SAMSUNG ELECTRONICS

SERVICE MANUAL

SV-425G/425B/425I/425X/C30G/SVR-425/121/SV-A80G(HCII)

Printed in Korea

AC68-00112A

SAMSUNG

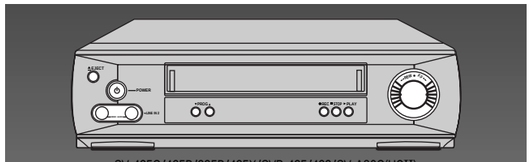
VIDEO CASSETTE RECORDER

SV-425G/224G/223G
SV-425B/225B/220B
SV-425I/223I
SV-425X/220X
SV-C30G/SV-6C/5C
SV-A80G(HCII)/A70G(HCII)/A11G(HCII)
SV-122G/121G/120G/100G/C12K
SVR-425/423/420/223/220/121/120

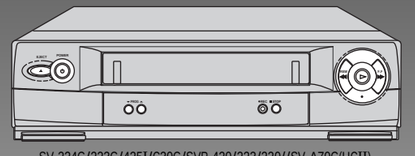
SERVICE Manual

For mechanical disassembly and adjustment, refer to the “Mechanical Manual” (DX-9R → AC68-00001A).

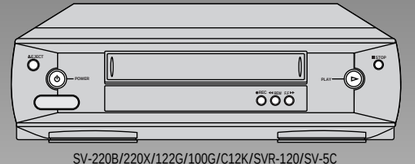
VIDEO CASSETTE RECORDER



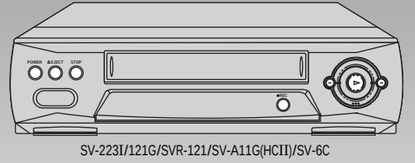
SV-425G/425B/225B/425X/SVR-425/423/SV-A80G(HCII)



SV-224G/223G/425I/C30G/SVR-420/223/220//SV-A70G(HCII)



SV-220B/220X/122G/100G/C12K/SVR-120/SV-5C



SV-223I/121G/SVR-121/SV-A11G(HCII)/SV-6C

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1. Precautions

2. Alignment and Adjustment

3. Exploded View and Parts List

4. Electrical Parts List

5. Schematic Diagrams

IMPORTANT SERVICE GUIDE

◆ MODE SWITCH (PROGRAM SWITCH) ASSEMBLY POINT

1) When installing the ass'y full deck on the Main PCB, be sure to align the assembly point of mode switch.

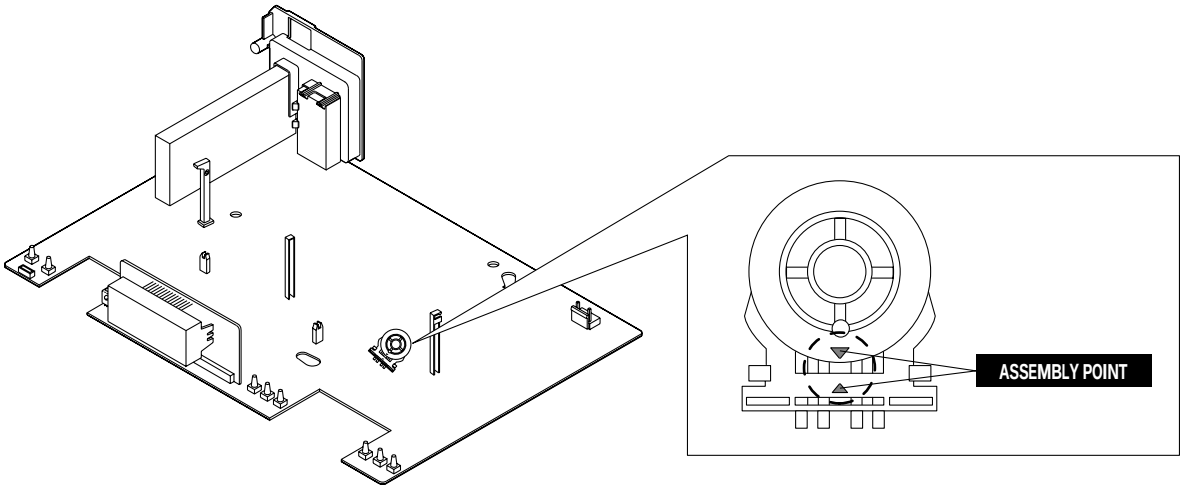


Fig. 1

◆ HOW TO EJECT THE CASSETTE TAPE
(If the unit does not operate on condition that tape is inserted into housing ass'y)

1) Remove the Holder Worm ❶ and the gear worm ❷. (See Fig. 2)
2) Turn the Gear Worm Wheel ❸ counterclockwise in the direction of arrow with screw driver. (See Fig. 2)
3) When Slider S, T are approached in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwounded tape. (Refer to Fig. 3)
   (If you rotate Gear Worm Wheel continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwounded tape in the state of set horizontally.)
4) Rotate Gear Worm Wheel ❸ counterclockwise using screw driver again up to the state of eject mode and then pick out the tape. (Refer to Fig. 2)

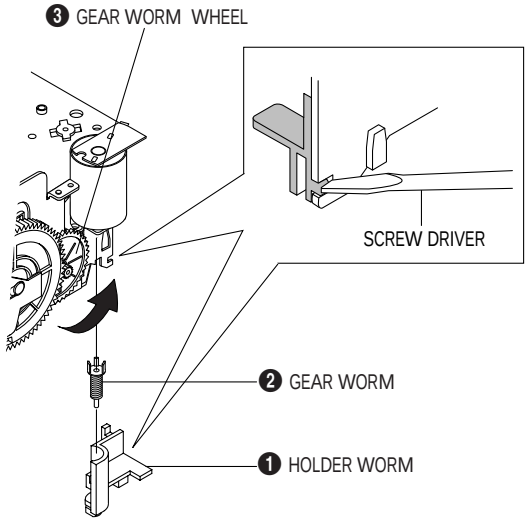


Fig. 2

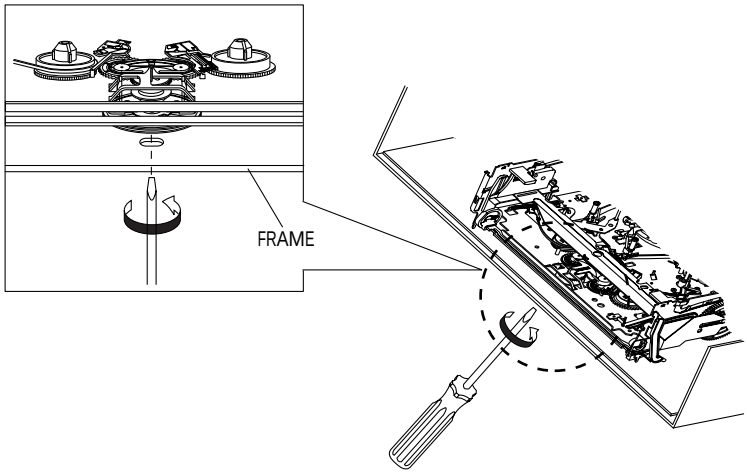


Fig. 3

1. Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.

2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including : control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people--particularly children --might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

   If the measured resistance is less than 1.0 megohm or greater than 5.2 megohms, an abnormality exists that must be corrected before the unit is returned to the customer.

4. Leakage Current Hot Check (See Fig. 1-1) :
   Warning : Do not use an isolation transformer during this test. Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

5. With the unit completely reassembled, plug the AC line cord directly the power outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including : antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

6. X-ray Limits :
   The picture tube is designed to prohibit X-ray emissions. To ensure continued X-ray protection, replace the picture tube only with one that is the same type as the original.

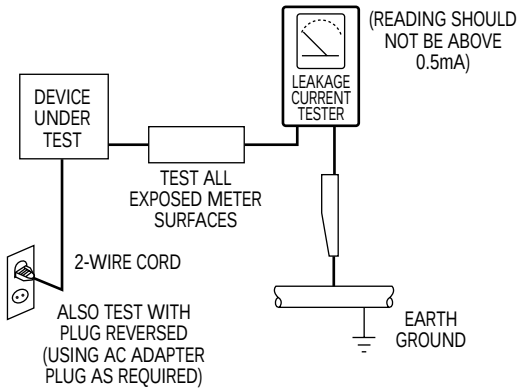


Fig. 1-1 AC Leakage Test

7. Antenna Cold Check :
   With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong.
   Connect the other lead to the coaxial connector.

8. High Voltage Limit :
   High voltage must be measured each time servicing is done on the B+, horizontal deflection or high voltage circuits.

   Heed the high voltage limits. These include the X-ray protection Specifications Label, and the Product Safety and X-ray Warning Note on the service data schematic.

9. Some semiconductor ("solid state") devices are easily damaged by static electricity.
   Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

10. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging Wrist-strap device. (Be sure to remove it prior to applying power--this is an electric shock precaution.)

11. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.

12. Design Alteration Warning :
    Never alter or add to the mechanical or electrical design of this unit. Example : Do not add auxiliary audio or video connectors.
    Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

13. Hot Chassis Warning :
    Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord. If an isolation transformer is not used, these units may be safely serviced only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC source.

    To confirm that the AC power plug is inserted correctly, do the following : Using an AC voltmeter, measure the voltage between the chassis and a known earth ground. If the reading is greater than 1.0V, remove the AC power plug, reverse its polarity and reinsert. Re-measure the voltage between the chassis and ground.

14. Some TV chassis are designed to operate with 85 volts AC between chassis and ground, regardless of the AC plug polarity. These units can be safely serviced only if an isolation transformer inserted between the receiver and the power source.

15. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

16. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

17. Observe the original lead dress, especially near the following areas : Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.

18. Picture Tube Implosion Warning :
    The picture tube in this receiver employs "integral implosion" protection. To ensure continued implosion protection, make sure that the replacement picture tube is the same as the original.

19. Do not remove, install or handle the picture tube without first putting on shatterproof goggles equipped with side shields. Never handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; do not try to remove such "permanently attached" yokes from the picture tube.

20. Product Safety Notice :
    Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original--even if the replacement is rated for higher voltage, wattage, etc.

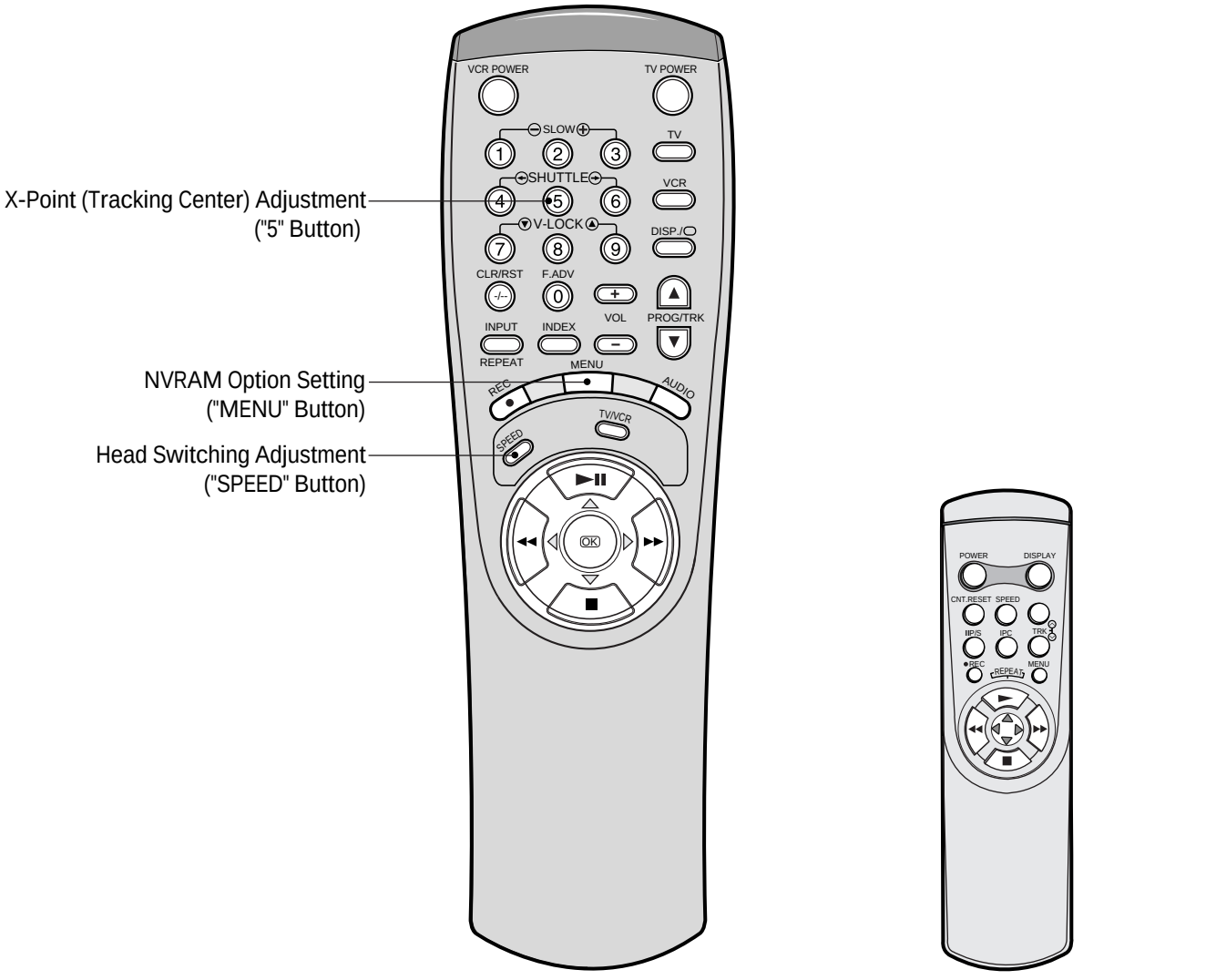
    Components that are critical for safety are indicated in the circuit diagram by shading, (⚠ or ⚠).
    Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

2. Alignment and Adjustment

2-1 Reference

1) X-Point (Tracking center) adjustment, “Head switching adjustment” and “NVRAM option setting” can be adjusted with remote control.
2) When replacing the Micom (IC601) and NVRAM (IC605 ; EEPROM) be sure to adjust the “Head switching adjustment” and “NVRAM option setting”.
3) When replacing the cylinder ass’y, be sure to adjust the “X-Point” and “Head switching adjustment”.
4) Among Samsung VCR remote control used for adjustment as a accessory, only the remote control that has figures buttons (0 ~ 9) is available for all adjustment regardless of chassis.
5) How to adjustment.
   - Press the “SW718 (TEST)” button on Main PCB to set the adjustment mode.
   - If the corresponding adjustment button is pressed, the adjustment is performed automatically.
   - If the adjustment is completed, be sure to turn the power off.

2-1-1 Location of adjustment button of remote control



<This type of remote control can adjust.>

<This type of remote control can not adjust.>

Remote Control for adjustment is not supplied as a Service Jig.

Fig. 2-1

2-1-2 SW718 (TEST) location for adjustment mode setting

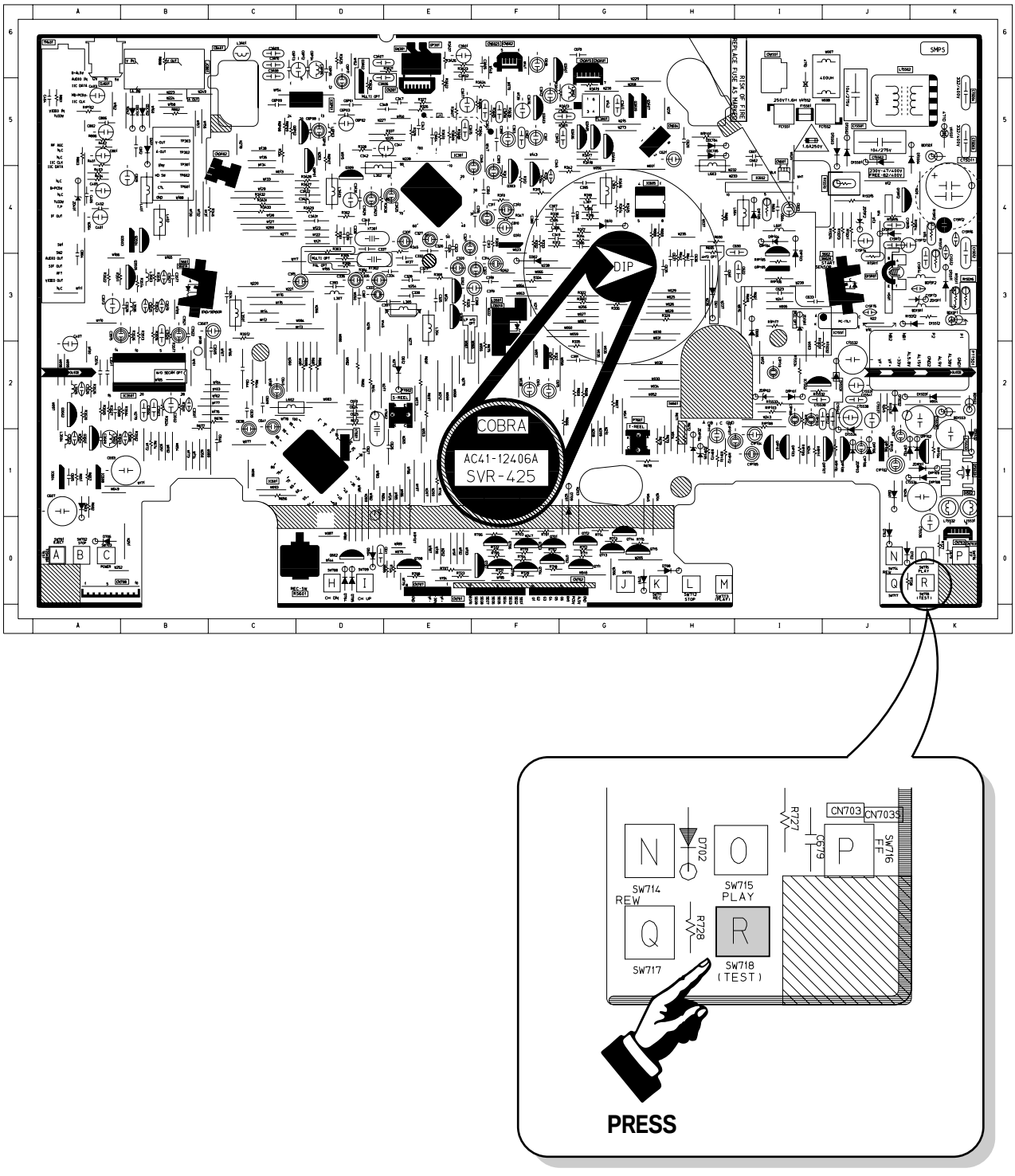


Fig. 2-2 Main PCB (Top View)

2-2 Mechanical Adjustment

Note : Refer to the Mechanical Manual "DX-9R (AC68-00001A)" for the adjustment and confirmation of ass'y full deck.

2-2-1 The number and position of test point

Test point :	TP601 (Control Pulse)
	TP602 (H'D S/W -Trigger)
	TP301 (Envelope)
	TP302 (Audio output)
	TP303 (Video output)

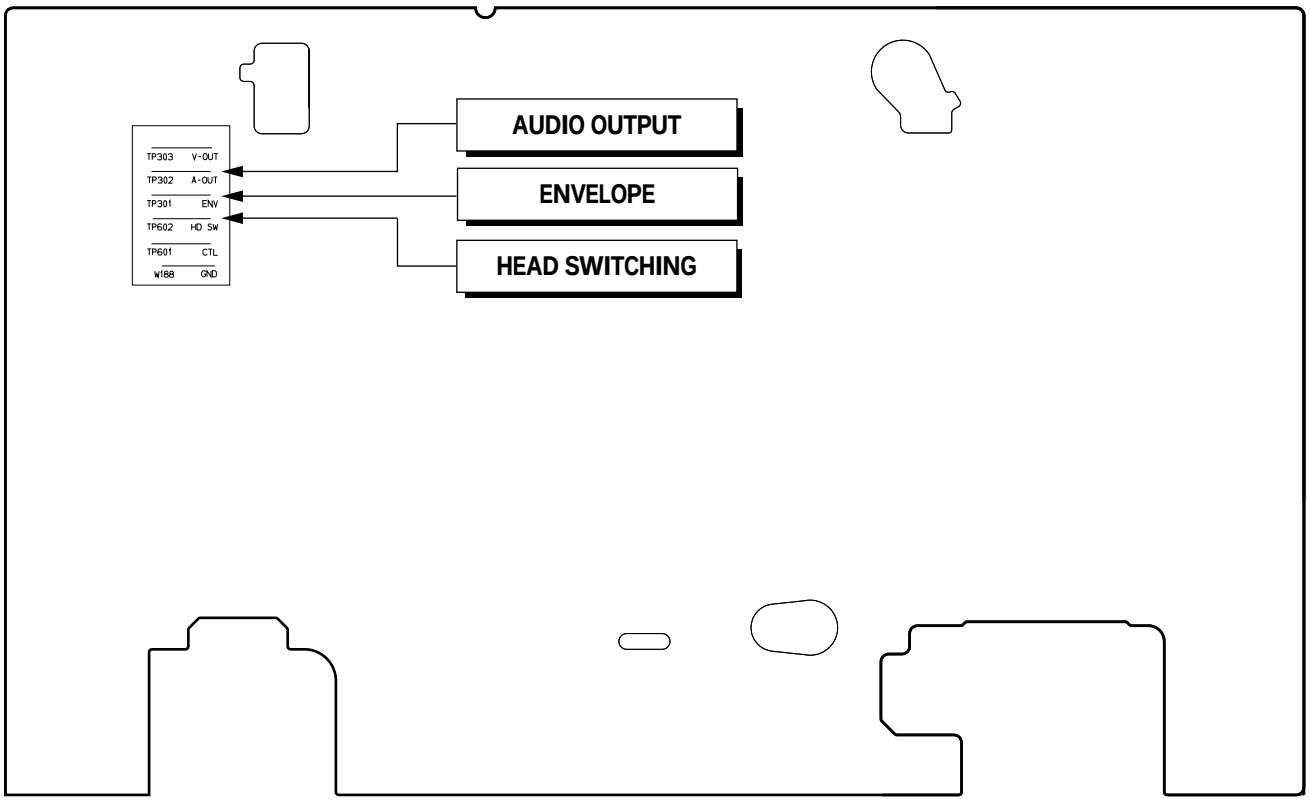


Fig. 2-3 Location of Test point (Main PCB-Top View)

2-2-1 ACE Head Position (X-Point) Adjustment

(See the 2-2-1(d) ACE Head Position (X-Point) Adjustment on page 2-2 of the Mechanical Manual)

1) Playback the alignment tape (Color bar).
2) Press the "SW718 (TEST)" button on Main PCB to set the adjustment mode. (See Fig. 2-2)
3) Press the "5" button of remote control then adjustment is operated automatically. (See Fig. 2-1)
4) Connect the CH-1 probe to TP301 (Envelope) the CH-2 probe to TP602 (H'D switching pulse) and then trigger to CH-1.
5) Insert the (-) driver into the X-Point adjustment hole and adjust it so that envelope waveform is maximum.
6) Turn the Power off.

2-3 Head Switching Point Adjustment

1) Playback the alignment tape.
2) Press the “SW718 (TEST)” button on Main PCB to set the adjustment mode. (See Fig. 2-2)
3) Press the “SPEED” button of remote control then adjustment is operated automatically. (See Fig. 2-1)
4) Turn the Power off.

2-4 NVRAM Option Setting

1) NVRAM Option is adjusted at production line basically.
2) In case Micom (IC601) and NVRAM (IC605 ; EEPROM) is replaced, be sure to set the corresponding option number of the repaired model. (If the option is not set, the unit is not operated.)

1) Press the “SW718 (TEST)” button on Main PCB to set the adjustment mode. (See Fig. 2-2)
2) Press the “MENU” button on the remote control about 5 seconds then option setting display is appeared. (See Fig. 2-4 and 2-5)
3) Select the option number (See Table 2-1 ; Page 2-5) of corresponding model with “FF” and “REW” button on the remote control.
4) If selecting the option number is completed, press the “PLAY” button of remote control. (If “PLAY” button is pressed, the selected number is changes reversed color. ; See Fig. 2-4 and 2-5)
5) Press the “OK (VCR)”, “MENU (VCP)” button of remote control again to store the option number. (“PLEASE WAIT” is displayed for a second as shown Fig. 2-6, 2-7 and this setting is completed.)
6) Turn the Power off.

