

Service Manual

General Description

Adjustment Procedures

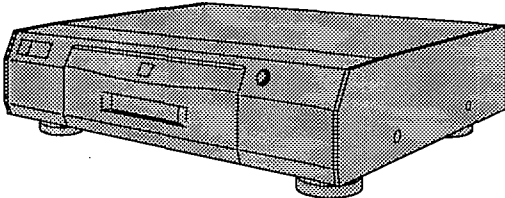
Block / Schematic Diagrams

Exploded Views / Parts List

Panasonic **DV** Mini **DV** PAL

Digital Video Cassette Recorder

NV-DV10000 ^B_{EC}



SPECIFICATIONS

ITEM	SPECIFICATION		ITEM	SPECIFICATION		
POWER	SOURCE: 220—240 V AC 50/60 Hz		AUDIO	INPUT: EURO AV (AV1, AV2) Connectors (21 pin) More than –6 dBV (500 mV), More than 10 k Ω AUDIO IN (AV3: FRONT/REAR) Connector (Phono type) More than –6 dBV (500 mV), More than 10 k Ω MICROPHONE JACK –70 dBV DV Terminals (compliant with IEE1394, 4 pin)		
	CONSUMPTION: 36 watts					
RECORDING SYSTEM	VIDEO : 2 rotary heads, Digital Component AUDIO : PCM Digital Recording: 16 bit (48 kHz/2ch), 12 bit (32 kHz/4ch)					
	PAL					
TV TUNER SYSTEM	NV-DV10000B	UHF : CH21—CH68 (PAL I) 75 Ω terminated	AUDIO	OUTPUT: EURO AV (AV1, AV2) Connectors (21 pin) –6 dBV (500 mV), Less than 1 k Ω AUDIO OUT Connector (Phono type) –6 dBV (500 mV), Less than 1 k Ω HEADPHONE JACK –30 dBV, 8 Ω DV Terminals (compliant with IEE1394, 4 pin)		
	NV-DV10000EC	VHF : CHE2—CHE12 UHF : CH21—CH69 75 Ω terminated CATV : CHS1—CHS3 CHM1—CHU10 CHS21—CHS41 75 Ω terminated				
RF OUT SYSTEM	NV-DV10000EC	UHF: CH21-CH69 71 $\pm$ 3dB μ , 75 Ω terminated	TAPE FORMAT	DV, Mini DV Cassette tape (Tape width 6.35 mm)		
	NV-DV10000B	UHF: CH21-CH68 71 $\pm$ 3dB μ , 75 Ω terminated				
VIDEO	HEADS: 4 rotary heads				TAPE SPEED	SP: 18.831 mm/s LP: 12.568 mm/s Record/Playback Time: 270 min. with DV270 SP: 60 min. with DVM60 LP: 90 min. with DVM60 FF/REW Time: approx. 70 sec. with DV270 approx. 50 sec. with DVM60
	INPUT: EURO AV (AV1, AV2) Connectors (21 pin) 1.0 Vp-p, 75 Ω unbalanced S-VIDEO IN (AV3: FRONT/REAR) Connector 1.0 Vp-p, 75 Ω unbalanced VIDEO IN (AV3: FRONT/REAR) Connector (Phono type) 1.0 Vp-p, 75 Ω unbalanced DV Terminals (compliant with IEE1394, 4 pin)					
	OUTPUT: EURO AV (AV1, AV2) Connectors (21 pin) 1.0 Vp-p, 75 Ω unbalanced S-VIDEO OUT Connector 1.0 Vp-p, 75 Ω unbalanced VIDEO OUT Connector (Phono type) 1.0 Vp-p, 75 Ω unbalanced DV Terminals (compliant with IEE1394, 4 pin)					
AUDIO	16 bit (48 kHz/2ch): 1track, 2 channels (Hi-Fi sound- stereo) 12 bit (32 kHz/4ch): 2track, 4 channels (Hi-Fi sound-stereo)		OPERATING TEMPERATURE	5°C—40°C		
			OPERATING HUMIDITY	35%—80%		
			DIMENSIONS	445 (W)×123 (H)×373.5 (D) mm		
			WEIGHT	7.0 kg		
		STANDARD ACCESSORIES	1 pc. RF Coaxial Cable 1 pc. Remote Controller 2 pcs. "R6" size batteries 1 pc. AC Mains Lead 1 pc. DV Cable 1 pc. Edit Cable 1 pc. S-Video Cable 1 pc. 21 pin Scart Cable 1 pc. AV Cable 1 pc. Editing Controller Cable 1 pc. Video Head Cleaning Tape			

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

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SECTION 1

GENERAL DESCRIPTIONS

1. SERVICE INFORMATION

1-1-1. Channel Memory IC Initialization

Memory IC30012 has to be initialized due to the setting value changes when replacing it.

Note:

a) When replacing the memory IC30012, the OSD microprocessor IC30013 should be replaced together.

b) It has to be performed before tuning.

c) Meaning of "MEMORY IC INITIALIZATION" is to make dependency in different models and to distinguish between different features.

d) It does not need to perform when replacing the System Control IC6001.

CHANNEL MEMORY IC INITIALIZATION

PROCEDURES	FIP Display	Monitor Screen
Turn the Shuttle Ring to FF then press the EJECT button for 3 seconds.		None
Turn the Shuttle Ring to FF then press the EJECT button more twice.		None
Press the EJECT key for 3 seconds.		None
Press the CH UP key twice.		None
Press the POWER key.	 (Colon starts flashing)	Service Screen (See Fig. S1)
Press the REC key on the Remote Controller Unit.		Service Screen (See Fig. S1)
Set the Model Code and Option Code by pressing 10-key or ►◄▲▼ keys on the Remote Controller Unit. (See Fig. S2)		Service Screen (See Fig. S1)
To release Service Mode, press POWER key and then turn the Shuttle Ring to FF then press the EJECT button 6 times until the normal indication on the FIP.		None

Service		
	Version	
OSD	VCCZ1.35	0
MAIN	V1CJ0.34	0
Pos for time ref.	NONE	
Last error code:	00	
Model Code	104 (68h)	
Option Code	160 (A0h)	
Clock adjust	+ 0	
VPS/PDC default	AUTO (depend)	

Fig. S1 Service Screen

"+0" by pressing ▲▼ keys on the Remote Controller Unit.
If changing the "VPS/PDC default" accidentally, set the code mentioned "(default)" by pressing ▲▼ keys on the Remote Controller Unit.

Model	Model Code	Option Code
NV-DV10000 EC	164	136
NV-DV10000 B	168	160

Fig. S2 Model Code & Option Code

Caution:

Since the "Clock adjust" and "VPS/PDC default" are future expansion, do not change the initial setting.

If changing the "Clock adjust" accidentally, set the code

3. Service Information Display

In the Service Information Display, there are four digits divided into 3 functions, Service Mode, Service Data Number and Service Information Number.

This information aids trouble shooting by indicating the source of the malfunction. The service mode number and service data number are used by the technician during repair while the service information can be used by the consumer to diagnose malfunctions allowing the technical to provide a more accurate repair cost estimate and reduce repair time.

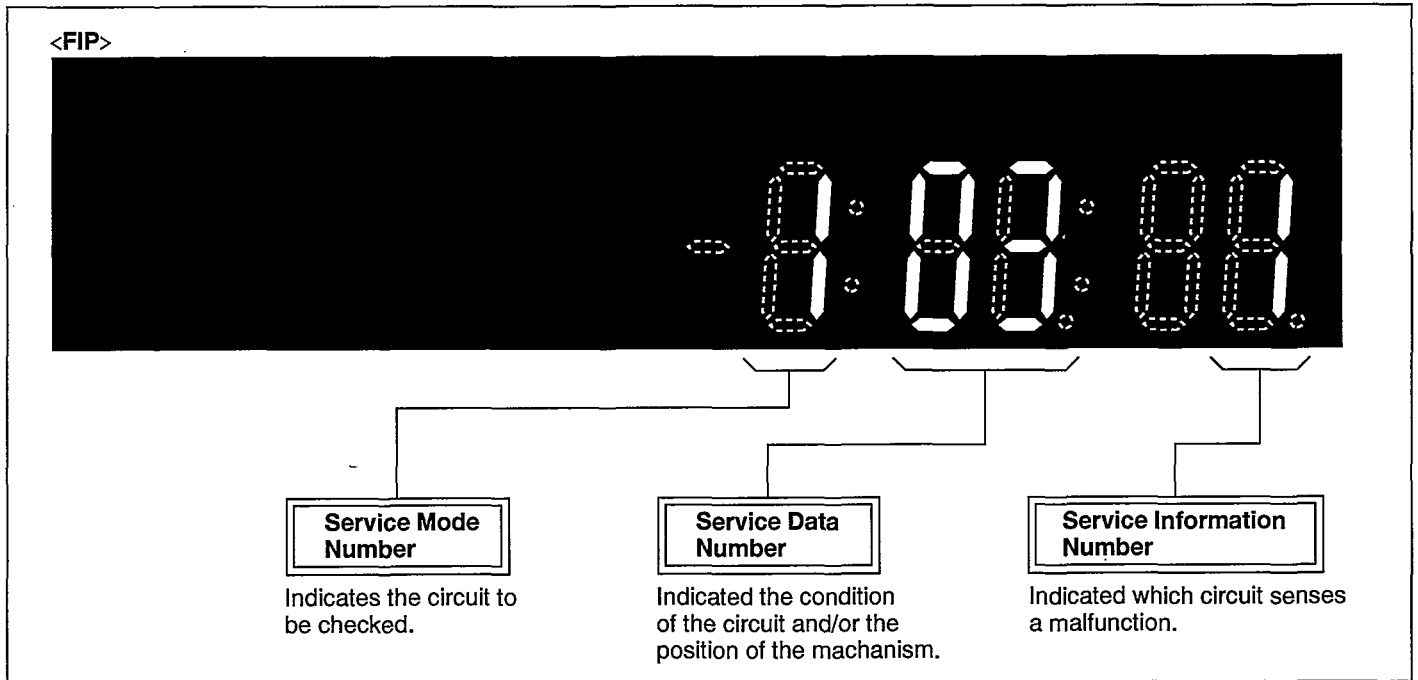


Fig. 2-5 Service Information Display

3-1. Set Service Mode

Press the FF and Eject button simultaneously.

The display will change "0.**:**"

Pressing the FF and Eject button simultaneously will change the Service Mode Number as follows. (Refer to Fig. 2)

- Mode 1 : Check tape protection circuit
- Mode 2 : Check tape transport mechanism
- Mode 3 : Check mode switching operation
- Mode 4 : Check tray in /out operation
- Mode 5 : Check control buttons
- Mode 6 : Check mode switching and solenoid operations
- Mode 7 : Check loading / unloading operation

The first digit indicates which of the above 7 service modes that the unit is currently in.

The second and third digits are service data that indicate the condition of the circuit or mechanism being checked.

The forth digit is the service information display. It is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is not supplied.

Service Mode Number	Service Data Numbers	Indication	Remarks																				
1 Tape Beginning/ End detect	00	Light detected at both sensors.																					
	01	Tape Beginning. Light to Supply Photo Sensor is blocked.																					
	02	Tape End. Light to Take-up Photo Sensor is blocked.																					
	03	No light detected at either sensor.																					
2 Mechanism position detect	03	Cassette Down																					
	05	H/L Position																					
	07	Middle Position																					
	09	Stop Position																					
	33	Tray Open Position																					
3 Process mode detect	0*, 2*, 3*	Tray In → Stop																					
	6*	Stop → Play																					
	8*	Play → Cue																					
	9*	Play → Rev																					
	n*	Stop → FF/Rew																					
	2*	Loading																					
	L*	Unloading																					
4 Tray process mode detect	1*	Tray In condition																					
	*2 → *3 → *4 → 00	Tray Out condition																					
5 Mode detect	00	Stop																					
	02	Rew																					
	03	FF																					
	04	Rev																					
	05	Cue																					
	08	Play																					
	0U	Rec																					
6 Mechanism position detect		<table><tr><td>Solenoid condition</td><td>Pinch</td><td>S Reel</td><td>T Reel</td></tr><tr><td>Stop</td><td>On</td><td>Off</td><td>Off</td></tr><tr><td>FF/REW</td><td>Off</td><td>Off</td><td>Off</td></tr><tr><td>Tray In/Out</td><td>Off</td><td>On</td><td>On</td></tr><tr><td>Loading</td><td>Off</td><td>Off</td><td>On</td></tr></table>	Solenoid condition	Pinch	S Reel	T Reel	Stop	On	Off	Off	FF/REW	Off	Off	Off	Tray In/Out	Off	On	On	Loading	Off	Off	On	
	Solenoid condition	Pinch	S Reel	T Reel																			
	Stop	On	Off	Off																			
	FF/REW	Off	Off	Off																			
	Tray In/Out	Off	On	On																			
Loading	Off	Off	On																				
	1U																						
	16																						
	2U																						
	29																						
7 Checks loading/unloading operation	_____	The Loading Motor rotates for loading operation when the “Play” button is pressed. The Loading Motor rotates for unloading operation when the “Stop” button is pressed.	Tape not required.																				

Fig. 3-2 Service Mode Number

3-2. Self-Test Mode

This VTR has a self-diagnosis and display function. If the VTR detects trouble during installation or during use, one of the following Fault Indication Codes will automatically appear in the VTR display. Fault Indication codes are displayed in the form of a single English letter plus two numbers such as "H01".

Note;

1. The indication "H" or "F" is displayed on the FIP, and the power is automatically turned off.

When the power is turned on again, the Fault Indication Code will disappear and the unit will return to normal display mode (either clock or counter).

2. This Fault Indication Code will be stored in the Timer microprocessor even with the AC plug disconnected.

The two-digit number portion of the stored Fault Indication Code can be redisplayed in the FIP's "second" display position (the last 2 digits on the light) by placing the unit in Service Mode Number 2 when turning on Service Information Display as for example "01" or "02" etc.

If a second error occurs, only the most recent error will be displayed and stored.

3. To erase the stored Fault Indication Code data, press "FF" and "Eject" button simultaneously more than 5 seconds.

Display	Condition	Cause	Remedy/Check	
H	H01	Cylinder Lock	After Cylinder lock is detected, the Cylinder does not start rotating again even after tape unloading.	Check the cylinder motor drive.
	H02	Capstan Lock	Cassette tape is not wound up during tape unloading.	Check the capstan motor drive.
F	F03	Loading Lock	Mechanism locks during tape loading.	1. Check the loading motor drive. 2. Check the mecha. phase alignment.
	F04	Unloading Lock	Mechanism locks during tape unloading.	
	F05	Reel FG Detection	Detects abnormal condition during tape loading/unloading.	Check the tension sensor and supply and take-up reel drive.
	F06	Tray In Lock	Tray Motor locks during Tray In.	1. Check the tray motor drive. 2. Check the tray phase alignment.
	F07	Tray Out Lock	Tray Motor locks during Tray Out.	
	F08	Tension Sensor Detection	Detects abnormal condition during tape loading.	1. Check the tension sensor and supply and take-up reel drive.

Fig. 3-3 Self-Test Indication Display

SECTION 2 ADJUSTMENT PROCEDURES

1. Disassembly/Assembly Procedures for cabinet parts, C.B.A. and Mechanism Unit

1-1. Disassemble Flow Chart for cabinet parts, C.B.A. and Mechanism Unit.

This flow chart indicates the disassembly steps the cabinet parts, C.B.A. and Mechanism Unit in order to access to items to be serviced. When reinstalling, perform the steps in reverse order.

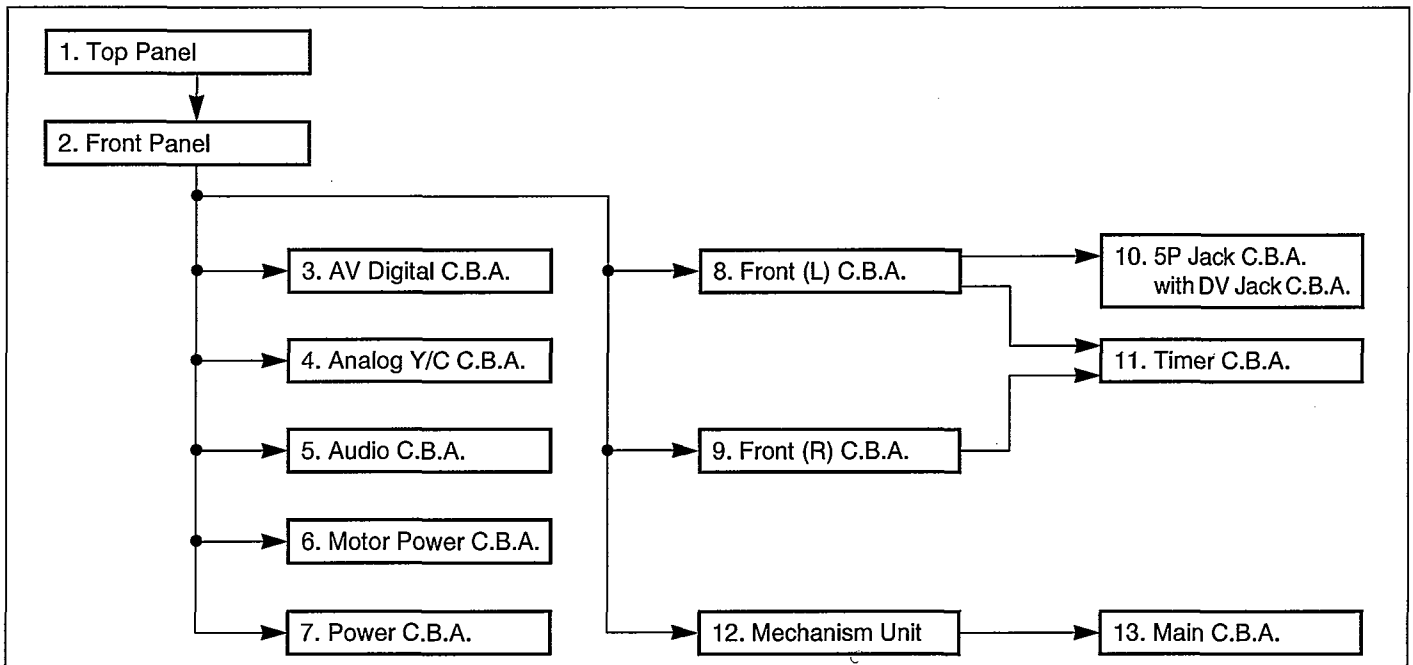


Fig. 1-1 Flow Chart

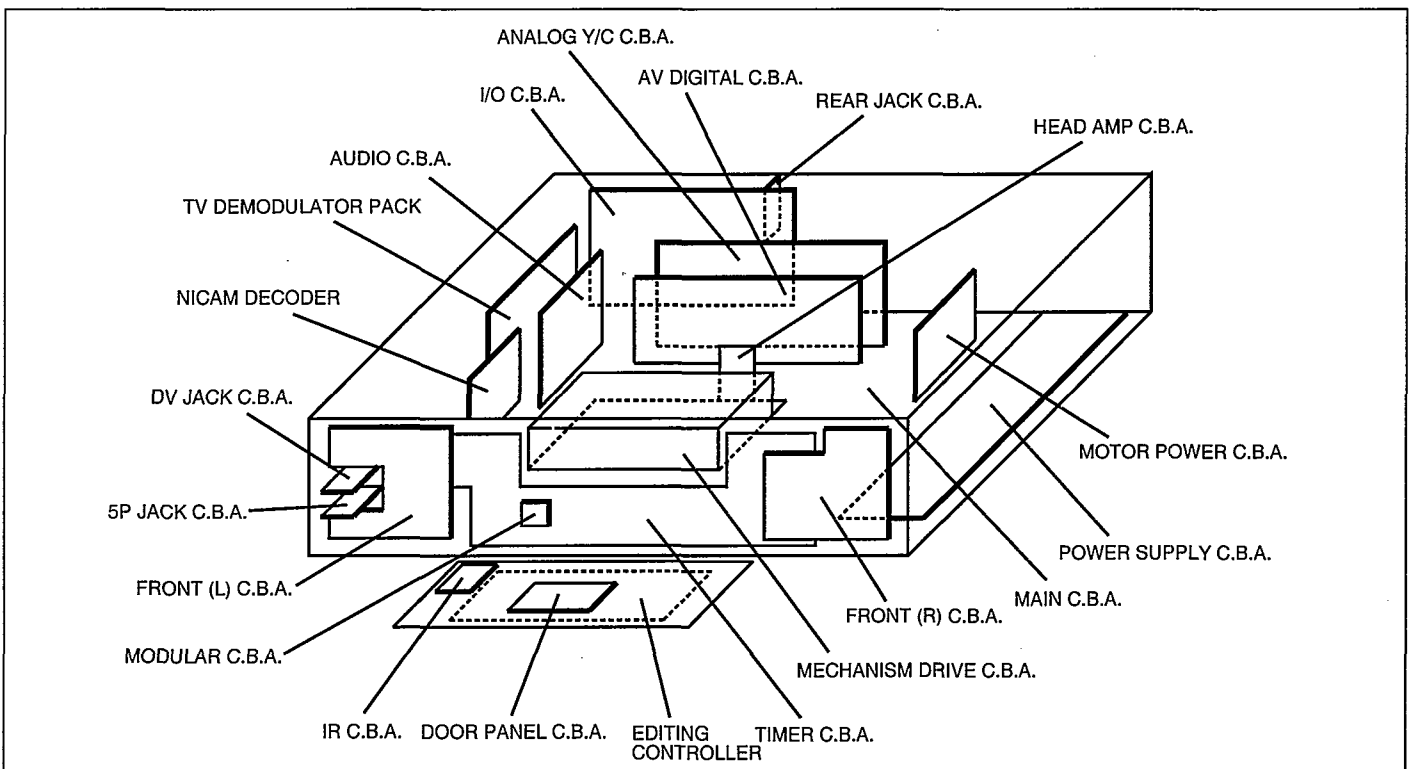


Fig. 1-2

1-2. Disassembly/Assembly Procedures (for cabinet parts, C.B.A. and Mechanism Unit)

No.	ITEM / PART	FIG.	REMOVAL (SCREW)
1	Top Panel	Fig. D-1	4-Screws (A) 1-Screw (B) Remove Side Plate (6 Hooks).
2	Front Panel	Fig. D-2 Fig. D-3	2-Screws (C) 1-Connector (P3701) 9-Locking Tabs (a) When Front Panel is installed, confirm the Connector P7504.
3	AV Digital C.B.A.	Fig. D-6 Fig. D-5	2-Screws (D) 2-Connectors (FP3201, P3701) Note 1: When the EVR Connection C.B.A. is installed, confirm the arrow direction on C.B.A..
4	Analog Y/C C.B.A.	Fig. D-6	2-Screws (E)
5	Audio C.B.A.	Fig. D-6	Note 2: 2-Locking Tabs (b)
6	Motor Power C.B.A.	Fig. D-6	1-Connector (P2502) Note 2: 2-Locking Tabs (c)
7	Power C.B.A.	Fig. D-6	1-Connector (P1102) 7-Locking Tabs (d)
8	Front (L) C.B.A.	Fig. D-3	1-Connector (P4851) 2-Locking Tabs (e)
9	Front (R) C.B.A.	Fig. D-3	1-Screw (F) 1-Connector (P4801) 2-Locking Tabs (f)
10	5P Jack C.B.A. & DV Jack C.B.A.	Fig. D-5	1-Screw (G) 2-Connectors (P3781, P7651) 1-Locking Tab (g)
11	Timer C.B.A.	Fig. D-4	3-Connectors (P7501, P7502, P7503) 6-Locking Tabs (h)
12	Mechanism Unit	Fig. D-5	Remove the Tray Angle. Set the Mechanism to the "Eject" position. 4-Connectors (P2705, FP5002, P6504, P6505) 3-Screws (H)
13	Main C.B.A.	Fig. D-6	4-Screws (D/E) 2-Screws (I) 4-Screws (J) 7-Locking Tabs (i)

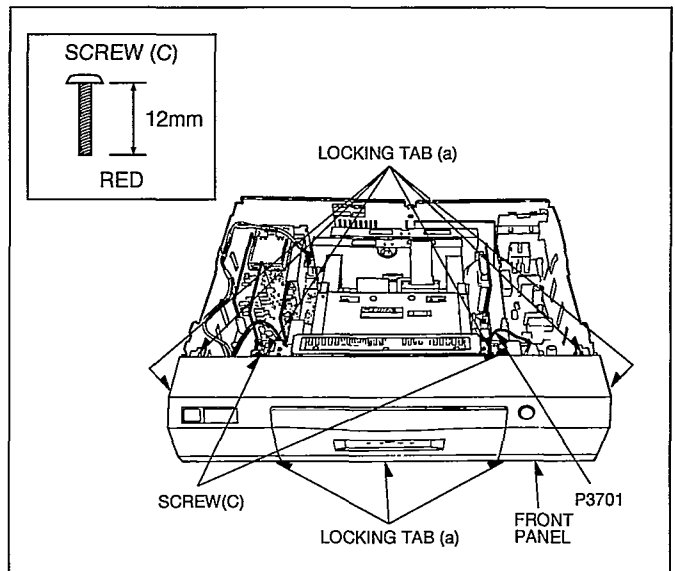


Fig. D-2

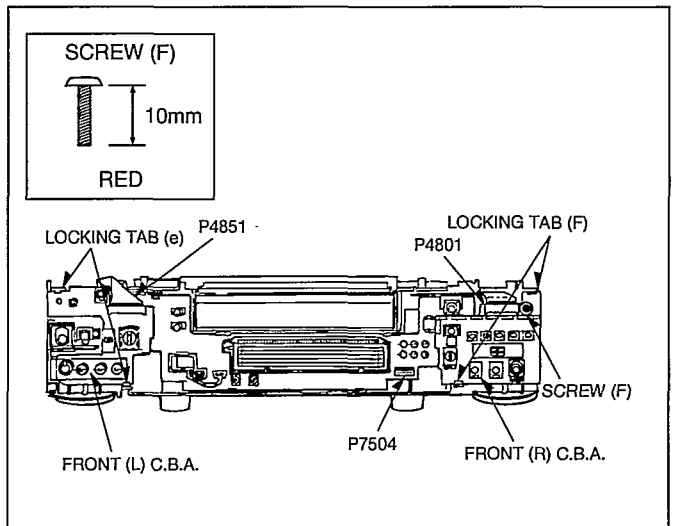


Fig. D-3

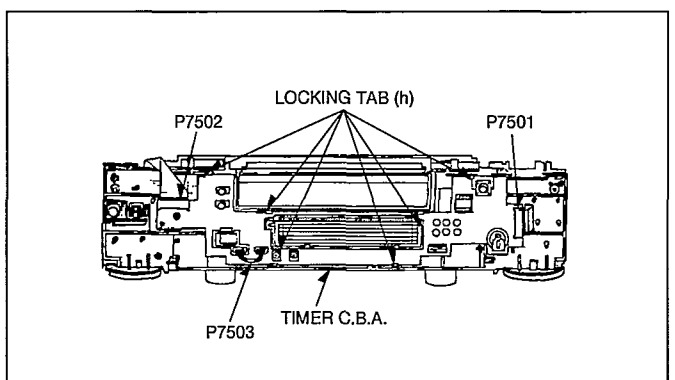


Fig. D-4

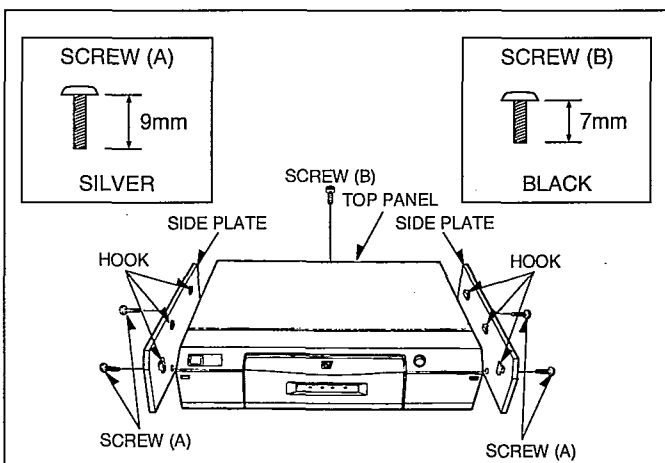


Fig. D-1

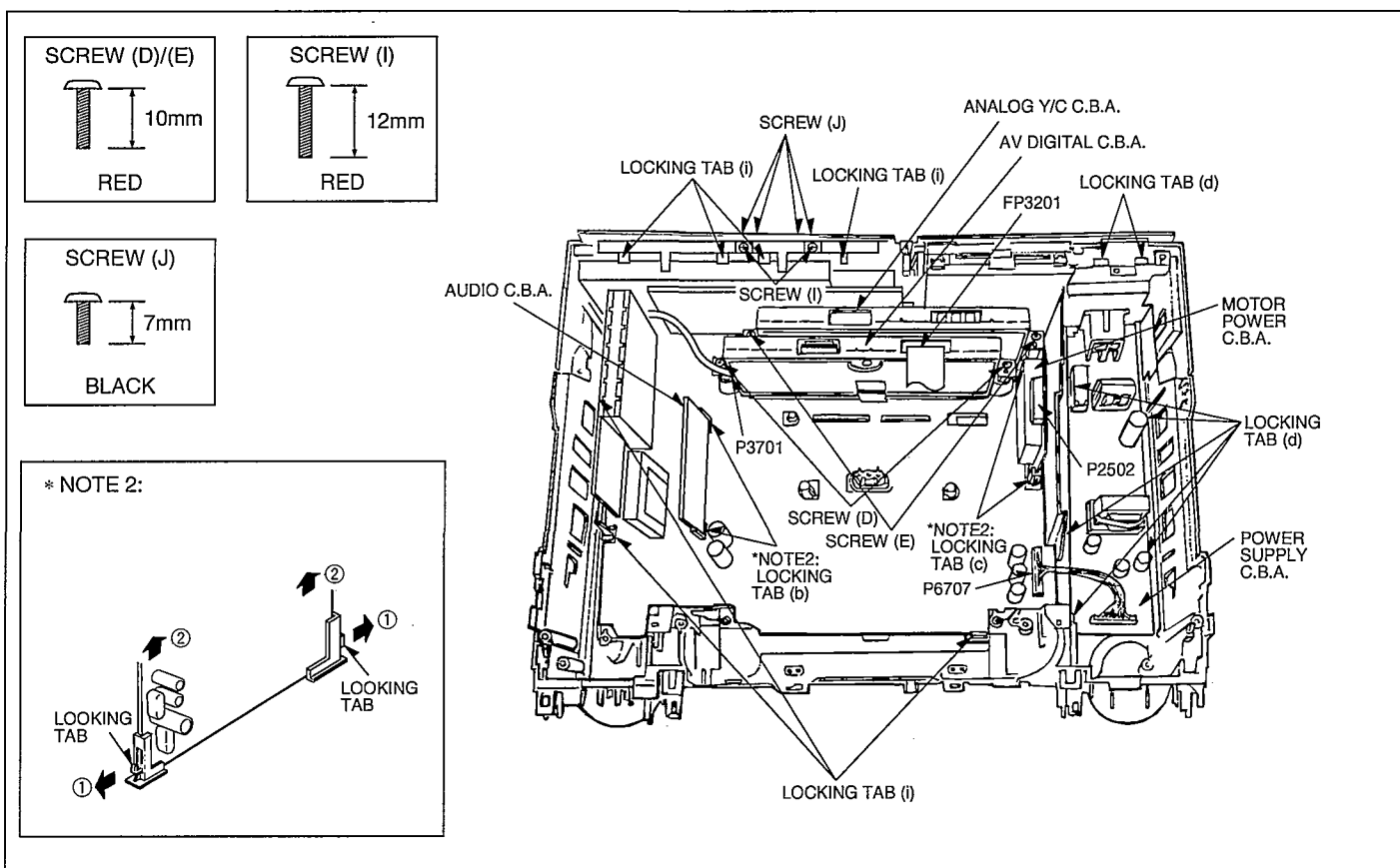
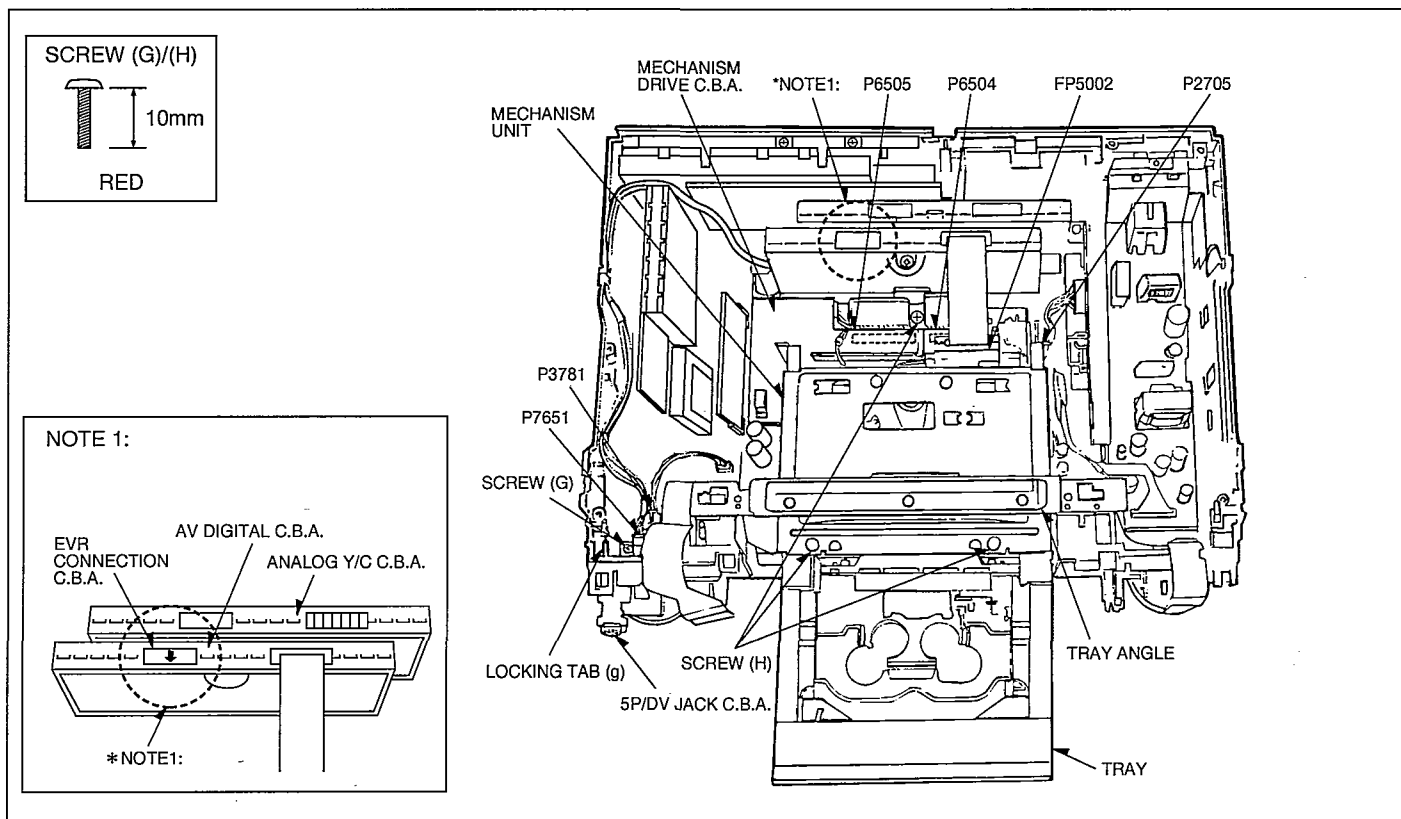


Fig. D-6

2. Disassembly/Assembly Procedures for Mechanism

2-1. Disassemble Flow Chart for Mechanism

This procedure starts with the condition that the mechanism unit has been removed from the unit.

The following chart indicates disassembly steps of the mechanical parts in order to gain access to part for servicing. When reinstalling, perform the steps in reverse order.

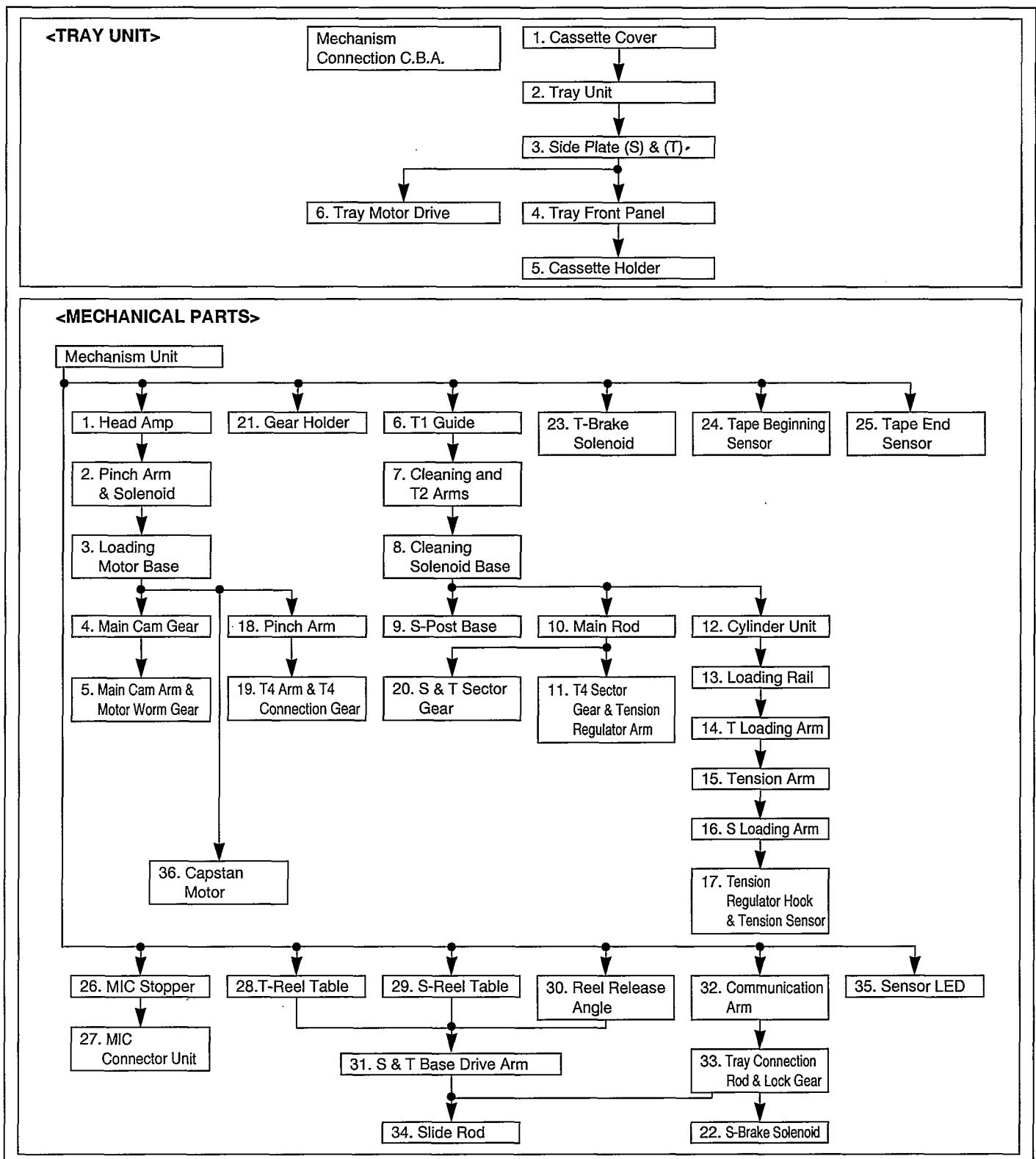


Fig. 2-1 Flow Chart

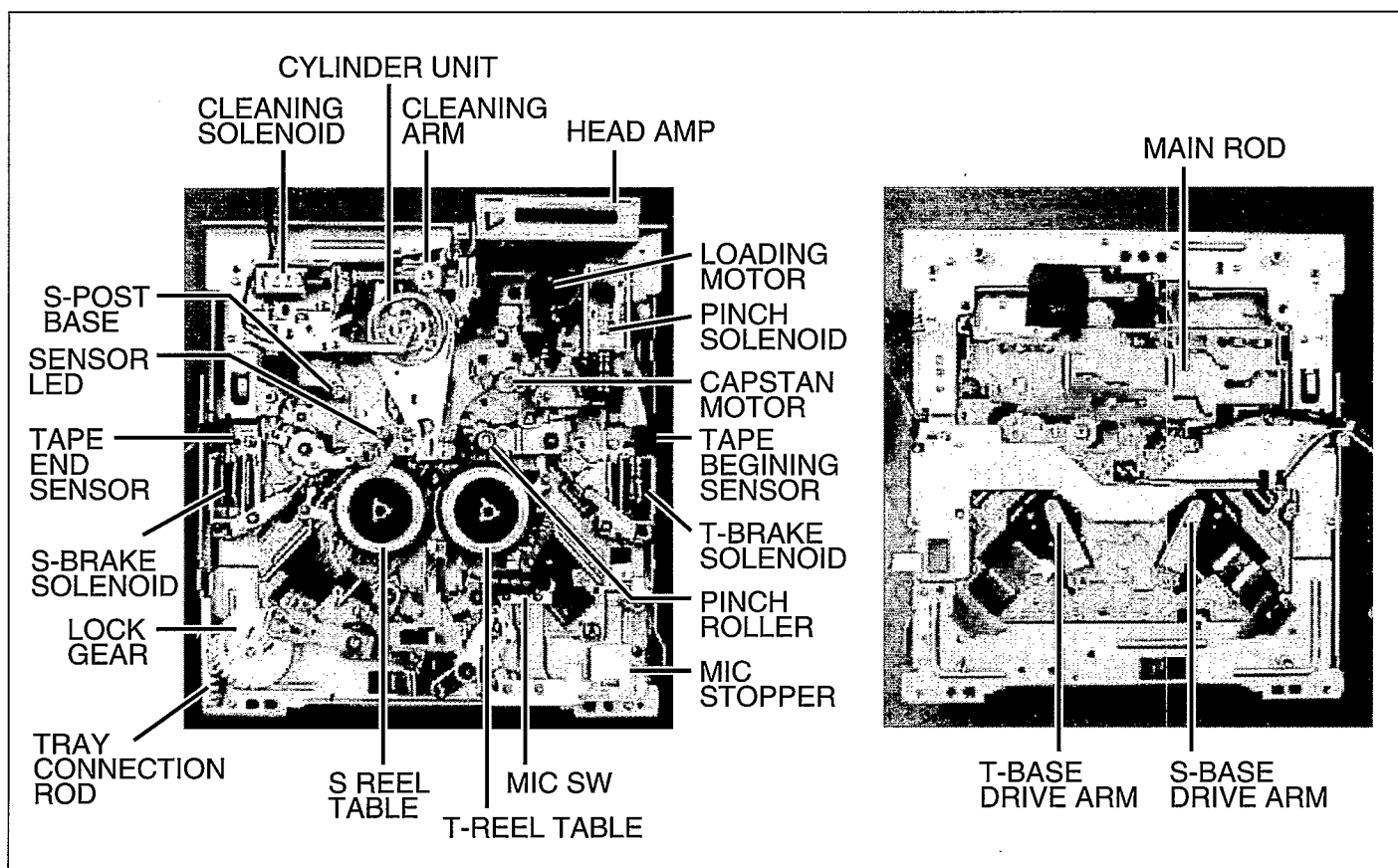


Fig. 2-2

2-2. Disassembly/Assembly Procedures (for Mechanical Parts)

1. Mechanism Connection C.B.A.

Unscrew 4 screws and disconnect following connectors.

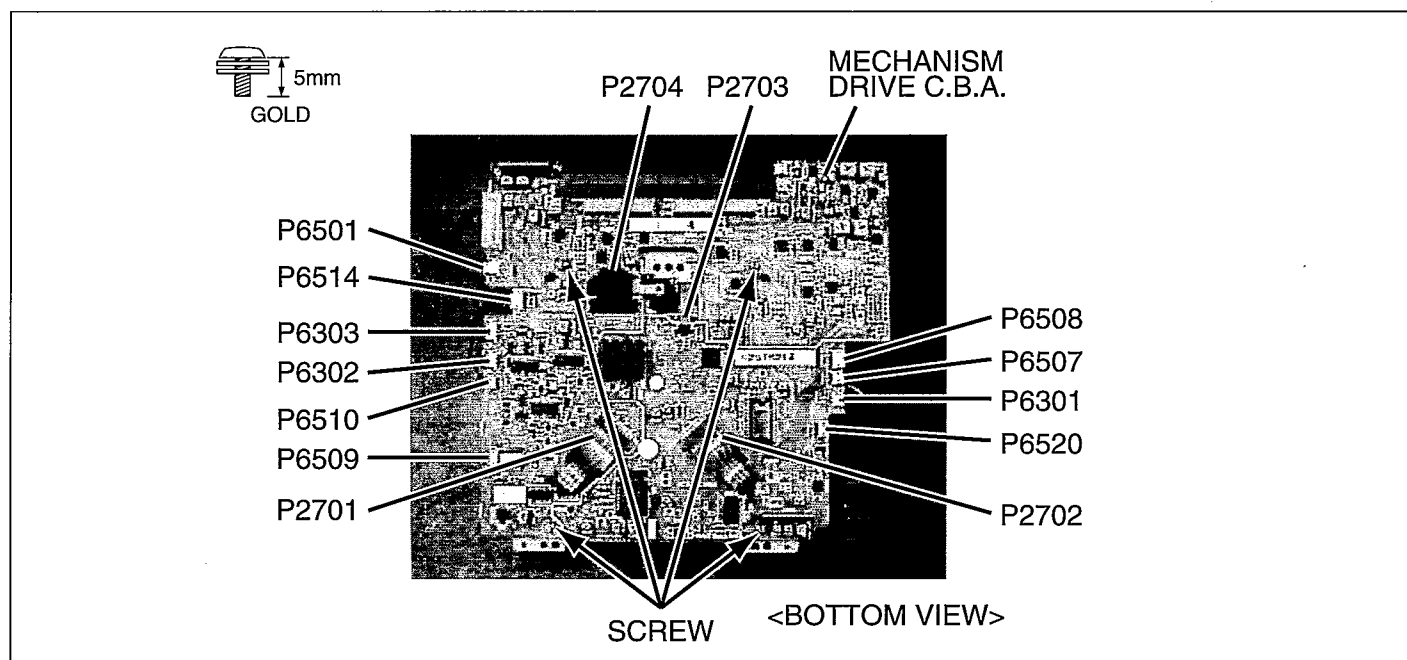


Fig. 2-3

2. Tray Unit

2-1. Cassette Cover

- Fig. T-1 Set the Mechanism to Tray open position. Unscrew 2 screws (A), then slide the Cassette Cover and unhook the hooking portion.
- Fig. T-2 When the Tray can not be opened normally, slowly turn the Tray Drive Shaft until the Tray is fully opened

2-2. Tray Unit

- Fig. T-3 Unscrew 4 screws (B) and disconnect P6502 when Mechanism Drive C.B.A. is connected to Mechanism Unit.
- Fig. T-4 Since the Side Plate (S) is located underneath the Tray Connection Rod, then shift the Side Plate (S) in the front direction and lift it up.

Note of installation

- Fig. T-5 Push the Tray Connection Rod in the rear direction and install the Tray Unit so that the Reel Shaft on the Side Plate (S) meets the groove on the Tray Connection Rod.

2-3. Side Plate (S) and (T)

- Fig. T-6 Set the Pinion Gear so that the projection (A) is aligned to the Dot Mark on the Rack (S) and (T) and remove the Side Plate (S) and (T).

Note of installation

- Fig. T-10 Confirm the position of the Cassette Change Lever. (Down position)
- Fig. T-7 Install the Pinion Gear so that the projection (B) on the pinion Gear is aligned to the hole on the Tray Drive Shaft Gear.
- Fig. T-6 Install the Side Plate (S) and (T) so that the projection (A) is aligned to the dot mark on the Rack (S) and (T).

2-4. Tray Front Panel

- Fig. T-8 Unscrew 2 screws (C) and unlock 4 locking tabs (A), then remove the Tray Front Panel.

2-5. Cassette Holder

- Fig. T-9 Slightly open the S and T Rack Unit and slowly remove the Cassette Holder from the Groove on the S and T Rack Unit.

