PS-X40

US Model
Canadian Model
AEP Model
UK Model
E Model

AUTOMATIC STEREO TURNTABLE SYSTEM

SPECIFICATIONS

GENERAL

Power Requirements: 120V ac, 60Hz (US, Canadian model)
240V ac, 50Hz (UK model)
120 V, 220 ac adjustable, 50/60 Hz (AEP, E model)

Power Consumption: 8W

Dimensions: Approx. 445 (w) x 145 (h) x 400 (d) mm (17½ (w) x 5¾ (h) x 15¾ (d) inches)
including projecting parts and controls

Weight: Approx. 8 kg (17 lb 10 oz), net
Approx. 9.1 kg (20 lb 2 oz), in shipping carton

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ !

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

TURNTABLE

Platter: 31.4 cm (12 3/8 inches) dia., aluminum-alloy diecast

Motor: DC servo-controlled linear BSL motor

Drive System: Direct drive, crystal lock control system

Speed: 33 1/3 rpm, 45 rpm
Starting characteristics
Comes to nominal speed within a half revolution (33 1/3 rpm)

Wow and Flutter: ±0.045% (DIN)
0.025% (WRMS)

S/N Ratio: 73 dB (DIN-B)

Initial Drift: Within 0.0003%

Load Characteristics: 0% up to 100 g tracking force

Automatic System: Lead-in, return, reject, repeat

TONEARM

Type: Statically balanced, universal

Pivot-to-stylus Length: 216.5 mm (8½ inches)

Overall Arm Length: 300 mm (11 7/8 inches)

Overhang: 16.5 mm (21/32 inches)

Tracking Error: +3°, −1°

Tracking Force Adjustment Range: 0 – 3 g

Shell Weight: 10.5 g

Cartridge Weight Range: 12–19 g (including shell)

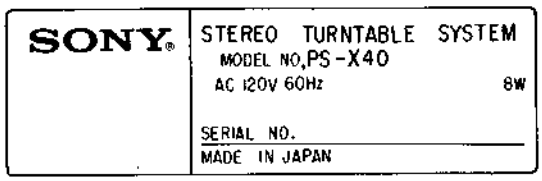
SONY®

SERVICE MANUAL

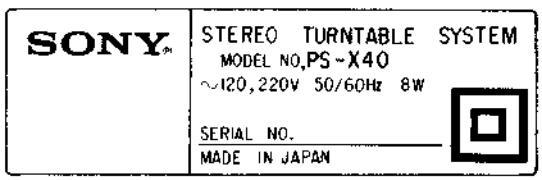
MODEL IDENTIFICATION

– Specification Label –

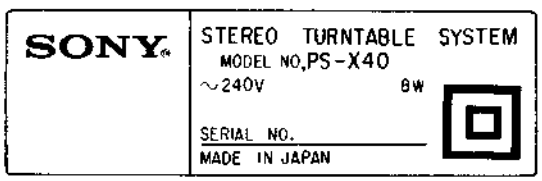
US, Canadian model



AEP, E model



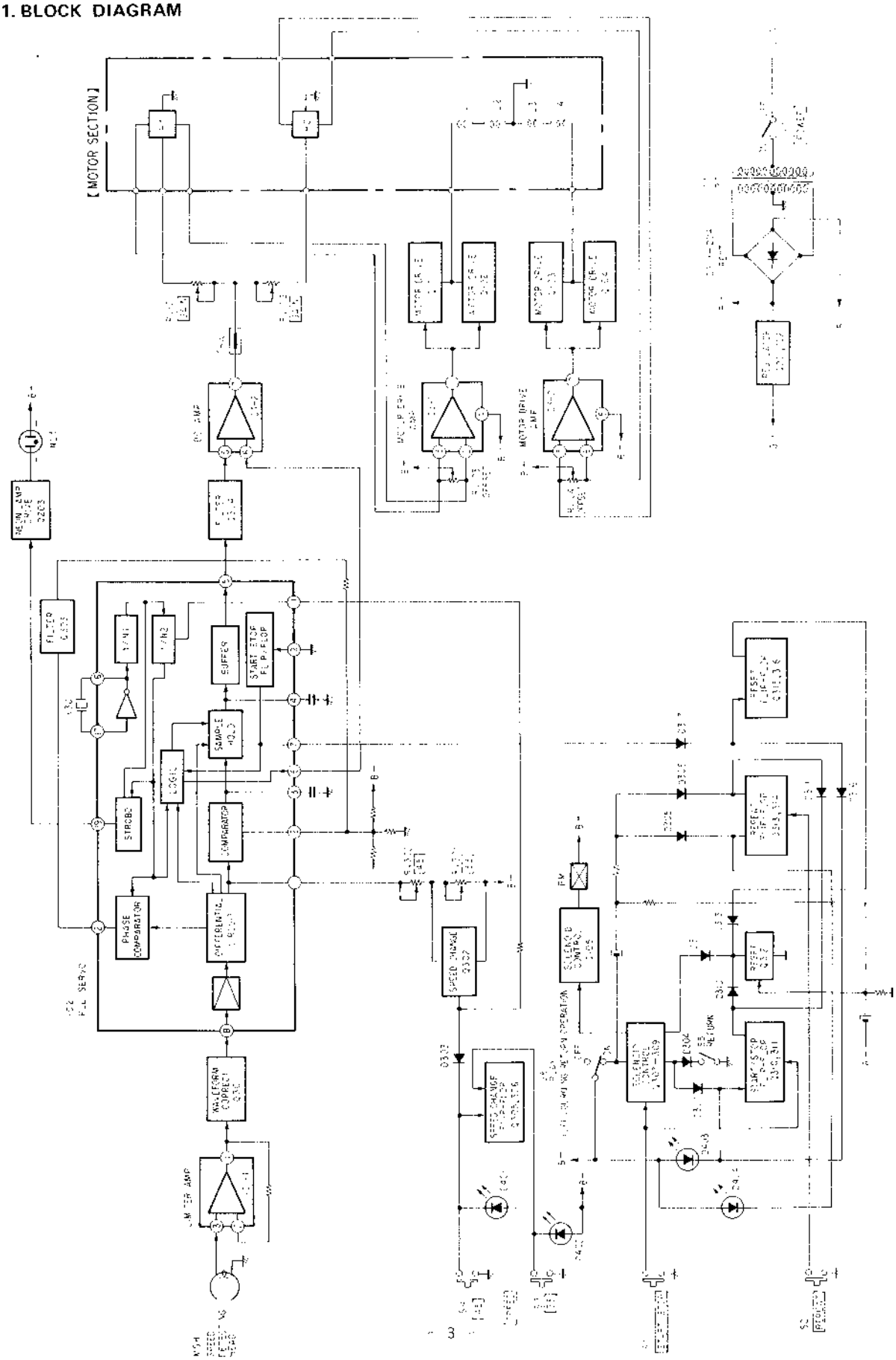
UK model



SECTION 1

OUTLINE

1-1. BLOCK DIAGRAM



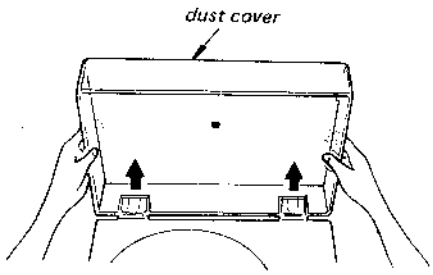
SECTION 2

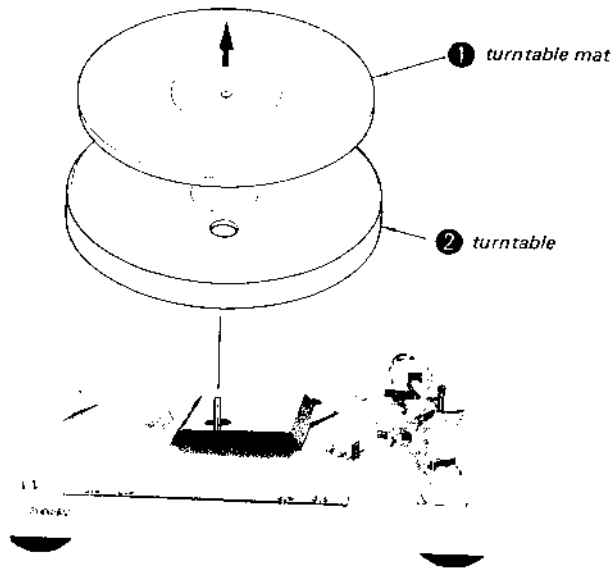
DISASSEMBLY

- Follow the disassembly or installation procedure in the numerical order given.

