MDP-850D
RMT-M22

SERVICE MANUAL

AEP Model
UK Model

SPECIFICATIONS

Type: CD/CDV/LD Player
Signal readout: Optical (Laser beam reflection)
Laser: Semiconductor diode laser (λ = 780 nm)
Laser output: 0.3 mW ±0.1 mW (from objective lens)
Signal format: CCIR standard, PAL colour system
EIA standard, NTSC colour system

Playing time

			PAL	NTSC
LD	CAV	30 cm (12 in) double-sided	72	60
		20 cm (8 in) double-sided	32	28
		20 cm (8 in) single-sided	–	14
	CLV	30 cm (12 in) double-sided	120	120
		20 cm (8 in) double-sided	40	40
		20 cm (8 in) single-sided	–	20
CD		12 cm (5 in) single-sided	74	74
		8 cm (3 in) single-sided	20	20
CDV		Audio portion	20	20
		Video portion	6	5
VSD		Video portion	–	5

(minutes)

Digital audio specifications
Frequency response
4 Hz to 20 kHz (± 1 dB)
Signal-to-noise ratio
More than 115 dB (EIAJ*)
Dynamic range: More than 95 dB (EIAJ*)
Total harmonic distortion
0.005%
Cnannel separation
More than 105 dB (EIAJ* at 1 kHz)
Wow and flutter: Below measurement limit
(±0.001% W.PEAK) (EIAJ*)
* Measured according to EIAJ (Electric Industries Association of Japan) standards

Video specifications
Horizontal video resolution
PAL 440 lines
NTSC 425 lines

Input/output specifications
Video output: 1.0 Vp-p, 75 ohms, unbalanced
RGB output (NTSC)
0.7 Vp-p 75 ohms, unbalanced
Audio output: Stereo L, R
Analog: 200 mVrms (1 kHz, 40% modulation)
Digital : 200 mVrms (1 kHz, –20 dB)
Audio digital output (optical)
–18 dBm, wavelength 660 nm

– Continued on next page –

CD VIDEO **CD/CDV/LD PLAYER**

SONY®

Headphone output 28 mW (32 ohms), Impedance = 8 ohms
CONTROL S IN input
Mini jack
Power requirements
220 – 240 V AC, 50/60 Hz
Power consumption
45 watts
Mass Approx. 9.2 kg
Dimensions Approx. 430 × 115 × 420.5 mm (w/h/d)
Operating temperature
+5°C to +35°C
Ambient humidity 5% to 90%

Remote Commander RMT-M22
Remote control system
Infrared control
Power requirements
3 V DC, (2 IEC R6 (size AA) batteries)
Dimensions Approx. 68 × 38 × 200 mm (w/h/d)
Mass Approx. 175 g (including batteries)

Supplied accessories
Remote Commander RMT-M22 (1)
IEC R6 (size AA) batteries (2)
EURO-AV (21-pin) connecting cable (1)
AC power cable (1)

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This CD CDV LD player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRAHLUNG. WENN ABDECKUNG GEÖFFNET UND SICHEREITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLIG LASERSTRÅLING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVERSEL : USYNLIG LASERSTRALING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EXSPONERING FOR STRÅLEN.

This label is located on the top cover and inside of the unit.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the areas of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommended their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommended their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270 ℃ during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be Careful not to apply force on the conductor when soldering or unsoldering.

TABLE OF CONTENTS

This section is extracted from instruction manual.

SECTION 1
GENERAL

Features

CD/CDV/LD Player

The unit can play all six types of optical discs currently available for home entertainment use. The video discs of either PAL or NTSC*1 video signal system can be played with this unit.

8 cm/3 inches CD	8 cm/3 inches in diameter Digital audio (Max. 20 min.), single-sided	
CD	12 cm/5 inches in diameter Digital audio (Max. 74 min.), single-sided	
Video Signal System	PAL	NTSC
CDV*2	12 cm/5 inches in diameter Digital audio (Max. 20 min.) and video and digital audio (Max. 6 min.), single-sided	12 cm/5 inches in diameter Digital audio (Max. 20 min.) and video and digital audio (Max. 5 min.), single-sided
VSD		12 cm/5 inches in diameter Video and digital audio (Max. 5 min), single-sided
LD	20 cm/8 inches in diameter Video and digital or analog audio (Max. 16 min. for CAV disc or 20 min. for CLV disc per side)	20 cm/8 inches in diameter Video and digital and/or analog audio (Max. 14 min. for CAV disc or 20 min. for CLV disc per side *3)
LD	30 cm/12 inches in diameter Video and digital or analog audio (Max. 36 min. for CAV disc or 60 min. for CLV disc per side)	30 cm/12 inches in diameter Video and digital and/or analog audio (Max. 30 min. for CAV disc or 60 min. for CLV disc per side)

Notes

*1 The NTSC system playback signal is output from the EURO-AV and LINE OUT VIDEO connectors as an NTSC signal. Therefore, the picture of an NTSC disc cannot be recorded on a PAL system VTR.

*2 The Compact Disc Video (CDV) format divides a CD into two sections. One is 20 minutes of digital audio playable on any CD player. The other, 5 or 6 minutes of video and digital audio, requires a CDV player.

*3 For details of the CAV and CLV discs, see the "Glossary" on page 106.

Functions

The following functions are available with this unit.
For the CDV disc, CD functions can be used on the audio portion and LD functions can be used on the video portion.

LD/CD/CDV

- **Program play**
  Plays chapters or tracks in any desired order.
- **Shuffle play** *1
  Plays chapters or tracks on a disc in random order.
- **Auto program** *1
  Plays chapters or tracks within a designated time.
- **AV calendar display** *1
  Shows the chapter or track numbers to be played.
- **INTRO scan**
  Plays only the beginning (introduction) of the chapters or tracks on a disc in order.
- **Multi-language display**
  Four language messages are available on your TV screen.
- **Microphone jack and adjustable echo**
  Allows you to enjoy signing along with a "Karaoke" disc.

LD

- **Both sides playback**
  Allows you to play both sides of an LD without turning it over.
- **Variable speed playback**
  11 speed settings for forward and reverse playback, step (frame-by-frame) playback on CAV discs.
- **Memory playback**
  Playback stopped at one scene can be resumed from the same point.
- **Picture enhance function**
  Allows you to select the best picture reproduction condition for each disc.

CDV

- **Video portion**
  All LD functions are available.
- **Audio portion**
  All CD functions are available.

Note

*1 These features are available for LDs with TOC (Table of Contents) data, all CDs and CDVs.
- If the LD has a TOC, the AV calendar is displayed as soon as you start playing the disc.
- If the LD has no TOC, the calendar appears at the end of a side played right to the end. However, this display is invalid as it is not based on TOC data.

For further information on LDs with TOC and features available with these discs, see page 106.

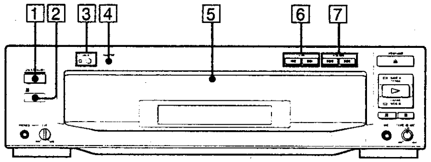
Warning

- This unit plays discs with any of the following logo marks on the label.

LaserDisc
CD VIDEO
LASER DISC
LaserVision
VIDEO SINGLE DISC
digital SOUND
digital AUDIO
COMPACT disc DIGITAL AUDIO

- CED or VHD type discs cannot be used with this unit.
- This unit is designed for discs conforming to PAL/NTSC video signal systems.

A-1



Location and Function of Parts and Controls

Refer to the page indicated in the black circle for details.

Front Panel

A-1

Buttons on the Remote Commander have the same functions as those on the main unit.

1 **⏻ ON/STANDBY button**
Press to turn on the player. Press again to enter standby.

2 **Remote control sensor**
Point the supplied Remote Commander here.

3 **LD/EXT button and indicator (30)**
When connecting a VTR to the Euro-AV connector, you can view the picture from the VTR by pressing the LD/EXT button to turn off the indicator.

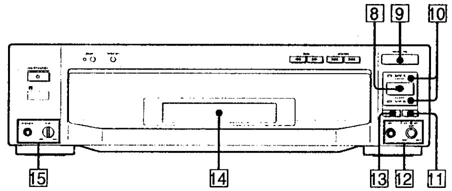
4 **RGB (NTSC) button (for NTSC disc only)**
When viewing an NTSC disc on PAL TV, use the Euro-AV connector for connection and press this button to turn on RGB indication in the display. The output from the player switches to RGB signal and the TV will be set to receive it automatically. If the TV has the RGB/composite signal selector, the setting may have to be done manually. If your TV receives NTSC signals, you do not need to use the RGB button.

5 **Front cover**
Automatically slides down when you press the ≜ OPEN/CLOSE button, and the disc tray comes out.

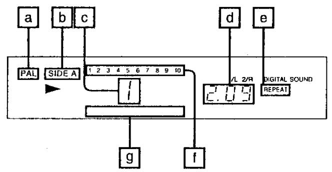
6 **◀◀/▶▶ SCAN buttons (58)(74)**
Use these buttons for scanning the disc in reverse or forward direction.

7 **⏮/⏭ ACS/AMS (Automatic Chapter Search/Automatic Music Sensor) buttons (60)(74)**
Use these buttons for skipping chapter/track.

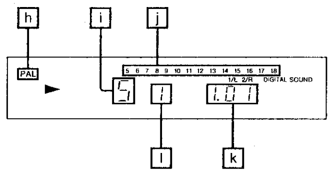
A-2



A-3



A-4



Location and Function of Parts and Controls

A-2

8 **▷ Play button**

9 **≜ Disc tray OPEN/CLOSE button**
Press to open or close the disc tray.

10 **SIDE A/B button and indicators (42)**
Use this button to switch the playing side of an LD and start playing.

11 **■ Stop button**

12 **MIC jack and ECHO/MIC LEVEL controls (98)**
To play Karaoke, plug a microphone into the MIC jack. Adjust the microphone volume and echo level with the controls.

13 **II Pause button**

14 **Display window (82)**
When playing a disc, the following information appears in the display.

A-3

LD
ⓐ Video output signal
ⓑ Playing disc side
ⓒ Chapter number
ⓓ Time (hr./min./sec.) or frame number
ⓔ Selected function
LD with TOC
ⓕ AV calendar on side A
ⓖ AV calendar on side B

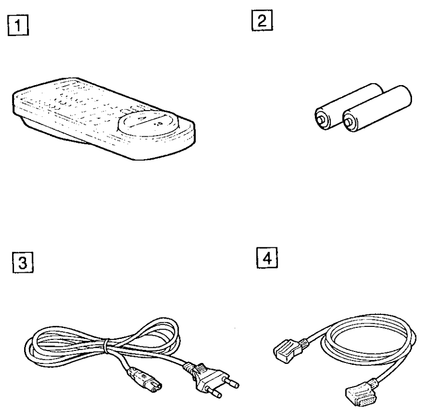
A-4

CD/CDV
ⓗ Video output signal*1
ⓘ Track number
ⓙ AV calendar
ⓚ Elapsed time (min./sec.) for track
ⓛ Index number

15 **PHONES jack (stereo phone type) and LEVEL control**
When listening with headphones, connect the headphones with stereo phone plug here. Adjust the volume with the LEVEL control.

*1 When playing a CD, always "PAL" lights up.

B-1



Location and Function of Parts and Controls

Accessories

B-1

The following accessories are included in the carton.

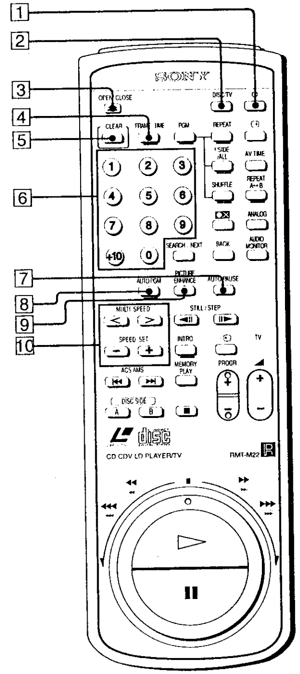
1 RMT-M22 Remote Commander

2 Two IEC R6 (size AA) batteries

3 AC power cable
The cable supplied with the model for the UK has a different plug from the one for Continental Europe.

4 EURO-AV (21-pin) connecting cable

C-1



A function activated by pressing a button with a yellow mark can be canceled by pressing the CLEAR button.

Vous pouvez annuler une fonction déclenchée par une touche marquée d'un repère jaune en appuyant sur la touche CLEAR.

Der gelbe Balken unter einer Taste zeigt an, daß die betreffende Funktion durch Drücken der CLEAR-Taste gelöscht werden kann.

Le funzioni attivate premendo un tasto con il segno giallo possono essere disattivate premendo il tasto CLEAR.

Location and Function of Parts and Controls

Remote Commander

C-1

Buttons on the Remote Commander have the same functions as those on the main unit.

1 **⏻ Standby button**
Press to turn on the player. Press again to enter standby.

2 **DISC/TV button ㉝**
When the player is connected to the TV via the EURO/AV connector, press to monitor TV program. Press again to return to disc viewing.

3 **⏏ Disc tray OPEN/CLOSE button**

4 **FRAME/TIME search button ㉜㉞**
Use this button to search for a particular point on a disc by frame or time number.

5 **CLEAR button**
Press to clear a wrong numerical entry, or to cancel the search or other function activated by the button with yellow mark on the Remote Commander.

6 **Number buttons**
These are used for entering program, chapter, track, frame or time numbers.

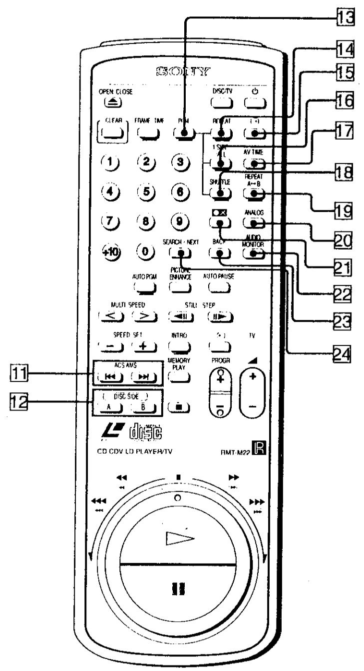
7 **AUTO PAUSE button ㉜**
Press this button to stop playback momentarily every time a selection ends.

8 **AUTO PGM button ㉟**
Use this button to playback selections on a CD, CDV, and LD with TOC within a set period.

9 **PICTURE ENHANCE button**
Use this button to get sharp/soft image.

10 **</> MULTI SPEED buttons ㉜**
+/– SPEED SET buttons ㉜
Use these buttons to play a CAV LD at varing speeds.

C-1



Location and Function of Parts and Controls

[11] ◀◀/▶▶ ACS/AMS (Automatic Chapter Search/Automatic Music Sensor) buttons ⑩⑭

[12] **DISC SIDE A/B buttons** ⑫
Use these buttons to switch the playing side of an LD and start playing.

[13] **PGM (program play) button** ⑩⑱
Use this button to specify the playing order of selections.

[14] **REPEAT button** ⑯ ⑯
Press to repeat chapters or tracks in any play mode.

[15] **Display button**
Press during playback to display screen messages (see page 36) on the TV screen.

[16] **1/SIDE/ALL button** ⑯ ⑯
Press to playback the single track/ chapter or one side of an LD.

[17] **AV TIME button** ⑫
Press to change time display.

[18] **SHUFFLE button** ⑭
Press to playback selections on a CD, CDV, and LD with TOC in random order.

[19] **REPEAT A↔B button** ⑱ ⑯
Press to repeat a particular portion on a disc.

[20] **ANALOG audio button** ⑯
Press to switch the player to analog or digital sound. (NTSC LD only)

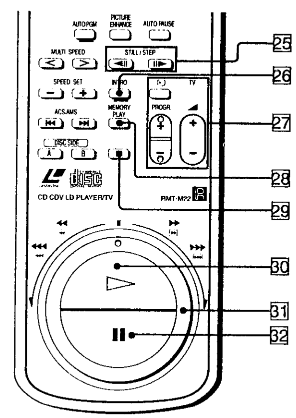
[21] **CX button** ⑯
Press to manually activate the CX noise reduction system.

[22] **AUDIO MONITOR button** ⑭
Press to switch the audio channels of a disc in the order of stereo, 1/L and 2/R.

[23] **BACK button** ⑩⑱
Use this button to correct numbers which you have entered.

[24] **SEARCH/NEXT button** ⑫⑭⑩⑱
Use this button to search for a particular point on a disc or correct numbers which you have entered.

C-1



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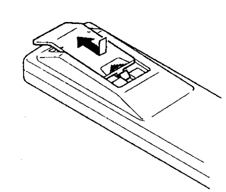

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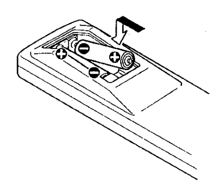


Location and Function of Parts and Controls

[25] **◀II/II▶ STILL/STEP buttons** ⑮
Use these buttons to view action frame by frame on a CAV LD.

[26] **INTRO (Introduction) scan button** ⑩
Press this button to sample the beginning of each selection on a disc.

[27] **TV operation buttons**
(Can be used to control Sony TV sets bearing the mark.)
PROGR. (program) +/– buttons
(volume) +/– buttons
button
Press to set the TV's inputs to video/ audio. (This function is available only with certain TV models.)

[28] **MEMORY PLAY button** ⑩
Press to resume playback from the point you stopped at.

[29] **■ Stop button**

[30] **▷ Play button**

[31] **Shuttle ring** ⑮, ⑭
Use for forward or reverse speed scan.

[32] **II Pause button**

Installing batteries into the Remote Commander

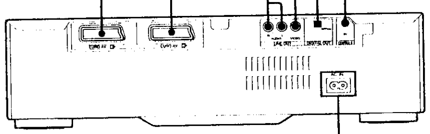
1 Open the lid.
2 Insert the two IEC R6 (size AA) batteries with correct polarity.

Battery life

Batteries should last for about six months under normal operating conditions. When the operating range of the Remote Commander becomes noticeably short, replace the batteries with new ones.

Note
When the Remote Commander is not to be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

D-1



Location and Function of Parts and Controls

Rear Panel

D-1

1 **EURO-AV ⊖ (input/output) connector (21-pin)** ㉜
If you connect this input/output connector to a VTR, you can view the picture from the VTR by pressing the LD/EXT button to turn off the indicator.*1

2 **EURO-AV ⊖ (output) connector (21-pin)**
Connect to the 21-pin connector of a TV with the supplied EURO-AV connecting cable.

3 **LINE OUT AUDIO L, R jacks (phono jacks)** ㉜
Connect to the audio input jacks of a TV set or the CD input jacks of an amplifier.

4 **LINE OUT VIDEO jack (phono jack)** ㉞
Connect to the video input jack of a TV set or a VTR.

5 **DIGITAL OUT (OPTICAL) connector** ㉜
This jack permits optical fiber connection to an amplifier or D/A converter unit with optical input. For connection, use cable POC-15 (not supplied).

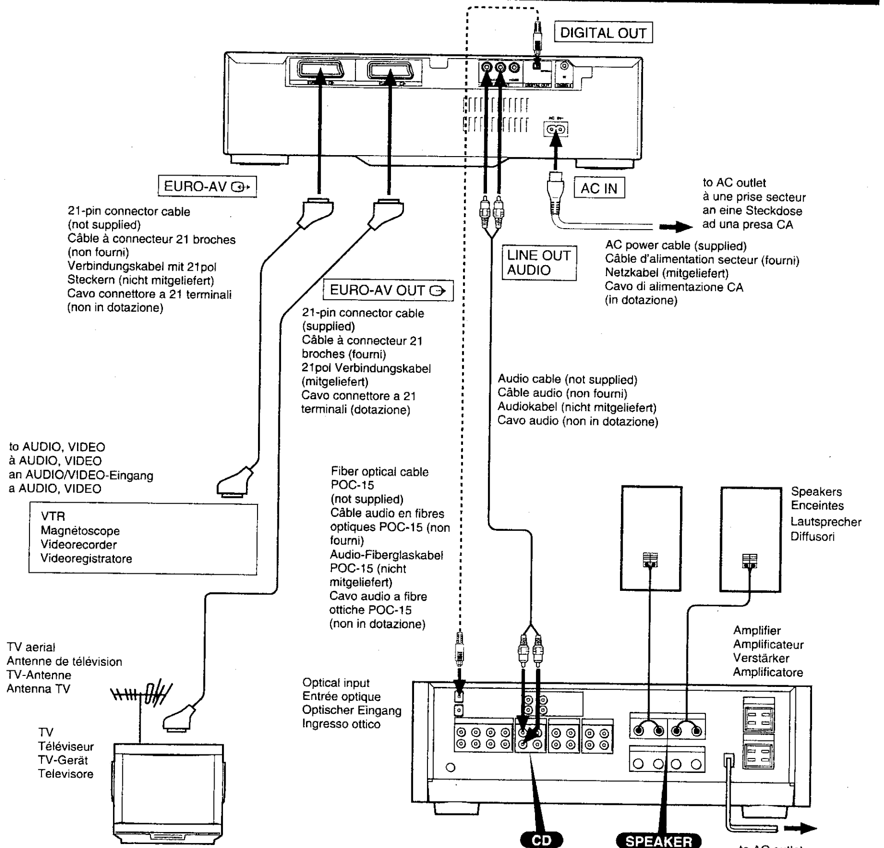
6 **CONTROL S IN jack (mini type)**
Connect to the CONTROL S output jack of a TV.
This unit can be remotely controlled by pointing the Remote Commander at the TV.
Use an RK-G69 connecting cable (not supplied) for connections.

7 **AC IN connector**
Connect the supplied AC power cable.

*1 When the LD/EXT indicator is lit, both the EURO-AV OUT ⊖ and ⊖ connectors output the signal from the disc played in the player. When you use a VTR or other such auxiliary equipment, press the LD/EXT button to turn off the indicator. The ⊖ connector is switched to an input terminal, and the signal inputs from the ⊖ connector output from the ⊖ connector through the multi disc player.

Connections/Connexions/Anschluß/Collegamenti

Connection to Audio System and to TV With Audio/Video Inputs and EURO-AV Connectors
Raccordement à une chaîne audio et à un téléviseur équipé d'entrées audio/vidéo et de connecteurs EURO-AV
Anschluß an eine Audioanlage und ein TV-Gerät mit Audio/Video-Eingängen und mit EURO-AV-Buchsen
Collegamento a un sistema audio e a un televisore dotato di ingressi audio/video e di connettori EURO-AV



TV: Set the input selector to "Video" for video disc viewing.
TV: Réglez le sélecteur d'entrée sur "Vidéo" pour regarder un disque vidéo.
TV-Gerät: Auf Videobetrieb schalten, wenn eine Bildplatte wiedergegeben werden soll.
Televisore: Regolare il suo selettore di ingresso su "VIDEO" per la visione di videodischi.

Notes
- Press the DISC/TV button to watch TV programs, and press again to view the picture of a disc.
- To view an NTSC disc, connect to the RGB input connector on TV. For details, refer to the operating instructions of TV.

Remarques
- Appuyez sur la touche DISC/TV pour regarder des émissions télévisées et appuyez de nouveau pour visionner un disque.
- Pour visionner un disque NTSC, raccordez le lecteur au connecteur d'entrée RGB du téléviseur. Pour plus de détails, consultez le mode d'emploi du téléviseur.

Hinweise
- Drücken Sie die DISC/TV-Taste zur Wiedergabe von TV-Programmen. Zur Wiedergabe einer Bildplatte drücken Sie die Taste erneut.
- Zur Wiedergabe einer NTSC-Platte schließen Sie das Gerät an den RGB-Eingang des TV-Geräts an. Genaueres siehe Bedienungsanleitung des TV-Geräts.

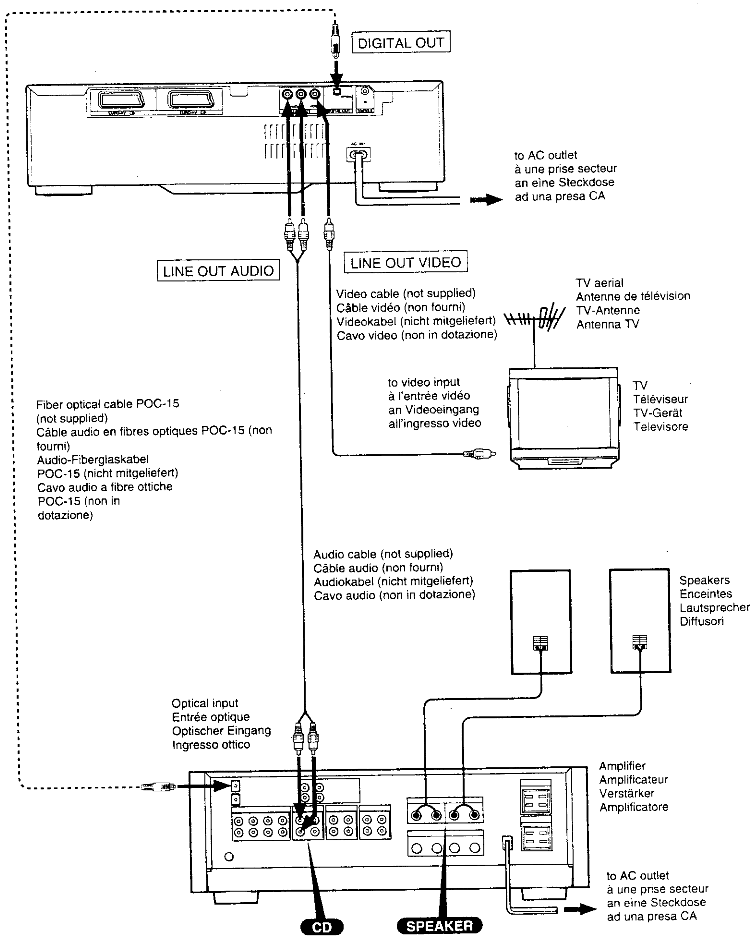
Note
- Premere il tasto DISC/TV per vedere programmi televisivi e premerlo di nuovo per vedere l'immagine di un disco.
- Per vedere l'immagine di un disco NTSC, eseguire il collegamento al connettore di ingresso RGB sul televisore. Per i dettagli, fare riferimento al manuale di istruzioni del televisore.

Connection of optical fiber cable
Connexion du câble en fibres optiques
Anschluß von Optokabeln
Collegamento del cavo a fibre ottiche

Remove protective cover.
Enlevez le cache de protection.
Die Schutzkappe abnehmen.
Togliere il copripresa.

Plug in connector firmly.
Branchez le connecteur à fond.
Den Stecker fest einstecken.
Inserire saldamente il connettore.

Connection to Audio System and to TV With Audio/Video Inputs
Raccordement à une chaîne audio et à un téléviseur équipé d'entrées audio/vidéo
Anschluß an eine Audioanlage und ein TV-Gerät mit Audio/Video-Eingängen
Collegamento a un sistema audio e a un televisore dotato di ingressi audio/video



Note When playing an NTSC disc, the picture may be abnormal on certain TVs.
Remarque Lors de la lecture d'un disque NTSC, l'image peut être bizarre sur certains types de téléviseurs.
Hinweis Bei einigen TV-Geräten kommt es bei der Wiedergabe von NTSC-Platten zu Bildstörungen.
Nota Quando si riproduce un disco NTSC, l'immagine può risultare anormale su alcuni tipi di televisori.

Connection precautions
- Make sure that all equipment is OFF before connecting or disconnecting any cables.
- Check the colour of the plugs: yellow indicates video; white, left audio channel, red, right audio channel.
- Firmly insert the plugs into the jacks. A loose connection can lead to noise.
- When unplugging a cable, grasp the plug. Never pull by the cable.
- To prevent interference, turn off all equipment that is connected, but not currently in use.
- If there is noise in the audio or video output, try moving the equipment further apart.
- Connection methods differ. When in doubt, consult the manufacturer's manual.

Précautions relatives aux connexions
- Vérifiez que tous les appareils sont hors tension avant de brancher ou débrancher les câbles.
- Vérifiez la couleur des fiches: jaune pour vidéo, blanc pour le canal audio gauche et rouge pour le canal audio droit.
- Insérez les fiches à fond dans les prises car tout branchement lâche peut provoquer du bruit.
- Pour débrancher un cordon, tirez sur la fiche et jamais sur le cordon proprement dit.
- Pour éviter des interférences, mettez tous les appareils inutilisés hors tension.
- En cas de bruit au niveau de la sortie audio ou vidéo, éloignez les appareils les uns des autres.
- Les méthodes de raccordement diffèrent selon les situations. En cas de doute, consultez le mode d'emploi des autres appareils.

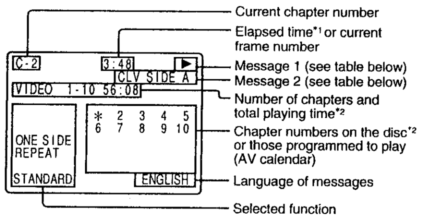
Hinweise zum Anschluß
- Schalten Sie alle Geräte aus, bevor Sie Anschlüsse ändern.
- Beachten Sie die Farben der Stecker: Gelb markiert das Videosignal, Weiß den linken Audiokanal und Rot den rechten Audiokanal.
- Stecken Sie die Stecker fest in die Buchsen ein. Lockerer Anschluß kann Störgeräusche verursachen.
- Fassen Sie beim Abtrennen der Kabel stets am Stecker und niemals am Kabel selbst an.
- Um gegenseitige Beeinflussungen zu verhindern, sollten alle Geräte, die momentan nicht verwendet werden, ausgeschaltet werden.
- Wenn das Audio- oder Video-Ausgangssignal gestört ist, stellen Sie die Geräte versuchsweise einmal weiter voneinander entfernt auf.
- Bei Fragen und Problemen bezüglich der Anschlußart lesen Sie in der betreffenden Anleitung nach.

Precauzioni per i collegamenti
- Assicurarsi che tutti gli apparecchi siano spenti prima di collegare o scollegare i cavi.
- Controllare il colore delle spine: giallo per video, bianco per il canale audio sinistro, rosso per il canale audio destro.
- Inserire saldamente le spine nelle prese. Collegamenti allentati possono provocare disturbi.
- Quando si scollegano i cavi, afferrarli sempre per la spina. Non tirare mai i cavi stessi.
- Per evitare interferenze, spegnere tutti gli apparecchi collegati attualmente non in uso.
- In caso di disturbi nell'uscita audio o video, provare a allontanare ulteriormente gli apparecchi.
- I metodi di collegamento possono differire. In caso di dubbi, consultare il manuale di istruzioni dell'apparecchio impiegato.

Screen Messages

Information on the operating condition of the unit and chapter or track numbers can be displayed on the TV or monitor screen. While no image is displayed, such as during search, information is shown on a black background for all PAL discs and CDs and a green background for NTSC LDs and CDVs.

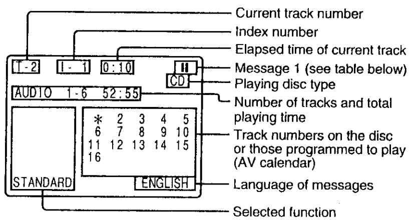
LD



*1 Discs not containing time data to the second indicate two-digit numbers such as, "22:".

*2 Appears when the disc contains TOC (Table of Contents) data.

CD



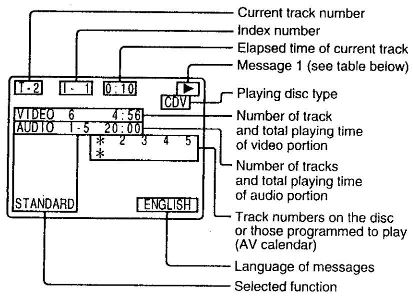
Message 1 (Examples)

Display	Explanation
OPEN	Disc tray open
CLOSE	Disc tray close
▶	Playback
■	Stop
II	Pause
⏪ / ⏩	Forward/reverse speed scan
SEARCH	Search
▶ × 1/2	1/2 speed display in forward direction

LD precaution

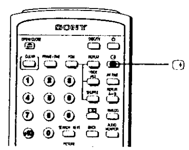
The unit determines that the upperside of the disc is side "A", and the other side is "B", regardless of the label "A" or "B" printed on the disc.

CDV



To turn on the screen messages

Press ⊕ (Display) on the Remote Commander twice.
Press ⊕ again to turn off the messages.
When you press ⊕ once, only the first line appears.



To change the language

You can change the language of messages by pressing ◀◀ on the player while in stop mode. Each time you press ◀◀, the language changes as follows:

→ English → French → Italian ← German ←

Message 2 (Examples)

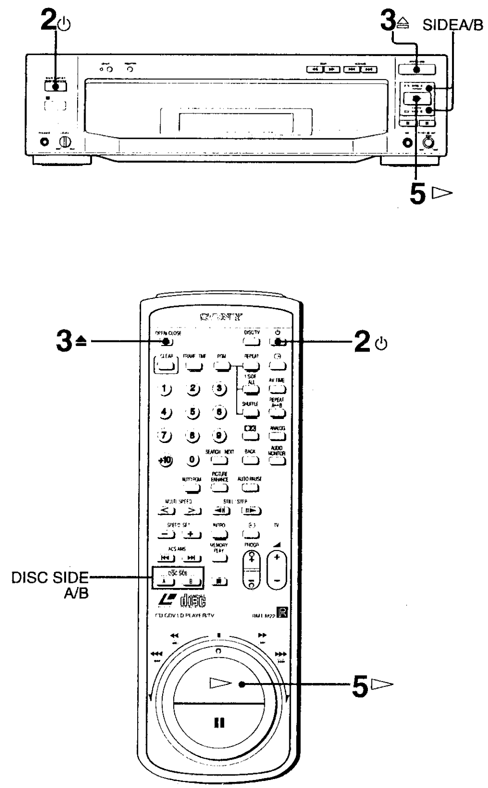
Display	Explanation
CAV SIDE A	Standard-play disc side A
CAV SIDE B	Standard-play disc side B
CLV SIDE A	Extended-play disc side A
CLV SIDE B	Extended-play disc side B
1/L	Main soundtrack/left channel
2/R	Second soundtrack/right channel
♪ DIGITAL	Digital sound
♪ ANALOG	Analog sound

CD precaution

When loading a CD, the TV screen automatically turns off. To turn on the screen to display messages, press ⊕. Some TV's may automatically mute the sound while the screen is off.

To Play a Disc

Starting Playback



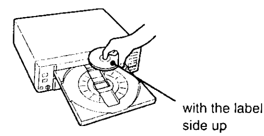
1 **Turn on the TV and stereo system.**
TV: Select the video input.
Stereo system: Turn on the amplifier or the receiver and select the proper audio input.

2 **Press ⏻ ON/STANDBY to turn on the player.**

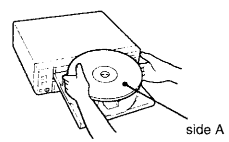
3 **Press ≜ OPEN/CLOSE to open the disc tray.**

4 **Place a disc on the tray.**
Place a disc on the center of the tray. If the disc is not placed correctly, playback may not start.

CD/CDV

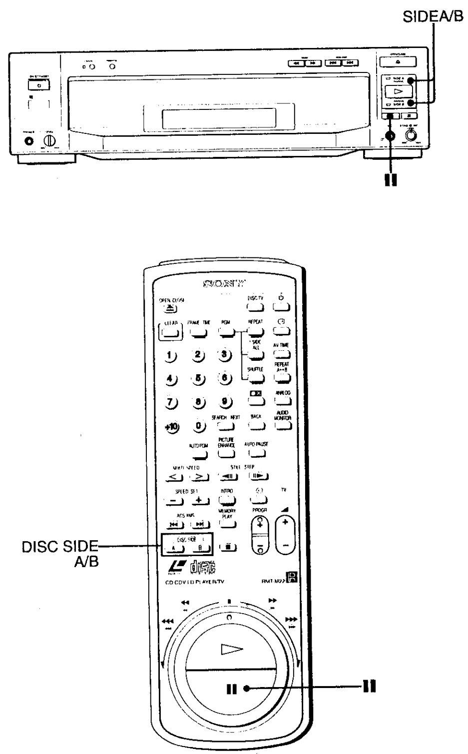


LD



5 **Press ▷ (play) to start playback.**
LD: Playback starts from the upper side (side A) of the disc. When playback of side A ends, the other side (side B) starts playing automatically.
CDV: Playback starts from the video portion.

Notes when placing a disc
- Insert only one disc at a time.
- Make sure that the disc is placed properly in the tray. Incorrect positioning may result in permanent damage to the disc.
- Do not use a CD stabilizer as it may cause damage to your disc or player.



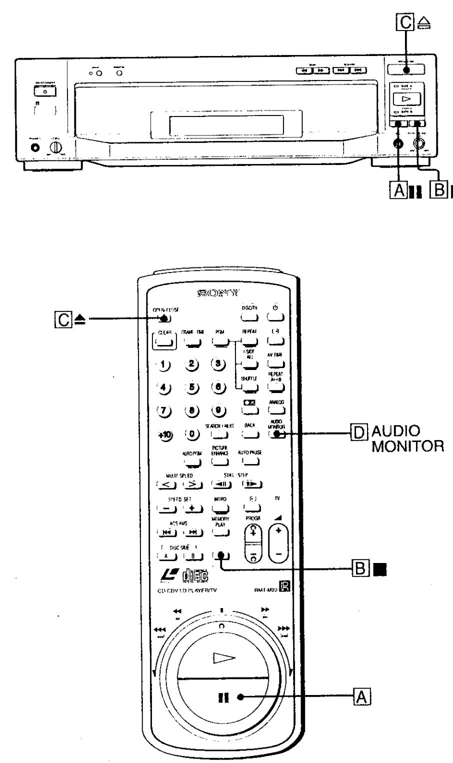
To Play a Disc

Using (DISC) SIDE A/B
You can start playing side A of an LD, CD or CDV by pressing (DISC) SIDE A instead of ▷. Press (DISC) SIDE B to play side B of the LD. When playing a CD or CDV, (DISC) SIDE B does not operate.

To pause at the beginning of a disc
Press **II** after placing a disc on the tray. The tray closes, and the player pauses at the beginning of the disc.

AV calendar
When playing a CD, CDV, or an LD containing TOC (Table of Contents) data, the AV calendar in the display window shows information on the total number of tracks or chapters. As tracks or chapters are played, the corresponding numbers on the display go out. To display the AV calendar on the TV screen, press ⊕ twice.

Note
Do not transport the player while playing a disc as it may cause damage to the disc.



To Play a Disc

To temporarily interrupt playback A

Press II (pause).
When playing CAV discs, the sound is cut off and a still picture is shown.
When playing PAL CLV discs or a video part of CDV discs, the picture turns to a black screen. Playing NTSC CLV or a video part of CDV discs, the picture turns to a green screen. To resume play from the same point, press ▷ or **II**.

To stop playback B

Press ■ (stop).
To restart playback from the beginning of the disc, press ▷.

To stop playback and remove the disc C

Press ⏏ OPEN/CLOSE.
Remove the disc and press ⏏ OPEN/CLOSE to close the tray.

To play a stereo or a second audio program (SAP) LD D

After playback has started

Reproduced sound		Indicators lit
Stereo disc	SAP disc	
Stereo	Audio signal (1) (left channel) Audio signal (2) (right channel)	1/L 2/R

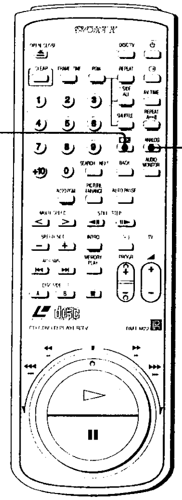
Press AUDIO MONITOR.

Left channel	Audio signal (1)	1/L

Press AUDIO MONITOR.

Right channel	Audio signal (2)	2/R

Press AUDIO MONITOR.



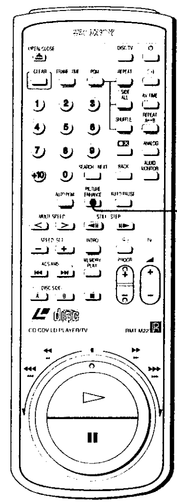
To Play a Disc

To switch from digital to analog sound

Press ANALOG to switch the player to analog or digital sound. (NTSC LDs only) Digital affords a better quality sound reproduction. If the LD contains a digital sound signal, the player automatically sends that output to the amplifier or receiver. When you press ANALOG, you can switch to analog sound. With certain discs there may be a difference in volume. To return to digital sound output, press ANALOG again.

Discs with CX Label

Discs bearing the CX label are recorded with the CX noise reduction system, which gives lower noise levels and higher dynamic range on analog sound. The player detects CX discs and activates the CX noise reduction system automatically. When playing a CX disc which does not contain a code to activate the CX noise reduction system, press CX. "CX ON" appears on the TV screen for three seconds and the CX noise reduction system is activated.



To Get Sharp/ Soft Image

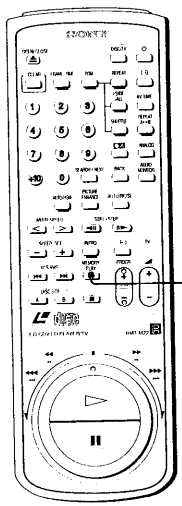
The best picture reproduction condition for each disc can be selected.

To select the picture enhance mode

Press PICTURE ENHANCE to select the desired mode. The selected mode appears on the TV screen (lower left-hand corner) for three seconds. Each time you press this button, the mode changes in the order of SHARP, SOFT and STANDARD.

SHARP	Sharp picture Refines the image
SOFT	Soft picture Reduces screen noise
STANDARD	Standard picture

Even if you turn off the player, the mode will remain stored in the player's memory.
If you unplug the power cord, the mode will return to STANDARD.



To Continue Playback From the Point You Stopped at—Memory Playback (for LDs only)

Even if you use ■ or ⏻ ON/STANDBY to stop, you can still continue play from the point you stopped at.

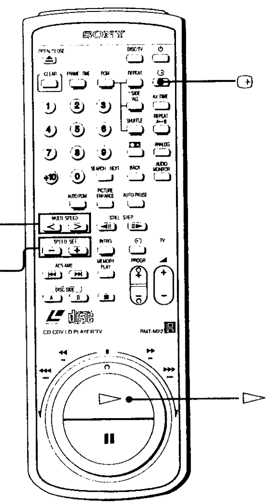
To play again from the point you stopped at

Press MEMORY PLAY.
Play starts from the point you stopped at.

The point at which you stopped playing is stored in the player's memory until you press ■ again. It is retained even if you turn off the power. Press MEMORY PLAY. The player turns on and resumes playback from the point you stopped at.

Notes

- This function can only be used for LDs in continuous mode.
- If you press ⏏, the memory is cleared and this function is canceled.



To Change Playback Speed and Direction —Speed Playback (for CAV LDs only)

To change the speed

1 Select the playback direction.
Press > for the forward direction.
Press < for the reverse direction.

2 Select the playback speed.
Press + to increase speed.
Press − to reduce speed.

	Speed indication	Speed (approx.)
Fast	×10	10 times normal speed
	×5	5 times normal speed
	×3	3 times normal speed
	×2	2 times normal speed
	×1	Normal speed
	×1/2	1/2 normal speed
	×1/4	1/4 normal speed
	×1/8	1/8 normal speed
	×1/16	1/16 normal speed
	×1/30	1/30 normal speed
Slow	×1/90	1/90 normal speed

Press ▷ to resume normal playback.

To change the direction

Press < to view the picture in reverse direction, or Press > to view in forward direction.
To resume normal playback, press ▷.

To display the speed and direction

Press ⊕.
The selected direction (◀ or ▶) and speed are shown.

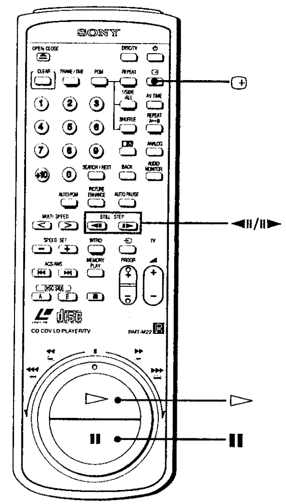
To Change Playback Speed and Direction —Speed Playback (for CAV LDs only)

Sound during speed playback
The sound can be heard only during x 1 (normal) speed play in the forward direction. In other speed and direction combinations, the sound is muted.

PAL discs
The image may be in black and white during × 10 (10 times) speed play in both directions.

CLV discs
The above functions are available only with CAV discs. If they are attempted with CLV discs, a three-second warning message, CLV SIDE A or CLV SIDE B, will appear on the screen.

Discs with automatic picture stop function
When a picture stop code is encountered during playback at the normal speed or slower than the normal speed, playback stops at that frame. Press ▷ to resume playback or a speed play button to continue the speed play.



To Play Frame by Frame —Step Playback (for CAV LDs only)

To view a still picture

Press II.
The picture stops at the current frame.
To resume normal playback, press ▷.

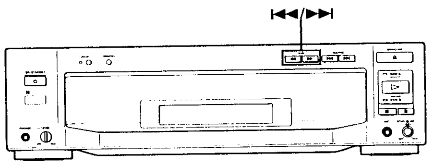
To view one frame at a time – step playback

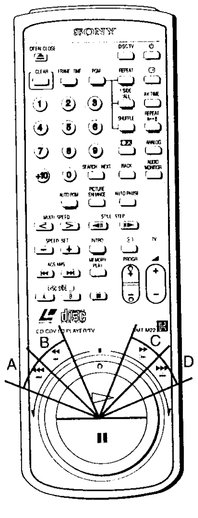
Press ◄II or II► once for freeze-frame. To advance the picture by one frame, press II► repeatedly (STEP in forward). To go back by one frame, press ◄II repeatedly (STEP in reverse).
For continuous frame-by-frame action press ◄II/II► once, then hold down the button.
To resume normal playback, press ▷.

During step playback operation
The sound is muted during step playback.

CLV discs
The above functions are available only with CAV discs. If they are attempted with CLV discs, a three-second warning message, CLV SIDE A or CLV SIDE B, will appear on the screen.

If you press ◄II/II► during normal playback
The frame freezes and you can achieve step playback.
To resume normal playback, press ▷.





To Search for a Particular Scene

The playback speed can be changed depending on the degree the shuttle ring is turned.

Dual Speed Scan

Normal Scan
Reverse scan: Turn the shuttle ring to the B position (or hold down ◀◀ on the player).
Forward scan: Turn the shuttle ring to the C position (or hold down ▶▶ on the player).
Scans in the speed of approximately 10 times normal speed.

High-speed scan
Reverse scan: Turn the shuttle ring to the A position.
Forward scan: Turn the shuttle ring to the D position.
Scans in the speed of approximately 30 times normal speed

To resume the normal play
Release the shuttle ring (or ◀◀/▶▶).

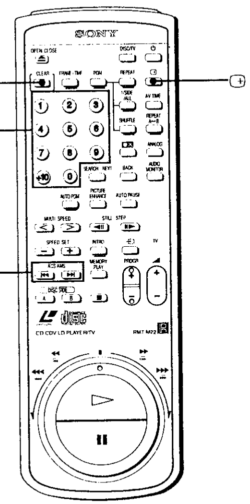
While scanning in either direction
- The sound is muted.
- The image with a CLV disc may be in black and white with a split screen.
- The image with a CAV discs may be in black and white on some TV's.
- A certain amount of noise is inevitable with all scanning operations. Especially, the image of CAV discs may be a little noisy.

LDs are divided into sections called chapters. The selections on CDs and CDVs are called tracks. Chapters and tracks are assigned numbers and this information is usually indicated on the disc jacket or label.

Les disques LD sont divisés en sections appelées "chapitres", tandis que sur les disques CD et CDV, elles sont appelées "plages".
Des numéros sont assignés aux chapitres et aux pistes et ces informations sont habituellement indiquées sur la couverture du disque ou sur le disque lui-même.

LDs sind in Kapitel, CDs und CDVs in Titel unterteilt. Die Kapitel- bzw. Titelnummern sowie Informationen dazu sind normalerweise auf dem Label oder der Plattenhülle angegeben.

I laserdisc sono divisi in sezione chiamate capitoli. I brani dei CD e dei CD video sono invece chiamati piste.
Ai capitoli ed alle piste sono assegnati dei numeri e queste informazioni sono generalmente indicate sulla copertina del disco o sull'etichetta.



To Search for a Particular Scene

Chapter/Track Search

Direct chapter or track search

Enter the desired chapter or track number by pressing the number buttons.
If you have pressed a wrong number, simply press the correct one.
Playback automatically starts from the designated chapter or track.

Chapter or track skip search

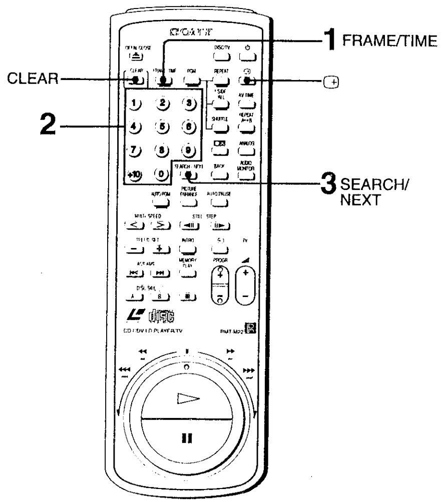
To advance to the beginning of successive chapters/tracks, press ▶▶I repeatedly as needed. To return to the beginning of the current chapter/track, press I◀◀ once. Press it repeatedly-before the picture reappears-to go to the beginning of previous chapters/tracks.

To check the current chapter/track
The numbers are shown in the display window of the player.
Press ⊕ to display them on the screen.

To enter a number greater than 10
Use the +10 and one of the number buttons.
Example: To enter 14 (+10) → (4)
To enter 20 (+10) → (+10) → (0)

If you press the +10 button by mistake
Press CLEAR, then enter the correct number.

Notes
- If the LD does not contain chapter numbers, or chapter number entered does not exist, chapter search does not function normally.
- While playing an LD with TOC or CDV, the unit does not accept the entry of a chapter/Track number which is not contained on the disc.



To Search for a Particular Scene

Frame Search (for CAV LDs)

Each picture on a CAV (standard-play) disc is called a frame.

Example: Locate frame number 12340.

1 **Press FRAME/TIME.**

2 **Press "1", "2", "3", "4", and "0" in sequence to enter the frame number.**
If you enter a wrong frame number, press FRAME/TIME once more to return the display indication to zero, and then enter the correct number. You can also correct the number using the BACK button.

3 **Press SEARCH/NEXT.**
The desired frame is located, and playback automatically starts.

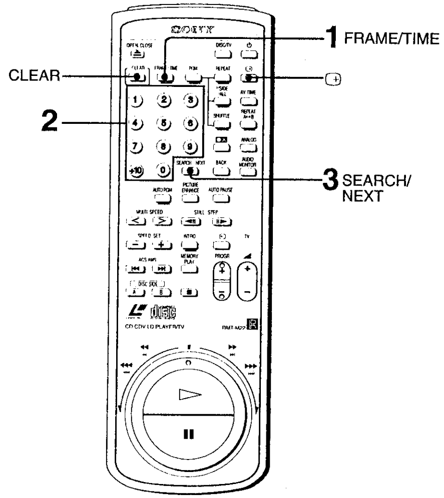
Search can be made in freeze-frame, pause, repeat and speed play modes as well as during normal playback. When the desired frame appears after the search, playback continues in the same mode.

To cancel frame search
Before the SEARCH/NEXT button is pressed, press CLEAR.

To check the current chapter and frame numbers
These numbers appear in the display window on the player. Press ⊕ to display them on the screen.

Notes
- If a frame number not contained on the disc is entered, frame search does not function normally.

62



To Search for a Particular Scene

Time Search (for CLV LDs)

CLV (extended-play) discs keep track with the position as elapsed time from the beginning of the disc.

Example: Locate the 12 min 05 sec point.

1 **Press FRAME/TIME.**

2 **Press "1", "2", "0", "5" in sequence.**
If you enter a wrong time number, press FRAME/TIME once more to return the display indication to zero, and then enter the correct number. You can also correct the number using the BACK button.

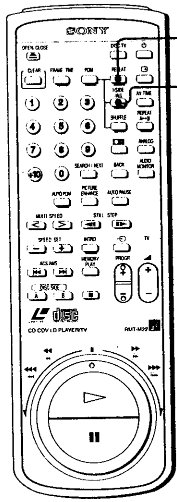
3 **Press SEARCH/NEXT.**
The picture of the desired time number is located, and playback automatically starts.

To cancel time search
Before the SEARCH/NEXT button is pressed, press CLEAR.

To check the current chapter and time numbers
These numbers appear in the display window on the player.
Press ⊕ to display them on the screen.

Notes
- If the disc does not include time data to the second, enter the time in minutes only.
- If a time number greater than the total time of the disc is entered, time search does not function normally.
- Time search is also available on a CD or CDV.

64



To Play Particular Portion of a Disc

Repeat Playback

One or both sides of an LD, a single chapter or a designated portion on the disc can be played repeatedly.

To repeat both sides of the disc – ALL repeat

Press REPEAT.
The REPEAT indication lights up in the display window, and both sides of the disc is repeatedly played.

To repeat the current side of the disc – ONE SIDE repeat

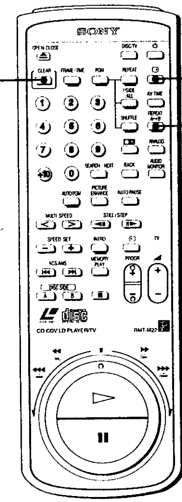
1 **Press 1/SIDE/ALL twice.**

2 **Press REPEAT.**
Repeat and 1 SIDE indications lights up in the display window, and the current side of the disc is repeatedly played.

To repeat the current chapter or track – SINGLE repeat

1 **Press 1/SIDE/ALL once.**

2 **Press REPEAT.**
REPEAT and 1 indications light up in the display window.
When the end of the current chapter or track is reached, playback of the chapter or track is automatically repeated.



To Play Particular Portion of a Disc

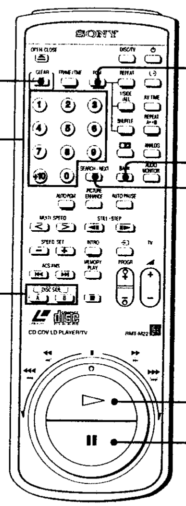
To repeat a designated portion of a disc – A ↔ B repeat

1 **During playback, press REPEAT A ↔ B at the start point (point A) of the desired portion.**
The REPEAT and A indications light up, and the B indication flashes.

