

FULL AUTOMATIC TURNTABLE

KD-67F

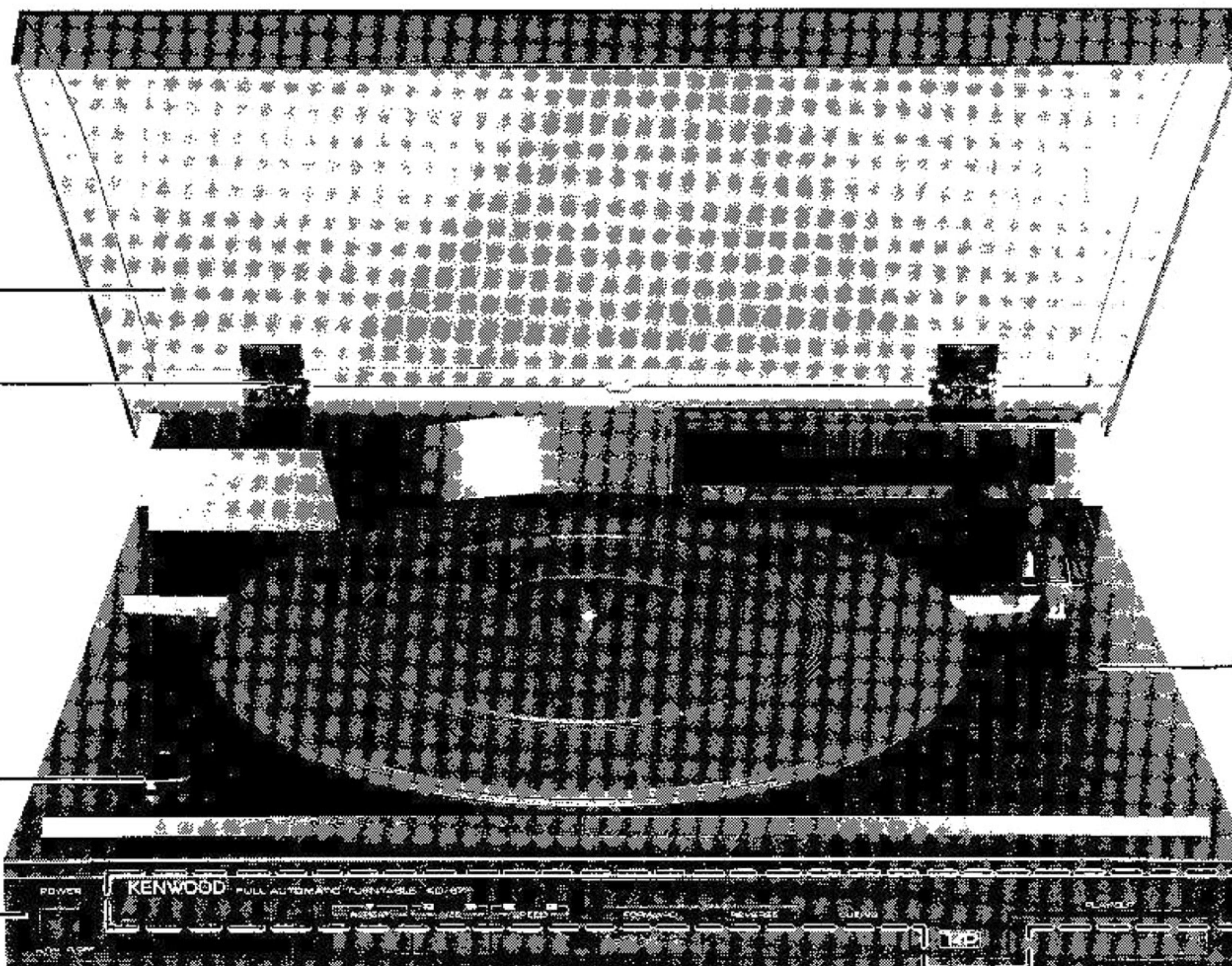
SERVICE MANUAL

KENWOOD

1988-6 PRINTED IN JAPAN
B51-3496-00(B)2850

Dust Cover*
(A53-0907-01)

Hinge
(J50-0125-05)



Turntable Platter Ass'y*
(D02-)

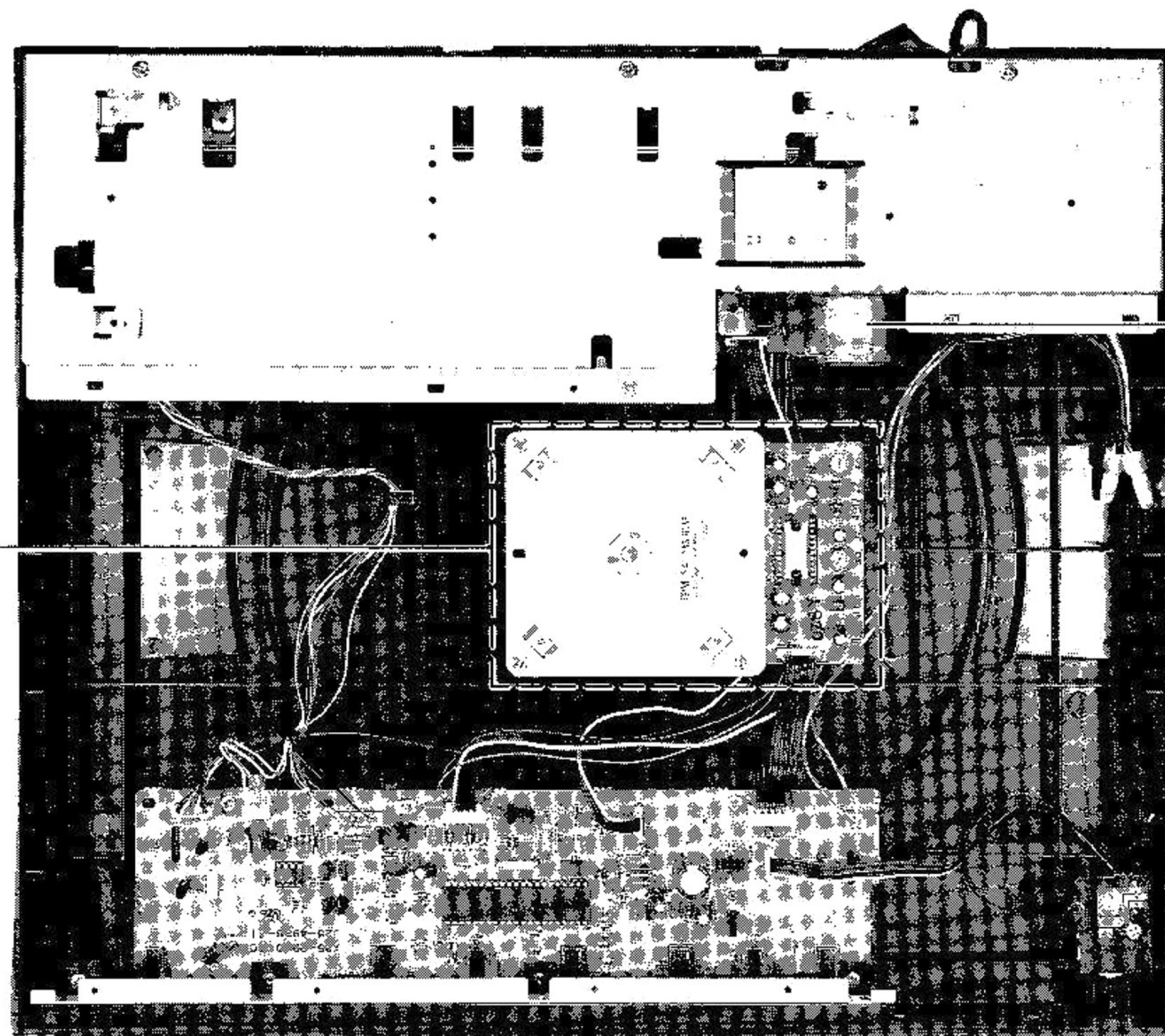
EP Adapter
(W01-0329-04)

Dressing
Plate
(B03-2438-04)

Dressing Plate
(B03-2437-02)

Motor Ass'y
(X92-1150-00)

Motor Ass'y
(T42-0411-05)



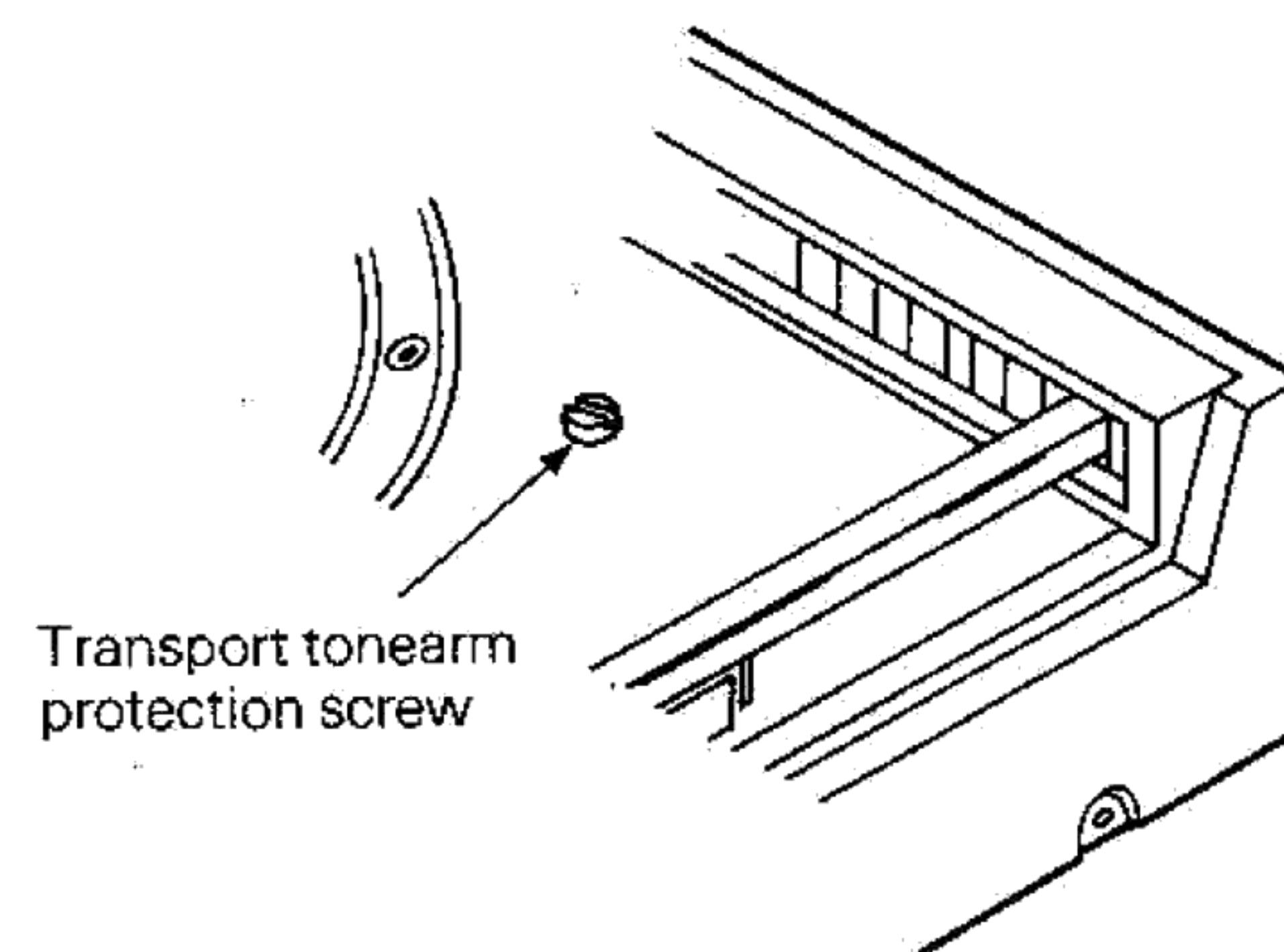
* Refer to parts list on page 26.

OPERATION DESCRIPTION

Transport tonearm protection screw

Remove the transport tonearm protection screw for shipping on the top of the unit.

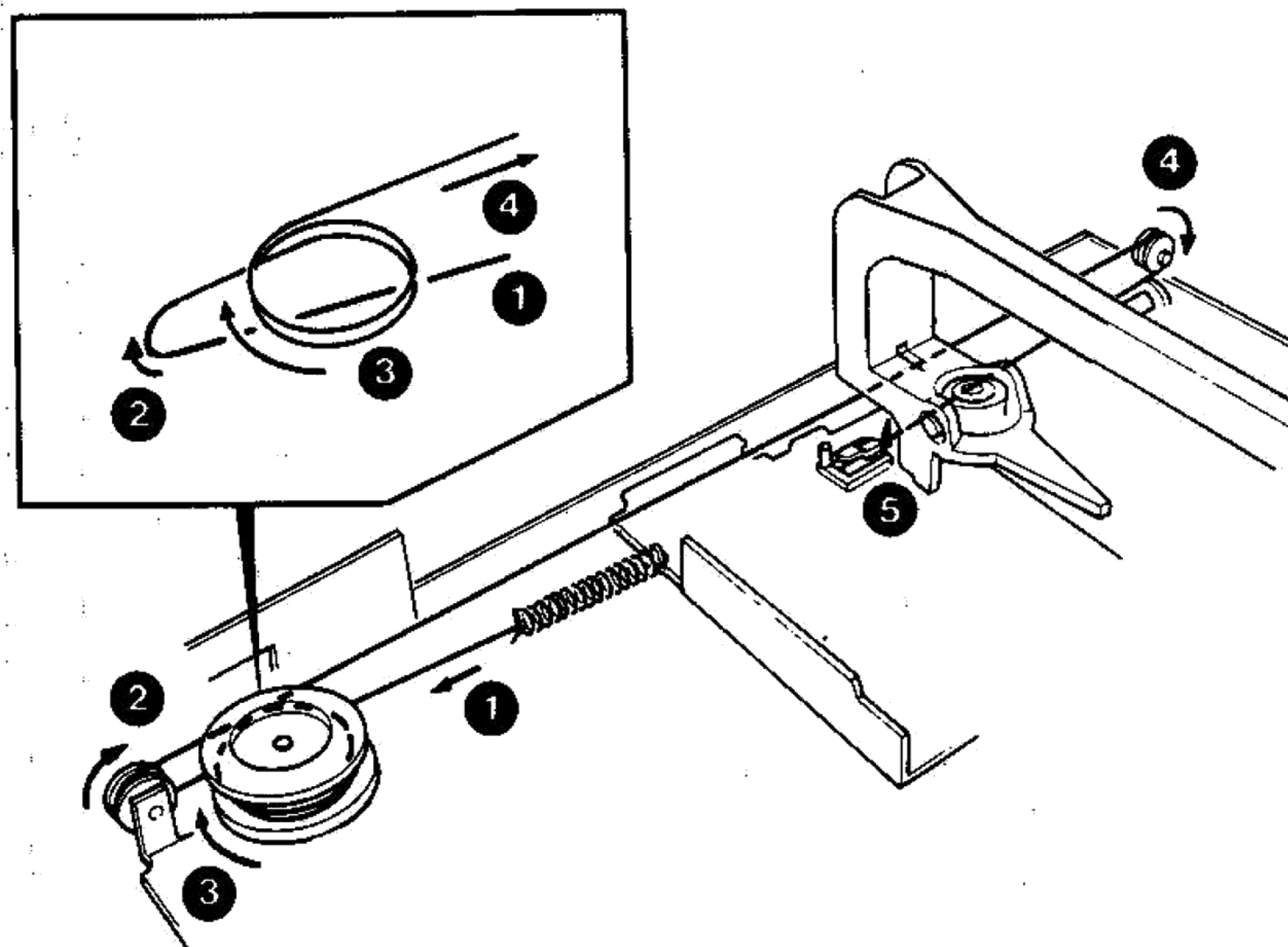
Remove the transport tonearm protection screw (red) using a coin etc. After removing, keep the screw for future moving.



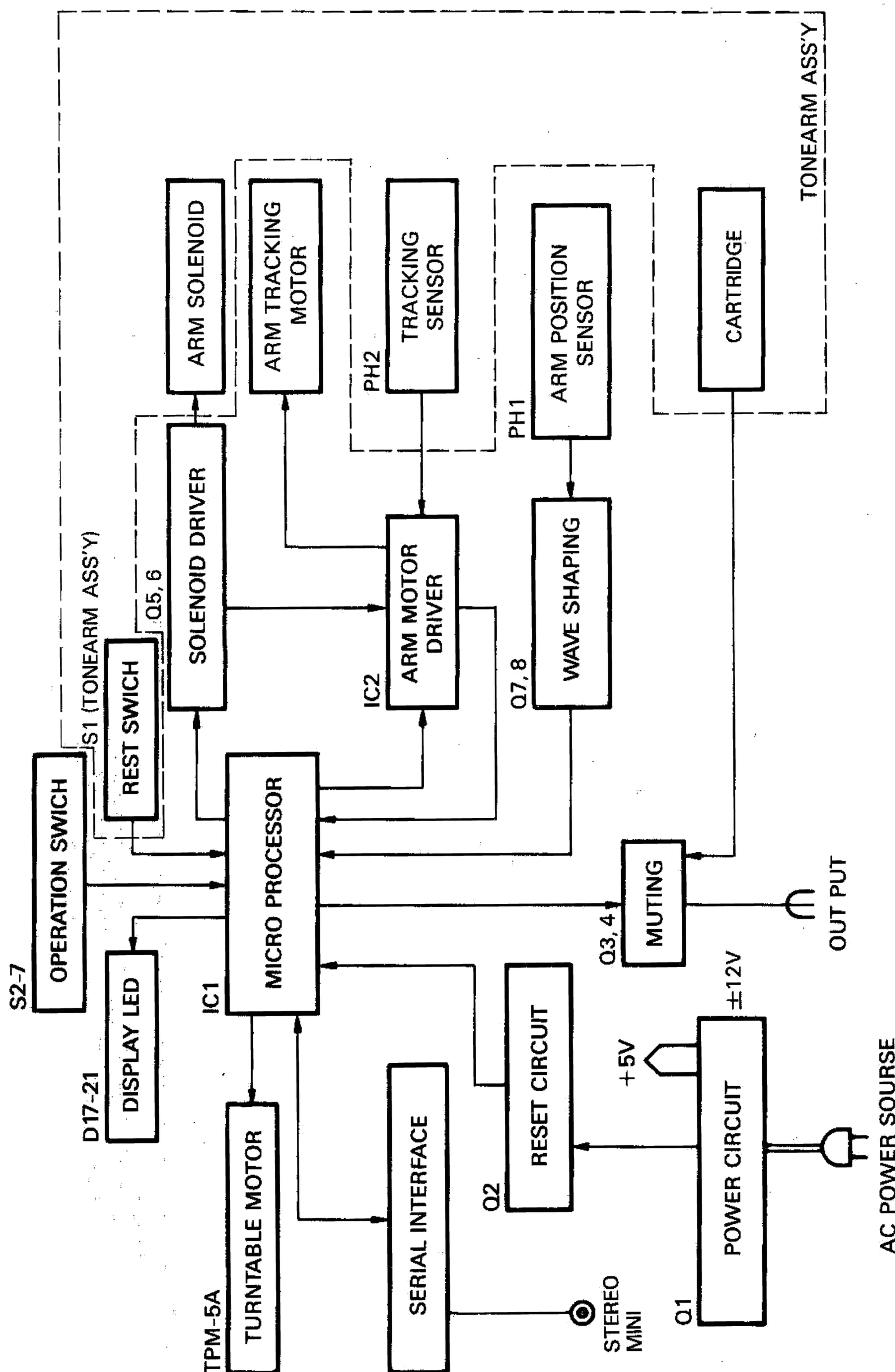
DIAL CORD STRINGING

1. Tie the cord to the spring and hook the spring to the projection of the holder (1).
2. Hook the cord to pulley (2) from lower side and then move it in the direction shows arrow to hook to the pulley (3).

