

SERVICE MANUAL



FISHER

CR-W890

**Double Reverse
Stereo Cassette Deck
(EUROPE)**



142 439 05

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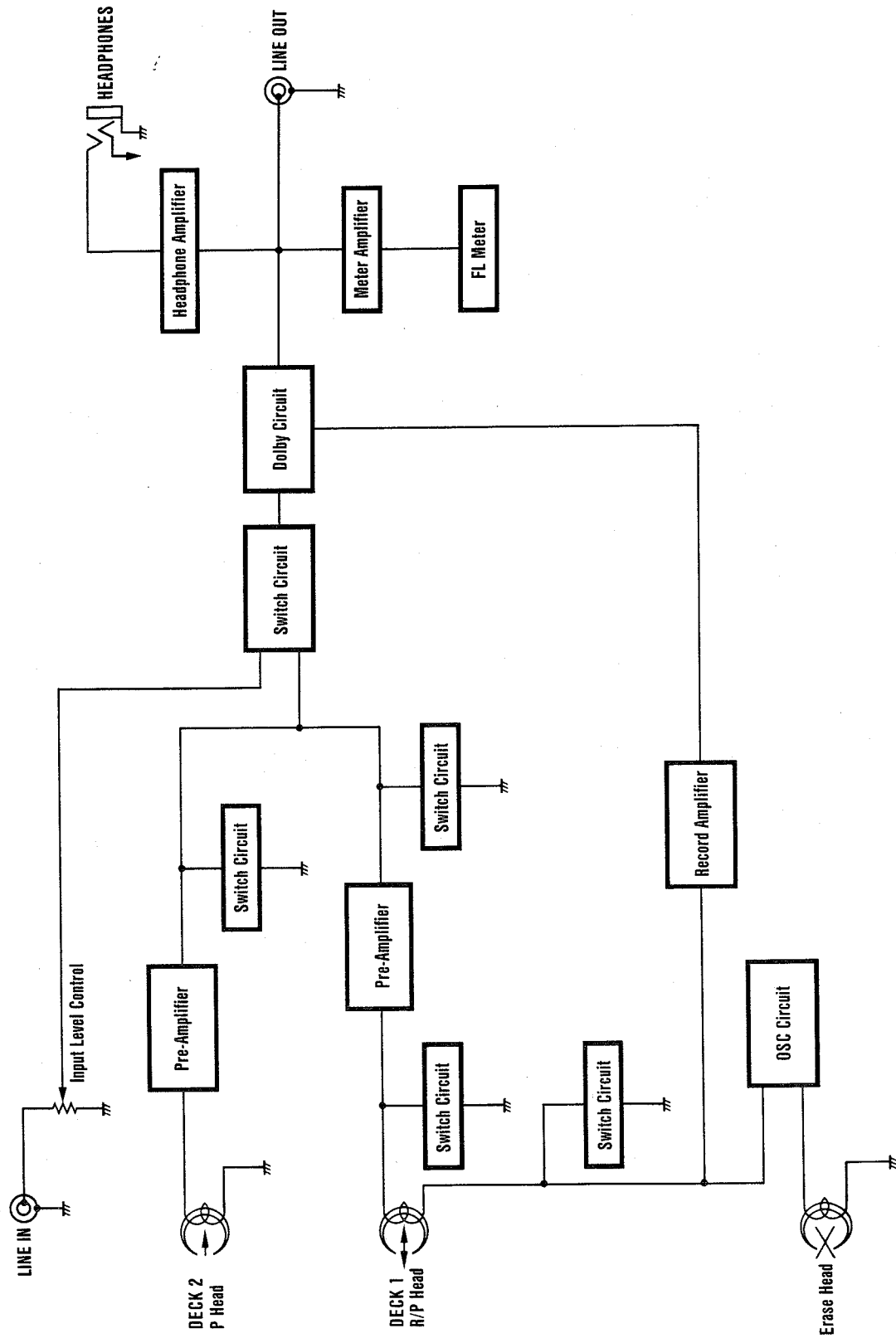
SPECIFICATIONS

CASSETTE DECK	CR-W890
Motor	(3) DC Governor
Cassette Loading	(2) Front
Drive System	(4) Capstan
Number of Heads	3
Head Material	Hard Permalloy / Ferrite
Operation	(2) Full Logic Mechanism
High Speed Dubbing	Yes
Wow & Flutter	0.06 % WRMS
Signal-to-Noise Ratio (CCIR Weighted)	
Dolby NR OFF	52 dB
Dolby NR ON B	62 dB
Dolby NR ON C	72 dB
Erase Ratio	70 dB
Channel Separation	40 dB
Signal Crosstalk	70 dB
Frequency Response 1-7/8 IPS	
Normal Tape (± 3 dB)	40 Hz – 13 kHz
CrO ₂ Equivalent Tape (± 3 dB)	40 Hz – 14 kHz
Metal Tape (± 3 dB)	40 Hz – 15 kHz
Total Harmonic Distortion at 0 VU	1.2 %
Fast-Forward / Rewind Time (C-60)	110 sec.
Level Indicators	FL Meters
Inputs (Sensitivity / Impedance)	(2) Line 100 mV / 50 k Ω
Outputs (Level at 0 VU / Impedance)	(2) Line 500 mV / 2.2 k Ω
Auto Tape Select	Normal, CrO ₂ , Metal
Tape Counter	Digital
GENERAL	
Power Requirements	AC 110 / 220 V (50Hz)
Power Consumption	27 Watts
Dimensions (W x H x D)	440 x 120 x 285 mm
Weight (approx.)	6.2 kg

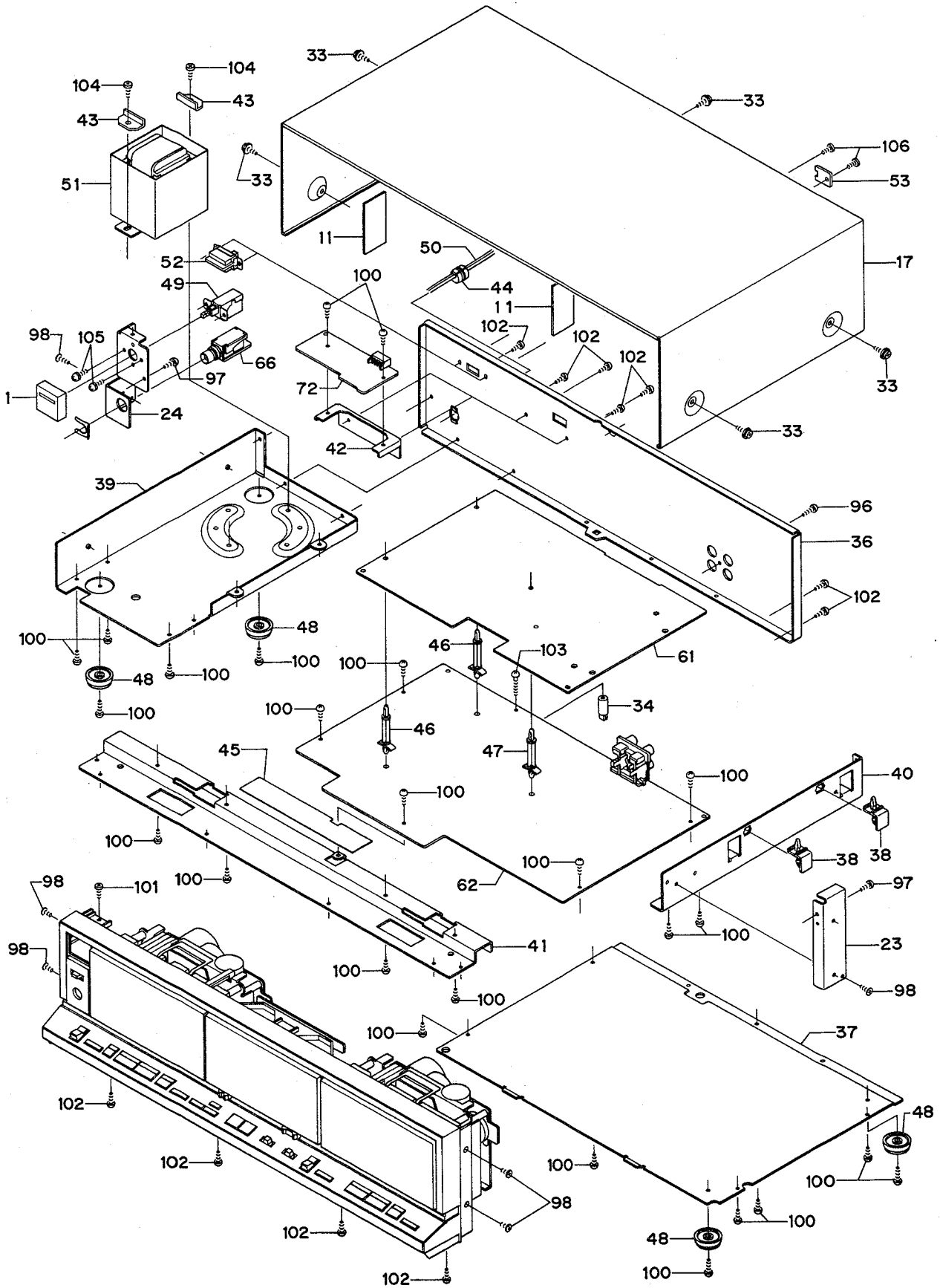
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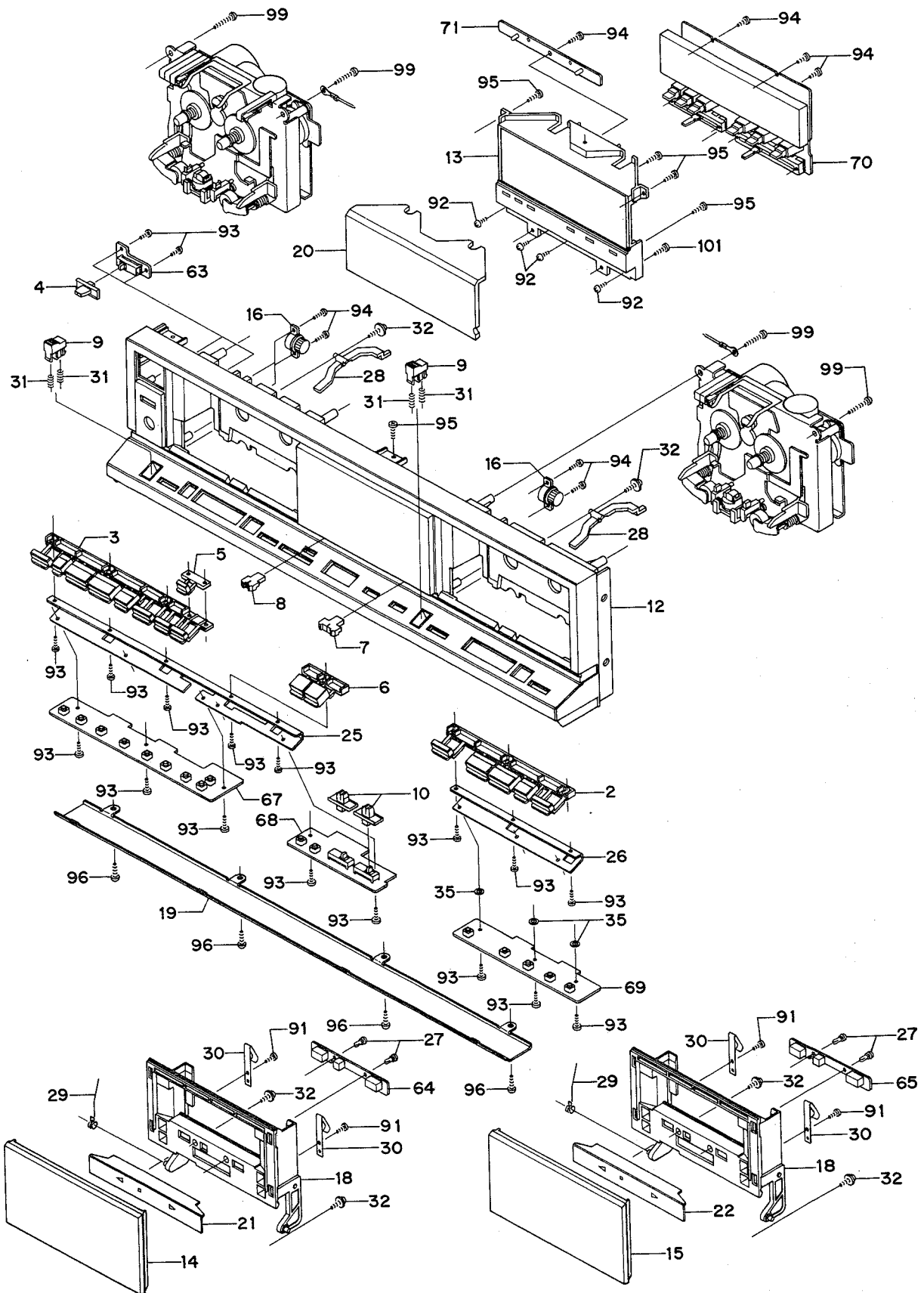
FUNCTIONAL BLOCK DIAGRAM



CABINET & CHASSIS EXPLODED VIEW



CABINET & CHASSIS EXPLODED VIEW (Continued)



CABINET & CHASSIS PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.

Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
PACKAGE							
	131-6-3069-16350	Patching Sheet	1	29	141-2-8529-36800	Spring Cassette-up	2
	141-6-1419-86301	Individual Carton	1	30	141-2-8539-57900	Spring Cassette Hold	4
	141-6-1469-05100	Pad Top	1	31	141-2-8559-01500	Spring Friction Sens	4
	141-6-1469-13500	Pad Left	1	32	141-2-4219-11600	Screw	7
	141-6-1469-13600	Pad Right	1	33	141-2-4219-33101	Screw, Bind Hd. Tapping-B, +M3.0x8	5
	141-6-2519-22290	Sheet Polyethylene	1	34	131-2-3614-21800	Mount P.C.B.	1
				35	131-2-4203-17200	Washer	3
				36	141-2-1219-37101	Rear Panel	1
				37	141-2-1259-10000	Cover Bottom	1
				38	141-2-2519-06300	Hinge	2
				39	141-2-3119-28200	Chassis Cabinet	1
				40	141-2-3159-04500	Panel Side Right	1
				41	141-2-3159-04600	Support Angle Mecha	1
				42	141-2-3519-71800	Bracket PCB	1
				43	141-2-3719-05500	Fix Trans	2
				44	131-2-6111-14200	Bushing	1
				45	141-2-4359-41000	Insulator PCB	1
				46	141-2-7539-77100	Pole	2
				47	141-2-7539-86400	Pole	1
				48	131-2-1801-12900	Leg	4
				49	Δ 4-2312-05030	Switch Push Power [SW31]	1
				50	Δ 4-2432-00500	Power Cord	1
				51	Δ 4-2519-74221	Power Trans [T1]	1
				52	Δ 4-2312-01020	Switch Slide (Voltage Select) [SW32]	1
				53	131-2-7104 00500	Plate Pad Switch	1
ACCESSORY							
	4-2359-78767	Connector 5P Assy	1				
	131-0-4004-15200	Wire Shield Assy	1				
	131-0-4004-15201	Wire Shield Assy	1				
	131-2-7103-51302	Label (Lid)	2				
	131-6-2719-10401	Bag Fan	1				
	141-6-4729-07700	Lavel Caution	1				
	142-6-4119-32988	Instruction Booklet	1				
CABINET							
	141-2-4469-56700	Cushion (Rear Panel)	1				
	Δ 4-2379-70110	Solderless Terminal	3				
	141-2-4359-22500	Cover Capacitor	1				
	141-2-4729-07100	Wire Band	15				
	Δ 4-2239-70970	Capacitor 0.01 μ F 400V [C1]	1				
1	131-2-1601-85202	Knob Power	1				
2	141-0-1649-02400	Knob Function Assy Right	1				
3	141-0-1649-02500	Knob Function Assy Left	1	61	141-0-1939-15831	Audio P.C.B. Assy	1
4	141-2-1649-36400	Knob Slide Switch	1	62	141-0-1939-15821	Control P.C.B. Assy	1
5	141-2-1649-42200	Knob Reset	1	63	141-0-1939-15740	Timer P.C.B. Assy	1
6	141-2-1649-42300	Knob Dubbing	1	64	141-0-1939-15750	Direction LED 1 P.C.B. Assy	1
7	141-2-1649-43300	Knob Volume	1	65	141-0-1939-15760	Direction LED 2 P.C.B. Assy	1
8	141-2-1649-43400	Knob Balance	1	66	141-0-1939-15770	Headphone P.C.B. Assy	1
9	141-2-1649-43500	Knob Eject	2	67	141-0-1939-15780	Function Switch 1 P.C.B. Assy	1
10	141-2-1649-43600	Knob Slide Switch	2	68	141-0-1939-15790	Function Switch 2 P.C.B. Assy	1
11	131-2-3202-14200	Metal Reinf	2	69	141-0-1939-15800	Function Switch 3 P.C.B. Assy	1
12	141-0-1129-20400	Cabinet Front Assy	1	70	141-0-1939-15810	FL Display P.C.B. Assy	1
13	141-0-1149-15100	Panel Holder Assy	1	71	141-0-1939-15850	Lamp P.C.B. Assy	1
14	141-0-1319-00800	Clear Lid Assy Left	1	72	141-0-1939-16691	Sub Rimocon P.C.B. Assy	1
15	141-0-1319-00801	Clear Lid Assy Right	1				
16	141-0-5519-07903	Gear Eject Assy	2				
17	141-2-1129-42400	Cover	1	91	143-3-1702-00618	Screw, Bind Hd. Tapping-B, +M2.0x6	4
18	141-2-1249-54100	Lid Cassette	2	92	101-3-1302-00518	Screw, Pan Hd., +M2.0x5	4
19	141-2-1259-10100	Cover Cabinet	1	93	143-3-1702-60611	Screw, Bind Hd. Tapping-B, +M2.6x6	18
20	141-2-1329-16206	Clear Decoration	1	94	143-3-1302-60811	Screw, Pan Hd. Tapping-B, +M2.6x8	8
21	141-2-1519-50100	Decoration Lid Left	1	95	143-3-1702-60811	Screw, Bind Hd. Tapping-B, +M2.6x8	5
22	141-2-1519-50101	Decoration Lid Right	1	96	143-3-1903-00818	Screw, Brazier Hd. Tapping-B, +M3.0x8	5
23	141-2-3169-30800	Bracket Support Right	1	97	143-3-1903-00811	Screw, Brazier Hd. Tapping-B, +M3.0x8	2
24	141-2-3169-30900	Bracket Power Left	1	98	143-3-1203-00811	Screw, Flat Hd. Tapping-B, +M3.0x8	6
25	141-2-3169-31000	Metal Mount Left	1	99	143-3-1903-01611	Screw, Brazier Hd. Tapping-B, +M3.0x16	4
26	141-2-3169-31100	Metal Mount Right	1	100	143-3-1903-00611	Screw, Brazier Hd. Tapping-B, +M3.0x6	25
27	141-2-3779-21500	Nylon Rivet	4	101	143-3-1703-00611	Screw, Bind Hd. Tapping-B, +M3.0x6	2
28	141-2-7429-01900	Lever Eject	2	102	143-3-1903-00618	Screw, Brazier Hd. Tapping-B, +M3.0x6	11

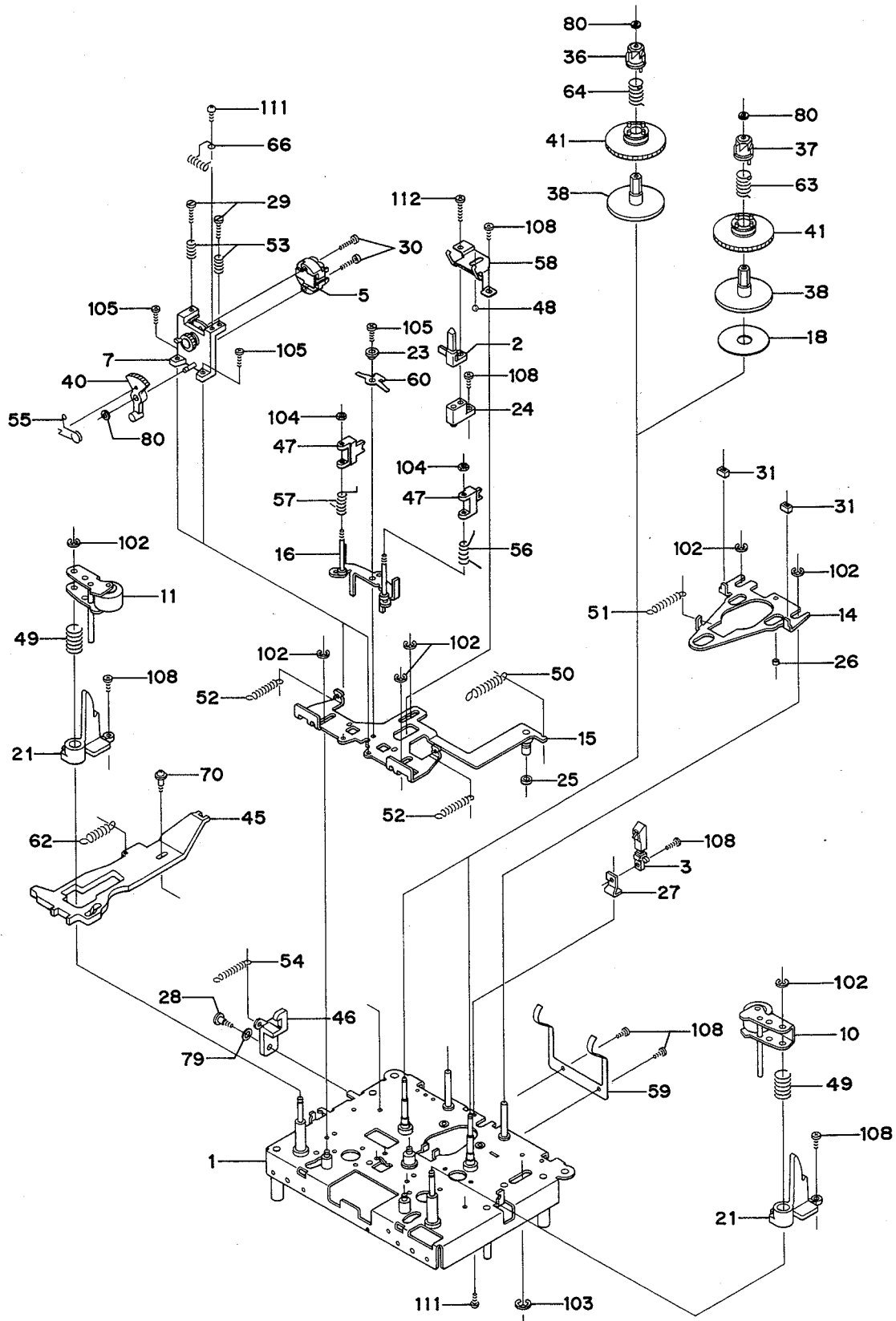
CABINET & CHASSIS PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
103	143-3-1903-01811	Screw, Brazier Hd. Tapping-B, +M3.0x18	1
104	143-3-1704-00811	Screw, Bind Hd. Tapping-B, +M4.0x8	2
105	131-3-1303-00511	Screw, Pan Hd. C SW, +M3.0x5	2
106	131-3-1303-00618	Screw, Pan Hd., +M3.0x6	2

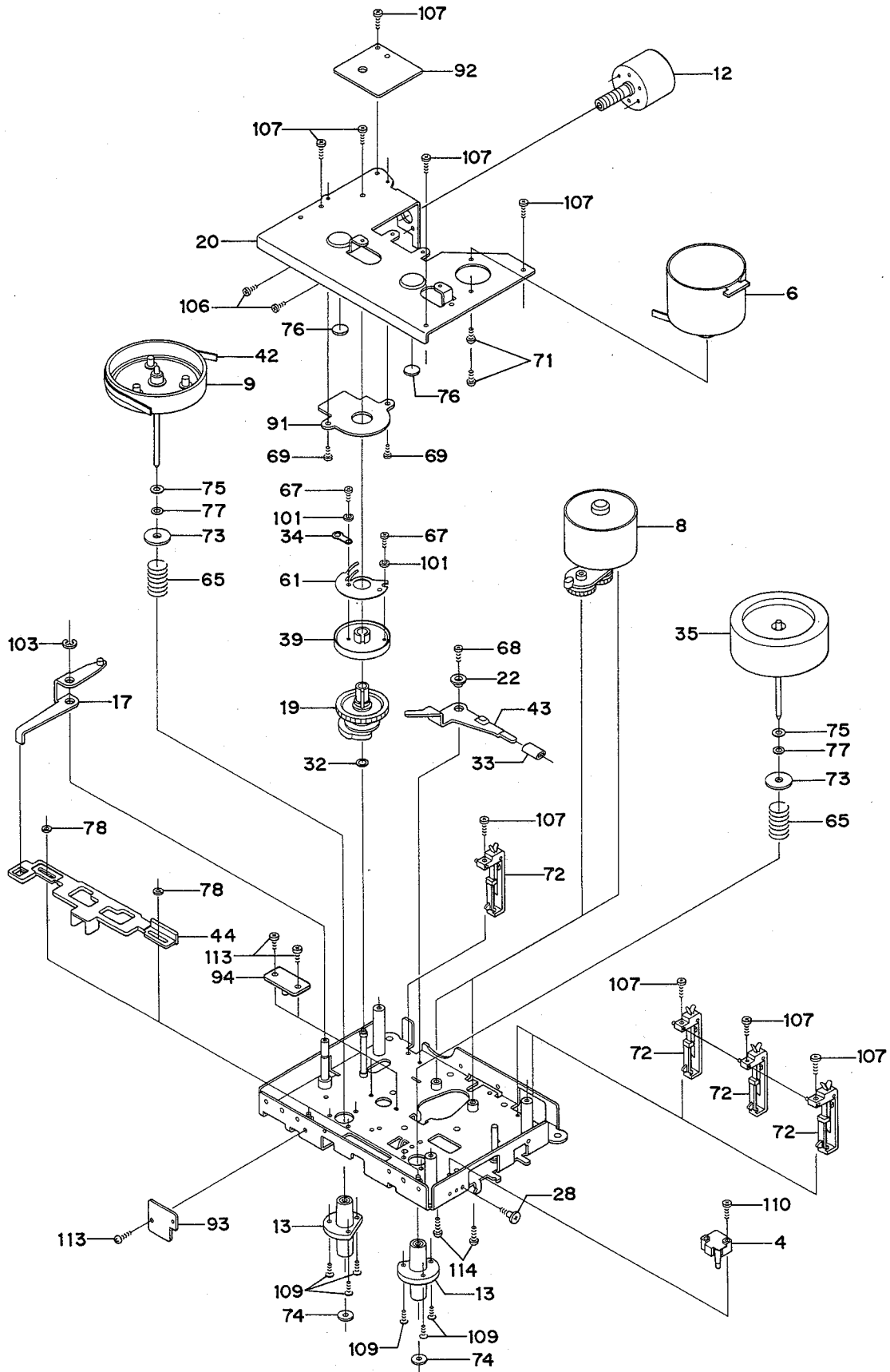
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

