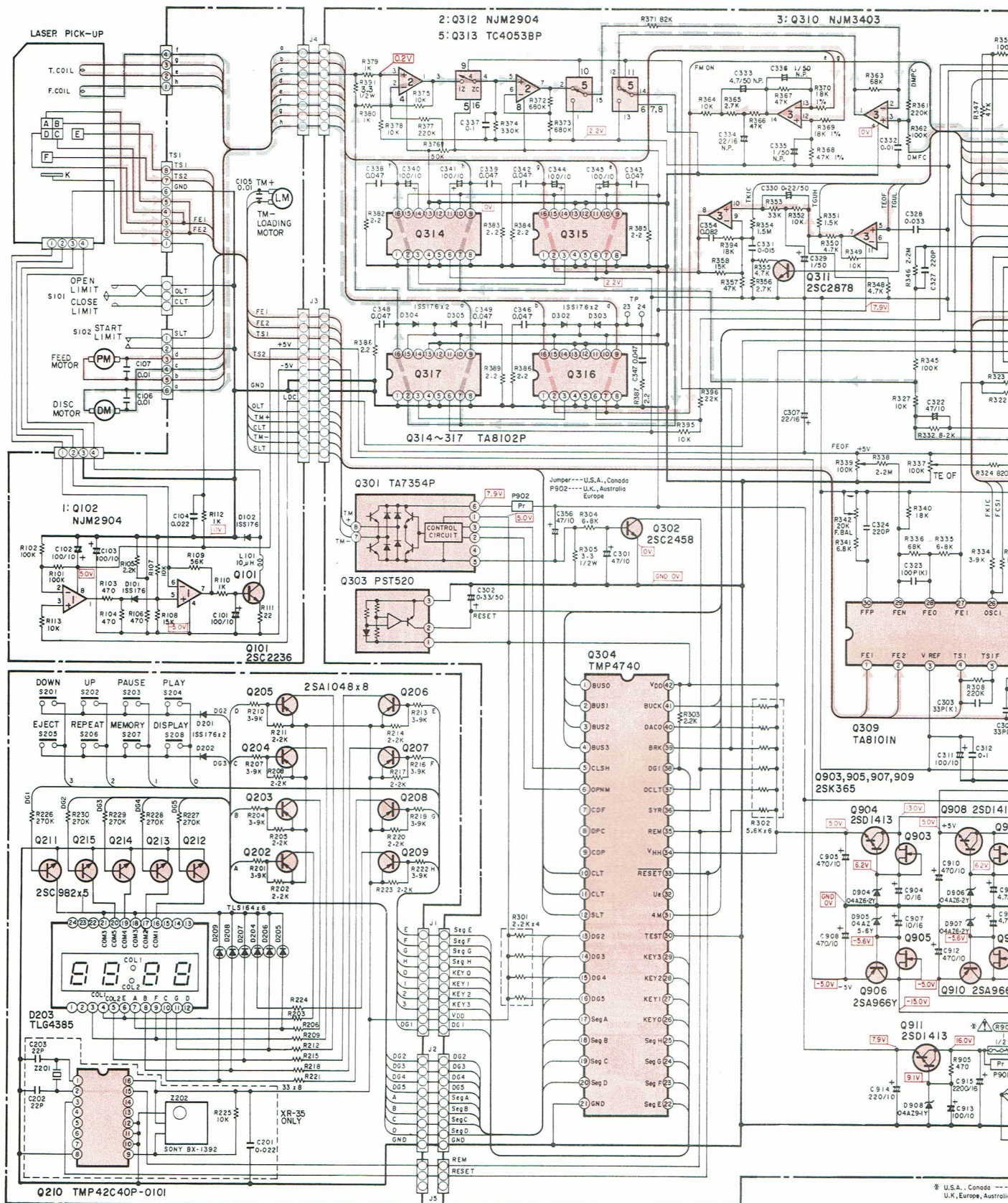


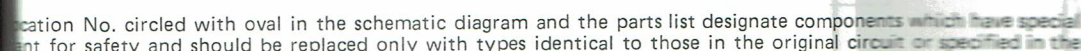
FOR OPH-21, OPH-23

6. SCHEM



CAUTION:
The Δ mark, the Location No. circled with oval in the schematic diagram and the parts list designations are characteristics important for safety and should be replaced only with types identical to those in the parts list.

