

Pioneer
sound. vision. soul

Training Guide CDJ-1000



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Pioneer
— S E R V I C E —

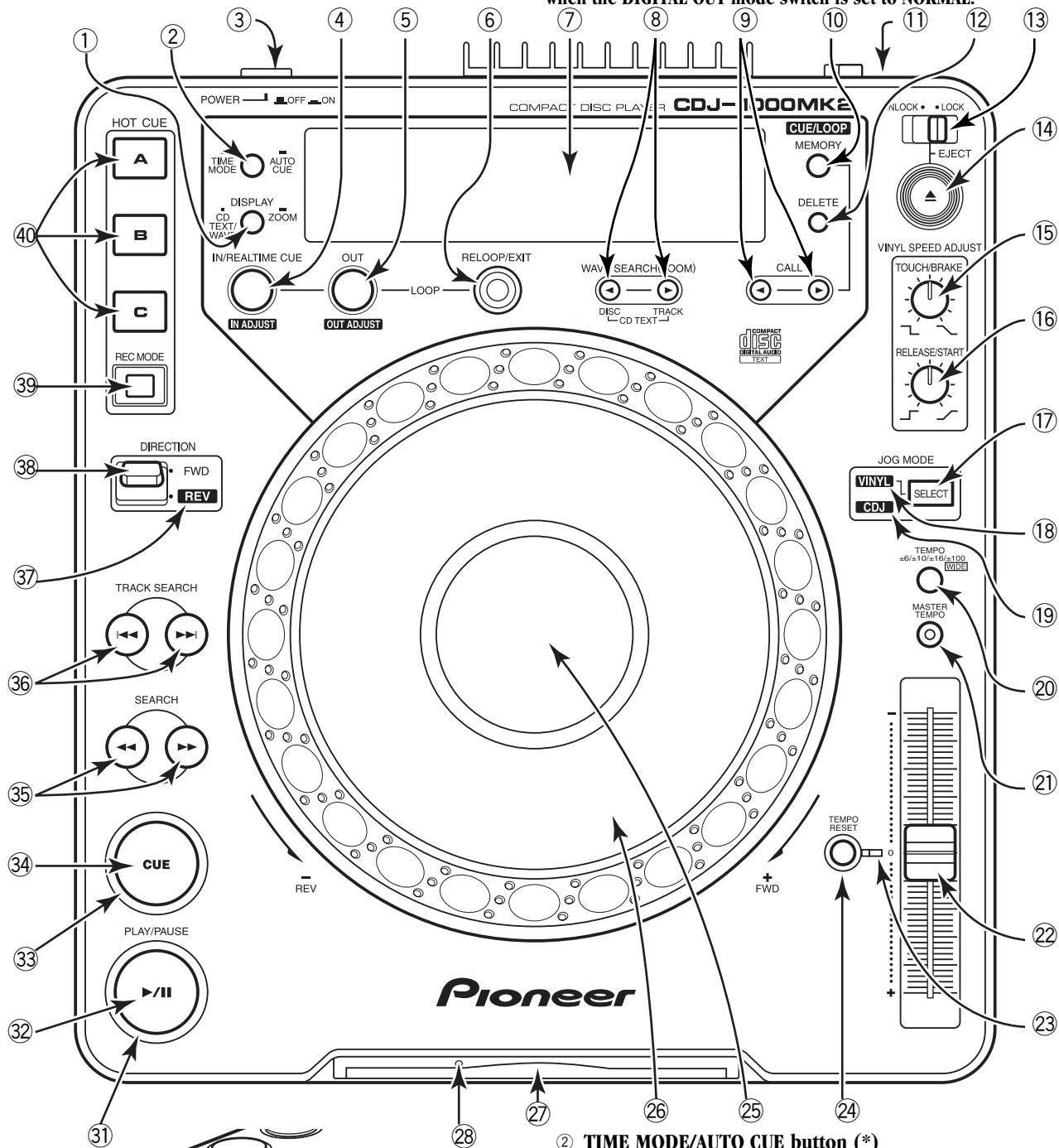
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PANEL FACILITIES

Top Panel

Operation buttons marked with the asterisk (*) are disabled when the **DIGITAL OUT** mode switch is set to **NORMAL**.



① **DISPLAY CD TEXT/WAVE (ZOOM) button (*)**

Each press of this button toggles the display between **WAVE** display and **CD-TEXT** disc/track title display. When the button is held down for 1 second or longer, the **WAVE** display cycles between the 1 track full-scale and 2x zoom scale.

② **TIME MODE/AUTO CUE button (*)**

TIME MODE:

Each time this button is pressed, the time display changes between elapsed playback time and remaining playback time (**REMAIN**) of each track.

The **TIME MODE** is stored in memory and persists even when the power is turned off.

AUTO CUE:

Hold down this key for 1 second or longer to toggle between **AUTO CUE** on and off.

AUTO CUE on/off status is stored in memory and persists even when the power is turned off.

③ **POWER switch OFF/ON**

This switch is located on the rear panel of the unit.

- ④ **LOOP IN/REALTIME CUE/IN ADJUST button/indicator (*)**
Real-time cue
Enter loop in point
Loop in point adjust
- ⑤ **LOOP OUT/OUT ADJUST button/indicator (*)**
Enter loop out point
Loop out point adjust
- ⑥ **RELOOP/EXIT button (*)**
- ⑦ **Display**
- ⑧ **WAVE SEARCH (ZOOM)/CD TEXT buttons (◀, ▶) (*)**
This button moves the displayed area when WAVE is in zoom display mode.
In the TEXT display mode, pressing the ◀ button will display the disc title and pressing the ▶ button will display the track title.
- ⑨ **CUE/LOOP CALL buttons (◀, ▶) (*)**
Calls Cue points and Loop points stored in internal memory or external memory (when a memory card is inserted). (When a memory card is inserted, the external memory takes precedence.)
- ⑩ **CUE/LOOP MEMORY button (*)**
Stores Cue points and Loop points in internal memory or external memory (when a memory card is inserted). (When a memory card is inserted, the external memory takes precedence.)
- ⑪ **DIGITAL OUT mode switch (DJ/NORMAL)**
This switch is located on the unit's rear panel.
When set to DJ, the DIGITAL OUT connector outputs audio data alone. When set to NORMAL, digital data (including sub-codes) is output, but the unit's DJ functions are not supported (operation buttons marked with the asterisk (*) are disabled). No sound will be produced in the Pause mode.
- ⑫ **CUE/LOOP DELETE button (*)**
Deletes Cue points or Loop points stored in internal memory or external memory (when memory card is inserted). (When a memory card is inserted, the external memory takes precedence.)
- ⑬ **EJECT UNLOCK/LOCK switch**
UNLOCK: In this mode the disc can be ejected even during playback.
LOCK: In this mode, the disc cannot be ejected during playback. The disc can be ejected when in pause mode.
- ⑭ **EJECT button (▲)**
When this button is pressed the disc is ejected through the disc insertion slot when it stops rotating. When the **EJECT UNLOCK/LOCK** switch is set to [LOCK] position, the disc can only be ejected when in pause mode.
- ⑮ **VINYL SPEED ADJUST TOUCH/BRAKE dial (*)**
When the **JOG MODE SELECT** button is set to [VINYL] position, you can use this dial to adjust the speed by which the playback stops when the surface of the Jog dial is pressed.
Playback stops faster as the dial is turned counterclockwise and stops slower as the dial is turned clockwise.
- ⑯ **VINYL SPEED ADJUST RELEASE/START dial (*)**
When the **JOG MODE SELECT** button is set to [VINYL] position, you can use this dial to adjust the speed by which playback starts after you take your hand off the surface of the Jog dial. Playback starts normal speed faster as the dial is turned counterclockwise and takes longer time to return to normal speed when turned clockwise.
- ⑰ **JOG MODE SELECT button (*)**
VINYL mode: when the surface of the Jog dial is pressed during playback, playback stops and if the dial is rotated, music is output according to the speed the dial is turned.

The **JOG MODE** is stored in memory and remains in memory even if the power is turned off.

CDJ mode: above operation is not performed even when the Jog dial surface is pressed.

- ⑱ **VINYL indicator (*)**
This indicator lights when the **JOG MODE** is in **VINYL** mode.
- ⑲ **CDJ indicator (*)**
This indicator lights when the **JOG MODE** is in **CDJ** mode.
- ⑳ **TEMPO Control Range button ±6/±10/±16/±100 WIDE (*)**
Each time the button is pressed, the range changes (±6%/±10%/±16%/±100%).
- ㉑ **MASTER TEMPO button/indicator (*)**
Each press of the button turns the master tempo function on or off.
- ㉒ **Tempo Control knob (*)**
Slide the knob towards you (+) to increase the tempo and slide it away from you (−) to decrease it.
- ㉓ **Tempo Reset indicator (*)**
Shows that the tempo has been reset to [0] (normal tempo) regardless of the position of the **Tempo Control** knob.
- ㉔ **TEMPO RESET button (*)**
Resets the tempo to [0] (normal tempo) regardless of the position of the **Tempo Control** knob. Press button once more to release it.
- ㉕ **Jog Dial Display**
- ㉖ **Jog dial (+FWD/−REV) (*)**
- ㉗ **Disc Loading Slot**
- ㉘ **Force Ejection Hole**
- ㉙ **Memory Card Loading Slot**
- ㉚ **Memory Card indicator**
Lights when the MMC card is being accessed.
Do not remove the card or turn off the power when this lamp is on.
- ㉛ **Play/Pause indicator**
Lights during play and flashes during pause.
- ㉜ **PLAY/PAUSE button (▶/⏸)**
- ㉝ **CUE indicator (*)**
Lights when a Cue point is set and a search is not being performed. Flashes in pause mode.
- ㉞ **CUE button (*)**
Cue point settings
Cue point sampler
Back cue
- ㉟ **SEARCH button (◀◀, ▶▶)**
- ㊱ **TRACK SEARCH button (◀◀, ▶▶)**
- ㊲ **Reverse indicator (REV) (*)**
Lights when the **DIRECTION FWD/REV** switch is set to reverse.
- ㊳ **DIRECTION FWD/REV switch (*)**
Plays tracks backwards when set to the [REV] position (forward position).
- ㊴ **HOT CUE REC MODE button (*)**
Switches **HOT CUE** button function (REC/CALL).
It is set to call when the power is turned on.
- ㊵ **HOT CUE A, B, C button/indicator**
It is set to hot cue point recording mode when **A**, **B** and **C** light in red.
It is set to call mode when **A**, **B** and **C** light in green. When the button is pressed, playback starts from the hot cue point. It is off when no hot cue point has been recorded.

FEATURES

The CDJ-1000 compact disc player is designed for use by DJs providing all the functions and performance required in disco clubs while offering performance, sound quality and functionality superior to any analog player.

JOG DIAL

The large 206 mm diameter Jog dial enables better handling than an analog turntable.

PITCH BEND

This function changes the music tempo depending on direction of Jog dial rotation and speed of movement.

SCRATCH PLAY

In the **VINYL** mode when the surface of the Jog dial is pressed playback is discontinued and then continues according to the direction and speed the dial is rotated. You can also adjust the startup when the Jog dial is touched and released to create new DJ techniques.

FRAME SEARCH

Moves the disc from pause position in frame increments (1/75 sec) when the Jog dial is rotated in pause mode.

SUPER FAST SEARCH

You can search the disc faster than normal search or track search by holding down a **MANUAL SEARCH** button or **TRACK SEARCH** button as you turn the Jog dial.

ON JOG DISPLAY

The display at the surface of the Jog dial shows disc turning status, current track, memory cue loop for each track (when engaged), Jog mode, etc.

WAVE DISPLAY

This display makes it possible to find the breakpoint between tracks in advance and use it as mix point or end point in the same way as you can on an analog record by checking the position of the needle in the groove.

CUE/LOOP MEMORY

This unit can store cue points of each disc in internal memory or on a Multimedia Card (MMC) (sold separately) that can be recalled for each disc.

HOT CUE

Provides instant start from any of three pre-selected hot cue points (A, B or C).

REVERSE PLAY

Set the **DIRECTION** switch to its forward position ([REV] position) to play the music backwards.

TEMPO CONTROL

100 mm high-precision slider coupled with a 0.02% increment digital display (within a $\pm 6\%$ range) allows exact control of speed to make tempo adjustments easy and accurate.

