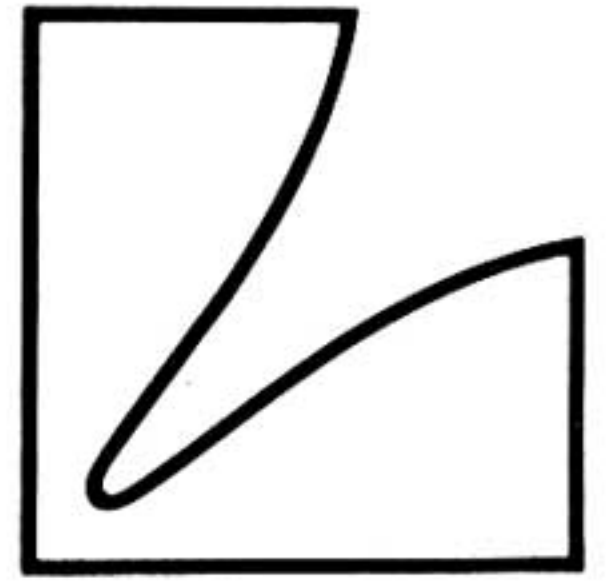


# SERVICE MANUAL



**Vacuum Disc Stabilizer Turntable**

# PD-310

**Vacuum Pump**

# VS-300



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# VS-300 Operation Circuit

## A. Power Switch ON

1. Output No. 3 of Flip-Flop R-S composed of N1 and output No. 4 of Flip-Flop R-S composed of N2 become stable at low level.
2. In case that there is enough time the power switch has been turned off and V.D.S. is ON mode when the power switch is off, the mono-stable multi-vibrator (hereinafter called as electromagnetic valve timer) operates and the electromagnetic valve gets open for about 2.5 seconds.

## B. V.D.S. ON 1-5; B 6-8; C 9; D, E J (PD-300)

1. When SW01 and SW of PD-310 (D1 is high) are ON and the motor of the PD-300 rotates, output No. 3 of F.F.-1 comes to be from low to high (output No. 4 of F.F.1 comes to be from high to low).
2. Q208 becomes ON and LED2 lights up. D2 becomes low and V.D.S. Indicator LED lights up.
3. If SW03 is normal (Pressure load 0-3 cmHg), output No. 4 of F.F.-2 comes to be from low to high.
4. When output No. 3 of F.F.2 comes to be from high to low, output No. 6 of N3 (pump timer) comes to be from low to high for about 12 seconds.
5. The pump motor switch composed of Q201, Q202 and Q203 becomes ON and sucking function gets started.
6. When pressure load of the pump unit becomes higher, SW03 comes to be from N.C. to N.O. at 3 cmHg and SW04 from N.C. to N.O. at 8 cmHg.
7. In accordance with signal from SW04 output No. 4 of F.F.-2 comes to be from high to low and No. 3 from low to high.
8. When output No. 4 of F.F.-2 comes to be from high to low, N3 shall be reset and the pump motor gets stopped.
9. When pressure load of the pump unit becomes lower and SW04 comes to be from N.O. to N.C. and SW03 from N.O. to N.C. at less than 3 cmHg, operation from 3 to 7 is to be repeated again.

## C. Pump Timer H-I

1. N3 is the timer IC and time is set up by the time constant of R220 and C212. (at present about 12 seconds)
2. The pump timer works when No. 5 is set and No. 7 is reset at the trigger of rising pulse VCC.
3. Output No. 6 becomes from low to high at set and from high to low at reset, but without reset trigger it becomes from high to low at set-up time.
4. The pump motor stops unless pressure load reaches 8 cmHg within the set-up time at B-6.
5. Depending on 1/2 (No. 1, 2, 3, 4, 5, 6) of N4 and 1/4 (No. 1, 2, 3) of N5, stop of the motor pump at reset or stop by the timer is judged. Only stop by the timer makes N5 No. 3 from low to high and V.D.S. off.

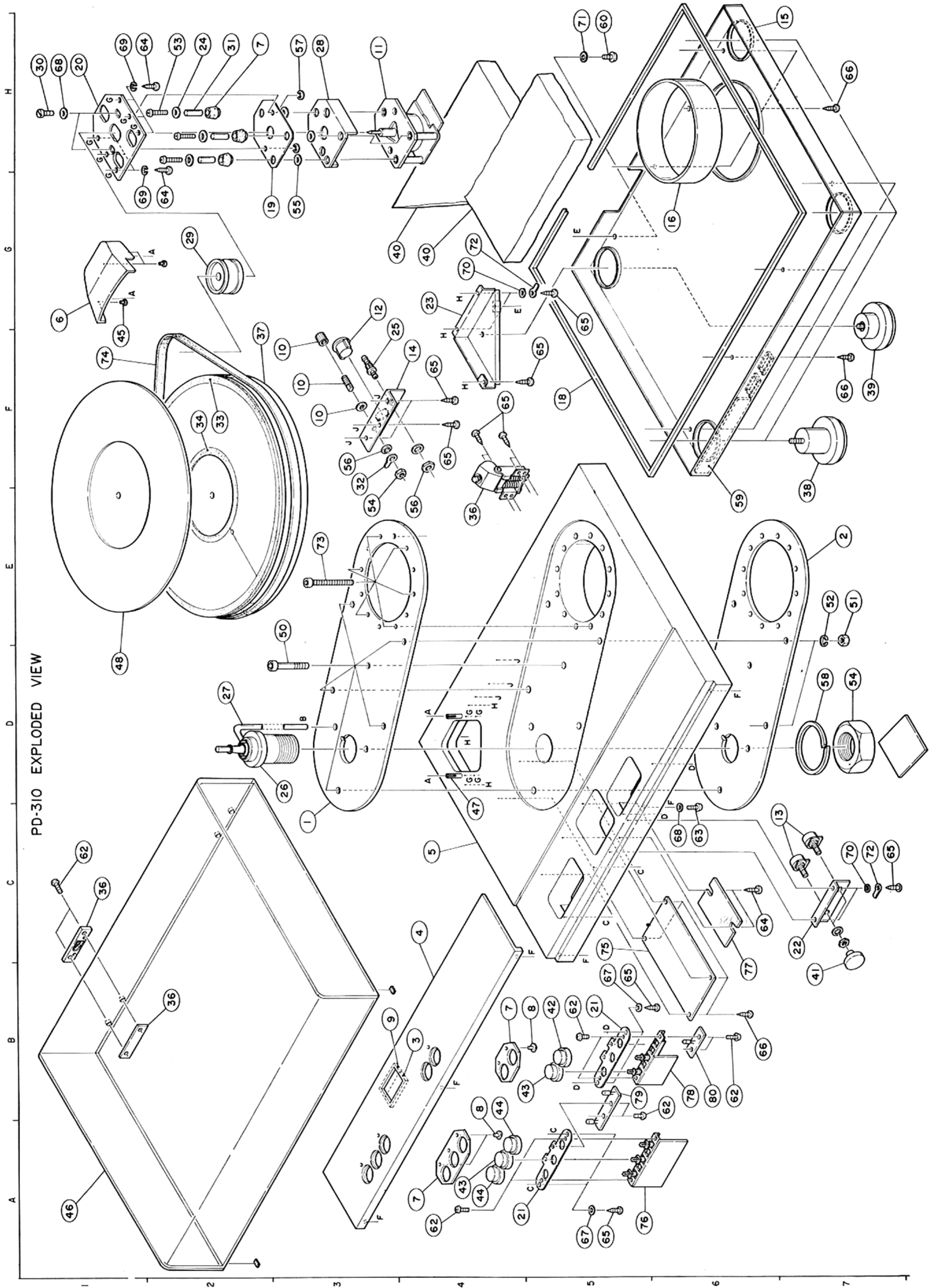
## D. V.D.S. OFF F, G K (PD-300)

1. When SW02 and SW of PD-310 are ON (D6 at high) and the pump motor gets stopped by the pump timer (N5 No. 3 comes to be from low to high.) and the motor of PD-300 gets stopped as well, output No. 3 of F.F.-1 comes to be from high to low and simultaneously output No. 4 of F.F.-2 comes to be from high to low.
2. Q208 gets OFF and LED2 and LED of PD-310 put off light.
3. The electromagnetic valve timer starts to work and the valve gets open for about 2.5 seconds.
4. During operation of the electromagnetic valve timer Q204 is ON, on which period a signal from B-2 to 3 is stopped if V.D.S. gets ON.