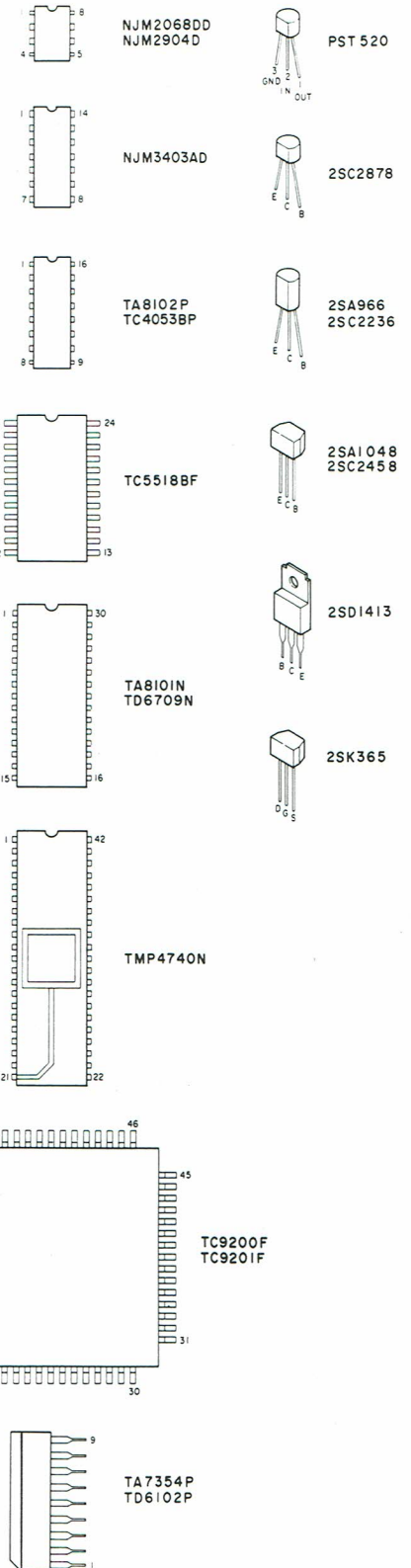
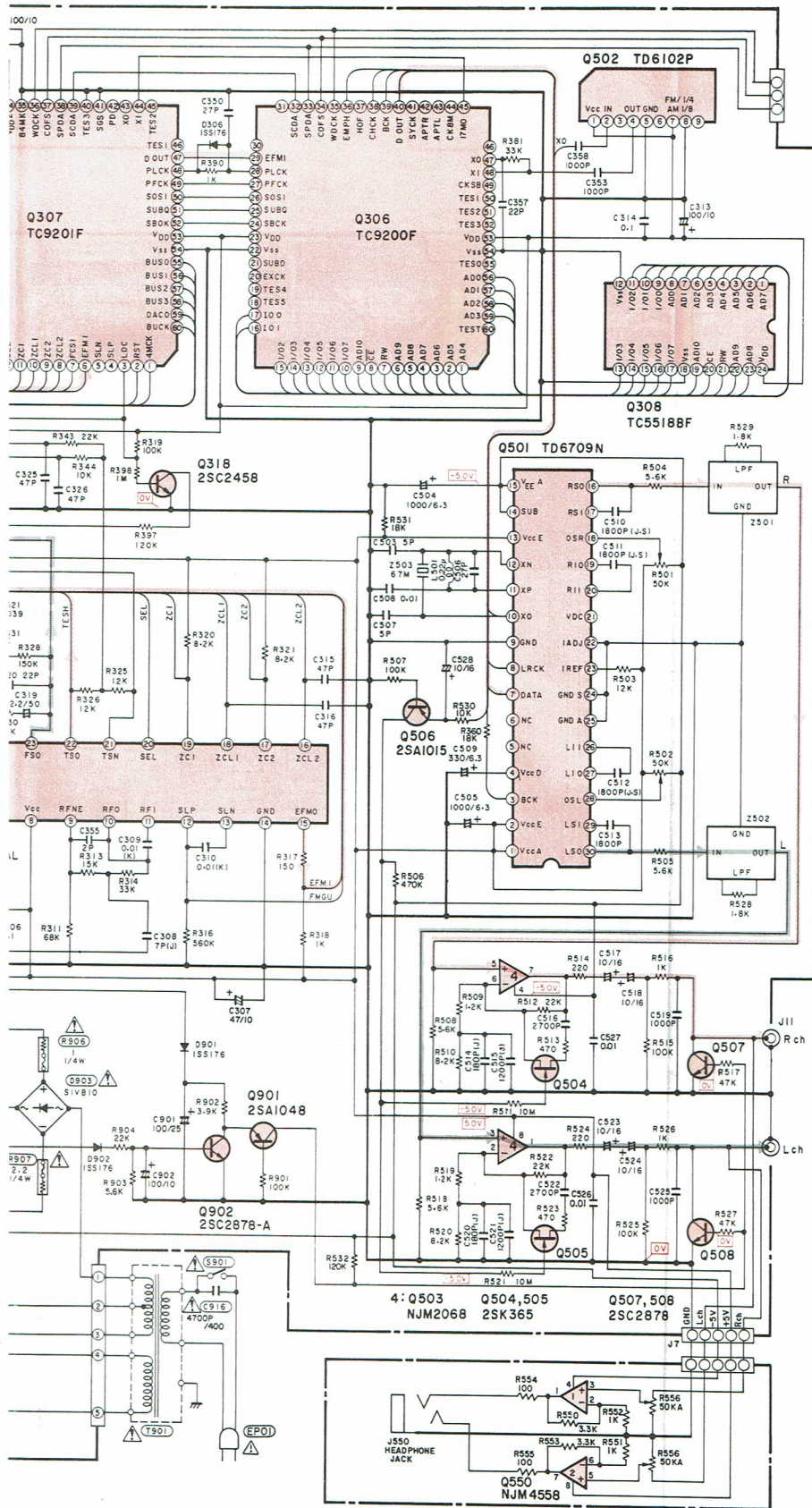
NJM2904
TC4053BF



Q309 Voltages of power ON with door closed without disc.
Voltages of PLAY mode with disc loaded.

	1	2	3	4	5	6	7	8	9	10	
2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.3V	0.9V	2.2V
11	1.1V	2.2V	X	1.5V	1.5V	X	5.1V	X	1.8V	2.2V	
16	17	4.8V	19	20	21	22	23	24	25	26	
2.40V	2.45V	1.1V	2.5V	2.5V	2.2V	2.2V	2.2V	2.2V	2.1V	2.1V	
3.1V	2.4V	1.1V	2.5V	2.6V	2.2V	2.2V	2.1V	2.2V	2.1V	2.1V	

