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PS-515

AEP Model
E Model

FULL AUTOMATIC STEREO TURNTABLE SYSTEM

SPECIFICATIONS

GENERAL

Power Requirements: 120 or 220V ac adjustable, 50/60 Hz (E model)
110, 120, 220 or 240V ac adjustable, 50/60 Hz (AEP model)

Power Consumption: 6 W

Dimensions: Approx. 450(w) x 135(h) x 385(d) mm
17 3/4 (w) x 5 3/8 (h) x 15 1/4 (d) inches
Including projecting parts and controls

Weight: Approx. 8 kg, 17 lb 10 oz (net)
Approx. 9.6 kg, 21 lb 3 oz (with shipping carton)

TURNTABLE

Platter: 32.6 cm (12 7/8 inches), aluminum-alloy diecasting

Drive System: Direct drive

Speeds: 33 1/3, 45 rpm

Speed Control Range: ±3%

Wow and Flutter: ±0.03% (WRMS)
±0.045% (DIN)

S/N Ratio: 70 dB (DIN-B)

TONEARM

Type: Statically balanced, universal

Arm Length: 300 mm (11 3/4 inches), overall
216.5 mm (8 1/2 inches), pivot-to-stylus

Overhang: 16.5 mm (2 1/32 inches)

Tracking Error: +3°, −1°

Tracking-force Adjustment Range: 0 – 3 g

Shell Weight: 7.5 g

Cartridge Weight Range: 4 – 12 g

Cartridge VL-15G

Type: Moving magnet type

Frequency Response: 10 Hz – 30 kHz

Channel Separation: 25 dB at 1 kHz

Output Voltage: 4 mV at 1 kHz, 5 cm/sec, 45°

Load Impedance: 50 kΩ

Tracking Force: 1.2 – 2.5 g (1.7 g recommended)

Stylus: Sony ND-15G (Conical 0.6 mil diamond)

Weight: 5.2 g

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.

— Continued on page 2 —

SONY®

SERVICE MANUAL

Cartridge VL-34G

Type:	Moving magnet type	**Load Impedance:**	50 kΩ
Frequency Response:	10 Hz — 30 kHz	**Tracking Force:**	1.5 — 2.5 g (2.0 g recommended)
Channel Separation:	25 dB at 1 kHz	**Stylus:**	Sony ND-134G (conical 0.6 mil diamond)
Output Voltage:	3 mV at 1 kHz, 5 cm/sec, 45°	**Weight:**	5.5 g

NOTE OF SCHEMATIC DIAGRAM

- 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, ¼W unless otherwise noted. kΩ : 1000Ω; MΩ : 1000 kΩ
- % indicates component tolerance.
- ☐ : panel designation.

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 20,000-ohm-per-volt VOM.
  - V : 33 rpm
  - (V) : 45 rpm
  - 〈 V〉 : X'TAL LOCK "ON"
  - [V] : START/STOP switch to ON.
  - ☐V☐ : STOP