2 **At the end point of the desired portion (point B), press REPEAT A ↔ B.**
The REPEAT A ↔ B indication lights up in the display window.
The player returns to the point where REPEAT
A ↔ B was first pressed, and repeat playback automatically starts.

To check the current status
Check the indications in the display window or press ⊕ to verify the current setting on the screen.

To cancel repeat functions
Press CLEAR.



To Play Particular Portion of a Disc

Program Playback

Up to 25 chapters or tracks can be played back in a specified order.

For example, you want to play chapters 5, 4, 2 on side A, chapter 10 on side B, then stop playing momentarily. Continuing with chapter 6 on side B, then back to side A to play 7 (in that order).

1 **Press PGM.**
PROGRAM and --:-- appear on the TV screen.

2 **Press DISC SIDE A, 5, 4, and 2.**
When playing an LD with TOC, the total playing time of these chapters are displayed.

3 **Press DISC SIDE B, then +10, 0 and II.**
The total playing time remain to --:--.

4 **Press 6, DISC SIDE A, then 7.**
The total playing time of chapters entered after **II** is displayed.

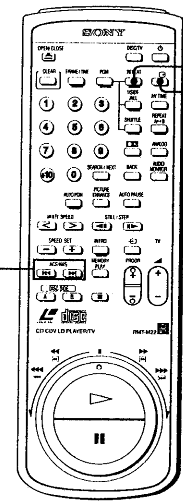
5 **Press ▷.**
Programmed selections are played.

If you make a mistake while entering numbers
To start over, press CLEAR, and PGM again, then enter the correct numbers.
To change a number, press SEARCH/NEXT or BACK to advance or go back until the incorrect number flashes on the screen, then enter a new number.

To enter chapter numbers over 10
Use the +10 and one of the number buttons.

If you press the +10 button by mistake
Press +10 repeatedly until -- flashes, then enter the correct number.

To cancel program playback
Press CLEAR. The player reverts to normal playback.



To Play Particular Portion of a Disc

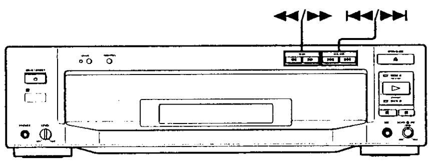
To repeat program playback
Press REPEAT to turn on the REPEAT indication.

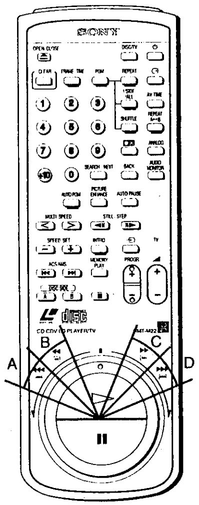
To move to a preceding or following programmed track
Press I◀◀ or ▶▶I.

To check the program contents
Press ⊕ twice.
The program is displayed on the screen.
The current chapter number flashes.

Notes
- When the shuttle ring is turned in the forward direction during program playback and the playback comes to the end of the current selection, the next programmed chapter will be played back. When the shuttle ring is turned in the reverse direction, the unit will not go back to previous chapters. If you want to move to a preceding programmed chapter, press the I◀◀ button until the desired programmed number comes up.
- Programmed contents are stored until the disc is removed or the power is switched off.

Program playing time
The total playing time of the program is displayed, only when tracks with numbers under 51 are programmed and the toal playing time is less than 100 minutes.





To Search for a Particular Track

The selections on CDs and CDVs are called tracks. Each track is assigned a track number which is indicated on the disc jacket or label.

To search by a track number

Enter the desired track number by pressing the number buttons.

To play a single track once
Press 1/SIDE/ALL once, then select the track with the numerical buttons.
When the track has been played, the player stops. To cancel the setting, press 1/SIDE/ALL again.

When a wrong number was entered
Simply press the correct one.

To skip tracks

To advance to the beginning of successive tracks, press ▶▶| repeatedly as needed.
To return to the beginning of the current track, press |◀◀ once. Press repeatedly to go back to the beginning of previous tracks.

To search for a particular point

To scan at fast speed
Turn the shuttle ring to the B position (or hold down ◀◀ on the player) for scanning in reverse. Turn the shuttle ring to the C position (or hold down ▶▶ on the player) for scanning forward.

To scan at higher speed
Turn the shuttle ring to the A position for scanning in reverse at the higher speed and the D position for scanning forward.

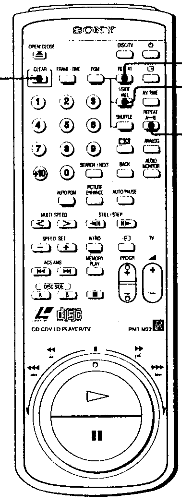
To resume normal speed
Release the shuttle ring (or ◀◀/▶▶).

To enter track numbers over 10
Use the +10 and one of the number buttons.

If you press the +10 button by mistake
Press CLEAR, then enter the correct number.

Sound during search
When scan is started from the playback mode, the sound can be heard at a low level. When scan was started from pause mode, the sound is muted.

Time search on CD/CDV
Time search is available on a CD or CDV. See page 64.



To Listen Only to Particular Track(s)

Repeat Playback

All or a single track, or a specified portion on a disc can be played repeatedly.

To repeat the current track – SINGLE repeat

1 **Press 1/SIDE/ALL.**

2 **Press REPEAT.**
The REPEAT and 1 indications light up in the display window. When the end of the current track is reached, playback of the track is automatically repeated.

To repeat the track only once, press REPEAT to turn off the REPEAT indication.

To repeat all tracks – ALL repeat

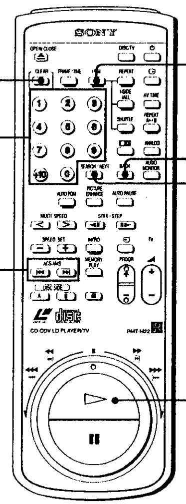
Press REPEAT.
The REPEAT indication lights up and the entire disc is repeatedly played.

To repeat a designated portion of a disc – A ↔ B repeat

1 **During playback, press REPEAT A ↔ B once at the start point (point A) of the desired portion.**
The REPEAT and A indication lights up, and B indication flashes in the display window.

2 **At the end point of the desired portion (point B), press REPEAT A ↔ B.**
The REPEAT A ↔ B indication lights up. The player returns to the point where REPEAT A ↔ B was first pressed, and repeat playback automatically starts.

To cancel repeat functions
Press CLEAR.



To Listen Only to Particular Track(s)

Program Playback

Up to 25 tracks can be played back in a specified order.

Example: To play tracks 5, 4, 2, and 6 in that order.

1 **Press PGM.**
The PGM indication in the display window flashes.

2 **Enter the track numbers by pressing "5", "4", "2", and "6" in sequence.**

3 **Press ▷.**
Playback starts from the beginning of the 5 and continues through tracks 4, 2, 6 then stops.

If you make a mistake while entering numbers
To start over, press CLEAR, and PGM again, then enter the correct numbers.
To change a number, press SEARCH/NEXT or BACK to advance or go back until the incorrect number flashes in the display window, then enter a new number.

To enter track numbers over 10
Use the +10 and one of the number buttons.

Example: To enter 14 (+10) → (4)

To enter 20 (+10) → (+10) → (0)

If you press the +10 button by mistake
Press +10 repeatedly until -- flashes, then enter the correct number.

To cancel program playback
Press CLEAR. The unit reverts to normal playback.

To repeat a program
Press REPEAT to turn on the REPEAT indication in the display window.

To move to a preceding or following programmed track
Press the I◀◀ or ▶▶I.

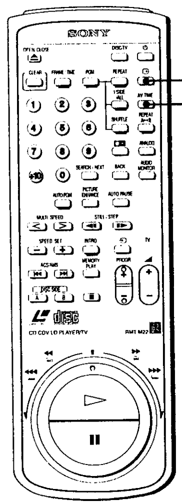
To Listen Only to Particular Track(s)

Notes
- When the shuttle ring is turned in the forward direction during program playback and the playback comes to the end of the current selection, the next programmed track will be played back. When the shuttle ring is turned in the reverse direction, the unit will not go back to previous tracks. If you want to move to a preceding programmed track, press the I◀◀ button until the desired programmed number comes up.

To check time and track information on a TV or monitor screen
Turn on the power of the TV or monitor connected to the player and press ⊕ twice. Time and track information for the CD/CDV are shown on the screen.

During program play
The numbers on the AV calendar go out as tracks are played. The contents of a program are stored until the disc is removed or the player is turned off.

Program playing time
The total playing time of the program is displayed, only when tracks with numbers 50 or less are programmed and the total playing time is less than 100 minutes.



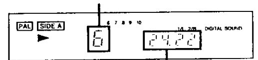
To Change Time Display (AV TIME)

When playing an LD containing TOC

To change the display, press AV TIME.
Each time you press AV TIME, the display changes as follows:

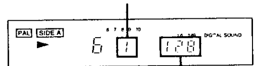
The first display.

Chapter number



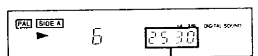
Total elapsed time for the CLV disc (or frame number for the CAV disc)

Press AV TIME. Index number



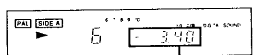
Elapsed time for chapter

Press AV TIME. (This display is skipped when playing a CLV disc.)



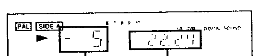
Total elapsed time for the CAV disc

Press AV TIME.



Remaining time for chapter

Press AV TIME. To return to the first display, press AV TIME once again.

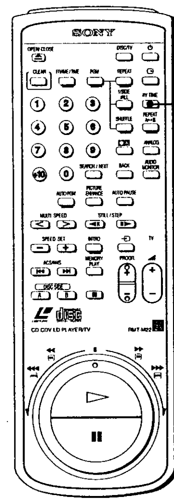


Total remaining play time

Remaining chapters on the disc

Display on the screen
Press ⊕. The time information is displayed on the the TV screen.

Note
If you press AV TIME while playing an LD which does not contain TOC, "NO TOC" appears on the screen. Time information does not change.



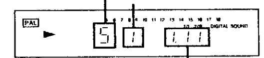
To Change Time Display (AV TIME)

When playing a CD or CDV

To change the display, press AV TIME.
Each time you press AV TIME, the display changes as follows:

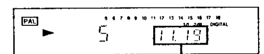
The first display.

Track number
Index number



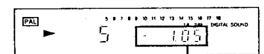
Elapsed time for track

Press AV TIME.



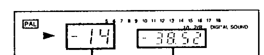
Total elapsed time for the disc

Press AV TIME.



Remaining time for track

Press AV TIME.
To return to the first display, press AV TIME once again.

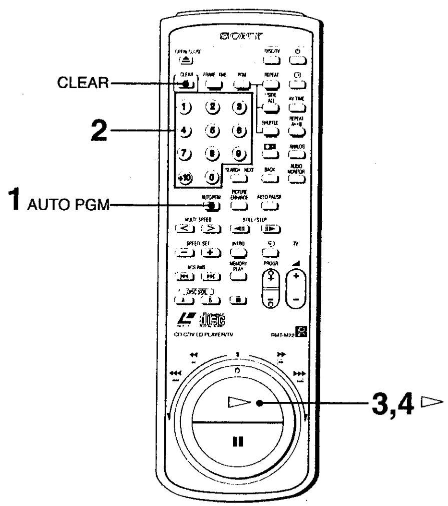


Total remaining play time*[1]

Remaining tracks*[1] on the disc

*[1] With a CDV disc, these figures refer only to the portion (audio/video) currently played.

Note
The remaining time will not be displayed for a track number higher than 50.



Auto Program Playback

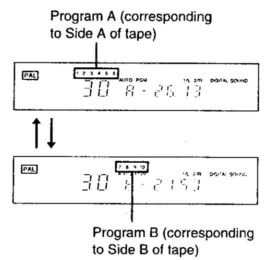
You can designate a length of time and make 2 different programs of selections fitting within that period.
When there is only minimal time left of the designated length of time, a selection with the longest playing time shorter than the left time will be entered.
This section explains how to conduct Auto Program Playback on a CD, but the function can also be used for LDs with TOC and CDVs.

1 **Press AUTO PGM.**
PGM flashes in the display window.

2 **Designate the time length for a single side of your tape.**

Example: For 30 minutes of playback
Press "+10", "+10", "+10" and "0"

Program A and B appears alternately.



If you press the wrong number,
simply press the correct one.

3 **Press ▷.**
The selections for Program A will be played and then the unit will pause.
The number of the selection that finishes its play disappears from the AV calendar display.

4 **Press ▷ to play back Program B.**

Auto Program Playback

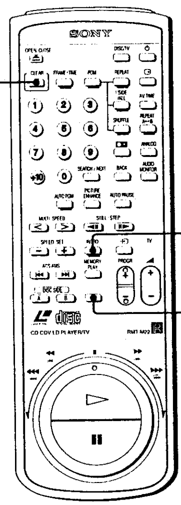
To resume normal playback
Press CLEAR or 1/SIDE/ALL.

AV calendar on the TV screen
The AV calendar shows information on the contents of two different programs: program A and program B, separated with a pause (P).

Auto program contents
Program contents are stored until the disc is removed or the power is turned off.

If your disc contains more than 50 selections
Selection with numbers over 50 may not be programmed with the auto program function.

Notes
- Auto program will not run if your selection is larger than the designated playing time.
- Auto program is not available for LDs without TOC data. If you press AUTO PGM when an LD without TOC is inserted, "NO TOC" appears on the TV screen.
- When playing an LD containing TOC, press **II** or ▷ before pressing AUTO PGM. The player will read the TOC data so that Auto program play can be carried out.
- You cannot make program consisting of chapters from both sides of an LD using Auto program.



INTRO Scan

The INTRO scan plays back only the beginning (introduction) of each chapter/track on a disc for approximately 10 seconds for a PAL disc and approximately 8 seconds for an NTSC disc. The INTRO scan will also play back the scenes of the video chapter for LD and CDV.

To start INTRO scan playback
Press INTRO.

LD

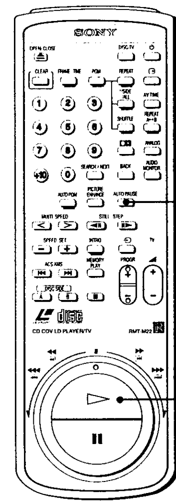
The beginning portion of each chapter will be played back for a short time, about 10 seconds for a PAL disc and for about 8 seconds for an NTSC disc, in order from chapter 1.
After the playback of the last chapter, the player will be paused.

CD/CDV

The beginning portion of each track will be played back for a short time, about 10 seconds for a PAL disc and for about 8 seconds for an NTSC disc, in order from track 1.
After the playback of the last track, the player will be paused.
Playback will begin with the video portion for CDV discs.

To resume normal playback
Press CLEAR. During search functions, normal playback will resume from the selection to be searched when CLEAR is pressed.

To stop playback
Press ■ to stop.



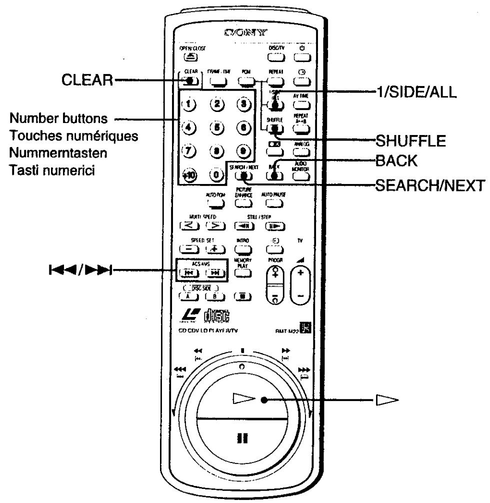
Auto Pause

Everytime a chapter or track is played, the player enters the pause mode.

Press AUTO PAUSE.

To start playback of next chapter or track
Press ▷.

To return to normal playback
Press AUTO PAUSE again.



Shuffle Playback

The chapters or tracks on the disc can be played back in random order.

To play all tracks or chapters on a disc

To ensure correct operation, do not press SHUFFLE immediately after the disc tray has closed, but only after the STOP indication in the display window has stopped flashing.

1 Press SHUFFLE.
The SHUFFLE indication in the display window flashes. The DELETE SHUFFLE -- indications on the TV screen appear.

2 Press ▷.
All chapters or tracks on the disc are played once in random order. After all chapters or tracks have been played, the unit enters the stop mode.

To play only certain chapters or tracks (delete shuffle)

1 Press SHUFFLE.

2 Enter the chapter number or track number not to be played.
On the display window, the deleted numbers in the AV calendar disappear, and on the TV screen, the deleted numbers are displayed.

3 Press ▷.
The player automatically selects a random program excluding the deleted chapters or tracks.

If you make a mistake in entering the chapter or track number to be deleted.
Press CLEAR, then press SHUFFLE again and enter the correct number.
Or, use SEARCH/NEXT or BACK to cause the wrong number to flash in the display window, and enter the correct number.

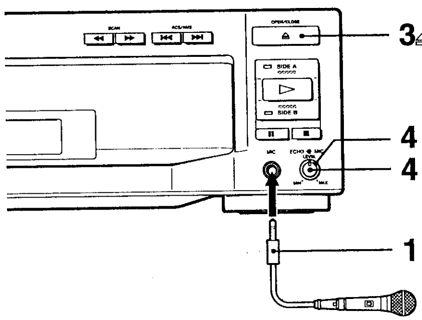
To resume normal playback
Press CLEAR or 1/SIDE/ALL.
Normal playback resumes from the next chapter or track.

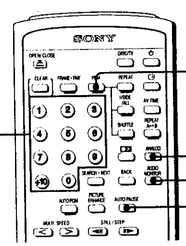
Shuffle play with CDV discs
Tracks in the audio part and video part are played in random order.

Shuffle play with LD discs
- Shuffle play is not available for LDs without TOC data. If you press AUTO PGM when an LD without TOC is inserted, "NO TOC" appears on the TV screen.
- When playing an LD containing TOC, press II or ▷ before pressing SHUFFLE. The player will read the TOC data so that shuffle play can be carried out.
- If you press 1/SIDE/ALL to turn off "ONE SIDE" on the TV screen, shuffle play can be performed on both sides of an LD. Press (DISC) SIDE B before pressing SHUFFLE to make the player read the TOC data on side B. Press SHUFFLE, then (DISC) SIDE A. All the selections on side A, then on side B are played at random.

To skip to the next chapter or track in shuffle play
Press ⏭. Returning to a previous chapter or track with ⏮ is not possible.

To repeat shuffle or delete shuffle play
Press REPEAT to turn on the REPEAT indication.
The player reshuffles the selections and plays them back in a different random order.
When the unit is turned off or the disc is removed, shuffle functions are cancelled.





To Enjoy Singing Along With a Disc

You can sing along with the back-up sound on a "Karaoke" disc using a microphone (not supplied).

To Enjoy "Karaoke" with a microphone

1 **Connect the microphone**
Before connecting a microphone turn MIC LEVEL (the inner knob) to MIN.

2 **Turn on the player and press ≜ OPEN/CLOSE.**
The disc tray comes out.

3 **Place the "Karaoke" disc, then enter the chapter/track number using the number buttons.**
The selection which you specified starts playing.

4 **Adjust the microphone's volume and echo level using MIC/ECHO LEVEL.**

If howling occurs
- Move the microphone away from the speakers.
- Lower MIC/ECHO LEVEL or volume of the speakers.

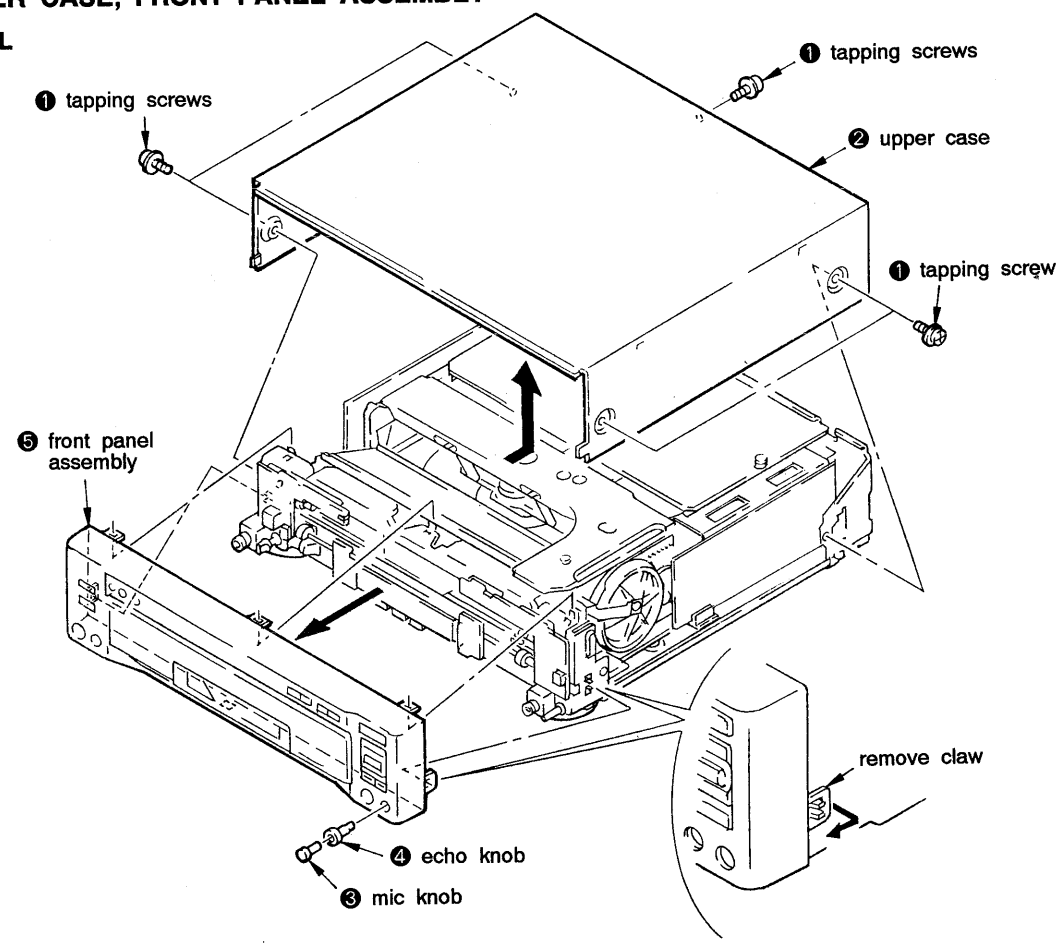
Useful features for "Karaoke" entertainment
- Using AUDIO MONITOR and ANALOG, you can hear the singer's voice (see page 44).
- When Auto pause function is activated, playback stops every time a selection ends (see page 92).
- Program playback allows you to specify the order the selections are played (see page 70).

SECTION 2
DISASSEMBLY

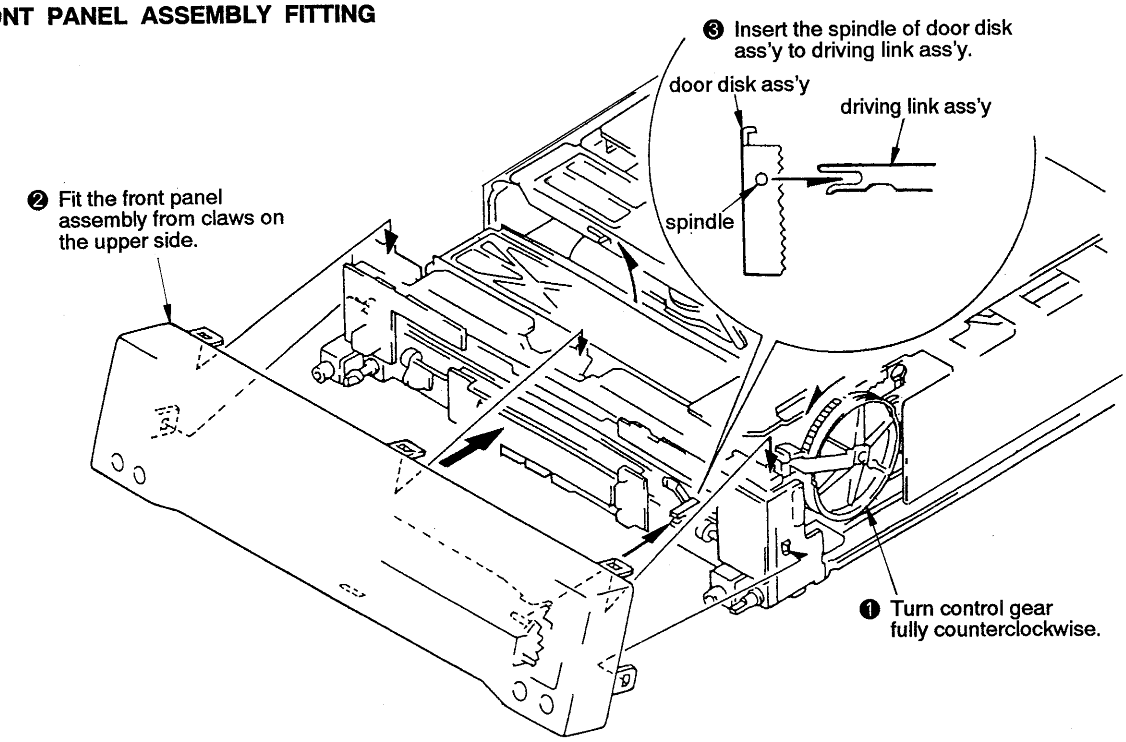
Note: Follow the disassembly procedure in the numerical order given.

2-1. UPPER CASE, FRONT PANEL ASSEMBLY

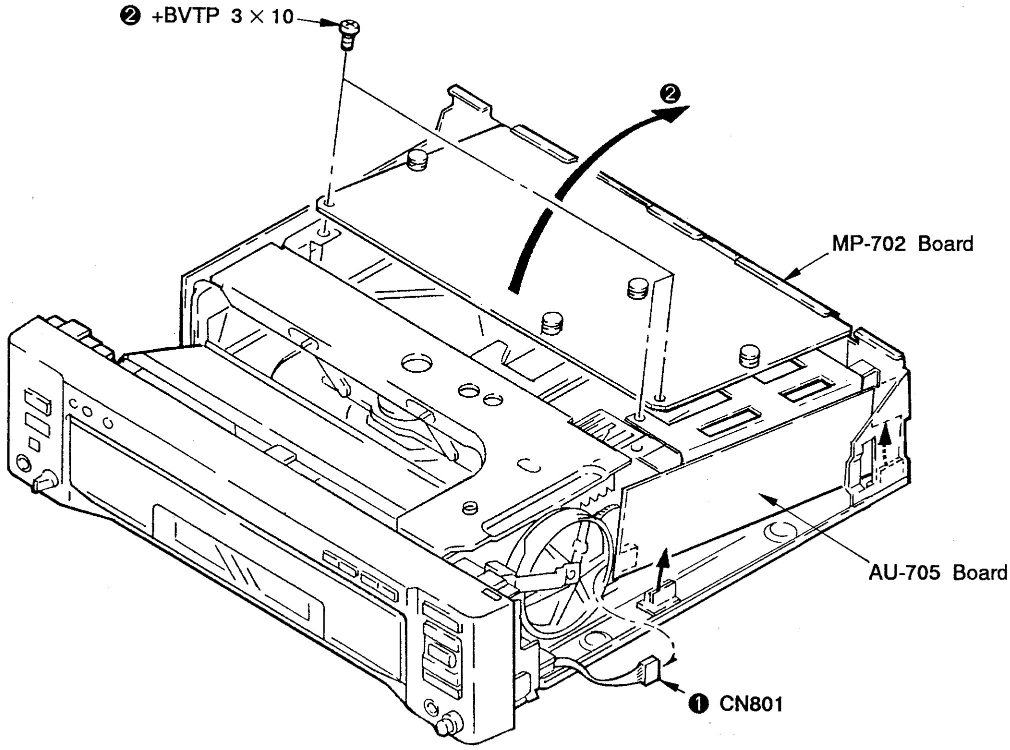
• **REMOVAL**



• **FRONT PANEL ASSEMBLY FITTING**

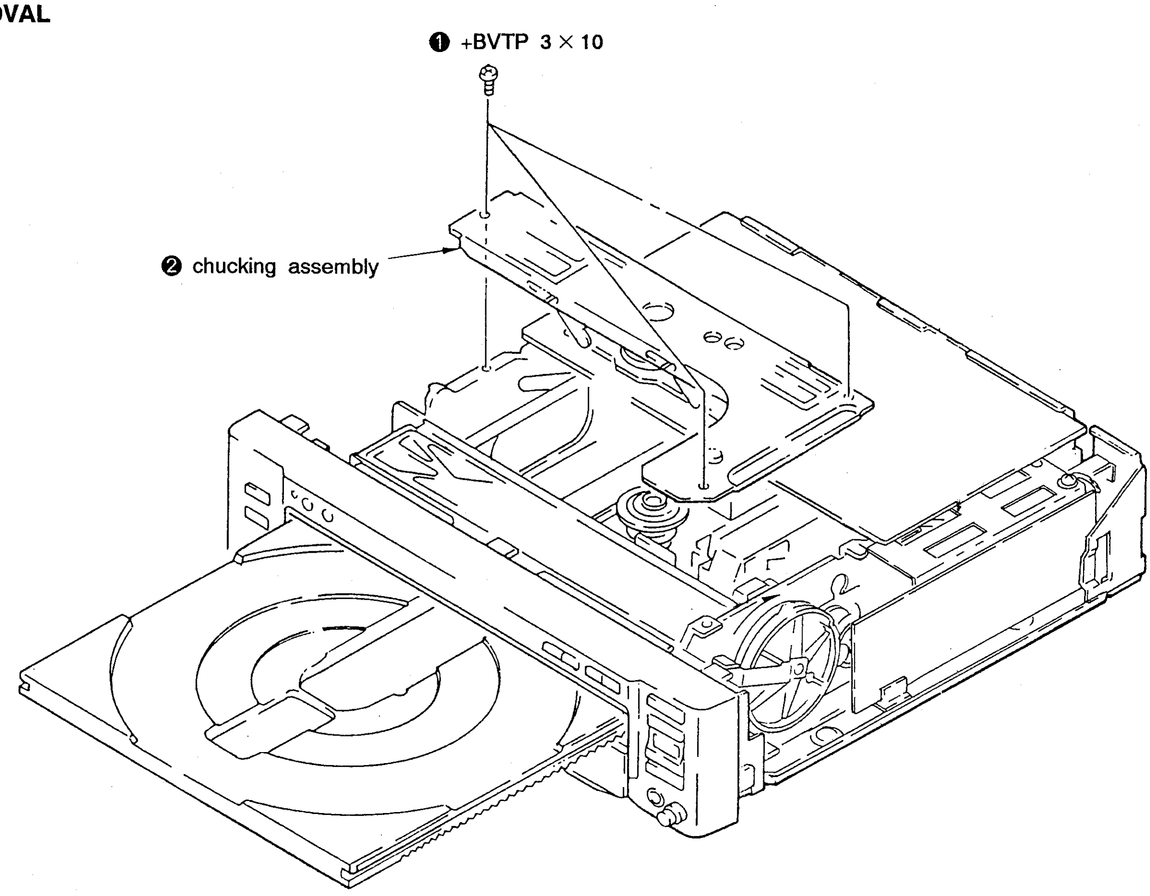


2-2. MP-702 BOARD (WITH AU-705 BOARD)

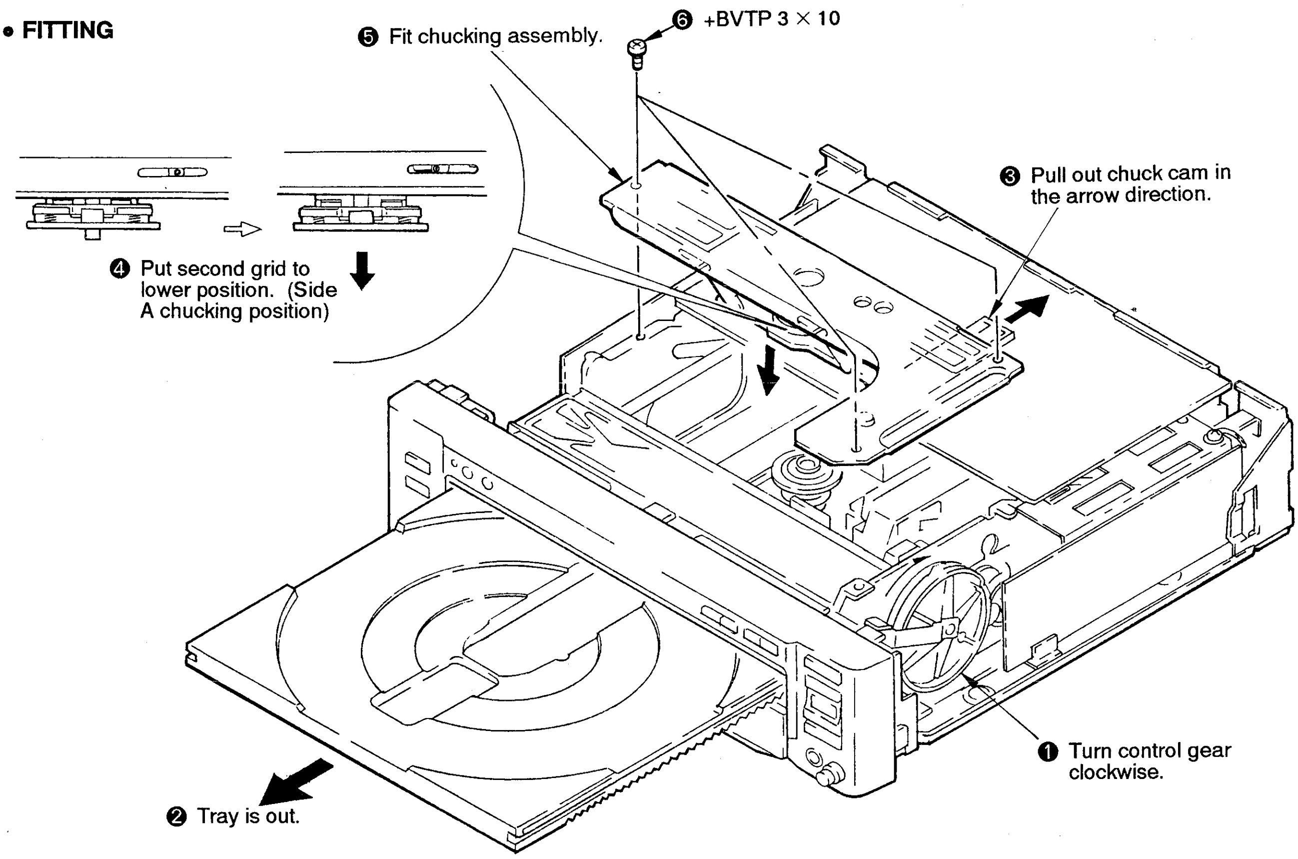


2-3. CHUCKING ASSEMBLY

• **REMOVAL**

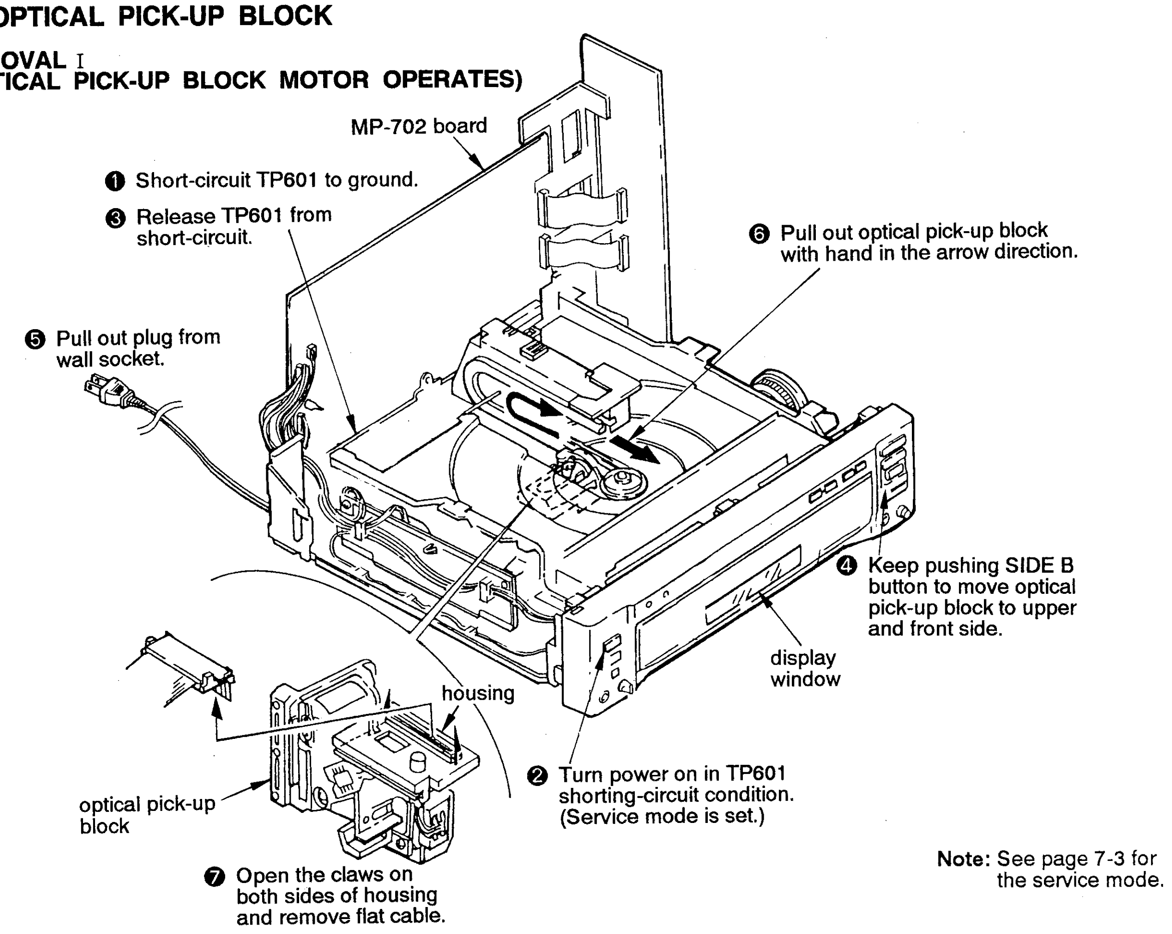


• **FITTING**



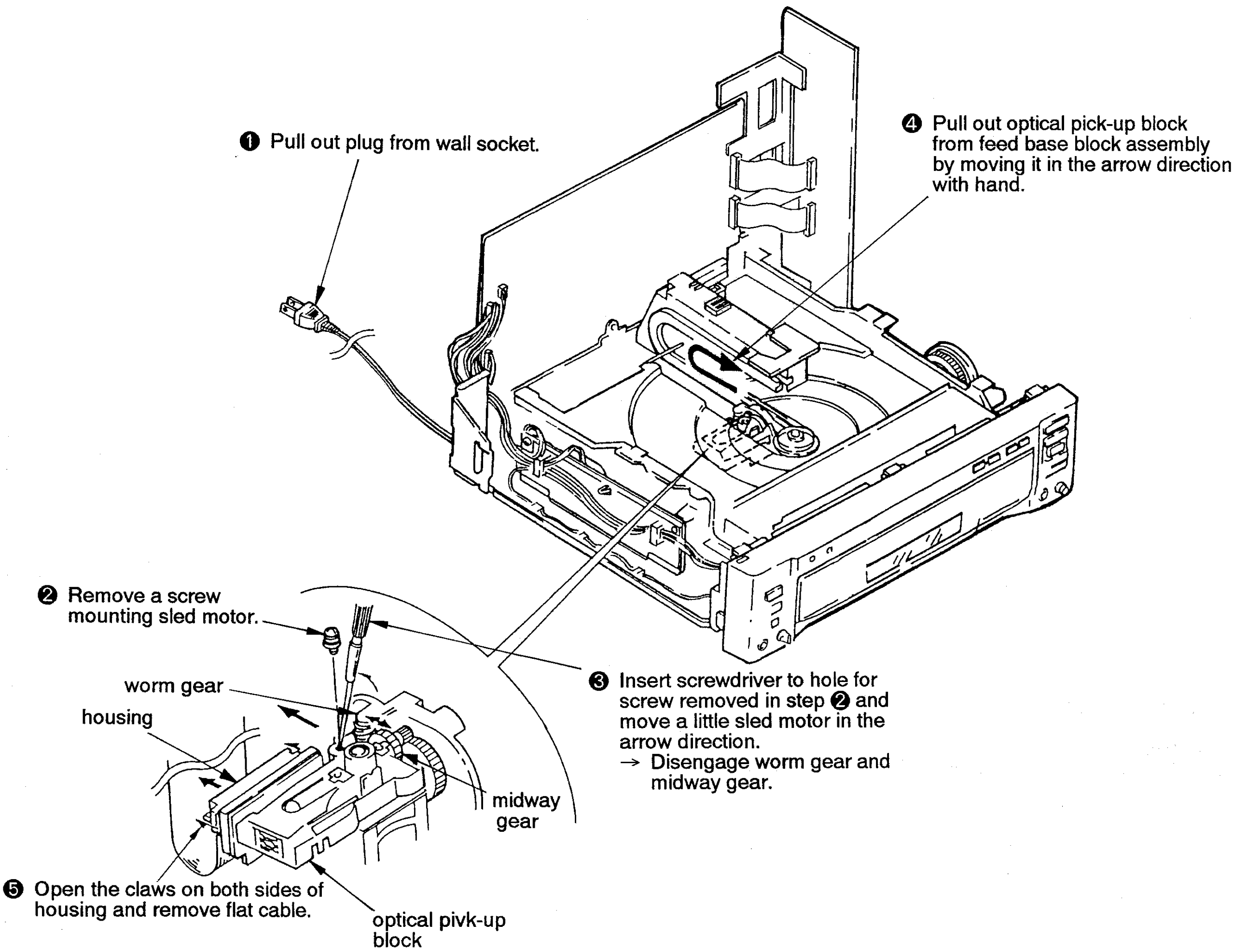
2-4. OPTICAL PICK-UP BLOCK

• **REMOVAL I (OPTICAL PICK-UP BLOCK MOTOR OPERATES)**

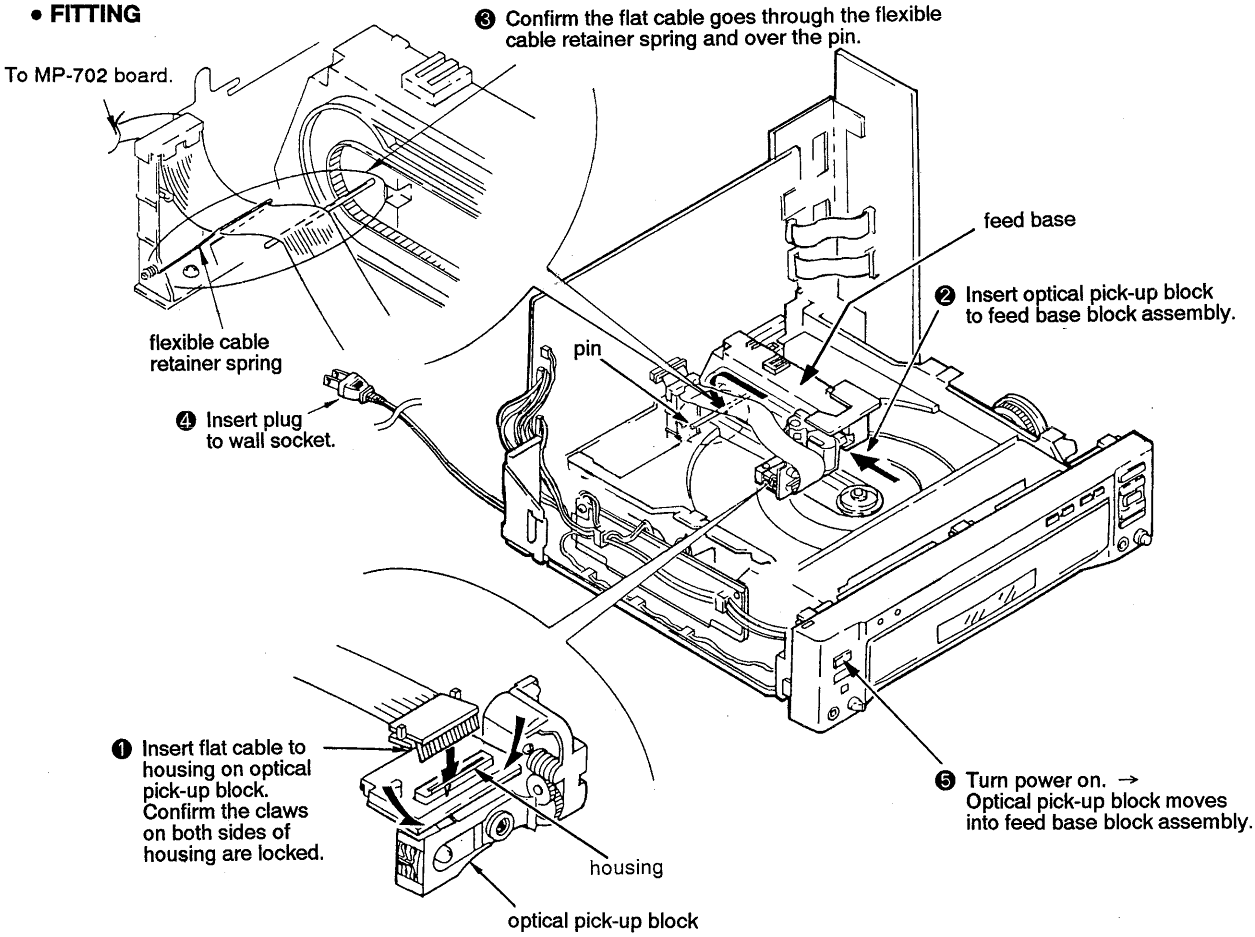


Note: See page 7-3 for the service mode.

• **REMOVAL II**
(OPTICAL PICK-UP BLOCK MOTOR DOESN'T OPERATE)