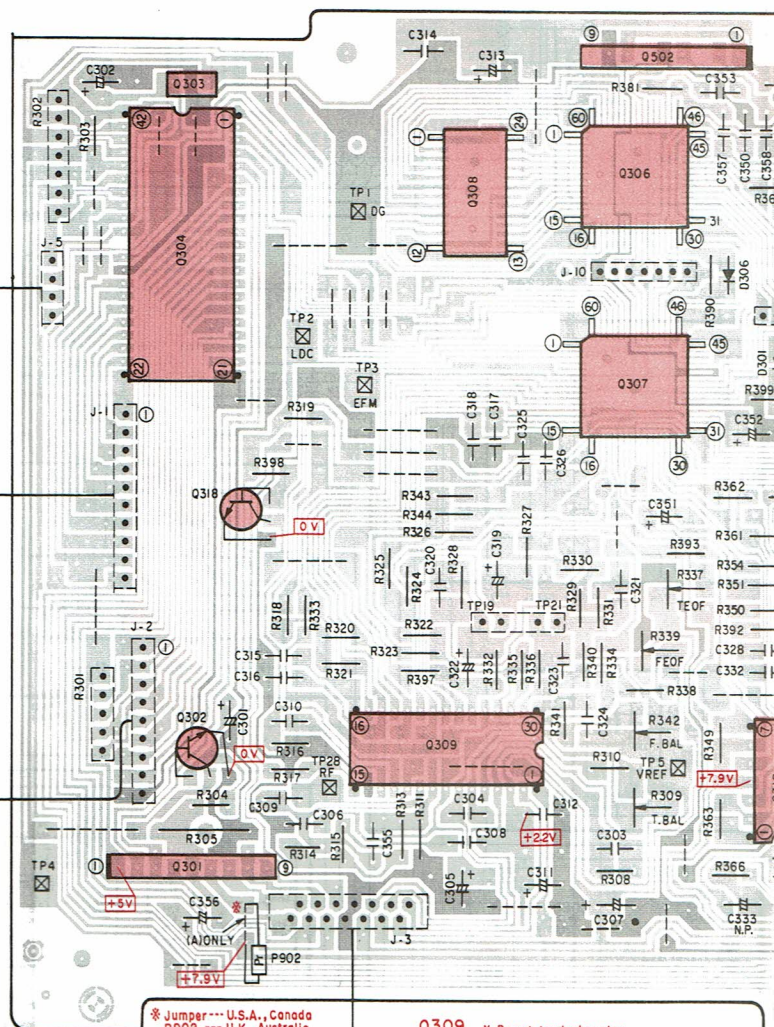
IC DIAGRAM



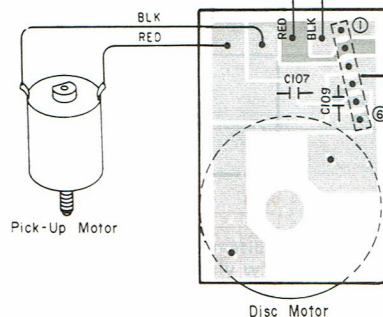
Q309 Voltages at power ON with door closed without disc.
Voltages at PLAY mode with disc loaded.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Power ON	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V
PLAY	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V

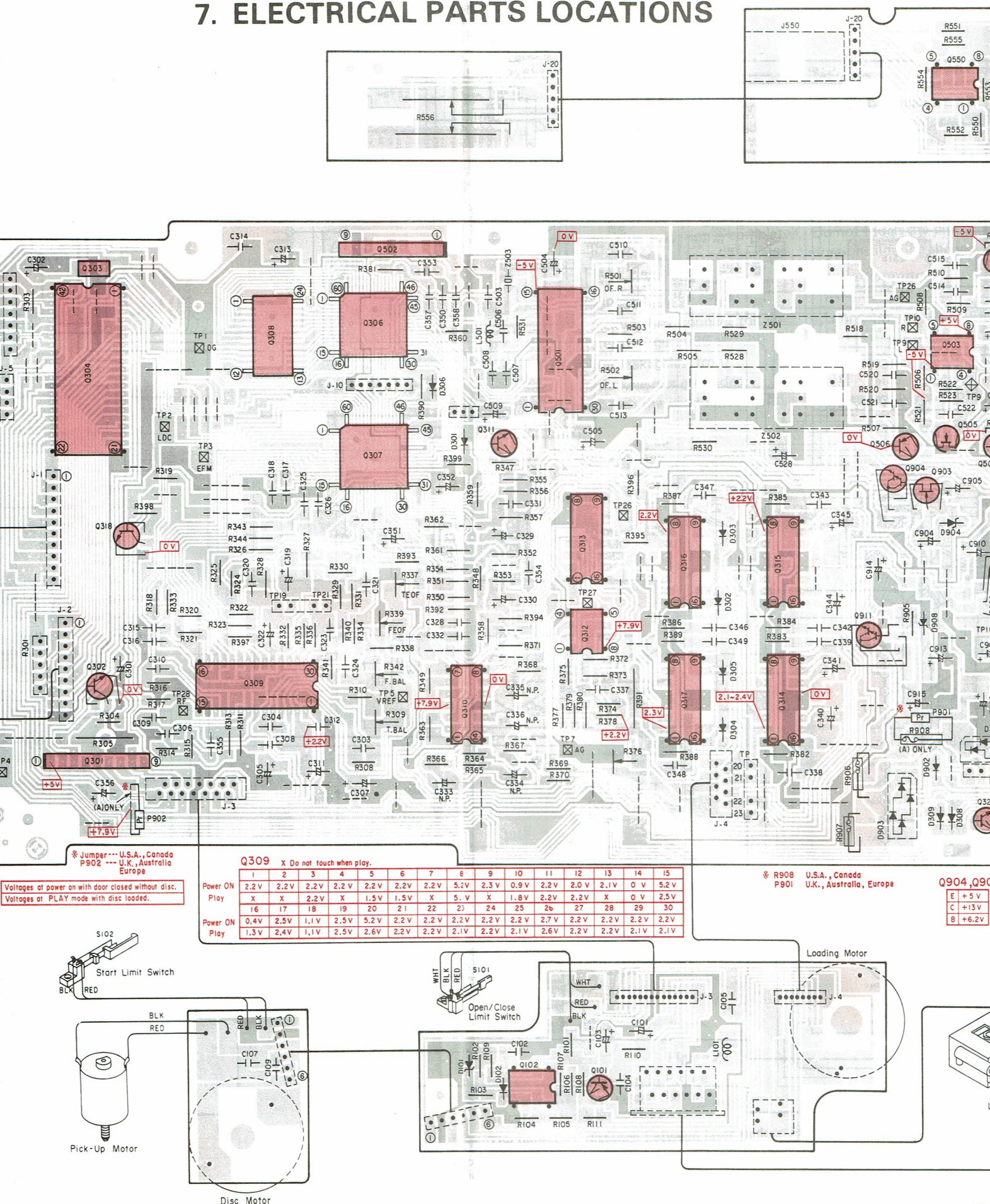
Components which have special circuit or specified in the



