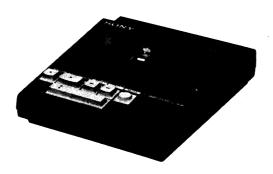
# **SERVICE MANUAL**

AEP Model **UK Model** 



## **SPECIFICATIONS**

Recording system

2-track 2-channel monaural Maximum 2,400 bps

Baud rate

Speaker diameter

14 mm ( $\frac{9}{16}$  inches), magnetic horn

Fast forward/rewind time

Approximately 2 min. (using a Sony CHF-60 cassette tape)

Frequency response 50 to 10,000 Hz

Input

Output

SAVE jack (minijack)
Input impedance 10 k ohms
LOAD jack (minijack)

REMOTE jack (special minijack)
Approximately 2.5 hours of continuous operation

Power requirements

ints
6 V dc
Four batteries, IEC designation
R6 (size AA)
DC IN 6 V jack accepts:
the following optional Sony ac
power adaptors

where used	ac power adaptor	input voltage of the adaptor
UK model	AC-15A (available in the United Kingdom)	240 V ac, 50 Hz
AEP model	AC-122 (available in European countries)	220 V ac (110, 127 or 240 V ac, adjustable) 50 Hz

Dimensions

140×49×177 mm (w/h/d)

Weight

 $(5\frac{5}{6} \times 15\frac{1}{16} \times 7 \text{ inches})$  (including projecting parts and controls) 520 g (1 lb 2 oz) incl. batteries

Tape Transport Mechanism Type MT-SDC500-06

#### **FEATURES**

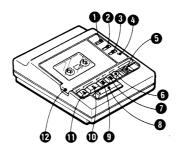
- The ADS (Auto Data Selector) system easily locates the beginning of the programs saved on a cassette.
- Saving data and programs is simple—just insert the cassette and press the SAVE button. The Automatic Gain Control system adjusts and maintains the recording level.
- The automatic shut-off mechanism turns the recorder off at the end of the tape in both the SAVE and LOAD modes.
- The tape transport mechanism allows fast forward and rewind functions to be performed even during remote control operation (MOTOR OFF command).
- The speaker monitor system lets you check saving and loading operation aurally.
- The SDC-500 can be used as a high-speed interface. (Up to 2,400 bits per second can be transmitted depending on the personal com-
- Two different power sources: house current (using the optional ac power adaptor) or

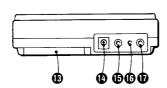




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## **LOCATION AND FUNCTION OF CONTROLS**





## Tape counter and counter reset button PHASE (load phase) select switch

When loading cannot be performed normally due to differences in the recording quality of computer-recorded or commercially available cassette tapes, use this switch (NOR or REV) to adjust. Usually, set this switch to the NOR

## MONITOR select switch

Programs and data saved on cassette are converted to a static-like sound signal. This sound can be monitored using the built-in speaker by setting the MONITOR select switch to L or H during save and load operations.

OFF: Sound is not monitored. (The sound cannot be heard through the speaker.)

Low volume

H: High volume

## **⚠** LOAD/SAVE/OPR (operation and battery

indicator) lamp This lamp is used to indicate the recorder

operation and battery condition.

SAVE (red): Indicates that the recorder is operating in the SAVE mode.

LOAD (green): Indicates that the recorder is operating in a mode other than SAVE (load, fast forward, rewind, etc.).

- When batteries are used as the power source, this lamp is used to check battery condition.
- 1 LOAD LEVEL (playback level) control

