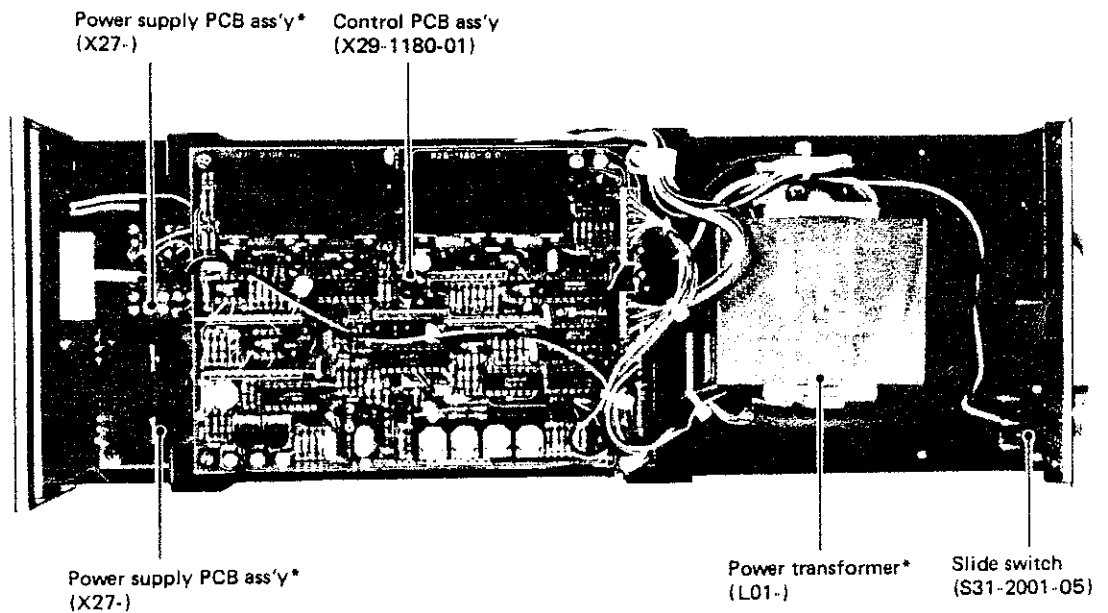
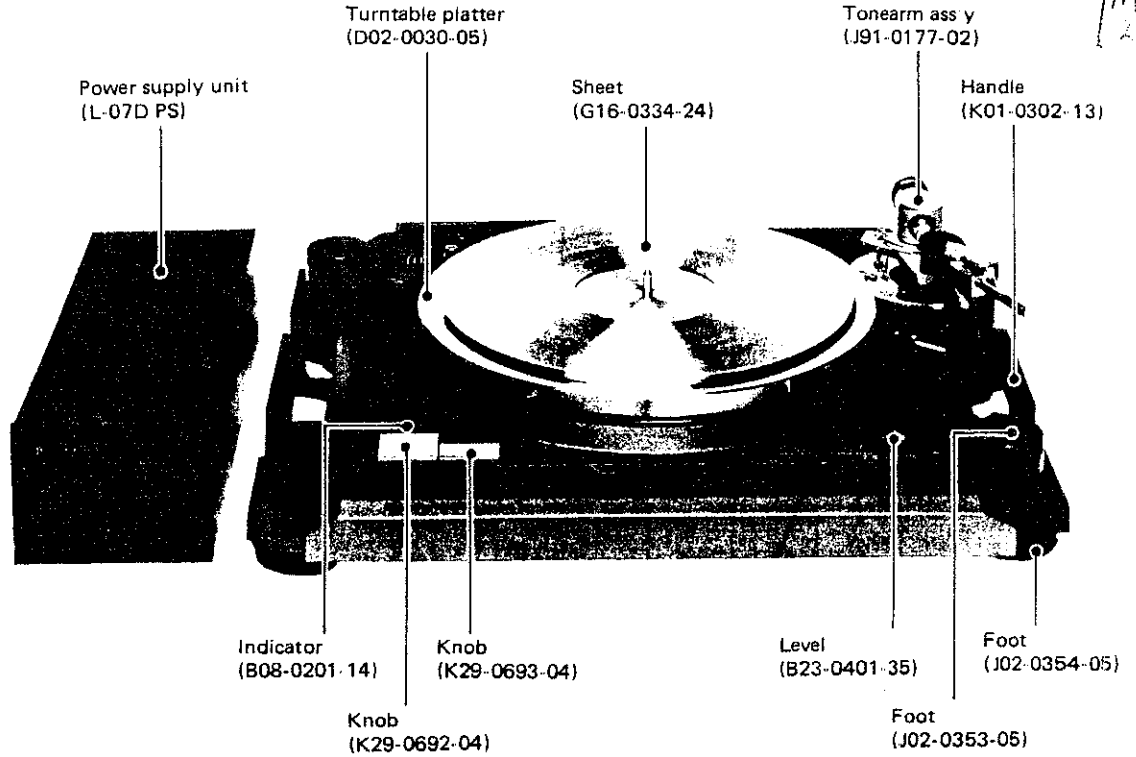