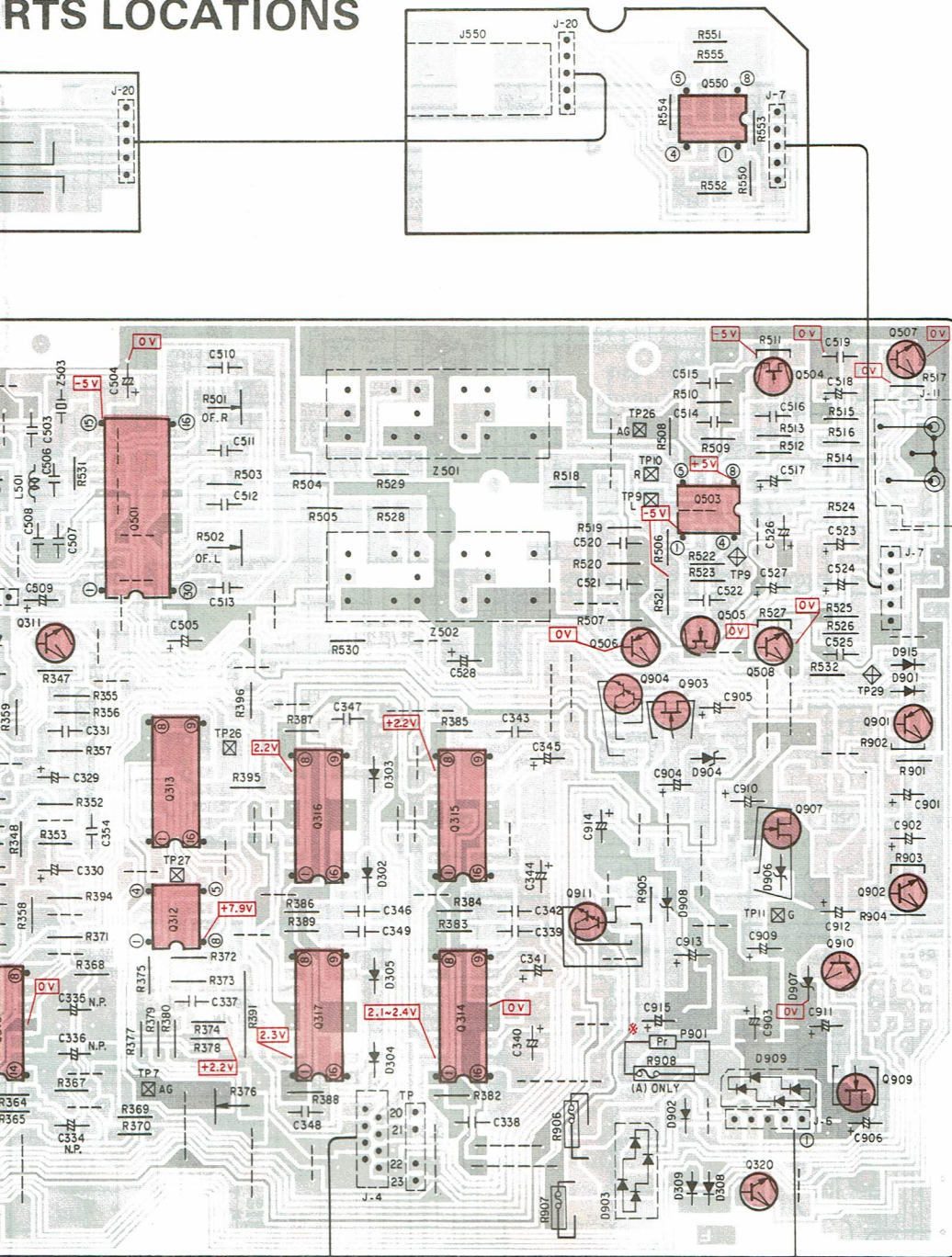
		Q309 X Do not touch when play.							
		1	2	3	4	5	6	7	8
Power ON Play		2.2 V	2.2 V	2.2 V	2.2 V	2.2 V	2.2 V	2.2 V	5.2 V
		X	X	2.2 V	X	1.5 V	1.5 V	X	5.2 V
		16	17	18	19	20	21	22	23
Power ON Play		0.4 V	2.5 V	1.1 V	2.5 V	5.2 V	2.2 V	2.2 V	2.2 V
		1.3 V	2.4 V	1.1 V	2.5 V	2.6 V	2.2 V	2.2 V	2.1 V