MECHANISM EXPLODED VIEW (DECK 1 TOP)



MECHANISM EXPLODED VIEW (DECK 1 BOTTOM)



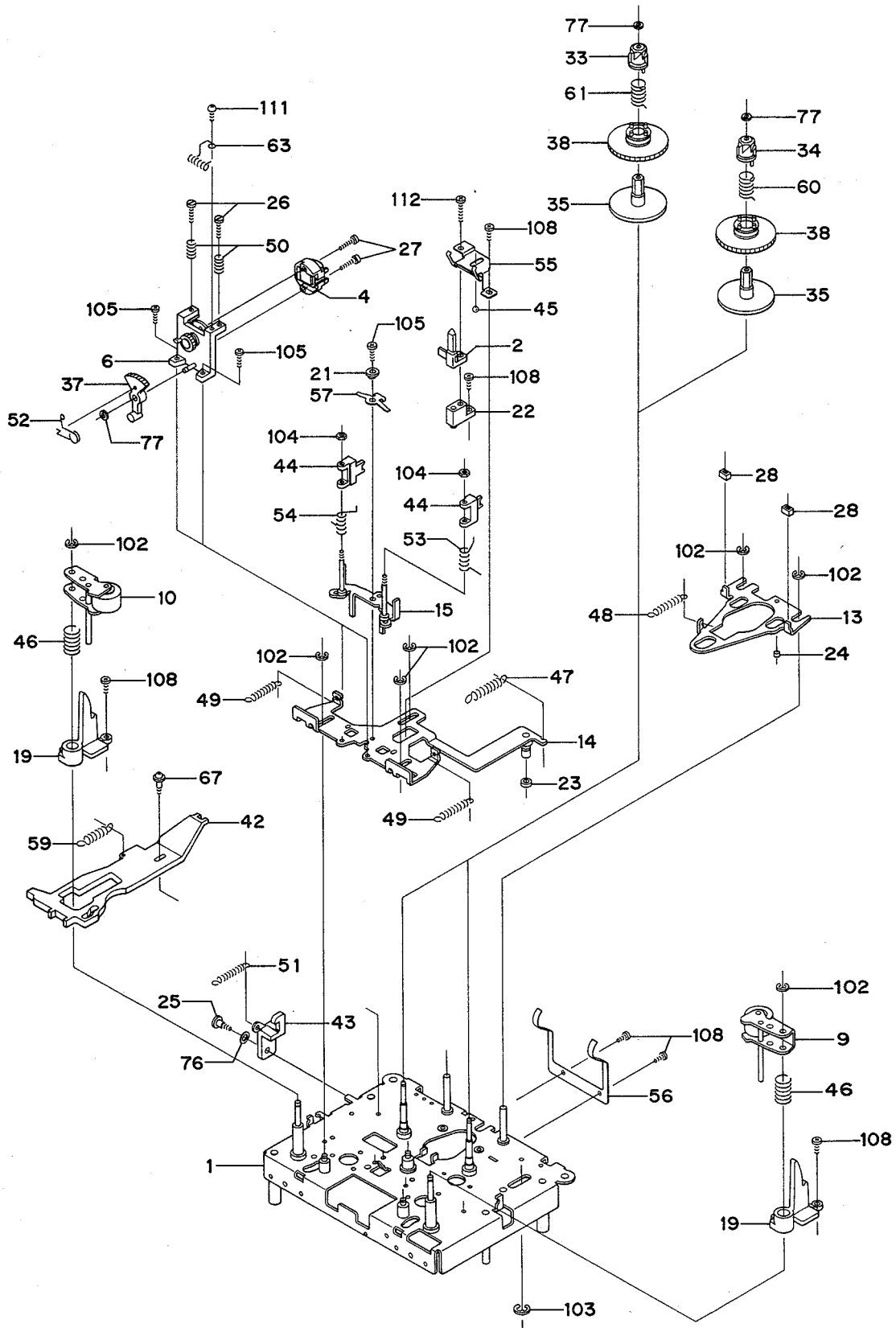
MECHANISM PARTS LIST (DECK 1)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
DECK 1 MECHANISM				54	141-2-8519-95100	Spring Interlock	1
CN01	4-2359-79342	Connector 2P Assy	1	55	141-2-8529-19100	Spring Gear Reverse	1
CN02	4-2359-79343	Connector 2P Assy	1	56	141-2-8529-19200	Spring Guide Tape	1
CN03	4-2359-79079	Connector 2P Assy	1	57	141-2-8529-19300	Spring Guide Tape	1
CN06	4-2359-79256	Connector 3P Assy	1	58	141-2-8539-51200	Spring Base	1
CN08	4-2359-79330	Connector 3P Assy	1	59	141-2-8539-51300	Spring Cassette	1
CN15	4-2359-79188	Connector 4P Assy	1	60	141-2-8539-51400	Spring Arm Guide	1
CN17	4-2359-78769	Connector 5P Assy	1	61	141-2-8539-55500	Switch Position	1
CN26	4-2359-79345	Connector 2P Assy	1	62	141-2-8549-00600	Spring Lever Eject	1
CN27	4-2359-79344	Connector 2P Assy	1	63	141-2-8559-07301	Spring Reel FF	1
CN38	4-2359-79292	Connector 6P Assy	1	64	141-2-8559-07500	Spring Reel REW	1
1	141-0-3119-25800	Chassis Assy	1	65	141-2-8559-08000	Spring	2
2	4-2039-71650	Photo Sensor SPI-306 [Q2]	1	66	141-2-8559-09600	Spring Lug	1
3	4-2319-76780	Leaf Switch (Metal) [SW24]	1	67	141-2-4219-29900	Screw	2
4	4-2319-77060	Lever Switch (Direction) [SW21]	1	68	141-2-4219-02900	Screw	1
5	4-2429-73020	Rec/Play/Erase Head [HD1]	1	69	141-2-4219-10801	Screw	2
6	4-5279-71500	Motor (Main) [M1]	1	70	141-2-4219-11400	Screw	1
7	141-0-3759-01101	Head Base Comple	1	71	141-2-4219-17900	Screw, Pan Hd., +M2.6x2.7	2
8	141-0-3799-01203	Gear Motor Compl (Reel) [M2]	1	72	4-2319-78250	Leaf Switch (Cassette) [SW22]	1
9	141-0-5219-12200	Flywheel Assy	1	72	4-2319-78250	Leaf Switch (CrO2) [SW23]	1
10	141-0-5459-03200	Arm Pinch Assy	1	72	4-2319-78250	Leaf Switch (FWD Interlock) [SW25]	1
11	141-0-5459-03201	Arm Pinch Assy	1	72	4-2319-78250	Leaf Switch (REV Interlock) [SW26]	1
12	141-0-5519-10900	Motor Assist Assy (Assist) [M3]	1	73	141-2-4569-08800	Washer	2
13	141-0-5719-00600	Holder Capstan Assy	2	74	141-2-4539-06900	Washer	2
14	141-0-7149-02000	Plate Brake Assy	1	75	141-2-4539-21800	Washer	2
15	141-0-7319-26700	Base Slide Assy	1	76	141-2-4539-35400	Washer	2
16	141-0-7439-14700	Arm Tape Guide Assy	1	77	141-2-4539-33400	Washer	2
17	141-0-7439-14800	Arm Slide Assy	1	78	141-2-4539-15700	Washer	2
18	141-2-1519-50200	Reflection Gear	1	79	141-2-4539-19700	Washer	1
19	141-2-3169-22500	Gear Assist	1	80	141-2-4539-27800	Washer	3
20	141-2-3169-26500	Support Flywheel	1				
21	141-2-3169-26600	Fix Cassette	2	91	4-2262-18621	PCB Assist	1
22	141-2-3529-11700	Spacer Stop	1	92	4-2262-27790	PCB Connctor 1	1
23	141-2-3529-40000	Spacer Tape Guide	1	93	4-2262-28180	PCB Head 1	1
24	141-2-3529-40200	Spacer Sensor	1	94	141-0-1939-15730	Photo P.C.B. Assy	1
25	141-2-3529-47200	Roller Base Slide	1				
26	141-2-3529-53000	Spacer Tube	1	101	110-3-2101-70013	Spring Washer-2, M1.7	2
27	141-2-3659-20100	Bracket Switch	1	102	112-3-1302-00040	E Ring, M2.0	7
28	141-2-4219-14000	Screw	2	103	112-3-1303-00040	E Ring, M3.0	2
29	141-2-4219-32100	Screw Azimuth	2	104	106-3-1302-00123	Hex. Nut-3, M2.0	2
30	141-2-4219-40700	Screw, Pan Hd., +M1.6x6	2	105	128-3-1317-05013	PI Screw-3, Pan Hd., +M1.7x5.0	3
31	141-2-4459-29900	Damper Base Slide	2	106	127-3-1217-02213	PI Screw-1, Flat Hd., +M1.7x2.2	2
32	141-2-4539-27304	Washer	1	107	101-3-1702-00513	Screw, Bind Hd., +M2.0x5	9
33	141-2-4619-07900	Tube Brake	1	108	101-3-1702-00411	Screw, Bind Hd., +M2.0x4	7
34	141-2-4729-07000	Lug	1	109	101-3-1202-00511	Screw, Flat Hd., +M2.0x5	6
35	141-2-5219-16401	Flywheel Capstan	1	110	101-3-1702-00611	Screw, Bind Hd., +M2.0x6	1
36	141-2-5319-13000	Fin Reel Supply	1	111	101-3-1302-00311	Screw, Pan Hd., +M2.0x3	2
37	141-2-5319-13100	Fin Reel Take-up	1	112	101-3-1702-01411	Screw, Bind Hd., +M2.0x14	1
38	141-2-5319-14500	Plate Reel	2	113	101-3-1302-00411	Screw, Pan Hd., +M2.0x4	3
39	141-2-5519-53100	Disk Slide Head	1	114	101-3-1302-60611	Screw, Pan Hd., +M2.6x6	2
40	141-2-5519-53300	Gear Reverse	1				
41	141-2-5519-53400	Gear Reel	2				
42	141-2-5619-02400	Belt Drive	1				
43	141-2-7149-06300	Arm Brake	1				
44	141-2-7319-67900	Plate Slide Head	1				
45	141-2-7359-03300	Rod Eject	1				
46	141-2-7419-97100	Lock Lid Cassette	1				
47	141-2-8219-34100	Guide Tape	2				
48	141-2-8259-00100	Ball	1				
49	141-2-8519-02100	Spring Select Button C	2				
50	141-2-8519-39300	Spring Base Slide	1				
51	141-2-8519-61100	Spring Slide	1				
52	141-2-8519-78600	Spring Slide Base	2				
53	141-2-8519-84300	Spring Support Flywheel	2				

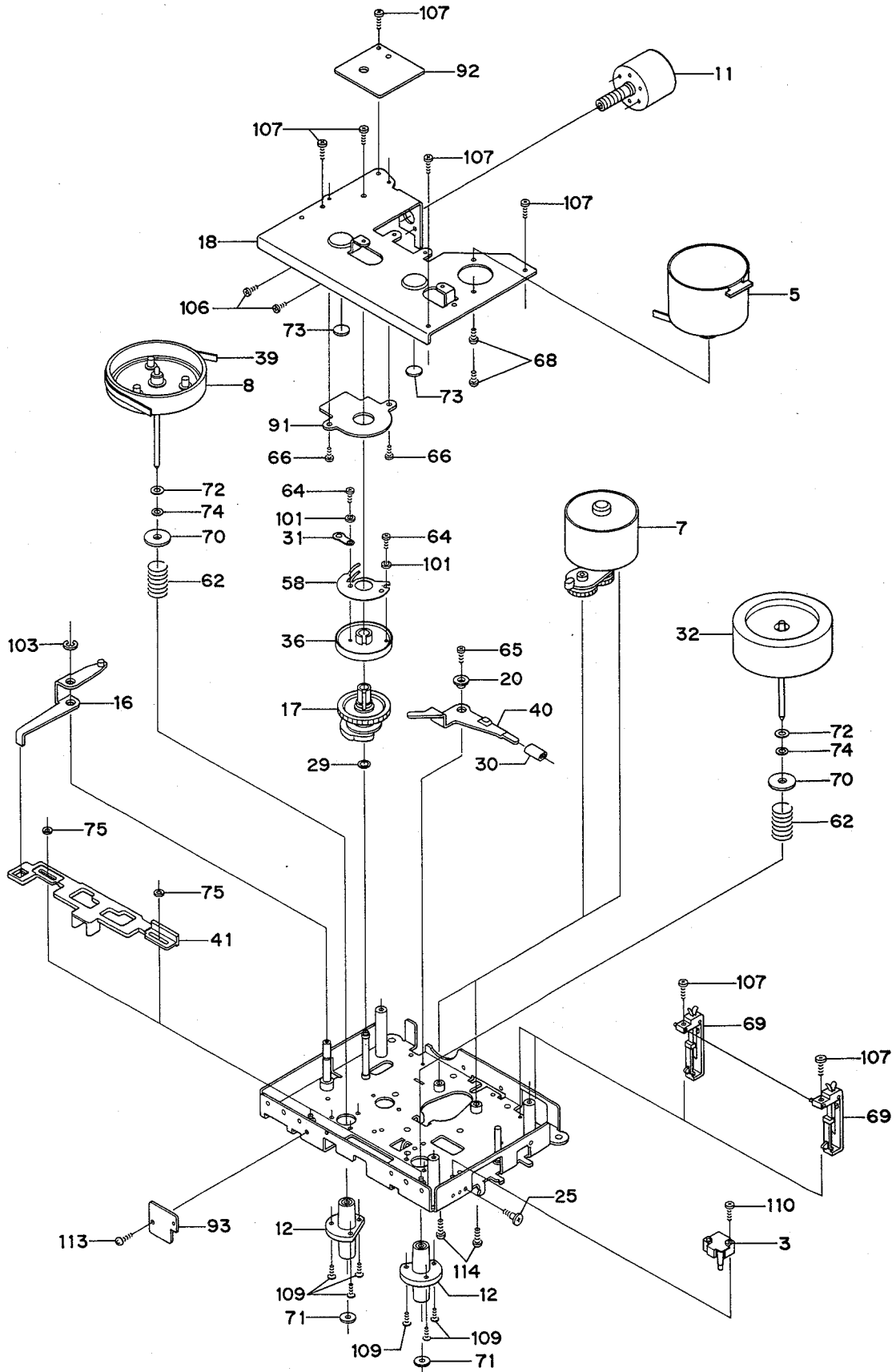
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

MECHANISM EXPLODED VIEW (DECK 2 TOP)



MECHANISM EXPLODED VIEW (DECK 2 BOTTOM)



MECHANISM PARTS LIST (DECK 2)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
DECK 2 MECHANISM				55	141-2-8539-51200	Spring Base	1
	4-2359-79313	Connector 1P Assy	1	56	141-2-8539-51300	Spring Cassette	1
CN04	4-2359-79343	Connector 2P Assy	1	57	141-2-8539-51400	Spring Arm Guide	1
CN05	4-2359-79342	Connector 2P Assy	1	58	141-2-8539-55500	Switch Position	1
CN07	4-2359-79256	Connector 3P Assy	1	59	141-2-8549-00600	Spring Lever Eject	1
CN09	4-2359-79330	Connector 3P Assy	1	60	141-2-8559-07300	Spring Reel FF	1
CN12	4-2359-79187	Connector 4P Assy	1	61	141-2-8559-07500	Spring Reel REW	1
CN16	4-2359-79189	Connector 4P Assy	1	62	141-2-8559-08000	Spring	2
CN29	4-2359-79331	Connector 3P Assy	1	63	141-2-8559-09600	Spring Lug	1
1	141-0-3119-25800	Chassis Assy	1	64	141-2-4219-29900	Screw	2
2	4-2039-71650	Photo Sensor SPI-306 [Q3]	1	65	141-2-4219-02900	Screw	1
3	4-2319-77060	Lever Switch (Direction) [SW28]	1	66	141-2-4219-10801	Screw	2
4	4-2429-73010	Play Head [HD2]	1	67	141-2-4219-11400	Screw	1
5	4-5279-71500	Motor (Main) [M4]	1	68	141-2-4219-17900	Screw, Pan Hd., +M2.6x2.7	2
6	141-0-3759-01101	Head Base Comple	1	69	4-2319-78250	Leaf Switch (Cassette) [SW29]	1
7	141-0-3799-01203	Gear Motor Compl (Reel) [M5]	1	69	4-2319-78250	Leaf Switch (EQ) [SW30]	1
8	141-0-5219-12200	Flywheel Assy	1	70	141-2-4569-08800	Washer	2
9	141-0-5459-03200	Arm Pinch Assy	1	71	141-2-4539-06900	Washer	2
10	141-0-5459-03201	Arm Pinch Assy	1	72	141-2-4539-21800	Washer	2
11	141-0-5519-10900	Motor Assist Assy (Assist) [M6]	1	73	141-2-4539-35400	Washer	2
12	141-0-5719-00600	Holder Capstan Assy	2	74	141-2-4539-33400	Washer	2
13	141-0-7149-02000	Plate Brake Assy	1	75	141-2-4539-15700	Washer	2
14	141-0-7319-26700	Base Slide Assy	1	76	141-2-4539-19700	Washer	1
15	141-0-7439-14700	Arm Tape Guide Assy	1	77	141-2-4539-27800	Washer	3
16	141-0-7439-14800	Arm Slide Assy	1				
17	141-2-3169-22500	Gear Assist	1	91	4-2262-18621	PCB Assist	1
18	141-2-3169-26500	Support Flywheel	1	92	4-2262-27800	PCB Connector 2	1
19	141-2-3169-26600	Fix Cassette	2	93	4-2262-28180	PCB Head	1
20	141-2-3529-11700	Spacer Stop	1				
21	141-2-3529-40000	Spacer Tape Guide	1	101	110-3-2101-70013	Spring Washer-2, M1.7	2
22	141-2-3529-40200	Spacer Sensor	1	102	112-3-1302-00040	E Ring, M2.0	7
23	141-2-3529-47200	Roller Base Slide	1	103	112-3-1303-00040	E Ring, M3.0	2
24	141-2-3529-53000	Spacer Tube	1	104	106-3-1302-00123	Hex. Nut-3, M2.0	2
25	141-2-4219-14000	Screw	2	105	128-3-1317-05013	PI Screw-3, Pan Hd., +M1.7x5.0	3
26	141-2-4219-32100	Screw Azimuth	2	106	127-3-1217-02213	PI Screw-1, Flat Hd., +M1.7x2.2	2
27	141-2-4219-40700	Screw, Pan Hd., +M1.6x6	2	107	101-3-1702-00513	Screw, Bind Hd., +M2.0x5	7
28	141-2-4459-29900	Damper Base Slide	2	108	101-3-1702-00411	Screw, Bind Hd., +M2.0x4	6
29	141-2-4539-27304	Washer	1	109	101-3-1202-00511	Screw, Flat Hd., +M2.0x5	6
30	141-2-4619-07900	Tube Brake	1	110	101-3-1702-00611	Screw, Bind Hd., +M2.0x6	1
31	141-2-4729-07000	Lug	1	111	101-3-1302-00311	Screw, Pan Hd., +M2.0x3	1
32	141-2-5219-16401	Flywheel Capstan	1	112	101-3-1702-01411	Screw, Bind Hd., +M2.0x14	1
33	141-2-5319-13000	Fin Reel Supply	1	113	101-3-1302-00411	Screw, Pan Hd., +M2.0x4	1
34	141-2-5319-13100	Fin Reel Take-up	1	114	101-3-1302-60611	Screw, Pan Hd., +M2.6x6	2
35	141-2-5319-14500	Plate Reel	2				
36	141-2-5519-53100	Disk Slide Head	1				
37	141-2-5519-53300	Gear Reverse	1				
38	141-2-5519-53400	Gear Reel	2				
39	141-2-5619-02400	Belt Drive	1				
40	141-2-7149-06300	Arm Brake	1				
41	141-2-7319-67900	Plate Slide Head	1				
42	141-2-7359-03300	Rod Eject	1				
43	141-2-7419-97100	Lock Lid Cassette	1				
44	141-2-8219-34100	Guide Tape	2				
45	141-2-8259-00100	Ball	1				
46	141-2-8519-02100	Spring Select Button C	2				
47	141-2-8519-39300	Spring Base Slide	1				
48	141-2-8519-61100	Spring Slide	1				
49	141-2-8519-78600	Spring Slide Base	2				
50	141-2-8519-84300	Spring Support Flywheel	2				
51	141-2-8519-95100	Spring Interlock	1				
52	141-2-8529-19100	Spring Gear Reverse	1				
53	141-2-8529-19200	Spring Guide Tape	1				
54	141-2-8529-19300	Spring Guide Tape	1				

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CASSETTE DECK ELECTRICAL ADJUSTMENTS

BEFORE ADJUSTMENT

If the tape surface which contacts the head, the capstan, and the pinch roller, etc., is stained, it will cause unstable running of the tape, wow and flutter, imperfect recording and erasing, deterioration of tonal quality, and the tape jam around the capstan, etc. Occasionally clean each part as follows;

1. Cut off power.
2. Open the cassette lid.
3. Wipe the head, the capstan, and the pinch roller with a cotton swab. If they are excessively stained, clean them with the swab soaked in absolute alcohol or cleaning liquid on the market.

MEASURING INSTRUMENTS REQUIRED

- Dualtrace Oscilloscope
- AC VTVM (AC voltmeter with high impedance)
- DC VTVM (DC voltmeter with high impedance)
- Dummy Load (47k Ω)
- Frequency Counter
- Signal Oscillator
- Test Tapes
 - ‡ 10kHz Test Tape (For example: TEAC MTT-114) for Head Azimuth Adjustment
 - ‡ 3kHz Test Tape (For example: TEAC MTT-111) for Normal Tape Speed Adjustment
 - ‡ 1.5kHz Test Tape (For example: A.BEX TCW-211) for Double Tape Speed Adjustment
 - ‡ 400Hz Test Tape (For example: TEAC MTT-150) for Playback sensitivity Adjustment
- Test Tapes for Recording and Playback Operations
 - ‡ Normal Tape (Example: TDK AC 223)

SWITCH POSITIONS

Unless especially indicated, set switch as follows;

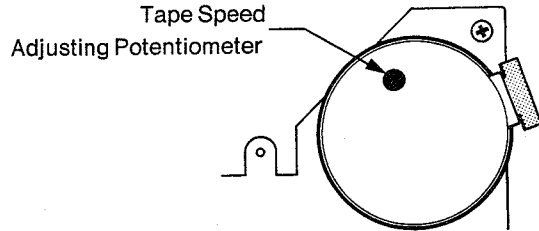
DOLBY NR Switch OFF

DECK 2 REEL MOTOR ADJUSTMENT

1. Install an empty cassette (one with no tape) in Deck 2 and set to the fast forward mode.
2. Connect a DC VTVM to both terminals of the reel motor, and adjust P502 in the CONTROL PCB so that the voltage between the terminals is 6.0V.

TAPE SPEED ADJUSTMENT (NORMAL SPEED)

1. Connect a dummy load (47K Ω) and frequency counter to the set's left LINE OUT terminal.
2. Install a test tape (For example: TEAC MTT-111) in Deck 1 and set to the playback mode.
3. Adjust the potentiometer in the capstan drive motor so that the reading on the frequency counter is 3000Hz \pm 10Hz.
4. Adjust Deck 2 in the same way as for Deck 1.

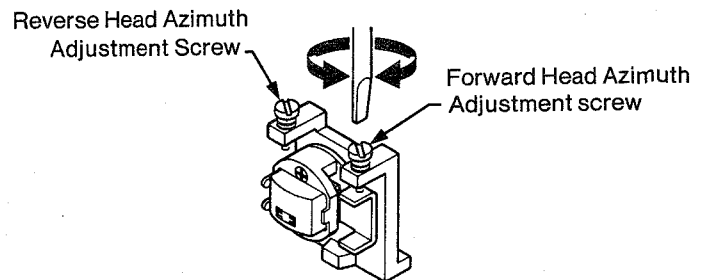


TAPE SPEED ADJUSTMENT (HIGH SPEED)

1. Connect a dummy load (47K Ω) and frequency counter to the set's left LINE OUT terminal.
2. Short circuit test pins A and B. (The set will be set to the high speed mode).
3. Install a test tape (For example: A.BEX TCW-211) in Deck 1 and set to the playback mode.
4. Adjust P401 in the CONTROL PCB so that the reading on the frequency counter is 3000Hz \pm 10Hz.
5. Adjust Deck 2 in the same way as for Deck 1 using P501.

HEAD AZIMUTH ADJUSTMENT

1. Connect dummy loads (47K Ω) and a dualtrace oscilloscope to the set's left and right LINE OUT terminals.
2. Install a test tape (For example: TEAC MTT-114) in Deck 1 and set to the forward playback mode.
3. Adjust the forward head azimuth adjustment screw so that the oscilloscope's waveform is maximum and so that the right waveform is over the left waveform.