3. Wind the cord twice around the pulley (3) from lower side and hook the cord to the pulley (4) from upper side.
4. Hook the loop of the cord to the holder (5).



BLOCK DIAGRAM



CIRCUIT DESCRIPTION

LISTS OF DEVICE FUNCTIONS

Electric unit (X25-2940-00)

Device	Application/function	Operation/condition/compatibility
IC1	Logic control	Refer to separate section.
IC2	Linear tracking motor control	Linear tracking servo-control, and generation of FOR and REV output voltages.
Q1	Regulated power supply	Control transistor for 5 V
Q2	For reset signal	When 5 V power turns ON, becomes "L" to output reset signal.
Q3, 4	Muting	Cancels muting only when arm is down.
Q5	Plunger drive	While arm is down, turns ON to hold plunger.
Q6	Plunger drive	When arm is down, turns ON for 800 msec to pull-in the plunger.
Q7, 8	Schmitt circuit	Forms a Schmitt circuit which shapes the output from the rotary encoder (arm position detection).
Q9~12	Current booster	Current drive of linear tracking motor.
Q13	Angle sensor output ON/OFF	Functions to prevent the angle sensor from operating when the arm is up.
PH1	Rotary encoder	Detects arm position.
PH2	Rotary encoder	Detects arm angle.

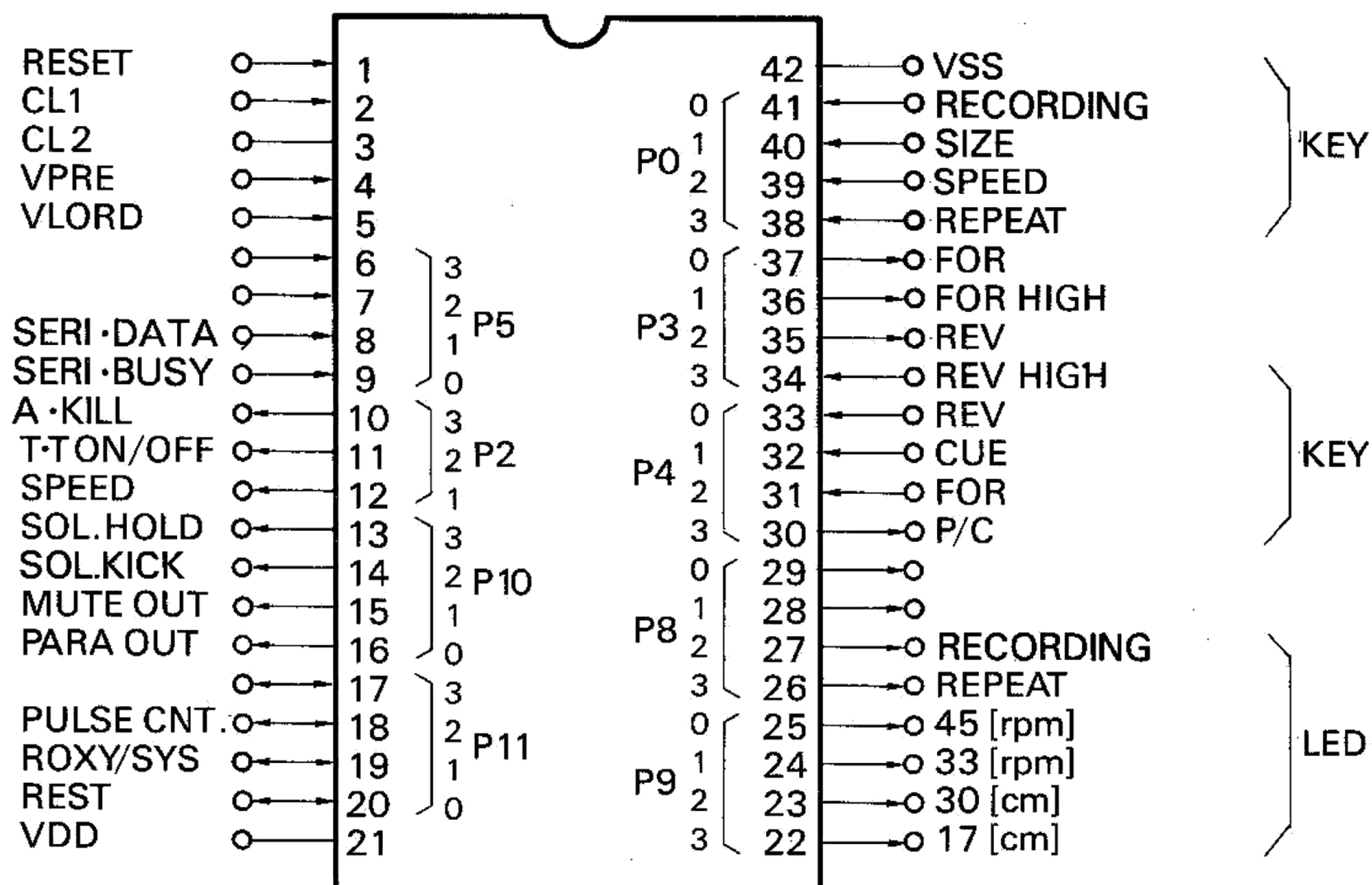
Control unit (X29-1770-00)

Device	Application/function	Operation/condition/compatibility
IC1	Motor driver	2-phase full-wave. F-servo motor driver.
Q1	Motor stop	At ON, motor stops, and at OFF runs.
Q2	Speed selection	At OFF, 33-1/3 RPM. At ON, 45 RPM.
H1, 2	Position detection	Detects rotor magnet position to change coil current.

CIRCUIT DESCRIPTION

Description of port function: IC1 (μ PD7537AC-014)

Port layout



Port Assignment Table (1)

Port	Pin No.	I/O Mode	Active Mode	Function
P5	0	41	I	H
	1	40	I	H
	2	39	I	H
	3	38	I	H
P11	1	12	O	H
			L	T.T Motor Speed 44 [rpm]
	2	11	O	H
		L	H	T.T Motor Stop
P0	3	10	O	H
	0	37	O	H
	1	36	O	H
	2	35	O	H
P3	3	34	O	H
	0	33	I	H
	1	32	I	H
	2	31	I	H
P4	3	30	I	H
	0	9	I/O	H
	1	8	I/O	H
	2	7	—	—
P8	3	6	—	—

Port Assignment Table (2)

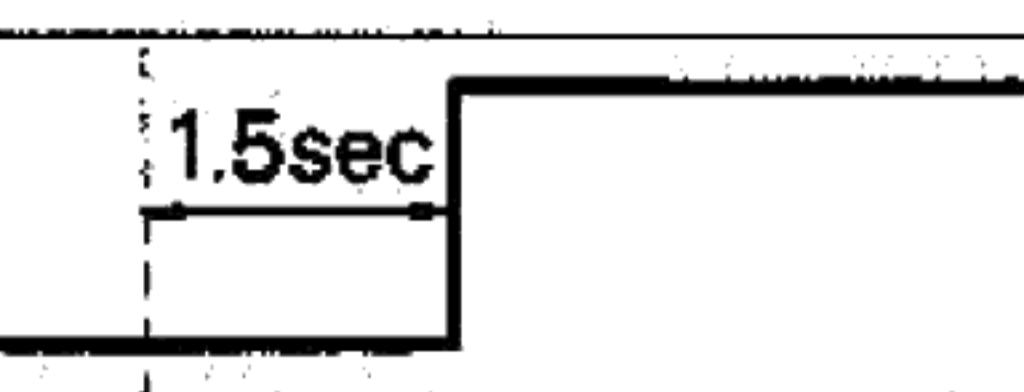
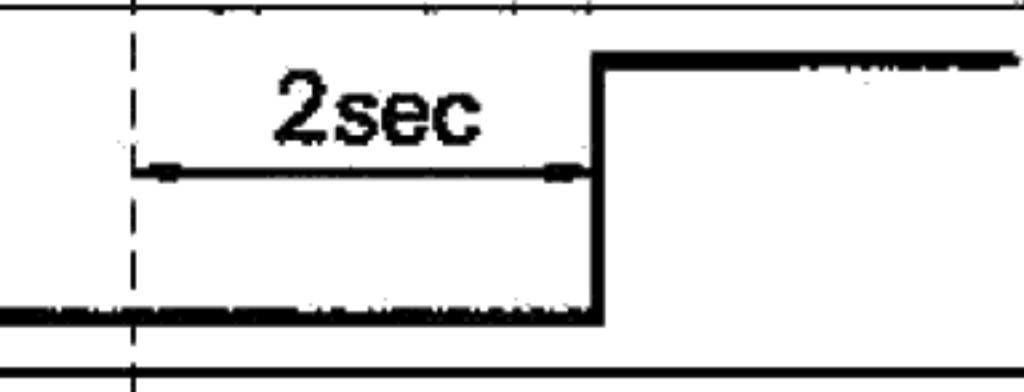
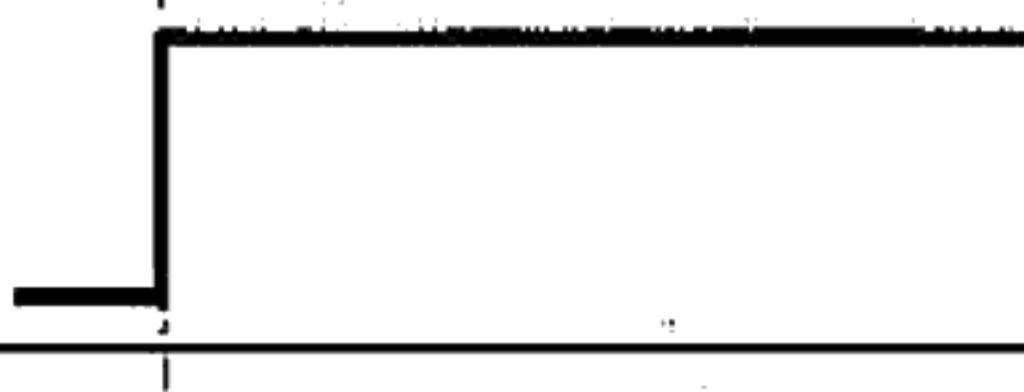
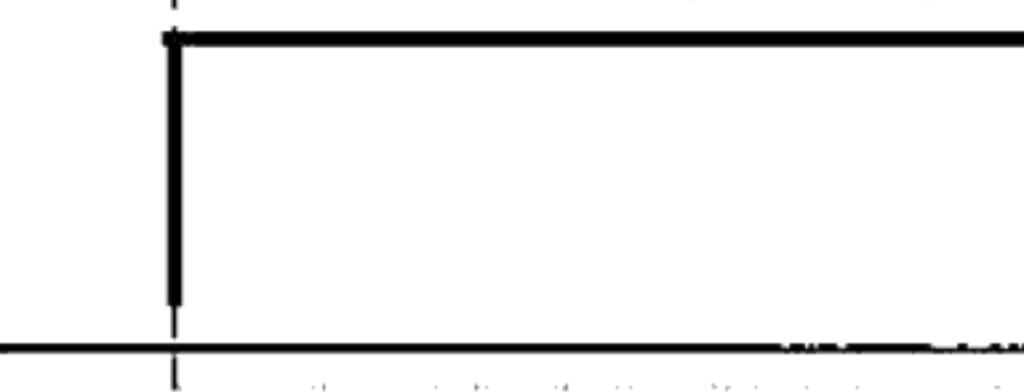
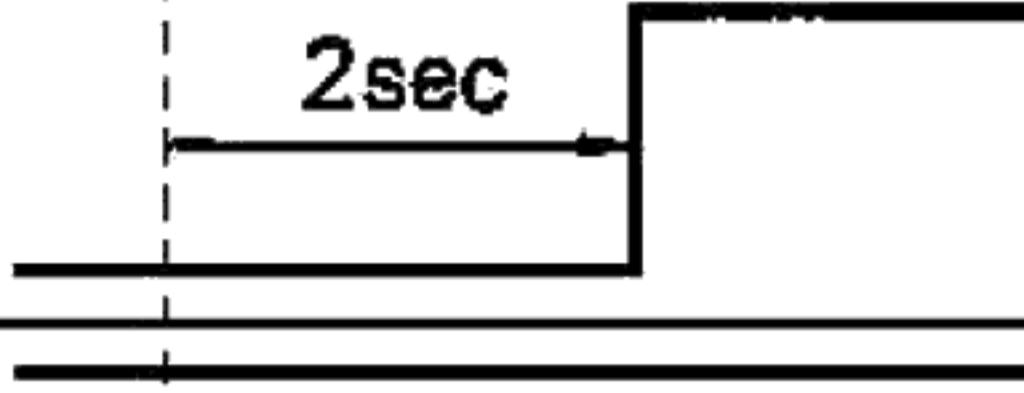
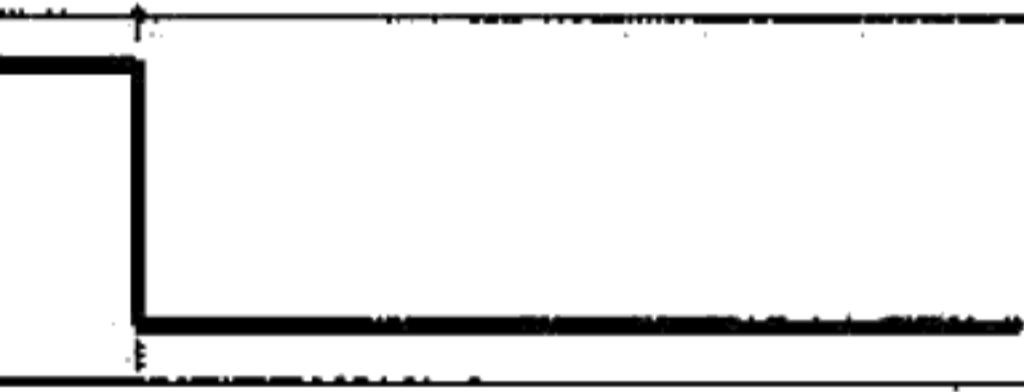
Port	Pin No.	I/O Mode	Active Mode	Function
P9	0	25	O	H
	1	24	O	H
	2	23	O	H
	3	22	O	H
P10	0	16	O	H
	1	15	O	L
	2	14	O	H
	3	13	O	H
P11	0	20	I	H
	1	19	I	L
	2	18	I	—
	3	17	—	—
RESET	1	I	H	Reset Signal
CL-1	2	—	—	Clock
CL-2	3	—	—	Clock
VPRE	4	—	—	Unused (GND)
VLOAD	5	—	—	Unused (GND)
VDD	21	—	—	Power Input pin (5 V)
VSS	21	—	—	GND