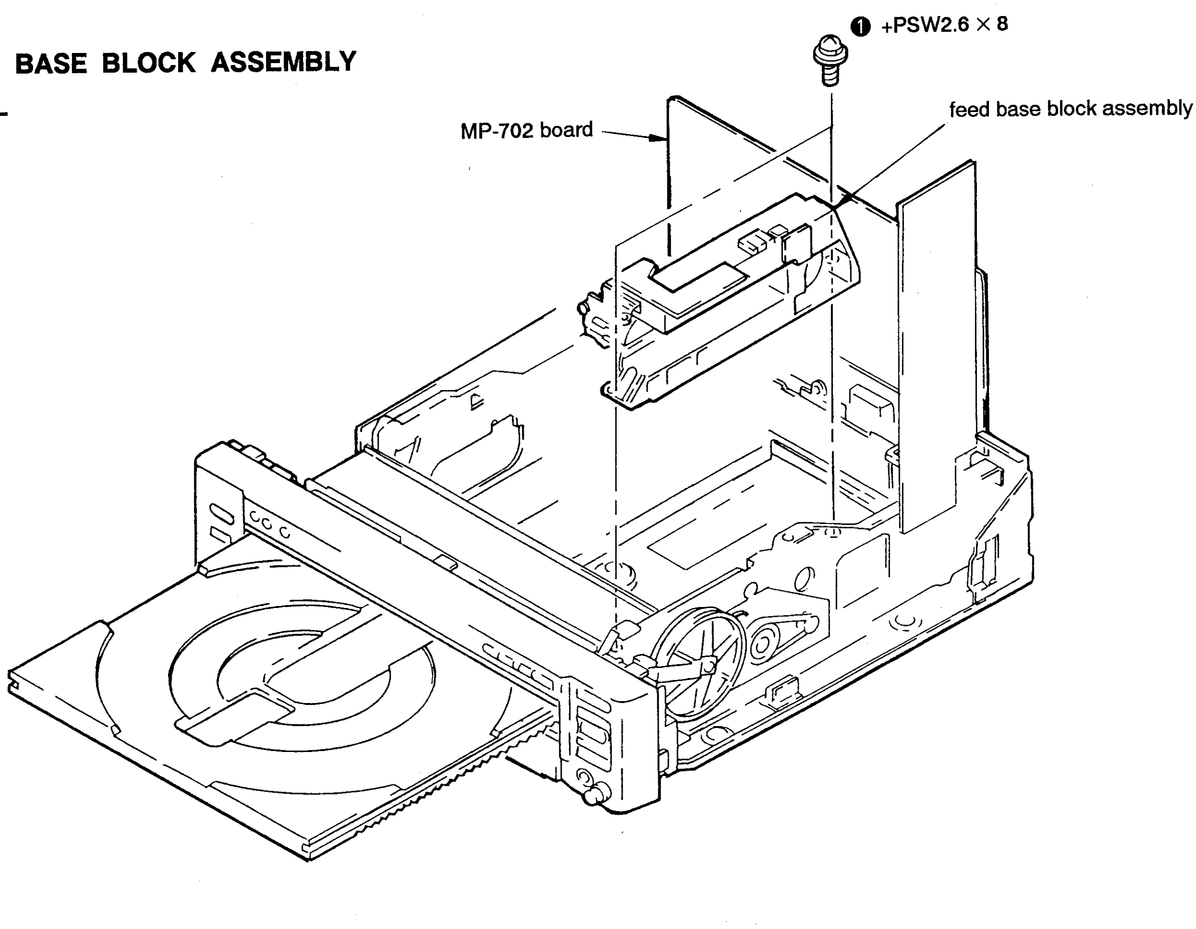


• **FITTING**

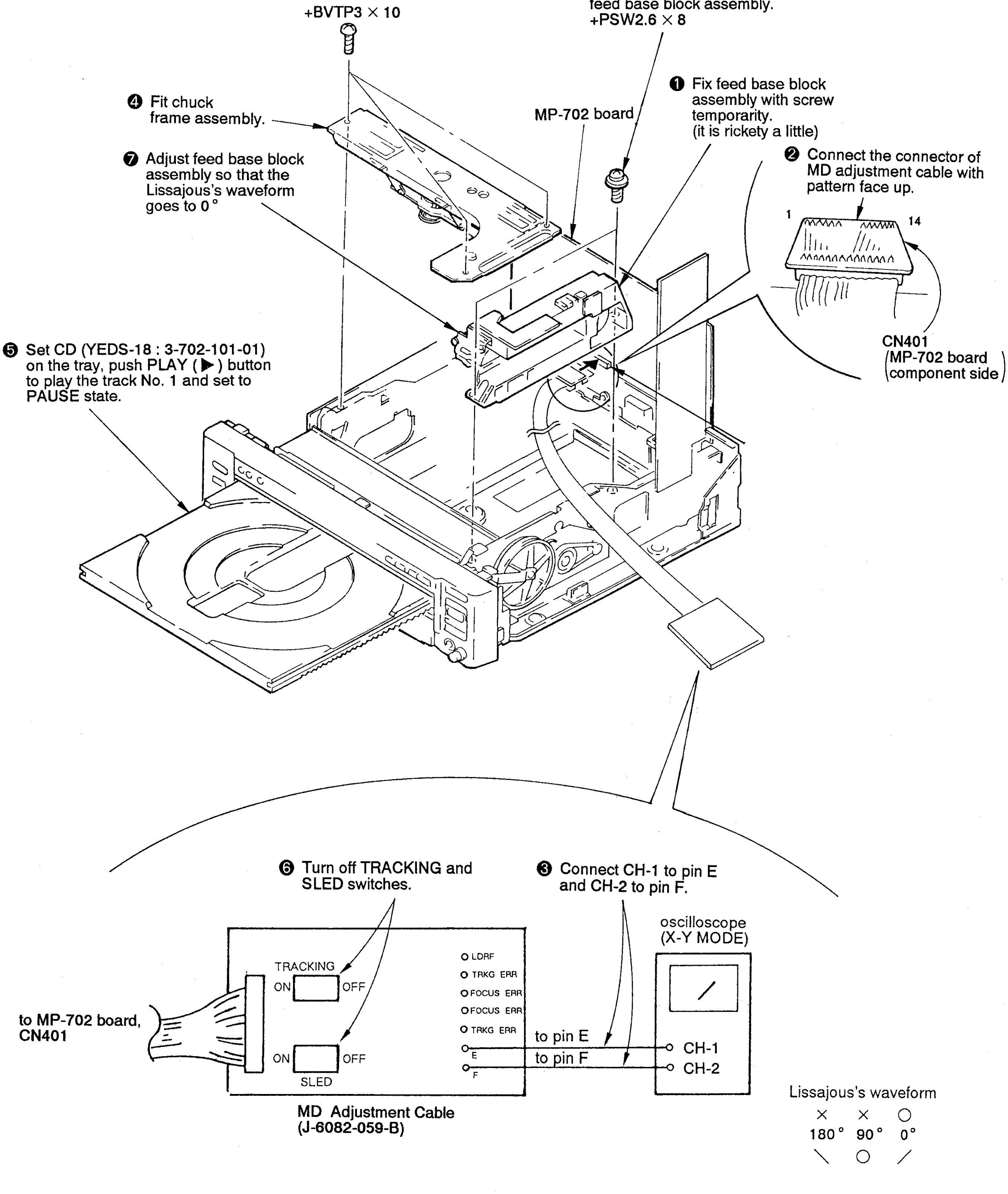


2-5. FEED BASE BLOCK ASSEMBLY

• **REMOVAL**

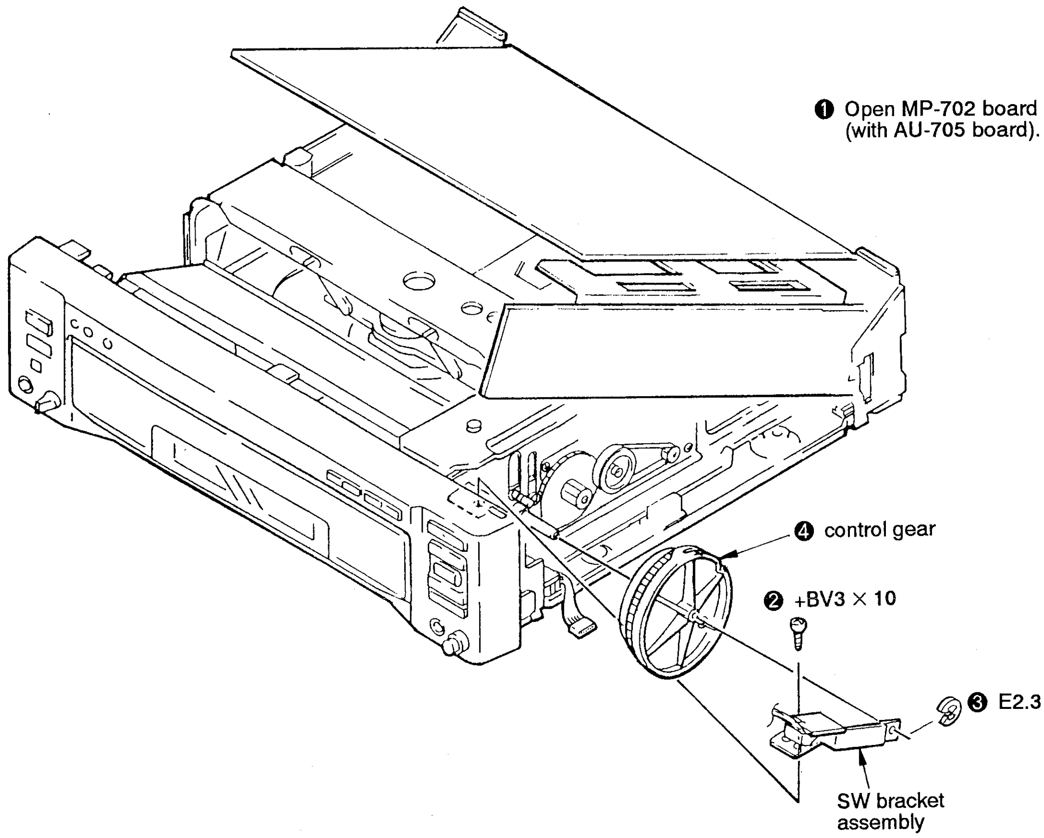


• **INSTALLATION**

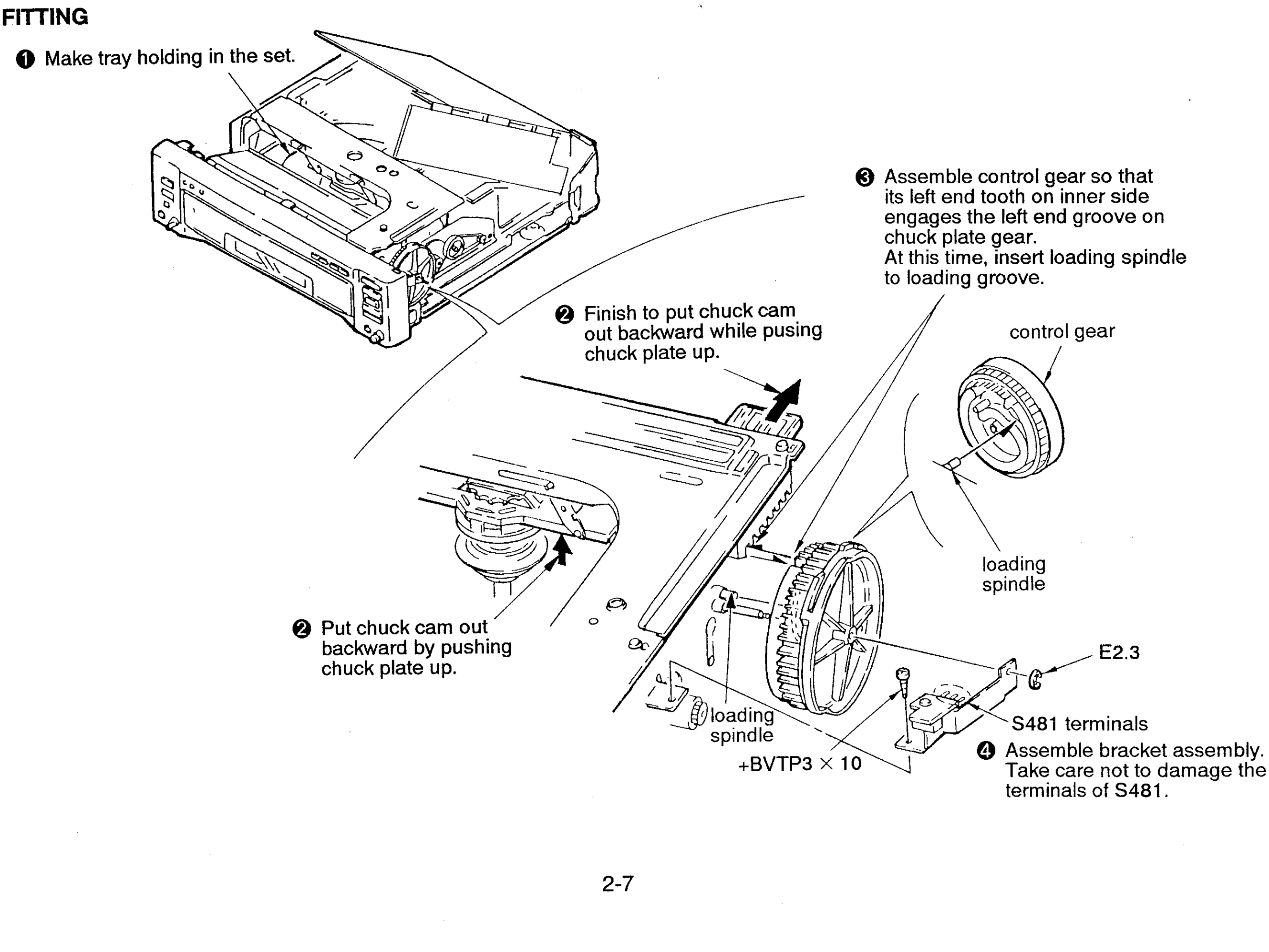


2-6. CONTROL GEAR

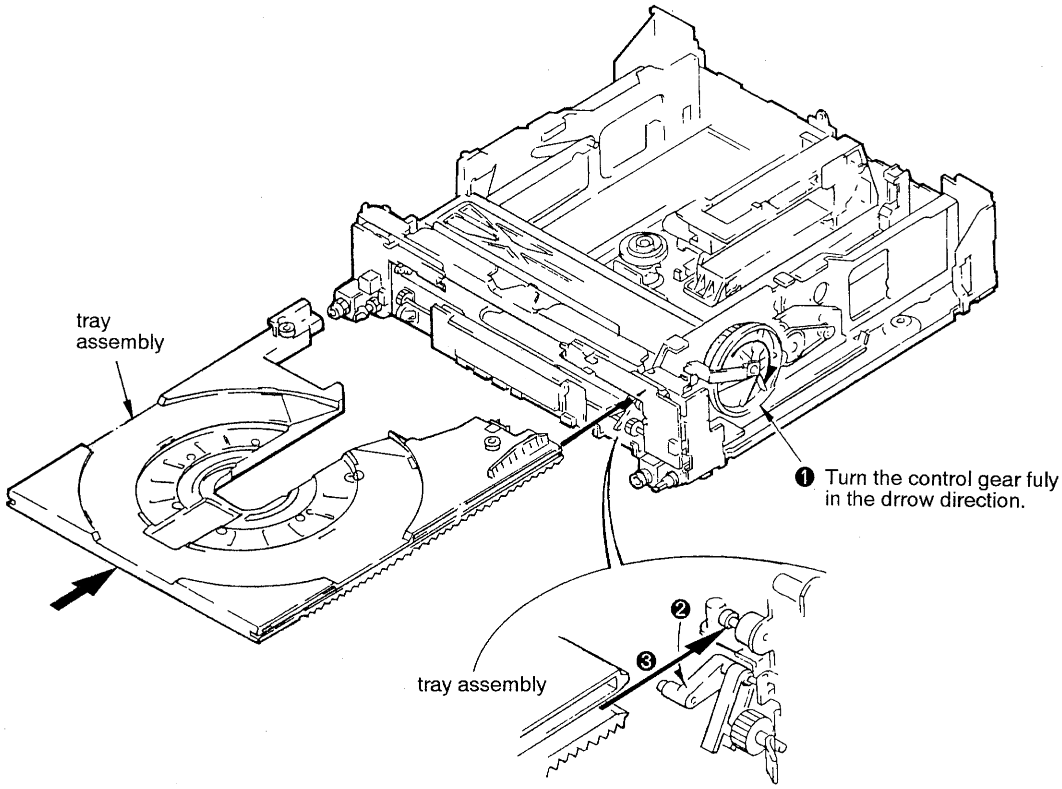
• REMOVAL



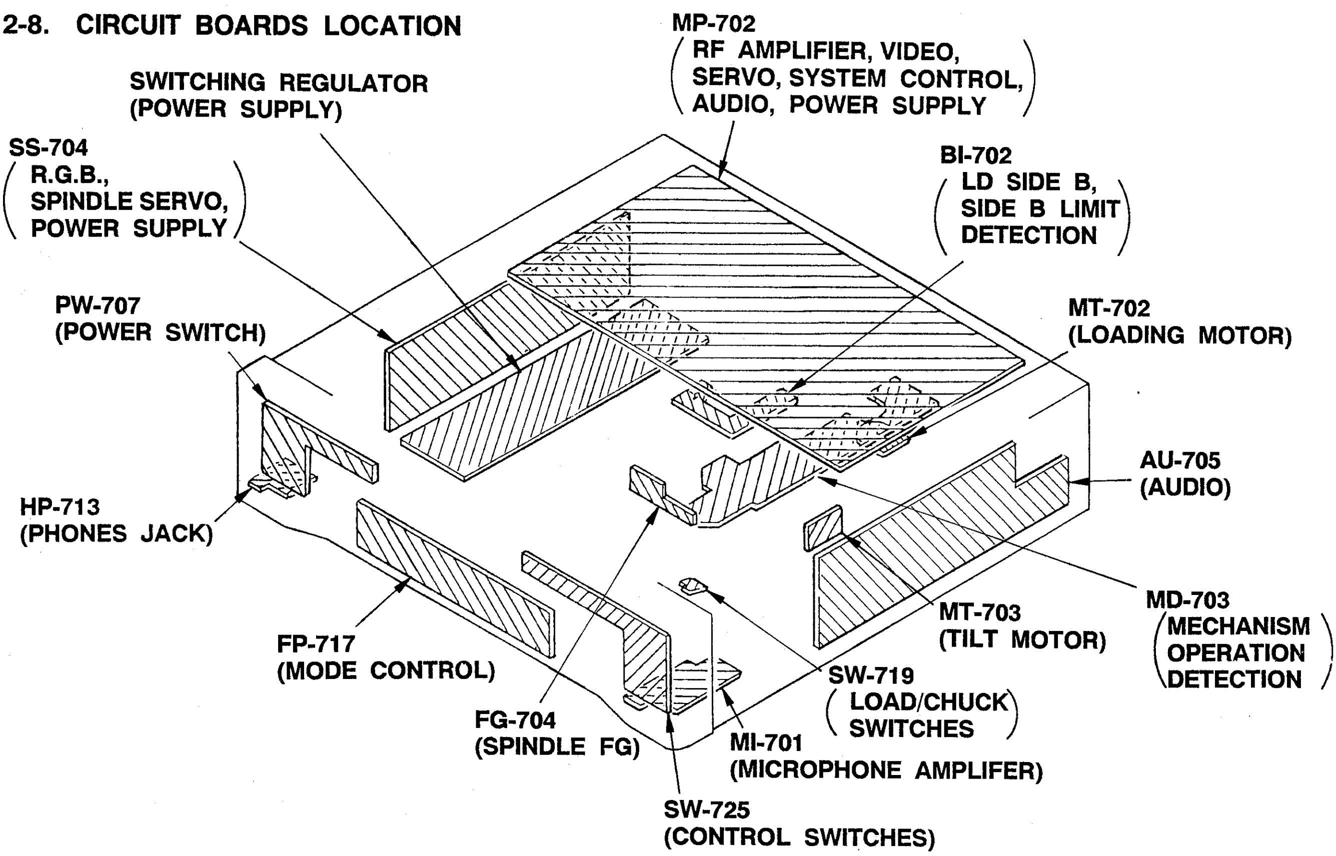
• FITTING



2-7. TRAY ASSEMBLY INSERTION

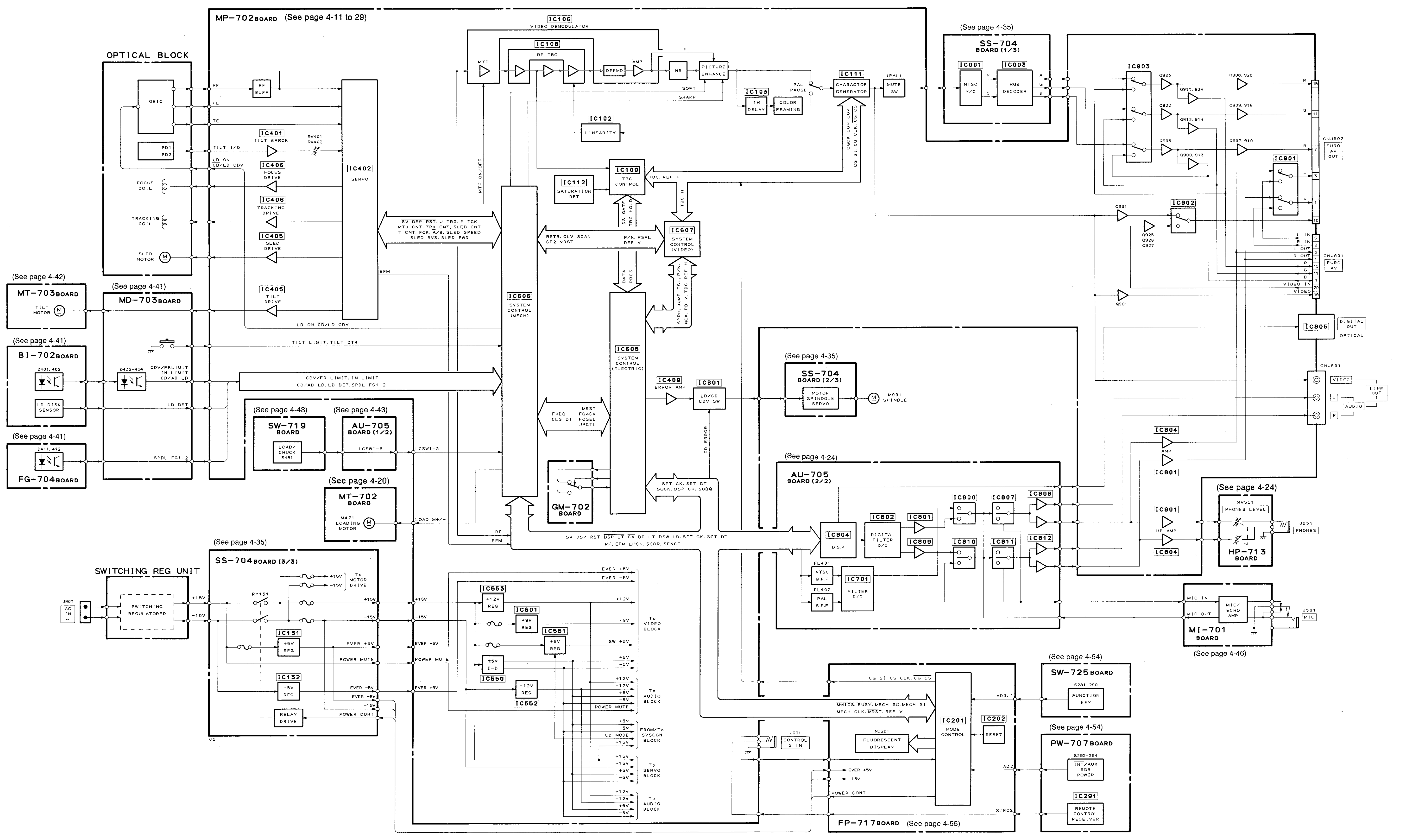


2-8. CIRCUIT BOARDS LOCATION

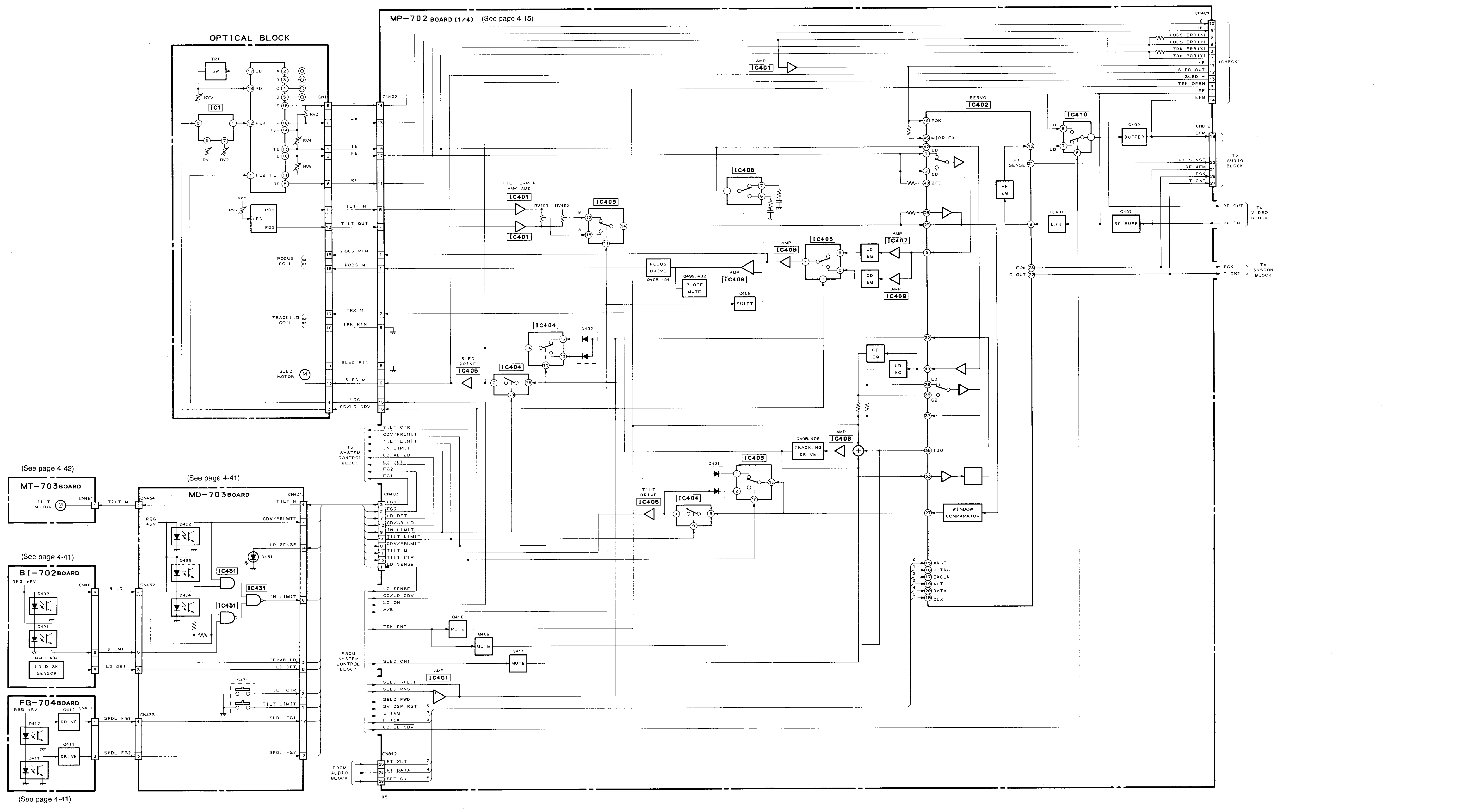


SECTION 3
BLOCK DIAGRAMS

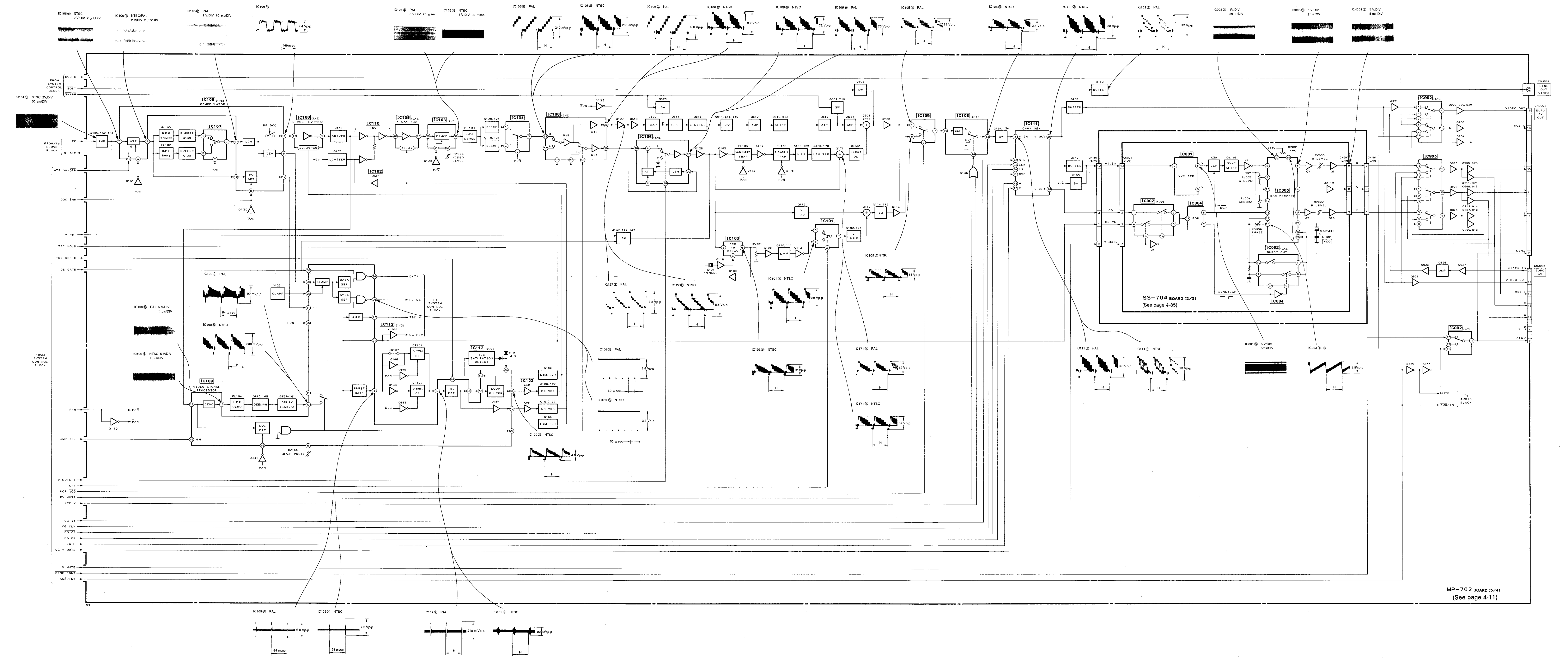
3-1. OVERALL BLOCK DIAGRAM



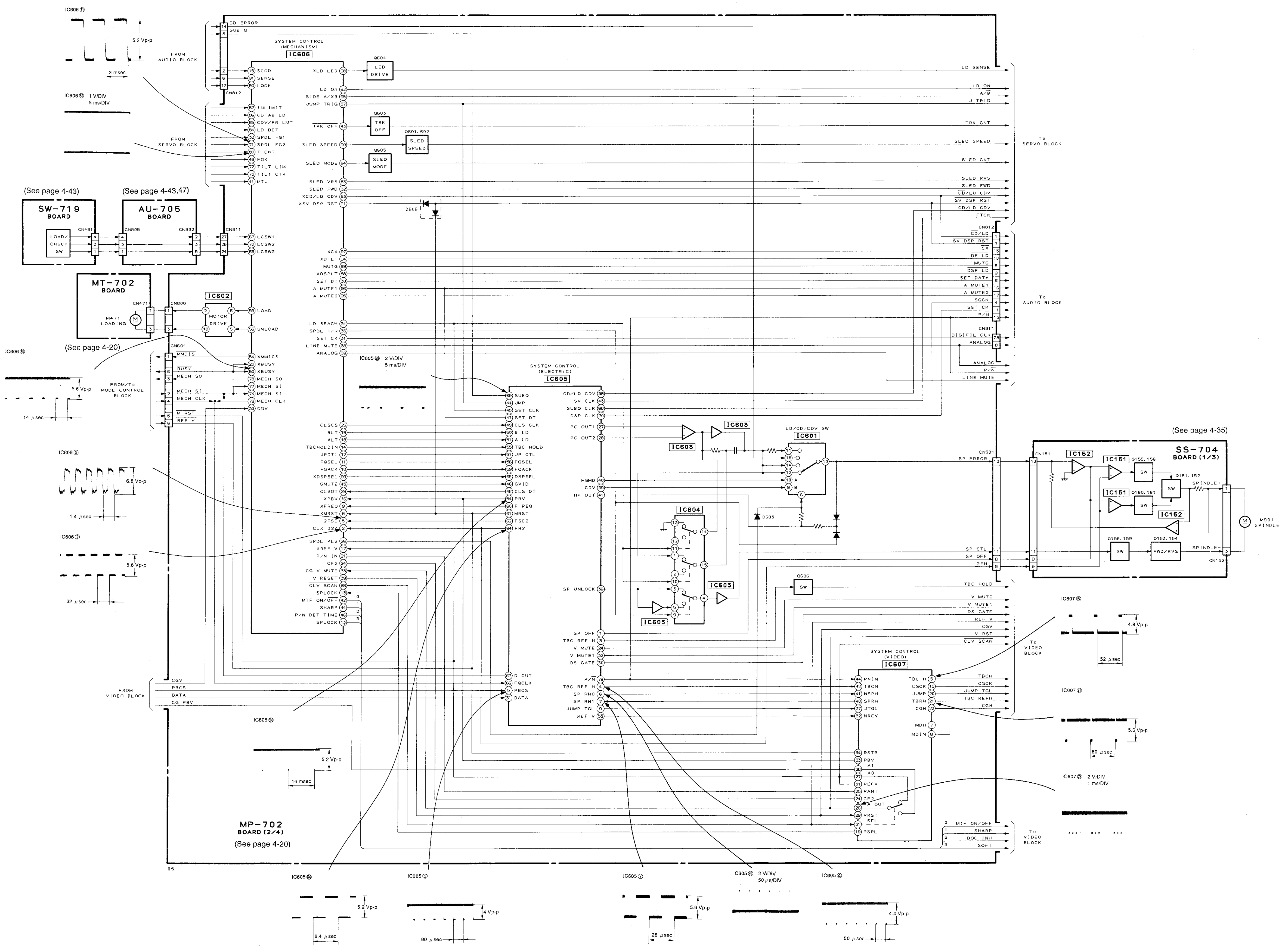
3-2. SERVO BLOCK DIAGRAM



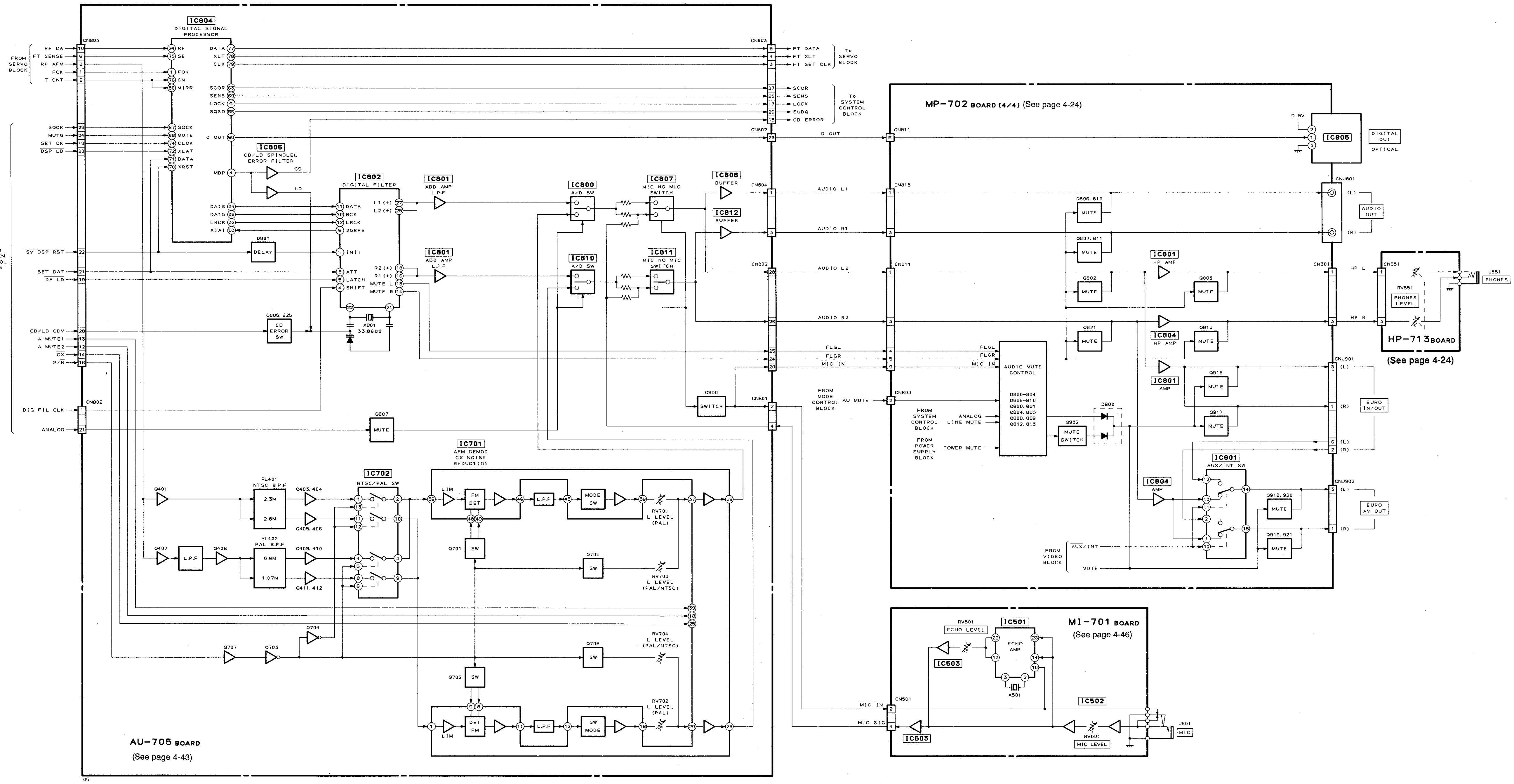
3-3. VIDEO BLOCK DIAGRAM



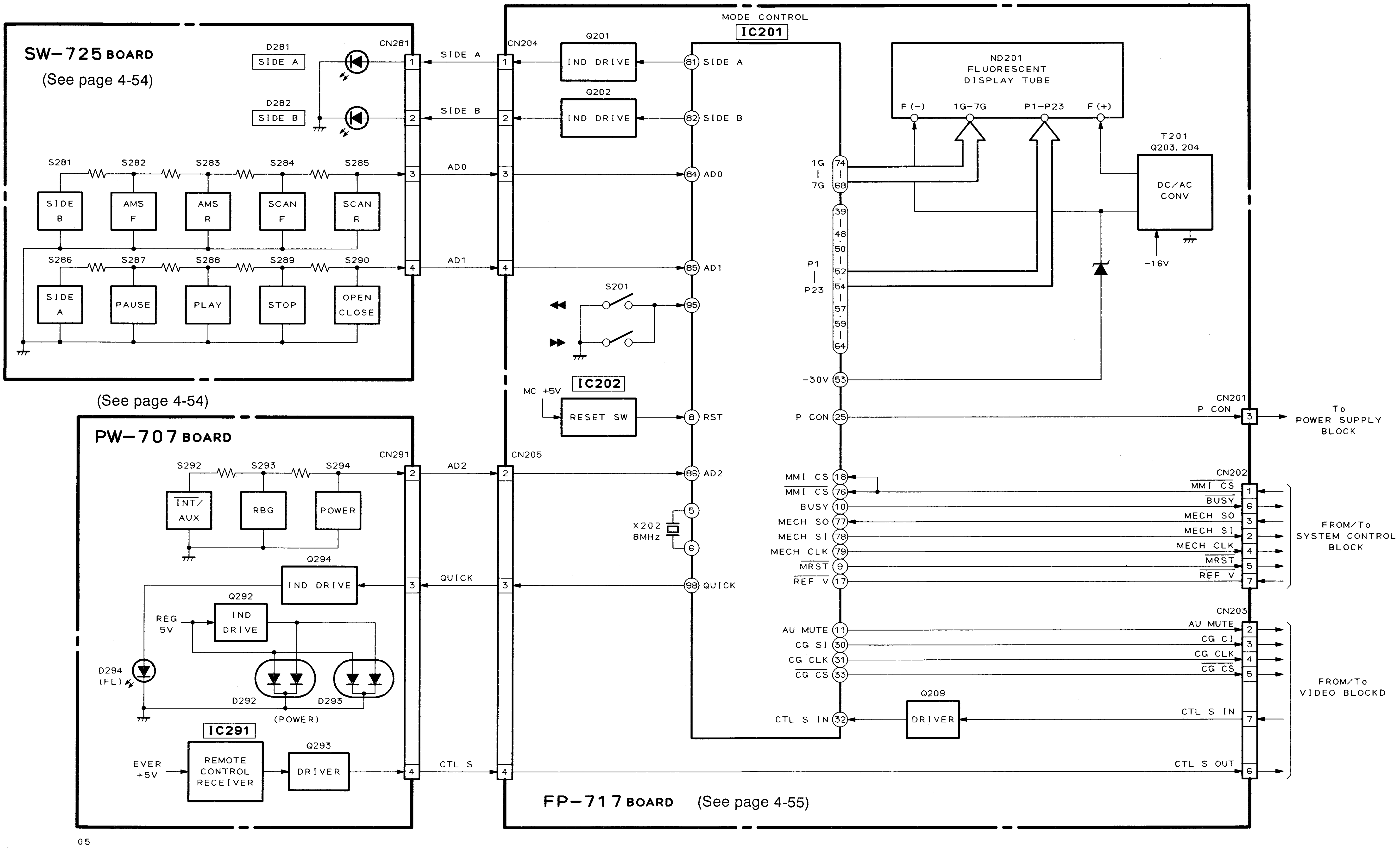
3-4. SYSTEM CONTROL BLOCK DIAGRAM



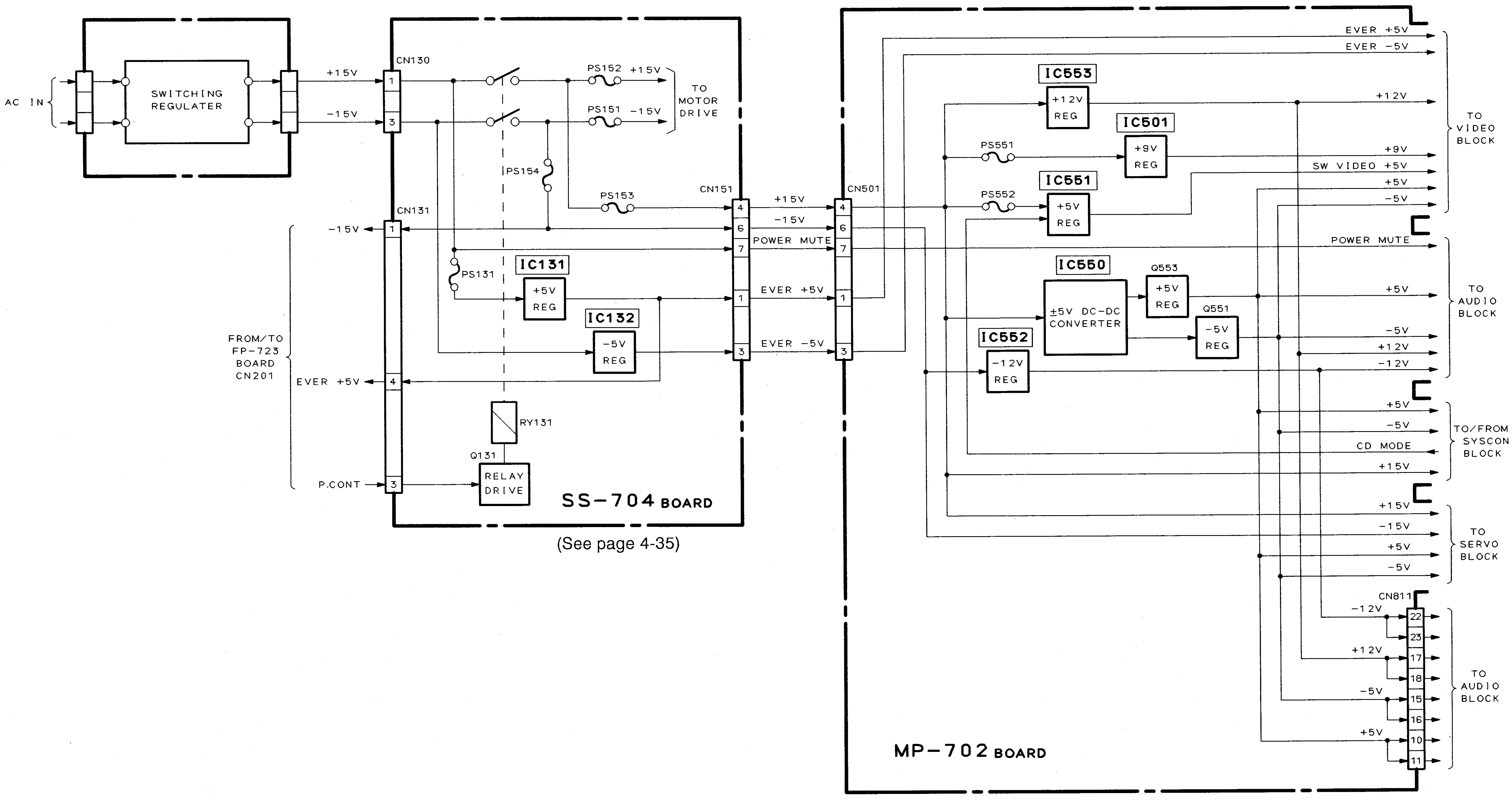
3-5. AUDIO BLOCK DIAGRAM



3-6. MODE CONTROL BLOCK DIAGRAM



3-7. POWER SUPPLY BLOCK DIAGRAM

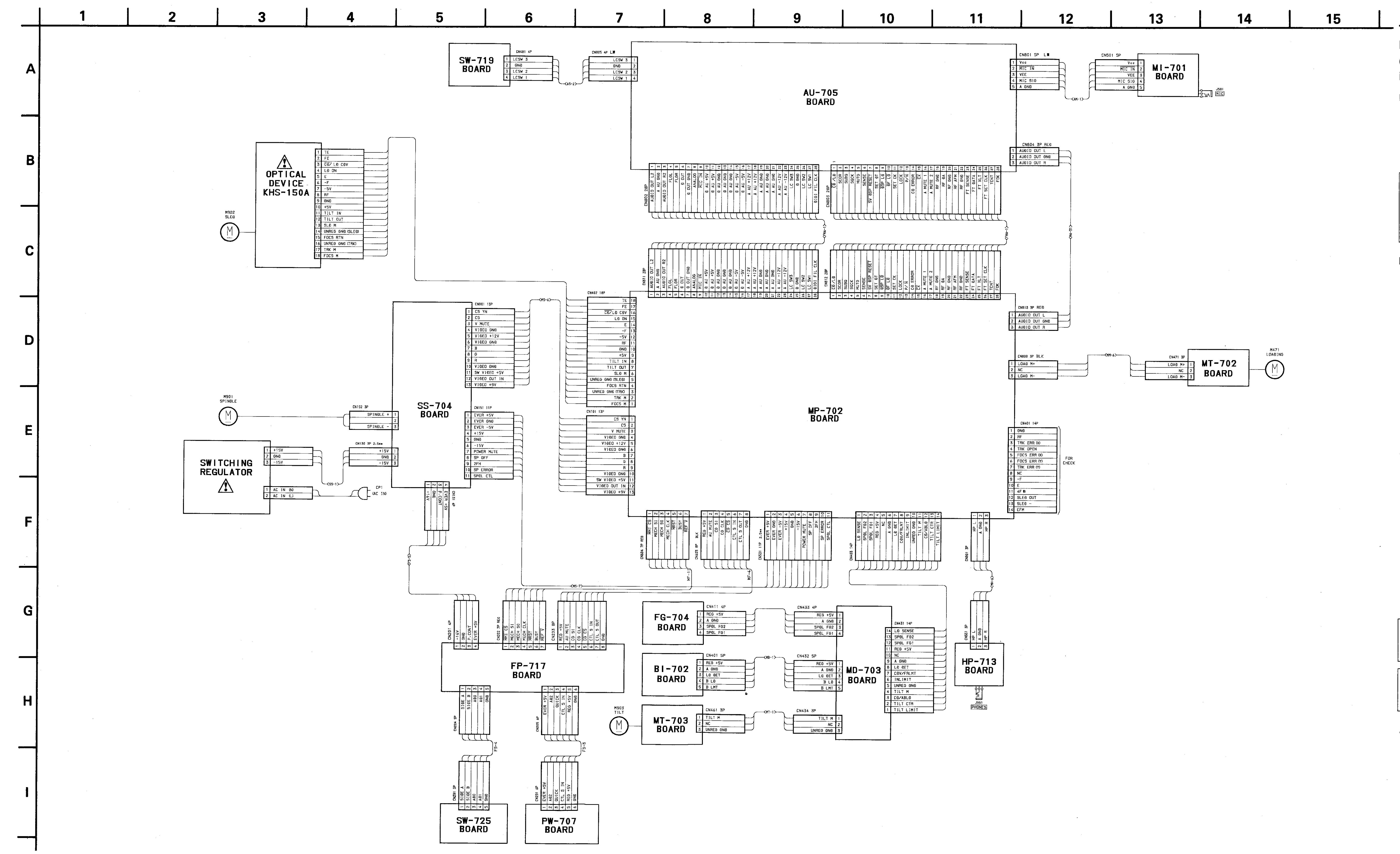


(See page 4-35)

(See page 4-29)

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- o——— : indicates a lead wire mounted on the component side.
- •——— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ░░░ : Pattern from the side which enables seeing.

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

For schematic diagram:

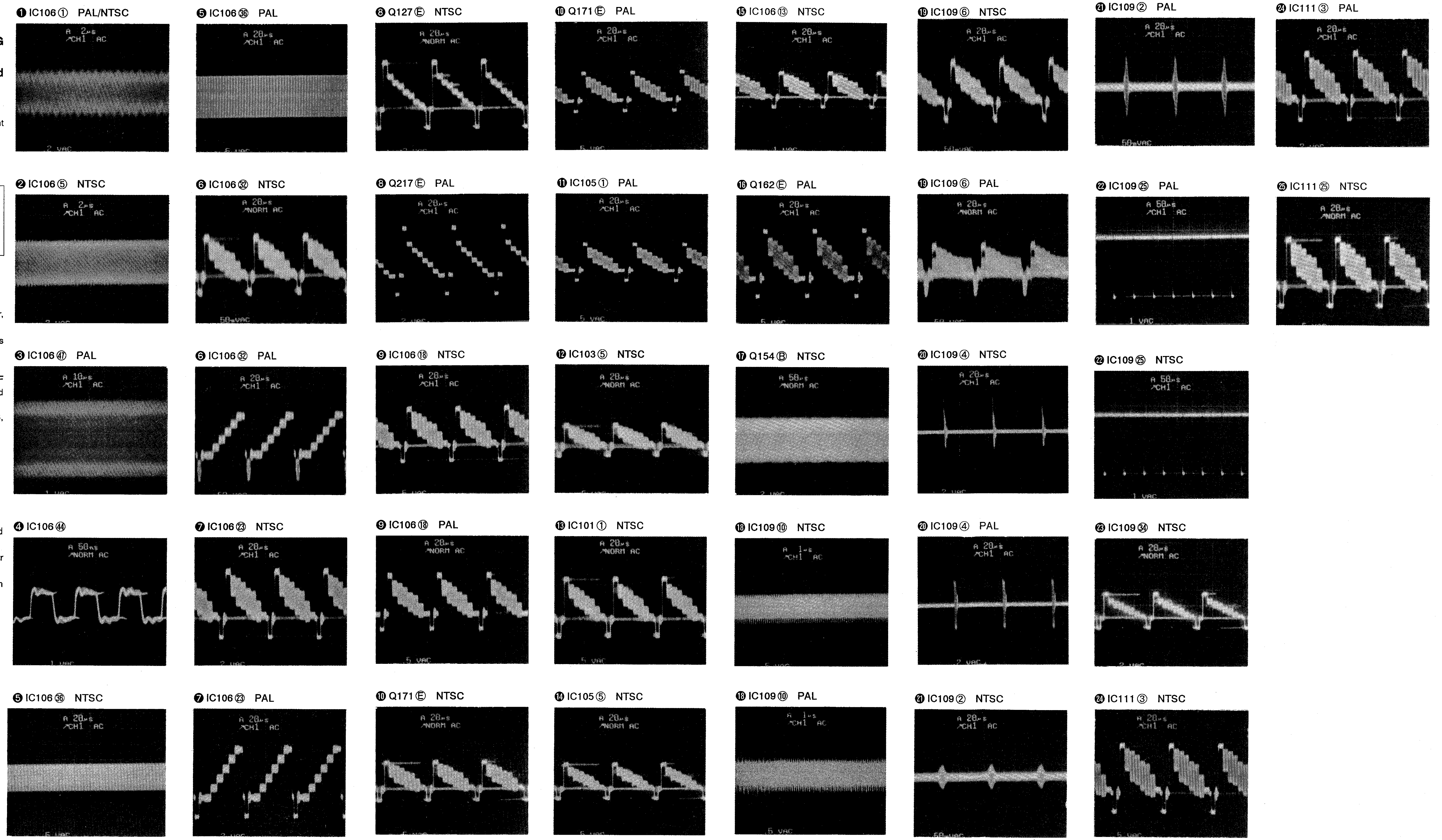
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repair.*
- ━━━ : B + Line.*
- ━ ━ ━ : B − Line.*
- Voltages are dc between measurement points and ground unless otherwise noted.*
- Readings are taken with a digital multimeter (DC10MΩ) under playing back color bar signal track on alignment disc.*
- Voltage variations may be noted due to normal production tolerances.
- ⇨ : IN/OUT direction of B line (+ , −).*
- Circled numbers refer to waveforms.*

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- * : indicated by the color red.

MP-702 BOARD



MDP-850D

MP-702 (RF AMPLIFIER, VIDEO, SERVO, SYSTEM CONTROL) PRINTED WIRING BOARD

– Ref. No.: MP-702 Board; 1,000, series –

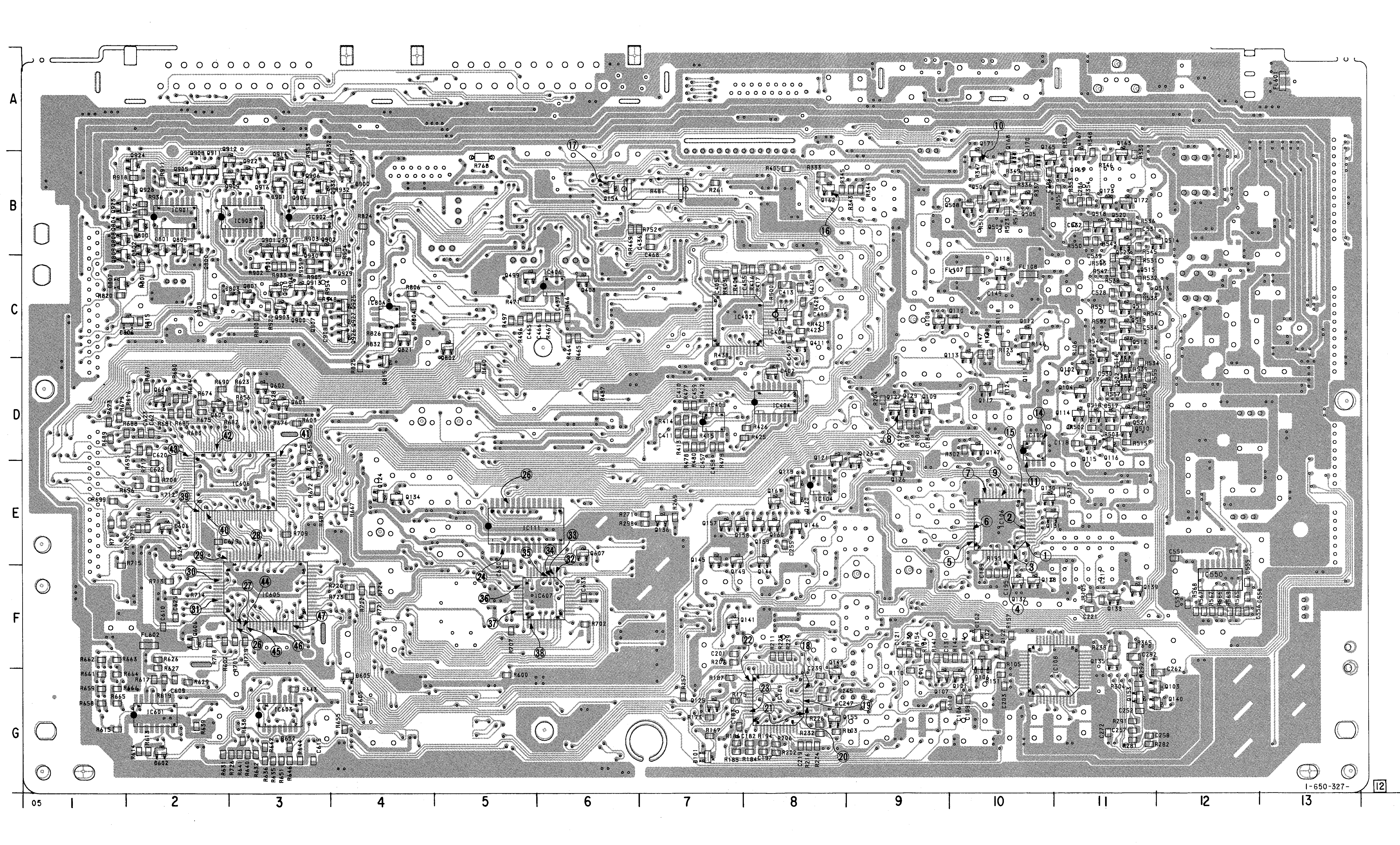
MP-702 BOARD

CN101	B-14
CN401	B-20
CN402	A-20
CN403	B-23
CN501	C-14
CN603	D-14
CN604	E-14
CN800	C-26
CN801	F-15
CN811	C-26
CN812	E-26
CN813	B-18
CNJ801	A-18
CNJ901	A-25
CNJ902	A-22
D101	G-7
D102	F-10
D103	D-23
D104	G-23
D105	F-23
D401	D-20
D402	D-8
D404	C-21
D406	B-20
D517	D-11
D518	D-11
D551	E-16
D553	D-16
D557	B-16
D558	A-16
D559	C-16
D560	C-15
D601	A-15
D602	G-2
D603	G-26
D604	C-26
D605	G-4
D606	E-2
D800	B-2
D801	B-2
D802	B-2
D803	C-3
D804	C-25
D806	C-2
D807	C-1
D808	C-2
D809	C-26
D810	C-26
D900	B-4
D901	B-3
IC101	C-18
IC102	G-18
IC103	C-18
IC104	E-8
IC105	D-10
IC106	E-10
IC107	F-17
IC108	G-11
IC109	G-8
IC110	G-17
IC111	E-5
IC112	G-20
IC401	D-22
IC402	C-7
IC403	D-20
IC404	D-8
IC405	C-20
IC406	C-6
IC407	D-21
IC408	C-8
IC409	D-7
IC410	C-20
IC501	C-16
IC550	F-12
IC551	C-16
IC552	B-16
IC553	B-16
IC601	G-2
IC602	D-26
IC603	G-3
IC604	G-24
IC605	F-3
IC606	E-3
IC607	F-6
IC801	C-24
IC804	C-4
IC805	A-17
IC901	B-2
IC902	B-3
IC903	B-3

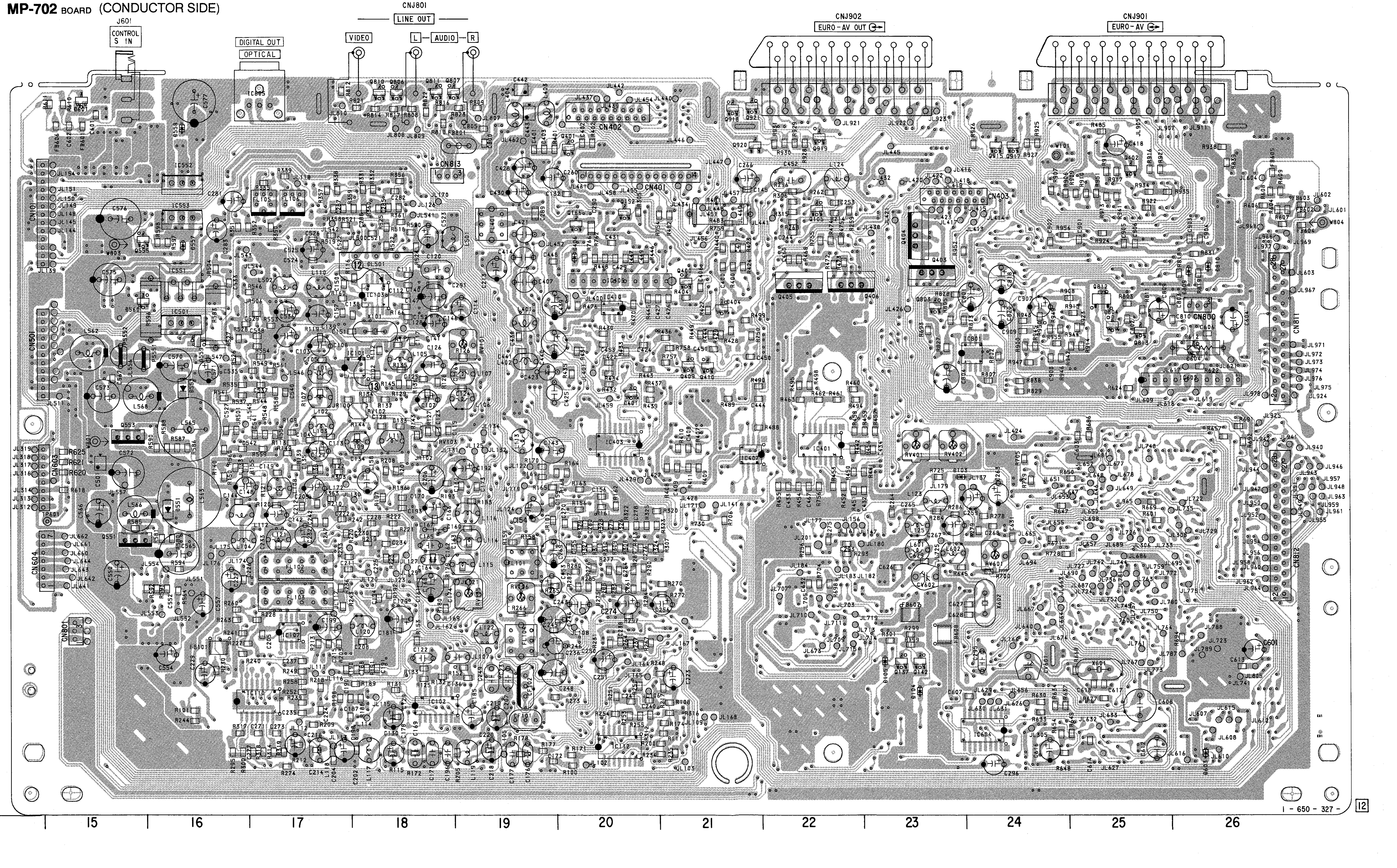
Q101	G-10
Q102	D-11
Q103	G-12
Q104	D-11
Q105	B-22
Q106	G-10
Q107	G-9
Q108	C-9
Q109	D-9
Q110	C-10
Q111	D-10
Q112	C-10
Q113	D-10
Q114	D-11
Q115	E-11
Q116	E-11
Q117	D-10
Q118	C-10
Q119	E-8
Q120	E-8
Q121	E-8
Q122	F-10
Q123	E-9
Q124	E-4
Q125	G-7
Q126	E-9
Q127	D-9
Q128	F-10
Q129	D-9
Q130	E-11
Q131	E-11
Q132	F-10
Q133	F-11
Q134	E-4
Q135	G-11
Q136	E-7
Q137	F-23
Q139	F-11
Q140	G-12
Q141	F-8
Q142	F-23
Q143	G-8
Q144	F-8
Q145	F-7
Q146	E-8
Q147	E-10
Q149	F-7
Q152	B-20
Q153	G-11
Q154	B-6
Q155	G-8
Q157	E-7
Q158	E-7
Q159	E-8
Q160	E-8
Q161	E-8
Q162	B-8
Q163	B-11
Q165	B-11
Q166	B-20
Q167	B-11
Q168	B-10
Q169	B-11
Q170	B-10
Q171	B-10
Q172	B-11
Q173	B-11
Q400	C-21
Q401	A-20
Q402	A-25
Q403	B-23
Q404	B-23
Q405	C-22
Q406	C-23
Q408	C-6
Q409	D-21
Q410	D-21
Q411	C-8
Q499	C-5
Q505	B-10
Q506	B-10
Q507	D-11
Q508	B-10
Q509	B-10
Q510	D-11
Q511	C-11
Q512	C-11
Q513	C-12
Q514	C-12
Q515	C-11
Q516	D-11
Q517	D-11
Q518	B-11

Q519	C-11
Q520	B-11
Q521	D-11
Q522	D-11
Q523	C-11
Q551	E-15
Q553	D-15
Q555	B-15
Q601	D-3
Q602	D-3
Q603	E-3
Q604	D-2
Q605	D-2
Q606	F-2
Q607	E-6
Q800	B-2
Q801	C-3
Q802	C-5
Q803	C-23
Q804	B-1
Q805	B-2
Q806	A-18
Q807	A-18
Q808	B-1
Q809	C-1
Q810	A-18
Q811	A-18
Q812	C-25
Q813	C-25
Q815	D-4
Q821	C-4
Q900	C-3
Q901	B-3
Q902	B-3
Q903	C-3
Q904	B-3
Q905	B-2
Q906	B-3
Q907	C-3
Q908	B-2
Q909	B-3
Q910	C-3
Q911	B-2
Q912	B-3
Q913	C-3
Q914	B-3
Q915	A-24
Q916	B-3
Q917	A-24
Q918	A-21
Q919	A-22
Q920	A-21
Q921	A-21
Q922	B-3
Q923	B-1
Q924	B-2
Q925	C-4
Q926	C-4
Q927	C-4
Q928	B-2
Q929	C-4
Q930	C-3
Q931	B-3
Q932	B-4
Q933	B-4

MP-702 BOARD (COMPONENT SIDE)

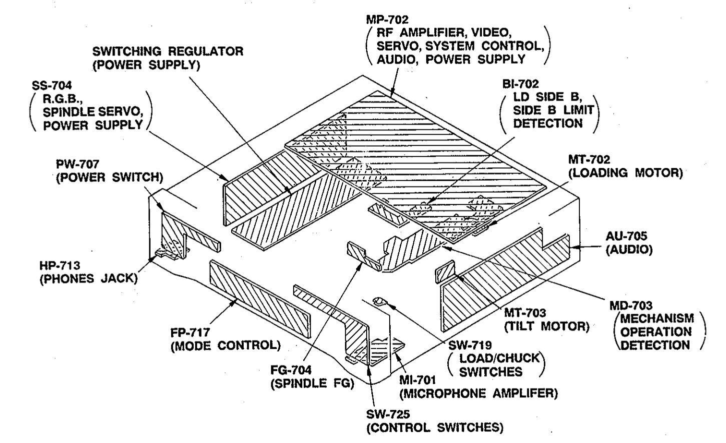


MP-702 BOARD (CONDUCTOR SIDE)



MP-702 (VIDEO) SCHEMATIC DIAGRAM • See page 4-3 to 4-5 for waveforms.