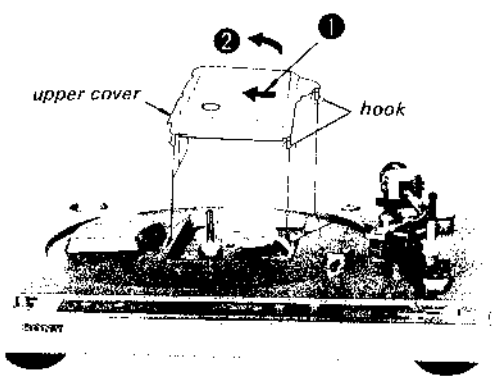
2-1. REMOVAL

Dust Cover and Turntable Removal



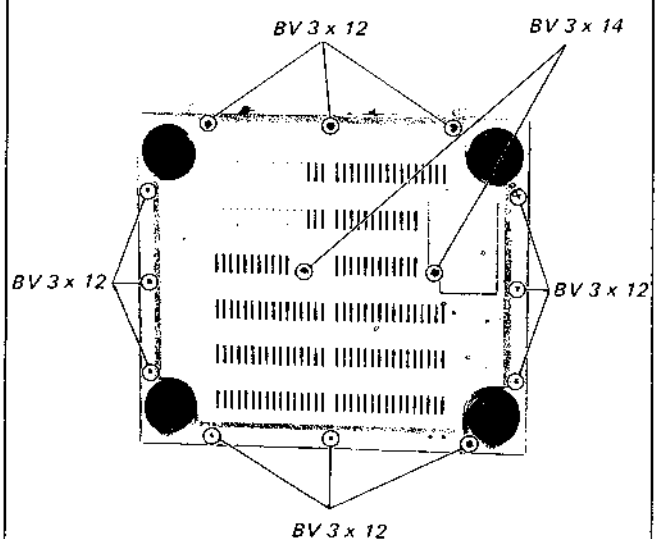


Upper Cover Removal

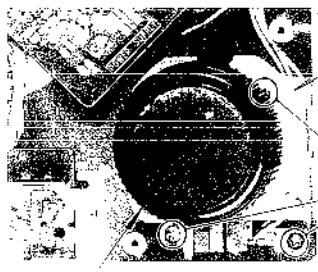


1. Press the upper cover in the direction of the arrow ❶ and unhook the two hooks on the right.
2. Push up the upper cover in the direction of the arrow ❷.

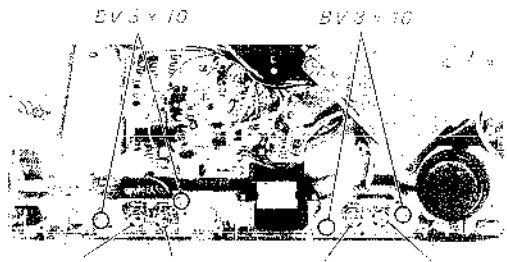
Bottom Plate Removal



POWER Switch (S7) Removal



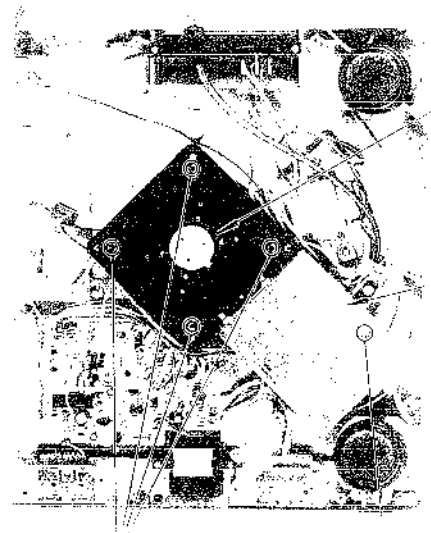
Start/Repeat Switch Board and Speed Selector Board Removal

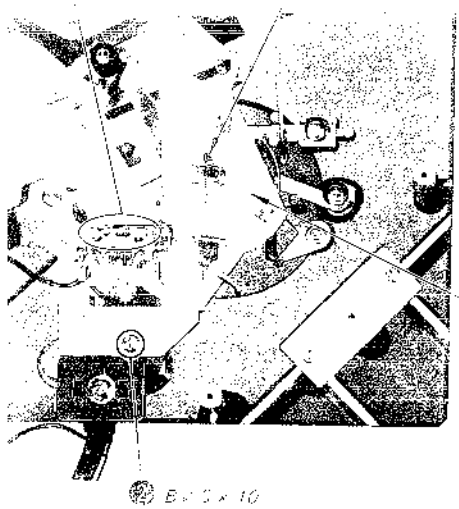


start/repeat switch board

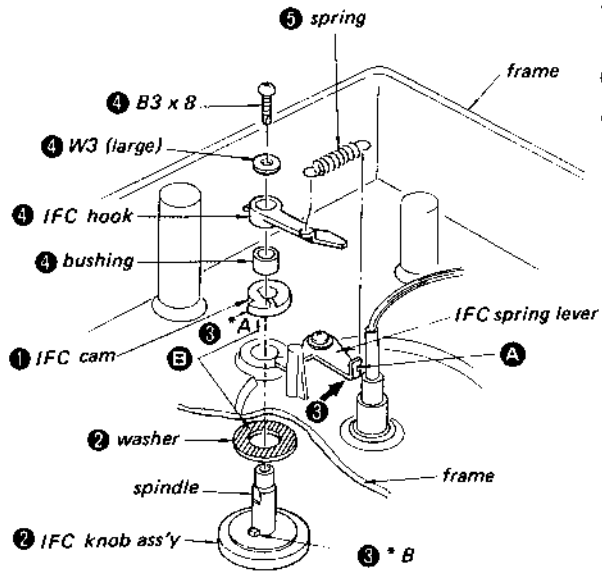
speed selector board

Motor and Mode Section Removal



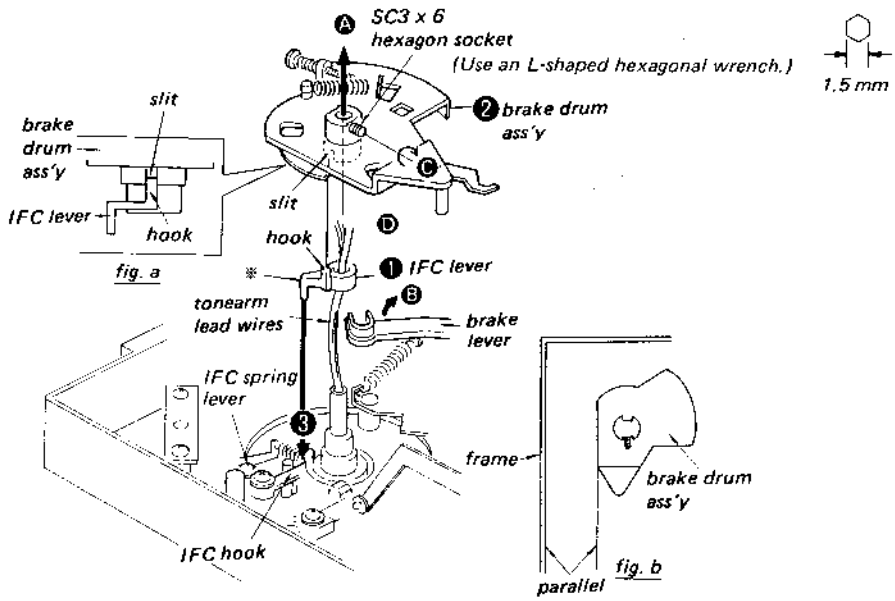


IFC Knob Assembly Installation



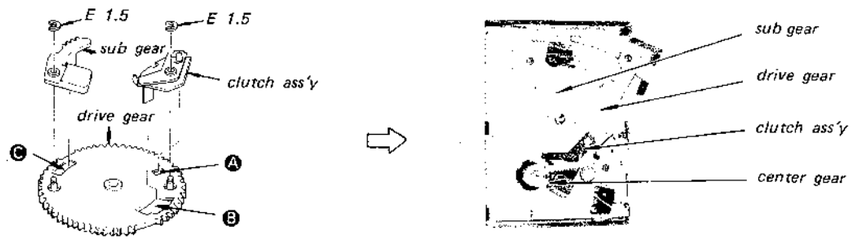
1. Smear the shaded portion (B) of the washer and the IFC cam with grease.
2. Install a washer in the IFC knob ass'y.
3. Set the marked point (*B) of the IFC knob ass'y as shown.
   Install it through the frame and install the IFC cam in the IFC knob ass'y.
   Be sure that the two marked points (*A & *B) coincide. (Place the IFC spring lever in the direction of the arrow when performing this installation.)
4. Place the bushing, IFC hook and washer (W3) on the spindle and fasten them with screw B3 x 8.
5. Connect the IFC hook and the IFC spring lever with a spring and apply suitable locking compound at point (A) of the lever.
6. After the installation has been completed, be sure that the IFC hook moves on its own.