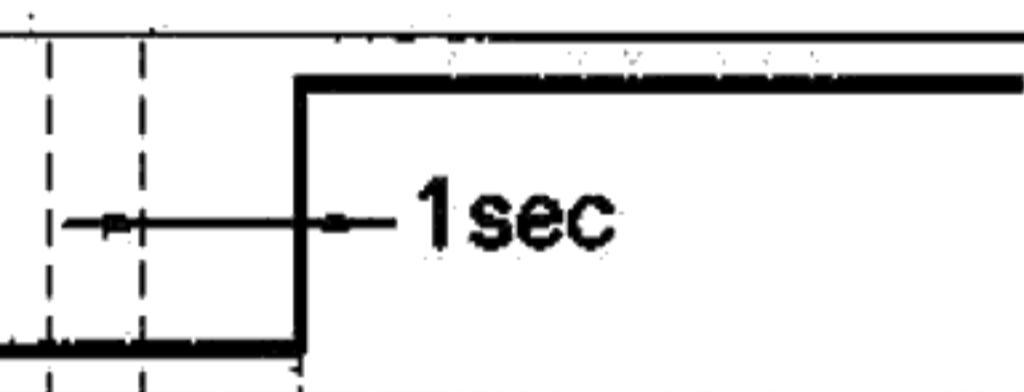
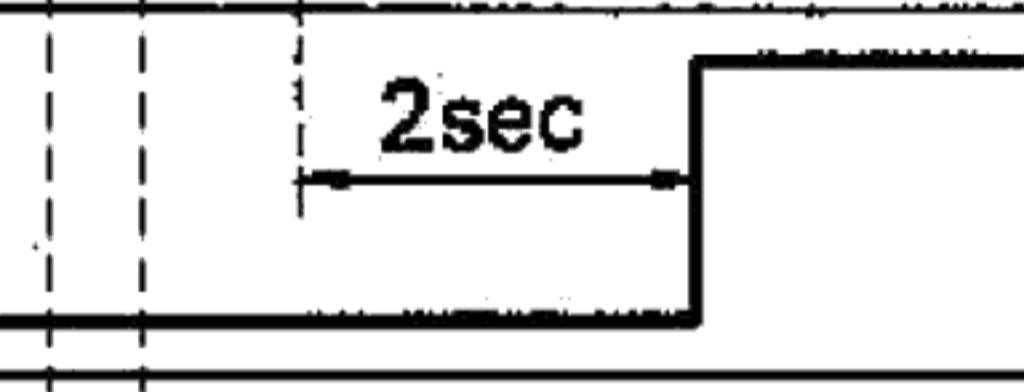
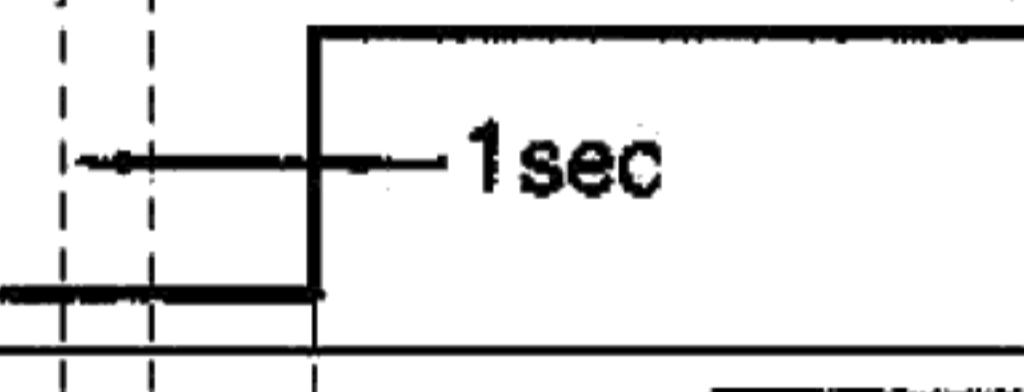
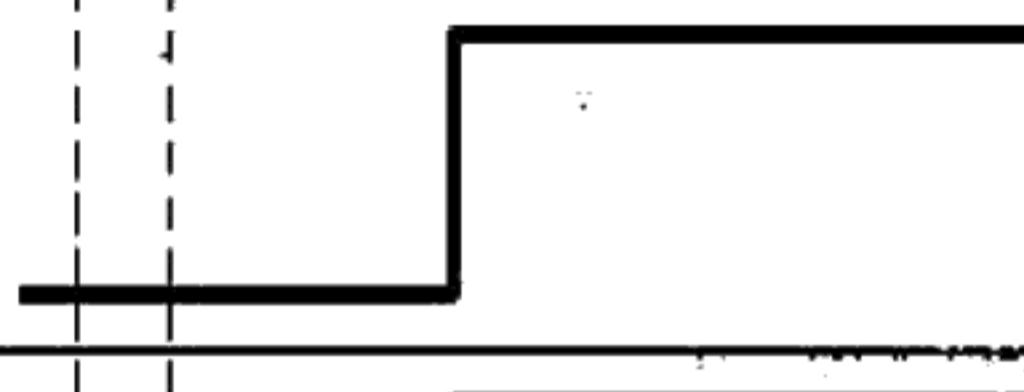
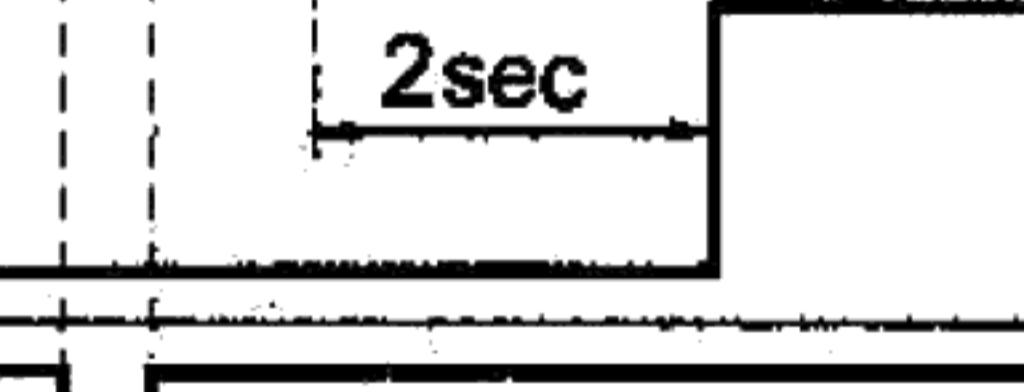
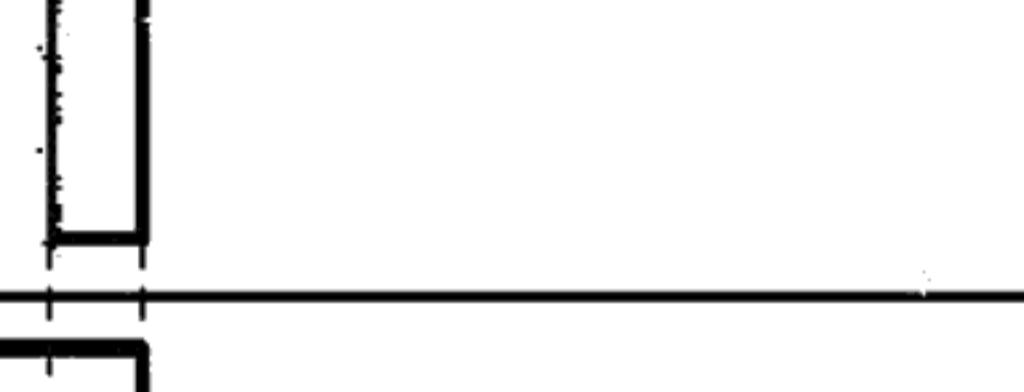
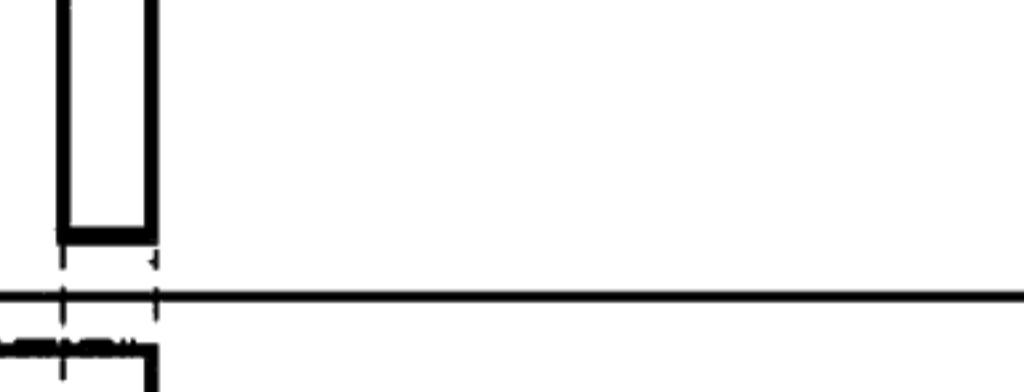
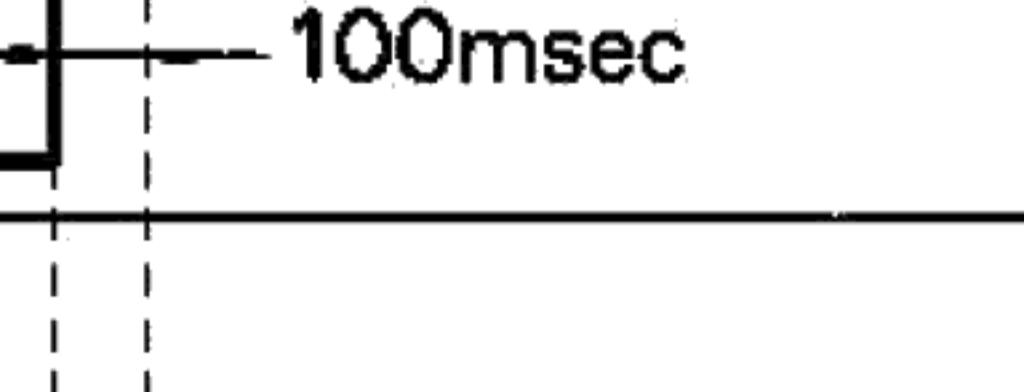
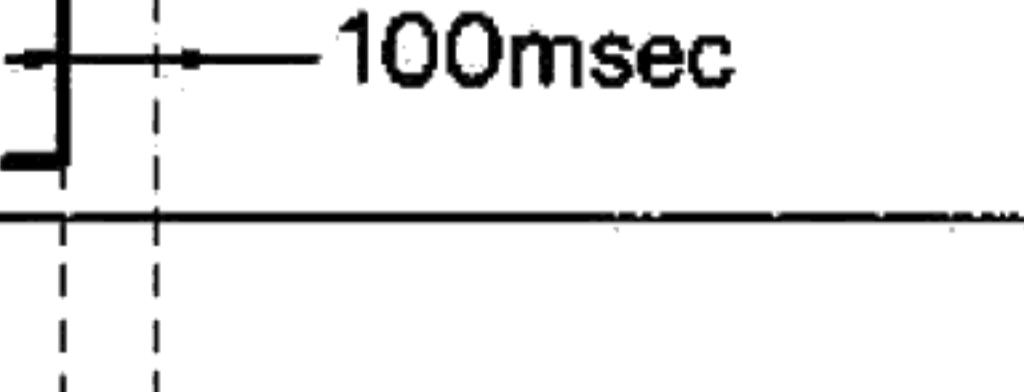
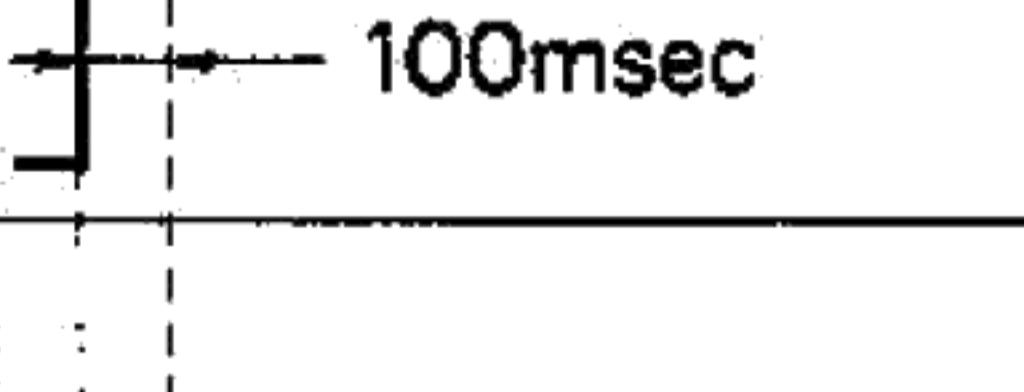
Port Assignment Table (3)

Port	Pin No.	I/O Mode	Active Mode	Function
P8	0	29	—	—
	1	28	—	—
	2	27	O	H
	3	26	O	H

CIRCUIT DESCRIPTION

Operation Timing Diagram (1)

Mode change Port	STOP→FORWARD (manual)	STOP→FORWARD (auto)	STOP→REVERSE (manual)	STOP→REVERSE (auto)
FWD				
HI FWD				
REV				
HI REV				
A·KILL				
SOLENOID				
KICK				
MUTING				
T·T				

Mode change Port	DOWN→FORWARD (manual)	DOWN→REVERSE (manual)	DOWN→REVERSE (auto)
FWD			
HI FWD			
REV			
HI REV			
A·KILL			
SOLENOID			
KICK			
MUTING			
T·T			

CIRCUIT DESCRIPTION

Operation Timing Diagram (2)

Mode change Port	DOWN→STOP(UP)	FORWARD→REVERSE	REVERSE→FORWARD	STOP(UP)→DOWN
FWD				
HI FWD		0.5sec	2sec	
REV			0.5sec	
HI REV		2sec		
A·KILL				
SOLENOID	100msec			
KICK				1sec
MUTING				3.5sec
T·T				

Auto-play Operation

Mode change Port	REST	FOR	PLAY	REV	REST
FWD		1.5sec	0.5sec		
HI FWD					
REV				1.5sec	
HI REV					
A·KILL	8msec				
SOLENOID					
KICK			1sec		
MUTING			3.5sec	100msec	
T·T					

CIRCUIT DESCRIPTION

OPERATIONAL DESCRIPTION BASIC OPERATIONAL DESCRIPTION

1. Automatic operation

(a) Auto-play (auto lead-in)

When the record size is selected by the SIZE key and the PLAY/CUT key is pressed after the record is loaded with the tonearm on the armrest, the speed is automatically set in response to the size selector and then playback starts at the first tune of that record.

When the turntable rotates after the PLAT/CUT key is pressed, the tonearm starts moving about 1.5 sec later. When the tonearm starts moving, the tonearm is fed at high speed toward the left (FF) to the "lead-in count - 16" position and is fed at low speed toward the left (FOR) to the lead-in count position.

When playback terminates and the tonearm has reached the return position of the set record size, or when the speed detection indicates that the tonearm has reached the lead-out groove, the tonearm is automatically returned. At this time, when the repeat play mode is set, playback is automatically repeated up to 16 times.

(b) Auto-cut

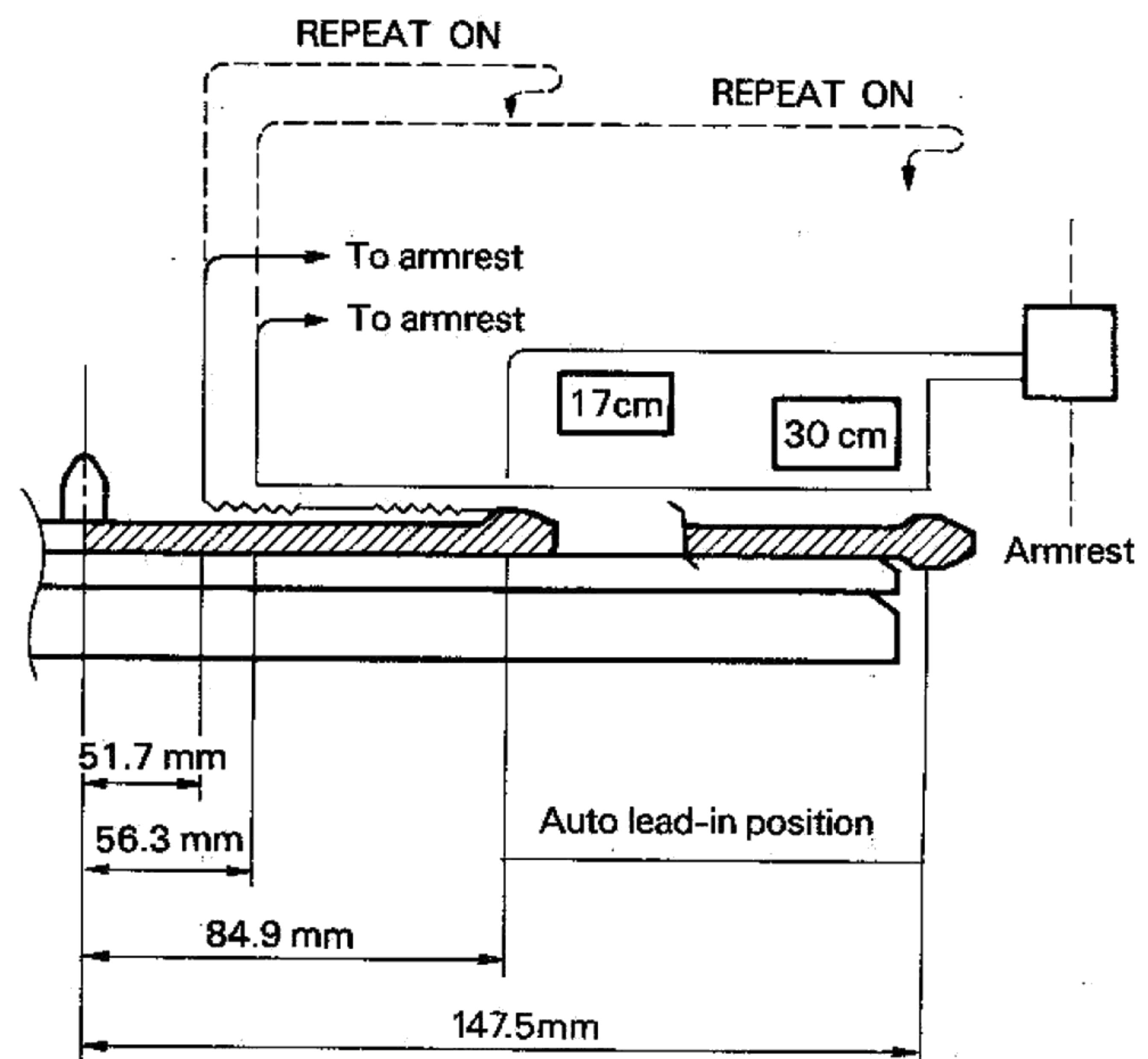
When the PLAY/CUT key is pressed with the tonearm at a location other than the armrest or during the auto-play mode, the auto-cut operation is engaged.

In this case, the number of play repetitions is canceled. The record size and speed settings made before playback remain, and do not change. In addition, during the auto-cut operation, all key operations are ignored.

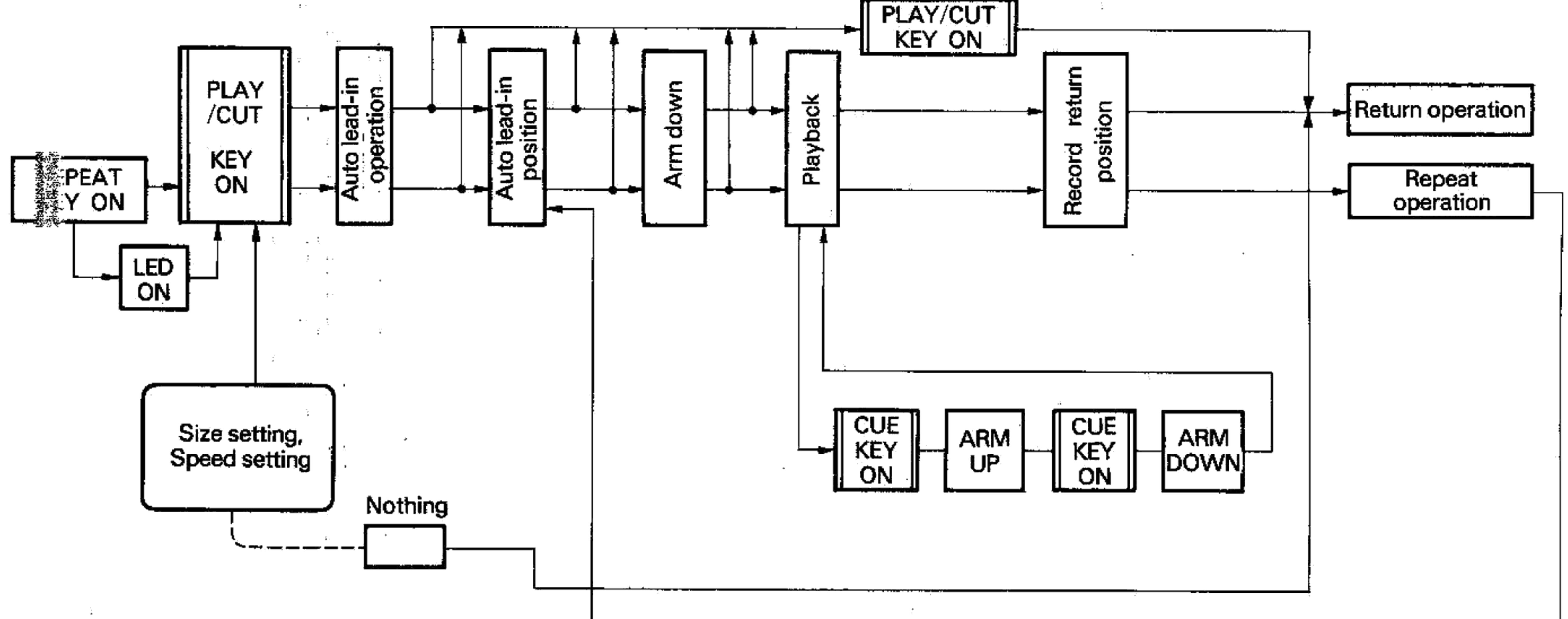
(c) Auto-repeat (only in auto-play)

The combination of the PLAY and REPEAT keys permits the playback to return to the first tune and continue. During the auto-repeat operation, when the FOR or REV key is pressed, the auto-repeat mode is canceled.

During the auto-repeat operation, the tonearm after being returned, is fed at high speed toward the right (REW) to the position located 16 counts before the auto lead-in position, after which the tonearm is fed at low speed through the auto lead-in position once, then fed toward the left and lowered onto the auto lead-in position.



Auto-play operation



- (1) A 25-cm record or a non-standard record is handled by manual playback.

- (2) This operation depends on the return position and record speed detection.

CIRCUIT DESCRIPTION

2. Manual operation

During the automatic operation or when the tonearm is placed on the armrest, when the FOR or REV key is pressed, the manual operation is engaged.

In this case, the tonearm is fed at low speed for 2 sec, after the FOR or REV key is pressed ON, after which it is fed at high speed.

3. Record size selection

At power ON, when the PLAY/CUT key is pressed without setting the record size and a record is not on the platter (30 cm or 17 cm), the tonearm moves to the 17-cm lead-in position and is returned.

Thus, the tonearm is not lowered.

In addition, even when the CUE key is pressed in the manual operation, the tonearm is not lowered and is returned.

Until the record size is set, the size indicator LEDs flicker alternately (in intervals of about 1 sec).