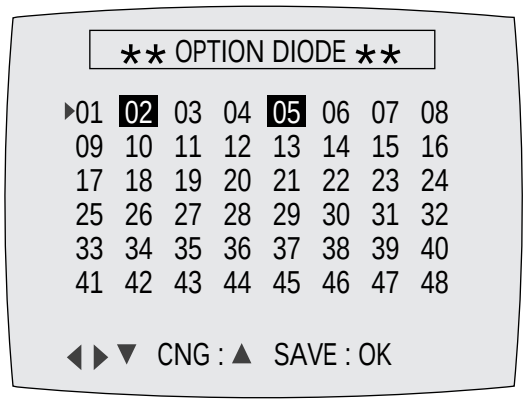


Fig. 2-4 (VCR)

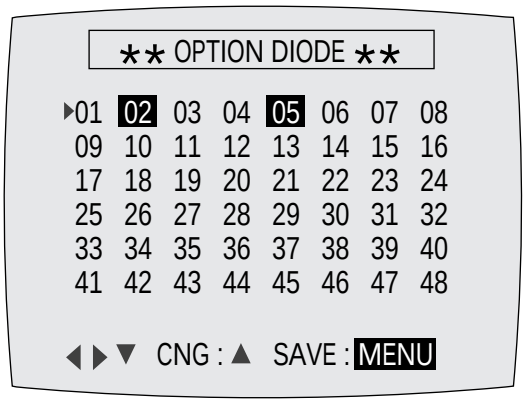


Fig. 2-5 (VCP)

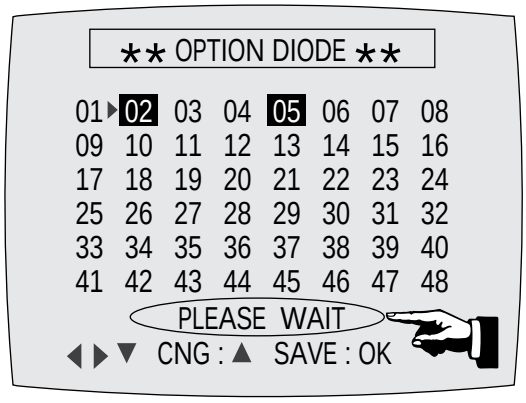


Fig. 2-6 (VCR)

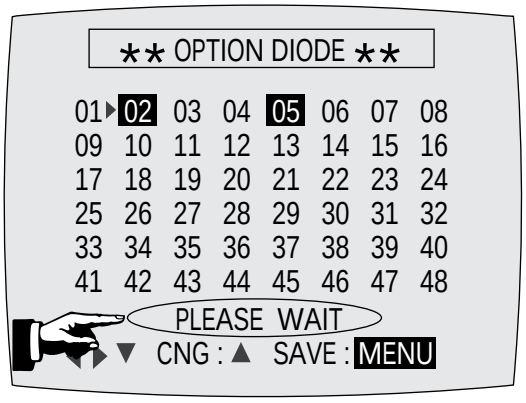


Fig. 2-7 (VCP)

<Table 2-1>

COUNTRY	MODELS	OPTION NUMBER
U.A.E. SYRIA	SV-425G	6, 8, 11, 12, 17, 18, 20, 25, 26, 30, 31, 32, 35, 42, 45, 46, 48
	SV-224G	6, 8, 11, 17, 18, 20, 25, 26, 30, 31, 32, 35, 39, 40, 42, 48
	SV-223G	6, 11, 17, 18, 20, 25, 26, 30, 31, 32, 35, 39, 40, 42, 48
	SV-122G	9, 10, 11, 17, 18, 20, 30, 31, 32, 34, 38, 39, 40, 42, 48
	SV-121G	8, 9, 10, 11, 17, 18, 20, 30, 31, 32, 34, 37, 40, 42, 48
	SV-100G	9, 10, 11, 17, 18, 20, 30, 31, 32, 34, 37, 40, 42, 48
LEBANON	SV-425G	6, 8, 11, 12, 17, 18, 20, 25, 26, 30, 31, 32, 35, 42, 45, 46, 48
	SV-121G	9, 10, 11, 17, 18, 20, 30, 31, 32, 34, 38, 39, 40, 42, 48
SAUDI ARABIA	SV-425G	6, 8, 11, 12, 17, 18, 20, 25, 26, 30, 31, 32, 35, 42, 45, 46, 48
	SV-223G	6, 11, 17, 18, 20, 25, 26, 30, 31, 32, 35, 39, 40, 42, 48
	SV-121G	9, 10, 11, 17, 18, 20, 30, 31, 32, 34, 38, 39, 40, 42, 48
IRAN	SV-A80G(HCII)	6, 8, 11, 12, 17, 18, 20, 25, 26, 29, 35, 42, 45, 46, 48
	SV-A70G(HCII)	6, 11, 17, 18, 20, 25, 26, 29, 35, 39, 40, 42, 48
	SV-A11G(HCII)	9, 10, 11, 17, 18, 20, 29, 34, 38, 39, 40, 42, 48
EGYPT	SV-223G	6, 11, 17, 18, 20, 25, 26, 30, 31, 32, 35, 39, 40, 42, 48
	SV-121G	9, 10, 11, 17, 18, 19, 20, 30, 31, 32, 34, 38, 39, 40, 42, 48
ISRAEL	SV-425G	6, 8, 11, 12, 17, 18, 25, 26, 29, 31, 32, 35, 38, 41, 42, 46
AUSTRALIA	SV-425B	1, 6, 8, 9, 12, 17, 18, 25, 27, 29, 31, 32, 35, 38, 41, 46
	SV-225B	1, 6, 9, 17, 18, 25, 27, 29, 31, 32, 34, 38, 41
	SV-220B	9, 17, 18, 25, 27, 29, 31, 32, 34, 40, 42
NEW ZEALAND	SV-425X	1, 6, 8, 12, 17, 18, 25, 26, 29, 31, 32, 35, 38, 41, 46
	SV-220X	17, 18, 25, 26, 29, 31, 32, 34, 40, 42
THAILAND	SV-C30G	6, 8, 11, 17, 18, 20, 25, 26, 29, 31, 32, 34, 39, 40, 42
	SV-6C	9, 10, 11, 17, 18, 20, 29, 31, 32, 34, 38, 39, 40, 42
	SV-5C	9, 10, 11, 17, 18, 20, 29, 30, 31, 32, 34, 37, 40, 42
VIETNAM	SV-6C	9, 10, 11, 17, 18, 20, 29, 31, 32, 34, 38, 39, 40, 42
	SV-5C	9, 10, 11, 17, 18, 20, 29, 31, 32, 34, 37, 40, 42
MALAYSIA	SV-C12K	9, 10, 11, 17, 18, 19, 29, 31, 32, 34, 37, 40, 42
ALGECIRAS	SV-C12K	9, 10, 11, 17, 18, 19, 29, 31, 32, 34, 37, 40, 42
GUINEA	SV-C12K	9, 10, 11, 17, 18, 19, 29, 31, 32, 34, 37, 40, 42
MOROCCO	SV-C12K	9, 10, 11, 17, 18, 19, 29, 31, 32, 34, 37, 40, 42
ALGERIA	SV-C12K	9, 10, 11, 17, 18, 19, 29, 31, 32, 34, 37, 40, 42
SOUTH AFRICA	SV-425I	6, 8, 11, 12, 17, 18, 25, 26, 29, 31, 32, 35, 41, 42, 46
	SV-223I	6, 11, 17, 18, 25, 26, 29, 31, 32, 34, 37, 38, 39, 42
	SV-C12K	9, 10, 11, 17, 18, 19, 29, 31, 32, 34, 37, 40, 42
BULGARIA	SV-121G	9, 10, 11, 17, 18, 19, 29, 31, 32, 34, 38, 39, 40, 42
UGOSLABIA	SV-121G	9, 10, 11, 17, 18, 20, 29, 31, 32, 34, 38, 39, 40, 42
C.I.S.	SVR-425	2, 6, 8, 11, 12, 17, 18, 19, 25, 30, 31, 32, 35, 41, 45, 46
	SVR-423	8, 11, 12, 17, 18, 25, 30, 31, 32, 35, 37, 41, 42, 45, 46
	SVR-420	8, 11, 12, 17, 18, 25, 30, 31, 32, 35, 37, 39, 40, 41, 42, 46
	SVR-223	6, 11, 17, 18, 25, 30, 31, 32, 34, 38, 40, 41, 42, 45
	SVR-220	11, 17, 18, 25, 30, 31, 32, 34, 37, 39, 40, 41, 42
	SVR-120	9, 10, 11, 17, 18, 20, 30, 31, 32, 34, 37, 40, 42
	SVR-121	9, 10, 11, 17, 18, 20, 30, 31, 32, 34, 38, 39, 40, 42

MEMO

3. Exploded View and Parts List

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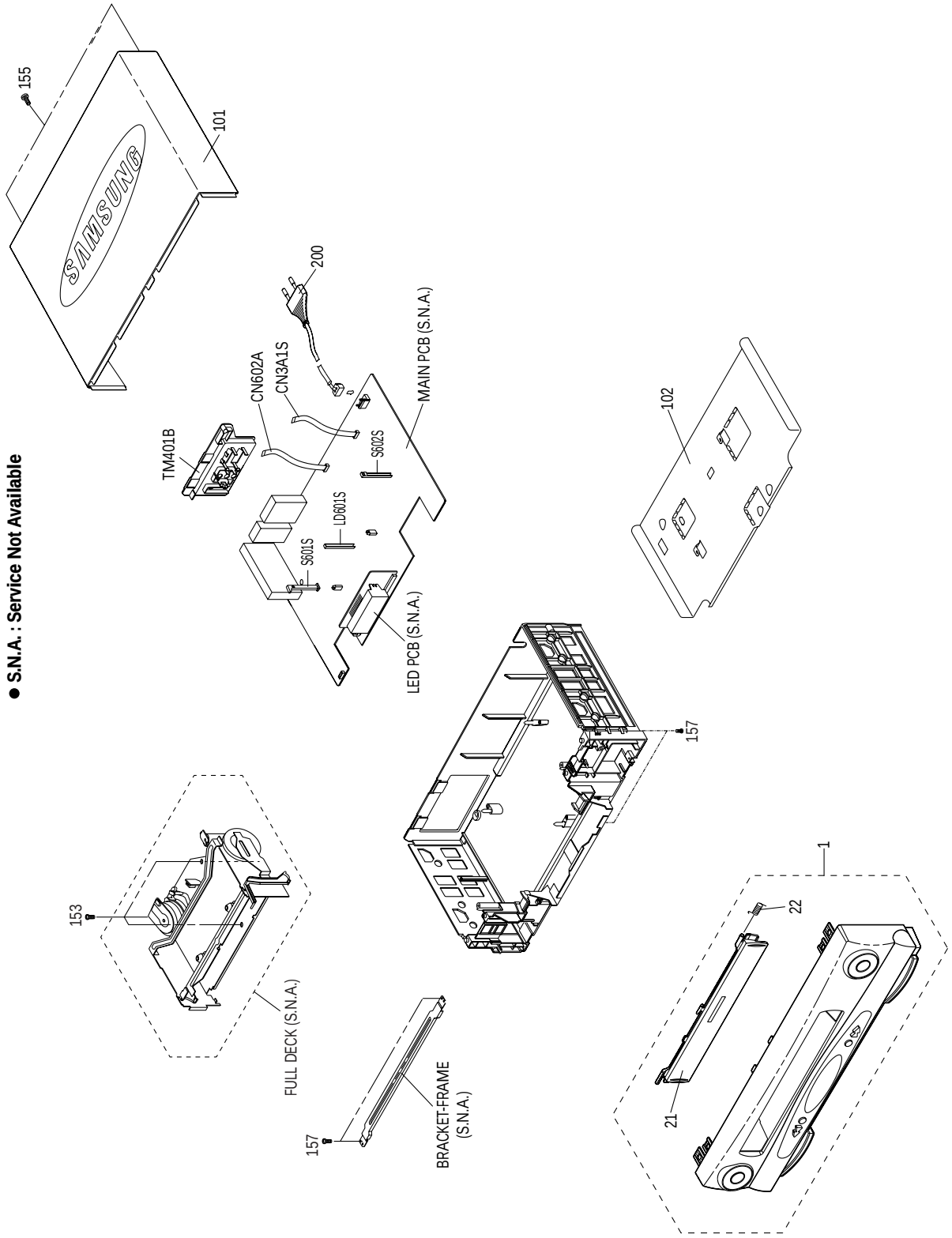
3-3 Mechanical Parts (Bottom Side) ------------------------------ 3-6

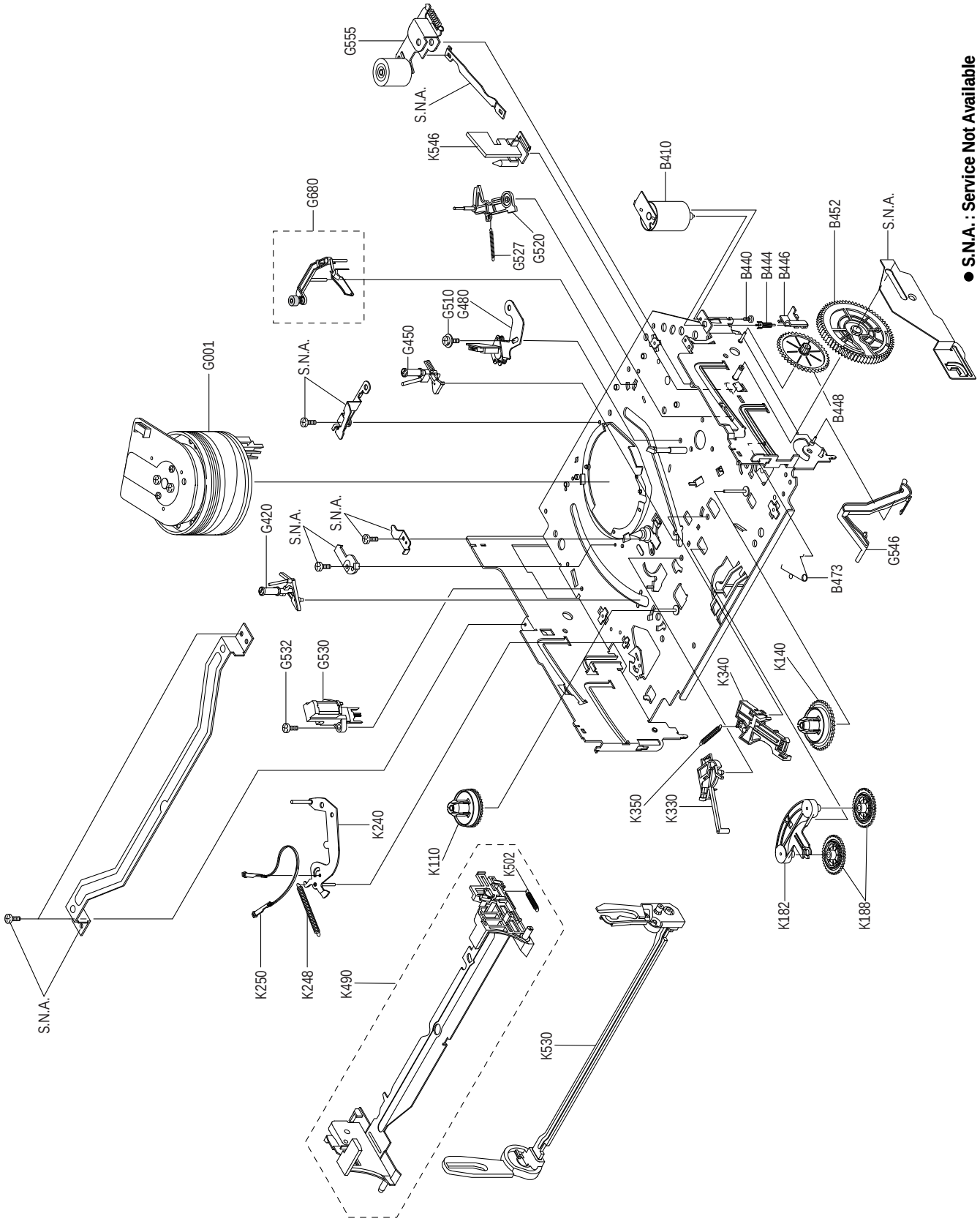
3-1 Cabinet Assembly



Loc. No	Parts No.	Description ; Specification	Remark
1	**Refer to table below**	ASSY-PANEL FRONT;HIPS 94HB	
21	**Refer to table below**	DOOR-CASSETTE	
22	AC61-62032A	SPRING-MASK;X-9,-,SUS,-,4.4,-,SV-C130	
101	AC64-00076A	CABINET-TOP;-,PCM(SECC),-0.525,320	
102	AC63-00004A	COVER-BOTTOM;-,SECC,-,PCM0.525,TM6524,-,	
153	AC60-12126A	SCREW-BH;-,BH,-,4*12,FE,FZY,-,-,-	
155	AC60-12134A	SCREW-TAP BH;-,BH,-,2-4X16,-,FE	
157	AC60-10063A	SCREW-TAPTITE;BH,+,-,M3,L12,ZPC3,SWRCH18	
200	**Refer to table below**	POWER CORD;KKP-419C,H03VVH2-F,VDE/KEMA-K	
CN3A1S	3809-001111	CABLE-FLAT;30V,80C,130mm,7P,1.25mm,UL289	
CN602A	3809-001049	CABLE-FLAT;30V,80C,100mm,5P,1.25mm,UL289	
LD601S	AC61-21009A	HOLDER-LED;-,POM(M90-44),-,BLK,-,X-9	
S601S	AC61-21008A	HOLDER-SENSOR;-,POM(M90-44),-,BLK,-,X-9	
S602S	AC61-21008A	HOLDER-SENSOR;-,POM(M90-44),-,BLK,-,X-9	
TM401B	**Refer to table below**	CONNECTOR BOARD-ASSY;HIPS94	

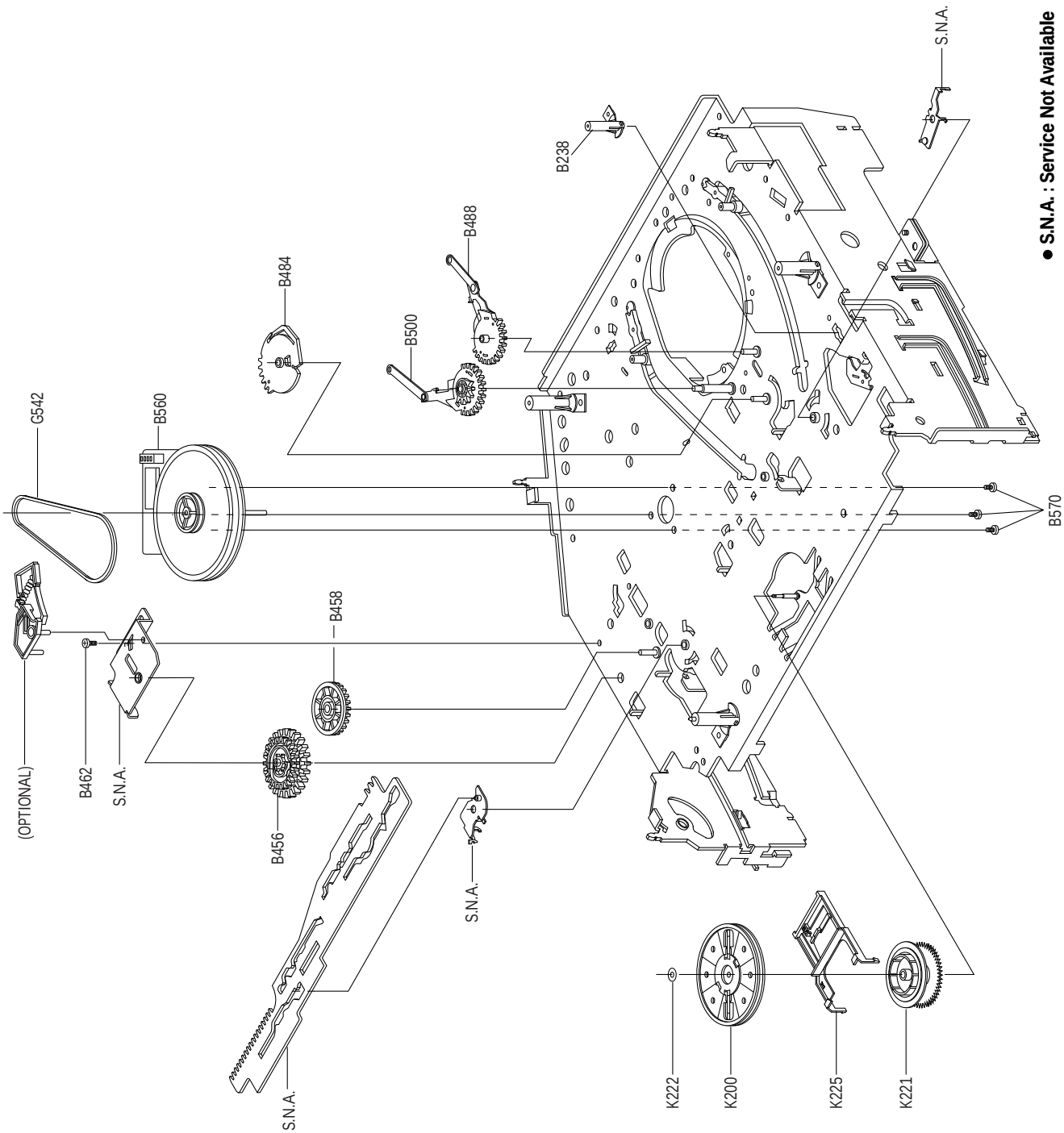
COUNTRY	MODELS	1	21	200	TM401B
FRANCE	SV-422FB	AC97-00367A	AC64-50997M	AC39-10019A	AC61-00021A
	SV-422FS	AC97-00415A	AC64-00116B	AC39-10019A	AC61-00021A
	SV-222FB	AC97-00369A	AC64-50997R	AC39-10019A	AC61-00021A
	SV-222FS	AC97-00416A	AC64-00116C	AC39-10019A	AC61-00021A
U.K.	SV-224B	AC97-00414A	AC64-00116A	AC39-10022K	AC61-00021C
	SV-222B	AC97-00372A	AC64-50997Q	AC39-10022K	AC61-00021C
GERMANY	SV-222X	AC97-00371A	AC64-50997S	AC39-10019A	AC61-00021B
SPAIN	SV-222X	AC97-00370A	AC64-50997P	AC39-10019A	AC61-00021B
PORTUGAL	SV-222X	AC97-00370A	AC64-50997P	AC39-10019A	AC61-00021B
ITALY	SV-422X	AC97-00368A	AC64-50997N	AC39-10019A	AC61-00021B
	SV-222X	AC97-00374A	AC64-50997U	AC39-10019A	AC61-00021B
SWEDEN/FINLAND/NORWAY	SV-222X	AC97-00373A	AC64-50997T	AC39-10019A	AC61-00021C
NETHERLAND	SV-222X	AC97-00373A	AC64-50997T	AC39-10019A	AC61-00021C
BELGIUM	SV-222X	AC97-00373A	AC64-50997T	AC39-10019A	AC61-00021C
IRAN	SV-422G	AC97-00375A	AC64-50997Y	AC39-10019A	AC61-00021D
	SV-222G	AC97-00376A	AC64-50997Z	AC39-10019A	AC61-00021D
U.A.E.	SV-422G	AC97-00375A	AC64-50997Y	AC39-10019A	AC61-00021D
	SV-222G	AC97-00376A	AC64-50997Z	AC39-10019A	AC61-00021D
MALAYSIA	SV-222G	AC97-00376A	AC64-50997Z	AC39-10019A	AC61-00021D
SOUTH AFRICA	SV-222I	AC97-00378A	AC64-50997W	AC39-10019A	AC61-00021D
AFRICA	SV-22K	AC97-00379A	AC64-50997X	AC39-10019A	AC61-00021D

3-2 Mechanical Parts (Top Side)



Loc. No	Parts No.	Description ; Specification	Remark
B410	AC31-12016A	MOTOR-LOADING ASSY;-,-,X-9	
B440	AC60-10515A	SCREW-MACHINE;-,PH,+,-,M3,L3,ZPC,-,YEL	
B444	AC66-20571A	GEAR-WORM;-,POM SW-01,0.5,2,-,4.5,X-9	
B446	AC61-21005A	HOLDER-WORM;-,POM M90-44,-,-,-,X-9	
B448	AC66-20573A	GEAR-WORM WHEEL;-,POM SW-01,0.6,11,-,6.6	
B452	AC66-20575A	GEAR-FL CAM;-,POM SW-01,M0.6,Z88,-,PCD58	
B473	AC61-60559A	SPRING-PINCH DRIVE;-,TS,SUS304,PI0.5,OD4	
G001	AC96-10483R	ASSY-CYLINDER;CX-9,SECAM 4HD	SV-422F ONLY
	AC96-10481J	ASSY-CYLINDER;CX-9, PAL 4HD	(4HD NON-DIAMOND HEAD)
	AC96-10481G	ASSY-CYLINDER;CX-9, PAL 2HD	(2HD NON-DIAMOND HEAD)
	AC96-10482J	ASSY-CYLINDER;CX-9, PAL 4HD/DLC	(4HD DIAMOND HEAD)
	AC96-10482D	ASSY-CYLINDER;CX-9, PAL 2HD(SP)/DLC	(2HD DIAMOND HEAD)
G420	AC66-80142A	SLIDER-SUPPLY ASSY;-,X-9(TS),-,-,-,X-9	
G450	AC66-80141A	SLIDER-TAKE UP ASSY;-,X-9(TS),-,-,-,X-9	
G480	AC33-00003A	HEAD-ACE ASSY;SHINHEUNG;-,-,-,-,X-9	
G510	AC60-10518A	SCREW-TAP TITE;-,PH,+,SW+ZW,M2.6,L5.6,ZP	
G520	AC66-30539A	LEVER-#9 GUIDE ASSY;-,X-9(TS),-,-,-,X-9	
G527	AC61-60553A	SPRING-#9 GUIDE;-,ES,SUS304-WPB,OD3.1,0.	
G530	AC33-00002A	HEAD-FE;-,HVFHP0038A,-,-,-,X-9	
G532	AC60-10519A	SCREW-TAP TITE;-,PH,+,-,M2.6,L8,ZPC	
G546	AC66-30535A	LEVER-FL DOOR;-,POM M90-44,-,-,BLK,X-9	
G555	AC59-90403A	UNIT-PINCH ASSY;X-9,-	
G680	AC66-30557A	LEVER-H/CLEANER ASSY;-,POM+URETHANE,-,-	(OPTIONAL)
K110	AC66-10267A	REEL-DISK S;-,POM M90-44,-,-,X-9	
K140	AC66-10268A	REEL-DISK T;-,POM M90-44,-,-,X-9	
K182	AC66-30524A	LEVER-IDLER;-,POM9044,-,-,-,-	
K188	AC66-20577A	GEAR-IDLER;-,PEBAX 7033,-,-,-,-,X-9	
K240	AC66-30538A	LEVER-TENSION ASSY;-,X-9(TS),-,-,-,X-9	
K248	AC61-60554A	SPRING-TENSION LEVER;-,ES,SUS304-WPB,OD3	
K250	AC63-12029A	BAND-BRAKE ASSY;-,X-9(TS),-,-,-,X-9	
K330	AC66-30550A	LEVER-S.BRAKE ASSY;-,POM+SUS,-,-,-,X-9	
K340	AC66-30549A	LEVER-T.BRAKE ASSY;-,POM+SUS,-,-,-,X-9	
K350	AC61-60564A	SPRING-BRAKE;-,TENSION,SWP-A,0.25,3,-,X-	
K490	AC61-21010B	HOLDER-CASS ASSY;-,SECC+POM+SUS,-,-,-,X-	
K502	AC61-60561A	SPRING-FL.LEVER-LR;-,ES,SUS304 WPB,PI2.7	
K530	AC66-30546A	LEVER-FL.ARM ASS'Y;-,SECC+POM+SUS,-,-,-,	

3-3 Mechanical Parts (Bottom Side)



Loc. No	Parts No.	Description ; Specification	Remark
B238	AC61-50660A	SLEEVE-TENSION;-,POM M90-44,-,-,ID3,-,-	
B456	AC66-20576A	GEAR-JOINT 1;-,POM SW-01,M1.0,Z22,-,PCD2	
B458	AC66-20574A	GEAR-JOINT 2;-,POM SW-01,M1.0,Z14,-,PCD1	
B462	AC60-10517A	SCREW-TAP TITE;-,PH,+,-,M2.6,L5,ZPC,-,YE	
B484	AC66-20580A	GEAR-LOADING DRIVE;-,POM SW-01,M1.0,Z32,	
B488	AC66-30543A	LEVER-S LOAD ASSY;-,-,-,-,-,X-9	
B500	AC66-30542A	LEVER-T LOAD ASSY;-,-,-,-,-,X-9	
B560	AC31-12017A	MOTOR-CAPSTAN;DMVCMC07C,-,X-9	
B570	AC60-10514A	SCREW-CAPSTAN;-,PH,+,M2.6,L6,-	
G542	AC66-60051A	BELT-PULLEY;-,5CM-70,2 * 2,-,71.3,-,X-9	
K200	AC61-21012A	HOLDER-CLUTCH ASSY;-,-,-,-,-,X-9	
K221	AC66-20581A	GEAR-CENTER ASSY;-,POM,M=O.5,-,HIGHT T.,	
K222	AC60-30306A	WASHER-SLIT;-,-,ID2.1,OD5.0,T0.5,-,POLYS	
K225	AC66-30547A	LEVER-UP DOWN ASSY;-,POM+SUS,-,-,-,X-9	