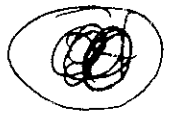
QUARTZ PLL DIRECT DRIVE TURNTABLE

SERVICE MANUAL

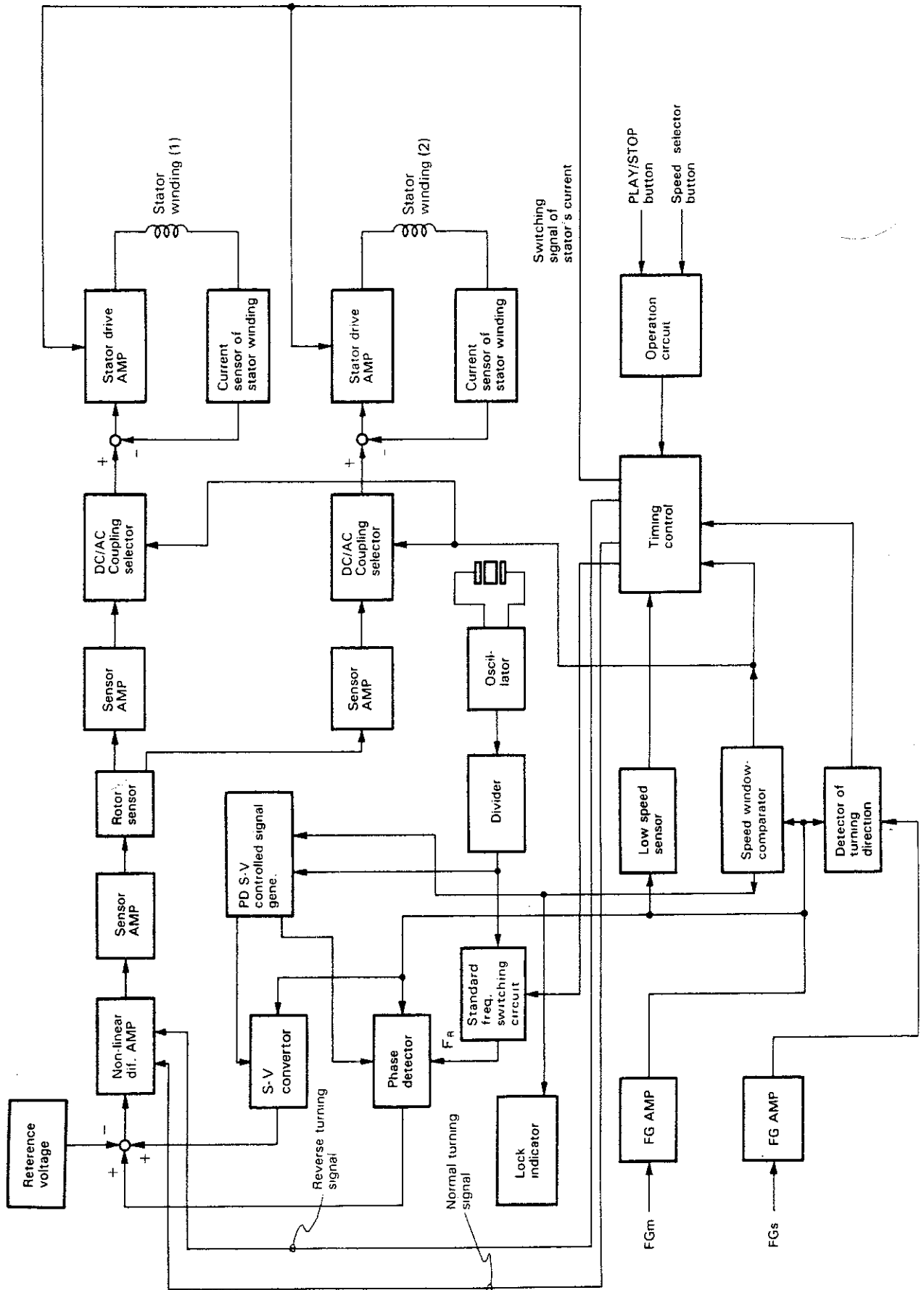
MASTER
1/11



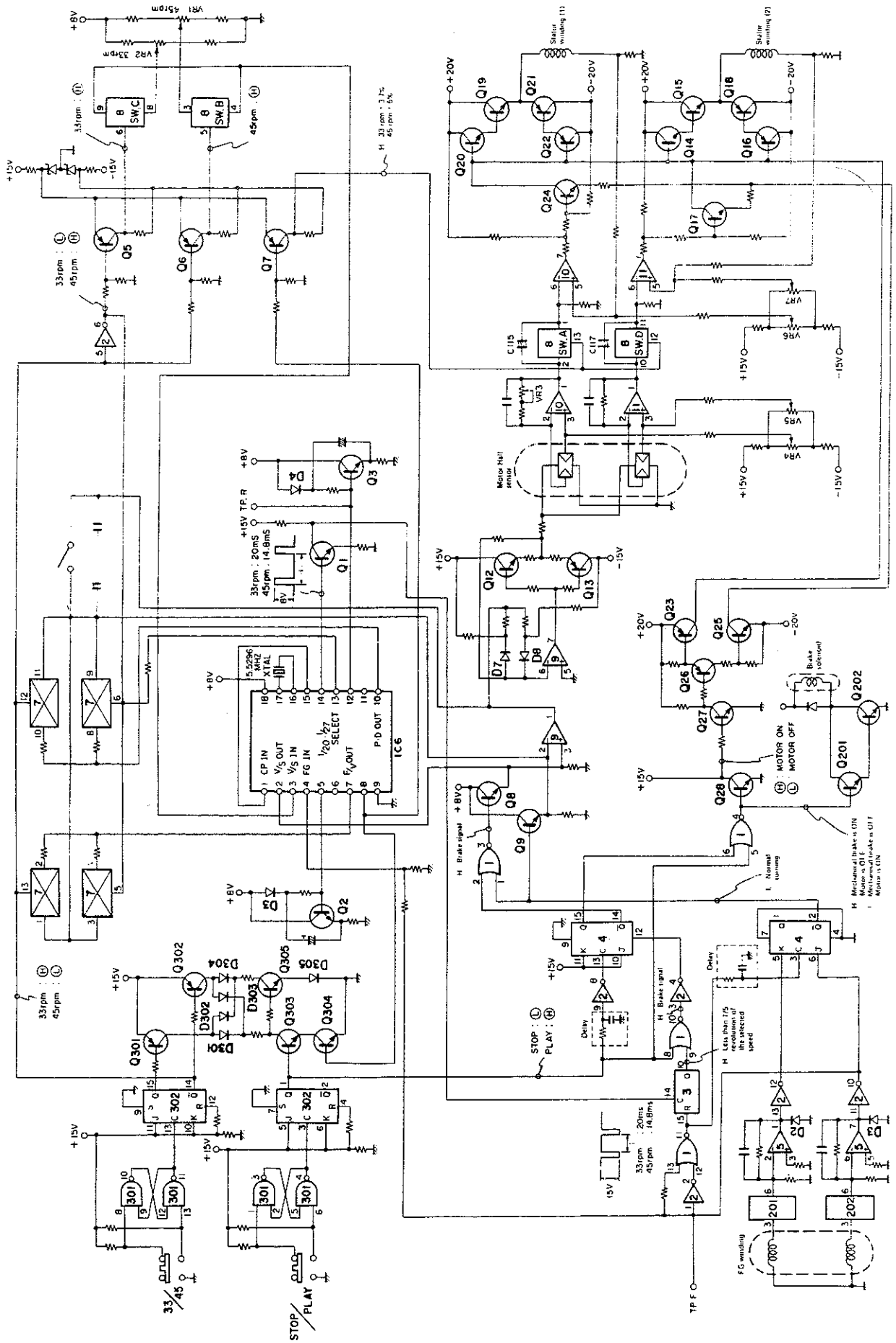
* Refer to Parts List on page 14



BLOCK DIAGRAM

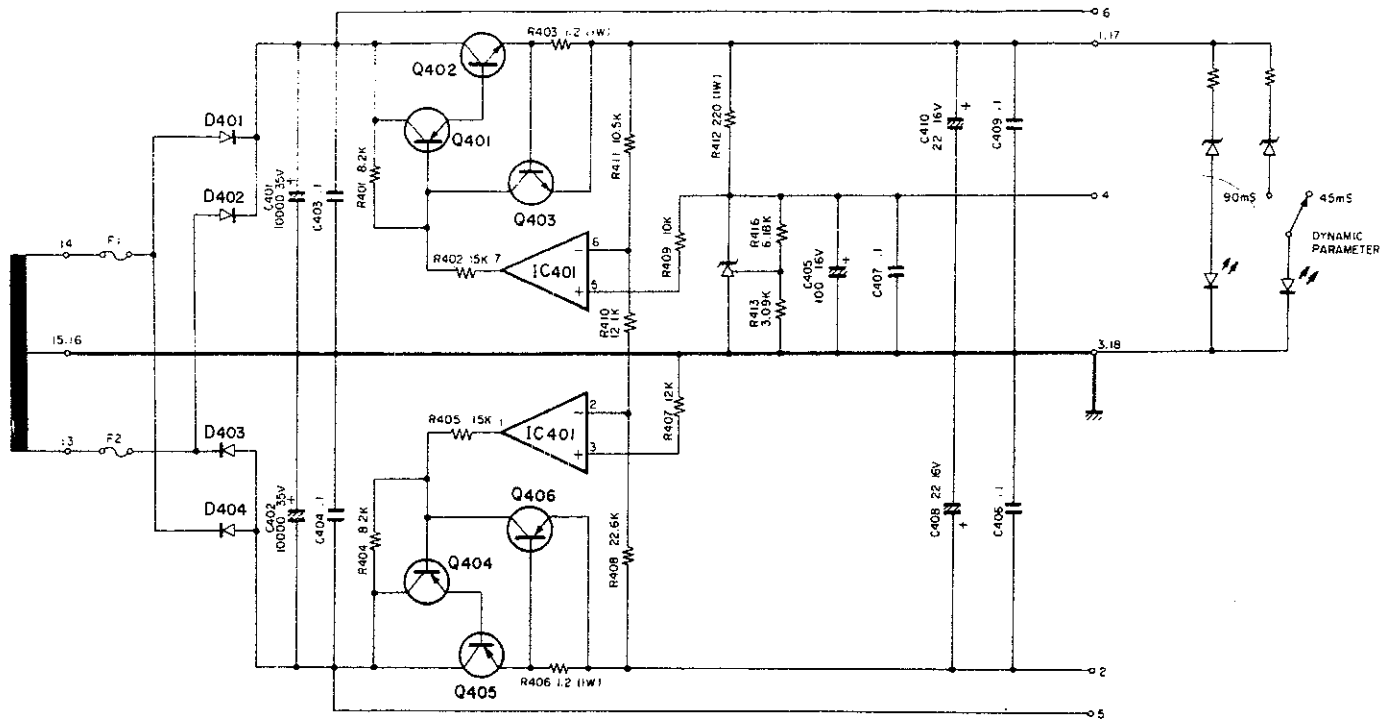


LOGIC DIAGRAM

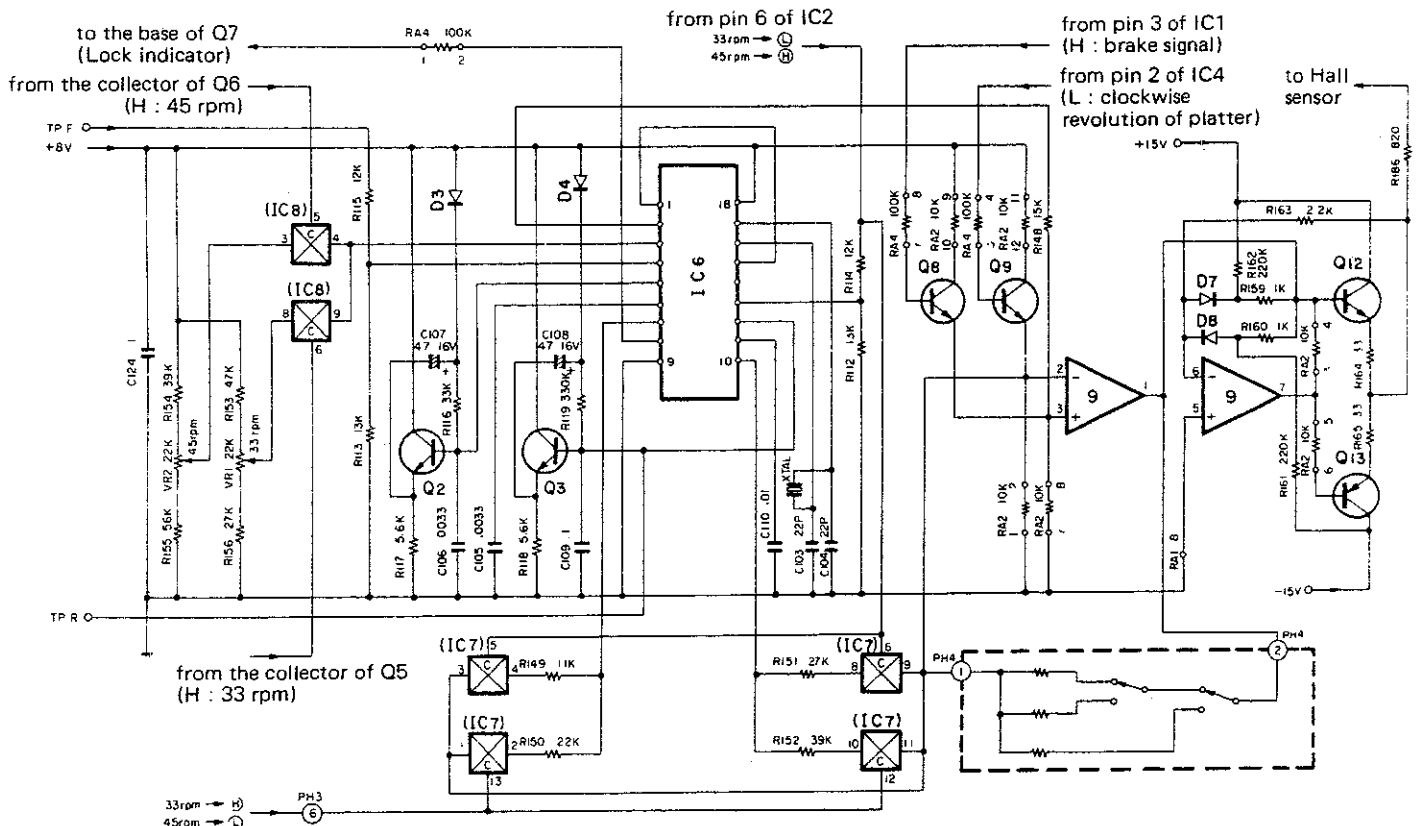


LOGIC DIAGRAM

POWER SUPPLY

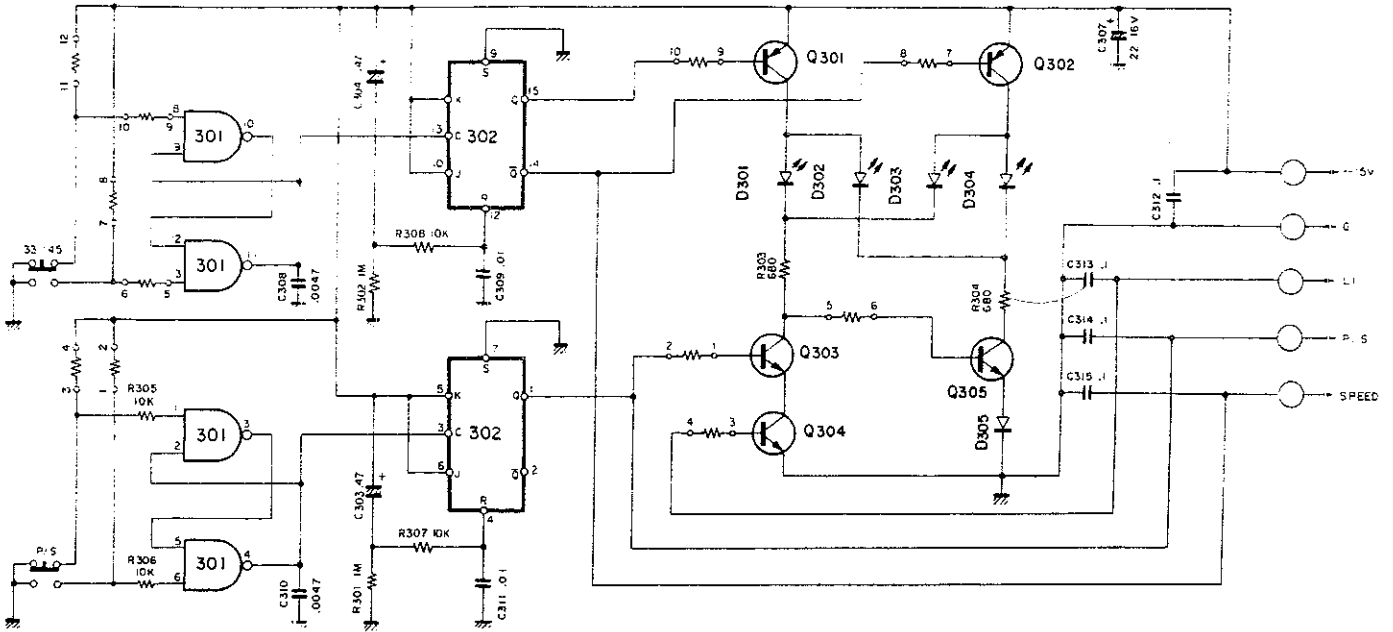


CONTROL UNIT LOGIC DIAGRAM

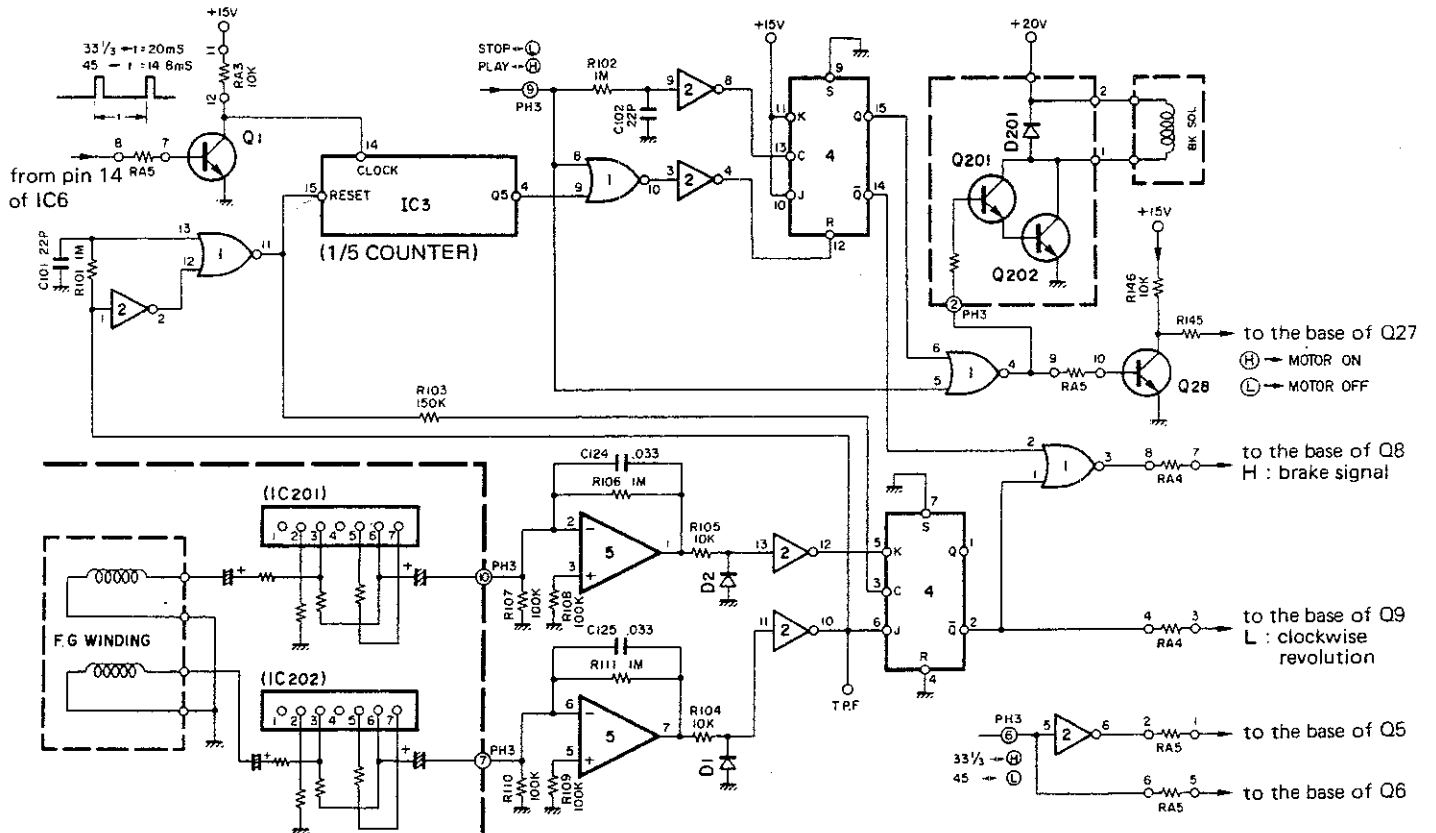


LOGIC DIAGRAM

CONTROL SWITCH LOGIC DIAGRAM

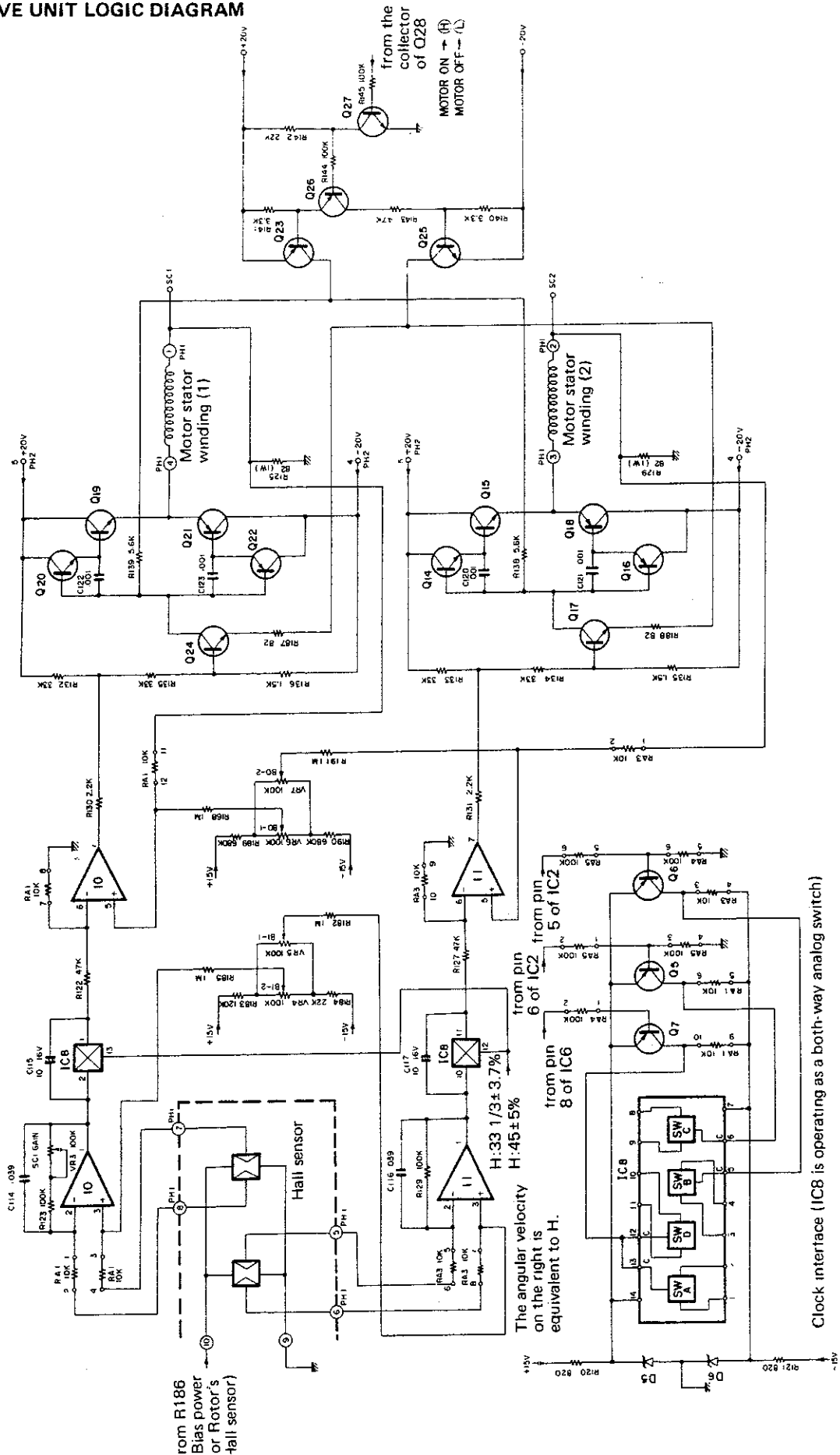


OPERATION UNIT LOGIC DIAGRAM



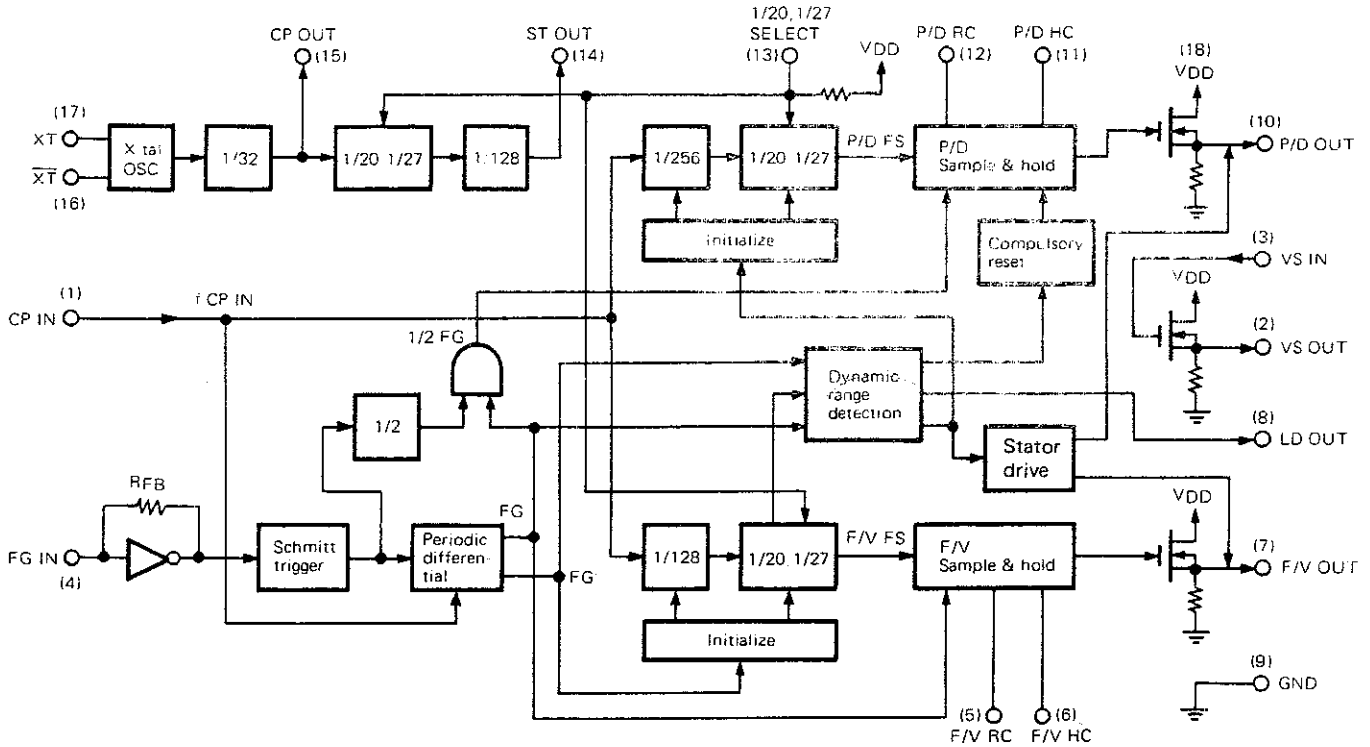
LOGIC DIAGRAM

MOTOR DRIVE UNIT LOGIC DIAGRAM

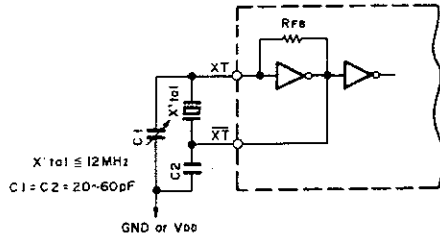


CIRCUIT DESCRIPTION

MSM5819RS



Terminal No.	Symbol	Function
1	CP IN	Standard signal input terminal, and is usually connected to CP OUT.
2	VS OUT	Terminals to set reference voltage. Output is a source follower. Voltage of 0 to $V_{DD} - V_{IN}$ appears at VS OUT terminal according to the voltage at VS IN terminal ($V_{IN} \approx 2V$).
3	VS IN	
4	FG IN	Input terminal for detector signal (comparison signal).
5	F/V RC	Terminal for connecting R1 and C1 to generate sawtooth wave to obtain F/V output voltage. ($C1 \leq 1\mu F$, $R1 \geq 10k\Omega$)
6	F/V HC	Terminal for connecting holding capacitor to obtain F/V output voltage. ($HC \approx 1/10 C1$, $HC \geq 1,000pF$)
7	F/V OUT	This terminal is a source follower buffer output for F/V HC. HC level is shifted about +2V for this output. Standard source follower resistor is 40kΩ.
8	LD OUT	Lock detector output terminal which is at "H" level (V_{DD}) when motor speed is normal (within lock range) and at "L" level (GND) when motor is too fast or too slow (out of lock range).
9	GND	
10	PD OUT	Same function as F/V OUT for P/D HC input.
11	P/D HC	Same function as F/V HC for P/D output. ($HC \approx 1/10 C2$, $HC \geq 1,000pF$)
12	P/D RC	Same function as F/V RC for R2 and C2 to obtain P/D output. ($C2 \leq 1\mu F$, $R2 \geq 10k\Omega$)