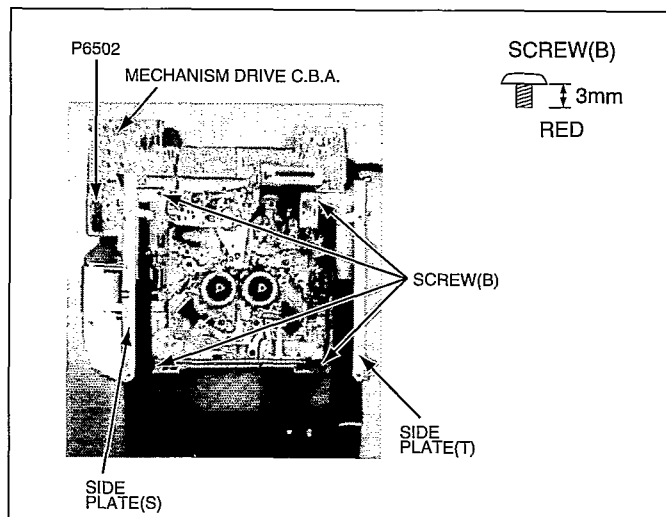


Fig. T-3

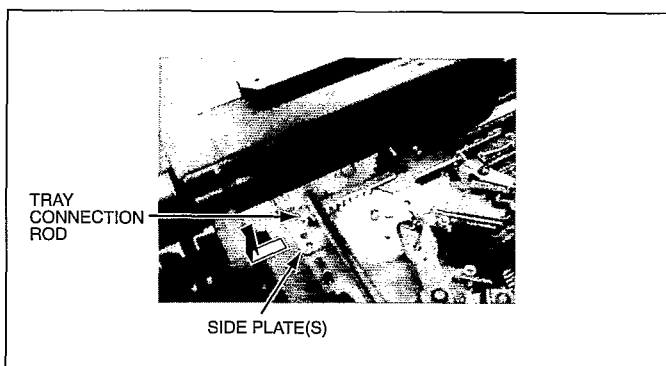


Fig. T-4

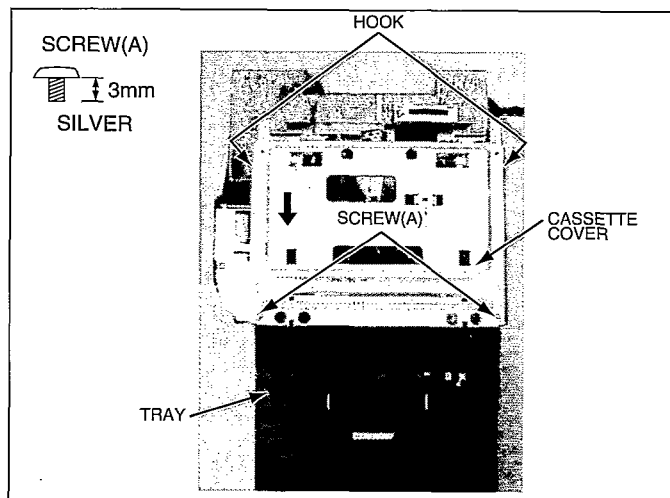


Fig. T-1

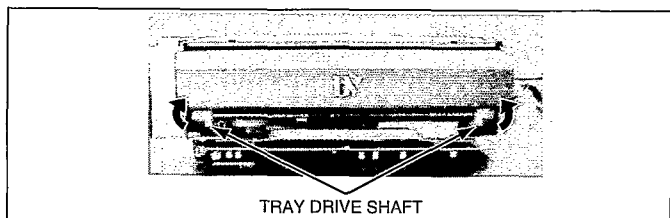


Fig. T-2

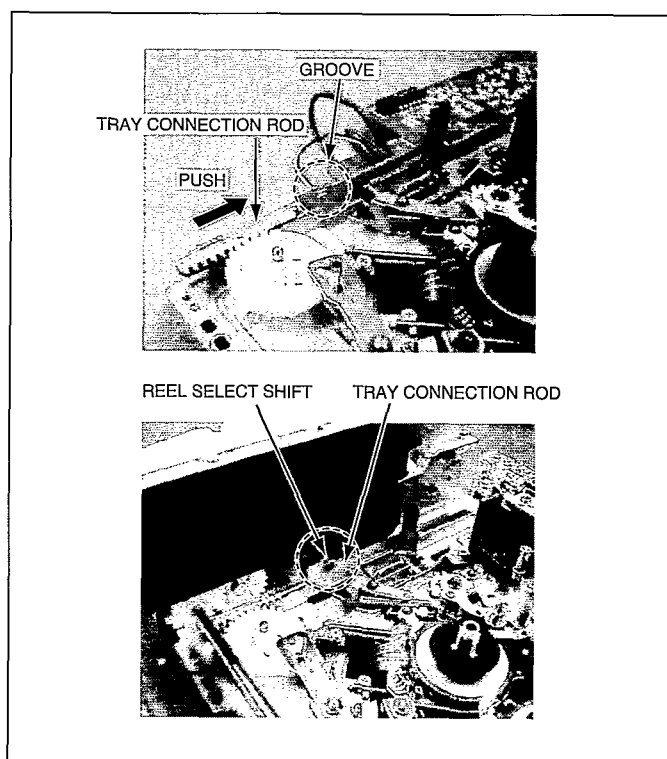


Fig. T-5

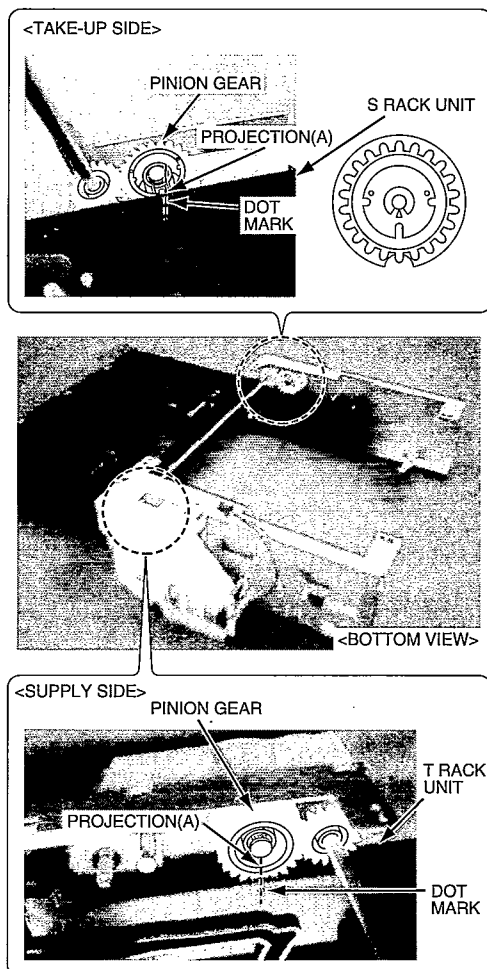


Fig. T-6

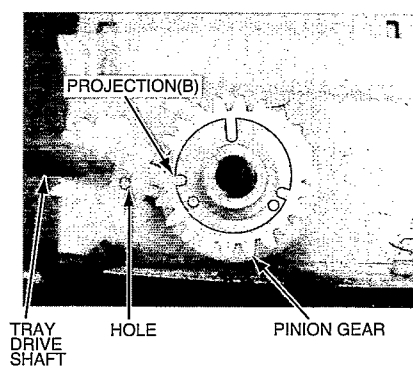


Fig. T-7

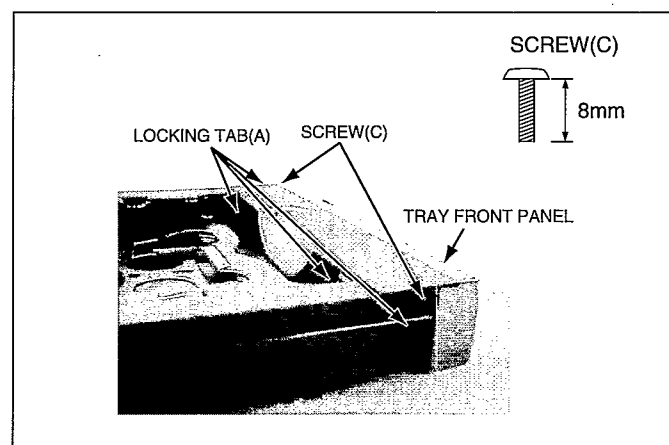


Fig. T-8

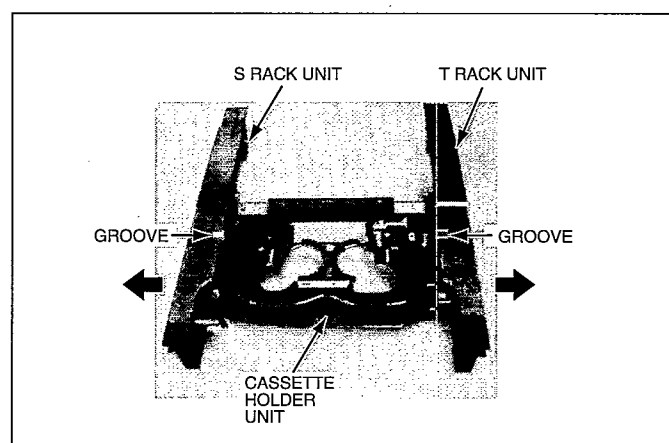


Fig. T-9

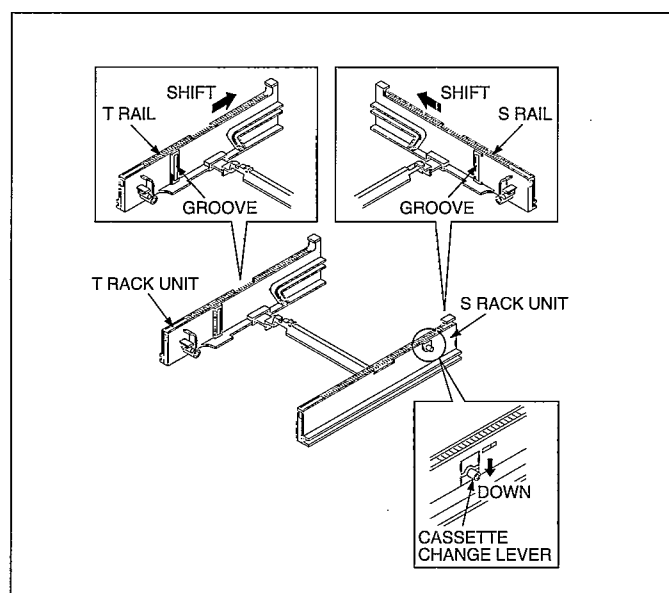


Fig. T-10

Note of installation

Fig. T-10 Shift the S and T Rail on the S and T Rack Unit to make the Tray down condition.

Fig. T-11 Install the Cassette Holder Unit so that the projection (C) on the Cassette Holder meets the groove on the S and T Rack unit.

2-6. Tray Motor Drive Unit

Fig. T-12 Unlock 3 locking tabs (B) and remove the Tray Motor Drive Unit.

Fig. T-13 Remove the Syncro. Drive Gear, Worm Foil Gear, Worm Gear and Tray Motor.

3. Mechanical Parts

3-1. Head AMP

Fig. M-1 Unscrew 2 screws (E).

Fig. M-2 Slide the Shield Case in up direction and remove the Shield Case.
Disconnect FP5001.

3-2. Pinch Solenoid and Pinch Arm

Fig. M-3 Unscrew 2 screws (F) and remove Cut Washer.
Shift the Pinch Solenoid in left direction and remove the Pinch Solenoid and Pinch Arm.

3-3. Loading Motor Base

Fig. M-4 Unscrew 5 screws (G) and (H) and remove the Loading Motor Base.

Note of installation

Fig. M-7 Set the Motor Worm Gear to the Loading Motor Shaft.

Fig. M-5 Install the Loading Motor Base so that the projection (D) on the Mode SW meets the Hole on the Main Cam Gear.

3-4. Main Cam Gear

Fig. M-6 Remove the Main Cam Gear.

3-5. Main Cam Arm and Motor Worm Gear

Fig. M-7 Remove the Main Cam Arm and Motor Worm Gear.

Note of installation

Fig. M-8 Install the Main Cam Arm so that the projection (E) on the Main Cam Arm meets the hole on the Main Rod.

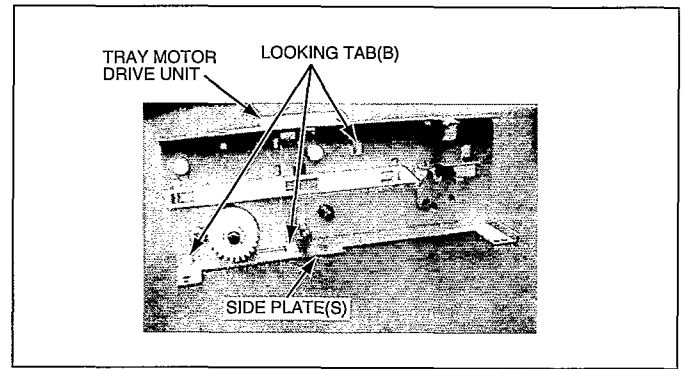


Fig. T-12

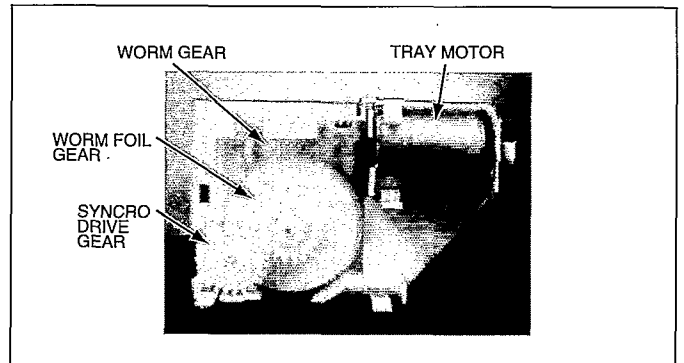


Fig. T-13

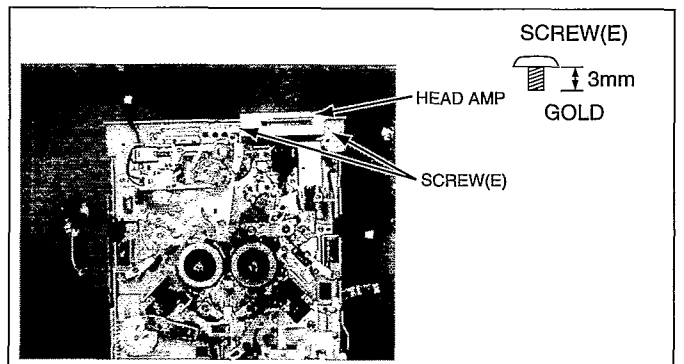


Fig. M-1

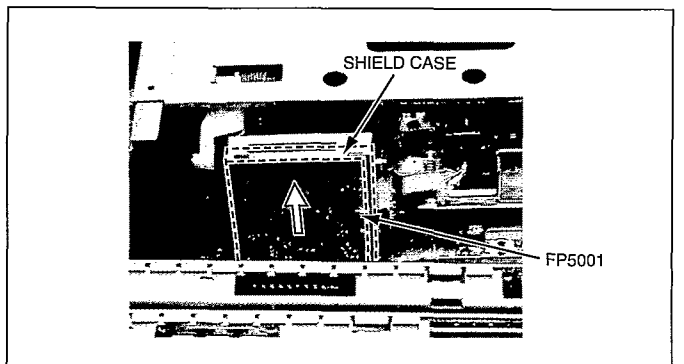


Fig. M-2

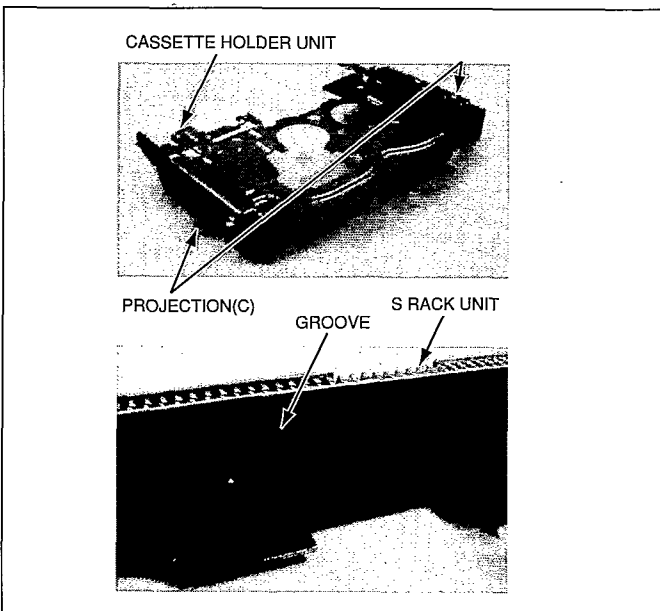
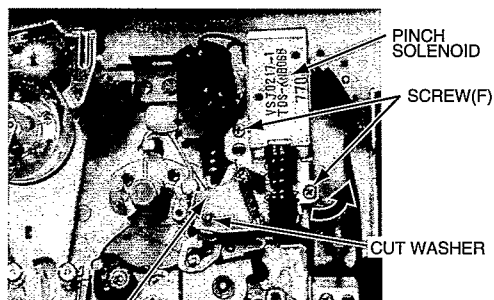


Fig. T-11



PINCH ARM

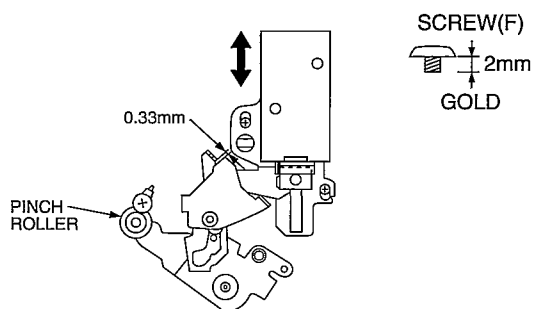


Fig. M-3

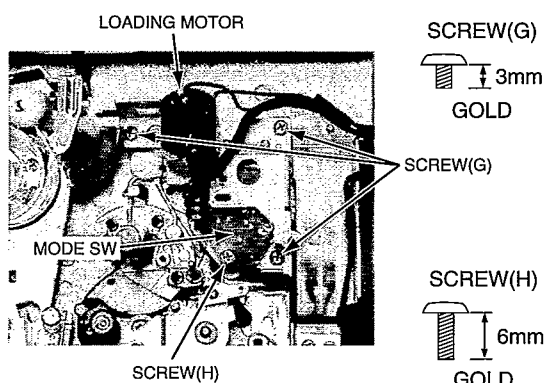


Fig. M-4

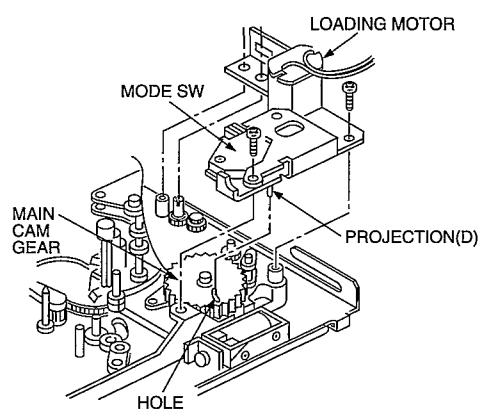


Fig. M-5

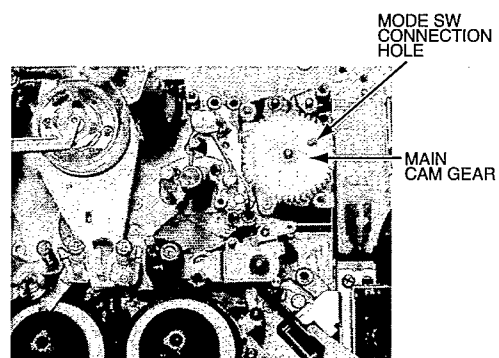


Fig. M-6

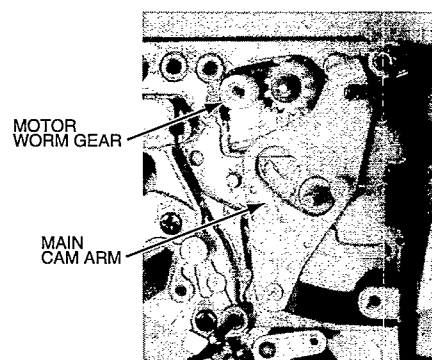


Fig. M-7

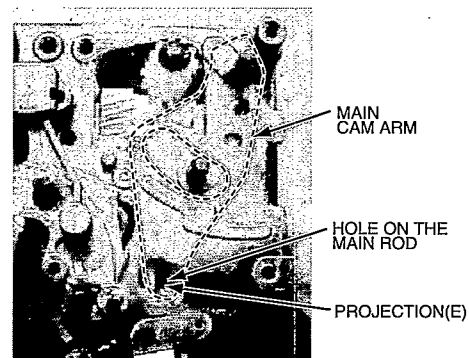


Fig. M-8

3-6. T1 Guide

Fig. M-9 Unscrew 2 screws (I) and remove the T1 Guide.

3-7. Cleaning Arm and T2 Arm

Fig. M-10 Unhook the Cleaning Spring.
Unlock the locking portion of the Cleaning Arm.
Remove the T2 Arm with Spring.

3-8. Cleaning Solenoid Base and Cleaning Solenoid

Fig. M-11 Unscrew 3 screws (J) and remove the Cleaning Solenoid Base.

Fig. M-12 Unscrew 2 screws (K) and remove the Cleaning Solenoid.

Note of installation

Fig. M-10 Adjust the Cleaning Solenoid Base so that the gap between the Cylinder and Cleaning Arm becomes 1.0mm $\pm$ 0.1mm.
Confirm that the Cleaning Roller rotates when the Cleaning Solenoid is turned on in the play mode.

3-9. S-Post Base

Fig. M-13 Unscrew 1 screw (L) and remove the S-Post Base.

3-10. Main Rod

Fig. M-14 Slide the Main Rod and remove it.
When the Cleaning Solenoid Base is not removed;
Slightly shift the Cleaning Solenoid Base in direction and slide the Main Rod since the Main Rod is stopped by Cleaning Solenoid Base.

Note of installation

Fig. M-15 Install the Main Rod so that the each drive shaft meets the groove of the Main Rod. To lock the Main Rod, slide it in left direction.

3-11. T4 Sector Gear and Tension Regulator Arm

Fig. M-16 Remove the T4 Sector Gear and Tension Regulator Arm.

Note of installation

Fig. M-17 Install the T4 Sector Gear so that the alignment hole of the T4 Sector Gear is aligned to the alignment gear of the T4 Arm.

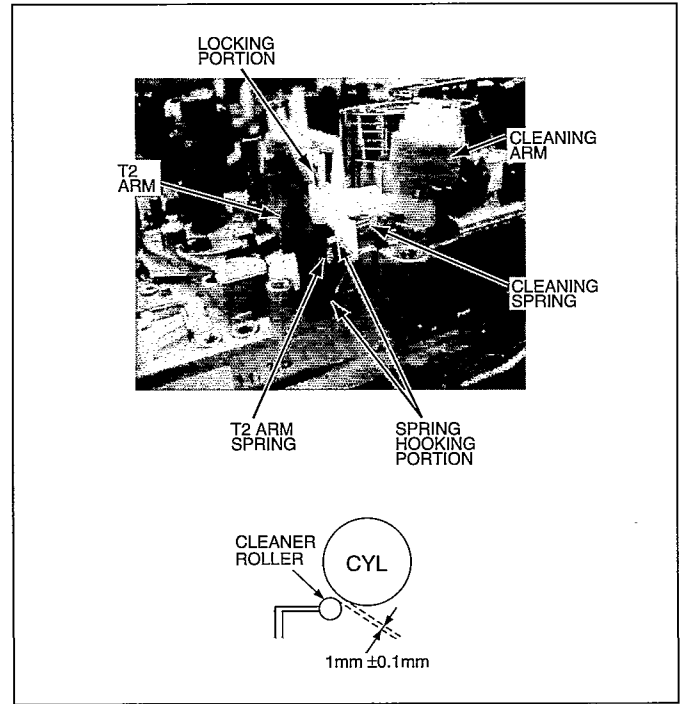


Fig. M-10

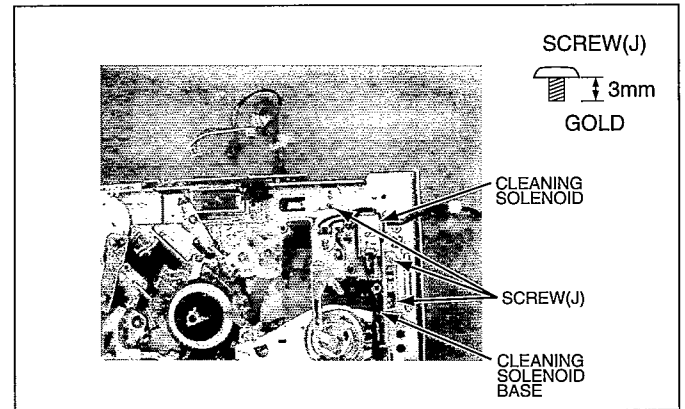


Fig. M-11

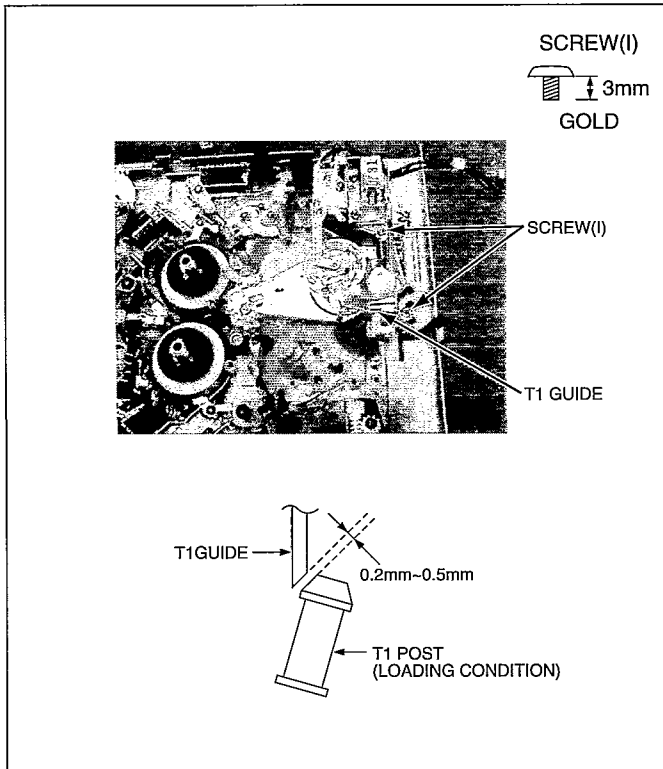


Fig. M-9

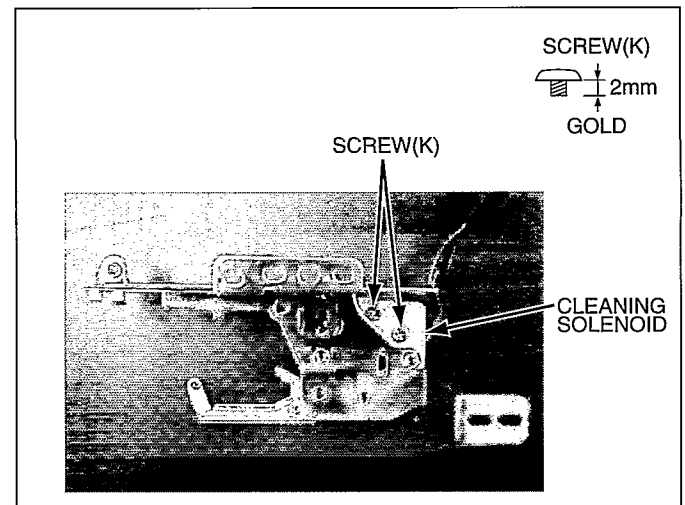


Fig. M-12

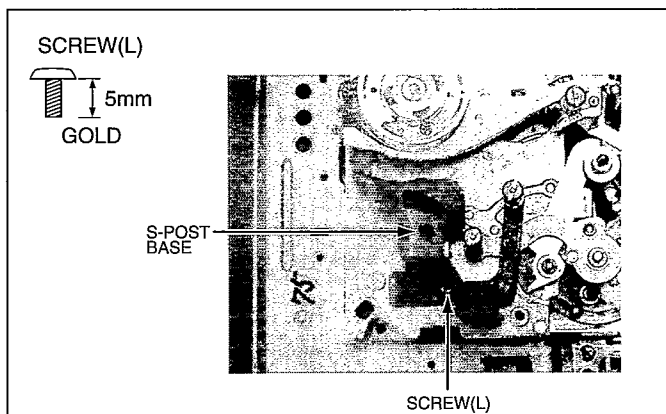


Fig. M-13

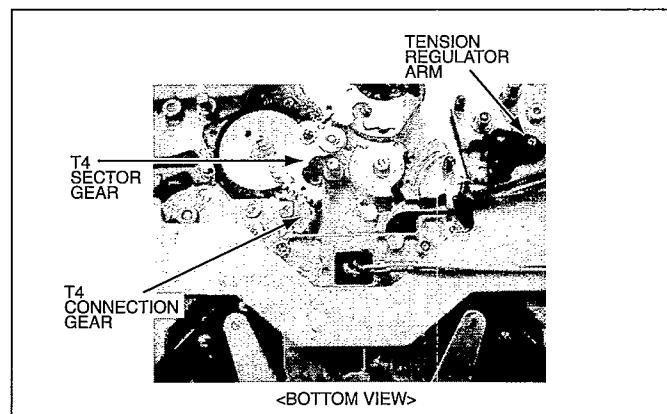


Fig. M-16

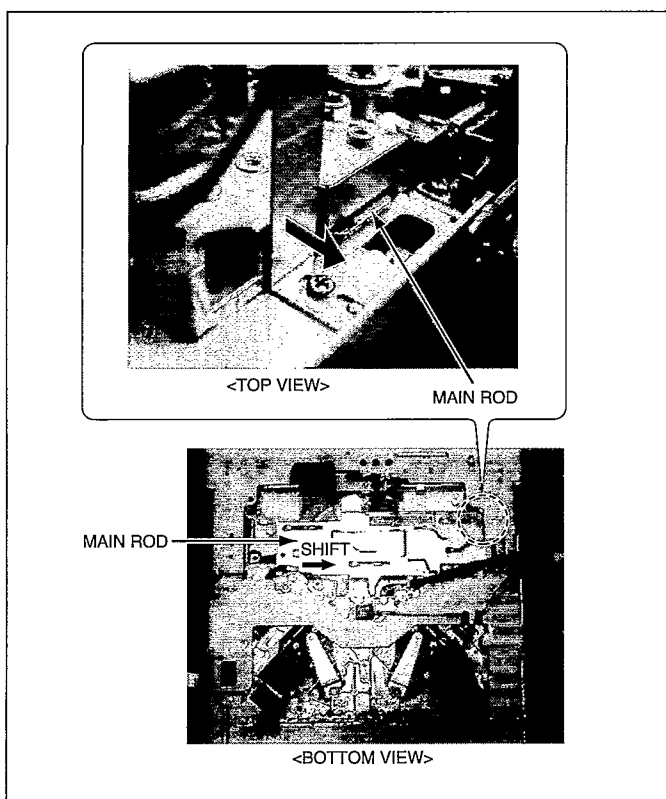


Fig. M-14

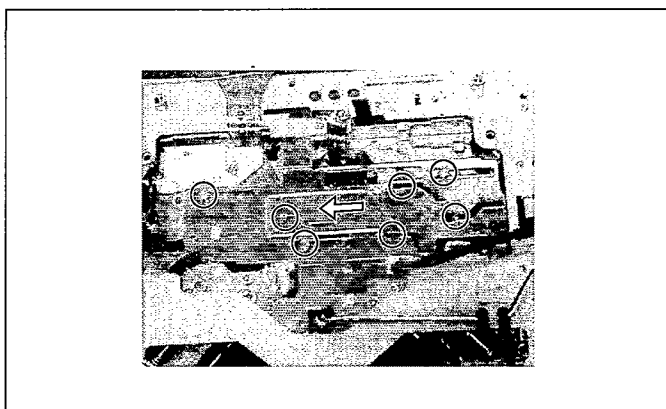


Fig. M-15

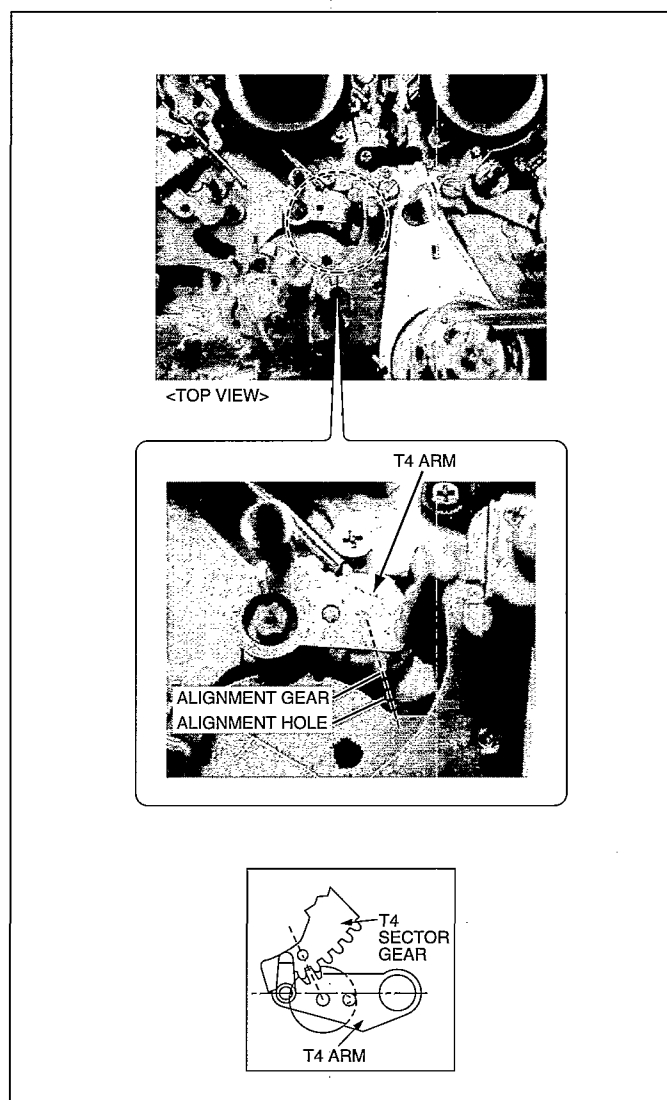


Fig. M-17

3-12. Cylinder Unit

Fig. M-18 Unscrew 4 screws (M) and (N). Then remove the Cylinder Unit carefully.

Fig. M-19 When removing or installing the Cylinder Unit, use extreme care so as not to damage the flexible cable.

3-13. Loading Rail

Fig. M-20 Unscrew 2 screws (O) and (P). Then slightly lift up the Loading Rail and slowly remove the S and T Loading Posts from the top side of the Loading Rail.

Note of installation

Fig. M-20 Install the S and T Loading Posts to the Loading Rail and set the Loading Rail to the chassis. Then install 2 screws (O) and (P).

3-14. T Loading Arm (Post)

Fig. M-21 Remove the E-Ring, washer and T Loading Arm.

When replacing the T Loading Arm, perform the "Mechanical Adjustment Procedures".

Note of installation

Fig. M-21 Install the T Loading Arm so that the hole on the gear of the T Loading Arm is aligned to the hole on the T Sector Gear.

3-15. Tension Arm

Fig. M-22 Remove the cut washer and unhook the spring, then remove the Tension Arm.

When replacing the Tension Arm, perform the "Mechanical Adjustment Procedures".

3-16. S Loading Arm (Post)

Fig. M-23 Remove the E-Ring, washer and S Loading Arm.

When replacing the S Loading Arm, perform the "Mechanical Adjustment Procedures".

Note of installation

Fig. M-23 Install the S Loading Arm so that the hole on the gear of the S Loading Arm is aligned to the hole on the S Sector Gear.

3-17. Tension Regulator Hook and Tension Sensor

Fig. M-24 Unscrew 1 screw (Q) located under the S Brake Solenoid, washer and Tension Sensor.

Remove the cut washer and Tension Regulator Hook.

When replacing the Tension Sensor, perform the "Mechanical Adjustment Procedures".

Note of installation

Fig. M-25 After installed Tension Sensor, confirm the position of the Tension Sensor cable.

3-18. Pinch Arm

Fig. M-26 Remove the cut washer and Pinch Arm with spring.

Note of installation

Fig. M-26 Confirm the hooking portion of the spring.

3-19. T4 Arm and T4 Connection Gear

Fig. M-27 Remove the Nylon Nut using tweezers or box driver (2.5mm).

Remove the washer, spring and T4 Arm.

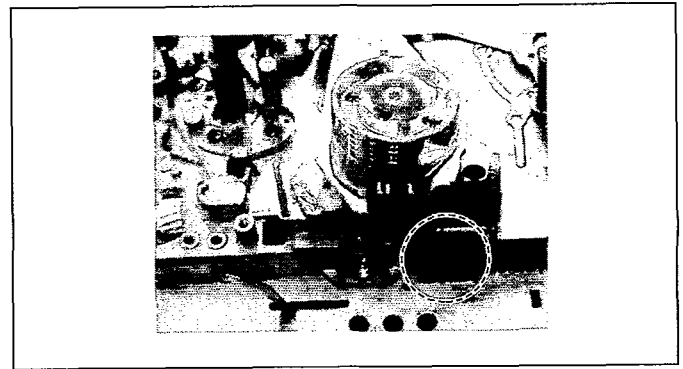


Fig. M-19

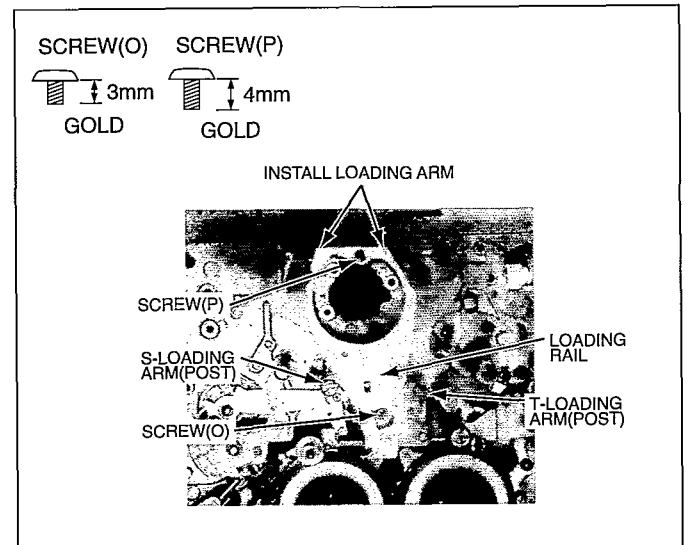


Fig. M-20

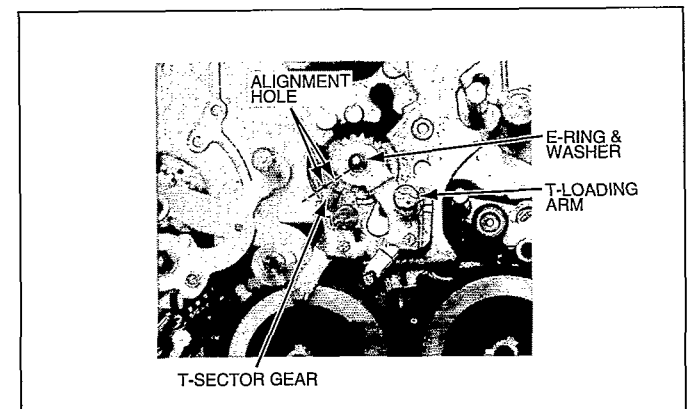


Fig. M-21

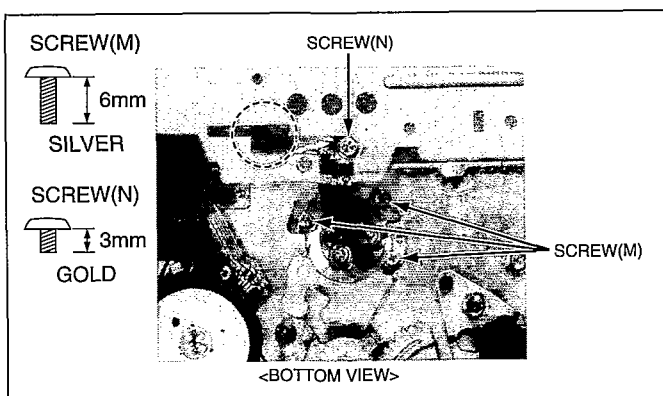


Fig. M-18

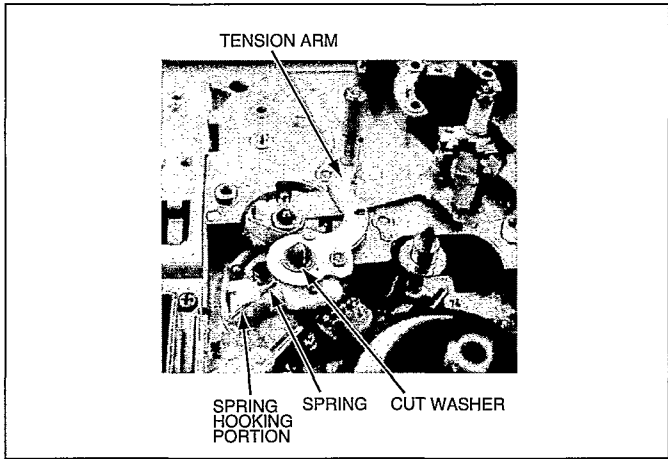


Fig. M-22

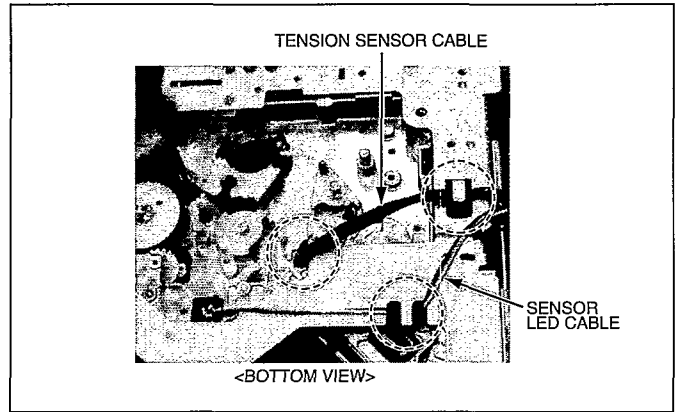


Fig. M-25

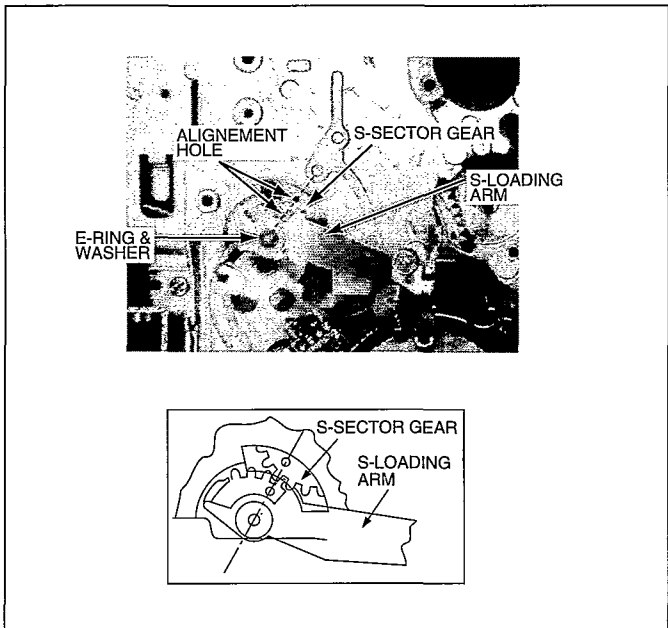


Fig. M-23

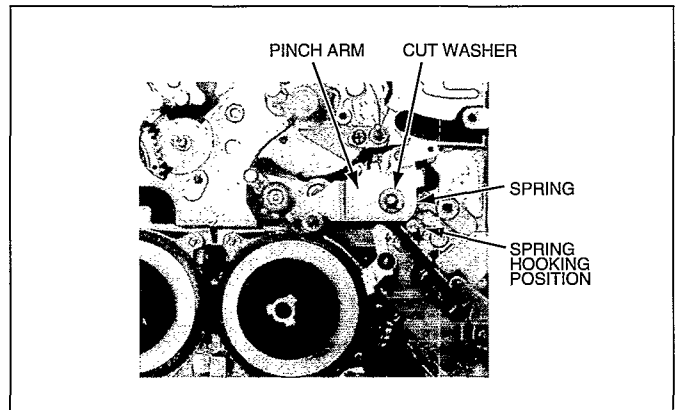


Fig. M-26

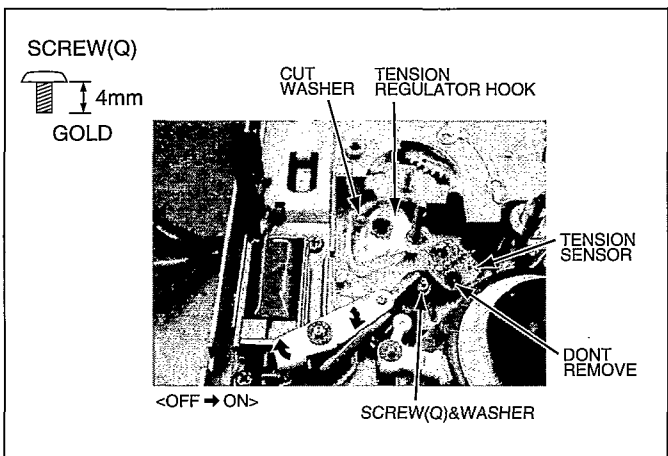


Fig. M-24

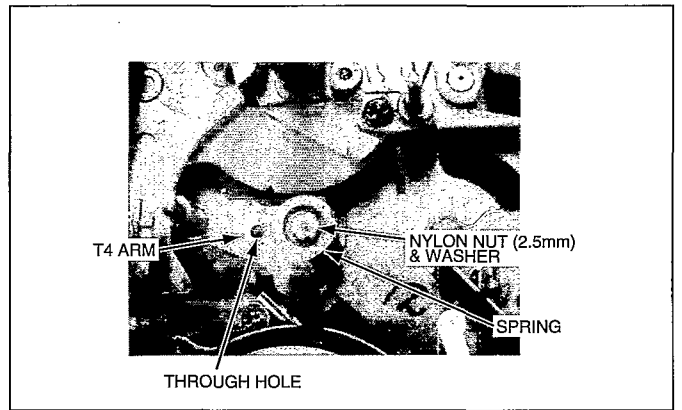


Fig. M-27

- Fig. M-28 Remove the cut washer and T4 Connection Gear. When replacing the T4 Arm and/or T4 Connection Gear, perform the "Mechanical Adjustment Procedures".

Note of installation

- Fig. M-28 Install the T4 Connection Gear and cut washer.
Fig. M-27 Install the T4 Arm so that the through hole on the T4 Arm is aligned to the alignment hole on the T4 Connection Gear as shown in Fig. M-28.

3-20. S and T Sector Gear

- Fig. M-29 Turn the S and T Sector Gears to clockwise and remove these Gears.

3-21. Gear Holder

- Fig. M-30 Unscrew 2 screws (R) and remove the Gear Holder.

Note of installation

- Fig. M-30 When installing the Gear Holder, confirm the position of the flexible cable of the Capstan Motor.

3-22. S-Brake Solenoid

- Fig. M-31 Unscrew 2 screws (S).
When removing the S-Brake Solenoid, the Tray Connection Rod must be removed because of the connector of the Solenoid is located between the Chassis and Tray Connection Rod.

Note of installation

- Fig. M33 Adjust the S-Brake Solenoid so that the gap between the S-Brake and S-Reel Table becomes 0.2 to 0.5 mm (just release).

3-23. T-Brake Solenoid

- Fig. M-32 Unscrew 2 screws (T) and remove the T-Brake Solenoid.

Note of installation

- Fig. M33 Adjust the T-Brake Solenoid so that the gap between the T-Brake and T-Reel Table becomes 0.2 to 0.5 mm (just release).

3-24. Tape Beginning Sensor (T Sensor)

- Fig. M-34 Unlock the locking portion and remove the Tape Beginning Sensor.

3-25. Tape End Sensor (S Sensor)

- Fig. M-35 Unlock the locking portion and remove the Tape End Sensor.

3-26. MIC Stopper

- Fig. M-36 Unscrew 2 screws (U) and remove the MIC Stopper.

3-27. MIC Connector Unit

- Fig. M-37 Unscrew 1 screw (V) and remove the cut washer and MIC Connector Unit.

Note of installation

- Fig. M-37 Install the MIC Connector Unit so that the projection (F) meets the hole on the MIC Connector Unit.

3-28. T Reel Table

- Fig. M-38 Unscrew 4 screws (W) and remove the T Reel Table with 2 shifts.

