- Oscilloscope
- Test tape --- QZZCFM

1. Test equipment connection is shown in fig. 11.
2. Play standard recording level portion of test tape (QZZCFM 315Hz), and using VTVM measure the output level at LINE OUT jack.
3. Make measurement for both channels.

**Standard value:** 0.65V

**Adjustment method**

1. If measured value is not standard, adjust VR3 (L-CH), VR4 (R-CH) (See fig. 28 on page 10).
2. After adjustment, check "Playback frequency response" again.

**Playback S/N ratio**

**Equipment:**
- VTVM
- Oscilloscope
- Test tape --- QZZCFM
- Empty cassette

1. Test equipment connection is shown in fig. 11.
2. Play standard recording level test tape (QZZCFM 315Hz) and read output level on VTVM. Refer to "Playback gain adjustment".
3. Place empty cassette (which has been cut) and playback again.
4. Measure noise level at this time using VTVM, and determine ratio of this level to test tape output signal voltage (315Hz).

**Standard value:** Greater than 45dB

**Bias leak**

**Equipment:**
- VTVM
- Oscilloscope

1. Test equipment connection is shown below.

**Fig. 16**

2. Place UNIT into record mode.
3. Adjust trap coil L5 (L-CH), L6 (R-CH), so that measured value on VTVM becomes minimum.
4. Take adjustment for both channels.

**Fig. 16**

- R/P head
- TP80
- VTVM
- Oscilloscope
- Record mode
- L5 (L-CH)
- L6 (R-CH)
### Bias current

**Equipment:**
- VTVM
- Oscilloscope

**Measurement & Adjustment:**

1. Test equipment connection is shown below.

   ![Bias current diagram](image)

   **Fig. 17**

   \[
   \text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10 \, \Omega}
   \]

2. Place UNIT into record mode, and bias selector to "LOW".
3. Read voltage on VTVM and calculate bias current by following formula.

   **Standard value:**
   - 300μA (LOW position)
   - 310μA (MED position)
   - 365μA (HIGH position)

4. Adjust VR17 (L-CH) and VR18 (R-CH) (See adjustment part location on page 10).

### Erase current

**Equipment:**
- VTVM
- Oscilloscope

**Measurement & Adjustment:**

1. Test equipment connection is shown below.

   ![Erase current diagram](image)

   **Fig. 18**

   \[
   \text{Erase current (A)} = \frac{\text{Value read on VTVM (V)}}{1 \, \Omega}
   \]

2. Place UNIT into record mode and set the bias selector to LOW position.
3. Read voltage on VTVM and calculate erase current by following formula.

   **Standard value:**
   - More than 40mA (LOW position)
   - More than 45mA (MED position)
   - More than 55mA (HIGH position)

   ![Erase current diagram](image)
### Overall gain

**Equipment:**
- AF oscillator
- VTVM
- ATT
- Oscilloscope
- Test tape
  (reference blank tape)
  **QZZCRA for Normal**

1. Test equipment connection is shown in fig. 19.

![Fig. 19](image)

2. Place UNIT into record mode, and equalizer selector to 120μS, bias selector to LOW (for normal tape).
3. Supply 1 kHz signal (−24 dB) from AF oscillator, through ATT, to LINE IN.
4. Adjust ATT until monitor level at LINE OUT becomes 0.65 V.
5. Using test tape, make recording.
6. Playback recorded tape, and make sure the value at LINE OUT on VTVM becomes 0.65 V.
7. If measured value is not 0.65 V, adjust VR5 (L-CH), VR6 (R-CH) (See fig. 28 on page 10).
8. Repeat from step (2).

<table>
<thead>
<tr>
<th>Remark</th>
<th>Record/playback mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Input level control: ---- MAX</td>
</tr>
<tr>
<td></td>
<td>Standard input level:</td>
</tr>
<tr>
<td></td>
<td>MIC: −72 ± 4 dB</td>
</tr>
<tr>
<td></td>
<td>LINE IN: −24 ± 3 dB</td>
</tr>
</tbody>
</table>

### Fluorescent meter

**Equipment:**
- VTVM
- AF oscillator
- ATT

1. Test equipment connection is shown in fig. 19.

![Fig. 20](image)

2. Supply 1 kHz signal (−24 dB) to the LINE IN jack, then press the record button.
3. Adjust the ATT so that the output level at LINE OUT jack becomes 0.65 V (standard input level).
4. Adjustment at "0 dB".