13	1/20, 1/27 SELECT	Input terminal for frequency dividing ratio selection. This selection is made to change the rotation speed of the motor.
14	ST OUT	Standard frequency output terminal for stroboscope of 1/16 duty ratio.
15	CP OUT	Standard signal output terminal generated from the X'tal oscillator.
16	\overline{XT}	Quartz and trimmer capacitor for fine adjustment of frequency are connected between \overline{XT} and XT terminals as shown below.
17	XT	
18	VDD	Power supply terminal.



CIRCUIT DESCRIPTION

Description of operation

The output signals F/V OUT and P/D OUT are under either of three condition described below ;

(1) Locked condition

Both F/V OUT and P/D OUT repeat "H" and "L" level by turns, and the lock detector signal (LD OUT) is at "H" level (V_{DD})

Lock range

33 1/3 rpm Standard signal period $T \pm 3.7\%$

45 rpm Standard signal period $T \pm 5\%$

Standard period $T = 1/(f_{cp} \text{ IN} \times (1/128) \times (1/20 \text{ or } 1/28))$

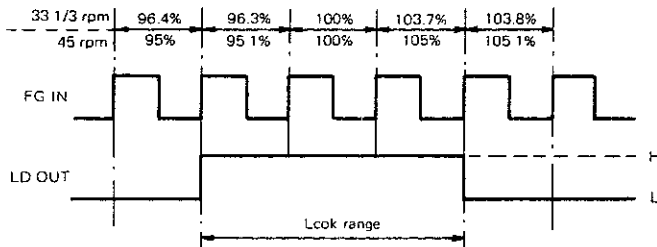
(2) Underspeed

Both F/V OUT and P/D OUT are at "H" level (V_{DD}), and the lock detector signal (LD OUT) is at "L" level (GND).

(3) Overspeed

Both F/V OUT and P/D OUT are at "L" level (GND), and lock detector signal (LD OUT) is at "L" level (GND)

Relation between the lock range and the periodic tolerance range is as follows :



Note : LD OUT signal is "H" level when FG IN signal period is within 95.1 to 105.1% of standard signal period for 45 rpm, and 96.3 to 103.7% for 33 1/3 rpm. It is "L" for other percentage.

Brake control circuit (Refer to the diagram of Operation unit logic diagram section on page 5.)

This L-07D employs both electronic brake and mechanical brake, and change them automatically depending on rotating condition. The parts related to this operation are IC1~5. IC3 is an octal counter, and when reset input (pin 15) is at "L" level and if five pulses are input to the clock input (pin 14), the output at pin 4 is at "H" level.