– Ref. No.: MP-702 Board; 1,000 series –



• No mark: PAL (Common)
( ) : NTSC

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
PB	⇨	⇨	⇨

MP-702 (RF AMPLIFIER, SERVO) SCHEMATIC DIAGRAM

• See pages 4-6 to 4-10 for MP-702 printed wiring board.

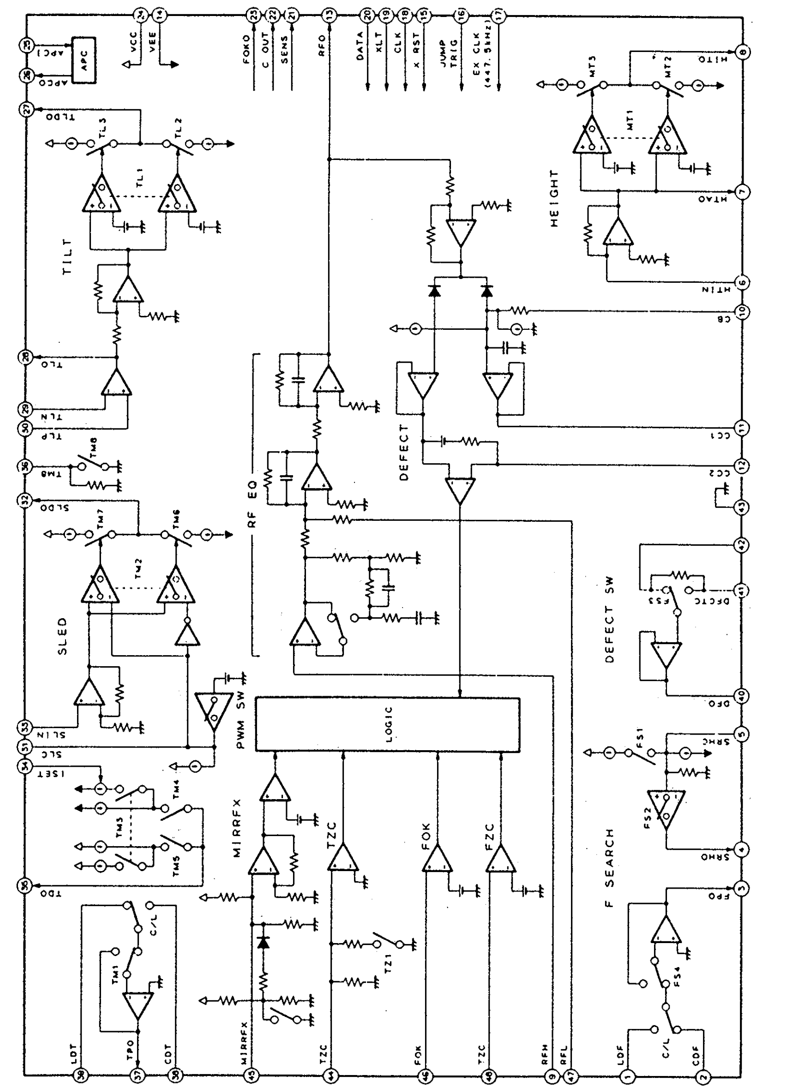
– Ref. No.: MP-702 Board; 1,000 series –

• No mark: PAL (Common)
( ) : NTSC

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨»	⇨»»	⇨

SPINDLE PHASE SERVO	➤»
SPINDLE SERVO (SPEED AND PHASE)	➤»»
TRACKING SERVO LD/CD/CDV	➤
SLIDE SERVO LD/CD	∑⟩
FOCUS SERVO LD/CD	➤
SKEW SERVO LD TILT	∑⟩

IC402 CXA1632Q

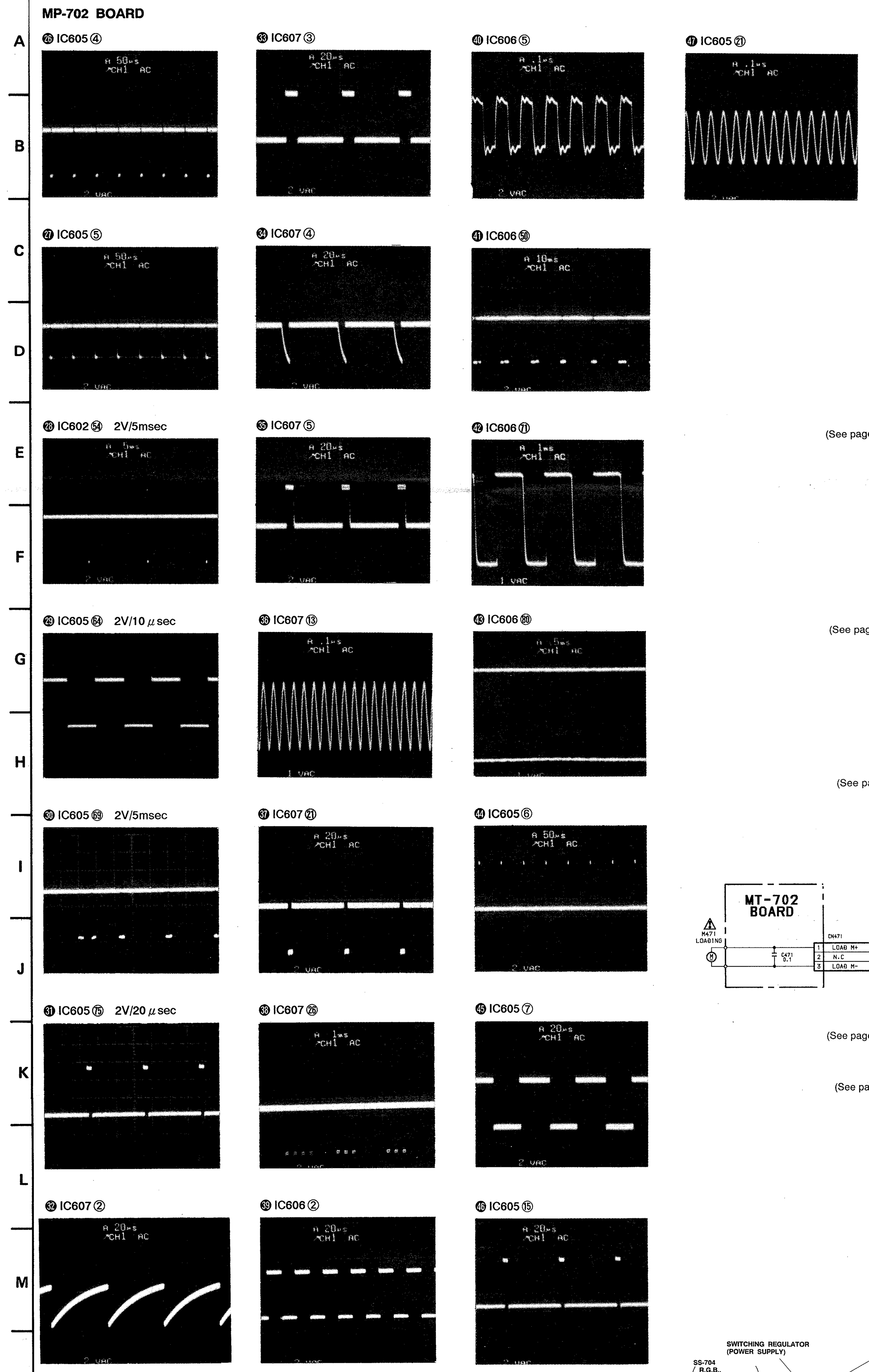


RF AMP, SERVO

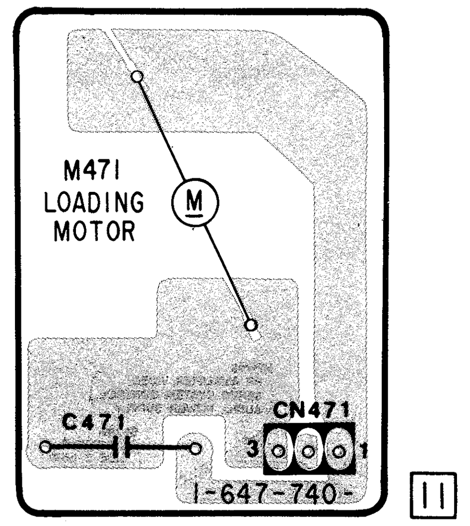
MP-702 (SYSTEM CONTROL), MF-702 (LOADING MOTOR), SW-719 (LOAD/CHUCK SWITCHES), GM-701 (GATE MODULE) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

• See page 4-6 to 4-10 for MP-702 Printed wiring board.

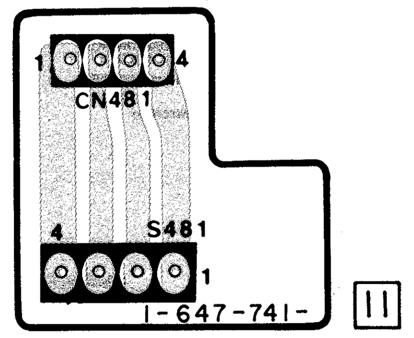
– Ref. No.: MP-702 and GM-701 Boards; 1,000 series, MT-702 and SW-719 Boards; 6,000 series –

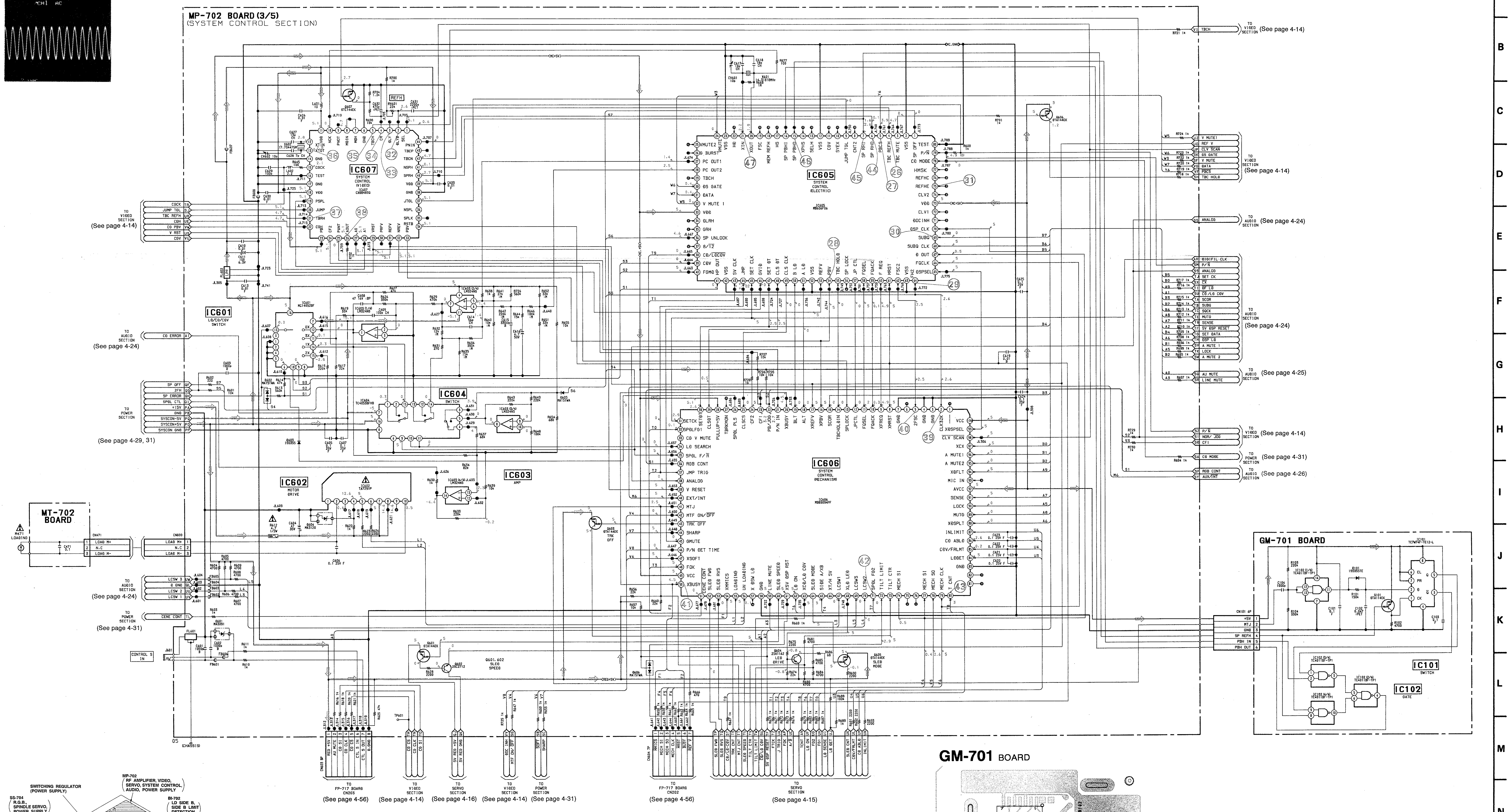


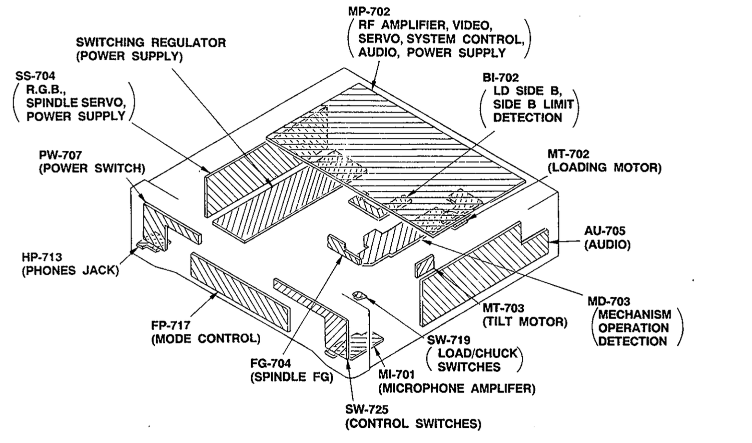
MT-702 BOARD



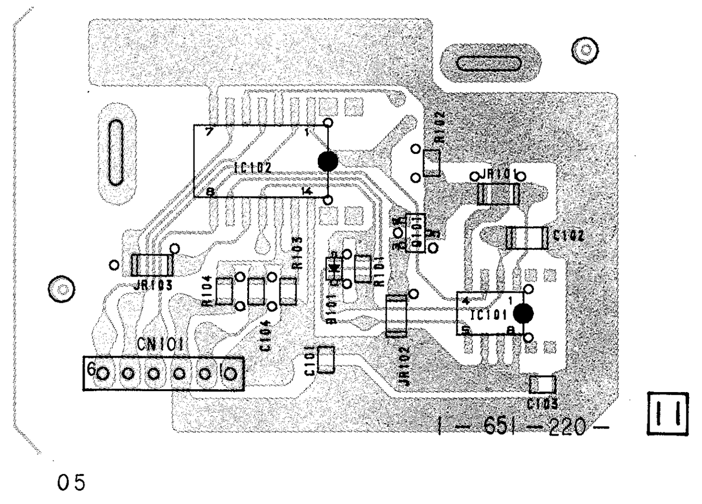
SW-719 BOARD







GM-701 BOARD



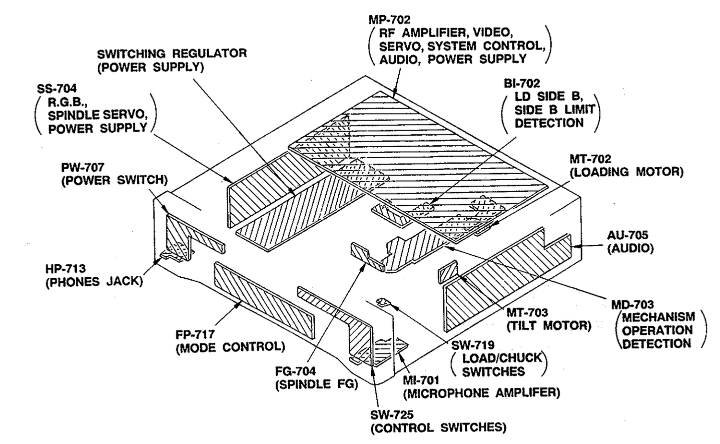
◎ No mark: PAL (Common)
( ) : NTSC

SPINDLE PHASE SERVO	
SPINDLE SERVO (SPEED AND PHASE)	
TRACKING SERVO LD/CD/CDV	
SLIDE SERVO LD/CD	
FOCUS SERVO LD/CD	
SKEW SERVO LD TILT	

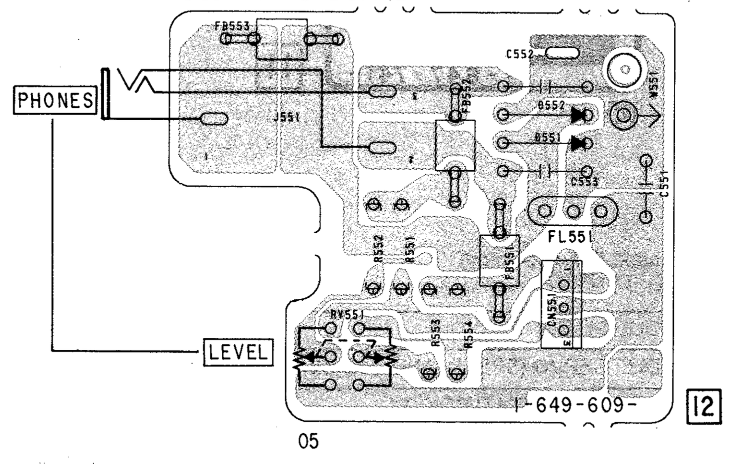
MP-702 (AUDIO), HP-713 (PHONES AMPLIFIER) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

• See page 4-6 to 4-10 for MP-702 printed wiring board.

– Ref. No.: MP-702 Board; 1,000 series, HP-713 Board; 7,000 series –



HP-713 BOARD

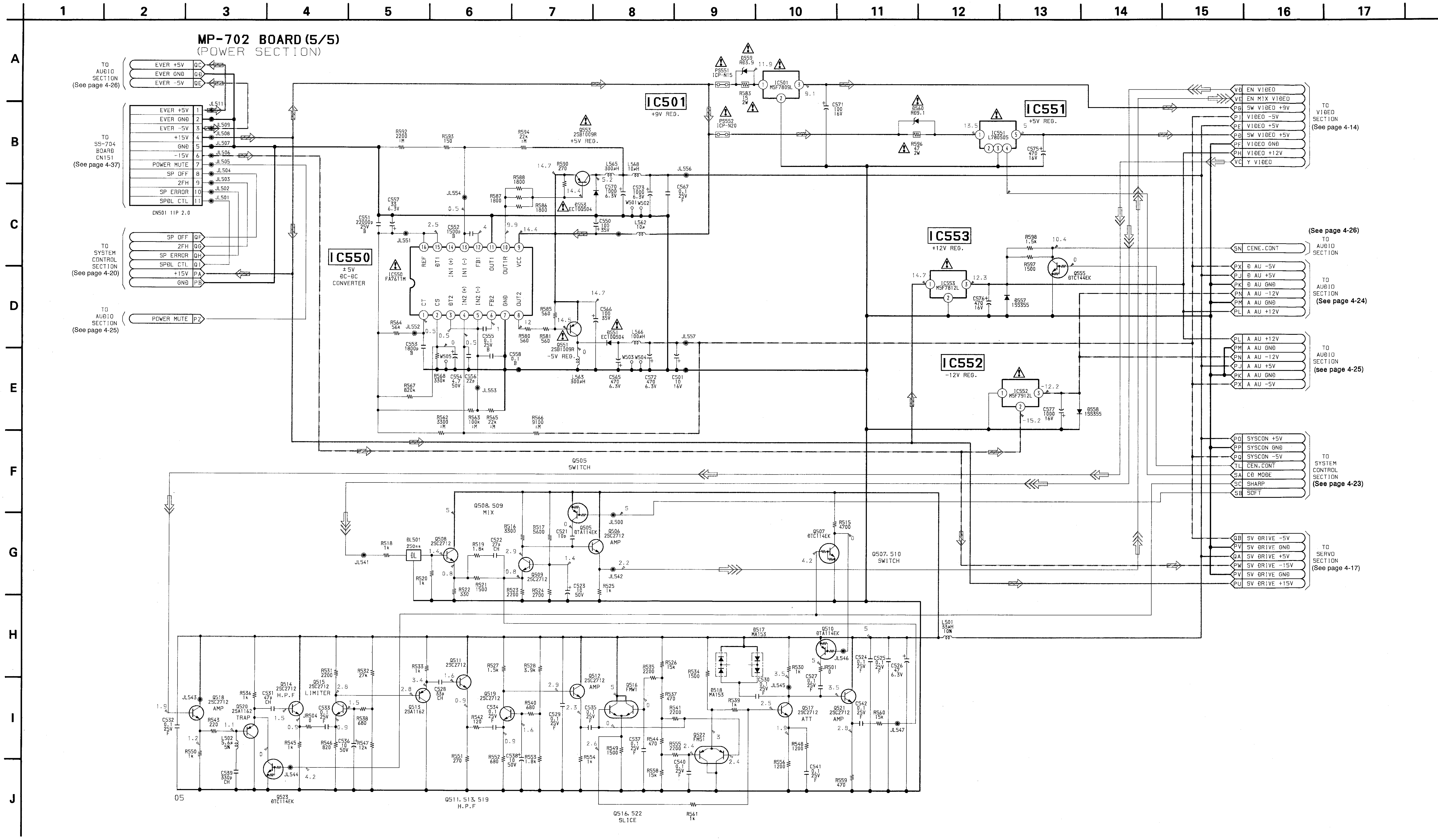


◎ No mark: PAL (Common)
( ) : NTSC

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

MP-702 (POWER SUPPLY) SCHEMATIC DIAGRAM • See page 4-6 to 4-10 for MP-702 printed wiring board.

– Ref. No.: MP-702 Board; 1,000 series –

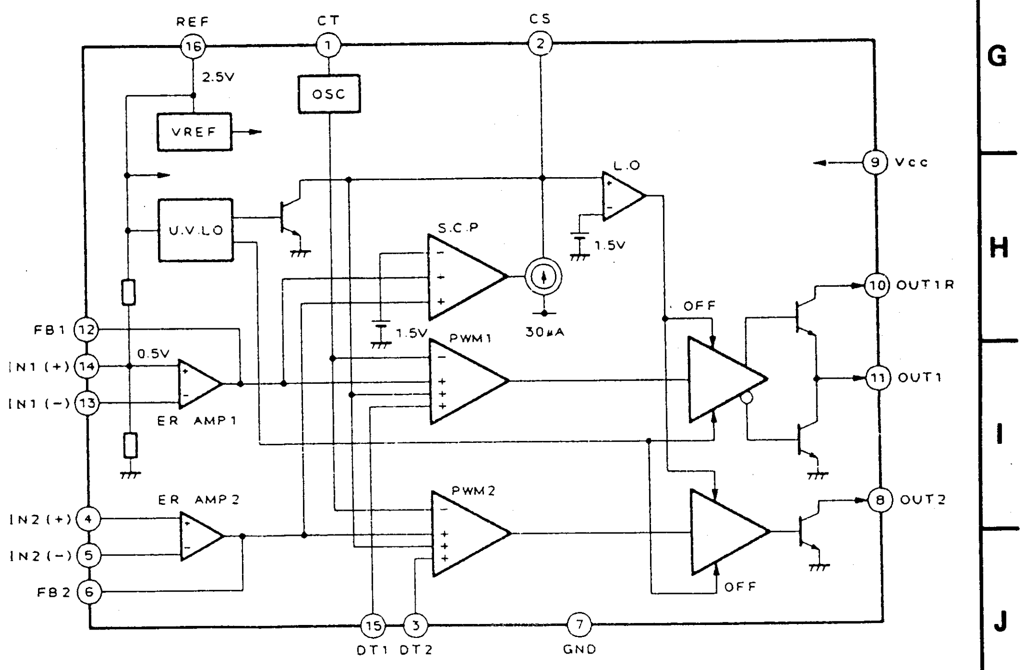


• No mark: PAL (Common)
( ) : NTSC

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

SPINDLE PHASE SERVO	
SPINDLE SERVO (SPEED AND PHASE)	
TRACKING SERVO LD/CD/CDV	
SLIDE SERVO LD/CD	
FOCUS SERVO LD/CD	
SKEW SERVO LD TILT	

IC550 FA7611M



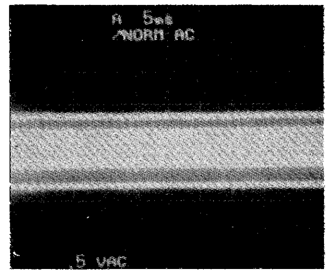
POWER SUPPLY

SS-704 (SPINDLE SERVO, R. G. B. DECODER) PRINTED WIRING BOARD

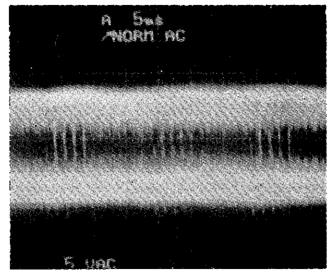
– Ref. No.: SS-704 Board; 5,000 series –

SS-704 BOARD

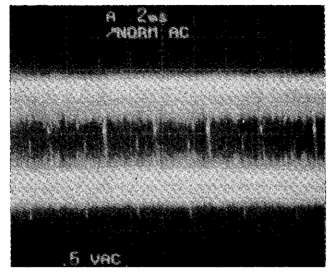
❶ IC001 ⑤



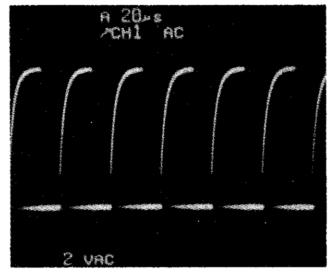
❻ CN001 ⑨



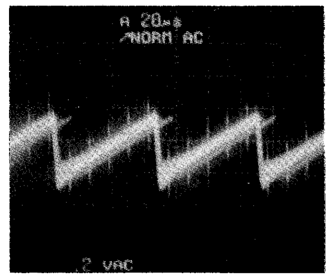
❷ IC002 ③



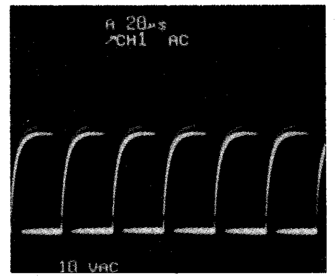
❼ IC151 ① PAL 2V/20 μsec



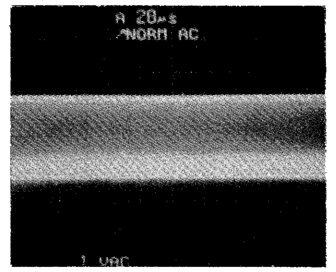
❸ IC002 ⑱, ⑲



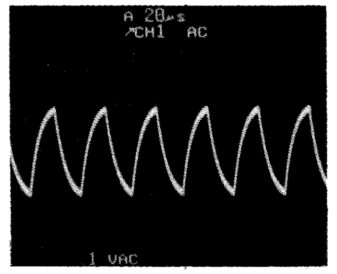
❽ IC151 ⑦ PAL 1V/20 μsec



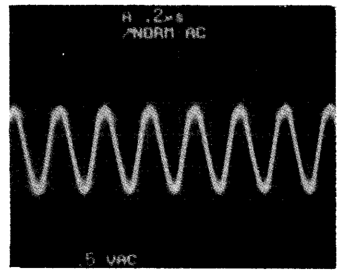
❹ IC002 ⑳



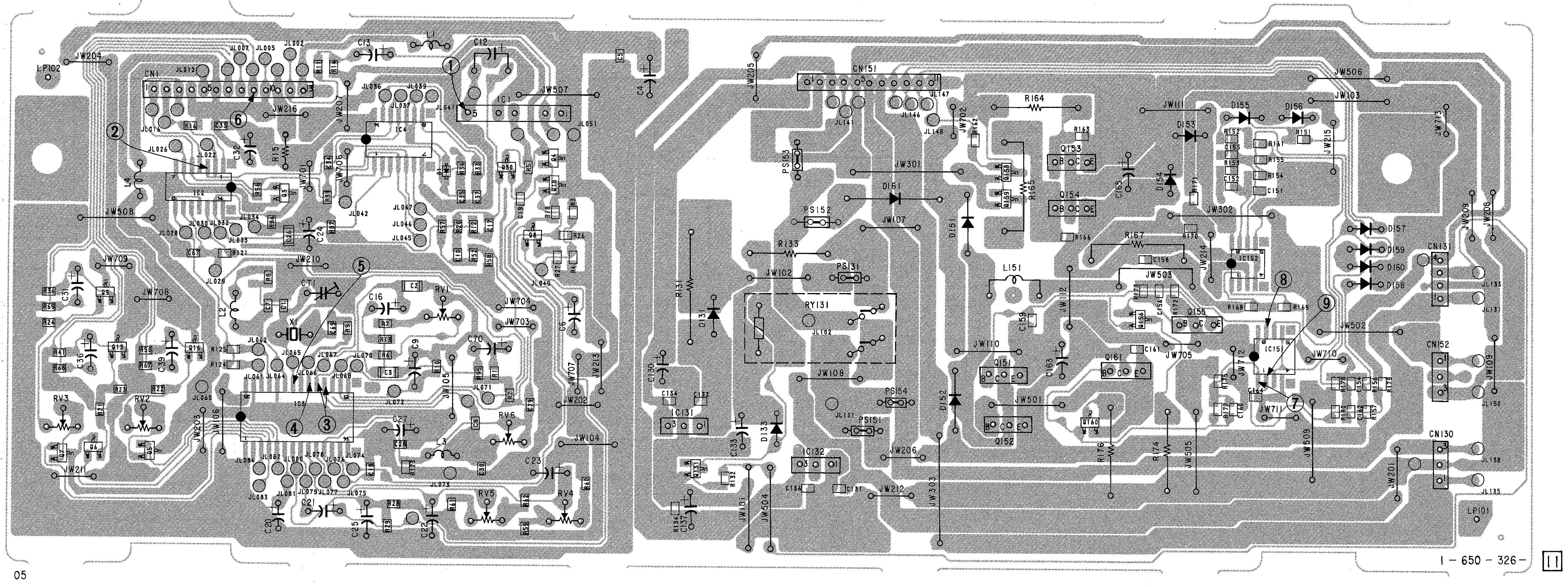
❾ IC151 ② PAL 1V/20 μsec

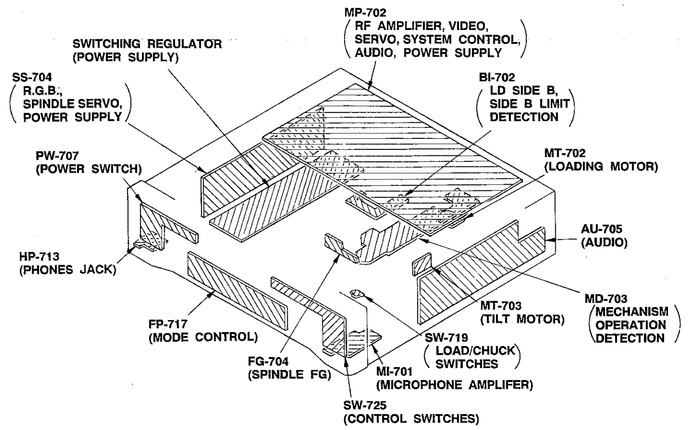


❺ IC002 ㉒



SS-704 BOARD

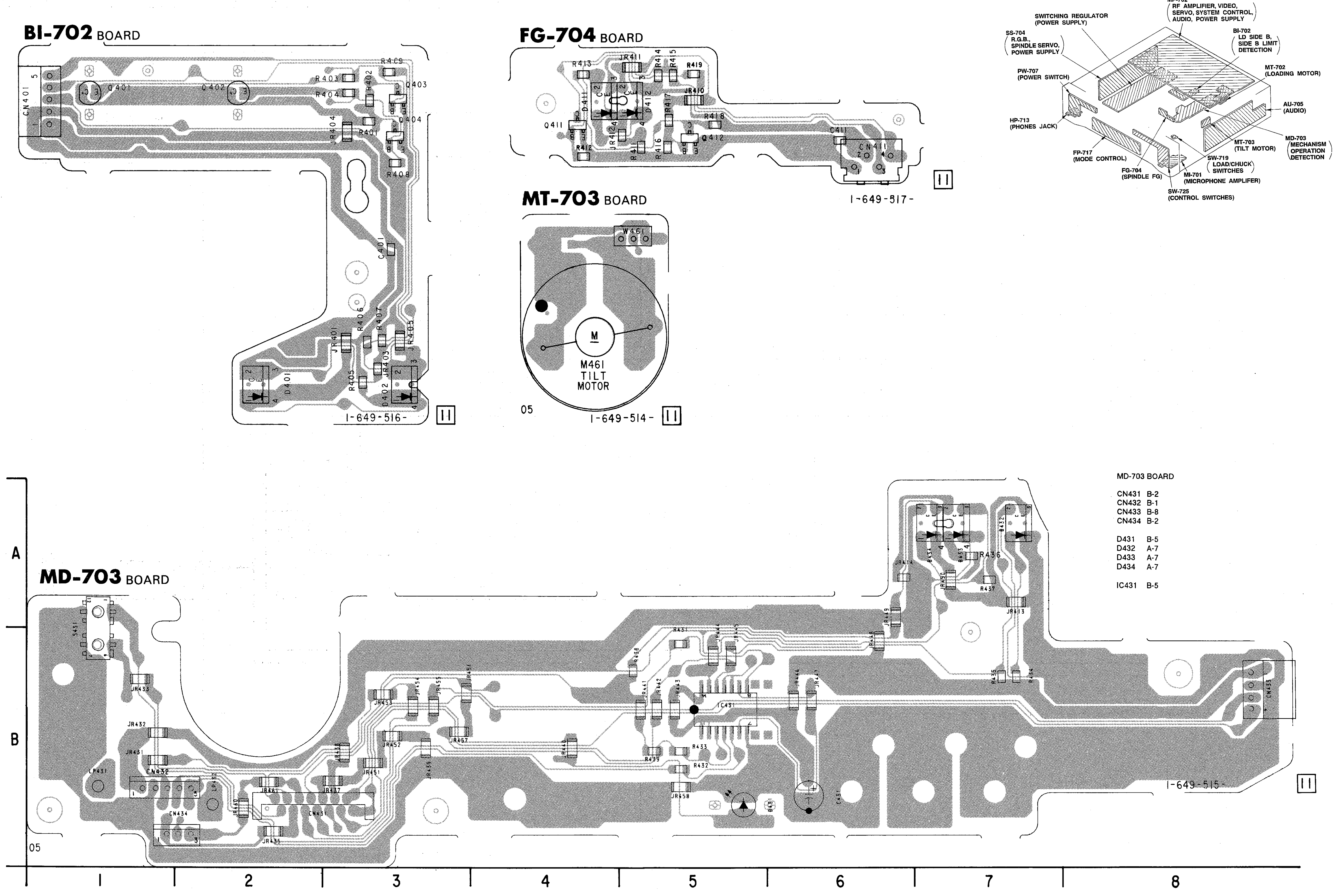





SS-704 BOARD
IC001
Y/C SEP.
IC002
SWITCH/
BURST CUT
IC003
RGB DECODER
IC004
BGP/
INVERTER
IC131
+5V REG.
IC132
-5V REG.
IC151
AMP
IC152
AMP
SWITCHING
REGULATOR
TO
FP-717 BOARD
CN201
(See page 4-56)
TO
MP-702 BOARD
POWER
SECTION
CN501
(See page 4-29)
TO
MP-702 BOARD
VIDEO
SECTION
CN101
(See page 4-14)
CN152 3P
SPINDLE +
SPINDLE -
M901
SPINDLE
Q151, 152, 155, 156, 160, 161
SWITCH
Q153, 154
FWD/RVS
Q158, 159
SWITCH
Q131
RELAY
DRIVE
SPINDLE PHASE SERVO
SPINDLE SERVO (SPEED AND PHASE)
TRACKING SERVO LD/CD/CDV
SLIDE SERVO LD/CD
FOCUS SERVO LD/CD
SKEW SERVO LD TILT
No mark: PAL (Common)
( ) : NTSC
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO
SIGNAL
PB

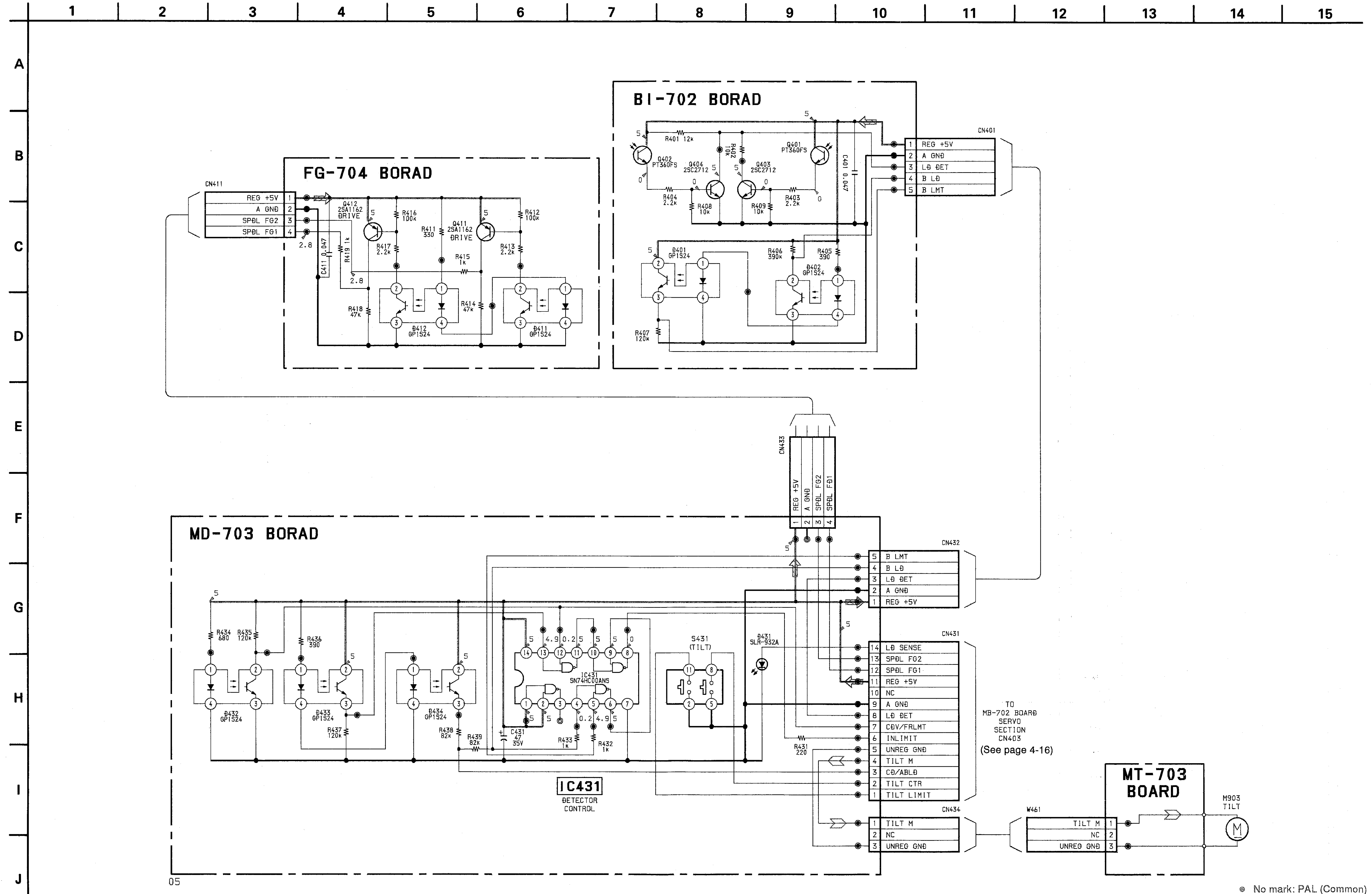
BI-702 (LD SIDE B, LIMIT DETECTION), FG-704 (SPINDLE FG), MD-703 (MECHANISM OPERATION DETECTION), MT-703 (TILT MOTOR) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

– Ref. No.: BI-702, FG-704, MD-703 and MT-703 Boards; 2,000 Series –



MD-703 BOARD

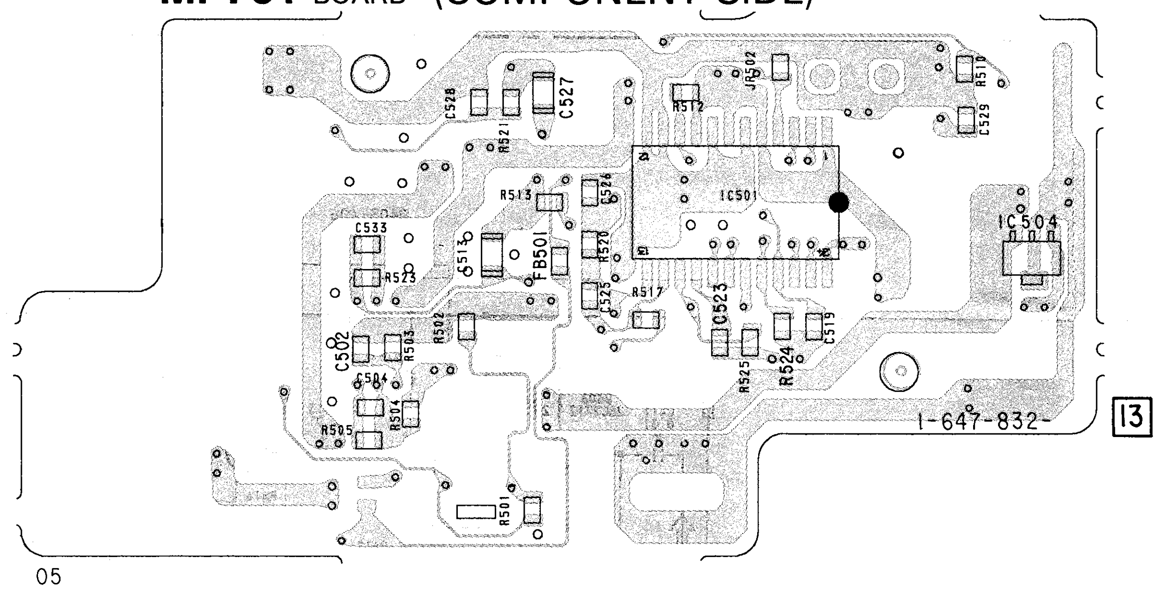
CN431	B-2
CN432	B-1
CN433	B-8
CN434	B-2
D431	B-5
D432	A-7
D433	A-7
D434	A-7
IC431	B-5

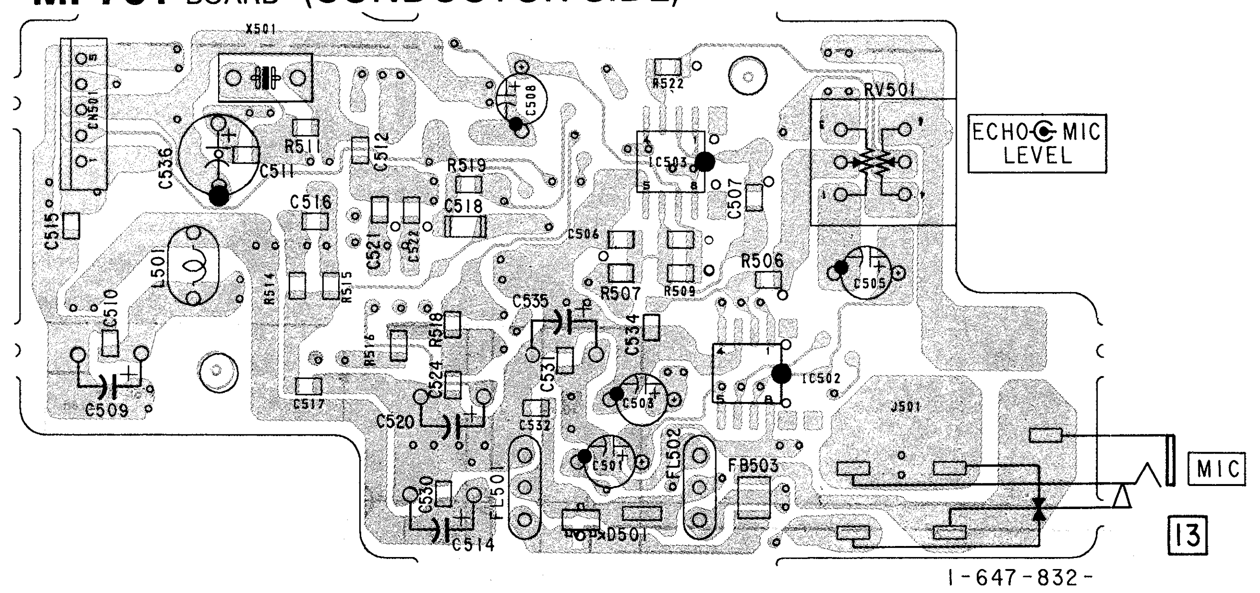


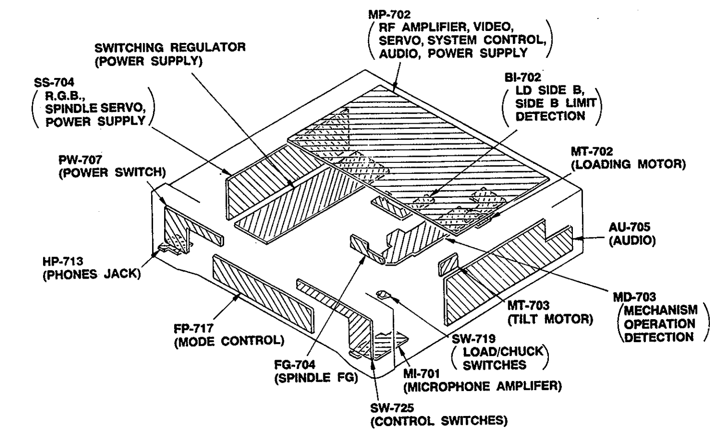
● No mark: PAL (Common)
( ) : NTSC

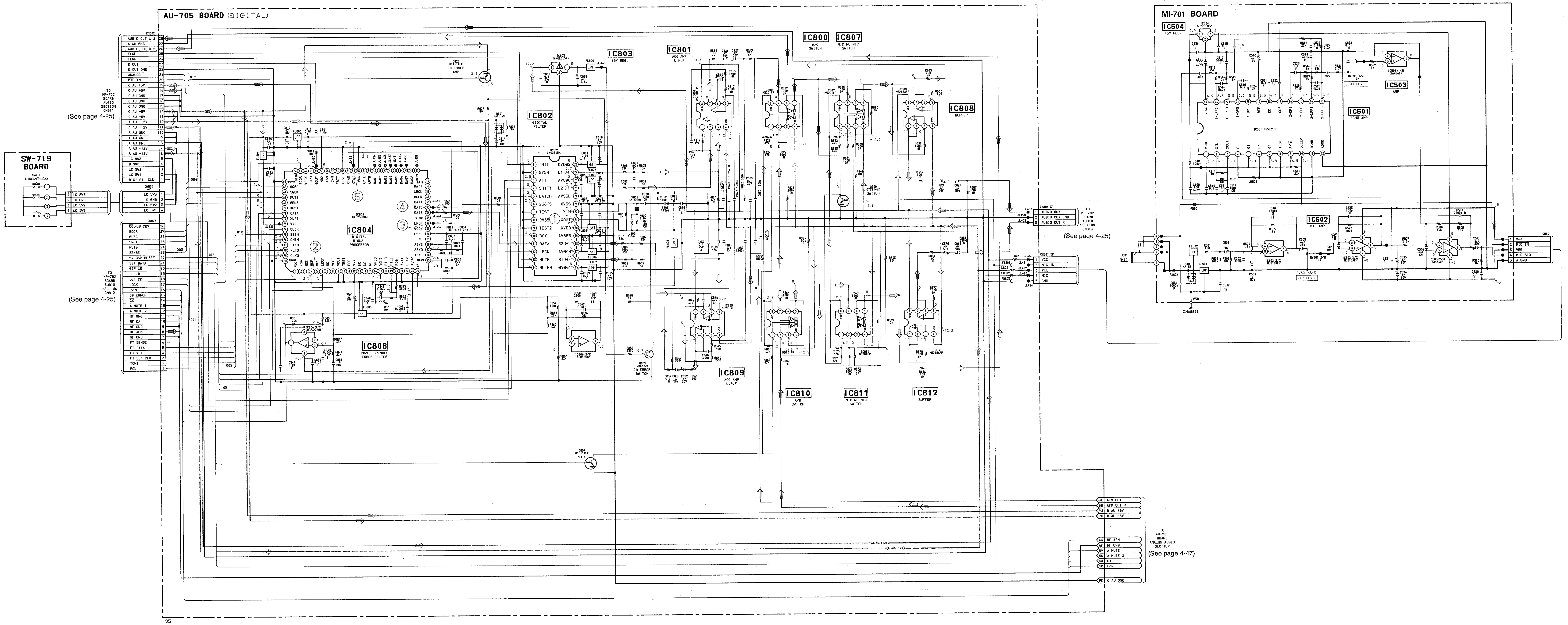
AU-705 (DIGITAL AUDIO), MI-701 (MIC AMPLIFIER) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM • See page 4-51 to 4-53 for AU-705 printed wiring board.