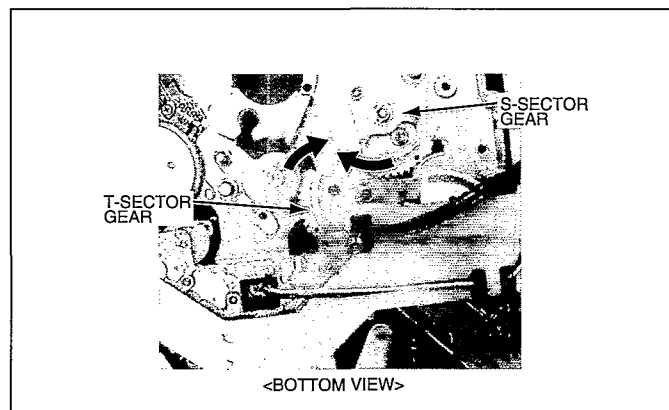


Fig. M-29

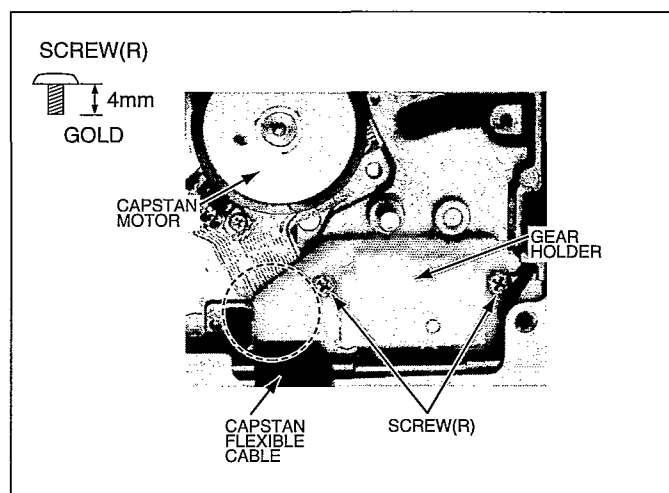


Fig. M-30

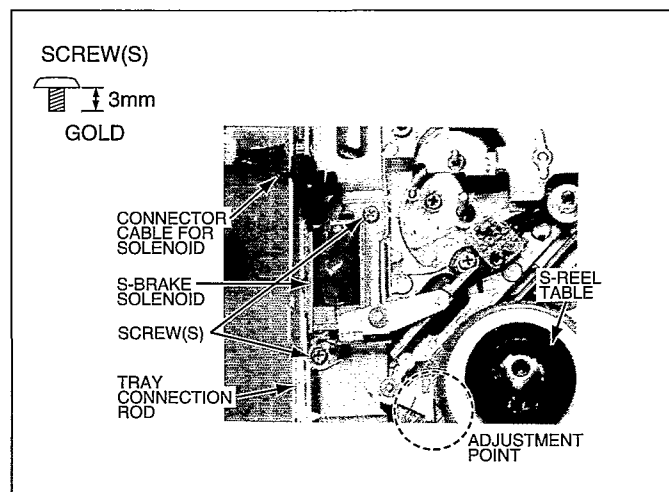


Fig. M-31

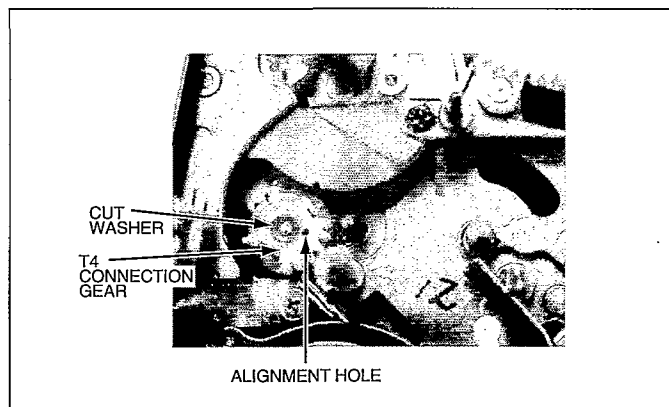


Fig. M-28

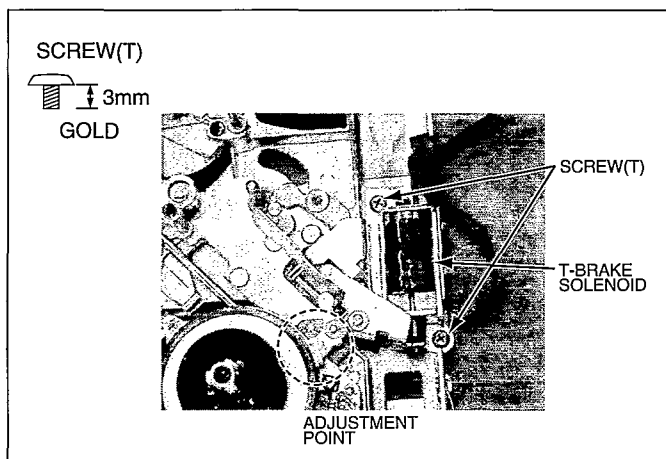


Fig. M-32

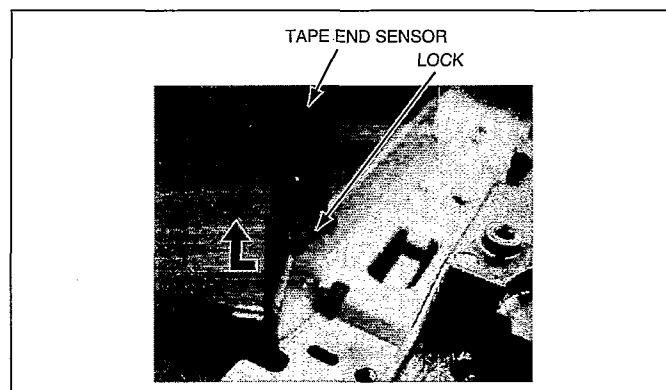


Fig. M-35

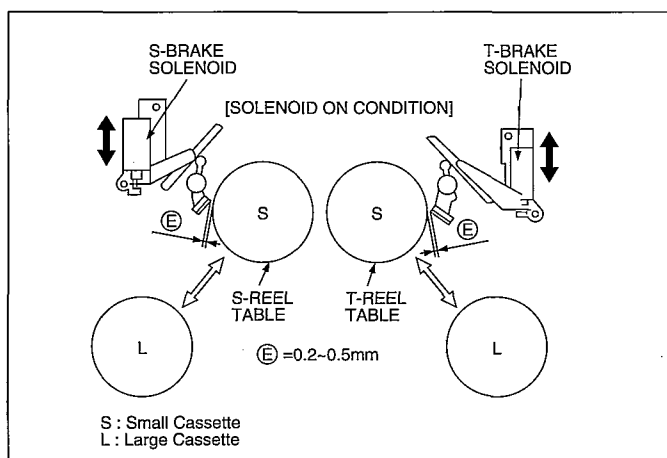


Fig. M-33

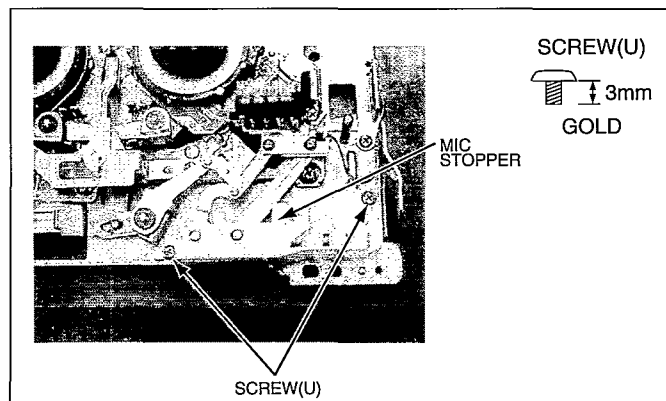


Fig. M-36

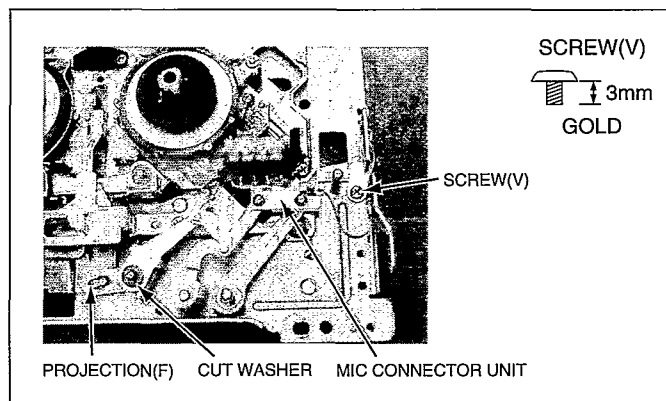


Fig. M-37

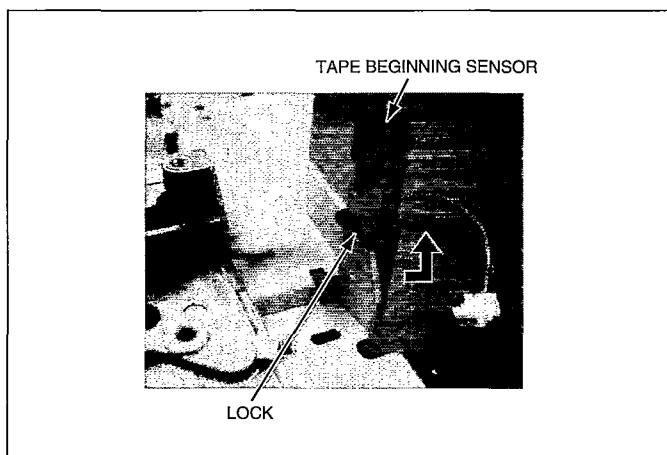


Fig. M-34

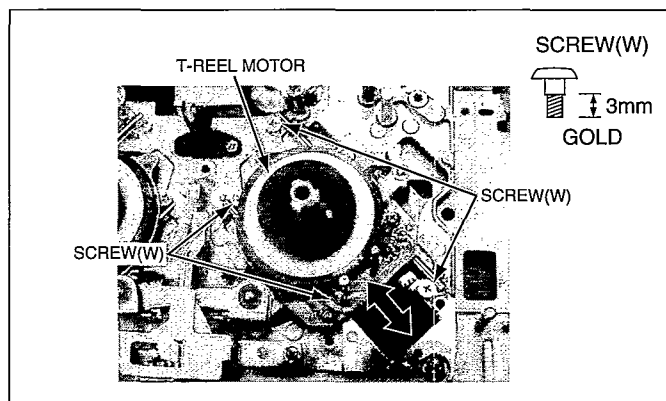


Fig. M-38

Note of installation

Fig. M-40 Set the inner and outer shafts to the T Reel Table.

Fig. M-41/42 Install the T Reel Table with 2 shafts so that the groove under the T Reel Table meets the projection (G) on the T Base Drive Arm.
Then install 4 screws (W).

3-29. S Reel Table

Fig. M-39 Unscrew 4 screws (X) and remove the S Reel Table with 2 shifts.

Note of installation

Fig. M-40 Set the inner and outer shafts to the S Reel Table.

Fig. M-41/42 Install the S Reel Table with 2 shafts so that the groove under the S Reel Table meets the projection (G) on the S Base Drive Arm.
Then install 4 screws (X).

3-30. Reel Release Angle

Fig. M-42 Unscrew 2 screws (Y) and remove the Reel Release Angle.

3-31. S and T Base Drive Arm

Fig. M-43 Remove the cut washer, S and T Base Drive Arms.

Note of installation

Fig. M-43 Install the S and T Base Arms so that the projections (H) on the S and T Base Arms meet the groove on the Slide Rod.

3-32. Communication Arm

Fig. M-44 Remove the cut washer and Communication Arm.

3-33. Tray Connection Rod and Lock Gear

Fig. M-45 Pull the Tray Connection Rod in front direction to release the lock and remove it.
Remove the Lock Gear.

Note of installation

Fig. M-46 Install the Tray Connection Rod.
Then install the Lock Gear so that the hole on the Lock Gear is aligned to the hole on the Tray Connection Rod.

3-34. Slide Rod

Fig. M-47 Remove the cut washer and Slide Rod.

3-35. Sensor LED

Fig. M-48 Unscrew 1 screw (Z) and Sensor LED.

Note of installation

Fig. M-25 After installed Sensor LED, confirm the position of the Sensor LED cable.

3-36. Capstan Motor

Fig. M-49 Unscrew 3 screws (a) and Capstan Motor.

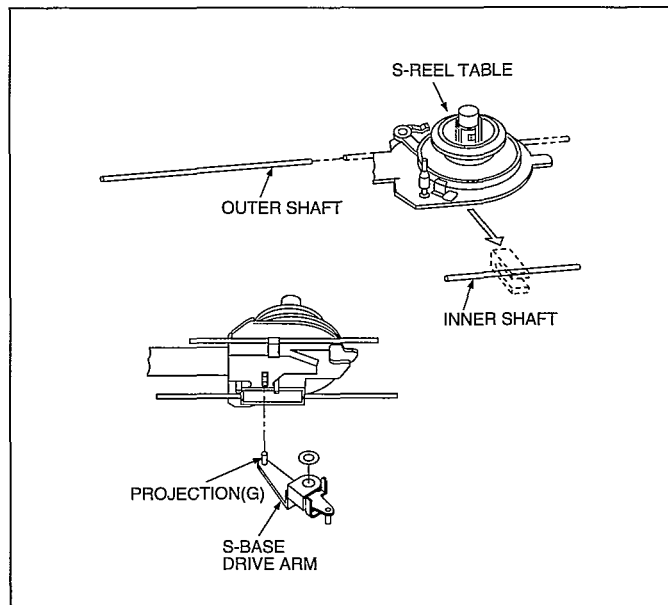


Fig. M-40

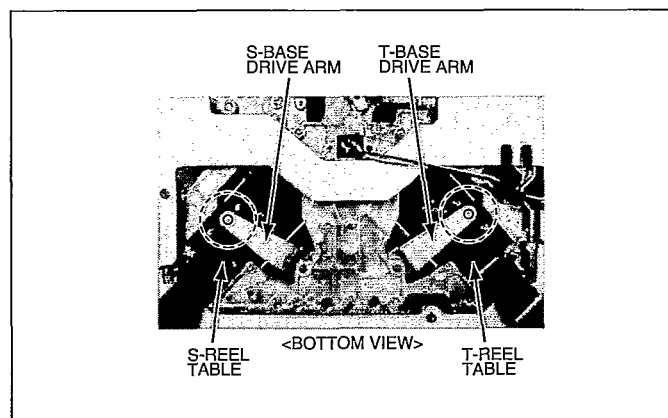


Fig. M-41

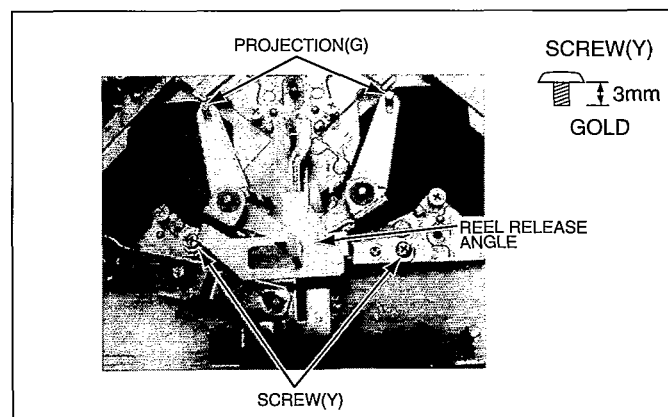


Fig. M-42

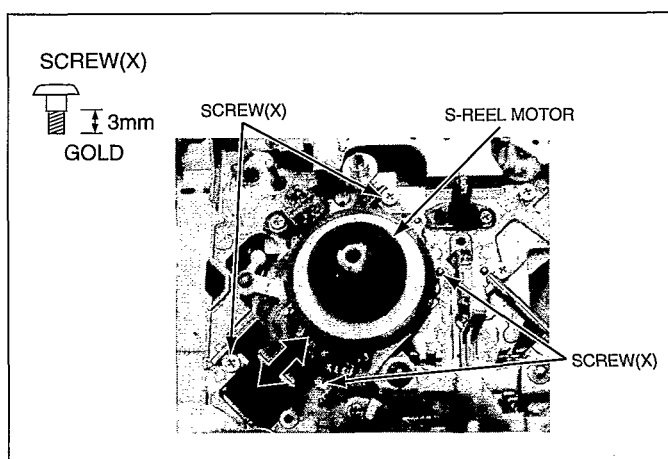


Fig. M-39

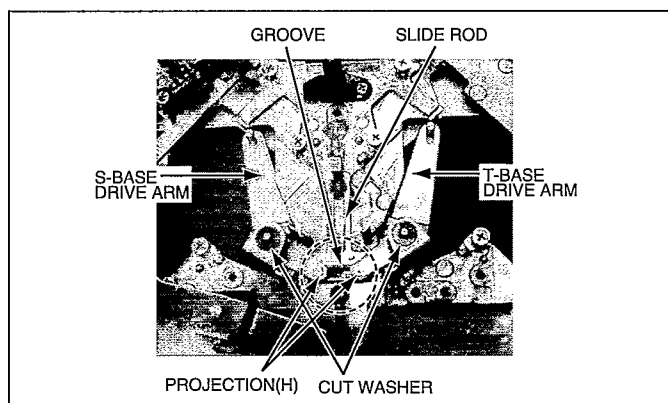


Fig. M-43

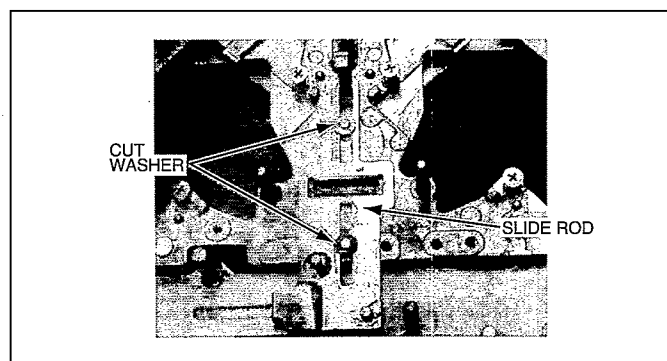


Fig. M-47

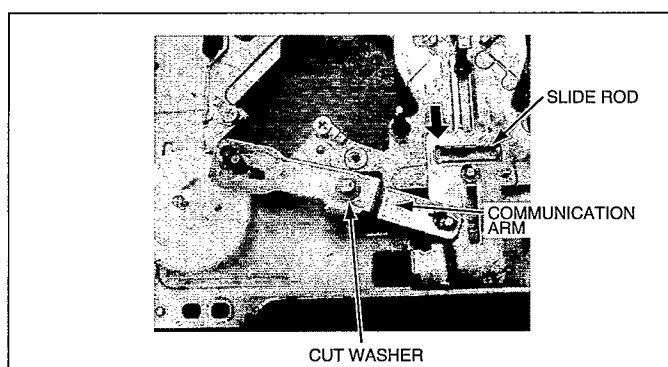


Fig. M-44

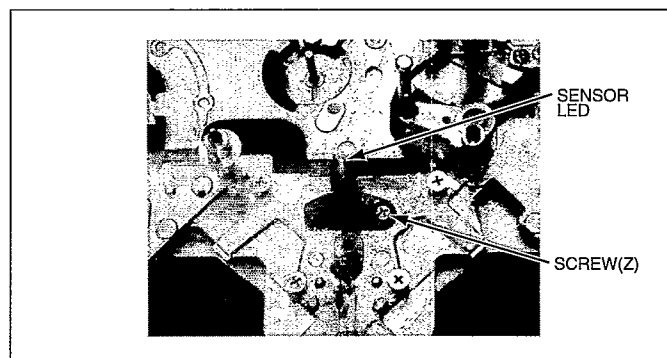


Fig. M-48

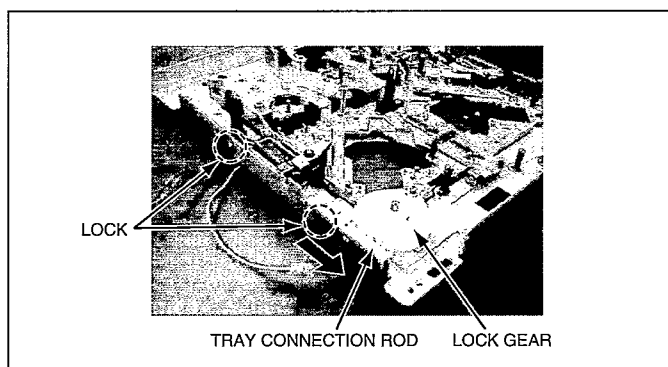


Fig. M-45

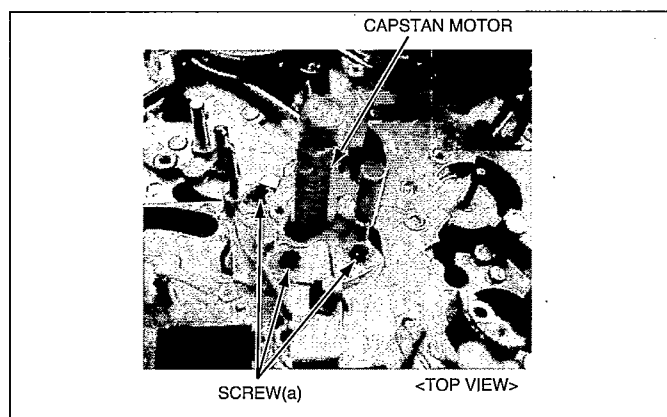


Fig. M-49

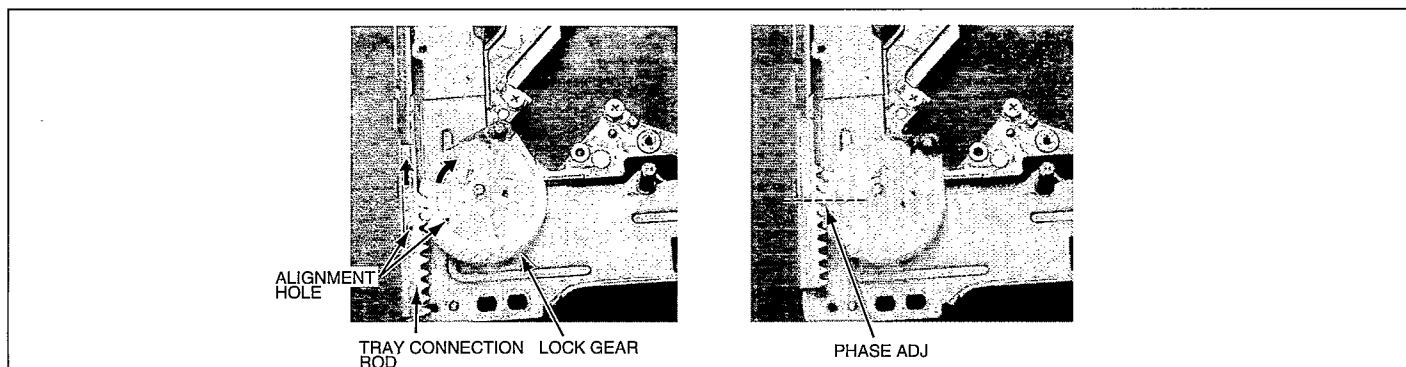


Fig. M-46

4. Mechanical adjustment

4-1. Name of Tape Transportation

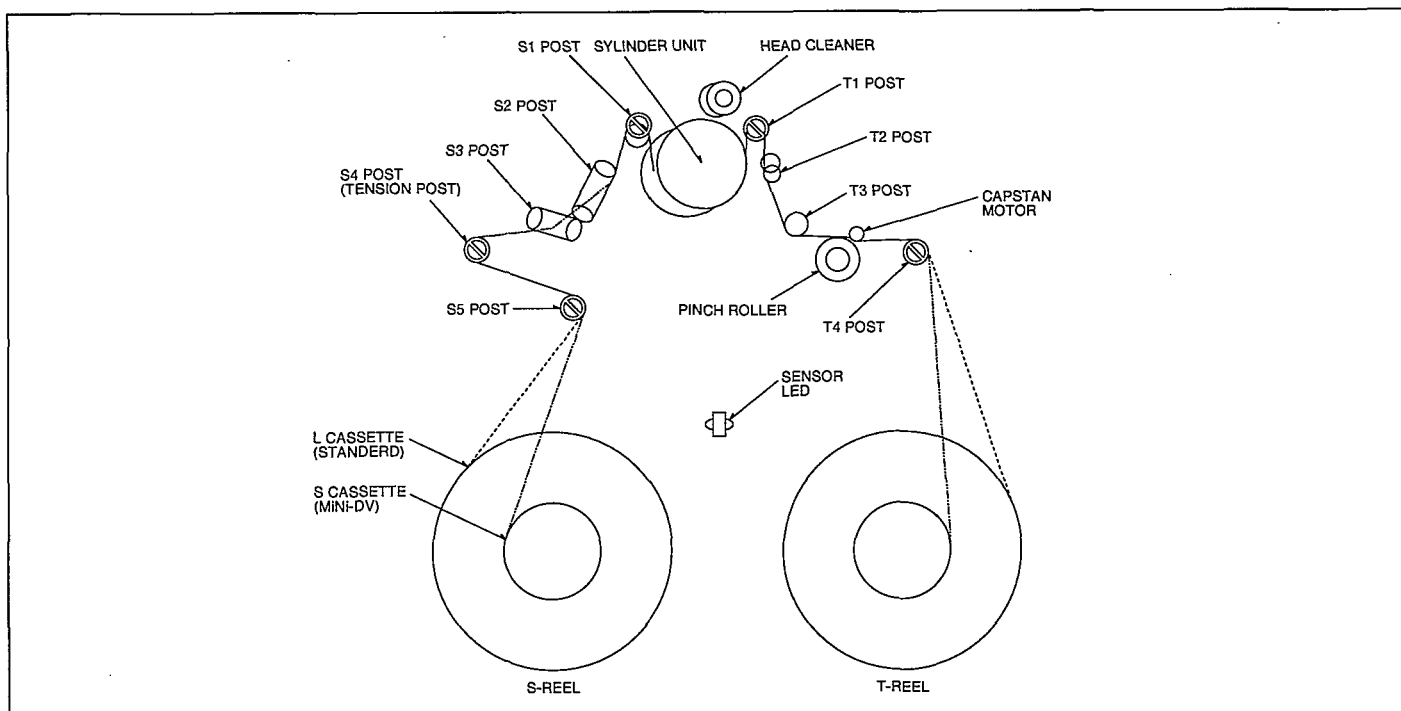


Fig. M-1

4-2. Cleaning Procedures

Make sure the power is off before cleaning. Use ethanol (more than 99% purity) as cleaning liquid.

4-2-1. Cleaning of Video Head

Clean heads by applying even pressure and rotating cylinder a few times. Never wipe in up and down motion. Never touch a cylinder with naked hand. First wipe with a cloth soaked by cleaning liquid. Then wipe with dry cloth.

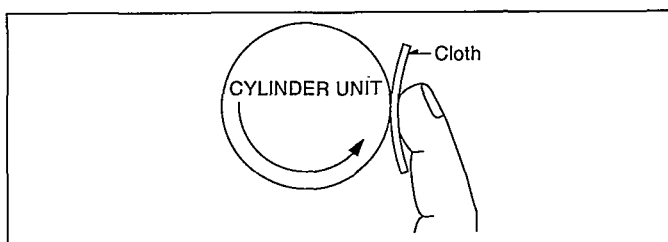


Fig. M-2

4-2-2. Cleaning of Drum Lead

Be careful not to touch a head chip. Clean the drum lead with a pick.

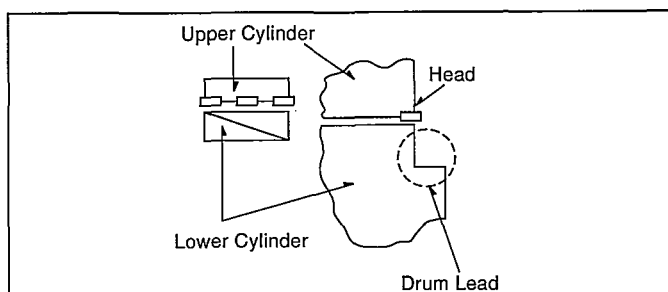


Fig. M-3

4-2-3. Cleaning of Pinch Roller and Capstan

Wipe the Pinch Roller and Capstan with a cloth soaked by cleaning liquid.

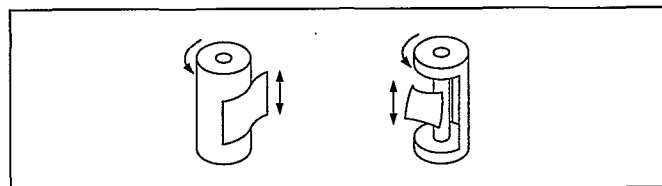


Fig. M-4

4-2-4. Cleaning of each Post

Wind a cloth on a pick. Wipe each post dry with that pick. Wipe again with a dry cloth. For metal posts wipe with cleaning liquid. Then wipe dry again.

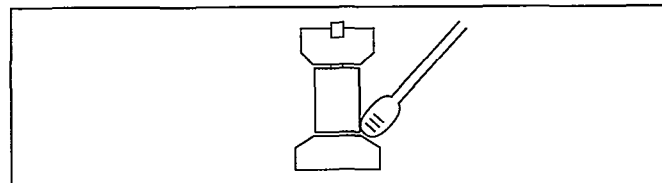


Fig. M-5

4-3. Reel Offset and Tension Arm Adjustment

Note:

Before beginning adjustment from the item 4-4., the "Reel Offset" and "Tension Arm Adjustment" described on the "5. Electrical Adjustment" must be done as shown in Fig. E-1.

4-4. T4, S4 and S5 Post Height Pre-Adjustment

Note :

Before this adjustment, the Servo Adjustment must be done.
(Refer to "5. Electrical Adjustment".)

1. Confirm the Reel Table is located at L (Standard) cassette position.
If it is located at S (Mini-DV) cassette position, turn power on and insert L cassette and eject the L cassette.
2. Turn power off. Remove the Front Loading Unit. Then place the Mech. Plate (VFK1348A) on the Reel Table.
3. Place the Post Height Adj. Tool (VFK1450) on the Mech. Plate as shown in Fig. M-6 and adjust the T4 post height by using the Box Driver (VFK1151).
4. Adjust the S4 and S5 post height by using the Post Driver (VFK1278).
5. Then turn S4 and S5 posts 1 round counterclockwise from lower limit position.

T4 Post : Lower Limit (-0.5 +/- 0.05 mm)

S4 Post : Lower Limit (+0.2 +/- 0.05 mm)

S5 Post : Lower Limit (+0.2 +/- 0.05 mm)

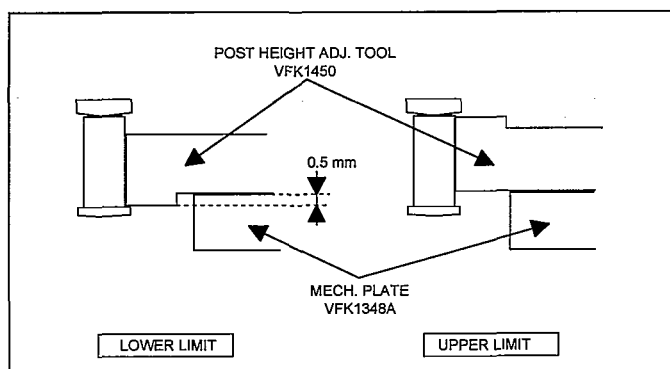


Fig. M-6

4-5. Tape Pass Adjustment Procedures

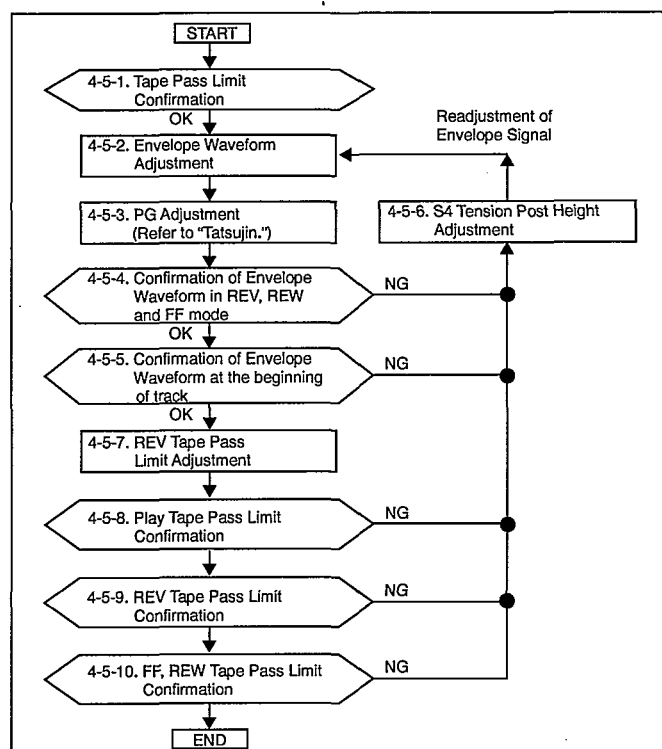


Fig. M-7

4-5-1. Tape Pass Limit Confirmation

1. Place unit into Play mode, and adjust the height of each post do not to occurred tape damage.
2. Regarding the S1 Post and T1 Post, refer to item "4-5-2. Envelope Waveform Adjustment".
3. Confirm the tape pass limit of each post as shown in Fig. M-8.

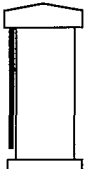
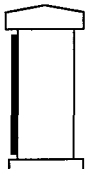
POST NAME	TAPE LIMIT							ADJUSTMENT PORTION	TAPE PASS LIMIT
	A	B	C	D	E	F	G		
4-5-1. Play Tape Pass Limit Confirmation									
S5 Post	×	×	○	○	×	×	×	S5 Post	Lower Limit
S4 (Tension) Post	×	×	×	○	×	×	×	S4 (Tension) Post	Lower Limit
S1 Post	×	○	×	×	×	×	×	S1 Post	Envelope Adjustment
T1 Post	×	○	×	×	×	×	×	T1 Post	Envelope Adjustment
T4 Post	×	×	○	×	×	×	×	T4 Post Arm Nut	Free Limit
4-5-7. REV Tape Pass Limit Adjustment									
S5 Post	×	○	○	○	×	×	×	S5 Post	Lower Limit
S4 (Tension) Post	×	×	○	○	×	×	×	S4 (Tension) Post	Lower Limit
S1 Post	×	○	×	×	×	×	×	S1 Post	Envelope Adjustment
T1 Post	×	○	○	○	×	×	×	T1 Post	Envelope Adjustment
T4 Post	×	×	○	×	×	×	×	T4 Post Arm Nut	Free Limit
4-5-8. Play Tape Pass Limit Confirmation									
S5 Post	×	×	○	○	×	×	×	S5 Post	Lower Limit
S4 (Tension) Post	×	×	×	○	×	×	×	S4 (Tension) Post	Lower Limit
S1 Post	×	○	×	×	×	×	×	S1 Post	Envelope Adjustment
T1 Post	×	○	×	×	×	×	×	T1 Post	Envelope Adjustment
T4 Post	×	×	×	○	×	×	×	T4 Post Arm Nut	Free Limit
4-5-9. REV Tape Pass Limit Confirmation									
S5 Post	×	○	○	○	×	×	×	S5 Post	Lower Limit
S4 (Tension) Post	×	○	○	○	×	×	×	S4 (Tension) Post	Lower Limit
S1 Post	×	○	×	×	×	×	×	S1 Post	Envelope Adjustment
T1 Post	×	○	○	○	×	×	×	T1 Post	Envelope Adjustment
T4 Post	×	○	○	○	×	×	×	T4 Post Arm Nut	Free Limit
4-5-10. FF / REW Tape Pass Limit Confirmation									
S5 Post	×	○	○	○	×	×	×	S5 Post	Lower Limit
S4 (Tension) Post	×	×	○	○	×	×	×	S4 (Tension) Post	Lower Limit
S1 Post	×	○	×	×	×	×	×	S1 Post	Envelope Adjustment
T1 Post	×	○	○	○	×	×	×	T1 Post	Envelope Adjustment
T4 Post	×	○	○	○	×	×	×	T4 Post Arm Nut	Free Limit
○ : means acceptable ×									
       A : Curl B : Upper C : Free D : Lower E : Curl F : Bend G : Drop									

Fig. M-8

4-5-2. Envelope Waveform Adjustment

<Pre-Adjustment>

1. Connect the "Tatsujin Kit" as shown in Fig. 2-5 (Section 1).
Then starts the RF / VITERBI Adjustment in the Video Section.
2. Connect the oscilloscope to "Envelope" and "GND" on the Measuring TP Board (VFK1409). Then playback the Alignment Tape (VFM3110EDS) and adjust S1 and T1 posts so that the envelope output is within following specification (Fig. M-9).
Use "HID1" as a trigger.
When the S1 and T1 posts are adjusted, first raise the post height and make small the entrance and exit side of the envelope, then down the post until envelope becomes flat.
3. Adjust T1 post and makes exit side of the envelope flat then adjust S1 post.

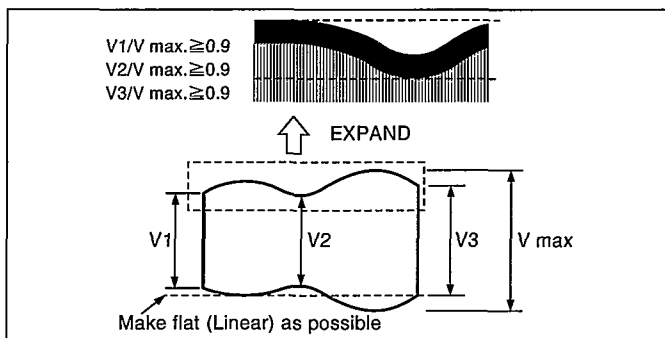


Fig. M-9

<Fine Adjustment>

1. Playback the self recorded tape and readjust S1 and T1 posts so that the BER counter number becomes the minimum.
2. After adjustment, unload the tape then loading the tape. Then confirm the waveform style and BER counter number is minimized.

4-5-3. PG Adjustment

Since the adjustment procedure for "PG Adjustment" is supported only "Tatsujin Kit", refer to "Tatsujin" software.

4-5-4. Confirmation of Envelope Waveform in REV, REW and FF mode

1. Connect the "Tatsujin Kit" as shown in Fig. 2-5 (Section 1).
2. Connect the oscilloscope to "Envelope" and "GND" on the Measuring TP Board (VFK1409).
3. Confirm the Envelope Waveform signal is in the specification in the REV, REW and FF mode as shown in Fig. M-10.
4. If it is out of specification, after adjusting the "4-5-6. S4 Tension Post Height Adjustment", confirm this "Envelope Waveform in REV, REW and FF mode" again.

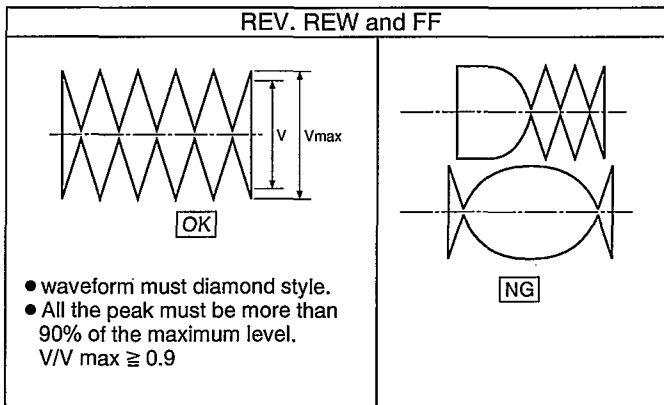


Fig. M-10

4-5-5. Confirmation of Envelope Waveform at the beginning of track

1. Observe the Envelope Waveform signal by oscilloscope and confirm the envelope signal is in the specification in the transition from FF to Play, from REW to Play, from REV to Play and from Loading completion to Play.
2. If it is out of specification, after adjusting the "4-5-6. S4 Tension Post Height Adjustment", confirm this "Envelope Waveform at beginning of track" again.

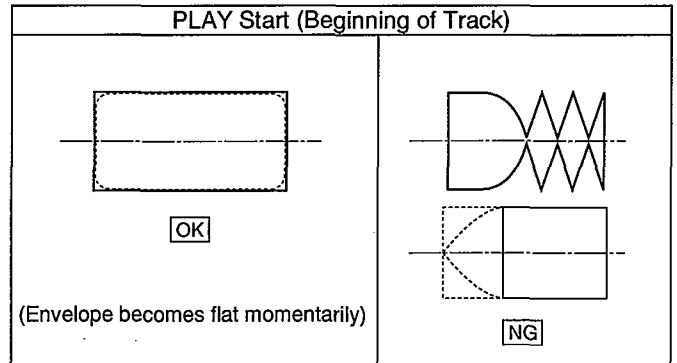


Fig. M-11

4-5-6. S4 Tension Post Height Adjustment

Note :

This adjustment should be done when the "4-5-2. Envelope Waveform Adj.", "4-5-4. Confirmation of Envelope in REV, REW and FF mode" or "4-5-5. Confirmation of Envelope Waveform at the beginning of Track" can not be achieved the specification.

1. Rotate the S4 Tension Post height 90 degrees counterclockwise from lower limit position.
2. Adjust S1 and T1 post height adjustment again. Refer to the "4-5-2. Envelope Waveform Adjustment".
3. Confirm the "Play Start Envelope Waveform". Refer to the "4-5-5. Confirmation of Envelope Waveform at the beginning of Track".
4. If it is not in the specification, repeat item 1 to 3. The maximum rotation angle is 360 degrees.
5. Even the height is still out of specification, confirm the "4-4. T4, S4 and S5 Post Height Pre-Adjustment".

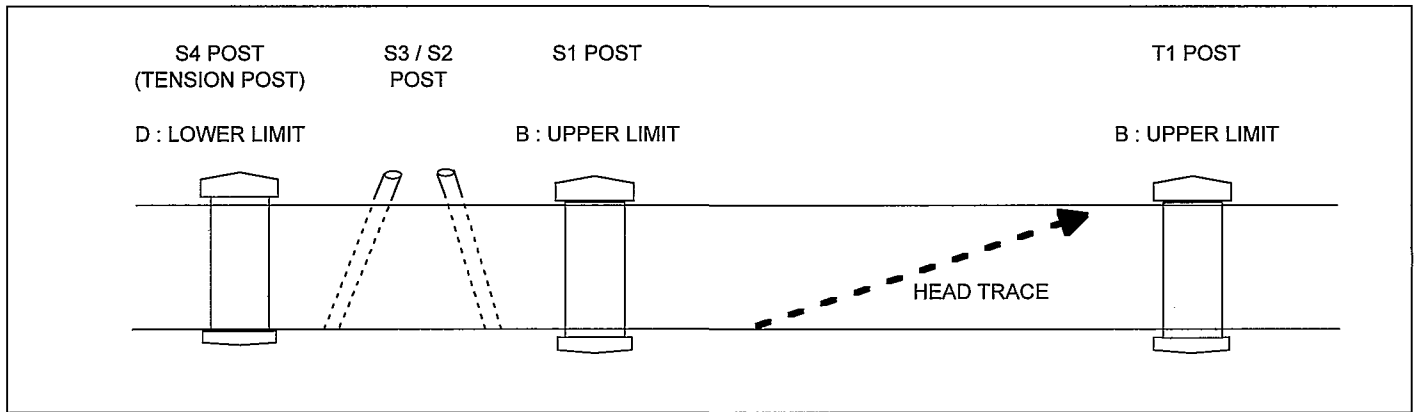


Fig. M-12

4-5-7. REV Tape Pass Limit Adjustment

1. Place unit into REV mode, and adjust T4 Post so that the lower limit touches the tape.
2. Confirm the tape pass limit of each post as shown in Fig. M-8.
3. This adjustment must be done after "4-5-2. Envelope Waveform Adjustment".

4-5-8. Play Tape Pass Limit Confirmation

1. Place the unit into Play mode, and confirm the each post limit is in the specification as shown in Fig. M-8.
2. This adjustment must be done after "4-5-2. Envelope Waveform Adjustment".
3. Regarding T4 Post, confirm and adjust this confirmation alternately with "4-5-9. REV Tape Pass Limit Confirmation".
4. Confirm the tape pass limit for both L and S cassettes.

4-5-9. REV Tape Pass Limit Confirmation

1. Place the unit into REV mode, and confirm the each post limit is in the specification as shown in Fig. M-8.
2. This adjustment must be done after "4-5-2. Envelope Waveform Adjustment".
3. This adjustment should be done alternately with "4-5-8. Play Tape Pass Limit Confirmation".
4. Confirm the tape pass limit for both L and S cassettes.

4-5-10. FF, REW Tape Pass Limit Confirmation

1. Place the unit into FF and REW mode, and confirm the each post limit is in the specification as shown in Fig. M-8.
2. This adjustment must be done after "4-5-2. Envelope Waveform Adjustment".
3. Confirm the tape pass limit for both L and S cassettes.

4-6. Cap. Tilt Adjustment

1. Remove the Pinch Solenoid and Pinch Arm.
2. Loosen the adjustment screw (a) and set the Cap. Tilt Adj. Plate (VFK1469) between Capstan Motor and Mechanism Caassis.
3. Turn the adjustment screw (a) to clockwise direction slowly until the Capstan Motor just touch to the Cap. Tilt Adj. Plate as shown in Fig. M-13.

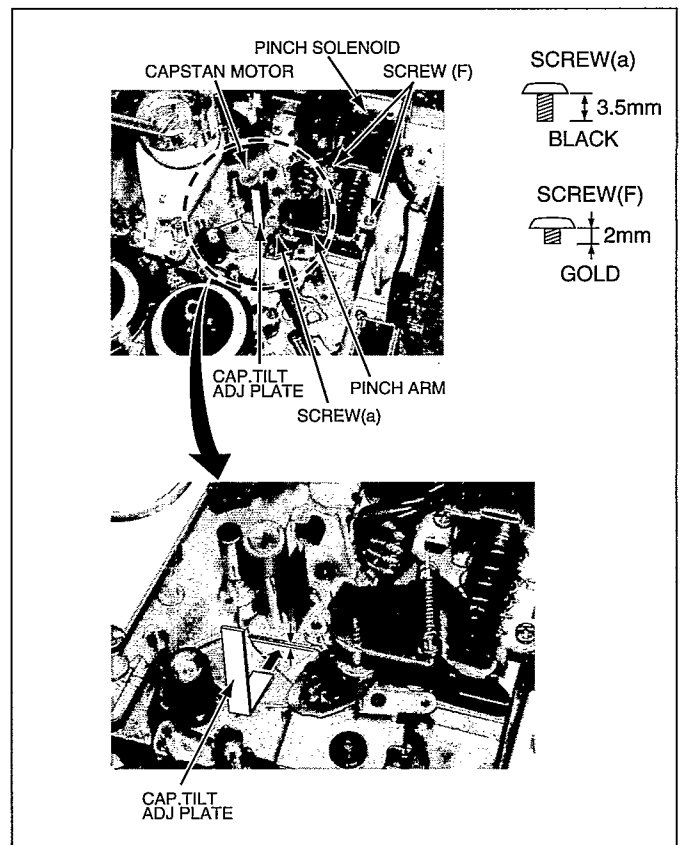


Fig. M-13

5. Electrical Adjustment

Since the "PG Shifter Adj." and Video adjustments except "EE Y Level Adj." are required the "Tatsujin Kit", these adjustment procedures are described on "Tatsujin" software.

1. Servo Circuit

1-1. T and S Reel Offset Adj.

[Take up Reel Offset Adj.]			
TP	ADJ	MODE	Jig & Tool
TP2701 (T ET)	VR2702 (T VR)	Cassette	
TP2702 (T GND)		Down (Stop)	
TAPE	M. EQ	SPEC.	
Mini DV	D.V.M.	0 +/- 1mV	

[T Reel Offset Adj.]

1. Set a cassette on the tray and make the cassette down condition.
2. Connect the Digital Volt Meter between TP2701 (T ET) and TP2702 (T GND).
3. Adjust VR2702 (T VR) so that the voltage becomes 0 +/- 1mV.

[Supply Reel Offset Adj.]			
TP	ADJ	MODE	Jig & Tool
TP2703 (S ET)	VR2701 (S VR)	Cassette	
TP2704 (S GND)		Down (Stop)	
TAPE	M. EQ	SPEC.	
Mini DV	D.V.M.	0 +/- 1mV	

[S Reel Offset Adj.]

1. Set a cassette on the tray and make the cassette down condition.
2. Connect the Digital Volt Meter between TP2703 (S ET) and TP2704 (S GND).
3. Adjust VR2701 (S VR) so that the voltage becomes 0 +/- 1mV.

Tension Adjustment

When this adjustment is done, melt the grew of the adjustment screws as shown in Fig. E-6

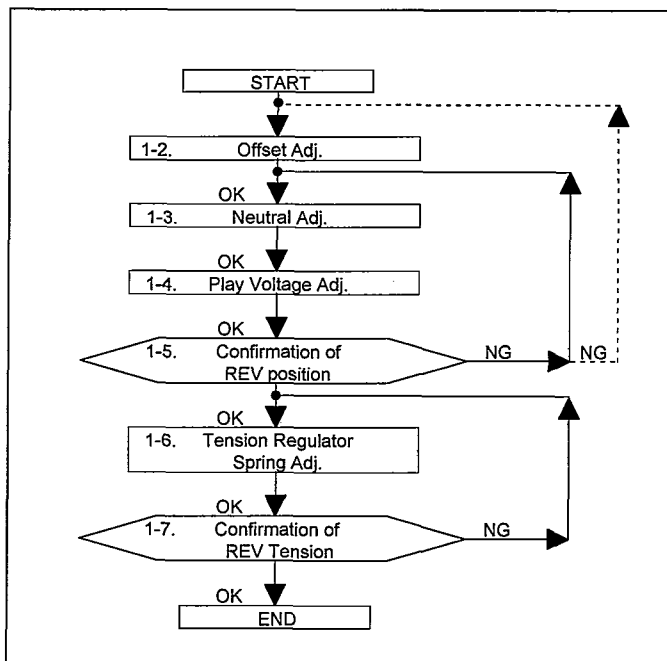


Fig. E-1

1-2. Tension Arm Offset Adj.

TP	ADJ	MODE	Jig & Tool
TP6502 (TP2)	VR6501 (TEN SET)	Cassette	
TP6503 (TP3)		Down (Stop)	
TAPE	M. EQ	SPEC.	
Mini DV	D.V.M.	0 +/- 0.03V	

1. Set a cassette on the tray and make the cassette down condition.
2. Connect the Digital Volt Meter between TP6502 (TP2) and TP6503 (TP3).
3. Adjust VR6501 (TEN SET) so that the voltage becomes 0 +/- 0.03V.

1-3. Tension Arm Neutral Adj.

TP	ADJ	MODE	Jig & Tool
TP6502 (TP2)	Tension Regulator Base	Loading Condition (Service Mode 7)	VFK1208 (Black with Hole)
TP6503 (TP3)			
TAPE	M. EQ	SPEC.	
	D.V.M.	0 +/- 0.06V	

1. Remove the Tray Unit.
2. Set the VFK1208 to the Supply Post Base (A) as shown in Fig. E-2.
3. Place the unit into the no tape-loading mode by using Service Mode described as follows.
 1. Press the "FF" and "Eject" buttons simultaneously in eight times to set the Service Mode No. 7.
 2. Set the mechanism to loading condition by pressing the "Play" button.

Play button : Loading direction
Stop button : Unloading direction
4. Connect the Digital Volt Meter between TP6502 (TP2) and TP6503 (TP3).
5. Loosen screw (A).
6. Adjust the Tension Regulator Base so that the voltage becomes 0 +/- 0.06V by moving the (D) portion with tweezers that are not magnetized.
7. Then tighten the screw (A).

Caution

Don't touch the magnetized driver or tweezers to S-Reel FG magnet portion, when the "D" portion is adjusting.

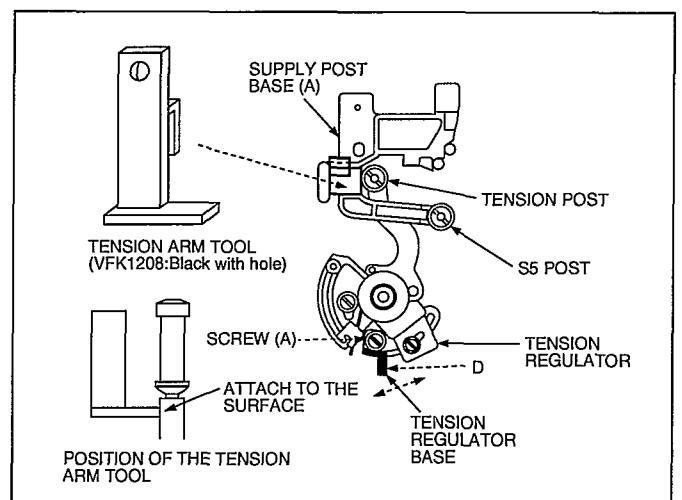


Fig. E-2

1-4. Tension Arm Play Voltage Adj.