## E. AC Mains OFF M

1. IF AC mains is OFF while V.D.S. is ON, Q207 gets OFF to make V.D.S. signal OFF by means of another rectifier circuit (D002, D003, C218), whose discharging time is shorter than that of the rectifier circuit for the constantvoltage regulator (D001, C001).

# Exploded View PD-310



PD-310 EXPLODED VIEW

# Exploded View Parts List PD-310

SYMBOL NO.	STOCK NO.	DESCRIPTION
1	UA1068	Chassis 1068
2	UA1069	Chassis 1069
3	UM1009	Reflection Mirrow
4	WA1248-1	Panel (J, S, E)
	WA1248-2	Panel (U)
5	WB1100	Cabinet
6	WE1106	Protector
7	WE1107	Knob Protector
8	WE1112	Protector
9	WE1012	Diffuser
10	AG0048	GND: terminal
11	AM1007	Motor PHM-6102F-01
12	AS5016	Connector Socket
13	RV0293	VR. 5KB
14	UC1213	Back Panel
15	UE1117	Bottom Cover
16	UJ1103	Arm Base Covering
17	UN1041	Motor Rubber
18	UN1047	Bottom Cover Edge Rubber
19	UR1347	Motor Bracket
20	UR1348	Motor Bracket
21	UR1349	Bracket
22	UR1350	Bracket
23	UR1351	Bracket
24	UZ1223	Motor Washer
25	UZ1234	Air Joint
26	UZ1237	Bearing
27	UZ1246-2	Air Pipe
28	UZ1344	Motor Weight
29	UZ1349	Motor Pulley
30	UZ1351	Motor Adjustment Scr.
31	YZA30A12	Column 3 x 12
32	YZB060H	Earth Lug B-9
33	UN1031-E	Sealing Pad (out)
34	UN1032-E	Sealing Pad (in)
35		Non Use
36	UZ1091	250 Auto Hinge OH55
37	UZ1224-G	Turn Table
	UZ1241	VC Oil Seal
38	UZ1341	Insulator F
39	UZ1342	Insulator R
40	UZ1346	Felter
41	WJ1062	Mold

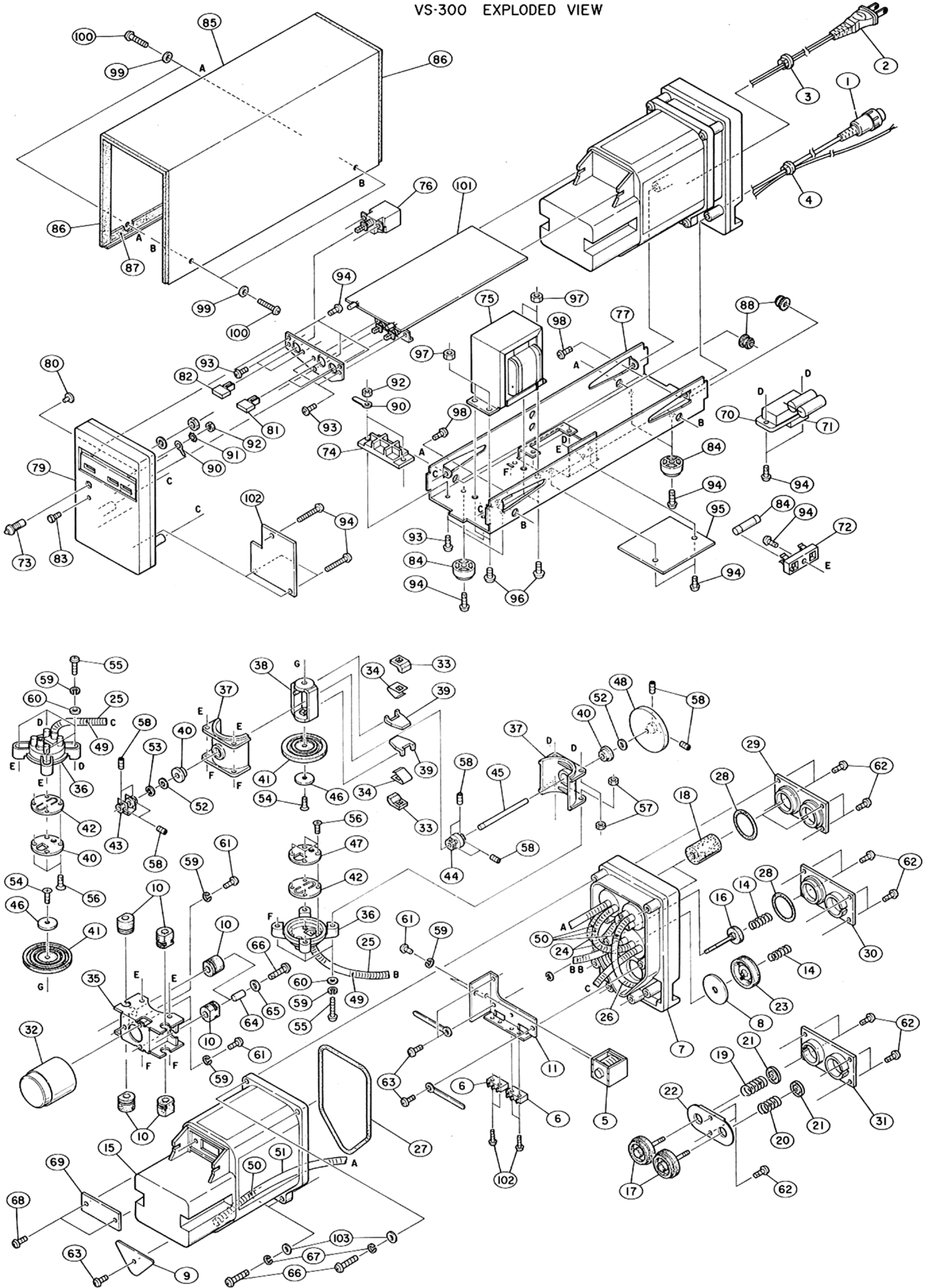
SYMBOL NO.	STOCK NO.	DESCRIPTION
42	WJ1169-1	Mold Knob
43	WJ1169-2	Mold Knob
44	WJ1169-3	Mold Knob
45	WZ1209	Rubber Push Protector
46	WZ1199	Dust Cover
47	WZ1200	Stopper Pin
48	WZ1195	Plutter Mat
49		Non Use
50	YMA60E55	Hexagon Scr. 6 x 55
51	YNA060A	Nut 6
52		Non Use
53	YAA30C18	Scr. Bind 3 x 18 BLK.
54	YNA360A	Nut 36
55	YWA030C	Washer 3
56	YWD060S	Toothed Lock Washer 6
57	YWJ030C	E Washer 3
58	YWN380N	Spring Washer 38
59		Non Use
60	YAA40C06	Scr, Bind 4 x 6 BLK.
61		Non Use
62	YAC30C10	Pan Head Scr. 3 x 10 BLK.
63	YAC40C30	Pan Head Scr. 4 x 30 BLK.
64	YCG31A10	Wood Screw
65	YCG31C16	Wood Screw
66	YJU30C16	Tapping Sems 3 x 16 BLK.
67	YWA030C	Washer 3
68	YWA040C	Washer 4
69	YWC030K	Spring Washer 3
70	YWE030B	Toothed Lock Washer 3
71	YWE040C	Toothed Lock Washer 4
72	YZB030H	Earth Lug B-5
73	YMA40E55	Hexagon Scr. 4 x 55
74	UZ1372	Stainless Wire Belt
	UZ1236	Belt
75		Motor P.C.B.
76	PB1404-1	PB1404-1
77	PB1404-2	PB1404-2
78	PB1404-3	PB1404-3
79	PB1404-4	PB1404-4
80	PB1404-5	PB1404-5

**Remarks:**

- J; 100V for Japan
- S { SK; 220V for Europe, South-East Asia
- { SG; 240V for England, Australia
- U; 120V for North America
- E { EZ; 120V (With Line Voltage Selector) for North America, South-East Asia
- { EK; 220V (With Line Voltage Selector) for Europe, South-East Asia
- { EG; 240V (With Line Voltage Selector) for England, Australia