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4. Electrical Parts List

Loc.No	Part No	Description ; Specification	Remark
-	-	**ASSY-MAIN;X9 PAL**	**S.N.A.**
S.M.P.S. (230V VOLTAGE)			
BD1SD1	AC27-92001M	INDUCTOR;70UH-M RT BFS3565R2F,-,-,-,-	
BD1SR1	3301-000297	CORE-FERRITE BEAD;AA,3.6x1.2x5.7mm,1400,	
BD1SS2	AC27-92001M	INDUCTOR;70UH-M RT BFS3565R2F,-,-,-,-	
BD1SS3	AC27-92001M	INDUCTOR;70UH-M RT BFS3565R2F,-,-,-,-	
C1SD03	2201-000934	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,18x	
C1SD04	2201-000934	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,18x	
C1SD11	2401-003302	C-AL;47uF,20%,400V,GP,TP,18X31.5,7.	
C1SD12	2201-000934	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,18x	
C1SR12	2401-000905	C-AL;22UF,20%,16V,BP,-,6X11,2.5MM	
C1SR13	2301-000361	C-FILM,PEF;1.2NF,10%,50V,TP,-,5MM	
C1SR14	2301-000445	C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm	
C1SS01	2305-001021	C-FILM,MPEF;100nF,20%,275V,TP,17.5x7x13.	⚠
C1SS02	2305-001021	C-FILM,MPEF;100nF,20%,275V,TP,17.5x7x13.	⚠
C1SS12	2201-000129	C-CERAMIC,DISC;100pF,10%,1KV,Y5P,TP,6x5,	
C1SS31	2401-000385	C-AL;10uF,20%,100V,GP,TP,6.3x11,5	
C1SS32	2401-001126	C-AL;330uF,20%,25V,WT,TP,10x12.5,5	
C1SS33	2401-001998	C-AL;1000uF,20%,25V,GP,TP,10x20,5mm	
C1SS34	2401-001126	C-AL;330uF,20%,25V,WT,TP,10x12.5,5	
C1SS35	2401-002162	C-AL;1000uF,20%,25V,WT,TP,10x20,5mm	
C1SS36	2401-001479	C-AL;470uF,20%,10V,GP,-,-,TP	
C1SS39	2301-000129	C-FILM,PEF;100nF,5%,50V,10X9X4.3X5,5mm,T	
C1SS41	2301-000423	C-FILM,PEF;3.3NF,5%,100V,TP,7X10X4.5MM,5	
CN1SS1	3711-000178	CONNECTOR-HEADER;1WALL,2P,1R,3.96mm,STRA	
D1SD31	0402-001195	DIODE-RECTIFIER;F1T4,400V,1.0A,TS-1,TP	
D1SR11	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D1SS01	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	⚠
D1SS02	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	⚠
D1SS03	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	⚠
D1SS04	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	⚠
D1SS11	0402-000276	DIODE-RECTIFIER;UF4007,1KV,1A,DO-41,TP	
D1SS12	0402-001195	DIODE-RECTIFIER;F1T4,400V,1.0A,TS-1,TP	
D1SS31	0402-001195	DIODE-RECTIFIER;F1T4,400V,1.0A,TS-1,TP	
D1SS32	0402-001194	DIODE-RECTIFIER;UG2D,200V,2A,DO-204AC,TP	
D1SS33	0402-000431	DIODE-RECTIFIER;FML-M02S,200V,2.5A,TO-22	
F1SS01	3601-001123	FUSE-FERRULE;250V,1.6A,TIME-LAG,CERAMIC,	⚠
IC1SS1	0604-001028	PHOTO-COUPLER;TR,50-600%,250mW,DIP-4,ST	⚠
IC1SS2	AC14-12006D	IC;KA431Z,TO-92,TAPING	⚠
L1SS02	AC29-30050C	FILTER-LINE NOISE;-,20mH,0.35A,AC250V,BS	⚠
L1SS31	AC27-12001N	COIL-CHOKE;10UH-15%,RA,K-30,Q80,150KHZ,-	
L1SS32	AC27-12001N	COIL-CHOKE;10UH-15%,RA,K-30,Q80,150KHZ,-	
PT1SD1	AC26-20120L	TRANS-SWITCHING;DP,230V,UL/CSA/DEMKO,EE2	⚠
Q1SR01	0502-001050	TR-POWER;2SC4517A,NPN,30W,TO-220,ST,10-	
Q1SR12	0501-000442	TR-SMALL SIGNAL;KTC3203-Y,NPN,400MW,T0-9	
R1SD11	2001-000305	R-CARBON;110Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R1SD12	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R1SD13	2001-000305	R-CARBON;110Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R1SD14	2001-000305	R-CARBON;110Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R1SD15	2001-000305	R-CARBON;110Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R1SD16	2006-000273	R-CEMENT;27Kohm,5%,2W,CA,BK,6.4x27x6.4m	
R1SD31	2001-000515	R-CARBON;220ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R1SD32	2001-000221	R-CARBON;1.2KOHM,5%,1/8W,AA,TP,-	
R1SR11	2003-000119	R-METAL OXIDE;0.68ohm,5%,2W,AE,TP,6x16mm	
R1SR12	2003-000264	R-METAL OXIDE;300ohm,5%,1W,AD,TP,4.3x12m	
R1SR14	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R1SS10	2006-000262	R-CEMENT;2.7ohm,10%,2W,CB,ST,7.5x11x20.	
R1SS13	2003-000148	R-METAL OXIDE;100OHM,5%,2W,AE,TP,6X16MM	
R1SS32	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R1SS33	2004-000869	R-METAL;3Kohm,1%,1/8W,AA,TP,1.8x3.2mm	
R1SS34	2004-000459	R-METAL;2.2Kohm,1%,1/8W,AA,TP,1.8x3.2m	
VA1SS1	1405-001026	VARISTOR;470V,600A,9x7mm,TP	⚠
ZD1SR1	0403-000571	DIODE-ZENER;UZP43B,43V,40-46V,1W,DO-41,T	

Loc.No	Part No	Description ; Specification	Remark
S.M.P.S. (FREE VOLTAGE)			
BD1SD1	AC27-92001M	INDUCTOR;70UH-M RT BFS3565R2F,-,-,-,-	
BD1SF1	AC27-92001M	INDUCTOR;70UH-M RT BFS3565R2F,-,-,-,-	
BD1SS2	AC27-92001M	INDUCTOR;70UH-M RT BFS3565R2F,-,-,-,-	
BD1SS3	AC27-92001M	INDUCTOR;70UH-M RT BFS3565R2F,-,-,-,-	
C1SD03	2201-000934	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,18x	
C1SD04	2201-000934	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,18x	
C1SD11	2401-003303	C-AL;82uF,20%,400V,GP,BK,22X30,10	
C1SD12	2301-000140	C-FILM,PEF;10nF,10%,630V,BK,16.5X9.5X5.7	
C1SF12	2401-000970	C-AL;22uF,20%,50V,WT,TP,5x11,5	
C1SF13	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm	
C1SF14	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C1SF15	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm	
C1SS01	2305-001021	C-FILM,MPEF;100nF,20%,275V,TP,17.5x7x13.	
C1SS02	2305-001021	C-FILM,MPEF;100nF,20%,275V,TP,17.5x7x13.	⚠
C1SS12	2201-000129	C-CERAMIC,DISC;100pF,10%,1KV,Y5P,TP,6x5,	⚠
C1SS31	2401-000385	C-AL;10uF,20%,100V,GP,TP,6.3x11,5	
C1SS32	2401-001126	C-AL;330uF,20%,25V,WT,TP,10x12.5,5	
C1SS33	2401-001998	C-AL;1000uF,20%,25V,GP,TP,10x20,5mm	
C1SS34	2401-001126	C-AL;330uF,20%,25V,WT,TP,10x12.5,5	
C1SS35	2401-002162	C-AL;1000uF,20%,25V,WT,TP,10x20,5mm	
C1SS36	2401-001479	C-AL;470uF,20%,10V,GP,-,-,TP	
C1SS39	2301-000129	C-FILM,PEF;100nF,5%,50V,10X9X4.3X5,5mm,T	
CN1SS1	3711-000178	CONNECTOR-HEADER;1WALL,2P,1R,3.96mm,STRA	
D1SD31	0402-001195	DIODE-RECTIFIER;F1T4,400V,1.0A,TS-1,TP	
D1SS01	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	
D1SS02	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	⚠
D1SS03	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	⚠
D1SS04	0402-001196	DIODE-RECTIFIER;1T5,600V,1A,TS-1,TP	⚠
D1SS11	0402-000276	DIODE-RECTIFIER;UF4007,1KV,1A,DO-41,TP	⚠
D1SS12	0402-001195	DIODE-RECTIFIER;F1T4,400V,1.0A,TS-1,TP	
D1SS31	0402-001195	DIODE-RECTIFIER;F1T4,400V,1.0A,TS-1,TP	
D1SS32	0402-001194	DIODE-RECTIFIER;UG2D,200V,2A,DO-204AC,TP	
D1SS33	0402-000431	DIODE-RECTIFIER;FML-M02S,200V,2.5A,TO-22	
F1SS01	3601-001123	FUSE-FERRULE;250V,1.6A,TIME-LAG,CERAMIC,	
IC1SS1	0604-001028	PHOTO-COUPLER;TR,50-600%,250mW,DIP-4,ST	⚠
IC1SS2	AC14-12006D	IC;KA431Z,TO-92,TAPING	⚠
L1SS02	AC29-30050C	FILTER-LINE NOISE;-,20mH,0.35A,AC250V,BS	⚠
L1SS31	AC27-12001N	COIL-CHOKE;10UH-15%,RA,K-30,Q80,150KHZ,-	⚠
L1SS32	AC27-12001N	COIL-CHOKE;10UH-15%,RA,K-30,Q80,150KHZ,-	
PT1SD1	AC26-20120K	TRANS-SWITCHING;DP,100V-240V,DEMKO,EE282	
Q1SR01	1203-001049	IC-PWM CONTROLLER:1L0380,TO-220F,4P,10MI	⚠
R1SD11	2001-000076	R-CARBON;47Kohm,5%,1/4W,AA,TP,2.4x6.4mm	
R1SD12	2001-000302	R-CARBON;10ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R1SD13	2001-000076	R-CARBON;47Kohm,5%,1/4W,AA,TP,2.4x6.4mm	
R1SD14	2001-000076	R-CARBON;47Kohm,5%,1/4W,AA,TP,2.4x6.4mm	
R1SD15	2001-000076	R-CARBON;47Kohm,5%,1/4W,AA,TP,2.4x6.4mm	
R1SD16	2003-000994	R-METAL OXIDE(S);33Kohm,5%,2W,AF,TP,3.9x	
R1SD31	2001-000515	R-CARBON;220ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R1SD32	2001-000221	R-CARBON;1.2KOHM,5%,1/8W,AA,TP,-	
R1SS10	2006-000262	R-CEMENT;2.7ohm,10%,2W,CB,ST,7.5x11x20.	
R1SS11	2003-000994	R-METAL OXIDE(S);33Kohm,5%,2W,AF,TP,3.9x	
R1SS13	2003-000148	R-METAL OXIDE;100OHM,5%,2W,AE,TP,6X16MM	
R1SS32	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R1SS33	2004-000869	R-METAL;3Kohm,1%,1/8W,AA,TP,1.8x3.2mm	
R1SS34	2004-000459	R-METAL;2.2Kohm,1%,1/8W,AA,TP,1.8x3.2m	
VA1SS1	1405-001026	VARISTOR;470V,600A,9x7mm,TP	
ZD1SF1	0403-000539	DIODE-ZENER;MTZ18C,18V,17.42-18.33V,500m	⚠
ZD1SF2	0403-000294	DIODE-ZENER;MTZ4.7B,4.7V,4.55-4.80V,500m	

Loc.No	Part No	Description ; Specification	Remark
POWER DRIVE PARTS			
C1P101	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C1P102	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C1P103	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C1P104	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
C1P105	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C1P106	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C1P107	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C1P108	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C1P110	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
D1P101	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D1P102	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D1P103	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	
D1P104	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	
D1P105	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	
D1P106	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D1P108	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	
D1P109	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	
Q1P101	0501-000616	TR-SMALL SIGNAL;KSC2328A-Y,NPN,1W,TO-92L	
Q1P102	0501-000616	TR-SMALL SIGNAL;KSC2328A-Y,NPN,1W,TO-92L	
Q1P103	0501-000616	TR-SMALL SIGNAL;KSC2328A-Y,NPN,1W,TO-92L	
Q1P104	0501-000610	TR-SMALL SIGNAL;KSA928A-Y,PNP,1W,TO-92L,	
Q1P105	0504-000116	TR-DIGITAL;KSR1001,NPN,300mW,4.7K-4.7K,T	
Q1P106	0504-000142	TR-DIGITAL;KSR2001,PNP,300mW,4.7K-4.7K,T	
Q1P107	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q1P108	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
R1P101	2001-000855	R-CARBON;560ohm,5%,1/4W,AA,TP,2.4x6.4mm	
R1P102	2001-000855	R-CARBON;560ohm,5%,1/4W,AA,TP,2.4x6.4mm	
R1P103	2001-000034	R-CARBON;220OHM,5%,1/4W,AA,TP,-	
R1P104	2001-000554	R-CARBON;270ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R1P105	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,-	
R1P106	2001-000611	R-CARBON;3.9KOHM,5%,1/4W,AA,TP,-	
R1P107	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R1P108	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R1P115	2001-000362	R-CARBON;150ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R1P116	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,-	
R1P117	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
ZD1P01	0403-001211	DIODE-ZENER;MTZJ12B,12V,11.44-12.03V,500	
ZD1P02	0403-000717	DIODE-ZENER;MTZJ5.1B,5.1V,4.94-5.2V,500m	
ZD1P03	0403-000720	DIODE-ZENER;MTZJ9.1B,9.1V,8.57-9.01V,500	
DJ601	AC37-22002R	JACK-DC;12.5mm,DUAE-9812,4P,BULK,8PIN	VCP Only
DDC101	0402-000127	DIODE-RECTIFIER;1N4148,100V,1A,DO-41,TP	VCP Only
DDC102	0402-000127	DIODE-RECTIFIER;1N4148,100V,1A,DO-41,TP	VCP Only
DDC104	0402-000127	DIODE-RECTIFIER;1N4148,100V,1A,DO-41,TP	VCP Only
DDC105	0402-000127	DIODE-RECTIFIER;1N4148,100V,1A,DO-41,TP	VCP Only
SYSTEM CONTROL/SERVO PARTS			
C601	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C602	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C603	2401-001545	C-AL;47uF,20%,25V,GP,TP,6.3x7mm,2.5	
C604	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C605	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C607	2401-000118	C-AL;1000uF,20%,10V,GP,TP,10x12.5,5	
C609	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C610	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C611	2301-000392	C-FILM,PEF;15nF,5%,50V,TP,6.5x8.5x3.2mm,	
C614	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C615	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C618	2401-001545	C-AL;47uF,20%,25V,GP,TP,6.3x7mm,2.5	
C619	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C620	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C621	2401-001545	C-AL;47uF,20%,25V,GP,TP,6.3x7mm,2.5	
C622	2301-001006	C-FILM,PEF;68nF,5%,50V,TP,8x4x8.5mm,5mm	
C623	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
C624	2202-000205	C-CERAMIC,MLC-AXIAL;22pF,5%,50V,SL,TP,1.	
C625	2202-000205	C-CERAMIC,MLC-AXIAL;22pF,5%,50V,SL,TP,1.	
C626	2202-000205	C-CERAMIC,MLC-AXIAL;22pF,5%,50V,SL,TP,1.	
C627	2202-000205	C-CERAMIC,MLC-AXIAL;22pF,5%,50V,SL,TP,1.	
C633	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C634	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C635	2202-000183	C-CERAMIC,MLC-AXIAL;2.2NF,20%,16V,Y5R,TP	
C636	2202-000183	C-CERAMIC,MLC-AXIAL;2.2NF,20%,16V,Y5R,TP	
C637	2202-000263	C-CERAMIC,MLC-AXIAL;470pF,10%,50V,Y5P,TP	
C638	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
C639	2202-000121	C-CERAMIC,MLC-AXIAL;100pF,10%,50V,Y5P,TP	
C640	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C641	2401-002165	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
C644	2202-000806	C-CERAMIC,MLC-AXIAL;220pF,10%,50V,Y5P,TP	
C646	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C679	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
C690	2301-001006	C-FILM,PEF;68nF,5%,50V,TP,8x4x8.5mm,5mm	
C691	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C693	2401-000118	C-AL;1000uF,20%,10V,GP,TP,10x12.5,5	
C6P01	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C6P02	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C6P03	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C6P04	2202-000243	C-CERAMIC,MLC-AXIAL;33pF,5%,50V,SL,TP,3.	
C6P05	2202-000216	C-CERAMIC,MLC-AXIAL;.027NF,5%,50V,SL,TP,	
C6P08	2202-000286	C-CERAMIC,MLC-AXIAL;56pF,5%,50V,SL,TP,1.	
C6P09	2202-000145	C-CERAMIC,MLC-AXIAL;.12NF,10%,50V,Y5P,TP	
C6P10	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C6P11	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C6P12	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C6P13	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
CN601	AC39-20817S	LEAD CONNECTOR-ASSY;DP,SMH200-02,YBH200-	
CN602	3708-001163	CONNECTOR-FPC/FC/PIC;5P,1.25mm,STRAIGHT,	
CN604	3711-003749	CONNECTOR-HEADER;BOX,8P,2R,2mm,STRAIGHT,	
D601	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	
D603	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D604	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D606	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D610	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D611	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D612	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	ULP Only
IC601	AC09-00008C	IC-MUC;UPD784927GF,100P	
IC601	AC09-00010A	IC-MUC;UPD784915AGF	VCP Only
IC602	1003-001162	IC-MOTOR DRIVER;KA3082,SIP,10PIN,25MIL,D	
IC604	AC14-12006C	IC;KA7533,DIP,-	
IC605	1103-000190	IC-EEPROM;24C02,256x8BIT,DIP,8P,300MIL,1	
IC605	1103-001101	IC-EEPROM;24C08,1028x8BIT,DIP,8P	SV-425B/225B Only
IC608	1203-000515	IC-VOL. DETECTOR;7042,TO-92,3P,177MIL,PL	
IC6P01	AC09-10458R	IC-MCU;LC74783JM-9745,24P,MFP,OSD IC,-	
L601	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L602	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L603	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L604	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L6P03	2701-000160	INDUCTOR-AXIAL;22UH,5%,2.4X3.4MM	
L6P05	2702-001077	INDUCTOR-RADIAL;27uH,5%,5.5x5.5mm	
LD601	0601-000517	LED-IR;RECTANGULA,4x6.0mm,75mW,6V,950	
PT601	0604-001122	PHOTO-INTERRUPTER;TR,0.065%,150mW,DIP-4,	
PT602	0604-001122	PHOTO-INTERRUPTER;TR,0.065%,150mW,DIP-4,	
Q602	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q6P01	0501-000303	TR-SMALL SIGNAL;KSA733,PNP,250mW,TO-92,T	
Q6P02	0501-000303	TR-SMALL SIGNAL;KSA733,PNP,250mW,TO-92,T	
R608	2001-000864	R-CARBON;56Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R609	2001-000864	R-CARBON;56Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R613	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R614	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R641	2001-000780	R-CARBON;470OHM,5%,1/8W,AA,TP,-	
R642	2001-000780	R-CARBON;470OHM,5%,1/8W,AA,TP,-	
R644	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R650	2003-000259	R-METAL OXIDE;3.9OHM,5%,2W,AE,TP,6X16MM	

◆ **ULP : ULTRA LONG PLAY**

Loc.No	Part No	Description ; Specification	Remark
R651	2001-000010	R-CARBON;68Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R654	2001-000802	R-CARBON;5.6Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R655	2001-000786	R-CARBON;47Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R656	2001-000241	R-CARBON;1.5Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R657	2001-000010	R-CARBON;68Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R660	2001-000786	R-CARBON;47Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R661	2001-000660	R-CARBON;33Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R666	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R667	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R668	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R669	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R670	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,-	
R671	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,-	
R672	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,-	
R674	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R675	2001-000362	R-CARBON;150ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R676	2001-000633	R-CARBON;30Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R677	2001-000522	R-CARBON;22Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R678	2001-000522	R-CARBON;22Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R679	2001-000515	R-CARBON;220ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R682	2001-000522	R-CARBON;22Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R685	2001-000660	R-CARBON;33Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R686	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R687	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R688	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R690	2001-000864	R-CARBON;56Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R691	2001-000515	R-CARBON;220ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R692	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R695	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	ULP Only
R697	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R6P07	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R6P08	2001-000005	R-CARBON;390OHM,5%,1/8W,AA,TP,-	
R6P09	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
RS601	AC34-20100B	SWITCH-REC;-,-,X-9,-	
S601	0603-001011	PHOTO-TR;NPN,35V,6V,50mA,75mW,BK	
S602	0603-001011	PHOTO-TR;NPN,35V,6V,50mA,75mW,BK	
SW601	AC34-20100A	SWITCH-MODE;-,-,X-9,-	
XT601	2801-003318	CRYSTAL-UNIT;32.768KHz,20ppm,28-AAP,12.5	
XT602	2801-003139	CRYSTAL-UNIT;8MHz,50ppm,28-AAA,22pF,80oh	
AUDIO/VIDEO PARTS			
C301	2401-001919	C-AL;2.2UF,20%,50V,-,TP,4X7MM,5	
C302	2301-000283	C-FILM,PEF;47nF,5%,100V,TP,7.3X7X3.2X5,5	
C303	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C304	2202-000216	C-CERAMIC,MLC-AXIAL;.027NF,5%,50V,SL,TP,	
C305	2202-000164	C-CERAMIC,MLC-AXIAL;.18NF,10%,50V,Y5P,TP	
C306	2202-000814	C-CERAMIC,MLC-AXIAL;390pF,10%,50V,Y5P,TP	
C307	2202-000162	C-CERAMIC,MLC-AXIAL;.015NF,5%,50V,SL,TP,	
C308	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C309	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C310	2401-000407	C-AL;10uF,20%,16V,GP,TP,3.5x5,2.5	
C311	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
C313	2202-000173	C-CERAMIC,MLC-AXIAL;1nF,10%,50V,Y5P,TP,1	
C314	2401-001775	C-AL;470nF,20%,50V,GP,TP,4x7,5	
C315	2401-000407	C-AL;10uF,20%,16V,GP,TP,3.5x5,2.5	
C316	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C318	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C320	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C321	2401-000407	C-AL;10uF,20%,16V,GP,TP,3.5x5,2.5	
C322	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C323	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C324	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C325	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C326	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C327	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C328	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C329	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C330	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C331	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C332	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C333	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C334	2202-000854	C-CERAMIC,MLC-AXIAL;47NF,30%,50V,Y5R,TP,	
C335	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C336	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C337	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
C338	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C339	2202-000854	C-CERAMIC,MLC-AXIAL;47NF,30%,50V,Y5R,TP,	
C340	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
C341	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C342	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C343	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C345	2201-002031	C-CERAMIC,DISC;5pF,0.25pF,50V,NPO,TP,5x3	
C346	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C347	2202-000286	C-CERAMIC,MLC-AXIAL;56pF,5%,50V,SL,TP,1.	
C348	2202-000286	C-CERAMIC,MLC-AXIAL;56pF,5%,50V,SL,TP,1.	4H'D LP
C349	2202-000849	C-CERAMIC,MLC-AXIAL;18pF,5%,50V,CH,TP,3.	
C350	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C380	2202-000849	C-CERAMIC,MLC-AXIAL;18pF,5%,50V,CH,TP,3.	
C381	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C390	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C391	2202-000121	C-CERAMIC,MLC-AXIAL;100pF,10%,50V,Y5P,TP	
C393	2202-000787	C-CERAMIC,MLC-AXIAL;10PF,5%,50V,Y5P,TP,3	
C395	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C398	2202-000205	C-CERAMIC,MLC-AXIAL;22pF,5%,50V,SL,TP,1.	
C3A01	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
C3A02	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C3A04	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C3A05	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	ULP Only
C3A06	2301-000392	C-FILM,PEF;15nF,5%,50V,TP,6.5x8.5x3.2mm,	MULTI SYSTEM
C3A07	2301-000392	C-FILM,PEF;15nF,5%,50V,TP,6.5x8.5x3.2mm,	
C3A08	2301-001014	C-FILM,PEF;6.8nF,5%,50V,TP,7x3x6,5mm	
C3A09	2301-001014	C-FILM,PEF;6.8nF,5%,50V,TP,7x3x6,5mm	
C3A10	2301-000314	C-FILM,PEF;8.2nF,5%,50V,TP,6.5x3.0x5.5mm	
C3A11	2301-000253	C-FILM,PEF;39NF,5%,100V,TP,7.5X4.5X12.5M	
C3A12	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C3A13	2301-000161	C-FILM,PEF;12nF,5%,50V,6.5X5.5X3.0X5,5mm	
C3A14	2301-001014	C-FILM,PEF;6.8nF,5%,50V,TP,7x3x6,5mm	
C3A15	2301-000381	C-FILM,PEF;10nF,5%,50V,TP,6.5x5.5x3mm,5m	
C3A16	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
C3A17	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
C3A18	2301-000402	C-FILM,PEF;1nF,5%,50V,TP,5x7x2.8mm,5mm	
C3A21	2301-000008	C-FILM,PEF;2.2nF,5%,50V,TP,5.5X7X3,5mm	
C3A22	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C3A23	2401-001168	C-AL;33uF,20%,16V,GP,TP,6.3x5,2.5mm	
C3A24	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C3A25	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
C3A29	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C3A30	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C3A31	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
CN301	3708-000395	CONNECTOR-FPC/FC/PIC;8P,1.25MM,STRAIGHT,	
CN3A01	3708-001302	CONNECTOR-FPC/FC/PIC;7P,1.25mm,STRAIGHT,	
CN3A02	3711-002445	CONNECTOR-HEADER;BOX,2P,2R,1.5MM,STRAIGH	
D302	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
FL3A01	AC27-80100A	COIL-OSC;126QN-K5272YHC=K,-,AM	
IC301	1204-001403	IC-VIDEO PROCESS;LA71570M,QFP,100P,-,PLA	MULTI SYSTEM
IC301	1204-001410	IC-VIDEO PROCESS;LA71590M,QFP,100P,-,PLA	PAL SYSTEM
L301	2701-000206	INDUCTOR-AXIAL;56UH,5%,2.4X3.4MM	
L302	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L303	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L304	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L306	2701-000119	INDUCTOR-AXIAL;120UH,5%,2.4X3.4MM	
L307	2701-000122	INDUCTOR-AXIAL;12uH,5%,2.4x3.4mm	

Loc.No	Part No	Description ; Specification	Remark
L3A01	2702-000120	INDUCTOR-RADIAL;15mH,5%,6.2x7.4mm	
L3A02	2702-000106	INDUCTOR-RADIAL;100uH,5%,6.2x7.4mm	
L3A03	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
Q302	0501-000303	TR-SMALL SIGNAL;KSA733,PNP,250mW,TO-92,T	
Q303	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q304	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q307	0504-000203	TR-DIGITAL;KSR1004,NPN,300mW,47K-47K,TO-	2H'D LP
Q308	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q309	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q310	0504-000203	TR-DIGITAL;KSR1004,NPN,300mW,47K-47K,TO-	ULP Only
Q3A01	0501-000303	TR-SMALL SIGNAL;KSA733,PNP,250mW,TO-92,T	
Q3A02	0504-000203	TR-DIGITAL;KSR1004,NPN,300mW,47K-47K	MULTI SYSTEM
Q3A03	0501-000442	TR-SMALL SIGNAL;KTC3203-Y,NPN,400MW,T0-9	
Q3A04	0501-000442	TR-SMALL SIGNAL;KTC3203-Y,NPN,400MW,T0-9	
Q3A05	0501-000442	TR-SMALL SIGNAL;KTC3203-Y,NPN,400MW,T0-9	
Q3A06	0501-000303	TR-SMALL SIGNAL;KSA733,PNP,250mW,TO-92,T	
Q3A07	0504-000203	TR-DIGITAL;KSR1004,NPN,300mW,47K-47K,TO-	ULP Only
Q3A09	0504-000203	TR-DIGITAL;KSR1004,NPN,300mW,47K-47K,TO-	ULP Only
R301	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R302	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R304	2001-000977	R-CARBON;8.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R305	2001-000258	R-CARBON;1.8KOHM,5%,1/8W,AA,TP,-	MULTI SYSTEM
R306	2001-000232	R-CARBON;1.3Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R308	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R309	2001-000723	R-CARBON;4.3Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R311	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R312	2001-000221	R-CARBON;1.2KOHM,5%,1/8W,AA,TP,-	
R313	2001-000515	R-CARBON;220ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R314	2001-000924	R-CARBON;680ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R315	2001-000472	R-CARBON;2.7KOHM,5%,1/8W,AA,TP,-	
R316	2001-000221	R-CARBON;1.2KOHM,5%,1/8W,AA,TP,-	
R317	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R318	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R320	2001-000009	R-CARBON;20KOHM,5%,1/8W,AA,TP,-	
R321	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R322	2001-000539	R-CARBON;24Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R324	2001-000554	R-CARBON;270ohm,5%,1/8W,AA,TP,1.8x3.2mm	2H'D LP
R325	2001-000472	R-CARBON;2.7KOHM,5%,1/8W,AA,TP,-	
R326	2001-000832	R-CARBON;510ohm,5%,1/8W,AA,TP,1.8x3.2mm	4H'D LP
R327	2001-000832	R-CARBON;510ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R328	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,-	
R329	2001-000472	R-CARBON;2.7KOHM,5%,1/8W,AA,TP,-	
R330	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,-	
R331	2001-000515	R-CARBON;220ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R332	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R333	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R334	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R335	2001-000800	R-CARBON;5.1Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R336	2001-000008	R-CARBON;15Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R337	2001-001000	R-CARBON;82Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R342	2001-000802	R-CARBON;5.6Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R346	2001-000258	R-CARBON;1.8KOHM,5%,1/8W,AA,TP,-	
R347	2001-001031	R-CARBON;91Kohm,5%,1/8W,AA,TP,1.8x3.2mm	ULP Only
R3A01	2001-000331	R-CARBON;12KOHM,5%,1/8W,AA,TP,-	
R3A04	2001-000241	R-CARBON;1.5Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3A05	2001-000660	R-CARBON;33Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A06	2001-000362	R-CARBON;150ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A07	2001-000645	R-CARBON;330Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3A08	2001-000331	R-CARBON;12KOHM,5%,1/8W,AA,TP,-	
R3A09	2001-000802	R-CARBON;5.6Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3A10	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R3A11	2001-000258	R-CARBON;1.8KOHM,5%,1/8W,AA,TP,-	
R3A12	2001-000458	R-CARBON;2.2ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A13	2001-000780	R-CARBON;470OHM,5%,1/8W,AA,TP,-	
R3A14	2001-000522	R-CARBON;22Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A15	2001-000411	R-CARBON;18KOHM,5%,1/8W,AA,TP,-	
R3A16	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R3A17	2001-000613	R-CARBON;3.9KOHM,5%,1/8W,AA,TP,-	
R3A18	2001-000613	R-CARBON;3.9KOHM,5%,1/8W,AA,TP,-	
R3A19	2001-000405	R-CARBON;180ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A20	2001-000904	R-CARBON;620ohm,5%,1/8W,AA,TP,1.8x	MULTI SYSTEM
R3A21	2001-000904	R-CARBON;620ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A22	2001-000006	R-CARBON;2.4Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3A23	2001-000802	R-CARBON;5.6Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3A24	2001-000522	R-CARBON;22Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A25	2001-000221	R-CARBON;1.2KOHM,5%,1/8W,AA,TP,-	
R3A26	2001-000331	R-CARBON;12KOHM,5%,1/8W,AA,TP,-	
R3A27	2001-000947	R-CARBON;7.5Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3A28	2001-000890	R-CARBON;6.8KOHM,5%,1/8W,AA,TP,-	
R3A29	2001-000890	R-CARBON;6.8KOHM,5%,1/8W,AA,TP,-	
R3A30	2001-000454	R-CARBON;2.2Mohm,5%,1/8W,AA,TP,1.8x3.2m	
R3A31	2001-000766	R-CARBON;43Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A32	2001-000766	R-CARBON;43Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A33	2001-000766	R-CARBON;43Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3A35	2001-000666	R-CARBON;33ohm,5%,1/8W,AA,TP,1.8x3.2mm	ULP Only
R3A37	2001-000947	R-CARBON;7.5Kohm,5%,1/8W,AA,TP,1.8x3.2m	
XT301	2801-001397	CRYSTAL-UNIT;4.433619MHZ,HC-49/U-S 15PPM	
XT302	2801-003399	CRYSTAL-UNIT;3.579545MHz,15ppm,28-AAA,	MULTI SYSTEM
		INPUT/OUTPUT PARTS	
C401	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C402	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
C403	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C404	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
C405	2401-001573	C-AL;47uF,20%,50V,GP,TP,6.3x11,2.5	
C406	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
C407	2401-001085	C-AL;330NF,20%,50V,GP,-,5X9,2MM	
D401	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-41,TP	
L401	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L402	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
R401	2001-000786	R-CARBON;47Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R402	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R403	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R404	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
TM401	AC40-30072D	TM-BLOCK;TCMK0600PD08A,PAL-BG/I/DK,181C	
TM401	AC40-30072A	TM-BLOCK;TMDG2-103A,PAL-BG,181CH	SV-425B/225B/220B
TM401	AC40-20100L	RF-MODULATOR;RMUP74055VC,VCP PAL	VCP Only
ZD401	0403-000390	DIODE-ZENER;UZP33B,33V,31.4-34.6V,1W,DO-	
C801	2401-001976	C-AL;47UF,20%,16V,GP,-,5X11,2	
C802	2401-001479	C-AL;470uF,20%,10V,GP,-,-,TP	
C806	2202-000830	C-CERAMIC,MLC-AXIAL;82pF,10%,50V,Y5P,TP,	
C809	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
C810	2401-000407	C-AL;10uF,20%,16V,GP,TP,3.5x5,2.5	
C812	2202-000121	C-CERAMIC,MLC-AXIAL;100pF,10%,50V,Y5P,TP	
JC801	AC37-20001H	JACK-RCA;DPAM-,4P,MONO,PI3.3	
R801	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R802	2001-000995	R-CARBON;820OHM,5%,1/8W,AA,TP,-	
R803	2001-000221	R-CARBON;1.2KOHM,5%,1/8W,AA,TP,-	
R806	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R808	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
		SECAM PARTS (OPTION)	
C3S01	2201-000804	C-CERAMIC,DISC;180pF,5%,50V,SL,TP,5x3,5	
C3S02	2401-001919	C-AL;2.2UF,20%,50V,-,TP,4X7MM,5	
C3S03	2301-000381	C-FILM,PEF;10nF,5%,50V,TP,6.5x5.5x3mm,5m	
C3S04	2301-000381	C-FILM,PEF;10nF,5%,50V,TP,6.5x5.5x3mm,5m	
C3S05	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C3S06	2201-000236	C-CERAMIC,DISC;150pF,5%,50V,SL,TP,5.0*3.	
C3S07	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
C3S08	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
C3S09	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C3S11	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	