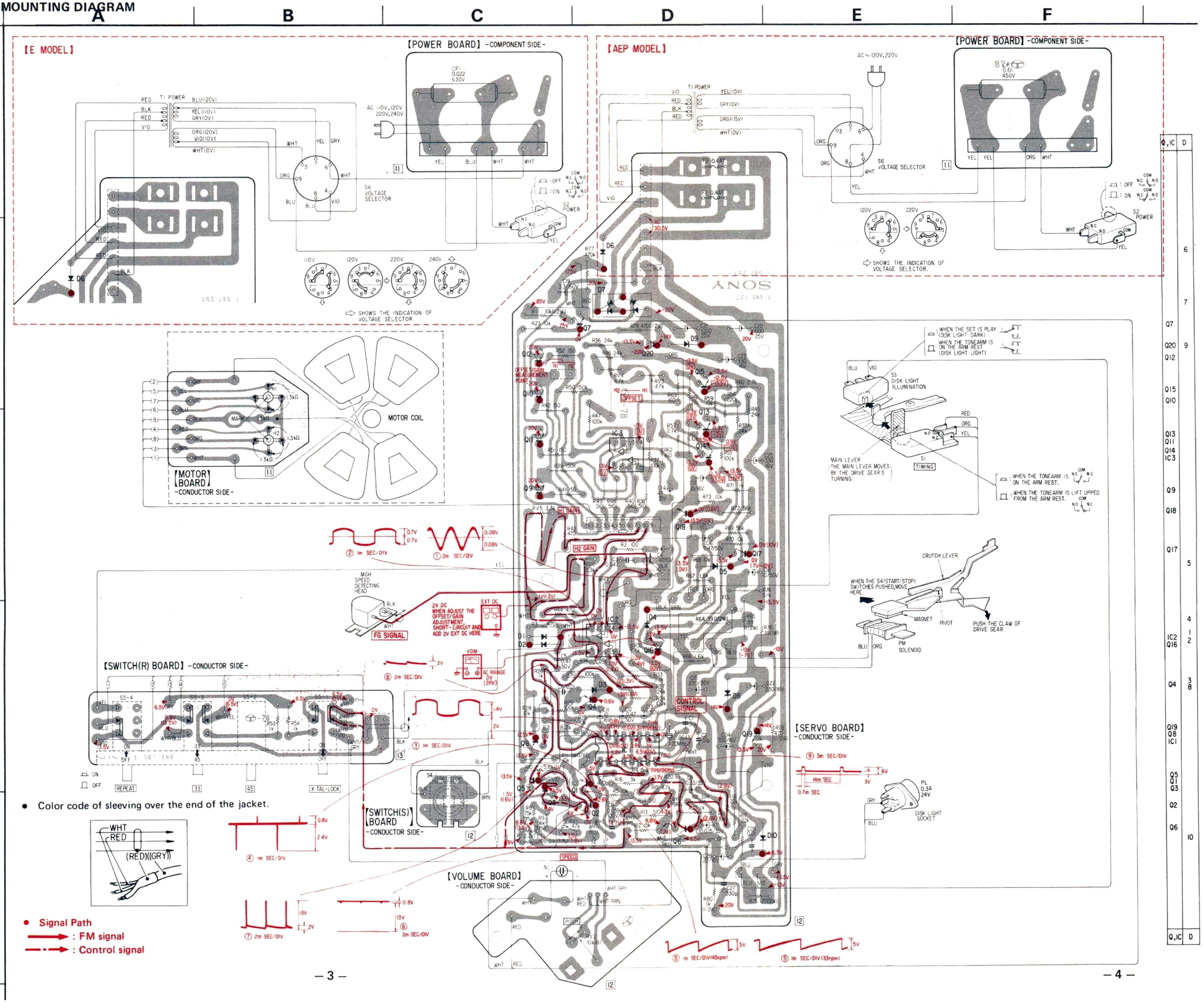
- ☐ : adjustment for repair.
- ——— : B + bus.
- — — — : B — bus.

- **Switch**

Ref. No.	Switch	Position
S1	TIMING	NO When the tonearm is on the arm rest.
S2	POWER	OFF
S3	DISK LIGHT ILLUMINATION	2 When the tonearm is on the arm rest.
S4	START/STOP	ON
S5-1	X'TAL-LOCK	ON
S5-2	33/45	45
S5-3	33/45	33
S5-4	REPEAT	OFF
S6	VOLTAGE SELECTOR	

Note: DC resistance measurements are with hall device connected on the circuit board, and are approximate.

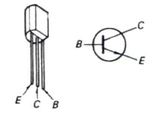
1. MOUNTING DIAGRAM



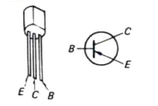
- Color code of sleeving over the end of the jacket.

- **Signal Path**
  - ——→ : FM signal
  - —·—→ : Control signal

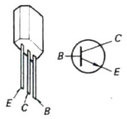
Q1-4
Q6, 13 : 2SC1364 (2SC945)
Q15, 18



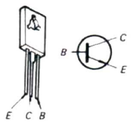
Q5, 8, 14 : 2SA 678 (2SA733)
Q17



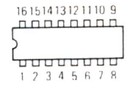
Q7: 2SC926A



Q9, 11: 2SD414

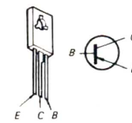


IC1: MSM5818

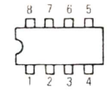


(Top view)