# Exploded View VS-300

VS-300 EXPLODED VIEW



# Exploded View Parts List VS-300

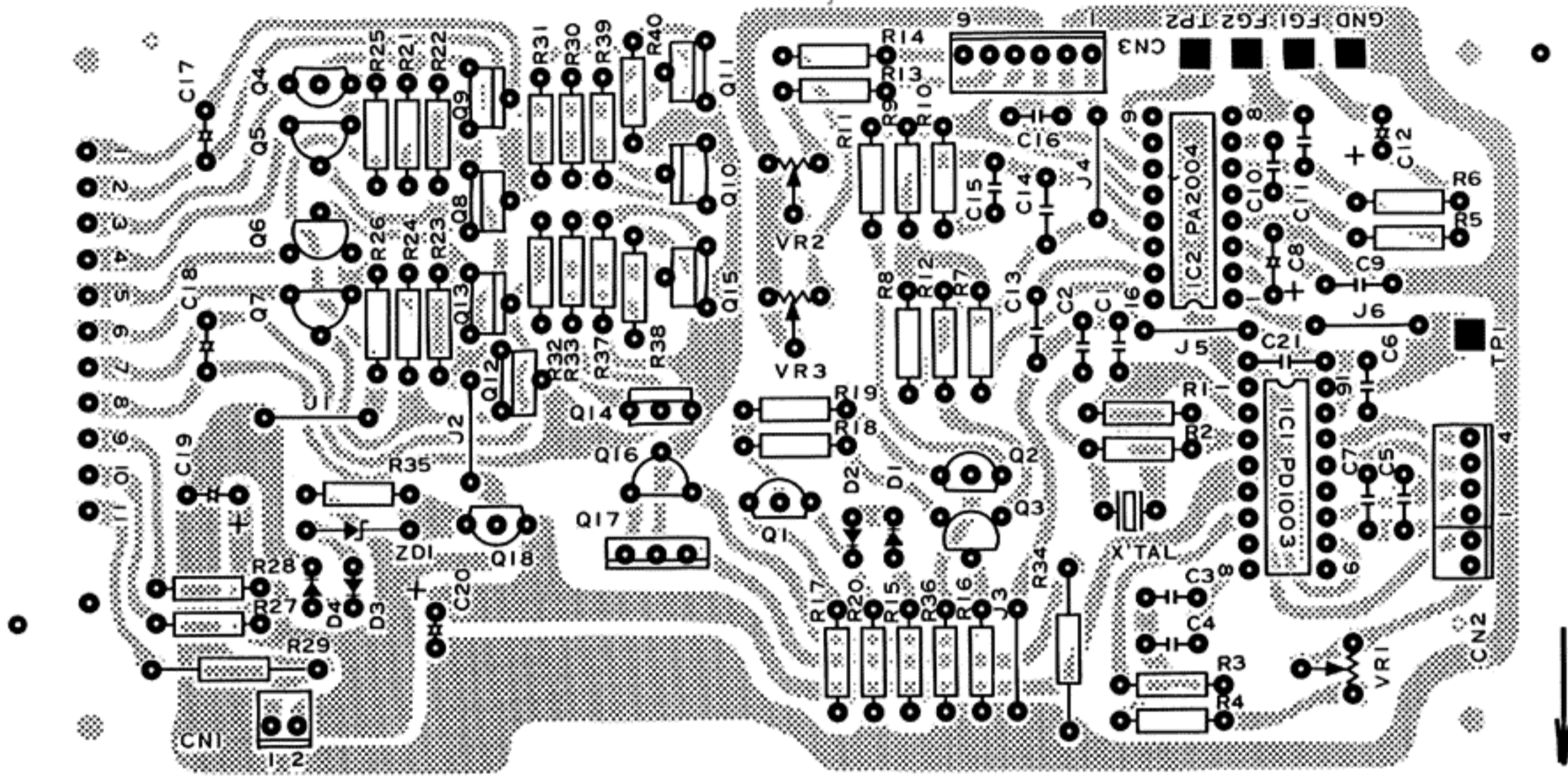
SYMBOL NO.	STOCK NO.	DESCRIPTION
1	AS0267	7P Din Cord
2	BK0015	AC Cord (J)
	BK0018	AC Cord (UZ, EZ)
	BK0022	AC Cord (SK, EK)
	BK0023	AC Cord (SG, EG)
3	BU0039	Cord Stopper (SG, EG)
	BU0033	Cord Stopper
4	BU0039	Cord Stopper
5	BX0044	Solenoid
6	SP0180	Micro SW SS-1E-4
7	UC1212	Back Panel
8	UJ1104	Cover 1104
9	UJ1105	Cover 1105
10	UN1040	Holder Rubber
11	UR1346	Bracket 1346
12		Non Use
13		Non Use
14	UU1037	Return Spring
15	UZ1323	Tank
16	UZ1324	Valve
17	UZ1325	Sensor Diaphragm
18	UZ1326	Filter
19	UZ1327	Sensor A 0.9 mm
20	UZ1328	Sensor B 0.7 mm
21	UZ1329	Sensor Adjuster
22	UZ1330	Sensor Push Plate
23	UZ1331	Valve Diaphragm
24	UZ1332A	Air Pipe 1332A
25	UZ1332B	Air Pipe 1332B
26	UZ1332C	Air Pipe 1332C
27	UZ1334	Ring (G-105)
28	UZ1335	Ring (G-025)
29	UZ1338	Cap A
30	UZ1339	Cap B
31	UZ1340	Cap C
32	AM1010	DC Motor MAN-15
33	UN1039	Holder Rubber
34	UU1046	Spring
35	UR1345	Bracket 1345
36	UZ1310	Pump Case
37	UZ1311	Pump Cover
38	UZ1312	Connection Rod
39	UZ1313	Slipper
40	UZ1314	Bearing
41	UZ1315	Diaphragm
42	UZ1316	Automatic Valve
43	UZ1317	Joint
44	UZ1318	Cam
45	UZ1319	Shaft
46	UZ1320	Diaphragm Push Plate
47	UZ1321	Valve Push Plate
48	UZ1350	Flywheel
49	UU1048-2	Tension Spring 1048-2
50	UU1048-1	Tension Spring 1048-1
51	UZ1332D	Air Pipe 1332D
52	YWZ030Z	Polyslider 3 x 8 x 0.5
53	YWJ020C	Retaining Ring E 2
54	YJE26A08	Flat Tapping 2.6 x 8
55	YAC30A15	Pan Head Scr. 3 x 15
56	YJE23A08	Flat Tapping 2.3 x 8
57	YNA030A	Nut 3

SYMBOL NO.	STOCK NO.	DESCRIPTION
58	YZZ26C04	Hexagon Headless Scr. 2.6 x 4 BLK.
59	YWC030M	Spring Washer 3
60	YWB030C	Washer 3
61	YAC30A04	Pan Head Scr. 3 x 4
62	YJH26C08	Pan Head Tapping Scr. 2.6 x 8 BLK.
63	YJJ30A08	Pan Head Tapping 3 x 8
64	YZA40A14	Column 4 x 14
65	YWA040A	Washer 4
66	YJH35A25	Pan Head Tapping 3.5 x 25
67	YWC040A	Spring Washer 4
68	YJH35A10	Pan Head Tapping 3.5 x 10
69	PB1405-2	PB1405-2
70	AC0013	Voltage Selector Socket
71	AC0014	Voltage Selector Plug
72	AH0016	1P Fuse Holder (J, U, E)
	AH0019	Fuse Holder (S)
73	AL0001	Neon Lamp BNB-2 (J)
74	AT0069	Terminal Plate N-1635
75	PT2598	Power Trans (J)
	PT2599	Power Trans (U)
	PT2600	Power Trans (S)
	PT2601	Power Trans (E)
76	SP0172	Push SW (J)
	SP0032	Push SW (U)
	SP0090	Push SW (S, E)
77	UA1067	Chassis 1067
78	UB1076	Sub Panel
79	WA1247-1	Panel 1247-1 (S, E)
	WA1247-2	Panel 1247-2 (J)
	WA1247-3	Panel 1247-3 (U)
80	WE1112	Protector 1112
81	WJ1171-1	Mold Knob
82	WJ1171-2	Mold Knob
83	WK1136	Metal Knob (J)
84	WN1028	Trannleg T-C
85	UG1036	Bonnet
86	UN1048	Edge Protector
87	UZ1336	Neoprene Sponge
88	YNL030Z	E 632 Well Nut
89		Non Use
90	YZB030H	Earth Lug B-5
91	YWE030A	External Lock Washer 3
92	YNA030A	Nut 3
93	YAC30A08	Pan Head Scr. 3 x 8
94	YJH35A10	Pan Head Tapping 3.5 x 10
95	UE1118	Bottom Plate
96	YAA40A08	Bind Scr. 4 x 8
97	YNA040A	Nut 4
98	YJH35A10	Pan Head Tapping 3.5 x 10
99	YWA030C	Washer 3
100	YAA30C12	Bind Scr. 3 x 12
101	PB1405-1	PB1405-1
102	YJJ23A10	Pan Head Tapping 2.3 x 10
103	YWB040A	Washer 4

# Adjustment Procedures

## Adjustment of Rotation

Set the adjustment knob at the mechanical center position for both 33 and 45 r.p.m. respectively, and adjust the VR2 (33 r.p.m.) and VR3 (45 r.p.m.) in the motor control P.C.B. so that the stroboscope gets stationary.