4. Next turn the same tape over and set to the reverse playback mode.
5. Adjust the reverse head azimuth adjustment screw in the same way as for the forward side.
6. Repeat the above several time.
7. Adjust Deck 2 in the same way as for Deck 1.

CASSETTE DECK ELECTRICAL ADJUSTMENTS (Continued)

PLAYBACK SENSITIVITY ADJUSTMENT

1. Connect a dummy load (47K Ω) and an AC VTVM to the set's left LINE OUT terminal.
2. Install a test tape (For example: TEAC MTT-150) in Deck 1 and set to the playback mode.
3. Adjust P102 so that the voltage of the LINE OUT terminal is 500mV.
4. Connect a dummy load (47K Ω) and an AC VTVM to the set's right LINE OUT terminal and adjust P202 so that the voltage of the LINE OUT terminal is 500mV.
5. Install a test tape (For example: TEAC MTT-150) in Deck 2 and set to the playback mode.
6. Do the same for Deck 1, and adjust P101 (L) and P201 (R) so that the output is 500mV.

NOTE:

When adjusting one deck, set the other deck to the stop mode.

FL METER SENSITIVITY ADJUSTMENT

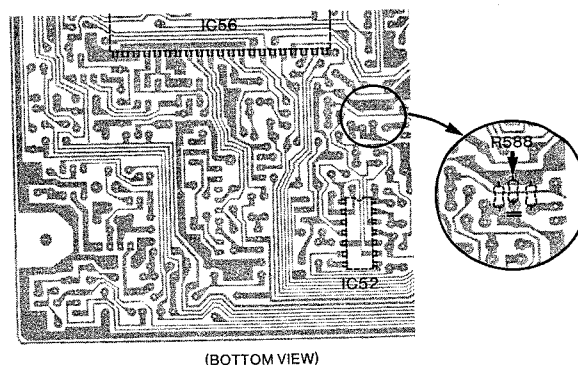
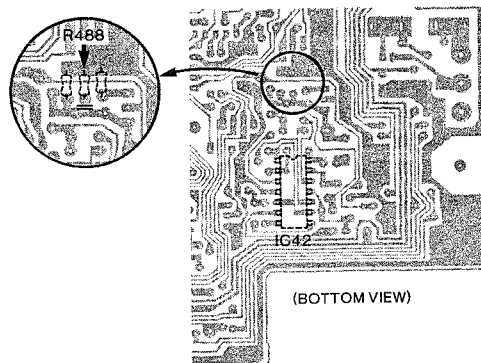
1. After the playback sensitivity adjustment was made, playback the test tape (for example: TEAC MTT-150) on Deck 1.
2. Adjust the P104 (L) and P204 (R) so that the level meter indicates the 0dB.

BIAS ADJUSTMENT

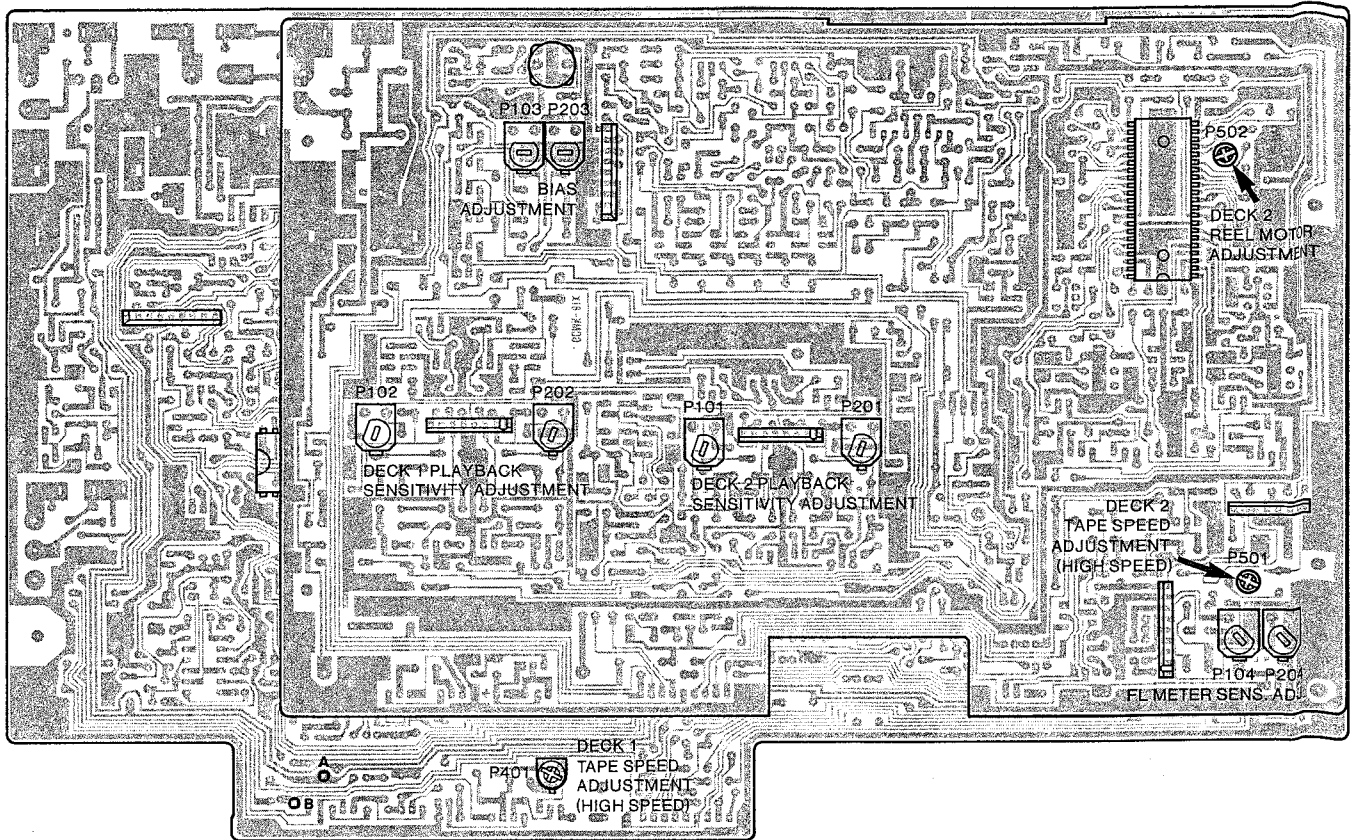
1. Connect a low frequency oscillator to the set's left LINE IN terminal and a dummy load (47K Ω) and AC VTVM to the left LINE OUT terminal.
2. Install a normal tape (For example: TDK AC223) in Deck 1.
3. Set the reocad balance control at the center position and then set the input level control to the maximam position.
4. Output 1kHz and 12kHz with -43dBs (7mV) from the low frequency oscillator and record these signals on the tape.
5. Play back the recorded signal and adjust P103 so that the difference between 1kHz and 12kHz is ± 0.5 dB.
6. Adjust right side in the same way as for left side using P203.

QUICK REVERSE ADJUSTMENT

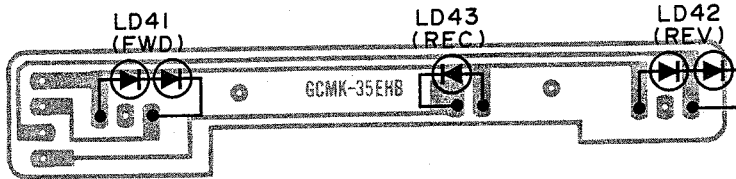
1. Confirm that the quick reverse operate on Deck 1 and Deck 2.
2. Cut the R488 (Deck 1), R588 (Deck 2) pattern of the CONTROL PCB according to the side which the quick reverse does not operate.



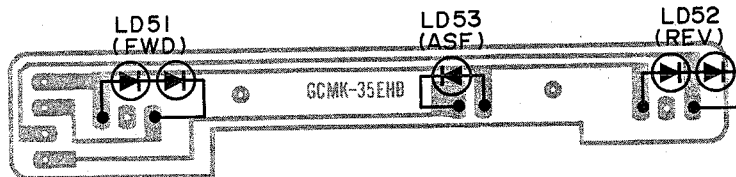
P.C.BOARD ALIGNMENT POINTS (TOP VIEW)



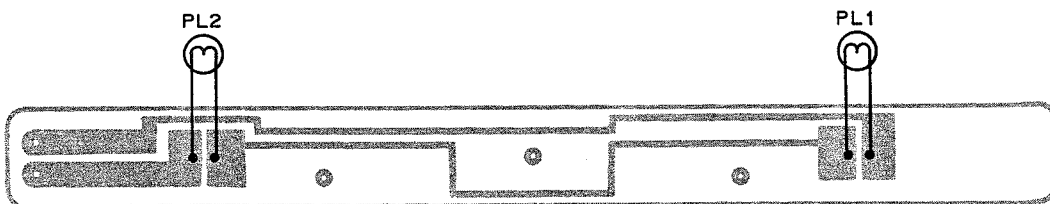
DIRECTION LED 1 P.C.BOARD (BOTTOM VIEW)

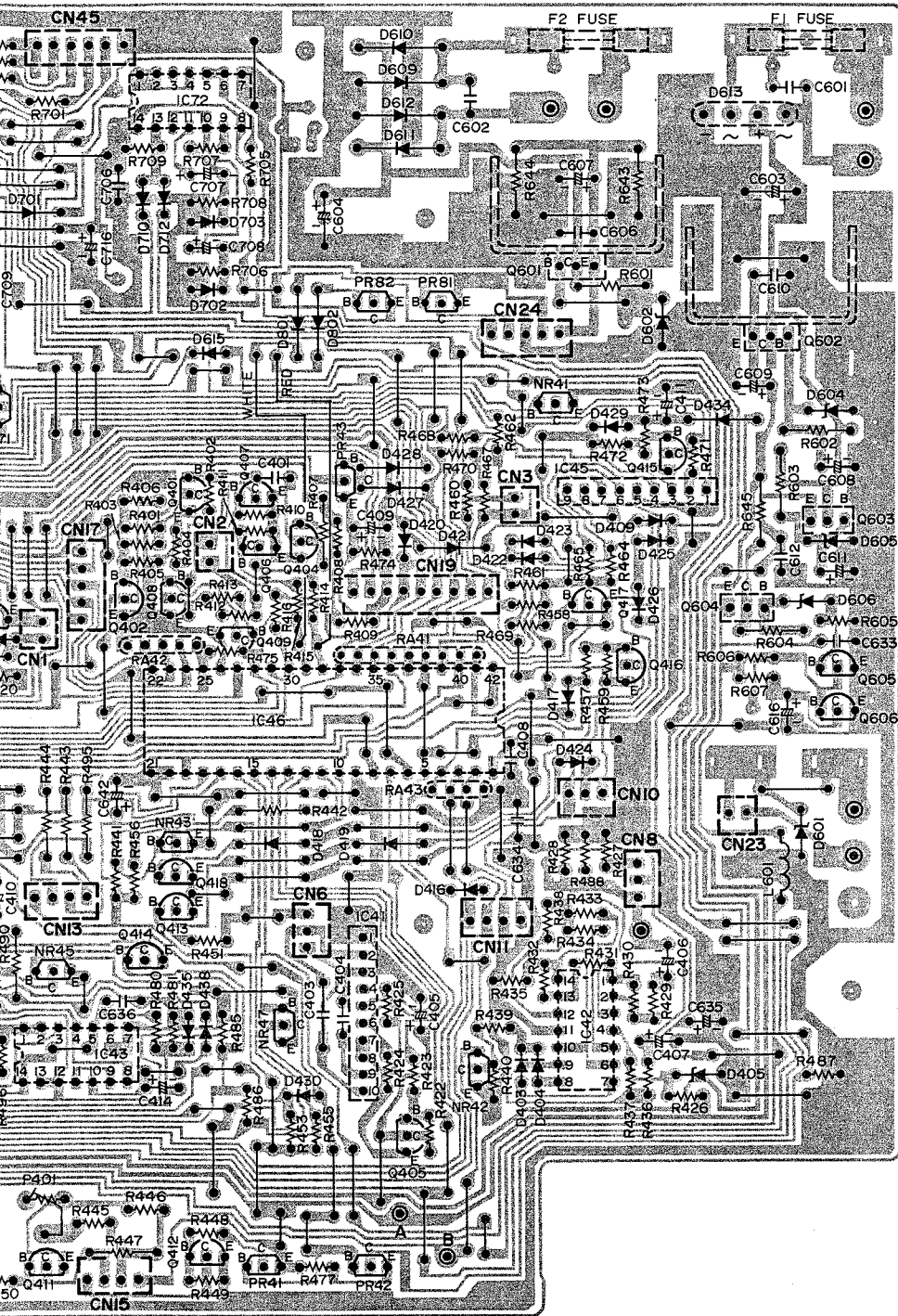


DIRECTION LED 2 P.C.BOARD (BOTTOM VIEW)



LAMP P.C.BOARD (BOTTOM VIEW)



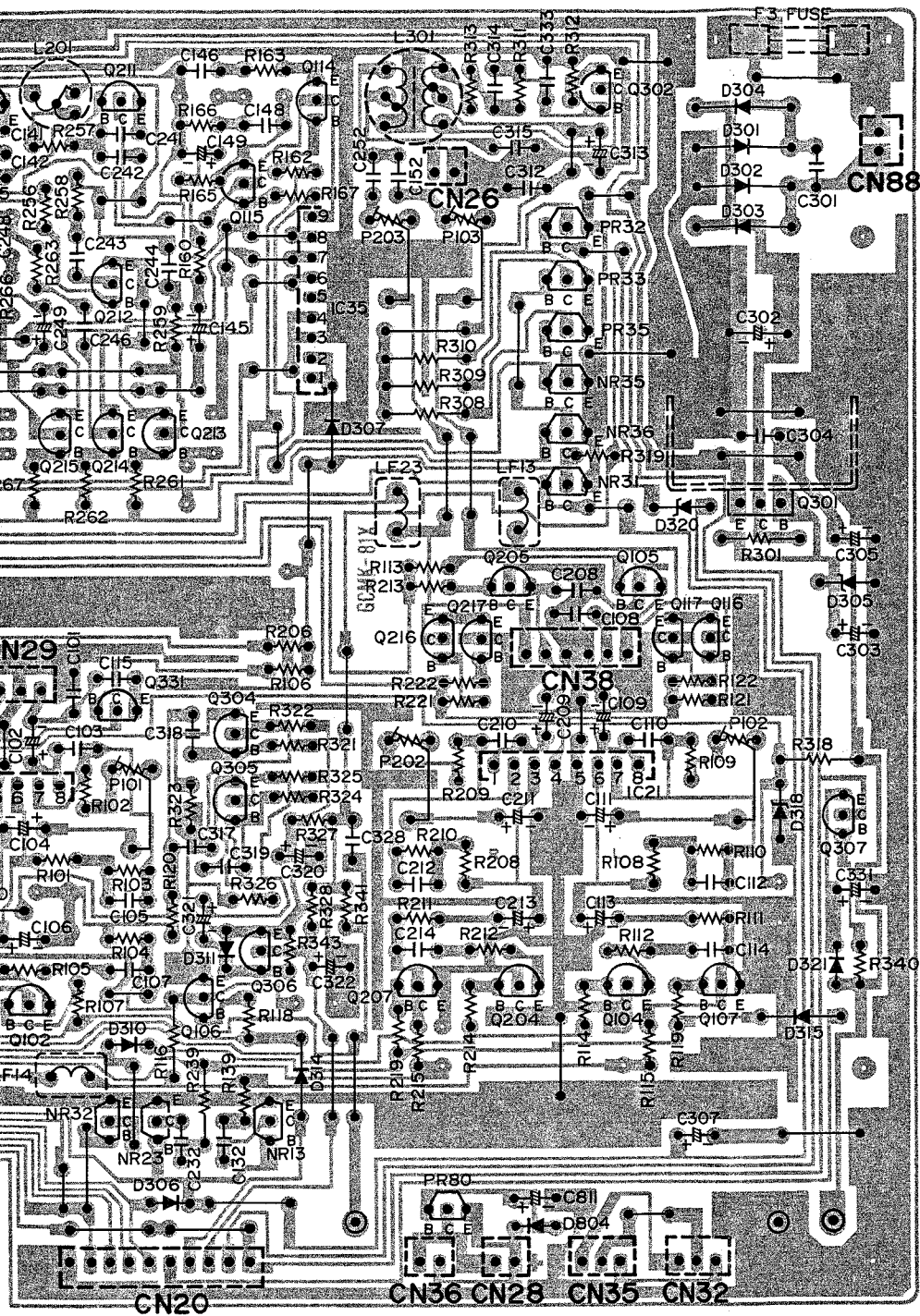


TRANSISTOR DC VOLTAGES

SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q404	2SD400	8.2V	12.1V	7.9V	Q417	2SC536	0.1V	5.1V	5.0V	Q601	2SC1846	34.2V	40.4V	33.5V
Q405	2SD400	8.8V	8.8V	8.2V	Q504	2SD400	10.3V	12.1V	9.7V	Q602	2SD880	12.7V	17.9V	12.1V
Q406	2SA562	7.9V	0V	7.9V	Q505	2SD400	8.8V	8.8V	8.2V	Q603	2SD880	9.4V	17.9V	8.8V
Q407	2SA562	7.9V	0V	7.9V	Q506	2SA562	9.7V	0.2V	9.7V	Q604	2SC1846	5.8V	11.1V	5.2V
Q408	2SC1959	0V	0V	0V	Q507	2SA562	9.7V	0.2V	9.7V	Q607	2SC536	0.7V	0V	0V
Q409	2SC1959	0V	0V	0V	Q508	2SC1959	0.2V	0.2V	4.7V	Q612	2SA608	11.4V	12.0V	12.1V
Q411	2SD1450	2.2V	12.1V	12.1V	Q509	2SC1959	0.2V	0.2V	4.7V					
Q416	2SA608	4.3V	0V	4.3V	Q511	2SD1450	0.1V	0.2V	12.1V					

BOARD

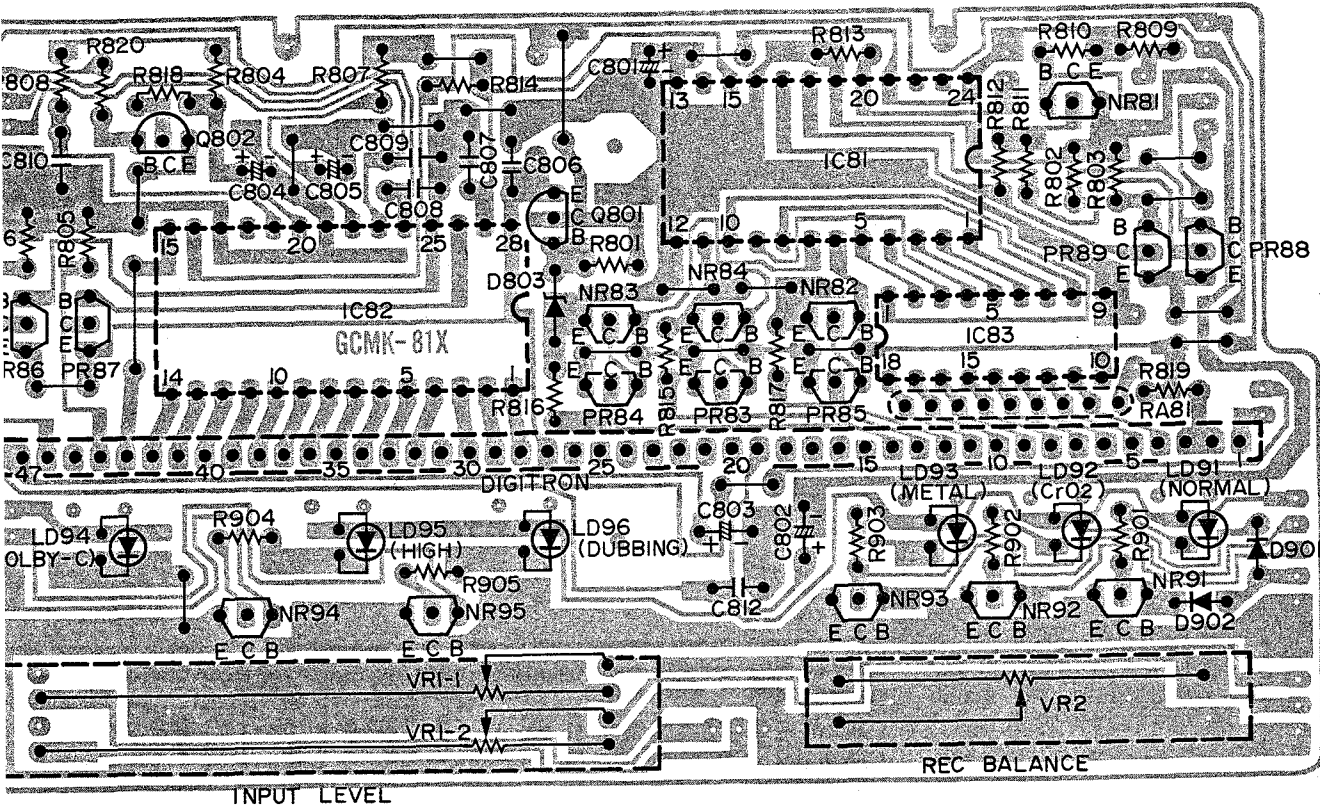
(VIEW)



TRANSISTOR DC VOLTAGES (* = REC Mode)									
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q301	2SD1666	15.6V	20.0V	15.0V	* NR35	RN1201	6.1V	14.6V	15.0V
* Q302	2SC2274	0.9V	13.5V	0.7V	* NR36	RN1205	2.0V	0.1V	0V
Q304	2SC536	0.7V	3.2V	0.1V	* PR32	RN2205	6.1V	14.6V	15.0V
Q305	2SC536	1.3V	3.6V	0.7V	* PR33	RN2205	0.1V	14.4V	14.6V
Q306	2SC536	0V	0.8V	0V	* PR35	RN2205	14.5V	13.4V	14.6V

FL DISPLAY P.C.BOARD

(BOTTOM VIEW)



TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q801	2SD734	29.0V	33.5V	28.4V

IC PIN NUMBERS DC VOLTAGES																						
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
IC81	TC5054P	2.2V	4.4V	4.4V	2.2V	0V	1.1V	2.2V	0.9V	0.9V	0.9V	0.9V	0V	5.0V	-	0.8	0V	5.0	5.0	0V	0V	
		21	22	23	24																	
		5.0V	-	-	5.0V																	
IC82	MSL9359RS	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0.8V	0V	-	1.3V	2.5V	
		21	22	23	24	25	26	27	28													
		0V	1.5V	0V	0V	16.4V	16.4V	5.0V	28.4V													
IC83	LB1290	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
		0.9V	0V	2.2V	0.9V	4.4V	4.4V	2.2V	0.9V	0V	33.8V	6.1	16.3V	32.5V	32.5V	6.1V	16.2V	0V	6.1V			

1 P.C.BOARD

(VIEW)

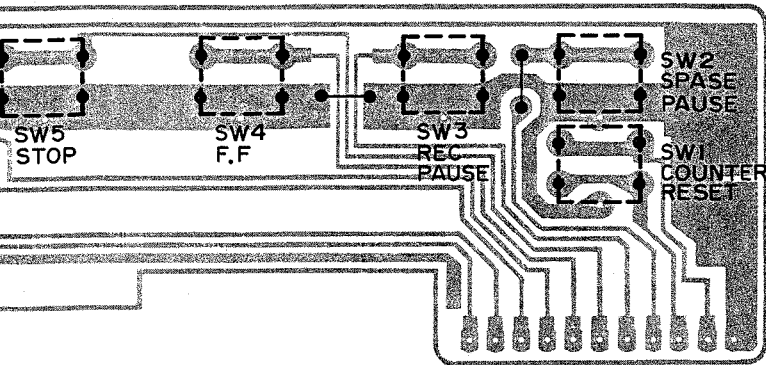
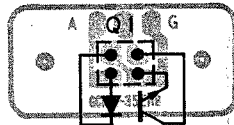


PHOTO P.C.BOARD

(BOTTOM VIEW)