7. ELECTRICAL PARTS LOCATIONS



RTS LOCATIONS



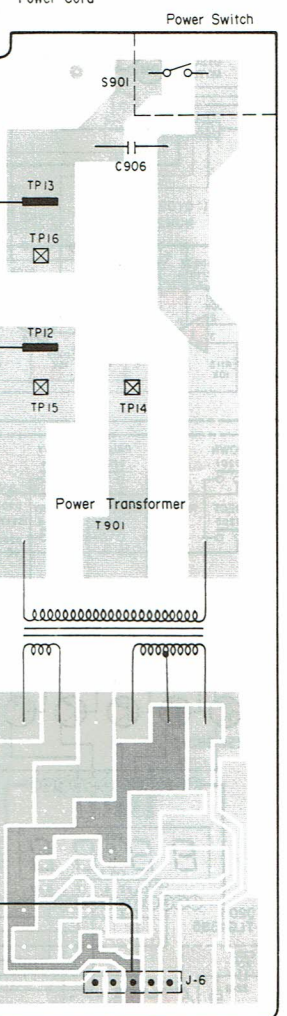
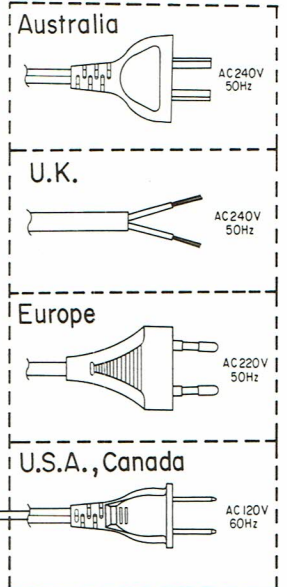
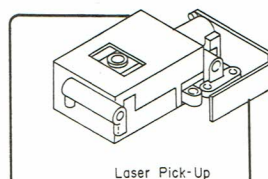
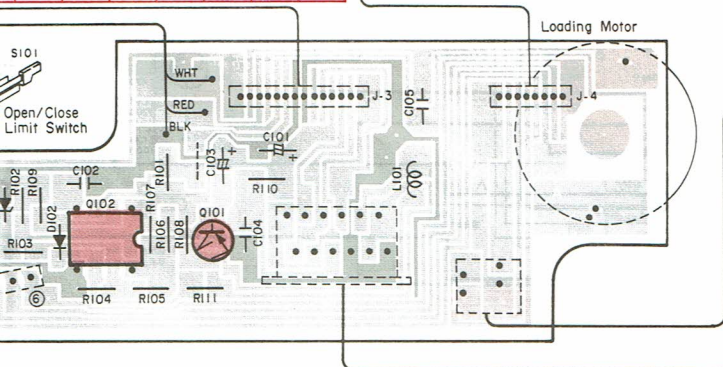
	9	10	11	12	13	14	15
V	2.3 V	0.9 V	2.2 V	2.0 V	2.1 V	0 V	5.2 V
V	X	1.8 V	2.2 V	2.2 V	X	0 V	2.5 V
V	2.2 V	2.2 V	2.7 V	2.2 V	2.2 V	2.2 V	2.2 V
V	2.2 V	2.1 V	2.6 V	2.2 V	2.2 V	2.1 V	2.1 V

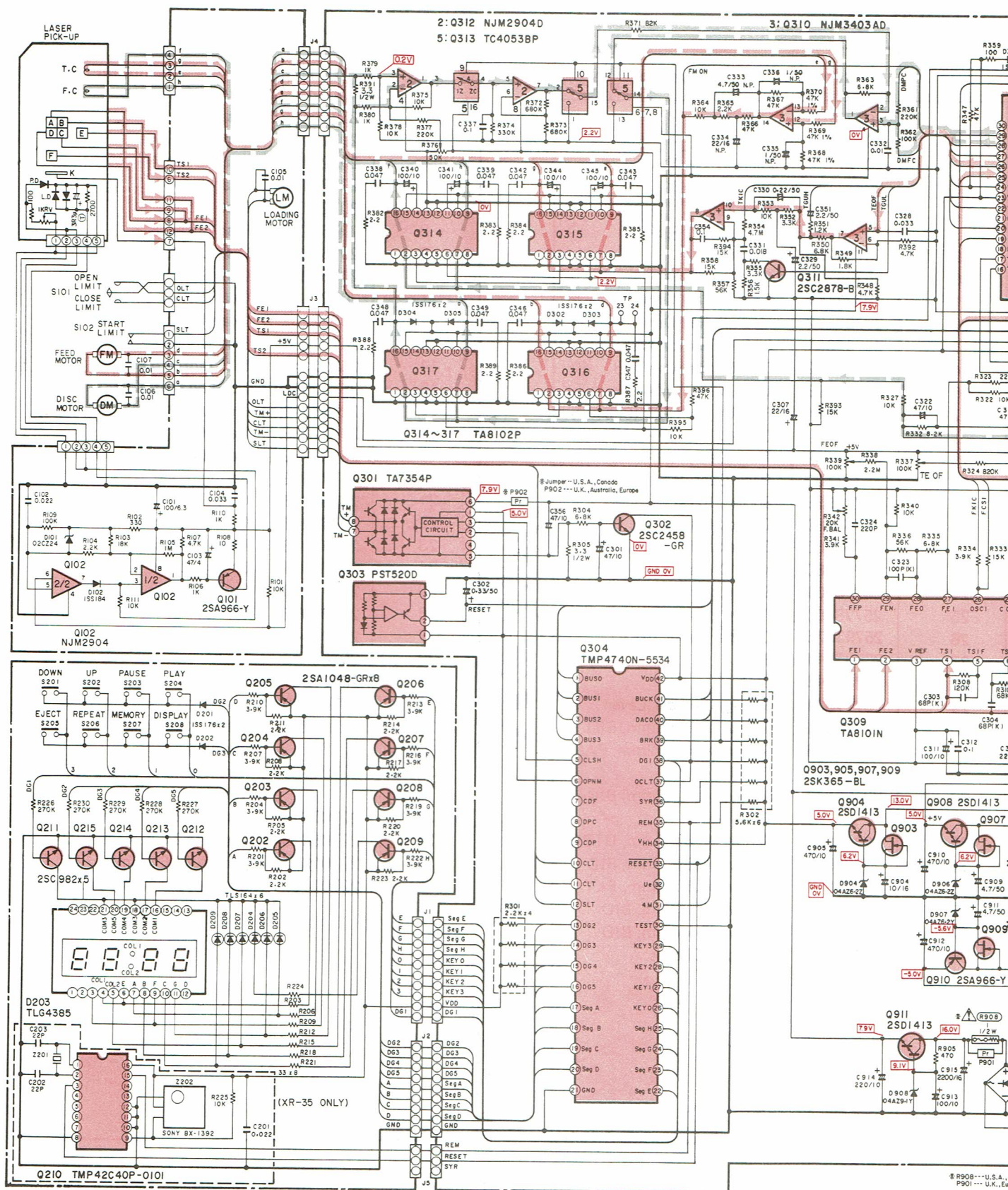
* R908 U.S.A., Canada
P901 U.K., Australia, Europe