# Motor PCB Parts List

SYMBOL NO.	STOCK NO.	DESCRIPTION
[I.C.]		
IC-1	TCQ0036	PD1003
IC-2	TCQ0037	PA2004
[Transistor]		
Q1	TR0043	2SA733 P, Q
Q2	TR0043	2SA733 P, Q
Q3	TR0043	2SA733 P, Q
Q4	TR0029	2SC945 P, Q
Q5	TR0029	2SC945 P, Q
Q6	TR0029	2SC945 P, Q
Q7	TR0029	2SC945 P, Q
Q8	TRQ2011	2SA673 B, C
Q9	TRQ2011	2SA673 B, C
Q10	TR0277	2SC1213 B, C
Q11	TR0277	2SC1213 B, C
Q12	TRQ2011	2SA673 B, C
Q13	TRQ2011	2SA673 B, C
Q14	TR0277	2SC1213 B, C
Q15	TR0277	2SC1213 B, C
Q16	TR0029	2SC945 P, Q
Q17	TRQ4022	2SC1449 L, M
Q18	TR0029	2SC945 P, Q
[Capacitor]		
C1	CC0014	22pF 50WV El
C2	CC0014	22pF 50WV El
C6	CK0067	0.01 $\mu$ F 50WV Ce
C7	CK0067	0.01 $\mu$ F 50WV Ce
C8	CS0056	0.1 $\mu$ F 50WV Ta
C9	CQ0153	0.039 $\mu$ F 50WV My
C10	CC0046	680pF 50WV Ce
C11		0.015 $\mu$ F 50WV Ce
C12	CE0025	10 $\mu$ F 10WV El
C13	CK0067	0.01 $\mu$ F 50WV Ce
C14	CQ0148	0.01 $\mu$ F 50WV My
C15	CQ0154	0.056 $\mu$ F 50WV My
C16	CK0067	0.01 $\mu$ F 50WV Ce
C17	CE0085	33 $\mu$ F 25WV El
C18	CE0085	33 $\mu$ F 25WV El
C19	CE0145	100 $\mu$ F 25WV El
C20	CE0054	47 $\mu$ F 16WV El
C21	CK0067	0.01 $\mu$ F 50WV Ce

SYMBOL NO.	STOCK NO.	DESCRIPTION
[Varistor]		
D1	TVQ0001	VD1222
D2	TV0015	VD1122
D3	TVQ0001	VD1222
D4	TVQ0001	VD1222
[Crystal]		
X-TAL	TXQ0002	LSS-0002-0
[Zener Diode]		
ZD1	TDQ0232	RD9.1EB2
[Semi-Fixed Resistor]		
VR2		10K
VR3		6.8K
[Resistor]		
R1	RC0338	4.7M 1/4WV Rd
R2	RC0249	1K 1/4WV Rd
R5	RC0306	220K 1/4WV Rd
R6	RC0231	220 1/4WV Rd
R8	RC0300	120K 1/4WV Rd
R9	RC0290	47K 1/4WV Rd
R10	RC0274	10K 1/4WV Rd
R11	RC0274	10K 1/4WV Rd
R12	RC0274	10K 1/4WV Rd
R13	RC0282	22K 1/4WV Ro
R14		16K 1/4WV Ro
R15	RC0233	270 1/4WV Rd
R16	RD0305	2.4K 1/4WV Rd
R17	RC0251	1.2K 1/4WV Rd
R18	RD0055	120 1/4WV Rd
R19	RD0055	120 1/4WV Rd
R20	RC0261	3.3K 1/4WV Rd
R21	RC0251	1.2K 1/4WV Rd
R22	RC0251	1.2K 1/4WV Rd
R23	RC0251	1.2K 1/4WV Rd
R24	RC0251	1.2K 1/4WV Rd
R25	RC0266	47K 1/4WV Rd
R26	RC0266	47K 1/4WV Rd
R29	RD0132	680 1/2WV Rd
R30	RC0270	6.8K 1/4WV Rd
R31	RC0270	6.8K 1/4WV Rd
R32	RC0270	6.8K 1/4WV Rd
R33	RC0270	6.8K 1/4WV Rd
R34	RD01518	2.2 1/2WV Rd
R35	RD0040	1.8K 1/4WV Rd
R36	RD0305	2.4K 1/4WV Rd

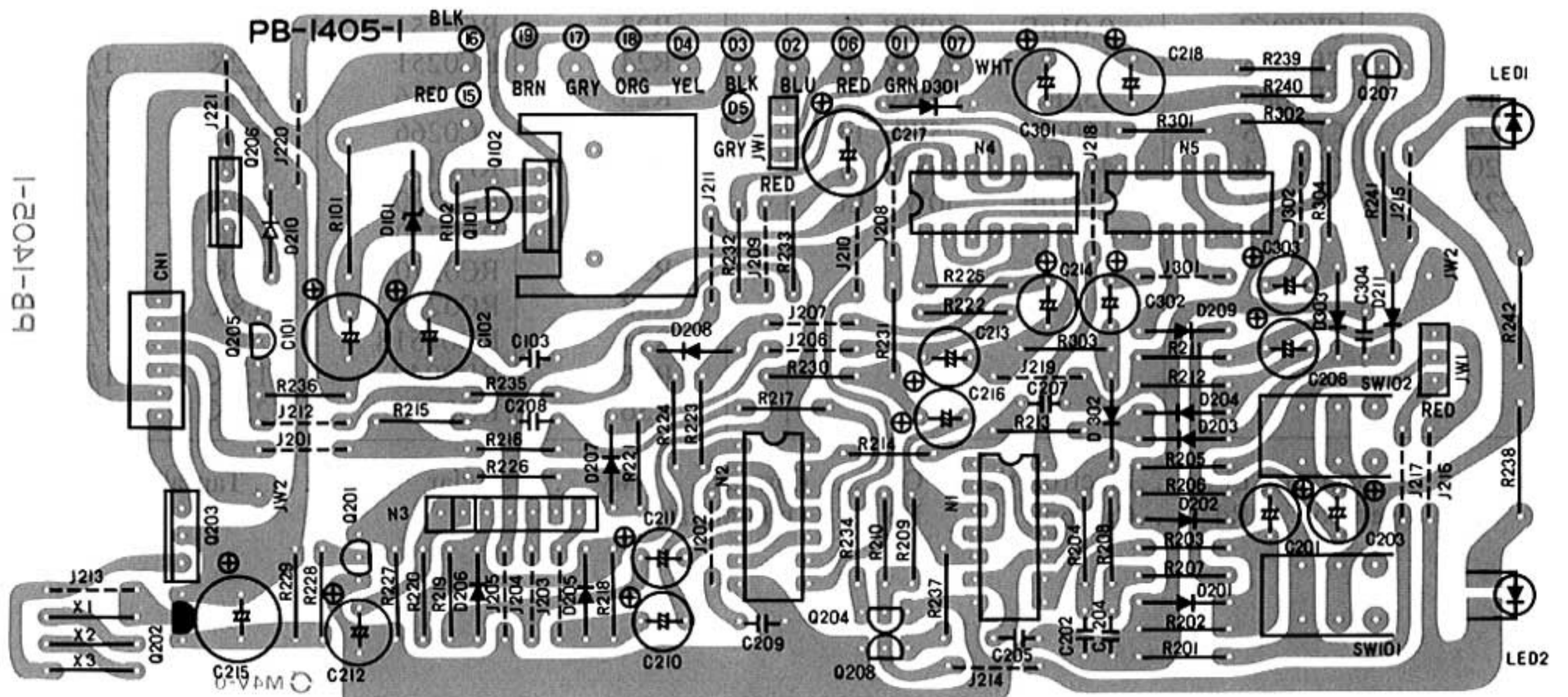
Remarks; Capacitor: El . . . . .Electrolytic, Ce . . . . .Cermaic, My . . . . .Mylar Ta . . . . .Tantalum  
Resistor Rd . . . . .Carbon, Ro . . . . .Oxid Metal

# PB-1405 Parts List VS-300

Remarks; Capacitor: El ... Electrolytic, Ce ... Ceramic, My ... Mylar  
 Resistor: Rd .. Carbon, Rf ... Flame Proof