TEMPO CONTROL RANGE

The maximum variable range can be set to four variable ranges: $\pm 6\%$, $\pm 10\%$, $\pm 16\%$ and $\pm 24\%$ to facilitate adjustment.

TEMPO CONTROL RESET

Resets the tempo to 0% regardless of slider position.

MASTER TEMPO

Changes music tempo without changing pitch.

CUE

BACK CUE

After storing the Cue point in memory, press the **CUE** button while playing the unit to go back to the Cue point and start over.

AUTO CUE

Auto cue automatically locates the song's start point even if it differs from the track's frame, allowing the player to start instantly at a press of the **PLAY** button.

CUE POINT SAMPLER

The sound from the memorized cue point can be reproduced by one touch, which can be used as the start point check and the sampler.

REAL TIME SEAMLESS LOOP

This function simplifies setting and releasing loops. This function lets you set a loop while you are playing a track. A loop can also be set at the end of the track so that the track does not stop. In addition, an **ADJUST** mode has been added to enable one-touch adjustments to Loop-in and Loop-out points and facilitate loop operation.

RELOOP

Allows you to replay a loop any number of times.

Press the **RELOOP** button after releasing loop play to return to the loop start point. Clever use of on and off in combination with the rhythm make it possible to create new sound effects.

PLAYING ADDRESS

This bar graph provides a visual representation of track playback progress that enables you to see current playback position just like you can on an analog record by checking needle position. The length of the bar shows current position and a flashing bar provides advance notice of track end.

SLOT IN

Discs are loaded directly without opening doors or trays, making track selection that much faster.

FADER START

Quick start and back cue can be performed using the fader function on DJ mixers DJM-500, DJM-600 and DJM-300 (all mixers are sold separately).

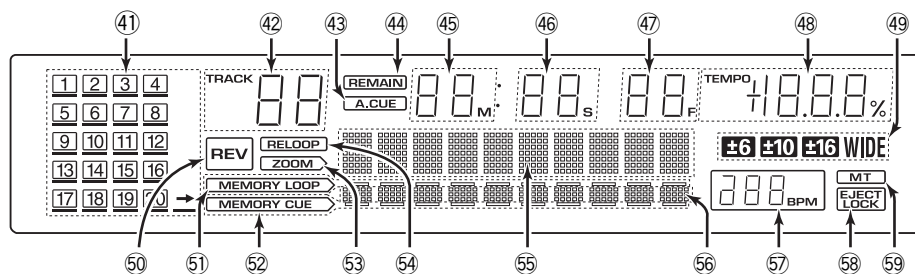
MULTI READ

CD-R, CD-RW discs can be replayed. (However, due to certain special characteristics of some discs, recorders as well as dirty or damaged discs, some discs may not replay properly.)

CD TEXT **FL Display Output Only**

CD TEXT informations are displayed if the CD includes the CD TEXT information.

DISPLAY



41 Calendar display (1 - 20, →)

TRACK numbers beyond the current track lights. When the next track is 21 or beyond, → lights. When Cue points or loops are stored, an underscore lights in the corresponding **TRACK** numbers.

42 TRACK Number indicator

Displays **TRACK** numbers.

43 Auto Cue indicator (A. CUE)

Lights when auto cue is on.

44 REMAIN indicator

Indicates that track remaining time is being displayed.

45 Time display (min) (M)

46 Time display (sec) (S)

47 Frame display (F)

One second is 75 frames.

48 Playback Tempo display (TEMPO)

Indicates the rate of change in the playback tempo.

49 Tempo Adjustment Range indicator (±6, ±10, ±16, WIDE)

Indicates the variable range of the **Tempo Control** knob selected with the **TEMPO Control Range** button. When ±100% is selected, the **WIDE** indicator appears in the display.

50 Reverse indicator (REV)

Indicates that the **DIRECTION FWD/REV** switch is set to reverse ([REV] position).

51 MEMORY LOOP indicator

Displays the selected track loop memory position above the playback address display (10 points). Even when there may be several memory points in the same block, only one lights.

52 MEMORY CUE indicator

Displays the selected cue memory positions under the playback address display (10 points). Even when there may be several memory points in the same block, only one lights.

53 ZOOM indicator

Indicates that **WAVE** is indicated in zoom mode.

54 RELOOP indicator

Lights when the unit is in reloop standby or performing a loop.

55 Wave/Text display

When **WAVE** is displayed the music level of the current track.

The level is indicated either in 1-track full scale, or zoom when only part of the track is shown. In the zoom mode, the display area is moved using the **WAVE SEARCH (ZOOM)** buttons (◀, ▶).

CD TEXT will be displayed in the TEXT mode.

The contents of the display is the disc title and track title in English up to a maximum of 48 letters which can be scrolled.

56 Playback Address display

Indicates elapsed playback time and remaining playback time in an easy to grasp 1-track full scale or 2x zoom scale bar graph.

The 1-track full scale mode shows elapsed time by lit segments from the left.

The 1-track full scale mode shows remaining time by unlit segments from the left.

When the remaining time is 30 seconds or less, the display flashes gently and the flashing becomes faster when there is 15 seconds or less left.

In the 2x zoom scale mode, only the playback position is lit for the **WAVE** display.

57 BPM Counter

Indicates BPM for the current track.

The BPM counter may sometimes not be able to measure the BPM of a track.

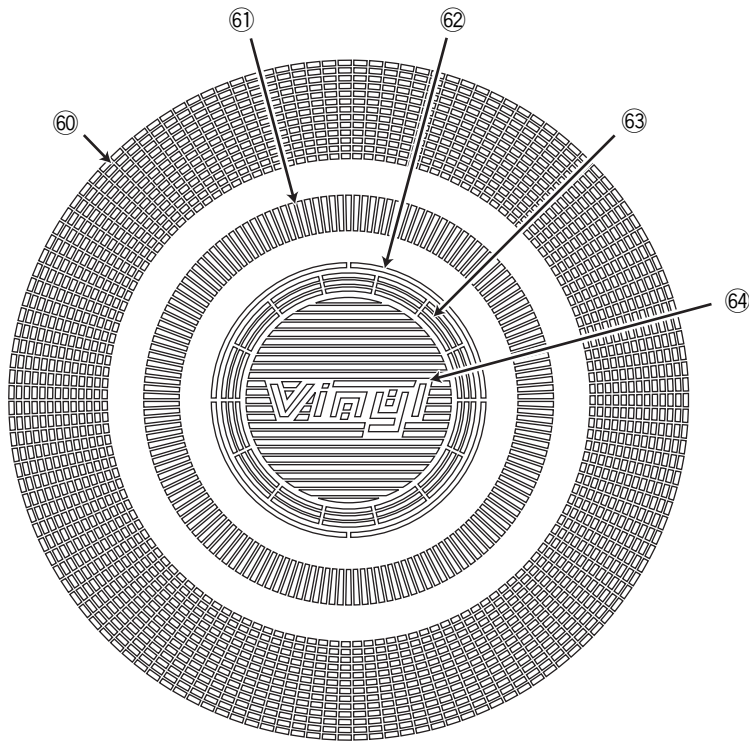
58 EJECT LOCK indicator

Lights when the **EJECT UNLOCK/LOCK** switch is set to the [LOCK] position.

59 Master Tempo indicator (MT)

Lights when the master tempo function is on.

JOG DIAL DISPLAY



60 Operation display

Indicates play position in frames 135 frames for one full rotation. Turns during playback and stops during pause.

61 Cue point position indicator

Indicates the current cue point position.

62 Display the condition of the audio memory

When set in the audio memory display mode the light will flash when recording.