Loc.No	Part No	Description ; Specification	Remark
C3S13	2401-001775	C-AL;470nF,20%,50V,GP,TP,4x7,5	
C3S14	2202-000173	C-CERAMIC,MLC-AXIAL;1nF,10%,50V,Y5P,TP,1	
C3S15	2401-000407	C-AL;10uF,20%,16V,GP,TP,3.5x5,2.5	
C3S17	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C3S19	2201-000376	C-CERAMIC,DISC;220pF,5%,50V,SL,TP,4x4,5	
C3S20	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm	
C3S21	2401-001915	C-AL;1uF,20%,50V,GP,TP,3x5,5	
C3S22	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C3S23	2201-000854	C-CERAMIC,DISC;51pF,5%,50V,CH,TP,6.5x3,5	
C3S25	2201-000202	C-CERAMIC,DISC;10pF,5%,50V,NPO,TP,5.0*3.	
C3S26	2201-000681	C-CERAMIC,DISC;82pF,5%,50V,SL,TP,5x3,5	
C3S27	2201-000863	C-CERAMIC,DISC;680pF,10%,50V,Y5P,TP,5x3,	
IC3S01	1204-001437	IC-CHROMA;LA7359,DIP,28P,400MIL,PLASTIC,	
L3S01	AC27-92001B	COIL-PEAKING AXIAL;BAL04ST101K,-,-,-,-	
L3S02	2702-000179	INDUCTOR-RADIAL;6.8uH,5%,6x6.4mm	
L3S03	2701-000165	INDUCTOR-AXIAL;27uH,5%,2.4x3.4mm	
L3S04	2701-000195	INDUCTOR-AXIAL;47UH,5%,2.4X3.4MM	
L3S05	2701-000160	INDUCTOR-AXIAL;22UH,5%,2.4X3.4MM	
Q3S01	0501-000303	TR-SMALL SIGNAL;KSA733,PNP,250mW,TO-92,T	
Q3S02	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q3S03	0504-000142	TR-DIGITAL;KSR2001,PNP,300mW,4.7K-4.7K,T	
Q3S04	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q3S05	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
R3S01	2001-000539	R-CARBON;24Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S02	2001-000977	R-CARBON;8.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3S03	2001-001015	R-CARBON;9.1Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3S04	2001-000539	R-CARBON;24Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S05	2001-000786	R-CARBON;47Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S11	2001-000837	R-CARBON;51Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S12	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,-	
R3S13	2001-000633	R-CARBON;30Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S14	2001-000890	R-CARBON;6.8KOHM,5%,1/8W,AA,TP,-	
R3S15	2001-000947	R-CARBON;7.5Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3S16	2001-000472	R-CARBON;2.7KOHM,5%,1/8W,AA,TP,-	
R3S17	2001-000522	R-CARBON;22Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S20	2001-000281	R-CARBON;100ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S21	2001-000674	R-CARBON;360ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S22	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,-	
R3S23	2001-000539	R-CARBON;24Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R3S24	2001-000319	R-CARBON;120Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R3S25	2001-000258	R-CARBON;1.8KOHM,5%,1/8W,AA,TP,-	
R3S26	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R3S27	2001-000319	R-CARBON;120Kohm,5%,1/8W,AA,TP,1.8x3.2m	
F/TIMER PARTS (MAIN PCB)			
CN703	3708-001163	CONNECTOR-FPC/FC/PIC;5P,1.25mm,STRAIGHT,	
CN708	3711-004013	CONNECTOR-HEADER;3WALL,10P,1R,2mm,STRAIG	
D701	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D702	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D703	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D704	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D705	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D706	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D708	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
D709	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
Q701	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q702	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q703	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q704	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q705	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q706	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q707	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q708	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q711	0501-000290	TR-SMALL SIGNAL;KSA643-Y,PNP,500MW,TO-92	
Q712	0501-000290	TR-SMALL SIGNAL;KSA643-Y,PNP,500MW,TO-92	
Q713	0501-000290	TR-SMALL SIGNAL;KSA643-Y,PNP,500MW,TO-92	
Q714	0501-000290	TR-SMALL SIGNAL;KSA643-Y,PNP,500MW,TO-92	
Q715	0501-000290	TR-SMALL SIGNAL;KSA643-Y,PNP,500MW,TO-92	
R701	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R702	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R703	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R704	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R705	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R706	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R707	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R708	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R711	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R712	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R713	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R714	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R715	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R716	2001-000449	R-CARBON;2.2Kohm,5%,1/8W,AA,TP,1.8x3.2m	
R718	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R719	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R720	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R721	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R722	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R723	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R724	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R727	2001-000008	R-CARBON;15Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R728	2001-000008	R-CARBON;15Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
SW701	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW702	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW703	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW706	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
SW707	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
SW708	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW709	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW711	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW712	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW713	3404-001076	SWITCH-TACT;12V,50mA,16gf+-50gf,6x6mm,SP	
SW718	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
LED MODULE PCB (OPTION)			
C701	2401-002165	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
C702	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C703	2202-000173	C-CERAMIC,MLC-AXIAL;1nF,10%,50V,Y5P,TP,1	
CN705	3711-001198	CONNECTOR-HEADER;NOWALL,10P,1R,2mm,ANGLE	
CN706	3711-001198	CONNECTOR-HEADER;NOWALL,10P,1R,2mm,ANGLE	
DT701	0703-001058	DISPLAY-LED;GRN/RED,6digit,10seg,57x20x1	
Q709	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q710	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
Q716	0501-000290	TR-SMALL SIGNAL;KSA643-Y,PNP,500MW,TO-92	
R709	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R710	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
R717	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R725	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R726	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R731	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
RM701	AC59-60060A	MODULE-REMOCON;GP1U281R,SHARP,38KHZ,-,-,	
LED SINGLE PCB (OPTION)			
C701	2401-002165	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
C702	2202-000797	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5P,TP,	
C703	2202-000173	C-CERAMIC,MLC-AXIAL;1nF,10%,50V,Y5P,TP,1	
CN705	3711-001198	CONNECTOR-HEADER;NOWALL,10P,1R,2mm,ANGLE	
CN706	3711-001198	CONNECTOR-HEADER;NOWALL,10P,1R,2mm,ANGLE	
D711	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
LD702	0601-001201	LED;ROUND,RED,3mm,635nm	
LD703	0601-000497	LED;ROUND,GRN,3.1mm,565nm	
LD704	0601-000497	LED;ROUND,GRN,3.1mm,565nm	
LD705	0601-000497	LED;ROUND,GRN,3.1mm,565nm	

Loc.No	Part No	Description ; Specification	Remark
LD706	0601-000497	LED;ROUND,GRN,3.1mm,565nm	
LD707	0601-000497	LED;ROUND,GRN,3.1mm,565nm	
LD709	0601-000497	LED;ROUND,GRN,3.1mm,565nm	
R729	2001-000362	R-CARBON;150ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R730	2001-000924	R-CARBON;680ohm,5%,1/8W,AA,TP,1.8x3.2mm	
R731	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,-	
RM701	AC59-60060A	MODULE-REMOCON;GP1U281R,SHARP,38KHZ,-,-,	
FRONT A/V PCB (OPTION)			
C704	2401-000407	C-AL;10uF,20%,16V,GP,TP,3.5x5,2.5	
C706	2202-000173	C-CERAMIC,MLC-AXIAL;1nF,10%,50V,Y5P,TP,1	
CN709	3710-001385	CONNECTOR-SOCKET;10P,1R,2mm,ANGLE,SN	
D707	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
JK701	AC37-22002K	JACK-PIN;3.2mm,DPSM-9818,2P,13mm,ARREY	
L703	2701-000181	INDUCTOR-AXIAL;33UH,5%,2.4X3.4MM	
R735	2001-000969	R-CARBON;75ohm,5%,1/8W,AA,TP,1.8x3.2mm	
SW706	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
SW707	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
SHUTTLE PCB (OPTION)			
CN707	3708-001164	CONNECTOR-FPC/FC/PIC;5P,1.25MM,ANGLE,SN	
SH701	2101-000101	VR-ROTARY;100Kohm,20%,1/10W,SIDE	

Loc.No	Part No	Description ; Specification	Remark

- **Refer to table below REMOCON-ASSY**

Country	Models	Part No.	Universal Remote
U.A.E. SYRIA	SV-425G	AC59-10419U	YES
	SV-224G	AC59-10425H	NO
	SV-223G	AC59-10419Y	NO
	SV-122G	AC59-10420G	NO
	SV-121G	AC59-10420A	NO
	SV-100G	AC59-10420A	NO
Lebanon	SV-425G	AC59-10419U	NO
	SV-121G	AC59-10420A	NO
Saudi Arabia	SV-425G	AC59-10419U	YES
	SV-223G	AC59-10419Y	NO
	SV-121G	AC59-10420A	NO
Iran	SV-A80G(HCII)	AC59-10419U	YES
	SV-A70G(HCII)	AC59-10419Y	NO
	SV-A11G(HCII)	AC59-10420A	NO
Egypt	SV-223G	AC59-10419Y	NO
	SV-121G	AC59-10420A	NO
Israel	SV-425G	AC59-10419U	YES
Australia	SV-425B	AC59-10419W	YES
	SV-225B	AC59-10419W	YES
	SV-220B	AC59-10419Y	NO
New Zealand	SV-425X	AC59-10419W	YES
	SV-220X	AC59-10419Y	NO
Thailand	SV-C30G	AC59-10419Y	NO
	SV-5C	AC59-10420A	NO
	SV-6C	AC59-10420A	NO
Vietnam	SV-5C	AC59-10420A	NO
	SV-6C	AC59-10420A	NO
Malaysia	SV-C12K	AC59-10420A	NO
Algeciras	SV-C12K	AC59-10420A	NO
Guinea	SV-C12K	AC59-10420A	NO
Morocco	SV-C12K	AC59-10420A	NO
Algeria	SV-C12K	AC59-10420A	NO
South Africa	SV-425I	AC59-10419L	YES
	SV-223I	AC59-10419Y	NO
	SV-C12K	AC59-10420A	NO
Bulgaria	SV-121G	AC59-10420A	NO
Ugoslabia	SV-121G	AC59-10420A	NO
C.I.S.	SVR-425	AC59-10419U	YES
	SVR-423	AC59-10419U	YES
	SVR-420	AC59-10419U	YES
	SVR-223	AC59-10419U	YES
	SVR-220	AC59-10419U	YES
	SVR-121	AC59-10420A	NO
	SVR-120	AC59-10420A	NO

5. Schematic Diagrams

◆ Block Identification of Main PCB - 5-2

5-1 S.M.P.S. (230 Voltage) - 5-3

5-2 S.M.P.S. (Free Voltage) - 5-4

5-3 Power Drive - 5-5

5-4 System Control/Servo - 5-6

5-5 Audio/Video - 5-7

5-6 Secam - 5-8

5-7 Input-Output - 5-9

5-8 Remote-Control (Multi-TV) - 5-10

5-9 Remote-Control (VCR Only) - 5-11

Note

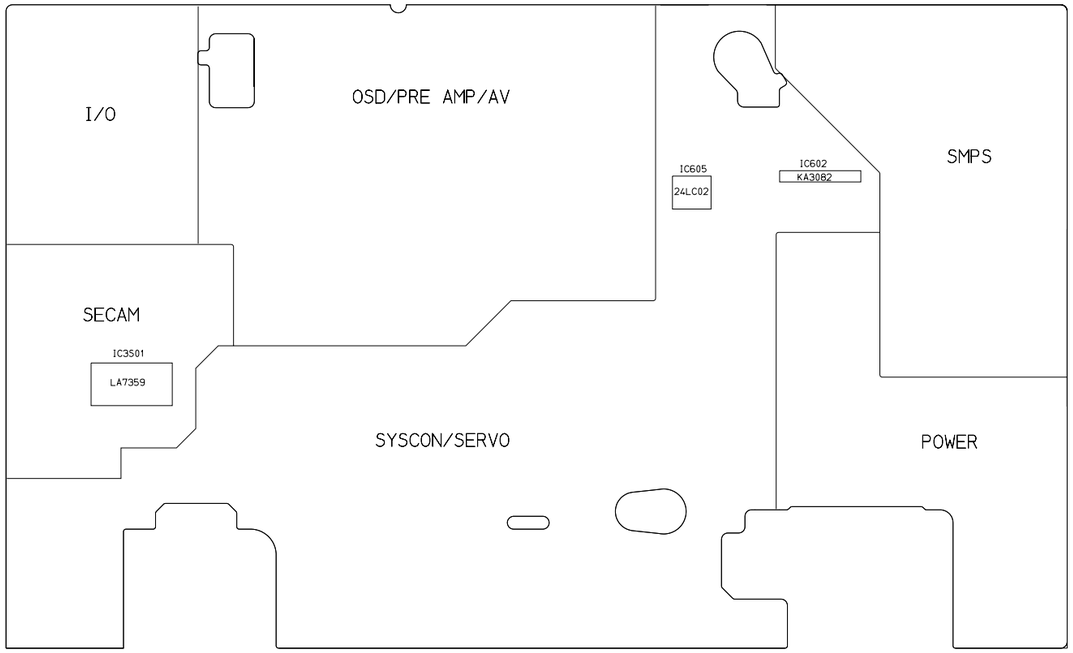
For schematic Diagram
- Resistors are in ohms, 1/8W unless otherwise noted.

Special note :
Most semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

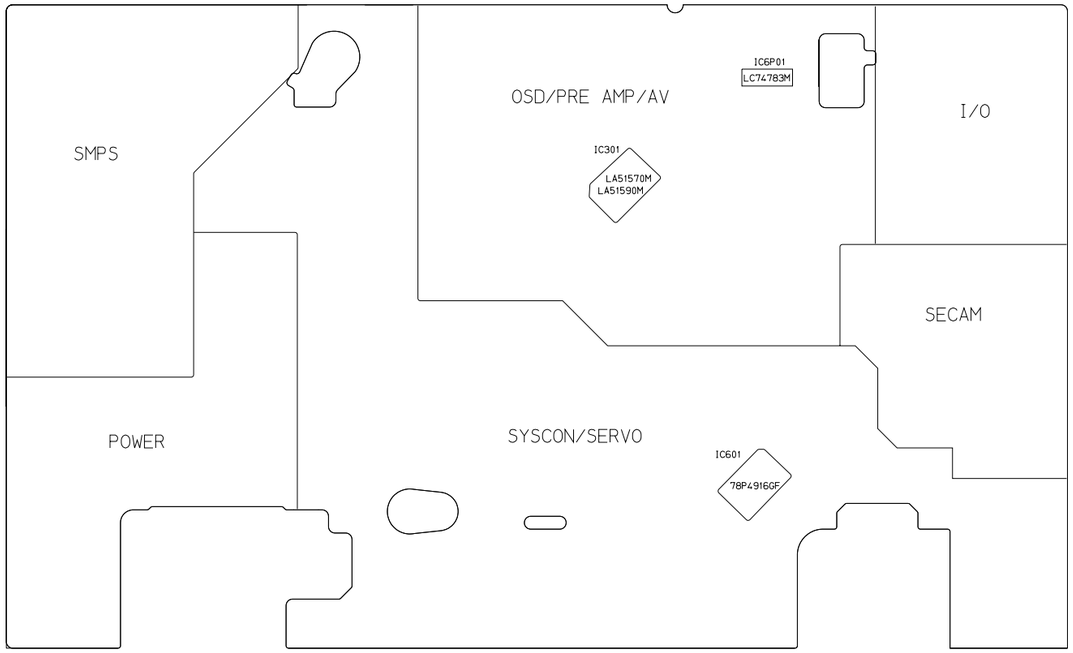
Note :
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list (may be slightly different or amended since this drawing was prepared).

Important safety notices :
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components.
Use only the same type.

◆ Block Identification of Main PCB

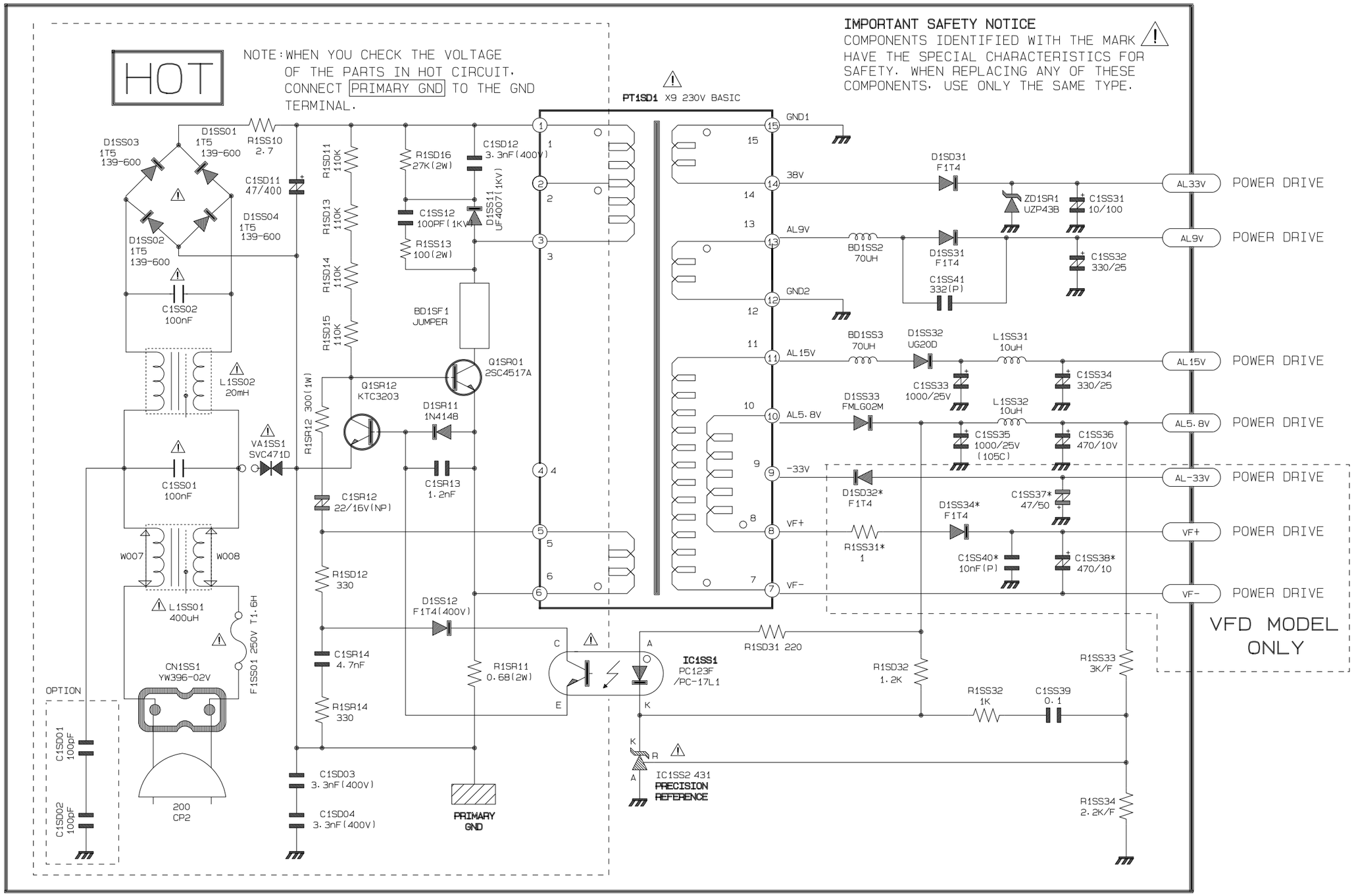


Component Side

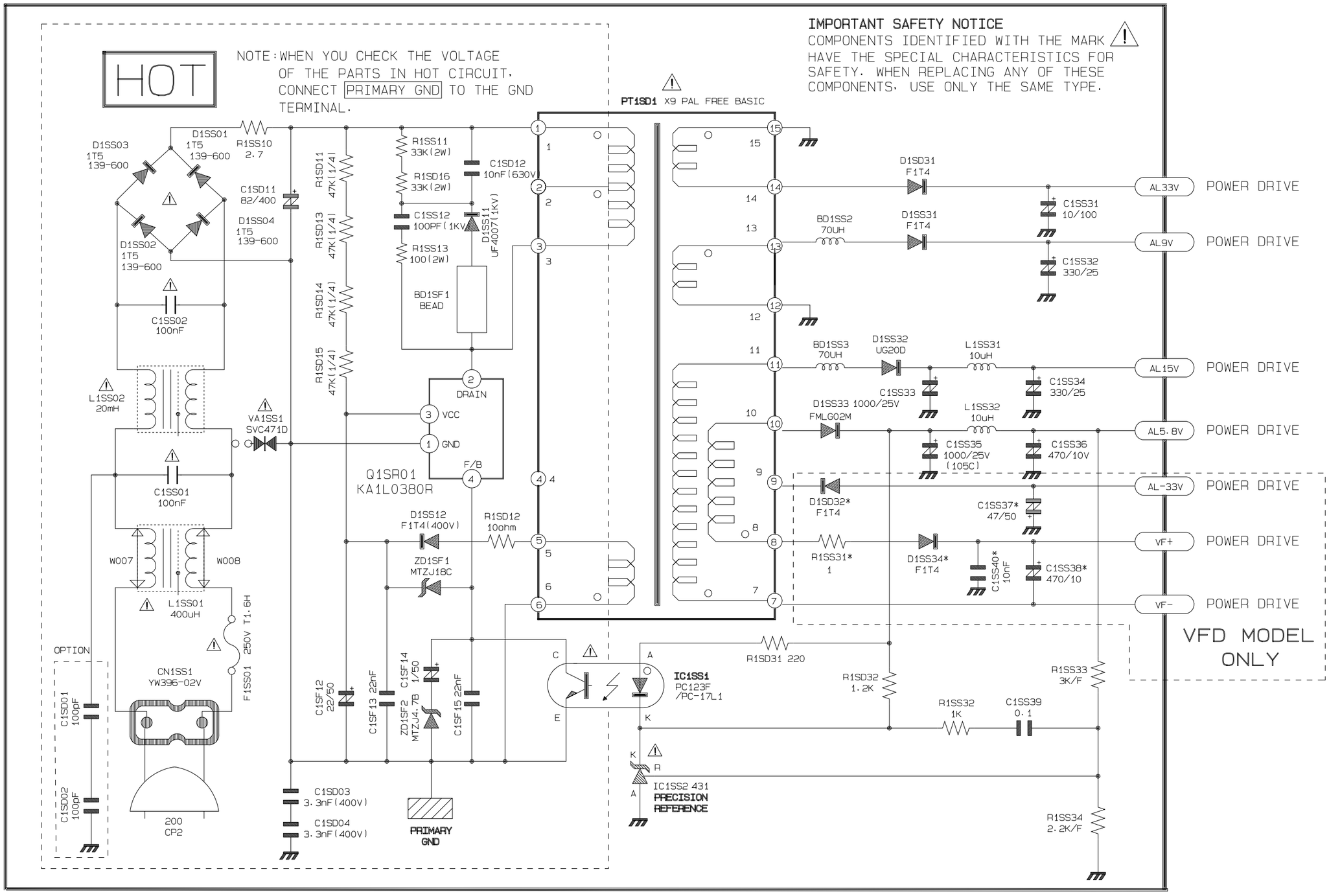


Conductor Side

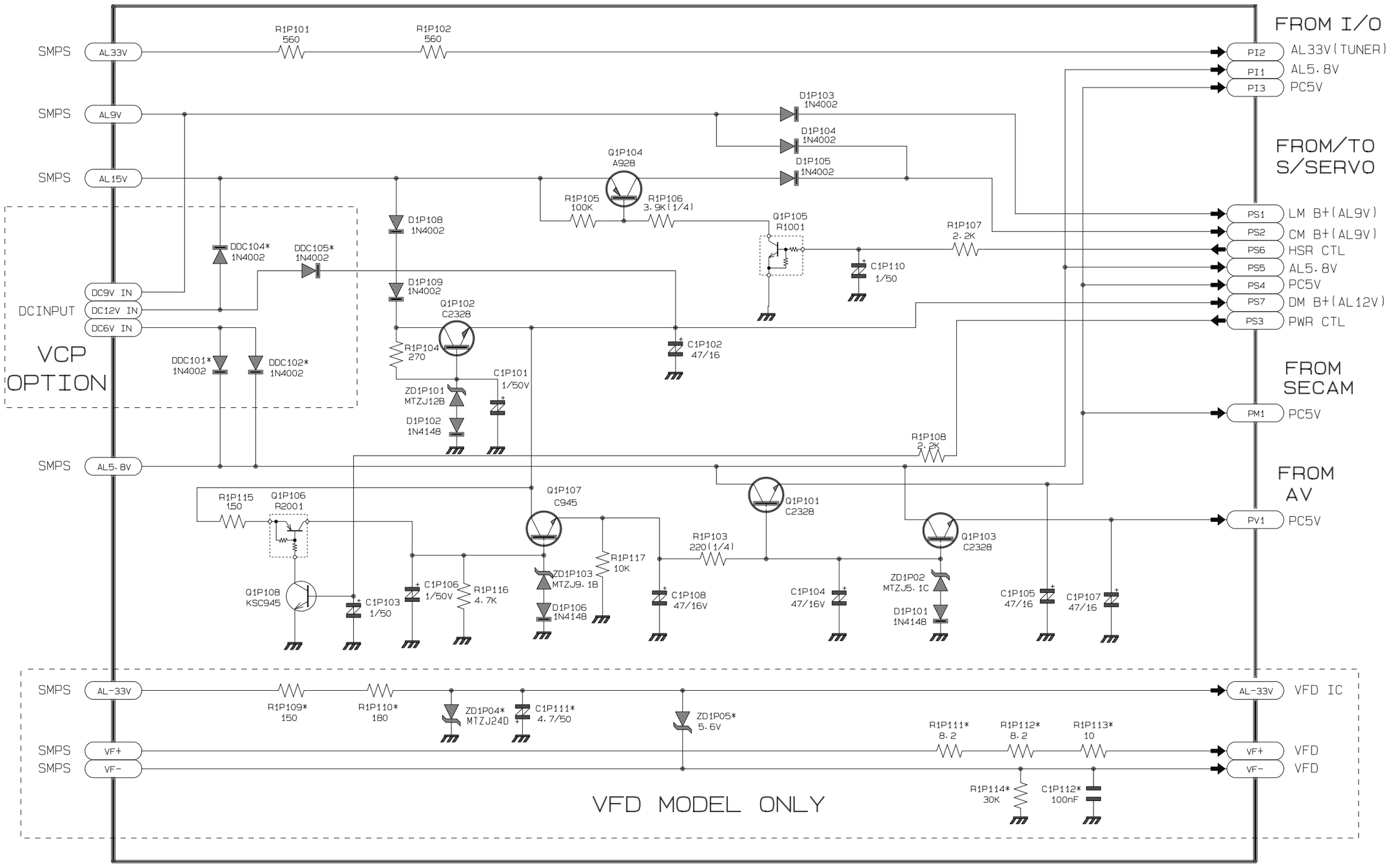
5-1 S.M.P.S. (230 Voltage)