SYMBOL NO.	STOCK NO.	DESCRIPTION
[Transistor]		
Q101	TR0029	2SC945
Q102	TR5012	2SD880
Q201	TR0029	2SC945
Q202	TR0043	2SA733
Q203	TR5012	2SD880
Q204	TR0029	2SC945
Q205	TR0029	2SC945
Q206	TR5012	2SD880
Q207	TR0029	2SC945
Q208	TR0029	2SC945
[Diode]		
D101	TD0216	WZ110 Zener
D201	TD0214	US1035 Silicon
D202	TD0214	US1035 Silicon
D203	TD0214	US1035 Silicon
D204	TD0214	US1035 Silicon
D205	TD0214	US1035 Silicon
D206	TD0214	US1035 Silicon
D207	TD0214	US1035 Silicon
D208	TD0214	US1035 Silicon
D209	TD0214	US1035 Silicon
D210	TD0001	1N4001 Silicon
D211	TD0214	US1035 Silicon
D301	TD0214	US1035 Silicon
D302	TD0214	US1035 Silicon
D303	TD0214	US1035 Silicon
X2	TD0214	US1035 Silicon
X3	TD0214	US1035 Silicon

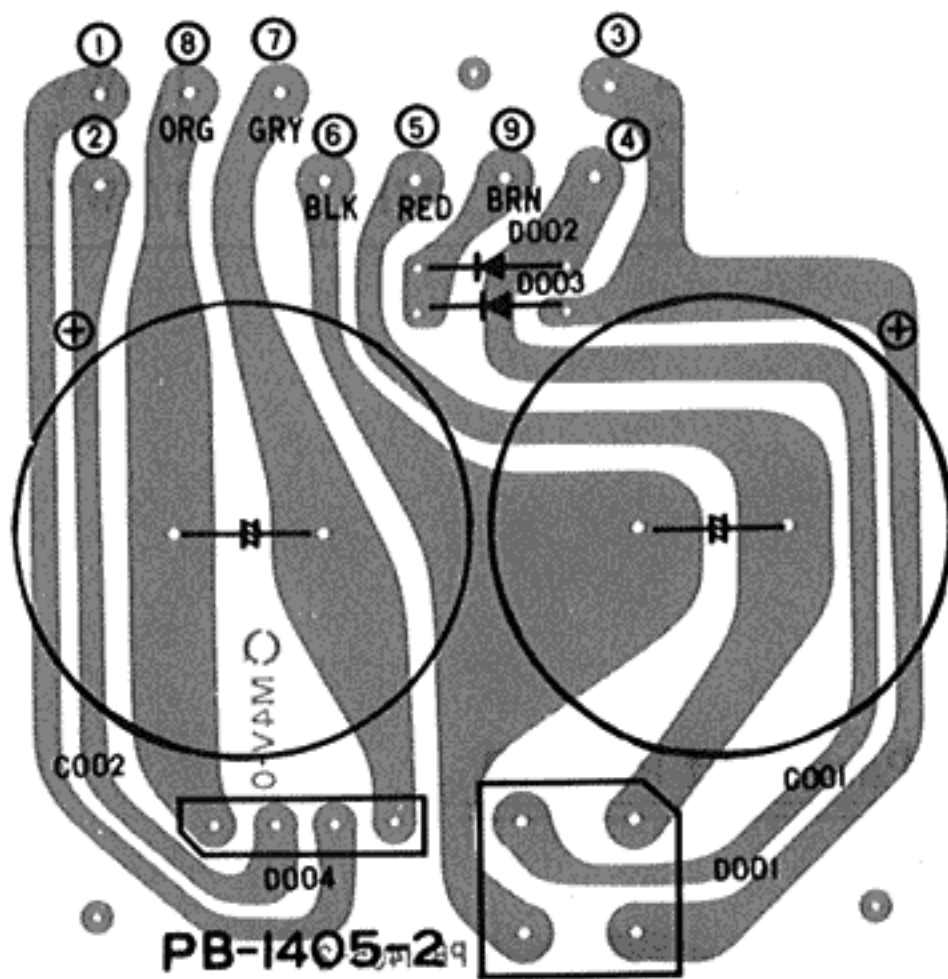
SYMBOL NO.	STOCK NO.	DESCRIPTION
[Capacitor]		
C102	CE1720	47 $\mu$ F 16WV El
C201	CE1749	0.47 $\mu$ F 50WV El
C202	CQ0013	0.022 $\mu$ F 50WV My
C203	CE1749	0.47 $\mu$ F 50WV El
C204	CQ0013	0.022 $\mu$ F 50WV My
C205	CC0011	470pF 50WV Ce
C206	CE1749	0.47 $\mu$ F 50WV El
C207	CQ0026	0.001 $\mu$ F 50WV My
C208	CQ0026	0.001 $\mu$ F 50WV My
C209	CC0035	270pF 50WV Ce
C210	CE1749	0.47 $\mu$ F 50WV El
C211	CE1749	0.47 $\mu$ F 50WV El
C212	CE0772	22 $\mu$ F LR 16WV El
C213	CE1750	1 $\mu$ F 50WV El
C214	CE1727	4.7 $\mu$ F 25WV El
C215	CE1712	220 $\mu$ F 10WV El
C216	CE1749	0.47 $\mu$ F 50WV El
C217	CE1720	47 $\mu$ F 16WV El
C218	CE1728	10 $\mu$ F 25WV El
C301	CE1728	10 $\mu$ F 25WV El
C302	CE1749	0.47 $\mu$ F 50WV El
C303	CE1750	1 $\mu$ F 50WV El
C304	CQ0021	0.0033 $\mu$ F 50WV My
[I.C.]		
N1	TC0140	TC4011BP
N2	TC0140	TC4011BP
N3	TC0200	BA222
N4	TC0140	TC4011BP
N5	TC0140	TC4011BP



SYMBOL NO.	STOCK NO.	DESCRIPTION		
[Resistor]				
R101	RB2729	390	1WV	Rf
R102	RB0182	1K	1/4WV	Rd
R201	RB0210	15K	1/4WV	Rd
R202	RB0222	47K	1/4WV	Rd
R203	RB0224	56K	1/4WV	Rd
R204	RB0244	390K	1/4WV	Rd
R205	RB0210	15K	1/4WV	Rd
R206	RB0222	47K	1/4WV	Rd
R207	RB0224	56K	1/4WV	Rd
R208	RB0244	390K	1/4WV	Rd
R209	RB0224	56K	1/4WV	Rd
R210	RB0244	390K	1/4WV	Rd
R211	RB0222	47K	1/4WV	Rd
R212	RB0222	47K	1/4WV	Rd
R213	RB0224	56K	1/4WV	Rd
R214	RB0244	390K	1/4WV	Rd
R215	RB0222	47K	1/4WV	Rd
R216	RB0230	100K	1/4WV	Rd
R217	RB0246	470K	1/4WV	Rd
R218	RB0220	39K	1/4WV	Rd
R219	RB0220	39K	1/4WV	Rd
R220	RB0248	560K	1/4WV	Rd
R221	RB0224	56K	1/4WV	Rd
R222	RB0244	390K	1/4WV	Rd
R223	RB0230	100K	1/4WV	Rd
R224	RB0193	3.3K	1/4WV	Rd

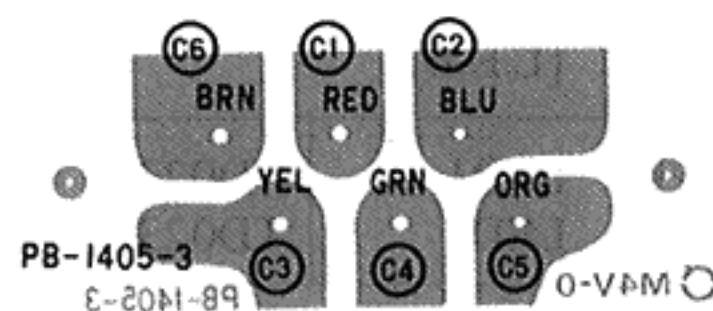
SYMBOL NO.	STOCK NO.	DESCRIPTION		
R225	RB0244	390K	1/4WV	Rd
R226	RB0220	29K	1/4WV	Rd
R227	RB0226	63K	1/4WV	Rd
R228	RB0224	56K	1/4WV	Rd
R229	RB0226	68K	1/4WV	Rd
R230	RB0220	39K	1/4WV	Rd
R231	RB0230	100K	1/4WV	Rd
R232	RB0206	10K	1/4WV	Rd
R233	RB0224	56K	1/4WV	Rd
R234	RB0224	56K	1/4WV	Rd
R235	RB0220	39K	1/4WV	Rd
R236	RB0226	68K	1/4WV	Rd
R237	RB0224	56K	1/4WV	Rd
R238	RD0133	560K	1/2WV	Rd
R239	RB0210	15K	1/4WV	Rd
R240	RB0220	39K	1/4WV	Rd
R241	RB0206	10K	1/4WV	Rd
R242	RD0133	560	1/2WV	Rd
R243	RB0222	47K	1/4WV	Rd
R244	RB0230	100K	1/4WV	Rd
R245	RB0230	100K	1/4WV	Rd
R301	RB0214	22K	1/4WV	Rd
R302	RB0220	39K	1/2WV	Rd
R303	RB0220	39K	1/4WV	Rd
R304	RB0220	39K	1/4WV	Rd