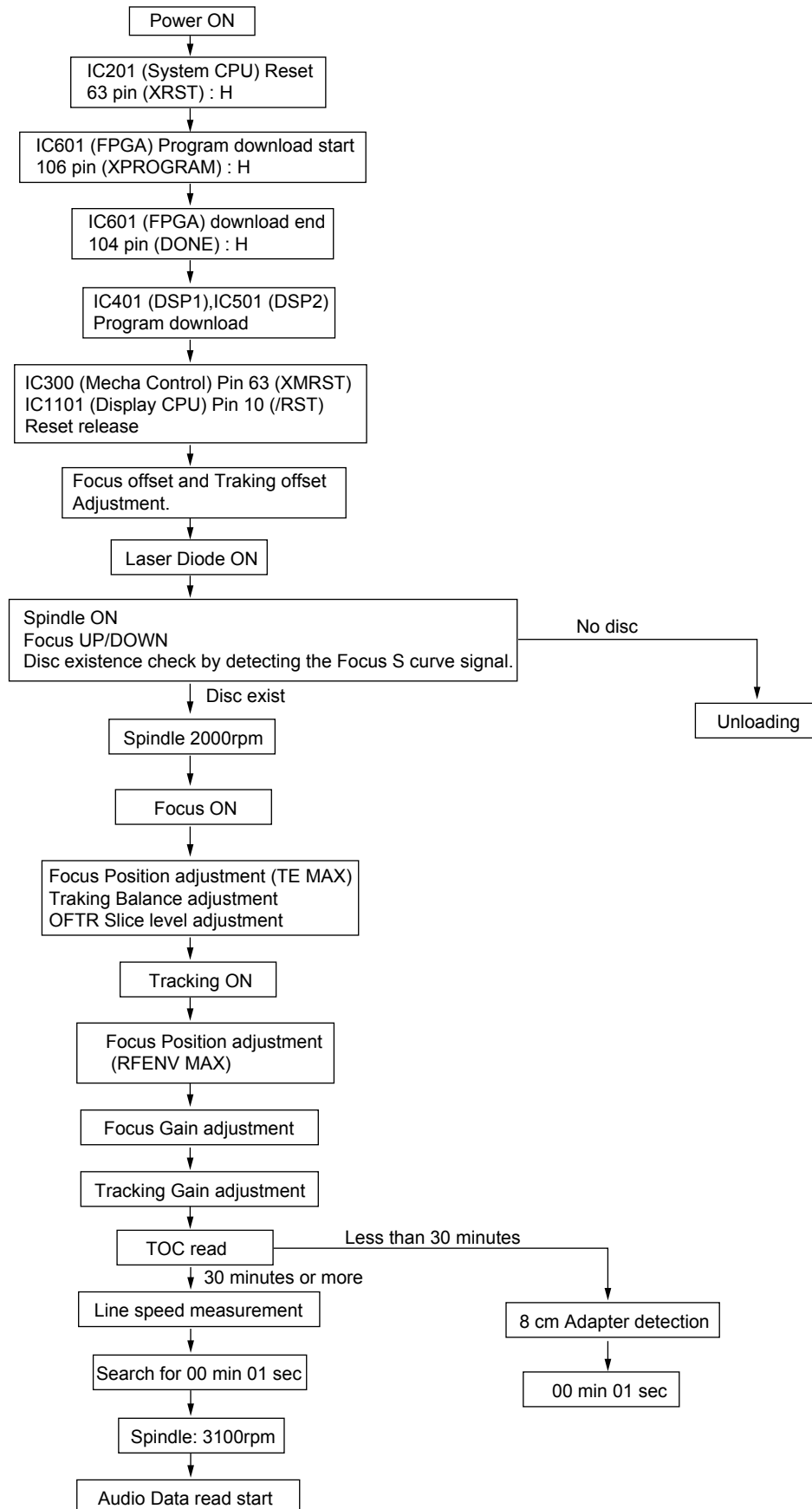
63 Jog touch detection indicator

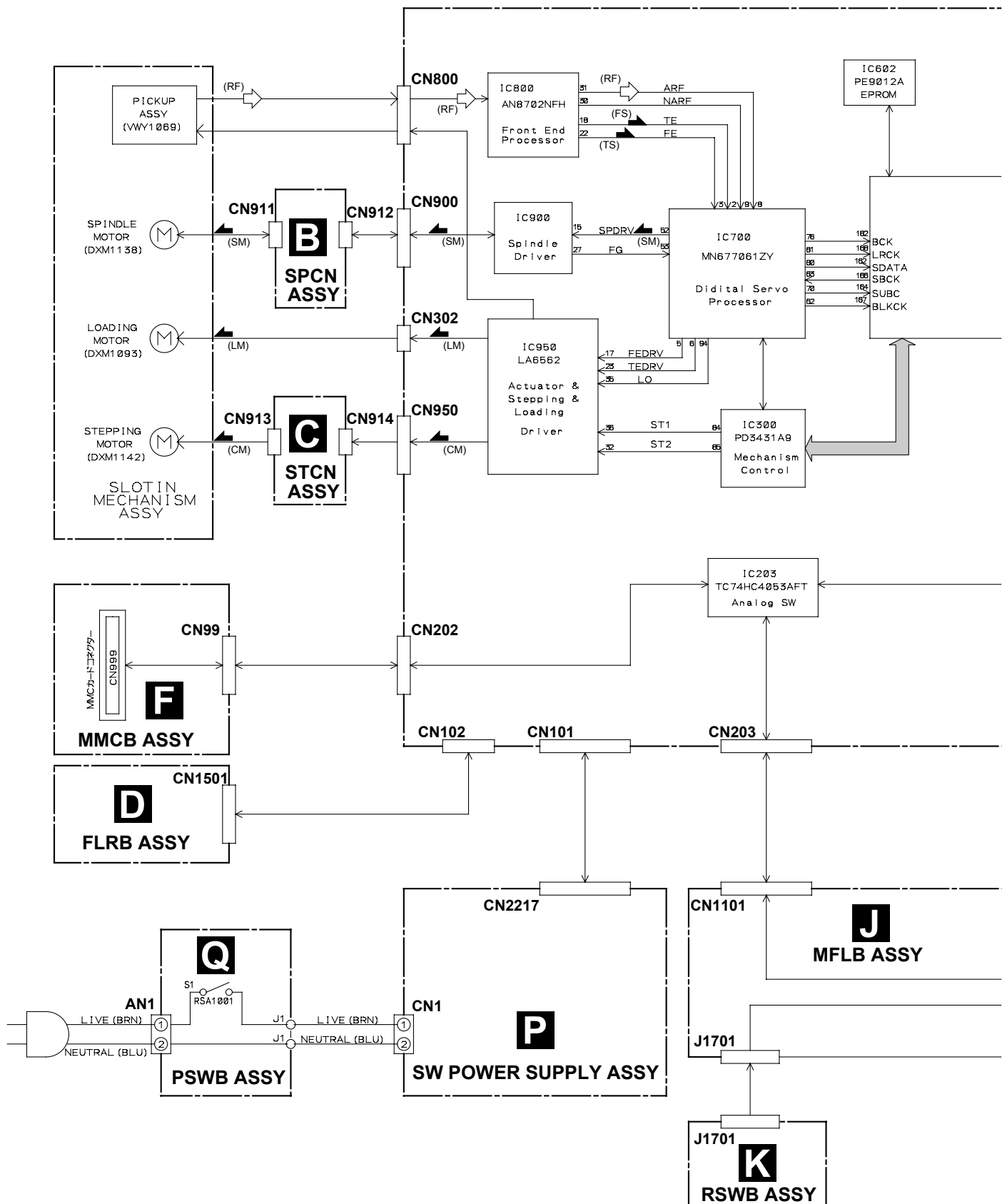
In the **VINYL** mode, this indicator lights when the surface of the Jog dial is pressed.

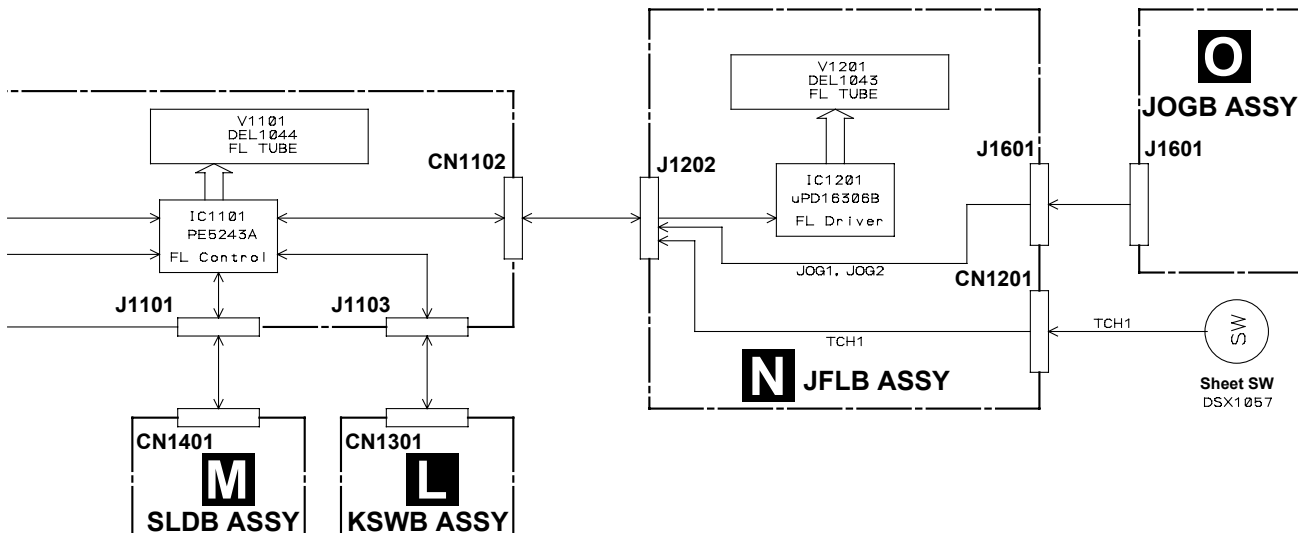
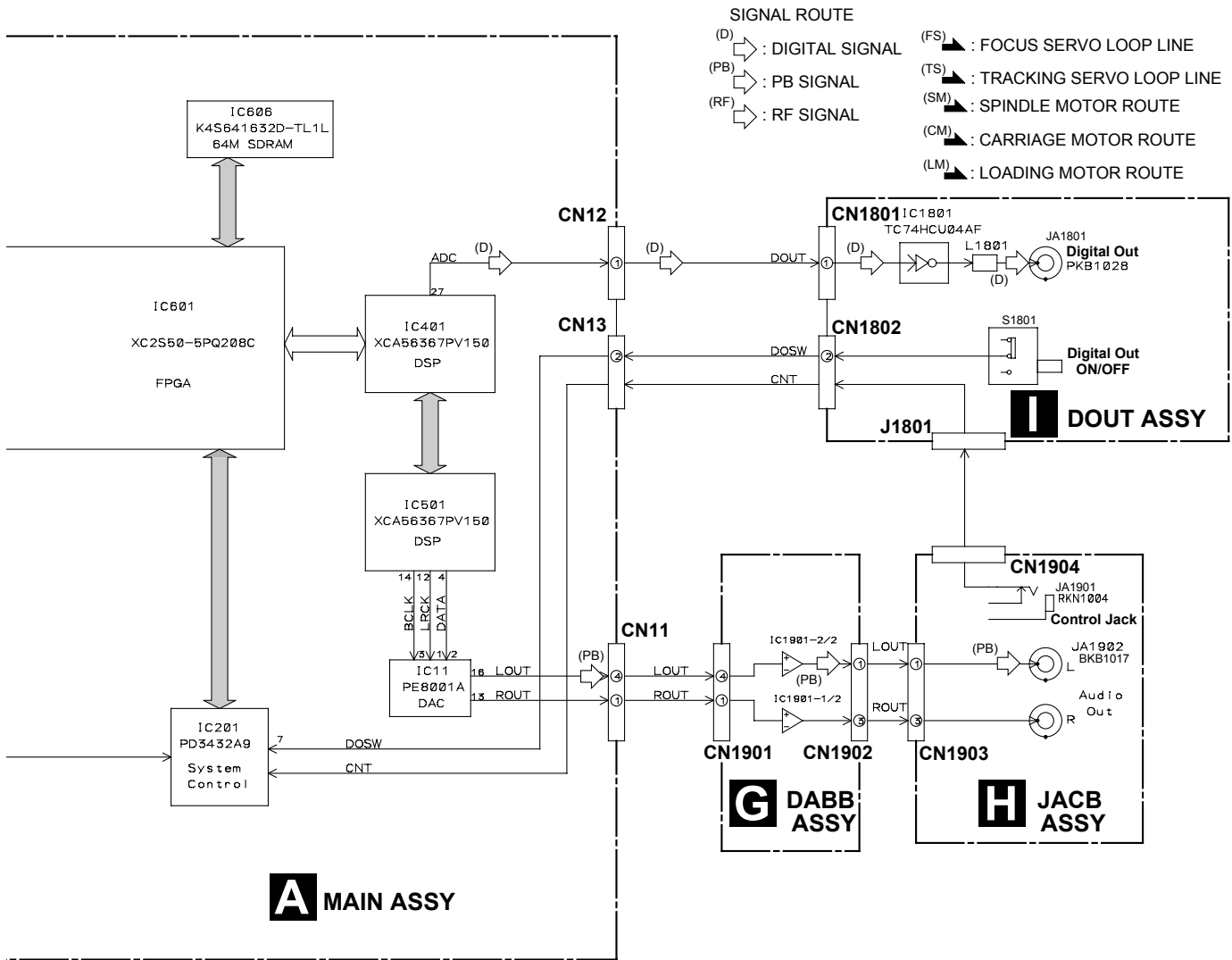
64 VINYL mode display.

Lights up in the **VINYL** mode.

Startup Sequence





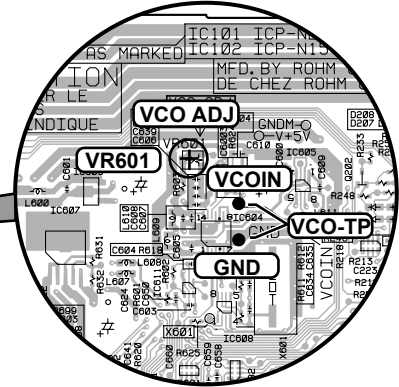
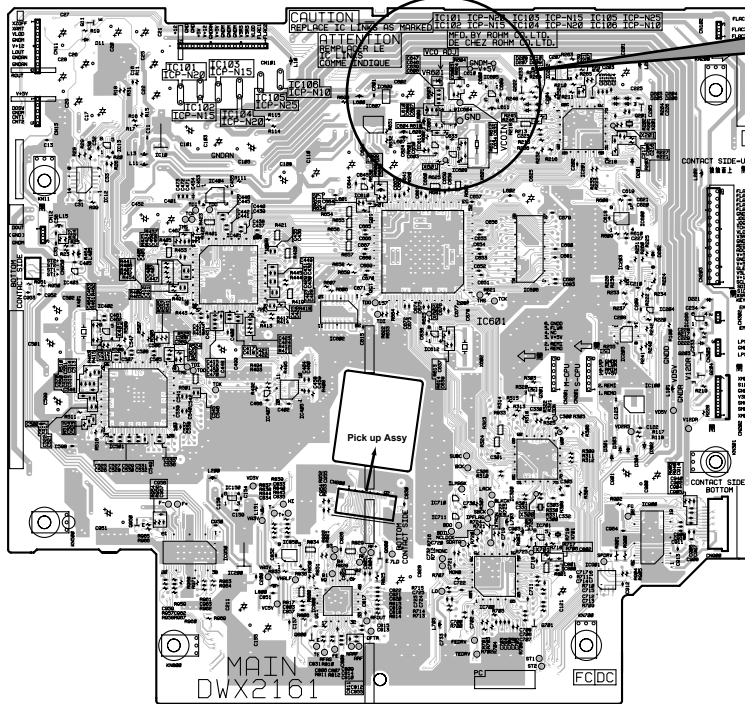


Adjustments

ADJUSTMENT ITEMS AND LOCATION

Adjustment Points (PCB Part)

A MAIN ASSY



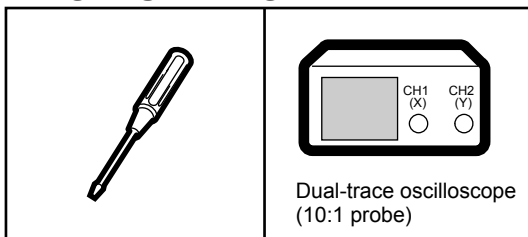
SIDE A

Adjustment Items

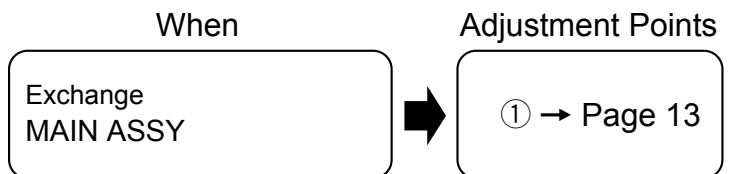
[Electrical Part]