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
AUDIO P.C.B. ASSY							
61	141-0-1939-15831	Audio P.C.B. Assy	1	D301	202-5-2540-13552	Diode, DS 135	1
	4-2369-73780	RT Pin 1P	3	D302	202-5-2540-13552	Diode, DS 135	1
	△ 4-2352-01940	Fuse Clip	2	D303	202-5-2540-13552	Diode, DS 135	1
	131-2-6201-33600	Heatsink (for Q301)	1	D304	202-5-2540-13552	Diode, DS 135	1
CN20	4-2369-71471	Plug 10P	1	D305	202-5-3210-15012	Zener Diode, GZA 15Y	1
CN21	4-2369-73130	Connector 3P	1	D306	202-5-1410-00110	Diode, GMA 01	1
CN26	4-2362-00770	Plug 2P	1	D307	202-5-1410-00110	Diode, GMA 01	1
CN27	4-2362-00770	Plug 2P	1	D308	202-5-1410-00110	Diode, GMA 01	1
CN28	4-2362-00770	Plug 2P	1	D309	202-5-1410-00110	Diode, GMA 01	1
CN29	4-2369-73130	Connector 3P	1	D310	202-5-1410-00110	Diode, GMA 01	1
CN30	4-2369-73130	Connector 3P	1	D311	202-5-1410-00110	Diode, GMA 01	1
CN31	4-2369-73130	Connector 3P	1	D312	202-5-1410-00110	Diode, GMA 01	1
CN32	4-2369-73130	Connector 3P	1	D313	202-5-2810-44210	Diode, DS 442	1
CN33	4-2369-74490	Plug 3P	1	D314	202-5-1410-00110	Diode, GMA 01	1
CN34	4-2369-71482	Plug 3P	1	D315	202-5-2810-44210	Diode, DS 442	1
CN35	4-2369-73130	Connector 3P	1	D316	202-5-1410-00110	Diode, GMA 01	1
CN36	4-2362-00770	Plug 2P	1	D317	202-5-1410-00110	Diode, GMA 01	1
CN37	4-2369-71851	Plug 4P	1	D318	202-5-3210-11012	Zener Diode, GZA 11Y	1
CN38	4-2369-73160	Connector 6P	1	D319	202-5-3210-11013	Zener Diode, GZA 11Z	1
CN39	4-2369-73150	Connector 5P	1	D320	202-5-3210-05613	Zener Diode, GZA5.6Z	1
CN88	4-2362-00770	Plug 2P	1	D321	202-5-1410-00110	Diode, GMA 01	1
F3	△ 4-2349-70380	Fuse (T630mA)	1	D322	4-2029-75070	Diode, DAN209S	1
L101	4-2559-70261	Coil	1	D804	202-5-1410-00110	Diode, GMA 01	1
L201	4-2559-70261	Coil	1	IC11	4-2069-71870	IC, BA 3302	1
L301	4-2589-73220	Coil OSC	1	IC21	4-2069-71870	IC, BA 3302	1
LF11	4-2729-70880	Dolby Filter	1	IC31	4-2069-74870	IC, CX-20187	1
LF12	4-2729-70860	Filter Skewing	1	IC32	4-2069-74450	IC, M5218L	1
LF13	4-2529-70430	Bias Trap	1	IC33	4-2069-75550	IC, BA 6138	1
LF14	4-2529-70420	Bias Trap	1	IC34	4-2069-74450	IC, M5218L	1
LF15	4-2529-70271	Bias Trap Coil	1	IC35	4-2069-74470	IC, TD62554S	1
LF21	4-2729-70880	Dolby Filter	1	Q101	203-5-5083-33165	Transistor, 2SC 3331	1
LF22	4-2729-70860	Filter Skewing	1	Q102	203-5-5000-53660	Transistor, 2SC 536	1
LF23	4-2529-70430	Bias Trap	1	Q104	203-5-5000-53660	Transistor, 2SC 536	1
LF24	4-2529-70420	Bias Trap	1	Q105	4-2039-71420	Transistor, 2SD 1450	1
LF25	4-2529-70271	Bias Trap Coil	1	Q106	4-2039-71420	Transistor, 2SD 1450	1
NR11	4-2039-72640	Digitra, RN1202	1	Q107	4-2039-71420	Transistor, 2SD 1450	1
NR12	4-2039-72620	Digitra, RN1201	1	Q108	203-5-5000-53660	Transistor, 2SC 536	1
NR13	4-2039-72640	Digitra, RN1202	1	Q110	4-2039-71420	Transistor, 2SD 1450	1
NR14	4-2039-72500	Digitra, RN1203	1	Q111	203-5-5000-53660	Transistor, 2SC 536	1
NR21	4-2039-72640	Digitra, RN1202	1	Q112	203-5-5000-53660	Transistor, 2SC 536	1
NR22	4-2039-72620	Digitra, RN1201	1	Q113	203-5-5000-53660	Transistor, 2SC 536	1
NR23	4-2039-72640	Digitra, RN1202	1	Q114	203-5-5000-53660	Transistor, 2SC 536	1
NR24	4-2039-72500	Digitra, RN1203	1	Q115	203-5-5000-53660	Transistor, 2SC 536	1
NR31	4-2039-72640	Digitra, RN1202	1	Q116	203-5-3983-70860	Transistor, 2SC 3708	1
NR32	4-2039-72640	Digitra, RN1202	1	Q117	203-5-3983-70860	Transistor, 2SC 3708	1
NR33	4-2039-72640	Digitra, RN1202	1	Q118	4-2039-71420	Transistor, 2SD 1450	1
NR34	4-2039-72640	Digitra, RN1202	1	Q119	4-2039-71420	Transistor, 2SD 1450	1
NR35	4-2039-72620	Digitra, RN1201	1	Q201	203-5-5083-33165	Transistor, 2SC 3331	1
NR36	4-2039-72630	Digitra, RN1205	1	Q202	203-5-5000-53660	Transistor, 2SC 536	1
NR37	4-2039-72630	Digitra, RN1205	1	Q204	203-5-5000-53660	Transistor, 2SC 536	1
P101	4-2222-01450	Semi-fixed (B-200Ω)	1	Q205	4-2039-71420	Transistor, 2SD 1450	1
P102	4-2222-01450	Semi-fixed (B-200Ω)	1	Q206	4-2039-71420	Transistor, 2SD 1450	1
P103	4-2229-72971	Potentiometer (B-100kΩ)	1	Q207	4-2039-71420	Transistor, 2SD 1450	1
P104	4-2222-01400	Potentiometer (B-100kΩ)	1	Q208	203-5-5000-53660	Transistor, 2SC 536	1
P201	4-2222-01450	Semi-fixed (B-200Ω)	1	Q210	4-2039-71420	Transistor, 2SD 1450	1
P202	4-2222-01450	Semi-fixed (B-200Ω)	1	Q211	203-5-5000-53660	Transistor, 2SC 536	1
P203	4-2229-72971	Potentiometer (B-100kΩ)	1	Q212	203-5-5000-53660	Transistor, 2SC 536	1
P204	4-2222-01400	Potentiometer (B-10kΩ)	1	Q213	203-5-5000-53660	Transistor, 2SC 536	1
PR31	4-2039-72650	Digitra, RN2202	1	Q214	203-5-5000-53660	Transistor, 2SC 536	1
PR32	4-2039-72610	Digitra, RN2205	1	Q215	203-5-5000-53660	Transistor, 2SC 536	1
PR33	4-2039-72610	Digitra, RN2205	1	Q216	203-5-3983-70860	Transistor, 2SC 3708	1
PR35	4-2039-72610	Digitra, RN2205	1	Q217	203-5-3983-70860	Transistor, 2SC 3708	1
PR80	4-2039-72490	Digitra, RN2203	1	Q218	4-2039-71420	Transistor, 2SD 1450	1
				Q219	4-2039-71420	Transistor, 2SD 1450	1

P.C. BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
Q301	203-5-5851-66670	Transistor, 2SD 1666	1	C204	CD2-2-763A-0001V	Electrolytic 220μF 6.3V	1
Q302	203-5-7252-27450	Transistor, 2SC 2274	1	C205	CM2-2-3500-K00SV	Mylar 0.022μF 50V ±10%	1
Q303	203-5-4551-01616	Transistor, 2SA1016	1	C206	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
Q304	203-5-5000-53660	Transistor, 2SC 536	1	C207	CM1-8-3500-K00SV	Mylar 0.018μF 50V ±10%	1
Q305	203-5-5000-53660	Transistor, 2SC 536	1	C208	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
Q306	203-5-5000-53660	Transistor, 2SC 536	1	C209	CD1-0-6500-0001V	Electrolytic 10μF 50V	1
Q307	203-5-7200-60860	Transistor, 2SA 608	1	C210	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
Q308	203-5-5000-53660	Transistor, 2SC 536	1	C211	CD2-2-763A-0001V	Electrolytic 220μF 6.3V	1
C101	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1	C212	CM2-2-3500-K00SV	Mylar 0.022μF 50V ±10%	1
C102	CD1-0-6500-0001V	Electrolytic 10μF 50V	1	C213	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C103	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1	C214	CM1-8-3500-K00SV	Mylar 0.018μF 50V ±10%	1
C104	CD2-2-763A-0001V	Electrolytic 220μF 6.3V	1	C215	CC3-9-1500-KE00C	Ceramic 390pF 50V ±10%	1
C105	CM2-2-3500-K00SV	Mylar 0.022μF 50V ±10%	1	C216	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1
C106	CD1-0-5500-0001V	Electrolytic 1μF 50V	1	C217	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1
C107	CM1-8-3500-K00SV	Mylar 0.018μF 50V ±10%	1	C218	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C108	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1	C219	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1
C109	CD1-0-6500-0001V	Electrolytic 10μF 50V	1	C220	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
C110	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1	C221	CM4-7-2500-K00SV	Mylar 0.0047μF 50V ±10%	1
C111	CD2-2-763A-0001V	Electrolytic 220μF 6.3V	1	C222	CD4-7-4500-0KB1V	Electrolytic 0.47μF 50V	1
C112	CM2-2-3500-K00SV	Mylar 0.022μF 50V ±10%	1	C223	CD1-5-4500-0KB1V	Electrolytic 0.15μF 50V	1
C113	CD1-0-5500-0001V	Electrolytic 1μF 50V	1	C224	CM1-5-3500-K00SV	Mylar 0.015μF 50V ±10%	1
C114	CM1-8-3500-K00SV	Mylar 0.018μF 50V ±10%	1	C225	CD2-2-4500-0KB1V	Electrolytic 0.22μF 50V	1
C115	CC3-9-1500-KE00C	Ceramic 390pF 50V ±10%	1	C226	CM6-8-3500-K00SV	Mylar 0.068μF 50V ±10%	1
C116	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1	C227	CM4-7-3500-K00SV	Mylar 0.047μF 50V ±10%	1
C117	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1	C228	CM6-8-2500-K00SV	Mylar 0.0068μF 50V ±10%	1
C118	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1	C229	CM1-0-3500-K00SV	Mylar 0.01μF 50V ±10%	1
C119	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1	C230	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C120	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1	C231	CM3-3-2500-K00SV	Mylar 0.0033μF 50V ±10%	1
C121	CM4-7-2500-K00SV	Mylar 0.0047μF 50V ±10%	1	C232	CM3-3-2500-K00SV	Mylar 0.0033μF 50V ±10%	1
C122	CD4-7-4500-0KB1V	Electrolytic 0.47μF 50V	1	C233	CD4-7-4500-0001V	Electrolytic 0.47μF 50V	1
C123	CD1-5-4500-0KB1V	Electrolytic 0.15μF 50V	1	C234	CD1-0-4500-0001V	Electrolytic 0.1μF 50V	1
C124	CM1-5-3500-K00SV	Mylar 0.015μF 50V ±10%	1	C235	CD3-3-6100-0001V	Electrolytic 33μF 10V	1
C125	CD2-2-4500-0KB1V	Electrolytic 0.22μF 50V	1	C236	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C126	CM6-8-3500-K00SV	Mylar 0.068μF 50V ±10%	1	C237	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C127	CM4-7-3500-K00SV	Mylar 0.047μF 50V ±10%	1	C238	CD2-2-4500-0001V	Electrolytic 0.22μF 50V	1
C128	CM6-8-2500-K00SV	Mylar 0.0068μF 50V ±10%	1	C239	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C129	CM1-0-3500-K00SV	Mylar 0.01μF 50V ±10%	1	C240	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C130	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1	C241	CM1-2-2500-K00SV	Mylar 0.0012μF 50V ±10%	1
C131	CM3-3-2500-K00SV	Mylar 0.0033μF 50V ±10%	1	C242	CM3-9-2500-K00SV	Mylar 0.0039μF 50V ±10%	1
C132	CM3-3-2500-K00SV	Mylar 0.0033μF 50V ±10%	1	C243	CM2-2-2500-K00SV	Mylar 0.0022μF 50V ±10%	1
C133	CD4-7-4500-0001V	Electrolytic 0.47μF 50V	1	C244	CM1-8-2500-K00SV	Mylar 0.0018μF 50V ±10%	1
C134	CD1-0-4500-0001V	Electrolytic 0.1μF 50V	1	C245	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C135	CD3-3-6100-0001V	Electrolytic 33μF 10V	1	C246	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1
C136	CD1-0-5500-0001V	Electrolytic 1μF 50V	1	C248	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1
C137	CD1-0-6160-0001V	Electrolytic 10μF 16V	1	C249	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C138	CD2-2-4500-0001V	Electrolytic 0.22μF 50V	1	C250	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C139	CD4-7-6160-0001V	Electrolytic 47μF 16V	1	C251	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
C140	CD1-0-5500-0001V	Electrolytic 1μF 50V	1	C252	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1
C141	CM1-2-2500-K00SV	Mylar 0.0012μF 50V ±10%	1	C253	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
C142	CM3-9-2500-K00SV	Mylar 0.0039μF 50V ±10%	1	C254	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C143	CM2-2-2500-K00SV	Mylar 0.0022μF 50V ±10%	1	C301	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C144	CM1-8-2500-K00SV	Mylar 0.0018μF 50V ±10%	1	C302	CD1-0-8250-0001V	Electrolytic 1000μF 25V	1
C145	CD2-2-6160-0001V	Electrolytic 22μF 16V	1	C303	CD4-7-7160-0006V	Electrolytic 470μF 16V	1
C146	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1	C304	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C148	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1	C305	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C149	CD2-2-6160-0001V	Electrolytic 22μF 16V	1	C306	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C150	CD1-0-5500-0001V	Electrolytic 1μF 50V	1	C307	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C151	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1	C308	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C152	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1	C309	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C153	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1	C310	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C154	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1	C311	CD1-0-8160-0006V	Electrolytic 1000μF 16V	1
C201	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1	C312	CC2-2-2500-KE00C	Ceramic 0.0022μF 50V ±10%	1
C202	CD1-0-6500-0001V	Electrolytic 10μF 50V	1	C313	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C203	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1	C314	CM1-0-3500-K00SV	Mylar 0.01μF 50V ±10%	1

P.C. BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty			
C315	CP1-0-3251-J000V	Polypropylen	0.01 μ F	250V	\pm 5%	1	R149	401 030 9207	CARBON 3.3K JA 1/8W	1
C316	CD3-3-7160-0006V	Electrolytic	330 μ F	16V		1	R150	401 030 4707	CARBON 27K JA 1/8W	1
C317	CC6-8-2500-KE00C	Ceramic	0.0068 μ F	50V	\pm 10%	1	R151	401 028 4207	CARBON 100K JA 1/8W	1
C318	CM2-2-3500-K00SV	Mylar	0.022 μ F	50V	\pm 10%	1	R152	401 031 2801	CARBON 39K JA 1/8W	1
C319	CM2-2-3500-K00SV	Mylar	0.022 μ F	50V	\pm 10%	1	R153	401 030 9702	CARBON 33K JA 1/8W	1
C320	CD4-7-6160-0001V	Electrolytic	47 μ F	16V		1	R154	401 031 6601	CARBON 4.7K JA 1/8W	1
C321	CD1-0-5500-0001V	Electrolytic	1 μ F	50V		1	R155	401 030 4202	CARBON 2.7K JA 1/8W	1
C322	CD2-2-6160-0001V	Electrolytic	22 μ F	16V		1	R156	401 030 4202	CARBON 2.7K JA 1/8W	1
C323	CD1-0-7160-0001V	Electrolytic	100 μ F	16V		1	R157	401 030 8705	CARBON 330 JA 1/8W	1
C324	CD1-0-8100-0006V	Electrolytic	1000 μ F	10V		1	R158	401 030 3700	CARBON 270 JA 1/8W	1
C325	CD2-2-7160-0006V	Electrolytic	220 μ F	16V		1	R159	401 032 0103	CARBON 560 JA 1/8W	1
C328	CC1-0-3500-ZG00C	Ceramic	0.01 μ F	50V	+80,-20%	1	R160	401 030 0709	CARBON 22K JA 1/8W	1
C329	CD3-3-6160-0001V	Electrolytic	33 μ F	16V		1	R161	401 030 0204	CARBON 2.2K JA 1/8W	1
C330	CC4-7-1500-KE00C	Ceramic	470pF	50V	\pm 10%	1	R162	401 031 6601	CARBON 4.7K JA 1/8W	1
C331	CD4-7-7160-0006V	Electrolytic	470 μ F	16V		1	R163	401 029 1502	CARBON 15K JA 1/8W	1
C333	CM1-0-3500-K00SV	Mylar	0.01 μ F	50V	\pm 10%	1	R165	401 031 2801	CARBON 39K JA 1/8W	1
R811	CD2-2-6160-0001V	Electrolytic	22 μ F	16V		1	R166	401 029 1502	CARBON 15K JA 1/8W	1
R101	401 032 0608	CARBON 5.6K JA 1/8W	1			1	R167	401 030 0204	CARBON 2.2K JA 1/8W	1
R102	401 029 9102	CARBON 22 JA 1/8W	1			1	R168	401 030 0709	CARBON 22K JA 1/8W	1
R103	401 028 8106	CARBON 120K JA 1/8W	1			1	R201	401 032 0608	CARBON 5.6K JA 1/8W	1
R104	401 030 4202	CARBON 2.7K JA 1/8W	1			1	R202	401 029 9102	CARBON 22 JA 1/8W	1
R105	401 031 2405	CARBON 3.9K JA 1/8W	1			1	R203	401 028 8106	CARBON 120K JA 1/8W	1
R106	401 028 3705	CARBON 10K JA 1/8W	1			1	R204	401 030 4202	CARBON 2.7K JA 1/8W	1
R107	401 029 9706	CARBON 220 JA 1/8W	1			1	R205	401 031 2405	CARBON 3.9K JA 1/8W	1
R108	401 032 0608	CARBON 5.6K JA 1/8W	1			1	R206	401 028 3705	CARBON 10K JA 1/8W	1
R109	401 029 9102	CARBON 22 JA 1/8W	1			1	R207	401 029 9706	CARBON 220 JA 1/8W	1
R110	401 029 2004	CARBON 150K JA 1/8W	1			1	R208	401 032 0608	CARBON 5.6K JA 1/8W	1
R111	401 030 4202	CARBON 2.7K JA 1/8W	1			1	R209	401 029 9102	CARBON 22 JA 1/8W	1
R112	401 031 2405	CARBON 3.9K JA 1/8W	1			1	R210	401 029 2004	CARBON 150K JA 1/8W	1
R113	401 031 6601	CARBON 4.7K JA 1/8W	1			1	R211	401 030 4202	CARBON 2.7K JA 1/8W	1
R114	401 031 6601	CARBON 4.7K JA 1/8W	1			1	R212	401 031 2405	CARBON 3.9K JA 1/8W	1
R115	401 029 1502	CARBON 15K JA 1/8W	1			1	R213	401 031 6601	CARBON 4.7K JA 1/8W	1
R116	401 014 5201	CARBON 15K JA 1/4W	1			1	R214	401 031 6601	CARBON 4.7K JA 1/8W	1
R117	401 029 1502	CARBON 15K JA 1/8W	1			1	R215	401 029 1502	CARBON 15K JA 1/8W	1
R118	401 031 2405	CARBON 3.9K JA 1/8W	1			1	R216	401 029 1502	CARBON 15K JA 1/8W	1
R119	401 031 2405	CARBON 3.9K JA 1/8W	1			1	R217	401 029 1502	CARBON 15K JA 1/8W	1
R120	401 030 9702	CARBON 33K JA 1/8W	1			1	R218	401 031 2405	CARBON 3.9K JA 1/8W	1
R121	401 032 4606	CARBON 6.8K JA 1/8W	1			1	R219	401 031 2405	CARBON 3.9K JA 1/8W	1
R122	401 030 0204	CARBON 2.2K JA 1/8W	1			1	R220	401 018 4903	CARBON 33K JA 1/4W	1
R123	401 032 8703	CARBON 8.2K JA 1/8W	1			1	R221	401 032 4606	CARBON 6.8K JA 1/8W	1
R124	401 032 4606	CARBON 6.8K JA 1/8W	1			1	R222	401 030 0204	CARBON 2.2K JA 1/8W	1
R125	401 032 6808	CARBON 7.5K JA 1/8W	1			1	R223	401 032 8703	CARBON 8.2K JA 1/8W	1
R126	401 028 4702	CARBON 1M JA 1/8W	1			1	R224	401 032 4606	CARBON 6.8K JA 1/8W	1
R127	401 031 4508	CARBON 430 JA 1/8W	1			1	R225	401 032 6808	CARBON 7.5K JA 1/8W	1
R128	401 031 2405	CARBON 3.9K JA 1/8W	1			1	R226	401 028 4702	CARBON 1M JA 1/8W	1
R129	401 030 4202	CARBON 2.7K JA 1/8W	1			1	R227	401 031 4508	CARBON 430 JA 1/8W	1
R130	401 032 4606	CARBON 6.8K JA 1/8W	1			1	R228	401 031 2405	CARBON 3.9K JA 1/8W	1
R131	401 032 4002	CARBON 680 JA 1/8W	1			1	R229	401 030 4202	CARBON 2.7K JA 1/8W	1
R132	401 032 2909	CARBON 6.2K JA 1/8W	1			1	R230	401 032 4606	CARBON 6.8K JA 1/8W	1
R133	401 030 9207	CARBON 3.3K JA 1/8W	1			1	R231	401 032 4002	CARBON 680 JA 1/8W	1
R134	401 030 4707	CARBON 27K JA 1/8W	1			1	R232	401 032 2909	CARBON 6.2K JA 1/8W	1
R135	401 028 3705	CARBON 10K JA 1/8W	1			1	R233	401 030 9207	CARBON 3.3K JA 1/8W	1
R136	401 012 5708	CARBON 1K JA 1/4W	1			1	R234	401 030 4707	CARBON 27K JA 1/8W	1
R138	401 030 4707	CARBON 27K JA 1/8W	1			1	R235	401 028 3705	CARBON 10K JA 1/8W	1
R139	401 030 0709	CARBON 22K JA 1/8W	1			1	R236	401 028 3200	CARBON 1K JA 1/8W	1
R140	401 029 9706	CARBON 220 JA 1/8W	1			1	R238	401 030 4707	CARBON 27K JA 1/8W	1
R141	401 028 4207	CARBON 100K JA 1/8W	1			1	R239	401 016 4806	CARBON 22K JA 1/4W	1
R142	401 028 3200	CARBON 1K JA 1/8W	1			1	R240	401 029 9706	CARBON 220 JA 1/8W	1
R143	401 030 9702	CARBON 33K JA 1/8W	1			1	R241	401 028 4207	CARBON 100K JA 1/8W	1
R144	401 012 5708	CARBON 1K JA 1/4W	1			1	R242	401 028 3200	CARBON 1K JA 1/8W	1
R145	401 029 0406	CARBON 150 JA 1/8W	1			1	R243	401 030 9702	CARBON 33K JA 1/8W	1
R146	401 028 2609	CARBON 100 JA 1/8W	1			1	R244	401 012 5708	CARBON 1K JA 1/4W	1
R147	401 029 9102	CARBON 22 JA 1/8W	1			1	R245	401 029 0406	CARBON 150 JA 1/8W	1
R148	401 031 0203	CARBON 330K JA 1/8W	1			1	R246	401 028 2609	CARBON 100 JA 1/8W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
R247	401 029 9102	CARBON 22 JA 1/8W	1		CONTROL P.C.B. ASSY		
R248	401 031 0203	CARBON 330K JA 1/8W	1	62	141-0-1939-15821	Control P.C.B. Assy	1
R249	401 030 9207	CARBON 3.3K JA 1/8W	1		4-2359-79319	Connector 1P Assy (Mecha)	1
R250	401 030 4707	CARBON 27K JA 1/8W	1		△ 4-2352-01940	Fuse Clip	4
R251	401 028 4207	CARBON 100K JA 1/8W	1		131-2-6201-33600	Heatsink (for Q601)	1
R252	401 031 2801	CARBON 39K JA 1/8W	1		131-2-6201-33600	Heatsink (for Q602)	1
R253	401 030 9702	CARBON 33K JA 1/8W	1		111-2-6220-11100	Wire Wrap Terminal	10
R254	401 031 6601	CARBON 4.7K JA 1/8W	1		143-3-1903-00811	Screw, Brazier Hd. Tapping-B, +M3.0x8	2
R255	401 030 4202	CARBON 2.7K JA 1/8W	1	CN1	4-2362-00770	Plug 2P	1
R256	401 030 4202	CARBON 2.7K JA 1/8W	1	CN2	4-2362-00770	Plug 2P	1
R257	401 030 8705	CARBON 330 JA 1/8W	1	CN3	4-2362-00770	Plug 2P	1
R258	401 030 3700	CARBON 270 JA 1/8W	1	CN4	4-2362-00770	Plug 2P	1
R259	401 032 0103	CARBON 560 JA 1/8W	1	CN5	4-2362-00770	Plug 2P	1
R260	401 030 0709	CARBON 22K JA 1/8W	1	CN6	4-2369-74490	Plug 3P	1
R261	401 030 0204	CARBON 2.2K JA 1/8W	1	CN7	4-2369-74490	Plug 3P	1
R262	401 031 6601	CARBON 4.7K JA 1/8W	1	CN8	4-2369-71482	Plug 3P	1
R263	401 029 1502	CARBON 15K JA 1/8W	1	CN9	4-2369-71482	Plug 3P	1
R265	401 031 2801	CARBON 39K JA 1/8W	1	CN10	4-2369-73130	Connector 3P	1
R266	401 029 1502	CARBON 15K JA 1/8W	1	CN11	4-2369-73140	Connector 4P	1
R267	401 030 0204	CARBON 2.2K JA 1/8W	1	CN12	4-2369-73140	Connector 4P	1
R268	401 030 0709	CARBON 22K JA 1/8W	1	CN13	4-2369-71851	Plug 4P	1
R301	401 016 2208	CARBON 220 JA 1/4W	1	CN14	4-2369-71851	Plug 4P	1
R302	401 018 2800	CARBON 330 JA 1/4W	1	CN15	4-2369-75330	Plug 4P	1
R303	401 028 3705	CARBON 10K JA 1/8W	1	CN16	4-2369-75330	Plug 4P	1
R304	401 028 3705	CARBON 10K JA 1/8W	1	CN17	4-2369-73150	Connector 5P	1
R305	401 021 1906	CARBON 560 JA 1/4W	1	CN18	4-2369-73160	Connector 6P	1
R306	401 028 3705	CARBON 10K JA 1/8W	1	CN19	4-2369-73690	Plug 9P	1
R307	401 028 3705	CARBON 10K JA 1/8W	1	CN20	4-2359-76821	Connector 10P Assy	1
R308	401 018 2800	CARBON 330 JA 1/4W	1	CN21	4-2359-76212	Connector 3P Assy	1
R309	401 014 1203	CARBON 15 JA 1/4W	1	CN22	4-2362-00770	Plug 2P	1
R310	401 017 0807	CARBON 270 JA 1/4W	1	CN23	4-2362-00770	Plug 2P	1
R311	401 028 3705	CARBON 10K JA 1/8W	1	CN24	4-2369-73150	Connector 5P	1
R312	401 028 2104	CARBON 10 JA 1/8W	1	CN25	4-2369-73130	Connector 3P	1
R313	401 029 9102	CARBON 22 JA 1/8W	1	CN45	4-2359-77793	Connector 6P Assy	1
R314	401 018 2800	CARBON 330 JA 1/4W	1	F1	△ 4-2349-70360	Fuse (T1.25A)	1
R315	401 028 3705	CARBON 10K JA 1/8W	1	F2	△ 4-2349-70150	Fuse (T315mA)	1
R316	401 028 3705	CARBON 10K JA 1/8W	1	J2	4-2359-75361	4P Pin Jack (Line)	1
R317	401 012 4107	CARBON 100 JA 1/4W	1	L601	4-2539-70301	Micro Inductor (100μH)	1
R318	401 018 2800	CARBON 330 JA 1/4W	1	NR41	4-2039-72630	Digitra, RN1205	1
R319	401 031 2405	CARBON 3.9K JA 1/8W	1	NR42	4-2039-72500	Digitra, RN1203	1
R320	401 030 4202	CARBON 2.7K JA 1/8W	1	NR43	4-2039-72500	Digitra, RN1203	1
R321	401 032 5603	CARBON 680K JA 1/8W	1	NR44	4-2039-72640	Digitra, RN1202	1
R322	401 028 3705	CARBON 10K JA 1/8W	1	NR45	4-2039-72500	Digitra, RN1203	1
R323	401 028 2609	CARBON 100 JA 1/8W	1	NR46	4-2039-72640	Digitra, RN1202	1
R324	401 032 5603	CARBON 680K JA 1/8W	1	NR47	4-2039-72640	Digitra, RN1202	1
R325	401 028 3705	CARBON 10K JA 1/8W	1	NR51	4-2039-72630	Digitra, RN1205	1
R326	401 032 4002	CARBON 680 JA 1/8W	1	NR52	4-2039-72500	Digitra, RN1203	1
R327	401 028 3200	CARBON 1K JA 1/8W	1	NR53	4-2039-72500	Digitra, RN1203	1
R328	401 033 1000	CARBON 91K JA 1/8W	1	NR61	4-2039-72640	Digitra, RN1202	1
R329	401 028 3705	CARBON 10K JA 1/8W	1	NR62	4-2039-72640	Digitra, RN1202	1
R330	401 031 6601	CARBON 4.7K JA 1/8W	1	NR63	4-2039-72640	Digitra, RN1202	1
R331	401 031 6601	CARBON 4.7K JA 1/8W	1	NR71	4-2039-72640	Digitra, RN1202	1
R332	401 012 5708	CARBON 1K JA 1/4W	1	P401	4-2229-76133	Potentiometer (B-220Ω)	1
R333	401 030 9702	CARBON 33K JA 1/8W	1	P501	4-2229-76133	Potentiometer (B-220Ω)	1
R334	401 028 3705	CARBON 10K JA 1/8W	1	P502	4-2229-76132	Potentiometer (B-33kΩ)	1
R335	401 028 4207	CARBON 100K JA 1/8W	1	PR41	4-2039-72650	Digitra, RN2202	1
R336	401 032 5108	CARBON 68K JA 1/8W	1	PR42	4-2039-72650	Digitra, RN2202	1
R337	401 028 4207	CARBON 100K JA 1/8W	1	PR43	4-2039-72650	Digitra, RN2202	1
R338	401 032 5108	CARBON 68K JA 1/8W	1	PR44	4-2039-72650	Digitra, RN2202	1
R339	401 028 4207	CARBON 100K JA 1/8W	1	PR51	4-2039-72650	Digitra, RN2202	1
R340	401 030 9702	CARBON 33K JA 1/8W	1	PR61	4-2039-72650	Digitra, RN2202	1
R341	401 030 0709	CARBON 22K JA 1/8W	1	PR62	4-2039-72650	Digitra, RN2202	1
R342	401 031 6601	CARBON 4.7K JA 1/8W	1	PR81	4-2039-72650	Digitra, RN2202	1
R343	401 031 7202	CARBON 47K JA 1/8W	1	PR82	4-2039-72650	Digitra, RN2202	1
R344	401 031 2405	CARBON 3.9K JA 1/8W	1				