Q904, Q908
E +5 V
C +13 V
B +6.2 V

Q906, Q910
E -5 V
C -15 V
B -5.6 V

Q911
E +7.9 V
C +16 V
B +9.1 V

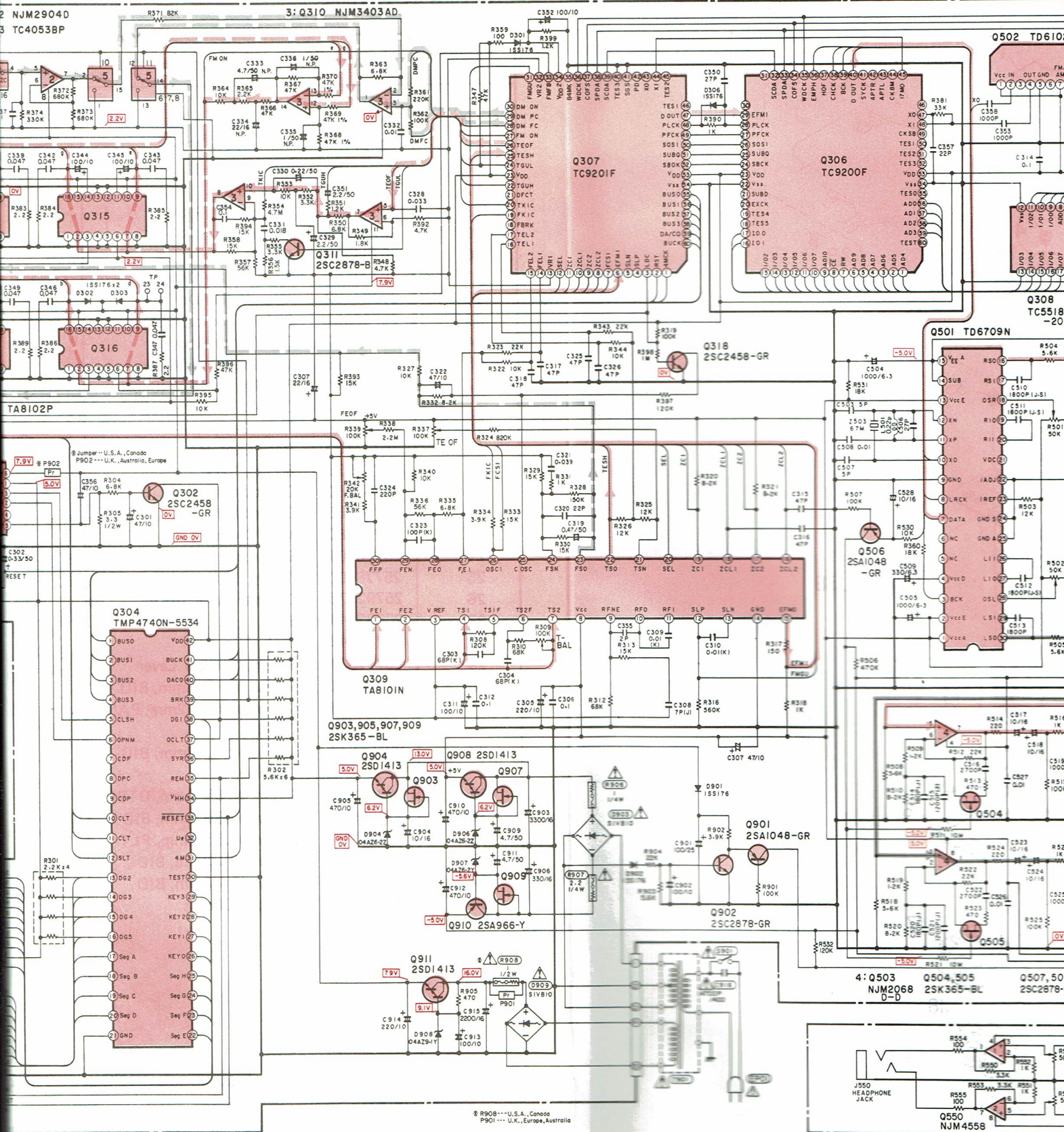




CAUTION:

The  mark, the Location No. circled with oval in the schematic diagram and the parts list designations are characteristics important for safety and should be replaced only with types identical to those in the parts list.