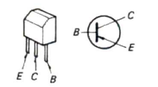
Q10, 12: 2SB548



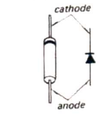
IC2, 3: μPC4558C



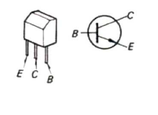
Q16, 20: 2SB605



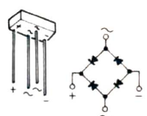
D1-5: IS1555
D6: 10E2



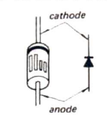
Q19: 2SD571



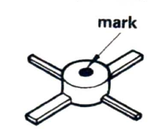
D7: SIRB10



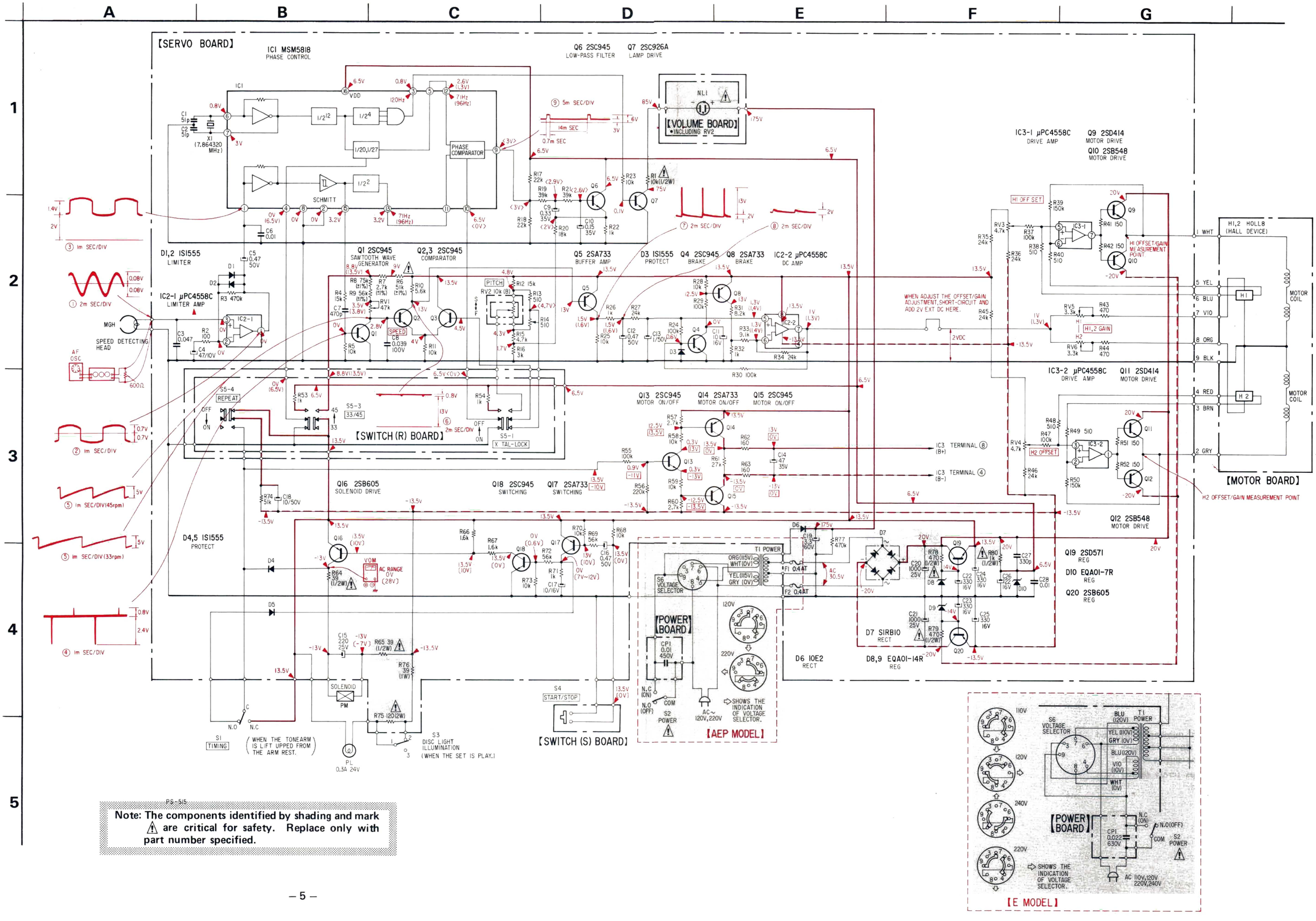
D8, 9: EQB01-14 (EQA01-14R)
D10: EQB01-07 (EQA01-7R)



H1, 2: F1409 (HOLL8)