The SIZE and SPEED keys are electrically interlocked with each other. Thus, when the 30-cm record size is selected, the record speed is set at 33 RPM, while when the 17-cm record size is selected, the record speed is set at 45 RPM.

In addition, after the size setting, the tonearm lowers onto the lead-in position of the set record size.

(Safety function only at power ON)

4. Speed selection

Until the record size is set, the SPEED key is not accepted. Although the SPEED key is electrically interlocked with the SIZE key, the SPEED key can be switched independently.

5. Cueing

In manual operation, the cueing permissible range is from the 30-cm lead-in position to the return position of the set record size.

6. Muting

Muting is canceled 3.5 sec after the tonearm lowered or 0.5 sec after input of the pulse count after the tonearm is lowered.

When the tonearm is rised, muting goes ON and then OFF 100 msec after by the plunger action

7. Others

- (a) In manual operation, the tonearm returns to the return position of the set record size (the 30-cm return position when the 30-cm record size is set).
- (b) Except the FOR and REV keys, every key pressed first is given priority. When another key is ON, all other keys are ignored. Therefore, other keys are not accepted unless the originally pressed key is turned OFF.
- (c) Only the FOR or REV key is effective except during the auto-cut operation irrespective of any other key ON/OFF.
- (d) Double pressure on the FOR or REV key causes stoppage of the turntable.

System Configuration for KD-66F for Serial Connection.

- (a) When the function selector of the amplifier is set at "PHONO", the turntable enters the auto-play operation.
- (b) When the function selector of the amplifier is changed to another position from "PHONO", the turntable enters the auto-return operation.
- (c) When the tonearm is lowered by pressing the PLAY/CUT key, the function selector of the amplifier is changed to "PHONO".
- (d) When roulette play is started on the turntable, the turntable enters the auto-return operation. Any key other than the SIZE and SPEED keys is not accepted until roulette play is canceled.
- (e) In case of (b), when cassette deck A or B is in the "PHONO REC" mode, the auto-return operation is not performed.
- (f) When the system is in roulette play, and the power of the turntable is turned ON, roulette play is canceled 1 sec later.

CIRCUIT DESCRIPTION

DESCRIPTION OF CIRCUIT OPERATION

Used board No.: X25-2940-00

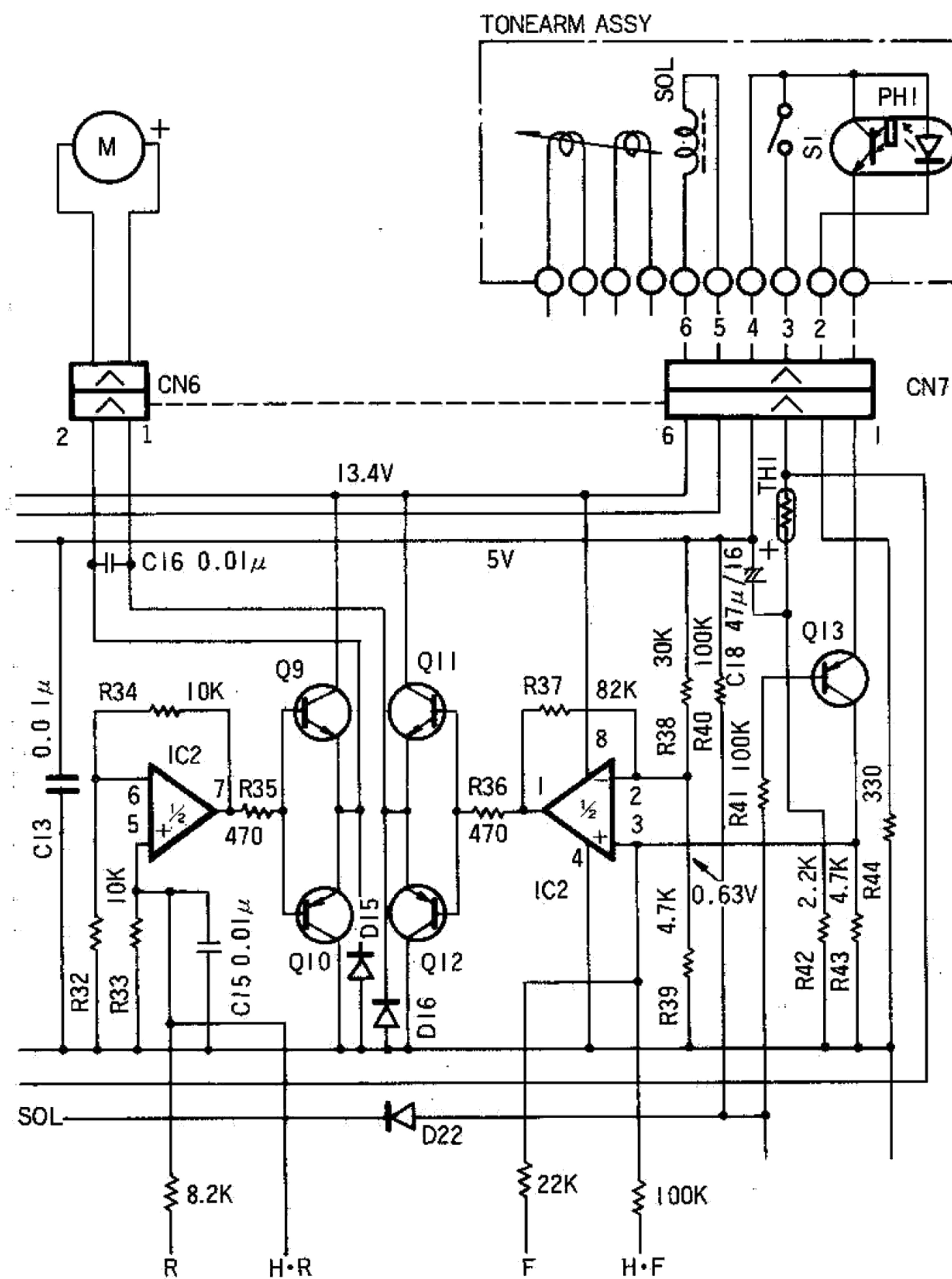
Lateral tracking motor control circuit: Used board No. X25-2940-00

As the plunger is at the OFF position when the arm is up, the solenoid output is 13.4 V. Thus, D22 is subject to reverse bias, and 5 V is applied to Q13 by way of R40 and R41. Thereby, Q13 turns OFF so that the sensor output is not supplied to pin 3 of IC2.

When the arm is lowered, the solenoid output becomes 0 V and a current flows via R41 so that Q13 turns ON. When Q13 turns ON, the sensor output is entered to IC2, in which it is then amplified to 26 dB and applied to the current booster consisting of Q11 and Q12. This current-boosted output is applied to the DC motor to move the arm in the forward direction.

When the F output becomes "H", the output resulting from the split by a 22 k-ohms resistor and R43 is applied to IC2 so that the arm moves at slow speed in the forward direction. When F and HF both become "H", the split voltage becomes higher due to the 22 k-ohms and 100 k-ohms resistors connected in parallel so that the arm moves at high speed in the forward direction.

Subsequently, when R becomes "H", the output resulting from the split by a 8.2 k-ohms resistor and R33 is applied to IC2 so that the arm moves at slow speed in the reverse direction. When H and R become "H", the output is not subject to the split by the resistors so that the arm moves at high speed in the reverse direction.



CIRCUIT DESCRIPTION

Introduction

The TPM-5 is smaller in size than the TPM-2 through employment of a 2-phase full-wave F-servo 1-chip motor driver TA7284P and through transition of resistor jumpers into chip. Furthermore, the TPM-2 uses a push-pull drive, and the TPM-5 uses a BTL drive owing to the TA7284P, thus enabling transition to a single power supply.

Circuit description

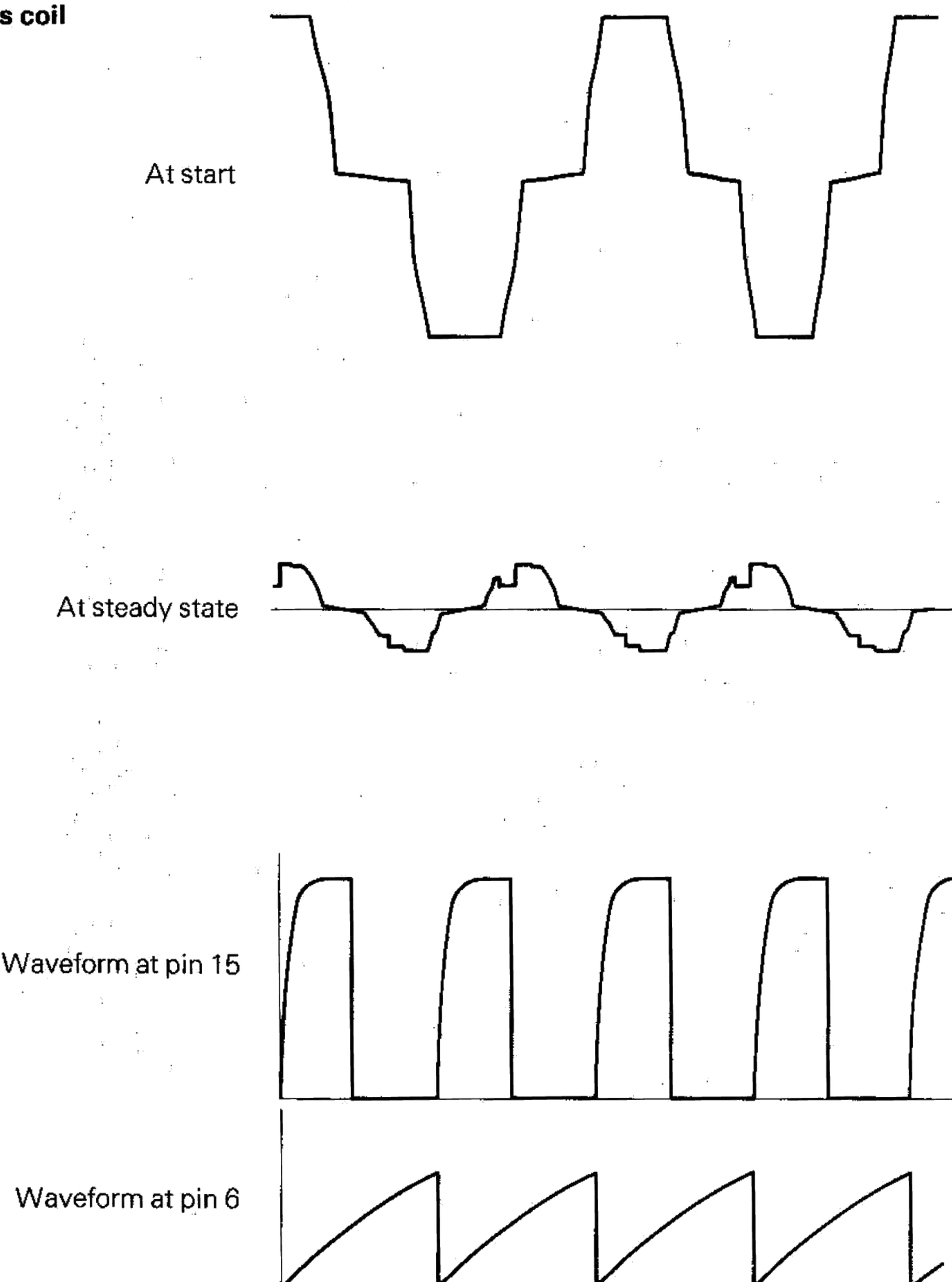
Signal detected by the FG coil is amplified by the FG amplifier and then input to the Schmitt circuit. The sampling and reset pulses required for the sample-hold operation are generated from the waveform-shaped output. Then, a triangular wave (pin 6) is generated from this control output, and that peak value is held at C5.

This hold voltage is compared with the reference voltage V_{rf} , and that error signal is amplified by amplifier 2. Moreover, the output of amplifier 2 is phase-inverted by amplifier 3 and input to the position detection circuit by way of the amplifier 4.

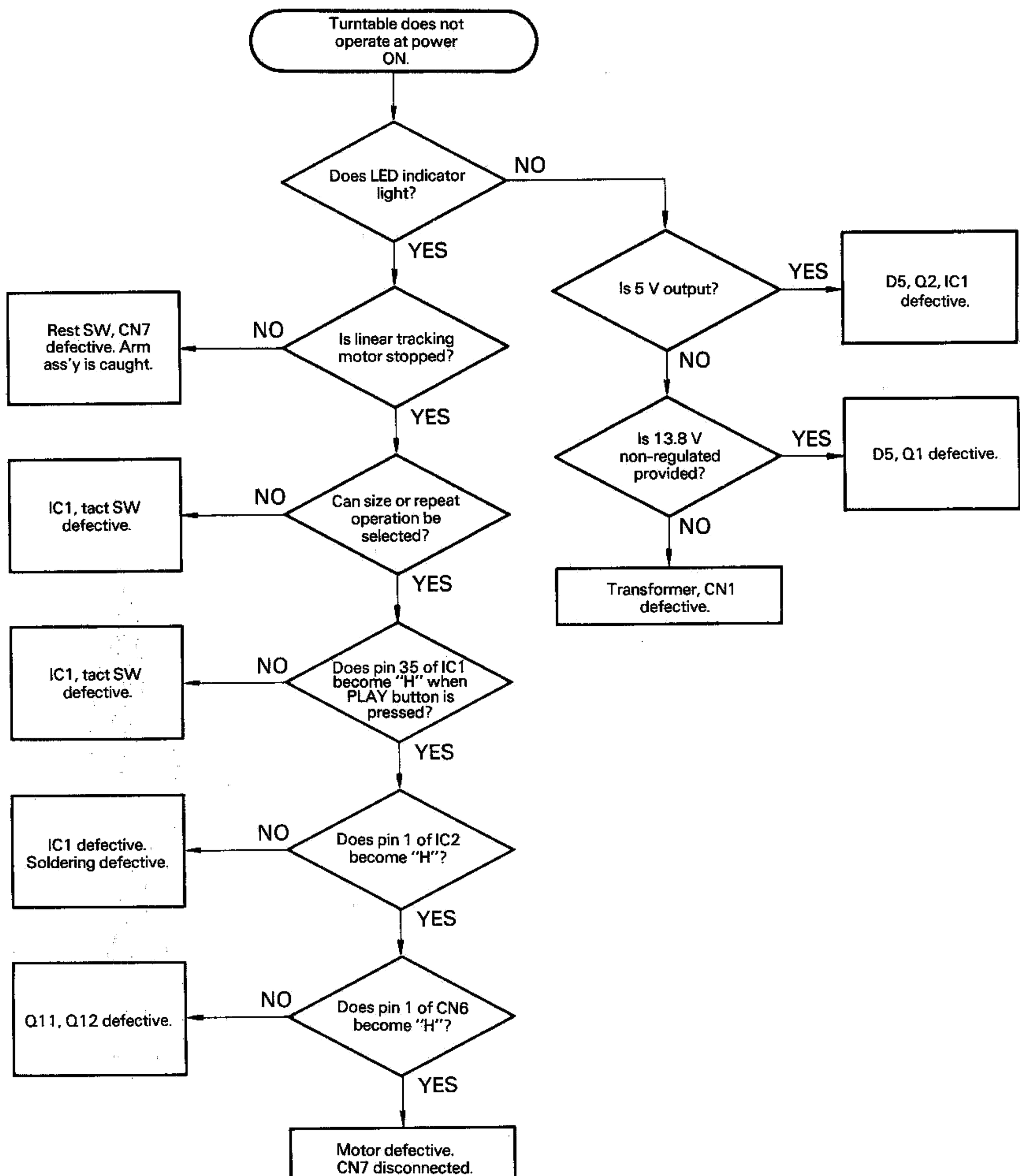
Then, the FG coil which detected by means of a Hall element, and the flow is the current corresponding to that output, to drive the magnet. The coil current is detected by R10 and R11 and is fed back to amplifier 4 so that the coil current is controlled.

When the voltage drops of R10 and R11 becomes 0.6 V, the protective circuit functions to prevent the flow of over-current.