FG signal is applied to pin 15 and pulses corresponding to rotation speed is applied to pin 14 of IC3. When the rotation speed is locked, the input frequencies at pins 14 and 15 are the same. In this condition, reset signal (FG signal) is applied to pin 15 everytime the clock signal (standard signal) is applied to pin 14, and the output at pin 4 is kept "L" level. If the stop button is pressed at this point, pins 8 and 5 of IC1 are reversed from "H" level to "L" level. But since pin 9 of IC1 connected with pin 4 of IC3, "L" level. Then, pin 10 of IC1 is set to "H" level, and this output is reversed to "L" level in IC2 and added to the reset input of IC4. While "H" level is applied to this terminal, this J-K flip-flop resets the outputs Q and \bar{Q} to "L" level and "H" level respectively. Now that "H" level turned to "L" level, clock input will be valid. To the clock input, the signal set to "L" level by pressing the stop button and delayed by 1M and 22pF and reversed to "H" level in IC2 is added. Consequently, output \bar{Q} is reversed to "L", and Q to "H", and the signal of \bar{Q} becomes the input of pin 2 of IC1 (this is because J-K flip-flop acts as a T flip-flop by the clock pulse when both J and K inputs are "H" level and both R and S inputs are "L" level).

On the other hand, FG signal of two phases amplified and shaped by IC5 and IC2 becomes the input for other FF, and it is connected so that \bar{Q} can be at "L" level when the turntable is turning in normal direction. Therefore, pin 1 of IC1 is also at "L" level, and its output (pin 3) is at "H" level, and it sends the brake signal to IC9 through Q8 to stop the motor. When the speed of the turntable is reduced to 1/5 of the rated speed under this condition, pin 4 of IC3 will be "H" level and pin 12 of IC4 (reset) will also be "H" level changing \bar{Q} to "H", and Q to "L". Then, pins 5 and 6 of IC1 are set to "L" level and output pin 4 outputs "H" to operate solenoid for the mechanical brake through the drivers Q201 and 202. Furthermore, Q28 sets the motor drive circuit to floating condition (to disable driving). At this point pin 2 of IC1 is at "H" level, and the electronic brake cannot work. Although the output of pin 4 of IC3 returns to "L" (reset of IC4 becomes invalid), the clock input of IC4 is kept at "H" level until the play button is pressed again. Pin 2 of IC4 is set at "H" during braking operation to prevent the motor from turning in reverse direction.

ADJUSTMENT

Before adjustment :

- Place the turntable horizontally.
- Place the turntable sheet without fail
- Turn off the dynamic parameter switch (18 mS)
- Turn the auxiliary parameter switch (on back panel of power supply) to N.
- Before moving the trimming potentiometers ensure the turning speed

No.	ITEM	OUTPUT SETTING	TURNTABLE SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	PLL (33 1/3 rpm)	Connect oscilloscope to TPR Terminal on Control board	33 1/3 rpm	VR33	Display one cycle of input wave on oscilloscope at 100mm and adjust rising point of wave to 60mm.	1
2	PLL (45 rpm)	Same as above.	45 rpm	VR45	Same as above	1
3	OFFSET AT START (33 1/3 rpm)	Connect oscilloscope to SC1 on Control board.	33 1/3 rpm	BI-1	Align base line of oscilloscope with X axis at center of cathode-ray tube. Slow down the rotation speed of the turntable platter by pressing the rim of the platter with the fingers adjust so that four or five waveforms appear on cathode-ray tube. Align center of waveform with X axis of cathode-ray tube.	2
4	OFFSET AT START (45 rpm)	Connect oscilloscope to SC2 on Control board.	45 rpm	BI-2	Same as above.	2
5	OFFSET DURING PLAYBACK (33 1/3 rpm)	Connect oscilloscope to SC1 on Control board.	33 1/3 rpm	BO-1	Align base line of oscilloscope with X axis at center of cathode-ray tube. Align center of waveform with X axis of cathode-ray tube.	2
6	OFFSET DURING PLAYBACK (45 rpm)	Connect oscilloscope to SC2 on Control board.	45 rpm	BO-2	Same as above	2
7	WOW AND FLUTTER	Connect wow and flutter meter to TPF on Control board.	33 1/3 rpm Playback part of 3kHz in test record.	SC1-GAIN	Adjust so that meter indicates minimum deflection.	3

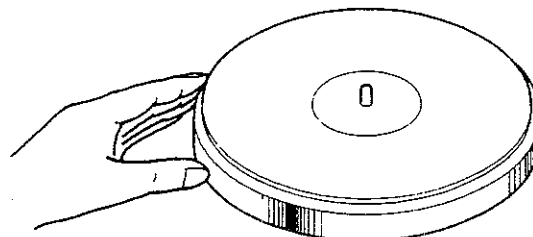
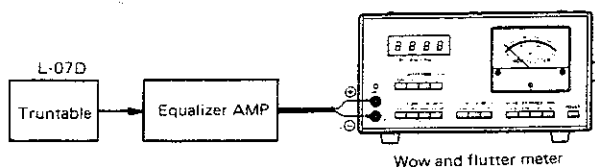
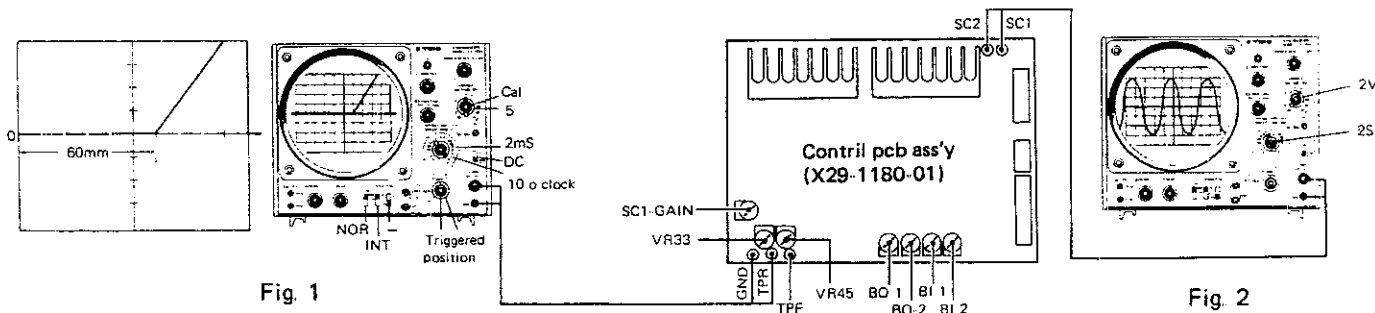


Fig 3

Fig. 2

REGLAGES

Avant les réglages :

- Placer la table de lecture à niveau.
- Ne pas oublier de placer un matelas en caoutchouc sur le plateau tournant
- Régler le commutateur de paramètre dynamique à la position OFF (18 mS)
- Mettre le commutateur de paramètre auxiliaire (situé sur le panneau arrière du bloc d'alimentation) à l'état N
- Avant de procéder au réglage des potentiomètres ajustables s'assurer toujours de la vitesse de rotation

N°	ITEM	REGLAGE DE LA SORTIE	REGLAGE DE LA TABLE DE LECTURE	POINTS D'ALIGNEMENT	ALIGNEMENT POUR	FIG.
1	PLL (33 1/3 tr/mn)	Connecter l'oscilloscope à la borne TPR de la plaque circuit imprimé du contrôle	33 1/3 tr/mn	VR33	Régler l'oscilloscope de manière à ce qu'une fréquence de l'onde d'entrée soit visualisée sur une longueur de 100mm de l'écran cathodique et que le flanc antérieur de l'onde soit égal à 60mm.	1
2	PLL (45 tr/mn)	Idem	45 tr/mn	VR45	Idem	1
3	TENSION DE DECALAGE (33 1/3 tr/mn)	Connecter l'oscilloscope à la borne SC1 de la plaque circuit imprimé du contrôle	33 1/3 tr/mn	BI-1	Aligner la ligne de base de l'oscilloscope sur l'axe X au centre de l'écran cathodique. Faire apparaître 4 ou 5 ondes sur l'écran cathodique en supportant la table de lecture par les côtés avec les mains. Aligner ainsi le centre de l'onde sur l'axe X de l'écran cathodique.	2
4	TENSION DE DECALAGE (45 tr/mn)	Connecter l'oscilloscope à la borne SC2 de la plaque circuit imprimé du contrôle.	45 tr/mn	BI-2	Idem	2
5	TENSION DE DECALAGE (33 1/3 tr/mn)	Connecter l'oscilloscope à la borne SC1 de la plaque circuit imprimé du contrôle.	33 1/3 tr/mn	BO-1	Aligner la ligne de base de l'oscilloscope sur l'axe X situé au centre de l'écran cathodique. Aligner le centre de l'onde sur l'axe X de l'écran cathodique.	2
6	TENSION DE DECALAGE (45 tr/mn)	Connecter l'oscilloscope à la borne SC2 de la plaque circuit imprimé du contrôle.	45 tr/mn	BO-2	Idem	2
7	PELURAGE ET SCINTILLEMENT	Connecter l'appareil de contrôle à la borne TPF de la plaque circuit imprimé du contrôle	33 1/3 tr/mn Reproduction des signaux à 3kHz enregistrés sur le disque prototype.	SC1-GAIN	Effectuer le réglage de manière à ce que l'aiguille fluctue le moins fortement	3

ABGLEICH

Vor die Abgleich :

- Der Plattenspieler wird für die Einstellung waagrecht stehen.
- Die Plattentellermatte wird angebracht
- Der Dynamikparameterschalter wird ausgeschaltet (18 mS)
- Der Hilfsparameterschalter wird (an der Rückseite der Stromversorgung) auf "N" gestellt
- Die Halbfestwiderstände werden nach Überprüfung der Drehzahl verstellt.

NR.	GEGENSTAND	AUSGANGS-EINSTELLUNG	PLATTENSPIELER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB
1	PLL (33 1/3 U/min)	Ein Oszilloskop an die TPR-Klemmen der Steuerschaltplatte anschließen.	33 1/3 U/min	VR33	So einstellen, daß 1 Periode der Eingangswellenform auf dem Oszilloskopschirm zu 100mm wird und der Anstieg der Wellenform bei 60mm liegt.	1
2	PLL (45 U/min)	Wie oben.	45 U/min	VR45	Wie oben.	1
3	VERSETZUNG BEIM START (33 1/3 U/min)	Ein Oszilloskop an SC1 der Kontrollschaltplatte anschließen	33 1/3 U/min	BI-1	Die Oszilloskopgrundlinie auf die X-Achse in der Mitte der Bildröhre einstellen. Den Umfang des Plattentellers mit der Hand festhalten und so einstellen, daß 4 bis 5 Wellen auf der Bildröhre erscheinen. Den Mittelpunkt der Wellenform auf die X-Achse einstellen.	2
4	VERSETZUNG BEIM START (45 U/min)	Ein Oszilloskop an SC2 der Kontrollschaltplatte anschließen.	45 U/min	BI-2	Wie oben.	2
5	VERSETZUNG WAHREND DER WIEDERGABE (33 1/3 U/min)	Ein Oszilloskop an SC1 der Kontrollschaltplatte anschließen.	33 1/3 U/min	BO-1	Die Oszilloskopgrundlinie auf die X-Achse in der Mitte der Bildröhre einstellen. Den Mittelpunkt der Wellenform auf die X-Achse einstellen.	2
6	VERSETZUNG WAHREND DER WIEDERGABE (45 U/min)	Ein Oszilloskop an SC2 der Kontrollschaltplatte anschließen.	45 U/min	BO-2	Wie oben.	2
7	JAULEN	Ein Jaulen-Meßgerät an TPF der Kontrollschaltplatte anschließen.	33 1/3 U/min Wiedergabe des 3kHz-Teils der Prüfplatte.	SC1-GAIN	So einstellen, daß der Ausschlag des Meßgerätes zu einem Minimum wird.	3