TP	ADJ	MODE	Jig & Tool
TP6502 (TP2) TP6503 (TP3)	VR6502 (TEN GAIN)	Loading Condition (Service Mode 7)	VFK1156 (Black)
TAPE	M. EQ	SPEC.	
—	D.V.M.	0.92 +/- 0.03V	

1. Remove the Tray Unit.
2. Set the VFK1156 to the Supply Post Base (A) as shown in Fig. E-3.
3. Place the unit into the no tape-loading mode by using Service Mode.
4. Connect the Digital Volt Meter between TP6502 (TP2) and TP6503 (TP3).
5. Adjust the VR6502 (TEN GAIN) so that the voltage becomes 0.92 +/- 0.03V.

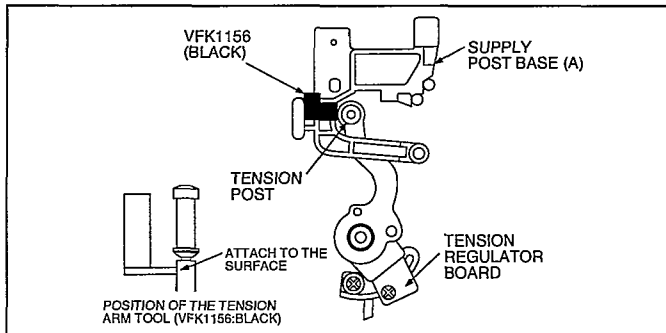


Fig. E-3

1-5. Confirmation of REV position of the Tension Arm

TP	ADJ	MODE	Jig & Tool
TP6502 (TP2) TP6503 (TP3)	—	Loading Condition (Service Mode 7)	VFK1155 (White)
TAPE	M. EQ	SPEC.	
—	D.V.M.	-0.92 +/- 0.2V	

1. Remove the Tray Unit.
2. Set the VFK1155 to the Supply Post Base (A) as shown in Fig. E-4.
3. Place the unit into the no tape loading mode by using Service Mode.
4. Connect the Digital Volt Meter between TP6502 (TP2) and TP6503 (TP3).
5. Confirm the voltage is in the specification.
6. If it is out of specification, readjust "1-3. Tension Arm Neutral Adj." and "1-4. Tension Arm Play Voltage Adj."
7. If it is still out of specification, replace the Tension Post unit and readjust the Tension Arm Adjustment from "1-2. Tension Arm Offset Adj."

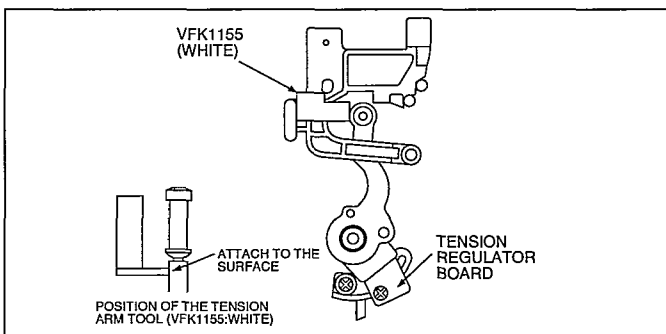


Fig. E-4

1-6. Tension Regulator Spring Adj.

TP	ADJ	MODE	Jig & Tool
TP6502 (TP2) TP6503 (TP3) Tension Post	Tension Regulator Spring Position	Loading Condition (Service Mode 7)	VFK1188 (Dial Tension Gauge)
TAPE	M. EQ	SPEC.	
—	D.V.M. Dial Tension Gauge	0.92 V (Play Position) 11 +/- 1gf	

1. Remove the Tray Unit.
2. Place the unit into the no tape loading mode by using Service Mode.
3. Connect the Digital Volt Meter between TP6502 (TP2) and TP6503 (TP3).
4. When pressing the R portion of the Tension Post in arrow direction by Dial Tension Gauge (VFK1188) until the voltage becomes 0.92V (Play Position) as shown in Fig. E-5, loosen screw (C) and adjust the Tension Regulator Spring position (Hook B) so that the tension is in the specification 11 +/- 1gf.
5. Tighten screw (C).

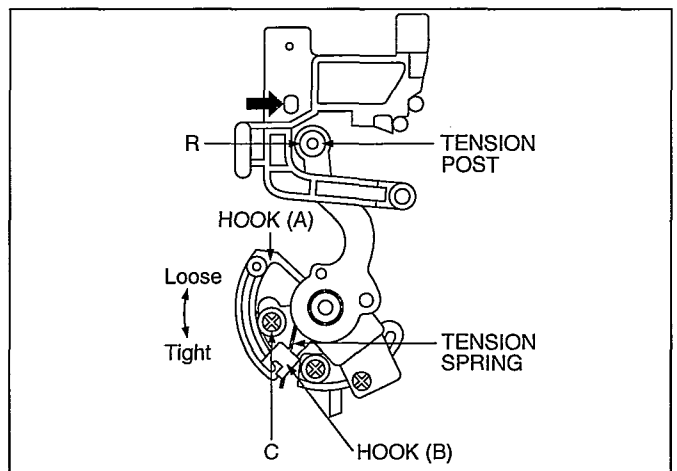


Fig. E-5

1-7. Confirmation of REV Tension

TP	ADJ	MODE	Jig & Tool
TP6502 (TP2) TP6503 (TP3) Tension Post	Tension Regulator Spring Position	Loading Condition (Service Mode 7)	VFK1188 (Dial Tension Gauge)
TAPE	M. EQ	SPEC.	
—	D.V.M. Dial Tension Gauge	-0.92 V (REV Position) 18 +/- 2gf	

1. Remove the Tray Unit.
2. Place the unit into the no tape loading mode by using Service Mode.
3. Connect the Digital Volt Meter between TP6502 (TP2) and TP6503 (TP3).
4. When pressing the R portion of the Tension Post in arrow direction by Dial Tension Gauge (VFK1188) until the voltage becomes -0.92V (REV Position) as shown in Fig. E-5, confirm the tension is in the specification 18 +/- 2gf.
5. If it is not, adjust "1-6. Tension Regulator Spring Adj." again.
6. Grease the screw A, B and C after Tension Arm Adjustment. The grease quantity at B portion is half of A and C portions as shown in Fig. E-6.

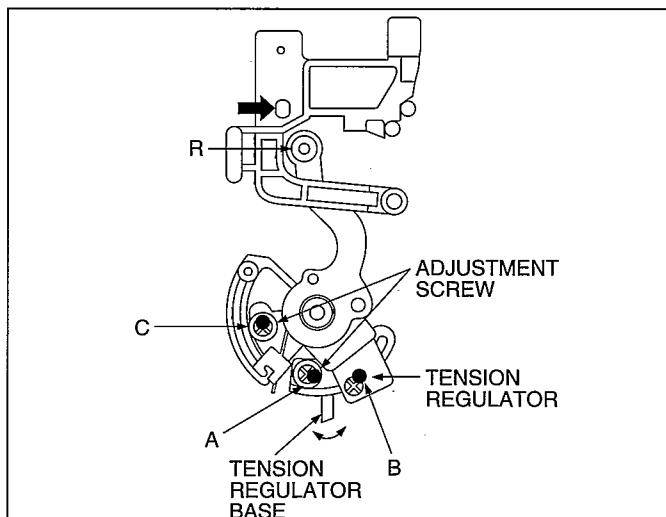


Fig. E-6

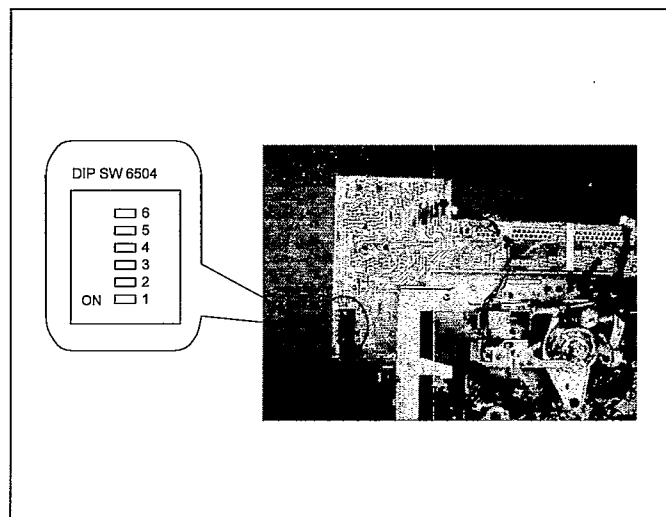


Fig. E-7

1-8. Supply and Take-up Photo Sensor Sensitivity Adj.

[Supply Photo Sensor Adj.]

TP	ADJ	MODE	Jig & Tool
TP6501 TP6504 (S Photo)	DIP SW (S6504)	Stop	VFK1426 (6%) VFK1217 (49%) Sensor Cassette
TAPE	M. EQ	SPEC.	
Sensor Cassette	D.V.M.	0.5 - 1.0 V Refer to Fig. E-8	

[Supply Photo Sensor Adj.]

1. Set all of the DIP SW (S6504) to ON.
2. Insert the 6% Sensor Cassette VFK1426.
3. Connect the Digital Volt Meter between TP6501 and TP6504 (S Photo).
4. Adjust the DIP SW as shown in Fig. E-8.
5. Confirm that the tape is not loaded when installing the 49% Sensor Cassette VFK1217.
6. If the tape is loaded when install the 49% Sensor Cassette readjust this adjustment.

[Take-up Photo Sensor Adj.]

TP	ADJ	MODE	Jig & Tool
TP6501 TP6505 (T Photo)	DIP SW (S6504)	Stop	VFK1426 (6%) VFK1217 (49%) Sensor Cassette
TAPE	M. EQ	SPEC.	
Sensor Cassette	D.V.M.	0.5 - 1.0 V Refer to Fig. E-9	

[Take-up Photo Sensor Adj.]

1. Set all of the DIP SW (S6504) to ON.
2. Insert the 6% Sensor Cassette VFK1426.
3. Connect the Digital Volt Meter between TP6501 and TP6505 (T Photo).
4. Adjust the DIP SW as shown in Fig. E-9
5. Confirm that the tape is not loaded when installing the 49% Sensor Cassette VFK1217.
6. If the tape is loaded when install the 49% Sensor Cassette, readjust this adjustment.

[Supply Sensor]

TP6501 - TP6504 VOLTAGE	DIP SW (S6504) ADJUSTMENT PROCEDURES	RESULT OF THE ADJUSTMENT	REMARKS
When the voltage is 0 - 0.5 V.	1. Change only SW 6 to OFF 2. Change only SW 5 to OFF 3. Change SW 5 and 6 to OFF 4. Change only SW 4 to OFF 5. Change SW 4 and 6 to OFF 6. Change SW 4 and 5 to OFF	If the voltage is not 0.5 - 1.0 V, proceed to the item 2. If the voltage is not 0.5 - 1.0 V, proceed to the item 3. If the voltage is not 0.5 - 1.0 V, proceed to the item 4. If the voltage is not 0.5 - 1.0 V, proceed to the item 5. If the voltage is not 0.5 - 1.0 V, proceed to the item 6.	If the voltage is in the specification (0.5 - 1.0 V), this adjustment is done.
When the voltage is 0.5 - 1.0 V.	This adjustment is not necessary.		
When the voltage is more that 1.0V.	NG Replace the Supply Photo Sensor. Then readjust this adjustment.		

Fig. E-8 Supply Photo Sensor Adj.

[Take-up Sensor]

TP6501 - TP6505 VOLTAGE	DIP SW (S6504) ADJUSTMENT PROCEDURES	RESULT OF THE ADJUSTMENT	REMARKS
When the voltage is 0 - 0.5 V.	1. Change only SW 1 to OFF 2. Change only SW 2 to OFF 3. Change SW 1 and 2 to OFF 4. Change only SW 3 to OFF 5. Change SW 1 and 3 to OFF 6. Change SW 2 and 3 to OFF	If the voltage is not 0.5 - 1.0 V, proceed to the item 2. If the voltage is not 0.5 - 1.0 V, proceed to the item 3. If the voltage is not 0.5 - 1.0 V, proceed to the item 4. If the voltage is not 0.5 - 1.0 V, proceed to the item 5. If the voltage is not 0.5 - 1.0 V, proceed to the item 6.	If the voltage is in the specification (0.5 - 1.0 V), this adjustment is done.
When the voltage is 0.5 - 1.0 V.	This adjustment is not necessary.		
When the voltage is more that 1.0V.	NG Replace the Take-up Photo Sensor. Then readjust this adjustment.		

Fig. E-9 Take-up Photo Sensor Adj.

2. Video Circuit

2-1. Phase Difference of Y/C Sepa. V Blanking Pulse Adj.

TP	ADJ	MODE	Input
TP30001 TP30005	VR30001	Stop (E-E)	Colour Bar Signal
TAPE	M. EQ	SPEC.	
—	Oscilloscope	Phase Difference T 24±0.5H	

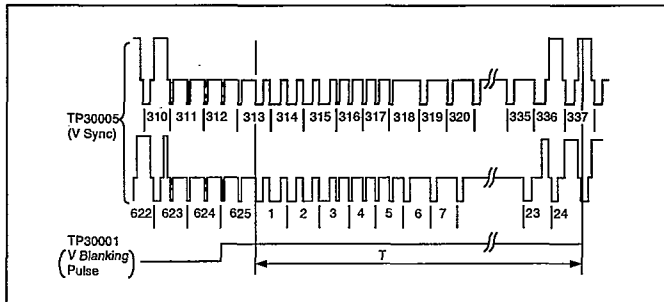


Fig. E-10

2-2. Phase Difference of Y/C Sepa. H blanking Pulse Adj.

TP	ADJ	MODE	Input
TP30004 TP30005	VR30003	Stop (E-E)	Colour Bar Signal
TAPE	M. EQ	SPEC.	
—	Oscilloscope	Phase Difference T=9.0±0.25μsec.	

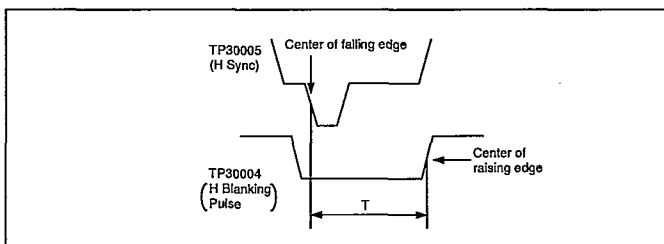


Fig. E-11

2-3. PAL Encoder Free Run Frequency Adj.

TP	ADJ	MODE	Input
TP30009 (TP30010 TP3007, 8)	VC30002	Free Run	—
TAPE	M. EQ	SPEC.	
—	Frequency Counter	Output Freq.= 4.433619MHz±50Hz	

1. Connect TP30010 to GND and put the unit into Free Run mode.
2. Apply 5V DC power to TP30007 and 2.6V DC to TP30008.

2-4.Edit OSD Colour Burst Clock Frequency Adj.

TP	ADJ	MODE	Input
TP30003 (TP30002)	VC30001	Stop (E-E)	—
TAPE	M. EQ	SPEC.	
—	Frequency Counter	Output Freq.= 4.433619MHz±50Hz	

1. Connect TP30002 to GND.

2-5.Edit OSD dot Clock Frequency Adj.

TP	ADJ	MODE	Input
TP30013 (TP30002)	VC30003	Stop (E-E)	—
TAPE	M. EQ	SPEC.	
—	Frequency Counter	Output Frequency= 6.850MHz±50KHz	

1. Connect TP30002 to GND.

2-6.Phase Difference of Color CTL Burst Gate Pulse Adj.

TP	ADJ	MODE	Input
TP30011 TP30012	VR30004	Stop (E-E)	Colour Bar Signal
TAPE	M. EQ	SPEC.	
—	Oscilloscope	Phase Difference T=9.0±0.25μsec.	

1. Connect TP30002 to GND.

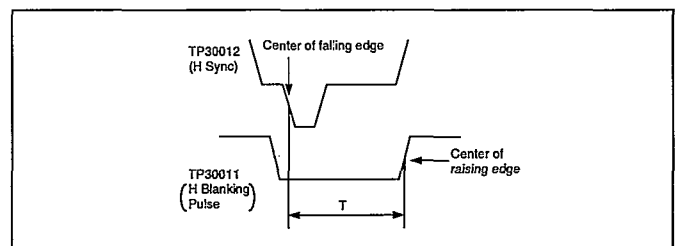


Fig. E-12

2-7.E-E Y Level Adj.

TP	ADJ	MODE	Input
TP3002 (I/O Pack)	VR30002 (Analog Y/C Pack)	Stop (E-E)	Colour Bar Signal
TAPE	M. EQ	SPEC.	
—	Oscilloscope	Y Level= 2.0±0.1Vp-p	

1. Terminate the VIDEO OUT at 75Ω.

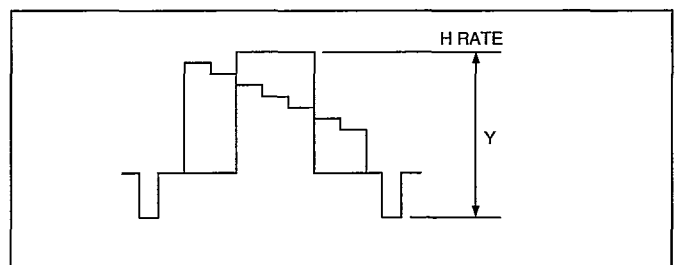


Fig. E-13

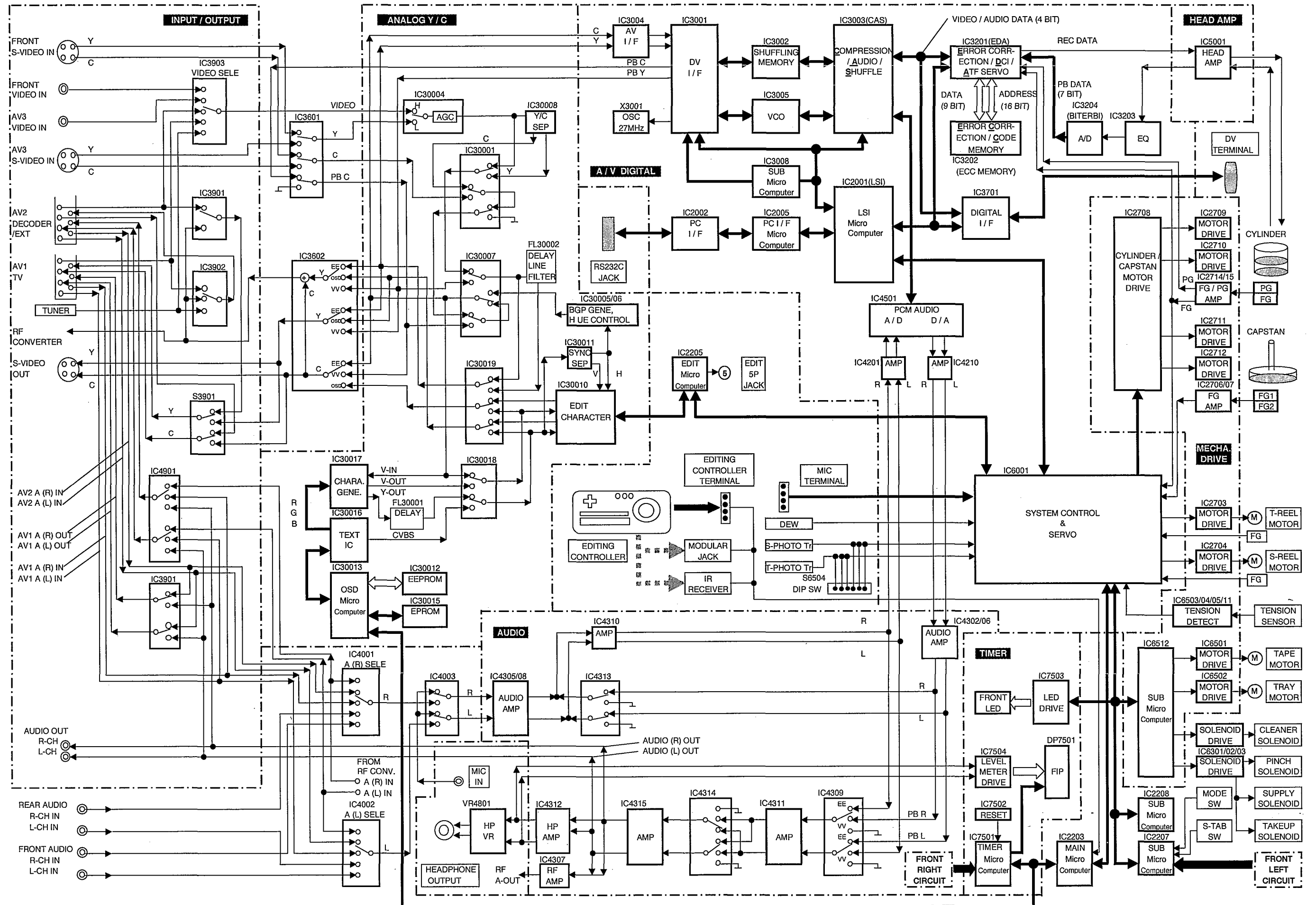
3. Audio Circuit

3-1. Level Meter Adj.

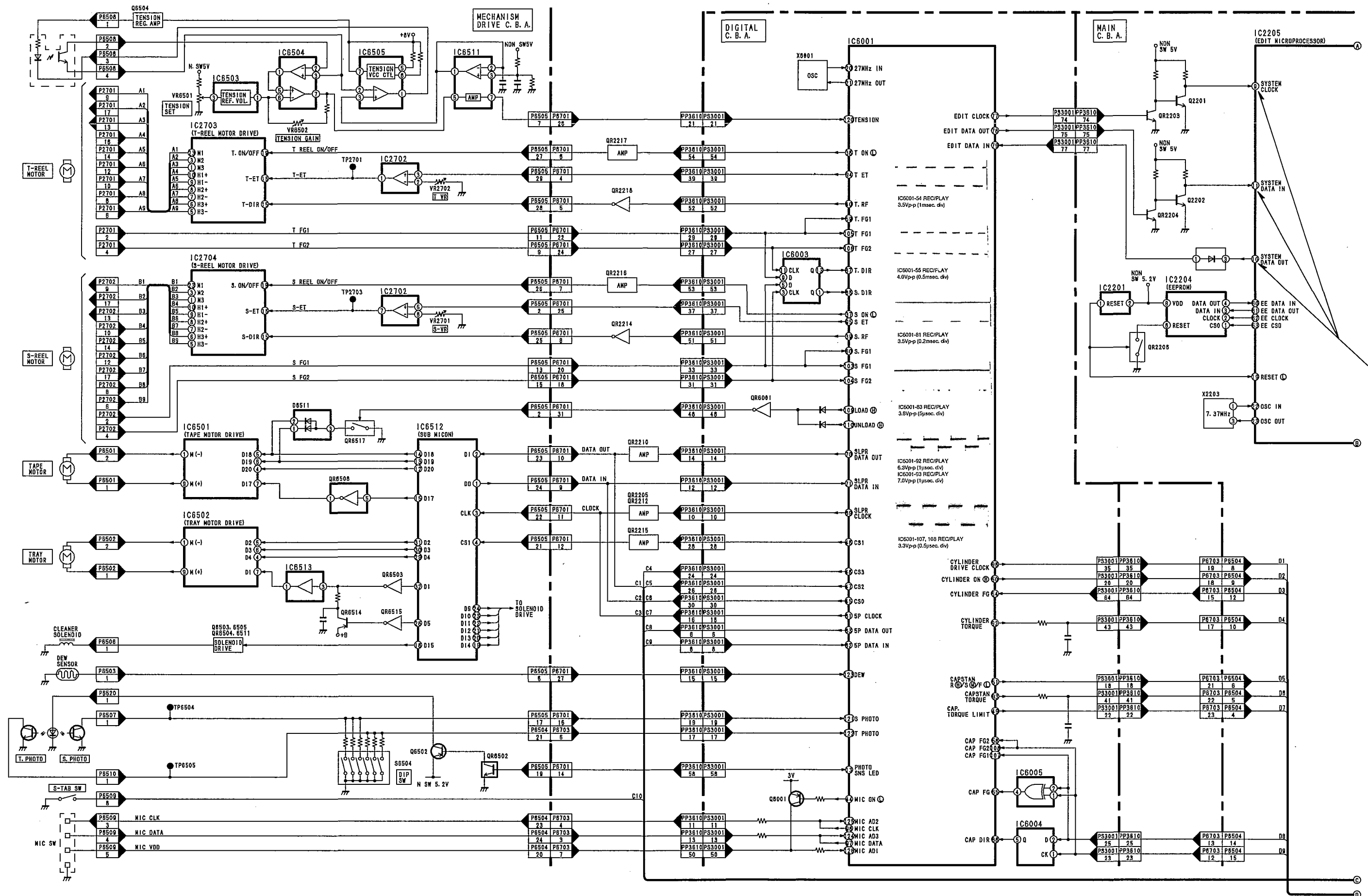
TP	ADJ	MODE	Input
Level Meter on the Front Panel	VR4004	Stop (E-E)	1 kHz, -6dB Audio Signal
TAPE	M. EQ	SPEC.	
—	—	0 [dB] Indicator on the Audio Level Meter just lights up.	

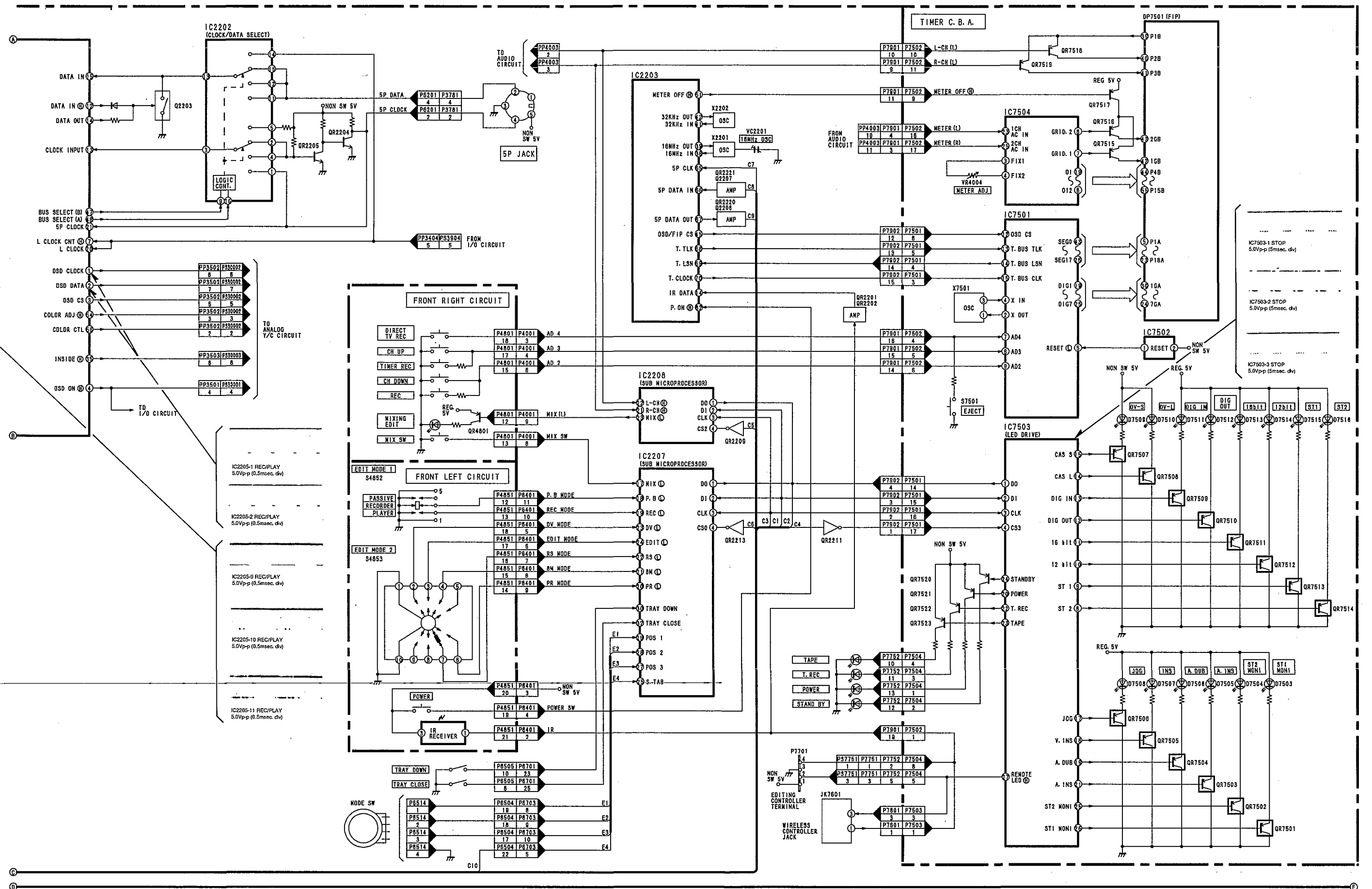
1. Set the Audio Rec Level Volume to center (click position : 5)
2. Set the output level of the Signal Generator to 1 kHz / -6dB and supply it to both Audio Input Line 1 terminals (L) and (R).
3. Adjust VR4004 until the 0dB of the Level Meter on the FIP just lights up.

3-2. OVERALL BLOCK DIAGRAM

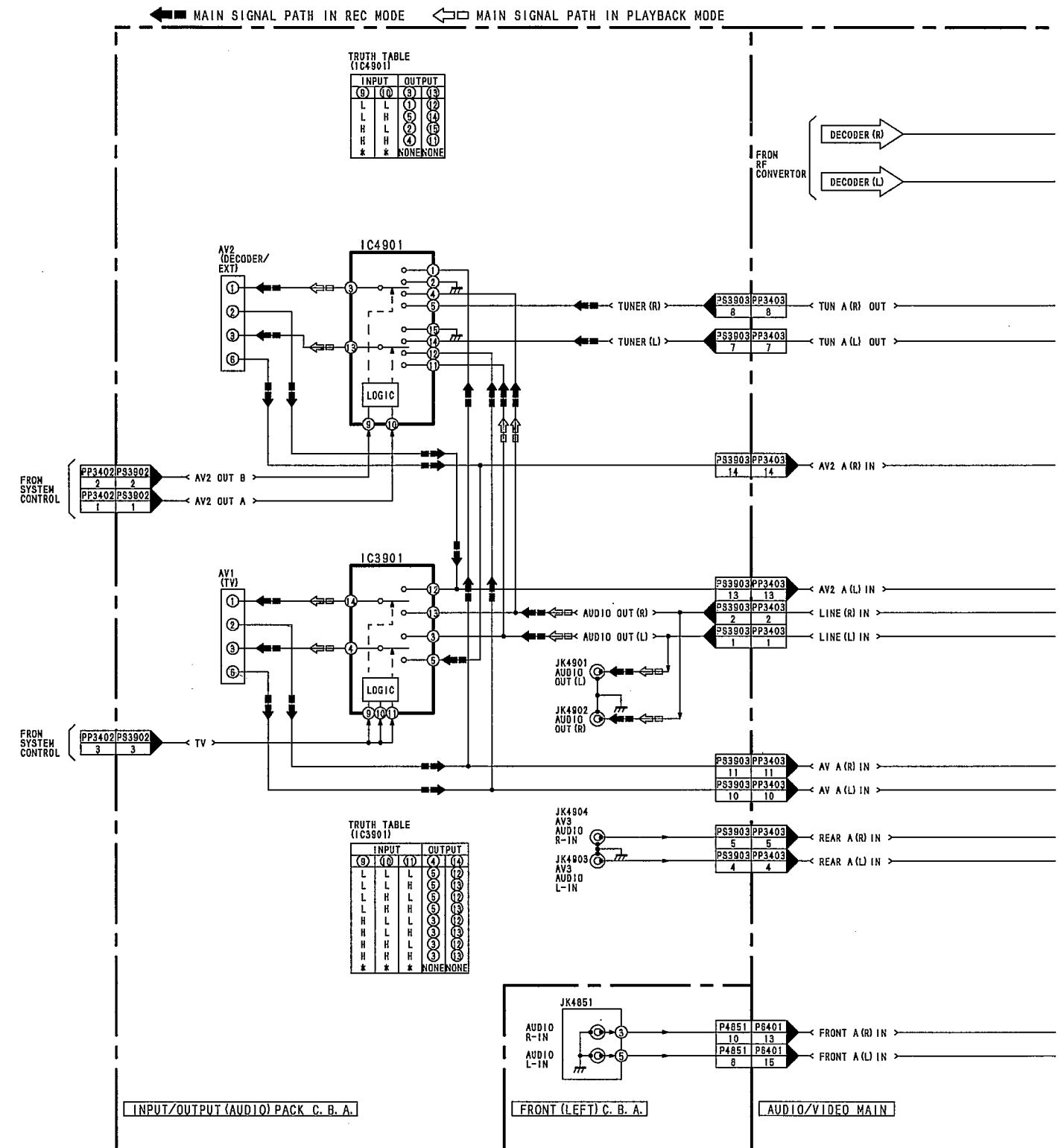
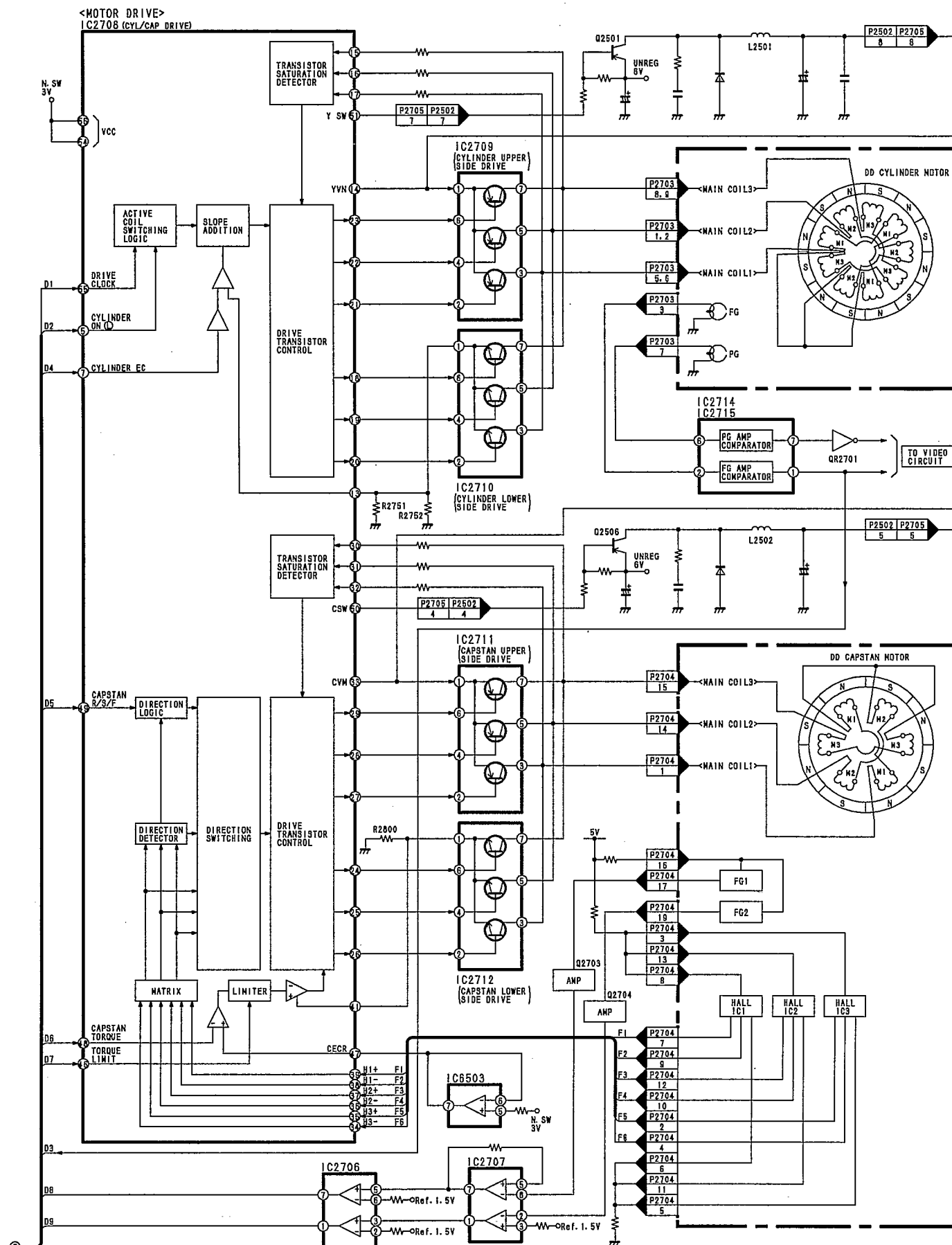