Brake Drum Installation



1. Thread the IFC lever with the tonearm lead wires.
2. Thread the brake drum ass'y with the tonearm lead wires. Pull the wires out in the direction of the arrow (A).
3. Set the marked portion (※) of the IFC lever between the IFC spring lever and the IFC hook.
4. Push the brake lever in the direction of the arrow (B) and match the slitted part with the hook of the IFC lever. (See fig. a)
5. Adjust the position of the drum so that the straight side of drum is parallel with the frame (See fig. b). Fix the drum by turning the set screw (SC3 x 6) in the direction of the arrow (C).

Sub Gear and Clutch Ass'y Installation



❶ Set the pawl of the sub gear in hole Ⓒ and fasten the sub gear with E1.5.

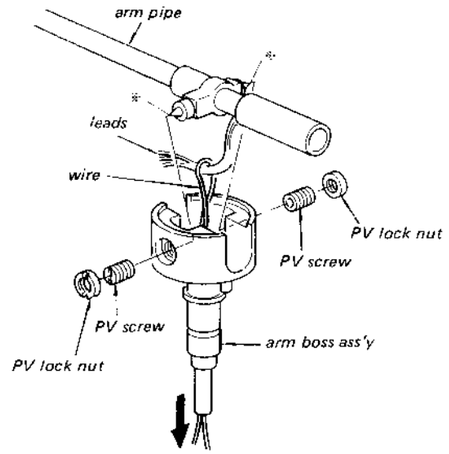
❷ Set the pawls of the clutch ass'y in holes Ⓐ and Ⓑ and fasten the clutch ass'y with E1.5.

❸ After installation has been completed, make sure that they move on their own.

3. Arm Boss Ass'y Installation

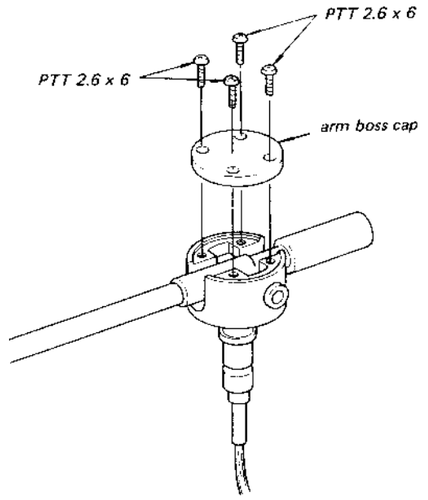
1. Thread the wire in arm boss ass'y.
2. Hook the five leads by the wire.
3. Pull the wire in the direction of arrow.
4. Tighten the pivot screw and the lock nut temporarily.

Note: Confirm that the portions marked ※ of the tornarm pipe are positioned to the center of the screw hole.



4. Arm Boss Cap Installation

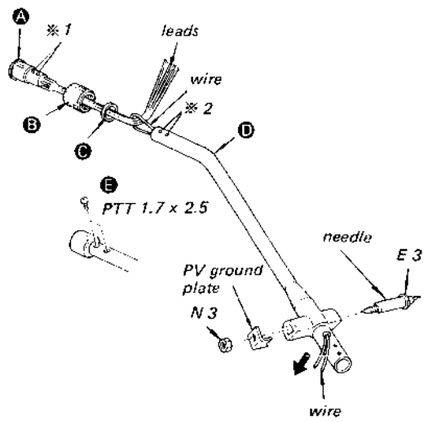
1. Install the arm boss cap with four screws.
2. Install the tornarm to the frame.



TONEARM INSTALLATION

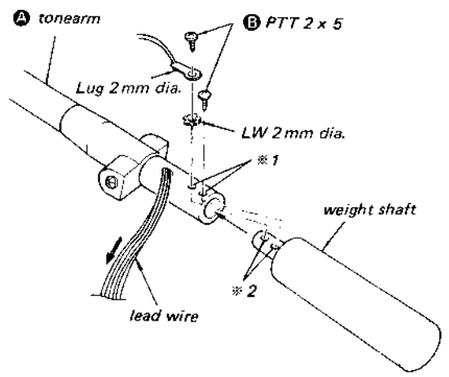
1. Pipe Assembly (1)

1. Thread a wire in Ⓓ .
2. Thread the leads of Ⓐ in Ⓑ and Ⓒ , and hook the leads by the wire.
3. Insert Ⓐ in Ⓓ by pulling the wire in the direction of the arrow, adjust two holes marked ※1 and ※2 to tighten the screws Ⓔ.



2. Pipe Assembly (2)

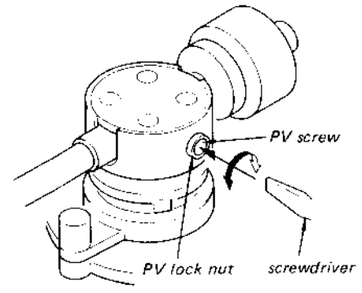
1. Hook the leads together by the wire and pull the leads into Ⓐ in the direction of arrow.
2. Adjust the two holes marked※1 and※2 to tighten the two screws Ⓑ .

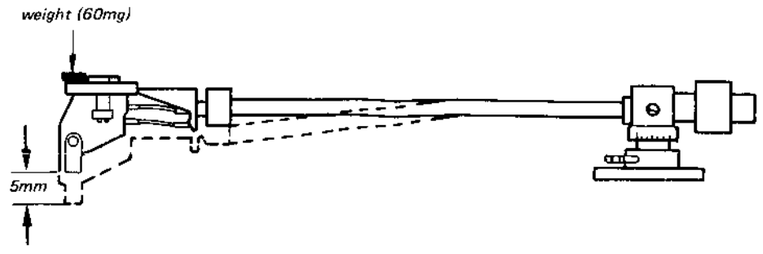


5. Longitudinal Sensitivity Adjustment

1. Make the longitudinal balance adjustment of tonearm.
2. Repeating the following procedures, adjust the pivot screw and the lock nut.
   a. When the 60 mg weight is placed on the top of the shell, the tonearm sinks 5 mm (measured at stylus-tip.)
   b. When the weight is removed, the tonearm returns horizontally.

Note: Rotate the left and right pivot screws by same numbers of turns.





MOTOR INSTALLATION

The motor and the servo amp board are assembled together. If found defective, disassemble the motor block as shown in Fig. A and repair it.

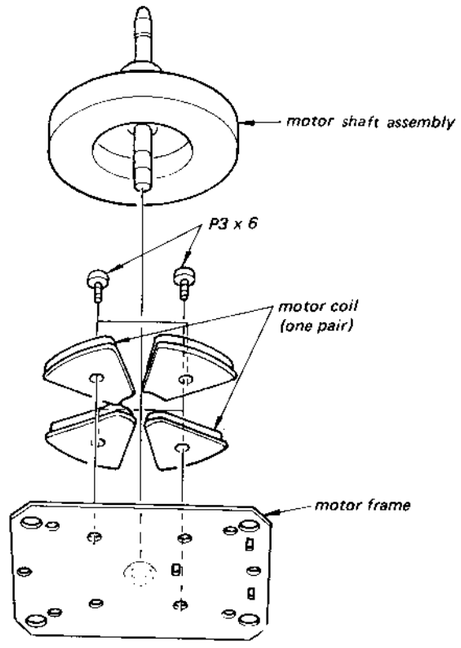


Fig. A

1. When the motor shaft is replaced, apply grease to the pivot and apply two drops of the SONY oil (OL-2KA) to the parts marked by * in Fig. B

2. When the motor bearing and the thrust retainer plate are replaced, apply grease to the pivot.

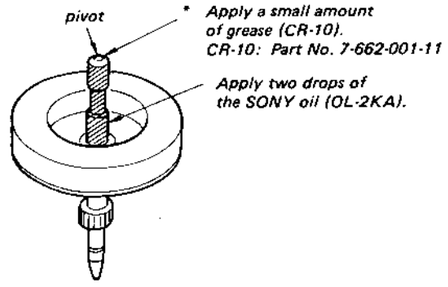


Fig. B

3. Insert the motor shaft assembly slowly in the motor bearing so that the motor shaft is not attracted by strong magnetic field strength.

4. The motor coils are composed of two pairs.
   a). Mount the coils on the motor frame so that the boss of the coil is placed in the hole of the frame as illustrated in Fig. C.
   b). Push the coils in the arrowed direction and tighten the screws.
   c). Lay the leads of the coils as shown in Fig. D and fix the leads in the slot between the portions marked by *in Fig. E.