2. SCHEMATIC DIAGRAM

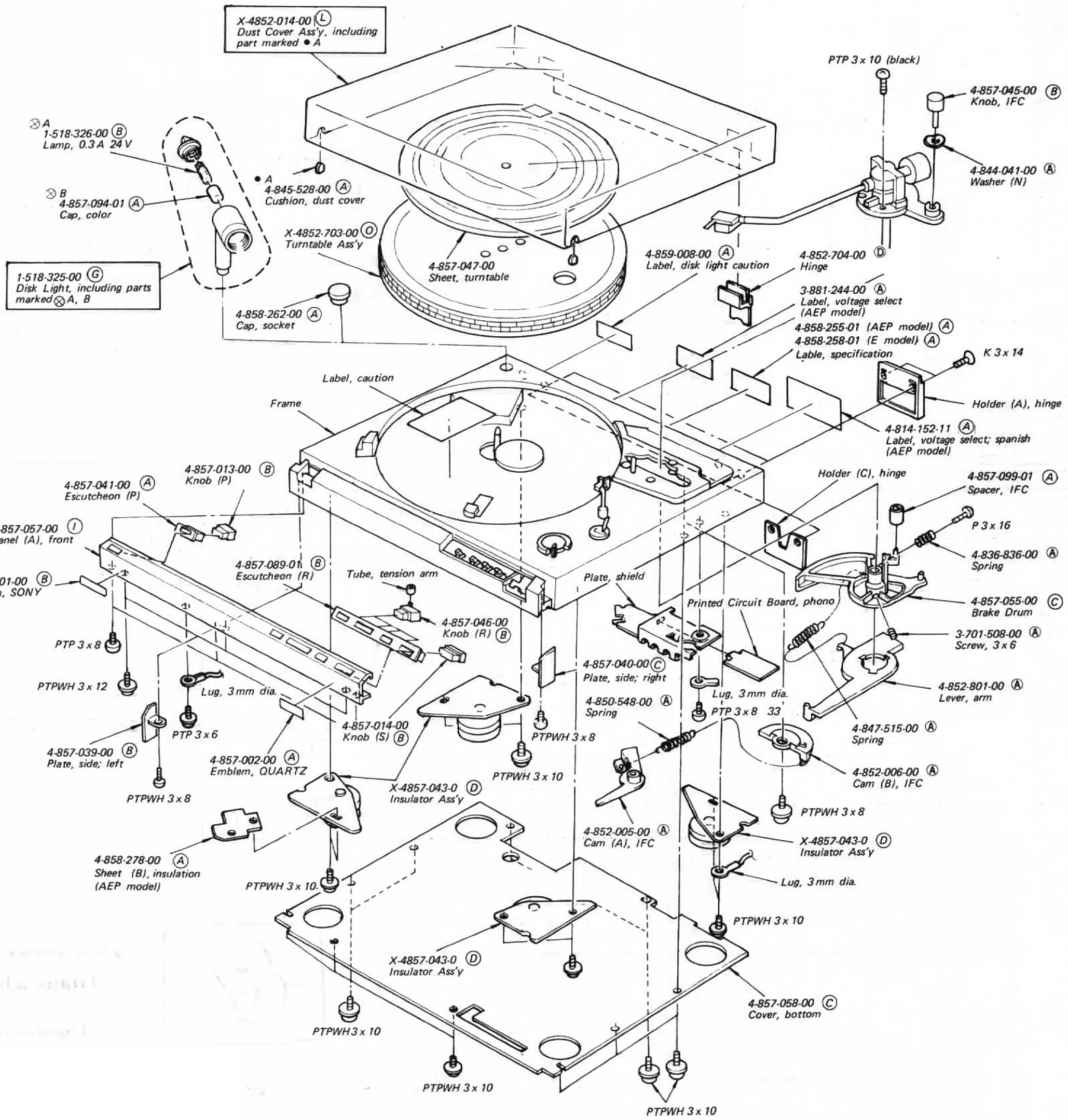


PS-515

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

3. EXPLODED VIEWS

3-1