**6** MUTE button

→ FF/CUE (fast forward/cue) button
 ■ STOP/EJECT button

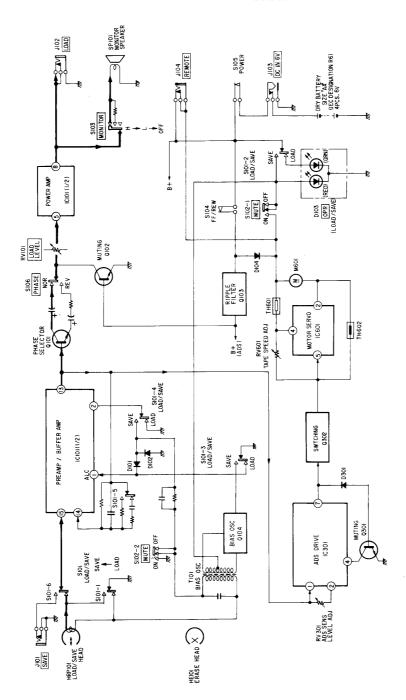
- STOP/EJECT button

   REW/REVIEW (rewind/review) button

   LOAD (play) button

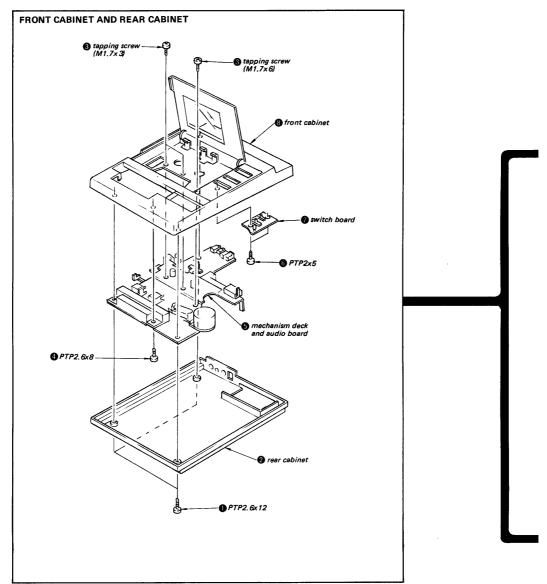
- Cassette compartment lid
- Battery compartment (bottom)
   DC IN 6V (DC power input) jack
- ( LOAD (output) jack
- ® REMOTE (remote control) jack
- SAVE (input) jack

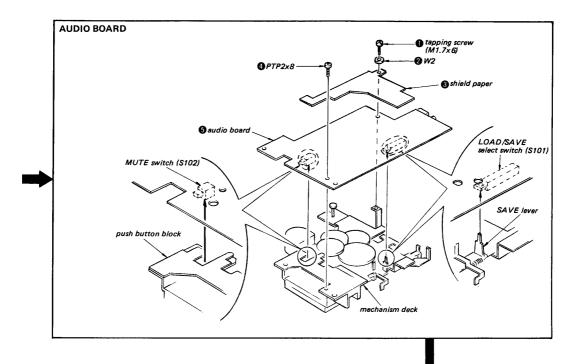
SECTION 1 BLOCK DIAGRAM

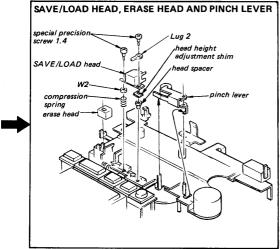


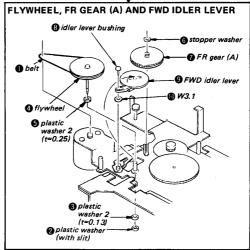
## SECTION 2 DISASSEMBLY

• Follow the disassembly procedure in the numerical order given.









## SECTION 3 ADJUSTMENTS

## 3-1. MECHANICAL ADJUSTMENT AND MEASUREMENT

#### **PRECAUTION**

1. Clean the following parts with a denatured-alcohol-moistened swab:

SAVE/LOAD head

pinch roller

erase head capstan rubber belts idlers

 Demagnetize the SAVE/LOAD head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)

- 3. Do not use a magnetized screwdriver for the adjustments.
- 4. After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

#### **Torque Measurement**

Torque	Meter Reading	Torque Meter
Load (Playback)	23-53 g·cm (0.32-0.74 oz·inch)	CQ-102C
Fast Forward and Rewind	52.5-90 g·cm (0.73-1.25 oz·inch)	CQ-201B
Back Tension	2-5 g·cm (0.028-0.069 oz·inch)	CQ-102C

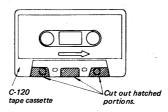
#### **Tape Tension Measurement**

Meter	Meter Reading
CQ-403A	More than 110 g (3.88 oz)

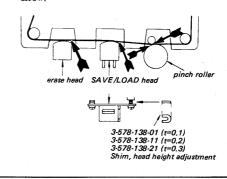


## Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



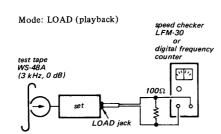
In LOAD (playback) mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shown by arrow.