3-3. SYSTEM CONTROL & SERVO BLOCK DIAGRAM

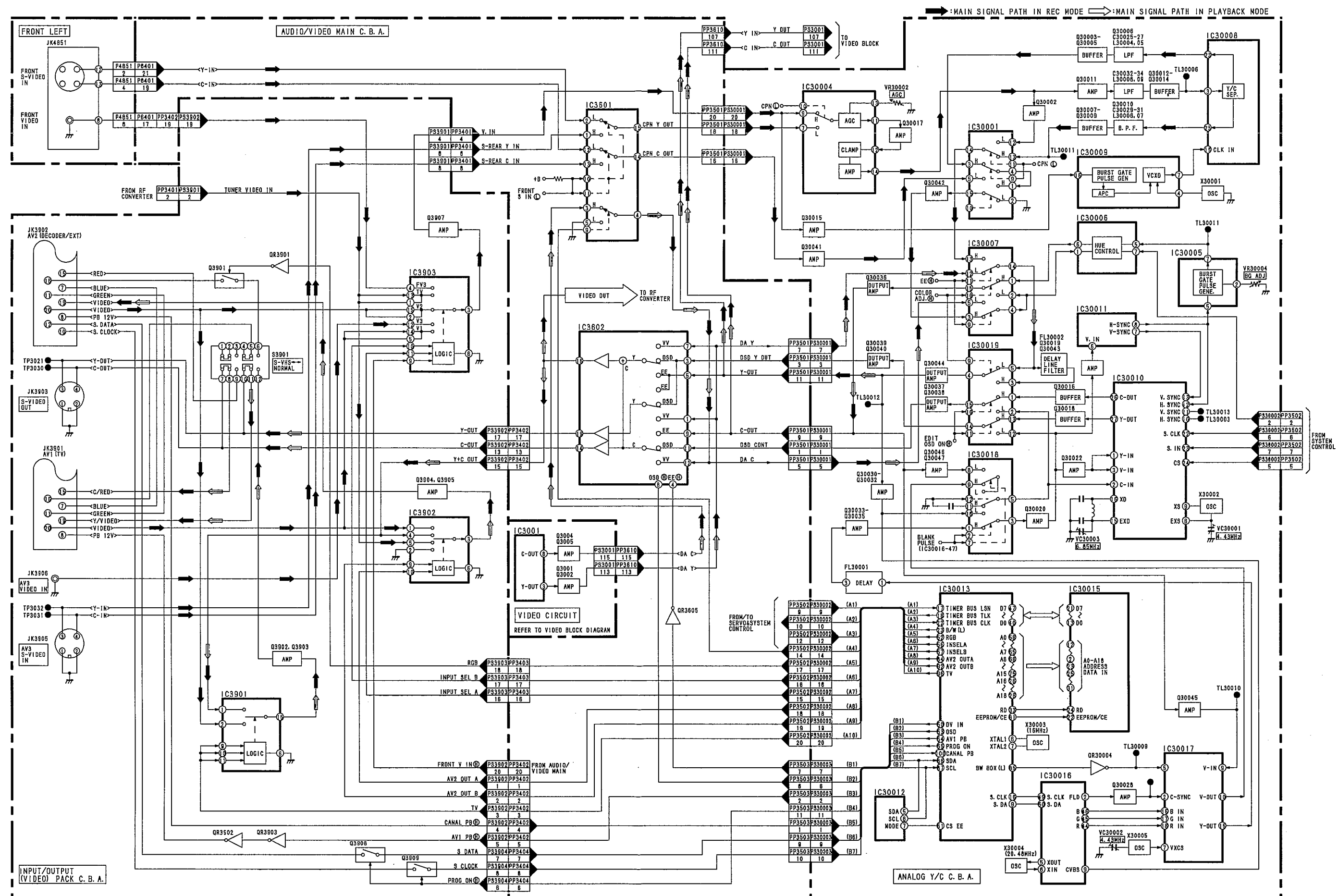




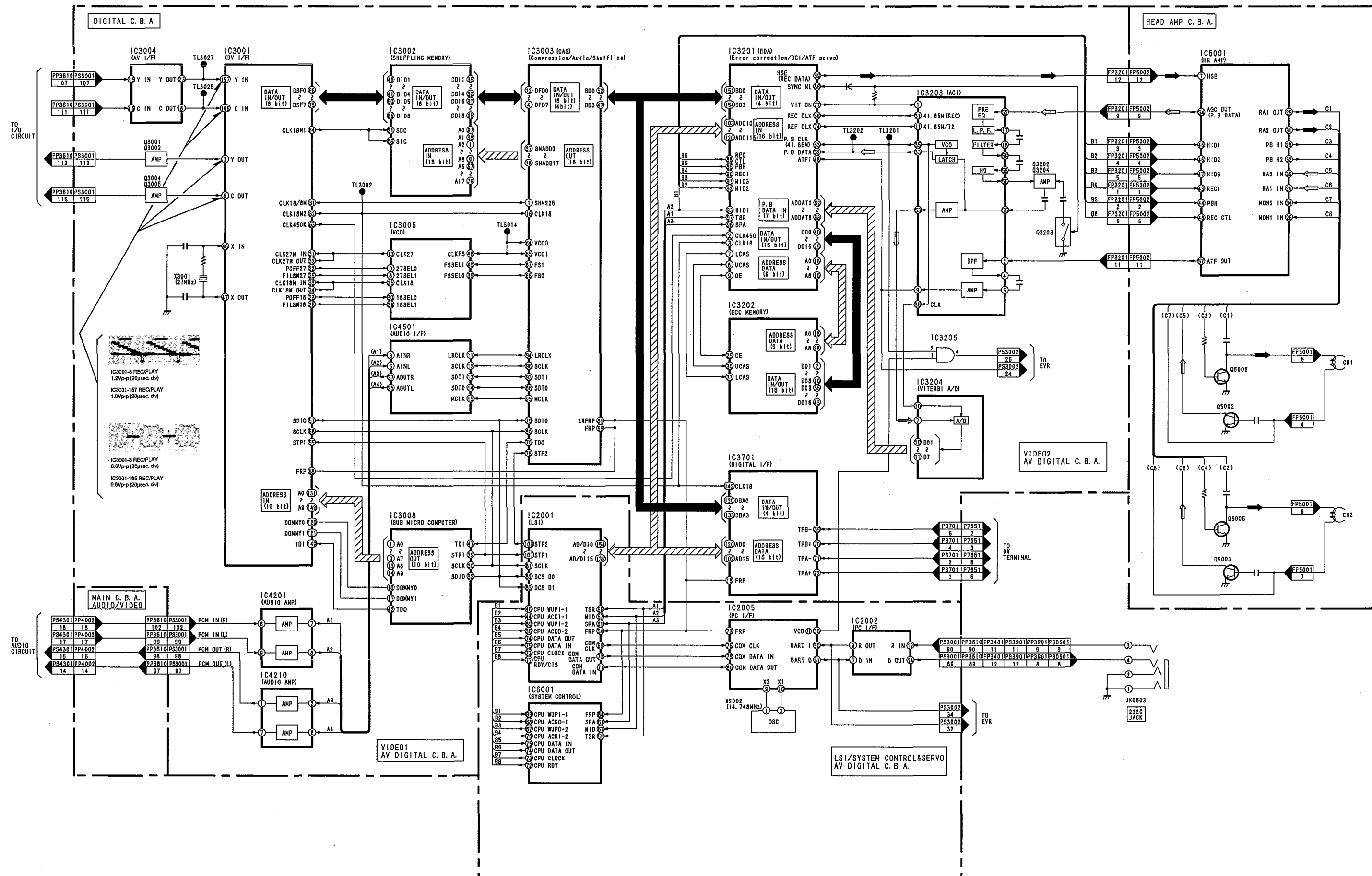
3-4. AUDIO BLOCK DIAGRAM



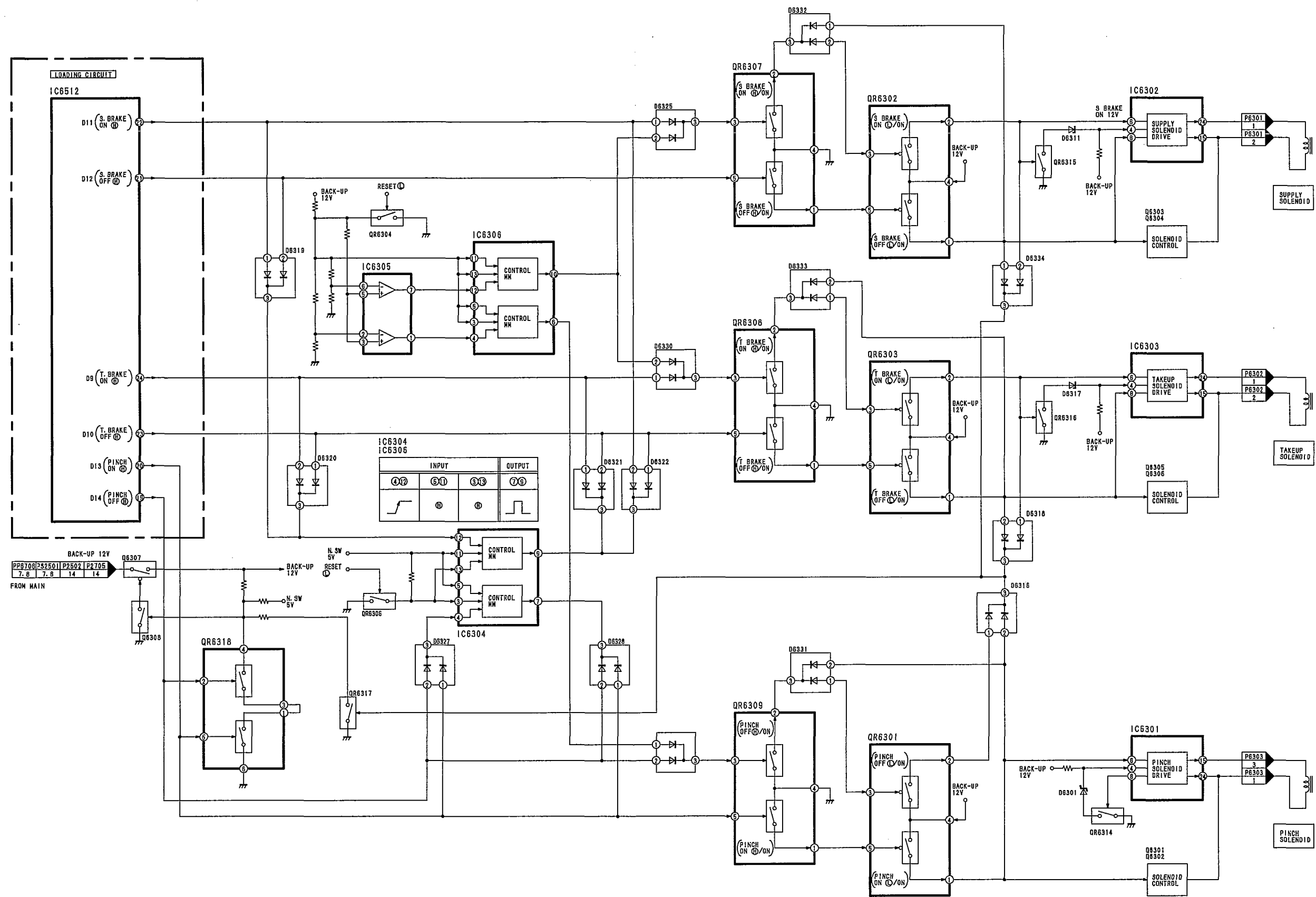
3-5. INPUT/OUTPUT BLOCK DIAGRAM



3-6. VIDEO BLOCK DIAGRAM

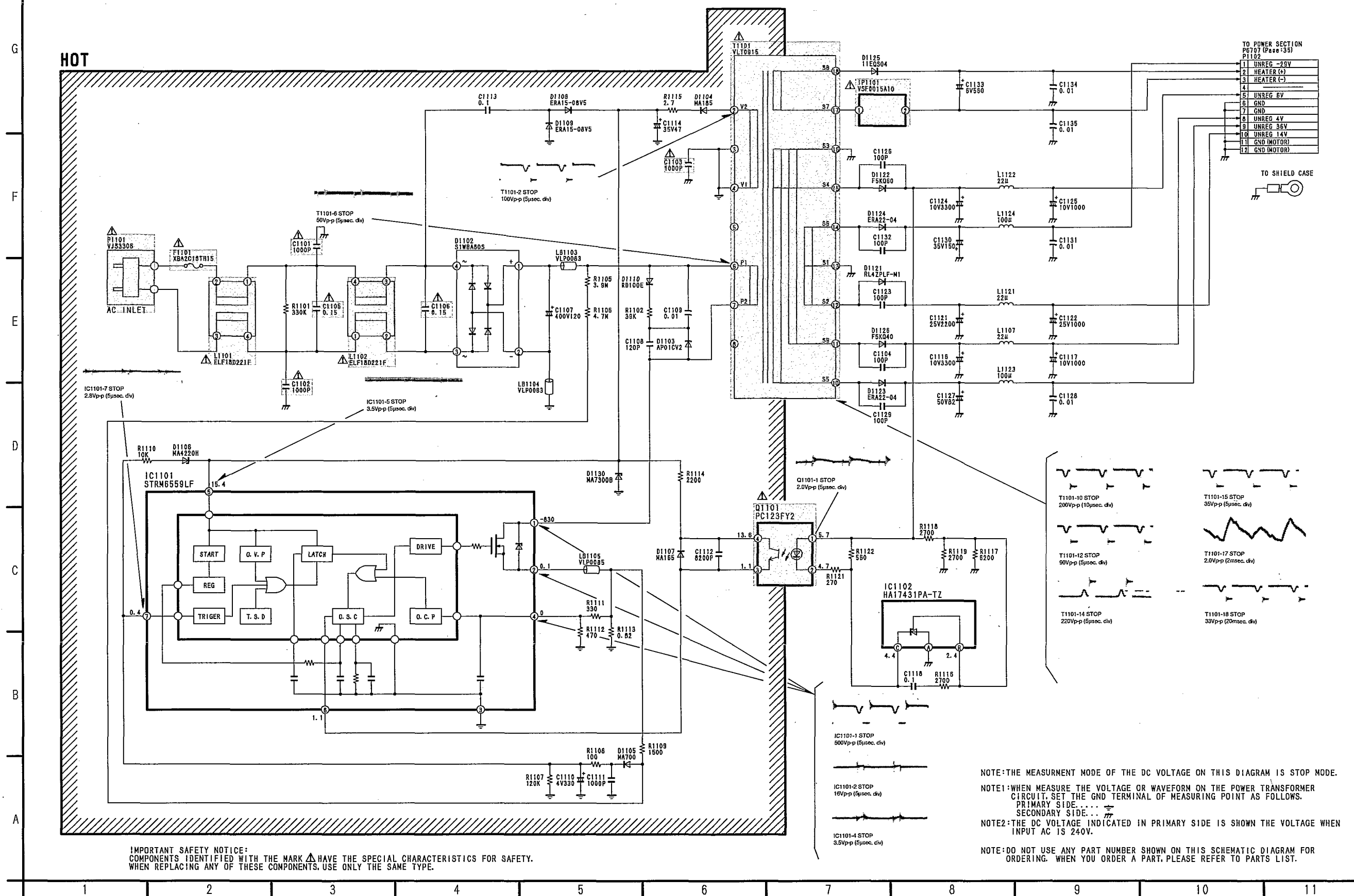


3-7. SOLENOID BLOCK DIAGRAM

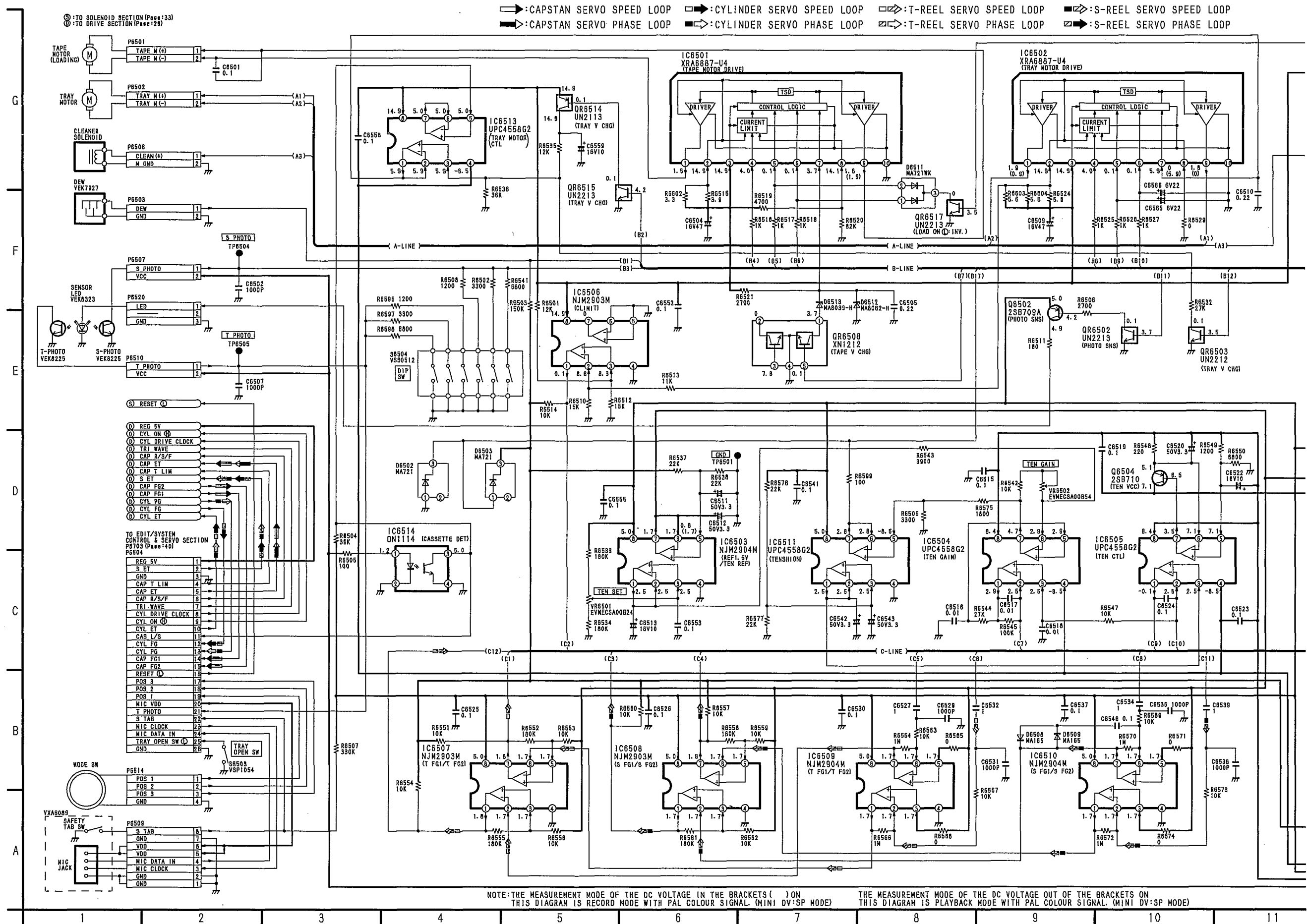


3-8. POWER SUPPLY SCHEMATIC DIAGRAM

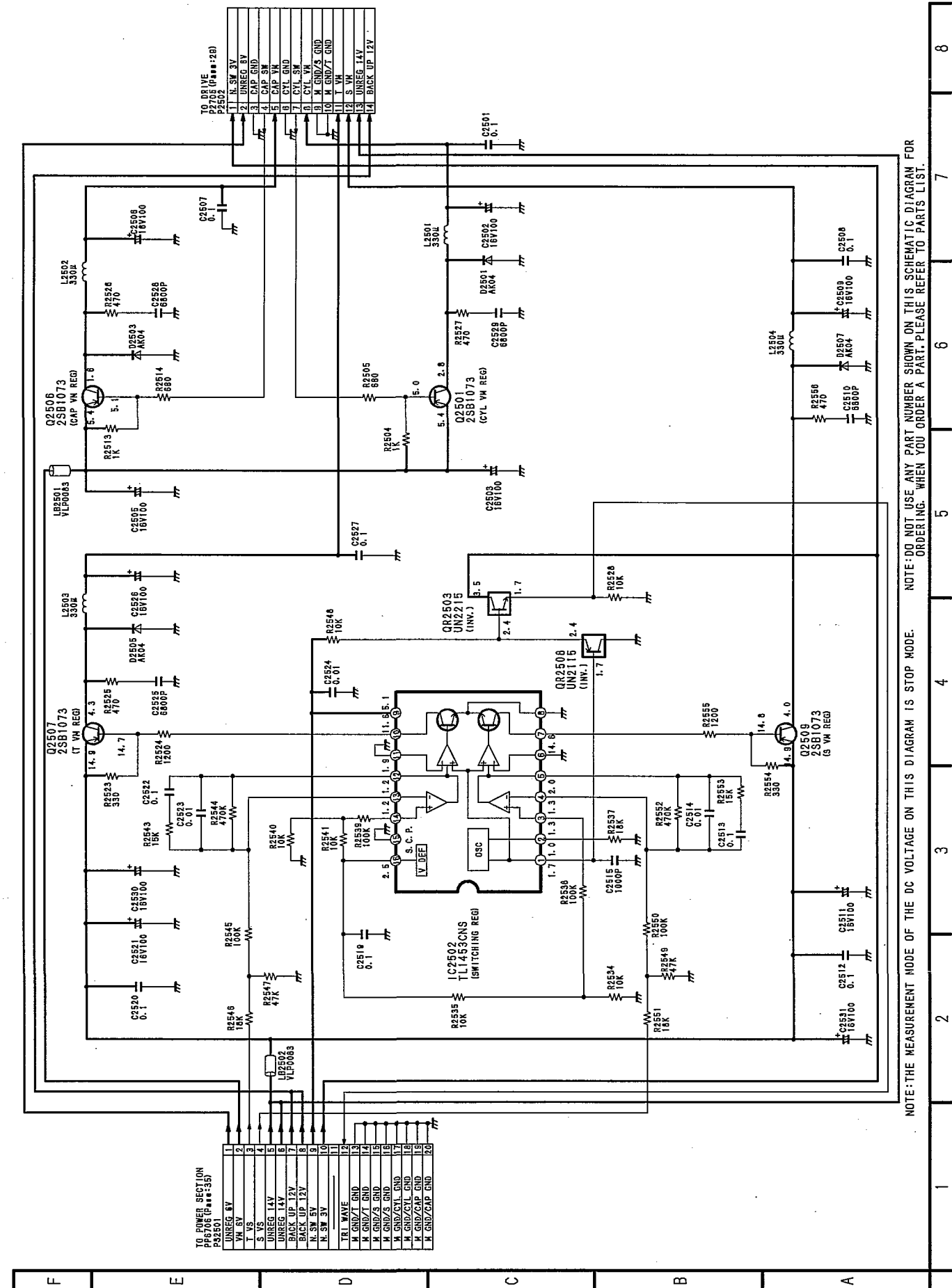
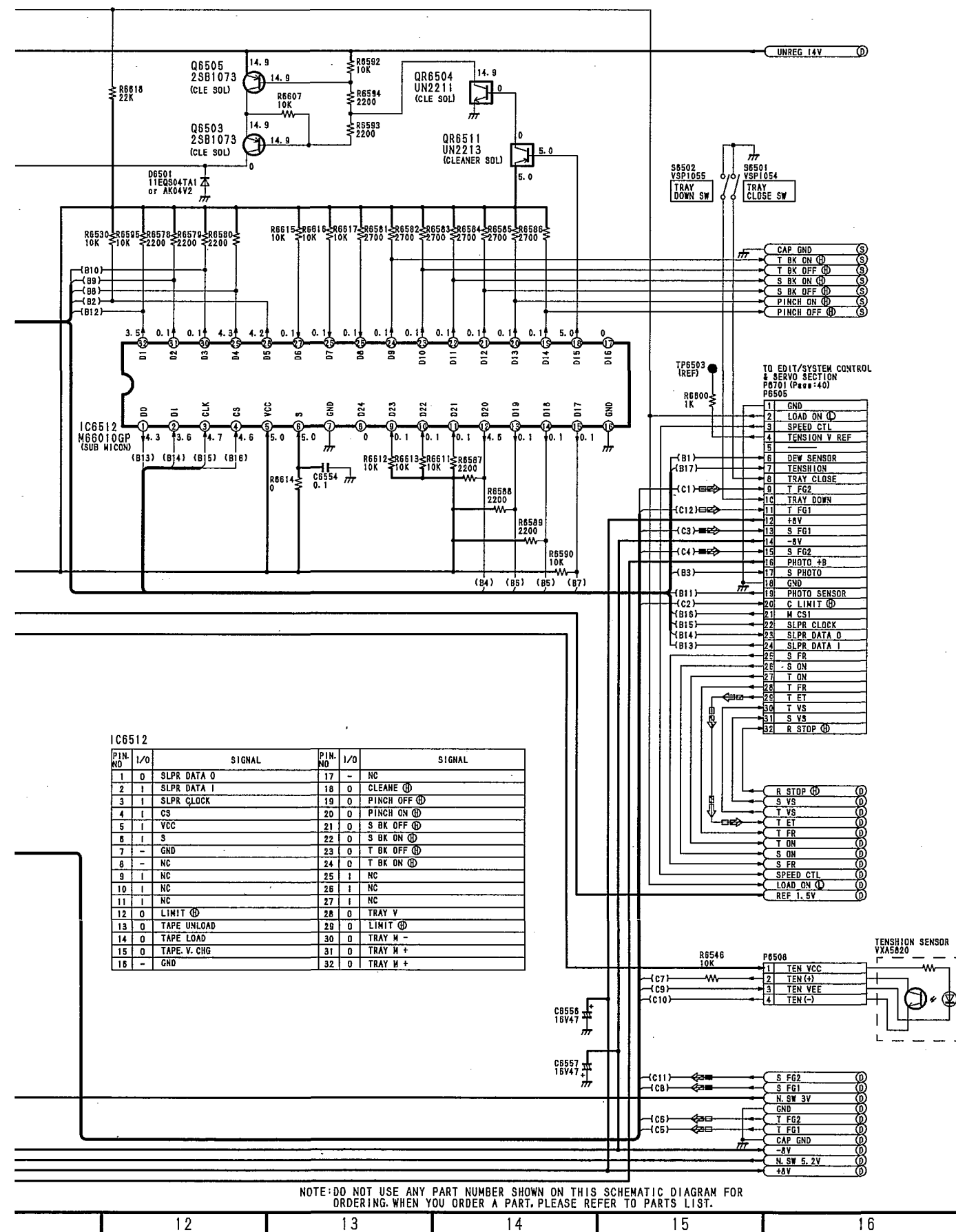
CAUTION THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT. PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.



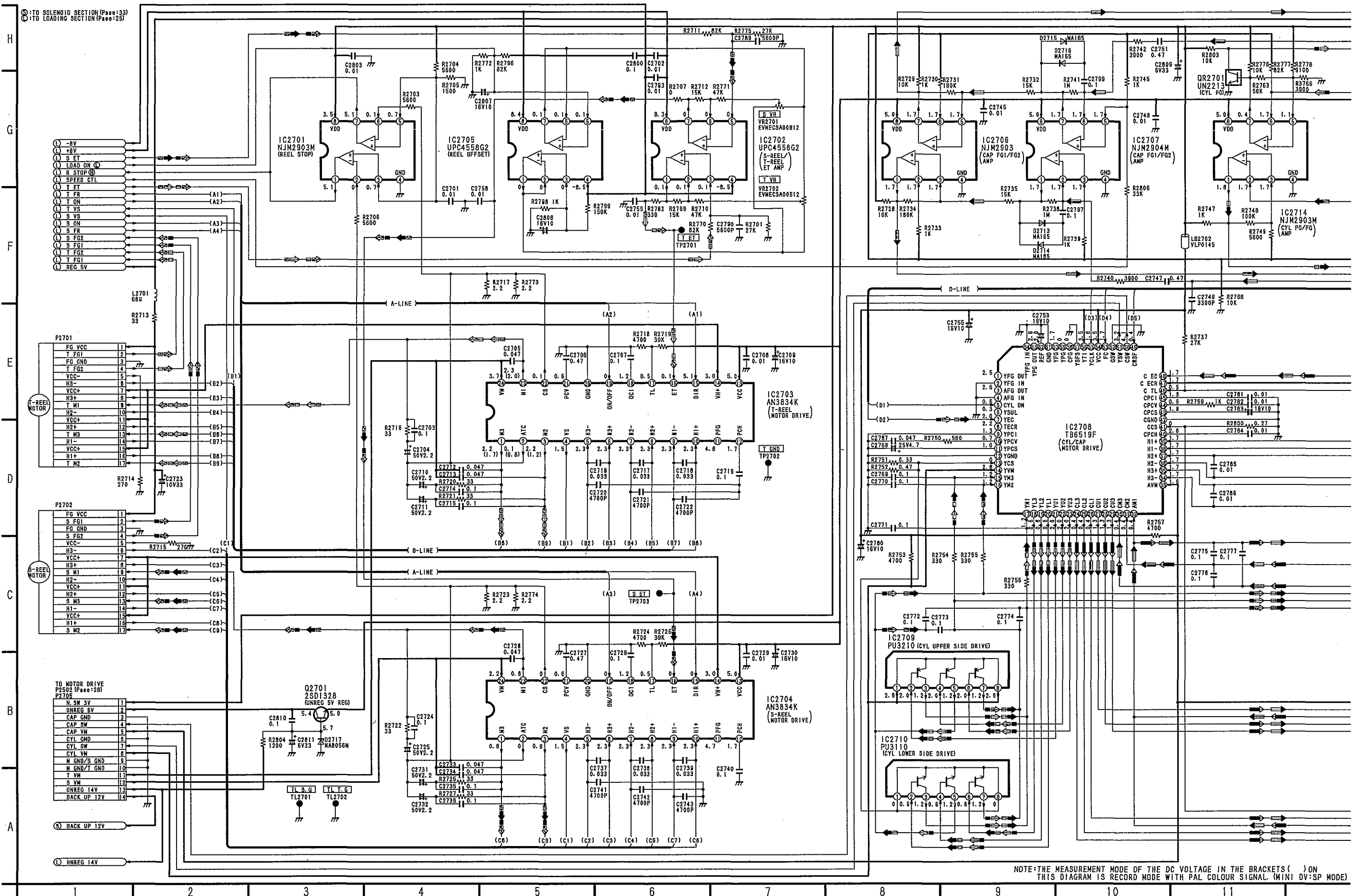
3-9. LOADING SECTION IN MECHANISM DRIVE SCHEMATIC DIAGRAM

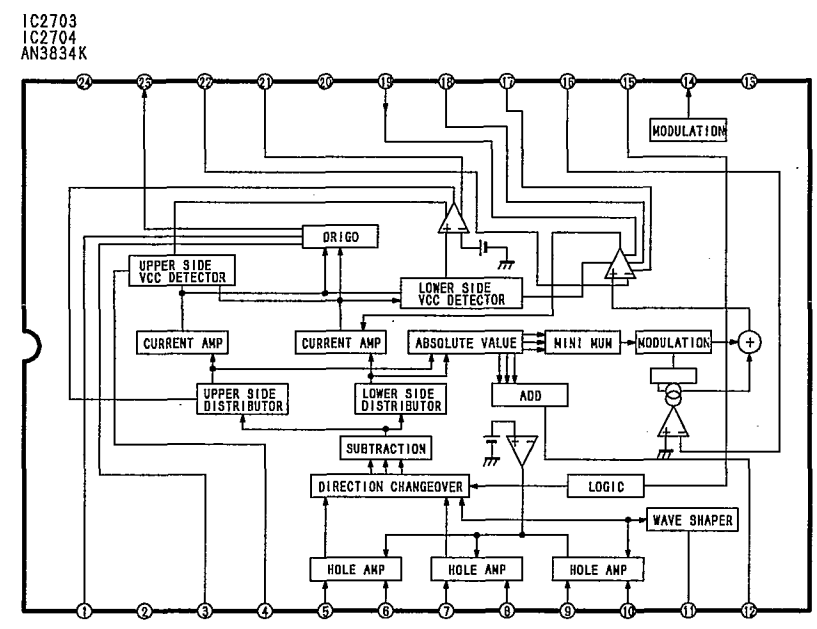
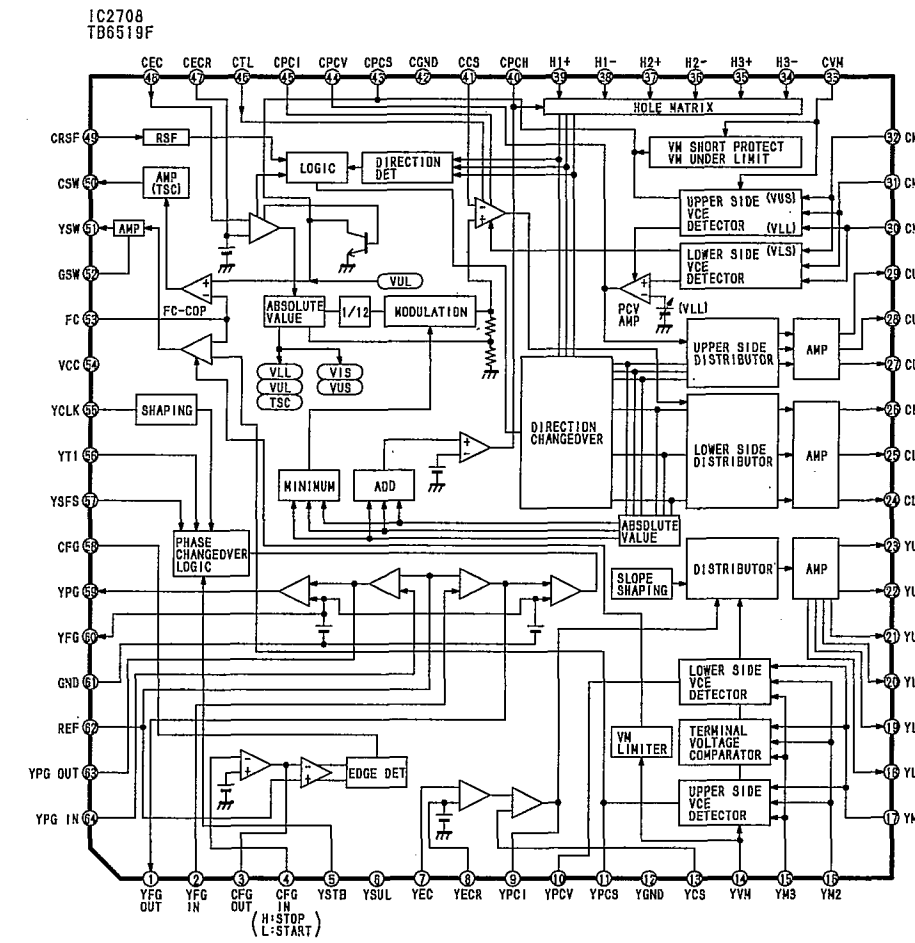
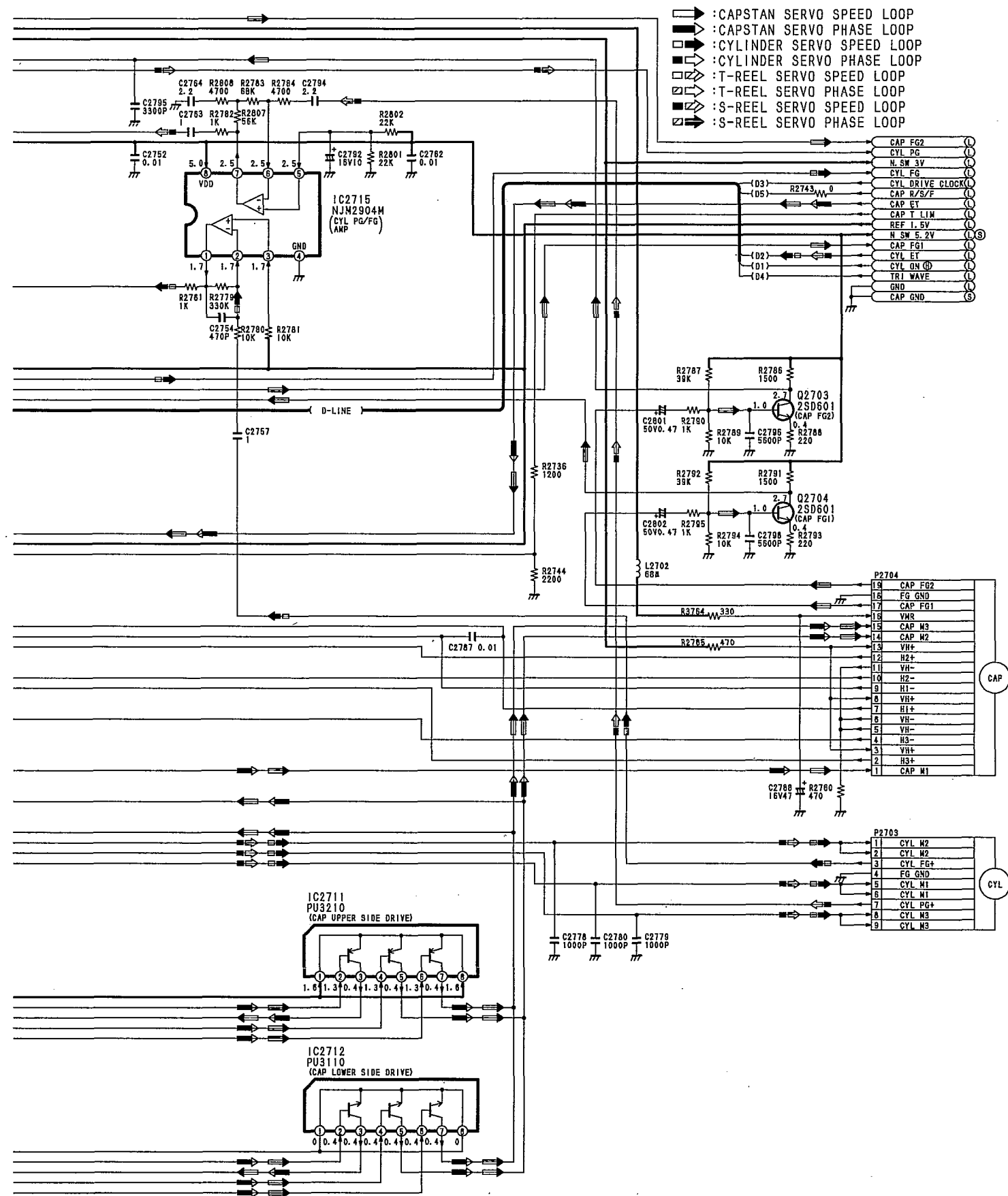


3-10. MOTOR DRIVE SCHEMATIC DIAGRAM

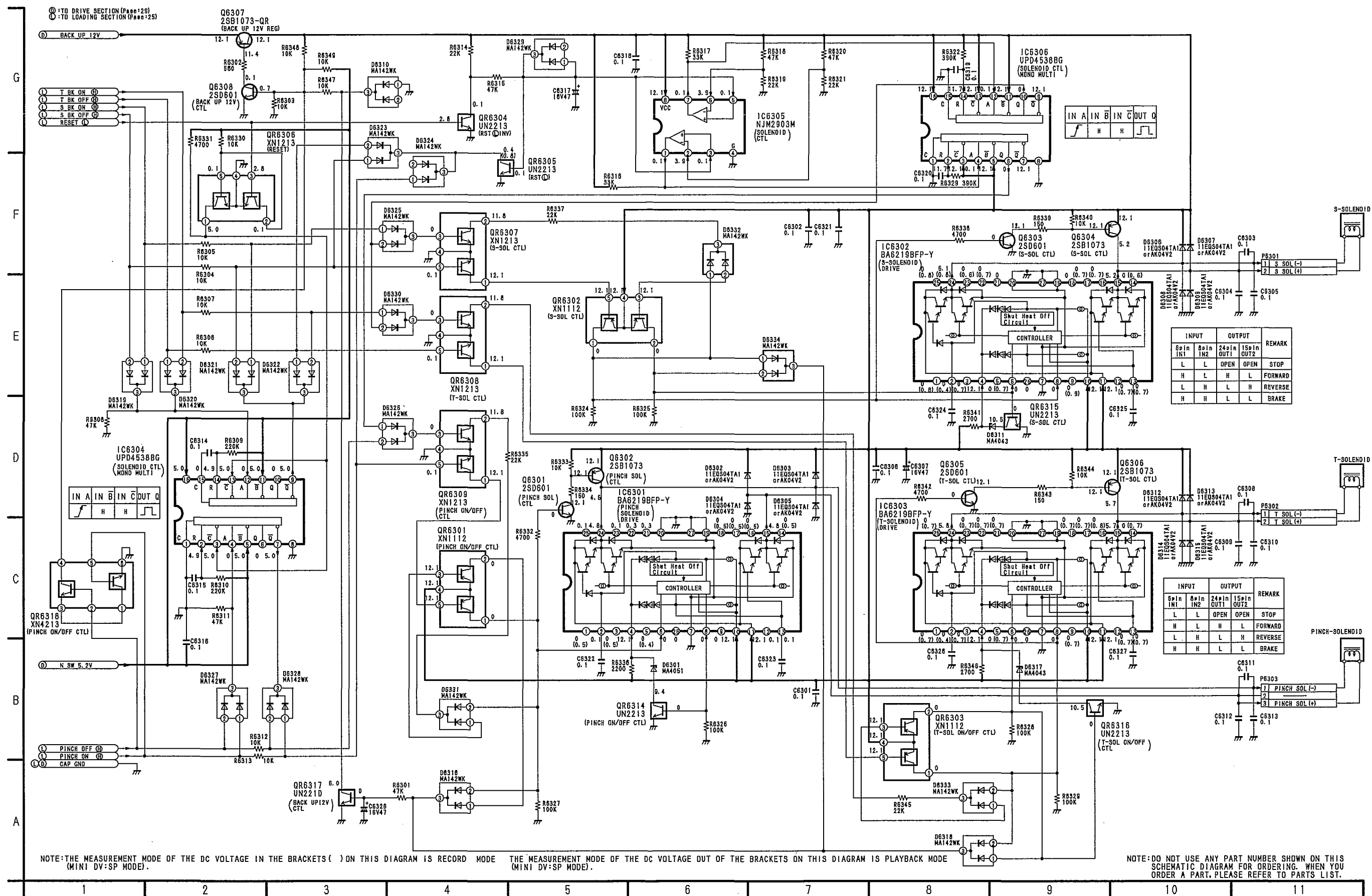


3-11. DRIVE SECTION IN MECHANISM DRIVE SCHEMATIC DIAGRAM

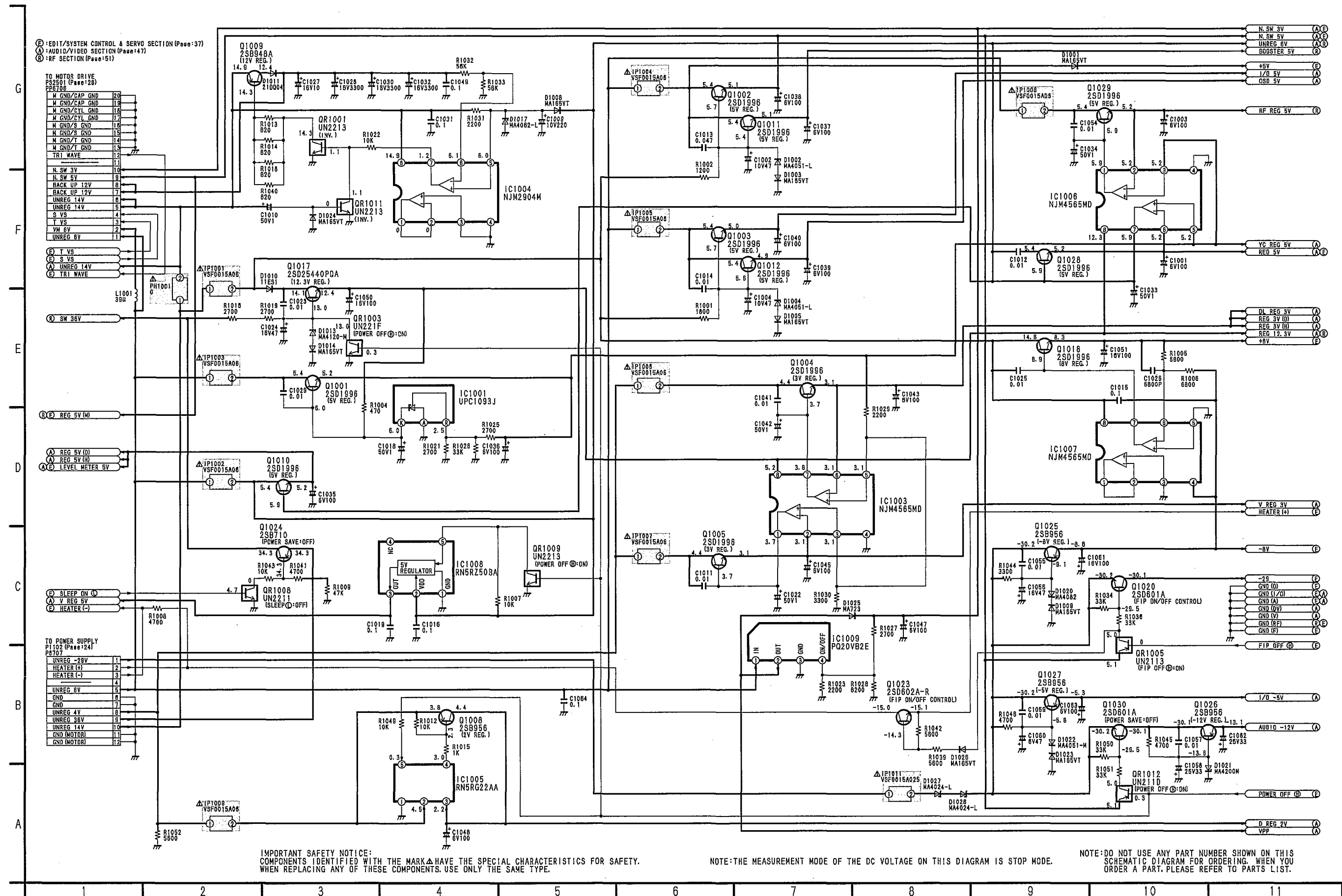




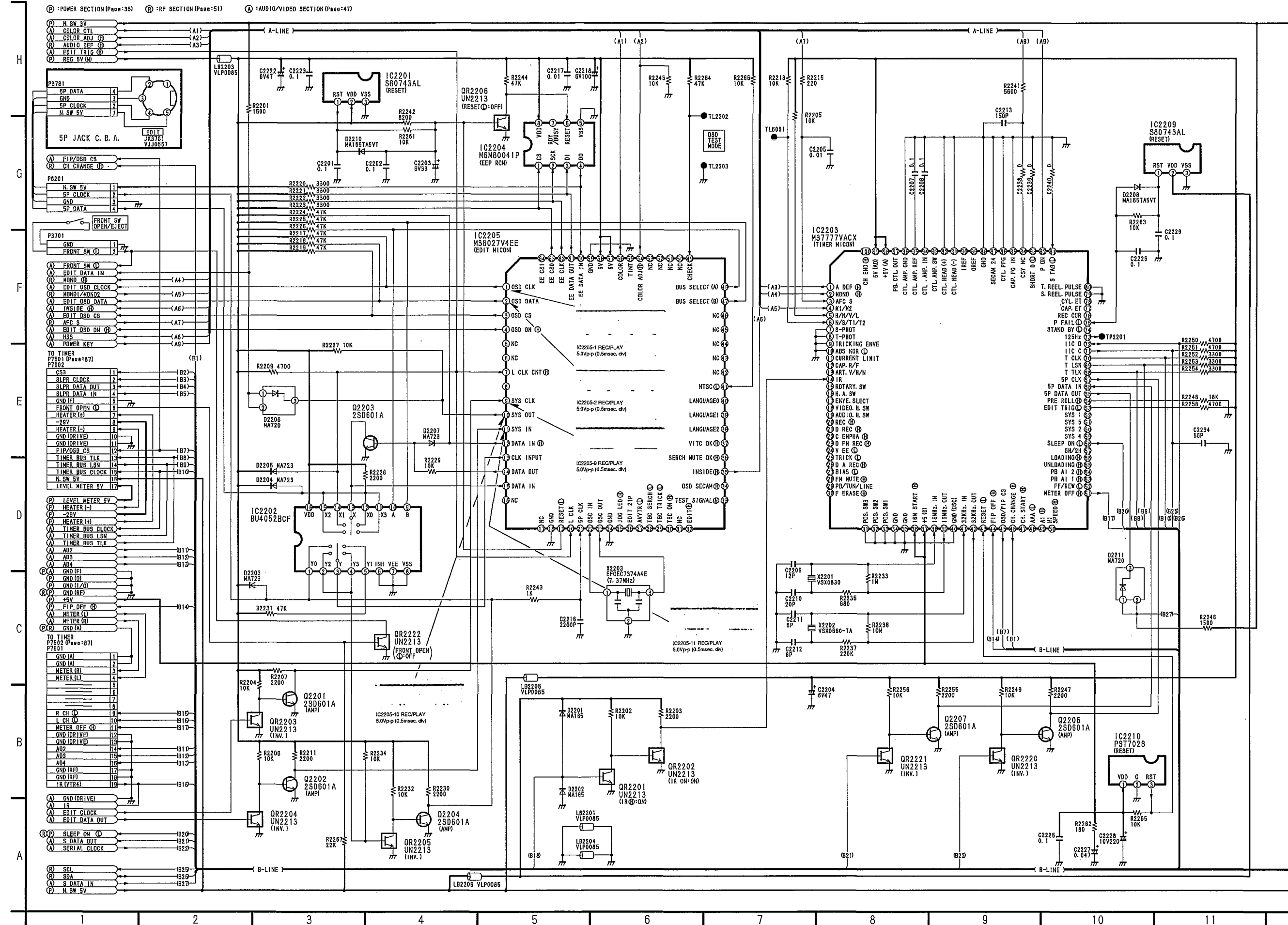
3-12. SOLENOID SECTION IN MECHANISM DRIVE SCHEMATIC DIAGRAM

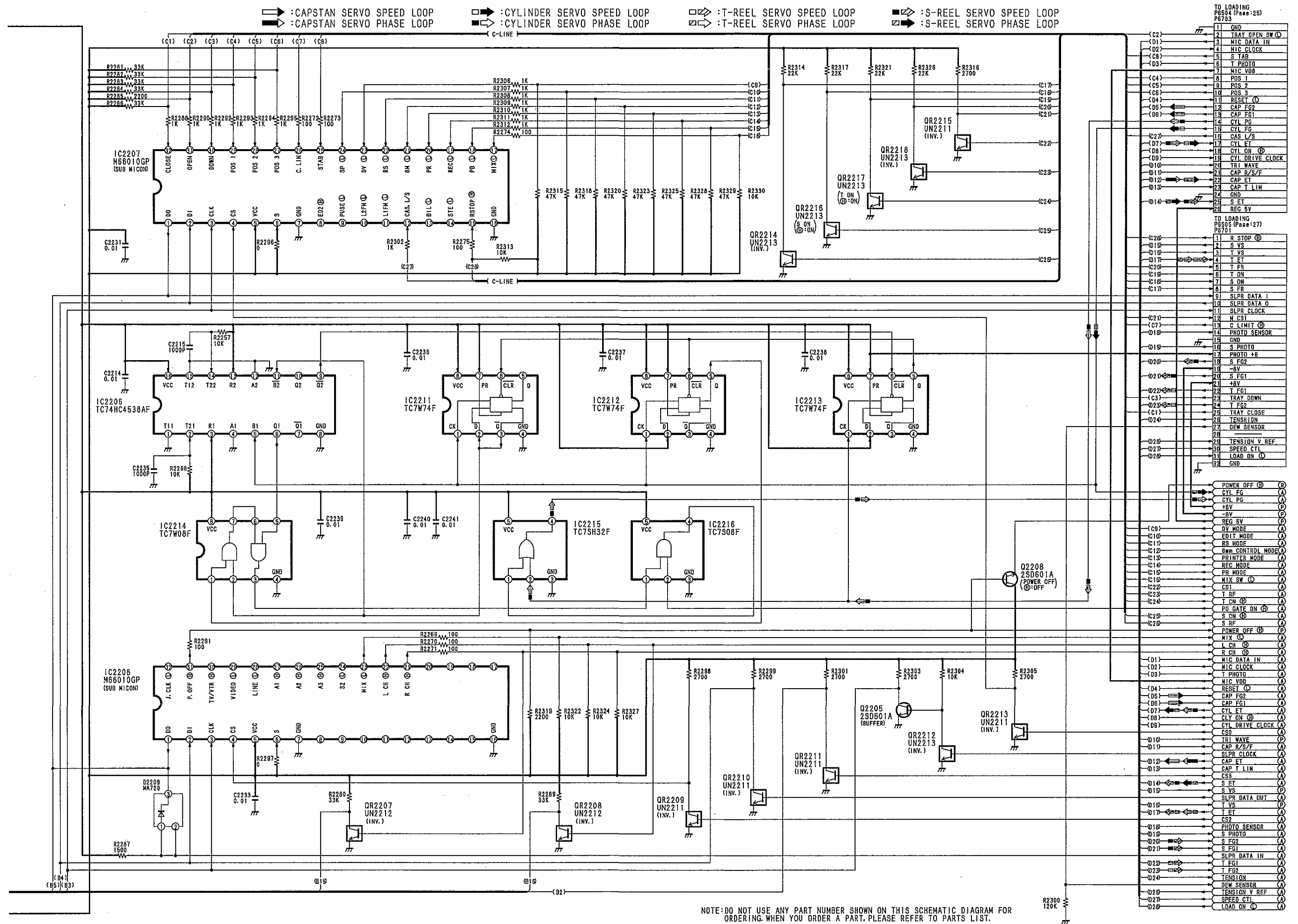


3-13. POWER SECTION IN MAIN SCHEMATIC DIAGRAM

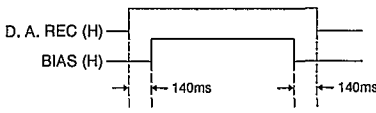


3-14. EDIT/SYSTEM CONTROL & SERVO SECTION IN MAIN, 5P JACK SCHEMATIC DIAGRAMS





IC2203 (M37777VACX): TIMER MICON

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION																		
1	AUDIO. DEF (H)	O	DECODER IC reset signal	26	D.A. REC (H)	O	Linear Audio Rec Timing H Output at timing of BIAS (H) At beginning of REC, Set BIAS (H) at 140msec. later of D.A. REC (H) set. At end of REC, release BIAS (H) at 140msec. former of D.A. REC (H) reset 																		
2	FORCE MONI (H)	O	U.K. Multi: Audio Detects Auto/off switch																						
3	AFC (S)	I	AFC S CURVE																						
4	No/M1/BII/M2/Ste	I	Audio mode detection for display on the OSD <table><tr><th>INPUT VOLTAGE</th><th>DISPLAY</th></tr><tr><td>MORE THAN 4.2V</td><td>NO DISPLAY</td></tr><tr><td>3.0 ~ 4.2</td><td>MONO1</td></tr><tr><td>2.0 ~ 3.0</td><td>BILINGUAL</td></tr><tr><td>0.8 ~ 2.0</td><td>MONO 1+2</td></tr><tr><td>LESS THAN 0.8V</td><td>STEREO</td></tr></table>					INPUT VOLTAGE	DISPLAY	MORE THAN 4.2V	NO DISPLAY	3.0 ~ 4.2	MONO1	2.0 ~ 3.0	BILINGUAL	0.8 ~ 2.0	MONO 1+2	LESS THAN 0.8V	STEREO						
INPUT VOLTAGE	DISPLAY																								
MORE THAN 4.2V	NO DISPLAY																								
3.0 ~ 4.2	MONO1																								
2.0 ~ 3.0	BILINGUAL																								
0.8 ~ 2.0	MONO 1+2																								
LESS THAN 0.8V	STEREO																								
5	L6/U6/U4/U2/U2L	I	CYLINDER (HIFI/NORMAL) SELECT <table><tr><th>INPUT VOLTAGE</th><th>CYLINDER</th><th>HIFI/NORMAL</th></tr><tr><td>MORE THAN 4.2V</td><td>LDD 6CH</td><td>HIFI</td></tr><tr><td>3.0 ~ 4.2</td><td>UDD 6CH</td><td>HIFI</td></tr><tr><td>2.0 ~ 3.0</td><td>UDD 2CH (NO LP)</td><td>NORMAL</td></tr><tr><td>0.8 ~ 2.0</td><td>UDD 2CH (LP)</td><td>NORMAL</td></tr><tr><td>LESS THAN 0.8V</td><td>UDD 4CH</td><td>NORMAL</td></tr></table>	INPUT VOLTAGE	CYLINDER	HIFI/NORMAL	MORE THAN 4.2V	LDD 6CH	HIFI	3.0 ~ 4.2	UDD 6CH	HIFI	2.0 ~ 3.0	UDD 2CH (NO LP)	NORMAL	0.8 ~ 2.0	UDD 2CH (LP)	NORMAL	LESS THAN 0.8V	UDD 4CH	NORMAL	27	BIAS (L)	O	Linear Audio BIAS OSC SW At Linear Audio Rec, H/L output at timing of D.A. REC (H)
			INPUT VOLTAGE	CYLINDER	HIFI/NORMAL																				
			MORE THAN 4.2V	LDD 6CH	HIFI																				
			3.0 ~ 4.2	UDD 6CH	HIFI																				
2.0 ~ 3.0	UDD 2CH (NO LP)	NORMAL																							
0.8 ~ 2.0	UDD 2CH (LP)	NORMAL																							
LESS THAN 0.8V	UDD 4CH	NORMAL																							
6	Nor/Ser/T1/T2	I	MODE SELECT <table><tr><th>INPUT VOLTAGE</th><th>MODE</th></tr><tr><td>MORE THAN 4.0V</td><td>NORMAL</td></tr><tr><td>2.5 ~ 4.0</td><td>SERVICE</td></tr><tr><td>1.0 ~ 2.5</td><td>TEST 2</td></tr><tr><td>LESS THAN 1.0V</td><td>TEST 1</td></tr></table>	INPUT VOLTAGE	MODE	MORE THAN 4.0V	NORMAL	2.5 ~ 4.0	SERVICE	1.0 ~ 2.5	TEST 2	LESS THAN 1.0V	TEST 1	28	FM. MUTE (H)	O	Audio Mute Output Power off, Head cleaning, Timer stand-by, VPS/PDC stand-by: H In VV mode, Except std tape run: H Former and later at EE/VV switch								
			INPUT VOLTAGE	MODE																					
			MORE THAN 4.0V	NORMAL																					
			2.5 ~ 4.0	SERVICE																					
1.0 ~ 2.5	TEST 2																								
LESS THAN 1.0V	TEST 1																								
7	S-PHOT	I	Tape Supply Photo Sensor Detect	29	PB/TUN/LINE	O	Normal Audio Circuit Select Normal Audio P.B: H Normal Audio Rec/LINE mode: L Normal Audio Rec/TUNER mode: M																		
			Tape Take-up Photo Sensor Detect	30	FULL. ERASE (H)	O	FE Head OSC SW																		
			Auto Tracking/Video Enve Detect Input for CVC	31	POS. SW3	I	Mechanical Position Input																		
			Lower output level Detect of FM audio	32	POS. SW2	I																			
8	T-PHOT	I		33	POS. SW1	I																			
9	TRACKING ENVE	O		34	GND	—	—																		
10	ABS. NORM (L)	I		35	GND	—	—																		
11	CURRENT. LIMIT	O		36	16M. START (H)	I	16 MHz START Hight																		
12	REC CUR	O	REC CURR CTL for REC AI (EE)/ Picture VR Value out for P.B. AI (VV)	37	5V (D)	I	5V (D)																		
13	ART. V/H/N	O		38	16MHz. IN	I	16 MHz IN																		
14	REMOCON	I	REMOTE/DIGIRAL RINK INPUT	39	16MHz. OUT	O	16 MHz OUT																		
15	ROTARY. SW	O	ROTARY SW	40	GND (OSC)	I	—																		
16	H.A. SW	O	HEAD AMP SW	41	32KHz. IN	O	32 kHz IN																		
17	ENVE. SLECT	I	ENVELOPE SELECT	42	32KHZ. OUT	I	32 kHz OUT																		
18	VIDEO. H. SW	O	VIDEO HEAD SW	43	RESET (L)	O	RESET (L)																		
19	AUDIO. H. SW	O	AUDIO HEAD SW	44	FIP (L)	I	FIP On/Off Select																		
20	REC (H)	O	REC/P.B Select of video/Audio Circuit REC Mode: H	45	FIP/OSD CS	O	FIP Driver/OSD Micon chip Select At Timing of Data transmission to FIP driver: L At Timing of Data transmission to OSD Micon: H																		
21	D. REC (H)	O	Video Rec Curr Timing (H. SW Sync.)																						
22	C. EMPHA (H)	O	Video/FM Audio Rec. Curr Up (H. SW Sync)																						
23	D. FM. REC (H)	O	FM Audio Rec Curr Timing (H. SW Sync.)																						
24	VIDEO. EE (L)	O	Video EE/VV Select (H SW Sync.) EE: L, VV: H	46	CH CHANGE (H)	O	Varing edge output of channel (H)																		
25	TRICK (L)	O	Trick Plag Mode Output Except Std tape run in VV: L	47	CH START (H)	O	Audio Carrier Auto Det start Edge output at Tuner preset																		
				48	AAA OFF (H)	O	Output during audio IC auto adj.																		
				49	AI MES (H)	O	Output during AI REC measurement (Fix carrier output)																		
				50	HALF WAVE (H)	O	Capstan Driver Full Wave/Half Wave select																		
25	TRICK (L)	O		51	P. OFF (H)	O	Output during Power Off H: at Power off, Timer stand-by, etc L: at Head cleaning, Timer confirmation, VPS/PDC stand-by, ACS																		
				52	FF/REW (L)	O	CTL signal Filter/Switch at FF/RES																		
				53	PB AI1 (H)	O	PB AI CONTROL																		
				54	PB AI2 (H)	O	PB AI CONTROL																		
			55	UNLOADING (H)	O	LOADING MOTOR CONTROL																			
			56	LOADING (H)	O	LOADING MOTOR CONTROL																			