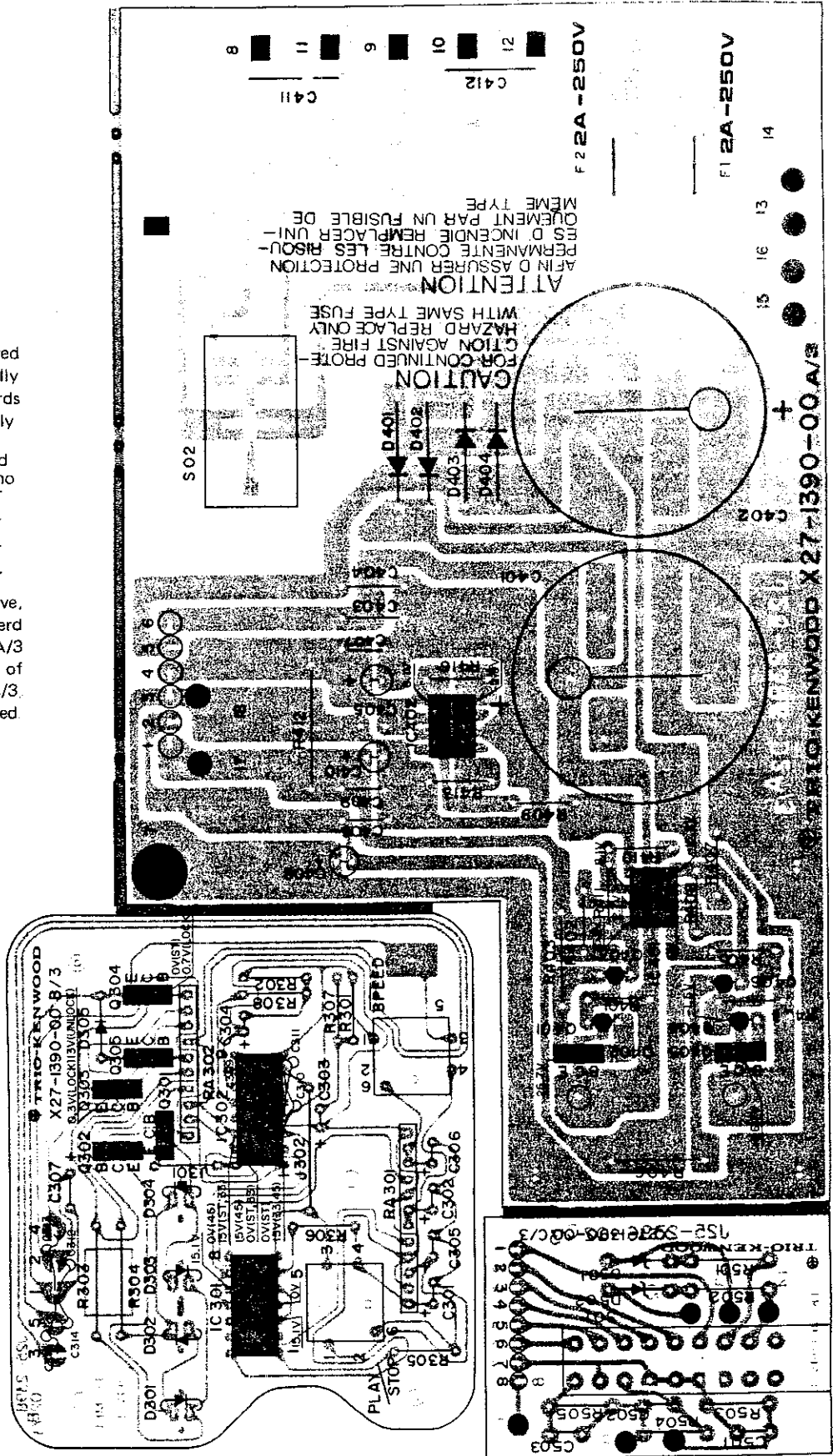
PC BOARD

POWER SUPPLY (X27-1390-01) Component side view

In this model, there are separated pc boards which was originally one. These separated pc boards can't be supplied independently

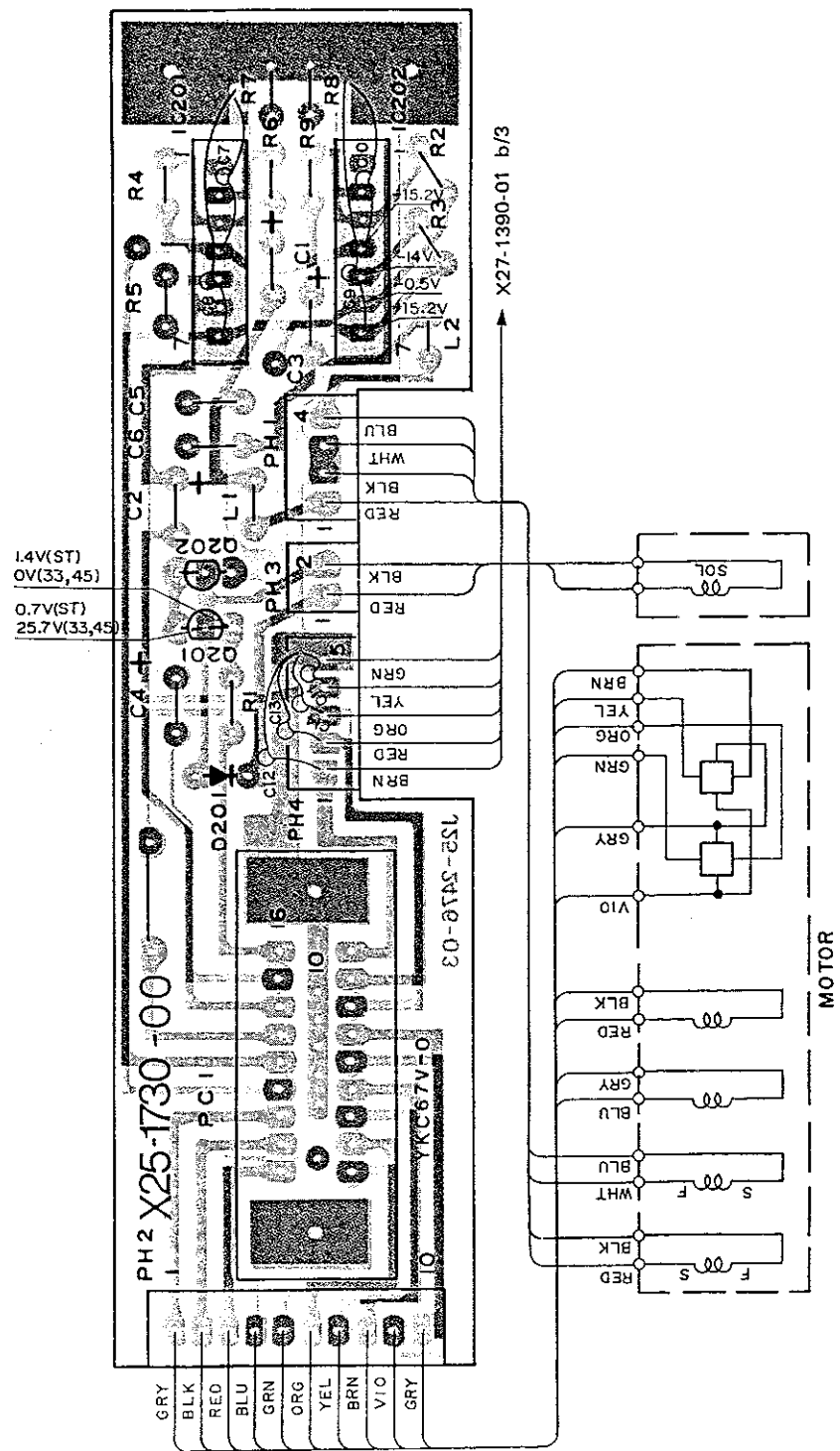
ex	Parts No of pc board	Separated portion no
	X09-1230-00	(A/3)
	X09-1230-00	(B/3)
	X09-1230-00	(C/3)

In the example shown above, separated portion can't be order indepedently In case only A/3 was orderd pc board ass'y of X09-1230-00, which all A/3 B/3 C/3 included will be shipped

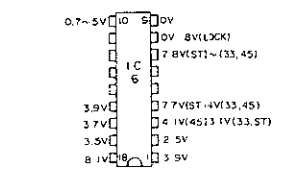
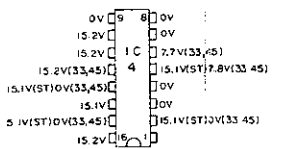
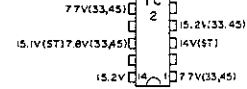
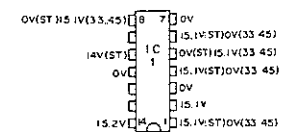
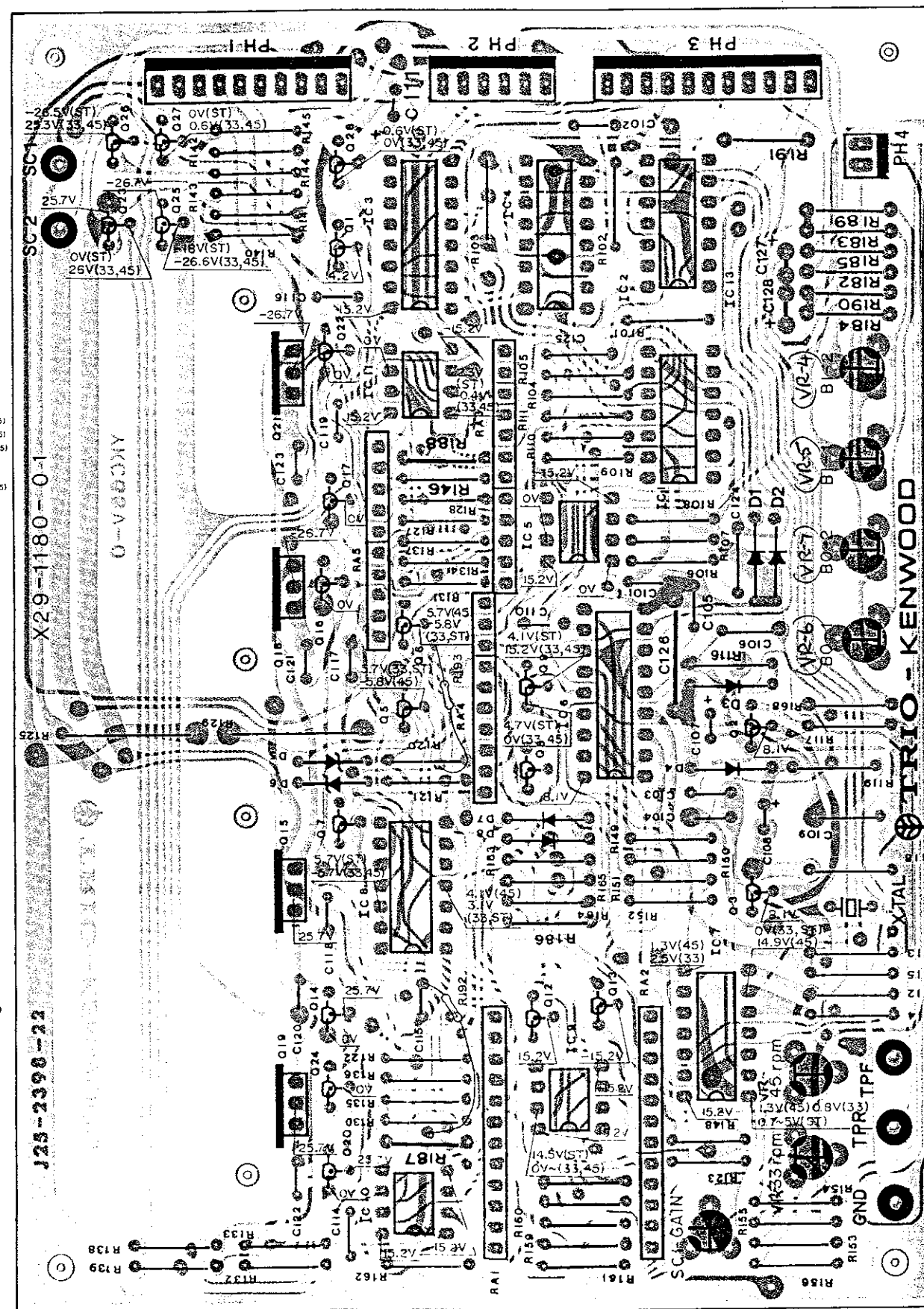


Refer to the schematic diagram for the values of resistors and capacitors

AMP (X25-1730-11) Component side view



CONTROL AMP (X29-1180-01) Component side view



Refer to the schematic diagram for the values of resistors and capacitors

WAVEFORMS AT CHECK POINTS

(at 33 1/3 rpm) using 10 : 1 probe

1 H : 5mS/div
V : 0.2V/div
emitter of Q3

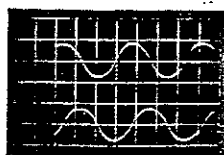


emitter of Q2

2 H : 0.1mS/div
V : 0.5V/div
pin 16 of IC6



3 H : 100mS/div
V : 0.2V/div
emitter of Q15

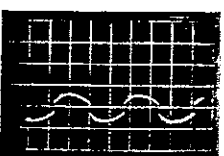


emitter of Q19

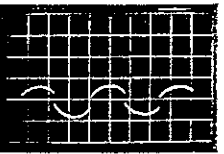
4 H : 5mS/div
V : 1V/div
TPF



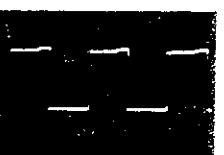
H : 5mS/div
V : 0.5V/div
TPR



5 H : 100mS/div
V : 0.2V/div
pin 7 of IC10



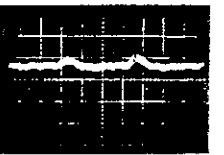
H : 100mS/div
V : 0.2V/div
pin 7 of IC11