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

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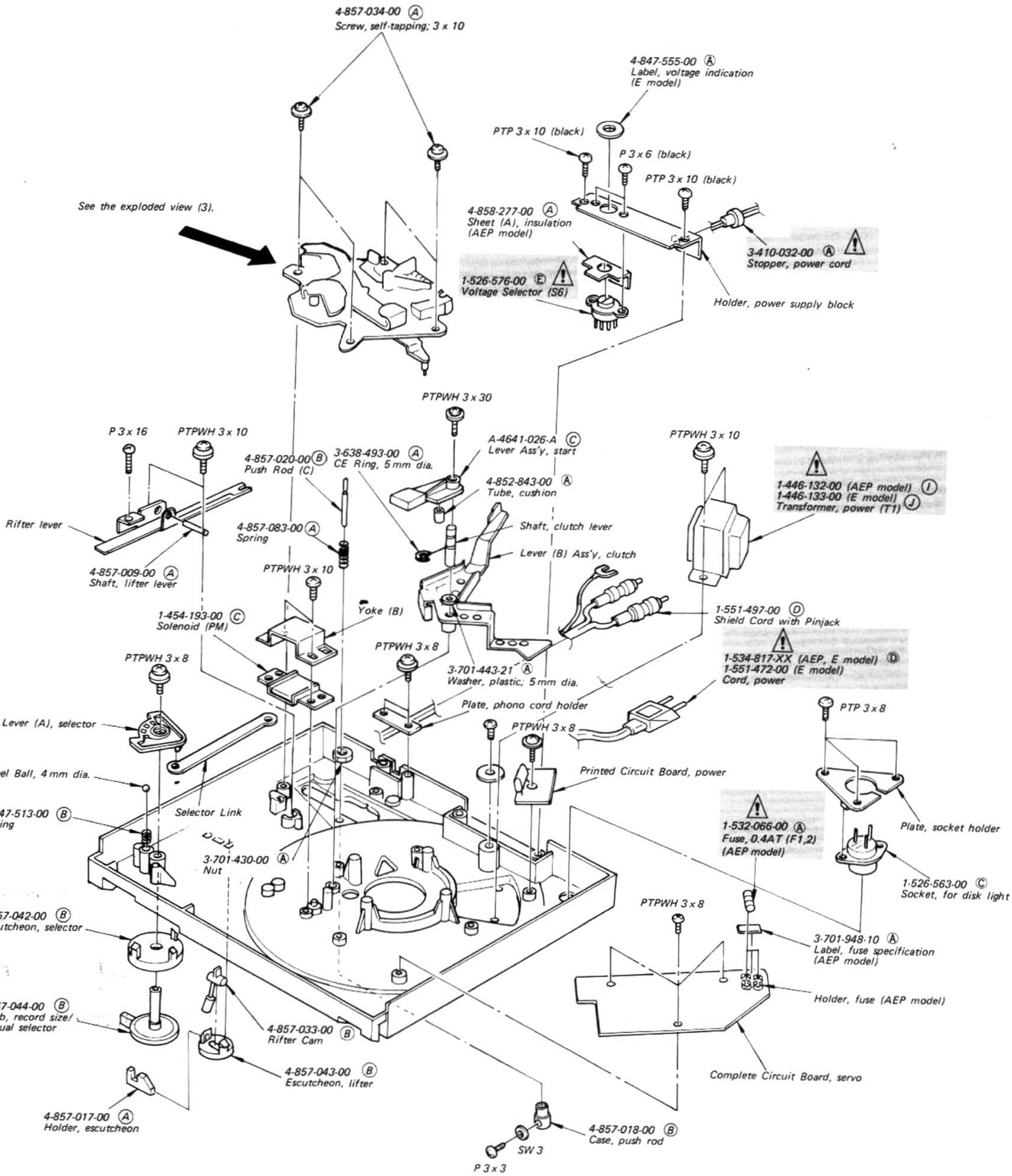
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