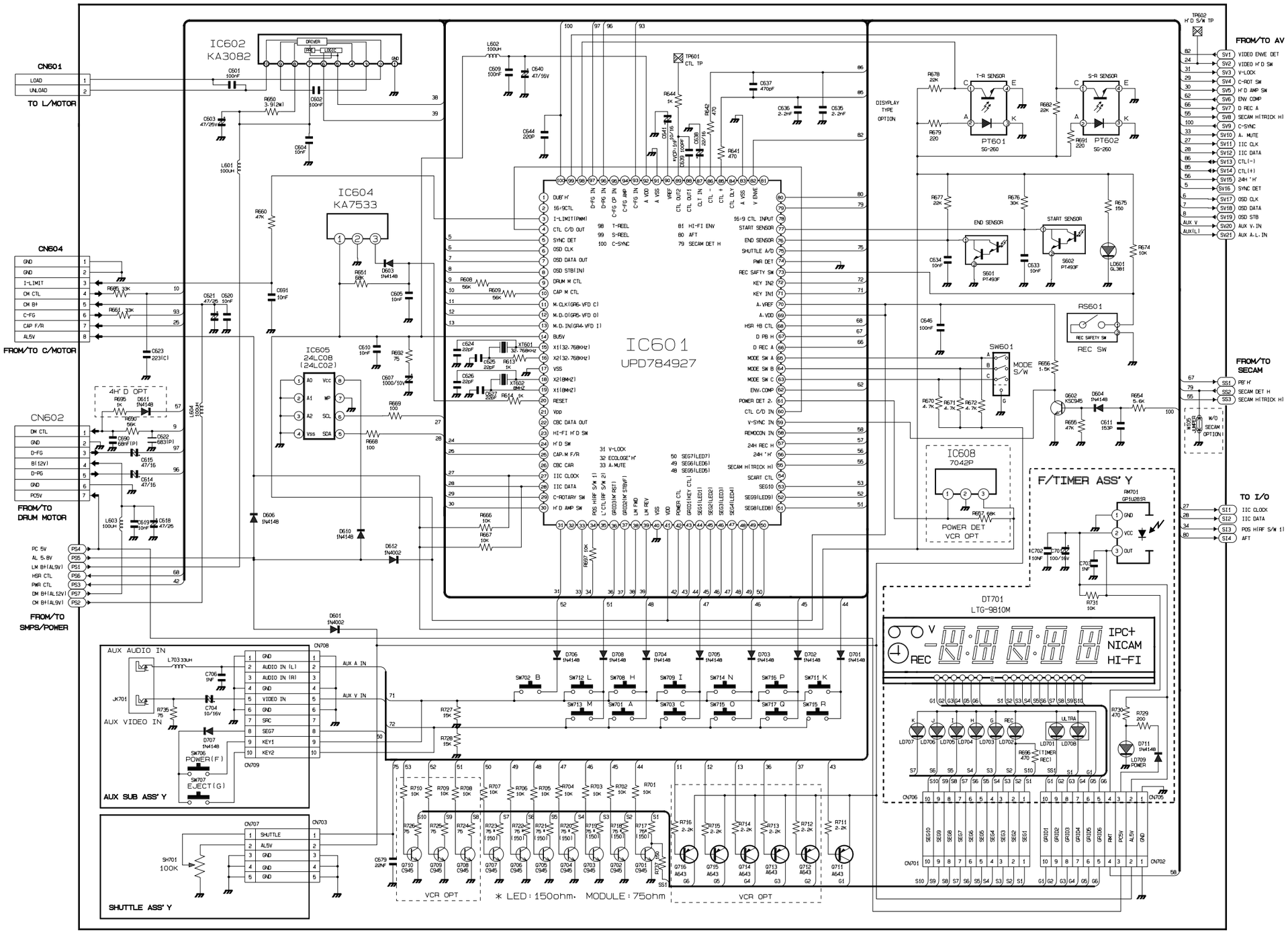
5-2 S.M.P.S. (Free Voltage)



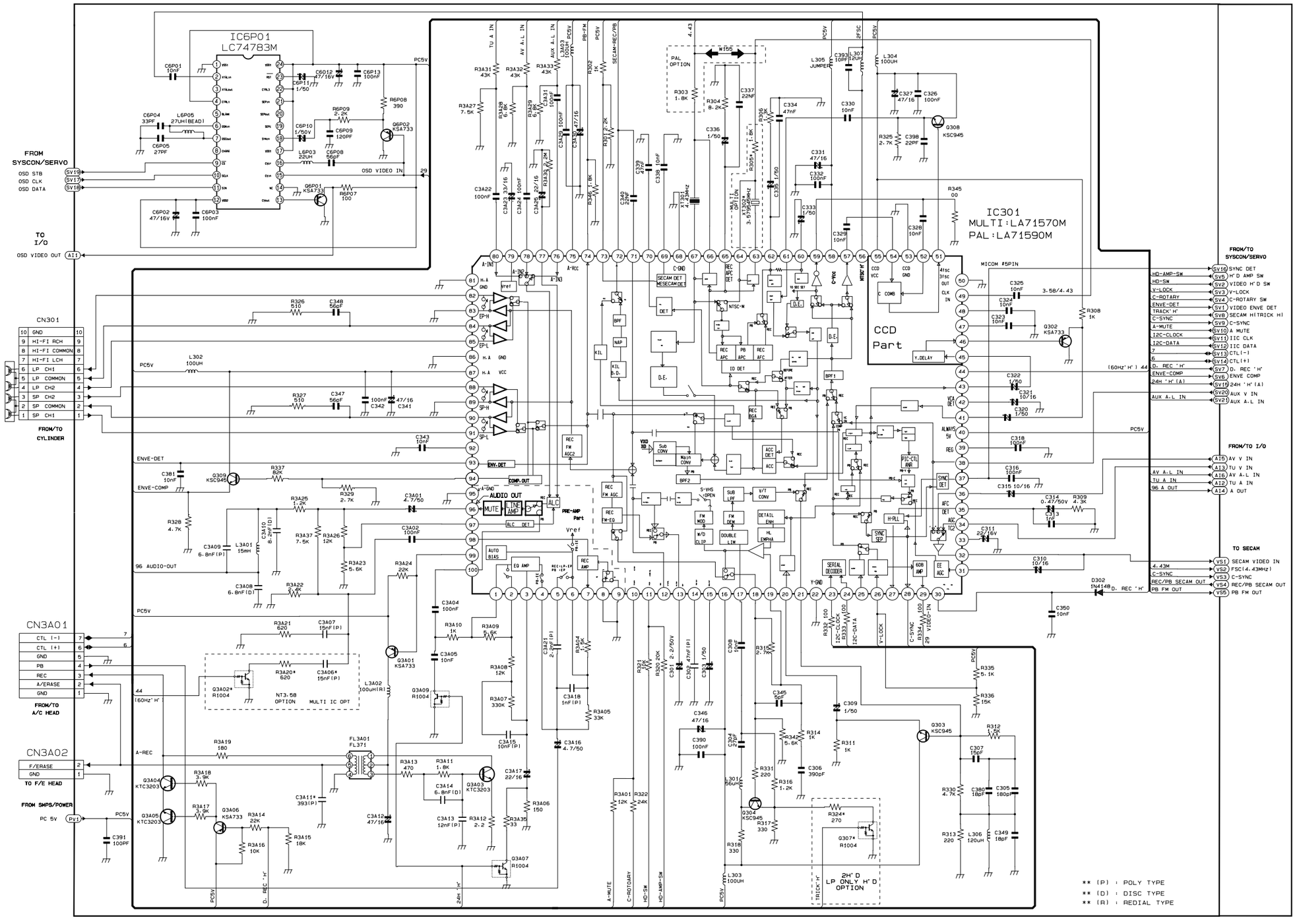
5-3 Power Drive



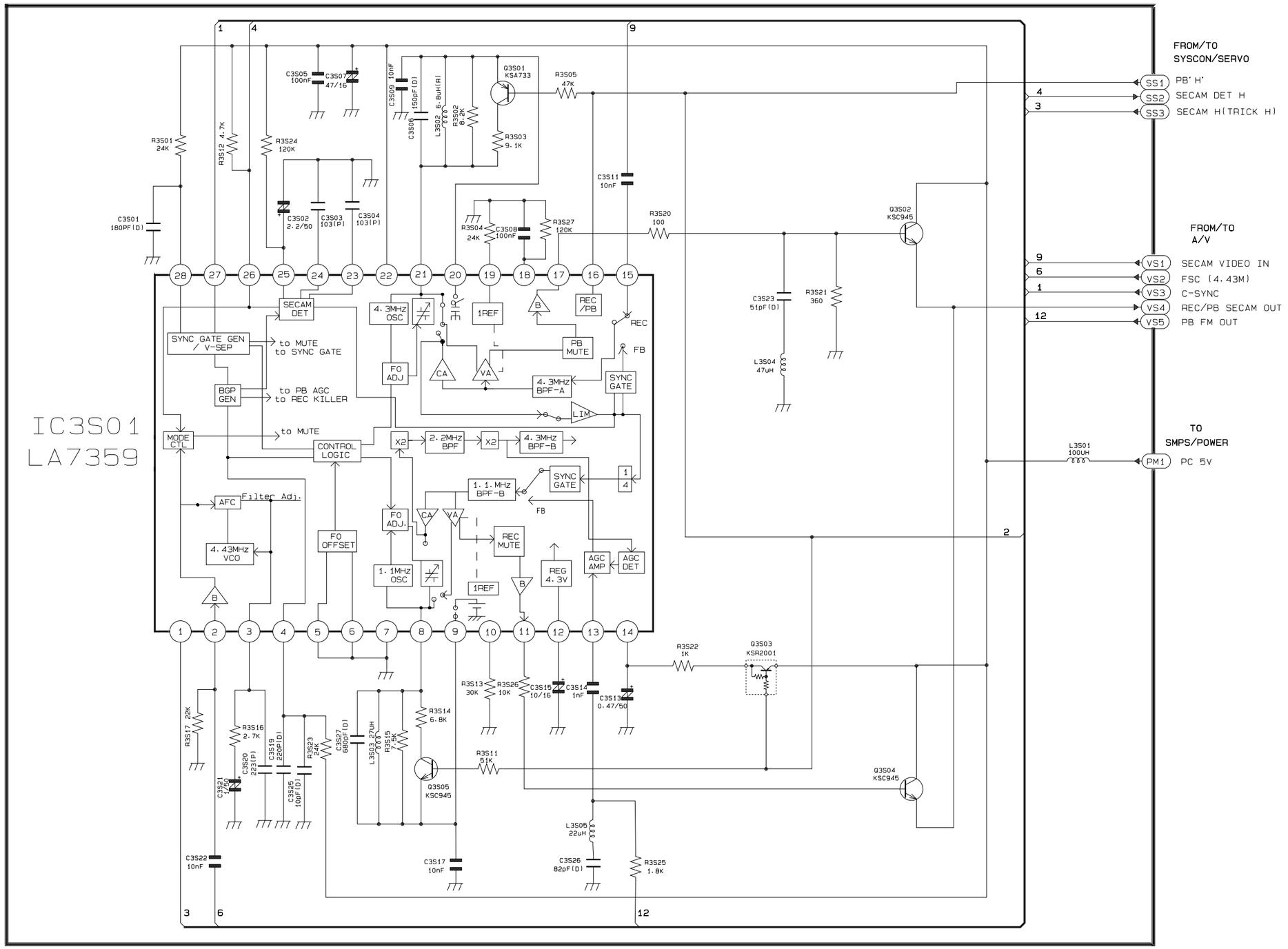
5-4 System Control/Servo



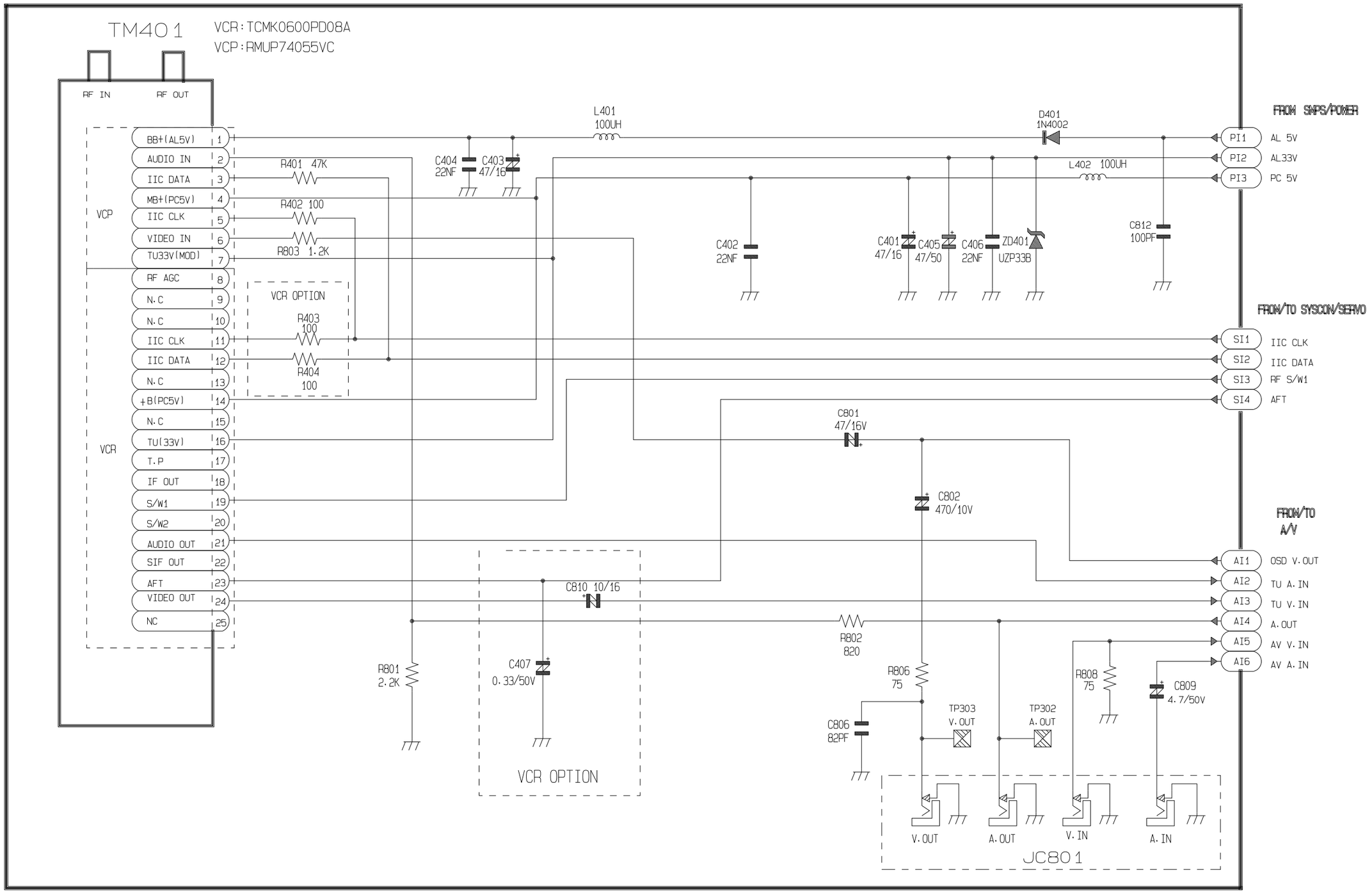
5-5 Audio/Video



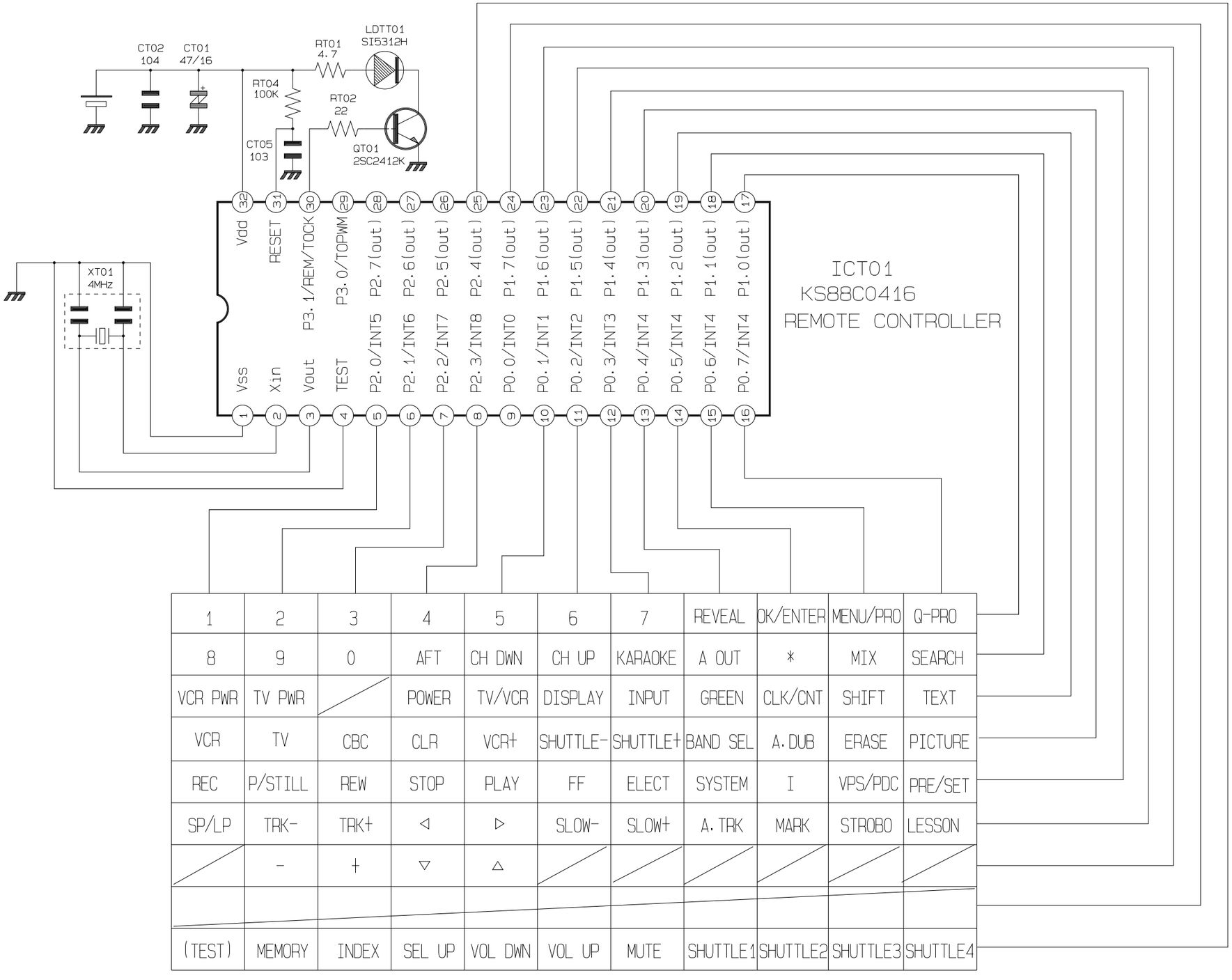
5-6 Secam


IC3S01
LA7359
FROM/TO
SYSCON/SERVO
SS1 PB' H'
SS2 SECAM DET H
SS3 SECAM H(TRICK H)
FROM/TO
A/V
VS1 SECAM VIDEO IN
VS2 FSC (4.43M)
VS3 C-SYNC
VS4 REC/PB SECAM OUT
VS5 PB FM OUT
TO
SMPS/POWER
PM1 PC 5V
SECAM DET
SYNC GATE GEN / V-SEP
to MUTE
to SYNC GATE
BGP GEN
to PB AGC
to REC KILLER
MODE CTL
to MUTE
CONTROL LOGIC
AFC
Filter Adj.
4.43MHz VCO
FO OFFSET
4.3MHz OSC
1REF
REC /PB
REC
PB MUTE
FB
FO ADJ
CA
VA
4.3MHz BPF-A
SYNC GATE
LIM
X2
2.2MHz BPF
4.3MHz BPF-B
1.1.MHz BPF-B
FO ADJ.
REC MUTE
1.1MHz OSC
REG 4.3V
AGC AMP
AGC DET
Q3S01 KSA733
Q3S02 KSC945
Q3S03 KSR2001
Q3S04 KSC945
Q3S05 KSC945
R3S01 24K
R3S12 4.7K
R3S24 120K
R3S02 8.2K
R3S03 9.1K
R3S05 47K
R3S20 100
R3S27 120K
R3S04 24K
R3S21 360
R3S22 1K
R3S11 51K
R3S13 30K
R3S26 10K
R3S14 6.8K
R3S15 7.5K
R3S16 2.7K
R3S17 22K
R3S23 24K
R3S25 1.8K
C3S01 180PF(D)
C3S02 2.2/50
C3S03 103(P)
C3S04 103(P)
C3S05 100nF
C3S07 47/16
C3S09 10nF
C3S06 150pF(D)
C3S08 100nF
C3S11 10nF
C3S23 51pF(D)
C3S15 10/16
C3S14 1nF
C3S13 0.47/50
C3S17 10nF
C3S22 10nF
C3S19 220P(D)
C3S20 223(P)
C3S21 150
C3S25 10pF(D)
C3S27 680pF(D)
C3S26 82pF(D)
L3S02 6.8uH(R)
L3S03 27uH
L3S04 47uH
L3S05 22uH
L3S01 100UH

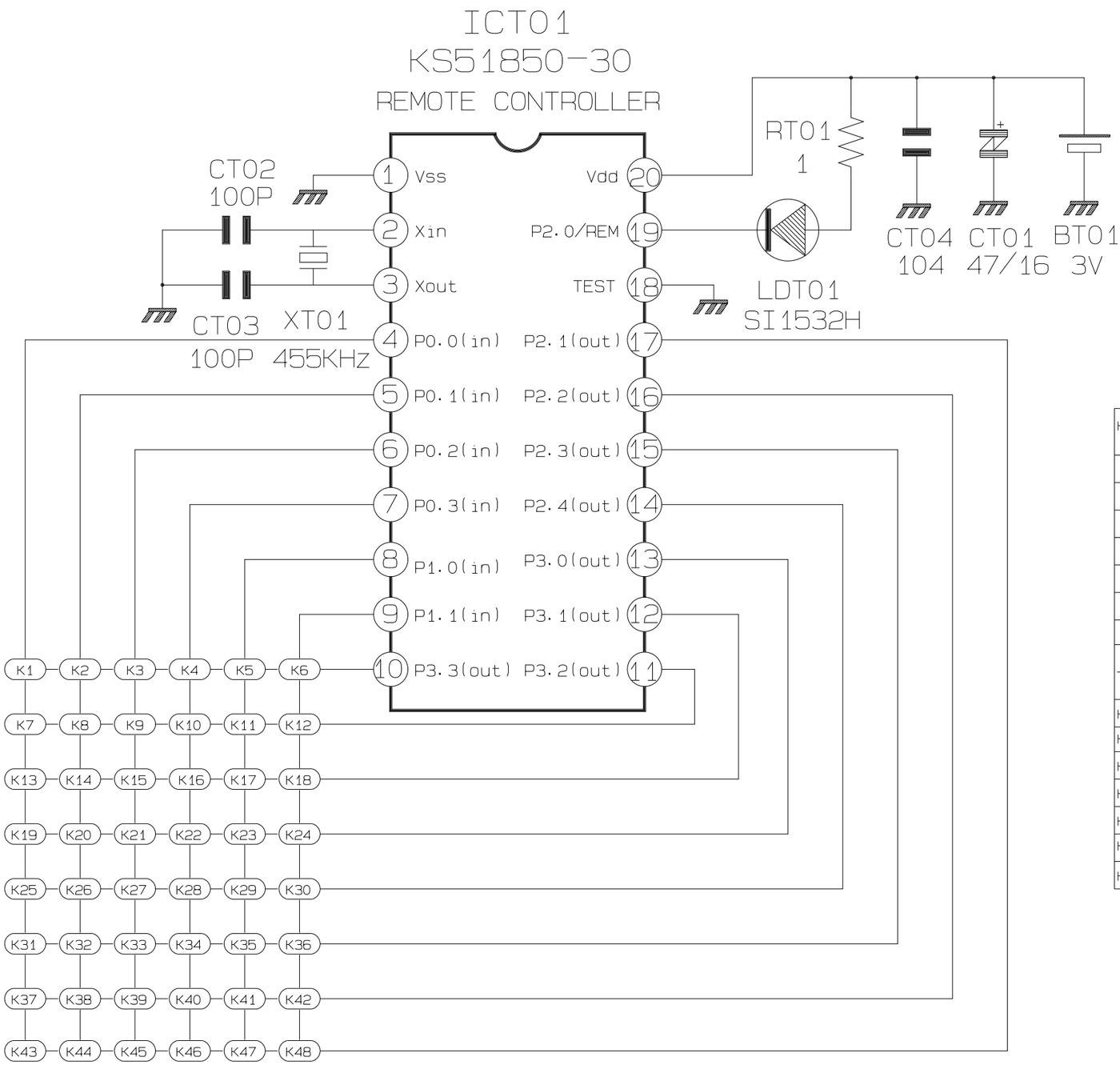
5-7 Input-Ouput



5-8 Remote-Control (Multi-TV)



5-9 Remote-Control (VCR Only)



KEY NO.	KEY NAME	KEY NO.	KEY NAME	KEY NO.	KEY NAME
K1	VTR/TV	K17	STOP	K33	INDEX
K2	POWER	K18	P/S	K34	TRK+
K3	1	K19	SLOW DOWN	K35	TRK-
K4	2	K20	REW	K36	DUB
K5	3	K21	PLAY	K37	MARK
K6	4	K22	FF	K38	VCR+
K7	5	K23	CLEAR/RESET	K39	CLK/COUNT
K8	6	K24	DISPLAY	K40	SP/LP
K9	7	K25	MENU	K41	Q-PROGRAM
K10	8	K26	EJECT	K42	OK. ENTER
K11	9	K27	ATR	K43	SYSTEM
K12	CH DOWN	K28	OUTPUT SEL	K44	MODE/KARAOKE
K13	0	K29	INPUT SEL	K45	AFT
K14	CH UP	K30	MONITOR	K46	PICTURE
K15	SLOW UP	K31	ERASE	K47	SHUTTLE-
K16	REC/OTR	K32	TEST	K48	SHUTTLE+

MEMO

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DX-9R

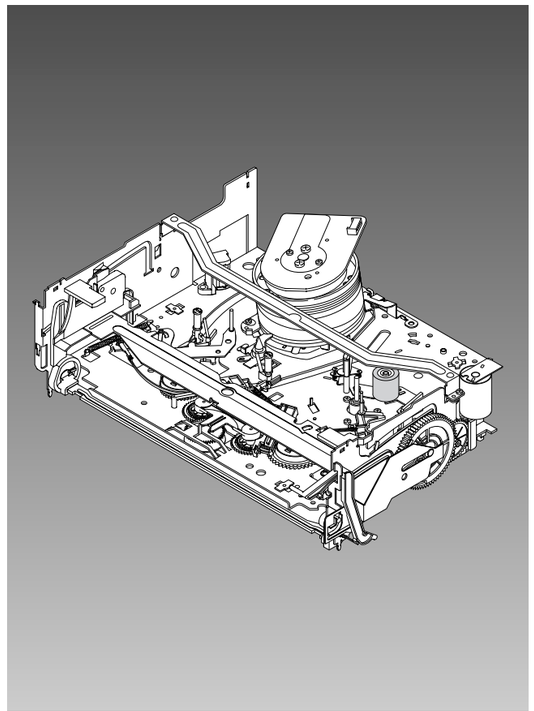
SAMSUNG

DX-9R

MECHANICAL Manual

◆ File with the SERVICE MANUAL.