## 3-2. ELECTRICAL ADJUSTMENTS

## Tape Speed Adjustment

#### Procedure:

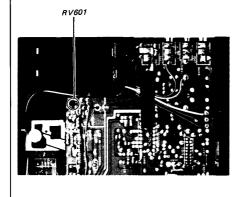


## Specification:

Speed checker	Digital frequency counter
±2%	2,940-3,060 Hz

Frequency difference between the beginning and the end of the tape should be within 1% (30 Hz).

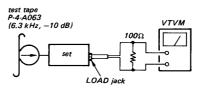
## Adjustment Location:



### SAVE/LOAD Head Azimuth Adjustment

## Procedure:

1. Mode: LOAD (playback)



2. Turn the adjustment screw to obtain the maximum reading on VTVM.

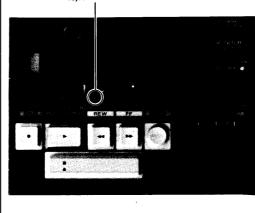
Note: Several peaks may appear, but take the maximum.

Adjustment should be completed by turning the screw in the clockwise direction.

3. After the adjustment, lock the adjustment screw with suitable locking compound.

## Adjustment Location:





## **ADS SENS Level Adjustment**

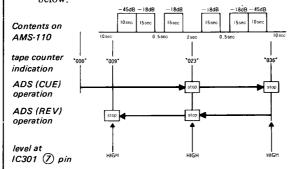
No adjustment is required for this adjustment. When replacing SAVE/LOAD head, confirm that the following symptom is not generated in ADS operation.

- Tape stops running at recorded portion of the tape.
- Tape does not stop running when blank portion on tape passes on the head.

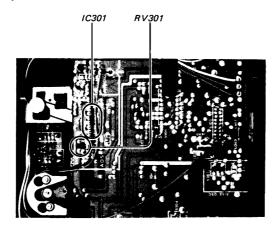
If these failures are found, make the adjustment as follows.

## Procedures:

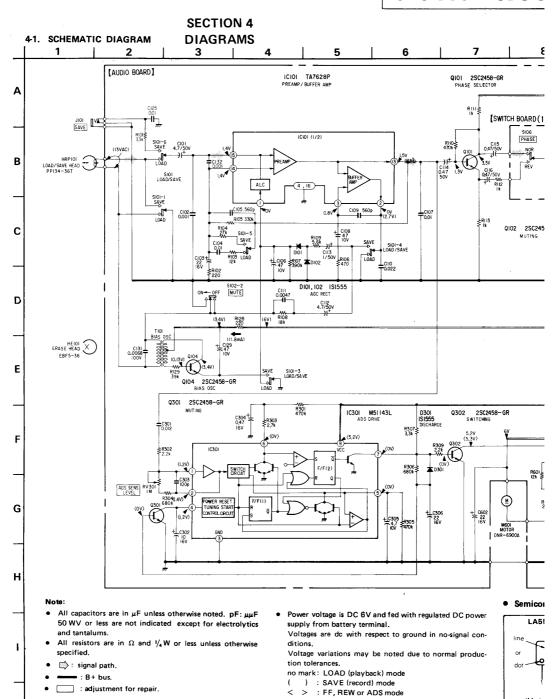
- Insert the test tape AMS-110 and rewind it. Set tape counter to "000".
- 2. When ADS (CUE) operation or ADS (REV) operation is made, adjust RV301 so that tape stops running at four portions shown in figure below.