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
57	SP Ⓜ	O	TAPE RUN SPEED OUTPUT NTSC2H: H PAL3H: H	76	CAP. R/F	O	CAPSTAN REVERSE Ⓜ/FORWARD Ⓞ
				77	CAP. ET	O	CAPSTAN ERROR TORQUE
				78	CYL. ET	O	CYLINDER ERROR TORQUE
58	SLEEP Ⓞ	O	Super Power Save Mode Set Output (L)	79	S. REEL. PULSE	I	Pulse Input from Real Sensor
59	PAL-I/BG/DK	O	Broadcast System Output for video circuit control	80	T. REEL. PULSE	I	Pulse Input from Real Sensor
60	SECAM/PAL	O	Broadcast System Output for video circuit control	81	STAB Ⓞ	I	Safety Tab Detect Exist: L, Non: H
61	NTSC Ⓞ	O	Broadcast System Output for video circuit control	82	POWER KEY Ⓜ	I	Main Power ON/OFF Key Input
				83	SHORT DN	I	OSC Trouble Detect of REC Mode
				84	C SYNC	I	COLOR SYNC
62	PAL/MESECAM	O	Broadcast System Output for video circuit control	85	CAP. FG	I	CAPSTAN FG
63	EDITTRIG Ⓞ	I/O	Synchronizing Edit Control	86	CYL. PFG	I	CYLINDER PG/FG
64	PREROLL Ⓜ	I/O		87	SECAM24 Ⓜ	I	26μ/24μ Head Select Input H: 24μ
65	5P/T2. DATA. OUT	O	Edit 5P/Serial Communication for Test	88	GND	—	—
66	5P/T2. DATA. IN	I	Edit 5P/Serial Communication for Test	89	OREF	O	REFERENCE OUT
67	5P/T2. CLOCK	O	Edit 5P/Serial Communication for Test	90	IREF	I	REFERENCE IN
68	T-BUS/IC. OUT	O	OSD Micon/FIP Driver Serial Communication	91	CTL. HEAD (-)	I	CONTROL HEAD (-)
69	T-BUS/IC. IN	I	OSD Micon/FIP Driver Serial Communication	92	CTL. HEAD (+)	I	CONTROL HEAD (+)
				93	CTL. AMP. SW	O	CONTROL AMP. SW
70	T-BUS/IC. CLK	O	OSD Micon/FIP Driver Serial Communication	94	CTL. AMP. IN	I	CONTROL AMP. IN
				95	CTL. AMP. REF	I	CONTROL AMP. REFERENCE
71	IIC. CLOCK	O	Tuner/FM Audio IC Serial Communication	96	CTL. AMP. GND	—	CONTROL AMP. GND
72	IIC. DATA	I/O	Tuner/FM Audio IC Serial Communication	97	PB. CTL. OUT	O	PLAYBACK CONTROL OUT
73	125Hz	O	Int. OSC Output for Main Clock Adj.	98	5V (A)	I	5V (A)
74	STANDBY Ⓞ	O	Display Output at VTR Stand-by	99	5V (AD)	I	5V (AD)
75	POWER FAIL Ⓞ	I	Power Stoppage Detect.	100	CH END Ⓜ	I	Audio Carrier Auto Detect Completion Input at Tuner Preset

IC2205 (M38027V4EE): EDIT MICON

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	P62	O	OSD CLK	33	P17/AD15	O	NC
2	P61	O	OSD DATA	34	P16/AD14	O	NC
3	P60	O	OSD CS	35	P15/AD13	O	INSIDE Ⓜ
4	P57/INT3	O	OSD ON Ⓜ	36	P14/AD12	O	NC
5	P56/PWM	O	NC	37	P13/AD11	O	NC
6	P55/CNTR1	O	NC	38	P12/AD10	O	NC
7	P54/CNTR0	I	L CLK CNT Ⓜ	39	P11/AD9	O	NC
8	P53/Srdy2	O	NC	40	P10/AD8	O	NC
9	P52/SCLK2	I	SYS CLK	41	P07/AD7	I	NTSC Ⓞ/PAL Ⓜ
10	P51/SOUT2	O	SYS OUT	42	P06/AD6	O	NC
11	P50/SIN2	I	SYS IN	43	P05/AD5	O	NC
12	P47/Srdy1	O	DATA INH	44	P04/AD4	O	NC
13	P46/CLK1	I	CLK INPUT	45	P03/AD3	O	NC
14	P45/TXD	O	DATA OUT	46	P02/AD2	O	NC
15	P44/RXD	I	DATA IN	47	P01/AD1	O	BUS SELECT (B)
16	P43/INT2	O	NC	48	P00/AD0	O	BUS SELECT (A)
17	P42/INT1	O	NC	49	P37	I	CHECK Ⓞ
18	CNVss	—	GND	50	P36	O	NC
19	RESET	—	RESET Ⓞ	51	P35	O	NC
20	P41/INT0	I	L CLK	52	P34	O	NC
21	P40/INT4	I	5P CLK	53	P33	O	NC
22	Xin	—	OSC IN	54	P32	O	COLOR ADJ Ⓜ
23	Xout	—	OSC OUT	55	P31/DA2	I	TINT
24	Vss	—	GND	56	P30/DA1	I	COLOR
25	P27	O	NC (JOG LED Ⓜ)	57	Vcc	—	5V
26	P26	O	NC (EDIT21P)	58	Vref	—	5V
27	P25	O	NC (AVVTR Ⓞ)	59	AVss	—	GND
28	P24	O	NC (TBC SERCH Ⓞ)	60	P67	I	EE DATA IN
29	P23	O	NC (TBC TRICK Ⓞ)	61	P66	O	EE DATA OUT
30	P22	O	NC (TBC ON)	62	P65	O	EE CLK
31	P21	O	NC	63	P64	O	EE CS0
32	P20	O	NC (EDIT Ⓜ)	64	P63	I	NC

IC2207 (M66010GP): SUB MICON

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	DO	O	Serial Data Output	17	MIX $\textcircled{L}$	I	Audio Mixing $\textcircled{L}$
2	DI	I	Serial Data Input	18	PB $\textcircled{L}$	I	PLAY BACK $\textcircled{L}$
3	CLK	I	Serial clock	19	REC $\textcircled{L}$	I	REC $\textcircled{L}$
4	CS	I	Chip select	20	PR $\textcircled{L}$	I	Preroll Connect $\textcircled{L}$
5	VCC	I	VCC	21	8M $\textcircled{L}$	I	8mm Connect $\textcircled{L}$
6	$\overline{S}$	I	Power ON $\textcircled{L}$	22	RS $\textcircled{L}$	I	RS232C Connect $\textcircled{L}$
7	GND	—	—	23	DV $\textcircled{L}$	I	DV Terminal Connect $\textcircled{L}$
8	ED2 $\textcircled{H}$	I	TV $\textcircled{H}$	24	5P $\textcircled{L}$	I	5P Terminal Connect $\textcircled{L}$
9	MUSE $\textcircled{L}$	I	Muse $\textcircled{L}$	25	S TAB $\textcircled{L}$	I	Safety Tab SW
10	L2FM $\textcircled{L}$	I	L2 Full Mode $\textcircled{L}$	26	C LIM	I	CURR. Limit
11	L1FM $\textcircled{L}$	I	L1 Full Mode $\textcircled{L}$	27	P03	I	Position SW3
12	CAS L/S	I	Cassette Detect L cassette $\textcircled{H}$ /S cassette $\textcircled{L}$	28	P02	I	Position SW2
13	BIL $\textcircled{L}$	I	Bilingual $\textcircled{L}$	29	P01	I	Position SW1
14	STE $\textcircled{L}$	I	Stereo $\textcircled{L}$	30	DOWN	I	Tray Down $\textcircled{L}$
15	RSTOP $\textcircled{L}$	I	Reel Driver desfruction detect Input	31	OPEN	I	Tray Open $\textcircled{L}$
16	GND	—	—	32	CLOSE	I	Tray Close $\textcircled{L}$

IC2208 (M66010GP): SUB MICON

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	DO	O	Serial Data Output	17	NC	—	—
2	DI	I	Serial Data Input	18	NC	—	—
3	CLK	I	Serial Data Clock	19	NC	—	—
4	CS	I	Chip Select	20	NC	—	—
5	VCC	I	VCC	21	RCH $\textcircled{H}$	O	R CH $\textcircled{H}$
6	$\overline{S}$	I	Power On $\textcircled{L}$	22	LCH $\textcircled{H}$	O	L CH $\textcircled{H}$
7	GND	—	—	23	MIX $\textcircled{L}$	O	Mix $\textcircled{L}$
8	NC	—	—	24	S2 $\textcircled{L}$	O	S Output Terminal widefull $\textcircled{L}$
9	NC	—	—	25	A3 $\textcircled{H}$	O	Input Select $\textcircled{H}$
10	NC	—	—	26	A2 $\textcircled{H}$	O	Input Select $\textcircled{H}$
11	NC	—	—	27	A1 $\textcircled{H}$	O	Input Select $\textcircled{H}$
12	NC	—	—	28	LINE $\textcircled{L}$	O	Line Input Select $\textcircled{L}$
13	NC	—	—	29	WIDE $\textcircled{L}$	O	S Output Terminal widefull $\textcircled{L}$
14	NC	—	—	30	TV/VTR $\textcircled{H}$	O	TV/VTR $\textcircled{H}$
15	NC	—	—	31	P OFF $\textcircled{H}$	O	Power off $\textcircled{H}$
16	GND	—	—	32	J CLK $\textcircled{L}$	O	Jast Clock $\textcircled{L}$

EDIT/SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (Mini DV : SP MODE)

REF. NO.	IC2201																			
MODE	1	2	3																	
STOP	4.9	5.0	0																	
PLAY	4.9	4.9	0																	
REC	4.9	5.0	0																	
F.F	4.9	4.9	0																	
REW	4.9	4.9	0																	
REF. NO.	IC2202																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	4.8	4.0	4.0	4.0	4.9	0	0	0	5.0	5.0	4.6	4.6	4.6	4.6	4.6	5.0				
PLAY	4.8	4.0	4.0	4.0	4.9	0	0	0	4.9	4.9	4.6	4.6	4.6	4.9	4.6	4.9				
REC	4.8	4.0	4.0	4.0	4.9	0	0	0	5.0	5.0	4.6	4.6	4.6	4.9	4.6	5.0				
F.F	4.8	4.0	4.0	4.0	4.9	0	0	0	4.9	4.9	4.6	4.6	4.6	4.9	4.6	4.9				
REW	4.8	4.0	4.0	4.0	4.9	0	0	0	4.9	4.9	4.6	4.6	4.6	4.9	4.6	5.0				
REF. NO.	IC2203																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	2.7	5.0	5.0	4.9	0	0	0	0	0	1.6	4.7	5.1	0	0	0.2	0	0	0
PLAY	0	0	2.7	4.9	4.9	4.9	0	0	0	0	0	1.6	0	5.1	0	0	0.1	0	0	0
REC	0	0	0.1	5.0	4.9	4.9	0	0	0	0	0	1.6	5.0	5.1	0	0	0.2	0	0	0
F.F	0	0	2.8	4.9	4.9	4.9	0	0	0	0	0	1.6	4.7	5.1	0	0	0.2	0	0	0
REW	0	0	2.7	4.9	4.9	4.9	0	0	0	0	0	1.6	4.7	5.1	0	0	0.2	0	0	0
REF. NO.	IC2203																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	0	4.7	0	0	4.7	0	0	0	0	0	0	0	4.7	4.7	2.2	2.1	0
PLAY	0	0	0	0	4.7	0	0	4.7	0	0	0	0	0	0	0	4.7	4.7	2.2	2.1	0
REC	0	0	0	0	4.7	0	0	4.7	0	0	0	0	0	0	0	4.7	4.7	2.2	2.2	0
F.F	0	0	0	0	4.7	0	0	4.7	0	0	0	0	0	0	0	4.7	4.7	2.2	2.1	0
REW	0	0	0	0	4.7	0	0	4.7	0	0	0	0	0	0	0	4.7	4.7	2.2	2.1	0
REF. NO.	IC2203																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	1.3	1.3	4.7	0	2.4	0	0	0	0	0.5	0	4.7	0	0	0	0	4.7	4.7	0.4	0
PLAY	1.3	1.3	—	0	2.4	0	0	0	0	1.0	0	4.7	0	0	0	0	4.7	4.7	0.5	0
REC	1.3	1.3	—	0	2.3	0	0	0	0	0.3	0	4.7	0	0	0	0	4.7	4.7	0.5	0
F.F	1.3	1.3	1.3	—	2.4	0	0	0	0	0.2	0	4.7	0	0	0	0.2	4.7	4.7	0.2	0
REW	1.3	1.3	4.7	—	2.4	0	0	0	0	0.3	0	4.7	0	0	0	0	4.7	4.7	0.2	0
REF. NO.	IC2203																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	5.0	0	3.6	4.2	4.5	4.4	4.4	4.4	2.9	2.9	2.4	4.7	5.0	0	0	4.0	0	0
PLAY	0	0	5.0	0	3.6	4.2	4.6	4.4	4.4	4.4	2.9	2.9	2.3	4.7	5.0	0	0	3.9	0	0
REC	0	0	5.0	0	3.6	4.1	4.6	4.4	4.4	4.4	2.9	2.9	2.3	4.7	5.0	0	0	3.9	0	0
F.F	0	0	4.9	0	3.6	4.3	4.5	4.4	4.4	4.4	2.9	2.9	2.3	4.7	5.0	0	0	4.0	0	0
REW	0	0	4.9	0	3.6	4.1	4.5	4.4	4.4	1.2	2.9	2.9	2.3	4.7	5.0	0	0	4.0	0	0
REF. NO.	IC2203																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0	0	0	4.2	0	0	0	0	2.5	2.5	0	0	0	2.5	2.5	0	2.5	5.0	5.0	0.2
PLAY	0	0	0	4.2	0	0	0	0	2.5	2.5	0	0	0	2.5	2.5	0	2.5	4.9	4.9	0.6
REC	0	0	0	4.2	0	0	0	0	2.5	2.5	0	0	0	2.4	2.5	0	2.5	5.0	5.0	0.6
F.F	0	0	0	4.2	0	0	0	0	2.5	2.5	0	0	0	2.5	2.5	0	2.5	4.9	4.9	0.3
REW	0	0	0	4.2	0	0	0	0	2.5	2.5	0	0	0	2.5	2.5	0	2.5	4.9	4.9	0.2
REF. NO.	IC2204																			
MODE	1	2	3	4	5	6	7	8												
STOP	5.0	5.0	5.0	5.0	0	0	5.0	5.0												
PLAY	5.0	5.0	5.0	4.9	0	0	4.9	5.0												
REC	5.0	4.9	5.0	4.9	0	0	4.9	5.0												
F.F	4.9	4.9	4.9	4.9	0	0	4.9	4.9												
REW	5.0	4.9	4.9	4.9	0	0	4.9	4.9												
REF. NO.	IC2205																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	4.7	4.6	4.4	0	0	0	4.9	0	4.7	4.8	3.8	0.5	4.0	0.3	4.6	0	0	0	4.5	5.0
PLAY	4.7	4.6	4.4	0	0	0	4.9	0	4.7	4.7	3.9	0.5	4.0	0.3	4.6	0	0	0	4.5	4.9
REC	4.7	4.6	4.4	0	0	0	5.0	0	4.7	4.7	3.9	0.4	4.0	0.3	4.6	0	0.1	0	4.5	5.0
F.F	4.7	4.6	4.4	0	0	0	4.9	0	4.7	4.8	3.9	0.4	4.0	0.3	4.6	0	0	0	4.5	4.9
REW	4.7	4.6	4.4	0	0	0	4.9	0	4.7	4.8	3.7	0.4	4.0	0.3	4.6	0	0	0	4.5	4.9
REF. NO.	IC2205																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	4.8	2.1	2.3	0	0	0	5.0	5.0	5.0	5.0	0	0	0	0	0	0	0	0	0	0
PLAY	4.8	2.1	2.2	0	0	0	0	5.0	4.9	0	0	0	0	0	0	0	0	0	0	0
REC	4.8	2.0	2.3	0	0	0	5.0	5.0	5.0	5.0	0	0	0	0	0	0	0	0	0	0
F.F	4.8	2.1	2.3	0	0	0	4.9	4.9	4.9	4.9	0	0	0	0	0	0	0	0	0	0
REW	4.8	2.1	2.3	0	0	0	0.4	4.9	4.9	4.9	0	0	0	0.5	0	0	0	0	0	0

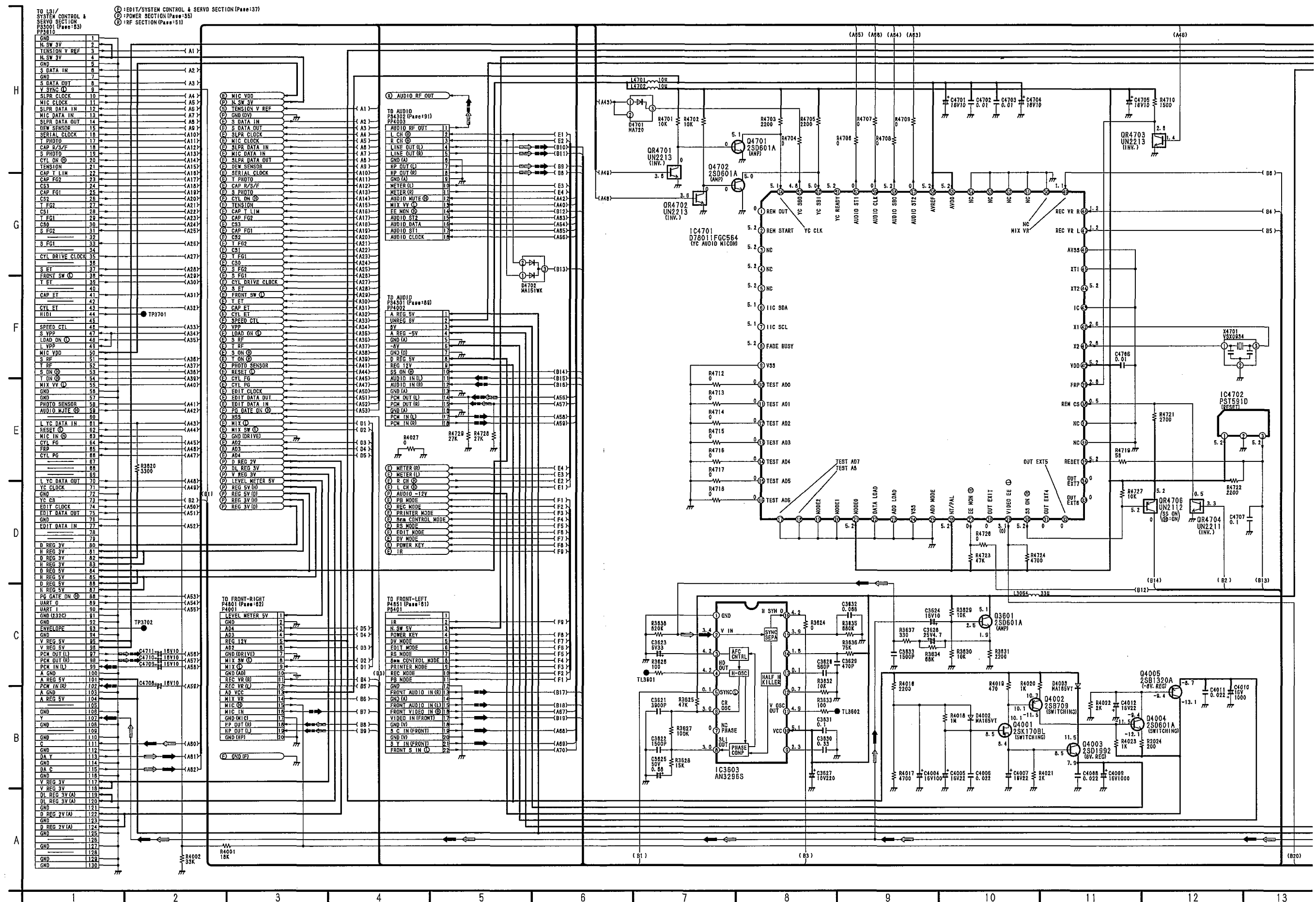
REF. NO.	IC2205																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	5.0	0	0	0	0	0	5.0	5.0	4.9	0	0	0	0	0	2.5	2.5	5.0	5.0	0	5.0
PLAY	4.9	0	0	0	0	0	5.0	4.9	4.9	0	0	0	0	0	2.5	2.5	4.9	5.0	0	4.9
REC	4.9	0	0	0	0	0	5.0	5.0	4.9	0	0	0	0	0	2.5	2.5	4.9	4.9	0	5.0
F.F	4.9	0	0	0	0	0	4.9	4.9	4.9	0	0	0	0	0	2.5	2.5	4.9	4.9	0	5.0
REW	4.9	0	0	0	0	0	5.0	4.9	4.9	0	0	0	0	0	2.5	2.5	5.0	5.0	0	4.9
REF. NO.	IC2205																			
MODE	61	62	63	64																
STOP	5.0	5.0	5.0	0.6																
PLAY	4.9	5.0	4.9	0.6																
REC	5.0	5.0	5.0	0.3																
F.F	4.9	4.9	4.9	1.7																
REW	4.9	4.9	4.9	1.2																
REF. NO.	IC2206																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	3.4	3.4	0	3.4	0	3.4	0	3.4	0	0	0	3.4	3.4	0	3.4				
PLAY	0	3.4	3.4	0	1.8	0	3.4	0	3.4	0	0	0	3.4	3.4	0	3.4				
REC	0	3.4	3.4	0	1.8	0	3.4	0	3.4	0	0	0	3.4	3.4	0	3.4				
F.F	0	3.4	3.4	0	1.8	0	3.4	0	3.4	0	0	0	3.4	3.4	0	3.4				
REW	0	3.4	3.4	0	1.8	0	3.4	0	3.4	0	0	0	3.4	3.4	0	3.4				
REF. NO.	IC2207																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	4.3	3.6	4.7	4.4	5.1	5.1	0	0.7	0.7	0.2	0.2	4.9	0.7	0.7	5.1	0	5.1	5.0	0	5.0
PLAY	4.3	3.6	4.7	4.4	5.1	5.1	0	0.7	1.1	1.1	1.0	4.9	1.1	0.9	1.1	0	5.1	1.1	0	5.0
REC	4.3	3.6	4.7	4.5	5.1	5.1	0	1.3	1.2	1.2	1.2	4.9	1.2	1.2	1.2	0	5.1	5.0	0	5.0
F.F	4.3	3.6	4.7	4.5	5.1	5.1	0	2.3	1.1	1.0	1.0	4.9	1.0	1.0	5.1	0	5.1	5.0	0	5.0
REW	4.3	3.6	4.7	4.4	5.1	5.1	0	2.2	2.2	1.2	1.0	4.9	1.1	1.1	5.1	0	5.1	5.0	0	5.0
REF. NO.	IC2207																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
STOP	5.0	0	5.0	5.0	0	0	5.0	5.0	0	5.0	5.1	0								
PLAY	5.0	0	5.0	5.0	0	0	5.0	5.0	0	1.1	5.1	0								
REC	5.0	0	5.0	5.0	0	0	5.0	5.0	0	5.0	5.1	0								
F.F	5.0	0	5.0	5.0	0	0	5.0	5.0	1.0	5.0	5.1	0								
REW	5.0	0	5.1	5.0	0	0	5.0	5.0	0	5.0	5.1	0								
REF. NO.	IC2208																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	4.3	3.6	4.7	4.6	5.1	5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLAY	4.3	3.6	4.7	4.6	5.1	5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REC	4.3	3.6	4.7	4.6	5.1	5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F.F	4.3	3.6	4.7	4.5	5.1	5.1	0	0	0	0	0	0	0	0	5.1	0	5.1	5.0	0	5.0
REW	4.3	3.6	4.7	4.5	5.1	5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REF. NO.	IC2208																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
STOP	3.5	3.5	5.1	0.1	0	0	0.2	0	0	0	0.1	0.1								
PLAY	3.5	3.5	5.1	0.1	0	0	0.2	0	0	0	0.1	0.1								
REC	3.5	3.5	5.1	1.2	0	0	1.9	0	0	0	0.1	1.8								
F.F	5.0	0	5.1	0	0	0	0.1	0	0	0	0.1	0								
REW	3.5	3.5	5.1	0	0	0	0	0	0	0	0.1	0								
REF. NO.	IC2209										IC2210									
MODE	1	2	3								1	2	3							
STOP	5.1	5.1	0								4.7	0	4.7							
PLAY	5.1	5.1	0								4.7	0	4.7							
REC	5.1	5.1	0								4.7	0	4.7							
F.F	5.1	5.1	0								4.7	0	—							
REW	5.1	5.1	0								4.7	0	—							
REF. NO.	IC2211								IC2212											
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
STOP	3.4	3.4	3.4	0	0	0	3.4	3.4			3.4	3.4	3.4	0	0	0	3.4	3.4		
PLAY	1.8	2.6	2.6	0	0.8	2.1	3.4	3.4			1.8	3.4	2.1	0	1.3	2.1	3.4	3.4		
REC	1.8	2.6	2.6	0	0.8	2.1	3.4	3.4			1.8	3.4	2.1	0	1.3	1.2	3.4	3.4		
F.F	1.8	2.6	2.6	0	0.8	2.1	3.4	3.4			1.8	3.4	2.1	0	1.3	2.1	3.4	3.4		
REW	1.8	2.6	2.6	0	0.8	2.1	3.4	3.4			1.8	3.4	2.1	0	1.3	2.0	3.4	3.4		
REF. NO.	IC2213								IC2214											
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
STOP	0.1	3.4	3.4	0	0	3.4	3.4	3.4			0	3.4	0	0	0	0	0	3.4		
PLAY	0.4	3.4	1.3	0	2.1	3.4	3.4	3.4			1.3	2.6	0	0	0	0.4	0.4	3.4		
REC	0.4	3.4	1.3	0	2.1	3.4	3.4	3.4			1.3	2.6	0	0	0	0.4	0.4	3.4		
F.F	0.4	3.4	1.3	0	2.1	3.4	3.4	3.4			1.3	2.6	0	0	0	0.4	0.4	3.4		
REW	0.4	3.4	1.4	0	2.0	3.4	3.4	3.4			1.3	2.6	0	0	0	0.4	0.4	3.4		

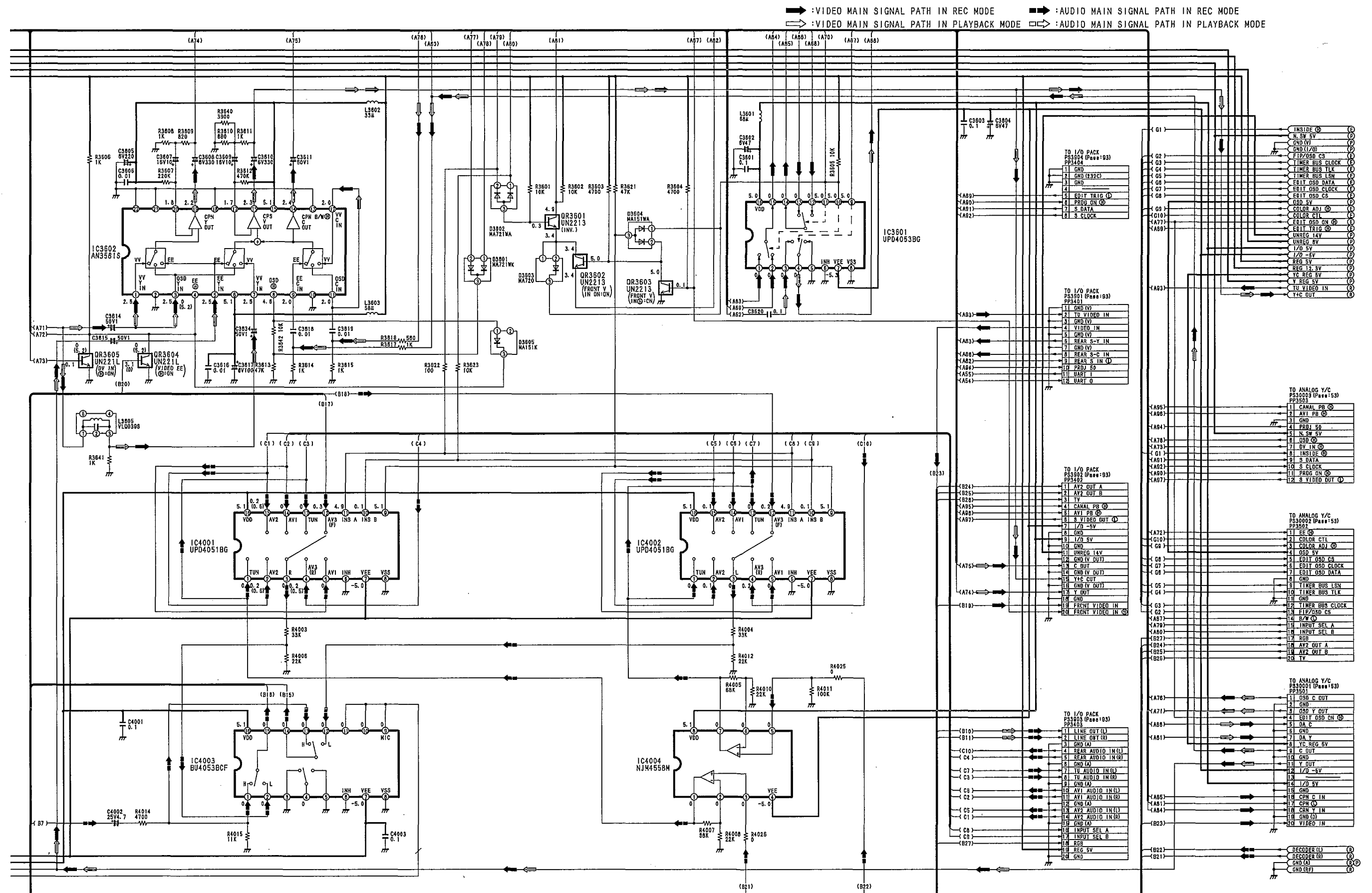
REF. NO.	IC2215										IC2216									
MODE	1	2	3	4	5						1	2	3	4	5					
STOP	0	0.1	0	0	3.4						0	0	0	0	3.4					
PLAY	0	0.4	1.3	0.3	3.4						0	0	0	0	3.4					
REC	0	0.4	0	0.3	3.4						0	0	0	0	1.0					
F.F	0	0.4	0	0.3	3.4						0	0	0	0	3.4					
REW	0	0.3	0	0.3	3.4						0	3.7	0	0	3.4					

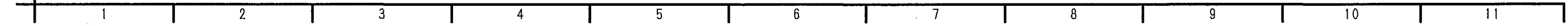
EDIT/SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (Mini DV : SP MODE)

REF. NO.	Q2201			Q2202			Q2203			Q2204			Q2205			Q2206		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	4.7	0	0	3.8	0.1	0	4.6	0	0	4.8	0	0	4.7	0	0	4.5	0
PLAY	0	4.7	0	0	3.9	0.1	0	4.6	0	0	4.8	0	0	4.7	0	0	0	4.5
REC	0	4.7	0	0	3.8	0.1	0	4.6	0	0	4.8	0	0	4.7	0	0	4.6	0
F.F	0	4.7	0	0	3.8	0.1	0	4.6	0	0	4.8	0	0	4.7	0	0	4.5	0
REW	0	4.7	0	0	3.9	0.1	0	4.6	0	0	4.8	0	0	4.7	0	0	4.5	0
REF. NO.	Q2207																	
MODE	E	C	B															
STOP	0	4.2	0.1															
PLAY	0	4.1	0.1															
REC	0	4.2	0.1															
F.F	0	4.2	0.1															
REW	0	4.2	0.1															
REF. NO.	QR2201			QR2202			QR2203			QR2204			QR2205			QR2206		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	3.5	0	5.1	0	0	0	3.4	0	0.1	2.8	0	0	4.0	0	0	4.5
PLAY	0	0	3.5	0	5.1	0	0	0	3.4	0	0.1	2.9	0	0	4.0	0	4.5	0
REC	0	0	3.5	0	5.1	0	0	0	3.4	0	0.2	2.8	0	0	4.0	0	0	4.5
F.F	0	0	3.5	0	5.1	0	0	0	3.4	0	0.1	2.9	0	0	4.0	0	0	4.5
REW	0	0	3.5	0	5.1	0	0	0	3.4	0	0.1	2.9	0	0	4.0	0	0	4.5
REF. NO.	QR2207			QR2208			QR2209			QR2210			QR2211			QR2212		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	3.5	0	0	3.5	0	4.5	1.0	0	3.6	1.1	0	4.5	0.9	0	0	3.3
PLAY	0	0	3.5	0	0	3.5	0	4.5	1.0	0	3.6	1.0	0	4.5	0.9	0	0	3.3
REC	0	0	3.5	0	0	3.5	0	4.6	1.0	0	3.6	1.1	0	4.5	0.9	0	0	3.3
F.F	0	0	3.5	0	0	3.5	0	4.5	1.0	0	3.6	1.0	0	4.5	0.9	0	0	3.3
REW	0	0	3.5	0	0	3.5	0	4.5	1.0	0	3.6	1.1	0	4.5	0.9	0	0	3.3
REF. NO.	QR2213			QR2214			QR2215			QR2216			QR2217			QR2218		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	4.4	0.5	0	0	3.7	0	4.6	0.4	0	5.1	0	0	5.1	0	0	5.0	0
PLAY	0	4.4	0.5	0	0	3.7	0	4.5	0.4	0	0	3.7	0	0	3.7	0	5.0	0
REC	0	4.4	0.5	0	0	3.7	0	4.6	0.4	0	0	3.7	0	0	3.7	0	5.1	0
F.F	0	4.4	0.5	0	0	3.7	0	4.5	0.4	0	0	3.7	0	0	3.7	0	5.0	0
REW	0	4.4	0.5	0	0	3.7	0	4.6	0.4	0	0	3.7	0	0	3.7	0	5.0	0
REF. NO.	QR2219			QR2220			QR2221			QR2222								
MODE	E	C	B	E	C	B	E	C	B	E	C	B						
STOP	0	0	4.7	0	0	3.2	0	0.1	3.1	0	0	3.5						
PLAY	0	0	4.7	0	0	3.2	0	0.1	3.1	0	0	3.5						
REC	0	0	4.7	0	0	3.2	0	0.1	3.1	0	0	3.5						
F.F	0	0	4.7	0	0	3.2	0	0.1	3.2	0	0	3.5						
REW	0	0	4.7	0	0	3.2	0	0.1	3.1	0	0	3.5						

3-15. AUDIO/VIDEO SECTION IN MAIN SCHEMATIC DIAGRAM



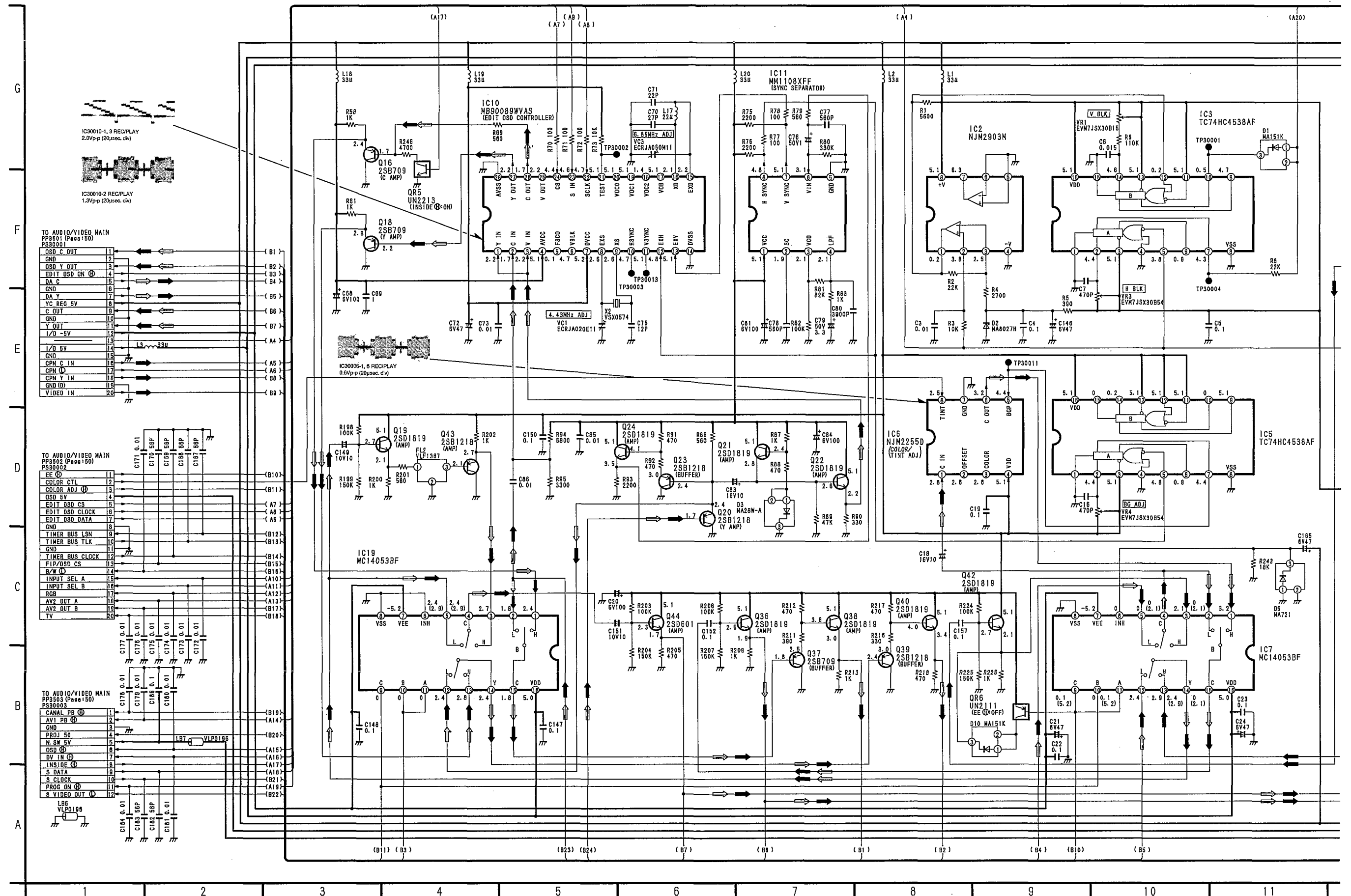




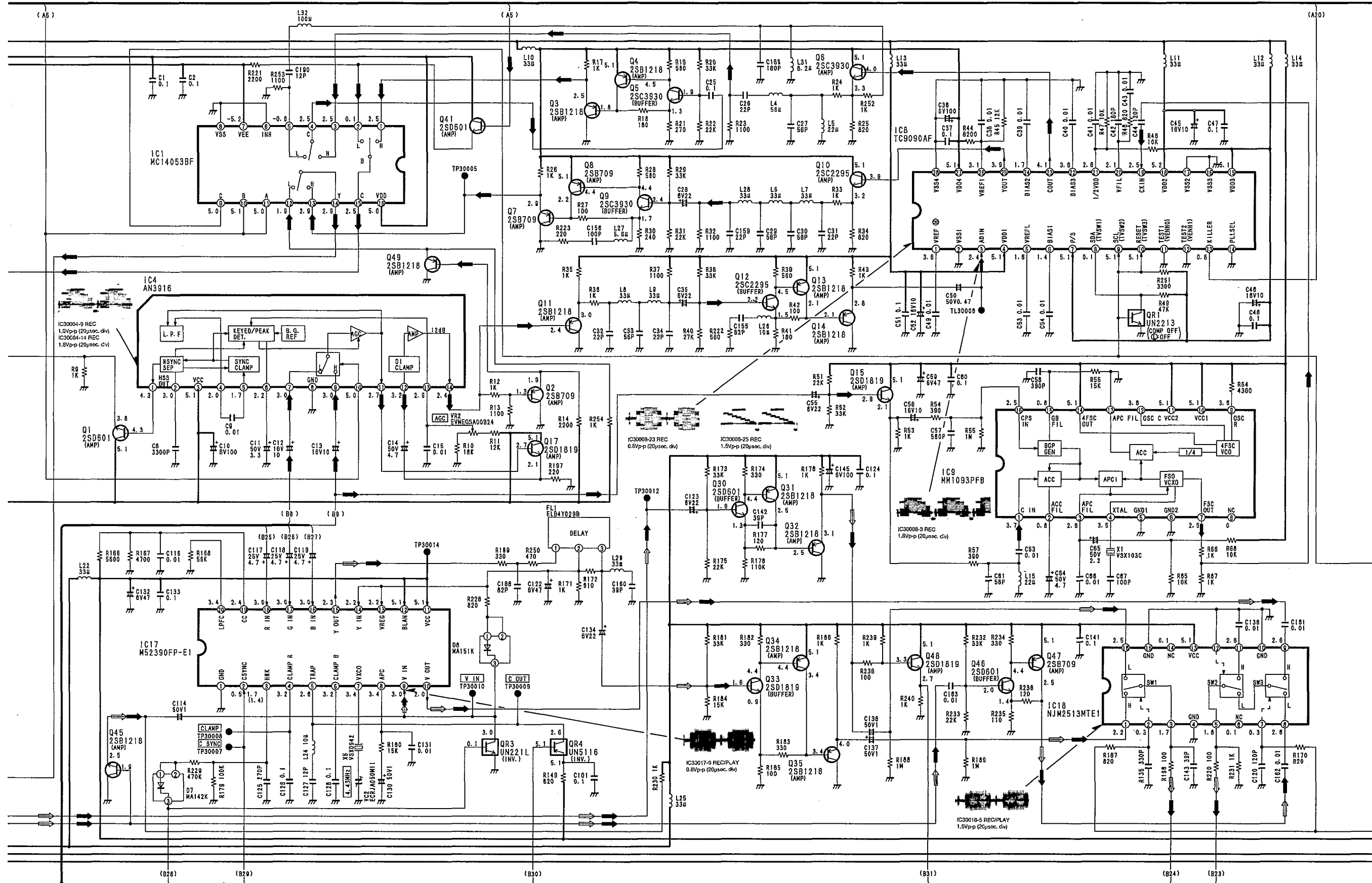
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-17. ANALOG Y/C SCHEMATIC DIAGRAM

[REF. NO. 30000 SERIES]



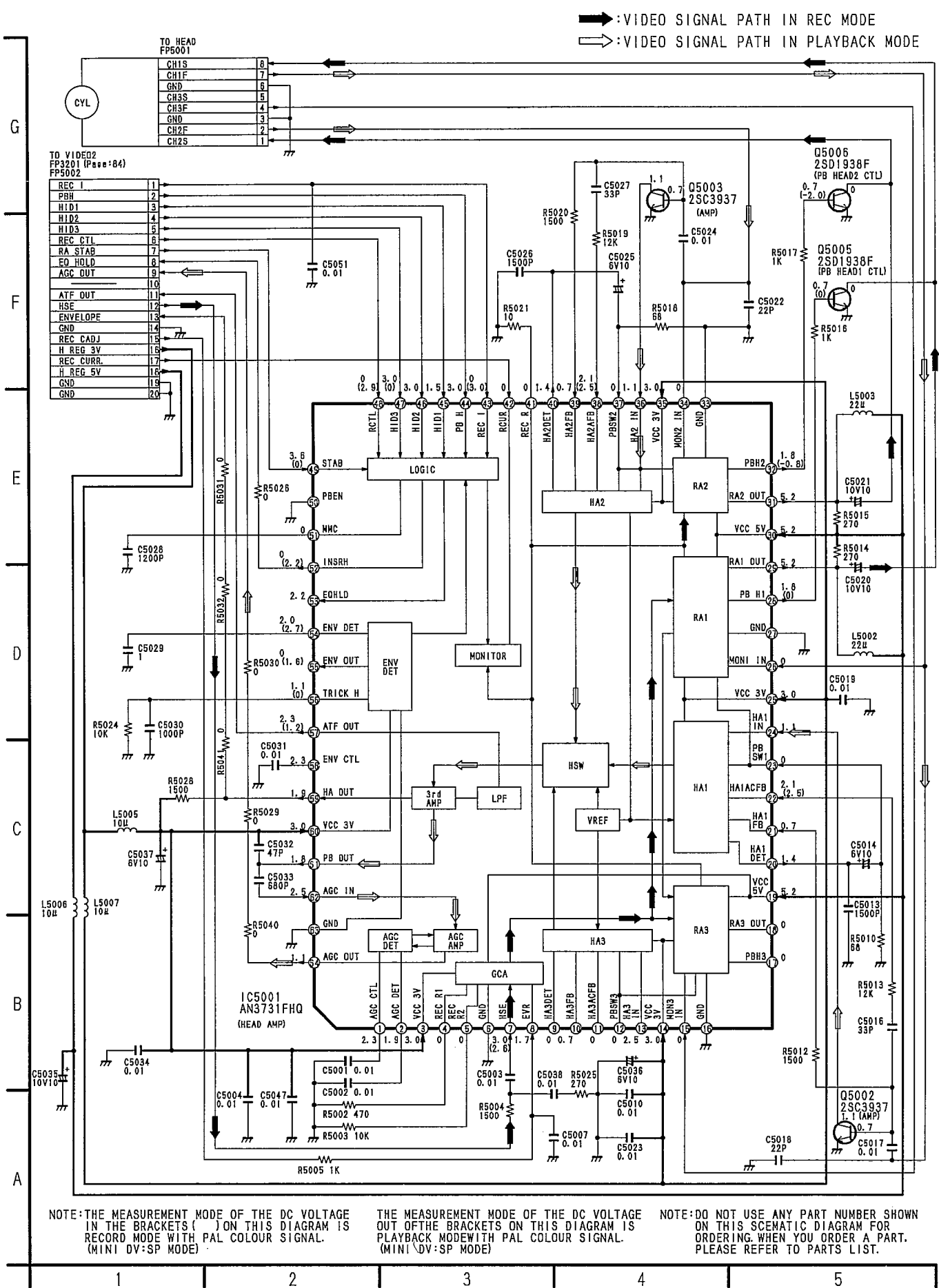
➡ : VIDEO MAIN SIGNAL PATH IN REC MODE
 ➡ : VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE



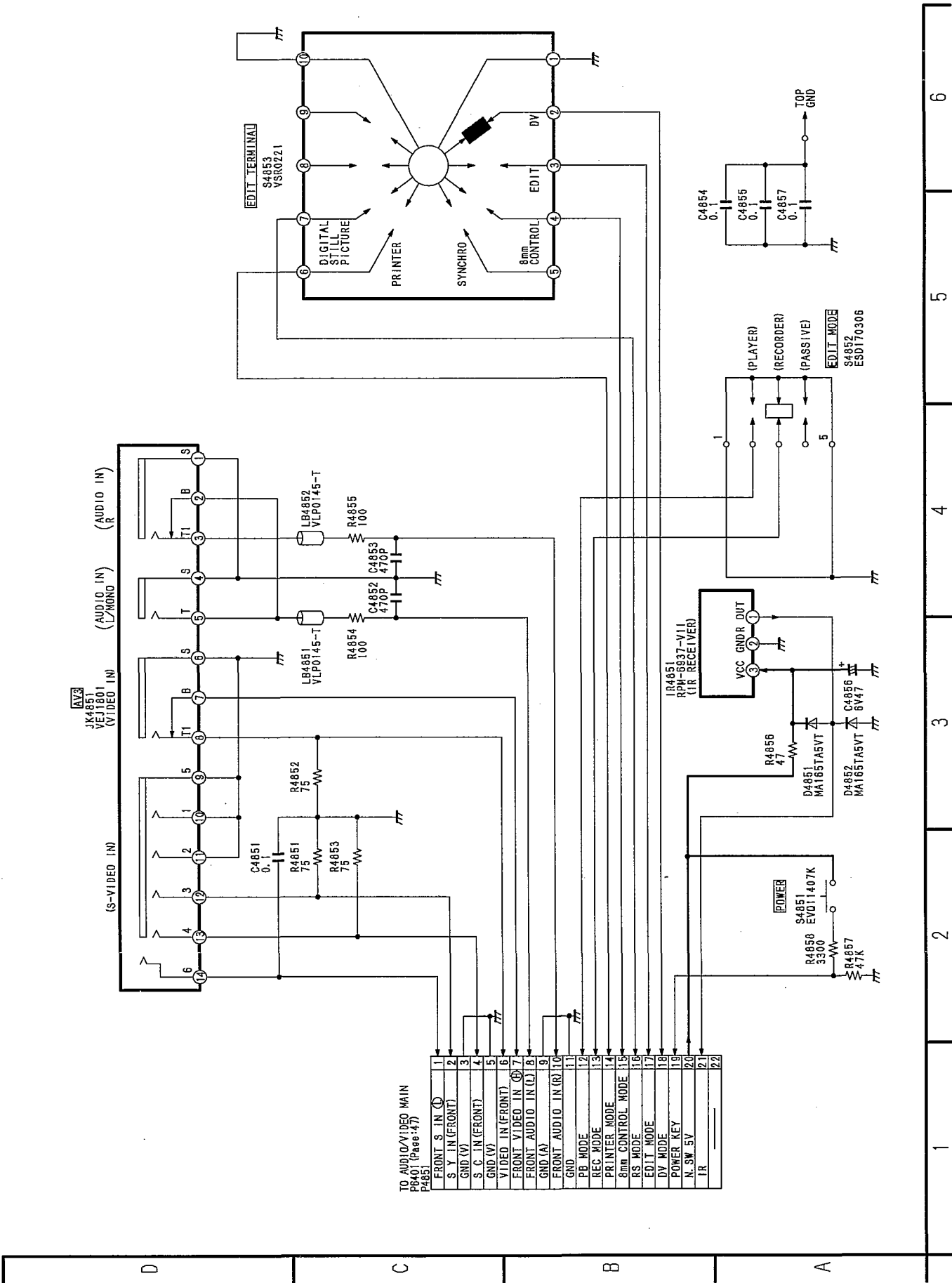
IC30013 (SABC161RIL16): SUB MICON

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	DCLOH	I	AD converter, not used	53	OSD $\oplus$	O	H=any OSD character displayed, L=no OSD character displayed
2	DCRCH	I	AD converter, not used	54	AV1 PB $\oplus$	O	Pin8 of I/O control $\rightarrow$ PB $\oplus$
3	JOG2	I	Jog dial 2 input	55	PROG $\oplus$	O	I/O control to switch IIC bus for LW-programmer. H: IIC bus is connected to AV2. L: IIC bus is not connected to AV2.
4	—	I	Hi-Z	56	VB	O	I/O control: The selection of VCR IN VA/VB:LL:tuner VA/VB:HL:AV1 VA/VB:LH:AV2 VA/VB:HH:AV3 or SAT Normal Audio Input select for ZN/ZT
5	Vss	—	GND	57	VA	O	Same as Pin56
6	XTAL1	I	Oscillator amplifier input, 16MHz	58	A0	O	A0 address line
7	XTAL2	O	Oscillator amplifier output, 16MHz	59	A1	O	A1 address line
8	Vcc	I	5V	60	A2	O	A2 address line
9	IIC SCL0	O	IIC clock line to CTX IC	61	A3	O	A3 address line
10	IIC SDA0	O	IIC data line to CTX IC	62	A4	O	A4 address line
11	COMB $\oplus$	O	Comb filter ON $\oplus$, OFF $\ominus$	63	A5	O	A5 address line
12	SAT IR	O	Infrared code for SAT receivers	64	A6	O	A6 address line
13	SHUTTLE4	I	Shuttle input 4	65	A7	O	A7 address line
14	SHUTTLE3	I	Shuttle input 3	66	Vss	—	GND
15	SHUTTLE2	I	Shuttle input 2	67	Vcc	I	5V
16	SHUTTLE1	I	Shuttle input 1	68	A8	O	A8 address line
17	LSN	O	Timer bus listen line	69	A9	O	A9 address line
18	TLK	I	Timer bus talk line	70	A10	O	A10 address line
19	SCL0 (spare)	O	NC	71	A11	O	A11 address line
20	SDA0 (spare)	O	NC	72	A12	O	A12 address line
21	RESET $\oplus$	O	Reset signal for Compact Text (0=normal, 1=Reset)	73	A13	O	A13 address line
22	CLK	I	Timer bus clock line	74	A14	O	A14 address line
23	B/W $\ominus$	O	L and High Impedance; L-B/W selected in FUNCTION menu	75	A15	O	A15 address line
24	Vss	—	GND	76	Vss	—	GND
25	Vcc	I	5V	77	Vcc	I	5V
26	A16	O	A16 address line	78	/RST	I	Reset Input (LOW level=reset active)
27	A17	O	A17 address line	79	/RSTOUT	O	for battery back up circuit
28	A18	O	A18 address line	80	/NMI	I	Non maskable interrupt, connected to Vcc
29	—	I	Pin is active for 4M EPROM	81	/CE	O	Chip enable for external EPROM (0=EPROM enabled)
30	—	O	NC (used for ROM Monitor input)	82	/Y	O	Chip select for SRAM
31	—	O	NC (used for ROM Monitor input)	83	FSCREEN $\oplus$	O	Fullscreen high signal, (0=no OSD fullscreen, 1=OSD fullscreen)
32	S/M $\ominus$	O	Croma Mix for SECAM/MESECAM box	84	AV2 OUT A	O	AV2 output selector A
33	/RD	O	External memory read strobe (for EPROM and SRAM)	85	BWBOX $\ominus$	O	force B/W OSD box for SECAM, (0=force B/W boxes, 1=colour boxes)
34	/WR	O	External memory write strobe (for SRAM)	86	IIC SDA1	O	IIC bus data line 1 (except EEPROM)
35	/READY	I	Ready input, not used	87	IIC SCL1	O	IIC bus clock line 1
36	ALE	O	Address latch enable output, not used	88	IIC SDA2	O	IIC bus clock line 2 (for EEPROM)
37	/EA	—	External access enable pin, connected to GND	89	P50 IN	I	Project50 input
38	Vss	—	GND	90	P50 OUT	O	Project 50 output
39	Vcc	I	5V	91	YC/CVBS	I	S VIDEO $\ominus$ INPUT
40	D0	I	D0 data line	92	AV2 OUT B	O	AV2 output selector B
41	D1	I	D1 data line	93	JOG1	I	Jog dial 1 input
42	D2	I	D2 data line	94	CSTBUS	I	Chip select signal for timer bus (1=OSD ucon selected, 0=FIP selectyed)
43	D3	I	D3 data line	95	—	O	NC (used for ROM Monitor input)
44	D4	I	D4 data line	96	TV $\oplus$	O	TV High: for I/O logic
45	D5	I	D5 data line	97	VAREF	I	Reference voltage for A/D converter, not used
46	D6	I	D6 data line	98	VAGND	—	GND for A/D converter, not used
47	D7	I	D7 data line	99	P50 in	I	Reserved for Project50 in
48	Vss	—	GND	100	CPB $\oplus$	I	PB $\oplus$ signal of AV2 is inputted. This logic will be used for I/O control.
49	Vcc	I	5V				
50	SAT $\oplus$	O	I/O control: The selection of SAT tuner or AV3. H: SAT tuner L: AV3 in This logic is valid, if AV3 is selected by VA/VB				
51	CS EE	O	Write enable for EEPROM. (1=READ only 0=Write enabled)				
52	RGB OFF $\oplus$	O	I/O control				