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
RA41	4-2219-70600	RM8-103J (10kΩx8)	1	D520	202-5-1410-00110	Diode, GMA 01	1
RA42	4-2219-71470	Resistor (22kΩx4)	1	D521	202-5-1410-00110	Diode, GMA 01	1
RA43	4-2219-71330	Resistor (22kΩx3)	1	D601	202-5-3210-06213	Zener Diode, GZA6.2Z	1
RA51	4-2219-70600	RM8-103J (10kΩx8)	1	D602	202-5-3220-33011	Zener Diode, GZA 33X	1
RA52	4-2219-71330	Resistor (22kΩx3)	1	D604	202-5-3210-12013	Zener Diode, GZA 12Z	1
D401	202-5-1410-00110	Diode, GMA 01	1	D605	202-5-3210-09112	Zener Diode, GZA9.1Y	1
D402	202-5-1410-00110	Diode, GMA 01	1	D606	202-5-3210-05112	Zener Diode, GZA5.1Y	1
D403	202-5-1410-00110	Diode, GMA 01	1	D607	202-5-3210-05112	Zener Diode, GZA5.1Y	1
D404	202-5-1410-00110	Diode, GMA 01	1	D608	202-5-3200-02721	Zener Diode, GZA2.7Y	1
D405	202-5-3210-05111	Zener Diode, GZA5.1X	1	D609	202-5-2540-13552	Diode, DS 135	1
D406	202-5-1410-00110	Diode, GMA 01	1	D610	202-5-2540-13552	Diode, DS 135	1
D407	202-5-1410-00110	Diode, GMA 01	1	D611	202-5-2540-13552	Diode, DS 135	1
D408	202-5-2810-44210	Diode, DS 442	1	D612	202-5-2540-13552	Diode, DS 135	1
D409	202-5-1410-00110	Diode, GMA 01	1	D613	202-5-2490-18540	Diode, DS 185	1
D410	202-5-2810-44210	Diode, DS 442	1	D614	202-5-1410-00110	Diode, GMA 01	1
D411	202-5-2810-44210	Diode, DS 442	1	D615	202-5-1410-00110	Diode, GMA 01	1
D412	202-5-2810-44210	Diode, DS 442	1	D616	202-5-2810-44210	Diode, DS 442	1
D413	202-5-2810-44210	Diode, DS 442	1	D617	202-5-1410-00110	Diode, GMA 01	1
D414	202-5-2810-44210	Diode, DS 442	1	D618	202-5-2810-44210	Diode, DS 442	1
D415	202-5-1410-00110	Diode, GMA 01	1	D619	202-5-1410-00110	Diode, GMA 01	1
D416	202-5-1410-00110	Diode, GMA 01	1	D620	202-5-1410-00110	Diode, GMA 01	1
D417	202-5-1410-00110	Diode, GMA 01	1	D621	202-5-1410-00110	Diode, GMA 01	1
D418	202-5-2810-44210	Diode, DS 442	1	D622	202-5-1410-00110	Diode, GMA 01	1
D419	202-5-2810-44210	Diode, DS 442	1	D623	202-5-1410-00110	Diode, GMA 01	1
D420	202-5-1410-00110	Diode, GMA 01	1	D624	202-5-1410-00110	Diode, GMA 01	1
D421	202-5-2810-44210	Diode, DS 442	1	D625	202-5-1410-00110	Diode, GMA 01	1
D422	202-5-1410-00110	Diode, GMA 01	1	D626	202-5-1410-00110	Diode, GMA 01	1
D423	202-5-1410-00110	Diode, GMA 01	1	D627	202-5-1410-00110	Diode, GMA 01	1
D424	202-5-1410-00110	Diode, GMA 01	1	D628	202-5-1410-00110	Diode, GMA 01	1
D425	202-5-1410-00110	Diode, GMA 01	1	D629	202-5-2810-44210	Diode, DS 442	1
D426	202-5-1410-00110	Diode, GMA 01	1	D630	202-5-1410-00110	Diode, GMA 01	1
D427	202-5-2810-44210	Diode, DS 442	1	D631	202-5-1410-00110	Diode, GMA 01	1
D428	202-5-2810-44210	Diode, DS 442	1	D632	202-5-1410-00110	Diode, GMA 01	1
D429	202-5-1410-00110	Diode, GMA 01	1	D633	202-5-1410-00110	Diode, GMA 01	1
D430	202-5-1410-00110	Diode, GMA 01	1	D701	202-5-2810-44210	Diode, DS 442	1
D431	202-5-1410-00110	Diode, GMA 01	1	D702	202-5-1410-00110	Diode, GMA 01	1
D432	202-5-1410-00110	Diode, GMA 01	1	D703	202-5-1410-00110	Diode, GMA 01	1
D433	202-5-1410-00110	Diode, GMA 01	1	D705	202-5-1410-00110	Diode, GMA 01	1
D434	202-5-2810-44210	Diode, DS 442	1	D706	202-5-1410-00110	Diode, GMA 01	1
D435	202-5-1410-00110	Diode, GMA 01	1	D707	202-5-3200-02721	Zener Diode, GZA2.7Y	1
D436	202-5-2810-44210	Diode, DS 442	1	D708	202-5-1410-00110	Diode, GMA 01	1
D437	202-5-1410-00110	Diode, GMA 01	1	D709	202-5-1410-00110	Diode, GMA 01	1
D438	202-5-1410-00110	Diode, GMA 01	1	D710	202-5-1410-00110	Diode, GMA 01	1
D439	202-5-1410-00110	Diode, GMA 01	1	D712	202-5-1410-00110	Diode, GMA 01	1
D440	202-5-1410-00110	Diode, GMA 01	1	D801	202-5-2810-44210	Diode, DS 442	1
D501	202-5-1410-00110	Diode, GMA 01	1	D802	202-5-2810-44210	Diode, DS 442	1
D502	202-5-1410-00110	Diode, GMA 01	1	DA71	4-2029-75070	Diode, DAN209S	1
D503	202-5-1410-00110	Diode, GMA 01	1	IC41	4-2069-73350	IC, BA 6109	1
D504	202-5-1410-00110	Diode, GMA 01	1	IC42	206-5-1296-32410	IC, LA 6324	1
D505	202-5-3210-05111	Zener Diode, GZA5.1X	1	IC43	4-2069-70312	IC, TC 4011 BP	1
D506	202-5-1410-00110	Diode, GMA 01	1	IC44	4-2069-74470	IC, TD62554S	1
D507	202-5-2810-44210	Diode, DS 442	1	IC45	4-2069-74480	IC, TD62551S	1
D508	202-5-1410-00110	Diode, GMA 01	1	IC46	208-5-6006-402347	IC, LM6402-347	1
D509	202-5-1410-00110	Diode, GMA 01	1	IC51	4-2069-73350	IC, BA 6109	1
D510	202-5-2810-44210	Diode, DS 442	1	IC52	206-5-1296-32410	IC, LA 6324	1
D511	202-5-2810-44210	Diode, DS 442	1	IC53	206-5-3285-52210	IC, LA 5522	1
D512	202-5-2810-44210	Diode, DS 442	1	IC56	208-5-6006-402347	IC, LM6402-347	1
D513	202-5-1410-00110	Diode, GMA 01	1	IC61	4-2069-74510	IC, TC 4012 BP	1
D514	202-5-1410-00110	Diode, GMA 01	1	IC62	206-5-9494-08110	IC, LC 4081 B	1
D515	202-5-1410-00110	Diode, GMA 01	1	IC63	4-2069-70312	IC, TC 4011 BP	1
D516	202-5-1410-00110	Diode, GMA 01	1	IC64	4-2069-70312	IC, TC 4011 BP	1
D517	202-5-1410-00110	Diode, GMA 01	1	IC65	4-2069-74500	IC, TC 4082 BP	1
D518	202-5-1410-00110	Diode, GMA 01	1	IC66	4-2069-74480	IC, TD62551S	1
D519	202-5-1410-00110	Diode, GMA 01	1	IC71	4-2069-75230	IC, TMP 4270N 1	1

P.C. BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
IC72	4-2069-70312	IC, TC 4011 BP	1	C418	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
IC73	4-2069-71940	IC, TC 4069 UBP	1	C501	CM4-7-3500-K00SV	Mylar 0.047μF 50V ±10%	1
Q401	203-5-5000-53660	Transistor, 2SC 536	1	C502	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
Q402	203-5-5000-53660	Transistor, 2SC 536	1	C503	CC1-0-4500-ZG00C	Ceramic 0.1μF 50V +80,-20%	1
Q403	203-5-5000-53660	Transistor, 2SC 536	1	C504	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
Q404	203-5-6850-40070	Transistor, 2SD 400	1	C505	CD4-7-7100-0006V	Electrolytic 470μF 10V	1
Q405	203-5-6850-40070	Transistor, 2SD 400	1	C506	CD3-3-6160-0001V	Electrolytic 33μF 16V	1
Q406	4-2039-72240	Transistor, 2SA 562	1	C507	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
Q407	4-2039-72240	Transistor, 2SA 562	1	C508	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1
Q408	4-2039-72230	Transistor, 2SC 1959	1	C509	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1
Q409	4-2039-72230	Transistor, 2SC 1959	1	C510	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
Q410	203-5-5000-53660	Transistor, 2SC 536	1	C511	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
Q411	4-2039-71420	Transistor, 2SD 1450	1	C512	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
Q412	4-2039-72230	Transistor, 2SC 1959	1	C513	CD1-0-4500-0001V	Electrolytic 0.1μF 50V	1
Q413	203-5-5000-53660	Transistor, 2SC 536	1	C514	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
Q414	203-5-5000-53660	Transistor, 2SC 536	1	C601	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
Q415	203-5-7200-60860	Transistor, 2SA 608	1	C602	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
Q416	203-5-7200-60860	Transistor, 2SA 608	1	C603	CD2-2-8250-0001V	Electrolytic 2200μF 25V	1
Q417	203-5-5000-53660	Transistor, 2SC 536	1	C604	CD4-7-7500-0001V	Electrolytic 470μF 50V	1
Q418	203-5-5000-53660	Transistor, 2SC 536	1	C606	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
Q501	203-5-5000-53660	Transistor, 2SC 536	1	C607	CD2-2-7350-0006V	Electrolytic 220μF 35V	1
Q502	203-5-5000-53660	Transistor, 2SC 536	1	C608	CD2-2-7160-0006V	Electrolytic 220μF 16V	1
Q503	203-5-5000-53660	Transistor, 2SC 536	1	C609	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
Q504	203-5-6850-40070	Transistor, 2SD 400	1	C610	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
Q505	203-5-6850-40070	Transistor, 2SD 400	1	C611	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
Q506	4-2039-72240	Transistor, 2SA 562	1	C612	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
Q507	4-2039-72240	Transistor, 2SA 562	1	C613	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
Q508	4-2039-72230	Transistor, 2SC 1959	1	C614	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
Q509	4-2039-72230	Transistor, 2SC 1959	1	C616	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
Q510	203-5-5000-53660	Transistor, 2SC 536	1	C617	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
Q511	4-2039-71420	Transistor, 2SD 1450	1	C618	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
Q512	4-2039-72230	Transistor, 2SC 1959	1	C620	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
Q513	203-5-5000-53660	Transistor, 2SC 536	1	C621	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
Q601	4-2039-70600	Transistor, 2SC 1846	1	C622	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
Q602	TTT--2SD8-80-G	Transistor, 2SD 880	1	C623	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
Q603	TTT--2SD8-80-G	Transistor, 2SD 880	1	C624	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
Q604	4-2039-70600	Transistor, 2SC 1846	1	C625	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
Q605	203-5-5000-53660	Transistor, 2SC 536	1	C626	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
Q606	203-5-5000-53660	Transistor, 2SC 536	1	C627	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
Q607	203-5-5000-53660	Transistor, 2SC 536	1	C628	CD3-3-6100-0001V	Electrolytic 33μF 10V	1
Q608	203-5-5000-53660	Transistor, 2SC 536	1	C629	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
Q609	203-5-5000-53660	Transistor, 2SC 536	1	C630	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
Q610	203-5-5000-53660	Transistor, 2SC 536	1	C631	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
Q611	203-5-5000-53660	Transistor, 2SC 536	1	C632	CD3-3-6100-0001V	Electrolytic 33μF 10V	1
Q612	203-5-7200-60860	Transistor, 2SA 608	1	C633	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
Q701	203-5-5000-53660	Transistor, 2SC 536	1	C634	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
Q702	203-5-5000-53660	Transistor, 2SC 536	1	C635	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
C1	4-2539-70711	CSB-400P Resonator	1	C636	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C2	4-2279-70110	Ceramic OSC 2MHz	1	C637	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C401	CM4-7-3500-K00SV	Mylar 0.047μF 50V ±10%	1	C638	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C402	CD1-0-6160-0001V	Electrolytic 10μF 16V	1	C639	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C403	CC1-0-4500-ZG00C	Ceramic 0.1μF 50V +80,-20%	1	C640	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C404	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1	C641	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C405	CD4-7-7100-0006V	Electrolytic 470μF 10V	1	C642	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C406	CD3-3-6160-0001V	Electrolytic 33μF 16V	1	C643	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C407	CD1-0-6160-0001V	Electrolytic 10μF 16V	1	C645	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C408	CC1-5-1500-KE00C	Ceramic 150pF 50V ±10%	1	C701	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
C409	CD1-0-6160-0001V	Electrolytic 10μF 16V	1	C702	CC6-8-0500-KD00C	Ceramic 68pF 50V ±10%	1
C410	CD4-7-5250-0001V	Electrolytic 4.7μF 25V	1	C703	CC6-8-0500-KD00C	Ceramic 68pF 50V ±10%	1
C411	CD3-3-6160-0001V	Electrolytic 33μF 16V	1	C704	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C413	CC4-7-3500-ZG00C	Ceramic 0.047μF 50V +80,-20%	1	C705	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1
C414	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1	C706	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C416	CD2-2-6160-0001V	Electrolytic 22μF 16V	1	C707	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C417	CD2-2-6160-0001V	Electrolytic 22μF 16V	1	C708	CD2-2-6160-0001V	Electrolytic 22μF 16V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
C709	CD4-7-5250-0001V	Electrolytic 4.7μF 25V	1	R454	401 028 7604	CARBON 12K JA 1/8W	1
C710	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1	R455	401 032 0608	CARBON 5.6K JA 1/8W	1
C711	CD2-2-6160-0001V	Electrolytic 22μF 16V	1	R456	401 030 0709	CARBON 22K JA 1/8W	1
C712	CD2-2-6160-0001V	Electrolytic 22μF 16V	1	R457	401 028 7604	CARBON 12K JA 1/8W	1
C713	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1	R458	401 032 0608	CARBON 5.6K JA 1/8W	1
C714	CD1-0-6160-0001V	Electrolytic 10μF 16V	1	R459	401 028 4207	CARBON 100K JA 1/8W	1
C715	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1	R460	401 030 4707	CARBON 27K JA 1/8W	1
C716	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1	R461	401 032 4606	CARBON 6.8K JA 1/8W	1
C717	CB2-2-6100-0000V	None-polar 22μF 10V	1	R462	401 030 4707	CARBON 27K JA 1/8W	1
R169	401 030 4707	CARBON 27K JA 1/8W	1	R463	401 032 0608	CARBON 5.6K JA 1/8W	1
R269	401 030 4707	CARBON 27K JA 1/8W	1	R464	401 028 7604	CARBON 12K JA 1/8W	1
R401	401 028 3705	CARBON 10K JA 1/8W	1	R465	401 028 7604	CARBON 12K JA 1/8W	1
R402	401 031 7707	CARBON 470K JA 1/8W	1	R466	401 030 9702	CARBON 33K JA 1/8W	1
R403	401 028 4207	CARBON 100K JA 1/8W	1	R467	401 030 4707	CARBON 27K JA 1/8W	1
R404	401 029 2004	CARBON 150K JA 1/8W	1	R468	401 030 9702	CARBON 33K JA 1/8W	1
R405	401 030 1300	CARBON 220K JA 1/8W	1	R469	401 028 3200	CARBON 1K JA 1/8W	1
R406	401 029 1502	CARBON 15K JA 1/8W	1	R470	401 030 9702	CARBON 33K JA 1/8W	1
R407	401 021 6703	CARBON 6.8 JA 1/4W	1	R471	401 029 1502	CARBON 15K JA 1/8W	1
R408	401 031 6106	CARBON 470 JA 1/8W	1	R472	401 028 4207	CARBON 100K JA 1/8W	1
R409	401 028 3200	CARBON 1K JA 1/8W	1	R473	401 032 1100	CARBON 56K JA 1/8W	1
R410	401 028 3705	CARBON 10K JA 1/8W	1	R474	401 029 5500	CARBON 18K JA 1/8W	1
R411	401 028 3705	CARBON 10K JA 1/8W	1	R475	401 029 1502	CARBON 15K JA 1/8W	1
R412	401 030 0204	CARBON 2.2K JA 1/8W	1	R476	401 032 0608	CARBON 5.6K JA 1/8W	1
R413	401 030 0204	CARBON 2.2K JA 1/8W	1	R477	401 031 2405	CARBON 3.9K JA 1/8W	1
R414	401 030 0204	CARBON 2.2K JA 1/8W	1	R478	401 030 9207	CARBON 3.3K JA 1/8W	1
R415	401 030 0204	CARBON 2.2K JA 1/8W	1	R479	401 032 0608	CARBON 5.6K JA 1/8W	1
R416	401 032 0103	CARBON 560 JA 1/8W	1	R480	401 028 3200	CARBON 1K JA 1/8W	1
R417	401 032 1100	CARBON 56K JA 1/8W	1	R481	401 028 4702	CARBON 1M JA 1/8W	1
R418	401 028 2609	CARBON 100 JA 1/8W	1	R482	401 031 7202	CARBON 47K JA 1/8W	1
R419	401 013 6407	CARBON 12K JA 1/4W	1	R483	401 028 7604	CARBON 12K JA 1/8W	1
R420	401 028 4207	CARBON 100K JA 1/8W	1	R484	401 016 3809	CARBON 2.2K JA 1/4W	1
R421	401 028 3705	CARBON 10K JA 1/8W	1	R485	401 031 2405	CARBON 3.9K JA 1/8W	1
R422	401 029 4503	CARBON 180 JA 1/8W	1	R486	401 028 3705	CARBON 10K JA 1/8W	1
R423	401 032 8208	CARBON 820 JA 1/8W	1	R487	401 031 2405	CARBON 3.9K JA 1/8W	1
R424	401 028 3705	CARBON 10K JA 1/8W	1	R488	401 032 8703	CARBON 8.2K JA 1/8W	1
R425	401 028 3705	CARBON 10K JA 1/8W	1	R490	401 012 8105	CARBON 100K JA 1/4W	1
R426	401 032 4002	CARBON 680 JA 1/8W	1	R491	401 021 3009	CARBON 5.6K JA 1/4W	1
R427	401 031 6106	CARBON 470 JA 1/8W	1	R492	401 030 0709	CARBON 22K JA 1/8W	1
R428	401 033 0706	CARBON 9.1K JA 1/8W	1	R493	401 031 7202	CARBON 47K JA 1/8W	1
R429	401 028 3705	CARBON 10K JA 1/8W	1	R494	401 018 4903	CARBON 33K JA 1/4W	1
R430	401 028 3705	CARBON 10K JA 1/8W	1	R495	401 022 1905	CARBON 680 JA 1/4W	1
R431	401 028 3200	CARBON 1K JA 1/8W	1	R496	401 030 9702	CARBON 33K JA 1/8W	1
R432	401 028 4207	CARBON 100K JA 1/8W	1	R501	401 028 3705	CARBON 10K JA 1/8W	1
R433	401 028 3705	CARBON 10K JA 1/8W	1	R502	401 031 7707	CARBON 470K JA 1/8W	1
R434	401 031 2405	CARBON 3.9K JA 1/8W	1	R503	401 028 4207	CARBON 100K JA 1/8W	1
R435	401 031 2405	CARBON 3.9K JA 1/8W	1	R504	401 029 2004	CARBON 150K JA 1/8W	1
R436	401 030 0204	CARBON 2.2K JA 1/8W	1	R505	401 030 1300	CARBON 220K JA 1/8W	1
R437	401 032 0608	CARBON 5.6K JA 1/8W	1	R506	401 029 1502	CARBON 15K JA 1/8W	1
R438	401 028 3200	CARBON 1K JA 1/8W	1	R507	401 021 6703	CARBON 6.8 JA 1/4W	1
R439	401 031 6601	CARBON 4.7K JA 1/8W	1	R508	401 031 6106	CARBON 470 JA 1/8W	1
R440	401 028 4702	CARBON 1M JA 1/8W	1	R509	401 030 4202	CARBON 2.7K JA 1/8W	1
R441	401 028 3705	CARBON 10K JA 1/8W	1	R510	401 028 3705	CARBON 10K JA 1/8W	1
R442	401 016 4806	CARBON 22K JA 1/4W	1	R511	401 028 3705	CARBON 10K JA 1/8W	1
R443	401 022 1905	CARBON 680 JA 1/4W	1	R512	401 030 0204	CARBON 2.2K JA 1/8W	1
R444	401 013 5301	CARBON 1.2K JA 1/4W	1	R513	401 030 0204	CARBON 2.2K JA 1/8W	1
R445	401 028 2609	CARBON 100 JA 1/8W	1	R514	401 030 0204	CARBON 2.2K JA 1/8W	1
R446	401 031 1903	CARBON 390 JA 1/8W	1	R515	401 030 0204	CARBON 2.2K JA 1/8W	1
R447	4-2219-71431	LT Resistor 820 OHM	1	R516	401 031 4508	CARBON 430 JA 1/8W	1
R448	401 032 4606	CARBON 6.8K JA 1/8W	1	R517	401 021 4105	CARBON 56K JA 1/4W	1
R449	401 028 3705	CARBON 10K JA 1/8W	1	R518	401 012 4503	CARBON 100 JA 1/4W	1
R450	401 028 3705	CARBON 10K JA 1/8W	1	R519	401 029 0901	CARBON 1.5K JA 1/8W	1
R451	401 030 0709	CARBON 22K JA 1/8W	1	R520	401 028 4207	CARBON 100K JA 1/8W	1
R452	401 031 2405	CARBON 3.9K JA 1/8W	1	R521	401 012 7009	CARBON 10K JA 1/4W	1
R453	401 030 9702	CARBON 33K JA 1/8W	1	R522	401 029 4503	CARBON 180 JA 1/8W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
R523	401 032 8208	CARBON 820 JA 1/8W	1	R619	401 028 3705	CARBON 10K JA 1/8W	1
R524	401 028 3705	CARBON 10K JA 1/8W	1	R620	401 018 4903	CARBON 33K JA 1/4W	1
R525	401 028 3705	CARBON 10K JA 1/8W	1	R621	401 020 2904	CARBON 47K JA 1/4W	1
R526	401 022 1905	CARBON 680 JA 1/4W	1	R622	401 031 6601	CARBON 4.7K JA 1/8W	1
R527	401 031 6106	CARBON 470 JA 1/8W	1	R623	401 032 1100	CARBON 56K JA 1/8W	1
R528	401 033 0706	CARBON 9.1K JA 1/8W	1	R624	401 028 3705	CARBON 10K JA 1/8W	1
R529	401 028 3705	CARBON 10K JA 1/8W	1	R625	401 031 7202	CARBON 47K JA 1/8W	1
R530	401 028 3705	CARBON 10K JA 1/8W	1	R626	401 028 7604	CARBON 12K JA 1/8W	1
R531	401 028 3200	CARBON 1K JA 1/8W	1	R627	401 031 7202	CARBON 47K JA 1/8W	1
R532	401 028 4207	CARBON 100K JA 1/8W	1	R628	401 030 9702	CARBON 33K JA 1/8W	1
R533	401 028 3705	CARBON 10K JA 1/8W	1	R629	401 030 9702	CARBON 33K JA 1/8W	1
R534	401 031 2405	CARBON 3.9K JA 1/8W	1	R630	401 028 4207	CARBON 100K JA 1/8W	1
R535	401 031 2405	CARBON 3.9K JA 1/8W	1	R631	401 032 1100	CARBON 56K JA 1/8W	1
R536	401 030 0204	CARBON 2.2K JA 1/8W	1	R632	401 028 7604	CARBON 12K JA 1/8W	1
R537	401 032 0608	CARBON 5.6K JA 1/8W	1	R633	401 031 7202	CARBON 47K JA 1/8W	1
R538	401 012 5708	CARBON 1K JA 1/4W	1	R634	401 028 7604	CARBON 12K JA 1/8W	1
R539	401 031 6601	CARBON 4.7K JA 1/8W	1	R635	401 031 7202	CARBON 47K JA 1/8W	1
R540	401 028 4702	CARBON 1M JA 1/8W	1	R637	401 028 3705	CARBON 10K JA 1/8W	1
R541	401 014 5201	CARBON 15K JA 1/4W	1	R638	401 032 0608	CARBON 5.6K JA 1/8W	1
R542	401 029 1502	CARBON 15K JA 1/8W	1	R639	401 030 9702	CARBON 33K JA 1/8W	1
R543	401 032 4002	CARBON 680 JA 1/8W	1	R640	401 029 0901	CARBON 1.5K JA 1/8W	1
R544	401 032 4002	CARBON 680 JA 1/8W	1	R641	401 028 3705	CARBON 10K JA 1/8W	1
R545	401 028 2609	CARBON 100 JA 1/8W	1	R642	401 029 1502	CARBON 15K JA 1/8W	1
R546	401 031 1903	CARBON 390 JA 1/8W	1	R643	401 020 2003	CARBON 4.7K JA 1/4W	1
R547	4-2219-71431	LT Resistor 820 OHM	1	R644	401 020 2003	CARBON 4.7K JA 1/4W	1
R548	401 032 4606	CARBON 6.8K JA 1/8W	1	R645	401 022 9000	CARBON 8.2 JA 1/4W	1
R549	401 028 3705	CARBON 10K JA 1/8W	1	R646	401 028 3705	CARBON 10K JA 1/8W	1
R550	401 028 3705	CARBON 10K JA 1/8W	1	R649	401 030 9702	CARBON 33K JA 1/8W	1
R551	401 030 0709	CARBON 22K JA 1/8W	1	R701	401 028 2609	CARBON 100 JA 1/8W	1
R552	401 014 5201	CARBON 15K JA 1/4W	1	R702	401 028 2609	CARBON 100 JA 1/8W	1
R553	401 031 6601	CARBON 4.7K JA 1/8W	1	R703	401 028 2609	CARBON 100 JA 1/8W	1
R554	401 028 7604	CARBON 12K JA 1/8W	1	R704	401 028 2609	CARBON 100 JA 1/8W	1
R555	401 028 4702	CARBON 1M JA 1/8W	1	R705	401 028 3200	CARBON 1K JA 1/8W	1
R556	401 030 4202	CARBON 2.7K JA 1/8W	1	R706	401 030 0709	CARBON 22K JA 1/8W	1
R557	401 030 9207	CARBON 3.3K JA 1/8W	1	R707	401 028 3200	CARBON 1K JA 1/8W	1
R558	401 028 3705	CARBON 10K JA 1/8W	1	R708	401 031 7707	CARBON 470K JA 1/8W	1
R559	401 030 0709	CARBON 22K JA 1/8W	1	R709	401 030 9702	CARBON 33K JA 1/8W	1
R560	401 028 3200	CARBON 1K JA 1/8W	1	R710	401 028 4207	CARBON 100K JA 1/8W	1
R561	401 028 2609	CARBON 100 JA 1/8W	1	R711	401 031 7202	CARBON 47K JA 1/8W	1
R562	401 032 1100	CARBON 56K JA 1/8W	1	R712	401 029 1502	CARBON 15K JA 1/8W	1
R563	401 032 0608	CARBON 5.6K JA 1/8W	1	R713	401 018 2800	CARBON 330 JA 1/4W	1
R564	401 021 3009	CARBON 5.6K JA 1/4W	1	R714	401 032 0608	CARBON 5.6K JA 1/8W	1
R565	401 028 4207	CARBON 100K JA 1/8W	1	R715	401 029 1502	CARBON 15K JA 1/8W	1
R566	401 028 7109	CARBON 1.2K JA 1/8W	1	R716	401 028 4207	CARBON 100K JA 1/8W	1
R567	401 028 3705	CARBON 10K JA 1/8W	1	R717	401 029 1502	CARBON 15K JA 1/8W	1
R588	401 032 8703	CARBON 8.2K JA 1/8W	1	R718	401 030 0709	CARBON 22K JA 1/8W	1
R601	401 021 1500	CARBON 560 JA 1/4W	1	R719	401 030 0709	CARBON 22K JA 1/8W	1
R602	401 018 2404	CARBON 330 JA 1/4W	1	R720	401 030 9702	CARBON 33K JA 1/8W	1
R603	401 021 1500	CARBON 560 JA 1/4W	1	R721	401 030 9702	CARBON 33K JA 1/8W	1
R604	401 012 5708	CARBON 1K JA 1/4W	1	R722	401 030 0709	CARBON 22K JA 1/8W	1
R605	401 032 4606	CARBON 6.8K JA 1/8W	1	R723	401 028 3705	CARBON 10K JA 1/8W	1
R606	401 030 9702	CARBON 33K JA 1/8W	1	R724	401 023 2802	CARBON 8.2K JA 1/4W	1
R607	401 028 4207	CARBON 100K JA 1/8W	1	R725	401 028 4207	CARBON 100K JA 1/8W	1
R608	401 030 9702	CARBON 33K JA 1/8W	1				
R609	401 028 7604	CARBON 12K JA 1/8W	1				
R610	401 028 4207	CARBON 100K JA 1/8W	1				
R611	401 030 4202	CARBON 2.7K JA 1/8W	1				
R612	401 028 3705	CARBON 10K JA 1/8W	1	63	141-0-1939-15740	Timer P.C.B. Assy	1
R613	401 028 3705	CARBON 10K JA 1/8W	1	CN10	4-2359-76662	Connector 3P Assy	1
R614	401 030 4202	CARBON 2.7K JA 1/8W	1	SW19	4-2319-74200	Slide Switch (Timer Standby)	1
R615	401 031 7202	CARBON 47K JA 1/8W	1				
R616	401 028 3200	CARBON 1K JA 1/8W	1				
R617	401 031 2801	CARBON 39K JA 1/8W	1	64	141-0-1939-15750	Direction LED 1 P.C.B. Assy	1
R618	401 030 9702	CARBON 33K JA 1/8W	1	CN13	4-2359-79186	Connector 4P Assy	1