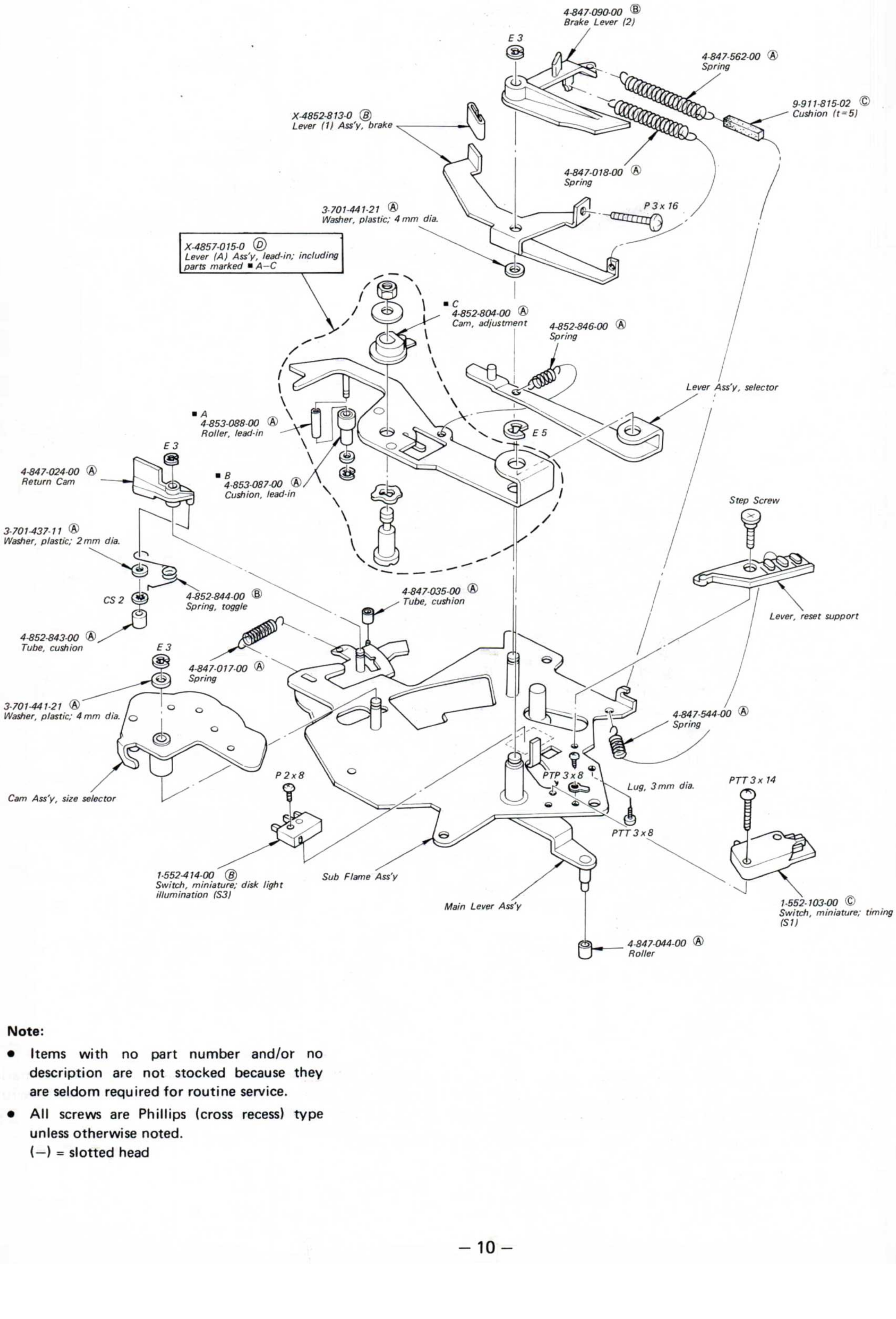
3-2



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

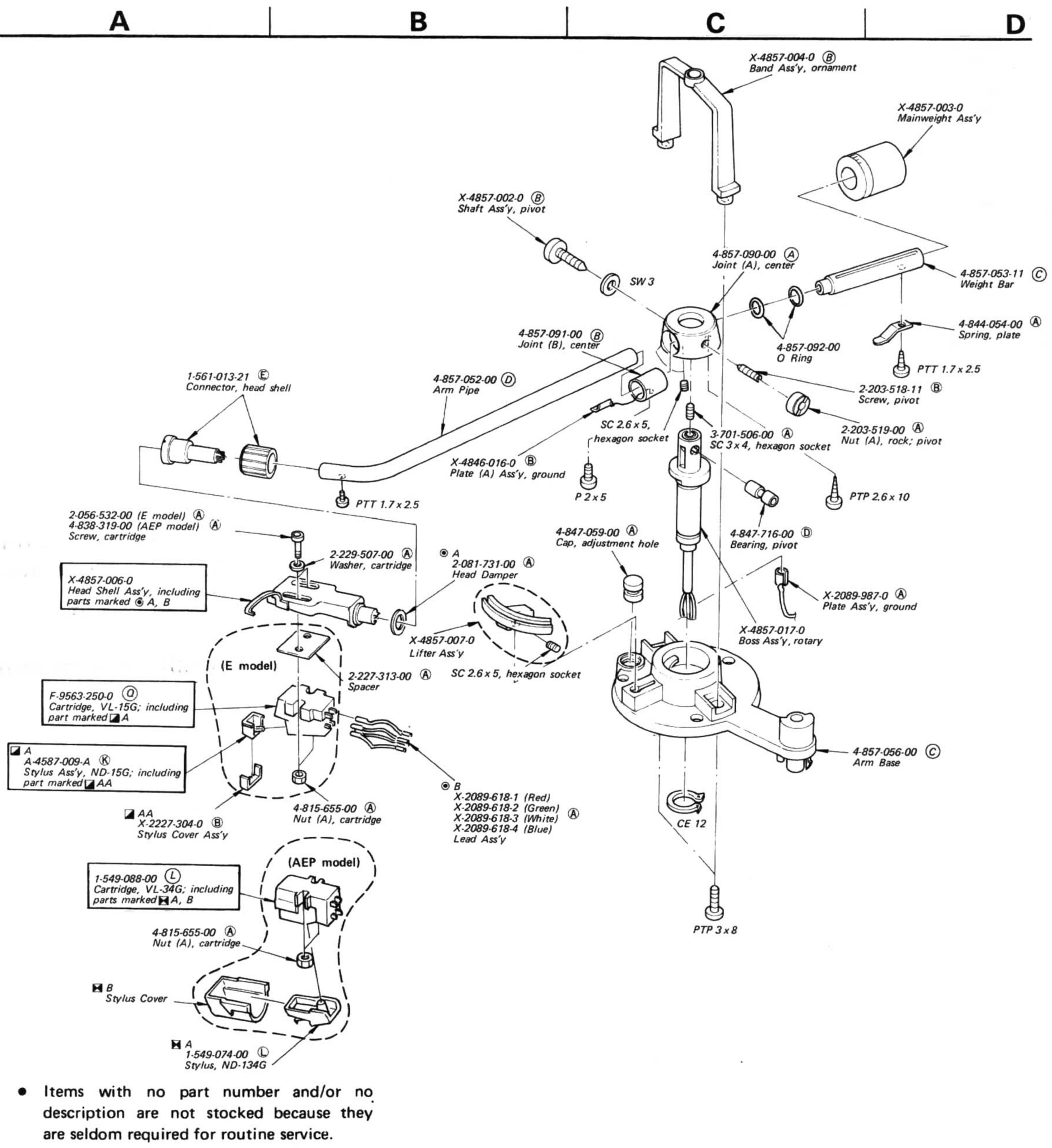
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.



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

3-5.