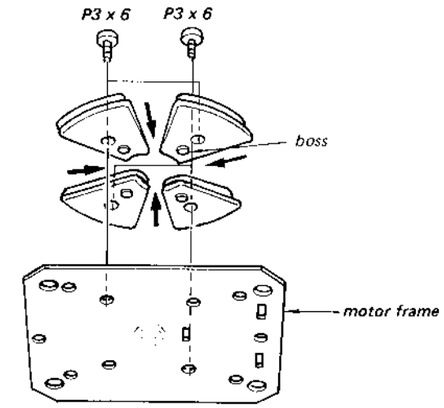


Fig. C

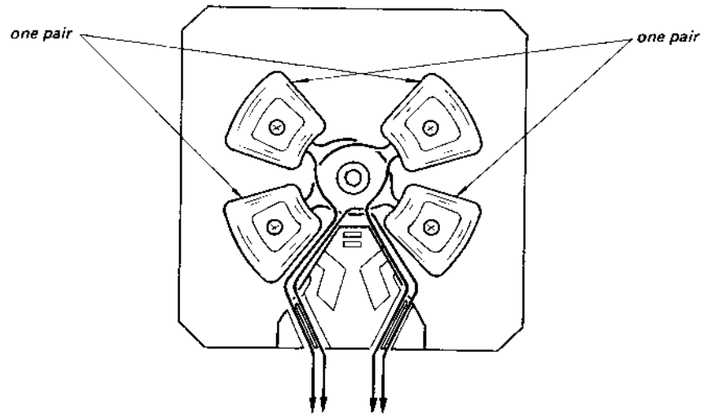


Fig. D

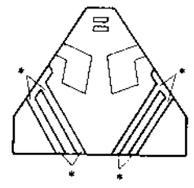
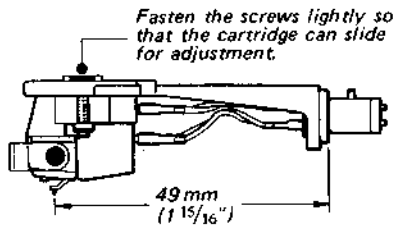


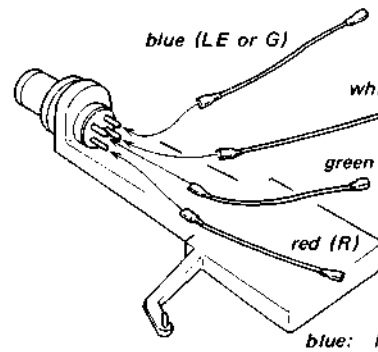
Fig. E

CARTRIDGE INSTALLATION

Install the cartridge into the shell with the mounting screws so that the distance between the shell end and the stylus tip is 49 mm ($1\ ^{15}/_{16}$ inches).



LEAD WIRE CONNECTION



blue: left channel (ground)
white: left channel (signal)
green: right channel (ground)
red: right channel (signal)

SECTION 3
ADJUSTMENTS

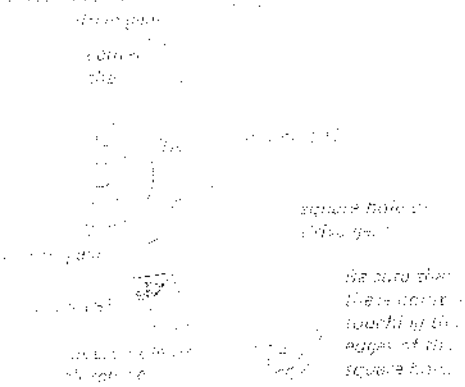
3-1 MECHANICAL ADJUSTMENTS

Automatic Return Position Adjustment

a. Unplug the power cord.

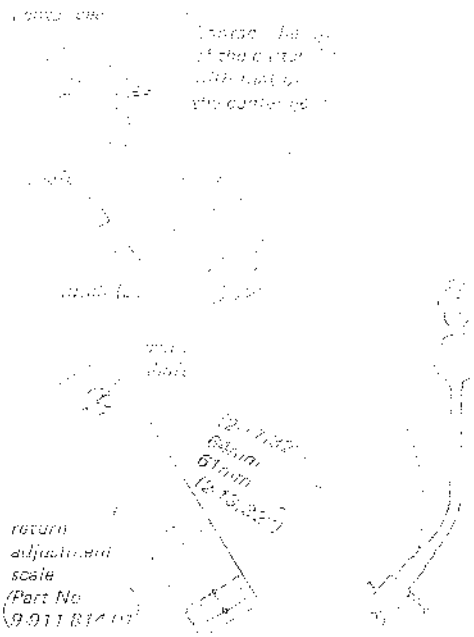
1. Remove the turntable mat and turntable.
2. Put the tonearm on the arm rest.
3. Turn the center shaft clockwise by hand and turn the drive gear one turn by engaging the center gear with the drive gear. Then place the drive gear in the disengaging position.

4. Place the stylus tip in the direction of the arrow and place the stylus tip over the [illegible] as shown below.



5. Set the return adjustment scale that is supplied with the accessories.

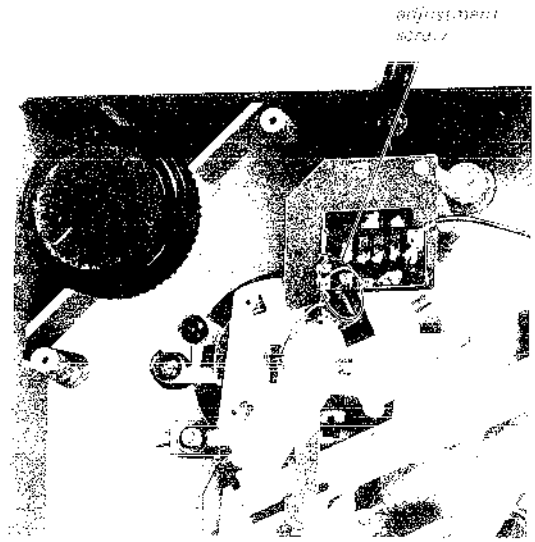
6. Move the tonearm toward the center shaft by hand so that the stylus tip is over the square hole and comes into the style [illegible]

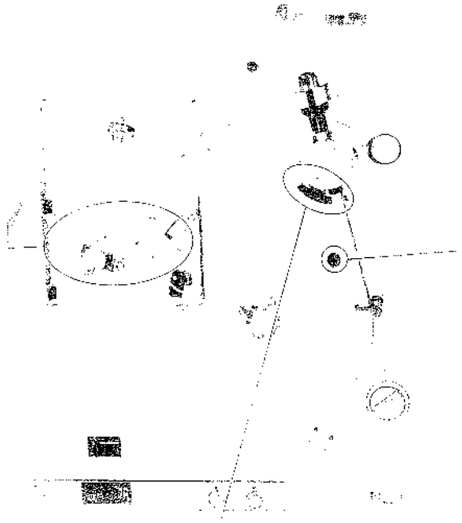


7. If necessary, adjust the adjustment screw.

Stylus Position	Adjustment Screw
outside of hatched area	clockwise
inside of hatched area	counterclockwise
on hatched area	correct

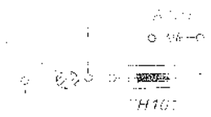
8. Play the accessories disc from [illegible] to side "C-1" and confirm that the tonearm [illegible]





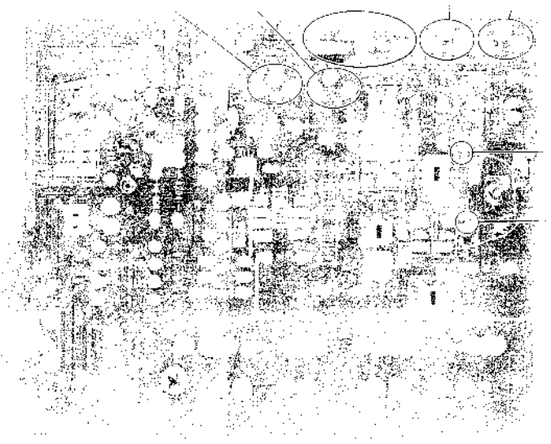
Arm Lifter Height Adjustment

Section Drop point Adjustment



2.2. ELECTRICAL ADJUSTMENTS

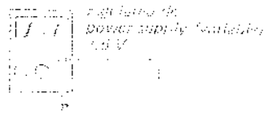
Hall Device Output Offset Adjustment (R3 point)

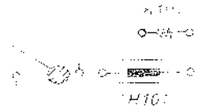


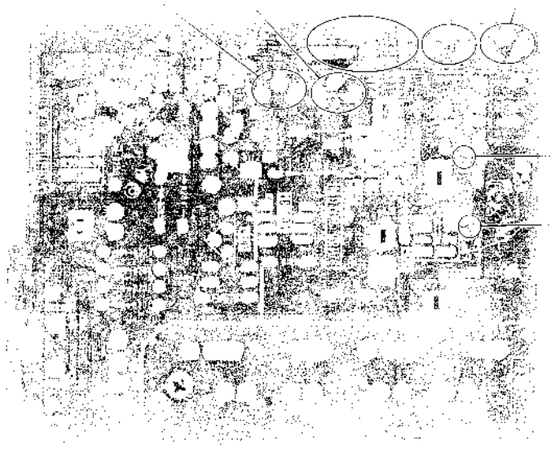
3-2 ELECTRICAL ADJUSTMENTS

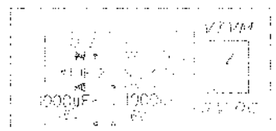
Hall Device Gain/Offset Adjustment (37 pin)

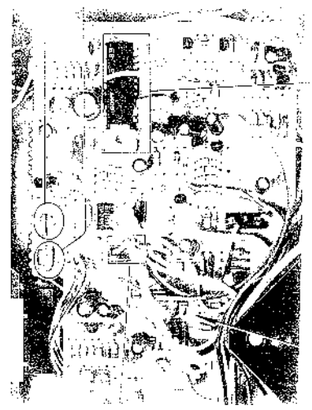
1. Consider the bridged portion on the pattern and connect the regulated power supply (+5 V) as shown.