- ① VCO Free-running Adjustment

2 JIGS AND MEASURING INSTRUMENTS



3 NECESSARY ADJUSTMENT POINTS

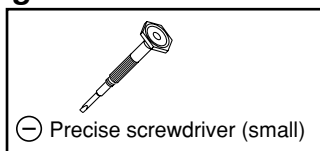


ADJUSTMENT

TEMPO ZERO POINT ADJUSTMENT



Jig



Necessary Adjustment Points

When

Exchange the SLIDER VR

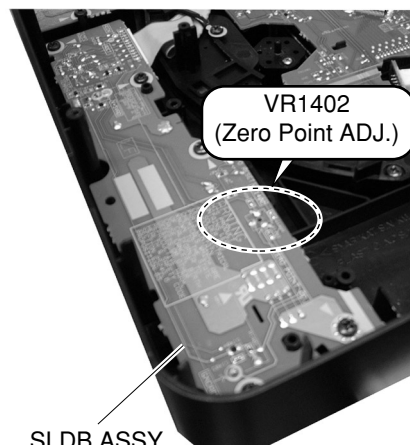
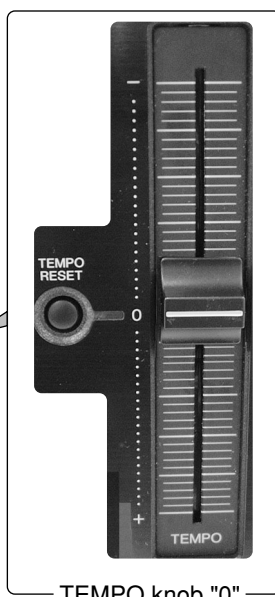
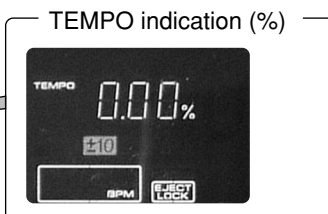
Adjustment points

VR1402
(Zero Point ADJ.)

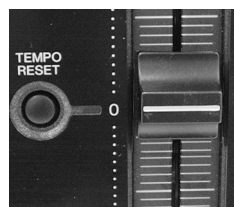
Adjustment and Check Points



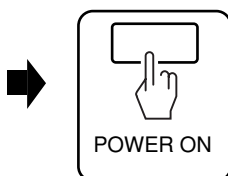
Control panel



Zero Point ADJ.

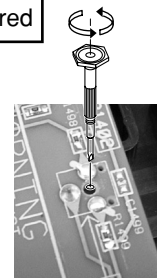
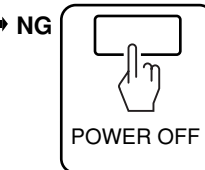


Set the TEMPO knob to the mechanical center "0."



Check that the TEMPO indication shows 0.00%.

OK No adjustment required



Perform fineadjustment with the VR1402.

Repeat the procedure until the TEMPO indication shows 0.00%.

Note:

Because the value of the adjusted voltage is read only when the unit is turned on, if the TEMPO indication does not become 0% at the slider center after adjustment, turn off the power, and perform fineadjustment again. (Repeat the sequence of fineadjustment, power on, check, power off, and fine-adjustment.)

When adjusting the VR1402 (Zero point adj.), adjust it from the hole on the foil side with the SLDB Assy attached to the control panel.

ELECTRICAL ADJUSTMENT

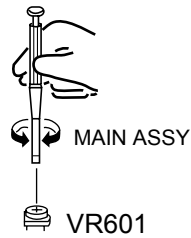
① VCO Free-running Adjustment

Objective : To optimize the VCO free-running frequency

When not properly adjusted :

- Master Tempo does not function normally.
- TEMPO display does not become the same as that of actual voice tempo.

- Power ON
- None disc
- The position of TEMPO slider is set to 0%
- DOUT OFF

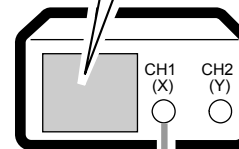


DC voltage
 $2.5 \pm 0.2V$

START

MAIN ASSY
VCO IN ○
GND 777

Probe (10:1)



Oscilloscope
V: 50mV/div.
H: 10msec/div.
DC mode

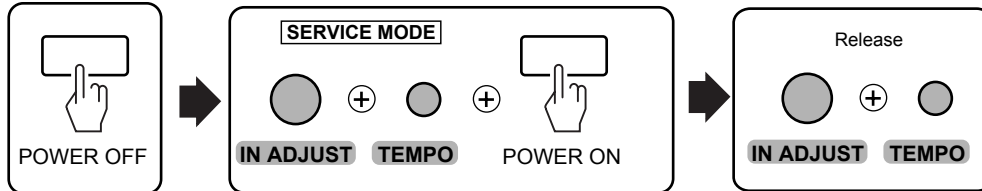
GENERAL INFORMATION

DIAGNOSIS

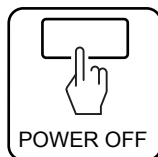
SERVICE MODE

HOW TO START / CANCEL SERVICE MODE

SERVICE MODE : ON



SERVICE MODE : CANCEL

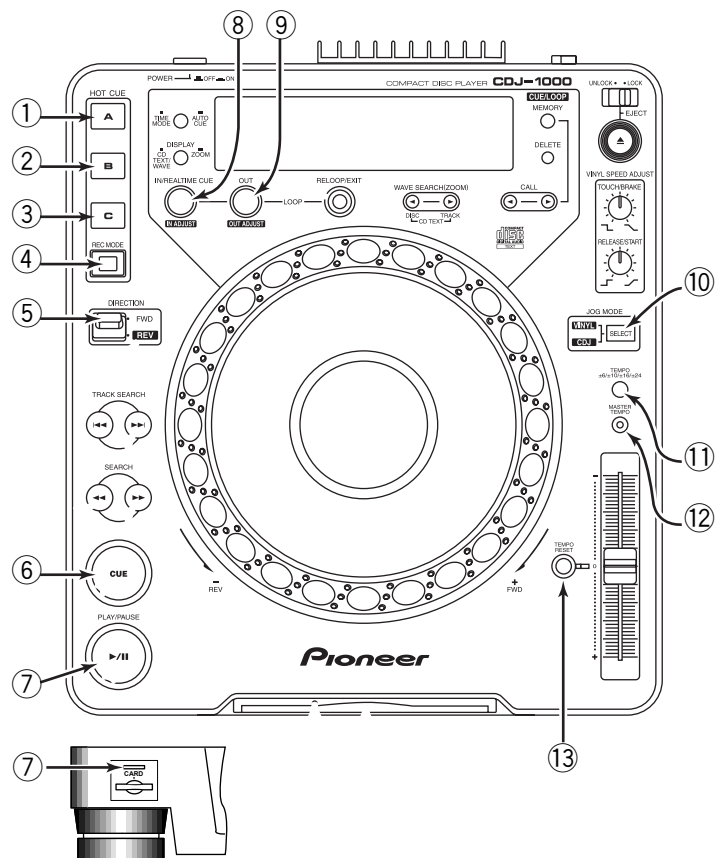


OPERATION IN SERVICE MODE

- In the service mode, can check "LED and FL displays" partially as follows.
- In addition, it lights while pressing the key.

LED CHECK

Key Name	LED lighting
① HOT CUE -A	A (Green)
② HOT CUE -B	B (Green)
③ HOT CUE -C	C (Green)
④ REC MODE	A B C (Red) (Red) (Red)
⑤ DIRECTION (SW)	REV
⑥ CUE	CUE
⑦ PLAY/PAUSE	PLAY/PAUSE CARD
⑧ IN ADJUST	IN ADJUST
⑨ OUT ADJUST	OUT ADJUST
⑩ JOG MODE	CDJ
⑪ TEMPO	VINYL
⑫ MASTER TEMPO	MASTER TEMPO
⑬ TEMPO RESET	TEMPO RESET



GENERAL INFORMATION

DIAGNOSIS

SERVICE MODE

■ Types of Service Modes

The unit is provided with three microcomputers: a microcomputer that controls key input and FL/LED display (display u com.) a mechanism-control microcomputer that drives the disc loading mechanism and servo mechanism, and a system control microcomputer that controls the whole system. The following test modes are provided for diagnosis of each microcomputer.

① Mode for checking key input in the display block and for display functions

In this mode, key input and the display function associated with such input can be checked.

② Mode for checking operation of the mechanical and servo blocks (using a connected PC)

In this mode, once you have connected a PC via the CN301 connector, which is directly connected to the mechanism-control microcomputer on the MAIN Assy through a special device, operation of the mechanical and servo blocks can be checked.

③ Mode for checking audio output (using a connected PC)

In this mode, once you have connected a PC via the CN201 connector, which is directly connected to the system control microcomputer on the MAIN Assy through a special device, audio output can be checked.

Before entering this mode, it is necessary to disconnect the CN1101 connector on the MFLB Assy and remove the upper unit (jog and display block), because the communication line is shared between audio output and display functions.

④ Mode for checking the load on the Jog dial

In this mode, the load (light/heavy) on the Jog dial while it is rotated is subjectively measured.

⑤ Mode for checking the error log

In this mode, the latest 16 errors can be checked.

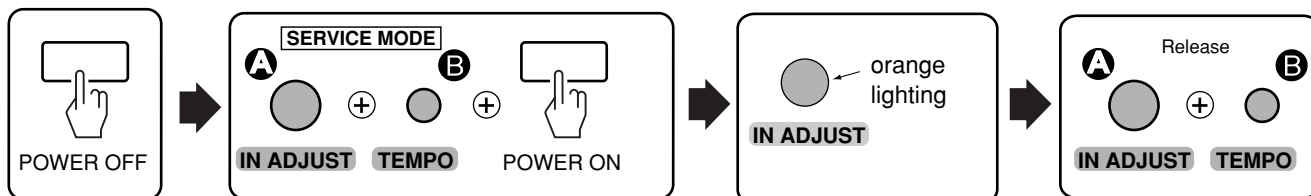
⑥ Mode for checking the version of the software program

In this mode, the version of the software program for each microcomputer can be checked.

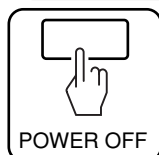
① Mode for checking key input in the display block and for display functions

- In this test mode, individual FL and LED displays can be checked, as shown below.
- The display lights while the key(s) is(are) held pressed.