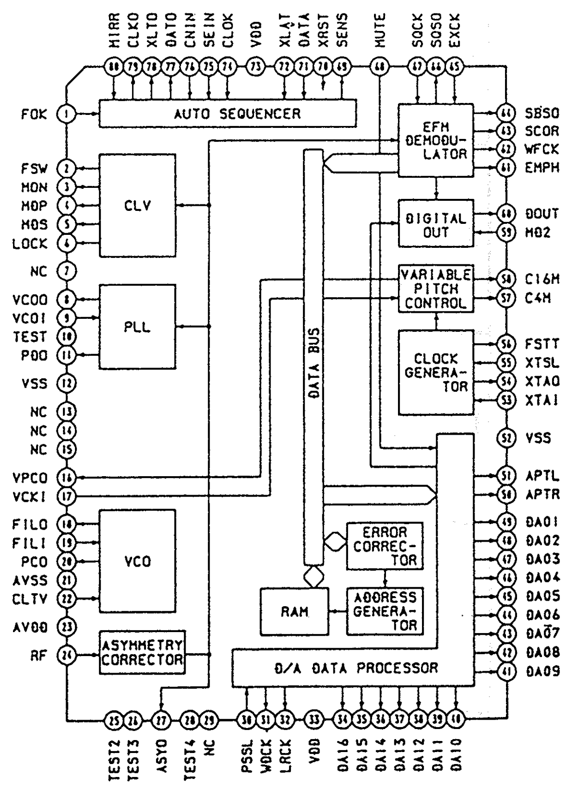
– Ref. No.: AU-705 Board; 4,000 series, MI-701Board; 3,000 series –











⊙ No mark: PAL (Common)
( ) : NTSC

	AUDIO SIGNAL
PB	⇨

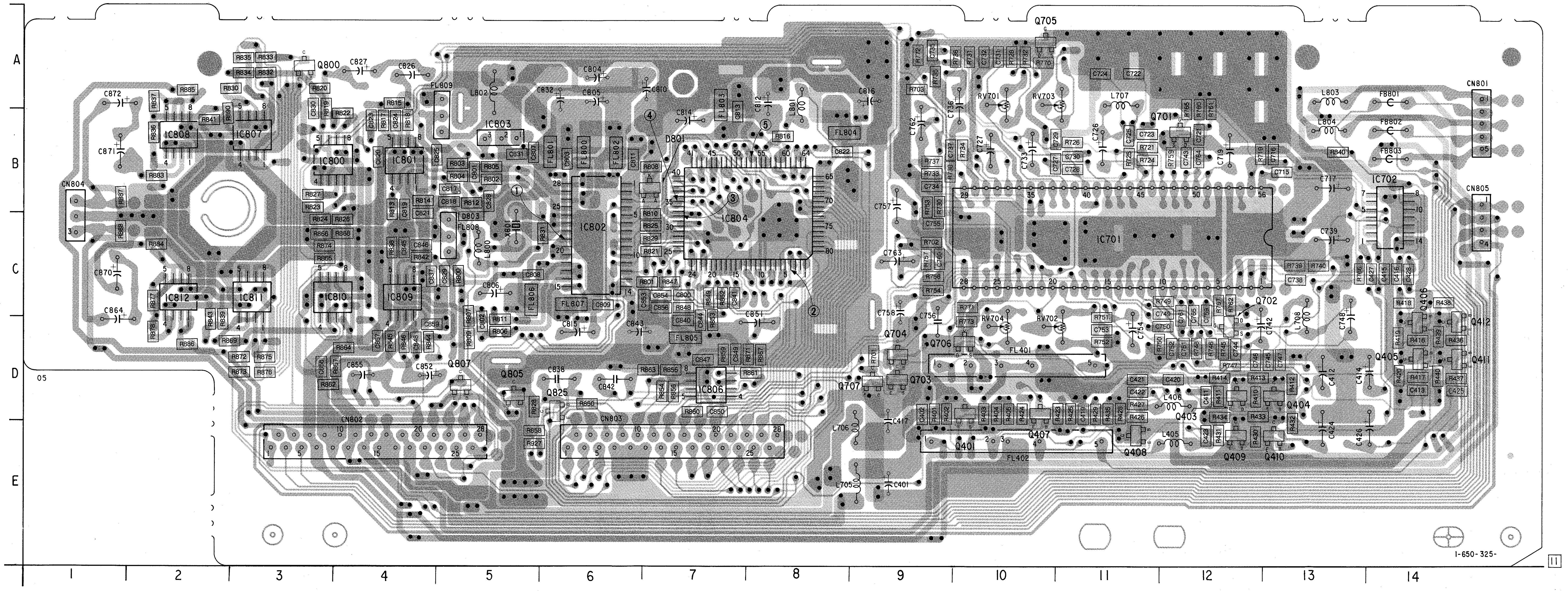
• No mark: PAL (Common)
( ) : NTSC

	AUDIO SIGNAL
PB	⇨

AU-705 (DIGITAL/ANALOG AUDIO) PRINTED WIRING BOARD

– Ref. No.: AU-705 Board; 4000 series –

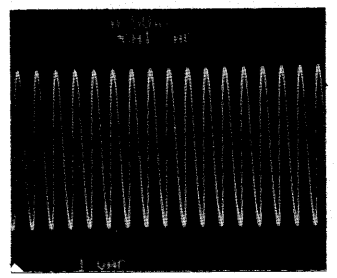
AU-705BOARD



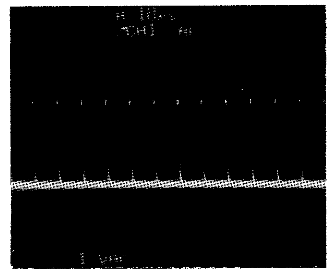
AU-705 BOARD	
CN801	B-14
CN802	E-4
CN803	E-6
CN804	B-1
CN805	C-14
D801	B-7
D803	C-5
IC701	C-11
IC702	B-14
IC800	B-3
IC801	B-4
IC802	C-6
IC803	C-3
IC804	B-7
IC806	D-7
IC807	B-3
IC808	B-2
IC809	C-4
IC810	C-3
IC811	C-3
IC812	C-2
Q401	D-10
Q403	D-12
Q404	D-13
Q405	D-14
Q407	D-10
Q408	E-10
Q409	E-10
Q410	E-10
Q412	D-14
Q701	B-12
Q702	D-12
Q703	D-9
Q704	D-9
Q705	A-10
Q706	D-10
Q707	D-9
Q800	A-3
Q805	D-5
Q807	D-5
Q825	D-6

AU-705 BOARD

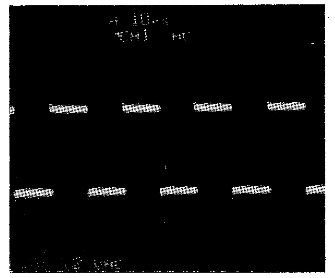
❶ IC802 ㉑



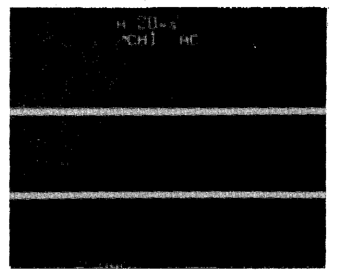
❷ IC804 ④



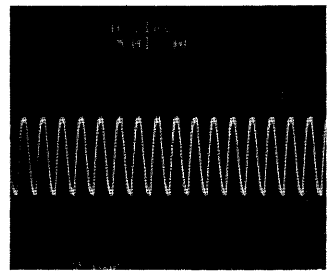
❸ IC804 ㉜

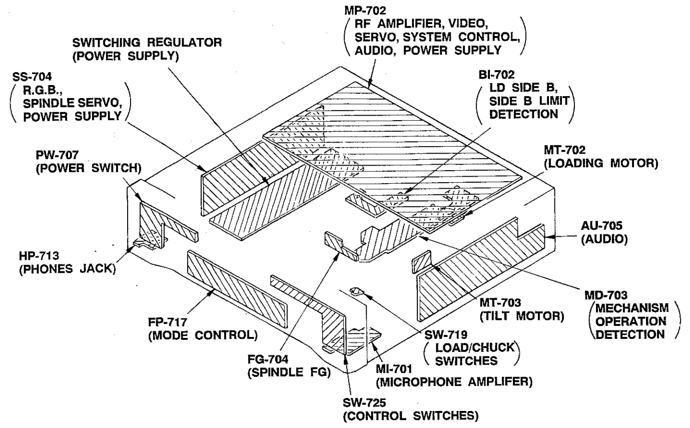


❹ IC804 ㉟



❺ IC804 ㊸



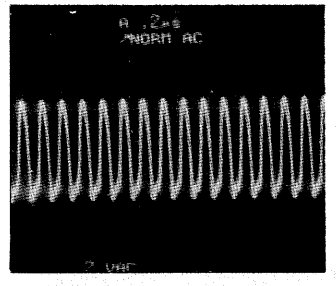


FP-717 (MODE CONTROL), SW-725 (CONTROL SWITCHES), PW-707 (POWER SWITCH) SCHEMATIC DIAGRAM

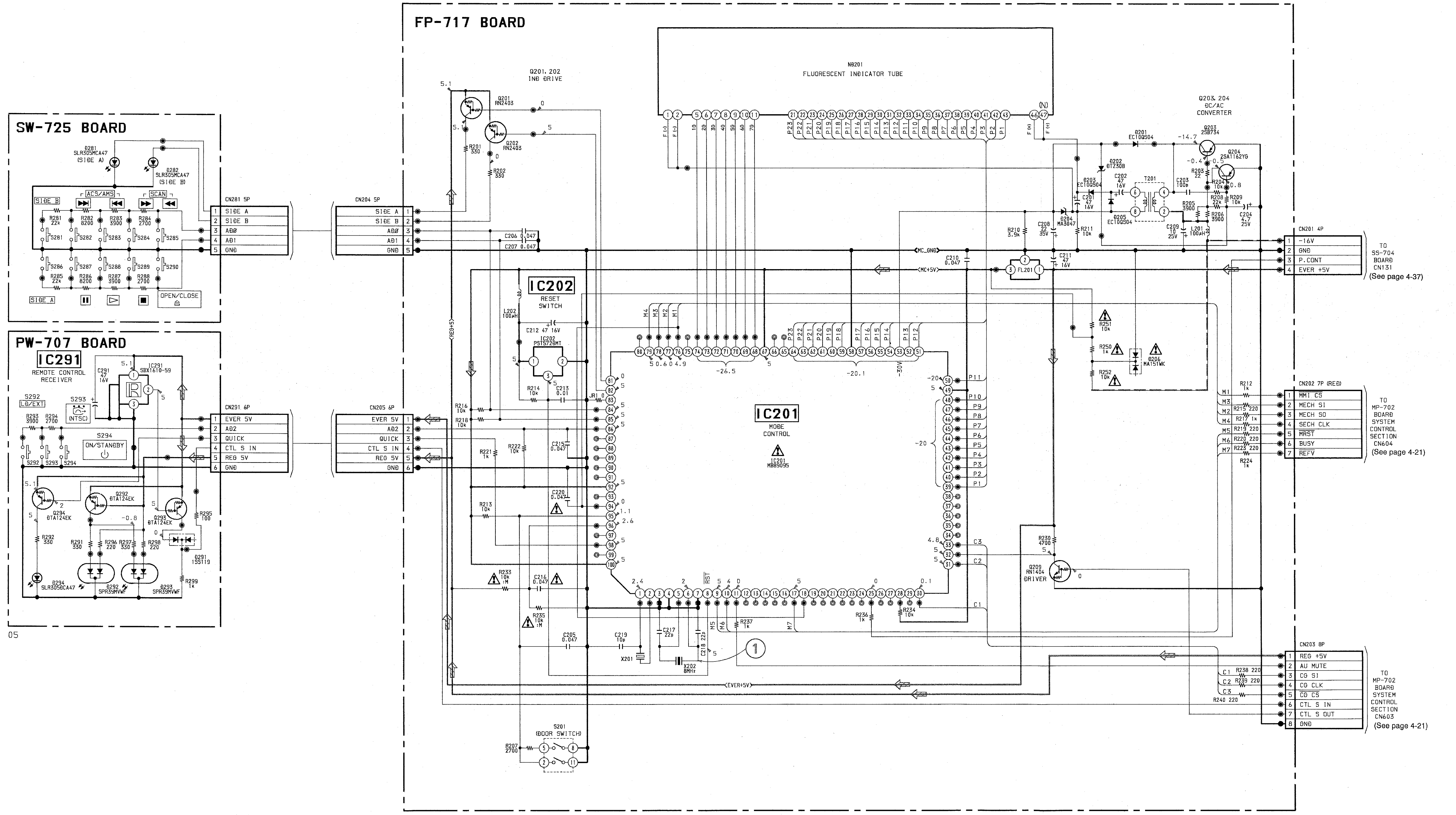
– Ref. No.: FP-717 Board; 3,000 series, SW-725 and PW-707 Boards; 7,000 series –

FP-705 BOARD

❶ IC201 ⑥



8 MHz



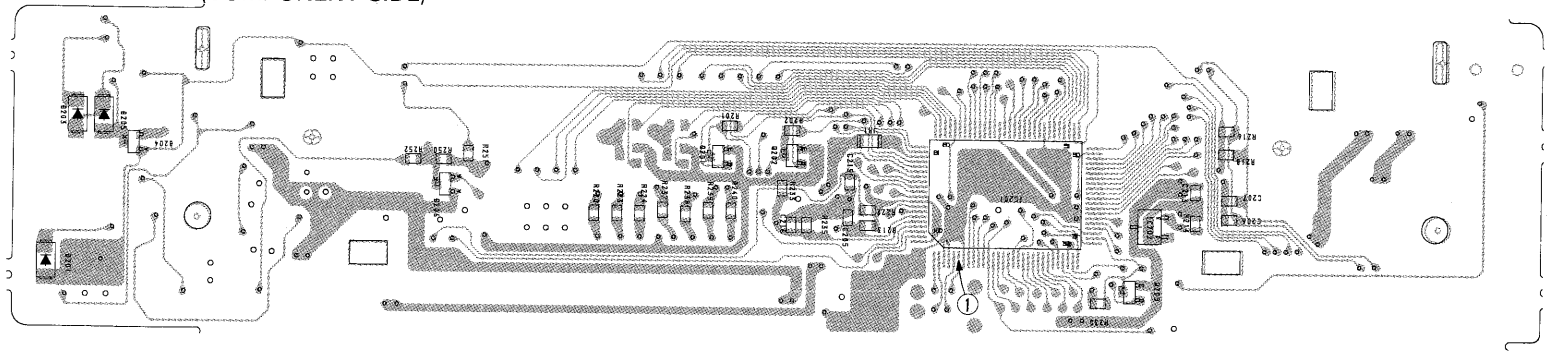
● No mark: PAL (Common)
( ) : NTSC

MODE CONTROL

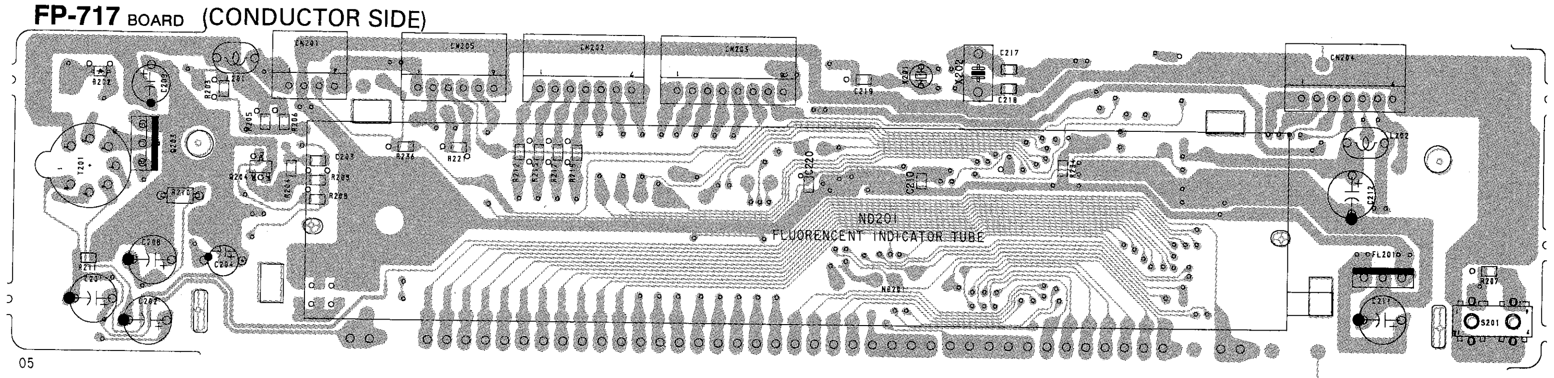
FP-717 (MODE CONTROL), SW-725 (CONTROL SWITCH), PW-707 (POWER SWITCH) PRINTED WIRING BOARDS

– Ref. No.: FP-717 Board; 3,000 series, SW-725 and PW-707 Boards; 7,000 series –

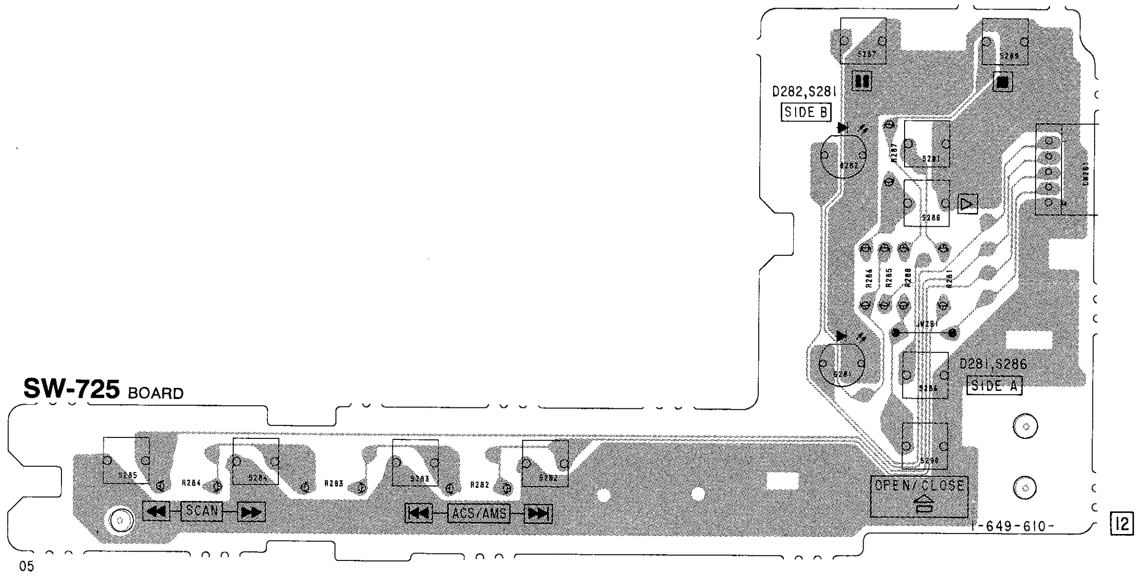
FP-717 BOARD (COMPONENT SIDE)



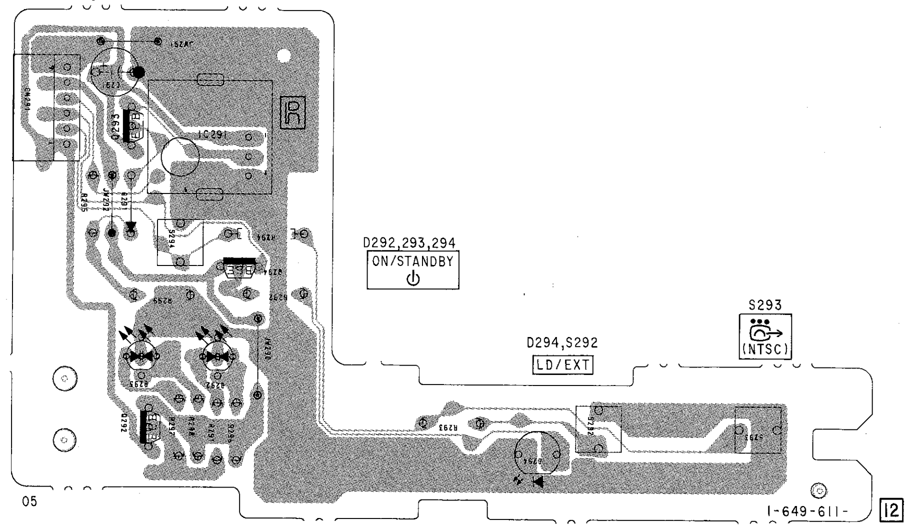
FP-717 BOARD (CONDUCTOR SIDE)

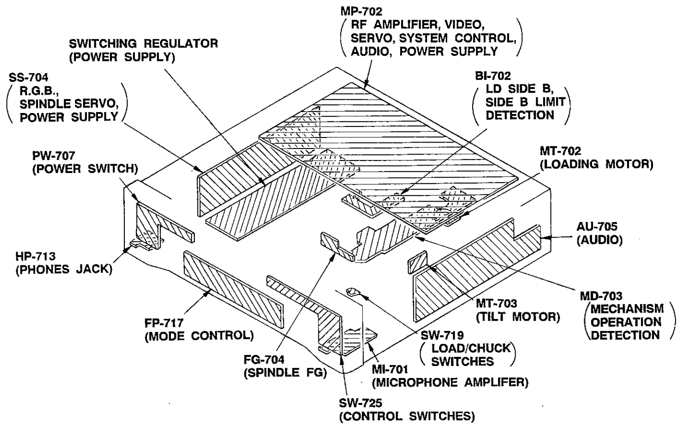


SW-725 BOARD



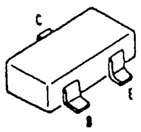
PW-707 BOARD



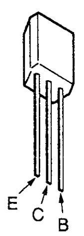


4-3. SEMICONDUCTORS

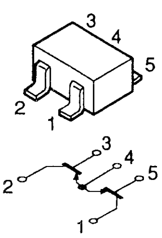
DTA114EK
DTA144EK
DTC114EK
DTC114TK
DTC144EK
RN1404
2SA1162-G
2SC2712-YG
2SC3326N-A
2SD596DV345



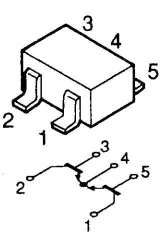
DTA124ES



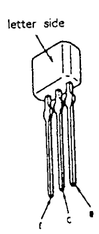
FMS1



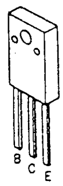
FMW1



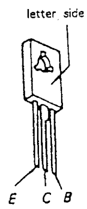
2SA1175-HFE
2SC2785-HFE



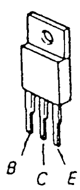
2SB1009R



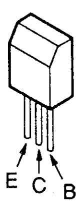
2SB1151



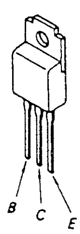
2SB1370-EF
2SD2012



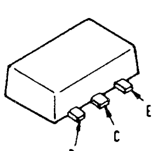
2SB734-34



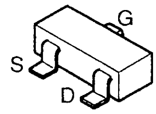
2SC4596E



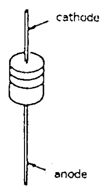
2SD999-CLCK



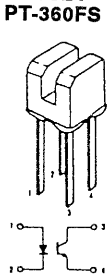
2SK209-G



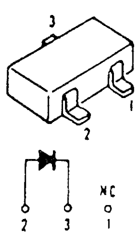
ERA81-006
HZS2-7NB1
RD4.3ES-B2
RD5.1ES-B2
RD9.1ES-B2
1SS119
11ES2



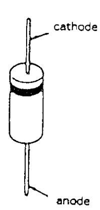
GP1S24
PT-360FS



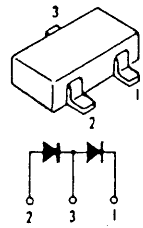
RD3.9M-B2
RD4.7M-B1
MA3091
MA3120-TX
RD3.6M-B2
RD6.2M-B1
RD9.1M-B2
1SS184



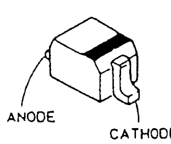
S3V40



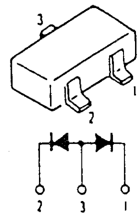
1SS226



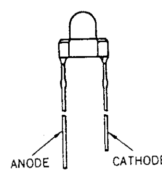
1SS355



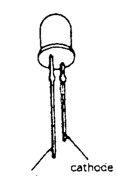
1S2836



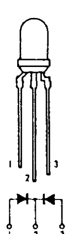
SLR305DCA47
SLR305MC3F



SLR932A



SPR-39MVWF



SECTION 5
REPAIR PARTS LIST

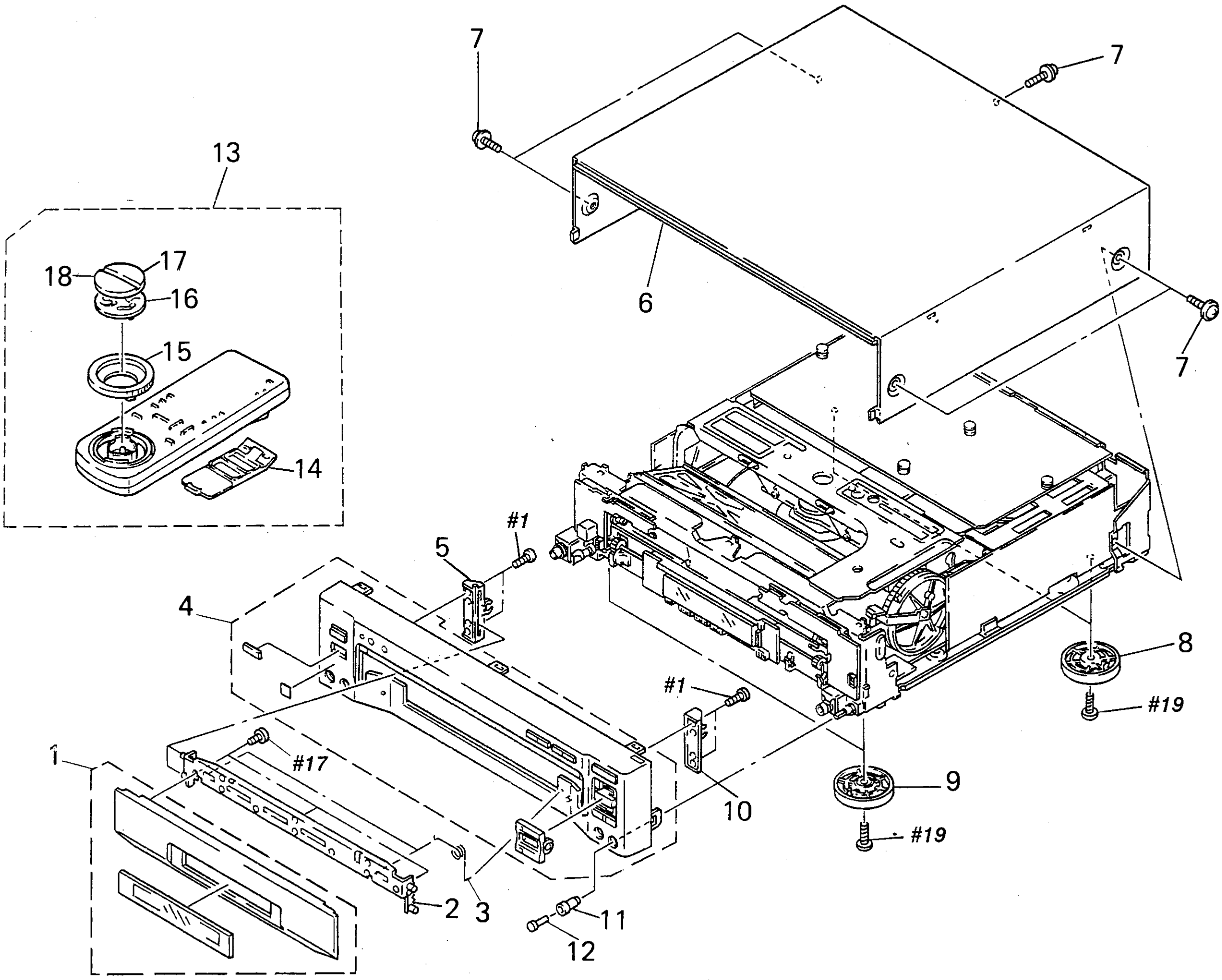
5-1. EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

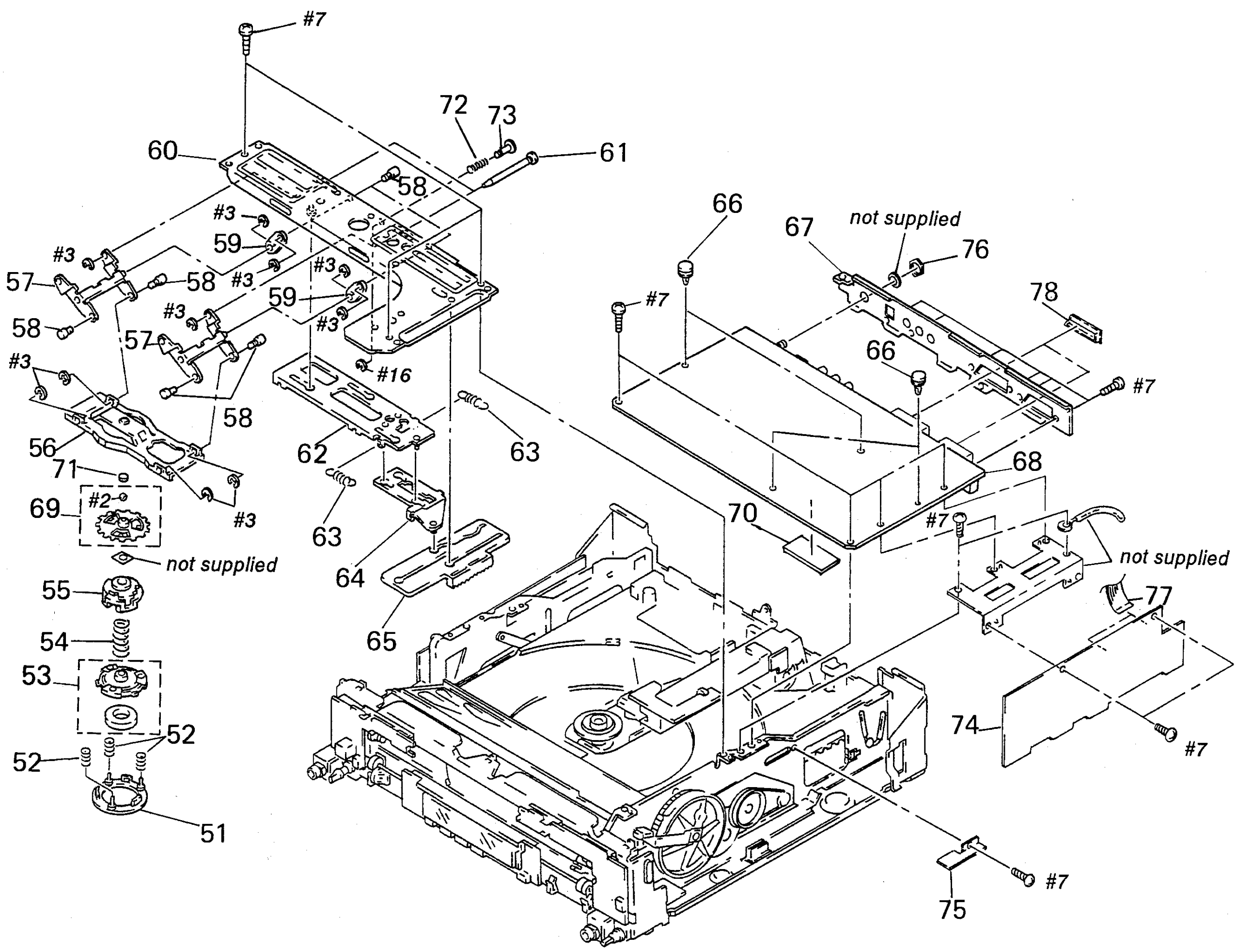
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1-1. FRONT PANEL ASSEMBLY



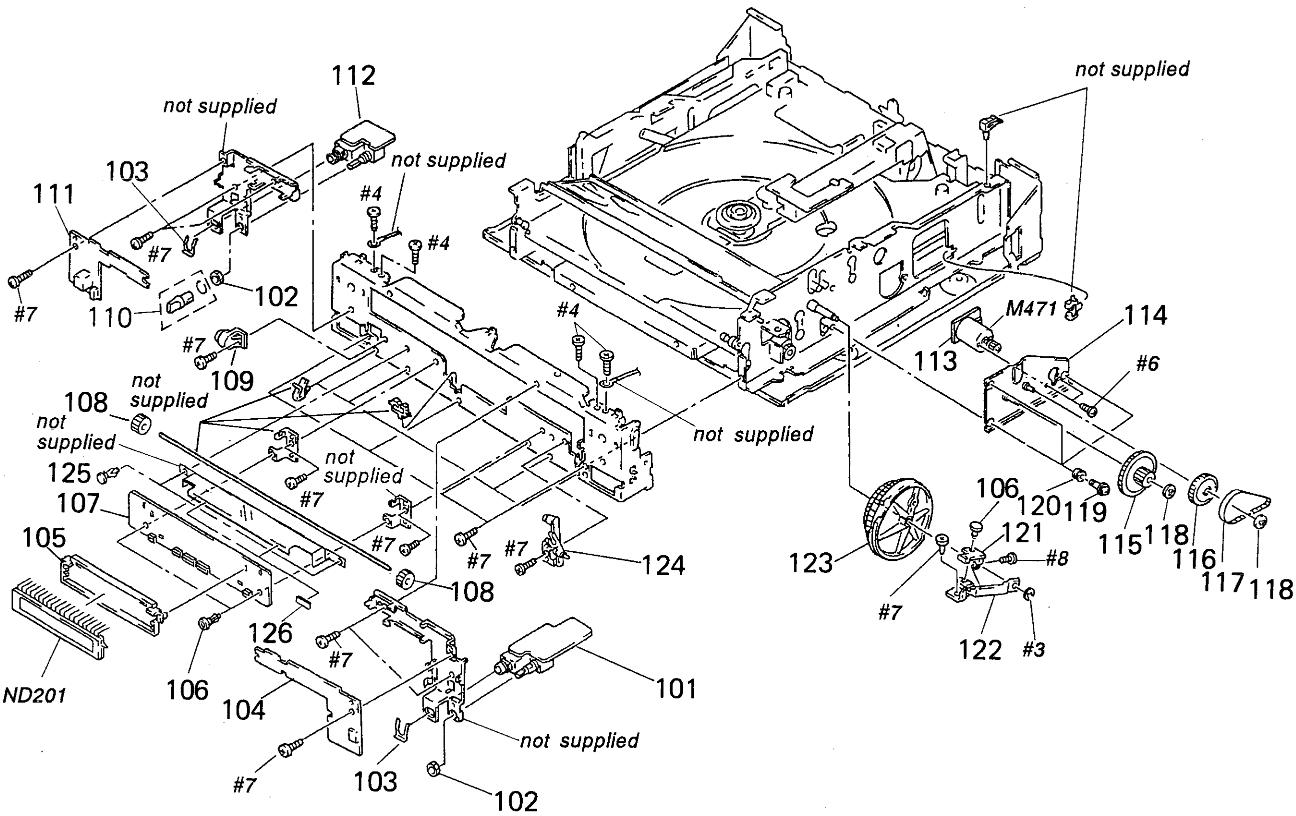
Ref. No.	Part No.	Description	Remark
1	X-3943-453-2	DOOR ASSY	
2	X-3942-785-1	DISK ASSY, DOOR	
3	3-953-309-01	SPRING, TORSION	
4	X-3943-452-1	PANEL ASSY, FRONT	
* 5	3-953-312-01	HOLDER (L), SLIDE	
* 6	X-3943-450-1	CASE (AE76) ASSY, UPPER	
7	3-710-901-41	SCREW, TAPPING	
8	X-3942-811-1	FOOT ASSY	
9	X-3943-320-1	FOOT ASSY	
* 10	3-953-313-01	HOLDER (R), SLIDE	
11	3-953-319-11	KNOB, ECHO	
12	3-953-318-11	KNOB, MICROPHONE	
13	1-467-380-11	REMOTE COMMANDER (RMT-M22)	
14	3-943-535-01	COVER, BATTERY	
15	3-941-616-01	SHUTTLE RING	
16	3-941-619-01	DIAL HOLDER	
17	3-941-617-41	BUTTON, PLAY	
18	3-941-618-41	BUTTON, PAUSE	

5-1-2. CHUCKING BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remark
51	X-3943-043-1	GUIDE (B) ASSY, CENTER	
52	3-953-290-01	SPRING (2), COMPRESSION	
53	X-3942-776-1	HOLDER ASSY, MAGNET	
54	3-953-291-01	SPRING (1), COMPRESSION	
55	3-953-288-01	PLATE, CHUCKING	
* 56	3-953-354-01	PLATE, CHUCK	
* 57	X-3942-801-1	ARM (L) ASSY	
* 58	3-953-345-01	SHAFT, ARM (S)	
* 59	3-953-352-01	ARM (S)	
* 60	X-3942-798-1	FRAME ASSY, CHUCK	
* 61	3-953-355-01	SHAFT, SLIDE	
* 62	X-3942-799-1	PLATE ASSY, SLIDE	
63	3-486-135-XX	SPRING, TENSION	
* 64	X-3942-800-1	LIMITER ASSY	
65	3-953-348-01	CAM, CHUCK	
* 66	4-386-173-01	SPACER	
* 67	3-956-671-01	PLATE, JACK	
* 68	A-6423-058-A	MP-702 BOARD, COMPLETE	
69	X-3942-787-1	PLATE ASSY, TOP	
* 70	A-6423-077-A	GM-701 BOARD, COMPLETE	
71	3-953-392-01	RETAINER, THRUST	
72	3-353-241-01	SPRING, COMPRESSION	
* 73	3-953-831-01	STOPPER, OPT	
* 74	A-6423-059-A	AU-705 BOARD, COMPLETE	
75	3-955-673-01	SPRING, LEAF	
76	3-724-182-01	NUT (SMALL JACK), M6	
77	1-751-683-11	CABLE, FLEXIBLE FLAT (28 CORE)	
* 78	3-956-675-01	COVER, EURO-AV	

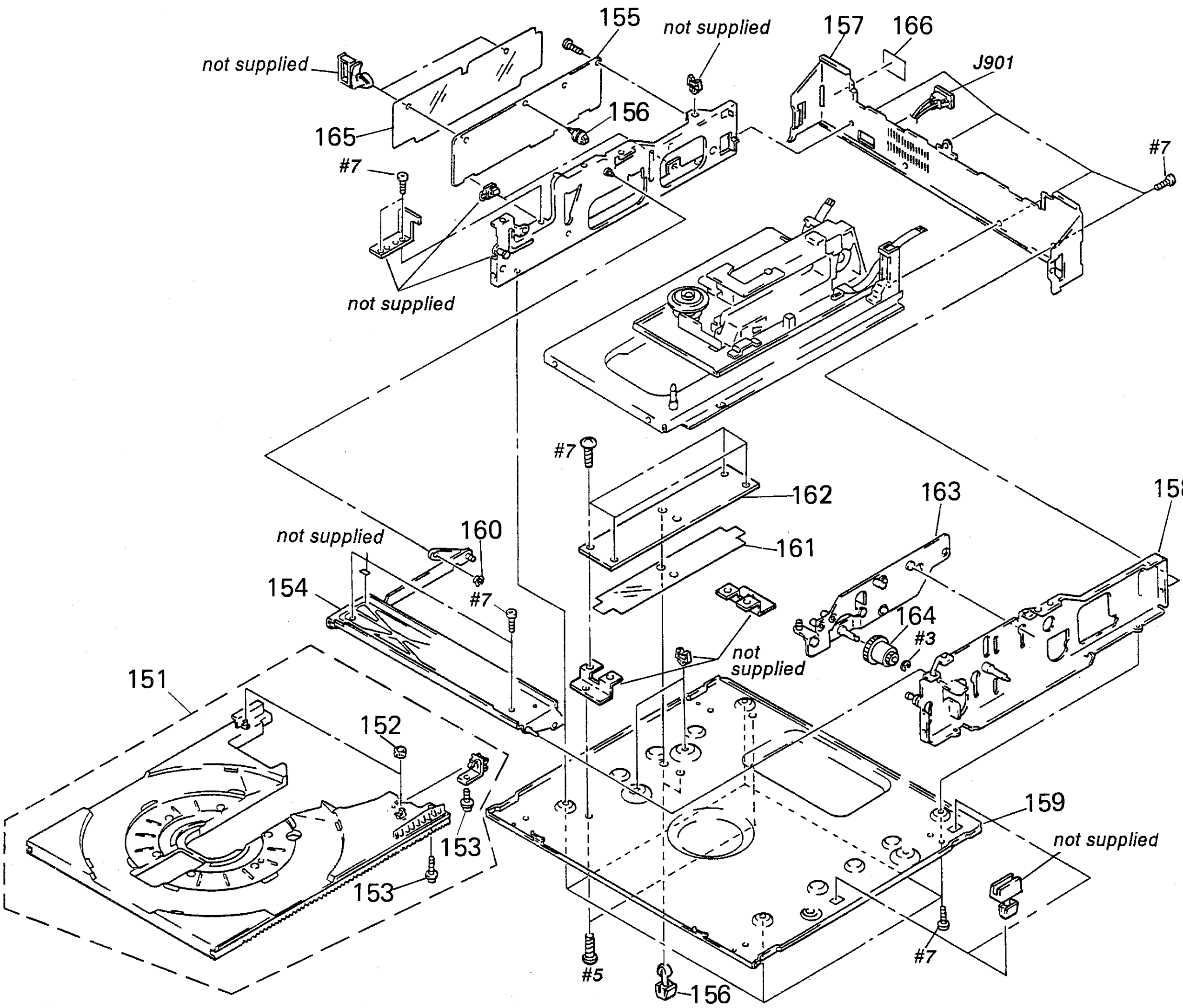
5-1-3. FRONT CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 101	A-6423-064-A	MI-701 (AE76) BOARD, COMPLETE	
102	3-950-989-01	NUT (M7), HEXAGON	
* 103	3-684-436-01	PLATE, MOUNT	
* 104	A-6423-063-A	SW-725 (AE76) BOARD, COMPLETE	
105	3-953-317-01	HOLDER, TUBE, FL	
106	3-531-576-11	RIVET	
* 107	A-6423-062-A	FP-717 (AE76) BOARD, COMPLETE	
108	3-953-325-01	GEAR, PHASE	
109	4-919-393-01	DAMPER	
110	A-6415-522-A	KNOB BLOCK ASSY (BR)	
* 111	A-6423-065-A	PW-707 (AE76) BOARD, COMPLETE	
* 112	A-6423-061-A	HP-713 (AE76) BOARD, COMPLETE	
* 113	A-6421-953-A	MT-702 BOARD, COMPLETE	
* 114	X-3942-805-1	BRACKET ASSY, GEAR	
115	3-953-358-01	GEAR, MIDWAY	
116	3-953-394-01	PULLEY (A)	
117	3-953-393-01	BELT, TIMING	
118	3-669-595-00	WASHER (2), STOPPER	
119	3-570-027-00	SCREW, MOTOR	
120	3-570-118-00	CUSHION, MOTOR	
* 121	A-6421-954-A	SW-719 BOARD, COMPLETE	
* 122	3-953-357-01	BRACKET, SW	
123	3-953-356-01	GEAR, CONTROL	
124	X-3942-786-1	LINK ASSY, DRIVING	
* 125	3-954-681-01	RIVET, NYLON	
126	3-831-441-11	CUSHION, CABINET UPPER 10X7X0.5	
⚠M471	X-3942-963-1	MOTOR ASSY (LOADING)	
ND201	1-517-161-21	INDICATOR TUBE, FLUORESCENT	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

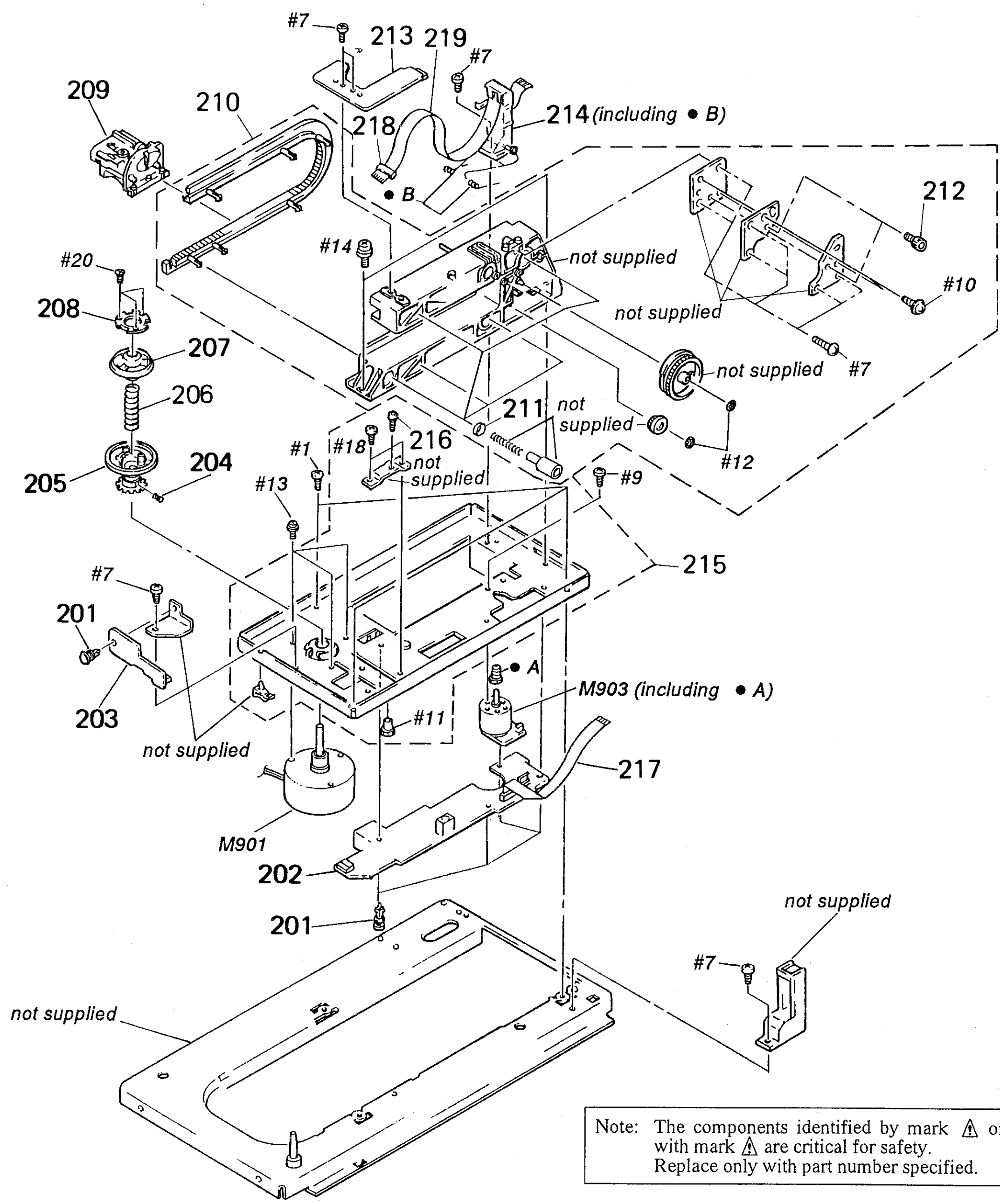
5-1-4. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
151	X-3942-781-1	TRAY ASSY	
* 152	4-914-248-01	STOPPER, RUBBER	
153	3-710-901-11	SCREW, TAPPING	
* 154	X-3942-796-1	FRAME ASSY, TRAY T	
* 155	A-6423-060-A	SS-704 BOARD, COMPLETE	
* 156	4-884-834-00	SUPPORT, PC	
* 157	3-955-881-11	PANEL, REAR	
* 158	X-3942-803-1	FRAME (R) ASSY	
* 159	3-955-544-01	PLATE, BOTTOM	
160	3-703-074-01	CAP 3, SHAFT	
* 161	3-956-670-01	SHEET, INSULATING	
⚠162	1-413-898-11	POWER BLOCK	
163	X-3942-802-1	PLATE ASSY, BASE, LOADING	
164	3-953-361-01	GEAR, IDLER	
* 165	3-956-673-01	SHEET, INSULATING	
* 166	3-955-950-01	LABEL, MODEL NUMBER	(UK)
* 166	3-956-674-01	LABEL, MODEL NUMBER	(AEP)
⚠J901	1-951-551-11	HARNESS (AC-2)(AC IN)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1-5. MECHANISM DECK CHASSIS SECTION



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
201	3-703-356-00	RIVET, T TYPE	
202	A-6421-956-A	MD-703 (J78) BOARD, COMPLETE	
203	A-6421-957-A	FG-704 (J78) BOARD, COMPLETE	
204	3-701-507-00	SET SCREW, DOUBLE POINT, (M3X5)	
205	X-3942-779-1	TURNTABLE ASSY	
206	3-953-289-01	SPRING (3), COMPRESSION	
207	3-953-292-01	GUIDE, CENTER	
208	3-953-293-01	PLATE (C), YOKE	
⚠209	8-848-286-11	DEVICE, OPTICAL KHS-150A (RP)	
210	A-6404-082-A	BASE BLOCK ASSY, FEED	
211	3-953-830-01	WASHER, U	

Ref. No.	Part No.	Description	Remark
212	3-899-249-01	BOLT, HEXAGON SOCKET	
213	A-6421-958-A	BI-702 (J78) BOARD, COMPLETE	
214	A-6404-076-A	STAND ASSY, FLEXIBLE RETAINER	
* 215	A-6404-074-A	PLATE BLOCK ASSY, BASE	
216	3-953-829-01	BOLT	
217	1-751-084-11	CABLE, FLEXIBLE FLAT (14 CORE)	
218	3-953-268-01	HOLDER (18P), FLEXIBLE	
219	1-751-083-11	CABLE, FLEXIBLE FLAT (18 CORE)	
⚠M901	1-698-109-11	MOTOR, DD (SPINDLE)	
⚠M903	X-3942-968-1	TILT MOTOR ASSY	