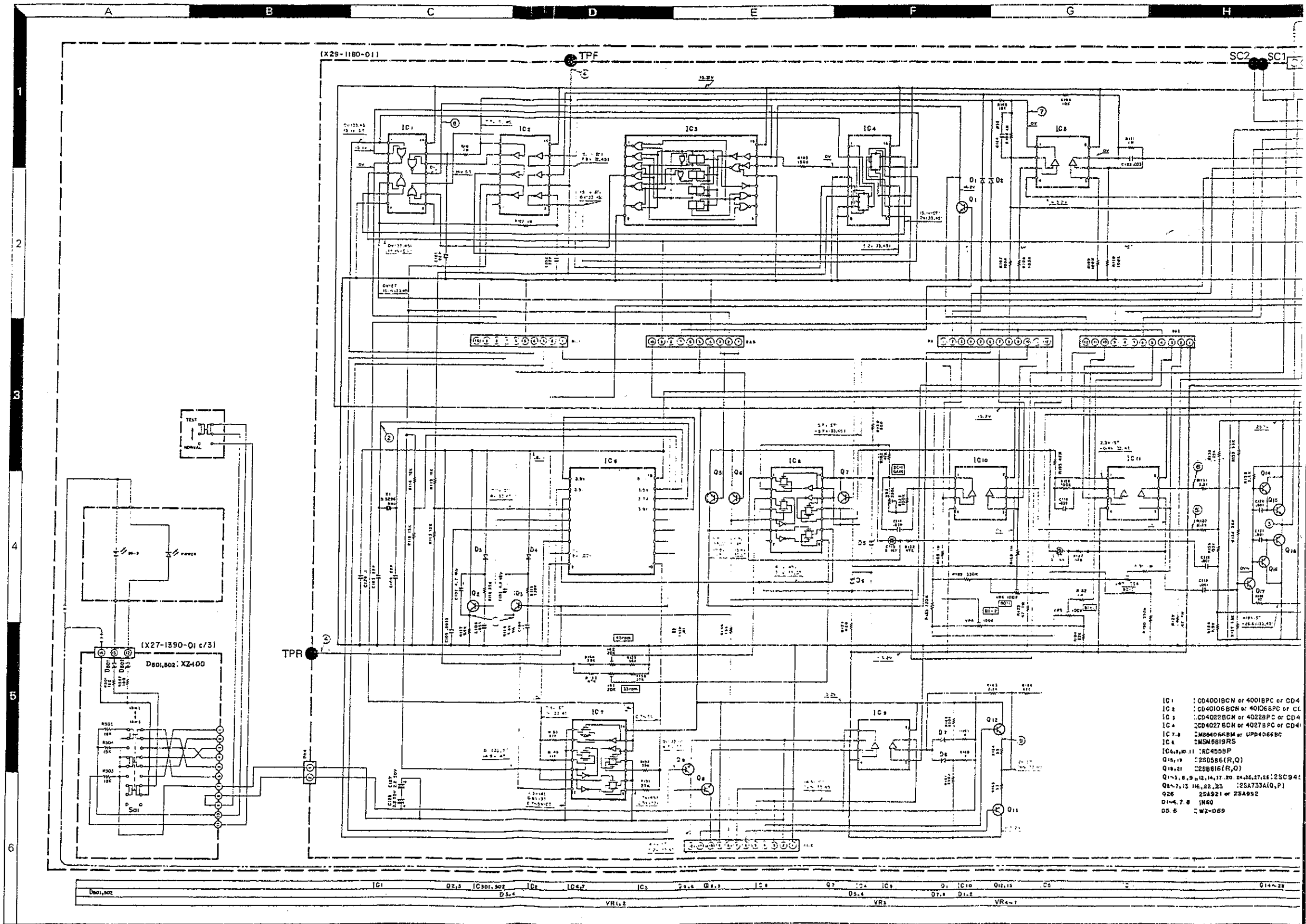
6 H : 5mS/div
V : 1V/div
pin 1 of IC5



H : 5mS/div
V : 0.5V/div
pin 15 of IC3

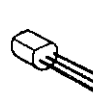


H : 0.5S/div
V : 0.1V/div
emitter of Q12

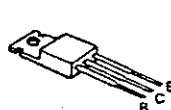


- IC1 : CD4001BCN or 4001BPC or CD4
- IC2 : CD40106BCN or 40106BPC or CD4
- IC3 : CD4022BCN or 4022BPC or CD4
- IC4 : CD4027BCN or 4027BPC or CD4
- IC5 : MSM6668M or UPD4066BC
- IC6 : MSM6819R5
- IC7,8,9,10 : RC4558P
- Q1,19 : 2SD586(R,Q)
- Q18,21 : 2SB616(R,Q)
- Q1,3,6,9,12,14,17,20,24,26,27,28 : 2SA733A(I,O,P)
- Q8,13,15,22,23 : 2SA992
- Q26 : 2SA921 or 2SA992
- D1-4,7,8 : 1N60
- D5,6 : WZ-069

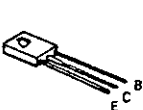
2SA733A
2SA921
2SA992
2SC945



2SB514
2SC1419



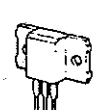
2SD882



2SA786FLN
2SC2021FLN



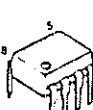
2SB616
2SD586



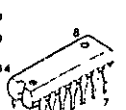
TA7136P



RC4558P
TL431CP



CD4001BCN
CD4001BE
CD4011BCN
CD4011BE
CD40106BCN
MC14001BCP
MC14011BCP
4001BPC
4011BPC
40106BPC



UPD4066BC



MB840

DIRECT DRIVE TURNTABLE

L-07D



SPECIFICATIONS

MOTOR & TURNTABLE
 Drive System: Direct Drive
 Motor: Coreless & Servless DC Servo Motor - Starting Torque 2.5 kg cm
 Turntable Platter: 33 cm (13") Diameter, Aluminum Alloy Die-Cast Laminated with
 Ductile Iron
 Weight: 5.5 g (112.1 lbs) including non-magnized stainless steel
 Motor & Turntable Defl: 1.025 kg cm²
 2 Sprockets: 33.13 and 45 mm
 Less than 0.020% (VWRMS)
 20W Weighted Better than -94 dB
 2% (within 100 g of tracking force)
 Less than 0.00015% (at 33-1/3 rpm, 400 Hz, 20 g cm load)
 Less than 0.0002% (at 33-1/3 rpm, 1000 Hz, 20 g cm load)
 Limitation of Measurement

TONEARM
 Type: Shaped Pop Arm EA Pop-Ar Connector
 Effective Tonearm Length: 15 mm (18.18 inch)
 Overhang: 15 mm (18.18 inch)
 Tracking Error: -2.72° - +1.11° - +1.48°
 -150 mm (59 mm) - 150 mm
 0 to 2 grams (50 mg) Stress
 1 to 8 grams
 5 to 12 grams (each Addition of 1000 μ Weight)
 Within 7 mm (1/4 inch)
 By Pressure Force 10 mm Steel
 Color: Chrome Type Weight: 1.5 kg (3.3 lbs)
 Compression: 1000 μ Carbon and Steel Foils
 Weight: 12 g

ADDITIONAL FEATURES
 Numerical Quartz-Lock and Power Indicator
 Electronic and Mechanical Control Brake
 Anti-Resonance
 Anti-Shaking Device
 On-Demand Clamping Circuit
 LED Speed Indicators
 Adjustable Height Indicator (12 mm x 15.22")
 with Laser Indicator
 Stylus Pressure Direct Readout Counter
 Sub-Tonearm Space for 14-inch Tonearm

MISCELLANEOUS
 Power Requirement: AC 120 V, 50 Hz U.S.A. & Canada Models
 AC 130-220-240 V (switchable), 50-60 Hz Others
 Power Consumption: 11.0 Watts U.S.A. & Canada Models
 45.0 Watts Others

Dimensions
 Turntable and Motor: W 556 mm (21 7/8")
 H 160 mm (6 11/16")
 D 470 mm (18 1/2")
 W 130 mm (5 1/8")
 H 110 mm (4 11/16")
 D 356 mm (14")

Weights
 Turntable and Motor: 31.0 kg (68.7 lbs)
 Control Unit: 4.3 kg (9.5 lbs)

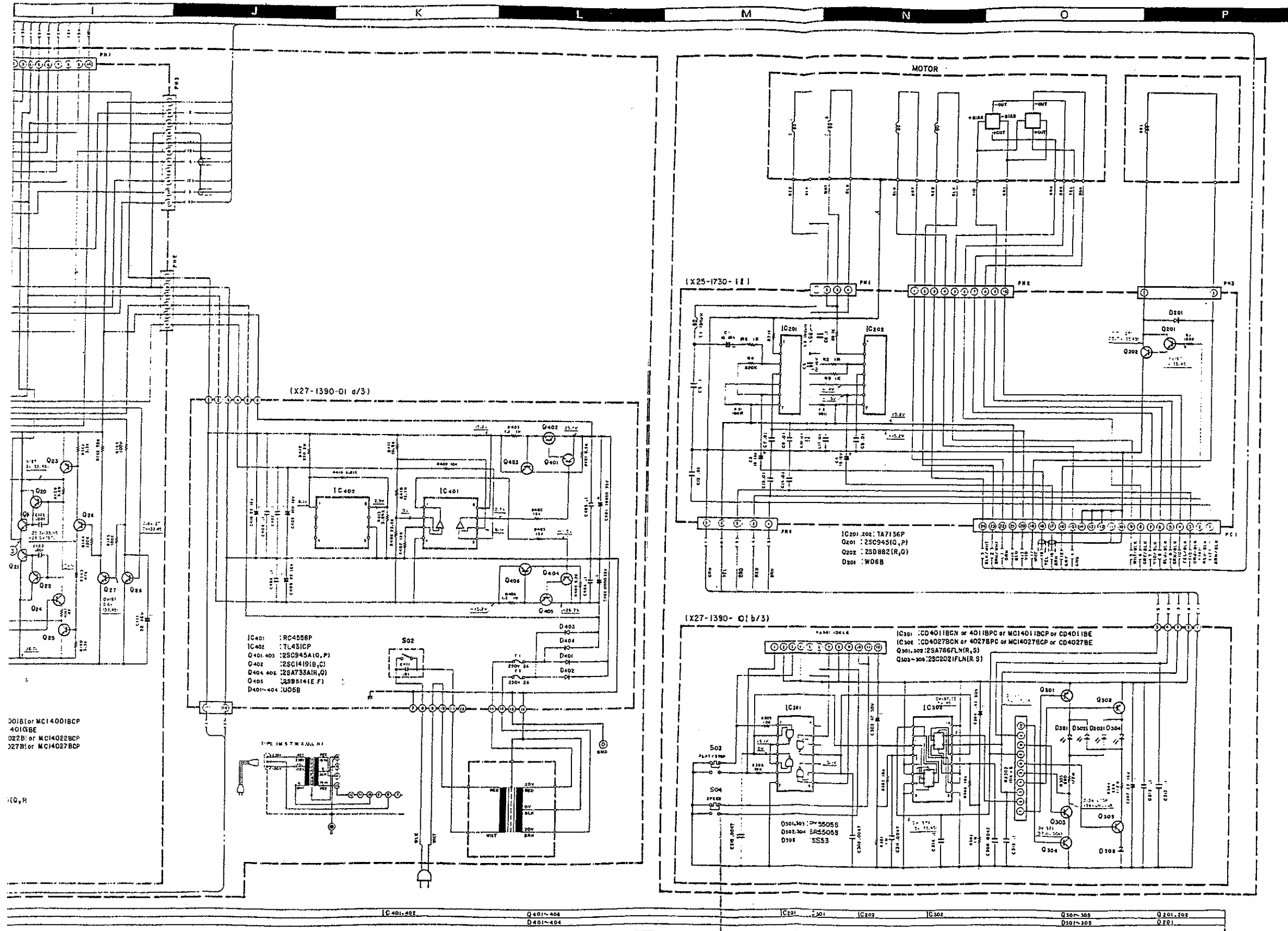
SUPPLIED ACCESSORIES
 Low resistance & low capacitance stereo cables with gold plated terminals, EP platter with overhang guide, Turntable platter cover, Dust cover, Stylus, Stylus holder, Stylus cap, Stylus wax

CABINET
 The construction of this cabinet is made of an anti-resonance composite material (ACB) with die-cast aluminum frame and methacrylate composite material.