FL Check Mode : ON

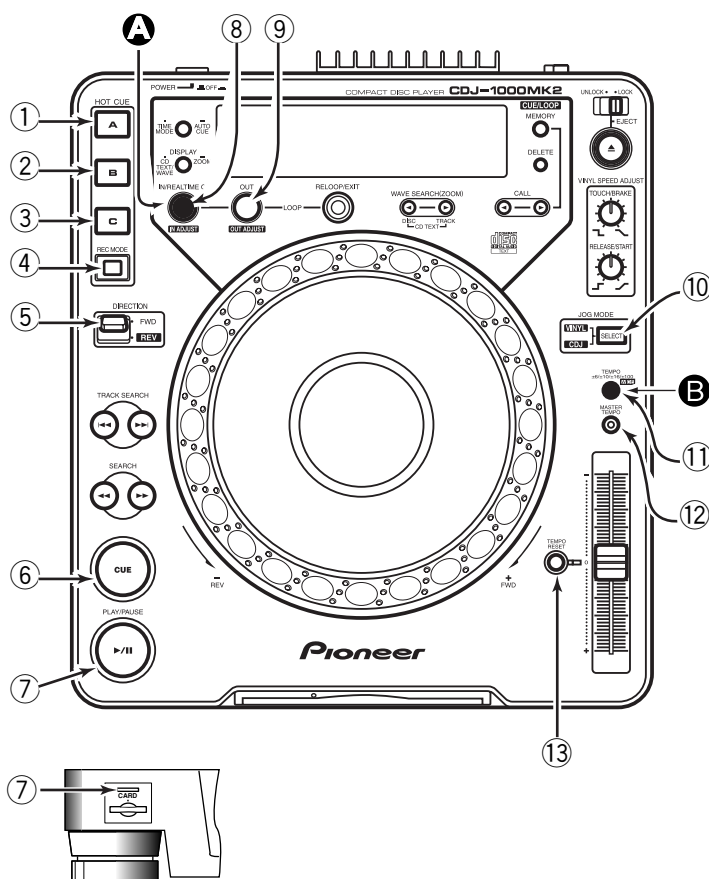


FL Check Mode : CANCEL



LED Check

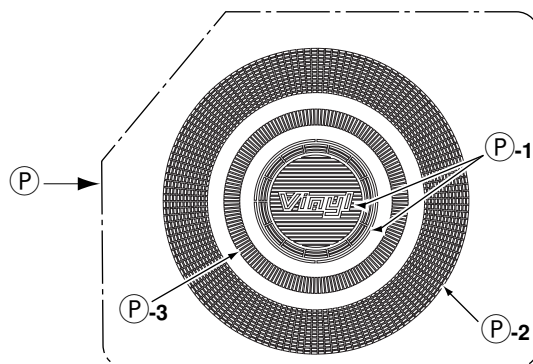
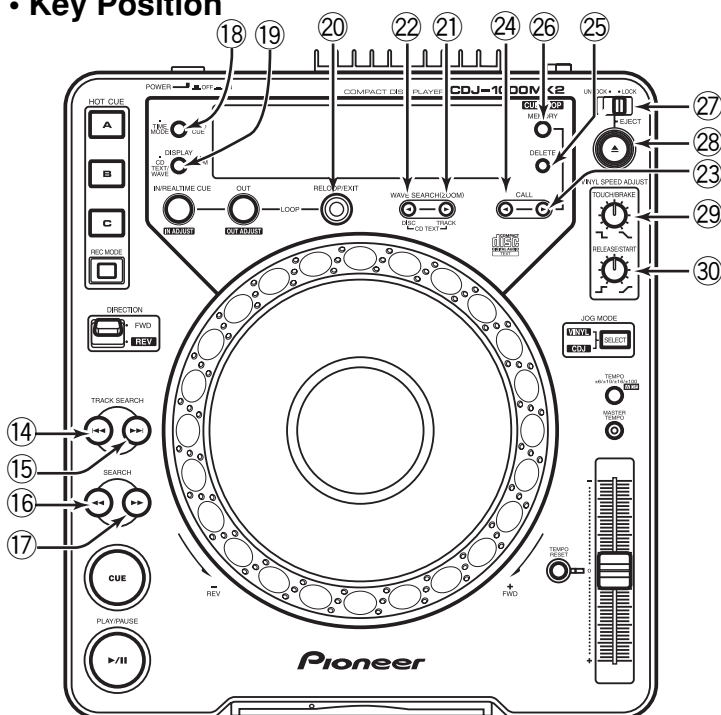
Key Name	LED lighting
① HOT CUE -A	A (red)
② HOT CUE -B	B (red)
③ HOT CUE -C	C (red)
④ REC MODE	A (green) B (green) C (green)
⑤ DIRECTION (SW)	REV (red)
⑥ CUE	CUE (orange)
⑦ PLAY/PAUSE	PLAY/PAUSE (red) CARD (green)
⑧ IN ADJUST	IN ADJUST (orange)
⑨ OUT ADJUST	OUT ADJUST (orange)
⑩ JOG MODE	CDJ (green)
⑪ TEMPO	VINYL (blue)
⑫ MASTER TEMPO	MASTER TEMPO (red)
⑬ TEMPO RESET	TEMPO RESET (green)



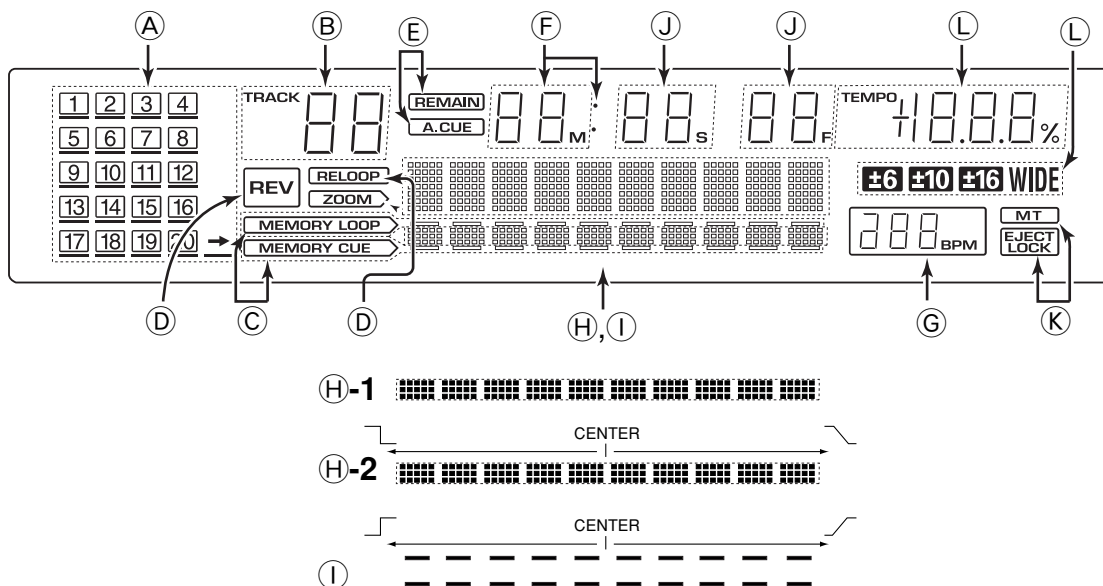
FL Check

Key Name	FL lighting Position
14 I◀◀	(A)
15 ▶▶I	(B)
16 ◀◀	(C)
17 ▶▶	(D)
18 TIME MODE/AUTO CUE	(E)
19 DISPLAY	(F)
20 RELOOP/ EXIT	(P- 1)
21 WAVE - FWD	(P- 2)
22 WAVE - REV	(P- 3)
23 CALL - FWD	(G)
24 CALL - REV	(H- 1)
25 DELETE	(J)
26 MEMORY	All of FL, (P): Jog-FL and LED light up.
27 EJECT LOCK (SW)	(K)
28 EJECT	(L)
29 MEMORY JOG ADJUST -TOUCH (VOL)	(H- 2)
30 MEMORY JOG ADJUST -RELEASE (VOL)	(I)

• Key Position



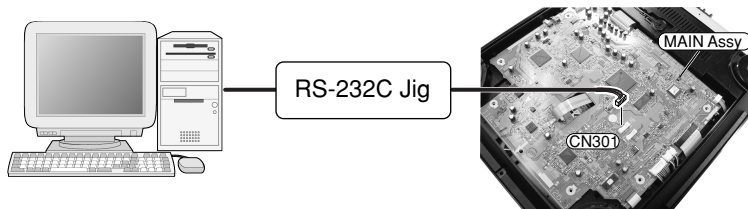
(FL DISPLAY)



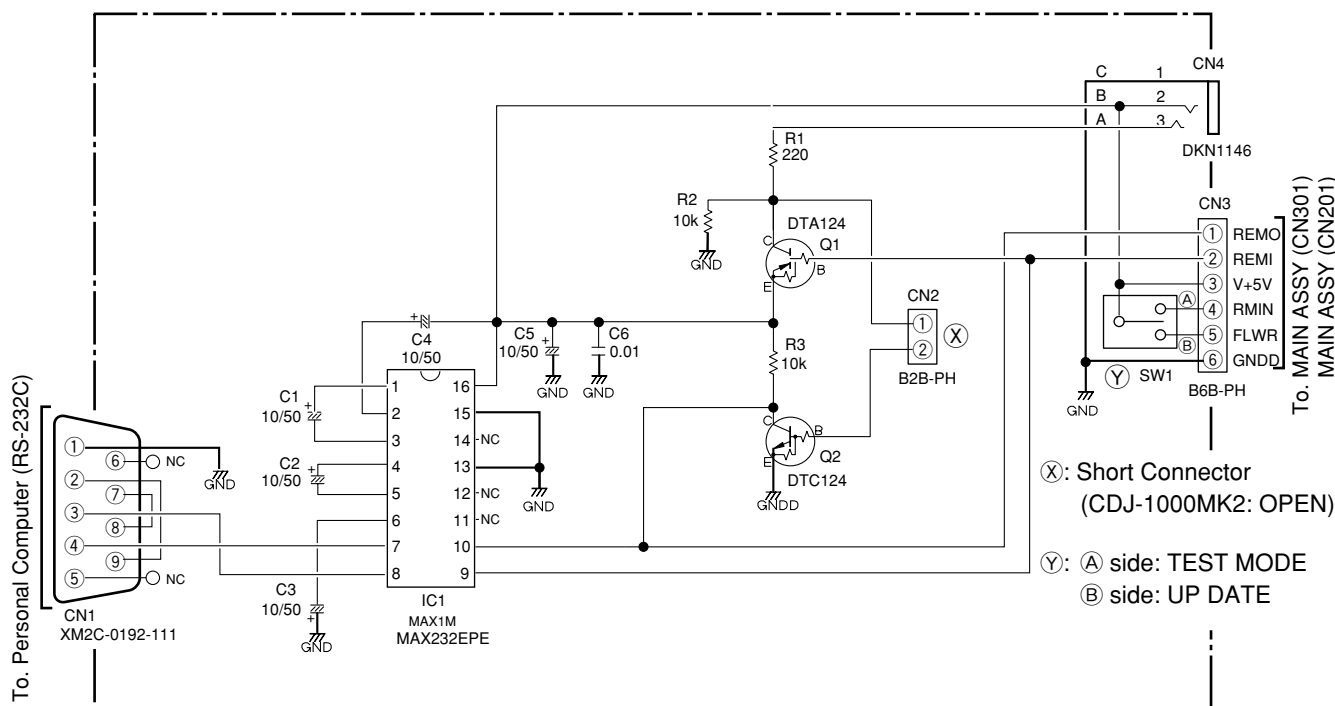
② Mode for checking operation of the mechanical and servo blocks (using a connected PC)

In this mode, once you have connected a PC via the CN301 connector, which is directly connected to the mechanism control microcomputer on the MAIN Assy through a RS-232C Jig, operation of the mechanical and servo blocks can be checked. The commands in this mode are mainly for testing the mechanical and servo systems, and not for testing the DJ functions (such as scan and tempo).

You can search your desired piece of music and play it. See "③ Mode for checking audio output (using a connected PC)".



RS-232C Jig Schematic Diagram



Parts List

SEMICONDUCTORS

IC1	: MAX232EPE
Q1	: DTA124
Q2	: DTC124

CAPACITORS

C1, C2, C3, C4, C5	: CEAT100M50
C6	: CKSQYF103Z50

RESISTORS

R1	: RD1/2VM221J
R2, R3	: RD1/2VM103J

OTHERS

CN1 (RS-232C CONNECTOR)	: XM2C-0192-111
CN2 (2P CONNECTOR)	: B2B-PH
CN3 (6P CONNECTOR)	: B6B-PH
CN4 (MIN JACK)	: DKN1146

Communication Soft

- Windows standard Hyper-Terminal
- Tera Term, CCT Win etc.