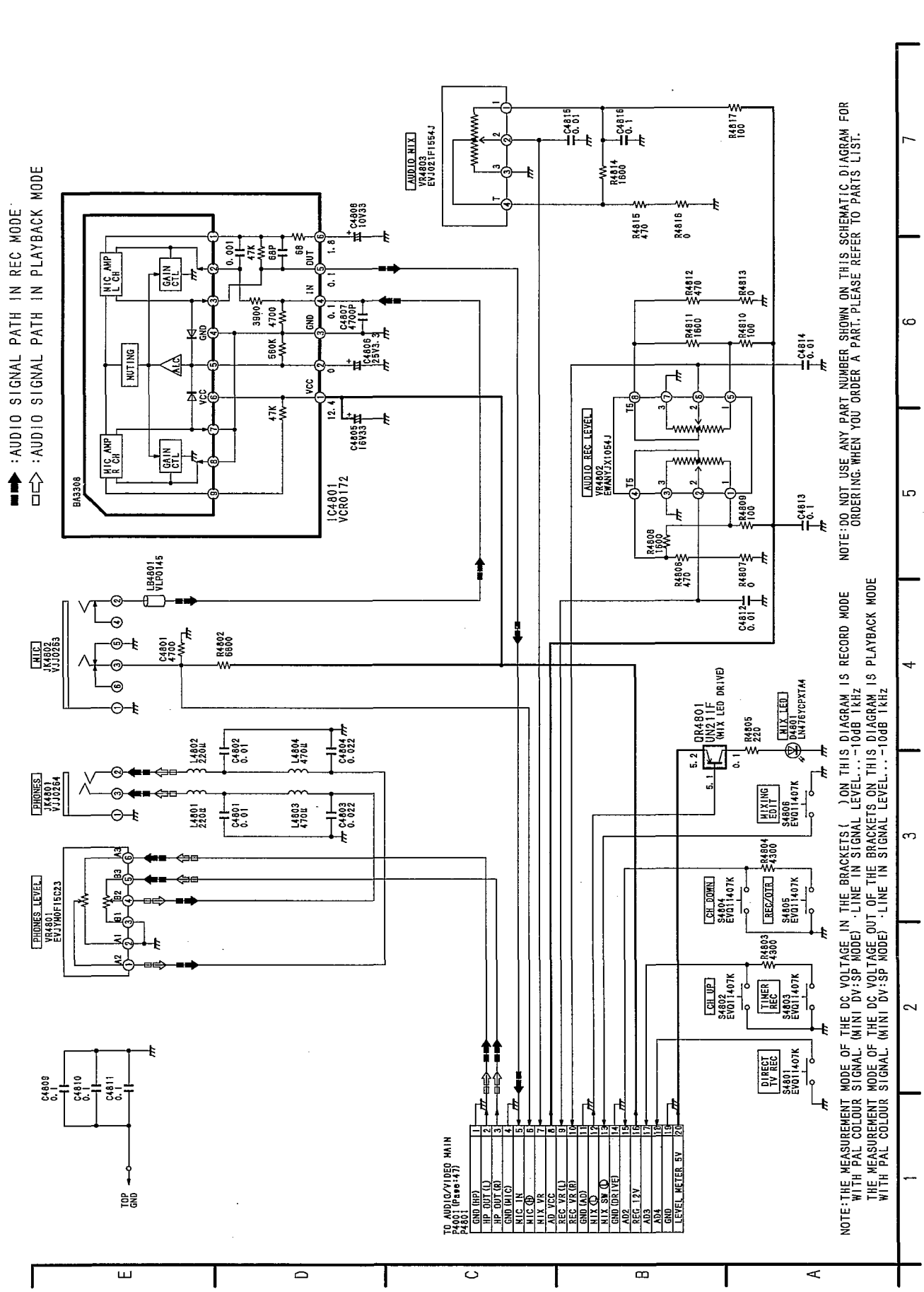
3-18. HEAD AMP SCHEMATIC DIAGRAM



3-19. FRONT (L) SCHEMATIC DIAGRAM

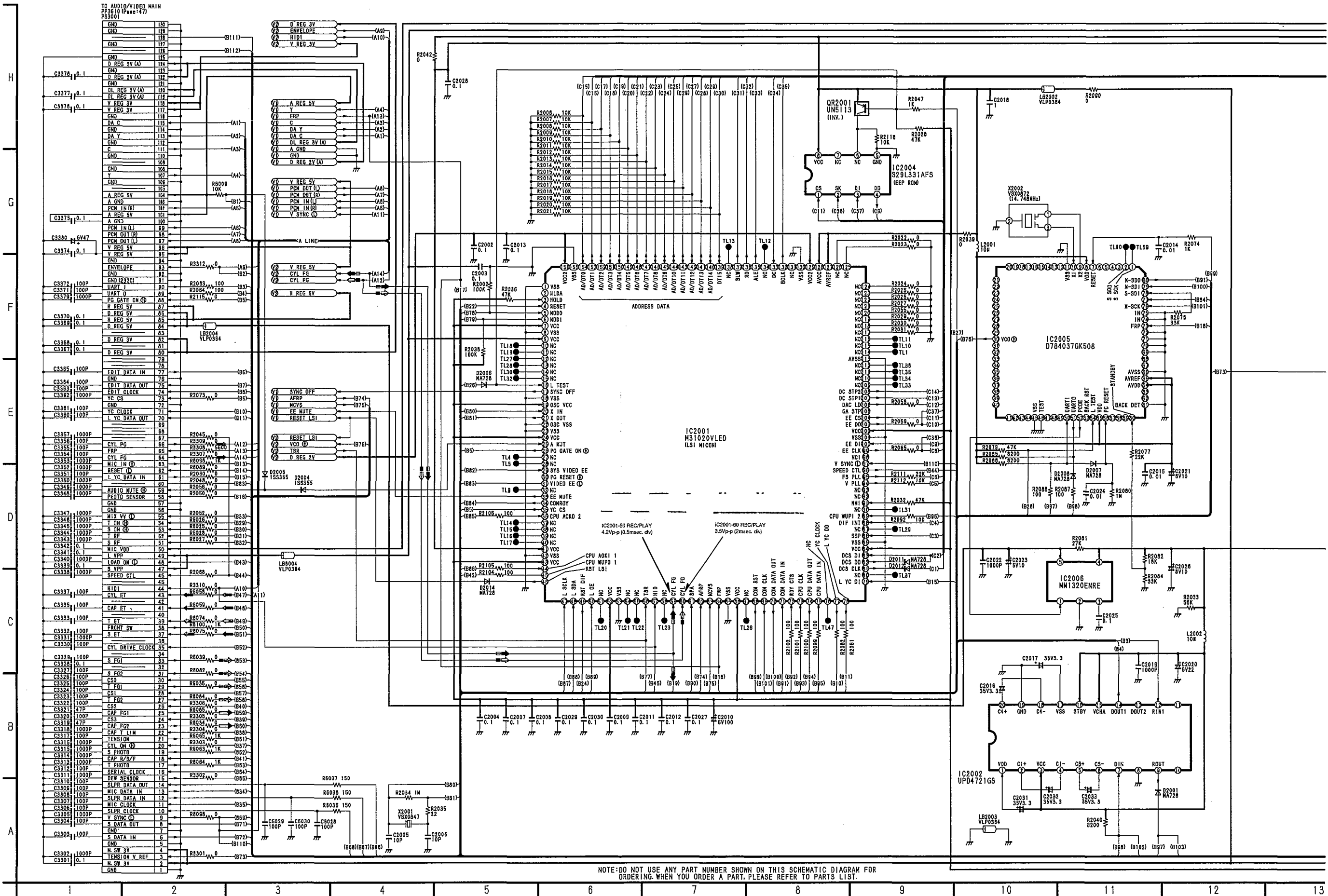


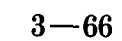
3-20. FRONT (R) SCHEMATIC DIAGRAM



NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE. WITH PAL COLOUR SIGNAL. (MINI DV: SP MODE) - LINE IN SIGNAL LEVEL... -10dB 1kHz. THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE. WITH PAL COLOUR SIGNAL. (MINI DV: SP MODE) - LINE IN SIGNAL LEVEL... -10dB 1kHz.

3-21. LSI/SYSTEM CONTROL & SERVO SECTION IN DIAITAL SCHEMATIC DIAGRAM





IC2001(M31020VLED) : LSI MICON

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	VSS	—		60	CYL PG	I	Cylinder PG
2	HLDA	O	Ext-Bus Hold Acknowledge/BST TCK (CLK)	61	SPA	I	SPA
3	HOLD	I	Ext-Bus Hold Request	62	AFRP	I	AFRP
4	RESET	I	Reset	63	MCVS	I	MCVS
5	MOD0	I	Single Chip Mode = Vss Vss	64	FRP	I	Frame reference pulse
6	MOD1	I	Memory Extend Mode = Vss Vcc	65	VSS	—	
7	VCC	—		66	VCC	—	
8	VSS	—		67	NC	O	—
9	VCC	—		68	COM RST	O	RS232C RESET
10	NC	O	—	69	COM CLK	I	RS232C CLK IN
11	NC	O	—	70	COM DATA OUT	O	RS232C SERIAL-DATA OUT
12	NC	O	—	71	COM DATA IN	I	RS232C SERIAL-DATA IN
13	NC	O	—	72	RDY CTS	I	from SYSCON ACK
14	NC	O	—	73	CPU CLK	O	to SYSCON CLK
15	NC	O	—	74	CPU DATA OUT	O	to SYSCON DATA
16	L TEST	I	EVR TEST MODE (L)	75	CPU DATA IN	I	from SYSCON DATA
17	SYNC OFF	O	L: Sync Gate Off H: Sync Gate On	76	NC	O	—
18	VSS	—		77	YC CLOCK	O	YC MICON Serial Clook
19	OSC VCC	—		78	L YC DO	O	YC MICON Data out
20	X IN	I	27MHz	79	L YC DI	I	YC MICON Data in
21	X OUT	O	27MHz	80	NC	O	—
22	OSC VSS	—		81	DSC CLK	O	CAS & DVIO Serial Clock
23	VSS	—		82	DSC D0	O	CAS & DVIO Serial Data Out
24	VCC	—		83	DSC D1	I	CAS & DVIO Serial Data In
25	A MUT	O	AUDIO MUTE	84	VCC	—	
26	PG GATE ON [Ⓢ]	O	PG GATE Control	85	VSS	—	
27	NC	O	—	86	SSP	I	Sector Start Pulse
28	NC	O	—	87	NC	O	—
29	SYS VIDEO EE	I	SYSCON EE/VV	88	DIF INT	I	Digital Interface IF
30	PG RESET [Ⓢ]	O	PG RESET	89	CPU WUPI 2	O	—
31	VIDEO EE [Ⓢ]	O	I/O Pack EE/VV Select	90	NC	O	—
32	NC	O	—	91	NMI	I	Pull-up
33	EEMUTE	O	EE MUTE	92	NC	O	—
34	COMRDY	O	232C MICON RDY	93	NC	O	—
35	YC CS	O	YC MICON CS	94	V PLL	O	Video PLL
36	CPU ACK 0-2	O	—	95	FS PLL	O	FS PLL (ATF ERR for Linear arrangement)
37	CTL 27M	O	27MHz Freq. Select	96	NC3(SPEED C TL)	I	CYL PG Amp Control (FF/REW 100 Times or more)
38	NC	O	—	97	NC2(VSYNC)	I	REC V Countermeasure
39	NC	O	—	98	NC1	O	Spare
40	NC	O	—	99	EE CLK	O	EEProm & DAC Clock
41	VCC	—		100	EE DI	I	EEProm & DAC Data In
42	VSS	—		101	VSS	—	
43	VCC	—		102	VCC	—	
44	CPU ACK0-1	I	from SYSCON ACK	103	EE DO	O	EEProm & DAC Data Out
45	CPU WUPO-1	O	to SYSCON REQ	104	EE CS	O	EEProm Chip Select
46	RST LSI	O	DVIO, CAS, EDA Reset	105	GA STP	O	L: Active H: Not Active
47	L SCKL	I	for FLASH CLK	106	DAC LD	O	DAC Load
48	L SDA	I	for FLASH DATA IN	107	DCS STP1	O	DVIO Serial Strobe Pulse
49	RST DIF	O	DIF LSI Reset	108	DCS STP2	O	CAS Serial Strobe Pulse
50	L OE	I	for FLASH WRITE OE	109	NC	O	—
51	NC	O	—	110	NC	O	—
52	VCC	—		111	NC	O	—
53	VSS	—		112	NC	O	—
54	NC	O	—	113	AVSS	—	
55	NC	O	—	114	NC	I	Connect to GND (0Ω)
56	TSR	I	Track Start Reference	115	NC	I	Connect to GND (0Ω)
57	HID	I	HSW	116	NC	I	Connect to GND (0Ω)
58	NC	O	—	117	NC	I	Connect to GND (0Ω)
59	CYL FG	I	Cylinder FG	118	NC	I	Connect to GND (0Ω)

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
119	NC	I	Connect to GND (0Ω)	138	BHW	O	—
120	NC	I	Connect to GND (0Ω)	139	DT15	I/O	EXT-Memory Address/Data Bus
121	NC	I	Connect to GND (0Ω)	140	ADDT14	I/O	EXT-Memory Address/Data Bus
122	NC	I	Connect to GND (0Ω)	141	ADDT13	I/O	EXT-Memory Address/Data Bus
123	NC	I	Connect to GND (0Ω)	142	ADDT12	I/O	EXT-Memory Address/Data Bus
124	NC	I	Connect to GND (0Ω)	143	ADDT11	I/O	EXT-Memory Address/Data Bus
125	NC	I	Connect to GND (0Ω)	144	ADDT10	I/O	EXT-Memory Address/Data Bus
126	NC	I	Connect to GND (0Ω)	145	ADDT9	I/O	EXT-Memory Address/Data Bus
127	AVREF	—		146	ADDT8	I/O	EXT-Memory Address/Data Bus
128	AVCC	—		147	ADDT7	I/O	EXT-Memory Address/Data Bus
129	VCC2	—		148	ADDT6	I/O	EXT-Memory Address/Data Bus
130	VSS	—		149	ADDT5	I/O	EXT-Memory Address/Data Bus
131		O	—	150	ADDT4	I/O	EXT-Memory Address/Data Bus
132	BCLK	O		151	ADDT3	I/O	EXT-Memory Address/Data Bus
133	D0	I	Data Complete for Ext-Memory mode	152	ADDT2	I/O	EXT-Memory Address/Data Bus
134	R/W	O	—	153	ADDT1	I/O	EXT-Memory Address/Data Bus
135	ALE	O	Address Latch Enable for Ext-Memory mode	154	ADDT0	I/O	EXT-Memory Address/Data Bus
136	RD	O	Read Strobe for Ext-Memory mode	155	VSS	—	
137	BLW	O	Byte Low Write for Ext-Memory mode	156	VCC2	—	

IC2005 (D784037GK508) : RS-232C INTERFACE MICROCOMPUTER

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	EVR SCK	O	Serial Clock Signal for SYNC Serial Communication (To Camera Micom)	46	TEST	—	GND
2	EVR SBO	O	Serial Data Signal for SYNC Serial Communication (To Camera Micom)	47	CGCS	O	CG CS
				48	CGPCL	O	CG PCL
				49	P12	—	(N.C.)
5	VTR T	O	SYNC Serial Communication Enable Signal for Camera Micom	50	UARTI	I	RS-232C Data
7	RESET	I	Reset Signal	51	UARTO	O	RS-232C Data
8	VDD	—	VDD (+3V)	52	PCOE	O	RS-232C Driver Output Enable
9	X2	O	Oscillator (14.7456MHz)	53	BACK RST	—	(N.C.)
10	X1	I	Oscillator (14.7456MHz)	54	TEST0	I	VTR Test Signal (H: Normal, L: Test Mode)
11	GND	—	GND	55	VDD	—	VDD (+3V)
12	S TITLE L	O	Sound Effect Control Signal	56	PC RST	I	Reset Signal Detect (AD Input)
13	LR CONT	O	LCD Driver Control (L/R Invert)	60	STBY	I	RS-232C Cable Connect Confirm
14	UD CONT	O	LCD Driver Control (U/D Invert)	61	BACK DET	—	GND
15	LCD P SAVE	—	(N.C.)	64	AVDD	—	Voltage for AD Converter (+3V)
17	INSEL	—	(N.C.)	65	AVREF1	—	Reference Voltage for AD Converter (+3V)
18	TALLY	O	TALLY LED Control	66	AVSS	—	GND for AD Converter
19	A LINE H	—	(N.C.)	67	ANO0	—	(N.C.)
20	T PH AD2	O	Take μ	68	ANO1	—	(N.C.)
21	T PH AD1	O	Take μ	69	AVREF2	—	GND
22	S PH AD2	O	Supply Tape Sensor	70	AVREF3	—	GND
23	S PH AD1	O	Supply Tape Sensor	71	P20	—	GND
24	EYE P SAVE	—	(N.C.)				
25	LCD WIDE	O	LCD Driver Wide Select	72	CAM T	I	Camera Service/232C Micom Select Signal (H: 232C, L: Camera Service)
26	SPK ON H	O	Speaker ON	73	FRP	I	Frame SYNC Signal
27	WIDNSW H	O	Noise Silent	76	SCK	I	Serial Clock Signal for SYNC Serial Communication (To VTR Micom)
28	VTR LED	O	VTR Mode LED				
29	CAM LED	O	CAMERA Mode LED	77	COM RDY	I	SYNC Serial Communication Enable Signal for VTR Micom
30	VCO H	O	VCO Test Mode [Ⓢ]				
31	LCD BL CONT	O	LCD Back Light Control Signal	78	EVR SDI	I	Serial Data Input for SYNC Serial Communication (To Camera Micom)
32	BL BRIGHT H	O	Back Light Bright Control Signal				
33	EVF BL CONT	O	EVF Back Light Control Signal	79	SDI	I	Serial Data for SYNC Serial Communication (To VTR Micom)
34	EVF ON	O	EVF ON				
35	LCD ON	O	LCD ON	80	SDO	O	Serial Data for SYNC Serial Communication (To VTR Micom)
44	CLKOUT	—	(N.C.)				
45	GND	—	GND				

IC6001 (M31020VLEC) : SYSTEM CONTROL MICROPROCESSOR

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	GND	—		55	CAP.FG	I	CAPSTAN 2 PHASE FG
2	—	O	Low FIX	56	TSR	I	HID PHASE REF. SIGNAL
3	—	O	Low FIX	57	HID	I	HEAD SELECT SW
4	RESET	I	RESET INPUT	58	CAP.FG2	I	CAPSTAN FG 2
5	MOD0	I	SIGNAL CHIP MODE SELECT	59	T.FG1	I	T REEL FG 1
6	MOD1	I	SIGNAL CHIP MODE SELECT	60	S.FG1	I	S REEL FG 1
7	VDD	—	VDD	61	SPA	I	
8	GND	—	GND	62	—	O	FIX Low OUTPUT
9	VDD	—	VDD	63	—	O	FIX Low OUTPUT
10	VIDEO.EE①	O	EE/VV SELECT OUTPUT (EE: L)	64	FRP	I	FRAME REF. SIGNAL
11	A.MUT③	O	AUDIO MUTE ③	65	GND	—	GND
12	ERASE③	O	ERASE ON ③/OFF	66	VDD	—	POWER
13	PHOTO.SNS	O	TAPE SENSOR LED (ON: L)	67	(CPU WUP0-2)	O	SYS CTL μ-PROCESSOR ↔ LSI (COMMUNICATION)
14	RASTAB	O	S TAB OUTPUT	68	CPU ACK0-1	O	SYS CTL μ-PROCESSOR ↔ LSI (COMMUNICATION)
15	MIX.VV①	O	MIX OUTPUT (VV MODE): L	69	SLPR.CLOCK	O	SERIAL/PARALLEL CONVERSION EXPANSION IC
16	EE.MONI①	O	EE MONITOR OUT: L	70	SLPR. DATA. OUT	O	SERIAL/PARALLEL CONVERSION EXPANSION IC
17	—	O	FIX LOW OUTPUT	71	SLPR. DATA. IN	I	SERIAL/PARALLEL CONVERSION EXPANSION IC
18	GND	—	GND	72	CPU RDY/CTS	O	SYS CTL μ-PROCESSOR ↔ LSI COMMUNICATION
19	VDD	—	OSC POWER	73	CPU CLOCK	I	SYS CTL μ-PROCESSOR ↔ LSI SERIAL SLAVE CLOCK
20	27MHz. IN	I	27MHz INPUT	74	CPU DATA OUT	O	SYS CTL μ-PROCESSOR ↔ LSI SERIAL DATA OUTPUT
21	27MHz. OUT	O	27MHz OUTPUT	75	CPU DATA IN	I	SYS CTL μ-PROCESSOR ↔ LSI SERIAL DATA INPUT
22	GND	—	OSC GND	76	(CPU ACK1-2)	O	SYS CTL μ-PROCESSOR ↔ LSI COMMUNICATION
23	GND	—	GND	77	EDIT.CLOCK	O	SYS CTL μ-PROCESSOR ↔ EDIT MICON SERIAL MASTER CLOCK
24	VDD	—	POWER	78	EDIT. DATA. OUT	O	SYS CTL μ-PROCESSOR ↔ EDIT MICON SERIAL DATA OUTPUT
25	FRONT SW	I	FRONT DOOR OPEN DETECT INPUT (OPEN: L, CLOSE/NO DOOR: H)	79	EDIT. DATA. IN	I	SYS CTL μ-PROCESSOR ↔ EDIT MICON SERIAL DATA INPUT
26	MP ADUB	O	FIX Low OUTPUT	80	—	O	FIX Low OUTPUT
27	—	O	FIX Low OUTPUT	81	SIRIAL.CLOCK	O	TIMER ↔ SYS CTL μ-PROCESSOR MASTER CLOCK
28	PINCH ON③	O	PINCH SOLENOID CONTROL OUTPUT	82	S. DATA. OUT	O	TIMER ↔ SYS CTL μ-PROCESSOR SIRIAL DATA OUTPUT
29	—	O	FIX Low OUTPUT	83	S. DATA. IN	I	TIMER ↔ SYS CTL μ-PROCESSOR SIRIAL DATA INPUT
30	—	O	FIX Low OUTPUT	84	VDD	—	POWER
31	—	O	FIX Low OUTPUT	85	GND	—	GND
32	TRAY VCHANGE	O	TRAY MOTOR VOLTAGE CONTROL OUTPUT	86	S. DIR	I	S REEL ROTATION DIRECTION DET.
33	S SOL ON③	O	S REEL SOLENOID CONTROL OUTPUT	87	T. DIR	I	T REEL ROTATION DIRECTION DET.
34	T SOL ON③	O	T REEL SOLENOID CONTROL OUTPUT	88	CAP. DIR	I	CAPSTAN ROTATION DIRECTION DET.
35	PINE RST③	O	RESET High OUTPUT	89	CPU WUPI-1	O	SYS CTL μ-PROCESSOR ↔ LSI PROCESSOR COMMUNICATION
36	—	O	FIX LOW OUTPUT	90	SSP	I	SECTOR START PULSE INPUT
37	S.ON③	O	S REEL ON/OFF CONTROL	91	—	I	
38	T.ON③	O	T REEL ON/OFF CONTROL	92	CYL. ET	O	CYLINDER TORQUE OUTPUT (12bit PWM)
39	S.RF	O	S REEL ROTATION DIRECTION CONTROL	93	CAP. ET	O	CAPSTAN TORQUE OUTPUT (12bit PWM)
40	T.RF	O	T REEL ROTATION DIRECTION CONTROL	94	T. ET	O	T REEL TORQUE OUTPUT (12bit PWM)
41	VDD	—	POWER	95	S. ET	O	S REEL TORQUE OUTPUT (14bit PWM)
42	GND	—	GND	96	DRV. CLK	O	CYLINDER DRIVER CLOCK
43	VDD	—	POWER				
44	MIC.ON③	O	POWER FOR MIC				
45	CS0	O	SERIAL/PARALLEL CONVERSION IC CHIP SELECT SIGNAL				
46	CS1	O	SERIAL/PARALLEL CONVERSION IC CHIP SELECT SIGNAL				
47	CS2	O	SERIAL/PARALLEL CONVERSION IC CHIP SELECT SIGNAL				
48	CS3	O	SERIAL/PARALLEL CONVERSION IC CHIP SELECT SIGNAL				
49	CAP.T.LIM	O	CAP TORQUE LIMIT				
50	CYL.ON①	O	CYL DRIVING: Low				
51	CAP.R/S/F	O	CAPSTAN ROTATION DIRECTION CONTROL				
52	VDD	—	POWER				
53	GND	—	GND				
54	CYL.FG	I	CYLINDER FG				

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
97	MIC. DATA	I/O	MIC SERIAL DATA	127	VDD	—	REF. POWER FOR ANALOG
98	MIC. CLK	O	MIC SERIAL CLOCK	128	VDD	—	ANALOG POWER
99	TM1 OK③	O	TIMER SERIAL CLOCK (500μ sec.)	129	VDD	—	POWER FOR BUS
100	SMAIN OK③	O	SYS. CTL MAIN ROUTIN (20msec.)	130	GND	—	GND
101	GND	—	GND	131	VSYNC①	I	V SYNC INPUT (SYNC EXIST: L)
102	VDD	—	POWER	132	—	O	
103	S. FG1	I	S REEL FG 1	133	—	I	GND (VIA 47k Resistor)
104	S. FG2	I	S REEL FG 2	134	MIC IN③	I	MIC INPUT (MIC IN: H)
105	T. FG1	I	T REEL FG 1	135	—	O	FIX Low OUTPUT
106	T. FG2	I	T REEL FG 2	136	—	O	FIX Low OUTPUT
107	CAP. FG1	I	CAPSTAN FG 1	137	—	O	FIX Low OUTPUT
108	CAP. FG2	I	CAPSTAN FG 2	138	—	O	FIX Low OUTPUT
109	LOAD③	O	LOADING MOTOR FORWARD OUTPUT	139	—	O	
110	UNLOAD③	O	LOADING MOTOR REVERSE OUTPUT	140	—	O	FIX Low OUTPUT
111	TRAY LOAD③	O	TRAY MOTOR FORWARD OUTPUT	141	—	O	FIX Low OUTPUT
112	TRAY UNLD③	O	TRAY MOTOR REVERSE OUTPUT	142	—	O	FIX Low OUTPUT
113	GND	—	GND	143	—	O	FIX Low OUTPUT
114	TEN V REF	I	INPUT	144	—	O	FIX Low OUTPUT
115	NTSC①	I	NTSC = LOW/PAL = HIGH	145	—	O	FIX Low OUTPUT
116	S. TEST	I	EVR ADJ INPUT	146	—	O	FIX Low OUTPUT
117	—	I	VIA RESISTOR GND	147	—	O	FIX Low OUTPUT
118	—	I	VIA RESISTOR GND	148	—	O	FIX Low OUTPUT
119	—	I	VIA RESISTOR GND	149	—	O	FIX Low OUTPUT
120	TENSION	I	TAPE TENSION A/D INPUT	150	—	O	FIX Low OUTPUT
121	S. PHOTO	I	S PHOTO SENSOR INPUT (BLACK TAPE: L)	151	—	O	FIX Low OUTPUT
122	T. PHOTO	I	T PHOTO SENSOR INPUT (BLACK TAPE: L)	152	—	O	FIX Low OUTPUT
123	DEW. SNS	I	DEW SENSOR INPUT	153	—	O	FIX Low OUTPUT
124	MIC. AD3	I	A/D INPUT 3 FOR MIC	154	—	O	FIX Low OUTPUT
125	MIC. AD2	I	A/D INPUT 2 FOR MIC	155	GND	—	GND
126	MIC. AD1	I	A/D INPUT1 FOR MIC	156	VDD 2	—	GND

LSI/SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (Mini DV : SP MODE)

REF. NO.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	3.6	3.6	2.7	0	3.6	3.6	0	3.6	0	0	0	0	0	0	3.6	3.6	0	3.6	1.7
PLAY	0	3.6	3.6	2.7	0	3.6	3.6	0	3.6	0	0	0	0	0	0	3.6	0	0	3.6	1.7
REC	0	3.6	3.6	2.7	0	3.6	3.6	0	3.6	0	0	0	0	0	0	3.6	3.6	0	3.6	1.7
F.F	0	3.6	3.6	2.7	0	3.6	3.6	3.6	3.6	0	0	0	0	0	0	3.6	3.6	0	3.6	1.7
REW	0	3.6	3.6	2.6	0	3.6	3.6	0	3.6	0	0	0	0	0	0	3.6	0	3.6	1.7	
REF. NO.	IC2001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	1.7	0	0	3.6	0	0	0	0	0	0	0	0	0	3.6	3.3	0	0	0	0	0
PLAY	1.8	0	0	3.6	0	0	0	0	3.6	0	3.6	0	0	3.6	3.3	0	3.6	0	0	0
REC	1.7	0	0	3.6	0	0	0	0	0	0	0	0	0	3.6	3.3	0	0	0	0	0
F.F	1.8	0	0	3.6	0	0	0	0	0	0	0	0	0	3.6	3.3	0	0	0	0	0
REW	1.8	0	0	3.5	0	3.6	0	0	0	0	0	0	0	3.6	3.3	0	0	0	0	0
REF. NO.	IC2001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.6	0	3.6	0	0	3.6	3.6	3.6	3.6	3.6	0	3.6	0	0	0	1.5	1.5	0	1.7	0.2
PLAY	3.6	0	3.6	0	0	3.6	3.6	3.6	3.6	3.6	0	3.6	0	0	0	1.5	1.5	0	1.7	0.2
REC	3.6	0	3.6	0	0	3.6	3.6	3.6	3.6	3.6	0	3.6	0	0	0	1.5	1.5	0	1.7	0.2
F.F	3.6	0	3.6	0	0	3.6	3.6	3.6	3.6	3.6	0	3.6	0	0	0	1.5	1.5	0	1.7	0.2
REW	3.6	0.7	3.6	0	0	3.6	3.6	3.6	3.6	3.6	0	3.6	0	0	0	1.5	1.5	0	1.6	0.2
REF. NO.	IC2001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	1.5	1.5	1.5	0	3.6	0	3.6	3.5	3.3	0.1	3.6	3.6	3.6	1.8	0	3.6	3.5	2.8	0
PLAY	0	1.5	1.5	1.5	0	3.6	0	3.6	3.5	3.3	0.1	3.6	3.6	3.6	1.5	0	3.6	3.5	2.8	0
REC	0	1.5	1.5	1.5	0	3.6	0	3.6	3.5	3.3	0	3.6	3.6	3.6	1.8	0	3.6	3.5	2.8	0
F.F	0	1.5	1.5	1.5	0	3.6	0	3.6	3.5	3.3	0.1	3.6	3.6	3.6	1.8	0	3.6	3.5	2.8	0
REW	0	1.5	1.5	1.5	0	3.6	0	3.6	3.5	3.3	0.1	3.6	3.6	3.6	1.8	0	3.6	3.5	2.8	0.9
REF. NO.	IC2001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.6	2.9	2.9	3.6	0	0	0	3.0	0	0	3.6	0	0	1.1	0	1.0	0	3.6	3.6	1.6
PLAY	3.6	3.0	2.9	3.6	0	0	0	3.0	0	0	3.6	0	0	0	1.6	1.0	0	3.6	3.6	1.1
REC	3.6	3.2	2.9	3.6	0	0	0	3.0	0	0	3.6	0	0	1.1	0	0.9	0	3.6	3.6	1.8
F.F	3.6	3.1	2.9	3.5	0	0	0	3.0	0	0	3.6	0	0	1.1	0	1.1	1.0	3.6	3.6	1.8
REW	3.6	3.3	2.9	3.6	0	0	0	3.0	0	0	3.6	0	0	1.1	0	1.0	3.6	3.6	3.6	1.8
REF. NO.	IC2001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0	3.6	3.6	0	0	0	2.7	3.5	0	0	0	0	0	1.5	1.5	1.5	0	0	0	0
PLAY	0	3.6	3.6	0	0	0	2.7	3.4	0	0	0	0	0	1.1	1.1	1.1	0	0	0	0
REC	0	3.6	3.6	0	0	0	2.7	3.4	0	0	0	0	0	1.7	1.8	1.7	0	0	0	0
F.F	0	3.6	3.6	0	0	0	2.7	3.5	0	0	0	0	0	1.8	1.8	1.8	0	0	0	0
REW	0	3.6	3.6	0	0	0	2.7	3.4	0	0	0	0	0	1.4	1.4	1.5	0	0	0	0
REF. NO.	IC2001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0	0	0	0	0	0	3.6	3.6	2.2	0	0	0.7	0	0	0	2.2	2.1	2.2	0.1	0
PLAY	0	0	0	0	0	0	3.6	3.6	2.2	0	0	0.7	0	0	0	2.1	2.2	2.2	0.1	0.1
REC	0	0	0	0	0	0	3.6	3.6	2.2	0	0	0.7	0	0	0	2.2	2.1	2.1	0.1	0.1
F.F	0	0	0	0	0	0	3.6	3.6	2.2	0	0	0.7	0	0	0	2.2	0	0	0.6	0
REW	0	0	0	0	0	0	3.6	3.6	3.6	0	0	0.7	0	0	0	2.2	2.2	2.2	0.1	0
REF. NO.	IC2001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156				
STOP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.2				
PLAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	2.2				
REC	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	2.2				
F.F	2.2	2.2	2.2	2.2	2.2	2.2	0	2.2	2.2	0	0	0	0	0	0	2.2				
REW	0.1	0	0	0.1	0.1	0.1	0.1	0	0.1	0.1	0	0	0	0	0	2.2				
REF. NO.	IC2002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	9.5	2.4	3.2	0.7	1.0	-2.2	3.2	0	3.2	3.2	0	0	9.5	-9.5	3.2	3.2	-9.5	0.8	0	4.0
PLAY	9.5	2.5	3.3	-0.7	1.0	-2.2	3.3	0	3.3	3.3	0	0	9.5	-9.5	3.3	3.3	-9.5	0.8	0	4.0
REC	9.5	2.5	3.3	-0.7	1.0	-2.2	3.3	0	3.3	3.3	0	0	9.5	-9.5	3.3	3.3	-9.5	0.8	0	4.0
F.F	9.5	2.5	3.3	-0.7	1.0	-2.2	3.3	0	3.3	3.3	0	0	9.5	-9.5	3.3	3.3	-9.5	0.8	0	4.0
REW	9.5	2.5	3.3	-0.7	1.0	-2.2	3.3	0	3.3	3.3	0	0	9.5	-9.5	3.3	3.3	-9.5	0.8	0	4.0
REF. NO.	IC2004																			
MODE	1	2	3	4	5	6	7	8												
STOP	0	3.6	3.6	1.7	0	0	0.6	3.7												
PLAY	0	3.6	3.6	1.6	0	0	0.8	3.7												
REC	0	3.6	3.6	1.7	0	0	0.8	3.6												
F.F	0	3.6	3.6	1.7	0	0	0.9	3.7												
REW	0	3.6	3.6	1.7	0	0	0.8	3.7												

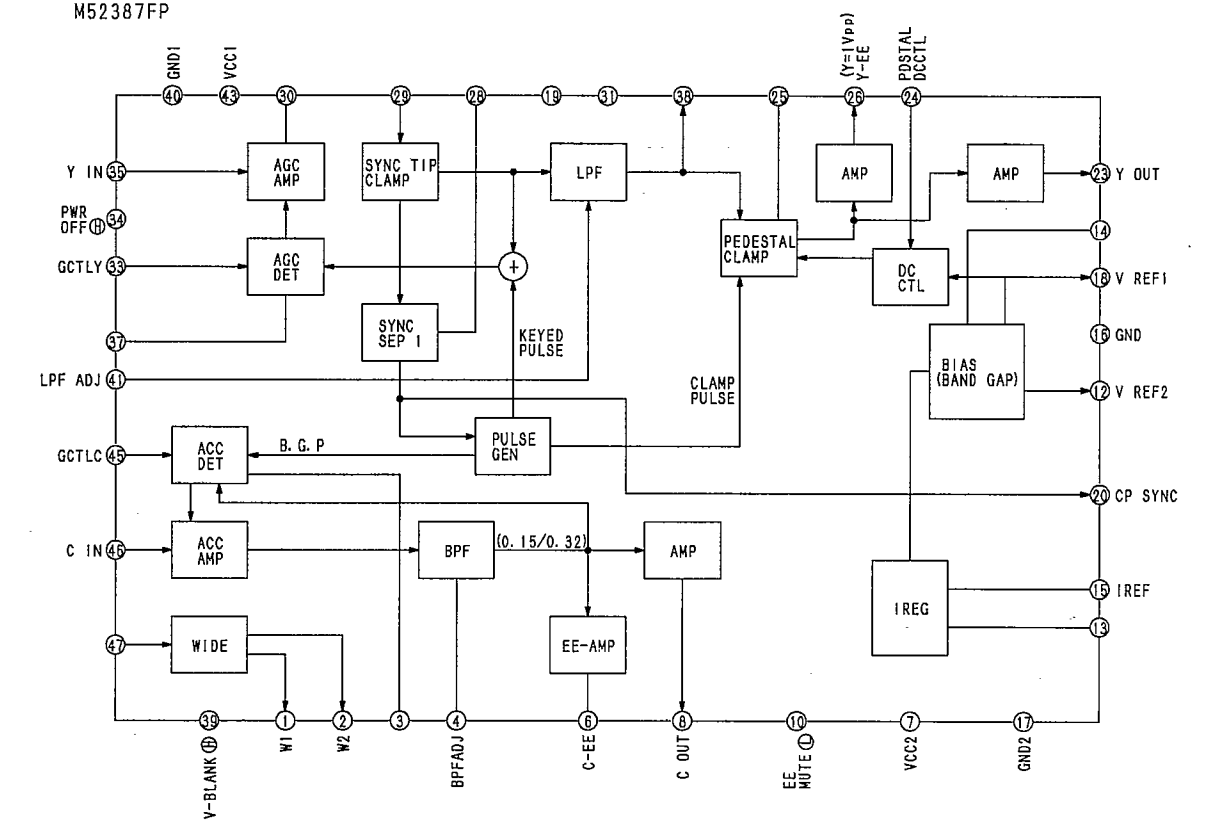
REF. NO.	IC2005																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.0	0.8	0	0	3.7	0	3.6	3.7	1.8	1.6	0	0	0	3.7	3.7	0	0	3.7	0	0
PLAY	3.0	0.8	0	0	3.7	0	3.6	3.7	1.8	1.7	0	0	0	3.7	3.7	0	0	3.7	0	0
REC	3.0	0.8	0	0	3.6	0	3.6	3.6	1.8	1.5	0	0	0	3.6	3.6	0	0	3.6	0	0
F.F	3.0	0.8	0	0	3.7	0	3.6	3.7	1.8	1.5	0	0	0	3.7	3.7	0	0	3.7	0	0
REW	3.0	0.8	0	0	3.7	0	3.6	3.7	1.8	1.5	0	0	0	3.7	3.7	0	0	3.7	0	0
REF. NO.	IC2005																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	0	0	3.7	0	3.7	3.7	0	0	3.7	3.7	3.7	0	0	0	0	0	0
PLAY	0	0	0	0	0	3.7	0	3.7	3.7	0	0	3.7	3.7	3.7	0	0	0	0	0	0
REC	0	0	0	0	0	3.6	0	3.6	3.6	0	0	3.6	3.6	3.6	0	0	0	0	0	0
F.F	0	0	0	0	0	3.7	0	3.7	3.7	0	0	3.7	3.7	3.6	0	0	0	0	0	0
REW	0	0	0	0	0	3.7	0	3.7	3.7	0	0	3.7	3.7	3.7	0	0	0	0	0	0
REF. NO.	IC2005																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	0	0	0	0	0	3.7	0	3.4	3.7	3.7	0	3.6	3.7	3.3	0	0	0	2.1
PLAY	0.1	0	0	0	0	0	0	3.7	0	3.4	3.7	3.7	0	3.6	3.7	3.3	0	0.1	0	2.1
REC	0	0	0	0	0	0	0	3.6	0	3.4	3.6	3.6	0	3.6	3.6	3.3	0	0	0	2.1
F.F	0	0	0	0	0	0	0	3.7	0	3.4	3.7	3.7	0	3.6	3.7	3.3	0	0	0	2.1
REW	0	0	0	0	0	0	0	3.7	0	3.4	3.7	3.7	0	3.6	3.7	3.3	0	0	0	2.1
REF. NO.	IC2005																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	0	3.7	3.7	0	0	0	0	0	0	0	1.5	0	0	3.5	3.6	0	3.3	0.1
PLAY	0	0	0	3.7	3.7	0	0	0	0	0	0	0.1	1.5	0	0	3.5	3.6	0	3.3	0.1
REC	0	0	0	3.6	3.6	0	0	0	0	0	0	0	1.5	0	0	3.5	3.6	0	3.3	0.1
F.F	0	0	0	3.7	3.7	0	0	0	0	0	0	0	1.5	0	0	3.5	3.6	0	3.3	0.1
REW	0	0	0	3.7	3.7	0	0	0	0	0	0	0	1.5	0	0	3.5	3.6	0	3.3	0.1
REF. NO.	IC2006																			
MODE	1	2	3	4	5															
STOP	3.7	0	1.2	3.3	5.2															
PLAY	3.7	0	1.2	3.3	5.1															
REC	3.7	0	1.2	3.3	5.1															
F.F	3.7	0	1.2	3.3	5.1															
REW	3.7	0	1.2	3.3	5.1															
REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	2.7	0	0	3.6	0	3.6	0	0	0	0	3.6	3.6	3.6	0	0	3.6	1.8
PLAY	0	0	0	2.7	0	0	3.6	0	3.6	3.6	0	0	3.6	3.6	3.6	3.6	0	0	3.6	1.8
REC	0	0	0	2.6	0	0	3.6	0	3.6	0	0	3.6	3.6	0	3.6	3.6	0	0	3.6	1.8
F.F	0	0	0	2.7	0	0	3.6	0	3.6	0	0	0	3.6	3.6	3.6	3.6	0	0	3.6	1.8
REW	0	0	0	2.6	0	0	3.6	0	3.6	0	0	0	3.6	3.6	3.6	3.6	0	0	3.6	1.8
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	1.8	0	0	3.6	0.1	0	0	0	0	0	0	3.6	0	0	0	0	0	0	3.6	0
PLAY	1.7	0	0	3.6	0.1	0	0	3.6	0	0	0	3.6	0	0	0	0	0	3.6	3.6	0
REC	1.8	0	0	3.6	0.1	0	0	3.6	0	0	0	3.6	0	0	0	0	3.6	3.6	3.6	0
F.F	1.2	0	0	3.6	0.1	0	0	0	0	0	0	3.6	0	0	0	0	3.6	3.6	3.6	0
REW	1.7	0	0	3.6	0.1	0	0	0	0	0	0	3.6	0	0	0	0	3.6	3.6	3.6	3.6
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.6	0	3.6	3.6	0	0	0	0	3.6	3.6	1.8	3.6	0	3.4	0	1.5	0	0	3.3	3.3
PLAY	3.6	0	3.6	3.6	0.5	0.4	0.4	0.4	3.6	0	0	3.6	0	0	1.7	1.8	1.5	1.6	1.7	1.7
REC	3.6	0	3.6	3.6	0.4	0.3	0.4	0.4	3.6	0	0	3.6	0	1.7	1.8	1.5	1.5	1.6	1.7	1.7
F.F	3.6	0	3.6	3.6	0.4	0.4	0.4	0.4	3.6	1.8	1.8	3.6	0	1.7	0	1.5	1.5	0	1.6	1.6
REW	3.6	0	3.6	3.6	3.6	0.3	0.4	0.4	3.6	0	1.8	3.6	0	1.7	0	1.5	1.5	0	1.6	1.6
REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	0	1.5	0	3.6	0	0	3.6	0	3.7	3.6	3.6	3.6	3.6	0	3.6	3.6	3.7	0
PLAY	0	0	0	1.5	0	3.6	0	0	3.3	1.0	3.3	3.6	3.6	1.5	3.6	0	3.3	2.9	3.6	0
REC	0	0	0	1.5	1.5	3.6	0	0	3.3	1.0	3.2	3.6	3.6	1.8	3.6	0	3.3	2.8	3.6	0
F.F	0	0	0	1.5	0	3.6	0	0	3.3	3.3	3.3	3.6	3.6	3.6	3.6	0	2.8	2.8	3.6	0
REW	0	0	0	1.5	0	3.6	0	0	3.3	1.0	3.3	3.6	1.1	3.6	2.6	0	3.3	2.8	3.6	0
REF. NO.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.6	3.6	3.7	3.6	0	3.7	3.7	3.7	3.7	0	0	0	3.6	1.8	0	1.8	3.7	3.7	0	3.6
PLAY	3.1	3.0	3.5	3.6	0	0	0	3.7	0	0	0	1.9	1.6	0.3	0.1	1.8	3.7	3.7	0.1	1.8
REC	3.1	3.0	3.5	3.6	0	0	0	3.6	3.6	0	0	0	1.9	0.2	0.1	1.8	3.6	3.7	3.7	1.8
F.F	3.1	3.1	3.5	3.6	0	0	0	0	0	0	0	1.9	1.8	0.7	0	1.8	3.6	3.7	0.1	1.8
REW	3.1	3.0	3.5	3.6	0	3.7	3.7	3.7	0	0	0	1.9	1.8	0	0.4	1.8	3.7	3.7	0.1	1.8