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

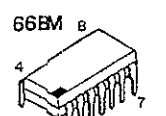
Kenwood poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

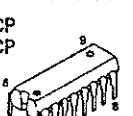


30181 or MC1401BCP
 4010BE
 Q22B1 or MC14022BCP
 Q27B1 or MC14027BCP

IC401



CD4022BCN MC14022BCP
 CD4022BE MC14027BCP
 CD4027BCN 4022BPC
 CD4027BE 4027BPC



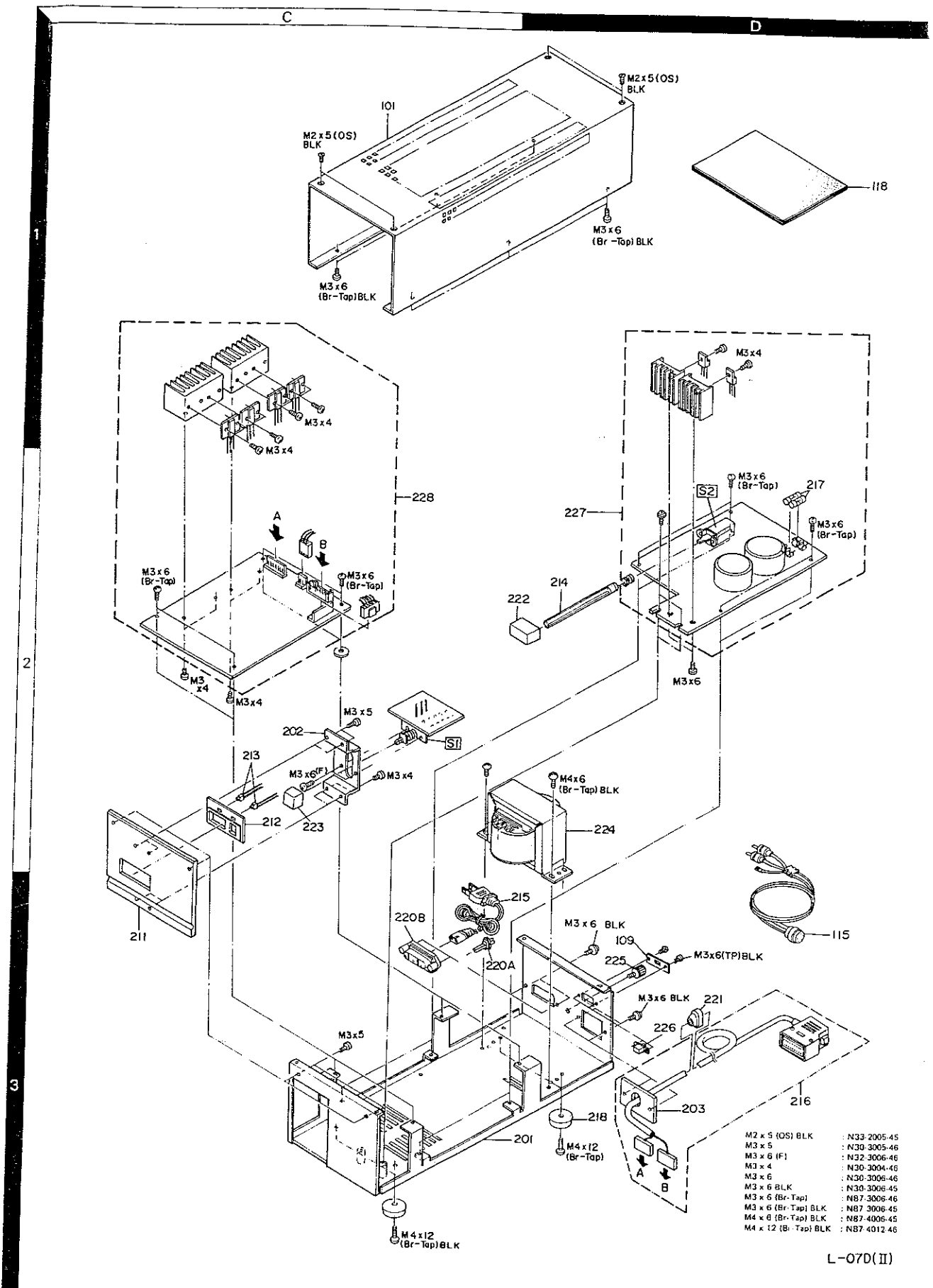
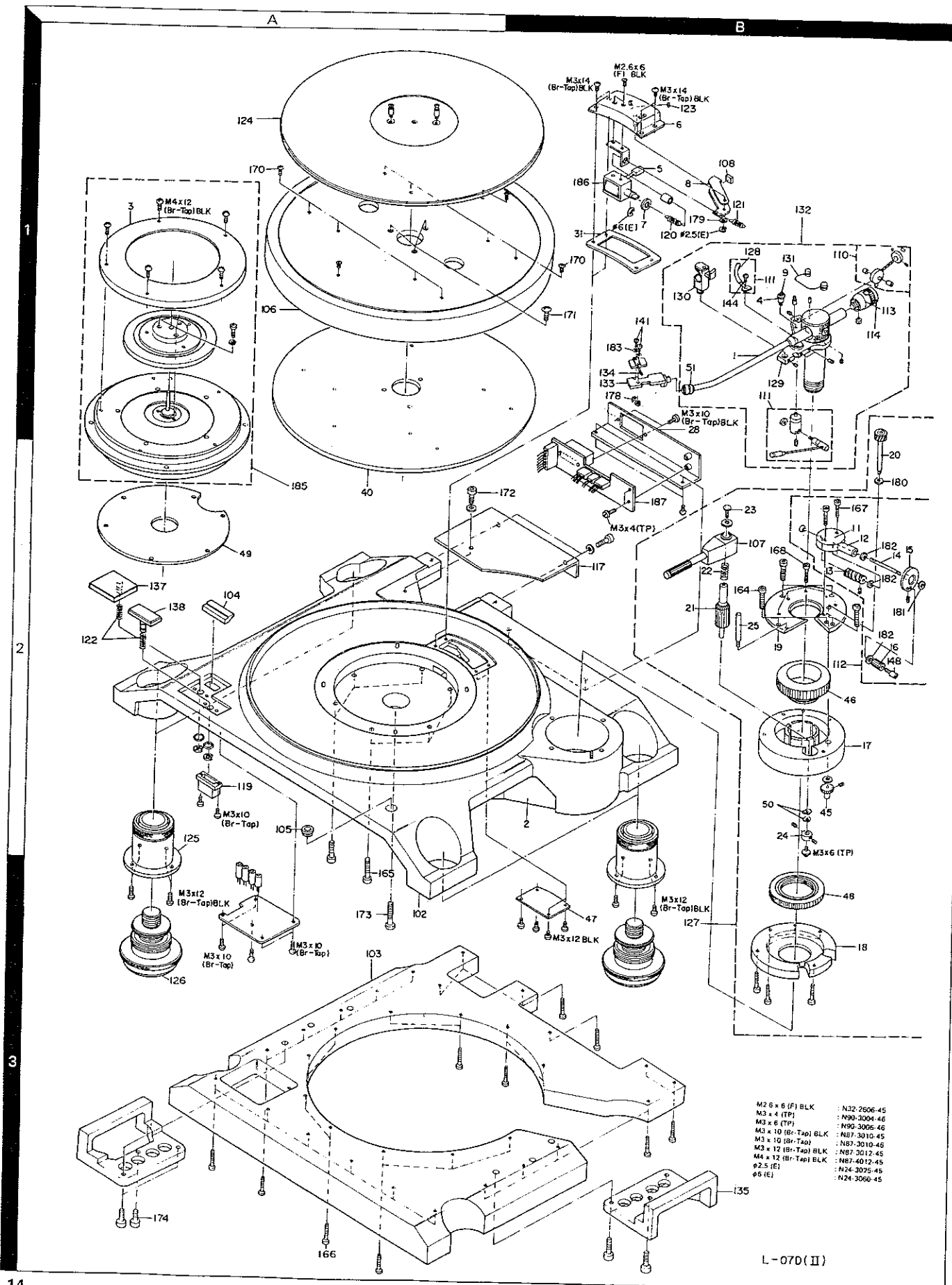
MSM5819RS

- DC voltages are measured by a VOM of 20kΩ/V (input impedance)
- Les tensions de courant continu sont mesurées par un multimètre d'une impédance d'entrée de 20kΩ/V
- Die Gleichstrom-Spannungen werden durch ein Vielfachmeßgerät von 20kΩ/V-Eingangsimpedanz gemessen

33 33 1/3 rpm
 45 45 rpm
 ST STOP MODE

EXPLODED VIEW

EXPLODED VIEW



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L-07D (UNIT)						
1	1B		NO STOCK	TONEARM		
2	2B		NO STOCK	INSERT HARDWARE		
3	1A		NO STOCK	MOTOR COVER		
4	1B		NO STOCK	PULLEY		
5	1B		NO STOCK	WIRE HARNESS		
6	1B		NO STOCK	CASE COVER		
7	1B		NO STOCK	WASHER (FLAT)		
8	1B		NO STOCK	LEVER		
9	1B		NO STOCK	STRING GUIDE		
11	2B		NO STOCK	WORM BOX COVER		
12	2B		NO STOCK	SHAFT HOLDER		
13	2B		NO STOCK	GEAR		
14	2B		NO STOCK	SHAFT		
15	2B		NO STOCK	KNOB		
16	2B		NO STOCK	KNOB		
17	2B		NO STOCK	TONEARM BASE		
18	3B		NO STOCK	GEAR HOLD PLATE		
19	2B		NO STOCK	TONEARM BASE PLATE		
20	1B		NO STOCK	WORM WHEEL GEAR		
21	2B		NO STOCK	FIXING GEAR		
22	2B		NO STOCK	COMPRESSION SPRING		
23	2B		NO STOCK	SCREW		
24	2B		NO STOCK	FIXING GEAR NUT		
25	2B		NO STOCK	HEIGHT BAR INDICATOR		
28	1B		NO STOCK	REAR PANEL		
31	1B		NO STOCK	SPACER		
40	2A		NO STOCK	REINFORCE HARDWARE		
45	2B		NO STOCK	PINION GEAR		
46	2B		NO STOCK	CHUCK NUT		
47	3B		NO STOCK	MOTOR COVER		
48	3B		NO STOCK	HEIGHT ADJ GEAR		
49	2A		NO STOCK	MOTOR SPACER		
50	2B		NO STOCK	SPRING LOCK WASHER		
51	1B		NO STOCK	CONNECTOR		
101	1C		A01-0611-22	METALLIC CABINET		
102	3A		A02-0321-21	PLASTIC CABINET		
103	3A		A40-0541-31	BOTTOM PLATE		KPUMH
103	3A		A40-0541-31	BOTTOM PLATE		XE
103	3A		A40-0542-31	BOTTOM PLATE		T
-			B46-0055-30	WARRANTY CARD		P
-			B46-0060-00	WARRANTY CARD		T
-			B46-0061-30	WARRANTY CARD		K
-			B46-0062-30	WARRANTY CARD		UH
-			B46-0063-23	WARRANTY CARD		UH
-			B46-0064-20	WARRANTY CARD		X
-			B46-0078-03	WARRANTY CARD		E
-			B50-2386-00	INSTRUCTION MANUAL (DC-20)		ET
-			B50-2386-00	INSTRUCTION MANUAL (DC-20)		KPUMX
-		*	B50-4285-00	INSTRUCTION MANUAL (ENG)		KUHXT
-		*	B50-4287-00	INSTRUCTION MANUAL (ENG/FR/SP)		PM
-		*	B50-4288-00	INSTRUCTION MANUAL (4-LINGUAL)		E
104	2A		B08-0201-14	INDICATOR		
105	2A		B23-0401-35	LEVEL		

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106	1A		D02-0030-05	TURNTABLE PLATTER		
107	2B		D10-0843-14	LEVER A ASSY		
108	1B		D31-0005-04	BRAKE SHOE		
109	3D		D32-0080-24	STOPPER		
110	1B		D39-0098-24	IFC ASSY		
111	1B		D40-0480-23	LIFTER ASSY		
112	2B		D40-0481-14	MECHANISM ASSY		
113	1B	*	D91-0141-03	MAIN WEIGHT		
114	1B		D91-0128-24	SUB WEIGHT		
-			E30-1301-05	GND CORD		
115	3D		E30-1336-15	AUDIO CORD		
117	2B		F07-0656-13	COVER		
118	1D		F09-0305-14	DUST COVER		
119	2A		F15-0514-04	SHADE		
120	1B		G01-0744-14	COIL SPRING		
121	1B		G01-0745-04	COIL SPRING		
122	2A		G01-0762-14	COIL SPRING		
123	1B		G13-0457-14	CUSHION		
124	1A		G16-0334-24	SHEET		
-			H01-2381-03	CARTON BOX (TONEARM)		
-			H01-2390-14	CARTON BOX		KPUMH
-			H01-2390-14	CARTON BOX		XE
-			H01-2392-04	CARTON BOX		KUMHX
-			H01-2394-04	CARTON BOX		P
-			H01-2395-04	CARTON BOX		T
-			H01-2396-04	CARTON BOX		E
-			H01-2397-14	CARTON BOX		T
-			H03-1338-04	OUTER CARTON BOX		E
-			H10-2258-01	POLYSTYRENE FIXTURE (TONEARM)		
-			H10-2259-01	POLYSTYRENE FIXTURE (TONEARM)		
-			H10-2262-02	POLYSTYRENE FIXTURE		
-			H10-2263-02	POLYSTYRENE FIXTURE		
-			H10-2264-02	POLYSTYRENE FIXTURE		
-			H10-2265-13	POLYSTYRENE FIXTURE		
-			H12-0370-02	PACKING FIXTURE		
-			H12-0371-03	PACKING FIXTURE		
-			H12-0373-03	PACKING FIXTURE		
-			H20-1104-04	COVER		
-			H20-1105-04	COVER		
-			H21-0607-04	SHEET		
-			H25-0029-04	BAG (TONEARM)		
-			H25-0078-04	BAG		
-			H25-0096-04	BAG		
-			H25-0605-14	BAG (TONEARM)		
-			H25-0611-04	BAG		
-			H39-0015-05	PACKING PARTS		PMHXE
-			H39-0015-05	PACKING PARTS		T
125	2A	*	J02-0353-05	FOOT		
126	3A	*	J02-0354-05	FOOT		
127	3B		J19-1927-53	TONEARM BASE ASSY		
128	1B		J19-1943-24	LIFTER SUPPORT		
129	1B	*	J19-2093-03	LIFTER BASE ASSY		
130	1B	*	J19-2094-04	TONEARM REST ASSY		