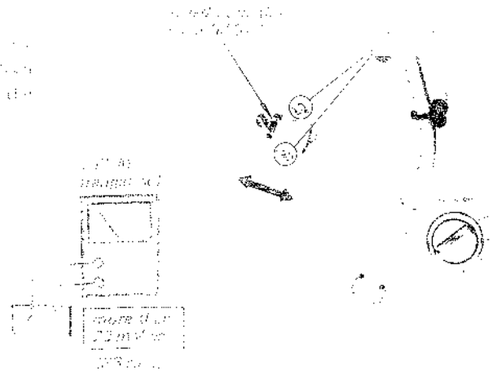












Speed Adjustment

1. Set the SPEED adjustment switch to 4 (4500 rpm).
2. Adjust RV202 for specified waveform on the oscilloscope.

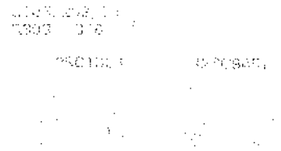
SECTION 4
DIAGRAMS

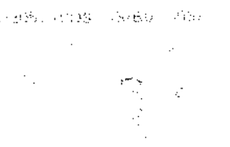
4-1. MOUNTING DIAGRAM *Conductor Side*

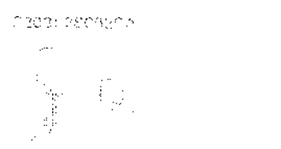
1. Replacement Semiconductors
   For replacement, use semiconductors equivalent to the following.

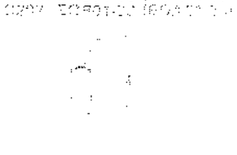
Q101, 103, 201, 203: 2SD614

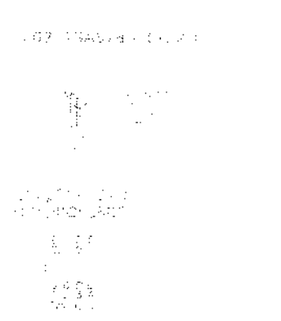
Q102: CX1193

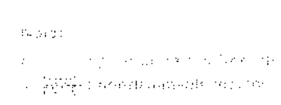


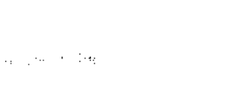




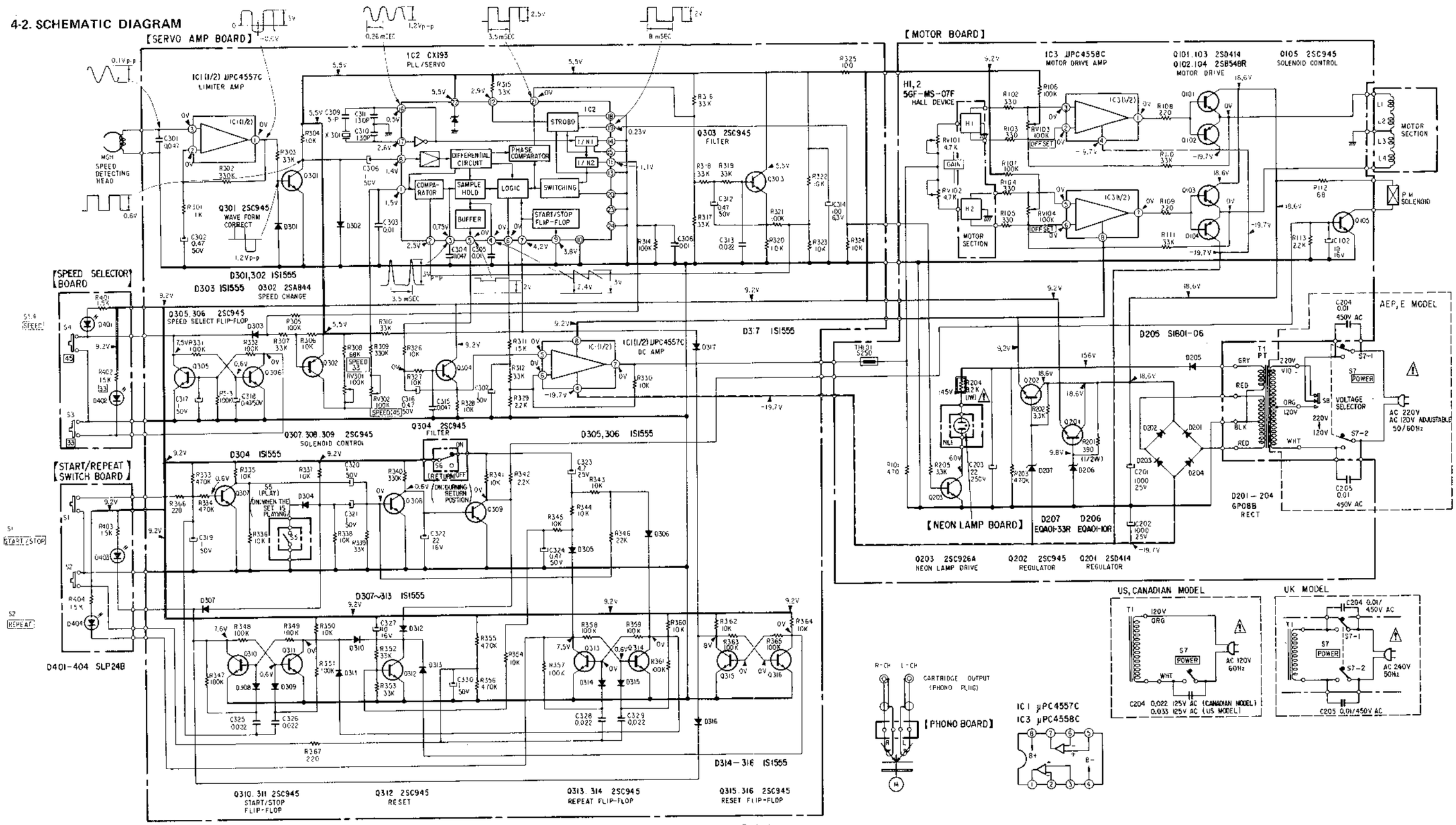








4-2. SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. pF : μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/4 W unless otherwise noted. kΩ : 1000 Ω; MΩ : 1000 kΩ
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken in stop mode with a VOM (20kΩ/V).
- Waveforms are taken at 33 rpm.
- ——— : B+ Bus.
- – – – : B– bus.

- Switch

Ref. No	Switch	Position
S1	START/STOP	OFF
S2	REPEAT	OFF
S3	SPEED (33)	OFF
S4	SPEED (45)	OFF
S5	PLAY	OFF
S6	RETURN	OFF
S7	POWER	OFF