TIMER P.C.B. ASSY

DIRECTION LED 1 P.C.B. ASSY

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R812	401 032 0608	CARBON 5.6K JA 1/8W	1
R813	401 028 3705	CARBON 10K JA 1/8W	1
R814	401 028 7604	CARBON 12K JA 1/8W	1
R815	401 028 3705	CARBON 10K JA 1/8W	1
R816	401 028 3705	CARBON 10K JA 1/8W	1
R817	401 028 3705	CARBON 10K JA 1/8W	1
R818	401 031 9206	CARBON 51K JA 1/8W	1
R819	401 031 6601	CARBON 4.7K JA 1/8W	1
R820	401 030 0709	CARBON 22K JA 1/8W	1
R901	401 029 0901	CARBON 1.5K JA 1/8W	1
R902	401 029 0901	CARBON 1.5K JA 1/8W	1
R903	401 029 0901	CARBON 1.5K JA 1/8W	1
R904	401 029 0901	CARBON 1.5K JA 1/8W	1
R905	401 029 0901	CARBON 1.5K JA 1/8W	1
RA81	4-2219-71540	Resistor (10kΩx8)	1

LAMP P.C.B. ASSY

71	141-0-1939-15850	Lamp P.C.B. Assy	1
	4-2359-79346	Connector 2P Assy	1
PL1	4-6129-70670	Lamp (8V, 105mA)	1
PL2	4-6129-70670	Lamp (8V, 105mA)	1

SUB REMOCON P.C.B. ASSY

72	141-0-1939-16691	Sub Rimocon P.C.B. Assy	1
	4-2372-00830	EC Terminal 1P	7
CN45	4-2369-73160	Connector 6P	1
CN99	4-2369-76010	Plug 5P	1
NR75	4-2039-72640	Digitra, RN1202	1
PR75	4-2039-72490	Digitra, RN2203	1
D720	202-5-1410-00110	Diode, GMA 01	1
DA72	4-2029-75070	Diode, DAN209S	1
IC74	206-5-8144-06610	IC, LC 4066BH	1
or	4-2069-71930	IC, TC 4066 BP	1
C720	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C721	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C722	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1
R730	401 028 7604	CARBON 12K JA 1/8W	1
R731	401 028 7604	CARBON 12K JA 1/8W	1
R732	401 028 4207	CARBON 100K JA 1/8W	1
R733	401 028 4207	CARBON 100K JA 1/8W	1

PHOTO P.C.B. ASSY

94	141-0-1939-15730	Photo P.C.B. Assy	1
	141-2-4539-06000	Washer Lever Connect	1
CN35	4-2359-77616	Connector 3P Assy	1
Q1	4-2039-72810	Photo Transister, NJL 5146 EBA	1

NOTES:

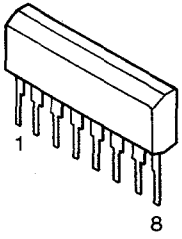
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

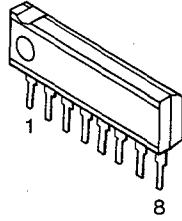
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

SEMICONDUCTOR LEAD IDENTIFICATION

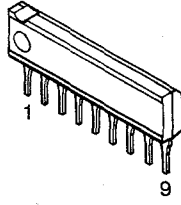
INTEGRATED CIRCUITS



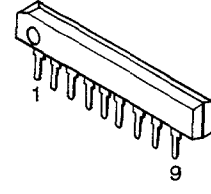
• M 5218 L



• BA 3302



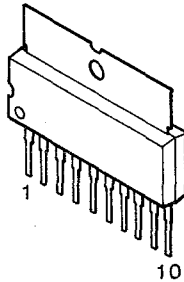
• BA 6138



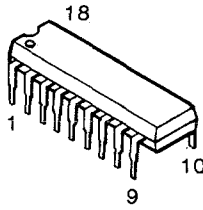
• TD 62554 S
• TD 62551 S



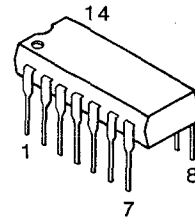
• LA 5522



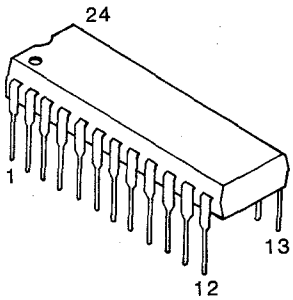
• BA 6109



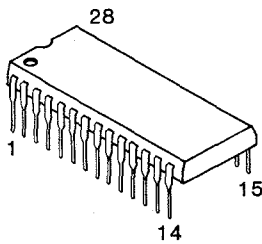
• LB 1290



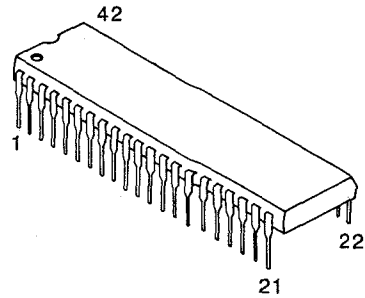
• LA 6324
• TC 4011 BP
• TC 4012 BP
• TC 4069 UBP
• TC 4082 BP
• LC 4066 B
• LC 4081 B



• TC 5054 P



• TMP 4270 N 1
• MSL 9359 RS



• LM 6402-347
• CX 20187

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
LD41	4-2029-73230	LED, LD 001 MG (FWD)	1	CN23	4-2359-79340	Connector 2P Assy	1
LD42	4-2029-73230	LED, LD 001 MG (REV)	1	CN24	131-0-4006-31411	Cord Assy	1
LD43	4-2029-72890	LED, LD 101 VR (REC)	1	CN25	4-2359-79258	Connector 3P Assy	1
DIRECTION LED 2 P.C.B. ASSY				CN30	131-0-4006-31402	Cord Assy	1
65	141-0-1939-15760	Direction LED 2 P.C.B. Assy	1	CN31	4-2359-79259	Connector 3P Assy	1
CN14	4-2359-79186	Connector 4P Assy	1	CN32	131-0-4006-31400	Cord Assy	1
LD51	4-2029-73230	LED, LD 001 MG (FWD)	1	CN34	4-2359-77651	Connector 3P Assy	1
LD52	4-2029-73230	LED, LD 001 MG (REV)	1	CN36	4-2359-79078	Connector 2P Assy	1
LD53	4-2029-75080	LED, LD 101 DU (ASF)	1	CN39	4-2359-78724	Connector 5P Assy	1
HEADPHONE P.C.B. ASSY				NR81	4-2039-72620	Digitra, RN1201	1
66	141-0-1939-15770	Headphone P.C.B. Assy	1	NR82	4-2039-72640	Digitra, RN1202	1
CN33	4-2359-79257	Connector 3P Assy	1	NR83	4-2039-72640	Digitra, RN1202	1
J1	4-2359-77530	Jack 3P Slim	1	NR84	4-2039-72640	Digitra, RN1202	1
FUNCTION SWITCH 1 P.C.B. ASSY				NR91	4-2039-72630	Digitra, RN1205	1
67	141-0-1939-15780	Function Switch 1 P.C.B. Assy	1	NR92	4-2039-72620	Digitra, RN1201	1
SW1	4-2312-05801	Key Board Switch (Counter Reset)	1	NR93	4-2039-72620	Digitra, RN1201	1
SW2	4-2312-05801	Key Board Switch (Space Pause)	1	NR94	4-2039-72640	Digitra, RN1202	1
SW3	4-2312-05801	Key Board Switch (Rec Pause)	1	NR95	4-2039-72640	Digitra, RN1202	1
SW4	4-2312-05801	Key Board Switch (F.F)	1	PR83	4-2039-72490	Digitra, RN2203	1
SW5	4-2312-05801	Key Board Switch (Stope)	1	PR84	4-2039-72490	Digitra, RN2203	1
SW6	4-2312-05801	Key Board Switch (FWD Play)	1	PR85	4-2039-72490	Digitra, RN2203	1
SW7	4-2312-05801	Key Board Switch (REV Play)	1	PR86	4-2039-72490	Digitra, RN2203	1
SW8	4-2312-05801	Key Board Switch (REC)	1	PR87	4-2039-72490	Digitra, RN2203	1
SW9	4-2312-05801	Key Board Switch (REW)	1	PR88	4-2039-72650	Digitra, RN2202	1
	141-2-4729-05000	Staple 5	5	PR89	4-2039-72650	Digitra, RN2202	1
CN19	4-2359-77688	Connector 9P Assy	1	VR1	4-2229-75650	Slide Volume (A-50kΩ)	1
CN28	4-2359-76785	Connector 2P Assy	1	VR2	4-2229-76470	Slide Volume (W-200kΩ)	1
	4-2359-79420	Connector 1P Assy	1	D803	202-5-3220-27013	Zener Diode, GZA 27Z	1
FUNCTION SWITCH 2 P.C.B. ASSY				D901	202-5-1410-00110	Diode, GMA 01	1
68	141-0-1939-15790	Function Switch 2 P.C.B. Assy	1	D902	202-5-1410-00110	Diode, GMA 01	1
SW10	4-2312-05801	Key Board Switch (High Speed Dubbing)	1	IC81	4-2069-75570	IC, TC 5054P	1
SW11	4-2312-05801	Key Board Switch (Normal Speed Dubbing)	1	IC82	4-2069-75580	IC, MSL 9359 RS	1
	141-2-4729-05000	Staple 5	1	IC83	4-2069-75560	IC, TD 62781AP	1
CN11	4-2359-76740	Connector 4P Assy	1		or 206-5-2621-29010	IC, LB 1290	1
CN22	4-2359-79341	Connector 2P Assy	1	LD91	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (Normal)	1
CN37	4-2359-77658	Connector 4P Assy	1	LD92	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (CrO ₂)	1
SW17	4-2319-74200	Slide Switch (Direction Mode)	1	LD93	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (Metal)	1
SW18	4-2319-74200	Slide Switch (Dolby NR)	1	LD94	DYY--SLB-72GG-	LED, SLB 72 GG 4 HL (Dolby-C)	1
FUNCTION SWITCH 3 P.C.B. ASSY				LD95	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (High)	1
69	141-0-1939-15800	Function Switch 3 P.C.B. Assy	1	LD96	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (Dubbing)	1
SW12	4-2312-05801	Key Board Switch (F.F)	1	Q801	203-5-4570-73460	Transistor, 2SD 734	1
SW13	4-2312-05801	Key Board Switch (Stop)	1	Q802	203-5-5000-53660	Transistor, 2SC 536	1
SW14	4-2312-05801	Key Board Switch (FWD Play)	1	C801	CD1-0-6160-0002V	Electrolytic 10μF 16V	1
SW15	4-2312-05801	Key Board Switch (REV Play)	1	C802	CD4-7-6350-0001V	Electrolytic 47μF 35V	1
SW16	4-2312-05801	Key Board Switch (REW)	1	C803	CD2-2-6350-0001V	Electrolytic 22μF 35V	1
	4-2359-79420	Connector 1P Assy	1	C804	CD4-7-5250-0002V	Electrolytic 4.7μF 25V	1
CN18	4-2359-79293	Connector 6P Assy	1	C805	CD3-3-5250-0002V	Electrolytic 3.3μF 25V	1
FL DISPLAY P.C.B. ASSY				C806	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
70	141-0-1939-15810	FL Display P.C.B. Assy	1	C807	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
	141-2-3769-19200	Spacer LED	6	C808	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
	141-2-4469-54900	Cushion Meter	2	C809	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
	4-2149-70060	Digitron	1	C810	CM1-2-3500-J00BV	Mylar 0.012μF 50V ±5%	1
				C812	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
				R801	401 028 3200	CARBON 1K JA 1/8W	1
				R802	401 030 0709	CARBON 22K JA 1/8W	1
				R803	401 030 0709	CARBON 22K JA 1/8W	1
				R804	401 031 9206	CARBON 51K JA 1/8W	1
				R805	401 032 5108	CARBON 68K JA 1/8W	1
				R806	401 032 5108	CARBON 68K JA 1/8W	1
				R807	401 031 0203	CARBON 330K JA 1/8W	1
				R808	401 029 5500	CARBON 18K JA 1/8W	1
				R809	401 032 4002	CARBON 680 JA 1/8W	1
				R810	401 031 6601	CARBON 4.7K JA 1/8W	1
				R811	401 032 0608	CARBON 5.6K JA 1/8W	1

SEMICONDUCTOR LEAD IDENTIFICATION (Continued)

BI-POLAR TRANSISTORS



- 2SA 562
- 2SA 608
- 2SA 1016
- 2SC 536
- 2SC 1959
- 2SC 2274
- 2SC 3331
- 2SC 3708
- 2SD 734



- 2SD 1012
- RN 1201
- RN 1202
- RN 1203
- RN 1205
- RN 2202
- RN 2203
- RN 2205



- 2SD 400



- 2SD 1450



- 2SC 1846

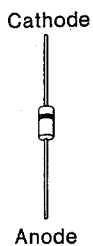


- 2SD 880



- 2SD 1666

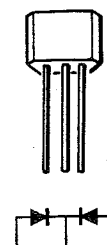
DIODES



- DS 135
- DS 442
- GMA 01
- GZA 2.7 Y
- GZA 5.1 X
- GZA 5.1 Y
- GZA 5.6 Z
- GZA 6.2 Z
- GZA 9.1 Y
- GZA 11 X
- GZA 11 Y
- GZA 12 Z
- GZA 15 Y
- GZA 33 X