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131	1B		J90-0321-04	STRING GUIDE ASSY		
132	1B	*	J91-0177-02	TONEARM ASSY		
133	1B	*	J92-0059-15	HEAD SHELL ASSY		
134	1B	*	J99-0215-04	FINGER ASSY		
-			K01-0303-04	HANDLE (DUST PLATTER)		
135	3B		K01-0302-13	HANDLE		
137	2A		K29-0692-04	KNØB (OPERATION)		
138	2A		K29-0693-04	KNØB (SPEED)		
141	1B		N09-0850-04	SCREW (CARTRIDGE)		
141	1B		N09-0851-04	SCREW (CARTRIDGE)		
141	1B		N09-0908-05	SCREW (CARTRIDGE)		
144	1B		N09-0874-04	SCREW		
148	2B		N09-0878-24	SCREW		
164	2B		N09-0885-05	SCREW		
165	3A		N09-0886-05	SCREW		
166	3A		N09-0888-05	SCREW		
167	2B		N09-0889-04	SCREW		
168	2B		N09-0890-04	SCREW		
170	1A		N09-0894-05	SCREW		
171	1B		N09-0895-05	SCREW		
172	2B		N09-0906-05	SCREW		
173	3A		N09-0907-05	SCREW		
174	3A		N09-0912-05	SCREW		
178	1B		N14-0412-04	NUT		
179	1B		N19-0016-04	WASHER		
180	2B		N19-0018-04	WASHER		
181	2B		N19-0025-04	WASHER		
182	2B		N19-0143-04	WASHER		
183	1B		N19-0175-09	WASHER		
185	2A	*	T43-0028-05	DIRECT DRIVE MOTOR		
186	1B		T94-0061-15	MAGNETIC PLUNGER		
-			W01-0310-05	CLEANING CLOTH		
-			W01-0320-04	EP ADAPTER		
-			W01-0325-03	DUST PLATTER		
-			W01-0328-05	SCREW DRIVER		
187	2B		X25-1730-00	AMP PCB ASSY	UMHXE	
187	2B		X25-1730-00	AMP PCB ASSY	T	
187	2B		X25-1730-11	AMP PCB ASSY	KP	
L-07D PS (UNIT)						
201	3D		NØ STOCK	MAIN CHASSIS		
202	2C		NØ STOCK	MOUNTING HARDWARE		
203	3D		NØ STOCK	HOLDER		
211	3C		A20-1990-03	FRONT PANEL	T	
211	3C		A20-1991-03	FRONT PANEL	KPUMH	
211	3C		A20-1991-03	FRONT PANEL	XE	
212	2C		B07-0593-14	ESCUTCHEON		
213	2C		B30-0725-05	LED		
214	2D		D22-0302-04	COUPLING		
-			E23-0083-05	TERMINAL		
215	3D		E30-0181-05	POWER CORD	KP	
215	3D		E30-1305-15	POWER CORD	UM	

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215	3D		E30-1328-15	POWER CORD	T	
215	3D		E30-1329-05	POWER CORD	HE	
215	3D		E30-1341-05	POWER CORD	X	
216	3D	*	E30-1356-05	CORD WITH PLUG		
220B	3C		E03-0102-15	AC INLET	UMHXE	
220B	3C		E03-0102-15	AC INLET	T	
217	2D		F05-2023-05	FUSE (2A)	UMX	
217	2D		F05-2029-05	FUSE (F2A)	HET	
217	2D		F06-2027-05	FUSE (2A)	KP	
-			J61-0307-05	WIRE BAND		
218	3D		J02-0325-15	FOOT		
220A	3D		J41-0034-05	BUSHING	KP	
221	3D		J42-0318-05	BUSHING		
222	2D		K27-0329-04	KNOB		
223	2C		K27-0330-04	KNOB		
224	2D		L01-6291-05	POWER TRANSFORMER	KP	
224	2D		L01-6294-05	POWER TRANSFORMER	T	
224	2D		L01-6294-05	POWER TRANSFORMER	UMHXE	
225	3D		N08-0128-35	DRESSED SCREW		
226	3D		S31-2001-05	SLIDE SWITCH		
227	2D		X27-1390-01	POWER SUPPLY PCB ASSY	KP	
227	2D		X27-1390-02	POWER SUPPLY PCB ASSY	UMX	
227	2D		X27-1390-03	POWER SUPPLY PCB ASSY	HET	
228	2C	*	X29-1180-01	CONTROL AMP PCB ASSY		
AMP (X25-1730-11)						
C1 -4			CE04W1C100M	ELECTR0 10UF 16WV		
C5 .6			C90-0270-05	CERAMIC 0.1UF K		
C7 -14			CK45F1H103Z	CERAMIC 0.01UF Z		
L1 .2			L40-1811-43	INDUCTOR		
R10			R92-0513-05	FL-PROOF RD10 G 2E	-11	
D201			WD6B	DIODE		
IC201,202			TA7136P	IC		
Q201			2SC945(A)(Q,P)	TRANSISTOR		
Q202			2SD882(R,Q)	TRANSISTOR		
POWER SUPPLY (X27-1390-01)						
D301			B30-0358-05	LED		
D302			B30-0359-05	LED		
D303			B30-0358-05	LED		
D304			B30-0359-05	LED		
C303,304			CE04W1HR47M	ELECTR0 0.47UF 50WV		
C307			CE04W1C220	ELECTR0 22UF 16WV		
C308-311			CK45B1H472K	CERAMIC 0.0047UF K		
C312-315			C91-0121-05	CERAMIC 0.1UF M		
C401,402			C90-0709-05	ELECTR0 1000UF 35WV		
C403,404			C90-0295-05	CERAMIC 0.1UF M		
C405			CE04W1C101	ELECTR0 100UF 16WV		
C406,407			C90-0270-05	CERAMIC 0.1UF K		
C408			CE04W1C220	ELECTR0 22UF 16WV		
C409			C90-0270-05	CERAMIC 0.1UF K		

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C410 C411			CE04W1C220 C91-0079-05	ELECTRO 22UF 16WV CERAMIC 0.01UF AC125V		
-			J13-0055-05	FUSE HOLDER		
RA302 RA301 R303,304 R403 R406			R92-0509-05 R92-0510-05 RD14AY2H681J RS14GB3A1R2J RS14GB3A1R2J	R MODULE R MODULE FL-PROOF RD680 J 2H FL-PROOF RS1.2 J 3A FL-PROOF RS1.2 J 3A		
R408 R410 R411 R412 R413			RN14BK2E2262F RN14BK2E1212F RN14BK2E1052F RS14GB3D221J RN14BK2E3091F	RN 22.6K F 2E RN 12.1K F 2E RN 10.5K F 2E FL-PROOF RS220 J 3D RN 3.09K F 2E		
R416 RS01,502			RN14BK2E6811F RD14GB2E181J	RN 6.81K F 2E FL-PROOF RD180 J 2E		
S01 S01 S01 S02 S03,04			S40-1304-05 S40-1306-05 S40-1319-05 S40-4303-05 S40-1314-05	PUSH SWITCH (RANGE) PUSH SWITCH (RANGE) PUSH SWITCH (RANGE) PUSH SWITCH (POWER) PUSH SWITCH (PLAY/STOP, SPEED)		-01 -02 -03
D305 D401-404 D501,502 IC301 IC302			1SS53 U05B XZ-100 CD4011BE CD4027BE	DIODE DIODE DIODE IC IC		
IC401 IC402 Q301,302 Q303-305 Q401			RC4558P TL431CP 2SA786FLN 2SC2021FLN(R,S) 2SC945(A)(Q,P)	IC IC TRANSISTOR TRANSISTOR TRANSISTOR		
Q402 Q403 Q404 Q405 Q406			2SC1419(B,C) 2SC945(A)(Q,P) 2SA733(A)(R,Q) 2SB514(E,F) 2SA733(A)(R,Q)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
CONTROL AMP (X29-1180-01)						
C101-104 C105 C106 C107,108 C109			CC455L1H220J CQ92P2A332G C91-0332-05 CS15E1C4R7K C91-0320-05	CERAMIC 22PF J MYLAR 0.0033UF G MYLAR 0.033UF G TANTAL 4.7UF 16WV MYLAR 0.1UF J		
C110 C111 C114 C115 C116			CQ92P2A103G CE04W1C220 CQ92M1H393JNS C90-0708-05 CQ92M1H393JNS	MYLAR 0.01UF G ELECTRO 22UF 16WV MYLAR 0.039UF J NP-ELEC 10UF 16WV MYLAR 0.039UF J		
C117 C118-123 C124,125 C126 C127,128			C90-0708-05 CQ92M1H102JNS CQ92M1H333JNS C90-0270-05 CE04AW1H2R2M	NP-ELEC 10UF 16WV MYLAR 0.001UF J MYLAR 0.033UF J CERAMIC 0.1UF K LL-ELEC 2.2UF 50WV		
X1			L77-1101-05	CRYSTAL RESONATOR		

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RA1 -3			R92-0510-05	R MODULE		
RA4 ,5			R92-0509-05	R MODULE		
R116			RN14BK2E3302G	RN 33K G 2E		
R119			RN14BK2E3303G	RN 330K G 2E		
R125			RS14GB3AR47J	FL-PROOF RSO. 47 J 3A		
R129			RS14GB3AR47J	FL-PROOF RSO. 47 J 3A		
R148			RN14BK2E1502G	RN 15K G 2E		
R149			RN14BK2E1102F	RN 11K F 2E		
R150			RN14BK2E2202G	RN 22K G 2E		
R151			RN14BK2E2702G	RN 27K G 2E		
R152			RN14BK2E3902G	RN 39K G 2E		
R153			RN14BK2E4702G	RN 47K G 2E		
R154			RN14BK2E3902G	RN 39K G 2E		
R155			RN14BK2E5602G	RN 56K G 2E		
R156			RN14BK2E2702G	RN 27K G 2E		
R164,165			R92-0210-05	FUSE RESIST33 G 2E		
VR1 ,2			R12-3305-05	TRIMMING POT. 20K		
VR3			R12-5031-05	TRIMMING POT. 220K		
VR4 -7			R12-5030-05	TRIMMING POT. 100K		
D1 -4			1N60	DIODE		
D5 ,6			WZ-069	DIODE		
D7 ,8			1N60	DIODE		
IC1			CD4001BCN	IC		
IC2			CD40106BCN	IC		
IC3			CD4022BCN	IC		
IC4			CD4027BCN	IC		
IC5			RC4558P	IC		
IC6			MSM5819RS	IC		
IC7 ,8			UPD4066BC	IC		
IC9 -11			RC4558P	IC		
Q1 -3			2SC945(A)(Q,P)	TRANSISTOR		
Q5 -7			2SA733(A)(Q,P)	TRANSISTOR		
Q8 ,9			2SC945(A)(Q,P)	TRANSISTOR		
Q12			2SC945(A)(Q,P)	TRANSISTOR		
Q13			2SA733(A)(Q,P)	TRANSISTOR		
Q14			2SC945(A)(Q,P)	TRANSISTOR		
Q15			2SD586(R,Q)	TRANSISTOR		
Q16			2SA733(A)(Q,P)	TRANSISTOR		
Q17			2SC945(A)(Q,P)	TRANSISTOR		
Q18			2SB616(R,Q)	TRANSISTOR		
Q19			2SD586(R,Q)	TRANSISTOR		
Q20			2SC945(A)(Q,P)	TRANSISTOR		
Q21			2SB616(R,Q)	TRANSISTOR		
Q22 ,23			2SA733(A)(Q,P)	TRANSISTOR		
Q24 ,25			2SC945(A)(Q,P)	TRANSISTOR		
Q26			2SA921	TRANSISTOR		
Q27 ,28			2SC945(A)(Q,P)	TRANSISTOR		

E: Scandinavia & Europe H: Audio Club K: USA

P: Canada

S: South Africa T: England U: PX(Far East, Hawaii)

UE: AAFES(Europe) X: Australia M: Other Areas

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