VHS DECK



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1. Disassembly and Reassembly

2. Alignment and Adjustment

1. Disassembly and Reassembly

1-1 Deck Parts Locations

1-1-1 Top View

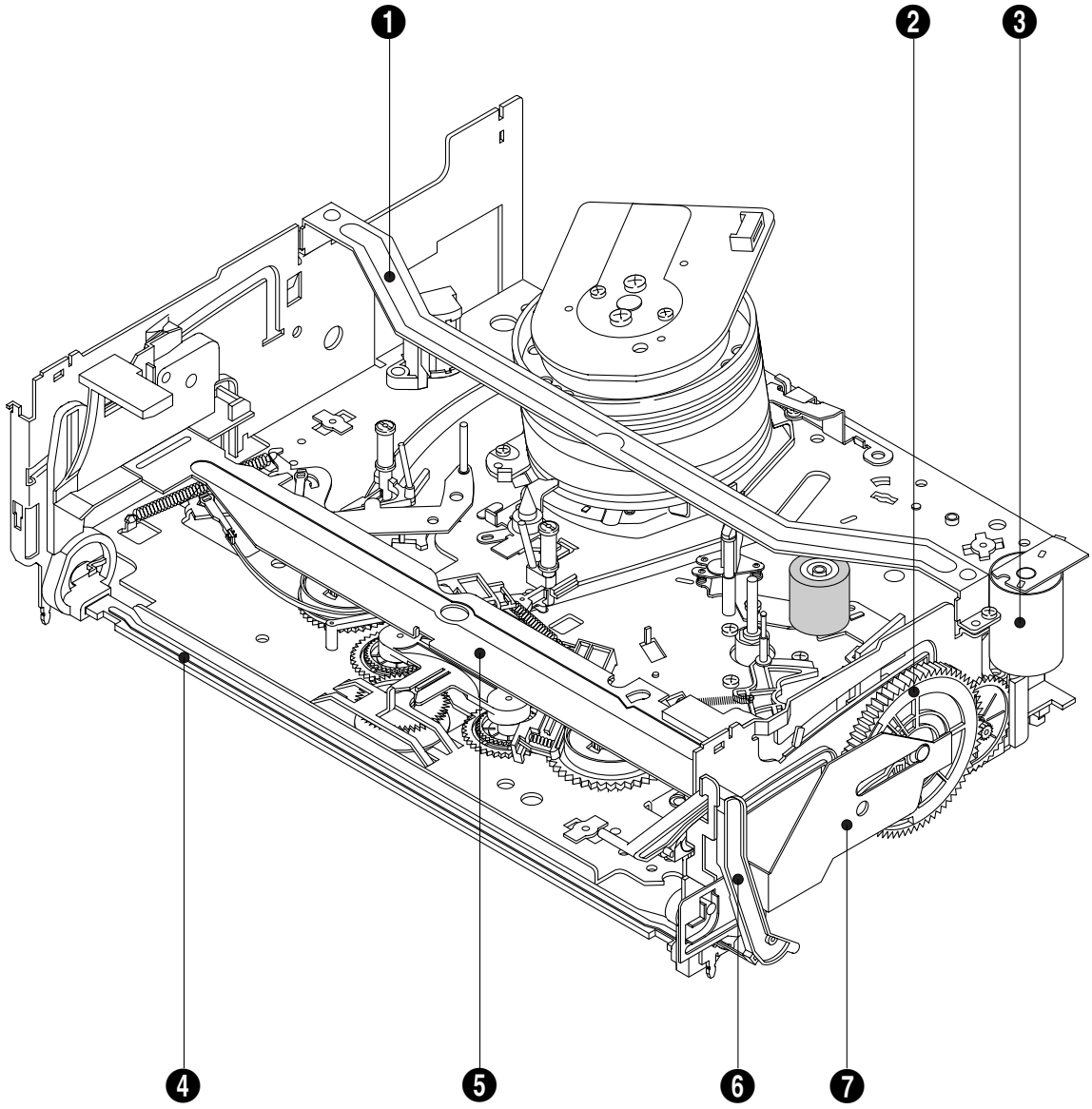


Fig. 1-1 Top parts Location-1

1. BRACKET FL TOP
2. GEAR FL CAM
3. MOTOR LOADING ASS'Y
4. LEVER FL ARM ASS'Y
5. HOLDER FL CASSETTE ASS'Y
6. LEVER FL DOOR
7. SLIDER FL DRIVE

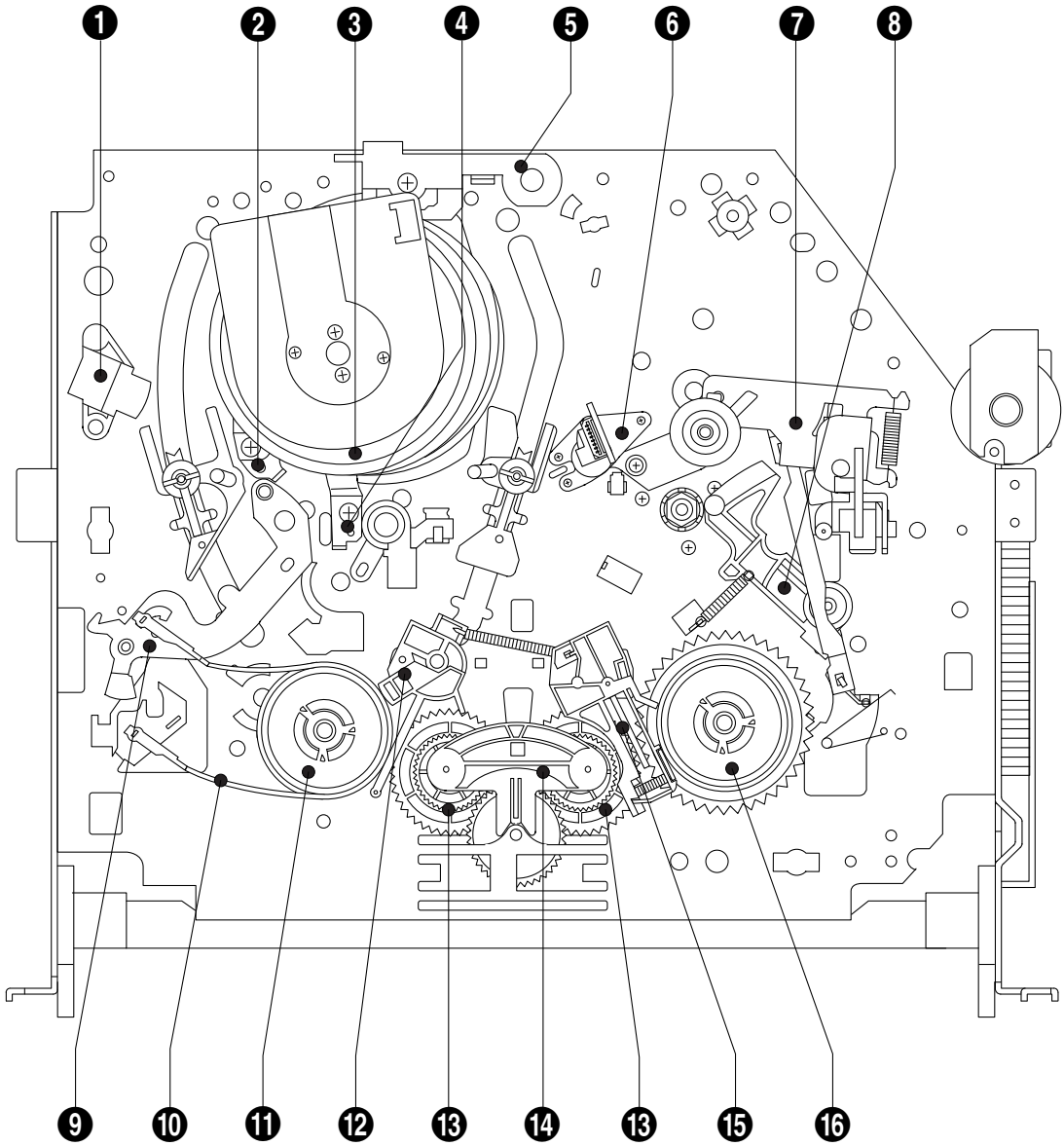


Fig. 1-2 Top Parts Location-2

❶ FE HEAD
❷ PLATE CYLINDER C
❸ CYLINDER ASS'Y
❹ PLATE CYLINDER B
❺ PLATE CYLINDER A
❻ ACE HEAD ASS'Y
❼ UNIT PINCH ASS'Y
❽ LEVER #9 GUIDE ASS'Y
❾ LEVER TENSION ASS'Y
❿ BAND BRAKE ASS'Y
⓫ DISK S REEL
⓬ LEVER S BRAKE ASS'Y
⓭ GEAR IDLE
⓮ LEVER IDLE
⓯ LEVER T BRAKE ASS'Y
⓰ DISK T REEL

1-1-2 Bottom View

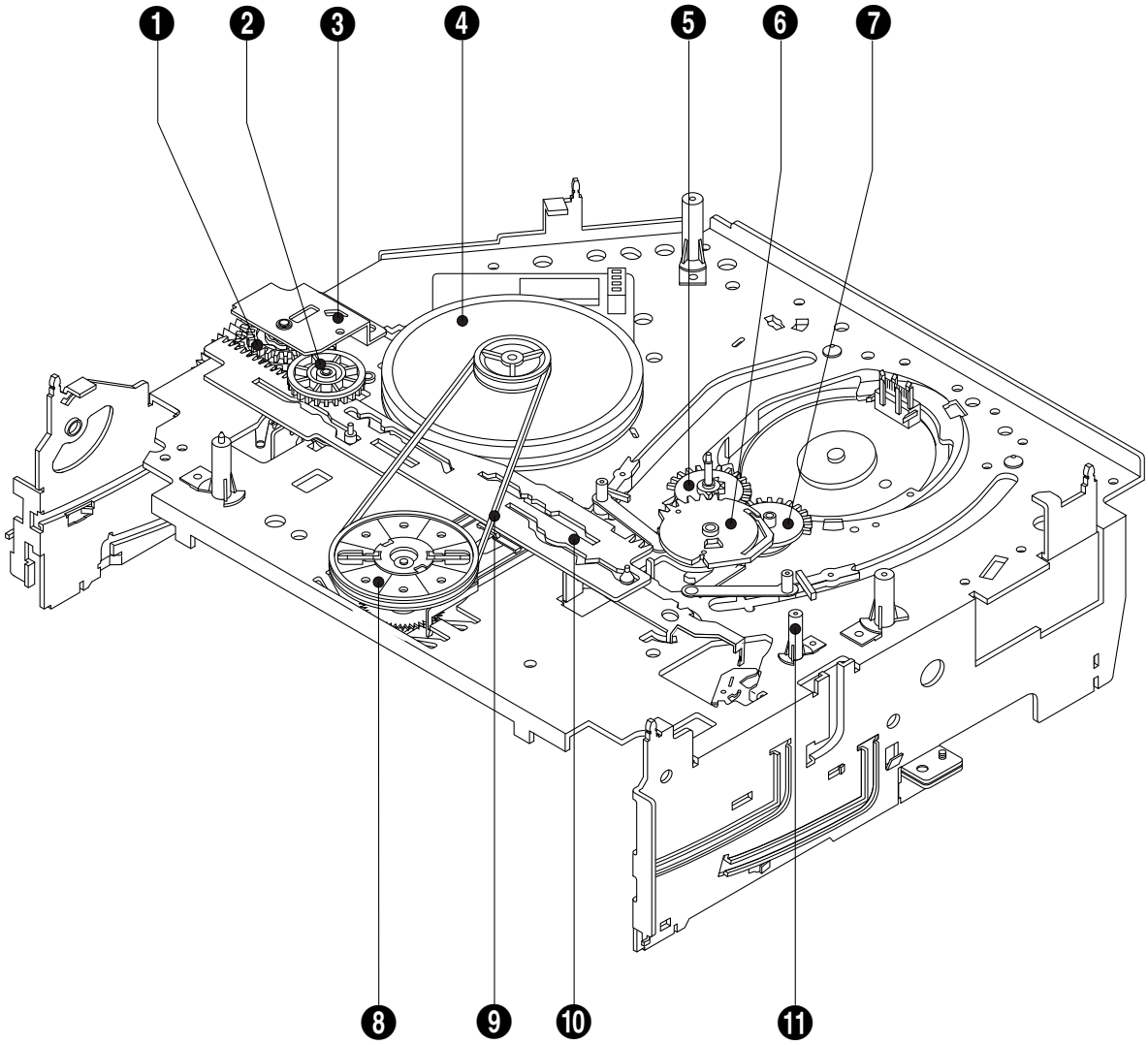


Fig. 1-3 Bottom Parts Location

1. GEAR JOINT 1
2. GEAR JOINT 2
3. BRAKET GEAR
4. MOTOR CAPSTAN ASS'Y
5. LEVER T LOAD ASS'Y
6. GEAR LOADING DRIVE
7. LEVER S LOAD ASS'Y
8. HOLDER CLUTCH ASS'Y
9. BELT PULLEY
10. SLIDER CAM
11. SLEEVE TENSION

1-2 Main Deck

1-2-1 Bracket FL Top Removal

1) Remove 2 screws ❶.
2) Remove the Bracket FL Top ❷.

Note : Take care not to change assembly direction.

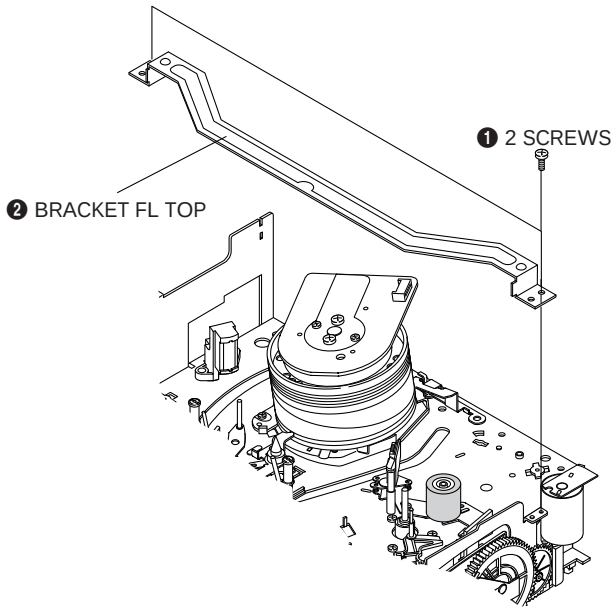


Fig. 1-4 Bracket FL Top Removal

1-2-2 Lever FL Door Removal

1) Rotate the Lever FL Door ❶ in the direction of arrow "A".
2) Release the Hook ❷, remove the Lever FL Door ❶ in the direction of arrow "B".

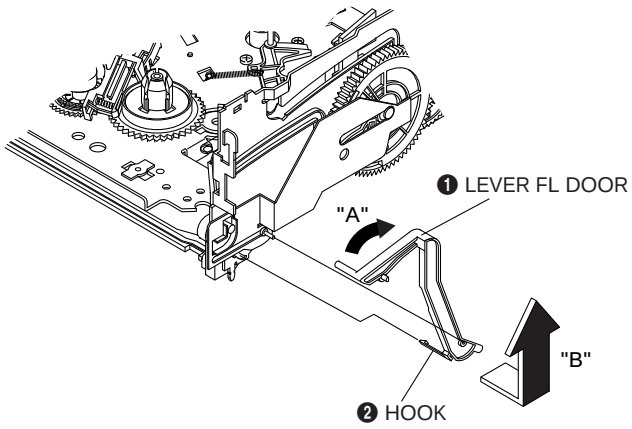


Fig. 1-5 Lever FL Door Removal

1-2-3 Holder FL Cassette Ass'y Removal

1) Remove the Lever FL Door. (Refer to Fig. 1-5)
2) Pull the Holder FL Cassette Ass'y ❶ to the eject position.
3) Pull the Holder FL Cassette Ass'y ❶ as grasping the Holder FL Cassette Ass'y ❶ and Lever FL Cassette-R ❷ in the same time to release hooking from Main Base until the Boss [A], [B] of Holder FL Cassette Ass'y ❶ is taken out from the Rail [C], [D].
4) Lift the Holder FL Cassette Ass'y ❶ in the direction of arrow "B" in this time, you have to grasp the Lever FL Cassette-R ❷ continuously until the Holder FL Cassette Ass'y ❶ is taken out completely.

Note : Be sure to insert Lever FL Cassette-R ❷ in the direction of "A" to prevent separation and breakage of the Lever FL Cassette-R ❷ at disassembling and reassembling.

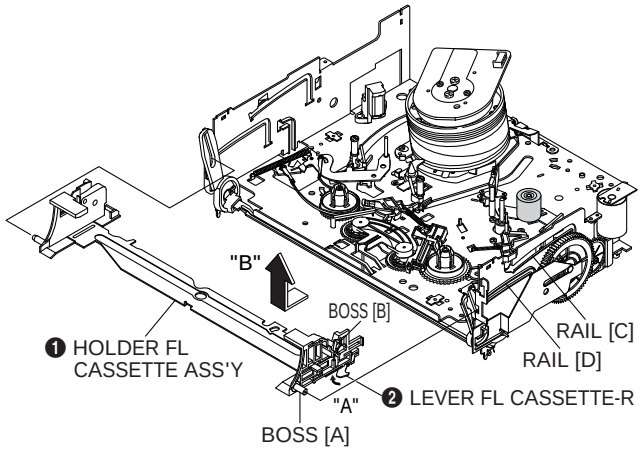


Fig. 1-6 Holder FL Cassette Ass'y Removal

1-2-4 Lever FL Arm Ass'y Removal

1) Remove the Lever FL Door. (Refer to Fig. 1-5)
2) Remove the Holder FL Cassette Ass'y. (Refer to Fig. 1-6)
3) Release the Hook ❶ in the direction of arrow "A", pull out the Lever FL Arm Ass'y ❹ from the Boss of Main Base.
4) Remove the Lever FL Arm Ass'y ❹ in the direction of arrow "B".

Assembly : When reinstalling, be sure to reassemble Lever FL Arm Ass'y ❹ after you insert the Boss ❷ in Groove [A] of Slider FL Drive ❸.

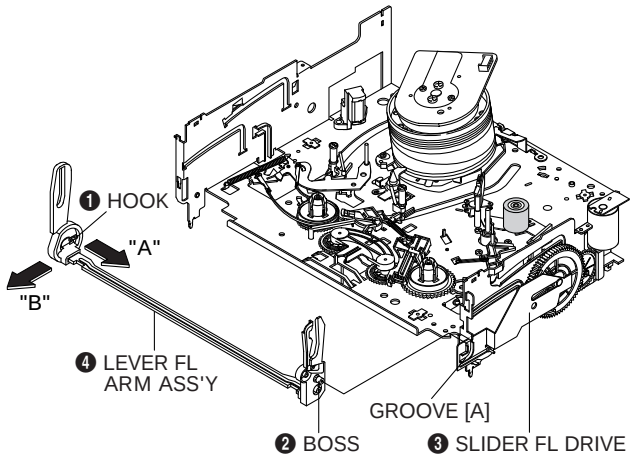


Fig. 1-7 Lever FL Arm Ass'y Removal

1-2-5 Slider FL Drive Removal

1) Pull the Slider FL Drive ❶ to the front direction.
2) Remove the Slider FL Drive ❶ in the direction of arrow. (Refer to Fig. 1-8)

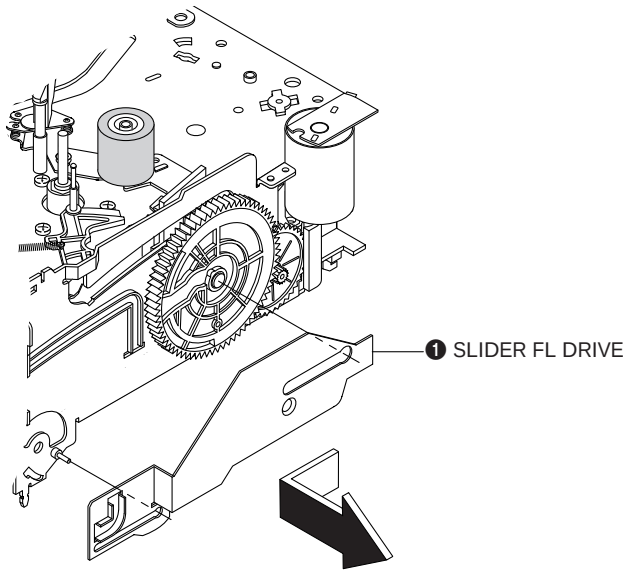


Fig. 1-8 Slider FL Drive Removal

1-2-6 Bracket Gear, Gear FL Cam, Gear Joint 1, 2 Removal

1) Remove screw ❶.
2) Lift the Bracket Gear ❷.
3) Remove the Gear FL Cam ❸.
4) Lift the Gear Joint 2 ❹, Gear Joint 1 ❺.

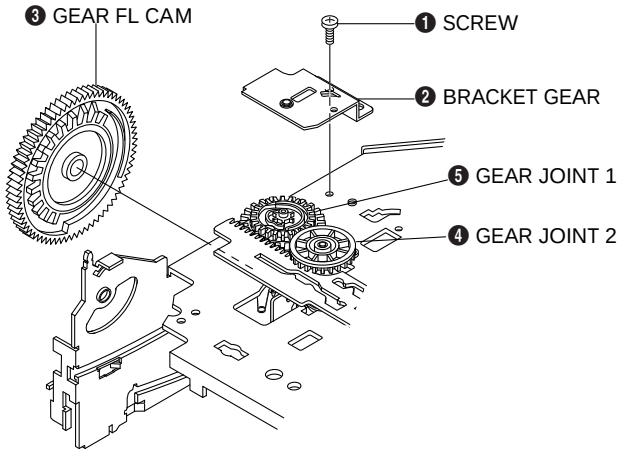


Fig. 1-9 Bracket Gear, Gear FL Cam, Gear Joint 1, 2 Removal

1-2-7 Assembly of Gear FL Cam, Gear Joint 1, 2

1) Be sure to align dot mark of Gear Joint 1 ❶ with dot mark of Gear Joint 2 ❷ as shown Fig. 1-10 (Refer to Timing Point 1), confirm the Timing Point 2 of the Gear Joint 2 ❷ and Slider Cam ❸.
2) Align the Gear FL Cam ❹ with the Gear Worm Wheel Post as shown detail drawing. (Refer to Timing Point 3)

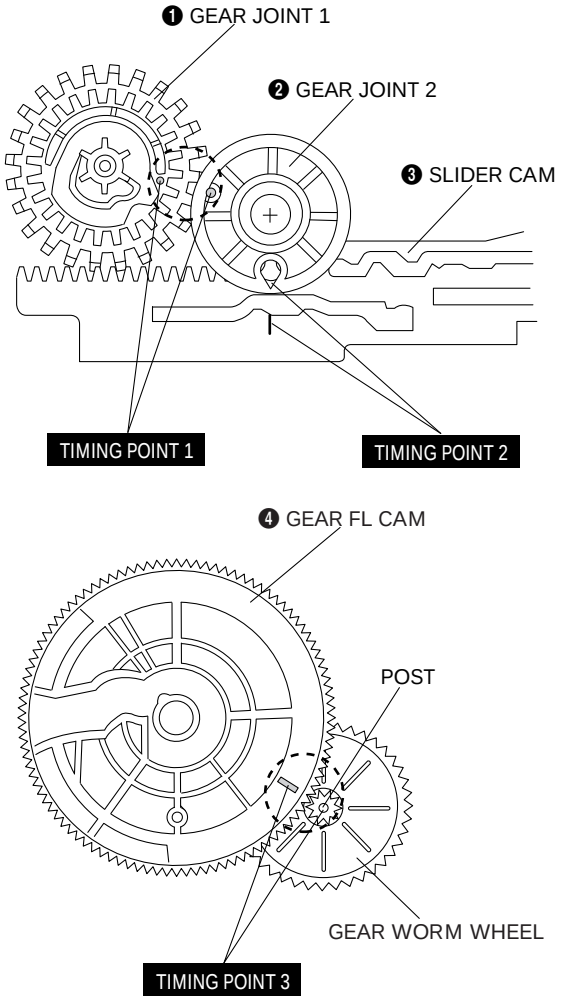


Fig. 1-10 Assembly of Gear FL Cam, Gear Joint 1,2

1-2-8 Holder Worm, Gear Worm, Gear Worm Wheel Removal

1) Release the Hook [A] in the direction of arrow and, remove the Holder Worm ❶.
2) Remove the Gear Worm ❷.
3) Remove the Gear Worm Wheel ❸. (After removing the Gear FL Cam as shown Fig. 1-9)

Note : Secure the Hook [A] after installing the Holder Worm ❶.

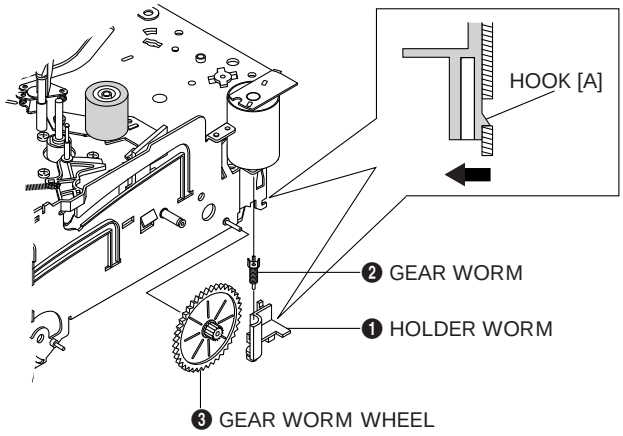


Fig. 1-11 Holder Worm, Gear Worm, Gear Worm Wheel Removal

1-2-9 Motor Loading Ass'y Removal

1) Remove the screw ❶.
2) Remove the Motor Loading Ass'y ❷.

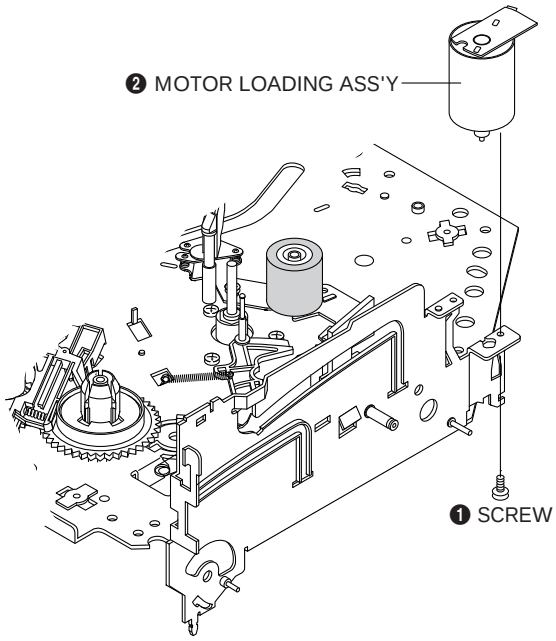


Fig. 1-12 Motor Loading Ass'y Removal

1-2-10 Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y Removal

1) Remove the Belt Pulley. (Refer to Fig. 1-29)
2) Remove the Gear Loading Drive ❶ after releasing Hook [A] in the direction arrow as shown in detail drawing.
3) Remove the Slider Cam ❷.
4) Remove the Lever T, S Load Ass'y ❸, ❹.