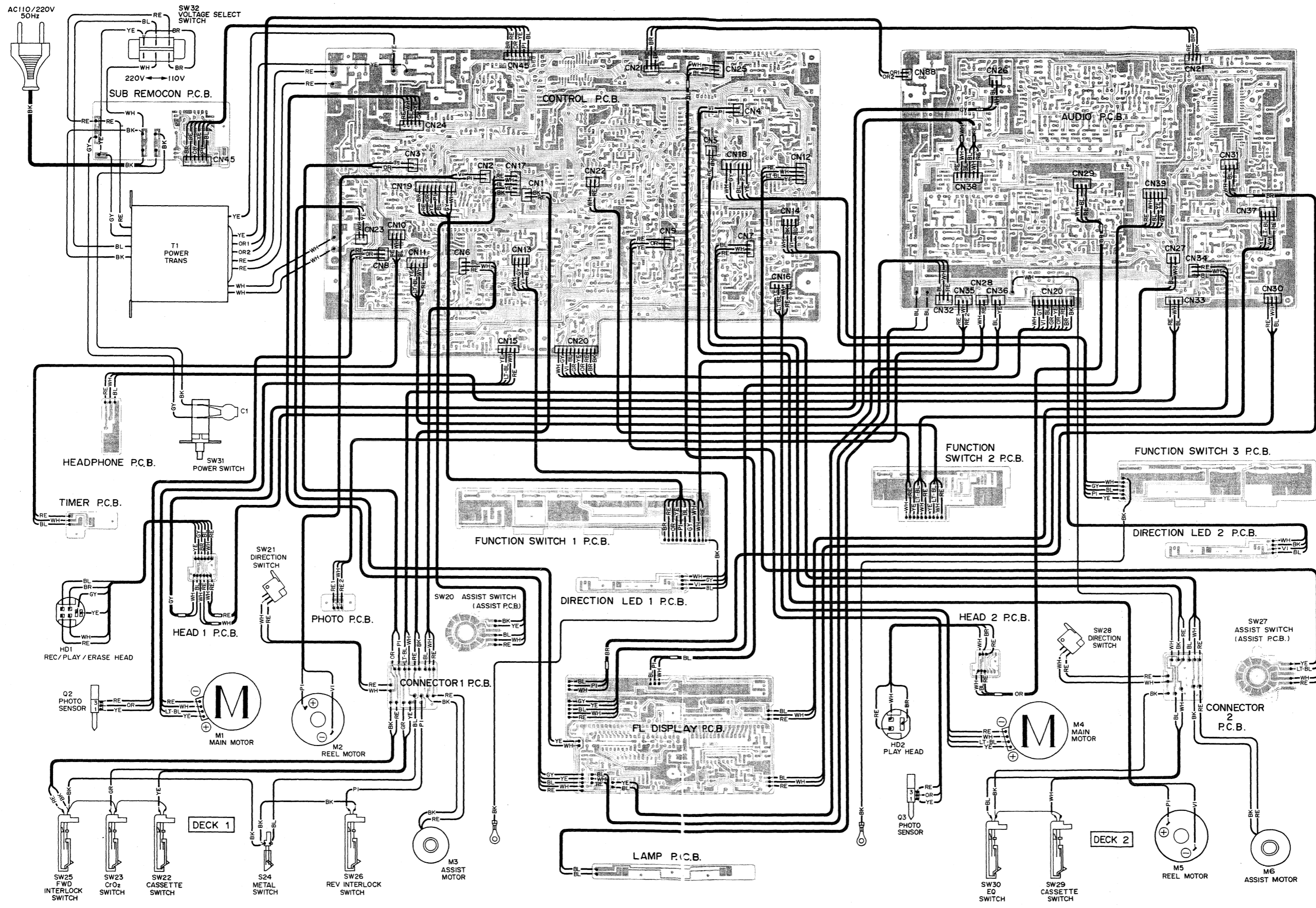


- DS 185

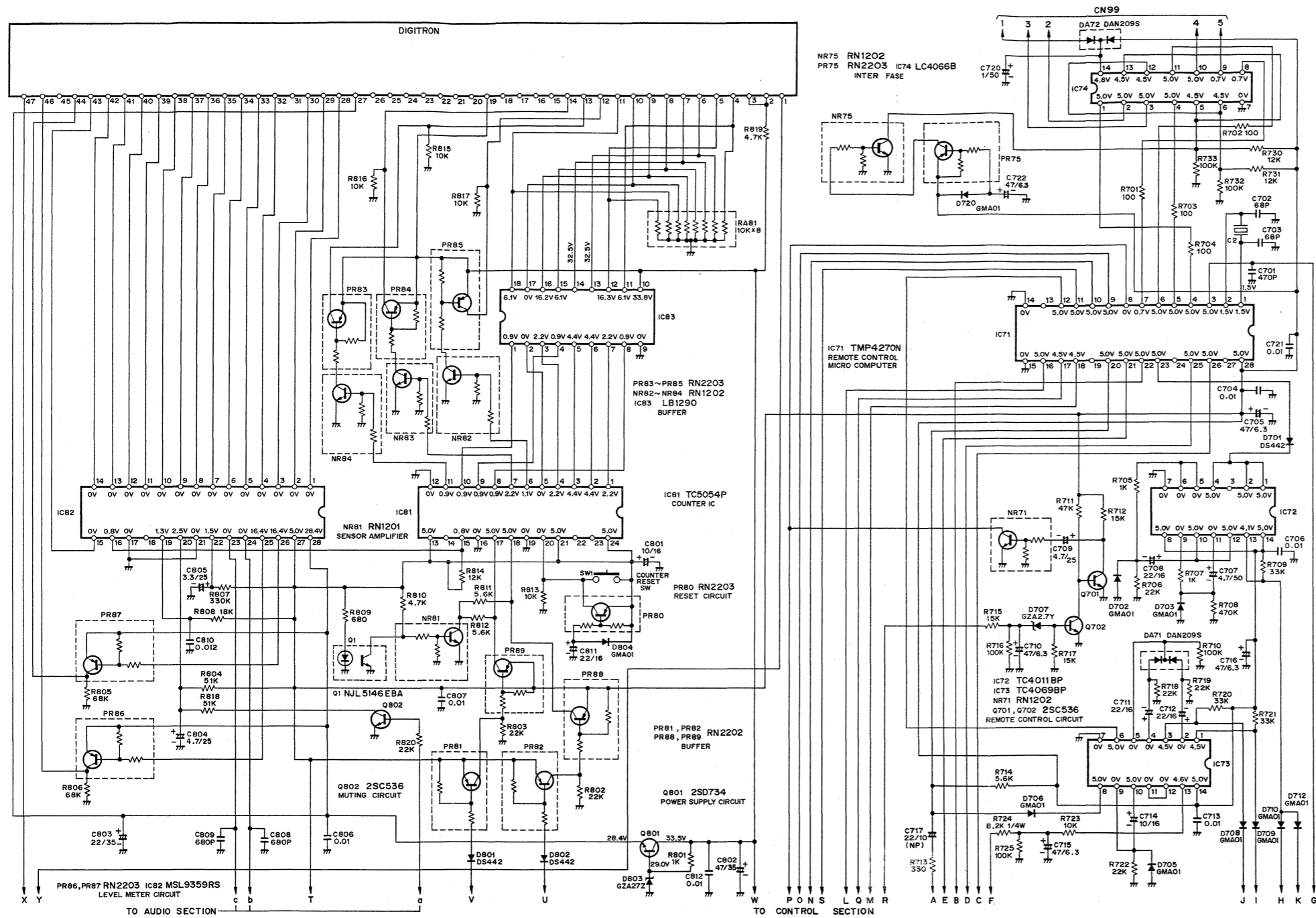


- DAN 209 S

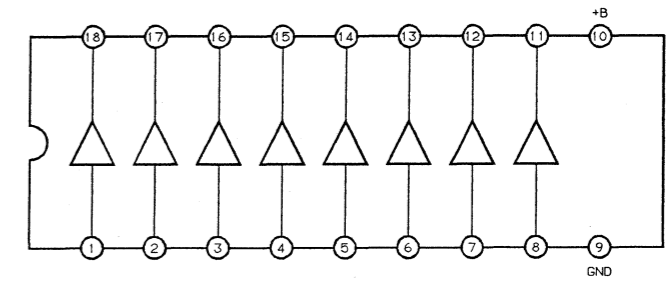
POINT TO POINT WIRING DIAGRAM



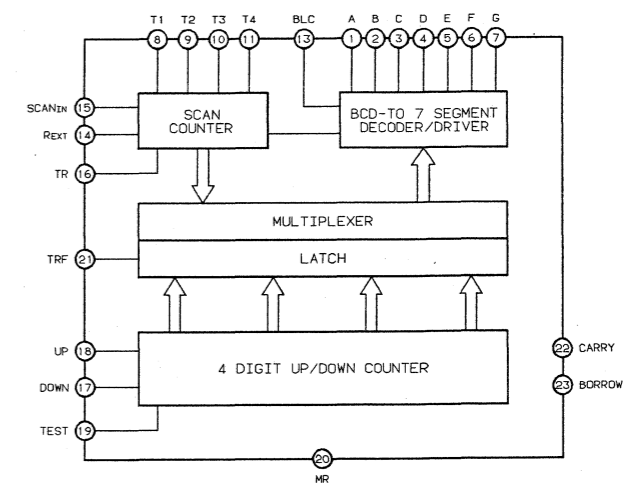
SCHEMATIC DIAGRAM (FL METER / REMOTE CONTROL SECTION)



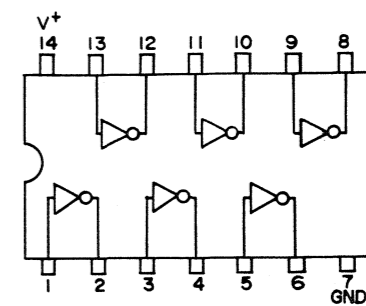
BUFFERIC LB 1290



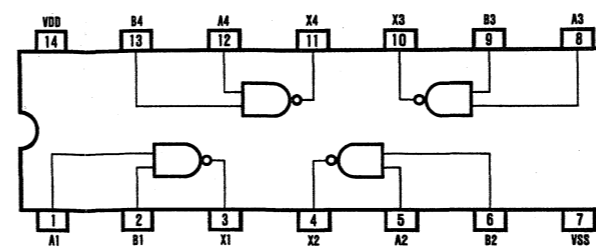
COUNTERIC TC 5054 P



HEX INVERTER IC TC 4069 UBP



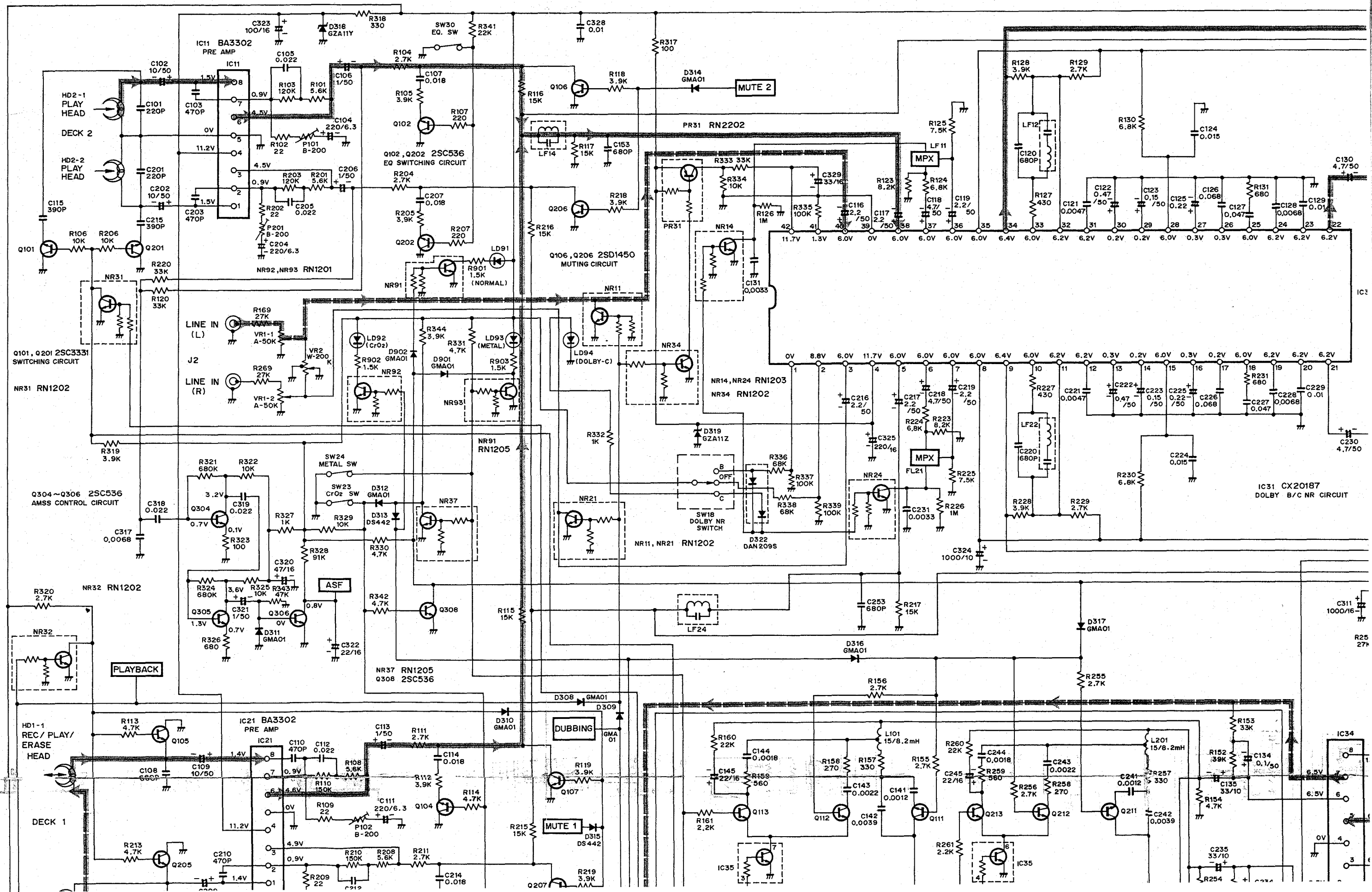
NAND GATE IC TC 4011 BP

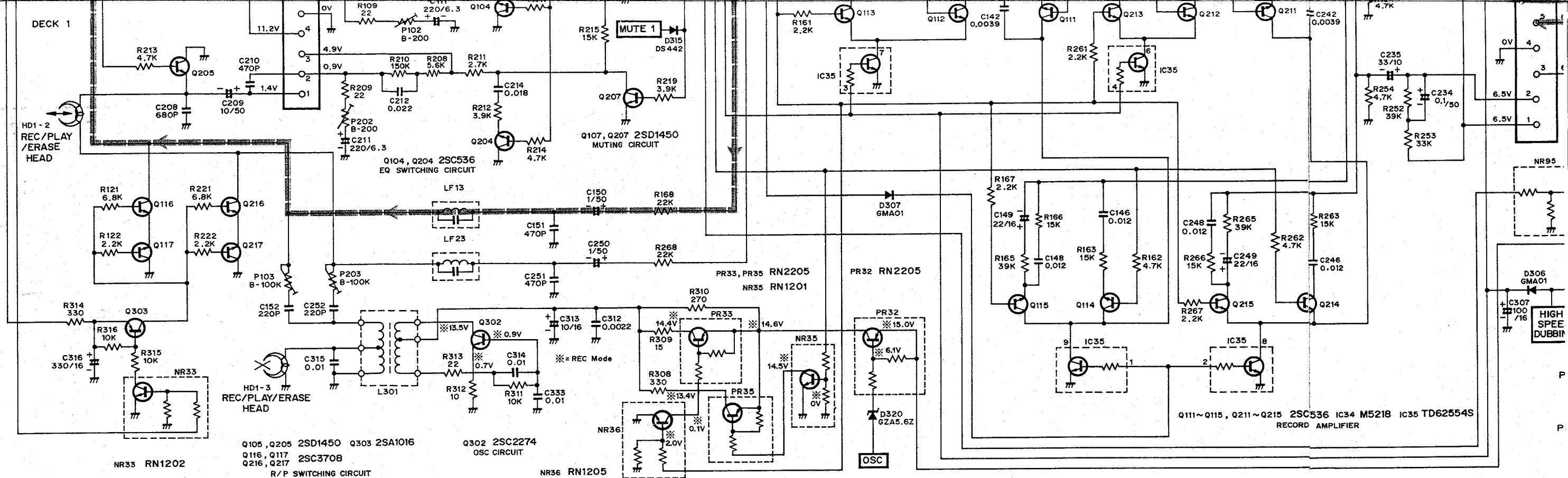


NOTES:

1. All resistors values are indicated in "ohm" ($K=10^3, M=10^6$).
 2. All capacitors values are indicated in " μF " ($P=10^{-12}$).
 3. All voltages indicated on the schematics are measured under the following conditions.
 - a. Use a V.T.V.M.
 - b. All voltages $\pm 10\%$ with respect to chassis ground
 - c. No signals at input terminals
 - d. AC input at 220 volts 50 Hz
 4. This is a basic schematic diagram.
- Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

SCHEMATIC DIAGRAM (Audio Section)





—————→ Signal flow of **PLAY**
 - - - - -→ Signal flow of **RECORD**

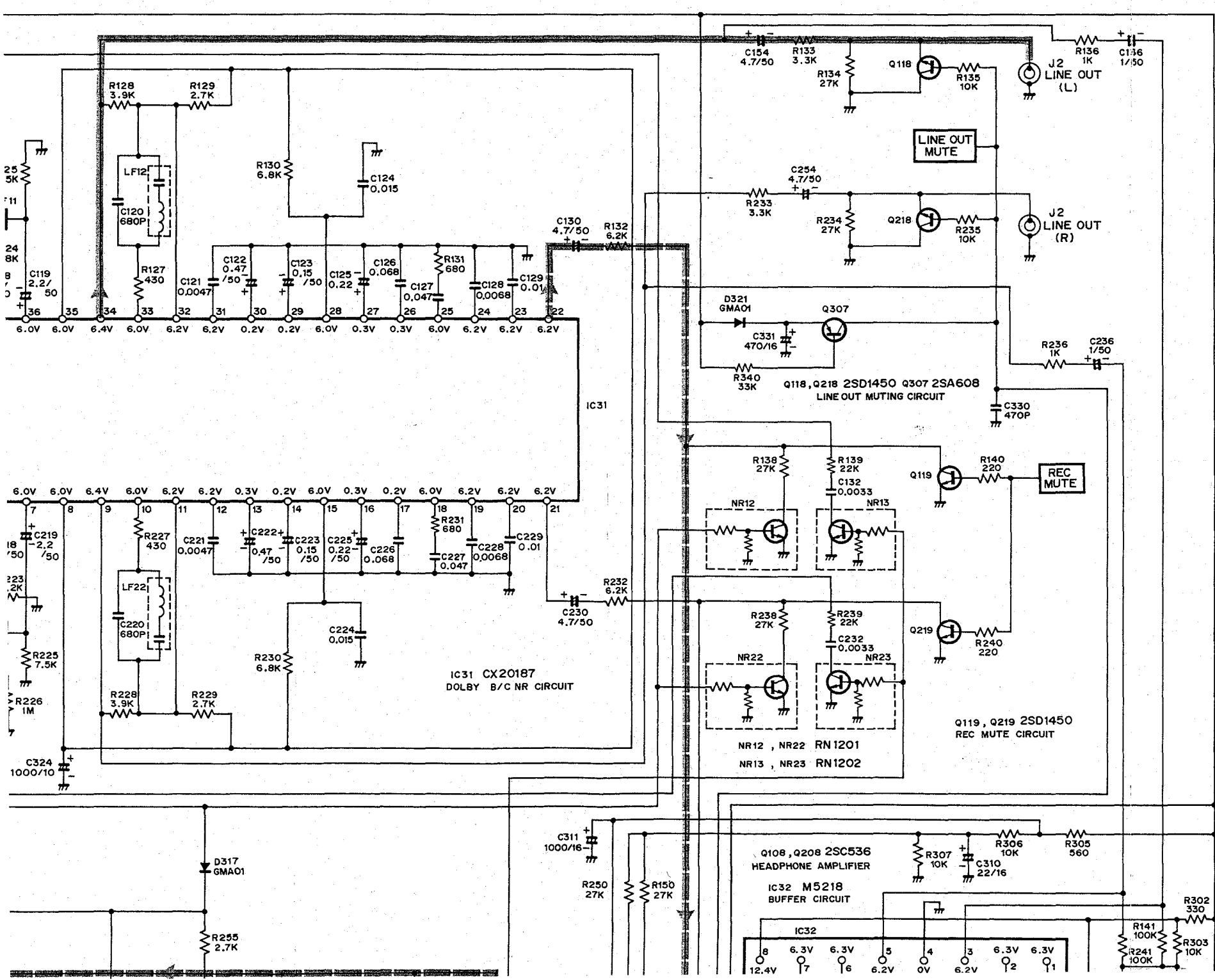
No.	Name	Position	No.	Name	Position
SW1	Counter Reset Switch (Deck 1)	OFF	SW17	Direction Mode Switch	ONE-CYCLE
SW2	Space Pause Switch (Deck 1)	OFF	SW18	Dolby NR Switch	OFF
SW3	REC Pause Switch (Deck 1)	OFF	SW19	Timer Standby Switch	OFF
SW4	F.F Switch (Deck 1)	OFF	SW20	Assist Switch (Deck 1)	STOP
SW5	Stop Switch (Deck 1)	OFF	SW21	Direction Switch (Deck 1)	FWD
SW6	FWD Play Switch (Deck 1)	OFF	SW22	Cassette Switch (Deck 1)	OFF
SW7	REV Play Switch (Deck 1)	OFF	SW23	CrO ₂ Switch (Deck 1)	OFF
SW8	REC Switch (Deck 1)	OFF	SW24	Metal Switch (Deck 1)	OFF
SW9	REW Switch (Deck 1)	OFF	SW25	FWD Interlock Switch (Deck 1)	OFF
SW10	High Speed Dubbing Switch	OFF	SW26	REV Interlock Switch (Deck 1)	OFF
SW11	Normal Speed Dubbing Switch	OFF	SW27	Assist Switch (Deck 2)	STOP
SW12	F.F Switch (Deck 2)	OFF	SW28	Direction Switch (Deck 2)	FWD
SW13	Stop Switch (Deck 2)	OFF	SW29	Cassette Switch (Deck 2)	OFF
SW14	FWD Play Switch (Deck 2)	OFF	SW30	EQ. Switch (Deck 2)	OFF
SW15	REV Play Switch (Deck 2)	OFF	SW31	Power Switch	OFF
SW16	REW Switch (Deck 2)	OFF	SW32	Voltage Select Switch	220V

NOTES:

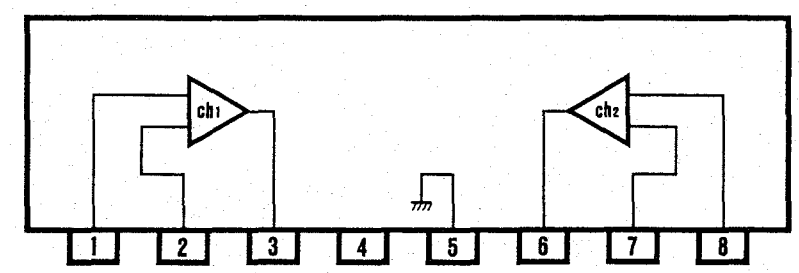
- All resistors values are indicated in "ohm" (K=10³, M=10⁶).
 - All capacitors values are indicated in "μF" (P=10⁻¹²).
 - All voltages indicated on the schematics are measured under the following conditions.
 - Use a V.T.V.M.
 - This is a basic schematic diagram.
- Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

Fisher 3482

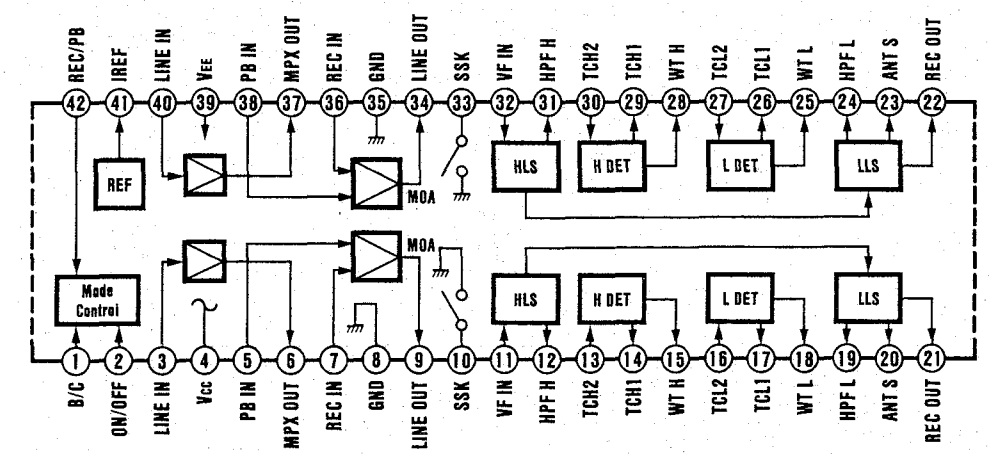
M (Audio Section)