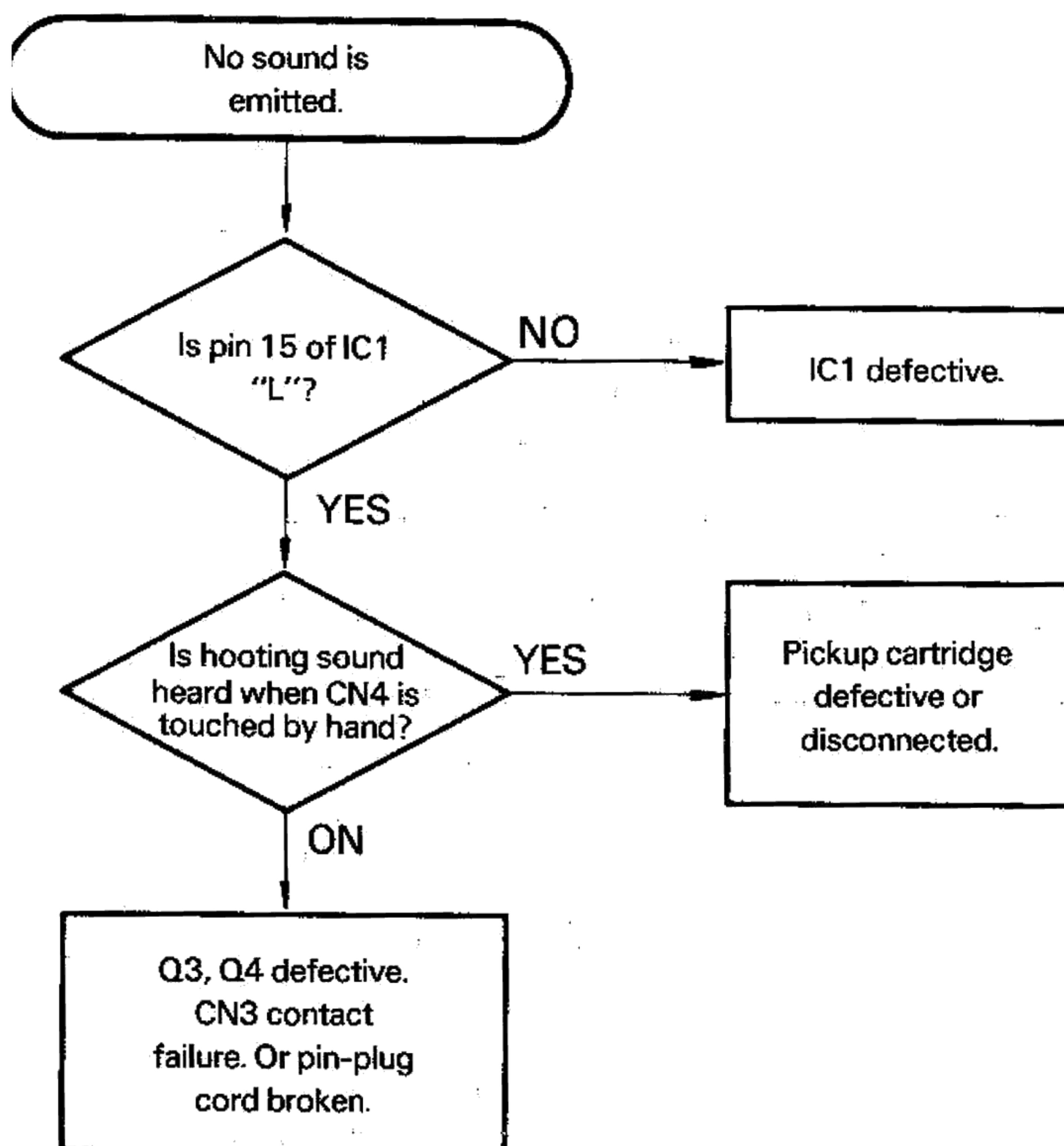
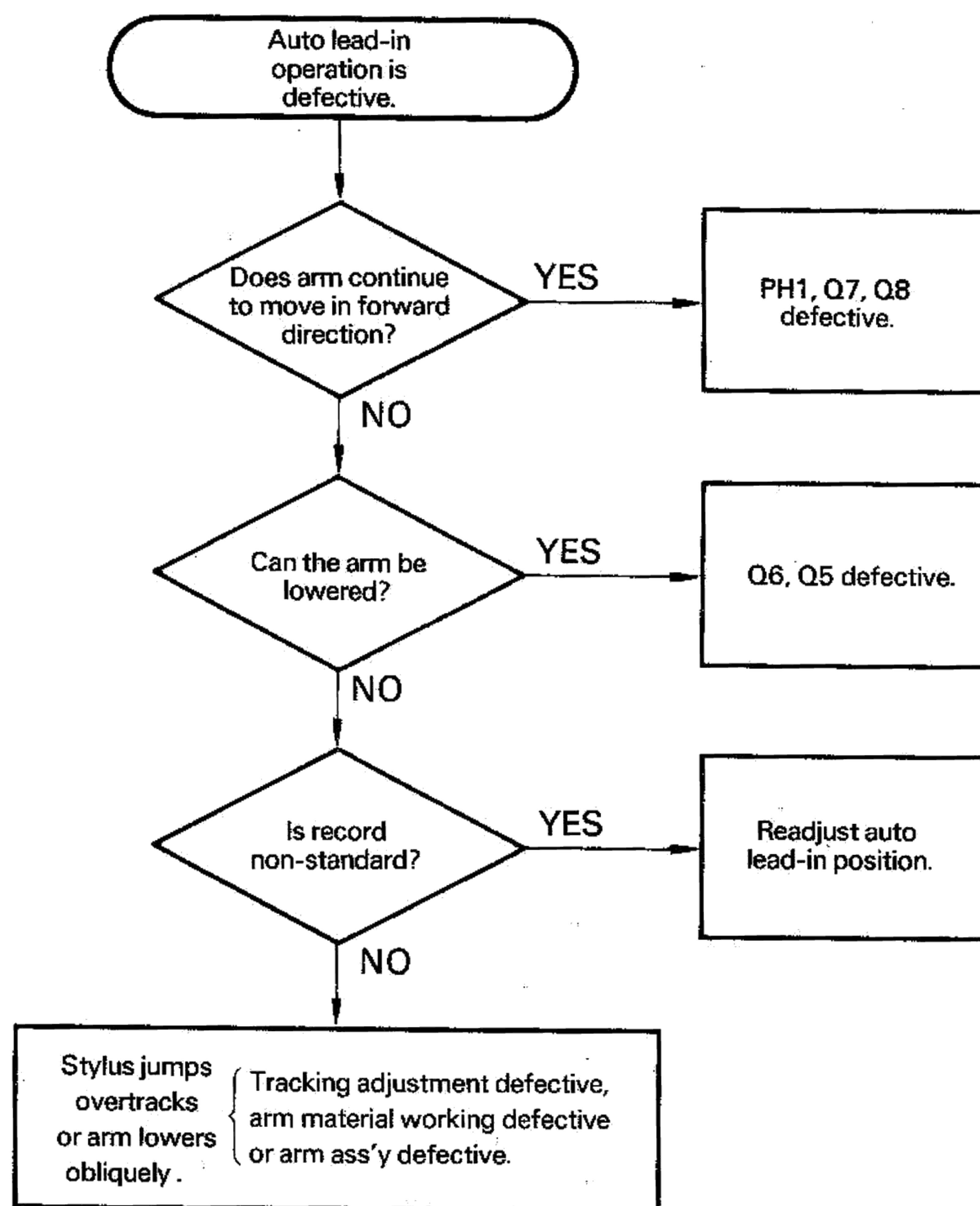
Waveform across coil



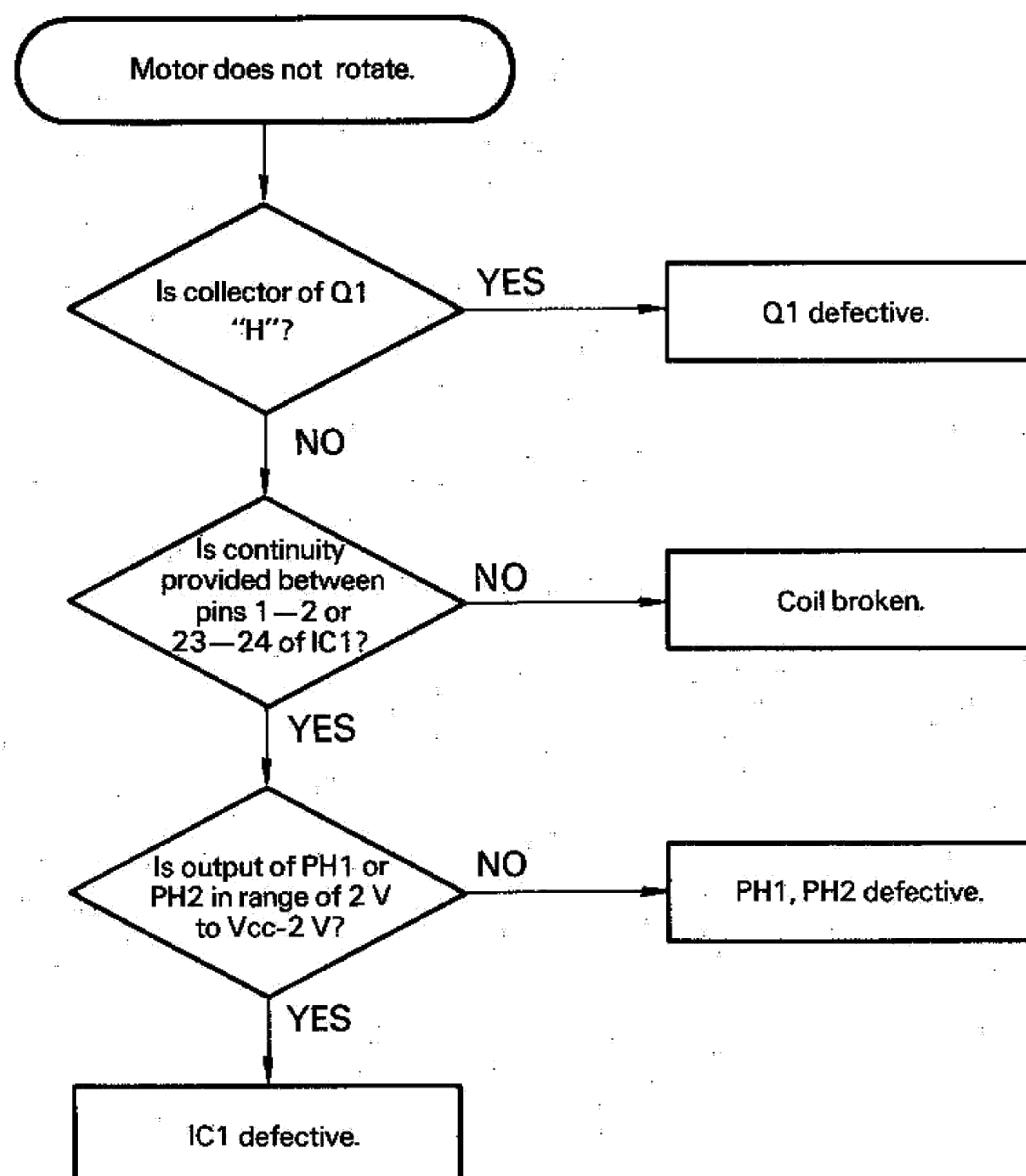
TROUBLE SHOOTING



TROUBLE SHOOTING



TROUBLE SHOOTING



When the desired performance is not obtained, replace the motor ass'y entirely.

ADJUSTMENT/REGLAGE

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	PLAYER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	ARM RIGHT- ANGLE	—	—	—	Arm centering screw (screw lock with adhesive)	At right angles with mechanism ass'y	2
2	STYLUS HEIGHT	—	—	• Reset position • Detach platter.	Height adjustment screw (screw lock with adhesive)	4~5mm from record surface	1
3	TRACKING	Short between test pins A and C.	Connect tester between test pins B and C.	Keep arm up.	Eccentric cam (PC board lock with adhesive)	0.4~0.45V	2
4	AUTO LEAD-IN	Test record	Connect to amplifier unit.	Achieve automatic arm lead in to 30cm position.	Auto lead-in adjustment screw (screw lock with adhesive)	20±10 count	1

*Note: When performing an adjustment from the way of this sequence, be sure to perform the succeeding adjustment(s) again.

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE LA LECTURE	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
1	L'ANGLE DROIT DU BRAS	—	—	—	Vis de centrage du bras (verrouillage de vis avec adhésif)	À angles droits avec l'assemblage du mécanisme	2
2	HAUTEUR DE LA POINTE DE LECTURE	—	—	• Position de remise à zéro • Détacher le plateau.	Vis d'ajustement de la hauteur (verrouillage de vis avec adhésif)	4~5mm de la surface du disque	1
3	D'ALIGNEMENT	Court-circuiter entre les broches-test A et C.	Raccorder le testeur entre les broches-test B et C.	Garder le bras soulevé.	Came excentrée (verrouillage de plaque de circuit imprimé avec adhésif)	0.4~0.45V	2
4	D'ENTREE AUTOMATIQUE	Mettre en place le disque-test.	Raccorder à l'amplificateur.	Effectuer l'entrée de bras automatique à la positoin 30cm.	Vis d'ajustement d'entrée automatique (verrouillage de vis avec adhésif)	Comptage 20±10	1

*Remarque: Lors de l'exécution d'un ajustement en cours de séquence, toujours réeffectuer les ajustements qui suivent.

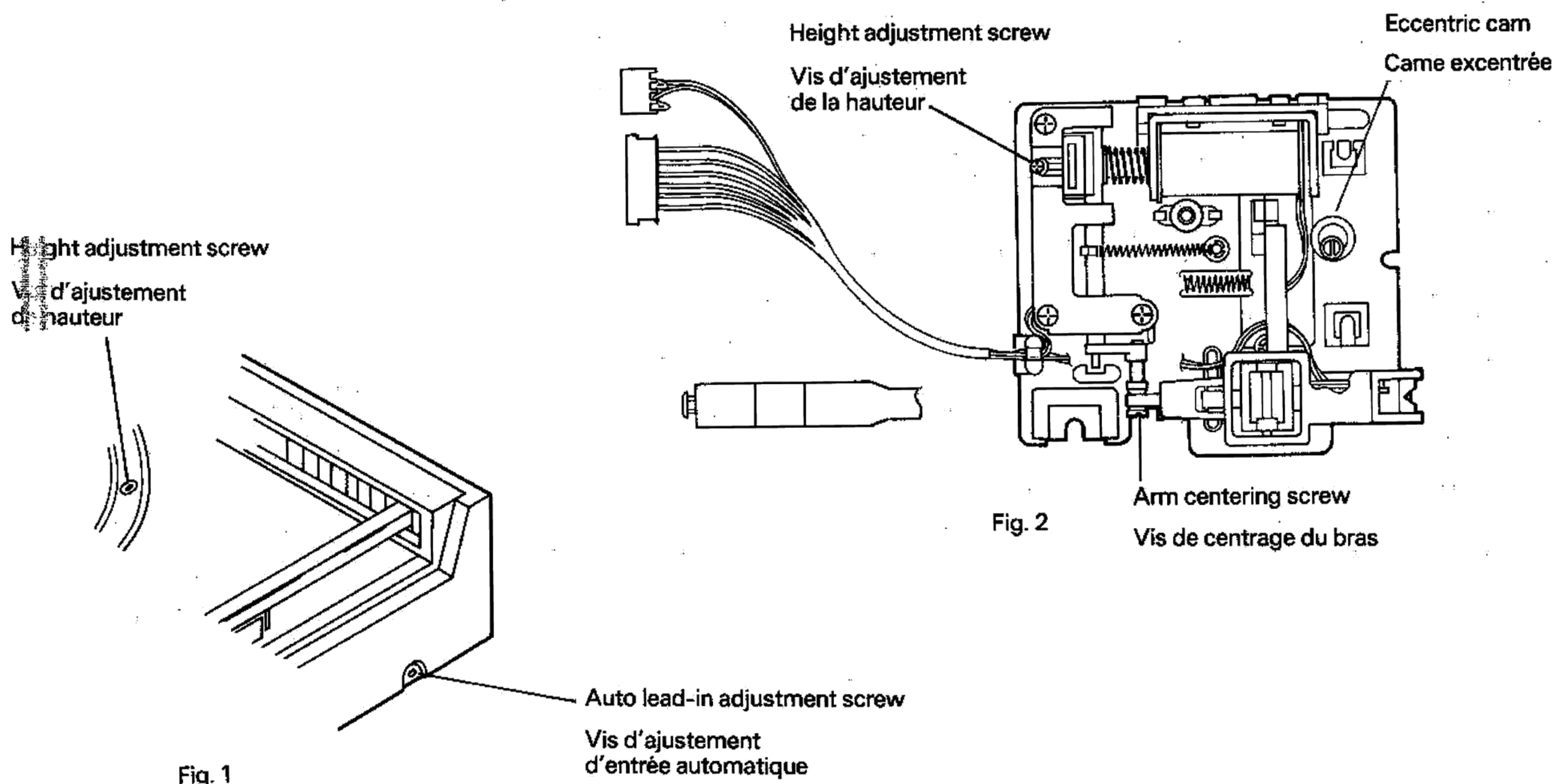


Fig. 1

ABGLEICH

R.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	SPIELER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
	EINSTELLUNG TONARM AUF RECHTEN WINKEL	—	—	—	Tonarm-Zentrierungsschraube (Schraube mit Klebemittel gesichert)	Auf rechten Winkel mit Mechanismus-Baugruppe	2
	NADELHÖHE	—	—	• Rückstellposition • Plattensteller abnehmen	Höheneinstellschraube (Schraube mit Klebemittel gesichert)	4~5mm von Plattenoberfläche	1
	SPURWINKEL	Teststifte A und C kurzschließen. Prüfgerät zwischen Teststiften B und C anschließen.	Prüfgerät zwischen Teststiften B und C anschließen.	Tonarm oben halten	Exzentrischer Nocken (Platine mit Klebemittel gesichert)	0,4~0,45V	2
	EINLAUFRILLE	Testschallpaltte auflegen.	An Verstärker anschließen.	Automatische Tonarmzuführung in 30cm-Position herstellen.	Einlauftrille-Einstellschraube (Schraube mit Klebemittel gesichert)	20±10 Zählungen	1

* Hinweis: Bei Durchführung einer Einstellung entsprechend der Einstell-Reihenfolge unbedingt die Einstellung überprüfen.