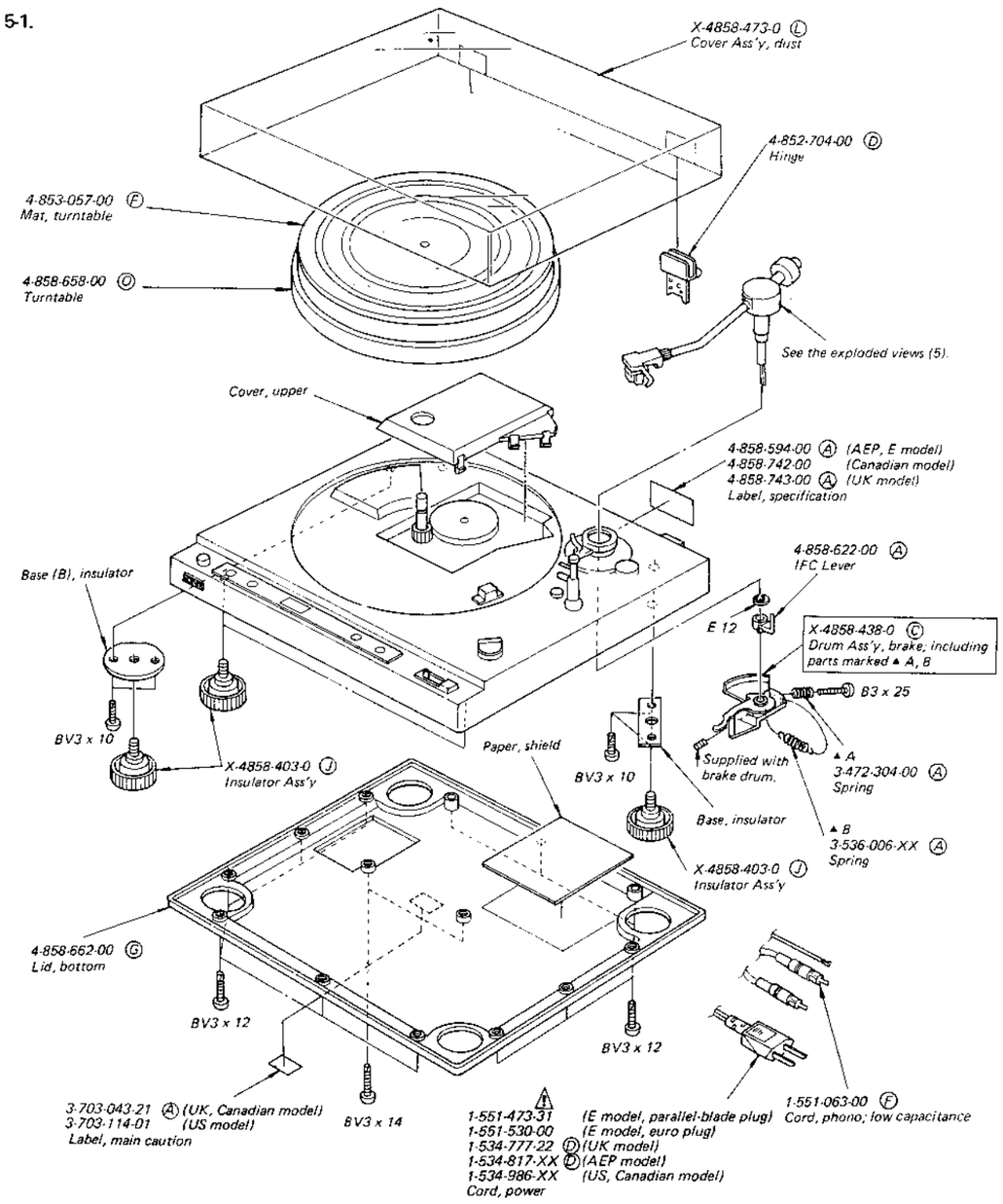
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 5

EXPLODED VIEWS

5-1.



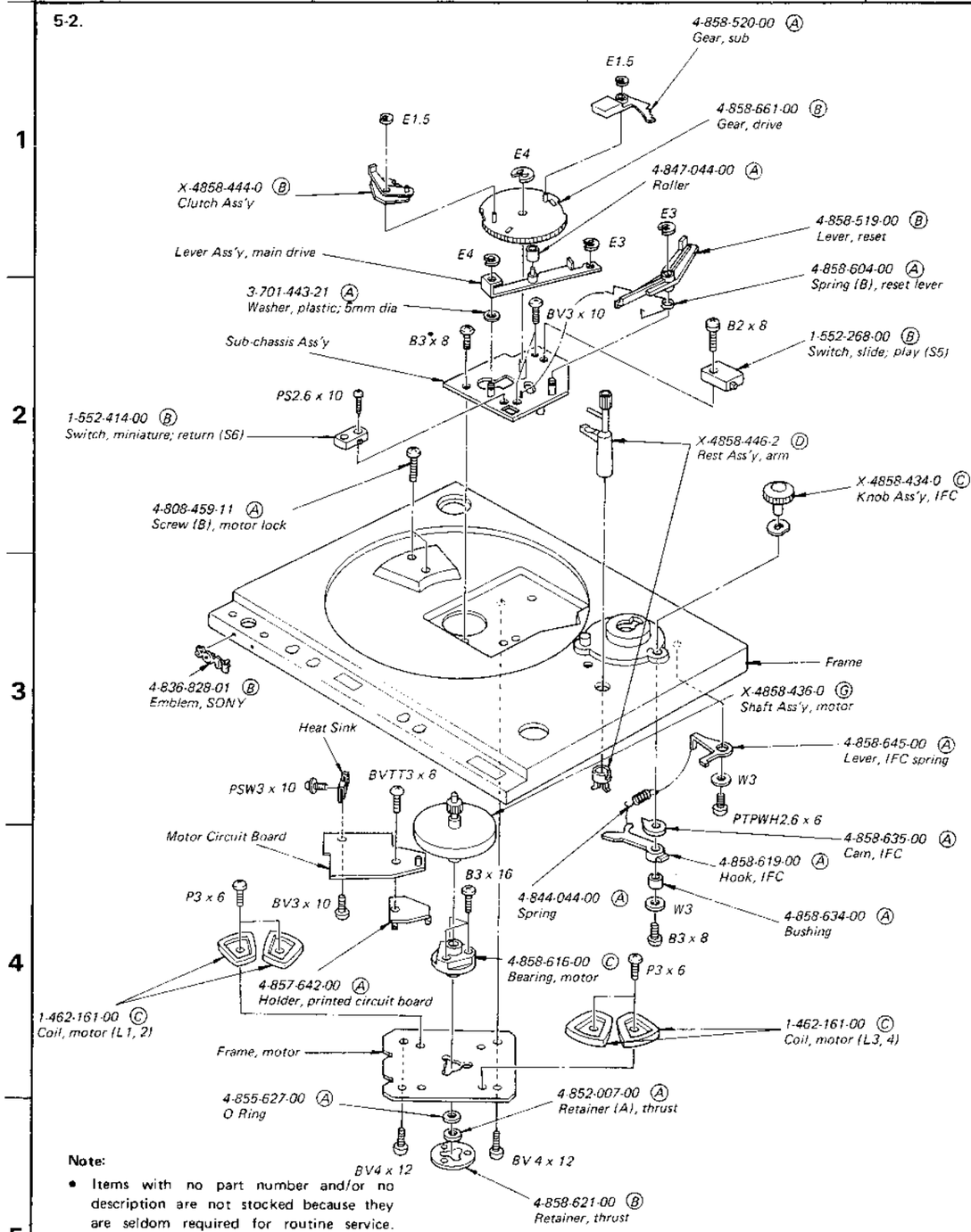
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

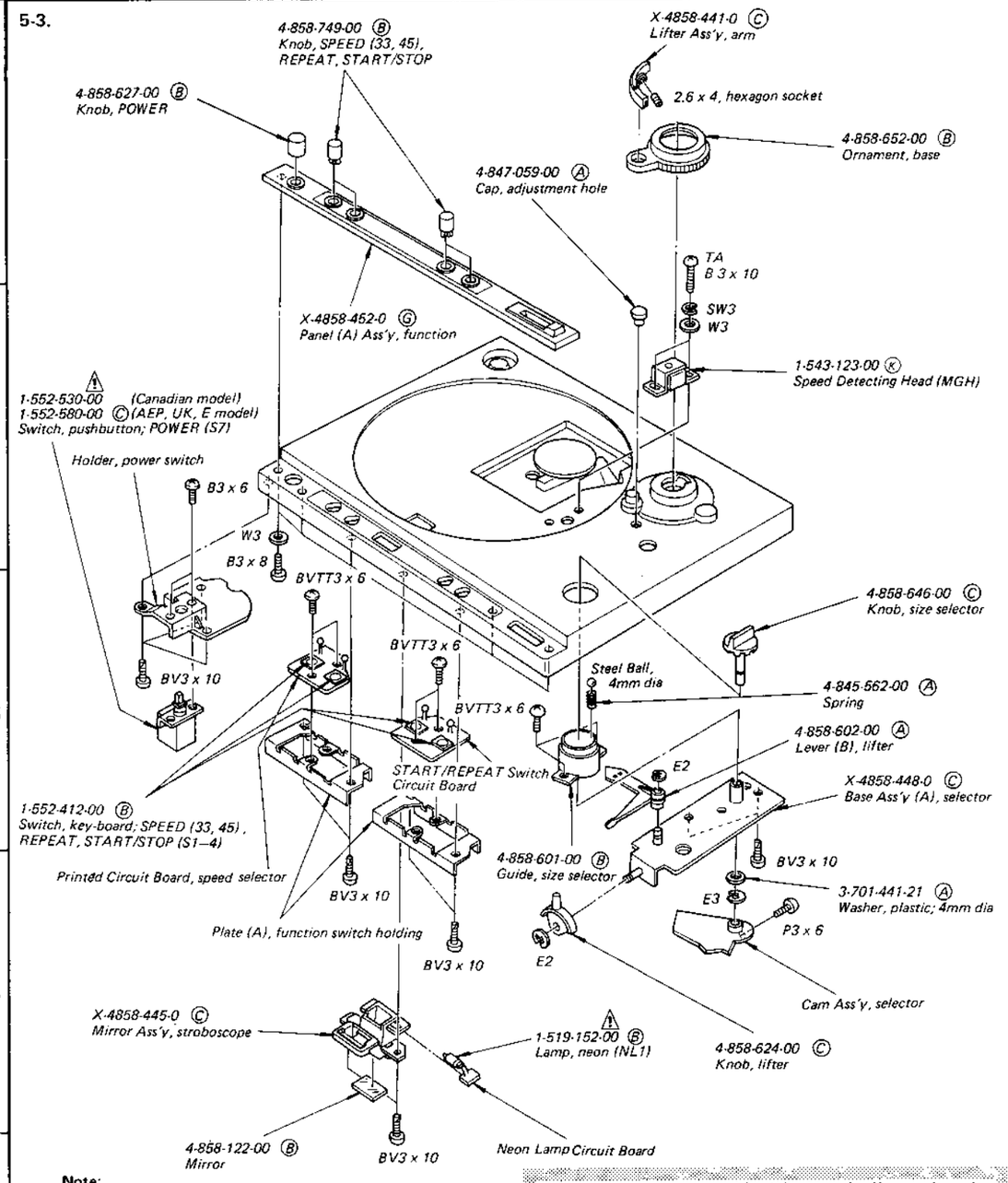
5-2.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-3.