AU-705

5-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
A	A-6423-059-A	AU-705 BOARD, COMPLETE			
		**********************			
		(Ref. NO. 4,000 Series)			
		< CAPACITOR >			
C401	1-124-443-00	ELECT	100uF	20%	10V
C402	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C411	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C412	1-124-589-11	ELECT	47uF	20%	16V
C413	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C414	1-124-589-11	ELECT	47uF	20%	16V
C415	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C416	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C417	1-124-443-00	ELECT	100uF	20%	10V
C419	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C420	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C421	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C422	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C423	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C424	1-124-589-11	ELECT	47uF	20%	16V
C425	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C426	1-124-589-11	ELECT	47uF	20%	16V
C427	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C428	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C715	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C716	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C717	1-126-177-11	ELECT	100uF	20%	10V
C719	1-124-443-00	ELECT	100uF	20%	10V
C721	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C722	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C723	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C724	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C725	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C726	1-126-233-11	ELECT	22uF	20%	50V
C727	1-124-443-00	ELECT	100uF	20%	10V
C728	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C729	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C730	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C731	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C732	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C733	1-126-096-11	ELECT	10uF	20%	35V
C734	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C735	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C736	1-124-234-00	ELECT	22uF	20%	16V
C737	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C738	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C739	1-126-177-11	ELECT	100uF	20%	10V
C742	1-124-443-00	ELECT	100uF	20%	10V
C743	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C744	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C745	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C746	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C747	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C748	1-124-234-00	ELECT	22uF	20%	16V
C749	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C750	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C751	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C752	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C753	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C754	1-126-096-11	ELECT	10uF	20%	35V
C755	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C756	1-126-529-11	ELECT	0.47uF	20%	50V
C757	1-124-443-00	ELECT	100uF	20%	10V
C758	1-124-927-11	ELECT	4.7uF	20%	100V
C759	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C760	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C761	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C762	1-107-715-11	ELECT	22uF	20%	50V
C763	1-107-715-11	ELECT	22uF	20%	50V
C764	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C765	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C800	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C801	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C802	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C803	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C804	1-124-126-00	ELECT	47uF	20%	10V
C805	1-124-126-00	ELECT	47uF	20%	10V
C806	1-124-126-00	ELECT	47uF	20%	10V
C807	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C808	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C809	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C810	1-124-126-00	ELECT	47uF	20%	10V
C811	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C812	1-124-126-00	ELECT	47uF	20%	10V
C813	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C814	1-124-126-00	ELECT	47uF	20%	10V
C815	1-124-126-00	ELECT	47uF	20%	10V
C816	1-124-126-00	ELECT	47uF	20%	10V
C817	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C818	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C819	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C820	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C821	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C822	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C823	1-104-540-11	FILM CHIP	0.0012uF	5%	50V
C824	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C825	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C826	1-126-051-11	ELECT	47uF	20%	50V
C827	1-126-051-11	ELECT	47uF	20%	50V
C828	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C829	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C830	1-104-541-11	FILM CHIP	0.0015uF	5%	50V
C831	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C832	1-124-472-11	ELECT	470uF	20%	10V
C837	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C838	1-126-320-11	ELECT, NONPOLAR	10uF	20%	16V
C840	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C841	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C842	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C843	1-124-126-00	ELECT	47uF	20%	10V
C844	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C845	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C846	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C847	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C848	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C849	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C850	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C851	1-124-907-11	ELECT	10uF	20%	50V
C852	1-126-051-11	ELECT	47uF	20%	50V
C853	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C854	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C855	1-126-051-11	ELECT	47uF	20%	50V
C857	1-104-540-11	FILM CHIP	0.0012uF	5%	50V
C858	1-104-541-11	FILM CHIP	0.0015uF	5%	50V
C859	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C864	1-126-051-11	ELECT	47uF	20%	50V
C870	1-126-051-11	ELECT	47uF	20%	50V
C871	1-126-051-11	ELECT	47uF	20%	50V
C872	1-126-051-11	ELECT	47uF	20%	50V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN801	1-506-484-11	PIN, CONNECTOR 5P	
* CN802	1-563-461-11	SOCKET, CONNECTOR 28P	
* CN803	1-563-461-11	SOCKET, CONNECTOR 28P	
CN804	1-506-468-11	PIN, CONNECTOR 3P	
* CN805	1-564-014-51	PIN, CONNECTOR 4P	
		< DIODE >	
D801	8-719-801-78	DIODE 1SS184	
D803	8-713-100-11	DIODE 1T362	
		< FERRITE BEAD >	
FB801	1-410-397-21	FERRITE BEAD INDUCTOR	
FB802	1-410-397-21	FERRITE BEAD INDUCTOR	
FB803	1-410-397-21	FERRITE BEAD INDUCTOR	
		< FILTER >	
FL401	1-239-786-11	FILTER, BAND PASS	
FL402	1-239-787-11	FILTER, BAND PASS	
FL800	1-236-744-21	FILTER, EMI	
FL801	1-236-744-21	FILTER, EMI	
FL802	1-236-744-21	FILTER, EMI	
FL803	1-236-744-21	FILTER, EMI	
FL804	1-236-744-21	FILTER, EMI	
FL805	1-236-744-21	FILTER, EMI	
FL806	1-236-744-21	FILTER, EMI	
FL807	1-236-744-21	FILTER, EMI	
FL808	1-239-803-11	FILTER, EMI	
FL809	1-239-803-11	FILTER, EMI	
		< IC >	
IC701	8-759-322-23	IC HA12127ANT	
IC702	8-759-143-99	IC uPD74HC4066G	
IC800	8-759-603-27	IC M5201FP	
IC801	8-759-636-55	IC M5218AFP	
IC802	8-752-360-60	IC CXD2565M	
⚠IC803	8-759-708-05	IC NJM78L05A	
IC804	8-752-351-78	IC CXD2500BQ	
IC806	8-759-100-96	IC uPC4558G2	
IC807	8-759-603-27	IC M5201FP	
IC808	8-759-636-55	IC M5218AFP	
IC809	8-759-636-55	IC M5218AFP	
IC810	8-759-603-27	IC M5201FP	
IC811	8-759-603-27	IC M5201FP	
IC812	8-759-636-55	IC M5218AFP	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

AU-705

Ref. No.	Part No.	Description				Remark
		< COIL >				
L405	1-408-420-00	INDUCTOR 82uH				
L406	1-408-420-00	INDUCTOR 82uH				
L705	1-408-420-00	INDUCTOR 82uH				
L706	1-408-420-00	INDUCTOR 82uH				
L707	1-410-069-11	INDUCTOR 6.8mH				
L708	1-410-069-11	INDUCTOR 6.8mH				
L800	1-408-399-00	INDUCTOR 1.5uH				
L801	1-408-594-21	INDUCTOR 1.8uH				
L803	1-424-033-21	FILTER, NOISE				
L804	1-424-033-21	FILTER, NOISE				
		< LEAD PIN >				
LP801	4-352-844-01	PIN, LEAD, COATING				
LP802	4-352-844-01	PIN, LEAD, COATING				
LP803	4-352-844-01	PIN, LEAD, COATING				
LP804	4-352-844-01	PIN, LEAD, COATING				
		< TRANSISTOR >				
Q401	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q403	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q404	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q405	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q406	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q407	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q408	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q409	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q410	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q411	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q412	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q701	8-729-220-93	TRANSISTOR	2SK209-G			
Q702	8-729-220-93	TRANSISTOR	2SK209-G			
Q703	8-729-901-04	TRANSISTOR	DTA114EK			
Q704	8-729-900-53	TRANSISTOR	DTC114EK			
Q705	8-729-220-93	TRANSISTOR	2SK209-G			
Q706	8-729-220-93	TRANSISTOR	2SK209-G			
Q707	8-729-900-53	TRANSISTOR	DTC114EK			
Q800	8-729-900-53	TRANSISTOR	DTC114EK			
Q805	8-729-202-38	TRANSISTOR	2SC3326N-A			
Q807	8-729-900-53	TRANSISTOR	DTC114EK			
Q825	8-729-901-04	TRANSISTOR	DTA114EK			
		< RESISTOR >				
R401	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R402	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R403	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R404	1-216-631-11	METAL CHIP	150	0.5%	1/10W	
R405	1-216-631-11	METAL CHIP	150	0.5%	1/10W	
R410	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R411	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R412	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R413	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R414	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R416	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R417	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R418	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R419	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R420	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R423	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R424	1-216-635-11	METAL CHIP	220	0.5%	1/10W	
R425	1-216-647-11	METAL CHIP	680	0.5%	1/10W	
R426	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R427	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R428	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R429	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R430	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R431	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R432	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R433	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R434	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R435	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R436	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R437	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R438	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R439	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R440	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R701	1-216-697-11	METAL CHIP	82K	0.5%	1/10W	
R719	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R721	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	
R724	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R725	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W	
R726	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R727	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R728	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R730	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R731	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R732	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R733	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W	
R734	1-218-756-11	METAL GLAZE	150K	2%	1/10W	
R735	1-218-756-11	METAL GLAZE	150K	2%	1/10W	
R736	1-216-698-11	METAL CHIP	91K	0.5%	1/10W	
R737	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R738	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R739	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R740	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R745	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R746	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	

Ref. No.	Part No.	Description				Remark
R747	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W	
R748	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R749	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R750	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R751	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R752	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R753	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W	
R754	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	
R757	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R758	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R759	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R760	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R761	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R762	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R765	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R766	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R767	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R770	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W	
R771	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W	
R772	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R773	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R800	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W	
R801	1-216-676-11	METAL CHIP	11K	0.5%	1/10W	
R802	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R803	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R804	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R805	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R806	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R807	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R808	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R809	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R810	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R811	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R812	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R813	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R814	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R815	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R816	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R817	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R818	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R819	1-216-650-11	METAL CHIP	910	0.5%	1/10W	
R820	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R821	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R822	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R823	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R824	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R825	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R826	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R827	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R828	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R829	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R830	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R831	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R832	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R833	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R834	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R835	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R836	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R837	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R838	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R839	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R841	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R842	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R843	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R844	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R845	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R846	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R847	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R848	1-218-776-11	METAL GLAZE	1M	2%	1/10W	
R849	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R850	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R852	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R853	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R854	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R855	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R856	1-216-693-11	METAL CHIP	56K	0.5%	1/10W	
R857	1-216-650-11	METAL CHIP	910	0.5%	1/10W	
R858	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R859	1-218-754-11	METAL GLAZE	120K	2%	1/10W	
R860	1-216-680-11	METAL CHIP	16K	0.5%	1/10W	
R861	1-218-754-11	METAL GLAZE	120K	2%	1/10W	
R862	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R863	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R864	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R865	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R866	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R867	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R868	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R869	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R871	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R872	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R873	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R874	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R875	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R876	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R877	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	

Ref. No.	Part No.	Description				Remark
R878	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R883	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R884	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R885	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R886	1-216-627-11	METAL CHIP	100	0.5%	1/10W	
R887	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R888	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R890	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R927	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
		< VARIABLE RESISTOR >				
RV701	1-238-019-11	RES, ADJ, CARBON 47K				
RV702	1-238-019-11	RES, ADJ, CARBON 47K				
RV703	1-238-019-11	RES, ADJ, CARBON 47K				
RV704	1-238-019-11	RES, ADJ, CARBON 47K				
		< VIBRATOR >				
X801	1-760-123-11	VIBRATOR, CRYSTAL (33.8688MHz)				

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A-6421-958-A BI-702 BOARD, COMPLETE
****
(Ref. NO. 2,000 Series)

Ref. No.	Part No.	Description				Remark
	3-953-261-01	HOLDER, PD				
		< CAPACITOR >				
C401	1-163-035-00	CERAMIC CHIP	0.047uF			50V
		< CONNECTOR >				
CN401	1-506-484-11	PIN, CONNECTOR 5P				
		< DIODE >				
D401	8-729-020-74	DIODE	GP1S24			
D402	8-729-020-74	DIODE	GP1S24			
		< JUMPER RESISTOR >				
JR401	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR403	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR404	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR405	1-216-296-91	METAL GLAZE	0	5%	1/8W	
		< TRANSISTOR >				
Q401	8-729-904-10	TRANSISTOR	PT-360FS			
Q402	8-729-904-10	TRANSISTOR	PT-360FS			
Q403	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q404	8-729-230-49	TRANSISTOR	2SC2712-YG			
		< RESISTOR >				
R401	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R403	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R404	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R405	1-216-039-00	METAL CHIP	390	5%	1/10W	
R406	1-216-111-00	METAL CHIP	390K	5%	1/10W	
R407	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R408	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W	

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A-6421-957-A FG-704 BOARD, COMPLETE
****
(Ref. NO. 2,000 Series)

Ref. No.	Part No.	Description				Remark
		< CAPACITOR >				
C411	1-163-035-00	CERAMIC CHIP	0.047uF			50V
		< CONNECTOR >				
CN411	1-691-863-11	CONNECTOR, BOARD TO BOARD				
		< DIODE >				
D411	8-729-020-74	DIODE	GP1S24-G			
D412	8-729-020-74	DIODE	GP1S24-G			
		< JUMPER RESISTOR >				
JR410	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR411	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR412	1-216-295-00	METAL CHIP	0	5%	1/10W	
		< TRANSISTOR >				
Q411	8-729-216-22	TRANSISTOR	2SA1162			
Q412	8-729-216-22	TRANSISTOR	2SA1162			
		< RESISTOR >				
R411	1-216-037-00	METAL CHIP	330	5%	1/10W	
R412	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R413	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R414	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R415	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R416	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R417	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R418	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R419	1-216-049-00	METAL CHIP	1K	5%	1/10W	

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Ref. No.	Part No.	Description				Remark
*	A-6423-062-A	FP-717 BOARD, COMPLETE				
		**********************				
		(Ref. NO. 3,000 Series)				
	3-953-317-01	HOLDER, TUBE, FL				
		< CAPACITOR >				
C201	1-124-589-11	ELECT	47uF	20%	16V	
C202	1-124-589-11	ELECT	47uF	20%	16V	
C203	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C204	1-126-163-11	ELECT	4.7uF	20%	50V	
C205	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C206	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C207	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C208	1-124-248-00	ELECT	22uF	20%	35V	
C209	1-126-096-11	ELECT	10uF	20%	35V	
C210	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C211	1-124-589-11	ELECT	47uF	20%	16V	
C212	1-124-589-11	ELECT	47uF	20%	16V	
C213	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C215	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
⚠C216	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C217	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C218	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C219	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	
⚠C220	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
		< CONNECTOR >				
CN201	1-506-483-21	PIN, CONNECTOR 4P				
CN202	1-506-486-11	PIN, CONNECTOR 7P				
CN203	1-506-487-11	PIN, CONNECTOR 8P				
CN204	1-506-484-11	PIN, CONNECTOR 5P				
CN205	1-506-485-11	PIN, CONNECTOR 6P				
		< DIODE >				
D201	8-719-210-39	DIODE	EC10QS-04			
D202	8-719-978-93	DIODE	DTZ30B-TT11			
D203	8-719-210-39	DIODE	EC10QS-04			
D204	8-719-105-73	DIODE	RD4.7M-B2			
D205	8-719-210-39	DIODE	EC10QS-04			
⚠D206	8-719-801-78	DIODE	1SS184			
		< FILTER >				
FL201	1-421-927-21	FILTER, NOISE				
		< IC >				
⚠IC201	8-759-252-50	IC	MB89095PF-G-149-BND			
IC202	8-759-074-40	IC	PST572DMT-T1			

Ref. No.	Part No.	Description				Remark
		< JUMPER RESISTOR >				
JR001	1-216-296-91	METAL GLAZE	0	5%	1/8W	
		< COIL >				
L201	1-414-189-31	INDUCTOR 100uH				
L202	1-414-189-31	INDUCTOR 100uH				
		< FLUORESCENT INDICATOR >				
ND201	1-517-161-21	INDICATOR TUBE, FLUORESCENT				
		< TRANSISTOR >				
Q201	8-729-207-69	TRANSISTOR	RN2403			
Q202	8-729-207-69	TRANSISTOR	RN2403			
Q203	8-729-140-97	TRANSISTOR	2SB734-34			
Q204	8-729-216-22	TRANSISTOR	2SA1162-G			
Q209	8-729-207-58	TRANSISTOR	RN1404			
		< RESISTOR >				
R201	1-216-037-00	METAL CHIP	330	5%	1/10W	
R202	1-216-037-00	METAL CHIP	330	5%	1/10W	
R203	1-216-009-00	METAL CHIP	22	5%	1/10W	
R204	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R205	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R206	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R207	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R208	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R210	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R211	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R212	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R214	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R215	1-216-033-00	METAL CHIP	220	5%	1/10W	
R216	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R217	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R218	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R219	1-216-033-00	METAL CHIP	220	5%	1/10W	
R220	1-216-033-00	METAL CHIP	220	5%	1/10W	
R221	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R222	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R223	1-216-033-00	METAL CHIP	220	5%	1/10W	
R224	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R230	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
⚠R233	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R234	1-216-073-00	METAL CHIP	10K	5%	1/10W	
⚠R235	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
⚠R236	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R237	1-216-049-00	METAL CHIP	1K	5%	1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
R238	1-216-033-00	METAL CHIP 220 5% 1/10W	
R239	1-216-033-00	METAL CHIP 220 5% 1/10W	
R240	1-216-033-00	METAL CHIP 220 5% 1/10W	
⚠R250	1-216-049-00	METAL CHIP 1K 5% 1/10W	
⚠R251	1-216-073-00	METAL CHIP 10K 5% 1/10W	
⚠R252	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< SWITCH >	
S201	1-692-440-11	SWITCH, PUSH (DOOR)	
		< TRANSFORMER >	
T201	1-448-740-21	TRANSFORMER, DC-DC CONVERTER	
		< VIBRATOR >	
X201	1-579-431-11	VIBLATOR, CRYSTAL	
X202	1-579-223-11	OSCILLATOR, CERAMIC (8MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-6423-077-A	GM-701 BOARD, COMPLETE	
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		(Ref. NO. 1,000 Series)	
		< CAPACITOR >	
C101	1-165-319-11	CERAMIC CHIP 0.1uF 50V	
C102	1-104-559-11	FILM CHIP 0.047uF 5% 16V	
C103	1-165-319-11	CERAMIC CHIP 0.1uF 50V	
C104	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
		< DIODE >	
D101	8-719-988-62	DIODE 1SS355	
		< IC >	
IC101	8-759-180-86	IC TC7W74F-TE12L	
IC102	8-759-008-79	IC MC14011BF	
		< TRANSISTOR >	
Q101	8-729-901-04	TRANSISTOR DTA114EK	
		< RESISTOR >	
R101	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R102	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R103	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R104	1-216-109-00	METAL CHIP 330K 5% 1/10W	

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Ref. No.	Part No.	Description	Remark
*	A-6423-061-A	HP-713 BOARD, COMPLETE	
		**********************	
		(Ref. NO. 7,000 Series)	
		< CAPACITOR >	
C551	1-161-772-11	CERAMIC 0.1uF 10% 25V	
C552	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C553	1-162-294-31	CERAMIC 0.001uF 10% 50V	
		< CONNECTOR >	
CN551	1-506-468-11	PIN, CONNECTOR 3P	
		< DIODE >	
D551	8-719-911-19	DIODE 1SS119	
D552	8-719-911-19	DIODE 1SS119	
		< FERRITE BEAD >	
FB551	1-410-396-41	INDUCTOR 0.45uH	
FB552	1-410-396-41	INDUCTOR 0.45uH	
FB553	1-410-396-41	INDUCTOR 0.45uH	
		< FILTER >	
FL551	1-239-803-11	FILTER, EMI	
		< JACK >	
J551	1-568-151-21	JACK, LARGE TYPE (PHONES)	
		< RESISTOR >	
R551	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R552	1-249-399-11	CARBON 33 5% 1/4W F	
R553	1-249-399-11	CARBON 33 5% 1/4W F	
R554	1-249-421-11	CARBON 2.2K 5% 1/4W F	
		< VARIABLE RESISTOR >	
RV551	1-223-191-11	RES, VAR, CARBON 500/500 (PHONES LEVEL)	

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Ref. No.	Part No.	Description	Remark
	A-6421-956-A	MD-703 BOARD, COMPLETE	
		**********************	
		(Ref. NO. 2,000 Series)	
	3-953-262-01	HOLDER, LED	
		< CAPACITOR >	
C431	1-126-947-11	ELECT 47uF 20% 35V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
		< CONNECTOR >				
* CN431	1-691-503-11	CONNECTOR, FPC 14P				
CN432	1-506-470-11	PIN, CONNECTOR 5P				
CN433	1-564-014-11	PIN, CONNECTOR 4P				
CN434	1-506-468-11	PIN, CONNECTOR 3P				
		< DIODE >				
D431	8-719-912-39	LED SLR932A				
D432	8-729-020-74	DIODE GP1S24				
D433	8-729-020-74	DIODE GP1S24				
D434	8-729-020-74	DIODE GP1S24				
		< IC >				
IC431	8-759-927-46	IC SN74HC00ANS				
		< JUMPER RESISTOR >				
JR413	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR414	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR431	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR432	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR433	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR435	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR437	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR438	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR439	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR440	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR441	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR442	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR443	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR444	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR445	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR446	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR447	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR448	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR449	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR450	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR451	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR452	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR453	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR454	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR455	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR456	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR457	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR458	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR460	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR461	1-216-296-91	METAL GLAZE	0	5%	1/8W	

Ref. No.	Part No.	Description				Remark
		< LEAD PIN >				
LP431	4-352-844-01	PIN, LEAD, COATING				
LP432	4-352-844-01	PIN, LEAD, COATING				
		< RESISTOR >				
R431	1-216-033-00	METAL CHIP	220	5%	1/10W	
R432	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R433	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R434	1-216-045-00	METAL CHIP	680	5%	1/10W	
R435	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R436	1-216-039-00	METAL CHIP	390	5%	1/10W	
R437	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R438	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R439	1-216-095-00	METAL CHIP	82K	5%	1/10W	
		< SWITCH >				
S431	1-692-440-11	SWITCH, PUSH (TILT)				

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* A-6423-064-A MI-701 BOARD, COMPLETE
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(Ref. NO. 3,000 Series)

Ref. No.	Part No.	Description				Remark
		< CAPACITOR >				
C501	1-126-160-11	ELECT	1uF	20%	50V	
C502	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C503	1-126-160-11	ELECT	1uF	20%	50V	
C504	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C505	1-126-163-11	ELECT	4.7uF	20%	50V	
C506	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C507	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C508	1-126-163-11	ELECT	4.7uF	20%	50V	
C509	1-124-584-00	ELECT	100uF	20%	10V	
C510	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C511	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C512	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C513	1-162-638-11	CERAMIC CHIP	1uF		16V	
C514	1-124-584-00	ELECT	100uF	20%	10V	
C515	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C516	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	
C517	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	
C518	1-162-638-11	CERAMIC CHIP	1uF		16V	
C519	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C520	1-124-589-11	ELECT	47uF	20%	16V	
C521	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C522	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C523	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C524	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	
C525	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	

Ref. No.	Part No.	Description			Remark
C526	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C527	1-162-638-11	CERAMIC CHIP	1uF		16V
C528	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C529	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C530	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C531	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C532	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C533	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C534	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C535	1-124-589-11	ELECT	47uF	20%	16V
C536	1-124-589-11	ELECT	47uF	20%	16V

< CONNECTOR >

Ref. No.	Part No.	Description			Remark
CN501	1-506-470-11	PIN, CONNECTOR 5P			

< DIODE >

Ref. No.	Part No.	Description			Remark
D501	8-719-800-76	DIODE 1SS226			
D502	8-719-109-60	DIODE RD2.7ES-B2			

< FERRITE BEAD >

Ref. No.	Part No.	Description			Remark
FB501	1-410-991-11	INDUCTOR CHIP 0.68uH			
FB503	1-543-775-11	FILTER, EMI			

< FILTER >

Ref. No.	Part No.	Description			Remark
FL501	1-236-728-11	ENCAPSULATED COMPONENT			
FL502	1-236-728-11	ENCAPSULATED COMPONENT			

< IC >

Ref. No.	Part No.	Description			Remark
IC501	8-759-053-14	IC M65831FP-600C			
IC502	8-759-636-55	IC M5218AFP			
IC503	8-759-924-46	IC BA4560F			
⚠IC504	8-759-630-34	IC M5278L05M			

< JACK >

Ref. No.	Part No.	Description			Remark
J501	1-569-112-31	JACK, LARGE TYPE (MIC)			

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			Remark
JR502	1-216-295-00	METAL CHIP	0	5%	1/10W

< COIL >

Ref. No.	Part No.	Description			Remark
L501	1-414-189-31	INDUCTOR	100uH		

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R501	1-216-025-00	METAL CHIP	100	5%	1/10W
R502	1-216-097-00	METAL CHIP	100K	5%	1/10W
R503	1-216-073-00	METAL CHIP	10K	5%	1/10W
R504	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R505	1-216-077-00	METAL CHIP	15K	5%	1/10W
R506	1-216-073-00	METAL CHIP	10K	5%	1/10W
R507	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R508	1-216-073-00	METAL CHIP	10K	5%	1/10W
R509	1-216-073-00	METAL CHIP	10K	5%	1/10W
R510	1-216-073-00	METAL CHIP	10K	5%	1/10W
R511	1-216-121-00	METAL CHIP	1M	5%	1/10W
R512	1-216-049-00	METAL CHIP	1K	5%	1/10W
R513	1-216-077-00	METAL CHIP	15K	5%	1/10W
R514	1-216-073-00	METAL CHIP	10K	5%	1/10W
R515	1-216-077-00	METAL CHIP	15K	5%	1/10W
R516	1-216-077-00	METAL CHIP	15K	5%	1/10W
R517	1-216-073-00	METAL CHIP	10K	5%	1/10W
R518	1-216-077-00	METAL CHIP	15K	5%	1/10W
R519	1-216-081-00	METAL CHIP	22K	5%	1/10W
R520	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R521	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R522	1-216-049-00	METAL CHIP	1K	5%	1/10W
R523	1-216-097-00	METAL CHIP	100K	5%	1/10W
R524	1-216-009-00	METAL CHIP	22	5%	1/10W
R525	1-216-009-00	METAL CHIP	22	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description			Remark
RV501	1-223-190-11	RES, VAR, CARBON 10K/10K (ECHO/MIC LEVEL)			

< VIBRATOR >

Ref. No.	Part No.	Description			Remark
X501	1-577-260-21	VIBRATOR, CERAMIC			

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Ref. No.	Part No.	Description			Remark
*	A-6423-058-A	MP-702 BOARD, COMPLETE			

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(Ref.NO. 1,000 Series)

Ref. No.	Part No.	Description			Remark
	1-216-102-00	METAL GLAZE	160K	5%	1/10W
*	4-908-854-11	CUSHION			

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C102	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C103	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C104	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C105	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C106	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C107	1-126-964-11	ELECT	10uF	20%	50V
C108	1-126-964-11	ELECT	10uF	20%	50V
C109	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C110	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C111	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C114	1-126-964-11	ELECT	10uF	20%	50V
C115	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C116	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C117	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C118	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C119	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C120	1-130-495-00	MYLAR	0.1uF	5%	50V
C121	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C122	1-130-483-00	MYLAR	0.01uF	5%	50V
C123	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C124	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C125	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C126	1-126-947-11	ELECT	47uF	20%	10V
C127	1-124-126-00	ELECT	47uF	20%	16V
C128	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C129	1-124-126-00	ELECT	47uF	20%	16V
C130	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C131	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C132	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C133	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C134	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C135	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C136	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C137	1-130-489-00	MYLAR	0.033uF	5%	50V
C138	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C139	1-126-947-11	ELECT	47uF	20%	10V
C140	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C141	1-124-126-00	ELECT	47uF	20%	16V
C142	1-124-903-11	ELECT	1uF	20%	50V
C143	1-124-261-00	ELECT	10uF	20%	50V
C144	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C145	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C146	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C147	1-126-924-11	ELECT	330uF	20%	6.3V
C148	1-124-443-00	ELECT	100uF	20%	10V
C149	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C150	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C151	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C152	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C153	1-124-584-00	ELECT	100uF	20%	10V
C154	1-126-160-11	ELECT	1uF	20%	50V
C155	1-124-261-00	ELECT	10uF	20%	50V
C156	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C157	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C158	1-124-903-11	ELECT	1uF	20%	50V
C159	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C160	1-163-107-00	CERAMIC CHIP	39PF	5%	50V

Ref. No.	Part No.	Description			Remark
C161	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C162	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C163	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C164	1-130-487-00	MYLAR	0.022uF	5%	50V
C165	1-130-483-00	MYLAR	0.01uF	5%	50V
C166	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C167	1-131-347-00	TANTALUM	1uF	10%	35V
C168	1-126-924-11	ELECT	330uF	20%	6.3V
C169	1-130-491-00	MYLAR	0.047uF	5%	50V
C170	1-124-903-11	ELECT	1uF	20%	50V
C171	1-130-489-00	MYLAR	0.033uF	5%	50V
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C173	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C174	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C175	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C176	1-130-486-00	MYLAR	0.018uF	10%	50V
C177	1-130-489-00	MYLAR	0.033uF	5%	50V
C178	1-124-903-11	ELECT	1uF	20%	50V
C179	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C180	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C181	1-126-924-11	ELECT	330uF	20%	6.3V
C182	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C183	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C184	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C185	1-124-925-11	ELECT	2.2uF	20%	100V
C187	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C188	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C189	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C190	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C191	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C192	1-124-925-11	ELECT	2.2uF	20%	100V
C193	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C194	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C195	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C196	1-130-483-00	MYLAR	0.01uF	5%	50V
C197	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C198	1-126-947-11	ELECT	47uF	20%	10V
C199	1-126-924-11	ELECT	330uF	20%	6.3V
C201	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C202	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C204	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C205	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C206	1-126-924-11	ELECT	330uF	20%	6.3V
C207	1-126-933-11	ELECT	100uF	20%	10V
C208	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C209	1-124-925-11	ELECT	2.2uF	20%	100V
C210	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C211	1-163-031-11	CERAMIC CHIP	0.01uF		50V

MP-702

Ref. No.	Part No.	Description		Remark	
C212	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C213	1-124-443-00	ELECT	100uF	20%	10V
C214	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C215	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C216	1-124-903-11	ELECT	1uF	20%	50V
C217	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C218	1-126-947-11	ELECT	47uF	20%	10V
C219	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C220	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C221	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C222	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C223	1-126-947-11	ELECT	47uF	20%	10V
C224	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C225	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C226	1-126-947-11	ELECT	47uF	20%	10V
C227	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C228	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C229	1-126-947-11	ELECT	47uF	20%	10V
C230	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C231	1-130-483-00	MYLAR	0.01uF	5%	50V
C232	1-126-947-11	ELECT	47uF	20%	10V
C233	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C234	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C235	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C236	1-126-160-11	ELECT	1uF	20%	50V
C237	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C238	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C239	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C240	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C241	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C242	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C243	1-124-499-11	ELECT	1uF	20%	50V
C244	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C245	1-124-589-11	ELECT	47uF	20%	16V
C246	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C247	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C248	1-124-589-11	ELECT	47uF	20%	16V
C249	1-130-491-00	MYLAR	0.047uF	5%	50V
C250	1-126-947-11	ELECT	47uF	20%	10V
C251	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C252	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C253	1-164-346-11	CERAMIC CHIP	1uF		16V
C254	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C255	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C256	1-124-443-00	ELECT	100uF	20%	10V
C257	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C258	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C259	1-126-947-11	ELECT	47uF	20%	10V
C260	1-124-126-00	ELECT	47uF	20%	16V
C261	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C262	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C263	1-126-964-11	ELECT	10uF	20%	50V
C264	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C265	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C266	1-126-964-11	ELECT	10uF	20%	50V
C267	1-126-933-11	ELECT	100uF	20%	16V
C268	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C269	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C270	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C271	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C272	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C274	1-126-964-11	ELECT	10uF	20%	50V
C275	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C276	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C277	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C278	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C279	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C280	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C281	1-126-947-11	ELECT	47uF	20%	10V
C282	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C283	1-124-126-00	ELECT	47uF	20%	16V
C284	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C285	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C286	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C287	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C288	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C289	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C290	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C291	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C292	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C293	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C295	1-130-475-00	MYLAR	0.0022uF	5%	50V
C296	1-126-964-11	ELECT	10uF	20%	50V
C400	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C401	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C402	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C403	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C405	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C406	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C407	1-124-277-11	ELECT	4.7uF	20%	35V
C408	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C409	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C410	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C411	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C413	1-163-075-00	CERAMIC CHIP	0.047uF		50V

Ref. No.	Part No.	Description			Remark
C414	1-124-767-00	ELECT	2.2uF	20%	50V
C415	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C416	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C417	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C418	1-126-964-11	ELECT	10uF	20%	50V
C421	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C422	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C423	1-124-967-11	ELECT	10uF	20%	10V
C424	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C425	1-124-279-11	ELECT	3.3uF	20%	25V
C427	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C428	1-126-947-11	ELECT	47uF	20%	35V
C429	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C430	1-126-947-11	ELECT	47uF	20%	35V
C431	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C432	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C433	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C434	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C436	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C437	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C438	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C439	1-124-589-11	ELECT	47uF	20%	16V
C440	1-124-589-11	ELECT	47uF	20%	16V
C441	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C442	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C443	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C444	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C448	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C449	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C450	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C451	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C452	1-130-499-00	MYLAR	0.22uF	5%	50V
C453	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C455	1-163-088-00	CERAMIC CHIP	5PF		50V
C457	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C458	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C459	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C460	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C465	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C466	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C467	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C468	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C501	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C521	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C522	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C523	1-126-964-11	ELECT	10uF	20%	50V
C524	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C525	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C526	1-126-154-11	ELECT	47uF	20%	6.3V
C527	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C528	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C529	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C530	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C531	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C532	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C533	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C534	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C535	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C536	1-126-964-11	ELECT	10uF	20%	50V
C537	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C538	1-126-964-11	ELECT	10uF	20%	50V
C539	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C540	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C541	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C542	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C550	1-126-948-11	ELECT	100uF	20%	35V
C551	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C552	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C553	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C554	1-124-927-11	ELECT	4.7uF	20%	100V
C555	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C556	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C557	1-124-229-00	ELECT	33uF	20%	10V
C558	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C565	1-124-472-11	ELECT	470uF	20%	10V
C566	1-126-948-11	ELECT	100uF	20%	35V
C567	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C570	1-126-916-11	ELECT	1000uF	20%	6.3V
C571	1-126-933-11	ELECT	100uF	20%	16V
C572	1-124-472-11	ELECT	470uF	20%	10V
C573	1-126-916-11	ELECT	1000uF	20%	6.3V
C575	1-126-935-11	ELECT	470uF	20%	16V
C576	1-126-103-11	ELECT	470uF	20%	16V
C577	1-124-360-00	ELECT	1000uF	20%	16V
C601	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C602	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C603	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C604	1-126-947-11	ELECT	47uF	20%	35V
C605	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C606	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C607	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C608	1-124-631-11	ELECT	47uF	20%	16V
C609	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C610	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C611	1-124-443-00	ELECT	100uF	20%	10V
C612	1-124-277-11	ELECT	4.7uF	20%	35V
C613	1-163-031-11	CERAMIC CHIP	0.01uF		50V

MP-702

Ref. No.	Part No.	Description			Remark
C614	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C615	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C616	1-124-927-11	ELECT	4.7uF	20%	100V
C617	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C618	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C619	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C620	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C621	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C622	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C623	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C624	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C625	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C626	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C627	1-163-096-00	CERAMIC CHIP	13PF	5%	50V
C628	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C629	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C630	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C631	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C632	1-104-535-11	FILM CHIP	470PF	5%	50V
C633	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C800	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C801	1-126-967-11	ELECT	47uF	20%	50V
C802	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C803	1-126-933-11	ELECT	100uF	20%	16V
C804	1-126-967-11	ELECT	47uF	20%	50V
C805	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C809	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C810	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C818	1-126-967-11	ELECT	47uF	20%	50V
C820	1-126-967-11	ELECT	47uF	20%	50V
C900	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C901	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C902	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C903	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C904	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C905	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C906	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C907	1-126-964-11	ELECT	10uF	20%	50V
C908	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C909	1-164-005-11	CERAMIC CHIP	0.47uF		25V
		< FILTER >			
CF101	1-760-122-11	FILTER, CERAMIC			
CF102	1-527-831-00	FILTER, CERAMIC			
		< CONNECTOR >			
CN101	1-506-478-11	PIN, CONNECTOR 13P			

Ref. No.	Part No.	Description		Remark
CN401	1-750-687-11	HOUSING, CONNECTOR (PC BOARD)		
CN402	1-750-505-11	CONNECTOR, FPC 18P		
* CN403	1-691-503-11	CONNECTOR, FPC 14P		
CN501	1-506-476-11	PIN, CONNECTOR 11P		
CN603	1-506-473-11	PIN, CONNECTOR 8P		
CN604	1-506-472-11	PIN, CONNECTOR 7P		
CN800	1-564-002-11	PIN, CONNECTOR 3P		
CN801	1-564-002-11	PIN, CONNECTOR 3P		
* CN811	1-563-461-11	SOCKET, CONNECTOR 28P		
* CN812	1-563-461-11	SOCKET, CONNECTOR 28P		
CN813	1-506-468-11	PIN, CONNECTOR 3P		
		< JACK >		
CNJ801	1-565-351-91	JACK, PIN 3P (LINE OUT)		
CNJ901	1-561-534-00	SOCKET, PIN 21P (EURO AV)		
CNJ902	1-561-534-00	SOCKET, PIN 21P (EURO AV OUT)		
		< VARIABLE CAPACITOR >		
CV601	1-141-304-21	CAP, TRIMMER 10PF		
CV602	1-141-304-21	CAP, TRIMMER 10PF		
		< DIODE >		
D101	8-719-801-78	DIODE	1SS184	
D102	8-719-105-52	DIODE	RD3.6M-B2	
D103	8-719-988-62	DIODE	1SS355	
D104	8-719-988-62	DIODE	1SS355	
D105	8-719-988-62	DIODE	1SS355	
D401	8-719-800-76	DIODE	1SS226	
D402	8-719-800-76	DIODE	1SS226	
D404	8-719-800-76	DIODE	1SS226	
D406	8-719-988-62	DIODE	1SS355	
D517	8-719-800-76	DIODE	1SS226	
D518	8-719-800-76	DIODE	1SS226	
⚠D551	8-719-210-39	DIODE	EC10QS-04	
⚠D553	8-719-210-39	DIODE	EC10QS-04	
D557	8-719-988-62	DIODE	1SS355	
D558	8-719-988-62	DIODE	1SS355	
⚠D559	8-719-105-58	DIODE	RD3.9M-B2	
⚠D560	8-719-106-44	DIODE	RD9.1M-B2	
D601	8-719-400-75	DIODE	MA3091	
D602	8-719-104-34	DIODE	1S2836	
D603	8-719-988-62	DIODE	1SS355	
D604	8-719-402-34	DIODE	MA3120-TX	
D605	8-719-104-34	DIODE	1S2836	
D606	8-719-104-34	DIODE	1S2836	
D800	8-719-104-34	DIODE	1S2836	
D801	8-719-104-34	DIODE	1S2836	
D802	8-719-104-34	DIODE	1S2836	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
D803	8-719-105-99	DIODE RD6.2M-B1	
D804	8-719-801-78	DIODE 1SS184	
D806	8-719-801-78	DIODE 1SS184	
D807	8-719-801-78	DIODE 1SS184	
D808	8-719-104-34	DIODE 1S2836	
D809	8-719-988-62	DIODE 1SS355	
D810	8-719-988-62	DIODE 1SS355	
D900	8-719-801-78	DIODE 1SS184	
D901	8-719-801-78	DIODE 1SS184	

< DELAY LINE >

Ref. No.	Part No.	Description	Remark
DL501	1-415-694-11	DELAY LINE, LC	

< FERRITE BEAD >

Ref. No.	Part No.	Description	Remark
FB101	1-543-570-11	BEAD, FERRITE (CHIP)	
FB601	1-412-390-21	INDUCTOR CHIP 0uH	
FB602	1-412-390-21	INDUCTOR CHIP 0uH	
FB603	1-412-390-21	INDUCTOR CHIP 0uH	
FB604	1-412-390-21	INDUCTOR CHIP 0uH	
FB605	1-412-390-21	INDUCTOR CHIP 0uH	
FB606	1-412-390-21	INDUCTOR CHIP 0uH	
FB607	1-543-646-11	BEAD, FERRITE (CHIP)	
FB608	1-543-646-11	BEAD, FERRITE (CHIP)	
FB801	1-410-397-21	FERRITE BEAD INDUCTOR	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL101	1-236-580-11	FILTER, LOW PASS	
FL102	1-235-943-11	BPF	
FL103	1-236-262-11	FILTER, BAND PASS	
FL104	1-236-580-11	FILTER, LOW PASS	
FL105	1-409-431-11	COIL, TRAP	
FL106	1-409-447-11	COIL, TRAP	
FL107	1-236-744-21	FILTER, EMI	
FL108	1-236-744-21	FILTER, EMI	
FL401	1-235-922-11	FILTER, LOW PASS (1.7MHz)	
FL601	1-236-744-21	FILTER, EMI	
FL602	1-236-744-21	FILTER, EMI	

< IC >

Ref. No.	Part No.	Description	Remark
IC101	8-759-048-09	IC MM1148XF	
IC102	8-759-100-95	IC uPC324G2	
IC103	8-752-322-34	IC CXL5003M	
IC104	8-759-941-68	IC BA7131F	
IC105	8-759-941-68	IC BA7131F	
IC106	8-752-036-23	IC CXA1254Q	
IC107	8-759-941-68	IC BA7131F	
IC108	8-759-502-69	IC CXD1152-MS	
IC109	8-752-036-24	IC CXA1255Q	
IC110	8-759-233-64	IC TC74HCU04AF	
IC111	8-759-183-50	IC MB90085-144-EF	
IC112	8-759-085-67	IC LM339NS	
IC401	8-759-983-74	IC LM324NS	
IC402	8-752-056-79	IC CXA1632Q	
IC403	8-759-208-11	IC TC4053BFHB	
IC404	8-759-300-71	IC HD14053BFP	
⚠IC405	8-759-048-30	IC LA6510L	
IC406	8-759-100-96	IC uPC4558G2	
IC407	8-759-100-96	IC uPC4558G2	
IC408	8-759-082-61	IC TC4W53FU-TE12L	
IC409	8-759-100-96	IC uPC4558G2	
IC410	8-759-242-64	IC TC4W53F	
⚠IC501	8-759-982-10	IC RC7809FA	
⚠IC550	8-759-946-09	IC FA7611M	
⚠IC551	8-759-802-18	IC L780S05	
⚠IC552	8-759-245-86	IC TA7912S	
⚠IC553	8-759-231-58	IC TA7812S	
IC601	8-759-009-06	IC MC14052BF	
⚠IC602	8-759-231-92	IC TA7291P	
IC603	8-759-983-74	IC LM324NS	
IC604	8-759-208-11	IC TC4053BFHB	
IC605	8-759-098-78	IC MB606F06	
IC606	8-759-259-86	IC MB89094PF-G-115	
IC607	8-759-180-98	IC CXD8483Q	
IC801	8-759-100-96	IC uPC4558G2	
IC804	8-759-100-96	IC uPC4558G2	
IC805	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
IC901	8-759-300-71	IC HD14053BFP	
IC902	8-759-300-71	IC HD14053BFP	
IC903	8-759-300-71	IC HD14053BFP	

< JACK >

Ref. No.	Part No.	Description	Remark
J601	1-507-562-31	JACK (CONTROL S)	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description				Remark
JR100	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR101	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR102	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR102	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR103	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR501	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR502	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR503	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR504	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR505	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR506	1-216-295-00	METAL CHIP	0	5%	1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MP-702

Ref.No.	Part No.	Description	Remark
		< COIL >	
L101	1-408-419-00	INDUCTOR 68uH	
L102	1-408-411-00	INDUCTOR 15uH	
L103	1-408-417-00	INDUCTOR 47uH	
L104	1-408-421-00	INDUCTOR 100uH	
L105	1-408-609-41	INDUCTOR 33uH	
L106	1-408-419-00	INDUCTOR 68uH	
L107	1-408-417-00	INDUCTOR 47uH	
L108	1-408-417-00	INDUCTOR 47uH	
L109	1-408-425-00	INDUCTOR 220uH	
L110	1-408-421-00	INDUCTOR 100uH	
L111	1-408-417-00	INDUCTOR 47uH	
L112	1-408-421-00	INDUCTOR 100uH	
L113	1-408-421-00	INDUCTOR 100uH	
L114	1-408-417-00	INDUCTOR 47uH	
L115	1-408-421-00	INDUCTOR 100uH	
L116	1-408-609-41	INDUCTOR 33uH	
L117	1-408-421-00	INDUCTOR 100uH	
L118	1-408-424-00	INDUCTOR 180uH	
L119	1-408-421-00	INDUCTOR 100uH	
L120	1-408-421-00	INDUCTOR 100uH	
L121	1-408-421-00	INDUCTOR 100uH	
L122	1-408-421-00	INDUCTOR 100uH	
L123	1-408-413-00	INDUCTOR 22uH	
L124	1-408-409-00	INDUCTOR 10uH	
L125	1-408-421-00	INDUCTOR 100uH	
L401	1-414-183-41	INDUCTOR 10uH	
L402	1-414-183-41	INDUCTOR 10uH	
L403	1-414-183-41	INDUCTOR 10uH	
L404	1-414-183-41	INDUCTOR 10uH	
L501	1-408-609-41	INDUCTOR 33uH	
L502	1-408-406-00	INDUCTOR 5.6uH	
L562	1-412-525-21	INDUCTOR 10uH	
L563	1-424-219-21	COIL, CHOKE 300uH	
L565	1-424-219-21	COIL, CHOKE 300uH	
L566	1-412-537-31	INDUCTOR 100uH	
L568	1-412-525-21	INDUCTOR 10uH	
L601	1-408-409-00	INDUCTOR 10uH	
L602	1-408-401-00	INDUCTOR 2.2uH	
		< LEAD PIN >	
LP001	4-352-844-01	PIN, LEAD, COATING	
LP002	4-352-844-01	PIN, LEAD, COATING	
LP003	4-352-844-01	PIN, LEAD, COATING	
		< IC LINK >	
⚠PS551	1-532-679-00	LINK, IC	
⚠PS552	1-532-685-00	LINK, IC	

Ref.No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q101	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q102	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q103	8-729-900-53	TRANSISTOR DTC114EK	
Q104	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q105	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q106	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q107	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q108	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q109	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q110	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q111	8-729-216-22	TRANSISTOR 2SA1162-G	
Q112	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q113	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q114	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q115	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q116	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q117	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q118	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q119	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q120	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q121	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q122	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q123	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q124	8-729-216-22	TRANSISTOR 2SA1162-G	
Q125	8-729-216-22	TRANSISTOR 2SA1162-G	
Q126	8-729-901-01	TRANSISTOR DTC144EK	
Q127	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q128	8-729-901-01	TRANSISTOR DTC144EK	
Q129	8-729-216-22	TRANSISTOR 2SA1162-G	
Q130	8-729-901-01	TRANSISTOR DTC144EK	
Q131	8-729-901-01	TRANSISTOR DTC144EK	
Q132	8-729-901-01	TRANSISTOR DTC144EK	
Q133	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q134	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q135	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q136	8-729-901-01	TRANSISTOR DTC144EK	
Q137	8-729-901-01	TRANSISTOR DTC144EK	
Q139	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q140	8-729-216-22	TRANSISTOR 2SA1162-G	
Q141	8-729-901-01	TRANSISTOR DTC144EK	
Q142	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q143	8-729-901-01	TRANSISTOR DTC144EK	
Q144	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q145	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q146	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q147	8-729-216-22	TRANSISTOR 2SA1162-G	
Q149	8-729-230-49	TRANSISTOR 2SC2712-YG	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description		Remark
Q152	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q153	8-729-216-22	TRANSISTOR	2SA1162-G	
Q154	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q155	8-729-901-01	TRANSISTOR	DTC144EK	
Q157	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q158	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q159	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q160	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q161	8-729-216-22	TRANSISTOR	2SA1162-G	
Q162	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q163	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q165	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q166	8-729-216-22	TRANSISTOR	2SA1162-G	
Q167	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q168	8-729-903-10	TRANSISTOR	FMW1	
Q169	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q170	8-729-903-10	TRANSISTOR	FMW1	
Q171	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q172	8-729-901-01	TRANSISTOR	DTC144EK	
Q173	8-729-901-01	TRANSISTOR	DTC144EK	
Q400	8-729-216-22	TRANSISTOR	2SA1162-G	
Q401	8-729-216-22	TRANSISTOR	2SA1162-G	
Q402	8-729-901-04	TRANSISTOR	DTA114EK	
⚠Q403	8-729-924-90	TRANSISTOR	2SB1370-EF	
⚠Q404	8-729-209-15	TRANSISTOR	2SD2012	
⚠Q405	8-729-209-15	TRANSISTOR	2SD2012	
⚠Q406	8-729-924-90	TRANSISTOR	2SB1370-EF	
Q408	8-729-901-06	TRANSISTOR	DTA144EK	
Q409	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q410	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q411	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q499	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q505	8-729-901-04	TRANSISTOR	DTA114EK	
Q506	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q507	8-729-900-53	TRANSISTOR	DTC114EK	
Q508	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q509	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q510	8-729-901-04	TRANSISTOR	DTA114EK	
Q511	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q512	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q513	8-729-216-22	TRANSISTOR	2SA1162-G	
Q514	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q515	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q516	8-729-903-10	TRANSISTOR	FMW1	
Q517	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q518	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q519	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q520	8-729-216-22	TRANSISTOR	2SA1162-G	

Ref. No.	Part No.	Description		Remark
Q521	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q522	8-729-902-96	TRANSISTOR	FMS1	
Q523	8-729-900-53	TRANSISTOR	DTC114EK	
⚠Q551	8-729-019-29	TRANSISTOR	2SB1009R	
⚠Q553	8-729-019-29	TRANSISTOR	2SB1009R	
Q555	8-729-901-01	TRANSISTOR	DTC144EK	
Q601	8-729-901-06	TRANSISTOR	DTA144EK	
Q602	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q603	8-729-901-06	TRANSISTOR	DTA144EK	
Q604	8-729-216-22	TRANSISTOR	2SA1162-G	
Q605	8-729-901-06	TRANSISTOR	DTA144EK	
Q606	8-729-901-06	TRANSISTOR	DTA144EK	
Q607	8-729-901-01	TRANSISTOR	DTC144EK	
Q800	8-729-901-04	TRANSISTOR	DTA114EK	
Q801	8-729-901-04	TRANSISTOR	DTA114EK	
Q802	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q803	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q804	8-729-901-04	TRANSISTOR	DTA114EK	
Q805	8-729-901-04	TRANSISTOR	DTA114EK	
Q806	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q807	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q808	8-729-901-04	TRANSISTOR	DTA114EK	
Q809	8-729-901-04	TRANSISTOR	DTA114EK	
Q810	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q811	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q812	8-729-140-75	TRANSISTOR	2SD999-CLCK	
Q813	8-729-900-53	TRANSISTOR	DTC114EK	
Q815	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q821	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q900	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q901	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q902	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q903	8-729-216-22	TRANSISTOR	2SA1162-G	
Q904	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q905	8-729-901-04	TRANSISTOR	DTA114EK	
Q906	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q907	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q908	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q908	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q909	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q910	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q911	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q912	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q913	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q914	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q915	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q916	8-729-230-49	TRANSISTOR	2SC2712-YG	
Q917	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q918	8-729-202-38	TRANSISTOR	2SC3326N-A	

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Ref. No.	Part No.	Description				Remark
Q919	8-729-202-38	TRANSISTOR	2SC3326N-A			
Q920	8-729-202-38	TRANSISTOR	2SC3326N-A			
Q921	8-729-202-38	TRANSISTOR	2SC3326N-A			
Q922	8-729-216-22	TRANSISTOR	2SA1162-G			
Q923	8-729-216-22	TRANSISTOR	2SA1162-G			
Q924	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q925	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q926	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q927	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q928	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q929	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q930	8-729-216-22	TRANSISTOR	2SA1162-G			
Q931	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q932	8-729-901-04	TRANSISTOR	DTA114EK			
Q933	8-729-902-99	TRANSISTOR	DTC114TK			
		< RESISTOR >				
R100	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R101	1-216-025-00	METAL CHIP	100	5%	1/10W	
R102	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R104	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R105	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R106	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R107	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R108	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R109	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R110	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R112	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R113	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R114	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R115	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R116	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R117	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R118	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R119	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R120	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R121	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R122	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W	
R123	1-216-039-00	METAL CHIP	390	5%	1/10W	
R124	1-216-039-00	METAL CHIP	390	5%	1/10W	
R125	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R126	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R127	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R128	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R129	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R130	1-216-113-00	METAL CHIP	470K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R132	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R133	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R134	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R135	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R136	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R137	1-216-041-00	METAL CHIP	470	5%	1/10W	
R138	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R139	1-216-045-00	METAL CHIP	680	5%	1/10W	
R140	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R141	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R142	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R143	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R144	1-216-045-00	METAL CHIP	680	5%	1/10W	
R145	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R146	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R147	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R148	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R149	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R150	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R151	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R152	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R153	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R154	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R155	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R156	1-216-025-00	METAL CHIP	100	5%	1/10W	
R157	1-216-009-00	METAL CHIP	22	5%	1/10W	
R158	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R159	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R160	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R161	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R162	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R163	1-216-043-00	METAL CHIP	560	5%	1/10W	
R164	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R165	1-216-041-00	METAL CHIP	470	5%	1/10W	
R166	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R167	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R168	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R169	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R170	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R172	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R173	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R174	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R175	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R177	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R178	1-249-437-11	CARBON	47K	5%	1/4W	
R179	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R180	1-216-081-00	METAL CHIP	22K	5%	1/10W	