**PB-1405-2 Parts List VS-300**



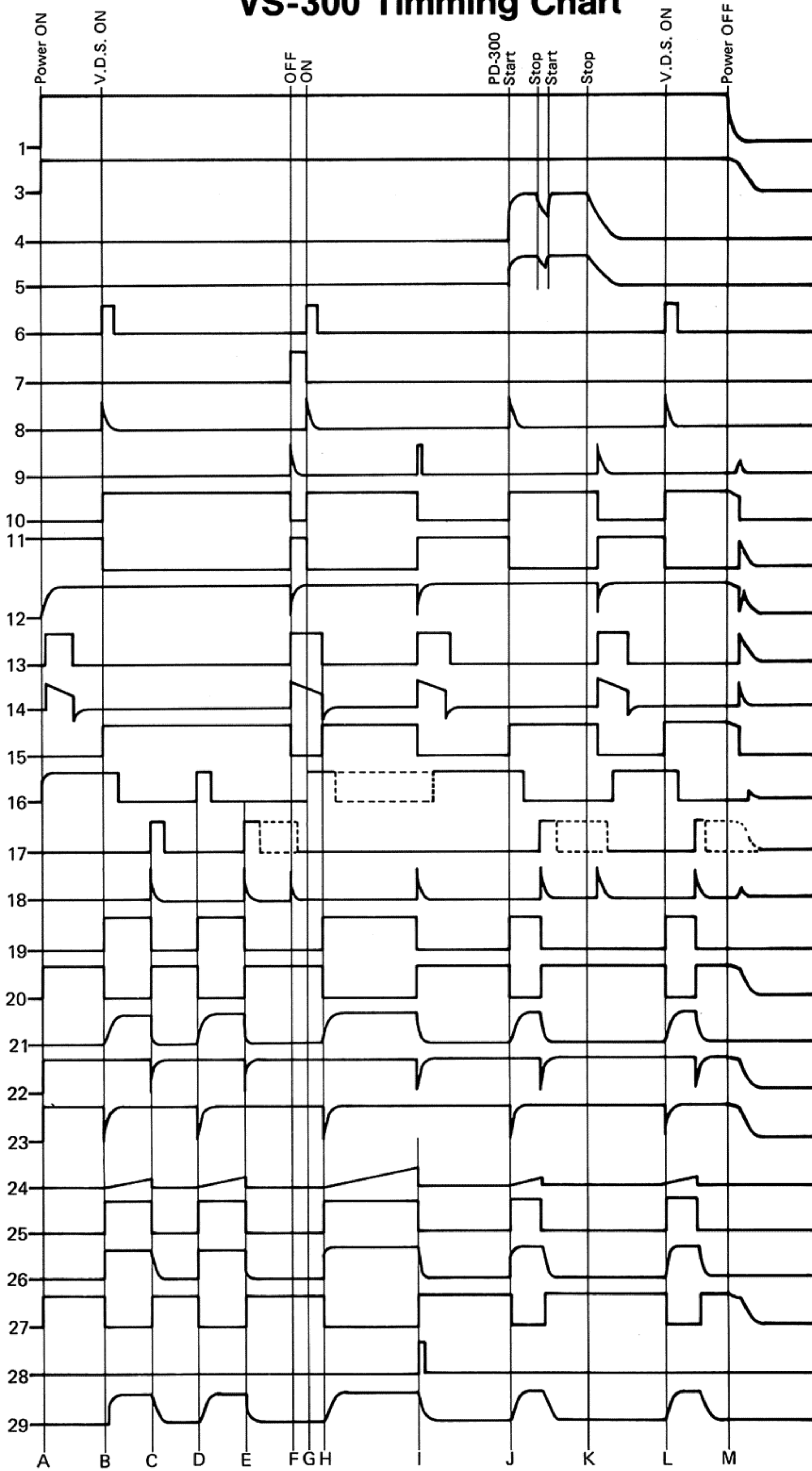
SYMBOL NO.	STOCK NO.	DESCRIPTION		
[Diode]				
D001	TD0185	S2VB10	Bridge	
D002	TD0214	US1035	Silicon	
D003	TD0214	US1035	Silicon	
D004	TD0139	S1VB10	Bridge	
[Capacitor]				
C001	CE1030	6800 $\mu$ F	25WV	E1
C002	CE1030	6800 $\mu$ F	25WV	E1