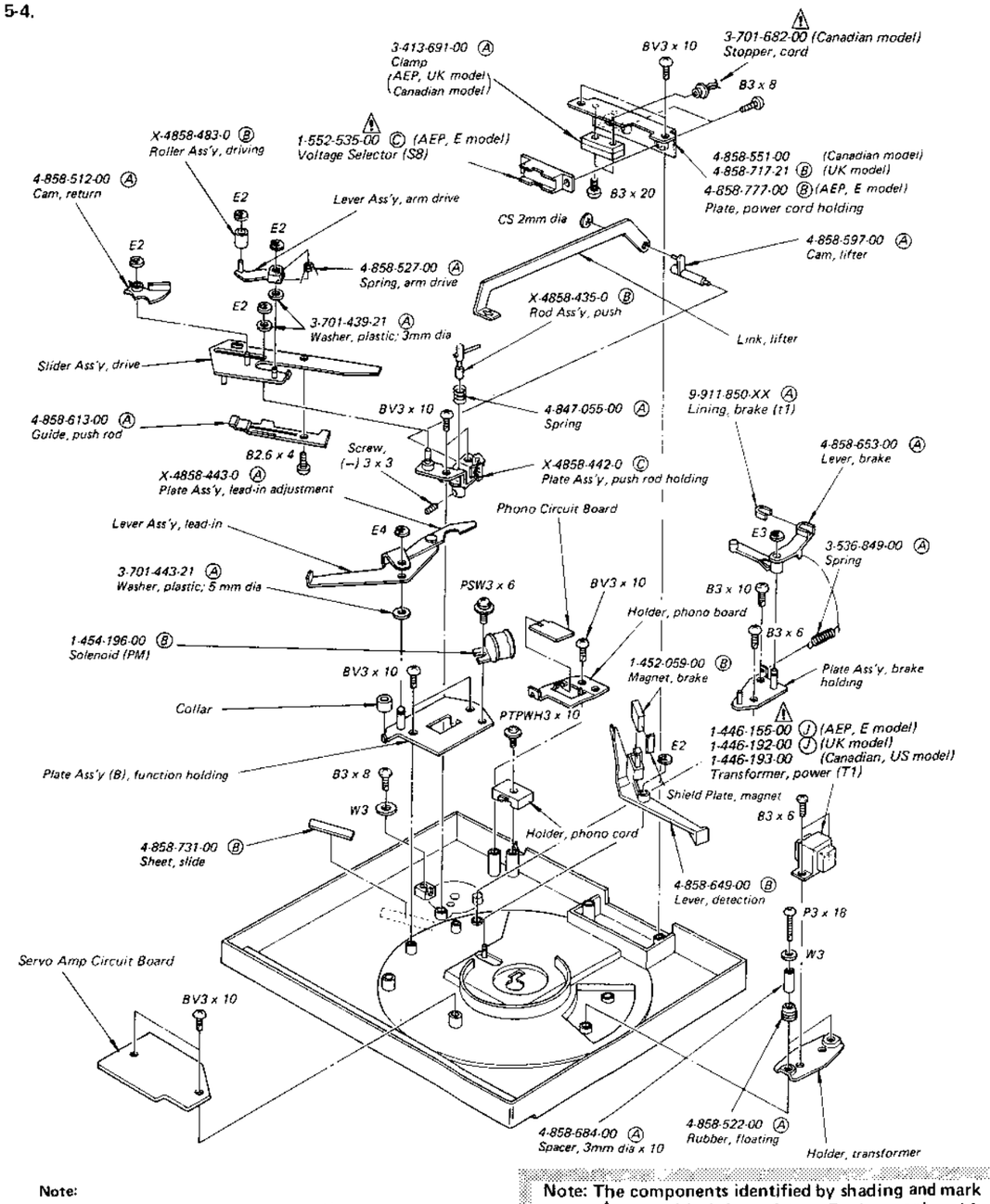
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters ((A) to (Z)) are applicable to European models only.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-4.



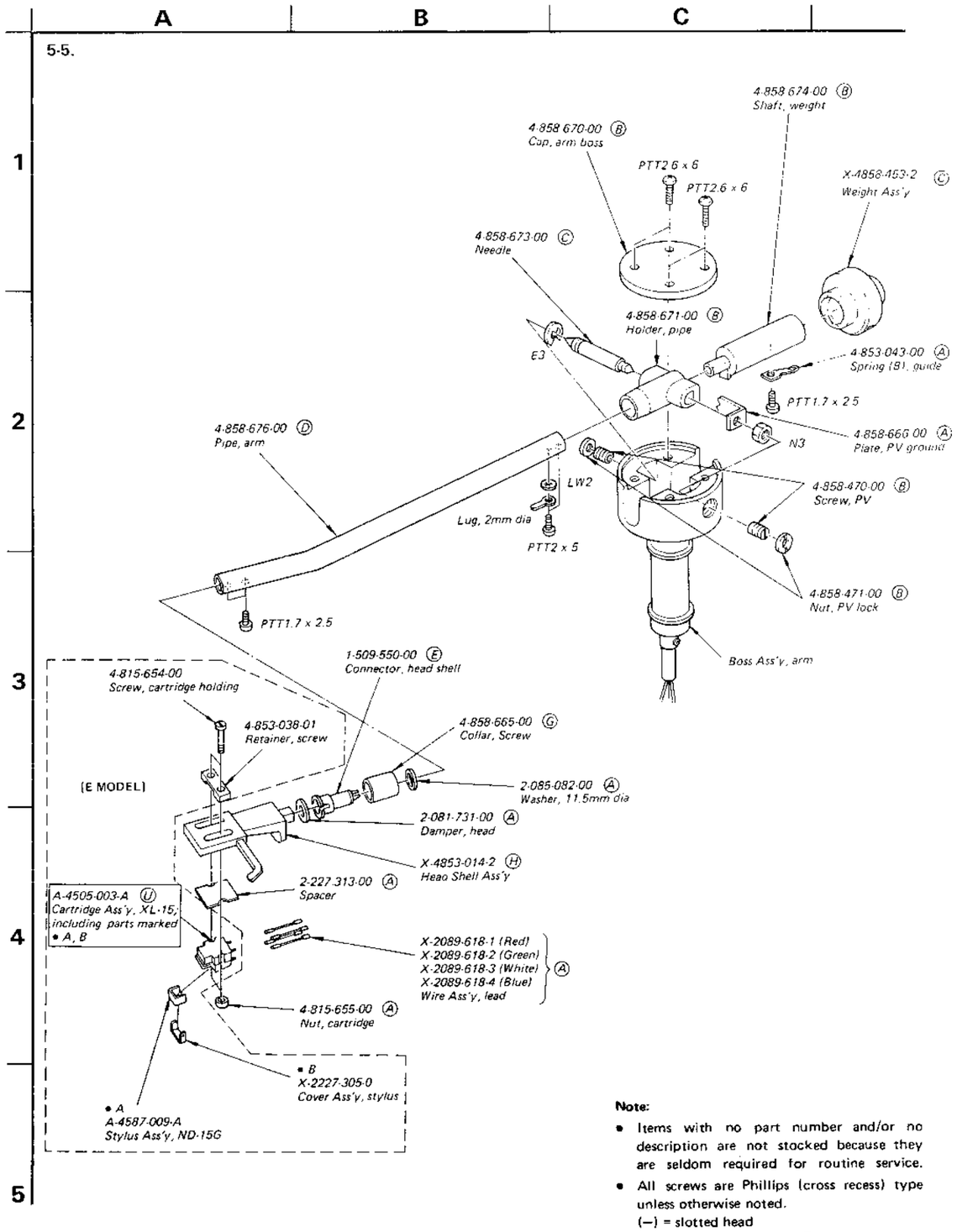
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters ((A) to (Z)) are applicable to European models only.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-5.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 6
ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
		SEMICONDUCTORS
		Transistors
Q101, 103	8-729-141-43	Ⓑ 2SD414
Q102, 104	8-729-154-83	Ⓑ 2SB548R
⇒Q105	8-729-663-47	Ⓑ 2SC1364
Q201	8-729-141-43	Ⓑ 2SD414
⇒Q202	8-729-663-47	Ⓑ 2SC1364
Q203	8-720-950-03	Ⓒ 2SC926A
⇒Q301	8-729-663-47	Ⓑ 2SC1364
⇒Q302	8-727-788-00	Ⓑ 2SA678
⇒Q303–316	8-729-663-47	Ⓑ 2SC1364
		ICs
IC1	8-759-145-57	Ⓒ μPC4557C
IC2	8-751-930-00	Ⓚ CX193
IC3	8-759-145-58	Ⓓ μPC4558C
		Diodes
⇒D201–204	8-719-200-02	Ⓑ 10E2
⇒D205	8-719-210-06	Ⓑ 10D6
⇒D206	8-719-931-10	Ⓑ EQB01-10
⇒D207	8-719-931-33	Ⓑ EQB01-33
D301–317	8-719-815-55	Ⓐ 1S1555
D401–404	8-719-900-24	Ⓑ SLP24B
H1, 2	8-719-905-07	Ⓒ 5GF-MS-07F
		COILS AND TRANSFORMERS
L1–4	1-462-161-00	Ⓒ Coil, motor
T1	⚠1-446-155-00	Ⓙ Transformer, power (AEP, E model)
T1	⚠1-446-192-00	Ⓙ Transformer, power (UK model)
T1	⚠1-446-193-00	Transformer, power (US, Canadian model)
		CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50 WV or less are not indicated except for electrolytics.
p: μμF, elect: electrolyitc