[Setup]

- Baud Rate : 4800bps
- Data Bits : 8bit
- Stop Bits : 1bit
- Parity : None

Communication Command

Command	Name	Description
TS	Test Mode Entry	To enter Test mode (It checks coming to a personal computer on the contrary with OFF.
BK	Address Block	To make the block-address assignment
TR	Address Track	To make the track-address assignment
IX	Address Index	To make the index-address assignment
TM	Address Time	To make the time-address assignment
SA	Start Up	To turn all servos on, and wait paused at the innermost track
PL	Play	To trace the signals on the disc (but not audio playback))
PA	Pause	To pause as soon as the command is received
SE	Search	To pause after searching for a given location
RJ	Reject	To turn all servos off and stop rotation of the disc
OP	Open	To eject the disc inside
EC	Error Count	To calculate the error rate
? A	Address Request	To return the address data (TNO:INDEX:AMIN:ASEC:AFRAME)
? B	Block Number Request	To return the block-number data (AMIN:ASEC:AFRAME)
? I	Index Number Request	To return the index-number data (TNO:INDEX)
? R	Track Number Request	To return the track-number data (TNO:INDEX)
? T	Time Code Request	To return the time-code data (AMIN:ASEC)
? Q	TOC Information Request	To return the TOC data (FTNO:ETNO:AMIN:ASEC:AFRAME)
? E	Error Rate Request	To return the error-rate data (effective EC command execution)
0TM	All Servo Off	To turn all servos off
1TM	LD On/Off	To turn on/off the laser-diode output (cyclic switching)
2TM	Focus Servo On/Off	To turn on/off the focus servo (cyclic switching)
3TM	Spindle On/Off	To turn on/off the spindle servo (cyclic switching)
4TM	Tracking Servo On/Off	To turn on/off the tracking servo (cyclic switching)
6TM	Address Read	To start a synchronized operation and start reading out the address data
9TM	Disc Search	To collect the disc data necessary for judging if a disc is inserted and for the focus servo
12TM	Focus Position Adjust	To perform the focus-position adjustment
13TM	Tracking Balance Adjust	To perform the tracking-balance adjustment
15TM	Focus Gain Adjust	To perform the focus-gain adjustment
16TM	Tracking Gain Adjust	To perform the tracking-gain adjustment
SF	Single Jump Fwd	To jump by one track toward the outermost track
SR	Single Jump Rev	To jump by one track toward the innermost track
MF	Multi Jump Fwd	To jump by the assigned number of tracks toward the outermost track
MR	Multi Jump Rev	To jump by the assigned number of tracks toward the innermost track
NF	Slider Move Fwd	To move the slider about 1 mm toward the outermost track
NR	Slider Move Rev	To move the slider about 1 mm toward the innermost track

Note:

To enter Test mode, execute the TS command before inserting a disc. Otherwise, audio playback of the first piece of music automatically starts responding to the command from the system-control microcomputer, and any command execution afterwards will not be accepted. In this case, "OFF" is displayed when a command is execution.

● Methods for assigning an address in a search operation

There are six methods for assigning an address in a search operation, as follows.

(Address Block) *

With the BK command, the address mode is set to block (absolute time = AMIN:ASEC:AFRAME).

Example: To search for 2 min 3 sec 4 frame: BK20304SE

(Address Track) *

With the TR command, the address mode is set to track.

Example: To search for the fifth piece of music (5th track): TR5SE

(Address Index) *

With the IX command, the address mode is set to index (TNO:INDEX).

Example: To search for Index 3 of the second piece of music: IX203SE

(Address Time) *

With the TM command, the address mode is set to time (absolute time = AMIN:ASEC)

Example: To search for 2 min 3 sec: TM203SE

* Once one of these address modes is assigned, it is maintained until another address mode is assigned.

(Error Count)

The error rate from the current location to the assigned address is calculated.

Example: To calculate the error rate from 20 min 0 sec 0 frame to 21 min 0 sec 0 frame and show the result

BK200000SE210000EC?E

Note: Figures in parentheses indicate the number of uncorrectable errors.

(TOC Information Request)

The TOC information for the disc is displayed.

Example: If the TOC information is 0116704307:

Number of the starting track = 01, number of the ending track = 16, recorded time = 70:43:07

● To manually start a servo

You can control the servo operations manually. Care must be taken during a manual operation in Test mode, because an inappropriate operation may damage the player.

For manual starting, the commands must be executed in the following order:

- 1TM : For turning on the laser diode
- 9TM : For judging if a disc is inside
- 3TM : For turning on the spindle
- 9TM : For disc search
- 2TM : For turning on the focus servo
- 13TM : For the tracking balance adjustment
- 4TM : For turning on the tracking servo
- 12TM : For the focus-position adjustment
- 15TM : For the focus-gain adjustment
- 16TM : For the tracking-gain adjustment
- 6TM : To start reading the address

(Single Jump Fwd/Rev)

To jump by one track (physical track, not one piece of music) toward the outermost/innermost track of the disc

(Multi Jump Fwd/Rev)

To jump by a given number of tracks (physical track, not pieces of music) toward the outermost/innermost track of the disc

Example: To jump by 100 tracks from the current location toward the outermost track: 100MF

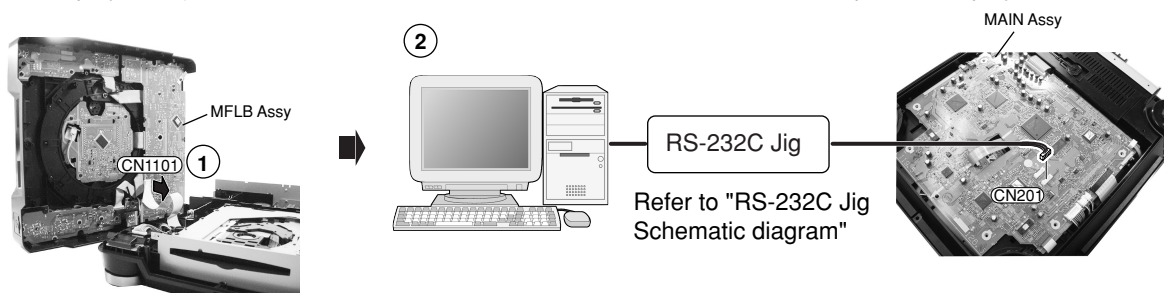
(Slider Move Fwd/Rev)

To move the slider by about 1 mm toward the outermost/innermost track of the disc. You can move the slider to your desired location by repeatedly executing this command.

③ Mode for checking audio output (using a connected PC)

In this mode, once you have connected a PC via the CN201 connector, which is directly connected to the system control microcomputer on the MAIN Assy through a RS-232C Jig, the audio outputs can be checked.

Before entering this mode, it is necessary to disconnect the CN1101 connector on the MFLB Assy and remove the upper unit (jog and display block), because the communication line is shared between audio output and display functions.



Communication Soft

- Windows standard Hyper-Terminal
- Tera Term, CCT Win etc.

[Setup]

- Baud Rate : 4800bps
- Data Bits : 8bit
- Stop Bits : 1bit
- Parity : None

Communication Command

Command	Name	Description
AD	Audio Play	To search for a designated piece of music, and start audio playback
RJ	Reject	To stop audio playback and disc rotation
OP	Open	To eject the disc

Supplement

(AD: Audio Play)

If the AD command is executed after disc insertion, audio playback of the designated piece of music starts.

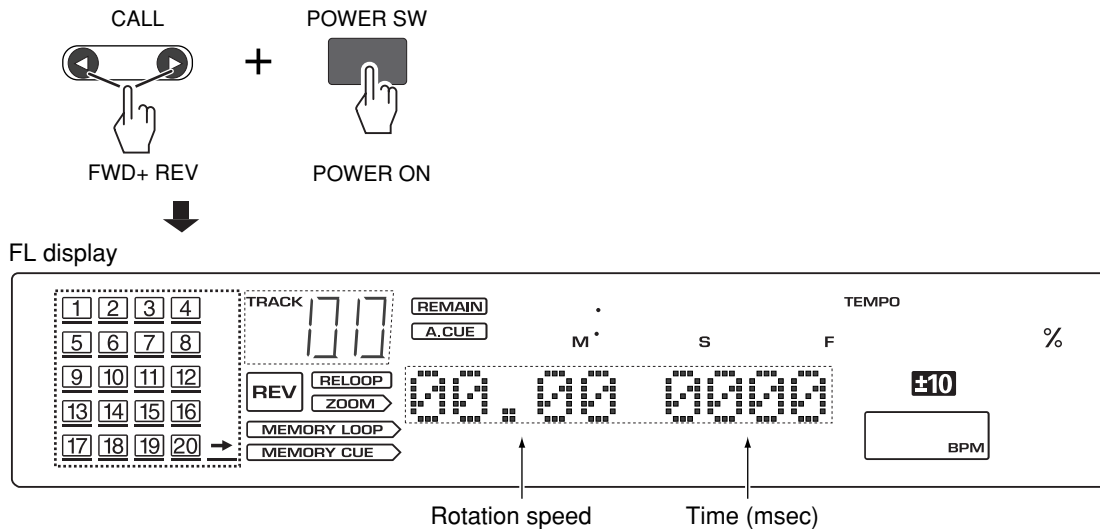
Example: For audio playback of the third piece of music: 3AD

Note: Designate the number in the range from 1 to the number of pieces of music recorded.

④ Mode for checking the load on the Jog dial

In this mode, the load (light/heavy) on the Jog dial while it is rotated is subjectively measured.

JOG Check Mode : ON



Measuring method

In this state, if you rotate the Jog dial rapidly either clockwise or counterclockwise, figures are displayed.

For example, if "16.14 0135" is displayed, it means as follows:

16.14: Highest speed (given that the normal [1x] speed is when it takes 1.8 sec for the Jog dial to rotate one full turn.)

0135: Time (msec) required for the Jog dial to decrease its speed from 3x speed to 1.5x speed

As to the time required for the Jog dial to decrease its speed, if the measurement is performed for several times repeatedly, from the second measurement and afterward, the average of the current required time and the previous required time is displayed. Thus, after several measurements, the result becomes closer to the mean.

Notes

- Perform the measurement of load on the Jog dial more than three times.
- The measurement result is displayed only when the Jog dial is rotated 7 times normal speed "07.00" or more.

Management value

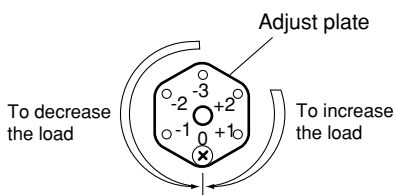
Jog management value: 150 ± 25 (msec)

Load adjustment method

Remove the screw fixing the adjust plate, then screw it into the hole corresponding to the value (-1, -2, -3, +1, or +2) for a load to be added:

-1, -2, -3 : To decrease the load

+1, +2 : To increase the load



JOG Check Mode : CANCEL

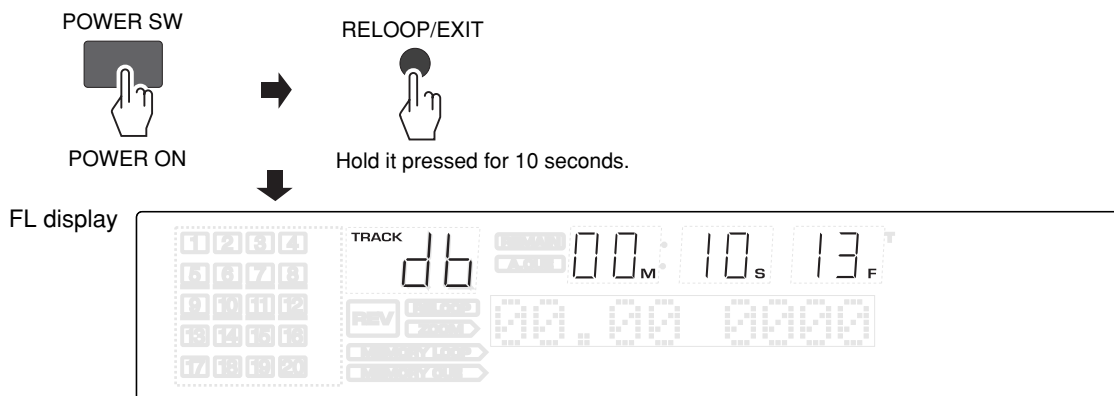


⑤ Mode for checking the error log

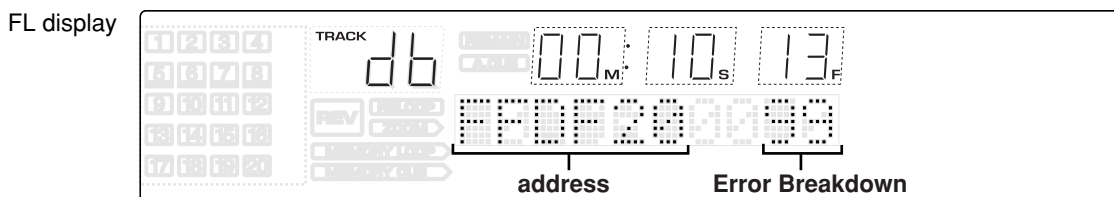
If any abnormality occurs in normal use, the following error numbers are displayed in the display block.

• How to check the error log

Error Check Mode : ON



- If a JOG dial is rotated on the right, it will become error display mode.



- By entering this mode, the latest 16 errors can be checked.