## Adjustment Location:

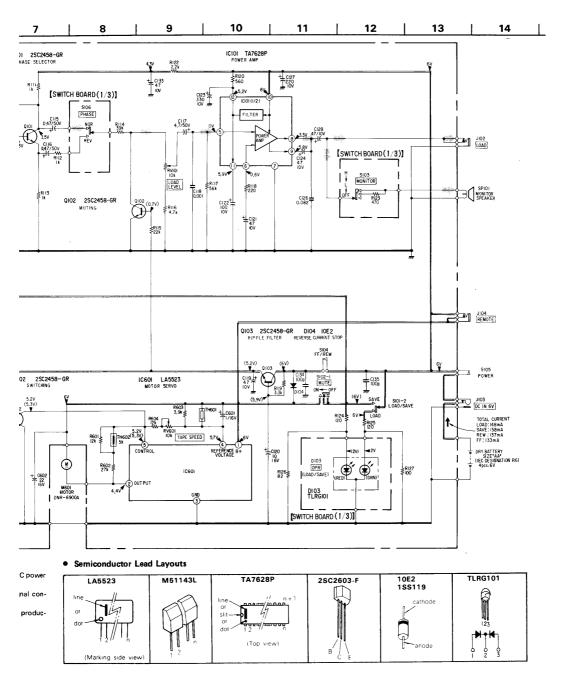


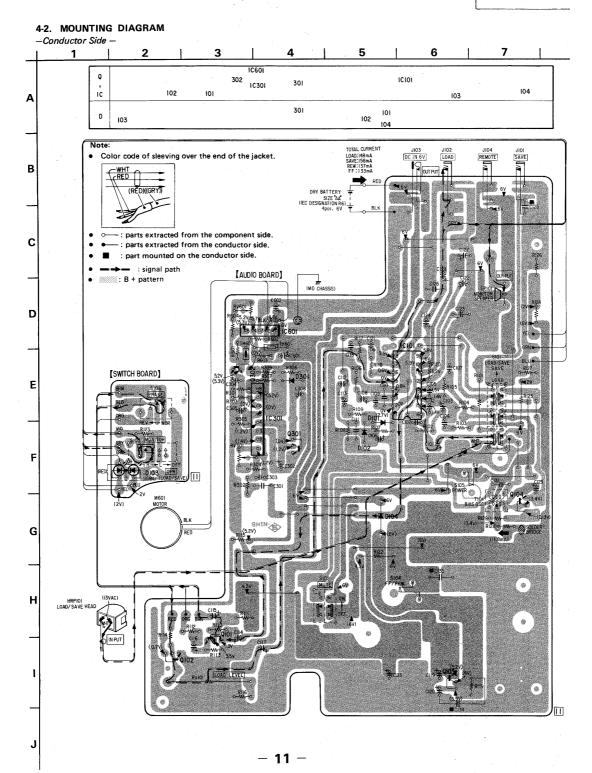
(Marki



: adjustment for repair.

AC voltage readings with a AUTO VOLTMETER. Total current is measured with no cassette installed.





## **SDC-500**

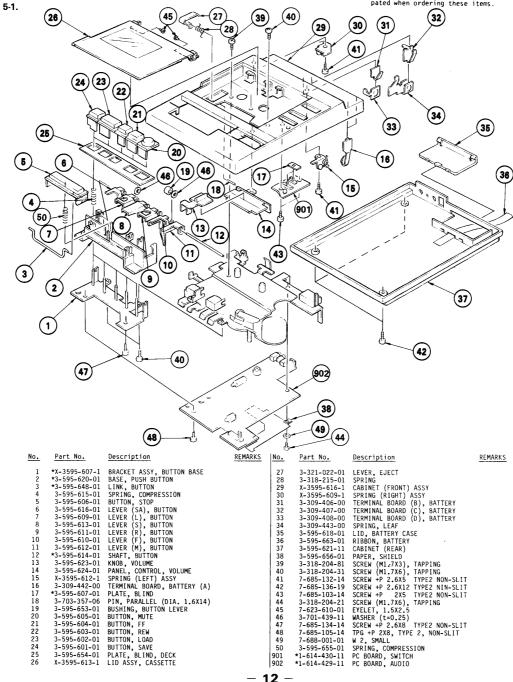
## **SECTION 5**

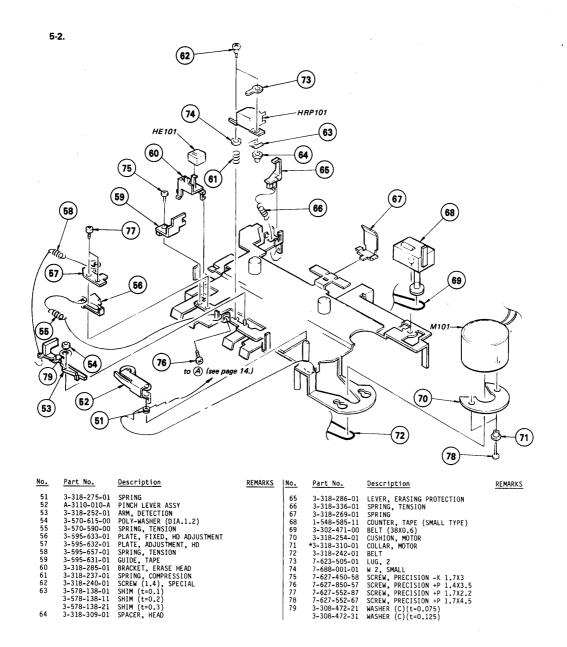
NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