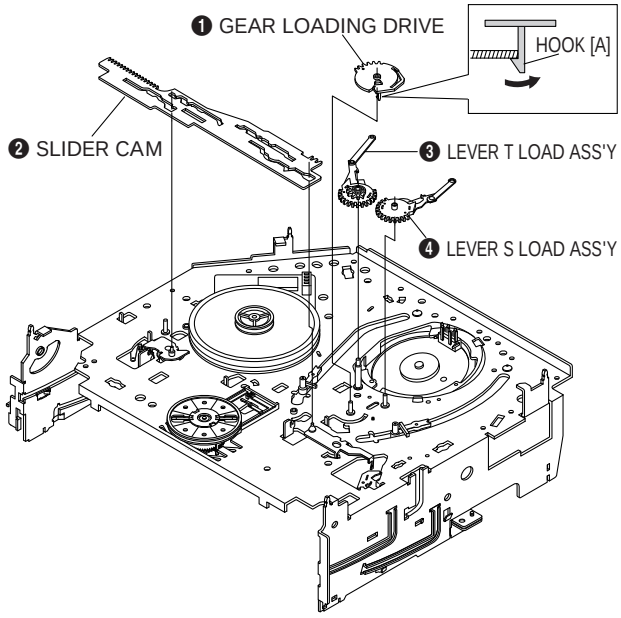


Fig. 1-13 Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y Removal

1-2-11 Assembly of Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y

1) When reinstalling, be sure to align dot of Lever T Load Ass'y ❶ with dot of Lever S Load Ass'y ❷ as shown in drawing. (Refer to Timing Point 1)
2) Insert the Pin A, B, C, D into the Slider Cam ❸ hole.
3) Be sure to align dot of Lever T Load Ass'y and dot of Gear Loading Drive ❹. (Refer to Timing Point 2)
4) Align dot of Gear Loading Drive with mark of Slider Cam as shown in drawing. (Refer to Timing Point 3)

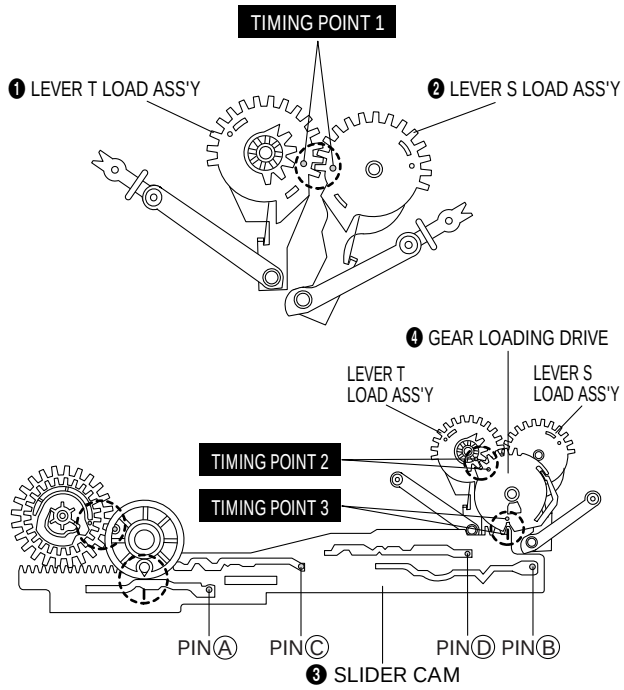


Fig. 1-14 Assembly of Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y

1-2-12 Lever Tension Ass'y, Band Brake Ass'y, Sleeve Tension Removal

1) Remove the Spring Tension ❶.
2) In bottom side of Deck, remove the Sleeve Tension ❷ after rotating it right or left as lifting locking edge of Sleeve Tension.
3) Remove the side "a" of the Band Brake Ass'y ❹ in the direction of arrow "A" from the Lever Tension Ass'y ❸.
4) Remove the side "b" of the Band Brake Ass'y ❹ in the direction of arrow "B" from the Main Base.

Note :
1) When replacing the Lever Tension Ass'y, be sure to apply oil in the Sleeve Tension.
2) Take care not to touch stain on the felt side, and not to be folded and broken Band Brake Ass'y.

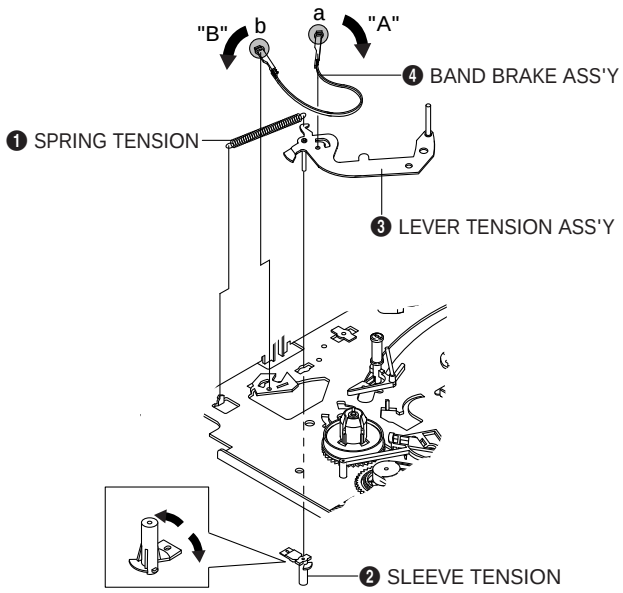


Fig. 1-15 Lever Tension Ass'y, Band Brake Ass'y, Sleeve Tension Removal

1-2-13 Lever S, T Brake Ass'y Removal

1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig. 1-16.
2) Lift the Lever S, T Brake Ass'y ❶, ❷ with Spring Brake ❸.

Assembly :
1) Assembly the Lever S Brake Ass'y ❶ on the Main Base.
2) Assembly the Lever T Brake Ass'y ❷ with Spring Brake ❸.

Note : Take extreme care not to be folded and transformed spring Brake at removing or reinstalling.

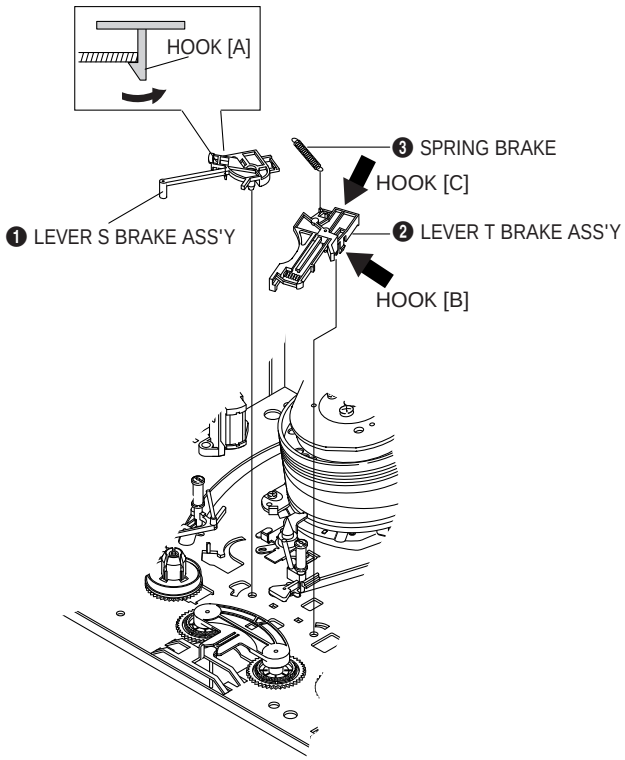


Fig. 1-16 Lever S, T Brake Ass'y Removal

1-2-14 Lever Idle Ass'y Removal

1) Push the Lever Idle ❶ in the direction of arrow "A", "B".
2) Lift the Lever Idle ❶.

Assembly :
1) Apply oil in two Bosses of Lever Idle ❶.
2) Assemble the Gear Idle ❷ with the Lever Idle ❶.

Note : When replacing the Gear Idle ❷, be sure to add oil in the boss of Lever Idle ❶.

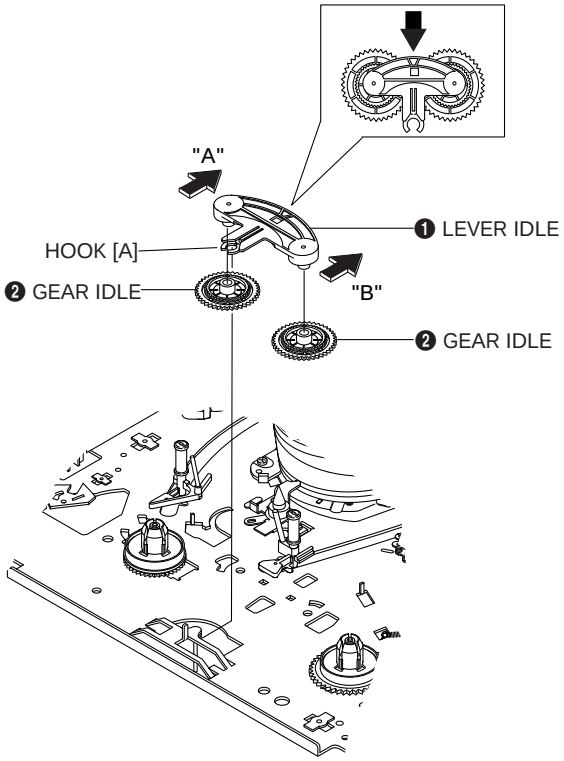


Fig. 1-17 Lever Idle Ass'y Removal

1-2-15 Disk S, T Reel Removal

1) Lift the Disk S, T Reel ❶, ❷.

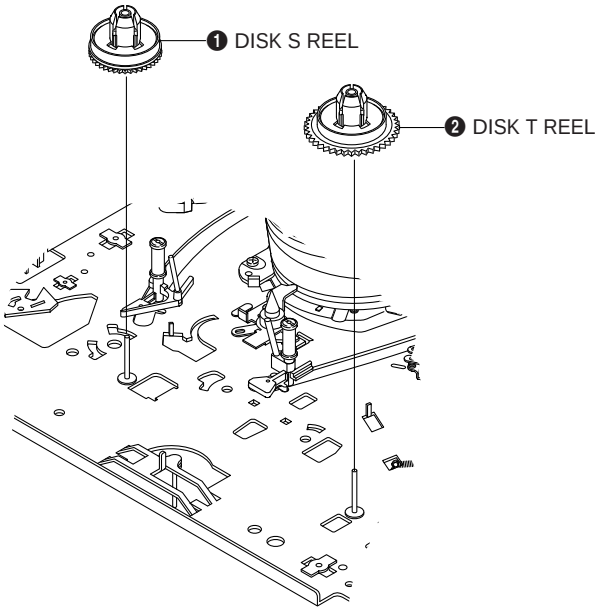


Fig. 1-18 Disk S, T Reel Removal

1-2-16 Holder Clutch Ass'y Removal

1) Remove the Washer Slit ❶.
2) Lift the Holder Clutch Ass'y ❷.

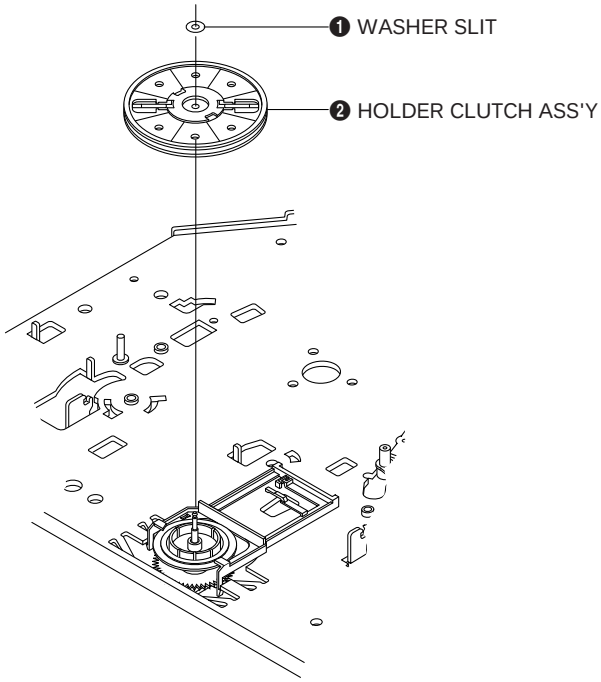


Fig. 1-19 Holder Clutch Ass'y Removal

1-2-17 Lever Up Down Ass'y, Gear Center Ass'y Removal

1) Remove the 2 hooks in the direction of arrow as shown Fig. 1-20 and lift the Lever Up Down Ass'y ❶.
2) Lift the Gear Center Ass'y ❷.

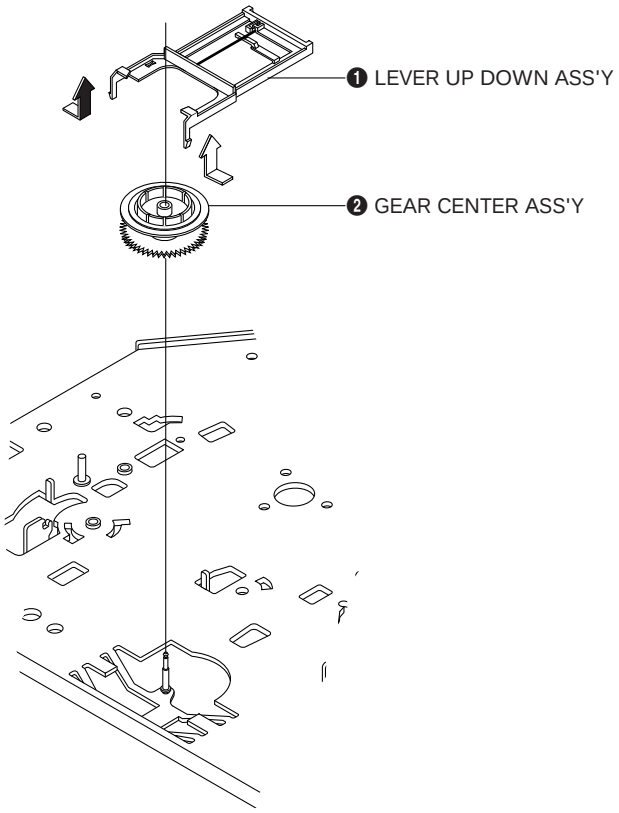


Fig. 1-20 Lever Up Down Ass'y, Gear Center Ass'y Removal

1-2-18 Assembly of Lever Up Down Ass'y, Gear Center Ass'y

1) Insert the Lever Up Down Ass'y ❶ in the 2 rectangular holes on Main Base.
2) Lift the Lever Up Down Ass'y ❶ about 35 degree. (Refer to Fig. 1-21)
3) Insert Ring ❹ of the Gear Center Ass'y ❷ in the Guide ❺ of the Lever Up Down Ass'y ❶.
4) Insert the Gear Center Ass'y ❷ in the post ❻ on Main Base.
5) Push down the Lever Up Down Ass'y ❶ for locking of the Hook ❼.

Note :
1) Take care not to separate and loose the Spring Up Down.
2) When assembling the Gear Center Ass'y, don't push down too much.

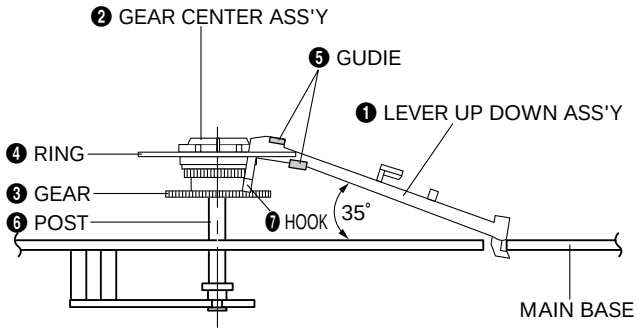


Fig. 1-21 Assembly of Lever Up Down Ass'y, Gear Center Ass'y

1-2-19 Guide Cassette Door Removal

1) Lift the Hook [A].
2) Rotate the Guide Cassette Door ❶ in the direction of arrow.

Note : After reinstalling the Guide Cassette Door ❶ secure the Hook [A].

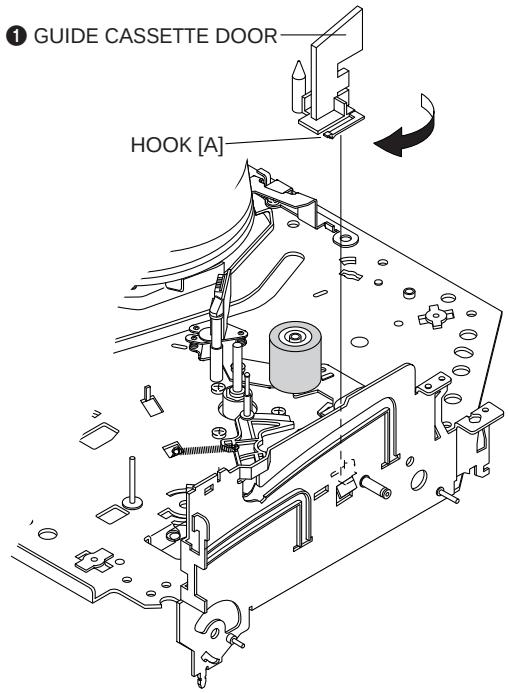


Fig. 1-22 Guide Cassette Door Removal

1-2-20 Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

1) Lift the Unit Pinch Ass'y ❶.
2) Remove the Plate Joint ❷ from Lever Pinch Drive.
3) Remove the Spring Pinch Drive ❸.

Note :
1) Take extreme care not to touch the grease on the Roller Pinch.
2) When reinstalling, be sure to apply grease on the post pinch roller.

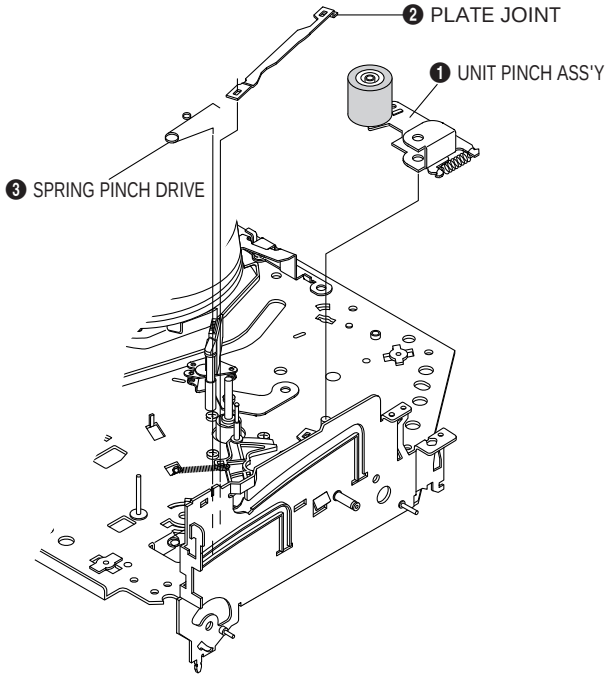


Fig. 1-23 Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

1-2-21 Lever #9 Guide Ass'y Removal

1) Remove the Spring #9 Guide ❶.
2) Lift the Lever #9 Guide Ass'y ❷ in the direction of arrow.

Note :
1) Take extreme care not to touch the grease on the tape Guide Post.
2) After reinstalling, check the bottom side of the Post #9 Guide to stick to the top side of Main Base.

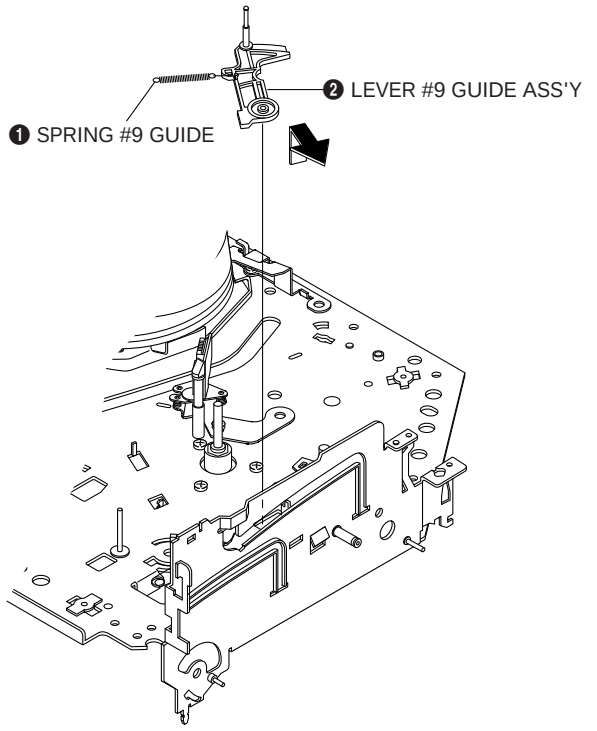


Fig. 1-24 Lever #9 Guide Ass'y Removal

1-2-22 FE Head Removal

1) Remove the screw ❶.
2) Lift the FE Head ❷.

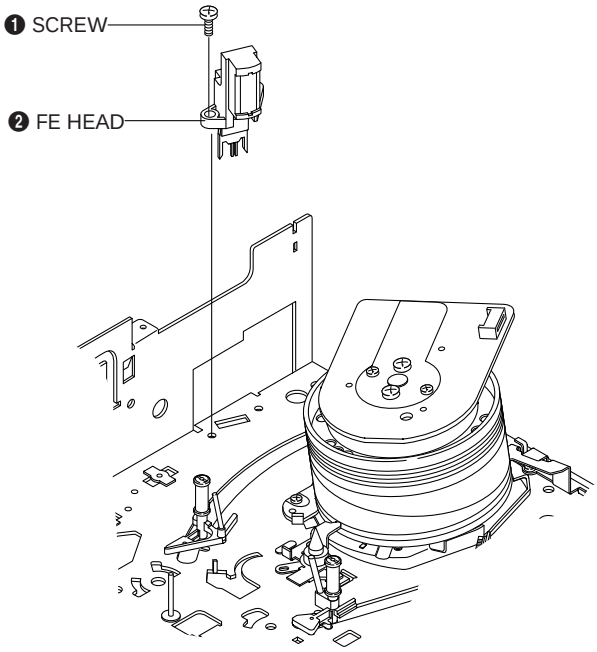


Fig. 1-25 FE Head Removal

1-2-23 ACE Head Removal

1) Pull out the FPC from connector of ACE Head Ass'y ❷.
2) Remove the screw ❶.
3) Lift the ACE Head Ass'y ❷.

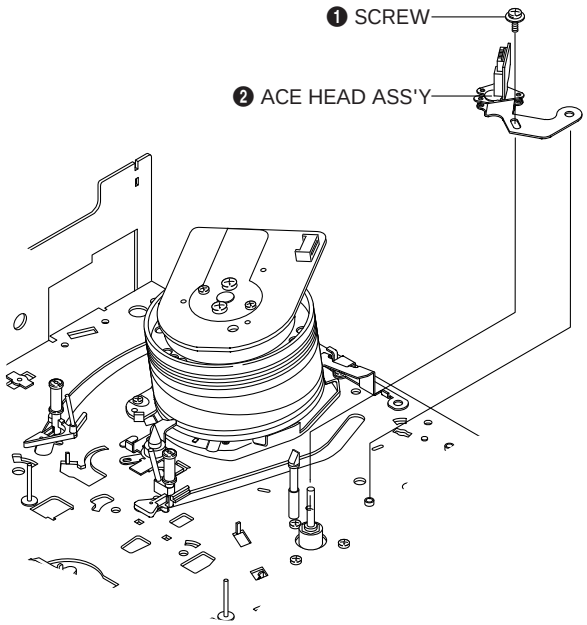


Fig. 1-26 ACE Head Removal

1-2-24 Slider S, T Ass'y Removal

1) Move the Slider S, T Ass'y ❶, ❷ to slot, and then lift it to remove. (Refer to arrow)

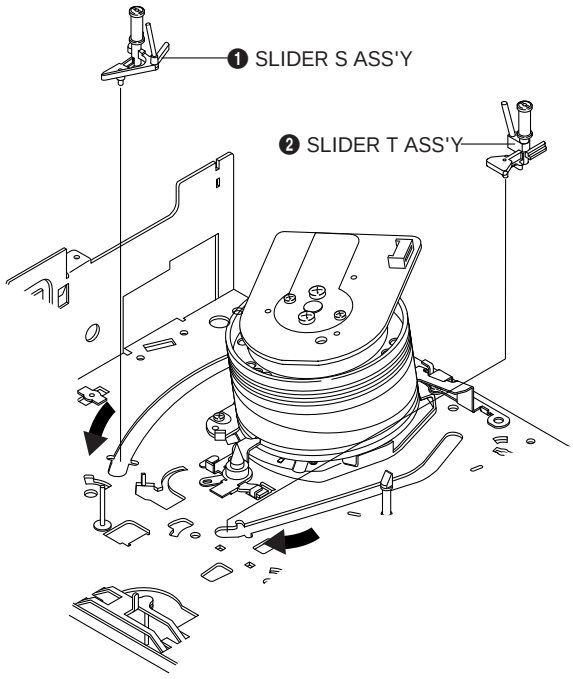


Fig. 1-27 Slider S, T Ass'y Removal

1-2-25 Cylinder Ass'y Removal

1) Remove the 3 Screws ❶, ❸, ❺.
2) Remove the Plate Cylinder A, B, C ❷, ❹, ❻ in the direction of arrow.
3) Lift the Cylinder Ass'y ❼.

Note :
1) When reinstalling, push the Plate Cylinder A, B ❹, ❻ in the reverse of arrow and then, tighten the 2 Screws ❸, ❺.
2) Take care not to touch the Cylinder Ass'y and the tape guide post at reinstalling Plate Cylinder C ❷.
3) Take care not to touch the Cylinder Ass'y with screw driver at reinstalling the Plate Cylinder C ❷.

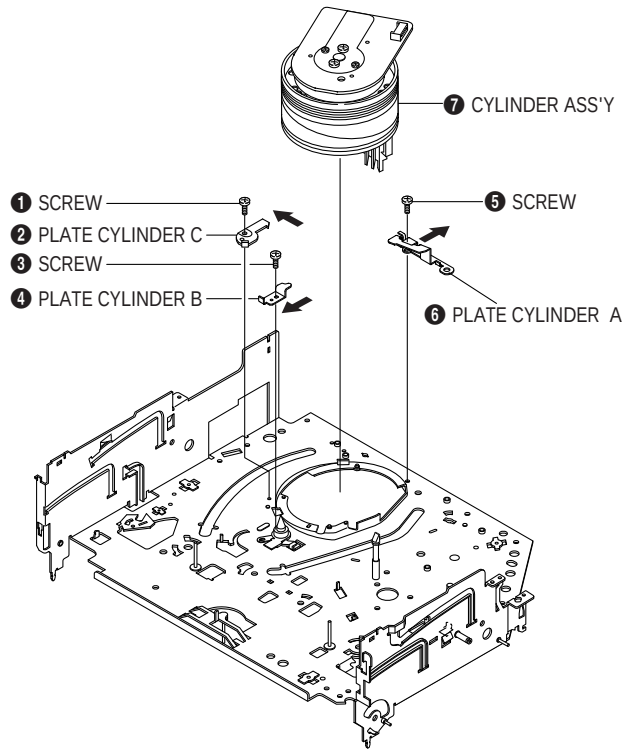


Fig. 1-28 Cylinder Ass'y Removal

1-2-26 Belt Pulley Removal

1) Remove the Belt Pulley ❶.

Note : Take extreme care not to touch the grease on Belt Pulley ❶ at assembling or reassembling.