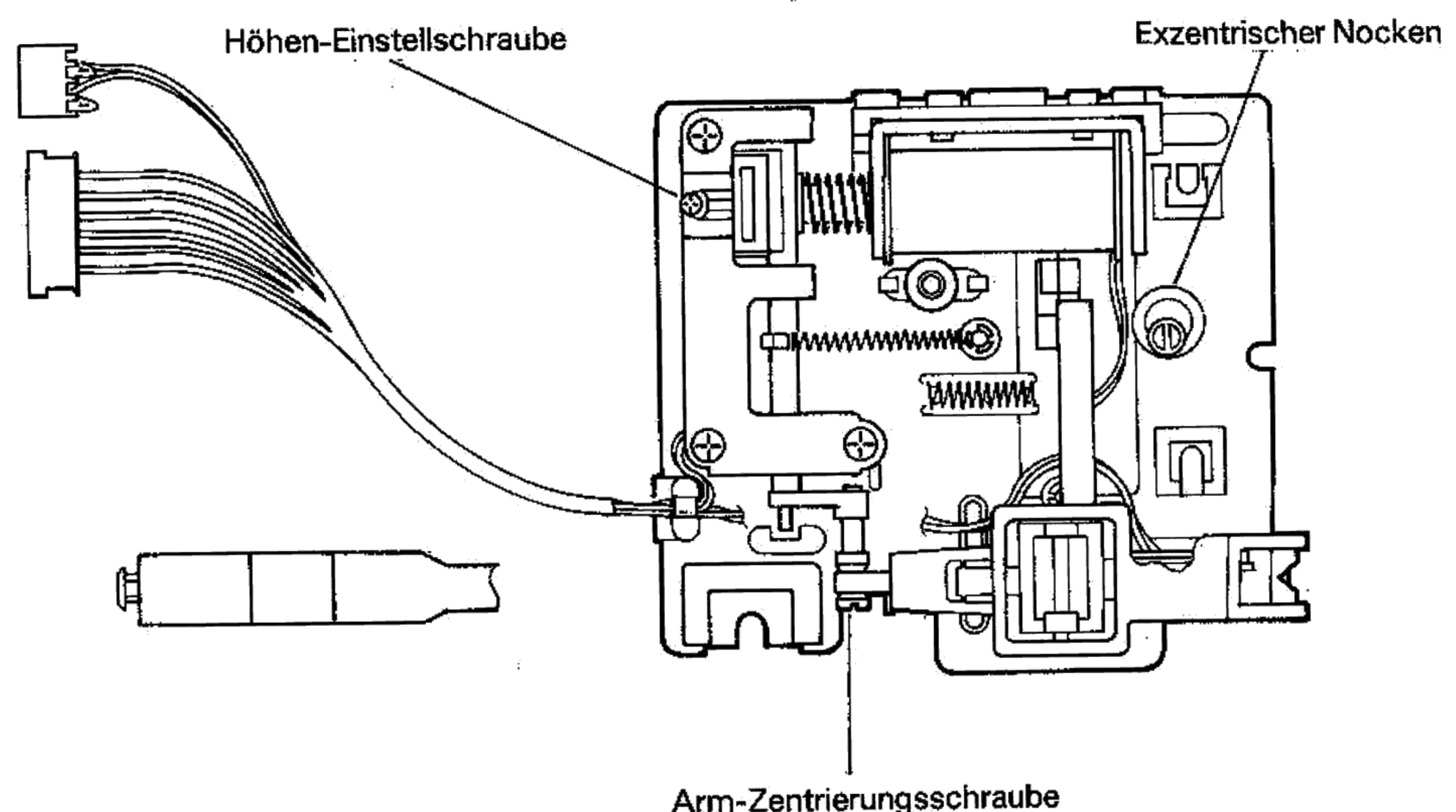


ABB. 2

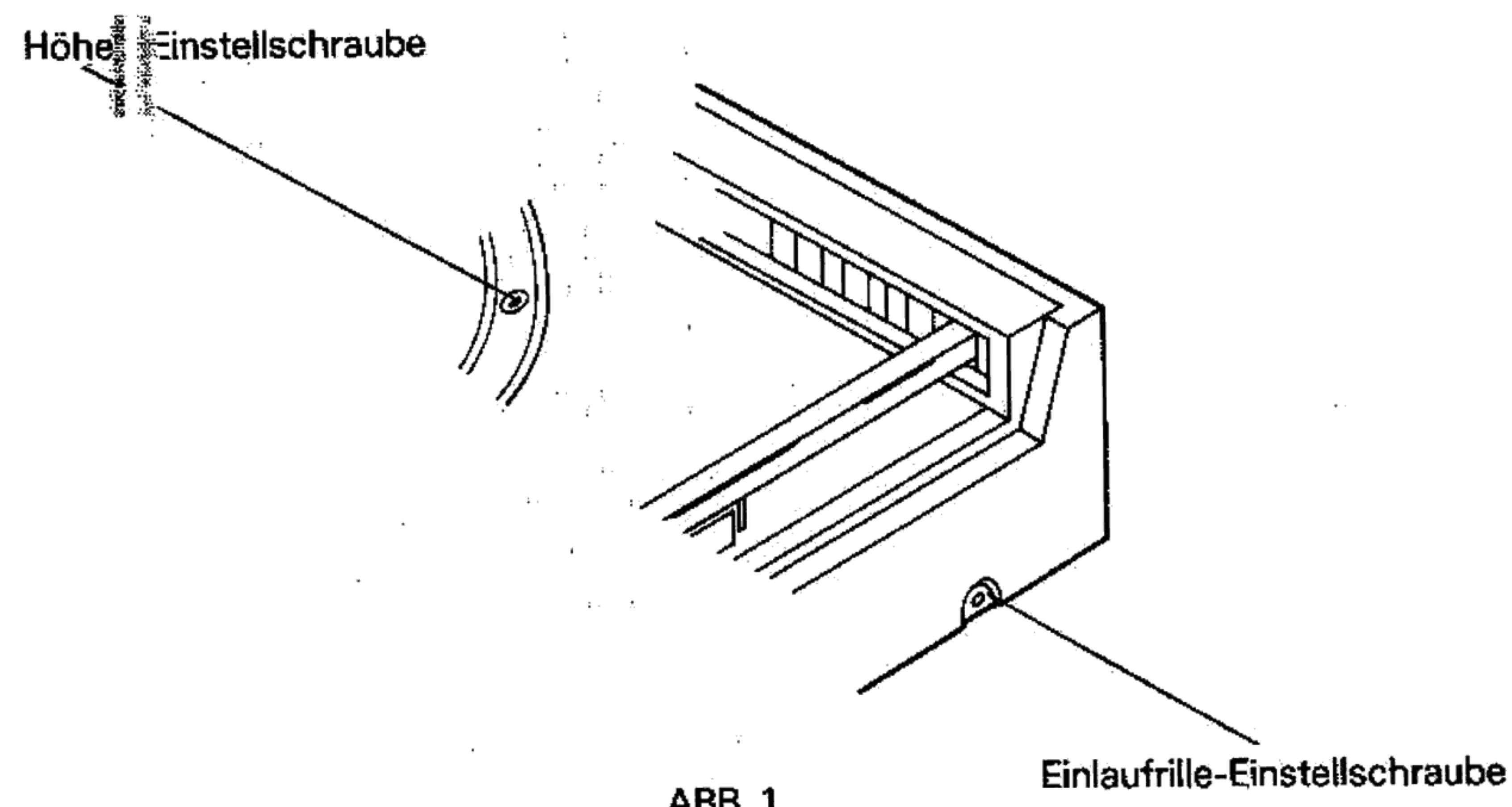
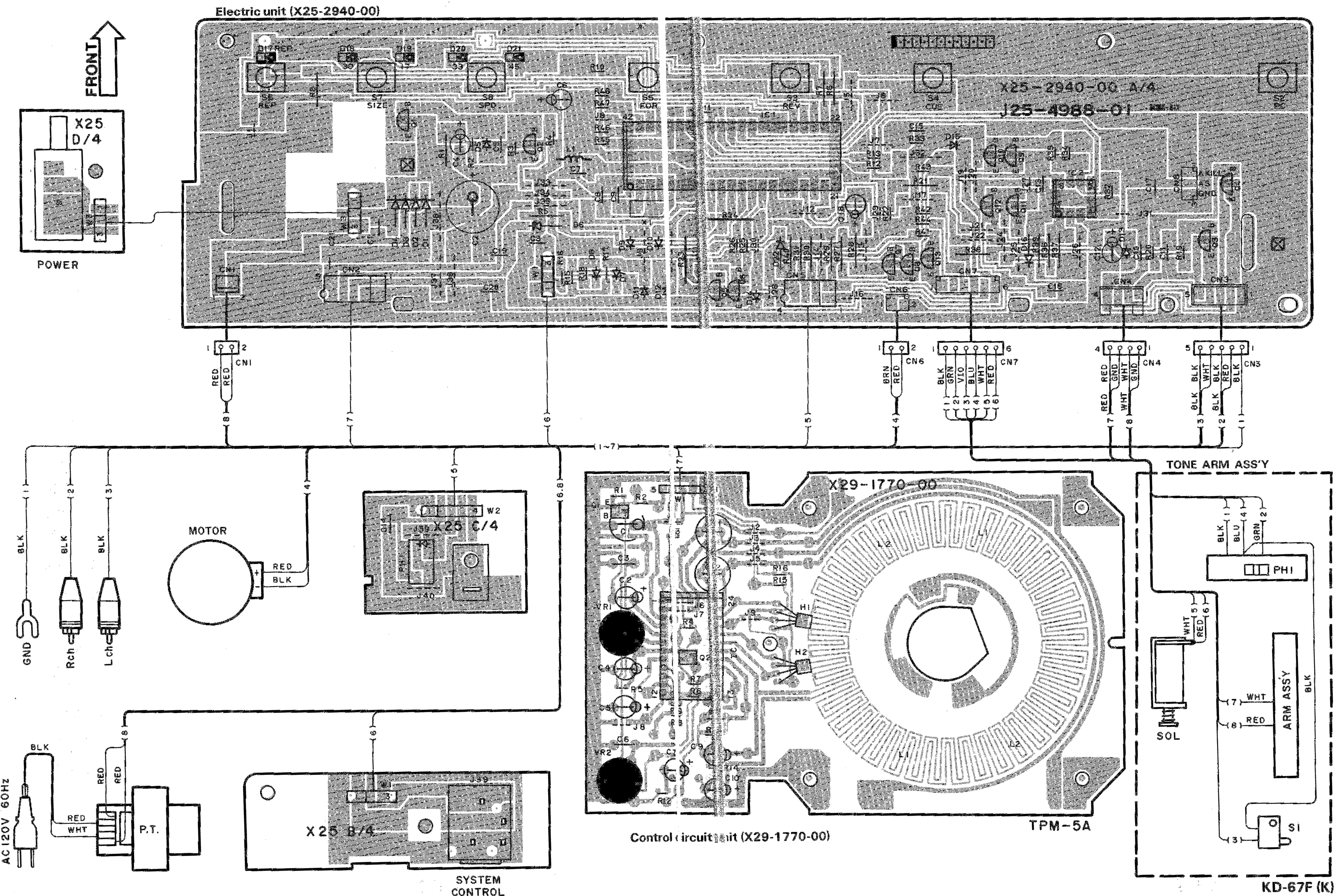
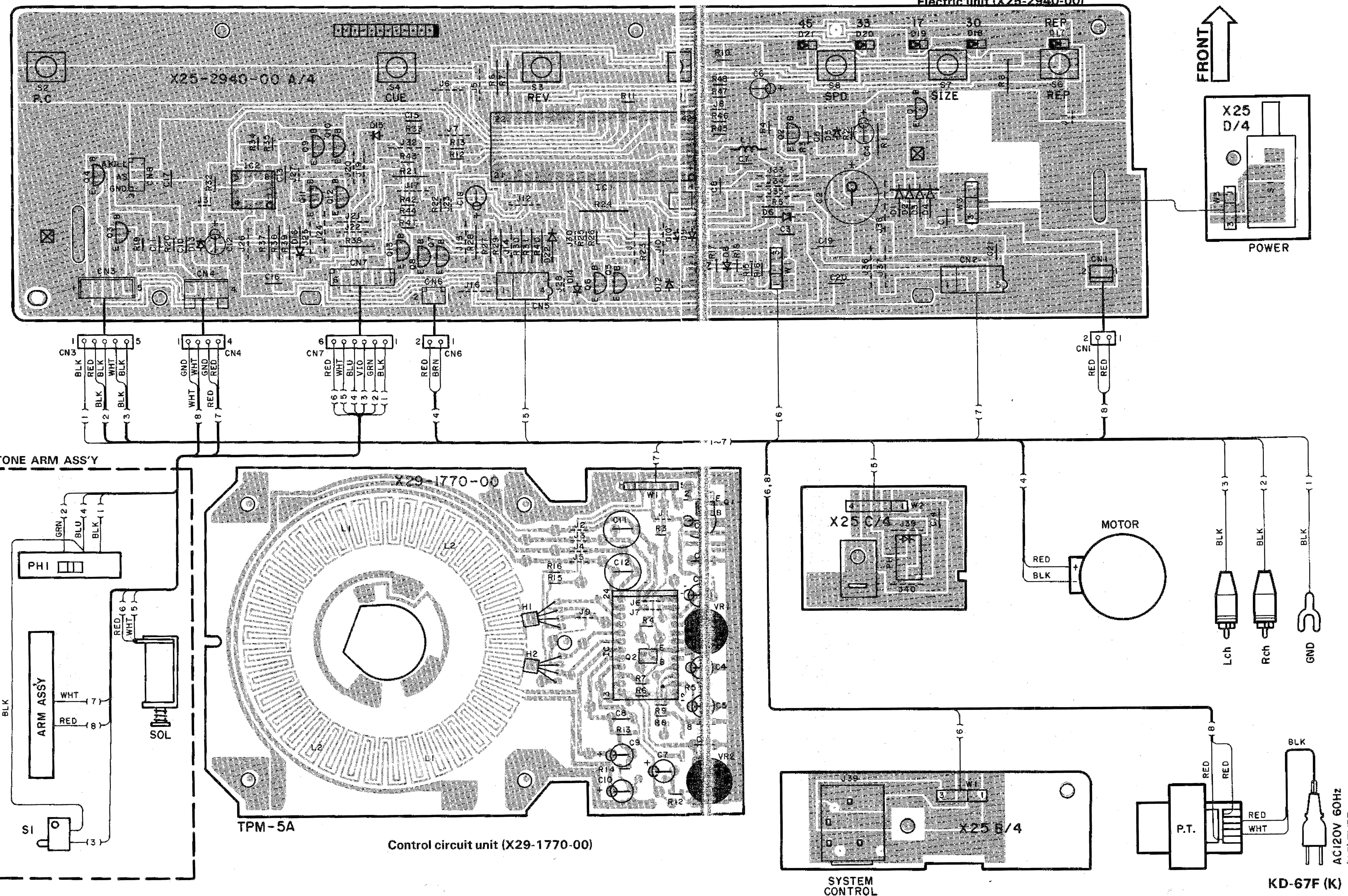


ABB. 1



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

**PC BOARD
FOIL SIDE VIEW**



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

IC 1 : UPD7537AC-014
IC 2 : AN6562


Q1 : 2SD882
Q2,7,8 : 2SC945(A)(Q,P) or 2SC2320(E,F)
Q3,4 : 2SD655(E,F)
Q5 : 2SD1302(S)
Q6,9,11 : 2SC3666 or 2SC3940A
Q10,12 : 2SA1426 or 2SA1534A
Q13 : 2SA733(A)(Q,P) or 2SA999(E,F)

D1~4 : DSM1AI
D5,6 : RD5.IES(B2) or HZS5.IN(B2)
D7~13,15 : ISS133 or ISS176
D14 : ISS131 or ISS178
D17~21 : B30-1161-05
PH1 : T95-0042-05
TH1 : SDT-65

TONE ARM ASS'Y

(X25-2940-00) (C/4)

GND LINE
+B LINE



(X25-2940-00) (B/4)

J39
DATA BUSY

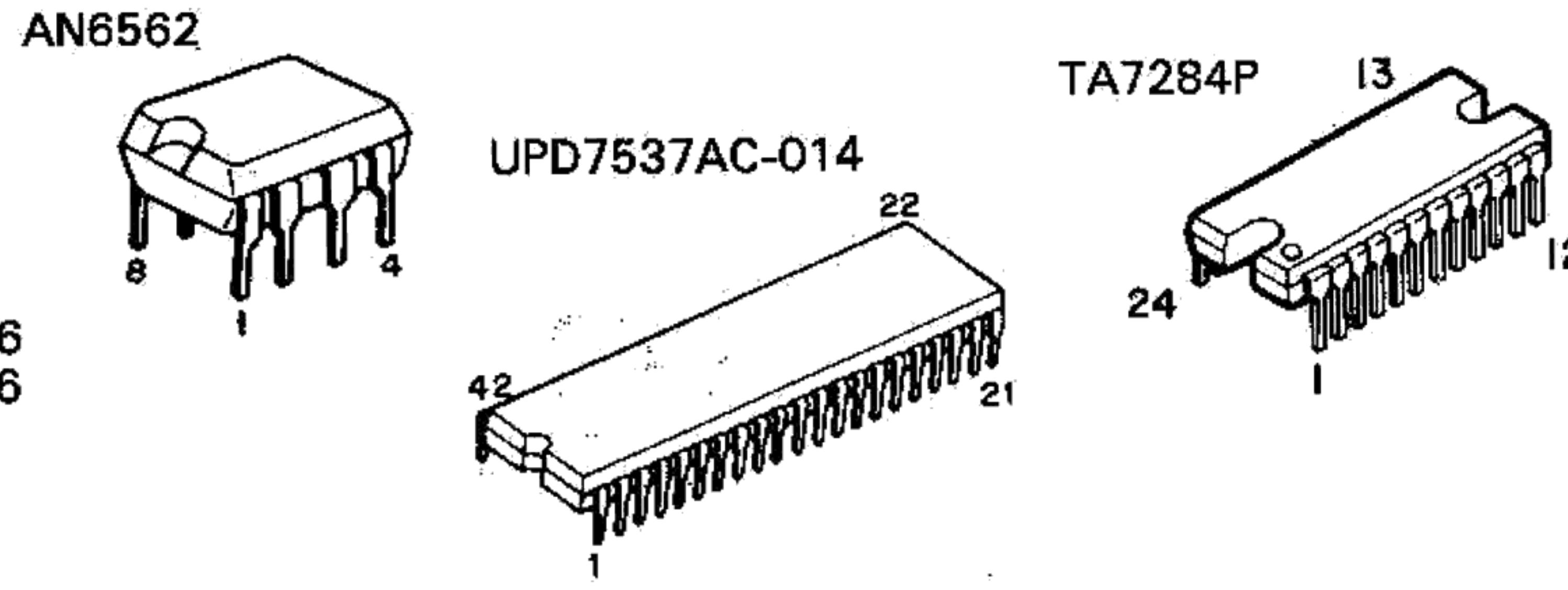
(X29-1770-00)

(X,E) TYPE
TPM-5A
GRY
230V 50Hz
WHT

(K,P) TYPE
RED
120V 60Hz
WHT

(U,UE,M) TYPE
230V GRY
OV RED
115V WHT

(X25-2940-00) (A/4)



IC voltages are measured with a high impedance voltmeter at 33-1/3 r.p.m. mode. Values may vary slightly due to variations between individual instruments or/and units.

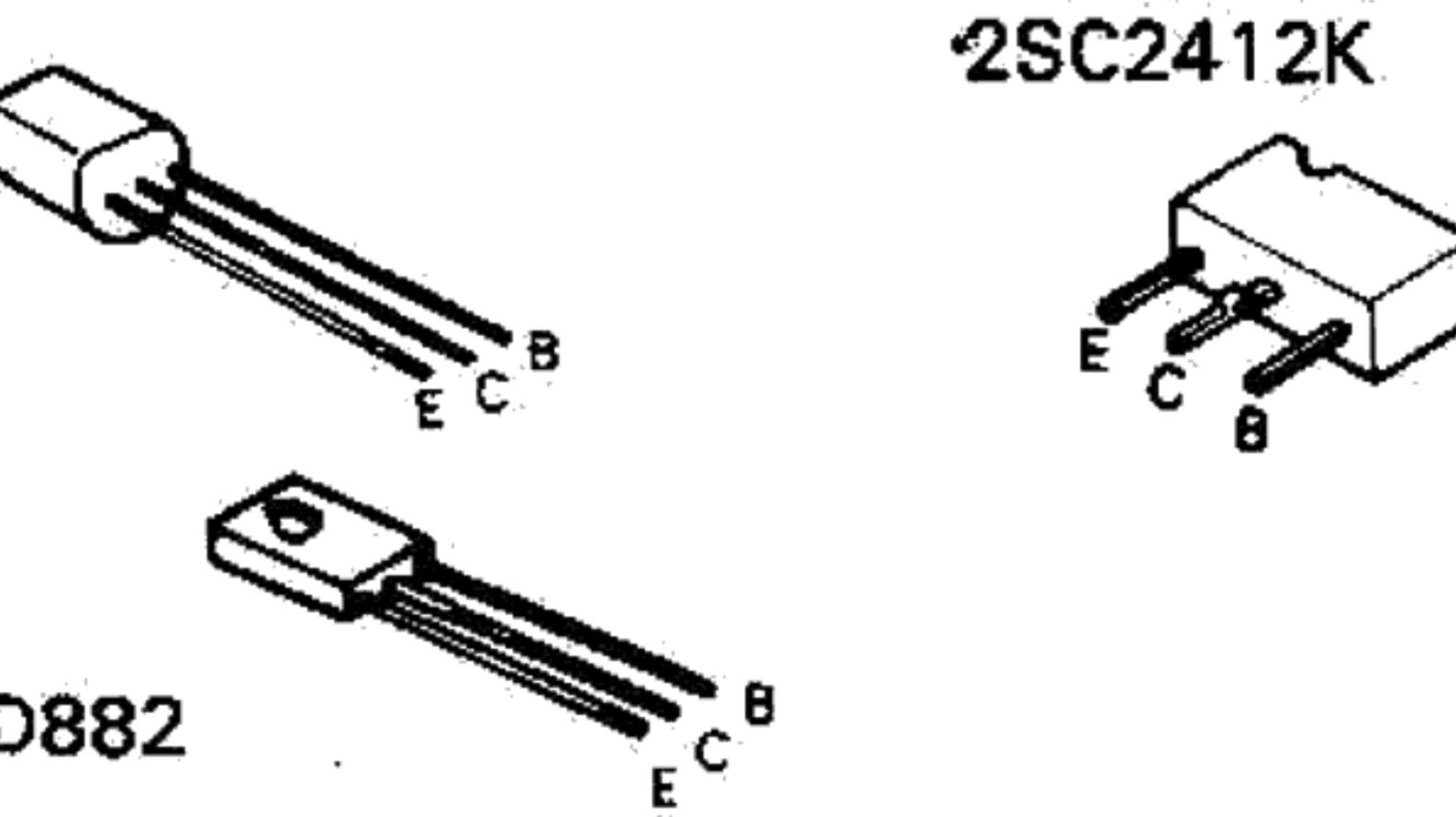
Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance, près de 33-1/3 r.p.m. en mode du lecture. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden bei 33-1/3 r.p.m. Wiedergabe mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten U. geringfügig.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

KD-67F (K)