- 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

4. ELECTRICAL PARTS LIST

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

Ref. No.	*Part No.*	*Description*
		SEMICONDUCTORS
		Transistors
⇒ Q1 – 4	8-729-663-47	Ⓑ 2SC1364
⇒ Q5	8-727-788-00	Ⓑ 2SA678
⇒ Q6	8-729-663-47	Ⓑ 2SC1364
⇒ Q7	8-720-950-03	Ⓒ 2SC926A
⇒ Q8	8-727-788-00	Ⓑ 2SA678
Q9	8-729-141-43	Ⓑ 2SD414
Q10	8-729-154-83	Ⓑ 2SB548
Q11	8-729-141-43	Ⓑ 2SD414
Q12	8-729-154-83	Ⓑ 2SB548
⇒ Q13	8-729-663-47	Ⓑ 2SC1364
⇒ Q14	8-727-788-00	Ⓑ 2SA678
⇒ Q15	8-729-663-47	Ⓑ 2SC1364
Q16	8-729-160-51	Ⓑ 2SB605
⇒ Q17	8-727-788-00	Ⓑ 2SA678
⇒ Q18	8-729-663-47	Ⓑ 2SC1364
Q19	8-729-157-11	Ⓑ 2SD571
Q20	8-729-160-51	Ⓑ 2SB605
		ICs
IC1	8-759-958-18	Ⓚ MSM5818
IC2, 3	8-759-145-58	Ⓓ μPC4558C
		Diodes
D1 – 5	8-719-815-55	Ⓑ 1S1555
D6	⚠ 8-719-200-02	Ⓑ 10E2
D7	⚠ 8-719-510-10	Ⓒ SIRB10
D8, 9	8-719-931-14	Ⓑ EQB01-14
D10	8-719-931-07	Ⓑ EQB01-07
H1, 2	8-719-814-09	Ⓓ F1409

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

Ref. No.	*Part No.*	*Description*		
		CAPACITORS		
		• All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. pF = μμF, elect = electrolytic		
C1, 2	1-102-491-11	Ⓐ 51P		
C3	1-101-006-11	Ⓐ 0.047		
C4	1-121-409-11	Ⓐ 47	10V	elect
C5	1-121-951-11	Ⓐ 0.47	50V	elect
C6	1-101-004-11	Ⓐ 0.01		
C7	1-102-114-11	Ⓐ 470P		
C8	1-130-140-11	Ⓑ 0.039	100V	polyethylene
C9	1-131-212-11	Ⓑ 0.33	35V	elect
C10	1-131-210-11	Ⓑ 0.15	35V	elect
C11	1-121-651-11	Ⓐ 10	16V	elect
C12	1-121-951-11	Ⓐ 0.47	50V	elect
C13	1-121-952-11	Ⓐ 1	50V	elect
C14	1-123-058-11	Ⓐ 47	35V	elect
C15	1-121-936-11	Ⓑ 220	25V	elect
C16	1-121-951-11	Ⓐ 0.47	50V	elect
C17	1-121-651-11	Ⓐ 10	16V	elect
C18	1-121-738-11	Ⓐ 10	50V	elect
C19	⚠ 1-123-004-11	Ⓑ 3.3	160V	elect
C20, 21	⚠ 1-123-066-11	Ⓑ 1000	25V	elect
C22 – 25	1-123-069-11	Ⓑ 330	16V	elect
C26	1-121-479-11	Ⓐ 22	16V	elect
C27	1-102-112-11	Ⓐ 330P		
C28	1-101-004-11	Ⓐ 0.01		
CP1	⚠ 1-115-148-11	Ⓒ 0.01	450V	paper (AEP model)
CP1	⚠ 1-129-718-00	Ⓑ 0.022	630V	polyethylene (E model)
		RESISTORS		
		(All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on the last page for their part numbers.)		
R1	⚠ 1-244-897-11	Ⓐ 10k	½W	carbon
R6	1-214-173-11	Ⓐ 51k ±1% ¼W		metal oxide
R7	1-214-142-11	Ⓐ 2.7k ±1% ¼W		metal oxide
R8	1-214-177-11	Ⓐ 75k ±1% ¼W		metal oxide
R9	1-214-174-11	Ⓐ 56k ±1% ¼W		metal oxide

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

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

Ref. No.	*Part No.*	*Description*		
R64, 65	⚠1-244-839-11	Ⓐ 39	½W	carbon
R75	⚠1-207-913-11	Ⓑ 120	2W	wire wound (nonflammable)
R76	1-213-126-11	Ⓐ 39	1W	metal oxide (nonflammable)
R78, 79	⚠1-244-865-11	Ⓐ 470	½W	carbon
R80	⚠1-244-873-11	Ⓐ 1k	½W	carbon
RV1	1-224-254-XX	Ⓑ 47k, adjustable; SPEED		
RV2	1-226-196-00	Ⓑ 10k(B), variable; PITCH		
RV3, 4	1-224-644-XX	Ⓑ 4.7k, adjustable; OFFSET		
RV5, 6	1-224-644-XX	Ⓑ 4.7k adjustable; GEIN		