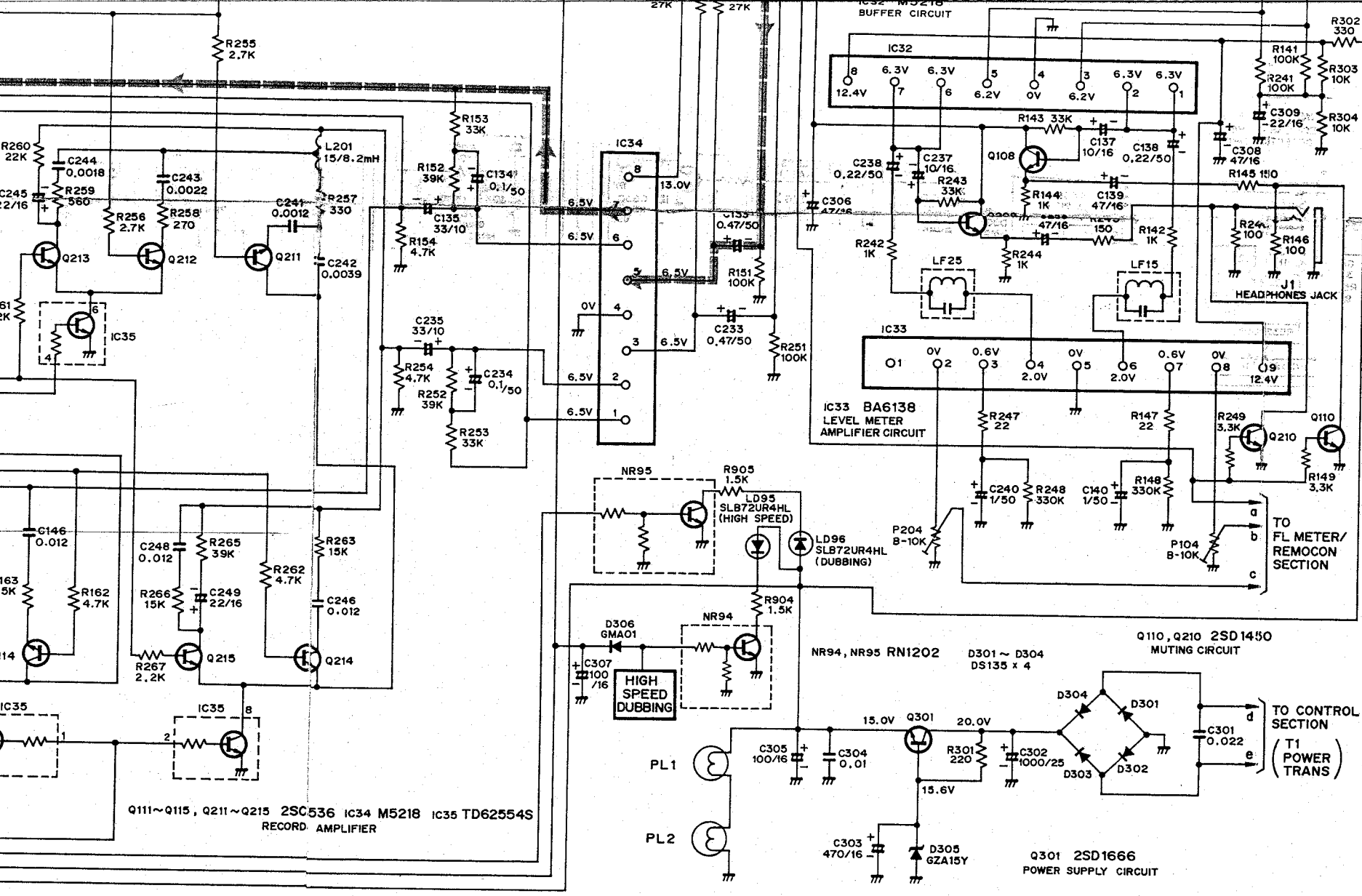


PRE-AMP IC BA 3302

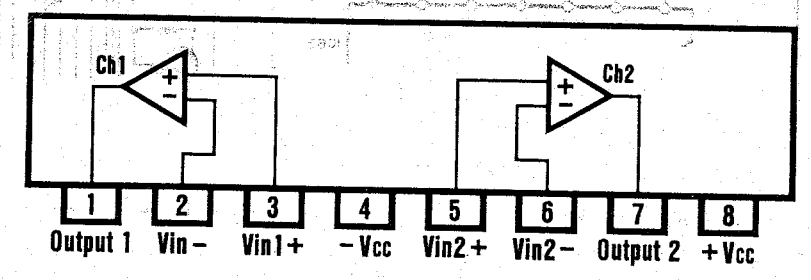


DOLBY IC CX 20187

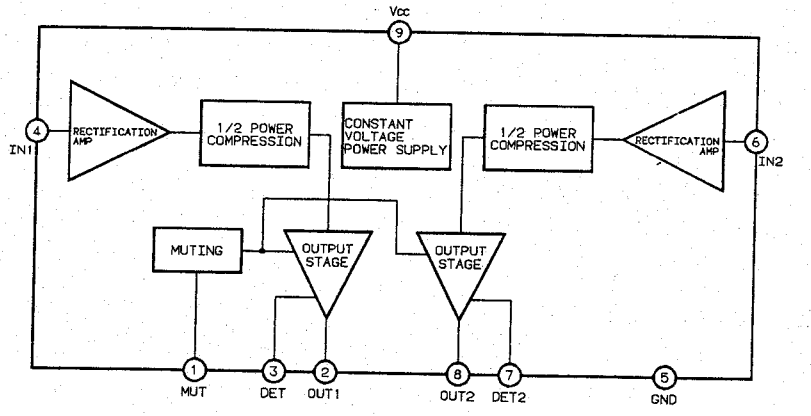




REC AMP / BUFFER IC M5218 L

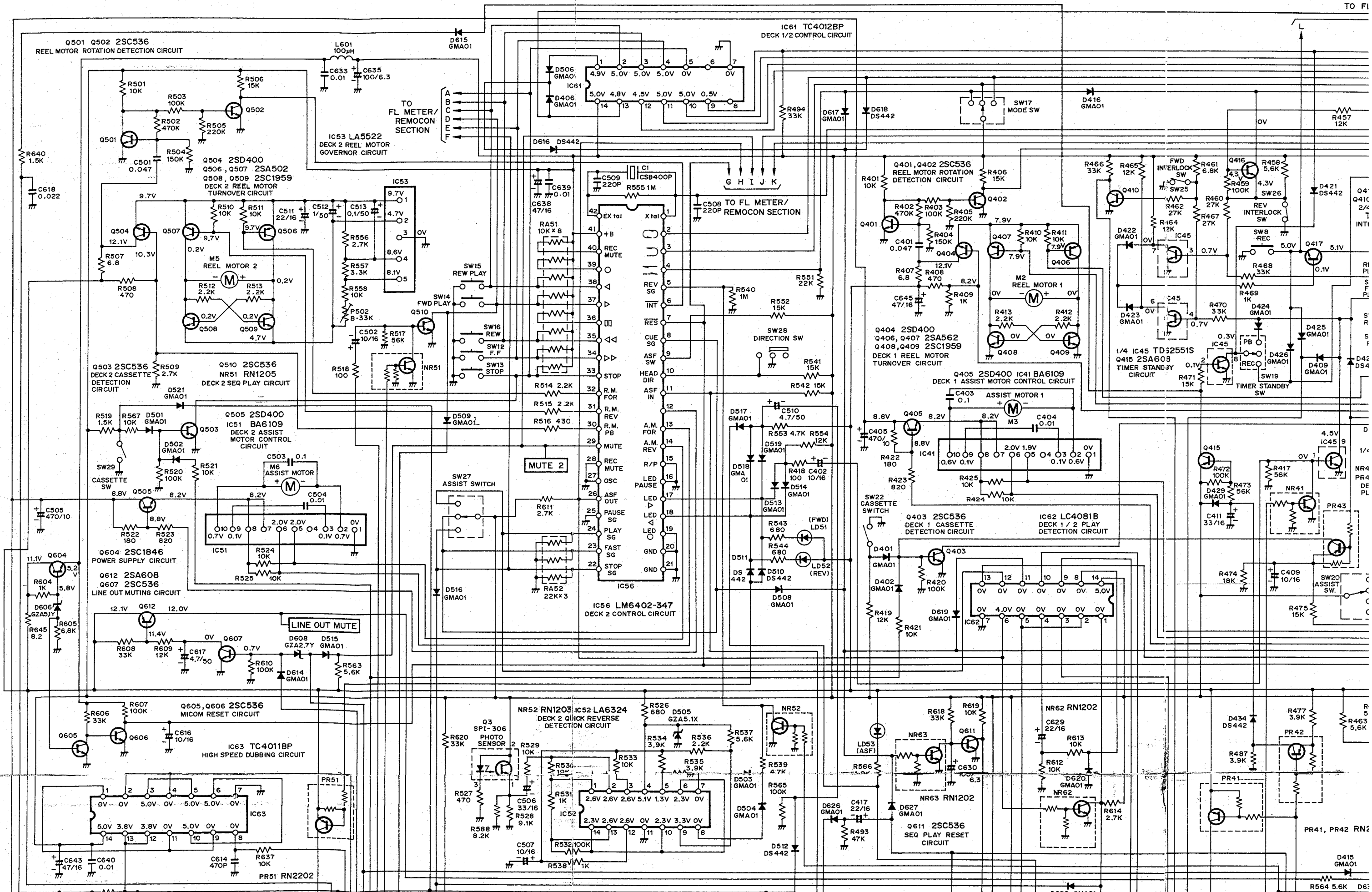


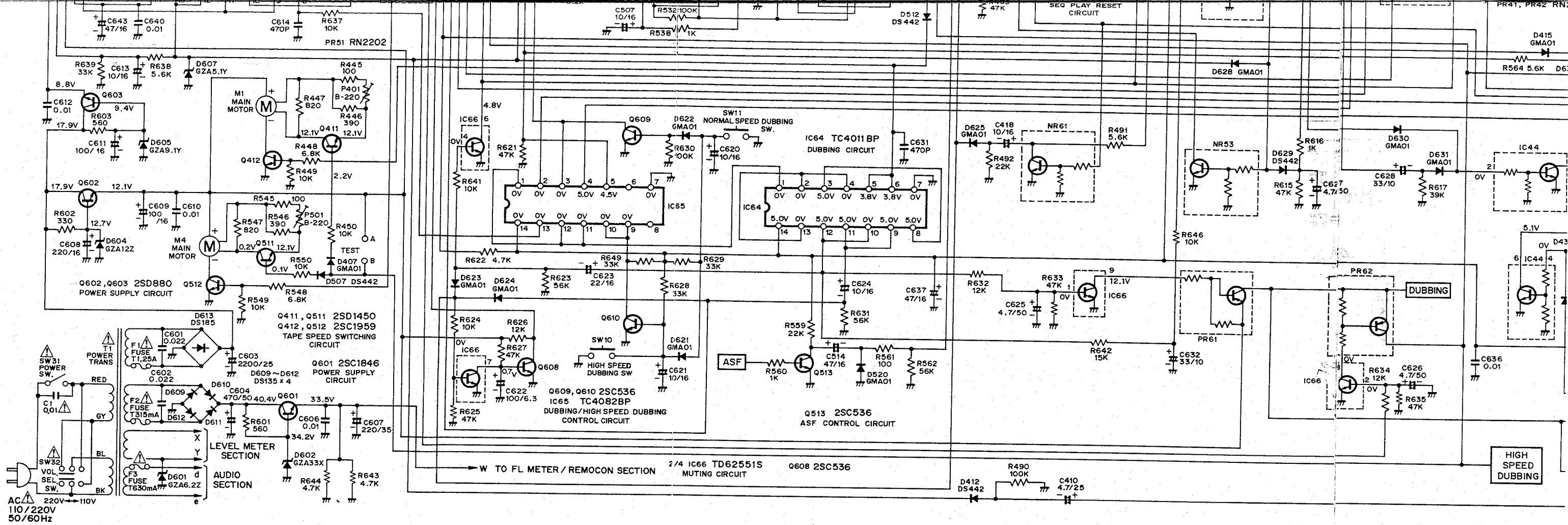
LEVEL METER IC BA 6138



1 voltages $\pm 10\%$ with respect to chassis ground
 2 signals at input terminals
 3 input at 220 volts 50 Hz
 4 is a basic schematic diagram.
 5 reserves the right to make any changes or

SCHEMATIC DIAGRAM (Control Section)





PRODUCT SAFETY NOTICE

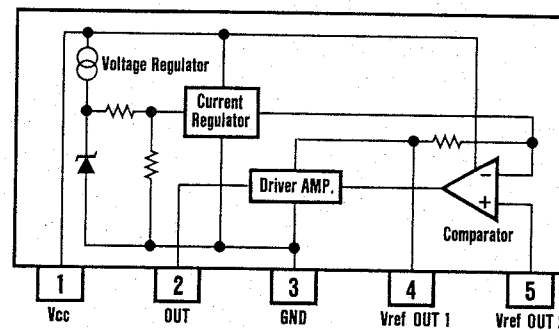
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTES:

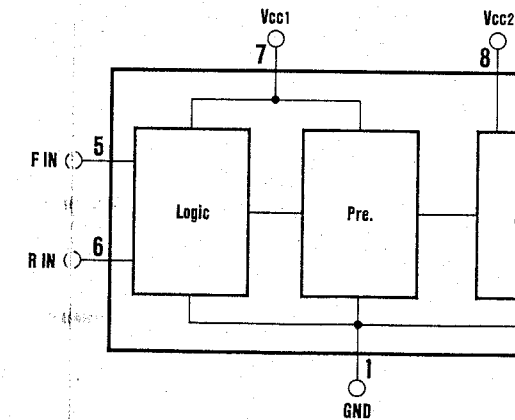
1. All resistors values are indicated in "ohm" (K=10³, M=10⁶).
 2. All capacitors values are indicated in "μF" (P=10⁻¹²).
 3. All voltages indicated on the schematics are measured under the following conditions.
 - a. Use a V.T.V.M.
 4. This is a basic schematic diagram.
- b. All voltages ±10% with respect to chassis ground
 c. No signals at input terminals
 d. AC input at 220 volts 50 Hz

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

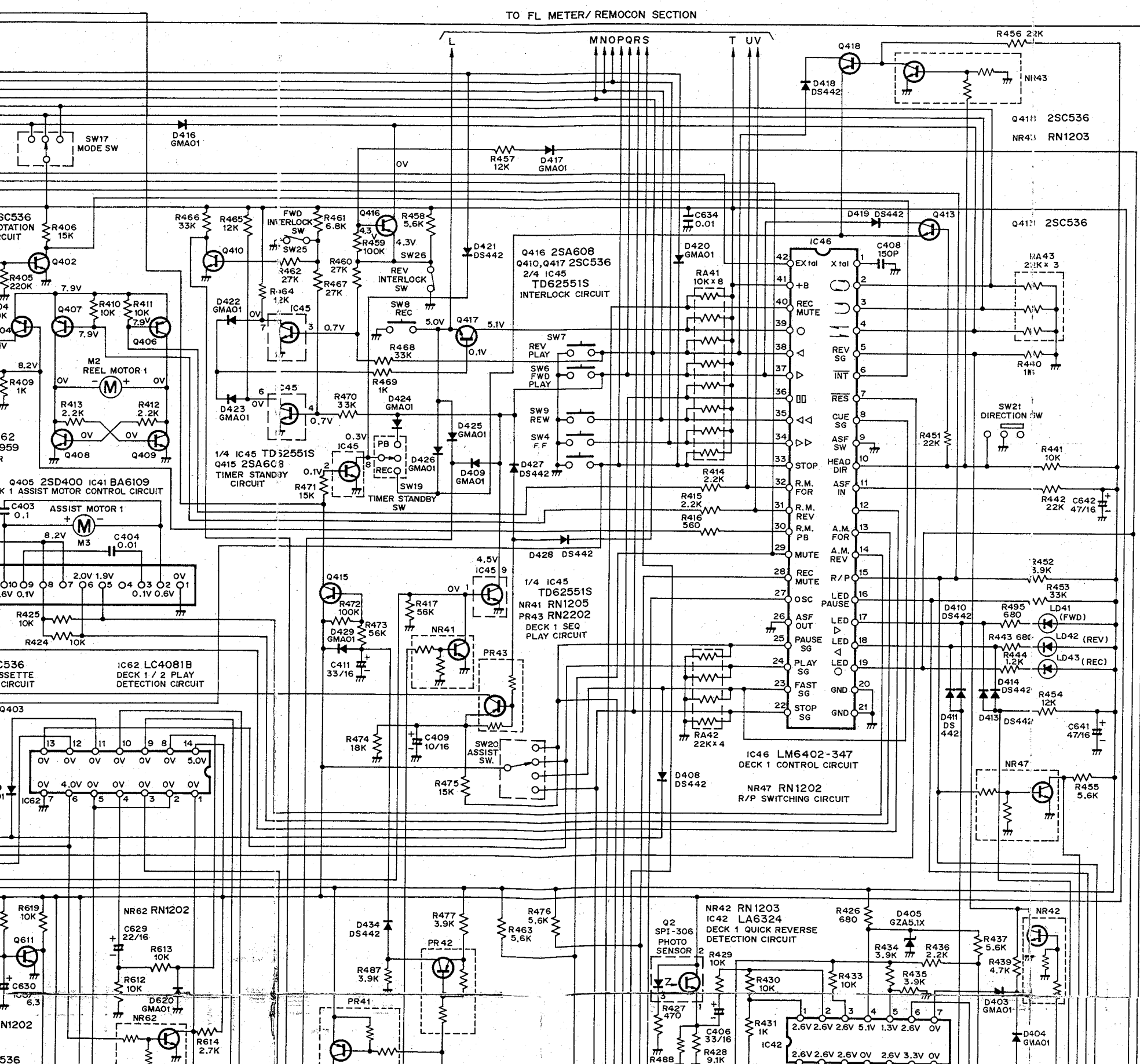
MOTOR GOVERNOR IC LA 5522



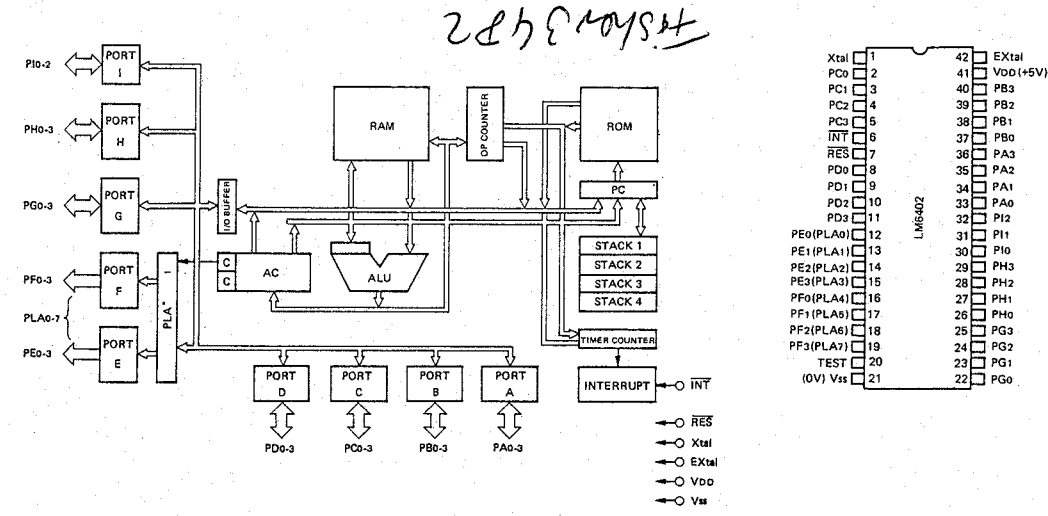
MOTOR CONTROL IC BA 6109



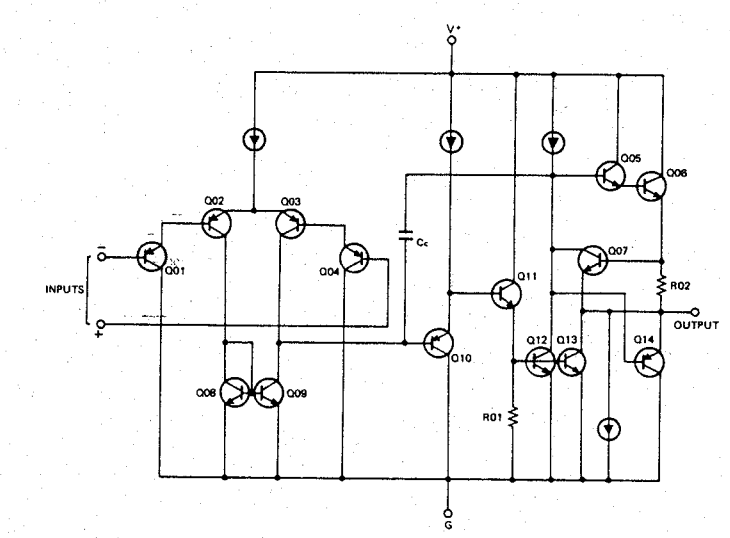
(Control Section)



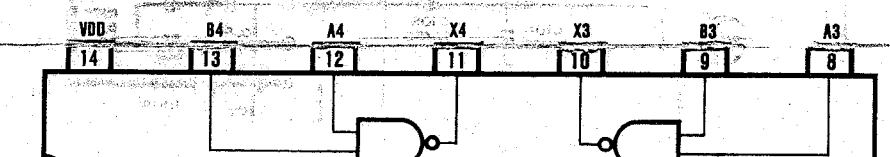
CONTROL IC LM 6402

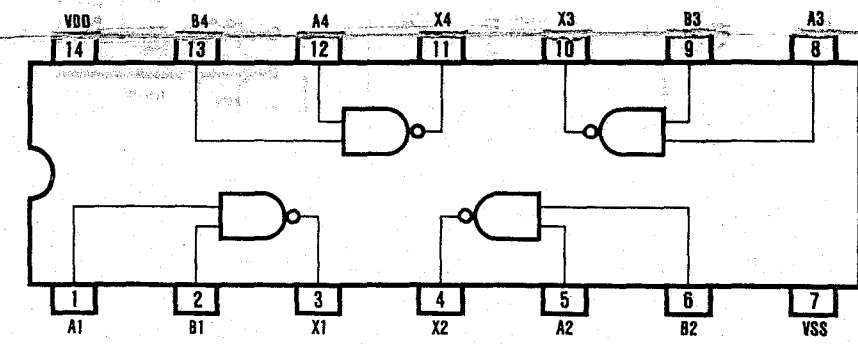
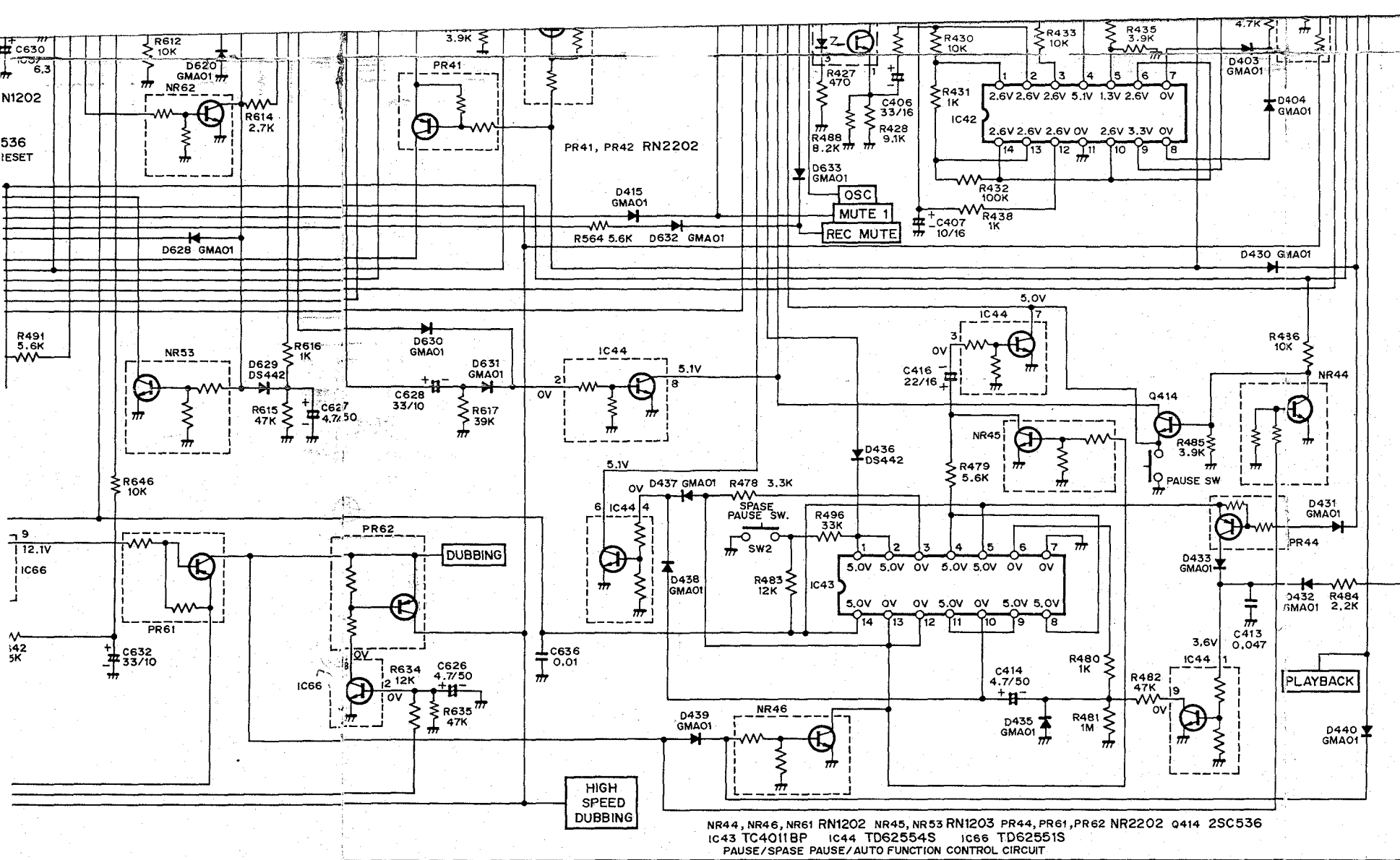


QUICK REVERSE DETECTION IC LA 6324

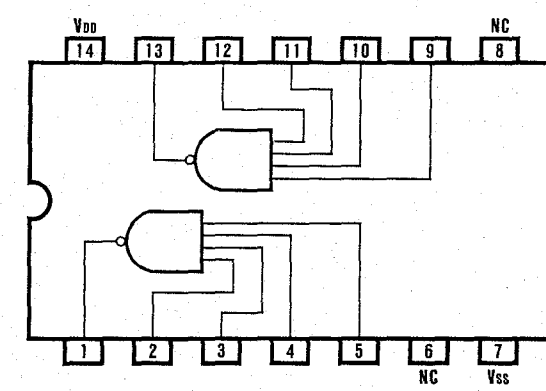


NAND GATE IC TC 4011 BP



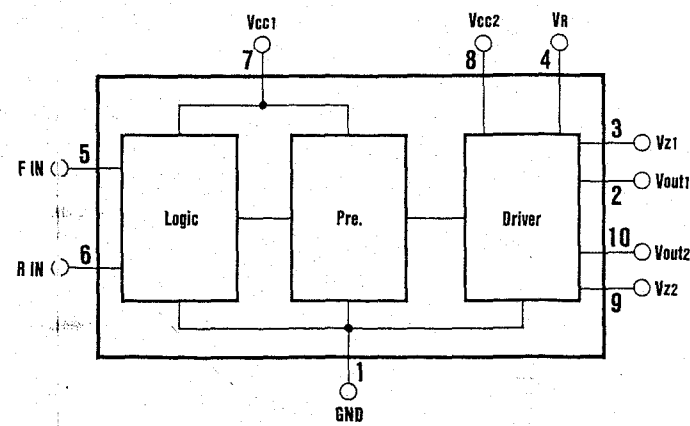


NAND GATE IC TC 4012 BP

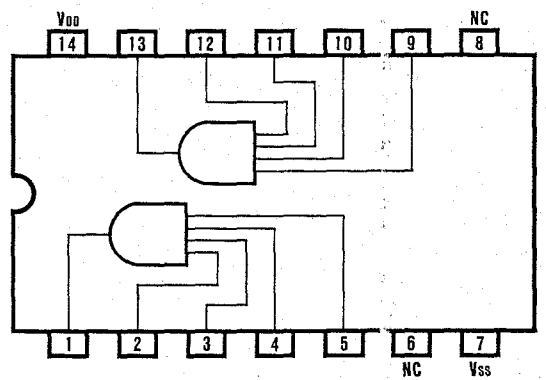


AND GATE IC TC 4081 BP

MOTOR CONTROL IC BA 6109



AND GATE IC TC 4082 BP

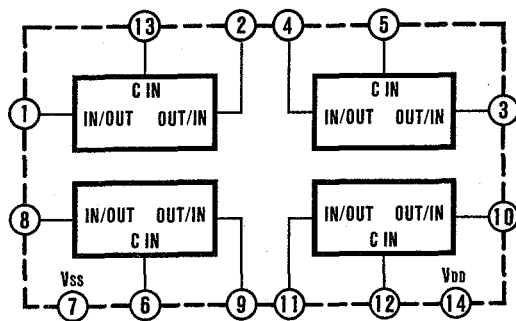


3482

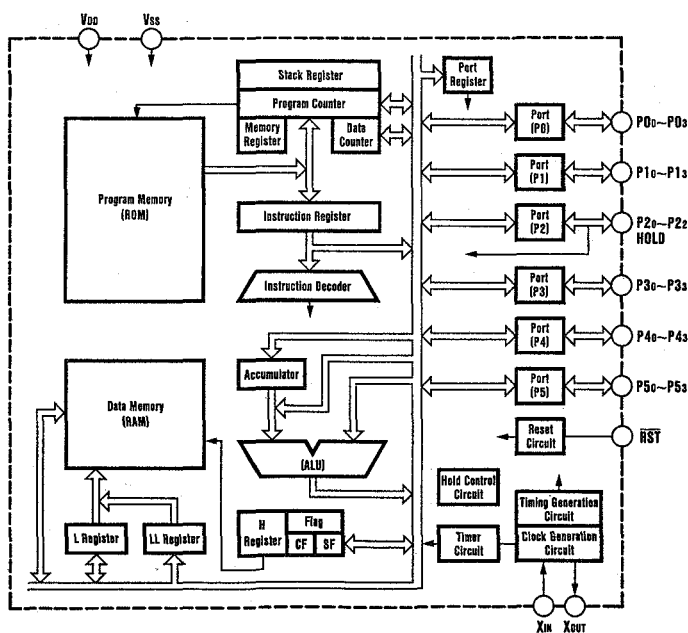
4

IC BLOCK DIAGRAM (FL METER / REMOTE CONTROL SECTION)

SWITCHING IC LC 4066 BH



CONTROL IC TMP 4270 N



LEVEL METER DRIVER IC MSL 9359 RS