**PB-1405-3 VS-300**

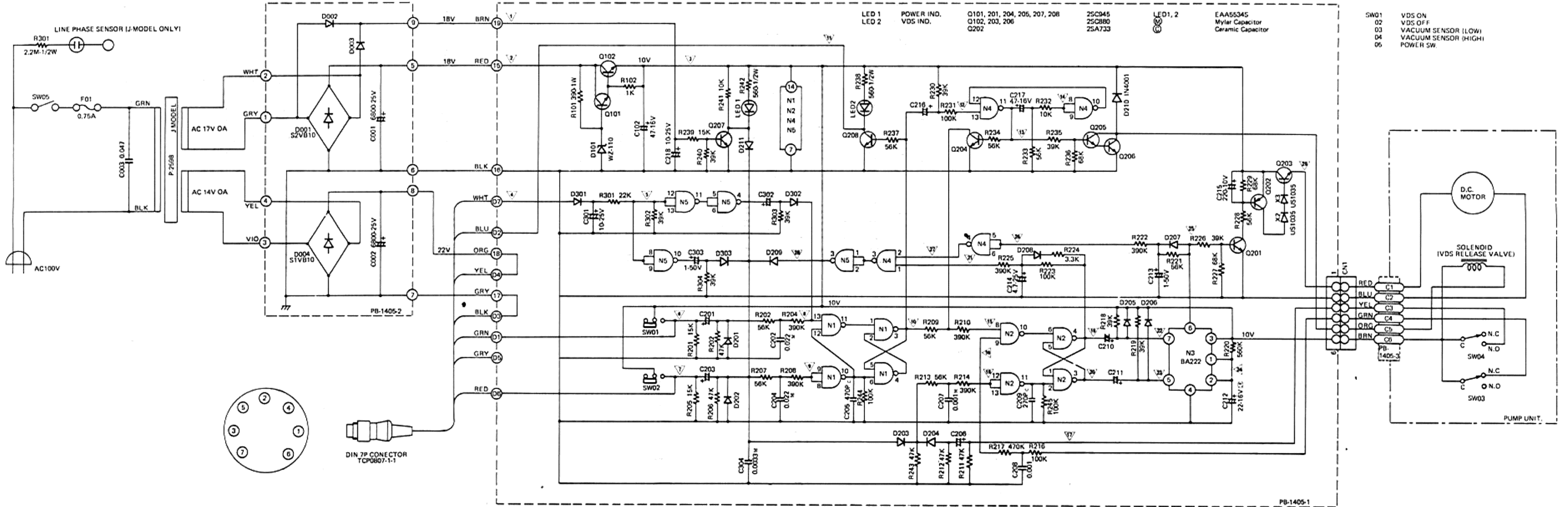
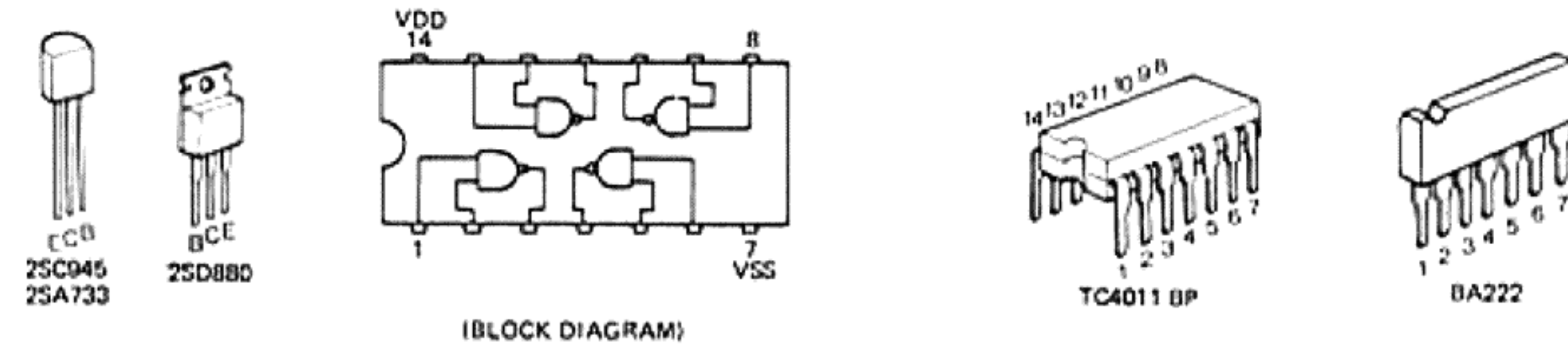
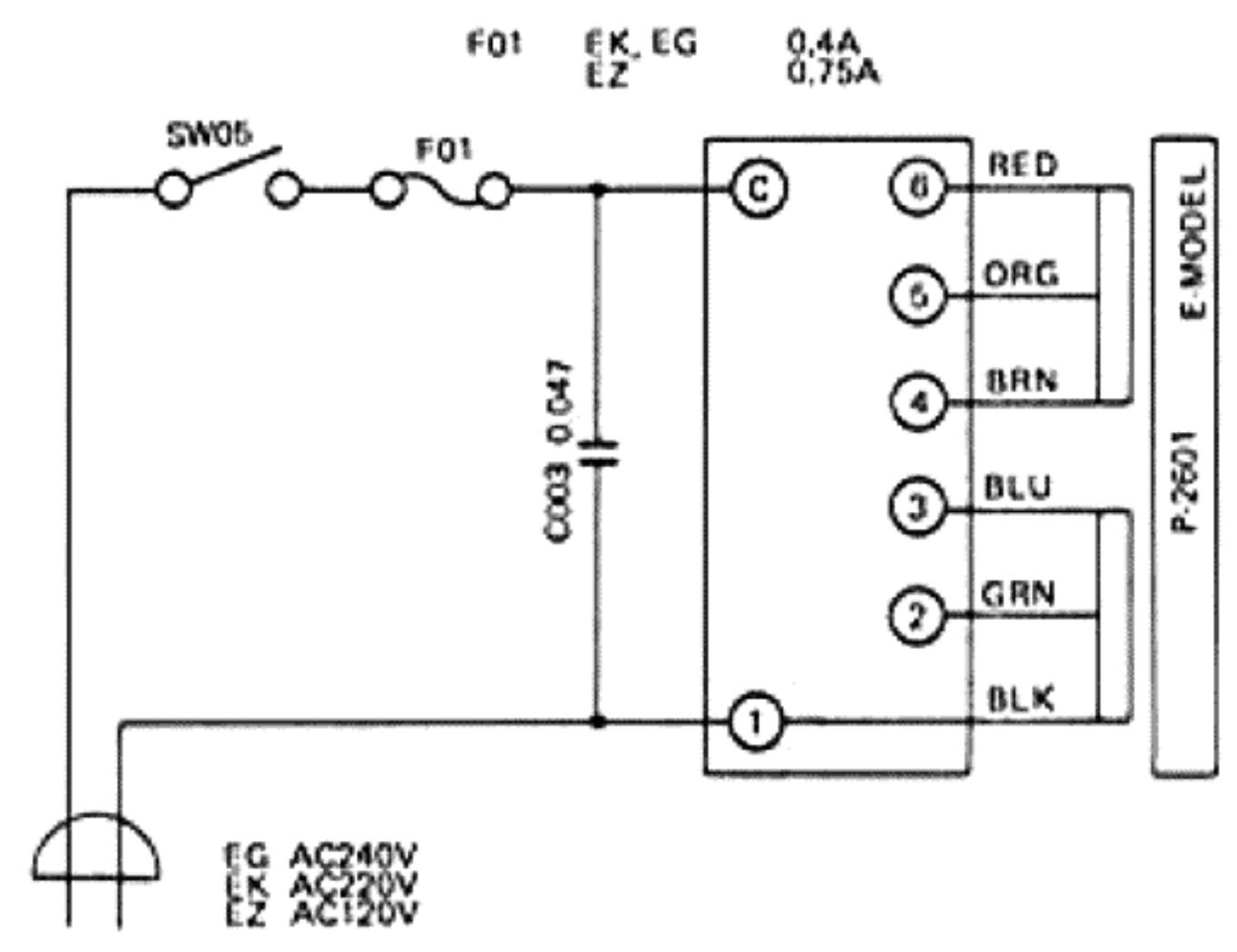
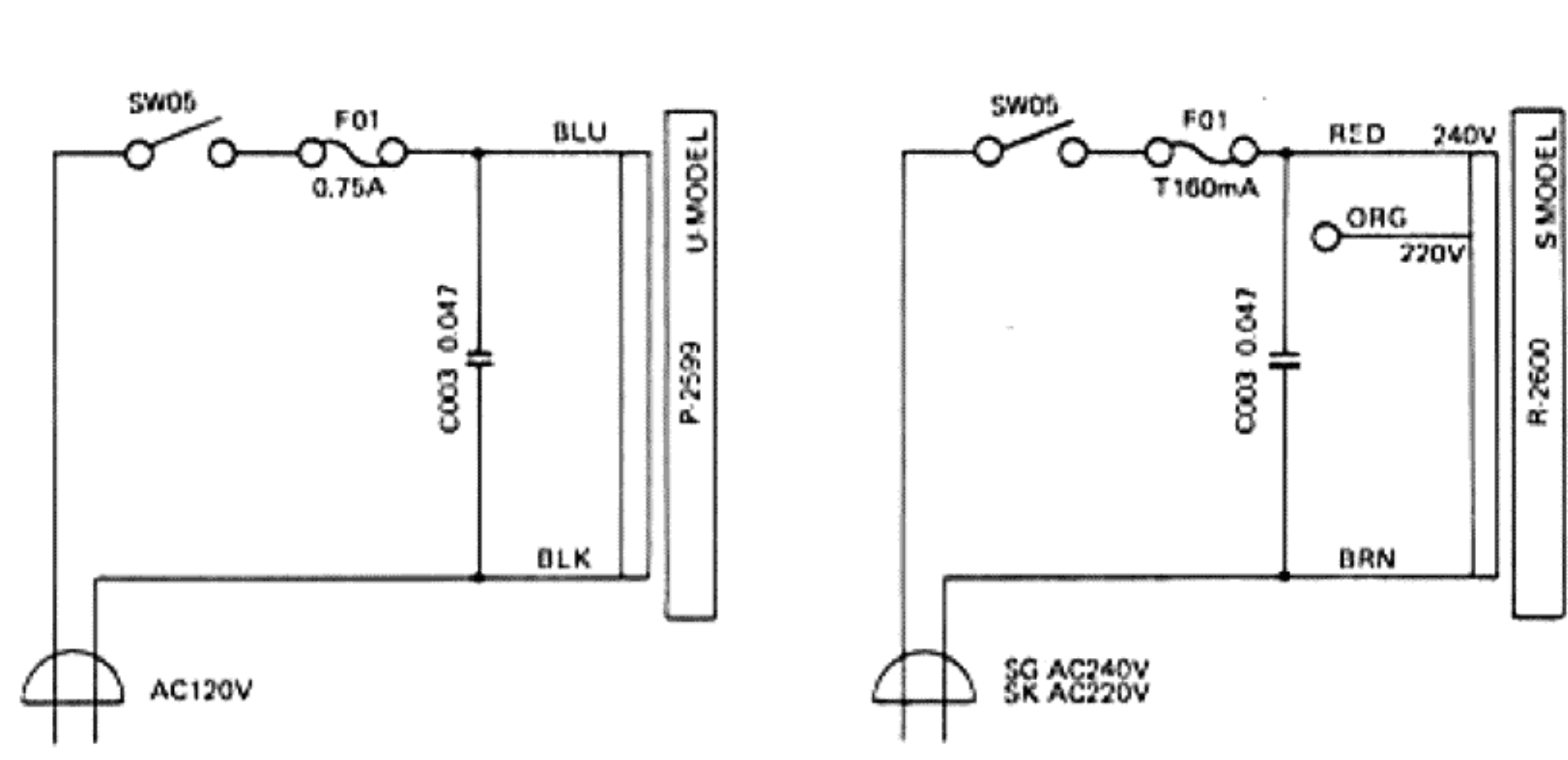