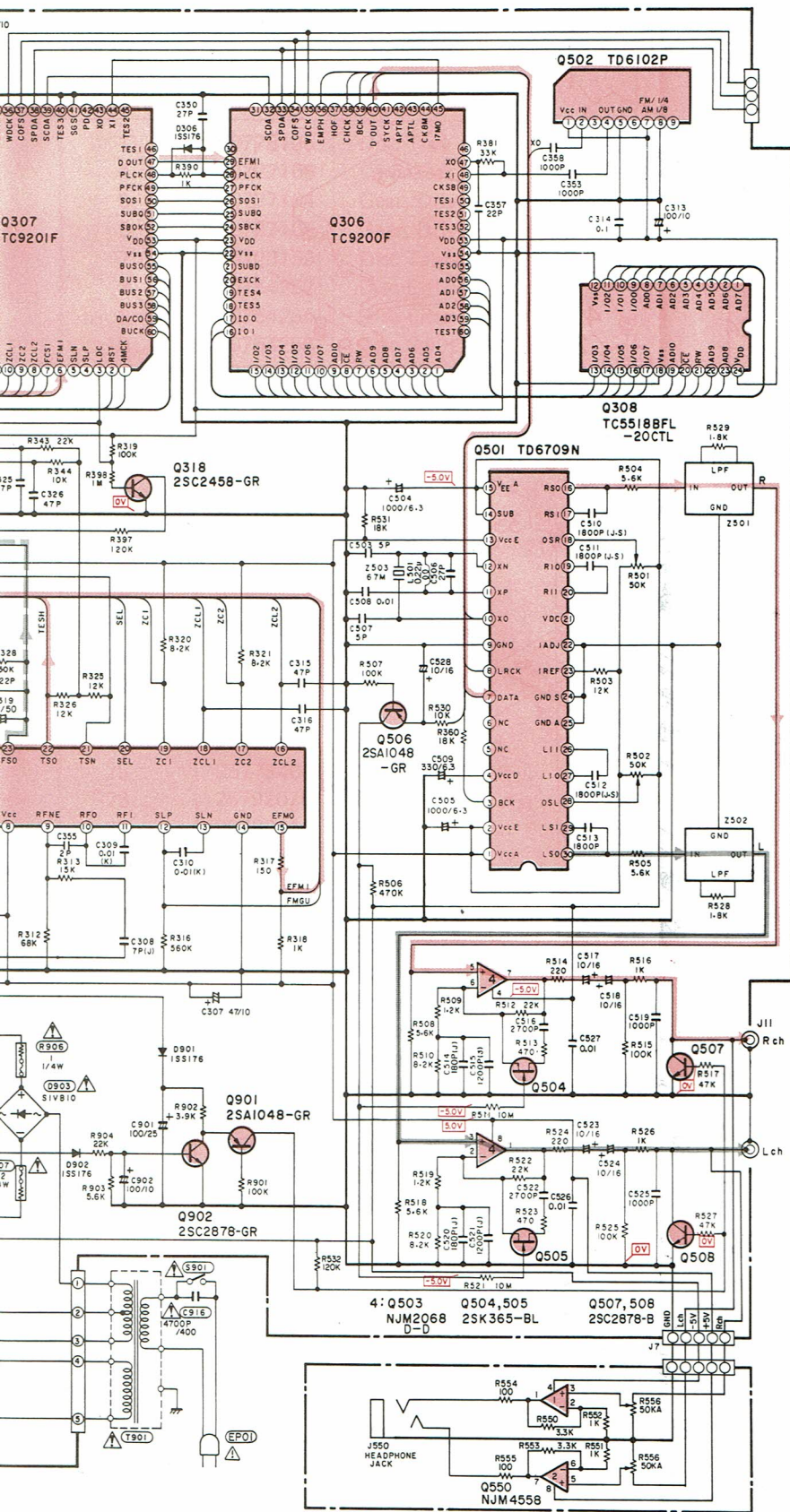
8. SCHEMATIC DIAGRAM



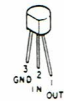
Volts of power ON with door closed without disc.
Volts of PLAY mode with disc loaded.

1	2	3	4	5	6	7	8	9	10
2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.3V	0.9V
2.2V	2.2V	X	1.5V	1.5V	X	5.1V	X	1.8V	
1.6V	1.7V	1.8V	1.9V	2.0V	2.1V	2.2V	2.3V	2.4V	2.5V
2.4V	2.5V	1.1V	2.5V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V
2.3V	2.4V	1.1V	2.5V	2.6V	2.2V	2.2V	2.1V	2.2V	2.1V

C DIAGRAM



NJM20680D
NJM29040



PST 520

NJM3403AD



2SC2878

TA8102P
TC4053BP



2SA966
2SC2236

TC5518BF



2SA1048
2SC2458

TA8101N
TD6709N

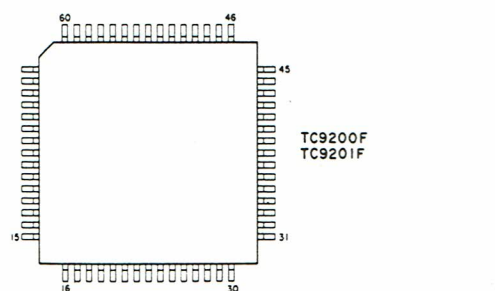


2SD1413

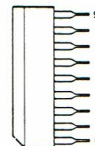
TMP4740N



2SK365



TA7354P
TD6102P



Q309

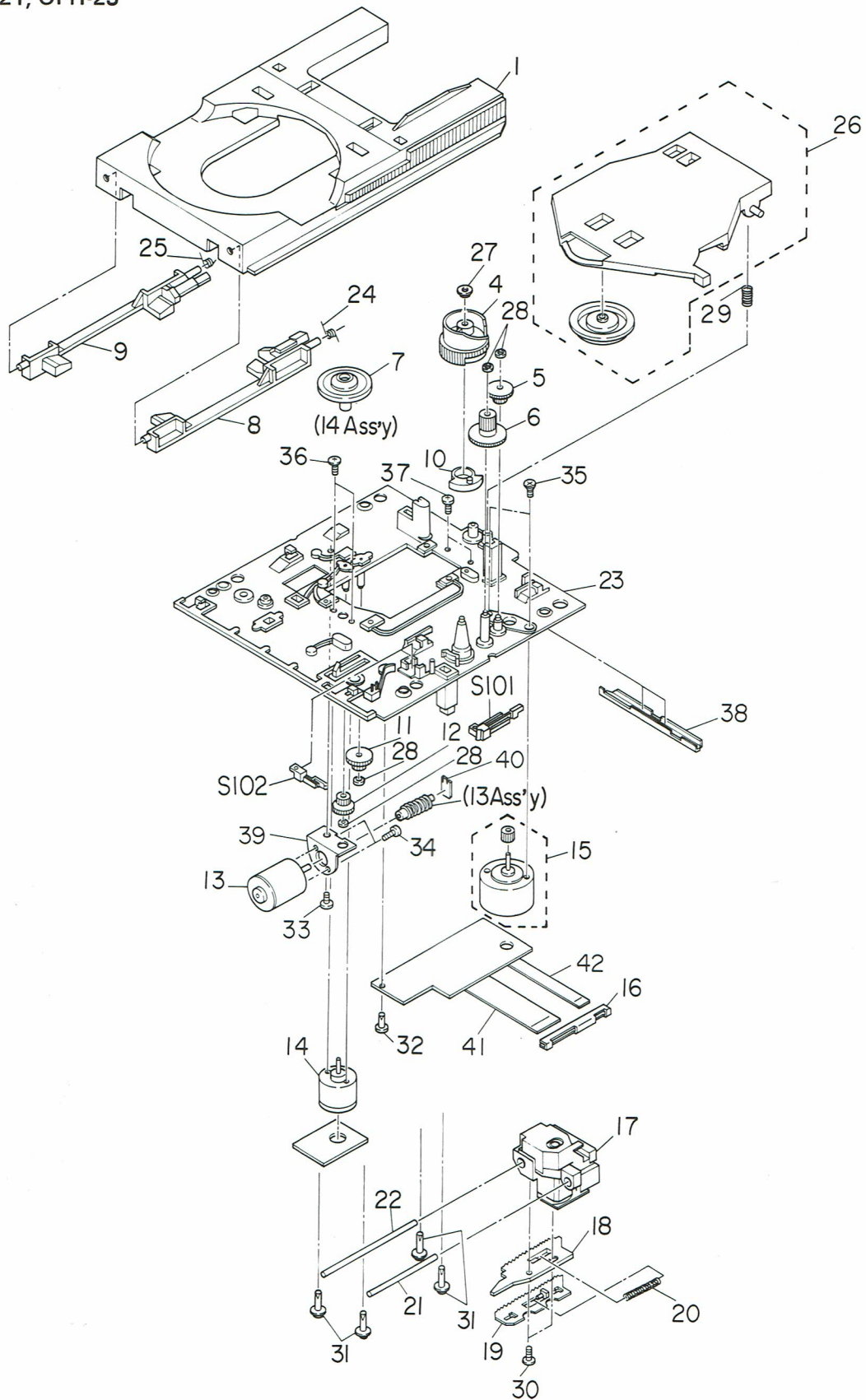
Voltages at power ON with door closed without disc.