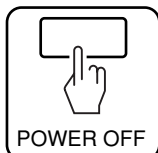
In this mode, an error breakdown code is displayed in the minute display block, and the address where that error breakdown code is stored in the memory of the microcomputer is displayed in the second and frame display block (in hexadecimal notation).

The error breakdown code of the latest error is stored at address FFDF20, and that of the oldest error is stored at address FFDF2F. You can change the address by turning the Jog dial from FFDF20 to FFDF2F (initial value: FFDF20).

Error No.	Error Name	Error Breakdown
E-6001	FPGA PROGRAM DOWNLOAD ERROR	61: The program cannot be written in the FPGA.
E-6002	DSP PROGRAM DOWNLOAD ERROR	62: The program cannot be written in the DSP.
E-7201	TOC READ ERROR	26: The TOC data cannot be read.
E-8301	PLAYER ERROR (startup problem)	11: Any error occurring before disc recognition and leading to operation stop is categorized as this error.* 20: The spindle motor does not rotate.* 21: No disc (focus error level: low)* 24: The address cannot be read.*
E-8302	PLAYER ERROR (playback problem)	12: Your desired address cannot be searched. 15: The address cannot be read. 22: The focus servo cannot close. 23: The tracking servo cannot close.
E-8303	PLAYER ERROR (problem in writing in the buffer)	99: Problem in writing in the buffer
E-9101	MECHANICAL TIME OUT	90: Abnormality in the disc-loading mechanism (timeout)

* If this error occurs before the inserted disc is recognized as a CD, the disc is automatically ejected. In this case, the error code No. is not displayed, but you can see the error breakdown code stored in memory. Only in the case of breakdown code 20 (the spindle motor does not rotate), the disc will not be ejected, because this is not a problem of the media.

Error Check Mode : CANCEL

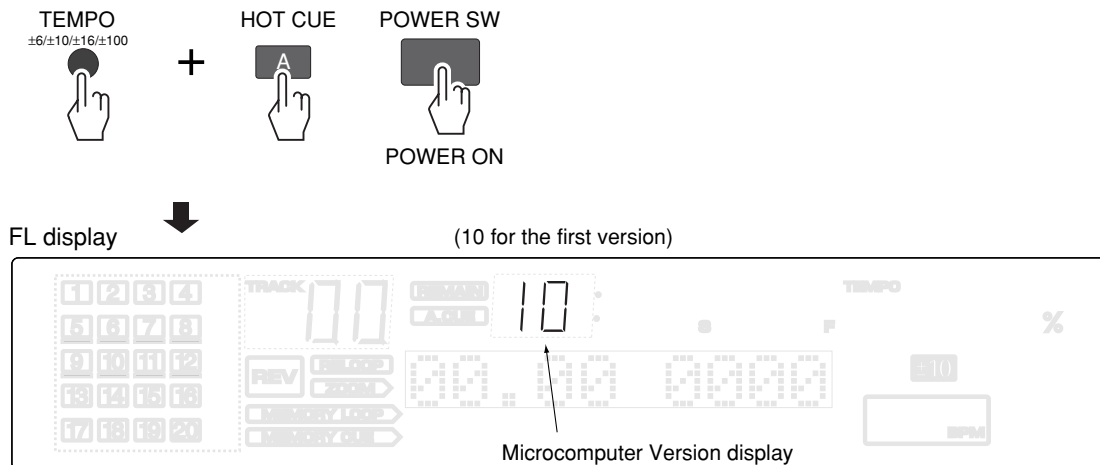


⑥ Mode for checking the version of the software program

In this mode, the version of the software program for each microcomputer can be checked.

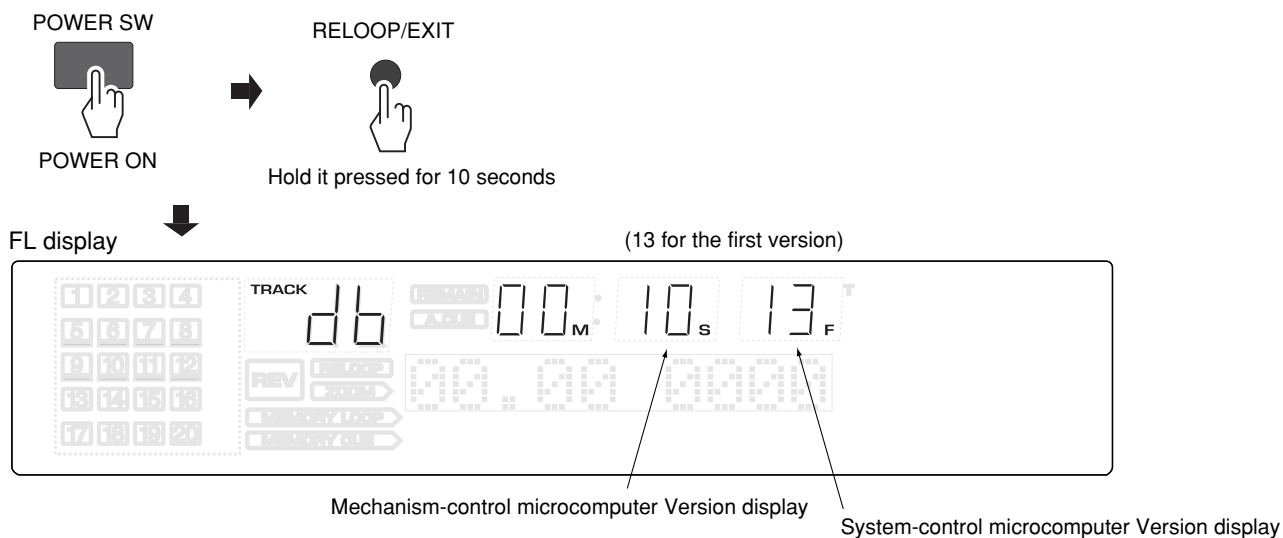
• How to check the software version for the display microcomputer

Ver. Check Mode : ON

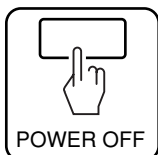


• How to check the software version for the mechanism-control and system-control microcomputers