Ref. No.	Part No.	Description			Remark
R181	1-216-049-00	METAL CHIP	1K	5%	1/10W
R182	1-216-049-00	METAL CHIP	1K	5%	1/10W
R183	1-216-049-00	METAL CHIP	1K	5%	1/10W
R184	1-216-113-00	METAL CHIP	470K	5%	1/10W
R185	1-216-083-00	METAL CHIP	27K	5%	1/10W
R186	1-216-097-00	METAL CHIP	100K	5%	1/10W
R187	1-216-295-00	METAL CHIP	0	5%	1/10W
R188	1-216-073-00	METAL CHIP	10K	5%	1/10W
R189	1-216-073-00	METAL CHIP	10K	5%	1/10W
R190	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R191	1-216-039-00	METAL CHIP	390	5%	1/10W
R192	1-216-091-00	METAL CHIP	56K	5%	1/10W
R193	1-216-117-00	METAL CHIP	680K	5%	1/10W
R194	1-216-097-00	METAL CHIP	100K	5%	1/10W
R195	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R196	1-216-079-00	METAL CHIP	18K	5%	1/10W
R197	1-216-083-00	METAL CHIP	27K	5%	1/10W
R198	1-216-073-00	METAL CHIP	10K	5%	1/10W
R199	1-216-097-00	METAL CHIP	100K	5%	1/10W
R200	1-216-085-00	METAL CHIP	33K	5%	1/10W
R201	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R202	1-216-113-00	METAL CHIP	470K	5%	1/10W
R203	1-216-043-00	METAL CHIP	560	5%	1/10W
R204	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R205	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R206	1-216-095-00	METAL CHIP	82K	5%	1/10W
R207	1-216-121-00	METAL CHIP	1M	5%	1/10W
R208	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R209	1-216-049-00	METAL CHIP	1K	5%	1/10W
R210	1-216-115-00	METAL CHIP	560K	5%	1/10W
R211	1-216-097-00	METAL CHIP	100K	5%	1/10W
R212	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R213	1-216-097-00	METAL CHIP	100K	5%	1/10W
R214	1-216-037-00	METAL CHIP	330	5%	1/10W
R215	1-216-047-00	METAL CHIP	820	5%	1/10W
R216	1-216-113-00	METAL CHIP	470K	5%	1/10W
R217	1-216-097-00	METAL CHIP	100K	5%	1/10W
R218	1-216-073-00	METAL CHIP	10K	5%	1/10W
R219	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R220	1-216-113-00	METAL CHIP	470K	5%	1/10W
R221	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R222	1-216-041-00	METAL CHIP	470	5%	1/10W
R223	1-216-047-00	METAL CHIP	820	5%	1/10W
R224	1-216-049-00	METAL CHIP	1K	5%	1/10W
R225	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R226	1-216-109-00	METAL CHIP	330K	5%	1/10W
R227	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R228	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R229	1-216-079-00	METAL CHIP	18K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R230	1-216-073-00	METAL CHIP	10K	5%	1/10W
R231	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R232	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R233	1-216-097-00	METAL CHIP	100K	5%	1/10W
R234	1-216-085-00	METAL CHIP	33K	5%	1/10W
R235	1-216-095-00	METAL CHIP	82K	5%	1/10W
R236	1-216-049-00	METAL CHIP	1K	5%	1/10W
R237	1-216-109-00	METAL CHIP	330K	5%	1/10W
R238	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R239	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R240	1-216-049-00	METAL CHIP	1K	5%	1/10W
R241	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R242	1-216-033-00	METAL CHIP	220	5%	1/10W
R243	1-216-049-00	METAL CHIP	1K	5%	1/10W
R244	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R245	1-216-113-00	METAL CHIP	470K	5%	1/10W
R246	1-216-121-00	METAL CHIP	1M	5%	1/10W
R247	1-216-033-00	METAL CHIP	220	5%	1/10W
R248	1-216-115-00	METAL CHIP	560K	5%	1/10W
R249	1-216-033-00	METAL CHIP	220	5%	1/10W
R250	1-216-097-00	METAL CHIP	100K	5%	1/10W
R251	1-216-097-00	METAL CHIP	100K	5%	1/10W
R252	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R253	1-216-073-00	METAL CHIP	10K	5%	1/10W
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W
R255	1-216-073-00	METAL CHIP	10K	5%	1/10W
R256	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R257	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R258	1-216-037-00	METAL CHIP	330	5%	1/10W
R259	1-216-041-00	METAL CHIP	470	5%	1/10W
R260	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R261	1-216-047-00	METAL CHIP	820	5%	1/10W
R262	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R263	1-216-049-00	METAL CHIP	1K	5%	1/10W
R264	1-216-075-00	METAL CHIP	12K	5%	1/10W
R265	1-216-077-00	METAL CHIP	15K	5%	1/10W
R266	1-216-079-00	METAL CHIP	18K	5%	1/10W
R267	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R268	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R269	1-216-073-00	METAL CHIP	10K	5%	1/10W
R270	1-216-025-00	METAL CHIP	100	5%	1/10W
R271	1-216-073-00	METAL CHIP	10K	5%	1/10W
R272	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R273	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R274	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R275	1-216-295-00	METAL CHIP	0	5%	1/10W
R276	1-216-097-00	METAL CHIP	100K	5%	1/10W
R277	1-216-097-00	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description				Remark
R278	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R279	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R280	1-216-047-00	METAL CHIP	820	5%	1/10W	
R281	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R282	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R283	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R284	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R285	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R286	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R287	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R288	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R289	1-216-043-00	METAL CHIP	560	5%	1/10W	
R290	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R291	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R292	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R293	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R294	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R295	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R296	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R297	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R298	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R299	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R300	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R301	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R302	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W	
R303	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R304	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R305	1-216-039-00	METAL CHIP	390	5%	1/10W	
R306	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R308	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R309	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R310	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R311	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R312	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R313	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R314	1-216-047-00	METAL CHIP	820	5%	1/10W	
R315	1-216-033-00	METAL CHIP	220	5%	1/10W	
R316	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R317	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R318	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R319	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R320	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R322	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R323	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R324	1-216-047-00	METAL CHIP	820	5%	1/10W	
R325	1-216-047-00	METAL CHIP	820	5%	1/10W	
R326	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R327	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R328	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R329	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R330	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R331	1-216-047-00	METAL CHIP	820	5%	1/10W	
R332	1-216-033-00	METAL CHIP	220	5%	1/10W	
R333	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R334	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R335	1-216-035-00	METAL CHIP	270	5%	1/10W	
R336	1-216-033-00	METAL CHIP	220	5%	1/10W	
R337	1-216-033-00	METAL CHIP	220	5%	1/10W	
R338	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R339	1-216-037-00	METAL CHIP	330	5%	1/10W	
R343	1-216-045-00	METAL CHIP	680	5%	1/10W	
R344	1-216-045-00	METAL CHIP	680	5%	1/10W	
R345	1-216-022-00	METAL CHIP	75	5%	1/10W	
R346	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R347	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R348	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R349	1-216-033-00	METAL CHIP	220	5%	1/10W	
R350	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R351	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R352	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R353	1-216-031-00	METAL CHIP	180	5%	1/10W	
R354	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R355	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R356	1-216-041-00	METAL CHIP	470	5%	1/10W	
R357	1-216-033-00	METAL CHIP	220	5%	1/10W	
R358	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R359	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R360	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R361	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R363	1-216-001-00	METAL CHIP	10	5%	1/10W	
R365	1-216-011-00	METAL CHIP	27	5%	1/10W	
R400	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R401	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R402	1-216-045-00	METAL CHIP	680	5%	1/10W	
R403	1-216-045-00	METAL CHIP	680	5%	1/10W	
R404	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R405	1-216-033-00	METAL CHIP	220	5%	1/10W	
R406	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R407	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R408	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R409	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R410	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R411	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R412	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R413	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R414	1-216-075-00	METAL CHIP	12K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R415	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R416	1-216-103-91	METAL GLAZE	180K	5%	1/10W	
R417	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R418	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R419	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R420	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R421	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R422	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R423	1-216-295-00	METAL CHIP	0	5%	1/10W	
R424	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R425	1-216-295-00	METAL CHIP	0	5%	1/10W	
R426	1-216-295-00	METAL CHIP	0	5%	1/10W	
R427	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R428	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R429	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R430	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R431	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R432	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R433	1-216-100-00	METAL GLAZE	130K	5%	1/10W	
R434	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R435	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R436	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R437	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R438	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R439	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R440	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R441	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R442	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R443	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R444	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R445	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R446	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R447	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R448	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R449	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R450	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R451	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R452	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R453	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R454	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R455	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R456	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R457	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R458	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R459	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R460	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R461	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R462	1-216-085-00	METAL CHIP	33K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R463	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R464	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R465	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R466	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R467	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R468	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R469	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R470	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R471	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R472	1-216-017-00	METAL CHIP	47	5%	1/10W	
R473	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R474	1-216-003-11	METAL GLAZE	12	5%	1/10W	
R475	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R476	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R477	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R478	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R479	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R480	1-216-095-00	METAL CHIP	82K	5%	1/10W	
⚠R481	1-216-369-00	METAL OXIDE	1	5%	2W	F
R482	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R483	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R485	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R487	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R488	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R489	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R490	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R494	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R495	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R496	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R497	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R498	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R499	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R500	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R515	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R516	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R517	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R518	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R519	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R520	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R521	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R522	1-216-037-00	METAL CHIP	330	5%	1/10W	
R523	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R524	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R525	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R526	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R527	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R528	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R530	1-216-049-00	METAL CHIP	1K	5%	1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MP-702

Ref. No.	Part No.	Description				Remark
R531	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R532	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R533	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R534	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R535	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R536	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R537	1-216-041-00	METAL CHIP	470	5%	1/10W	
R538	1-216-045-00	METAL CHIP	680	5%	1/10W	
R539	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R540	1-216-045-00	METAL CHIP	680	5%	1/10W	
R541	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R542	1-216-027-00	METAL CHIP	120	5%	1/10W	
R543	1-216-033-00	METAL CHIP	220	5%	1/10W	
R544	1-216-041-00	METAL CHIP	470	5%	1/10W	
R545	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R546	1-216-047-00	METAL CHIP	820	5%	1/10W	
R547	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R548	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R549	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R550	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R551	1-216-035-00	METAL CHIP	270	5%	1/10W	
R552	1-216-045-00	METAL CHIP	680	5%	1/10W	
R553	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R554	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R555	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R556	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R558	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R559	1-216-041-00	METAL CHIP	470	5%	1/10W	
R560	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R561	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R562	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R563	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R564	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R565	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R566	1-216-674-11	METAL CHIP	9.1K	0.5%	1/10W	
R567	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R568	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R580	1-216-043-00	METAL CHIP	560	5%	1/10W	
R581	1-216-043-00	METAL CHIP	560	5%	1/10W	
⚠R583	1-215-881-11	METAL OXIDE	15	5%	2W	F
R585	1-216-043-00	METAL CHIP	560	5%	1/10W	
R586	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R587	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R588	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R590	1-216-035-00	METAL CHIP	270	5%	1/10W	
R592	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R593	1-216-029-00	METAL CHIP	150	5%	1/10W	
R594	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
⚠R596	1-215-884-11	METAL OXIDE	47	5%	2W	F
R597	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R598	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R600	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R601	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R602	1-216-033-00	METAL CHIP	220	5%	1/10W	
R603	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R604	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R605	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R606	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R607	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R608	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R609	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R610	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R611	1-216-049-00	METAL CHIP	1K	5%	1/10W	
⚠R612	1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R613	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R614	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R615	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R616	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R617	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R618	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R619	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R620	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R621	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R622	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R623	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R624	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R625	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R626	1-216-111-00	METAL CHIP	390K	5%	1/10W	
R627	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R628	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R629	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R630	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R631	1-216-035-00	METAL CHIP	270	5%	1/10W	
R632	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R633	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R634	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R635	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R636	1-218-766-11	METAL CHIP	390K	0.50%	1/10W	
R637	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R638	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R639	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R640	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R641	1-216-685-11	METAL CHIP	27K	0.5%	1/10W	
R642	1-218-760-11	METAL CHIP	220K	0.50%	1/10W	
R643	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R644	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R645	1-216-025-00	METAL CHIP	100	5%	1/10W	

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Ref. No.	Part No.	Description			Remark
R646	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R647	1-216-049-00	METAL CHIP	1K	5%	1/10W
R648	1-216-097-00	METAL CHIP	100K	5%	1/10W
R649	1-216-105-00	METAL CHIP	220K	5%	1/10W
R650	1-216-049-00	METAL CHIP	1K	5%	1/10W
R651	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R652	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R653	1-216-049-00	METAL CHIP	1K	5%	1/10W
R654	1-216-045-00	METAL CHIP	680	5%	1/10W
R655	1-216-073-00	METAL CHIP	10K	5%	1/10W
R656	1-216-081-00	METAL CHIP	22K	5%	1/10W
R657	1-216-073-00	METAL CHIP	10K	5%	1/10W
R658	1-216-049-00	METAL CHIP	1K	5%	1/10W
R659	1-216-049-00	METAL CHIP	1K	5%	1/10W
R660	1-216-081-00	METAL CHIP	22K	5%	1/10W
R661	1-216-049-00	METAL CHIP	1K	5%	1/10W
R662	1-216-049-00	METAL CHIP	1K	5%	1/10W
R663	1-216-049-00	METAL CHIP	1K	5%	1/10W
R664	1-216-049-00	METAL CHIP	1K	5%	1/10W
R665	1-216-049-00	METAL CHIP	1K	5%	1/10W
R666	1-216-041-00	METAL CHIP	470	5%	1/10W
R667	1-216-049-00	METAL CHIP	1K	5%	1/10W
R668	1-216-121-00	METAL CHIP	1M	5%	1/10W
R669	1-216-049-00	METAL CHIP	1K	5%	1/10W
R670	1-216-049-00	METAL CHIP	1K	5%	1/10W
R671	1-216-049-00	METAL CHIP	1K	5%	1/10W
R672	1-216-049-00	METAL CHIP	1K	5%	1/10W
R673	1-216-049-00	METAL CHIP	1K	5%	1/10W
R674	1-216-081-00	METAL CHIP	22K	5%	1/10W
R675	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R676	1-216-049-00	METAL CHIP	1K	5%	1/10W
R677	1-216-025-00	METAL CHIP	100	5%	1/10W
R679	1-216-049-00	METAL CHIP	1K	5%	1/10W
R680	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R681	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R682	1-216-049-00	METAL CHIP	1K	5%	1/10W
R683	1-216-049-00	METAL CHIP	1K	5%	1/10W
R684	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R685	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R686	1-216-021-00	METAL CHIP	68	5%	1/10W
R687	1-216-049-00	METAL CHIP	1K	5%	1/10W
R688	1-216-097-00	METAL CHIP	100K	5%	1/10W
R689	1-216-049-00	METAL CHIP	1K	5%	1/10W
R690	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R691	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R692	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R693	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R694	1-216-049-00	METAL CHIP	1K	5%	1/10W
R695	1-216-049-00	METAL CHIP	1K	5%	1/10W
R696	1-216-049-00	METAL CHIP	1K	5%	1/10W
R697	1-216-049-00	METAL CHIP	1K	5%	1/10W
R698	1-216-073-00	METAL CHIP	10K	5%	1/10W
R699	1-216-049-00	METAL CHIP	1K	5%	1/10W
R700	1-216-049-00	METAL CHIP	1K	5%	1/10W
R701	1-216-049-00	METAL CHIP	1K	5%	1/10W
R702	1-216-049-00	METAL CHIP	1K	5%	1/10W
R704	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R705	1-216-073-00	METAL CHIP	10K	5%	1/10W
R706	1-216-073-00	METAL CHIP	10K	5%	1/10W
R707	1-216-073-00	METAL CHIP	10K	5%	1/10W
R708	1-216-049-00	METAL CHIP	1K	5%	1/10W
R709	1-216-049-00	METAL CHIP	1K	5%	1/10W
R710	1-216-049-00	METAL CHIP	1K	5%	1/10W
R711	1-216-049-00	METAL CHIP	1K	5%	1/10W
R712	1-216-049-00	METAL CHIP	1K	5%	1/10W
R713	1-216-049-00	METAL CHIP	1K	5%	1/10W
R714	1-216-049-00	METAL CHIP	1K	5%	1/10W
R715	1-216-049-00	METAL CHIP	1K	5%	1/10W
R716	1-216-049-00	METAL CHIP	1K	5%	1/10W
R717	1-216-049-00	METAL CHIP	1K	5%	1/10W
R718	1-216-049-00	METAL CHIP	1K	5%	1/10W
R719	1-216-049-00	METAL CHIP	1K	5%	1/10W
R720	1-216-049-00	METAL CHIP	1K	5%	1/10W
R721	1-216-049-00	METAL CHIP	1K	5%	1/10W
R722	1-216-049-00	METAL CHIP	1K	5%	1/10W
R723	1-216-049-00	METAL CHIP	1K	5%	1/10W
R724	1-216-049-00	METAL CHIP	1K	5%	1/10W
R725	1-216-049-00	METAL CHIP	1K	5%	1/10W
R726	1-216-115-00	METAL CHIP	560K	5%	1/10W
R728	1-216-049-00	METAL CHIP	1K	5%	1/10W
R729	1-216-049-00	METAL CHIP	1K	5%	1/10W
R730	1-216-049-00	METAL CHIP	1K	5%	1/10W
R750	1-216-099-00	METAL CHIP	120K	5%	1/10W
R752	1-216-073-00	METAL CHIP	10K	5%	1/10W
R754	1-216-097-00	METAL CHIP	100K	5%	1/10W
R755	1-216-117-00	METAL CHIP	680K	5%	1/10W
R756	1-216-085-00	METAL CHIP	33K	5%	1/10W
R757	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R758	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R759	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R766	1-216-099-00	METAL CHIP	120K	5%	1/10W
⚠R768	1-249-387-11	CARBON	3.3	5%	1/4W F
R800	1-216-049-00	METAL CHIP	1K	5%	1/10W
R801	1-216-049-00	METAL CHIP	1K	5%	1/10W
R802	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R803	1-216-109-00	METAL CHIP	330K	5%	1/10W
R804	1-216-651-11	METAL CHIP	1K	0.5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MP-702

Ref. No.	Part No.	Description				Remark
R805	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R806	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R807	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R808	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R809	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R810	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R811	1-216-037-00	METAL CHIP	330	5%	1/10W	
R812	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R813	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R814	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R815	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R816	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R817	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R818	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R819	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R820	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R821	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R822	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R823	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R824	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R825	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R826	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R827	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R828	1-218-764-11	METAL GLAZE	330K	2%	1/10W	
R829	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R831	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R832	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R838	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R839	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R900	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R901	1-216-041-00	METAL CHIP	470	5%	1/10W	
R902	1-216-022-00	METAL CHIP	75	5%	1/10W	
R903	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R904	1-216-022-00	METAL CHIP	75	5%	1/10W	
R905	1-216-029-00	METAL CHIP	150	5%	1/10W	
R906	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R907	1-216-021-00	METAL CHIP	68	5%	1/10W	
R908	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R909	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R910	1-216-021-00	METAL CHIP	68	5%	1/10W	
R911	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R912	1-216-029-00	METAL CHIP	150	5%	1/10W	
R913	1-216-029-00	METAL CHIP	150	5%	1/10W	
R914	1-216-029-00	METAL CHIP	150	5%	1/10W	
R915	1-216-021-00	METAL CHIP	68	5%	1/10W	
R916	1-216-021-00	METAL CHIP	68	5%	1/10W	
R917	1-216-021-00	METAL CHIP	68	5%	1/10W	
R918	1-216-029-00	METAL CHIP	150	5%	1/10W	
R919	1-216-029-00	METAL CHIP	150	5%	1/10W	
R920	1-216-029-00	METAL CHIP	150	5%	1/10W	
R921	1-216-021-00	METAL CHIP	68	5%	1/10W	
R922	1-216-021-00	METAL CHIP	68	5%	1/10W	
R923	1-216-021-00	METAL CHIP	68	5%	1/10W	
R924	1-216-037-00	METAL CHIP	330	5%	1/10W	
R925	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R926	1-216-037-00	METAL CHIP	330	5%	1/10W	
R927	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R928	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R929	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R930	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R931	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R932	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R933	1-216-041-00	METAL CHIP	470	5%	1/10W	
R934	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R935	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R936	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R937	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R938	1-216-037-00	METAL CHIP	330	5%	1/10W	
R939	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R940	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R941	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R942	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R943	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R944	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R945	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R946	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R947	1-216-043-00	METAL CHIP	560	5%	1/10W	
R948	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R949	1-216-025-00	METAL CHIP	100	5%	1/10W	
R950	1-216-022-00	METAL CHIP	75	5%	1/10W	
R952	1-216-037-00	METAL CHIP	330	5%	1/10W	
R953	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R954	1-216-037-00	METAL CHIP	330	5%	1/10W	
R955	1-216-037-00	METAL CHIP	330	5%	1/10W	
R956	1-216-073-00	METAL CHIP	10K	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV101	1-241-763-11	RES, ADJ, CARBON 4.7K	
RV105	1-241-763-11	RES, ADJ, CARBON 4.7K	
RV106	1-241-630-11	RES, ADJ, CARBON 10K	
RV401	1-238-019-11	RES, ADJ, CARBON 47K	
RV402	1-238-019-11	RES, ADJ, CARBON 47K	
RV601	1-241-765-11	RES, ADJ, CARBON 22K	

< VIBRATOR >

Ref. No.	Part No.	Description				Remark
X101	1-567-652-11	VIBRATOR, CRYSTAL (13.3MHz)				
X601	1-567-900-11	OSCILLATOR, CRYSTAL (14.31818MHz)				
X602	1-577-289-11	VIBRATOR, CRYSTAL (17.734475MHz)				

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* A-6421-953-A MT-702 BOARD, COMPLETE

****

(Ref.NO. 6,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C471	1-161-063-00	CERAMIC	0.1uF	10%	50V	

< CONNECTOR >

Ref. No.	Part No.	Description				Remark
* CN471	1-695-105-11	PIN, CONNECTOR (PC BOARD) 3P				

****

* A-6423-065-A PW-707 BOARD, COMPLETE

****

(Ref.NO. 7,000 Series)

* 1-649-611-11 PW-707 BOARD

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C291	1-124-589-11	ELECT	47uF	20%	16V	

< CONNECTOR >

Ref. No.	Part No.	Description				Remark
CN291	1-506-485-11	PIN, CONNECTOR 6P				

< DIODE >

Ref. No.	Part No.	Description				Remark
D291	8-719-911-19	DIODE 1SS119				
D292	8-719-028-30	DIODE SPR-39MVWF				
D293	8-719-028-30	DIODE SPR-39MVWF				
D294	8-719-992-26	DIODE SLR-305DC3F				

< IC >

Ref. No.	Part No.	Description				Remark
IC291	8-741-100-48	IC SBX1610-59				

< TRANSISTOR >

Ref. No.	Part No.	Description				Remark
Q292	8-729-900-63	TRANSISTOR DTA124ES				
Q293	8-729-900-63	TRANSISTOR DTA124ES				
Q294	8-729-900-63	TRANSISTOR DTA124ES				

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R291	1-249-411-11	CARBON	330	5%	1/4W	
R292	1-249-411-11	CARBON	330	5%	1/4W	
R293	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R294	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R295	1-247-807-31	CARBON	100	5%	1/4W	
R296	1-249-409-11	CARBON	220	5%	1/4W	F
R297	1-249-411-11	CARBON	330	5%	1/4W	
R298	1-249-409-11	CARBON	220	5%	1/4W	F
R299	1-249-417-11	CARBON	1K	5%	1/4W	F

< SWITCH >

Ref. No.	Part No.	Description				Remark
S292	1-571-977-11	SWITCH, TACTIL (LD/EXT)				
S293	1-571-977-11	SWITCH, TACTIL (RGB)				
S294	1-571-977-11	SWITCH, TACTIL (ON/STANDBY)				

****

* A-6423-060-A SS-704 BOARD, COMPLETE

****

(Ref.NO. 5,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C001	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C002	1-164-713-11	CERAMIC CHIP	0.0056uF	5%	50V	
C003	1-164-713-11	CERAMIC CHIP	0.0056uF	5%	50V	
C004	1-124-472-11	ELECT	470uF	20%	10V	
C005	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C006	1-124-907-11	ELECT	10uF	20%	50V	
C007	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C008	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C009	1-124-903-11	ELECT	1uF	20%	50V	
C010	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C012	1-126-962-11	ELECT	3.3uF	20%	50V	
C013	1-124-477-11	ELECT	47uF	20%	25V	
C016	1-124-903-11	ELECT	1uF	20%	50V	
C017	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C018	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C019	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C020	1-124-477-11	ELECT	47uF	20%	25V	
C021	1-124-907-11	ELECT	10uF	20%	50V	
C022	1-124-903-11	ELECT	1uF	20%	50V	
C023	1-124-903-11	ELECT	1uF	20%	50V	
C024	1-124-477-11	ELECT	47uF	20%	25V	
C025	1-124-907-11	ELECT	10uF	20%	50V	
C026	1-163-077-91	CERAMIC CHIP	0.1uF		50V	
C027	1-124-477-11	ELECT	47uF	20%	25V	
C028	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C029	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C030	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C031	1-124-907-11	ELECT	10uF	20%	50V	
C032	1-124-477-11	ELECT	47uF	20%	25V	
C033	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C034	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C035	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C036	1-124-907-11	ELECT	10uF	20%	50V	
C037	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	

SS-704

Ref. No.	Part No.	Description			Remark
C039	1-124-907-11	ELECT	10uF	20%	50V
C067	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C069	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C070	1-124-902-00	ELECT	0.47uF	20%	50V
C130	1-126-101-11	ELECT	100uF	20%	16V
C131	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C132	1-164-222-11	CERAMIC CHIP	0.22uF		25V
⚠C133	1-126-948-11	ELECT	100uF	20%	35V
C134	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C136	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C137	1-126-101-11	ELECT	100uF	20%	16V
C151	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C152	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C154	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C155	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C156	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C158	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C159	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C160	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C161	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C162	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C163	1-124-122-11	ELECT	100uF	20%	50V
C164	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C165	1-124-122-11	ELECT	100uF	20%	50V
		< CONNECTOR >			
* CN001	1-568-790-41	PIN, CONNECTOR 13P			
* CN130	1-560-891-00	PIN, CONNECTOR 3P			
CN131	1-506-469-11	PIN, CONNECTOR 4P			
* CN151	1-568-788-21	PIN, CONNECTOR 11P			
CN152	1-564-506-11	PLUG, CONNECTOR 3P			
		< TRIMMER >			
CT001	1-141-443-11	TRIMMER, CERAMIC			
		< DIODE >			
D001	8-719-988-62	DIODE 1SS355			
⚠D131	8-719-110-13	DIODE RD9.1ES-B2			
⚠D133	8-719-911-19	DIODE 1SS119			
D151	8-719-980-78	DIODE ERA81-006			
D152	8-719-980-78	DIODE ERA81-006			
D153	8-719-200-82	DIODE 11ES2			
D154	8-719-200-82	DIODE 11ES2			
D155	8-719-911-19	DIODE 1SS119			
D156	8-719-911-19	DIODE 1SS119			
D157	8-719-911-19	DIODE 1SS119			
D158	8-719-109-85	DIODE RD5.1ES-B2			
D159	8-719-109-75	DIODE RD4.3ES-B2			

Ref. No.	Part No.	Description	Remark
D160	8-719-911-19	DIODE 1SS119	
D161	8-719-503-40	DIODE S3V40	
		< IC >	
IC001	1-466-870-11	IC FILTER BLOCK, COMB (HCF0200)	
IC002	8-759-008-67	IC MC14066BF	
IC003	8-759-072-63	IC uPC1482G-E1	
IC004	8-759-925-74	IC SN74HC04ANS	
⚠IC131	8-759-231-53	IC TA7805S	
⚠IC132	8-759-701-65	IC NJM79M05FA	
IC151	8-759-100-93	IC uPC393G2	
IC152	8-759-996-43	IC RC4558PS	
		< COIL >	
L001	1-408-609-41	INDUCTOR 33uH	
L002	1-408-609-41	INDUCTOR 33uH	
L003	1-408-609-41	INDUCTOR 33uH	
L004	1-408-609-41	INDUCTOR 33uH	
L151	1-424-219-11	COIL, CHOKE 300uH	
		< IC LINK >	
⚠PS131	1-532-679-00	LINK, IC	
⚠PS151	1-532-675-00	LINK, IC 1.5A	
⚠PS152	1-532-675-00	LINK, IC 1.5A	
⚠PS153	1-532-675-00	LINK, IC 1.5A	
⚠PS154	1-532-675-00	LINK, IC 1.5A	
		< TRANSISTOR >	
Q003	8-729-900-53	TRANSISTOR DTC114EK	
Q004	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q005	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q006	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q007	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q008	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q009	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q013	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q016	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q018	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q030	8-729-230-49	TRANSISTOR 2SC2712-YG	
⚠Q131	8-729-141-75	TRANSISTOR 2SD596DV345	
⚠Q151	8-729-117-11	TRANSISTOR 2SB1151-L	
⚠Q152	8-729-019-31	TRANSISTOR 2SC4596E	
⚠Q153	8-729-117-11	TRANSISTOR 2SB1151-L	
⚠Q154	8-729-019-31	TRANSISTOR 2SC4596E	
Q155	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q156	8-729-216-22	TRANSISTOR 2SA1162-G	
Q158	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q159	8-729-216-22	TRANSISTOR 2SA1162-G	
Q160	8-729-230-49	TRANSISTOR 2SC2712-YG	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
Q161	8-729-119-76	TRANSISTOR	2SA1175-HFE			
		< RESISTOR >				
R001	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R002	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R003	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R004	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R005	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R006	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R007	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R008	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R009	1-216-045-00	METAL CHIP	680	5%	1/10W	
R010	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R011	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R012	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R013	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R014	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R015	1-249-411-11	CARBON	330	5%	1/4W	
R016	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R018	1-216-039-00	METAL CHIP	390	5%	1/10W	
R020	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R021	1-216-035-00	METAL CHIP	270	5%	1/10W	
R022	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R023	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R024	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R026	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R027	1-216-039-00	METAL CHIP	390	5%	1/10W	
R028	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R029	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R031	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R033	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R034	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R036	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R041	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R050	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R052	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R056	1-216-295-00	METAL CHIP	0	5%	1/10W	
R057	1-216-295-00	METAL CHIP	0	5%	1/10W	
R058	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R059	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R060	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R061	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R062	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R067	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R068	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R069	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R086	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R087	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R095	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R121	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R123	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R124	1-216-295-00	METAL CHIP	0	5%	1/10W	
R125	1-216-021-00	METAL CHIP	68	5%	1/10W	
⚠R131	1-215-884-11	METAL OXIDE	47	5%	2W	F
⚠R132	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
⚠R133	1-216-428-00	METAL OXIDE	180	5%	1W	F
R134	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R151	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R152	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R153	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R154	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R155	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R156	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R157	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R162	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R163	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R164	1-247-750-11	CARBON	680	5%	1/2W	
R165	1-247-750-11	CARBON	680	5%	1/2W	
R166	1-216-049-00	METAL CHIP	1K	5%	1/10W	
⚠R167	1-216-369-00	METAL OXIDE	1	5%	2W	F
R168	1-216-690-11	METAL CHIP	43K	0.5%	1/10W	
R169	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R170	1-216-690-11	METAL CHIP	43K	0.5%	1/10W	
R171	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R173	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R174	1-215-866-11	METAL OXIDE	330	5%	1W	F
R175	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R176	1-247-750-11	CARBON	680	5%	1/2W	
R177	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R178	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R179	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R180	1-216-097-00	METAL CHIP	100K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV001	1-241-630-11	RES, ADJ, CARBON 10K				
RV002	1-241-760-11	RES, ADJ, CARBON 470				
RV003	1-241-760-11	RES, ADJ, CARBON 470				
RV004	1-241-628-11	RES, ADJ, CARBON 2.2K				
RV005	1-241-628-11	RES, ADJ, CARBON 2.2K				
RV006	1-241-628-11	RES, ADJ, CARBON 2.2K				
		< RELAY >				
⚠RY131	1-515-833-11	RELAY				

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		< VIBRATOR >			
X001	1-567-505-11	OSCILLATOR, CRYSTAL (4.43MHz)			

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Ref. No.	Part No.	Description			Remark
*	A-6421-954-A	SW-719 BOARD, COMPLETE			
		**********************			
		(Ref. NO. 6,000 Series)			
		< CONNECTOR >			
* CN481	1-566-779-11	PIN, CONNECTOR (PC BOARD) 4P			
		< SWITCH >			
S481	1-692-439-11	SWITCH, PUSH (LOAD/CHUCK)			

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Ref. No.	Part No.	Description			Remark
*	A-6423-063-A	SW-725 BOARD, COMPLETE			
		*********************			
		(Ref. NO. 7,000 Series)			
		< CONNECTOR >			
CN281	1-506-484-11	PIN, CONNECTOR 5P			
		< DIODE >			
D281	8-719-992-30	LED SLR305MC3F			
D282	8-719-992-30	LED SLR305MC3F			
		< RESISTOR >			
R281	1-249-433-11	CARBON	22K	5%	1/4W
R282	1-249-428-11	CARBON	8.2K	5%	1/4W F
R283	1-249-424-11	CARBON	3.9K	5%	1/4W F
R284	1-249-422-11	CARBON	2.7K	5%	1/4W F
R285	1-249-433-11	CARBON	22K	5%	1/4W
R286	1-249-428-11	CARBON	8.2K	5%	1/4W F
R287	1-249-424-11	CARBON	3.9K	5%	1/4W F
R288	1-249-422-11	CARBON	2.7K	5%	1/4W F
		< SWITCH >			
S281	1-571-977-11	SWITCH, TACTIL (SIDE B)			
S282	1-571-977-11	SWITCH, TACTIL (ACS/AMS:▶▶|)			
S283	1-571-977-11	SWITCH, TACTIL (ACS/AMS:|◀◀)			
S284	1-571-977-11	SWITCH, TACTIL (SCAN:▶▶)			
S285	1-571-977-11	SWITCH, TACTIL (SCAN:◀◀)			
S286	1-571-977-11	SWITCH, TACTIL (SIDE A)			
S287	1-571-977-11	SWITCH, TACTIL (❚❚)			
S288	1-571-977-11	SWITCH, TACTIL (▷)			
S289	1-571-977-11	SWITCH, TACTIL (■)			
S290	1-571-977-11	SWITCH, TACTIL (OPEN/CLOSE ⏏)			

****

MISCELLANEOUS
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Ref. No.	Part No.	Description	Remark
77	1-751-683-11	CABLE, FLEXIBLE FLAT (28 CORE)	
⚠162	1-413-898-11	POWER BLOCK	
⚠209	8-848-286-11	DEVICE, OPTICAL KHS-150A (RP)	
215	1-751-083-11	CABLE, FLEXIBLE FLAT (18 CORE)	
217	1-751-084-11	CABLE, FLEXIBLE FLAT (14 CORE)	
⚠J901	1-951-551-11	HARNESS (AC-2) (AC IN)	
⚠M471	X-3942-963-1	MOTOR ASSY (LOADING)	
⚠M901	1-698-109-11	MOTOR, DD (SPINDLE)	
⚠M903	X-3942-968-1	TILT MOTOR ASSY	

****

ACCESSORIES & PACKING MATERIALS
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Ref. No.	Part No.	Description	Remark
⚠	1-575-131-11	CORD, POWER (AEP)	
⚠	1-590-866-11	CORD, POWER (UK)	
	1-751-684-11	CORD, CONNECTION	
	3-757-688-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH GERMAN, ITALIAN)	
	3-757-688-41	MANUAL, INSTRUCTION (DUTCH, SWEDISH SPANISH, PORTUGUESE) (AEP)	
*	3-953-404-01	CUSHION (UPPER)	
*	3-953-405-01	CUSHION (LOWER)	
*	3-953-410-41	INDIVIDUAL CARTON	

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****
HARDWARE LIST
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Ref. No.	Part No.	Description
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#2	7-671-155-01	STEEL BALL 3.0
#3	7-624-105-04	STOP RING 2.3, TYPE -E
#4	7-685-144-11	SCREW +P 3X5 TYPE2 NON-SLIT
#5	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S
#6	7-682-645-01	SCREW +PS 3X4
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2
#8	7-627-553-48	SCREW, PRECISION +P 2X4
#9	7-628-253-05	SCREW +PS 2X4
#10	7-621-759-35	+PSW, 2.6X5
#11	7-684-220-02	NUT 3, HEXAGON CAP
#12	7-624-190-81	STOP RING 2, TYPE-CS
#13	7-682-946-09	SCREW +PSW 3X5
#14	7-621-759-65	+PSW, 2.6X8
#16	7-624-102-04	STOP RING 1.5, TYPE -E
#17	7-685-131-19	SCREW +P 2.6X4 TYPE2 NON-SLIT
#18	7-685-646-81	SCREW +BVTP 3X8 TYPE2
#19	7-685-158-19	SCREW +P 4X6 TYPE2 NON-SLIT
#20	7-685-103-19	SCREW +P 2X5 TYPE2 SLIT
#21	7-685-648-79	SCREW +BVTP 3X12 TYPE2

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 6
IC PIN FUNCTION DESCRIPTION

6-1. SYSTEM CONTROL MICROPROCESSOR PIN FUNCTION (MP-702 BOARD IC606 MB89094)

PIN NO.	PIN NAME	I/O	FUNCTION
1	N.C		NOT USED. OPEN
2	CLK32	I	CRYSTAL OSCILLATOR (32 kHz) INPUT
3	GND	I	GND
4	GND	I	GND
5	2FSC	I	2 fsc (7.159 MHz) INPUT
6	N.C		NOT USED. OPEN.
7	Vss	I	GND
8	$\overline{\text{MRST}}$	I	RESET INPUT TERMINAL (L: RESET)
9	$\overline{\text{FREQ}}$	I	PHILLIPS CODE (FRAME NO.) READ OUT ENABLE INPUT
10	FQACK	O	PHILLIPS CODE, SUBQ (SUB CODE) DATA OUTPUT CONTROL (H: DATA OUTPUT)
11	FQSEL	O	PHILLIPS CODE/SUBQ DATA SELECT (L: SUBQ)
12	JPCTRL	O	1 TRACK JUMP (1TJ)/MULTI TRACK JUMP (MTJ) SELECT SIGNAL OUTPUT (H: 1TJ)
13	SPLOCK	I	SPINDLE SERVO LOCK SIGNAL (H: DURING SPINDLE SERVO IS LOCKING)
14	TBCHOLDIN	O	CHROMA TBC CONTROL SIGNAL OUTPUT
15	SCOR	I	H WHEN SUB CODE SYNC IS DETECTED
16	$\overline{\text{PB V}}$	I	PLAYBACK V SYNC SIGNAL INPUT
17	$\overline{\text{REF V}}$	I	REFERENCE V SYNC SIGNAL
18	ALT	O	INTERNAL A REGISTER LATCH OF EXPANSION OUTPUT PORT IC (IC605 ON MP-702 BOARD) OUTPUT
19	BLT	O	INTERNAL B REGISTER LATCH OF EXPANSION OUTPUT PORT IC (IC605 ON MP-702 BOARD) OUTPUT
20	$\overline{\text{BUSY}}$	I	COMMUNICATION ENABLE SIGNAL FROM MODE CONTROL MICROPROCESSOR (H : COMMUNICATION ENABLE)
21	P/N IN	I	PAL/NTSC SELECT SIGNAL IN "H" : PAL "L" : NTSC
22	PB/JOG	O	"L" PAL CAV JOG MODE
23	CF1	O	COLOR FRAMING CIRCUIT SELECT
24	CF2	O	COLOR FRAMING CIRCUIT SELECT
25	CLSCS	O	CHIP SELECT SIGNAL OUTPUT FOR CLS DT (PIN 29) SIGNAL
26	SPDLPLS	O	SPINDLE PULSE DRIVE SIGNAL OUTPUT (H: SPINDLE FREE-RUN)
27	TBRKMON	O	SERVO IC BRAKE MONITOR (H: BRAKE ON). NOT USED
28	PULL UP +5V	I	+5 V
29	CLSDT	I	CLV SCAN V SYNC COUNTER SERIAL DATA FROM IC605 INPUT. NORMALLY L. WHEN CLS CS (PIN 25) IS H, DATA IS IN. CLOCK IS SET CK (PIN 31)
30	SETDT	O	SERIAL DATA OUTPUT TO DSP (DIGITAL SIGNAL PROCESSOR) IC (IC804 ON AU-705 BOARD) AND EXPANSION OUTPUT PORT IC
31	SETCK	O	SERIAL TRANSFERRING CLOCK TO DSP IC AND IC605
32	SPDLFG1	I	SPINDLE FG INPUT 1 (1 ROTATION: 12WAVES)
33	CG V MUTE	O	CGV MUTE SIGNAL
34	LD SEARCH	O	SPINDLE SERVO CONTROL OUTPUT (H: DURING LD SEARCHING)
35	SPDL F/R	O	SPINDLE ROTATING DIRECTION SIGNAL OUTPUT (H: FWD)
36	RGB CONT	O	H WHEN R. G. B. SIGNALS ARE OUT
37	JMP TRIG	O	TRACK JUMP TRIGGER PULSE OUTPUT
38	ANALOG	O	AUDIO ANALOGUE/DIGITAL SELECT (H: ANALOGUE, L: DIGITAL)
39	V RESET	O	V RESET SIGNAL FOR PAL SYNC. SIGNAL. "L" RESET
40	EXT/INT	O	LD/EXT SELECT SIGNAL OUT "H" : LD
41	MTJ	I	TRACKING PULSE OUTPUT FOR MTJ. NORMALLY INPUT, OUTPUT DURING JUMPING TRACKS (L: FWD)
42	MTF ON/OFF	O	MTF CORRECTION ON/OFF SIGNAL (H: MTF ON)
43	$\overline{\text{TRK OFF}}$	O	PUT OFF SERVO IC TRACKING CONTROL (L: TRACKING OFF)
44	SHARP	O	PICTURE ENHANCE CONTROL SIGNAL "H": SHARP
45	GMUTE	O	ON CLV SCAN, GRAY PICTURE MUTE CONTROL OUTPUT (L: PLAYBACK PICTURE) (H: GRAY PICTURE)
46	P/N DET TIME	O	DOC INH SIGNAL OUT
47	$\overline{\text{SOFT}}$	O	PICTURE ENHANCE CONTROL SIGNAL. "L" : SOFT
48	FOK	I	FOCUS LOCK SIGNAL INPUT (H: FOCUS LOCK)
49	Vcc	I	+5 V POWER SUPPLY
50	$\overline{\text{BUSY}}$	I	COMMUNICATION ENABLE SIGNAL FROM MODE CONTROL MICROPROCESSOR (H: COMMUNICATION ENABLE)
51	$\overline{\text{CENE CONT}}$	O	CENELEC CONTROL SIGNAL OUT
52	SLED FWD	O	SLED FWD FORCED MOVE SIGNAL OUTPUT FROM PORT (H: FWD MOVE)
53	SLED REV	O	SLED REV FORCED MOVE SIGNAL OUTPUT FROM PORT (H: REV MOVE)
54	$\overline{\text{MMICS}}$	O	SERIAL COMMUNICATION CHIP SELECT SIGNAL OUTPUT TO MODE CONTROL MICROPROCESSOR

PIN NO.	PIN NAME	I/O	FUNCTION
55	LOADING	O	TRAY LOADING DRIVE
56	UN LOADING	O	TRAY EJECT DRIVE
57	N.C		NOT USED. OPEN
58	Vss	I	GND
59	LINE MUTE	O	AUDIO OUTPUT MUTE SIGNAL OUTPUT (H: MUTE)
60	SLED SPEED	O	SLED DRIVE SPEED CHANGE (L: SLOW)
61	$\overline{\text{SV DSP RST}}$	O	RESET OUTPUT TO (L: RESET) SERVO IC (IC401 ON MB-712 BOARD), DSP IC AND D/A CONVERTER (IC201 ON MB-712 BOARD).
62	LD ON	O	LASER DIODE ON/OFF SIGNAL (H: ON EMITTING)
63	$\overline{\text{CD}}$/LD CDV	O	L: PLAYING CD OR AUDIO PART OF CDV. H: OTHERS
64	SLED MODE	O	SLED CONTROL OUTPUT
65	SIDE A/B	O	TILT SERVO SIDE SELECT (A: H, B: L)
66	$\overline{\text{T}}$/H SV	O	TILT/HIGHT SELECT (L: TILT)
67	LCSW1	I	LOADING/CHUCKING POSITION SENSOR INPUT 1
68	$\overline{\text{LD LED}}$	O	LED EMITTING SIGNAL FOR DISC DISCRIMINATION
69	LCSW3	I	LOADING/CHUCKING POSITION SENSOR INPUT 2
70	LCSW2	I	LOADING/CHUCKING POSITION SENSOR INPUT 3
71	SPDL FG2	I	SPINDLE FG INPUT 2
72	TILT LIMIT	I	TILT UP/DOWN LIMIT SW INPUT
73	TILT CTR	I	TILT CENTOR POSITION SW INPUT
74	MECH SI	I	32 BYTE SERIAL TRANFERRING DATA INPUT
75, 76	N.C		NOT USED. OPEN
77	MECH SI	I	32 BYTE SERIAL TRANFERRING DATA OUTPUT. SERIAL DATA INPUT FROM MODE CONTROL MICROPROCESSOR
78	MECH SO	O	32 BYTE SERIAL TRANFERRING DATA INPUT. SERIAL DATA OUTPUT TO MODE CONTROL MICROPROCESSOR
79	MECH CLK	O	32 BYTE SERIAL TRANFERRING CLOCK
80	T CNT	I	JUMPING TRACKS COUNTING SIGNAL INPUT. NOT USED
81, 82	N.C		NOT USED. OPEN
83	AVss	I	GND
84	LDDET	I	A/D INPUT THERE IS DISC OR NOT, 8/12 INCH DETECTION
85	CDV/FRLMT	I	A/D INPUT SLED POSITION INFORMATION (CDV)
86	CD ABLD	I	A/D INPUT SLED POSITION INFORMATION (CD, ALD, BLD)
87	INLIMIT	I	A/D INPUT SLED POSITION INFORMATION (INLIMIT)
88	$\overline{\text{DSPLT}}$	O	LATCH SIGNAL FOR DSP IC OUTPUT
89	MUTG	O	DSP MUTE SIGNAL (H: MUTE)
90	LOCK	I	FRME SYNC (EFM) LOCK SIGNAL (Hi LOCK)
91	SENSE	I	VARIOUS SENSE INPUT SIGNAL FROM DSP
92	AVcc	I	+5 V POWER SUPPLY
93	MIC IN	O	EMPHASIS SELECT SIGNAL OUTPUT (L: EMPHASIS ON)
94	$\overline{\text{DFLT}}$	O	DIGITAL FILTER DATA LOAD SIGNAL
95	A MUTE 2	O	L CH AUDIO OUTPUT MODE SELECT *
96	A MUTE 1	O	R CH AUDIO OUTPUT MODE SELECT *
97	$\overline{\text{CX}}$	O	CX ON/OFF CONTROL OUTPUT (L: CX ON)
98	$\overline{\text{CLV SCAN}}$	O	CLV SCAN ON/OFF SIGNAL
99	$\overline{\text{DSPSEL}}$	O	SELECTS COMMUNICATION WITH DSP (L: CONNECT, H: SEPARATE)
100	Vcc	I	POWER SUPPLY TERMINAL (+5 V)

*** AUDIO OUTPUT MODE SELECT**

A MUTE 1		L	L	H	H
A MUTE 2		L	H	L	H
MODE		STEREO	MONO (L)	MONO (R)	MUTE
AUDIO OUTPUT	L	L/CH1	L/CH1	R/CH2	MUTE
	R	R/CH2			

6-2. EXPANSION OUTPUT PORT IC PIN FUNCTION (MP-702 BOARD IC605 MB606F06)

PIN NO.	PIN NAME	I/O	FUNCTION
1	SP OFF	O	SPINDLE MOTOR ON/OFF SIGNAL OUTPUT (H: SPINDLE MOTOR ON)
2	Vss		GND
3	TBC MUT	O	TBC MUTE SIGNAL OUTPUT
4	TBC REFH	O	REFERENCE HORIZONTAL SYNC. SIGNAL FOR TBC OUTPUT
5	PBCS	I	PB COMPOSITE V, H SYNC. SIGNAL INPUT
6	SP RHO	O	REFERENCE H SYNC. SIGNAL FOR SPINDLE SERVO OUTPUT
7	SP RHI	I	REFERENCE H SYNC. SIGNAL FOR SPINDLE SERVO INPUT
8	CNT2	O	TBC CONTROL OUTPUT (H: LINE SYSTEM, L: BURST SYSTEM)
9	JUMP TGL	O	JUMP TOGGLE OUTPUT
10	SYEX	O	SYNC. SIGNAL FOR CHARACTER GENERATOR SELECT. NOT USED
11	CGV	O	V SYNC. GENERAL FOR CHARACTER GENERATOR OUTPUT. NOT USED
12	Vss		GND
13	SELH	O	H SYNC. SIGNAL FOR CHARACTER GENERATOR OUTPUT. NOT USED
14	XPHS	O	PB H SYNC. SIGNAL OUTPUT. NOT USED
15	SP PBHO	O	PB H SYNC. SIGNAL FOR SPINDLE SERVO OUTPUT
16	SP PBHI	I	PB H SYNC. SIGNAL FOR SPINDLE SERVO INPUT
17	HS	O	CENTER OF ECCENTRICITY OUTPUT. NOT USED
18	MEM REFH	O	REF H OUTPUT FOR THE SET WITH MEMORY (NOT RESET). NOT USED
19	FSC	O	fsc (3.579545 MHz) OUTPUT. NOT USED
20	XOUT	O	4 fsc (14.31818 MHz) OUTPUT
21	XIN	I	4 fsc (14.31818 MHz) INPUT (CLOCK)
22	HD	I	H SYNC. SIGNAL FOR DIGITAL TBC INPUT. NOT USED
23	Vss		GND
24	V MUTE	O	VIDEO MUTE SIGNAL OUTPUT
25	V MUTE2	O	SIGNAL FOR ADDING REF. V SYNC. SIGNAL TO PLAYBACK VIDEO SIGNAL DURING CLV SCANNING (NOT USED)
26	G BURST	O	BURST SIGNAL (3.58 MHz) FOR GRAY PICTURE GENERATION DURING CLV SCANNING (NOT USED)
27	PC OUT1	O	SPINDLE SERVO FORCED ACCELERATION/DECELERATION SIGNAL OUTPUT. (H: ACCELERATION, L: DECELERATION, Hiz: OTHERS)
28	PC OUT2	O	SPINDLE SERVO H SERVO ERROR OUTPUT
29	TBC H	I	H SYNC. SIGNAL AFTER TBC CORRECTION FOR CHARACTER GENERATOR INPUT. NOT USED
30	DS GATE	O	GATE SIGNAL FOR READING OUT PHILLIPS CODE (FRAME NO.)
31	DATA	I	PHILLIPS CODE DATA INPUT
32	V MUTE1	O	BLANKING V SYNC. SIGNAL OF PLAYBACK VIDEO SIGNAL DURING CLV SCANNING
33	VDD		+5 V
34	DLRH	O	GRAY SIGNAL FOR GENERATING GRAY PICTURE DURING CLV SCANNING. NOT USED
35	GRH	O	H SYNC. SIGNAL FOR GENERATING GRAY PICTURE DURING CLV SCANNING. NOT USED
36	SP UNLOCK	O	SIGNAL FOR SETTING BY MECHANISM CONTROLLER OUTPUT WHEN SPINDLE IS UNLOCKED
37	8/$\overline{12}$	O	LD DISC SIZE SET OUTPUT. (H: 8 INCHES, L: 12 INCHES) NOT USED
38	CD/$\overline{LDCDV}$	O	DISC TYPE SET OUTPUT H: PLAYBACK CD OR AUDIO PART OF CDV L: PLAYBACK LD OR VIDEO PART OF CDV
39	CDV	O	SPINDLE SERVO MODE SET (H: VIDEO PART OF CDV)
40	FGMD	O	SPINDLE SERVO MODE SET (H: FG MODE (WHILE COUNTING SPINDLE FG, FORCING TO ACCELERATE/DECELERATE SPINDLE MOTOR))
41	HP OUT	O	HOLD PULSE OUTPUT. NORMALLY OUT. PULSE OUTPUT DURING JUMPING TRACKS
42	Vss		GND
43	SV CLK	O	CLOCK FOR SERVO IC (IC402 ON MP-702 BOARD). 1/8 fsc (APPROX. 450 kHz)
44	JMP	I	TRACK JUMP CONTROL SIGNAL INPUT. (GATE FOR HP OUT)
45	SET CLK	I	INTERNAL A, B REGISTER CLOCK INPUT FROM SYSTEM CONTROL MICROPROCESSOR (IC501 ON MB-712 BOARD)
46	GVID	I	GRAY PICTURE CONTROL SIGNAL INPUT DURING CLV SCANNING (H: GRAY PICTURE, L: PLAYBACK PICTURE)
47	SET DT	I	INTERNAL A, B REGISTER SERIAL DATA INPUT FROM SYSTEM CONTROLLER
48	CLS DT	O	CLV SCAN V SYNC. COUNTER DATA OUTPUT TO SYSTEM CONTROLLER. NORMALLY L. DATA OUTPUT WHEN CLS CLK (PIN ㊾) IS H. CLOCK IS SET CLK (PIN ㊺)
49	CLS CLK	I	CLOCK FOR READING OUT CLV SCAN V SYNC COUNTER DATA CONTROL SIGNAL INPUT
50	B LD	I	INTERNAL B REGISTER LATCH INPUT
51	A LD	I	INTERNAL A REGISTER LATCH INPUT
52	Vss		GND
53	REF V	O	REFERENCE V SYNC. SIGNAL OUTPUT
54	PB V	O	PLAYBACK V SYNC. SIGNAL OUTPUT
55	TBC HOLD	I	CHROMA TBC CONTROL SIGNAL INPUT
56	SP LOCK	O	SPINDLE SERVO LOCK SIGNAL OUTPUT (H: DURING LOCKING). NOT USED
57	JP CTL	I	TRACK JUMP SELECT SIGNAL INPUT (H: 1 TRACK JUMP, L: MULTI TRACK JUMP)
58	FQSEL	I	PHILLIPS CODE/SUBQ (SUB CODE) SELECT SIGNAL INPUT (L: SUBQ)
59	FQACK	I	PHILLIPS CODE, SUBQ DATA OUTPUT CONTROL (H: DATA OUTPUT)
60	$\overline{\text{F REQ}}$	O	PHILLIPS CODE READING OUT ENABLE SIGNAL OUTPUT
61	$\overline{\text{MRST}}$	I	SYSTEM RESET INPUT (L: RESET)
62	FSC2	O	2 fsc OUTPUT
63	Vss		GND
64	FH2	O	2 fH (3.15 kHz). CARRIER FOR SPINDLE MOTOR PWM DRIVE CIRCUIT
65	$\overline{\text{DSPSEL}}$	I	CLOCK CONTROL SIGNAL FOR DSP IC (L: CONNECTED TO DSP)
66	FQCLK	I	CLOCK FOR READING OUT PHILLIPS CODE, SUBQ DATA INPUT
67	D OUT	O	PHILLIPS CODE, SUBQ CODE SERIAL DATA OUTPUT
68	SUBQ CLK	O	SUBQ TRANSFERRING CLOCK
69	SUBQ	I	SUBQ DATA INPUT
70	DSP CLK	O	CLOCK FOR DSP IC OUTPUT
71	DOCINH	O	DROP OUT CORRECTION INHIBITION OUTPUT. NOT USED
72	CLV1	O	SPINDLE SERVO GAIN MONITOR OUTPUT. NOT USED
73	VDD		+5 V
74	CLV2	O	SPINDLE SERVO GAIN MONITOR OUTPUT. NOT USED
75	REF HE	O	REF HE MONITOR OUTPUT. NOT USED
76	REF HC	O	REF HC MONITOR OUTPUT. NOT USED
77	HMSK	O	PHILLIPS CODE MASKING SIGNAL MONITOR OUTPUT. NOT USED
78	CD MODE	O	"H" : VIDEO +5 V IS TURNED OFF.
79	P/$\overline{N}$	O	PAL/NTSC SELECT SIGNAL. "H" : PAL "L" : NTSC
80	TEST	I	TEST MODE INPUT (H: TEST)

6-3. FP-717 BOARD IC201 MB89095 PIN FUNCTION

Pin No.	Pin Name	I/O	Description
1	CLK32KHZ	O	FOR CRYSTAL OSCILLATOR (32 kHz). NOT USED
2	CLK32KHZ	I	FOR CRYSTAL OSCILLATOR (32 kHz). NOT USED
3	GND	I	
4	GND	I	
5	CLK8MHZ	I	FOR CRYSTAL OSCILLATOR (8 MHz)
6	CLK8MHZ	O	FOR CRYSTAL OSCILLATOR (8 MHz)
7	Vss	I	GND
8	$\overline{\text{RST}}$	I	RESET IN (L : RESET)
9	$\overline{\text{MRST}}$	I	SLC RESET IN (L : RESET)
10	$\overline{\text{BUSY}}$	O	L WHEN COMMUNICATING WITH SLC
11	AUMUTE	O	H WHEN AUDIO MUTING
12 ~ 16	N.C		
17	$\overline{\text{REFV}}$	I	REFERENCE V SYNC. SIGNAL
18	$\overline{\text{MMI CS}}$	I	CHIP SELECT FOR COMMUNICATION WITH SLC (L : COMMUNICATING)
19 ~ 24	N.C		
25	POW CTR	O	POWER ON / OFF CONTROL OF THE SET (H : POWER ON)
26	N.C		
27	N.C		
28	+5V PULLUP	I	START MODE SELECTIONS INPUT AFTER IS RELEASED
29	N.C		
30	CG SI	O	CHARACTER GENERATOR SERIAL TRANSFERRING DATA OUT
31	CG CLK	O	CHARACTER GENERATOR SERIAL TRANSFERRING DATA CLOCK OUT
32	SIRCS IN	I	SIRCS DATA IN
33	$\overline{\text{CG CS}}$	O	CHARACTER GENERATOR SERIAL TRANSFERRING CHIP SELECT (L : COMMUNICATING)
34 ~ 38	N.C		
39	FL P1	O	FL TUBE SEGMENT OUT
40	P2	O	FL TUBE SEGMENT OUT
41	P3	O	FL TUBE SEGMENT OUT
42	P4	O	FL TUBE SEGMENT OUT
43	P5	O	FL TUBE SEGMENT OUT
44	P6	O	FL TUBE SEGMENT OUT
45	P7	O	FL TUBE SEGMENT OUT
46	P8	O	FL TUBE SEGMENT OUT
47	P9	O	FL TUBE SEGMENT OUT
48	P10	O	FL TUBE SEGMENT OUT
49	Vcc	I	EVER +5V POWER SUPPLY
50	FL P11	O	FL TUBE SEGMENT OUT
51	P12	O	FL TUBE SEGMENT OUT
52	P13	O	FL TUBE SEGMENT OUT
53	VRDP	I	− 30V HIGH WITH SAND VOLT PGE PULL DOWN POWER SUPPLY
54	FL P14	O	FL TUBE SEGMENT OUT
55	P15	O	FL TUBE SEGMENT OUT
56	P16	O	FL TUBE SEGMENT OUT

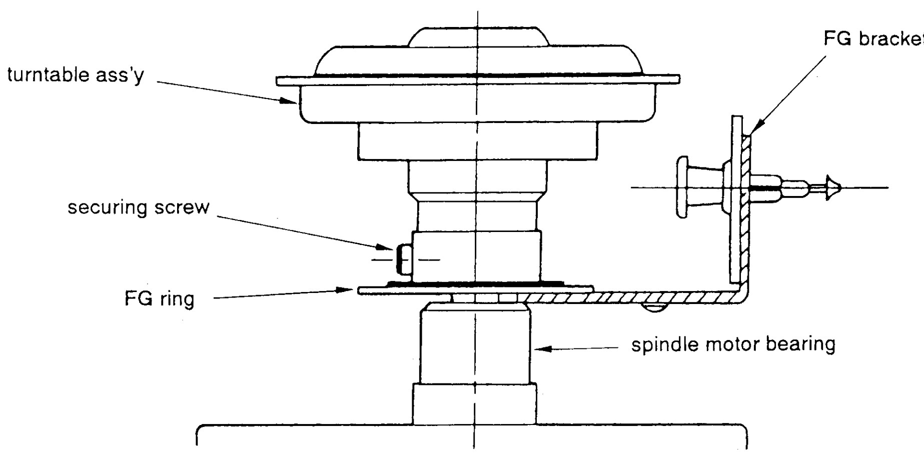
Pin No.	Pin Name	I/O	Description
57	FL P17	O	FL TUBE SEGMENT OUT
58	Vss	I	GND
59	FL P18	O	FL TUBE SEGMENT OUT
60	P19	O	FL TUBE SEGMENT OUT
61	P20	O	FL TUBE SEGMENT OUT
62	P21	O	FL TUBE SEGMENT OUT
63	P22	O	FL TUBE SEGMENT OUT
64	P23	O	FL TUBE SEGMENT OUT
65	N.C	O	
66	N.C	O	
67	Vcc	I	EVER +5 V POWER SUPPLY
68	FL 7G	O	FL TUBE GRID OUT
69	6G	O	FL TUBE GRID OUT
70	5G	O	FL TUBE GRID OUT
71	4G	O	FL TUBE GRID OUT
72	3G	O	FL TUBE GRID OUT
73	2G	O	FL TUBE GRID OUT
74	1G	O	FL TUBE GRID OUT
75	N.C		
76	$\overline{\text{MMI CS}}$	I	32 BYTE SERIAL TRANSFERRING CHIP SELECT (L : COMMUNICATING)
77	MECH SO	I	32 BYTE SERIAL TRANSFERRING DATA INPUT
78	MECH SI	O	32 BYTE SERIAL TRANSFERRING DATA OUTPUT
79	MECH CLK	O	32 BYTE SERIAL TRANSFERRING CLOCK
80	N.C		
81	$\overline{\text{SA LED}}$	O	SIDE A LED OUT (L : LIGHTING UP)
82	$\overline{\text{SB LED}}$	O	SIDE B LED OUT (L : LIGHTING UP)
83	AVss	I	GND
84	AD0	I	KEY INPUT
85	AD1	I	KEY INPUT
86	AD2	I	KEY INPUT
87 ~ 91	N.C		
92	AVcc	I	EVER +5 V POWER SUPPLY
93	N.C		
94	− 16V. MONITOR	I	− 16V MONITOR
95	AD3	I	DOOR SWITCH INPUT
96	REG. MONITOR	I	REG +5 V MONITOR
97	N.C		
98	$\overline{\text{QUICK LED}}$	I	DIRECT ACCESS LED OUTPUT (L : LIGHTING UP)
99	N.C		
100	Vcc	I	EVER +5 V POWER SUPPLY

SECTION 7
ADJUSTMENTS

7-1. MECHANICAL ADJUSTMENT

7-1-1. TURNTABLE ASSEMBLY HEIGHT ADJUSTMENT

1. Open the tray by turning the control gear secured on the right side of the set clockwise.
2. Remove chucking assembly.
3. Remove FG bracket with FG board.
4. Replace turntable assembly.
   Adjust turntable assembly height using FG bracket (1 mm thickness) as followings.
5. Fit FG bracket with FG board in its original position.