Voltages at PLAY mode with disc loaded.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Power ON	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.2V	2.3V	0.9V	2.2V	2.0V	2.1V	0V	5.2V
PLAY	X	X	2.2V	X	1.5V	1.5V	X	5.1V	X	1.8V	2.2V	2.2V	X	0V	2.5V
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	0.4V	2.5V	1.1V	2.5V	5.2V	2.2V	2.2V	2.2V	2.2V	2.7V	2.2V	2.2V	2.2V	2.2V	2.2V
	1.3V	2.4V	1.1V	2.5V	2.6V	2.2V	2.2V	2.1V	2.2V	2.1V	2.6V	2.2V	2.2V	2.1V	2.1V

9. MECHANISM EXPLODED VIEW

FOR OPH-21, OPH-23



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

10. MECHANISM PARTS LIST

FOR OPH-21, OPH-23

Location No.	Part No.	Description
1	20778195	Disc Tray
4	20727166	Cam Gear
5	20727164	Gear, Drive A
6	20727165	Gear, Drive B
7	20723159	Disc Table
8	20754257	Disc Lifter, R
9	20754256	Disc Lifter, L
10	20754255	Cam Switch
11	20727161	Gear, Pulley Drive A
12	20727162	Gear, Pulley Drive B
13	25792091	Pick Up Motor Ass'y
14	25792092	Disc Motor Ass'y
15	25792093	Loading Motor Ass'y
17	22155214	Pick Up, OPH-23 (Substitute OPH-23 for OPH-21)
18	20727159	Rack Gear, A
19	20727160	Rack Gear, B
20	25777533	Spring, Rack
21	20764280	Guide Shaft, A
22	20764266	Guide Shaft, B
23	20743180	Main Chassis
24	25778401	Spring, Lifter, L
25	25778400	Spring, Lifter, R
26	25792076	Clamper Lever Ass'y
27	25783444	Bush
28	25783443	Bush
29	25777531	Spring, Clamper Lever
30	22708531	Screw, $\phi 2.6 \times 5\text{mm}$, BID
31	22708096	Screw, $\phi 2.6 \times 12\text{mm}$, PAN Tapping
32	22701338	Screw, $\phi 2.6 \times 8\text{mm}$, BID Tapping
33	22707350	Screw, $\phi 2.6 \times 5\text{mm}$, DTBID
34	22708528	Screw, $\phi 2.6 \times 3\text{mm}$, BID
35	22701361	Screw, $\phi 2.6 \times 5\text{mm}$, FLT
36	22701467	Screw, $\phi 2 \times 3\text{mm}$, BID
37	22708542	Screw, $\phi 3 \times 8\text{mm}$, BID
38	20743183	Support, Chassis

FOR OPH-41

Location No.	Part No.	Description
1	20778195	Disc Tray
4	20727166	Cam Gear
5	20727164	Gear, Drive A
6	20727165	Gear, Drive B
7	20723159	Disc Table
8	20754257	Disc Lifter, R
9	20754256	Disc Lifter, L
10	20754255	Cam Switch
11	20727161	Gear, Pulley Drive A
12	20727162	Gear, Pulley Drive B
13	25792091	Pick Up Motor Ass'y
14	25792143	Disc Motor Ass'y
15	25792093	Loading Motor Ass'y
17	22155241	Pick Up, OPH-41
18	20727188	Rack Gear, A-2
19	20727189	Rack Gear, B-2
20	25777533	Spring, Rack
21	20764265	Guide Shaft, A
22	20764265	Guide Shaft, A
23	20743188	Main Chassis
24	25778401	Spring, Lifter, L
25	25778400	Spring, Lifter, R
26	25792076	Clamper Lever Ass'y
27	25783444	Bush
28	25783443	Bush
29	25777531	Spring, Clamper Lever
30	22707670	Screw, $\phi 1.7 \times 4\text{mm}$, PAN
31	22708208	Screw, $\phi 2.6 \times 12\text{mm}$, BID Tapping
32	22701338	Screw, $\phi 2.6 \times 8\text{mm}$, BID Tapping
33	22707350	Screw, $\phi 2.6 \times 5\text{mm}$, DTBID
34	22708528	Screw, $\phi 2.6 \times 3\text{mm}$, BID
35	22701361	Screw, $\phi 2.6 \times 5\text{mm}$, FLT
36	22701467	Screw, $\phi 2 \times 3\text{mm}$, BID

CAUTION:

Two kinds of laser pickups (OPH-21, OPH-23/OPH-41) are used for XR-30/XR-35. Mechanism, cabinet, and certain electrical parts are not interchangeable if the pickup is different. Check your unit and order correct service parts matching to your unit.

* For identification of laser pickup, refer to page 8.