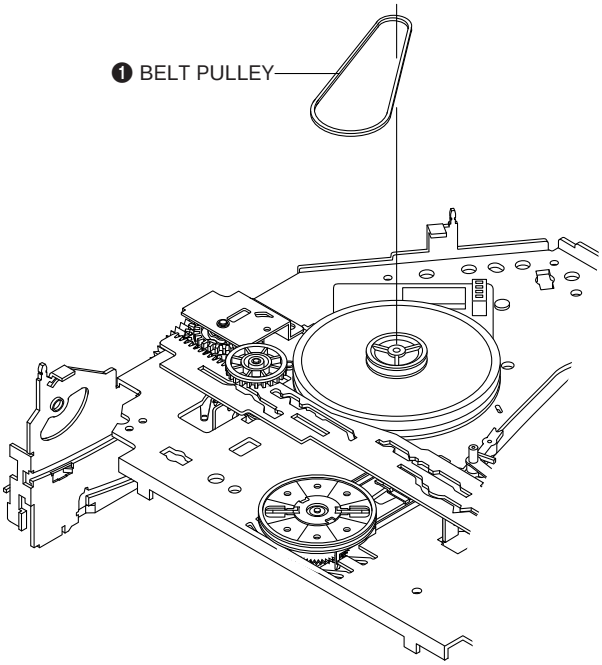


Fig. 1-29 Belt Pulley Removal

1-2-27 Lever Head Cleaner Ass'y Removal (Optional)

1) Release the Hook ❶.
2) Lift the Lever Head Cleaner Ass'y ❷.

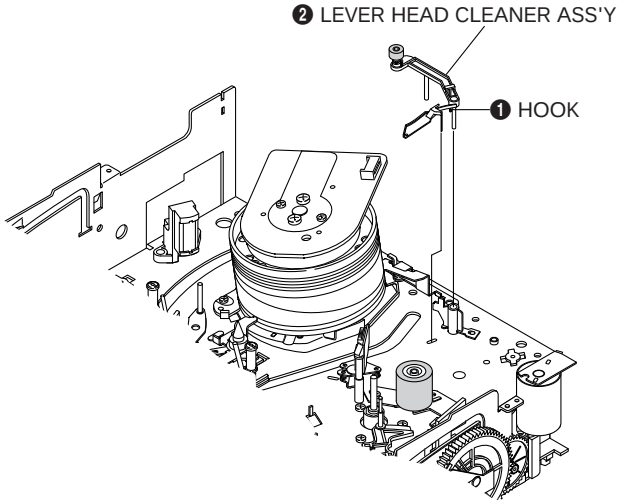


Fig. 1-30 Lever Head Cleaner Ass'y Removal

1-2-28 Motor Capstan Ass'y Removal

1) Remove the 3 Screws ❶.
2) Remove the Motor Capstan Ass'y ❷.

Assembly :
1) Match the 3 holes of Motor Capstan Ass'y ❷ to the 3 holes of Main Base as attending not to drop or knock the Motor Capstan Ass'y.
2) Tighten the 3 Screws in the direction of arrow as shown detail drawing.

Note :
1) Don't reuse the removed screws from Motor Capstan Ass'y.
2) After tightening screws, check if there is gap between the head of screws and the top side of Main Base. There should have no gap between the head of screws and the top side of Main Base.
3) After reinstalling, adjusting the tape transport system again.

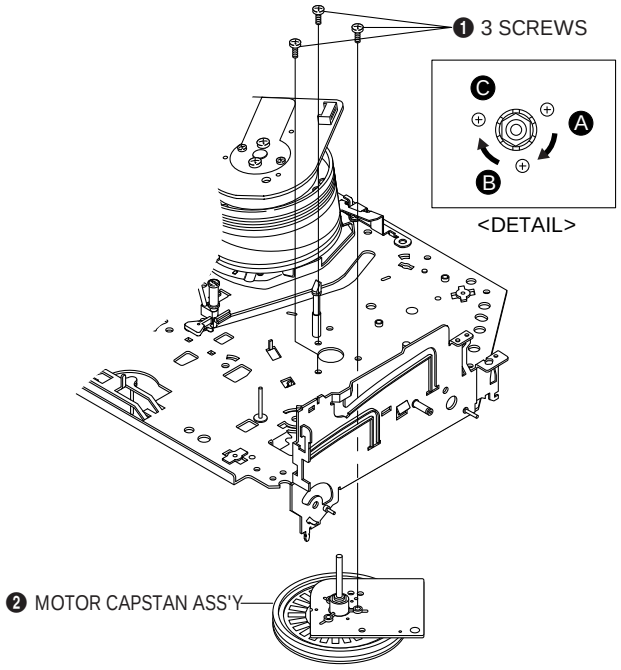


Fig. 1-31 Motor Capstan Ass'y Removal

1-2-29 How to Eject the Cassette Tape (If the unit does not operate on condition that is inserted into housing ass'y)

1) Remove the Holder worm ❶ and the Gear Worm ❷.
2) Turn the Gear Worm Wheel ❸ counterclockwise with screw driver. (Refer to arrow)

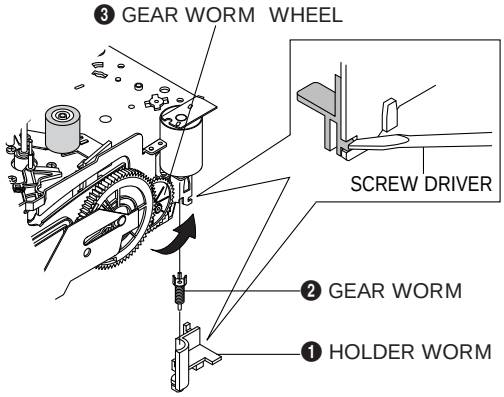


Fig. 1-32

3) When Slider S, T are approached in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwounded tape. (Refer to Fig. 1-33)
(If you rotate Gear Worm Wheel continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwounded tape in the state of set horizontally.)
4) Rotate Gear Worm Wheel ❸ counterclockwise using screw driver again up to the state of eject mode and then pick out the tape. (Refer to Fig. 1-32)

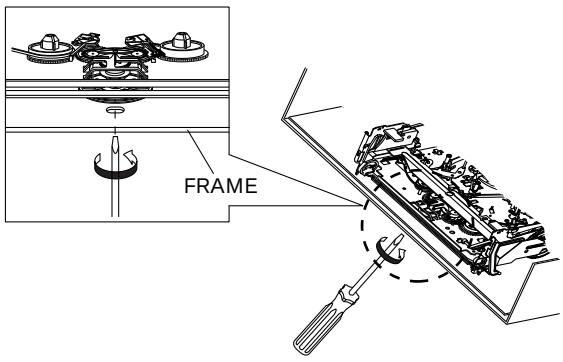


Fig. 1-33

1-3 The table of clearing, Lubrication and replacement time about principal parts

1) The replacement time of parts is not life of parts.
2) The table 1-1 is that the VCR Set is in normal condition (normal temperature, normal humidity).
   The checking period may be changed owing to the condition of use, runtime and environmental conditions.
3) Life of the Cylinder Ass'y is depend on the condition of use.
4) See exploded view for location of each parts.

<Table 1-1>

*	Parts Name	Checking Period										Remark
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
TAPE PATH SYSTEM	POST TENSION	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	- To clean the parts, use patch and alcohol (solvent). - After cleaning, use the video tape after alcohol is gone away completely. - We recommend to use oil [EP-56] or solvent. - One or two drops of oil should be applied after cleaning with alcohol.
	SLANT POST S, T	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#8 GUIDE SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	CAPSTAN SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#9 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#3 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	GUIDE ROLLER S, T	Δ	Δ	Δ	O	O	O	O	O	O	O	
	CYLINDER ASS'Y	Δ	O	O	O	O	O	O	O	O	O	
	FE HEAD	Δ	Δ	Δ	O	O	O	O	O	O	O	
	ACE HEAD	Δ	O	O	O	O	O	O	O	O	O	
	PINCH ROLLER	Δ	O	O	O	O	O	O	O	O	O	
	POST REEL S, T		◆		◆		◆		◆		◆	- Periodic time of applying oil (Apply oil after cleaning) - The excessive applying oil may be the cause of malfunction.
	SLEEVE TENSION		◆		◆		◆		◆		◆	
	POST CENTER		◆		◆		◆		◆		◆	
	LEVER IDLE BOSS (2Point)		◆		◆		◆		◆		◆	
DRIVING SYSTEM	CAPSTAN MOTOR PULLEY	Δ	Δ	Δ	Δ	Δ	O	O	O	O	O	
	BELT PULLEY				O	O	O	O	O	O	O	
	HOLDER CLUTCH ASS'Y	Δ	O	O	O	O	O	O	O	O	O	
	GEAR CENTER ASS'Y		O	O	O	O	O	O	O	O	O	
	GEAR IDLE (2Point)		O	O	O	O	O	O	O	O	O	
	LOADING MOTOR		O	O	O	O	O	O	O	O	O	
BRAKE SYSTEM	BAND BRAKE ASS'Y		O	O	O	O	O	O	O	O	O	
	BRAKE T ASS'Y		O	O	O	O	O	O	O	O	O	

Δ : Cleaning O : Check and replacement in necessary ◆ : Add Oil

2. Alignment and Adjustment

2-1 Tape Transport System and Adjustment Locations

The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the following :
1) Noise observed on the screen.
2) Tape damage.
3) Parts replacement in the tape transport system.

Lower flange height of tape guide is used as the reference for the transport adjustment.
To maintain the height of the tape guide and prevent damage, do not apply excessive force onto the main base.

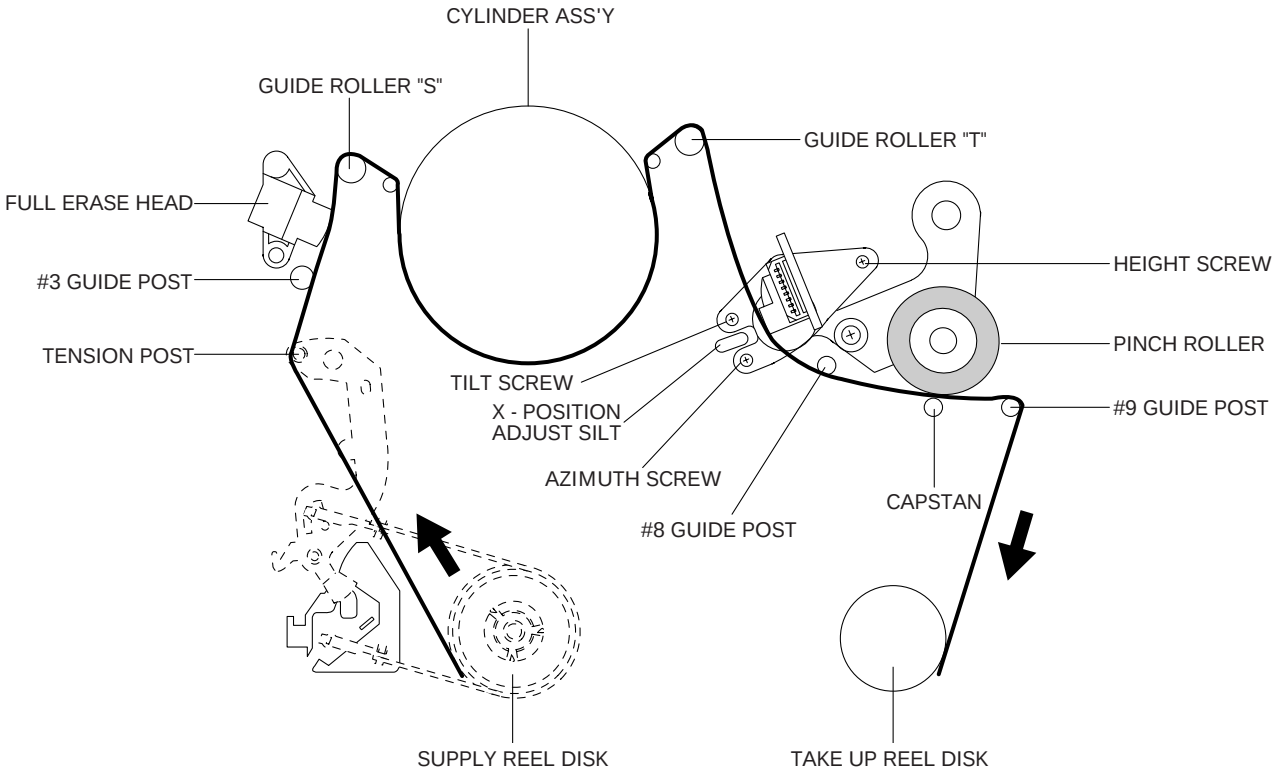


Fig. 2-1 Location of Tape Transport Adjustment

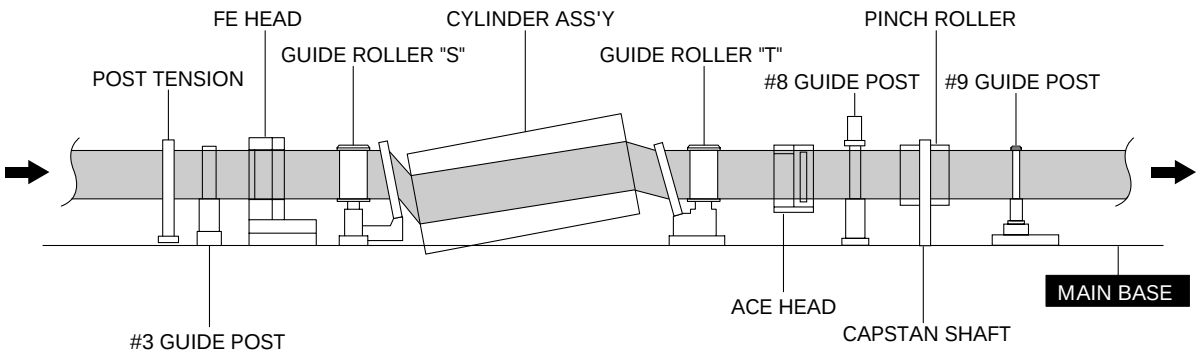


Fig. 2-2 Tape Travel Diagram

2-2 Tape Transport System Adjustment

When parts are replaced, perform the required adjustments by referring to procedures for the tape transport system. If there are any changes to the tape path, first run a T-120 tape and make sure excessive tape wrinkle does not occur at the tape guides.

1) If tape wrinkle is observed at the guide roller S, T, turn the guide roller S, T until wrinkle disappears.
2) If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the ACE head. (See page 5-3 of the Service Manual for Test Point Locations.)

2-2-1 ACE Head Assembly Adjustment

2-2-1(a) ACE HEAD HEIGHT ADJUSTMENT

1) Run the alignment tape (Color bar) in the playback mode.
2) Observe surface of the audio head using a dental mirror.
3) Turn screw (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25mm. (Refer to Fig. 2-3 and 2-4)

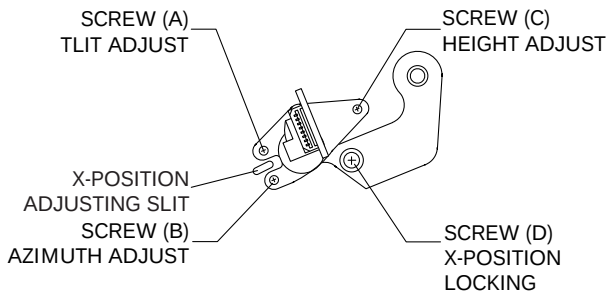


Fig. 2-3 Location of ACE Head Adjustment Screw

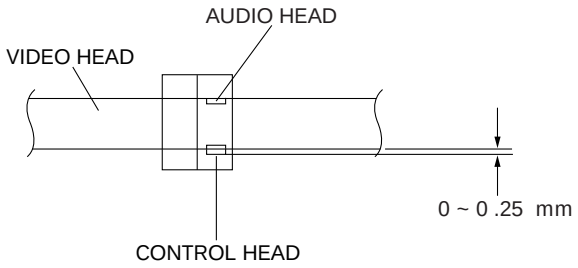


Fig. 2-4 ACE Head Height Adjustment

2-2-1(b) ACE HEAD TILT ADJUSTMENT

1) Playback a blank tape and observe the position of the tape at the lower flange of tape guide.
2) Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 2-5 (B).
3) If a curl or wrinkle of the tape occurs, slightly turn the screw (A) tilt adjust on the ACE head ass'y.
4) Reconfirm the ACE head height.

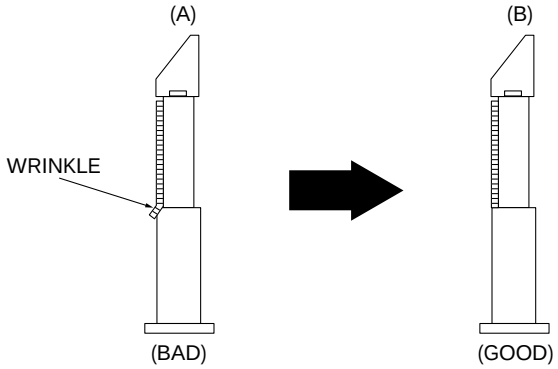


Fig. 2-5 Tape Guide Check

2-2-1(c) AUDIO AZIMUTH ADJUSTMENT

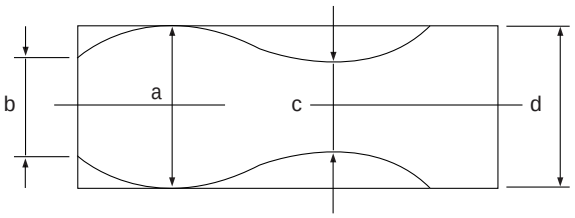
1) Load alignment tape (Mono scope) and playback the NTSC : 7KHz (PAL : 6KHz) signal.
2) Connect channel-1 scope probe to audio output test point.
3) Adjust screw (B) to achieve maximum audio level. (See Fig. 2-3)

2-2-1(d) ACE HEAD POSITION (X-POINT) ADJUSTMENT

1) See page 5-1 of the Service Manual for ACE Head position (X-Point) adjustment.

2-2-2 Linearity adjustment (Guide roller S, T adjustment)

1) Playback the Mono Scope alignment tape (SP mode).
2) Observe the video envelope signal on an oscilloscope (triggered by the video switching pulse).
3) Make sure the video envelope waveform (at its minimum) meets the specification shown in Fig. 2-6.
   If it does not, adjust as follows :



a b c d
c,b,d/a ≧ 63%

Fig. 2-6 Envelope Waveform Adjustment

Note :
a=Maximum output of the video RF envelope.
b=Minimum output of the video RF envelope at the entrance side.
c=Minimum output of the video RF envelope at the center point.
d=Maximum output of the video RF envelope at the exit side.

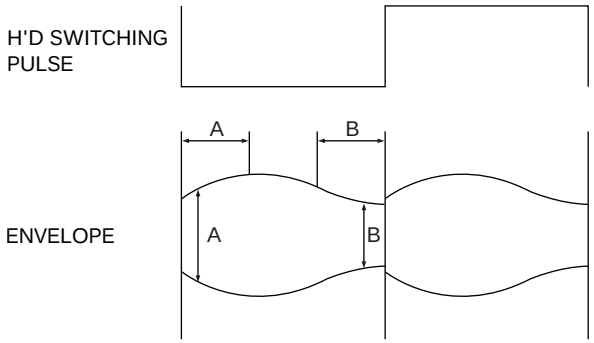


Fig. 2-7 Adjustment Points

4) If the section A in Fig. 2-7 does not meet the specification, adjust the guide roller S up or down.
5) If the section B in Fig. 2-7 does not meet the specification, adjust the guide roller T up or down.
6) Play back the Mono Scope alignment tape (SP mode).
7) Connect an oscilloscope CH-1 to the Envelope and CH-2 to the H'D SW Pulse for triggering.
8) Turn the guide roller heads with a flat head (▬) driver to obtain a flat video RF envelope as shown in Fig. 2-8.

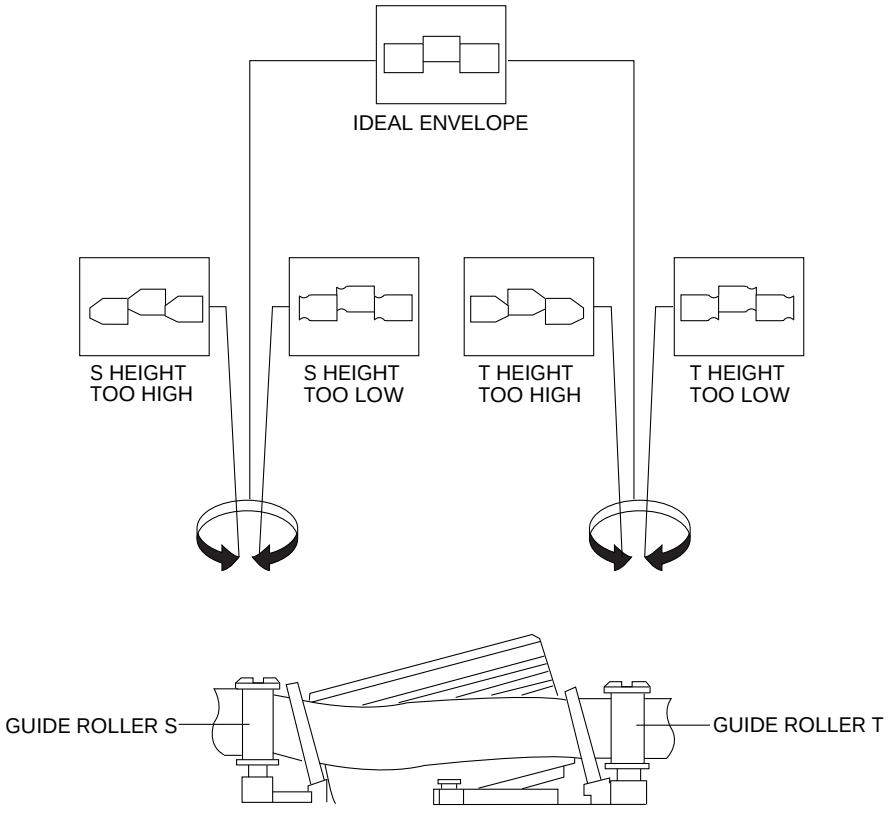


Fig. 2-8 Guide Roller S, T Height Adjustment

2-2-3 Check Transitional Operation from RPS to Play

Check transition from RPS mode to play mode :
Using a pre-recorded SP tape, make sure the entry side of envelope comes to an appropriate steady state within 3 seconds (as shown in Fig. 2-9).
If the envelope waveform does not reach specified peak-to peak amplitude within 3 seconds, adjust as follows :

1) Make sure there is no gap between the supply roller lower flange and the tape.
   If there is a gap, adjust the supply guide roller again.
2) Change operation mode from the RPS to the play mode (again) and make sure the entry side of envelope rises within 3 second.

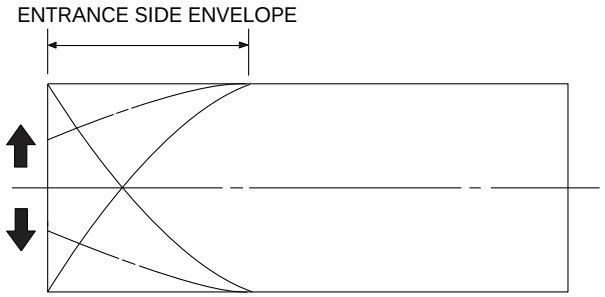


Fig. 2-9 Video Envelope Rising when Operation mode Changes from RPS to Play Mode

2-2-4 Envelope Check

1) Make recordings on T-120 (E-120) and T-160 (E-180) tape.
   Make sure the playback output envelope meets the specification as shown in Fig. 2-10.
2) Play back a self recorded tape (recording made on the unit using with T-120 (E-120).
   The video envelope should meet the specification as shown in Fig. 2-10.
   In SP mode, (A) should equal (B).
   If the head gap is wide, upper cylinder should be checked.

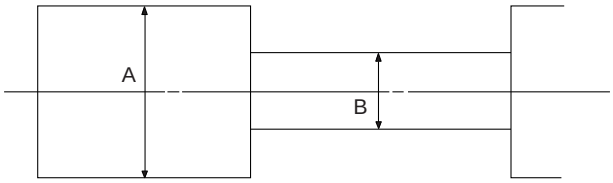


Fig. 2-10 Envelope Output and Output Level

2-2-5 Tape Wrinkle Check

1) Run the T-160 (E-180) tape in the playback, FPS, RPS and Pause modes and observe tape wrinkle at each guide.
2) If excessive tape wrinkle is observed, perform the following adjustments in Playback mode :

- Tape wrinkle at the guide roller S, T section : Linearity adjustment.
- Tape wrinkle at tape guide flange : ACE head assembly coarse adjustment.

2-3 Reel Torque

1) The rotation of the capstan motor causes the Holder Clutch Ass'y to rotate through the Belt Pulley.
2) The spring wrap PLAY/REV of holder clutch ass'y drives the disk reel S, T through gear idle by rotation of gear center ass'y.
3) Brake is operated by slider cam at FF/REW mode.
4) Transportation of accurate driving force is done by gears. (Gear Center Ass'y)

Note : If the spec. does not meet the followings specifications, replace the holder clutch ass'y and then recheck.

<Table 2-1>

MODE	TORQUE g/cm		GAUGE
PB	NTSC	82.5 ± 27.5	Cassette Torquemeter
	PAL	79 ± 27	
RPS	145 ± 30		Cassette Torquemeter

2-4 Location adjustment and Confirmation of Tension Post

1) Remove the holder cassette ass'y and then push the lever FL Arm-R to the direction of loading.
2) Push the lever tension drive ❶ in the direction of arrow. (See Fig. 2-11)
3) Turn the gear worm wheel ❷ clockwise so that "Timing Point" of the slider FL drive ❸ and gear FL cam ❹ can be aligned (See Fig. 2-12)

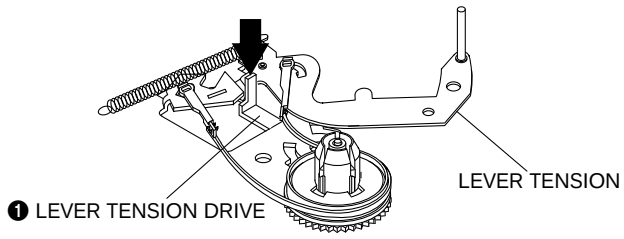


Fig. 2-11

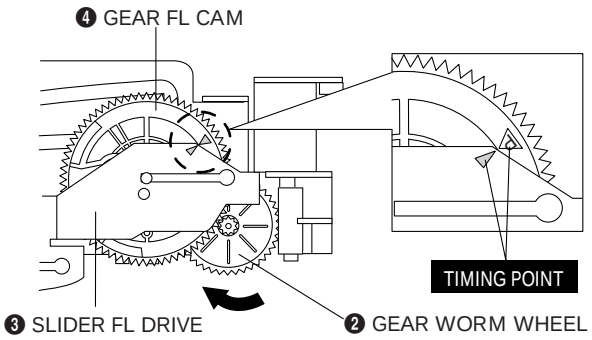


Fig. 2-12

4) As rotating Disk S Reel ❶ clockwise and the region of adjusting in the Main Base (in shape of slit) clockwise or counterclockwise after inserting screw driver in the slit on Main Base. Adjust the left end edge of Lever Tension Ass'y ❸ to 1.3 +1.5/-0.5mm from the location of mark in the Main Base.
5) As rotating Disk S Reel ❶, double-check the location of the left end edge of Lever Tension Ass'y and the quantity of crossing from mark on Main Base. (+1.0/-0.5mm)

Counterclockwise : Torque UP
Clockwise : Torque DOWN

Back Tension should be 56 ± 15g.cm at inspecting it with Back Tension Meter.

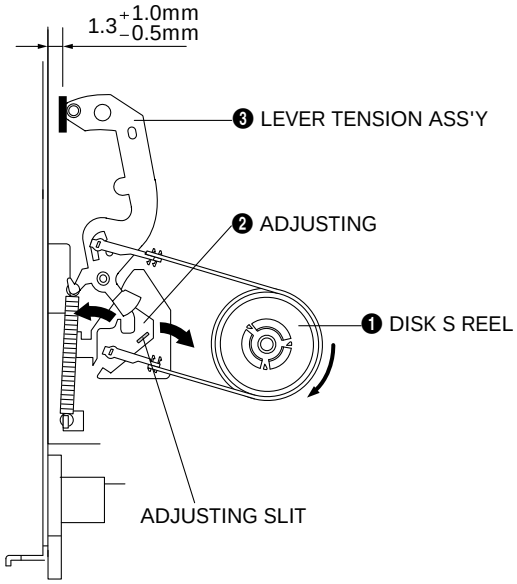


Fig. 2-13 Tension Pole and Back Tension Adjustment

Note :
1) Mark on Main Base is located in about 1.3mm from inside of bending line.
2) Be careful not to deform the region of adjusting on Main Base up and down at adjusting.

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