Insert FG bracket between spindle motor bearing and FG ring to set height and tighten securing screw.

7-2. ELECTRICAL ADJUSTMENTS

During these adjustment, see the parts arrangement diagram for adjustments on page from 7-13.

7-2-1. LIST OF SERVICING JIGS

- Oscilloscope
- Color monitor TV
- Digital voltmeter
- Audio level meter
- Frequency counter
- Remote commander (RMT-M22)
- LD alignment disc { *HLV-3P (8-797-003-00)...PAL / **HLV-8 (8-797-008-00)...NTSC
  * : REF3P is also available.
  ** : REF7 is also available.
- CD alignment disc YEDS-18 (3-702-101-01)
- MD adjustment cable (J-6082-059-B)
- Hexagonal wrench
  (Tangential screwdriver: 7-700-766-04)
- Decentering screwdriver ϕ 4 (J-6095-029-A)

7-2-2. CAUTIONS ON ADJUSTMENT

- Disc load/unload operation must not be performed when servicing with the unit laying down sideways.
  (Never press the OPEN and CLOSE buttons.)
- When laying the unit down sideways, perform adjustment with the left side down and turn the power on.
- When adjusting the servo system, be sure to set up the unit horizontally.

7-2-3. MD ADJUSTMENT CABLE (J-6082-059-B)

MD adjustment cable is used to adjust the servo system with connecting to CN401 on MP-702 board. Remove it except when adjusting the servo system.

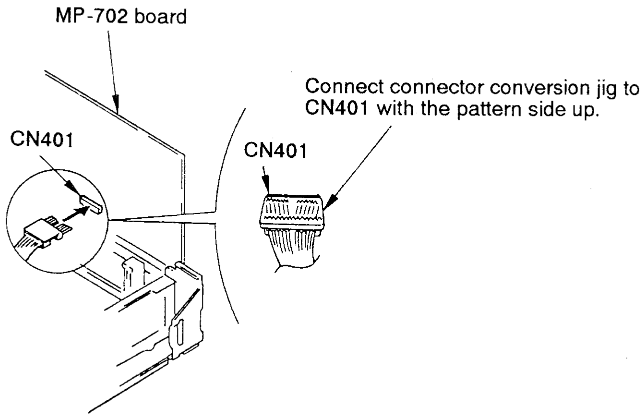


Fig. 7-2-1.

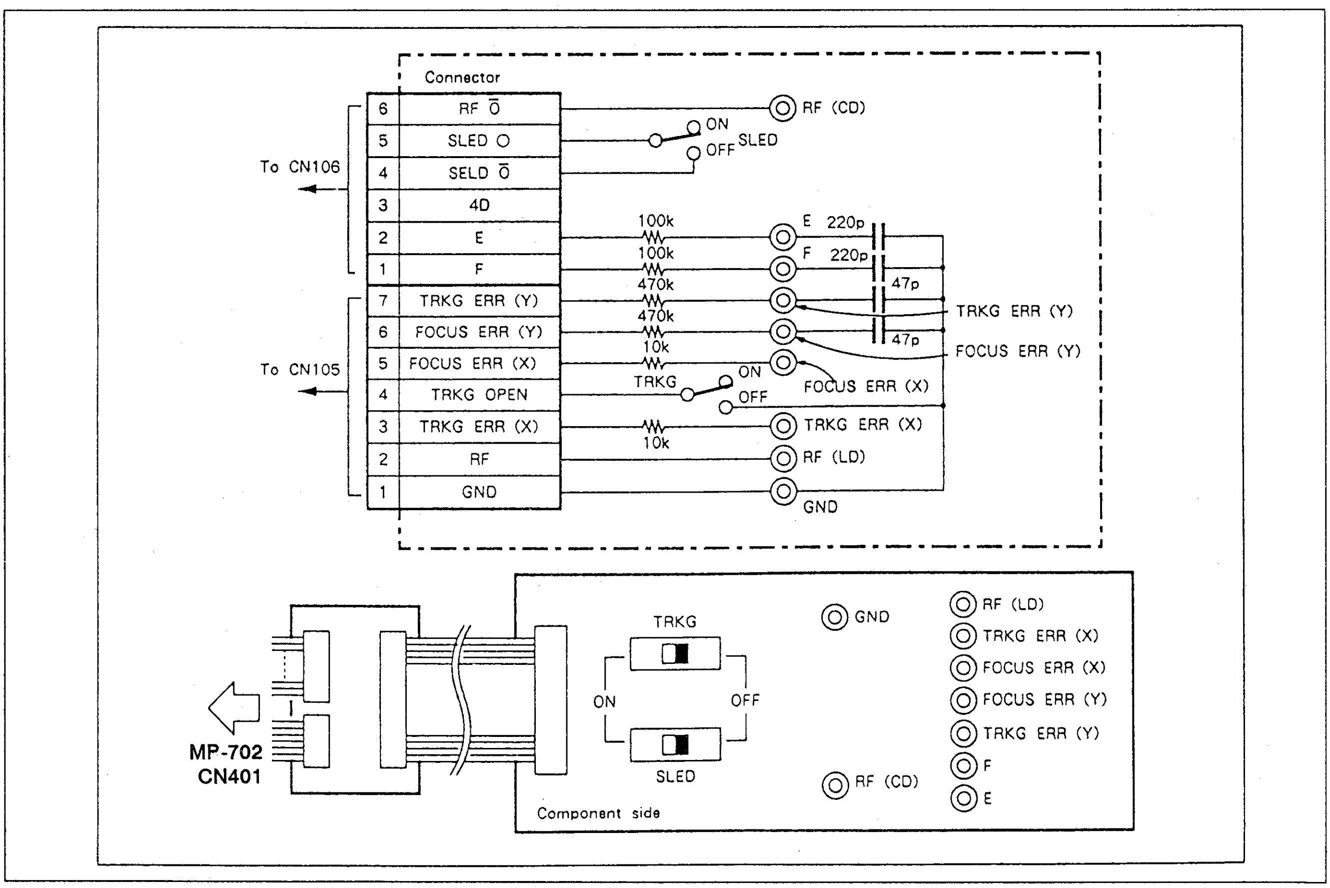


Fig. 7-2-2. MD Adjustment Cable

7-2-4. SERVICE MODE

2-4-1. Operation of the MDP-850D with Hidden Key Functions

1. Explanation of the hidden key functions

Special control functions to be used for the test or some other purposes of the MDP-850D are available by pressing simultaneously the multiple function keys on the main unit. The control functions available in this way are called "special key functions". The special key functions can be used in either of the following modes.

- the service mode,
- the normal operation mode.

2. How to use "simultaneous main-unit-key-press functions"

The functions available by pressing simultaneously the multiple specific keys only on the main unit are called "simultaneous main-unit-key-press functions". These functions are to be used when a quick operation such as "forced power off" is required.
The following table lists the currently available simultaneous main-unit-key-press functions.

2-4-2. Operation of the MDP-850D in the Service Mode

1. Explanation of the service mode

The functions for the use on reparation and maintenance (the service mode) are incorporated in the MDP-850D. The mode in which those functions are available is called "the service mode".

The following are the differences between the service mode and the normal operation mode.

(1) Special operations such as focusing search and sledding can be carried out.
(2) Power is not turned off automatically in an emergency condition of power off.

2. Entering the service mode

The following procedure shows how to enter the service mode.

(1) While the power is turned off, connect the test pin (TP601 for service mode setting) on the MP-702 board of the main unit, to the ground.
(2) Turn on the power by pressing the power key of the main unit. Nothing is displayed on the screen at this moment.
(3) Disconnect the test pin (the connection was performed in step (1) above) from the ground.
The service mode can be started when the background color changes in violet. If the background color is blue or black, the service mode is not available yet. If so, restart the procedure from step (1) above.

3. Quitting the service mode

To quits the service mode, press the power key and turn off the power. If you cannot turn off the power in this way (the operation of the mechanisms is not complete), carry out the forced power off function by pressing the reverse direction scanning key and the power key on the main unit at the same time.

Table 7-2-1. List of simultaneous main-unit-key-press functions

Keys to be pressed on the main unit	Functions
Reverse direction scanning key and power key	(1) Forced power off This function turns off power forcibly. It is to be used if you want to turn off the power in the following cases. ● Operation of the mechanisms is out of control. ● Power cannot be turned off by pressing the power key. Note that this function should be used with care because it may turn off the power in a half way of the operation of the mechanisms.
STOP key and power key	(2) Forced reset This function carries out initialization of the mode controller in addition to the forced power off function. It is to be used if you want to reset the mode controller in the following case. Something is wrong with the mode controller such that it operates with incorrect display. Note that once this function has been carried out, all information, including the history of emergency case, other than the trap-flag information in the debugging mode, will be deleted.
B side key and door open/close key and power key (With power off only)	(3) Lighting up all the FL display (all the segments of the FL tube) and LEDs on the main unit This function turns on all the FL tube segments and LEDs after turning on the power automatically. Until you switched off the power, normal operation is possible while all the FL tube segments and LEDs are lit.

4. Operating with the special key functions

The special key functions in the service mode are available only under NO DISC and STOP conditions, for safety purposes.

Check that the indication for those conditions is displayed without flashing on the screen or on the FL display. In order to carry out the special key functions listed in table 7-2-2, in the status above, turn off the FL display, and then press the desired key such as PLAY or PAUSE on the main unit.

The sledding motion with the SIDE A or SIDE B key is effective only while holding the key pressed. However, the operation started with the PLAY or PAUSE key continues, once it is pressed, until you press the STOP key. While the unit is carrying out the special key function, the LED of side B of the main unit is lit.

Note that multiple special key functions cannot be started even if you press multiple keys at the same time.

When the FL display is turned off, some keys are not effective. Be sure to turn on the FL display if you don't want to carry out the special key functions.

Table 7-2-2. List of the special key functions

Key	Special key functions
SIDE A	Sledding in reverse direction (downward)
SIDE B	Sledding in normal direction (upward)
PLAY	Focusing search
PAUSE	Tilt servo ON
STOP	Stop special operations

The following are the details of the special key functions available with the MDP-850D.

(1) PLAY key for focusing search

Focusing search operation can be carried out repeatedly by holding down the PLAY key. There is no fault with the unit if the pick-up lens moves up and down.

Be sure to start the focusing search operation after checking the condition that the the sled is placed in appropriate position (at around the center of side A). To stop the focusing search operation, press the STOP key.

(2) SIDE A key for sledding in reverse direction

The sled can be moved in reverse direction (center of side B, to edge of side B, to edge of side A, and then to center of side A) after completing initialization of the tilt (the tilt is placed in neutral position) by holding down the SIDE A key. To stop the sledding in reverse direction, release the SIDE A key.

(3) SIDE B key for sledding in normal direction

As contrary to item (2) above, the sled can be moved in normal direction (center of side A, to edge of side A, to edge of side B, and then to center of side B). This movement of the sled is desired when replacing the optical part. To stop the sledding in normal direction, release the SIDE B key.

(4) PAUSE key for tilt servo ON

The tilt servo is activated while holding down the PAUSE key. Move the sled to around the center of side A with the SIDE A and SIDE B keys, and put a CD or equivalent on the tray so that it screens the skew sensor. Then, if the tilt moves by pressing the PAUSE key, operation is normal.

The tilt can be placed back in neutral position by moving the sled with the SIDE A and SIDE B keys. To deactivate the tilt servo, press the STOP key.

7-2-5. POWER SUPPLY CHECK (SS-704 BOARD)

Mode	Stop
Measuring Equipment	Digital voltmater
UNREG +15 V Check	
Measurement Point	Pin ④ of CN151 (Pin ⑤, GND)
Specified Value	15.0 ± 1.0 V
UNREG −15 V Check	
Measurement Point	Pin ⑥ of CN151 (Pin ⑤, GND)
Specified Value	−15.0 ± 1.0 V
Power Mute Check	
Measurement Point	Pin ⑦ of CN151 (Pin ⑤, GND)
Specified Value	−15.7 ± 1.0 V
EVER 5 V Check	
Measurement Point	Pin ① of CN151 (Pin ②,GND)
Specified Value	5.0 ± 0.3 V
EVER −5 V Check	
Measurement Point	Pin ③ of CN151 (Pin ②, GND)
Specified Value	−5.0 ± 0.3 V

- Confirm that the power supply voltages satisfy the respective specified values.

7-2-6. SYSTEM CONTROL SYSTEM ADJUSTMENT

2-6-1. Microprocessor Clock (PAL) Adjustment (MP-702 Board)

Mode	Stop
Measurement Point	TP JL725 (Near Pin ⑮ of IC607)
Measuring Equipment	Frequency counter
Adjusting Element	CV602
Specified Value	17,734,475 ± 20 Hz

Adjustment method:

1) Set PAL alignment disc.
2) Adjust CV602 to 17,734,475 ± 20 Hz.

2-6-2. Microprocessor Clock (NTSC) Adjustment (MP-702 Board)

Mode	Stop
Measurement Point	TP JL725 (Near Pin ⑮ of IC607)
Measuring Equipment	Frequency counter
Adjusting Element	CV601
Specified Value	14,318,180 ± 40 Hz

Adjustment method:

1) Set NTSC alignment disc.
2) Adjust CV601 to 14,318,180 ± 40 Hz.

7-2-7. SERVO SYSTEM ADJUSTMENT

2-7-1. CD Adjustment

1) Loosen the screws of feed base block assembly.

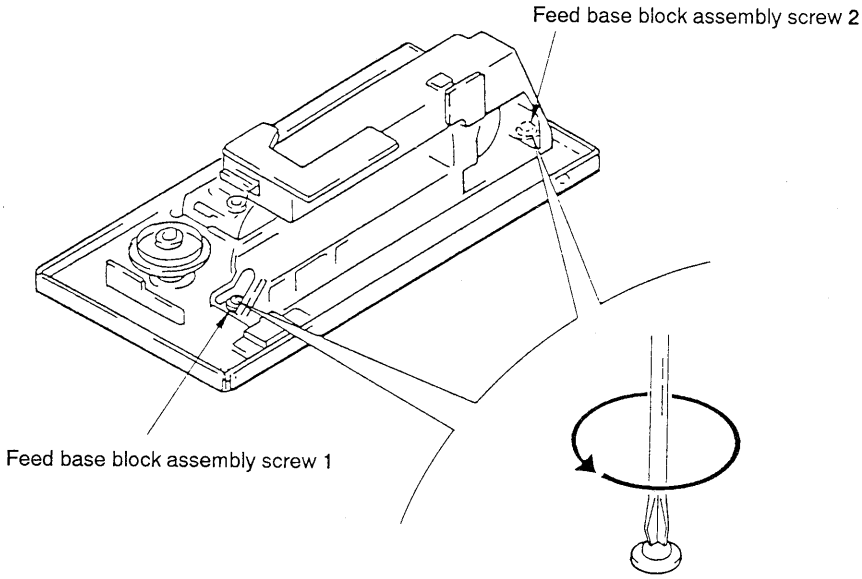


Fig. 7-2-3.

2) Playback the alignment disc to press the Pause button about 3 seconds later.
3) Connect the oscilloscope to LD RF on the MD adjustment cable to see if the waveform shown below appears.

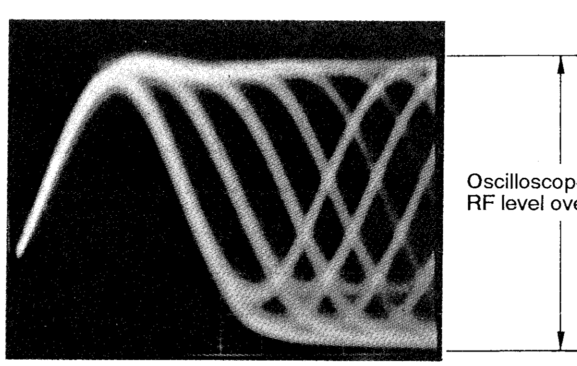


Fig. 7-2-4.

4) Insert the A TAN screw with hexagonal wrench 2.6 into the hole of top surface of chucking assembly to adjust so that RF Level is maximum. (Over 1.7 Vp-p)

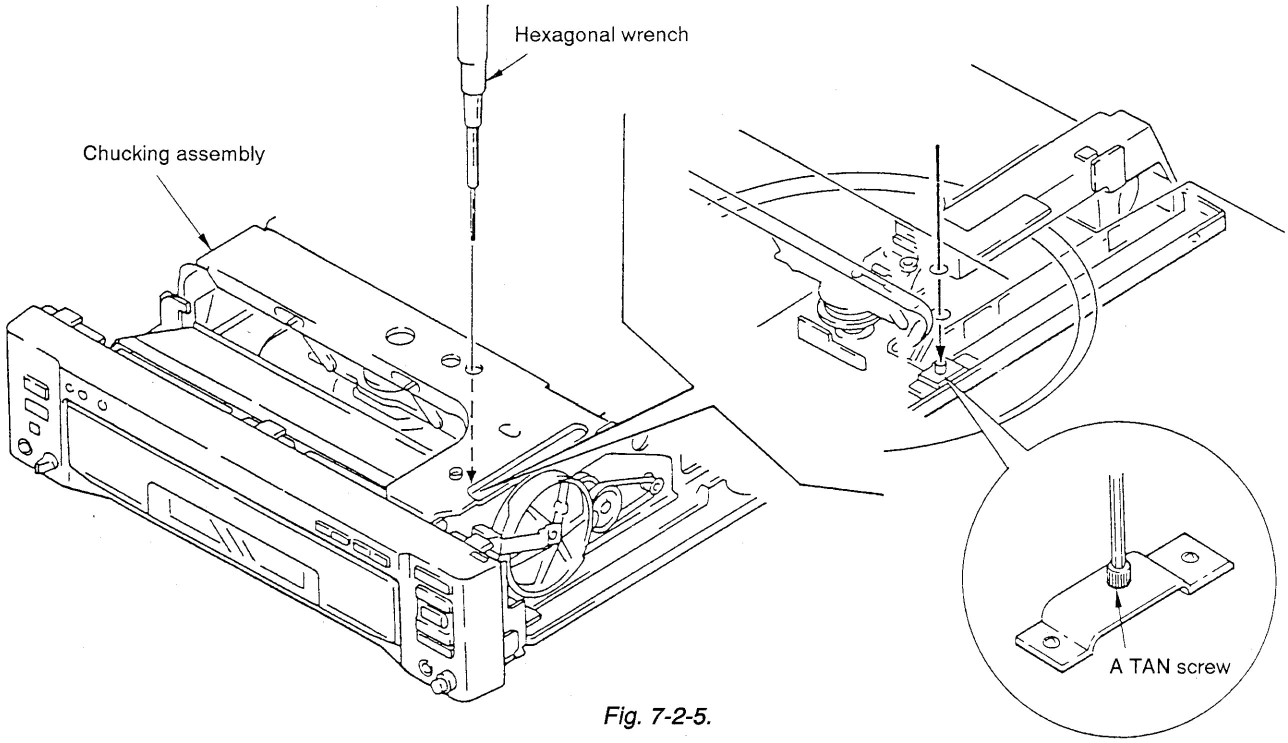


Fig. 7-2-5.

5) Insert decentering screwdriver into the feed base block assembly for RD adjustment.

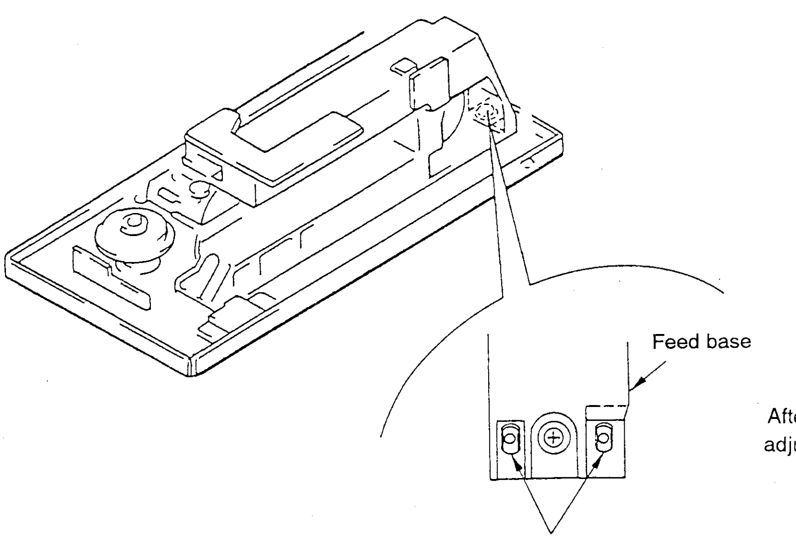
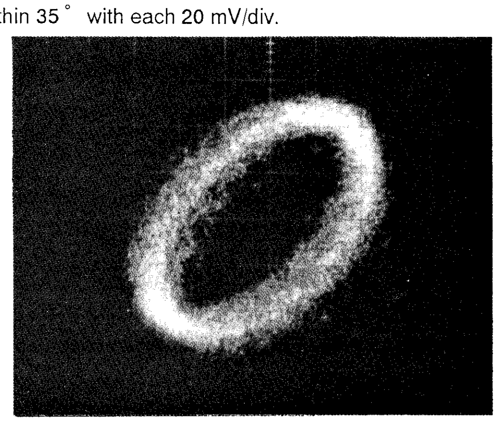


Fig. 7-2-6.

6) Take the DISC out to tighten the 2 screws of the feed base.
7) Apply suitable locking compound to A TAN screw.

Terminal E,F/TRK, SLED OFF
Oscilloscope X/Y Lissagous range
Difference within 35° with each 20 mV/div.

Before the adjustment.



⇩ Make the figure straight.

After the adjustment.

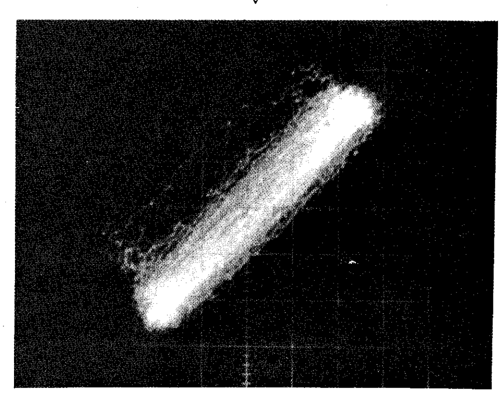
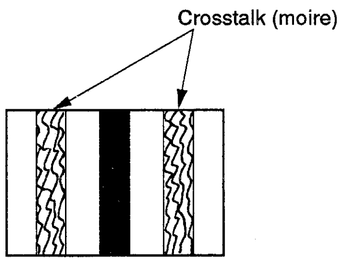


Fig. 7-2-7.

2-7-2. LD System

1) Play the alignment disc.
2) Pause at #770.
   Check that the vertical bar appears on TV monitor and turn RV401 to make right and left crosstalk (moire) the same level and minimum. (Side A tilt balance adjustment)



#770 & #130

Fig. 7-2-8.

3) Pause at #130 to check that the moire is minimum. (Do not turn RV401 at this time.)
4) Tracking gain and focus gain adjustments are not necessary.
   – Already adjusted at the optical pick-up block side –
5) Check the tracking balance.
   Measure the registance at the Y terminal of TRACKING ERR on the MD adjustment cable with oscilloscope.

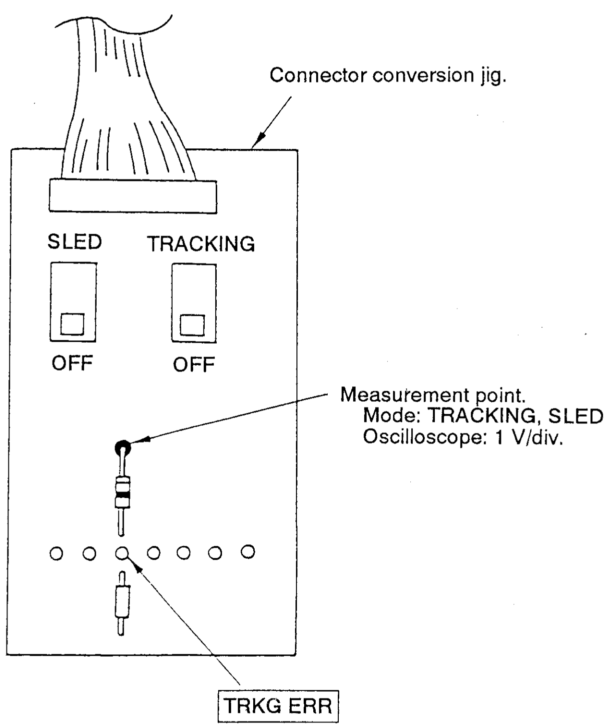
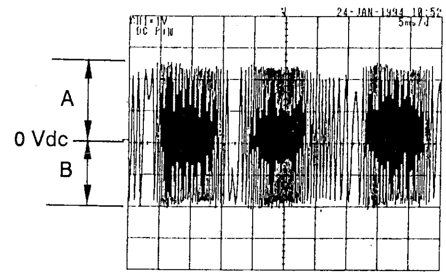


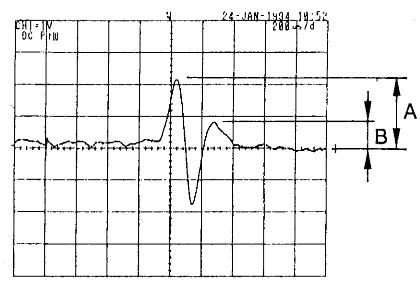
Fig. 7-2-9. Check the TRACKING BALANCE



check that it meets $-5 \leqq \frac{A - B2}{(A+B)} \times 100(\%) \leqq 8$

Fig. 7-2-10.

6) Then turn on the TRACKING and SLED to check the waveform of 1 track jump in STILL at the chapter3 (#2201)

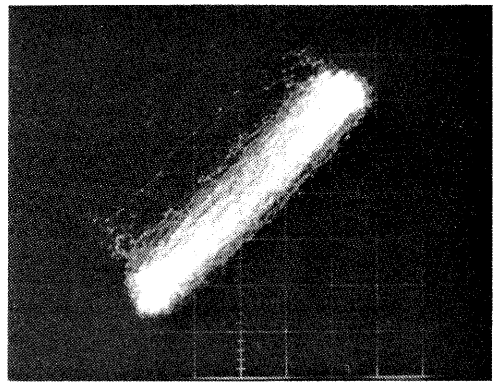


check that it meets $B \leqq \frac{1}{2}A$

Fig. 7-2-11.

2-7-3. Side B Adjustment

1) Loosen RD of side B on the feed base and TAN screw. (Hexagonal screw 2.6)
2) Insert the alignment disc to playback with side B at CAV side and pause at #770. Check that the same block bar as the crosstalk adjustment at the side A on monitor. (See Fig. 7-2-8.)
3) Insert the tip of the decentering screwdriver to the B TAN adjustment hole to adjust that the crosstalk is minimum.
4) Then in the same way, adjust with RV402 so that the crosstalk is minimum, and at this time the level at track jump should be maximum.
   (Side B tilt balance adjustment)
5) Check that crosstalk at #130 is minimum.
6) Send the disc to Chapter 3 (#2201) to pause.
7) Turn off the SLED and TRACKING to adjust inserting the decentering screwdriver to BRD adjustment hole so that the Lissagous waveform meets the standard.
   Make not more than 1 turn in the TAN adjustment.



Jig terminal : E, F
Oscilloscope : X/Y lissagous 20 mV/div.
Phase difference : Within 35°

Fig. 7-2-12.

8) Take out the disc to tighten B TAN, RD screw.

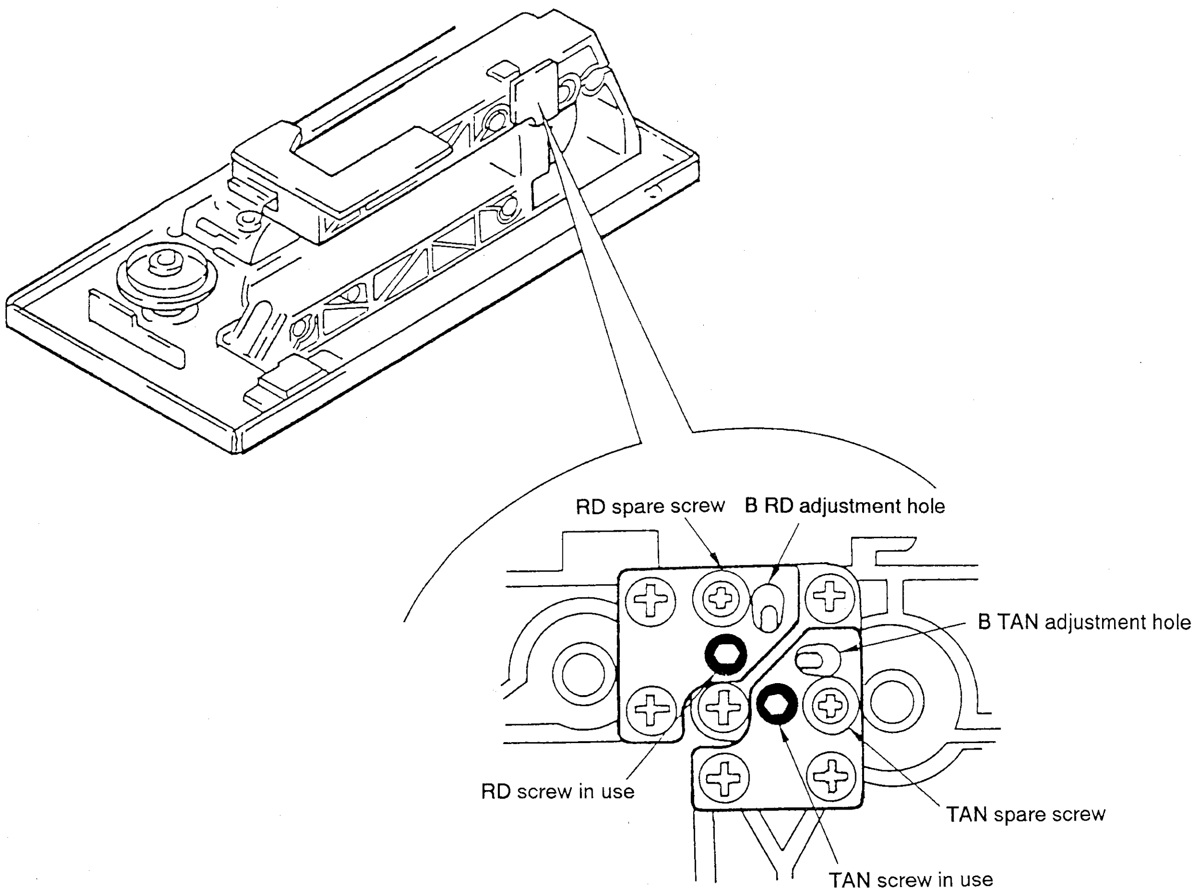


Fig. 7-2-13.

7-2-8. VIDEO SYSTEM ADJUSTMENT

2-8-1. Burst Gate Position Adjustment (MP-702 Board)

Mode	Still
Signal	Frame 3851 (Color bar) (HLV-3P)
Measurement Point	Pin ㉓ of IC109
Adjusting Element	RV106
Specified Value	8.5 ± 0.1 μsec

Adjustment method:

1) Select STILL (▶◀) mode.
2) Search the frame 3851.
3) Adjust RV106 so that tw becomes 8.5 ± 0.1 μsec.

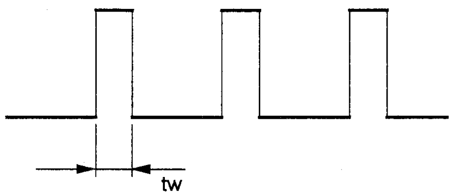


Fig. 7-2-14.

2-8-2. TBC Hold Adjustment (MP-702 Board)

Mode	Playback
Signal	Frame 3851 (Color bar) (HLV-3P)
Measurement Point	Pins ㉕ to ㉟ of IC108
Measuring Equipment	Oscilloscope (DC mode)
Adjusting Element	RV601
Specified Value	4.3 ± 0.3 Vp-p (with respect to ground)

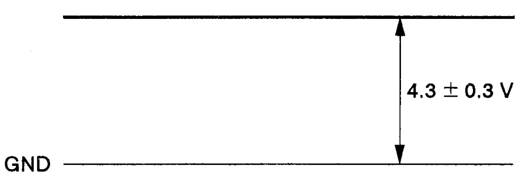


Fig. 7-2-15.

2-8-3. Video output Level Adjustment (MP-702 Board)

Mode	Still
Signal	Frame 3851 (Color bar) (HLV-3P)
Measurement Point	J101 (JC-701/703 Board) (VIDEO OUT terminal) (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV105
Specified Value	1.05 ± 0.04 Vp-p

Adjustment method:

1) Select STILL (▶◀) mode.
2) Search the frame 3851 and apply a color bar signal.
3) Turn RV105 to fully counterclockwise direction.
4) Adjust RV105 to 1.05 ± 0.04 Vp-p on the first adjusting point at turning clockwise direction.

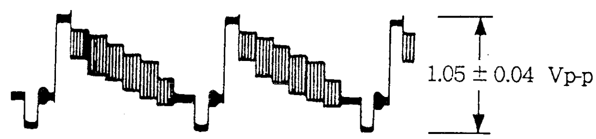


Fig. 7-2-16.

2-8-4. Color Framing Y Level Check (MP-702 Board)

Mode	Playback and Still
Signal	Frame 3851 (Color bar) (HLV-3P)
Measurement Point	VIDEO OUT terminal (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Specified Value	A=B

Adjustment mothod:

1) Search the frame 3851.
2) Check Y levels on the playback mode and the still mode.

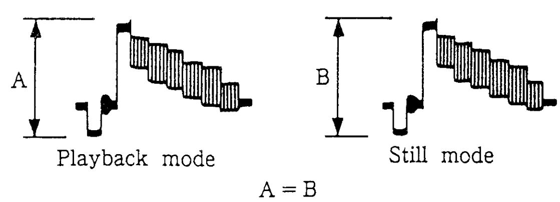


Fig. 7-2-17.

2-8-5. Color Framing Chroma Level (1) Adjustment (MP-702 Board)

Mode	Still
Signal	Frame 3851 (Color bar) (HLV-3P)
Measurement Point	VIDEO OUT terminal (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV101
Specified Value	Minimum

Adjustment method:

1) Select STILL (▶◀) mode.
2) Search the frame 3851.
3) Minimize with RV101 the shaking of green portion.

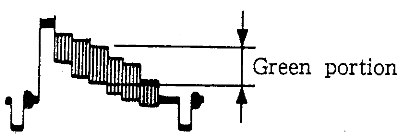


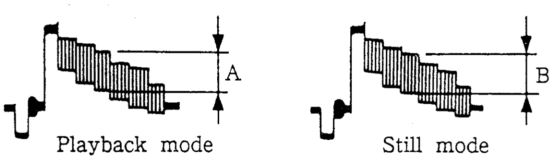
Fig. 7-2-18.

2-8-6. Color Framing Chroma Level (2) Check (MP-702 Board)

Mode	Playback and Still
Signal	Frame 3851 (Color bar) (HLV-3P)
Measurement Point	VIDEO OUT terminal (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Specified Value	A=B

Adjustment mothod:

1) Search the frame 3851.
2) Check the green levels on the playback mode and the still mode.



A = B

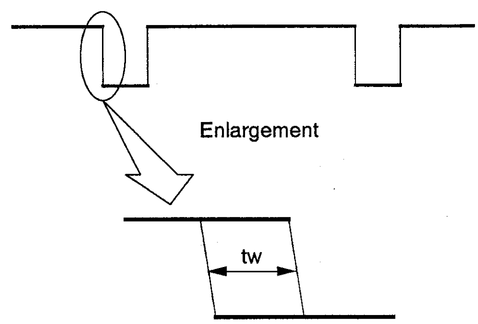
Fig. 7-2-19.

2-8-7. Color Framing REF H Adjustment (MP-702 Board)

Mode	Playback and Still
Signal	Frame 3851 (Color bar) (HLV-3P)
Measurement Point	Pin ④ of IC111
Adjusting Element	Oscilloscope
Specified Value	tw=112 ± 5 msec

Adjustment method:

1) Select STILL (▶◀) mode.
2) Search the frame 3851.
3) Check so that tw is 112 ± 5 msec.



tw=112 ± 5 msec

Fig. 7-2-20.

2-8-8. APC Adjustment (SS-704 Board)

Mode	Still
Signal	Frame 4100 (Color bar) (HLV-8)
Measurement Point	Pins ⑲ and ⑳ of IC3
Measuring Equipment	Digital voltmeter
Adjusting Element	[Adj. 1] CT1 [Adj. 2] RV1
Specified Value	[Adj. 1] 0 ± 1 mV [Adj. 2] 0 ± 3 mV

Adjustment method:

[Adjustment 1]

1) Select STILL (▶◀) mode.
2) Search the frame 4100.
3) Connect a digital voltmeter between Pin ⑲ (+) and Pin ⑳ (COM) of IC3.
4) Adjust with CT1 to 0 ± 1 mV reading on digital voltmeter.

[Adjustment 2]

1) Remove JW30.
2) Connect IC1 side of C19 to ground.
3) Select STILL (▶◀) mode.
4) Search the frame 4100.
5) Connect a digital voltmeter between Pin ⑲ (+) and Pin ⑳ (COM) of IC3.
6) Adjust with RV1 to 0 ± 3mV reading on digital voltmeter.

7) Solder JW30.
8) Confirm the voltage value between Pins ⑲ and ⑳ becomes 0 ± 5 mV.
9) When it doesn't satisfy the specified value, repeat adjustments from [Adjustment 1].

2-8-9. G Level Adjustment (SS-704 Board)

Mode	Still
Signal	Frame 4100 (Color bar) (HLV-8)
Measurement Point	Pin ⑧ of CN1 (Terminated to 75Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV5
Specified Value	1.35 ± 0.06 Vp-p

Adjustment method:
1) Select STILL (▶◀) mode.
2) Search the frame 4100.
3) Adjust with RV5 to 1.35 ± 0.06 Vp-p.

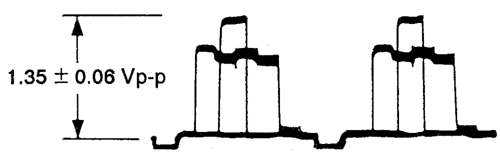


Fig. 7-2-21.

2-8-10. R Level Adjustment (SS-704 Board)

Mode	Still
Signal	Frame 4100 (Color bar) (HLV-8)
Measurement Point	Pin ⑨ of CN1 (Terminated to 75Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV3
Specified Value	1.35 ± 0.06 Vp-p

Adjustment method:
1) Select STILL (▶◀) mode.
2) Search the frame 4100.
3) Adjust with RV3 to 1.35 ± 0.06 Vp-p.

Fig. 7-2-22.

2-8-11. B Level Adjustment (SS-704 Board)

Mode	Still
Signal	Frame 4100 (Color bar) (HLV-8)
Measurement Point	Pin ⑦ of CN1 (Terminated to 75Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV2
Specified Value	1.35 ± 0.06 Vp-p

Adjustment method:
1) Select STILL (▶◀) mode.
2) Search the frame 4100.
3) Adjust with RV2 to 1.35 ± 0.06 Vp-p.

Fig. 7-2-23.

2-8-12. Chroma Level Adjustment (SS-704 Board)

Mode	Still
Signal	Frame 4100 (Color bar) (HLV-8)
Measurement Point	Pin ⑦ of CN1 (Terminated to 75Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV4
Specified Value	1.02 ± 0.06 Vp-p

Adjustment method:
1) Select STILL (▶◀) mode.
2) Search the frame 4100.
3) Adjust with RV4 to 1.02 ± 0.06 Vp-p. (Blue level)

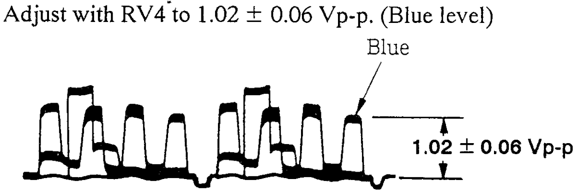


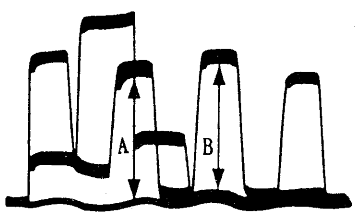
Fig. 7-2-24.

2-8-13. HUE Adjustment (SS-704 Board)

Mode	Still
Signal	Frame 4100 (Color bar) (HLV-8)
Measurement Point	Pin ⑦ of CN1 (Terminated to 75Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV6
Specified Value	A=B=1.02 ± 0.06 Vp-p

Adjustment method:

1) Select STILL (▶◀) mode.
2)Search the frame 4100.
3)Adjust with RV6 to 1.02 ± 0.06 Vp-p.



A=B=1.02 ± 0.06 Vp-p

Fig. 7-2-25.

7-2-9. AUDIO SYSTEM ADJUSTMENT

2-9-1.Analog Audio System Adjustment

1. Audio output level adjustment (AU-705 Board)

Note: Adjusting element of the 2/R channel is indicated in brackets [ ].

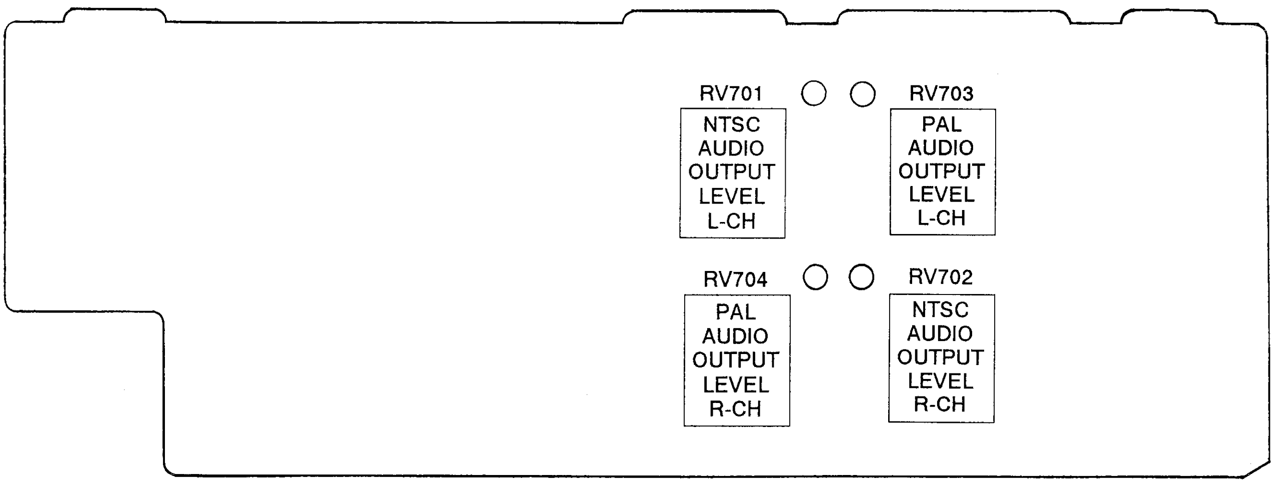
Mode	Still
Signal	Frame 4301 (RAMP/1 kHz) (HLV-3P) Frame 4301 (RAMP/1 kHz) (HLV-8)
Measurement Point	Audio output 1/L [2/R] terminal
Measuring Equipment	Audio level meter or Oscilloscope
Adjusting Element	RV701 [RV702] (NTSC) RV703 [RV704] (PAL)
Specified Value	Audio level meter: 500 ± 25 mVrms Oscilloscope: 1.4 ± 0.07 Vp-p

Adjustment method:

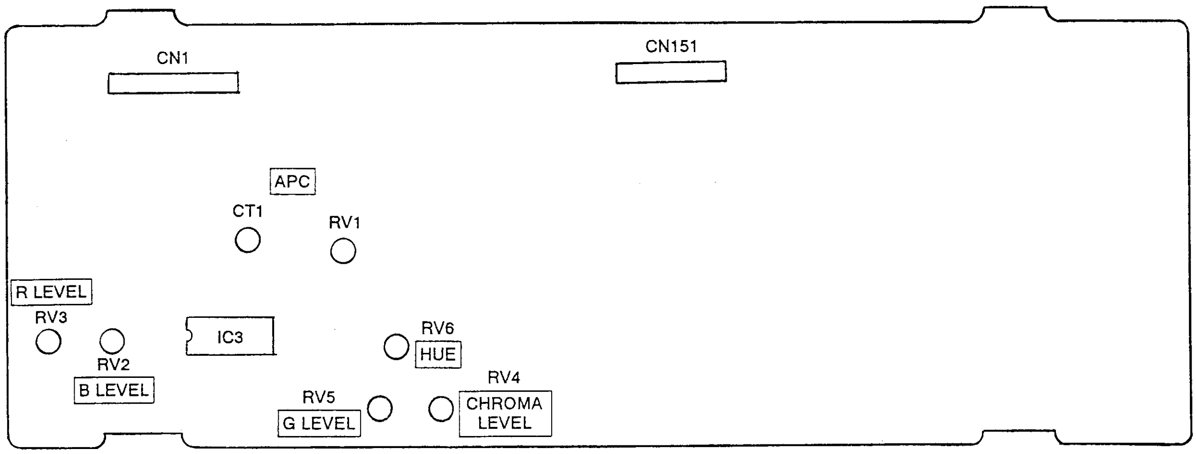
1) Play back the HLV-8 disc.
2) Search the Frame 4301 (chapter 6).
3) Turn off the [CX] with remote commander.
   (Confirm that the indication on the front panel of the main unit is disappeared.)
4) Adjust with RV701 [RV702] to 500 ± 25 mVrms or 1.4 ± 0.07 Vp-p.
5) Play back the HLV-3P disc.
6) Search the Frame 4301 (chapter 6).
7) Turn off the [CX] with remote commander.
   (Confirm that the indication on the front panel of the main unit is disappeared.)
8) Adjust with RV703 [RV704] to 500 ± 25 mVrms or 1.4 ± 0.07 Vp-p.

7-2-10. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

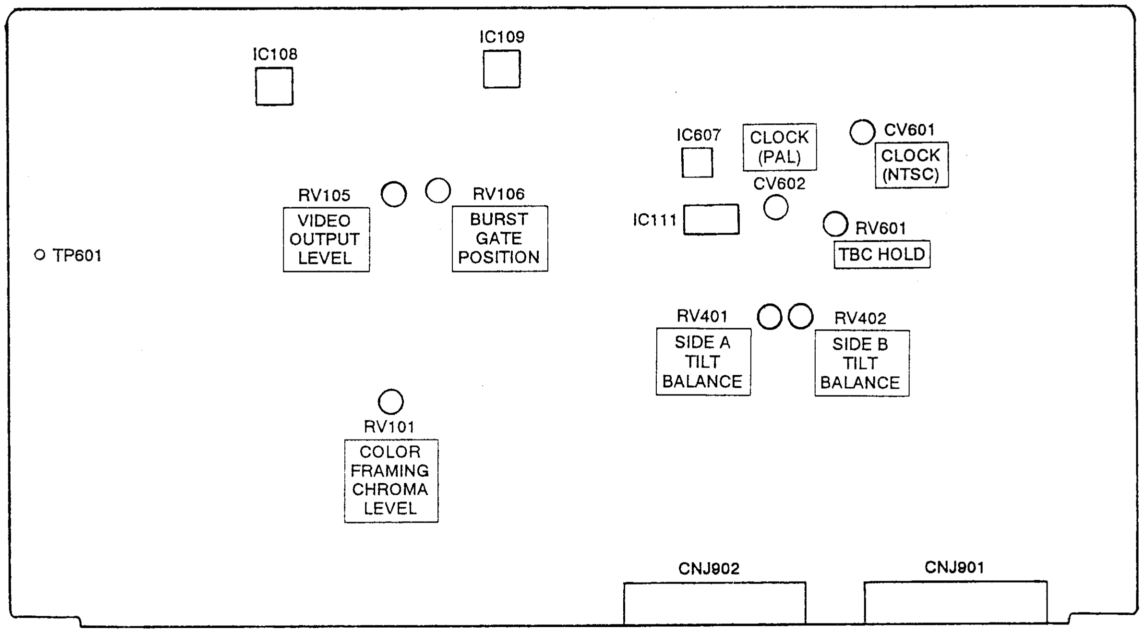
AU-705 BOARD (CONDUCTOR SIDE)



SS-704 BOARD (CONDUCTOR SIDE)



MP-702 BOARD (COMPONENT SIDE)



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