REF. NO.	IC6001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0	0	3.6	3.3	0	3.3	0	0	0	0	0	0	0	1.8	3.6	3.6	0	0	0	3.3
PLAY	0	3.6	1.6	1.7	1.6	1.6	1.6	1.6	0	0	0	0	0	1.8	3.6	3.6	0	0	0	2.7
REC	0	3.6	1.7	1.6	1.6	1.7	1.6	1.6	0	0	0	0	0	1.8	3.6	3.6	0	0	0	2.7
F.F	0	3.6	1.6	1.6	1.6	1.6	0	3.3	0	0	0	0	0	1.8	3.6	3.6	0	0	0	2.1
REW	0	3.6	1.6	1.6	1.6	1.6	2.9	3.3	0	0	0	0	0	1.8	3.6	3.6	0	0	0	1.0
REF. NO.	IC6001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0	0	0	3.7	3.7	3.7	3.6	3.6	3.6	0	0	2.5	2.2	0	3.0	3.6	3.6	3.6	1.7	1.7
PLAY	0.1	0.1	0.1	3.7	3.7	3.7	3.6	3.6	3.6	0	0	2.3	0	0	0	3.6	3.6	3.6	1.6	1.6
REC	0	0	0	3.7	3.7	3.7	3.6	3.6	3.6	0	0	2.2	0	0	0	3.6	3.6	3.6	1.7	1.7
F.F	0.1	0	0	3.7	3.7	3.7	3.6	3.6	3.6	0	0	2.2	0	0	0	3.6	3.6	3.6	1.6	1.6
REW	0.1	0.1	0	3.7	3.7	3.7	3.6	3.6	3.6	0	0	2.2	0	0	0	3.6	3.6	3.6	1.7	1.6
REF. NO.	IC6001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156				
STOP	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0	3.6				
PLAY	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.6	1.6	0	3.6				
REC	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0	3.6				
F.F	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.7	1.7	1.7	1.6	0	3.6				
REW	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0	3.6				
REF. NO.	IC6002																			
MODE	1	2	3	4	5															
STOP	2.7	3.6	0	0	3.4															
PLAY	2.7	3.6	0	0	3.4															
REC	2.7	3.6	0	0	3.4															
F.F	2.7	3.6	0	0.9	3.4															
REW	2.7	3.6	0	0.9	3.4															
REF. NO.	IC6003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	3.7	0	0	0	3.3	0	0	0	3.3	0	3.3	0	3.7	3.7						
PLAY	0	3.7	1.7	0	1.6	0	0	0	1.6	0	1.6	3.7	0	3.7						
REC	0	3.7	1.6	0	1.6	0	0	0	1.6	0	1.6	3.7	0	3.7						
F.F	0	3.7	1.5	0	1.5	0	0	0	1.5	0	1.6	3.7	0	3.7						
REW	3.7	0	1.5	0	1.5	0	0	0	1.6	0	1.6	0	3.7	3.7						
REF. NO.	IC6004										IC6005									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5					
STOP	0	0	0	0	3.6	3.7	3.7	3.7			0	0	0	0	3.7					
PLAY	1.6	1.6	0	0	3.7	3.7	3.7	3.7			1.6	1.6	0	1.8	3.7					
REC	1.6	1.6	0	0	3.7	3.7	3.7	3.7			1.6	1.6	0	1.8	3.7					
F.F	3.3	0	3.7	0	0	3.7	3.7	3.7			0	0	0	0	3.7					
REW	0	3.3	0	0	3.7	3.7	3.7	3.7			0	3.3	0	3.7	3.7					
REF. NO.	IC6006																			
MODE	1	2	3	4	5	6	7	8												
STOP	1.8	1.8	1.8	0	0	0	0	3.6												
PLAY	1.8	1.8	1.8	0	0	0	0	3.6												
REC	1.8	1.8	1.8	0	0	0	0	3.6												
F.F	1.8	1.8	1.8	0	0	0	0	3.6												
REW	1.8	1.8	1.8	0	0	0	0	3.6												

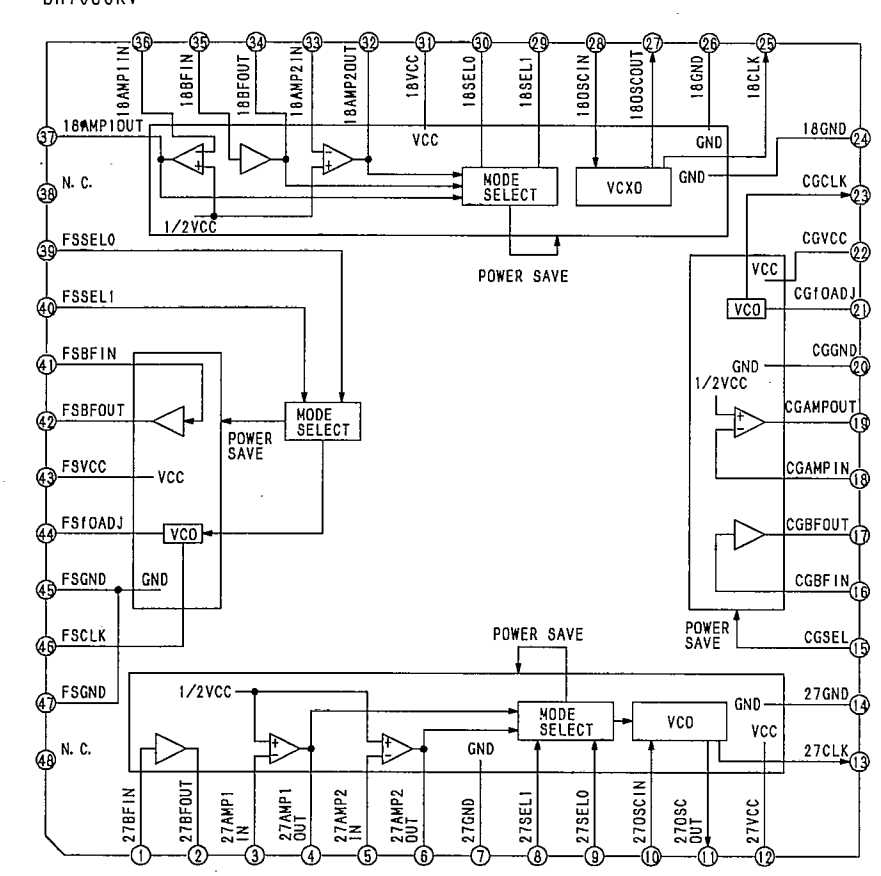
LSI/SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (Mini DV : SP MODE)

REF. NO.	Q6001																	
MODE	E	C	B															
STOP	3.7	3.7	3.6															
PLAY	3.7	3.7	3.6															
REC	3.7	3.7	3.6															
F.F	3.7	3.7	3.6															
REW	3.6	3.7	3.6															
REF. NO.	QR2001			QR6001														
MODE	E	C	B	E	C	B												
STOP	3.7	0	3.6	0	3.4	0												
PLAY	3.7	0	3.6	0	3.4	0												
REC	3.7	0	3.6	0	3.4	0												
F.F	3.7	0	3.6	0	3.4	0												
REW	3.7	0	3.6	0	3.4	0												

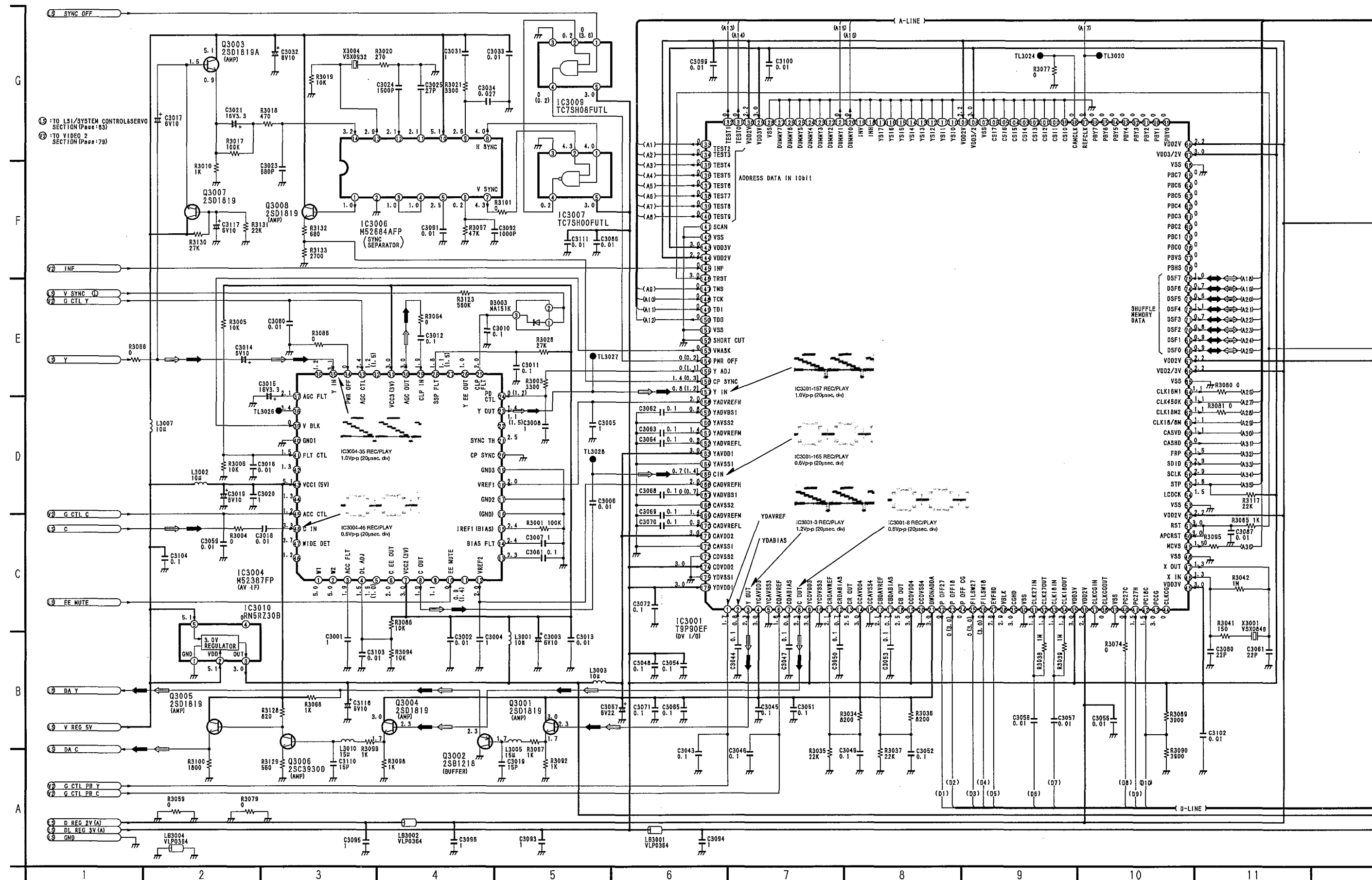
IC3004
M52387FP

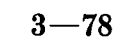


IC3005
BH7086KV

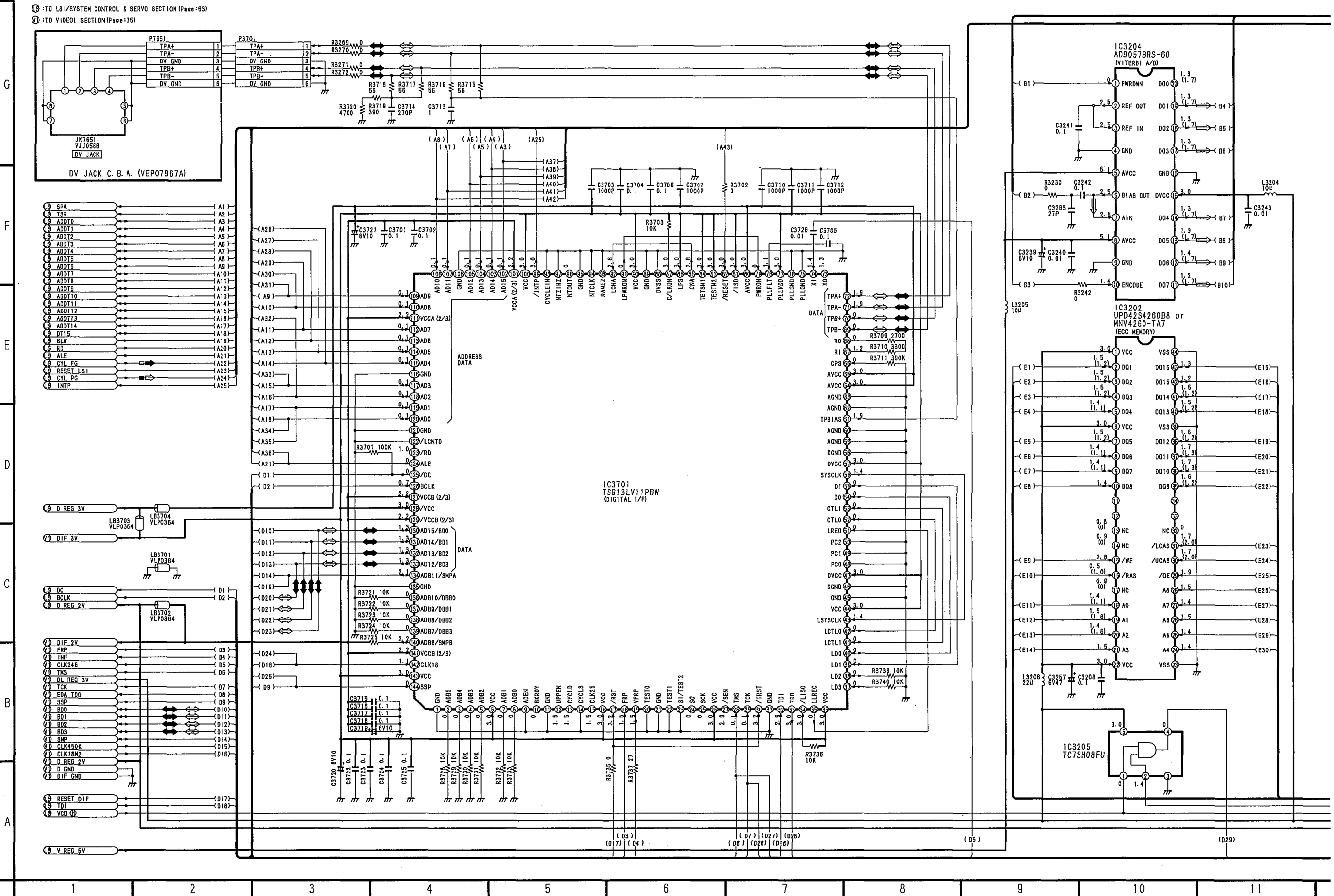


3-22. VIDEO 1 SECTION IN DIGITAL SCHEMATIC DIAGRAM

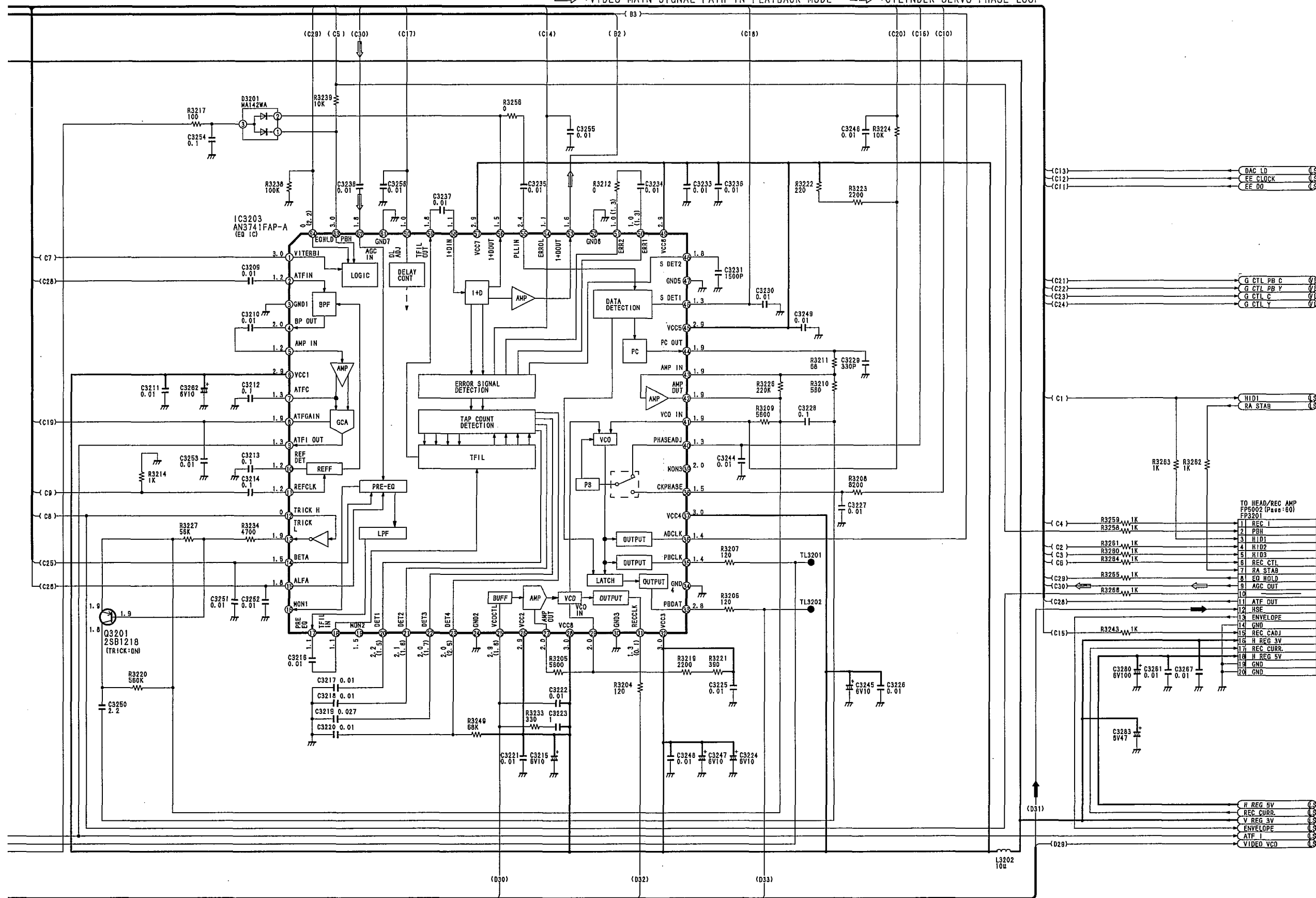




3-23. VIDEO 2 SECTION IN DIGITAL, DV JACK SCHEMATIC DIAGRAMS



→ : VIDEO MAIN SIGNAL PATH IN REC MODE ⇨ : CYLINDER SERVO SPEED LOOP
 ⇨ : VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE ⇨ : CYLINDER SERVO PHASE LOOP



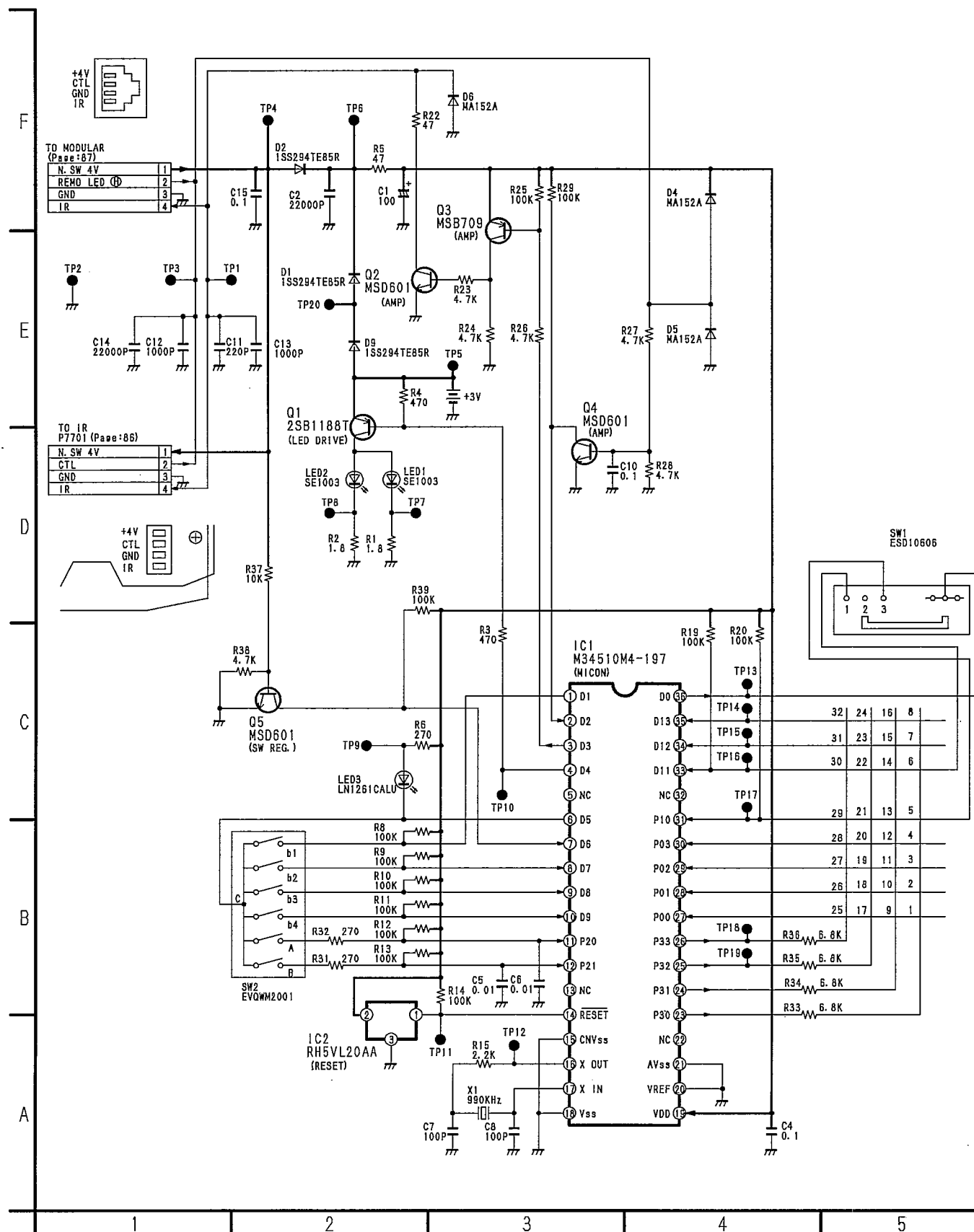
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL (MINI DV:SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL (MINI DV:SP MODE)

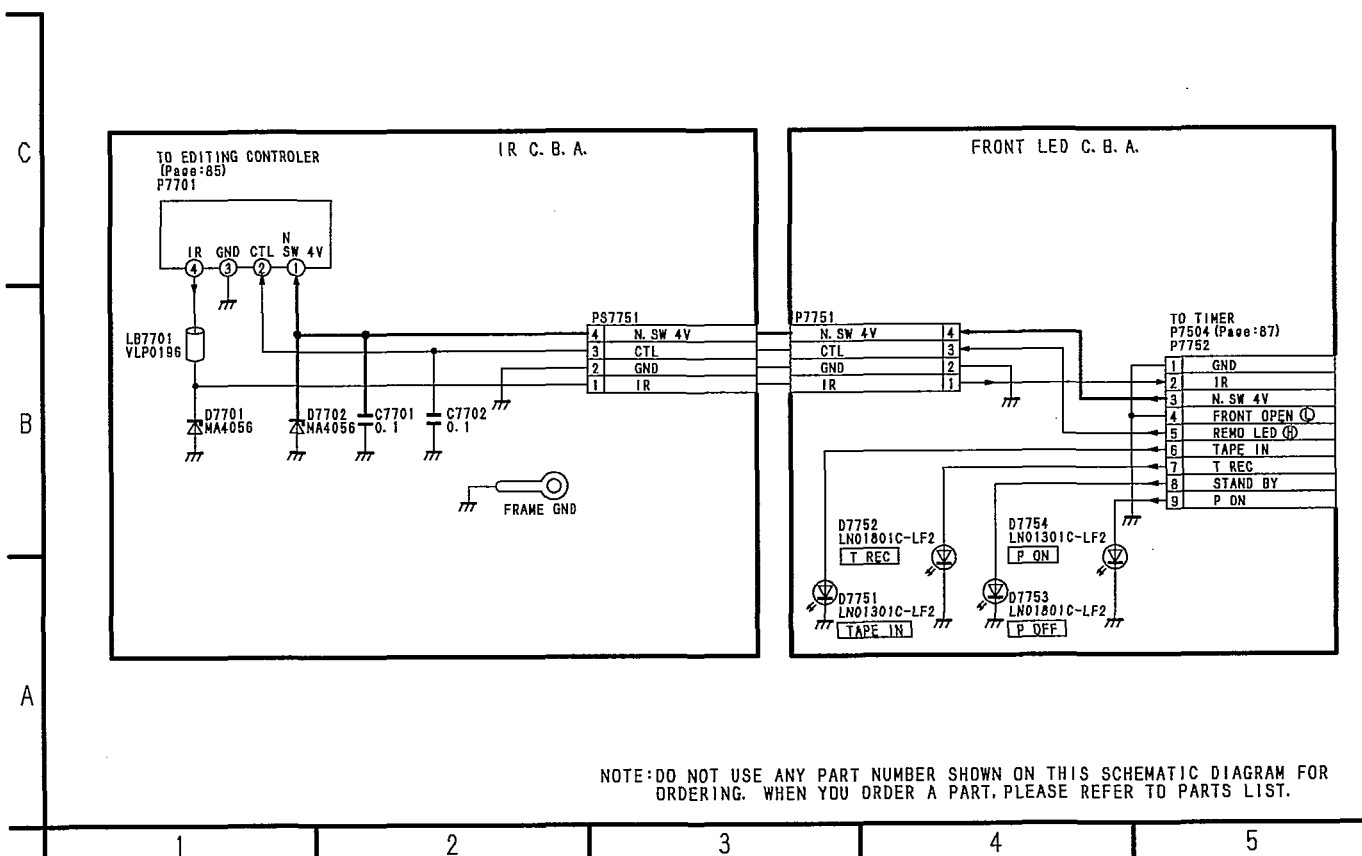
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

23 24 25 26 27 28 29 30 31 32 33

3-24. EDITING CONTROLLER SCHEMATIC DIAGRAM



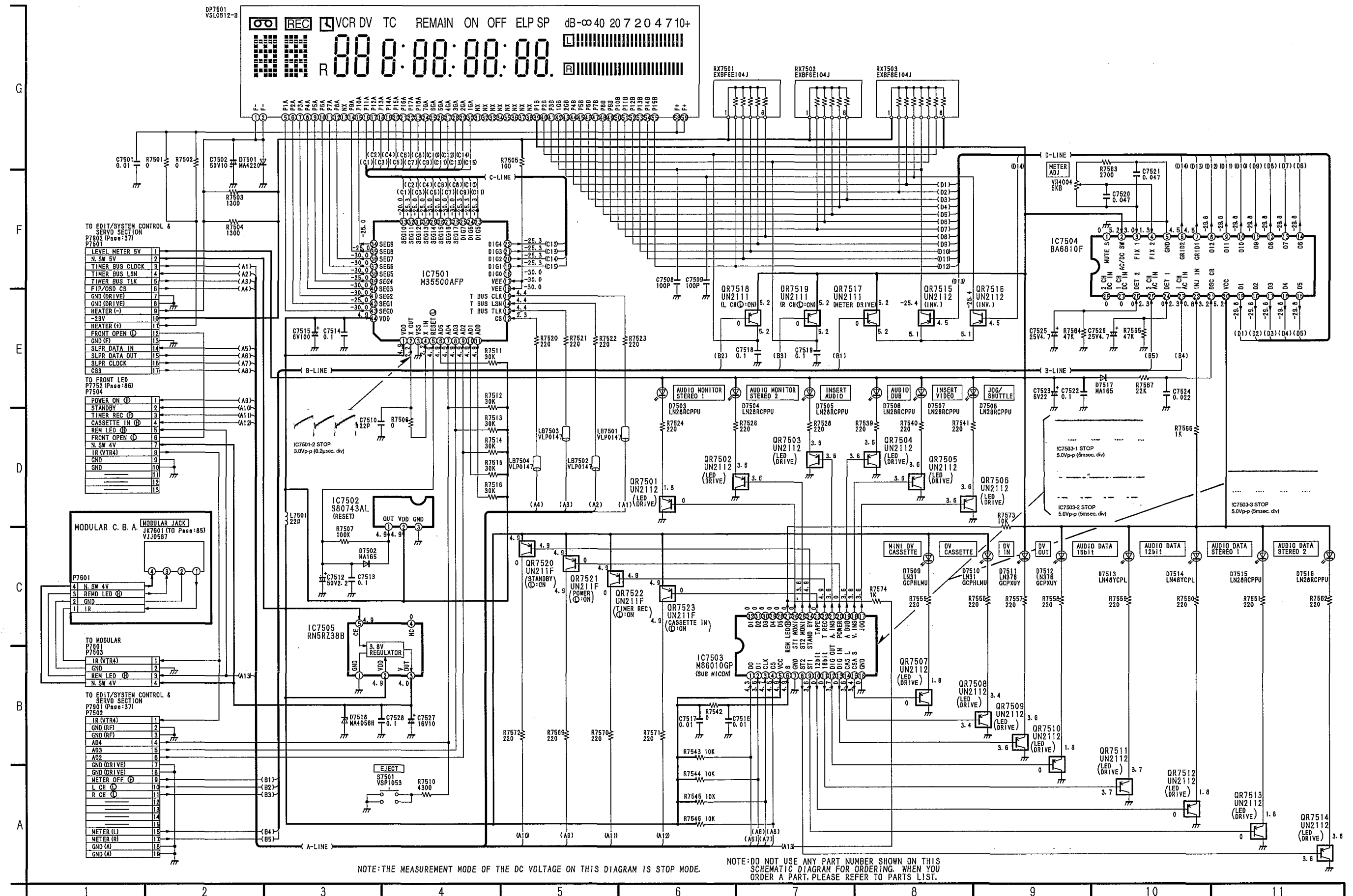
3-25. IR, FRONT LED SCHEMATIC DIAGRAMS



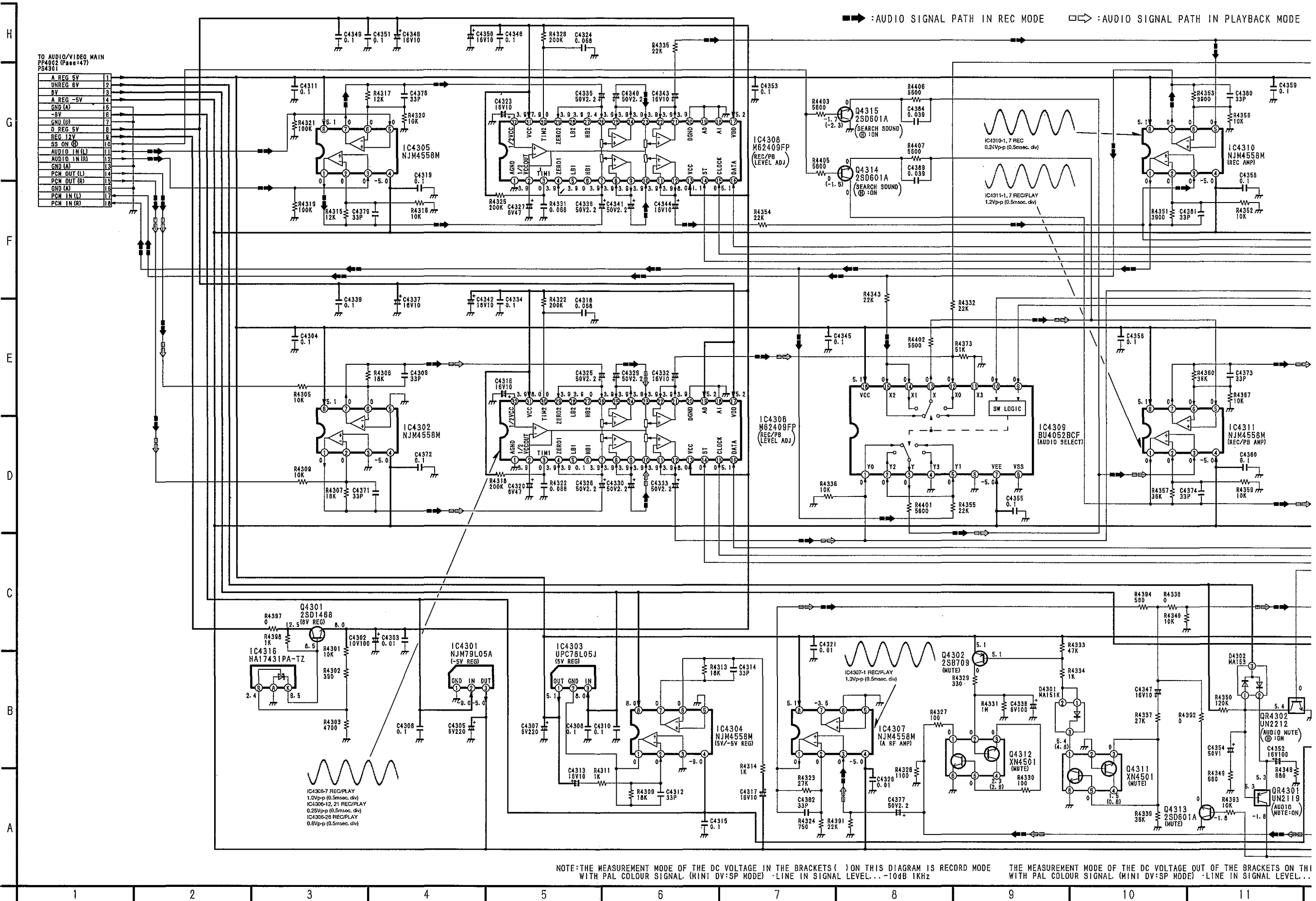
IC7503 (M66010GP): SUB MICON

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	DO	O	Serial Data	17	EDIT	O	LED ON Edit
2	DI	I	Serial Data	18	V INS	O	LED ON Video Insert
3	CLK	I	Serial Clock	19	A DUB	O	LED ON Audio Dubbing
4	CS	I	I/O Chip Select	20	POWER	O	LED ON Power
5	VCC	I		21	A INS	O	LED ON Audio Insert
6	—	I		22	T REC	O	LED ON Timer Rec
7	GND	—		23	TAPE	O	LED ON Cassette In
8	ST2	O	LED ON Data Stereo 2	24	STAND BY	O	LED ON Stand By
9	ST1	O	LED ON Data Stereo 1	25	ST2 MONI	O	LED ON Monitor Stereo 2
10	12bit	O	LED ON 12 Bit	26	ST1 MONI	O	LED ON Monitor Stereo 1
11	16bit	O	LED ON 16 Bit	27	REM LED	O	LED ON
12	DIG OUT	O	LED ON DV Output	28	—	O	
13	DIG IN	O	LED ON DV Input	29	—	—	
14	CAS L	O	LED Normal Cassette	30	—	—	
15	CAS S	O	LED On Mini Cassette	31	—	—	
16	GND	—		32	—	—	

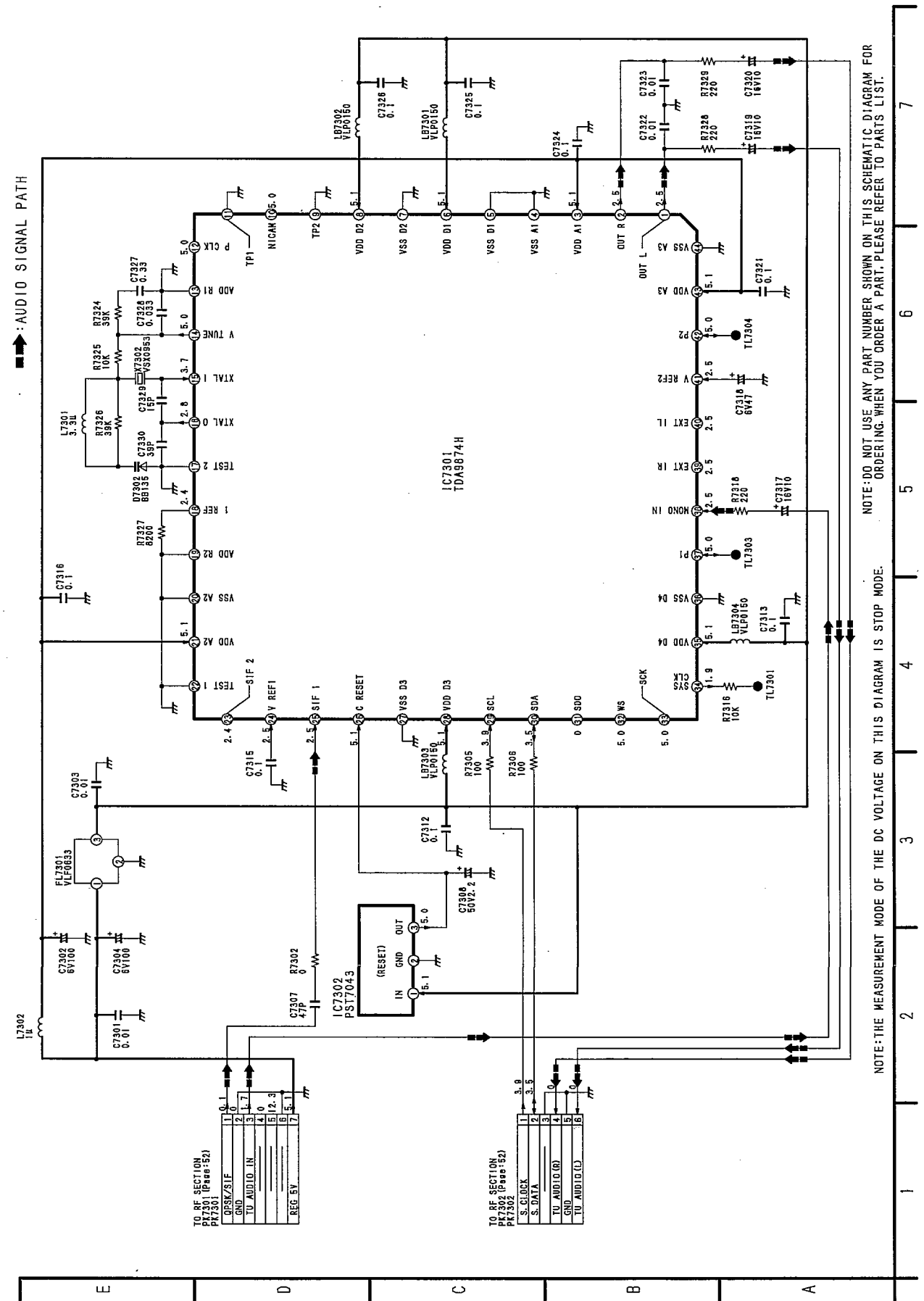
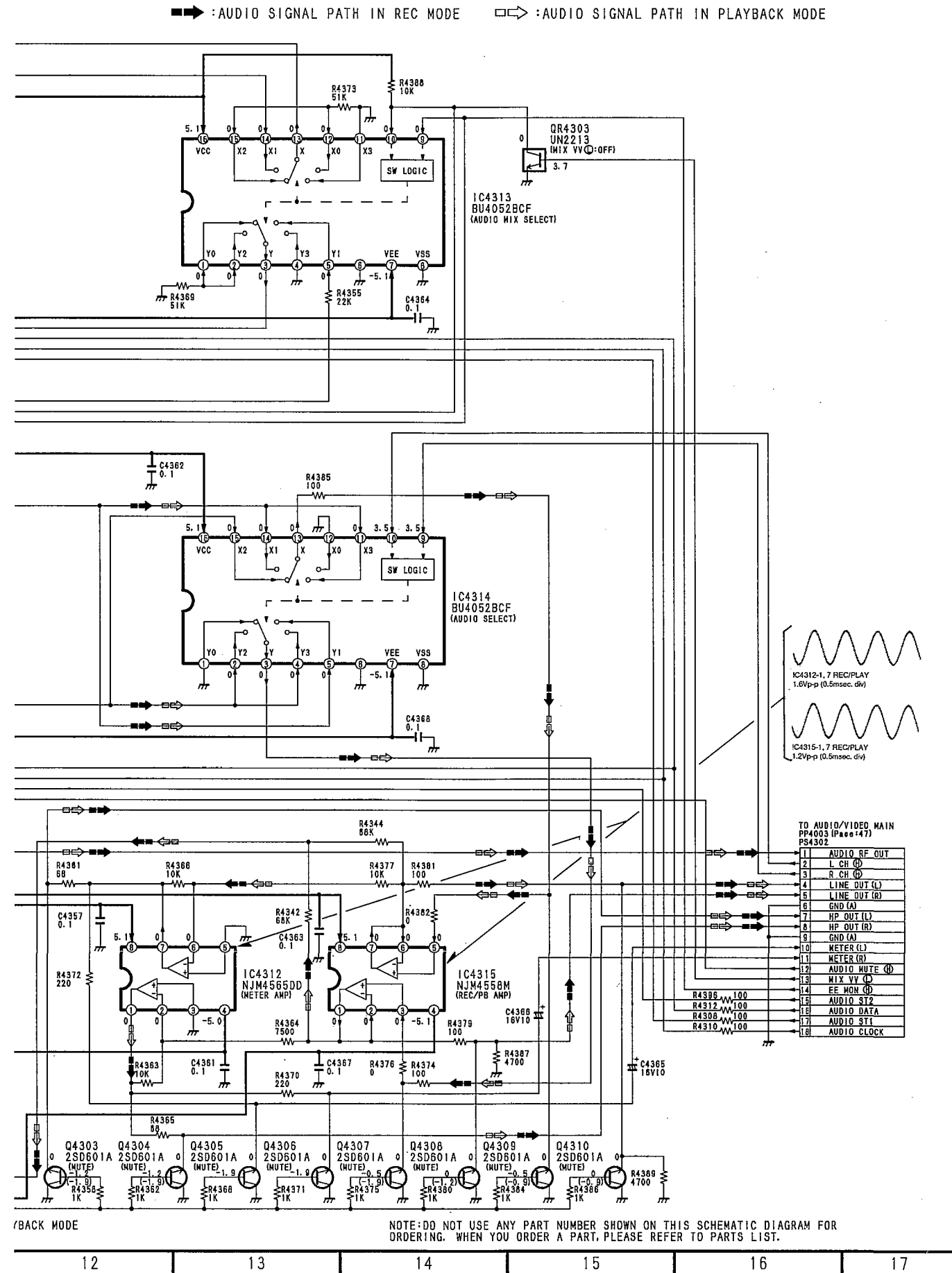
3-26. TIMER, MODULAR SCHEMATIC DIAGRAMS



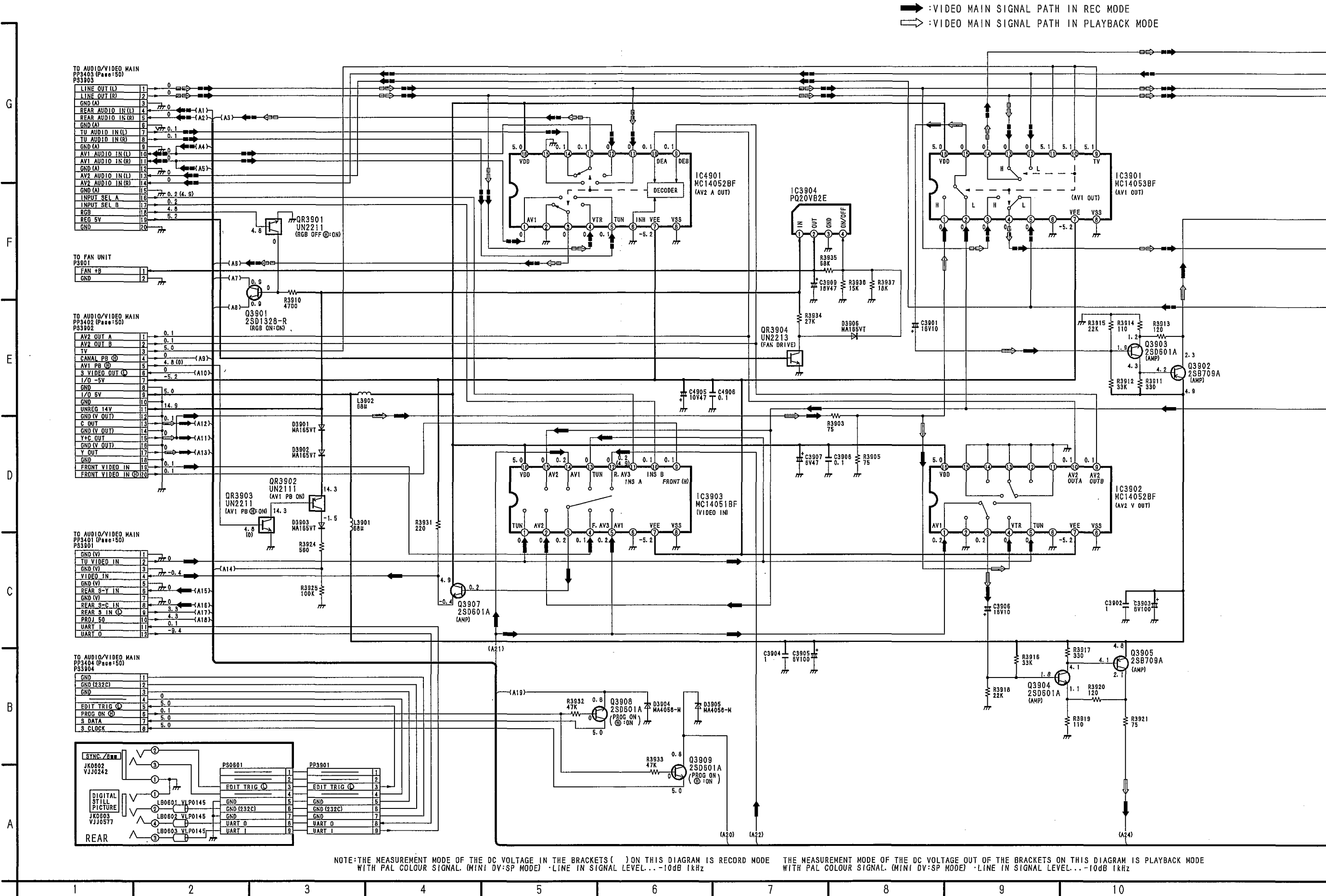
3-27. AUDIO SCHEMATIC DIAGRAM



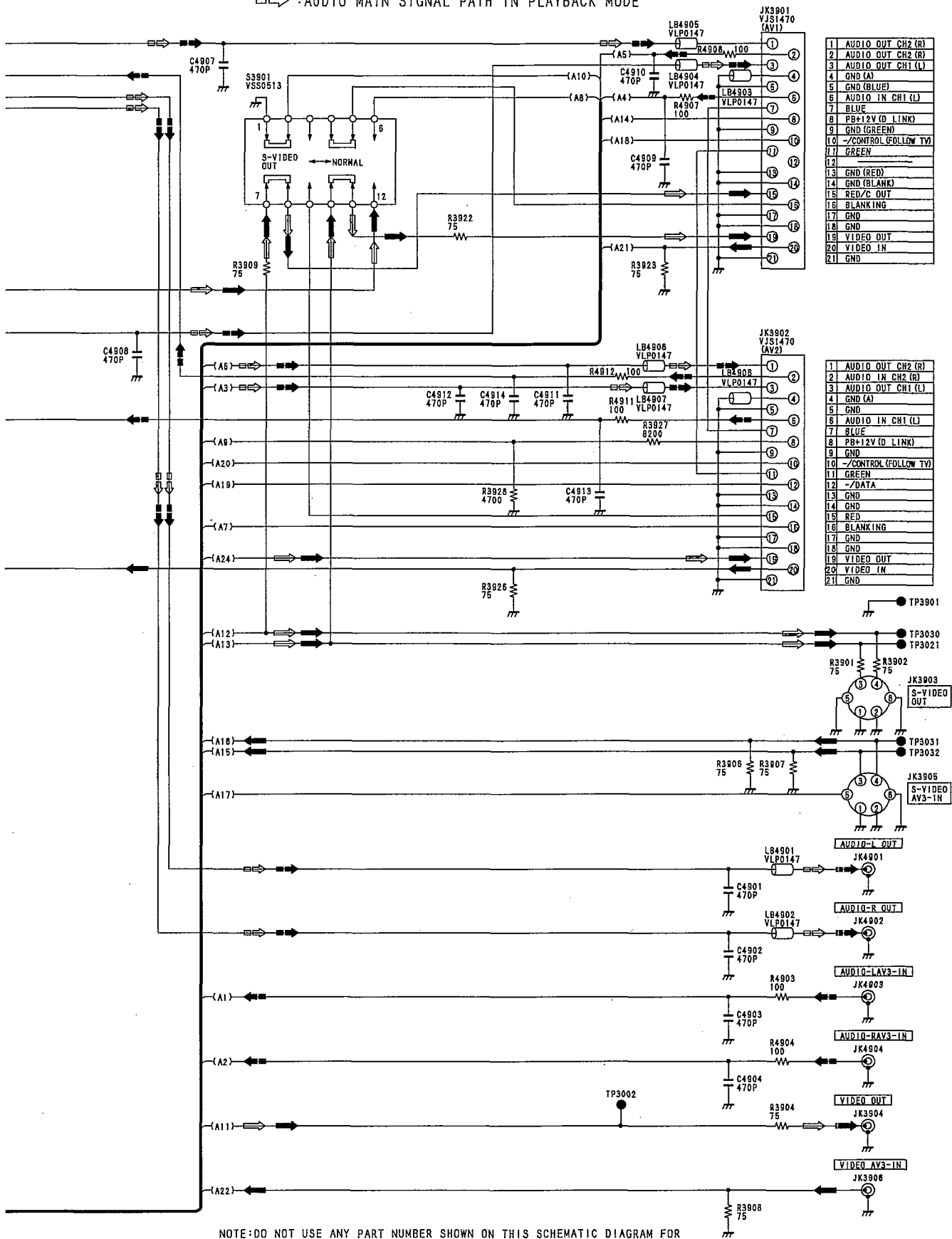
3-28. NICAM DECODER SCHEMATIC DIAGRAM



3-29. INPUT/OUTPUT, PEAR JACK SCHEMATIC DIAGRAMS



■➡ : AUDIO MAIN SIGNAL PATH IN REC MODE
 □➡ : AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



3-30. TV DEMODULATOR SCHEMATIC DIAGRAM