Ver. Check Mode : ON

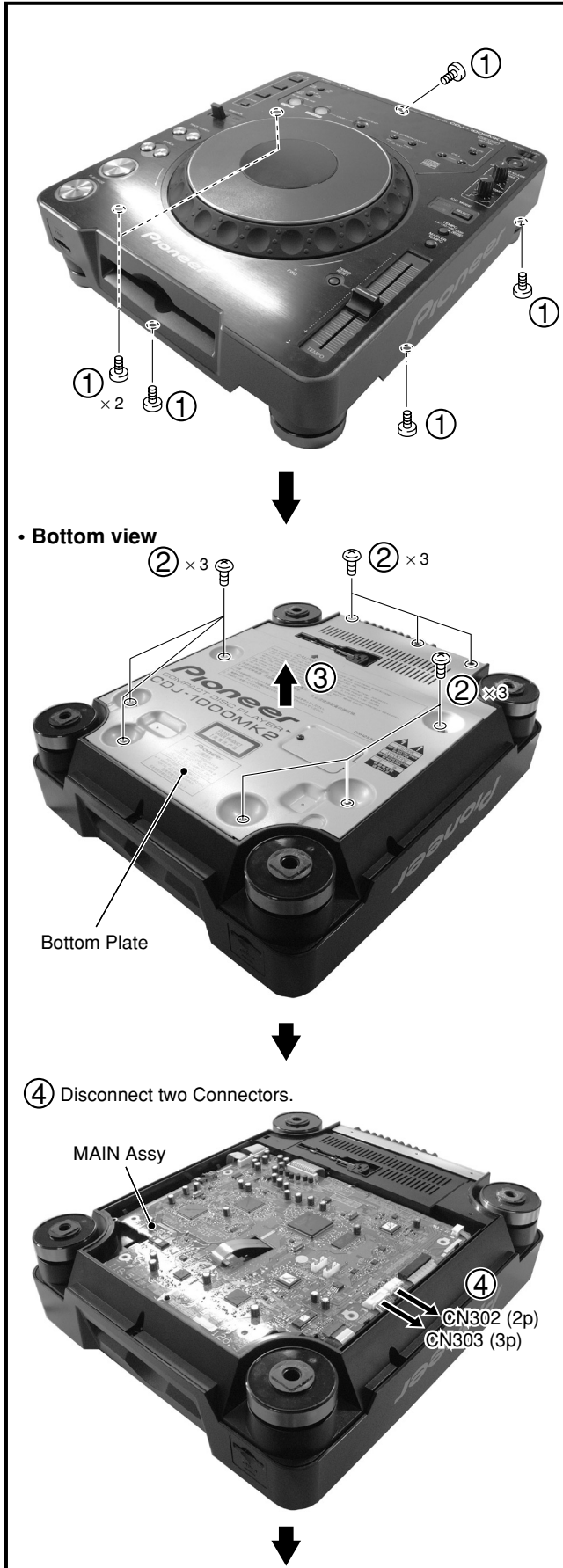


Ver. Check Mode : CANCEL

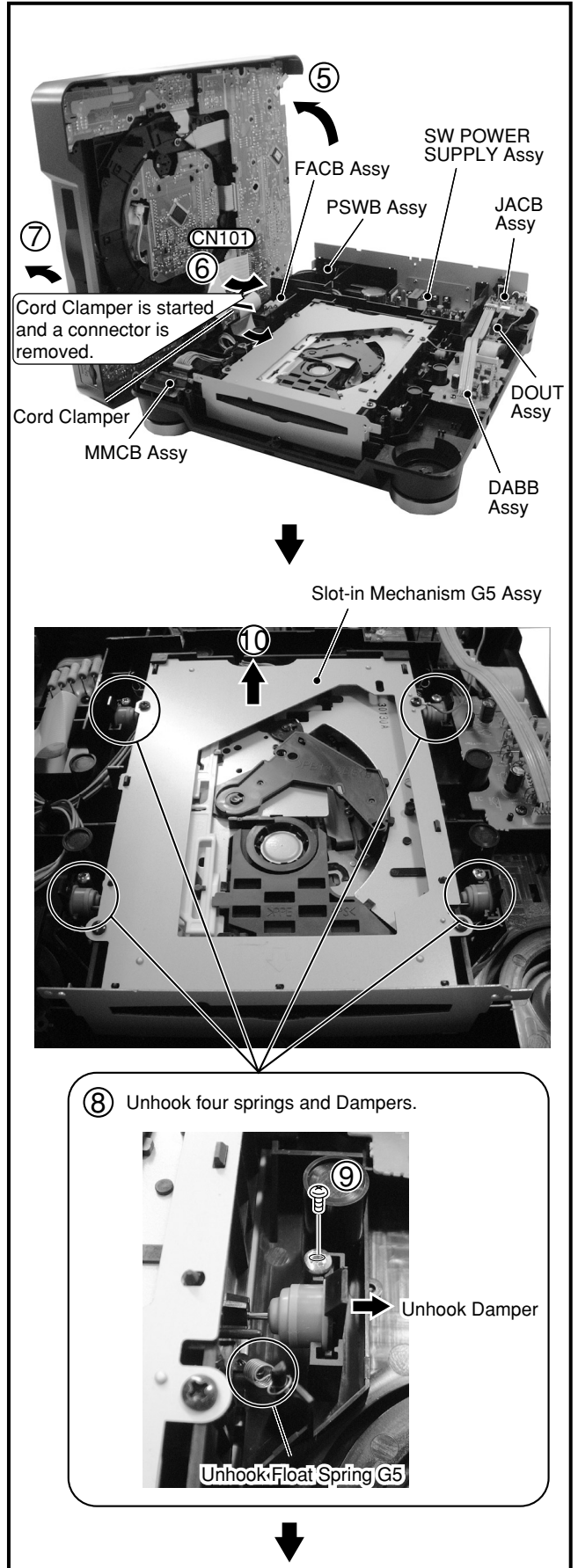


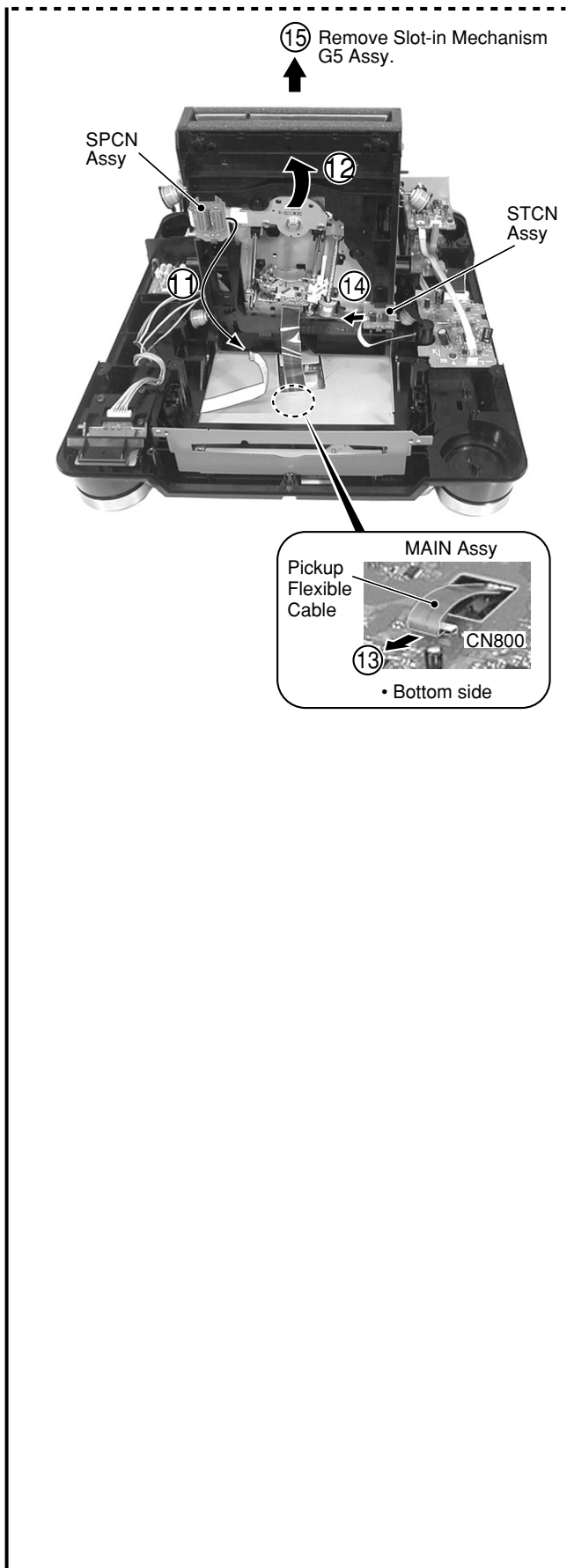
DISASSEMBLY

1 MAIN Assy

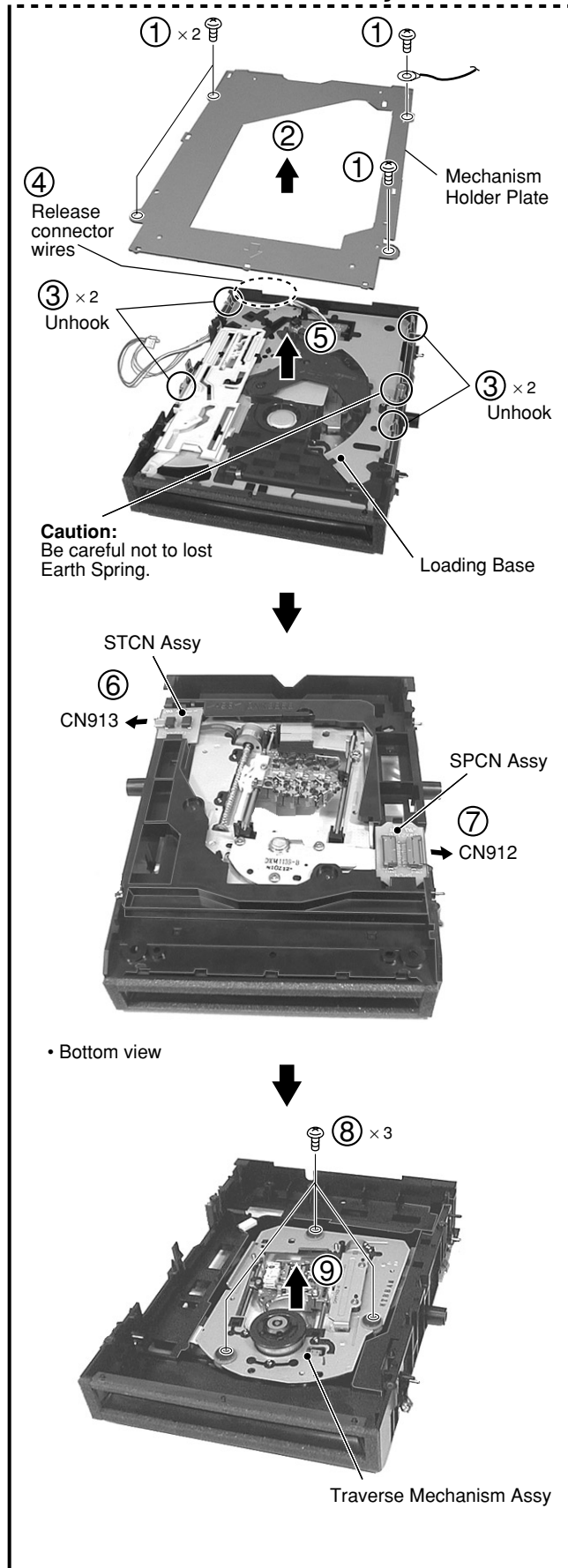


2 SLOT-IN MECHANISM Assy



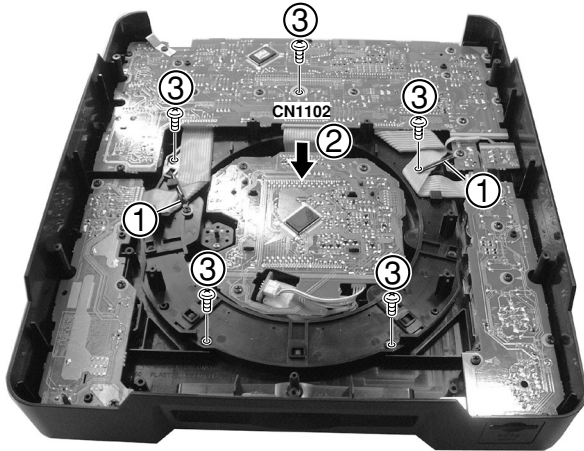


3 Traverse Mechanism Assy

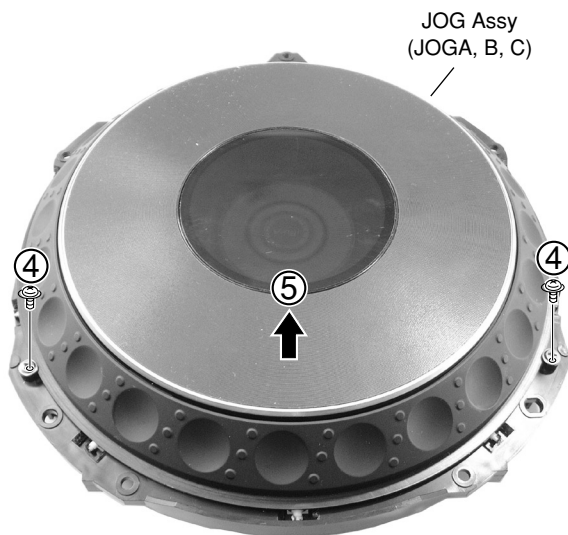


4 JOG Section

- ① Release a Cord Clamper.
- ② Disconnect a connector assy (CN1102).
- ③ Remove five screws.

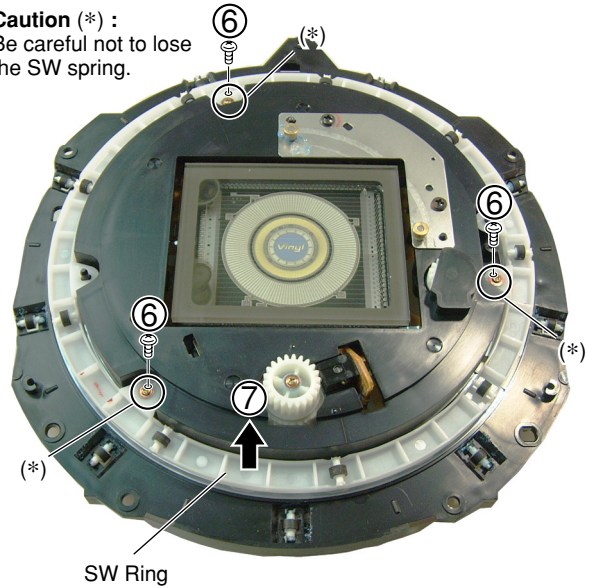


- ④ Remove two screws.
- ⑤ Remove the JOG ASSY (JOG A, B and C)



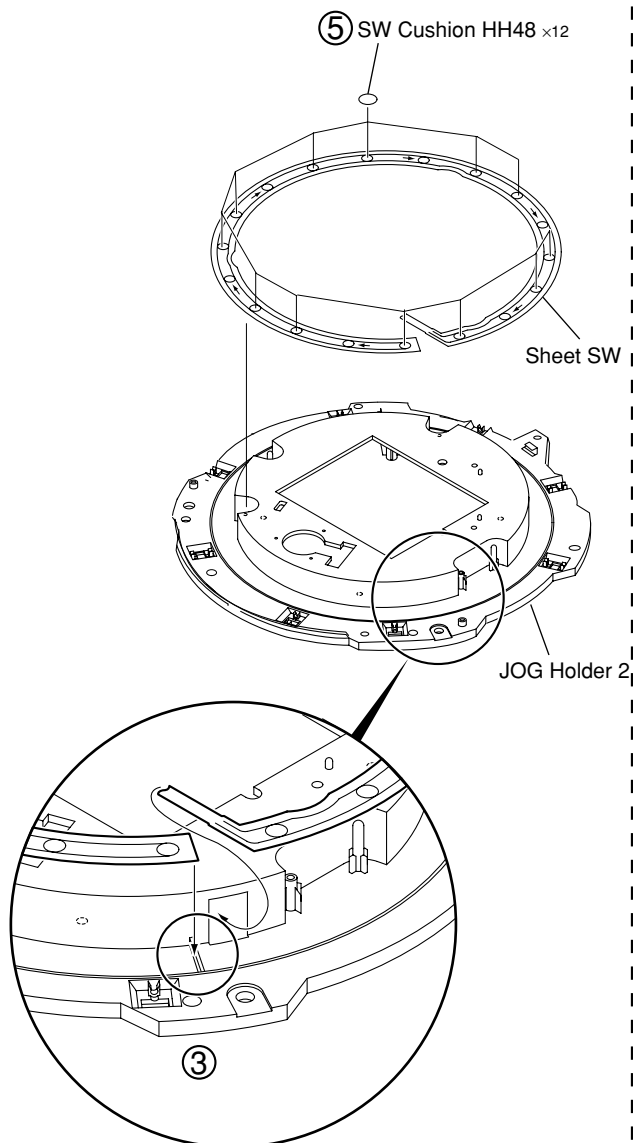
- ⑥ Remove three screws.
- ⑦ Remove the SW Ring.

Caution (*) :
Be careful not to lose
the SW spring.



Caution in Sheet SW Installation

- ① Be careful not to bend and fold the Sheet SW.
- ② Confirm that the dust or trash does not adhere to pasting side (JOG Holder).
In addition, when tearing off the former Sheet SW and putting a new part, completely wipe the JOG Holder off with alcohol so that paste does not remain on the pasting side of JOG Holder.
- ③ When putting the Sheet SW, match the position not to run aground on rib of the internal circumference of JOG Holder.
- ④ Sheet SW pushes all the sides including the point of contact fully, and put it. (No good air getting into it.)
(When the air got into it, remove it and replace the new one. Do not recycle it.)
- ⑤ Put the SW Cushion HH48 on direction arrow part (12 places) of the Sheet SW.
- ⑥ When inserting a cable in connector, release a lock by all means, and connector locks after inserting it.



Caution in Roller A Assy Installation

- ① Apply a grease (GYA1001) to the shaft bearing section of JOG Holder side and SW Ring side.
(Apply it to two places for roller one.)
(Be careful so that grease does not adhere to rubber section of the roller.)