2SA1534A
2SA733(A)
2SA999
2SC2320
2SC3940A
2SC945(A)
2SD1302
2SD655



2SD882

2SA1037K
2SC2412K

AN6562

2SA1426

2SC3666

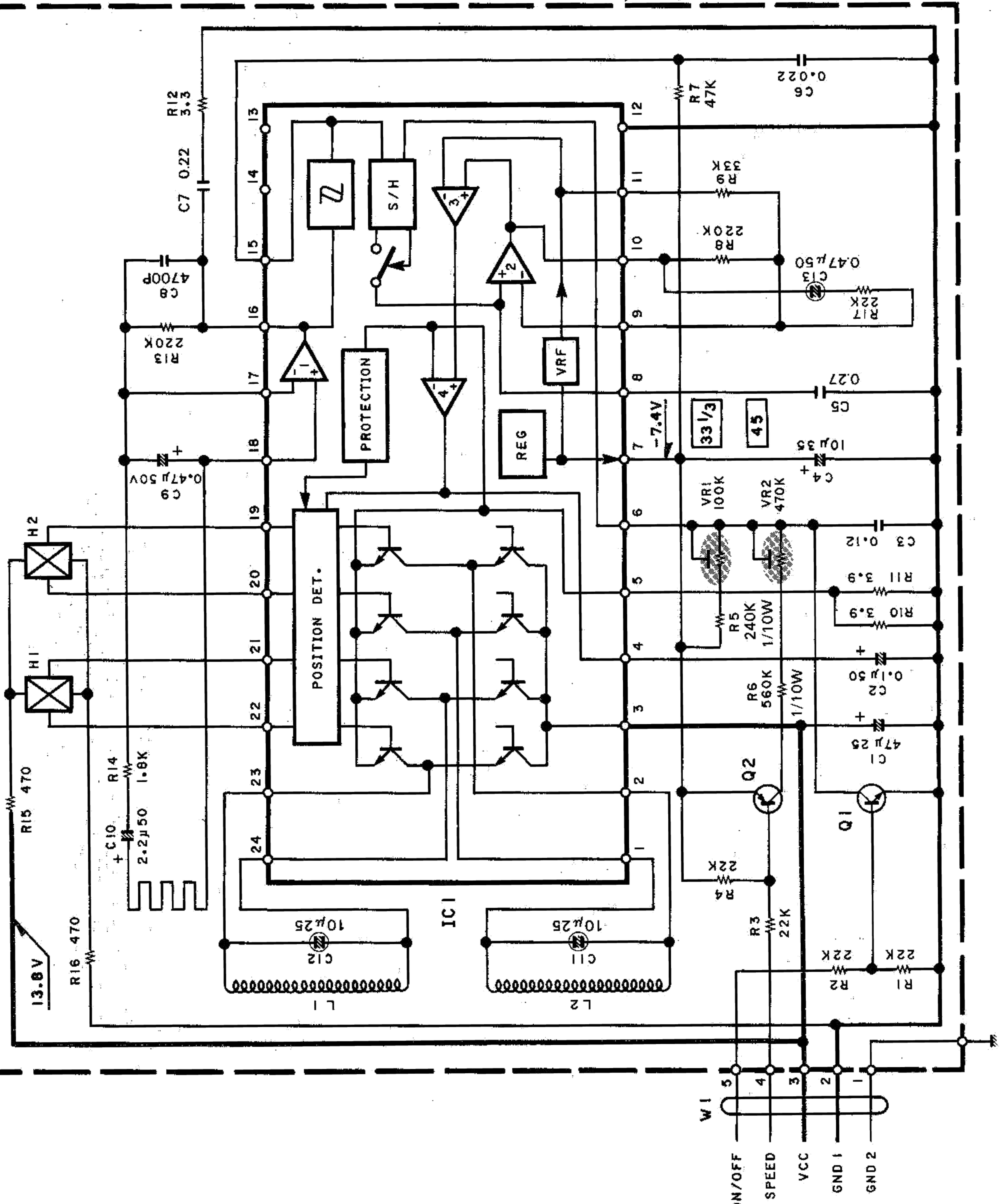
UPD7537AC-014

TA7284P


X29-1770-001 TPM-5A CONTROL CIRCUIT UNIT

IC1 : TA7284 P
 Q1 : 2SC2412K
 Q2 : 2SA1037K
 H1,2: T95-0015-15

TPM-5A

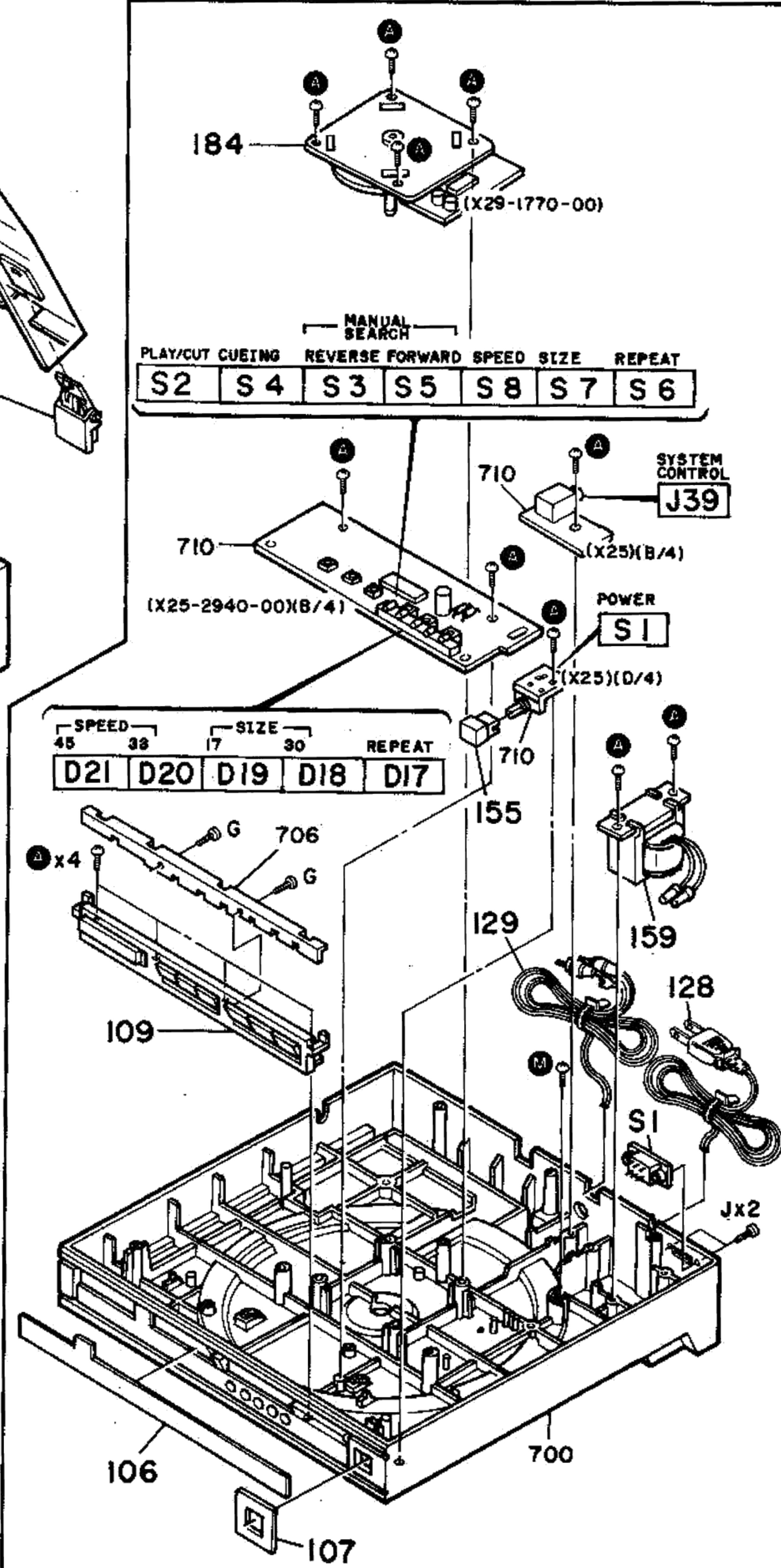
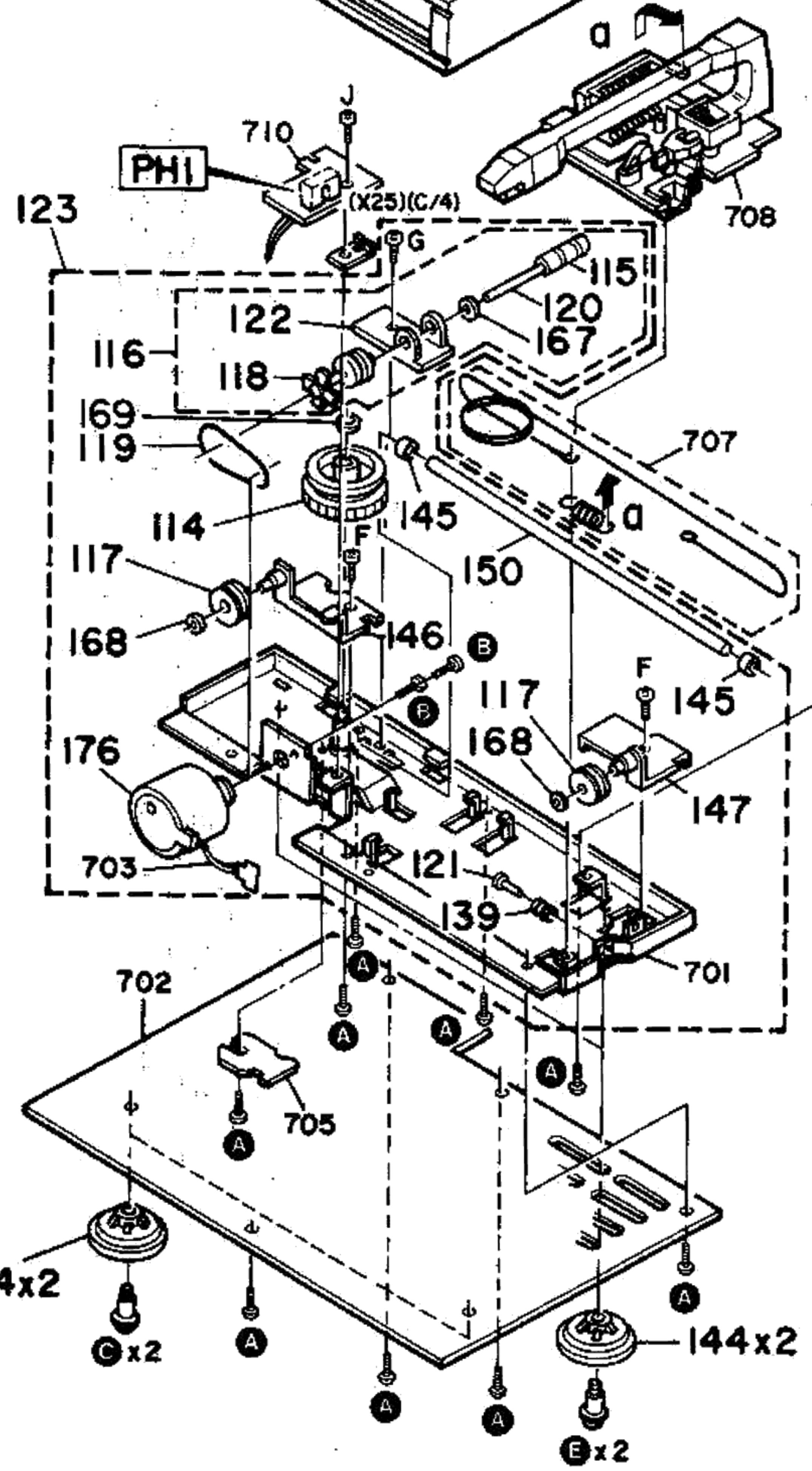
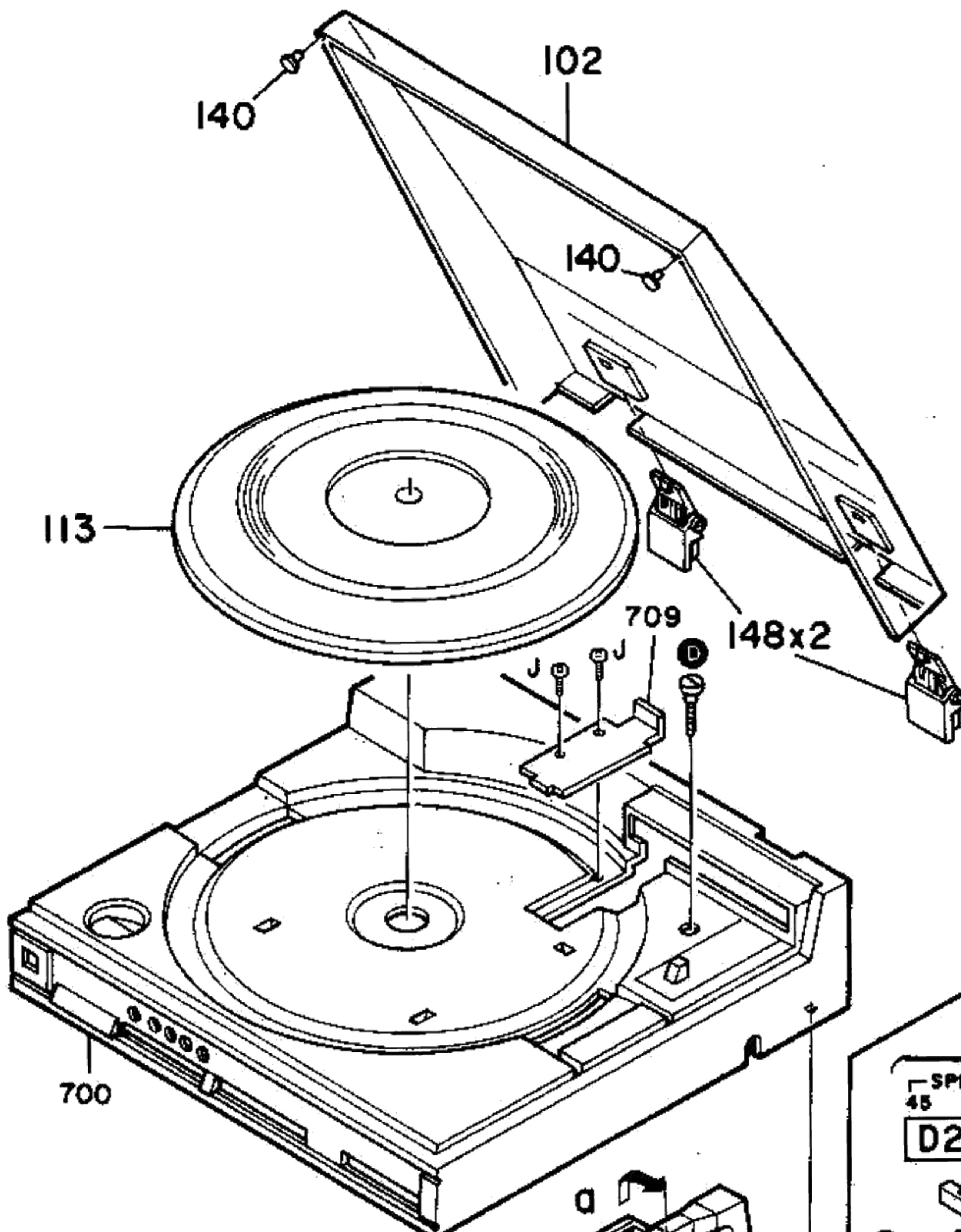


EXPLODED VIEW (MECHANISM UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (MAIN UNIT)



A	N09 - 1720 - 05
B	M2.6x2.8
C	STEPPED M3x15
D	
E	STEPPED
F	#3x4
G	#3x6 (Bi-Top)
H	#3x8 (Bi-Top)
J	#3x8 (Bi-Top) BLK
I	

KD-67F (K)

Parts with the exploded numbers larger than 700 are not supplied.

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Telle ohne Parts No. werden nicht geliefert.

PARTS LIST

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕向	Re- marks 備考
KD-67F						
102	1C		A53-0907-01	DUST COVER		
102	1C		A53-0907-01	DUST COVER	KK2PE XMUUE	
106	3D	*	B03-2437-02	DRESSING PLATE (KENWOOD)		
107	3D	*	B03-2438-04	DRESSING PLATE (POWER)		
109	2D		B07-1726-02	ESCUCHON		
-			B46-0092-03	WARRANTY CARD	KK1K2 UUE	
-			B46-0094-03	WARRANTY CARD		
-			B46-0095-03	WARRANTY CARD	UUE	
-			B46-0096-13	WARRANTY CARD	X	
-			B46-0121-03	WARRANTY CARD	P	
-			B46-0122-13	WARRANTY CARD	E	
-		*	B50-8848-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B50-8849-00	INSTRUCTION MANUAL(FRENCH)	EPXM	
-		*	B50-8850-00	INSTRUCTION MANUAL(SPANISH)	M	
-		*	B50-8851-00	INSTRUCTION MANUAL(G.D.I)	E	
-		*	B50-9207-00	INSTRUCTION MANUAL(CHINESE)	M	
-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	
-			B58-0802-04	CAUTION CARD	UUE	
-			B59-0092-00	SERVICE DIRECTORY		
113	1C	*	D02-0059-35	TURNTABLE PLATTER ASSY	EXMUUE	
113	1C	*	D02-0060-35	TURNTABLE PLATTER ASSY	KK1K2P	
114	2C		D13-0089-14	GEAR		
115	2C		D13-0282-04	WORM		
116	2C		D13-0310-04	WORM ASSY		
117	2C, 3C		D15-0172-04	PULLEY		
118	2C		D15-0200-04	PULLEY (WORM ASSY)		
119	2C		D16-0082-04	BELT		
120	2C		D21-0523-04	SHAFT	(WORM ASSY)	
121	3C		D21-1172-05	SHAFT		
122	2C		D23-0167-04	RETAINER		
123	2C		D40-0392-02	MECHANISM ASSY		
128	2D		E30-0181-05	AC POWER CORD	KK1K2P	
128	2D		E30-0459-05	AC POWER CORD	E	
128	2D		E30-0812-05	AC POWER CORD	MUUE	
128	2D		E30-1341-05	AC POWER CORD	X	
129	1D		E30-0977-05	CORD WITH PLUG	KK1K2P	
129	1D		E30-0977-05	CORD WITH PLUG	XMUUE	
130	2D		E30-1378-05	AUDIO CORD	MUUE	
130	2D		E30-1378-05	AUDIO CORD	EPX	
130	2D		E30-1379-05	AUDIO CORD	KK1K2	
139	3C		G01-0675-04	COMPRESSION SPRING		
140	1C		G13-0179-04	CUSHION (DUST COVER)	KK2PE	
140	1C		G13-0179-04	CUSHION	XMUUE	
-		*	H01-7818-04	ITEM CARTON CASE	K2PEX	
-		*	H01-7818-04	ITEM CARTON CASE	MUUE	
-		*	H01-7819-04	ITEM CARTON CASE	K	
-		*	H01-7820-04	ITEM CARTON CASE	K1	
-			H10-3427-02	POLYSTYRENE FOAMED FIXTURE(L)		
-			H10-3428-02	POLYSTYRENE FOAMED FIXTURE(R)		
-			H11-0005-04	POLYSTYRENE FOAMED BOARD		

E: Scandinavia & Europe K: USA P: Canada

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

KD-67F : K2, P, E, X, M, U, UE

KD-67FC : K

KD-67FCL : K1

 indicates safety critical components.