C102	1-121-651-00	Ⓐ 10	16 V	elect	
C201, 202	1-121-388-00	Ⓑ 1000	25 V	elect	
C203	1-123-027-00	Ⓑ 2.2	250 V	elect	
C204	⚠1-108-750-00	0.033 (US model)	125 V	mylar	
C204	⚠1-130-098-00	0.022 (Canadian model)	125VAC	film	
C204, 205	⚠1-115-148-00	Ⓒ 0.01 (AEP, UK, E model)	450VAC	paper	
C301	1-101-925-00	Ⓐ 0.047			
C302	1-121-726-00	Ⓐ 0.47	50 V	elect	
C303	1-108-804-00	Ⓐ 0.01		mylar	
C304	1-108-845-00	Ⓐ 0.047		mylar	
C305	1-108-804-00	Ⓐ 0.01		mylar	
C306, 307	1-121-391-00	Ⓐ 1	50 V	elect	
C308	1-101-923-00	Ⓐ 0.01			
C309	1-102-491-00	Ⓐ 51 p			
C310, 311	1-101-081-00	Ⓐ 130 p			
C312	1-121-726-00	Ⓐ 0.47	50 V	elect	
C313	1-161-034-00	Ⓐ 0.022			
C314	1-121-413-00	Ⓐ 100	6.3 V	elect	
C315	1-161-036-00	Ⓐ 0.047			
C316	1-121-951-00	Ⓐ 0.47	50 V	elect	
C317	1-121-391-00	Ⓐ 1	50 V	elect	
C318	1-121-726-00	Ⓐ 0.47	50 V	elect	
C319–321	1-121-391-00	Ⓐ 1	50 V	elect	
C322	1-121-479-00	Ⓐ 22	16 V	elect	
C323	1-121-395-00	Ⓐ 4.7	25 V	elect	
C324	1-121-726-00	Ⓐ 0.47	50 V	elect	
C325, 326	1-101-924-00	Ⓐ 0.022			
C327	1-121-651-00	Ⓐ 10	16 V	elect	
C328, 329	1-101-924-00	Ⓐ 0.022			
C330	1-121-391-00	Ⓐ 1	50 V	elect	

RESISTORS

All resistors are in ohms. Common ¼ W carbon resistors are omitted. Refer to the list on the page 28 for their part numbers.

R201	1-244-863-00	Ⓐ 390	½ W	carbon
R204	⚠1-213-154-00	Ⓑ 8.2 k	1 W	metal oxide (nonflammable)
RV101, 102	1-224-633-00	Ⓐ 4.7 k, adjustable; gain		
RV103, 104	1-224-637-00	Ⓐ 100 k, adjustable; offset		
RV301, 302	1-224-637-00	Ⓐ 100 k, adjustable; speed (33, 45)		

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

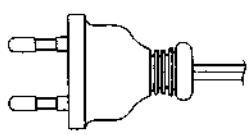
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

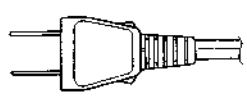
Ref. No.	*Part No.*	*Description*
		SWITCHES
S1–4	1-552-412-00	Ⓑ Key-Board, START/STOP, REPEAT, SPEED (33, 45)
S5	1-552-268-00	Ⓑ Slide, PLAY
S6	1-552-414-00	Ⓑ Miniature, RETURN
S7	⚠1-552-530-00	Pushbutton, POWER (US, Canadian model)
	⚠1-552-580-00	Ⓒ Pushbutton, POWER (AEP, UK, E model)
S8	⚠1-552-535-00	Ⓒ Voltage Selector (AEP, E model)
		MISCELLANEOUS
MGH	1-543-123-00	Ⓚ Speed Detecting Head
NL1	⚠1-519-152-00	Ⓑ Lamp, neon
PM	1-454-196-00	Ⓑ Solenoid
TH101	1-800-195-00	Ⓐ Thermistor, S-250
X301	1-527-380-00	Ⓓ Crystal
	1-452-059-00	Ⓑ Magnet, Brake
	1-509-550-00	Ⓔ Connector, head shell
	⚠1-534-777-72	Ⓓ Cord, power (UK model)
	⚠1-534-817-XX	Ⓓ Cord, power (AEP model)
	⚠1-534-986-XX	Cord, power (US, Canadian model)
	1-551-063-00	Ⓕ Cord, phono; low capacitance
	⚠1-551-473-31	Cord, power, parallel-blade plug (E model)
	⚠1-551-530-00	Cord, power; euro-plug (E model)

–Power Cord (E model)–

euro-plug (1-551-530-00)



parallel-blade plug (1-551-473-31)



ACCESSORIES AND PACKING MATERIALS

Part No.	*Description*
X-4853-006-0	Ⓔ Screw Ass'y, cartridge (AEP, UK, US, Canadian model)
including:	
2-011-002-00	Bag, polyethylene
2-056-532-01	Ⓑ Screw (A), cartridge
2-224-081-00	Ⓑ Screw (E), cartridge
2-224-081-11	Ⓑ Screw (E), cartridge
3-770-625-11	Ⓓ Manual, instruction (AEP, UK, E model)
3-770-625-21	Manual, instruction (US model)
3-770-625-21, 3-794-319-31	Manual, instruction (Canadian model)
3-701-614-00	Ⓐ Bag, polyethylene
3-701-616-00	Ⓐ Bag, polyethylene, shell and main weight
3-701-630-00	Ⓐ Bag, polyethylene
3-701-634-00	Ⓐ Bag, polyethylene, turntable
3-701-806-00	Ⓐ Adaptor, 45 rpm
3-701-891-00	Ⓐ Label, main caution (Canadian, UK model)
3-703-114-01	Label, main caution (US model)
3-793-395-00	Ⓑ Gauge, tracking error check
3-794-265-00	Leaflet, caution (E model)
4-847-314-00	Ⓒ Bag, polyethylene
4-848-002-00	Ⓐ Cushion, arm pipe
4-857-655-00	Ⓐ Plate (A), protection
4-858-407-00	Ⓐ Adjustor, drop-point
4-858-587-00	Ⓐ Bag, accessory
4-858-593-00	Ⓐ Cushion, weight
4-858-738-00	Ⓔ Carton
4-858-740-00	Ⓒ Cushion, right
4-858-741-00	Ⓒ Cushion, left
4-858-748-00	Ⓒ Box, accessory

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

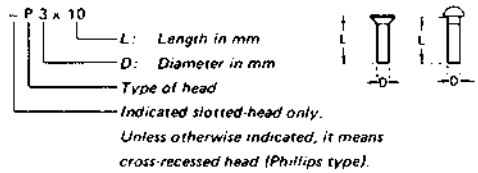
1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

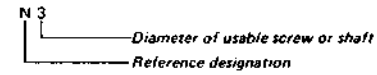
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
BF		fillister-head screw	
BV		brazier-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex. TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH	Ⓐ	pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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