A. Adjust VR9 (L-CH) and VR10 (R-CH) so that the Fluorescent meters show an illuminated indication up to "0 dB" when the input signal level is 0.9 dB higher than the standard input level.

B. Then confirm that the Fluorescent meters show an illuminated indication up to "+1 dB" when the input signal level is 1.0 dB higher than the standard input level.

5. Adjustment at "−20 dB".

![Fig. 21](image)
<table>
<thead>
<tr>
<th>ITEM</th>
<th>MEASUREMENT &amp; ADJUSTMENT</th>
<th>REMARKS</th>
</tr>
</thead>
</table>
|      | A. Adjust VR7 (L-Ch) and VR8 (R-Ch) so that the Fluorescent meters show an illuminated indication up to "-20dB" when the input signal level is 15.1 dB lower than the standard input level. | • Record/playback mode  
• Input level control ---- MAX |
|      | B. Then confirm that the Fluorescent meters show an illuminated indication up to "-15dB" when the input signal level is 15.0 dB lower than the standard input level. |       |
|      | Overall distortion       |         |
|      | **Equipment**            |         |
|      | • Distortion meter       |         |
|      | • AF oscillator          |         |
|      | • ATT                    |         |
|      | • Oscilloscope           |         |
|      | • Test tape (reference blank tape) |  
--- QZCRA for Normal  
--- QZCRX for CrO₂  
--- QZCRY for FeCr |
|      | 1. Test equipment connection is shown in fig. 22. |         |
|      | ![Distortion Diagram](image) |         |
|      | *Fig. 22* |         |
|      | 2. Supply 1kHz signal to LINE IN and adjust ATT so that output level at LINE OUT indicates 0.65 V. |         |
|      | 3. Make recording. |         |
|      | 4. Playback and measure distortion factor of output signal. |         |
|      | 5. When the distortion factor does not satisfy the standard, check the bias current. When the bias current is lower than standard, distortion will increase. Care should be exercised in the adjustment because the bias current also has an influence on the overall frequency response. Refer to "The overall frequency response" and "The bias current adjustment". |         |
|      | **Standard value:** |         |
|      | Less than 2.5% (Normal) |         |
|      | Less than 4.0% (FeCr, CrO₂) |         |
|      | Overall frequency response |         |
|      | **Equipment**            |         |
|      | • VTVM                   |         |
|      | • AF oscillator          |         |
|      | • ATT                    |         |
|      | • Test tape (reference blank tape) |  
--- QZCRA for Normal  
--- QZCRX for CrO₂  
--- QZCRY for FeCr |
<p>|      | <strong>Note:</strong> Before measuring and adjusting, make sure of the playback frequency response. (For the method of measurement, please refer to the playback frequency response.) |         |
|      | 1. Test equipment connection is shown in fig. 19. |         |
|      | 2. Load reference blank test tape and place UNIT into record mode. |         |
|      | 3. Supply 1kHz signal from AF oscillator through ATT to LINE IN. |         |
|      | 4. Adjust ATT so that input level is -20 dB below standard recording level (standard recording level = 0 VU). |         |
|      | 5. At this time, LINE OUT level indicates 0.065 V. |         |
|      | 6. Record each frequency: 50Hz, 100Hz, 220Hz, 1kHz, 4kHz, 8kHz, and 10kHz (12kHz for CrO₂ tape or FeCr tape) at the same level. |         |
|      | 7. Playback and express in dB the difference between playback output level of each frequency based on playback output level of 1kHz. |         |
|      | 8. Make sure that the measured value is within the range specified in the overall frequency response chart. |         |
|      | <strong>Overall frequency response chart (Normal)</strong> |         |
|      | <img src="image" alt="Frequency Response Chart" /> |         |
|      | <em>Fig. 23</em> |         |</p>
<table>
<thead>
<tr>
<th>ITEM</th>
<th>MEASUREMENT &amp; ADJUSTMENT</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>Set the bias selector to CrO₂ position.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Measure as same as manner above.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Make sure that the measured value is within the range specified in the overall frequency response chart for CrO₂ tape below.</td>
<td></td>
</tr>
</tbody>
</table>