PARTS LIST

× New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕向	Re- marks 備考
-			H13-0002-03	CARTON BOARD		
-			H25-0225-04	PROTECTION BAG (850X450X0.03)	KK1K2P	
-			H25-0225-04	PROTECTION BAG (850X450X0.03)	EXUUE	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0294-04	PROTECTION BAG		
-			H25-0625-04	PROTECTION BAG (620X740X0.03)	M	
144	3C		J02-0196-04	INSULATOR		
145	2C, 3C		J19-2578-04	HOLDER		
146	3C		J21-3906-04	MOUNTING HARDWARE (R)		
147	3C		J21-3907-04	MOUNTING HARDWARE (L)		
148	1C		J50-0125-05	HINGE	KK2PE	
148	1C		J50-0125-05	HINGE	XMUUE	
150	2C		J90-0164-05	RAIL		
155	2D		K29-2001-04	KNB ASSY(BUTTON)POWER		
-			J61-0054-05	WIRE BAND		
-			J61-0307-05	WIRE BAND		
▲ 159	2D		L01-7371-05	POWER TRANSFORMER	KK1K2P	
▲ 159	2D		L01-7372-05	POWER TRANSFORMER	EX	
▲ 159	2D		L01-7374-05	POWER TRANSFORMER	MUUE	
167	2C		N19-0333-04	FLAT WASHER (WORM ASSY)		
168	3C		N19-0366-04	FLAT WASHER (PULLY)		
169	2C		N19-0143-04	FLAT WASHER (GEAR)		
A	3C, 3D		N09-1720-05	TAPTITE SCREW		
B	3C		N09-1415-05	MACHINE SCREW(M2.6X2.8)MOTOR		
C	3C		N09-1655-05	STEPPED SCREW(M3X15)FOOT-F		
D	1C		N09-1718-15	MACHINE SCREW		
E	3C		N09-1722-05	STEPPED SCREW (FOOT-R)		
M	2D		N09-1789-05	MACHINE SCREW (POWER CORD)		
S1	2D		S31-2126-05	SLIDE SWITCH (POWER TYPE)	MUUE	
△ 176	3C		T42-0411-05	MOTOR ASSY		
180	1D		W01-0329-04	EP ADAPTER		
184	1D		X92-1150-00	MOTOR ASSY		

ELECTRIC UNIT (X25-2940-00)

D17 -21	2D	B30-1161-05	LED (REPEAT, SPEED, SIZE SEL.)		
C1		CK45FF1H103Z	CERAMIC 0.010UF Z		
C2		CE04KW1C222M	ELECTRO 2200UF 16WV		
C3		CK45FF1H103Z	CERAMIC 0.010UF Z		
C4		CE04KW1C470M	ELECTRO 47UF 16WV		
C5		CC45FSL1H101J	CERAMIC 100PF J		
C6		CE04KW1C470M	ELECTRO 47UF 16WV		
C7		CK45FF1H103Z	CERAMIC 0.010UF Z		
C8 ,9		CC45FSL1H101J	CERAMIC 100PF J		
C10 ,11		CK45FF1H473Z	CERAMIC 0.047UF Z		
C12		CE04KW1C220M	ELECTRO 22UF 16WV		
C13 -16		CK45FF1H103Z	CERAMIC 0.010UF Z		
C17		CK45FF1H223Z	CERAMIC 0.022UF Z		
C18		CE04KW1C330M	ELECTRO 33UF 16WV		
C19 -22		CK45FF1H103Z	CERAMIC 0.010UF Z		
C23		CE04KW1C470M	ELECTRO 47UF 16WV		
J39	1D	E11-0164-05	MINIATURE PHONE JACK(3P)SYSTEM		

E: Scandinavia & Europe K: USA

P: Canada

U: PX(Far East, Hawaii) T: England

M: Other Areas

UE: AAFES(Europe)

X: Australia

KD-67F : K2, P, E, X, M, U, UE

KD-67FC : K

KD-67FCL : K1

 indicates safety critical components.

PARTS LIST

* New Parts

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Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕 向	Re- marks 備考
L1 X1			L40-1511-14 L78-0202-05	SMALL FIXED INDUCTOR(150UH,K) RESONATOR (400KHZ)		
R23			RS14KB3D390J	FL-PROOF RS 39 J 2W		
R24			RS14KB3D150J	FL-PROOF RS 15 J 2W		
S1 S2 -B	2D 1D		S40-2182-15 S40-1064-05	PUSH SWITCH (POWER) PUSH SWITCH (SPEED,MANUAL)		
PH1	2C		T95-0042-05	OPTO ISOLATOR		
D1 -4 DS ,6 DS ,6 D7 -13 D7 -13			DSM1A1 HZ55.1N(B2) RD5.1ES(B2) ISS133 ISS176	DIODE ZENER DIODE ZENER DIODE DIODE DIODE		
D14 D14 D15 ,16 D15 ,16 D22			ISS131 ISS178 ISS133 ISS176 ISS133	DIODE DIODE DIODE DIODE DIODE		
D22 IC1 IC2			ISS176 UPD7537AC-014 AN6562	DIODE IC(MICROPROCESSOR) IC(OP AMP X2)		
Q1 Q2			2SD882 2SC2320(E,F)	TRANSISTOR TRANSISTOR		
Q2 Q3 ,4 Q5 Q6 Q6			2SC945(A)(Q,P) 2SD655(E,F) 2SD1302(S) 2SC3666 2SC3940A	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q7 ,8 Q7 ,8 Q9 Q9 Q10			2SC2320(E,F) 2SC945(A)(Q,P) 2SC3666 2SC3940A 2SA1426	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q10 Q11 Q11 Q12 Q12			2SA1534A 2SC3666 2SC3940A 2SA1426 2SA1534A	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q13 Q13 TH1			2SA733(A)(Q,P) 2SA999(E,F) SDT-65	TRANSISTOR TRANSISTOR THERMISTOR		

CONTROL CIRCUIT UNIT (X29-1770-00)

C1		CE04KW1E470M	ELECTRO	47UF	25WV	
C2		CE04KW1H0R1M	ELECTRO	0.1UF	50WV	
C3		CF92FV1H124J	MF	0.12UF	J	
C4		CE04KW1V100M	ELECTRO	10UF	35WV	
C5		CF92FV1H274J	MF	0.27UF	J	
C6		CF92FV1H223J	MF	0.022UF	J	
C7		CF92FV1H224J	MF	0.22UF	J	
C8		CF92FV1H472J	MF	4700PF	J	
C9		CE04KW1HR47M	ELECTRO	0.47UF	50WV	
C10		CE04KW1H2R2J	ELECTRO	2.2UF	50WV	
C11 ,12		C90-1353-05	NP-ELEC	10UF	25WV	

E: Scandinavia & Europe K: USA P: Canada

KD-67F : K2, P, E, X, M, U, UE

U: PX(Far East, Hawaii) T: England M: Other Areas

KD-67FC : K

UE : AAFES(Europe) X: Australia

KD-67FCL : K1

 indicates safety critical components.

PARTS LIST

* New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕向	Re- marks 備考
C13			C90-1331-05	NP-ELEC CERAMIC	0.47UF 0.010UF	50WV Z
C14			CK45FF1H103Z			
J1 -9			R92-0338-05	CLYND CHIP R 0 OHM		
R1 -4			RD41FB2B223J	CLYND CHIP R 22K	J	1/8W
R5			RK73FB2A244J	CHIP R 240K	J	1/10W
R6			RK73FB2A564J	CHIP R 560K	J	1/10W
R7			RD41FB2B473J	CLYND CHIP R 47K	J	1/8W
R8			RD41FB2B224J	CLYND CHIP R 220K	J	1/8W
R9			RD41FB2B333J	CLYND CHIP R 33K	J	1/8W
R10 ,11			RD41FB2B3R9J	CLYND CHIP R 3.9	J	1/8W
R12			RD41FB2B3R3J	CLYND CHIP R 3.3	J	1/8W
R13			RD41FB2B224J	CLYND CHIP R 220K	J	1/8W
R14			RD41FB2B182J	CLYND CHIP R 1.8K	J	1/8W
R15 ,16			RD41FB2B471J	CLYND CHIP R 470	J	1/8W
R17			RD41FB2B223J	CLYND CHIP R 22K	J	1/8W
VR1			R12-5046-05	TRIMMING POT. (100K) 33RPM		
VR2			R12-6012-05	TRIMMING POT. (470K) 45RPM		
H1 ,2			T95-0015-15	HOLL ELEMENT (H-300B)		
IC1			TA7284P	IC(MOTOR DRIVER)		
Q1			2SC2412K	TRANSISTOR		
Q2			2SA1037K	TRANSISTOR		

TONEARM ASS'Y (K2: J91-0328-05, OTHER: J91-0352-05)

1	3A	D14-0101-08	ROLLER		
2	2A	D21-1158-08	SHAFT		
3	2B	D21-1159-08	SHAFT (ARM)		
7	1A	G01-1918-08	EXTENSION SPRING		
8	1B	G01-1919-08	EXTENSION SPRING(TONEARM)		
9	2B	G01-1920-08	COMPRESSION SPRING		
10	2B	G01-1921-08	COMPRESSION SPRING		
11	1B	G01-1922-08	COMPRESSION SPRING(TONEARM)		
15	1B	J91-0319-08	PICKUP ARM	K2	
15	1B	*	PICKUP ARM	KK1PE	
15	1B	*	PICKUP ARM	XMUUE	
18	1A	N14-0177-08	HEXAGON NUT	KK1PE	
18	1A	N14-0177-08	HEXAGON NUT	XMUUE	
Q	1A	N09-1778-08	MACHINE SCREW	KK1PE	
Q	1A	N09-1778-08	MACHINE SCREW	XMUUE	
S1	3B	S50-1038-05	MICRO SWITCH		
22	1A	*	PICKUP CARTRIDGE	KK1PE	
22	1A	*	PICKUP CARTRIDGE	XMUUE	
23	3A	T94-0050-05	MAGNETIC PLUNGER		
PH1	2B	T95-0019-05	OPTO ISOLATOR		

E: Scandinavia & Europe K: USA

P: Canada

U: PX(Far East, Hawaii)

T: England

M: Other Areas

UE : AAFES(Europe)

X: Australia

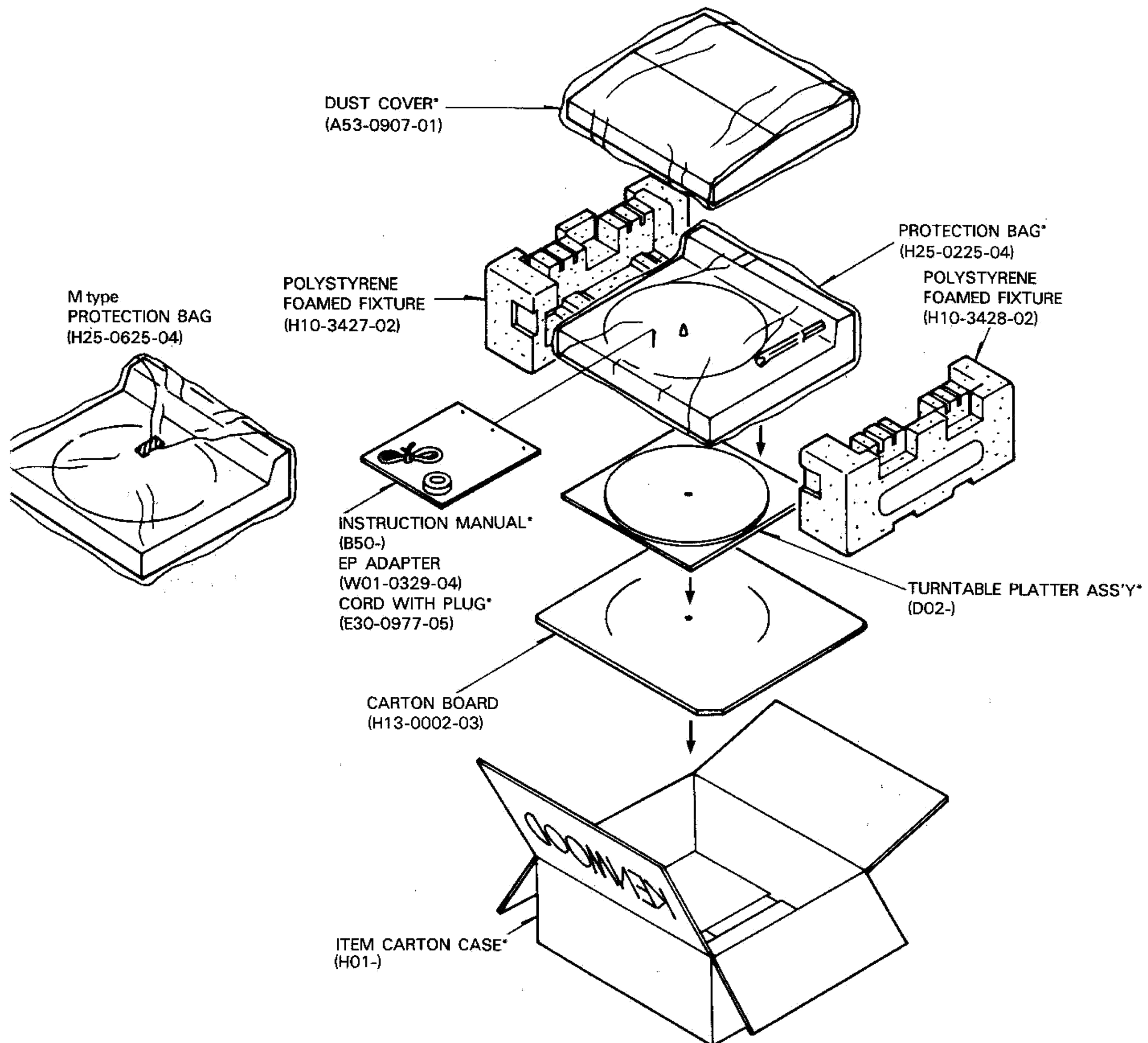
KD-67F : K2, P, E, X, M, U, UE

KD-67FC : K

KD-67FCL : K1

 indicates safety critical components.

PACKING



* Refer to parts list on page 26.

SPECIFICATIONS

Motor and Turntable

Drive System	Direct-Drive System
Motor	Coreless & Slotless FG Servo Motor
Turntable Platter	29.4 cm (11-9/16") Diameter
	1.1 kg (2.4 lb) Weight
Speeds	2 Speeds, 33-1/3 and 45 rpm
Wow & Flutter	0.025% (WRMS) DIN: 0.05%
NN (Rumble)	DIN: 40 dB (Unweighted) DIN: 75 dB (Weighted)

Tonearm

Type	Linear Tracking Tonearm
Tracking Error	±0.2°
Cartridge	T4P

Cartridge

Furnished Cartridge	T4P MM Cartridge (V-67BL)
Frequency Response	20~20,000 Hz
Channel Separation	Better than 22 dB (1,000 Hz)
Output Voltage	2.5 mV (1,000 Hz, 5 cm/sec.)
Output Balance	2.0 dB (1,000 Hz, 5 cm/sec.)

Note:

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

Load Impedance	47 k ohms
Stylus	0.6 mil diamond
Optimum Tracking Force	1.25 grams
Compliance	7×10^{-6} cm/dyne
Replacement Stylus	N-67BL

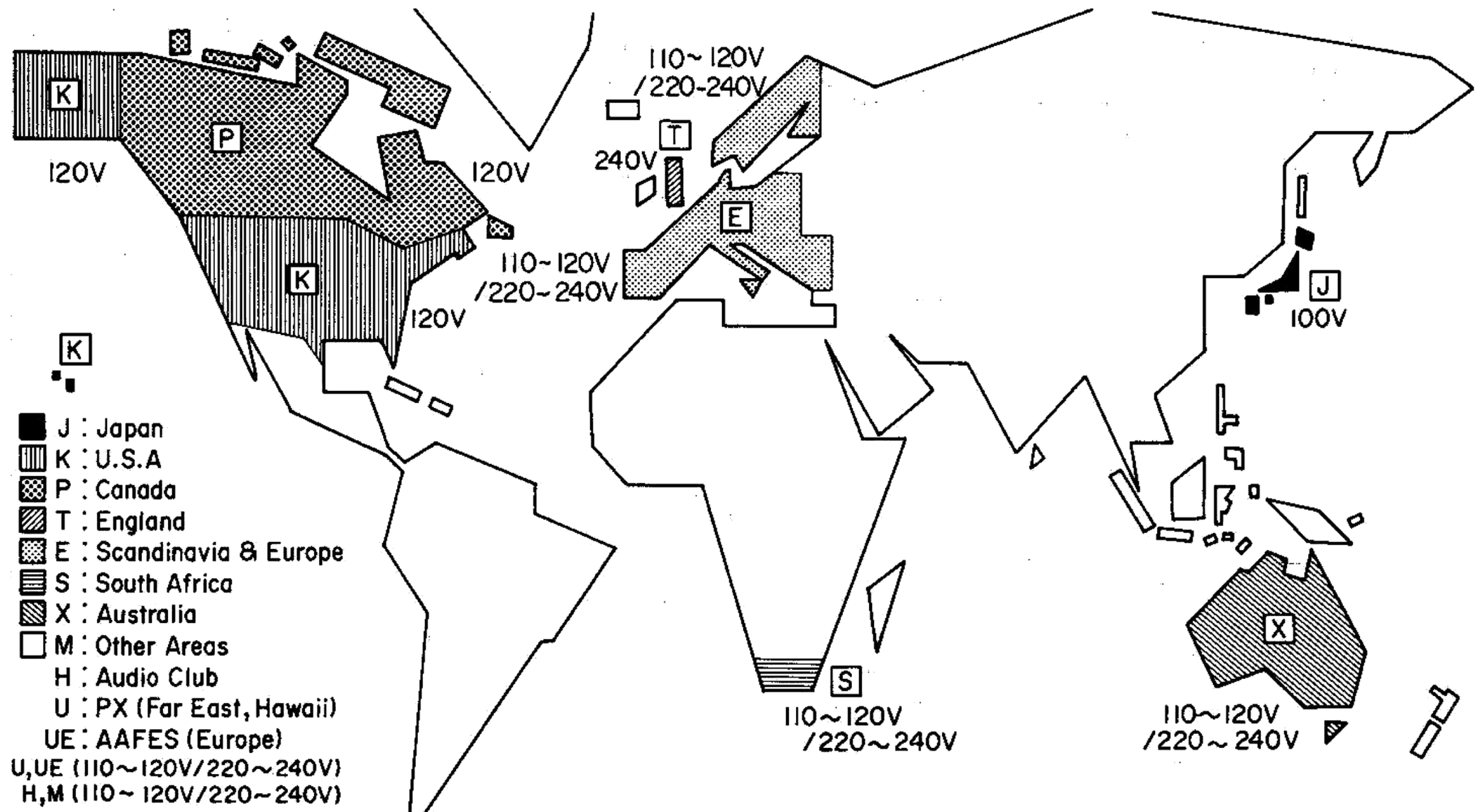
Miscellaneous

Power Consumption	10 watts
Dimensions	W 420 mm (16-9/16") H 110 mm (4-5/16") D 359 mm (14-1/8")
Weight (Net)	4.7 kg (10.3 lb)

Model name and its accessories list

Model name	Accessories	Cartridge	Dust cover
KD-67F P, U, UE, M, X, T, E	○	○	○
KD-67F K2 type	×	○	○
KD-67FC K type	○	○	○
KD-67FCL K1 type	○	○	×

WORLD MAP & AREA CODE



Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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