SWITCHES

S1	1-552-103-00	Ⓒ miniature; TIMING
S2	⚠1-516-889-00	Ⓓ miniature; POWER (AEP model)
S2	⚠1-552-414-00	Ⓑ miniature; POWER (E model)
S3	1-552-414-00	Ⓑ miniature; disk light illumination
S4	1-552-412-00	Ⓑ key-boar; START/STOP
S5-1 – 4	1-552-413-00	Ⓔ push; REPEAT/33/45/ X' TAL-LOCK
S6	⚠1-526-576-21	Ⓓ Voltage selector

MISCELLANEOUS

F1, 2	⚠1-532-066-00	Ⓐ Fuse, 0.4AT (AEP model)
MGH	1-543-093-00	Ⓔ Speed Detecting Head
NL1	⚠1-519-152-00	Ⓑ Lamp, neon
PM	1-454-193-00	Ⓒ Solenoid
T1	⚠1-446-132-00	Ⓘ Transformer, power (AEP model)
T1	⚠1-446-133-00	Ⓙ Transformer, power (E model)
X1	1-527-348-00	Ⓓ Crystal, 7.864320 MHz
	1-518-325-00	Ⓖ Disk Light
	including:	
PL	1-518-326-00	Ⓑ Lamp, 0.3A 24V
	4-857-094-01	Ⓐ Cap, color
	1-526-563-00	Ⓒ Socket, for disk light
	⚠1-534-817-XX	Ⓔ Core, power (AEP, E model)
	1-549-088-00	Ⓛ Cartridge, VL-34G (AEP model)
	including:	
	1-549-074-00	Ⓛ Stylus, ND-134G (AEP model)
		Stylus Cover (AEP model)
	⚠1-551-472-00	Ⓒ Cord, power (E model)
	1-551-497-00	Ⓓ Shield Cord with Pinjack
	1-552-411-00	Ⓑ Switch, push; lock
	1-561-013-00	Ⓔ Connector, head shell
	1-587-200-00	Ⓑ Printed Circuit Board, Switch (S)

PACKING MATERIALS AND ACCESSORIES

Ref. No.	*Description*
X-4857-003-0	Ⓔ Weight Ass'y, main
2-054-619-00	Ⓐ Spacer, cartridge
3-701-616-00	Ⓐ Bag, polyethylene
3-701-630-00	Ⓐ Bag, polyethylene
3-701-634-00	Ⓐ Bag, polyethylene
3-701-806-00	Ⓐ Adaptor, 45 rpm
3-770-584-11	Ⓔ Manual, instruction
3-793-395-11	Ⓑ Gauge, tracking error
3-794-123-11	Ⓐ Label, caution
4-843-577-02	Ⓐ Sheet, protection, dust cover
4-847-092-00	Ⓒ Driver
4-847-314-00	Ⓒ Bag, polyethylene; main
4-852-078-00	Ⓑ Holder, turntable
4-852-080-00	Ⓑ Cushion, upper
4-852-081-00	Ⓑ Cushion, lower
4-853-409-00	Ⓑ Cushion, arm
4-857-047-00	Ⓖ Sheet, turntable
4-858-284-00	Ⓔ Carton

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

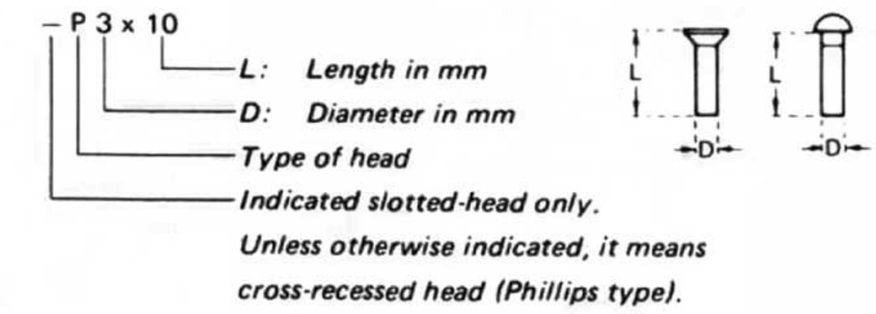
1/4 WATT CARBON RESISTORS Ⓐ

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

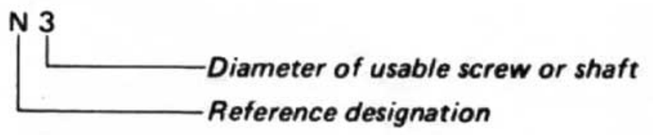
Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10 k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11 k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12 k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13 k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15 k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16 k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18 k	1-244-703-11	180k	1-244-737-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20 k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244 681-11	22 k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24 k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27 k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30 k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33 k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36 k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39 k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43 k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47 k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51 k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56 k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644 11	620	1-244-668-11	6.2k	1-244-692-11	62 k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68 k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75 k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82 k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91 k	1-244-720-11	910k	1-244-744-11		

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	
RF		fillister-head screw	
BV		braizer-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	

Sony Corporation

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