![Overall frequency response chart (CrO₂)](image)

**Fig. 24**

| 12.  | Set the bias selector to FeCr position. |         |
| 13.  | Measure as same as manner above. |         |
| 14.  | Make sure that the measured value is within the range specified in the overall frequency response chart for FeCr tape below. |         |

![Overall frequency response chart (FeCr)](image)

**Fig. 25**

**Overall frequency response adjustment**

(As a standard for adjustment)

**Adjustment 1—Using bias current**

1. When the frequency response between the middle- and high-frequency range becomes higher than the standard value, as shown by the solid line in fig. 26, increase the bias current by turning VR17 (L-CH), VR18 (R-CH).
2. When it becomes lower, as shown by dotted line, reduce the bias current by turning VR17 (L-CH), VR18 (R-CH).

**Note:**

1. For adjustment when the bias current is lower than the standard value, use the procedure indicated in adjustment 2, because reducing the bias current beyond this point may worsen the distortion factor.
2. For the method of bias current measurement, refer to "Bias current adjustment" on page 6.

![Bias current chart](image)

**Fig. 26**

**Adjustment 2—Using the peaking coil for recording equalization**

When the frequency response is flat in the middle-frequency range and makes a sharp rise or drop in the high-frequency range, as shown in fig. 27, adjust by turning the peaking coil L3 (L-CH), L4 (R-CH) for normal tape recording equalization.
ELECTRICAL PARTS LOCATION

1. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain –34.5 dB at TP3 (L Ch), TP4 (R Ch) (Frequency 5 kHz).
2. Confirm that the value at IN position is 8 ± 2.5 dB greater than the value at OUT position of Dolby NR switch.

- **Dolby NR circuit**
  - Equipment:
    - VTVM
    - AF oscillator
    - ATT
    - Oscilloscope
  - Overall S/N ratio:
    - Equipment:
      - VTVM
      - AF oscillator
      - ATT
      - Oscilloscope
      - Test tape (reference blank tape Q2ZCCRA)
  - Standard value:
    - Greater than 43 dB (without NAB filter)

- **Record mode**
  - Input level control — MAX

- **Record/playback mode**
  - Input level control — MAX
  - Erase the tape with a bulk tape eraser.
CIRCUIT BOARD

NOTE:
The circuit shown in red on the conductor is B circuit.
Values indicated in ... are DC voltages between the chassis and electrical parts.
NOTE:
The circuits shown in red on the conductor is B circuit.
Values indicated in ... are DC voltages between the chassis and electrical parts.
Front-Loading Vertical Hold Stereo Cassette Deck with FL Bar Graph Peak Meters, Rewind Auto-Play, and Separate 3-Position Bias and Equalization Selectors

For additional information, please refer to the service manual for Model No. RS-M22.

Notes:
1. This service manual indicates the main differences between; original RS-M22 for (D/B/N/A) and RS-M22 for PX.
2. Please file this manual with the service manual for Model No. RS-M22 (original), order No. ARD-7812089C.

### PARTS COMPARISON TABLE:

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Description</th>
<th>Parts Number Original</th>
<th>Parts Number for PX</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3, 4</td>
<td>Resistor</td>
<td>ERD25TJ822</td>
<td>ERD25TJ681</td>
<td></td>
</tr>
<tr>
<td>C103, 104</td>
<td>Capacitor</td>
<td>ECQM05223KZ</td>
<td>—</td>
<td>Deleted</td>
</tr>
<tr>
<td>E4</td>
<td>Pin Jack Board Assembly</td>
<td>QEJ5002S</td>
<td>QEJ5003S</td>
<td></td>
</tr>
<tr>
<td>G4</td>
<td>Front Panel Assembly</td>
<td>QYP0832</td>
<td>QYP0752</td>
<td></td>
</tr>
<tr>
<td>G15</td>
<td>Name Plate</td>
<td>QGS2629</td>
<td>QGS2710</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Instruction Book</td>
<td>QQT2477</td>
<td>QQT2657</td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>Inside Carton</td>
<td>QPN3784</td>
<td>QPN3781</td>
<td></td>
</tr>
</tbody>
</table>

* Other parts are just same as parts for Asia, Latin America, Middle East and Africa areas.