# VS-300 Timming Chart

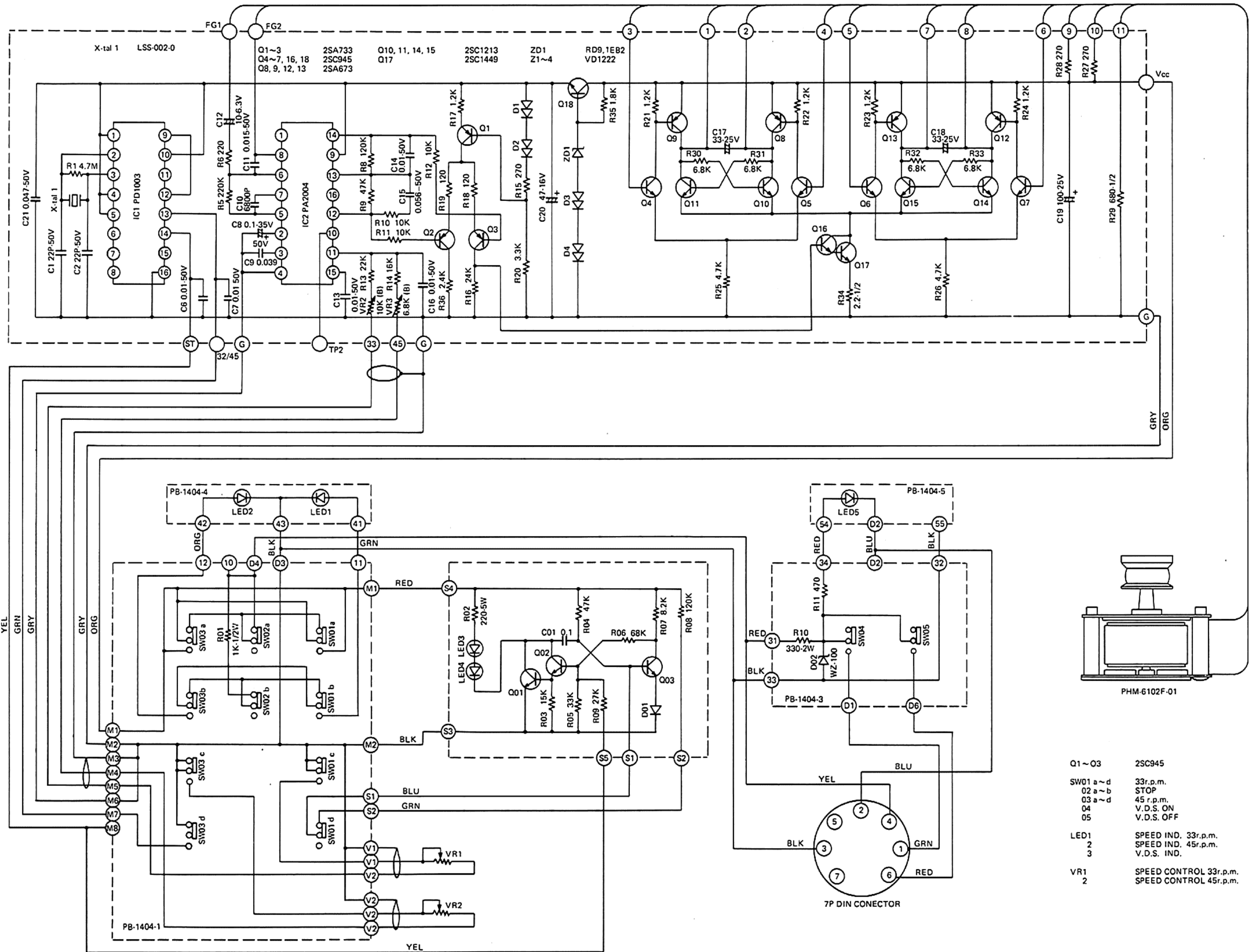


# VS-300 Schematic Diagram



Remarks  
 1. Unless otherwise specified, all resistors are in ohm, all capacitors are in micro farad.  
 2. Unless otherwise specified, all Diodes are US1035, all capacitors are 0.47µF-50V.

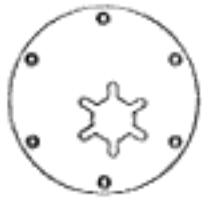
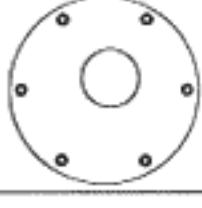
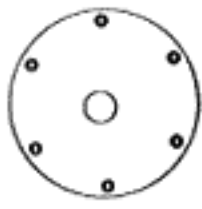
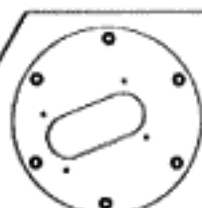
# PD-310 Schematic Diagram



1. Unless otherwise specified, all resistors are in ohm, all capacitors are in micro farad.

- |            |                        |
|------------|------------------------|
| Q1 ~ Q3    | 2SC945                 |
| SW01 a ~ d | 33r.p.m.               |
| 02 a ~ b   | STOP                   |
| 03 a ~ d   | 45 r.p.m.              |
| 04         | V.D.S. ON              |
| 05         | V.D.S. OFF             |
| LED1       | SPEED IND. 33r.p.m.    |
| 2          | SPEED IND. 45r.p.m.    |
| 3          | V.D.S. IND.            |
| VR1        | SPEED CONTROL 33r.p.m. |
| 2          | SPEED CONTROL 45r.p.m. |

## ARM-BASE & APPLICABLE TONEARMS

TYPE		TONEARM/BRAS	L	D	SHAPE
TF-MT	STAX	UA-7, UA-3, UA-9	212 ~ 240 mm	30.5 mm	
	GRACE	G-704, G-714			
	MICRO	MA-505, MA-707X, MA-303 MA-101mk II, MA-77mk II			
	FR	FR-64, FR-64S, FR-14			
	ORTOFON	RMG-212			
	SAEC	WE-308, WE-407/23			
	AUDIO-TECHNICA	AT-1503 III, AT-1100			
LUXMAN	TA-1				
TF-LH	JVC	UA7045	215 ~ 235 mm	41 mm	
	TECHNICS	EPA-100			
	LUSTER	GST-801			
	AUDIO-CRAFT	AC-300mk II, AC-3000MC			
TF-SG	GRACE	G-940, G-545F, G-840F, G-707, Σ-709, G-945	221 ~ 231 mm	25 mm	
	FR	FR-54			
	DENON	DA-305, DA-307, DA-309			
	AUDIO-CRAFT	AC-3000, AC-300A			
	EXEL-SOUND	ES-801			
	ADC	LMF-1, LMF-2			
TF-LS	SME	30009S II, 3009S III	SME		

Remarks

L : Distance between platter centre and arm pivot.

D : Diameter of arm-fixing hole

## Specifications

### SPECIFICATIONS PD-310

#### [PHONO MOTOR SECTION]

Driving System:	Belt Drive System
Motor:	Brushless & Slotless DC Servo Motor
Turntable Platter:	30cm Aluminum die-cast 3.4 kgs
Inertia Moment:	500 kgs·cm <sup>2</sup>
Rotation:	33 rpm, 45 rpm (2-speed)
Adjustable Range of Rotation:	+10% - -6% (33-1/3, 45 rpm independent)
S/N Ratio:	better than 70 dB (D1N-B)
Wow & Flutter:	no more than 0.03% (W.R.M.S.)
Rise Time:	within 3 seconds

#### [ADDITIONAL FEATURES]

Stroboscope:	Illumination by built-in quartz oscillator
Acrylic Cover:	4mm-thick, detachable
Insulator:	Adjust Facility
Tonearm Base:	Detachable

#### [GENERAL]

Dimensions:	490(W) × 390(D) × 175(H) mm 19.3" × 15.4" × 6.9"
Weight:	Net 18.5 kgs

### SPECIFICATIONS VS-300

Applicable Turntable System:	LUXMAN PD310 and PD300
Suction System:	Automatic Reset Type Electric Air Sucking System
Pressure Sensing System:	Dual Line (high and low)
Dimensions:	90(W) × 150(H) × 357(D) mm
Weight:	4 kgs

\* Specifications and appearance design subject to change without notice.