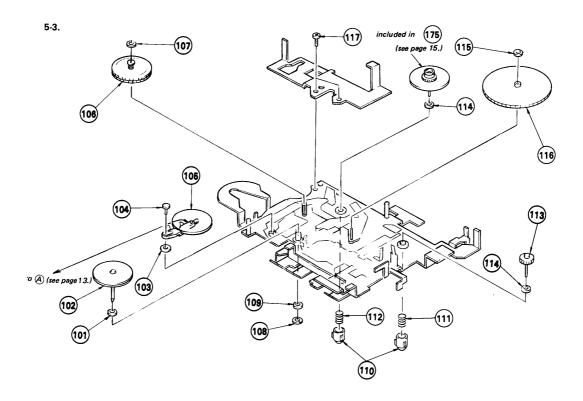
**EXPLODED VIEWS** The construction parts of an assembled part are indicated with a collation number in the remark column.

Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be antici-pated when ordering these items.

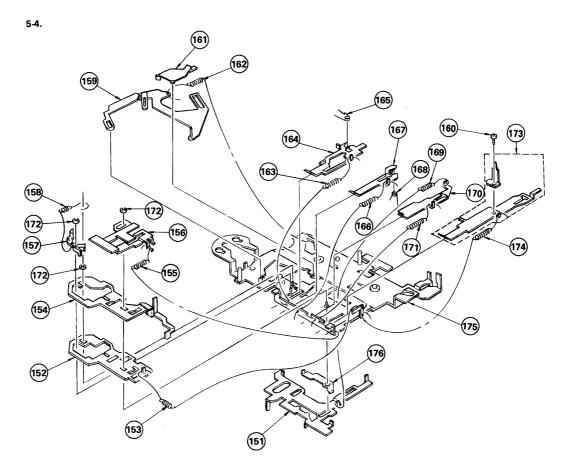




## SDC-500



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
101 102 103 104 105 106 107 108	X-3318-211-1 3-827-323-11 3-318-324-01 X-3318-210-1 X-3318-207-1 3-578-265-11 3-318-236-01	WASHER (t=0.25) FLYWHEEL ASSY WASHER (DIA. 3.1) BUSHING, IDLER LEVER LEVER ASSY, FWD IDLER GEAR (A) ASSY, FR WASHER, STOPPER WASHER, POLY, SLIT WASHER (t=0.13)		113	3-318-241-01 X-3318-204-1 3-701-437-21 3-570-615-00 3-318-265-01	SPRING, CÓMPRESSION SPRING, COMPRESSION GEAR ASSY, REW WASHER (t=0.5) POLY-WASHER (DIA.1.2)	



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
151	X-3595-606-1	CHASSIS ASSY, HEAD		164	3-595-637-01	LEVER. FF	
152	*3-318-294-01			165	3-318-276-01	SPRING	
153	3-318-248-01	SPRING, TENSION		166		SPRING, TENSION	
154	X-3595-605-1	LEVER ASSY, SWITCH		167	3-595-638-01		
155	3-547-669-00	SPRING, TENSION		168	3-318-277-01	SPRING. REW	
156	3-595-639-01	LEVER, STOP		169	3-565-927-00	SPRING, TENSION	
157	3-318-296-01	LEVER, SHUT-OFF		170	3-595-636-01	LEVER, LOAD	
158	3-318-336-01	SPRING, TENSION		171	3-318-246-01	SPRING, TENSION	
159	X-3318-208-1	LEVER ASSY, FR		172		RING, RETAINING E-1.2	
160	7-627-850-07	SCREW, PRECISION +P 1.4X2		173		LEVER ASSY, SAVE	
161	3-318-288-01	ARM, FF		174	3-318-247-01	SPRING, TENSION	
162	3-318-243-01	SPRING, TENSION		175		CHASSIS ASSY, SUB	110-114
163	3-318-250-01	SPRING, TENSION		176	*3-318-267-01		110-114

## **SECTION 6 ELECTRICAL PARTS LIST**

#### NOTE:

- NOTE:

  Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS: MF:μF, PF:μμF.

RESISTORS
All resistors are in ohms.
F: nonflammable

COILS · MMH : mH, UH : բH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μΑ..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

#### ELECTRICAL PARTS

## ELECTRICAL PARTS

	LECOTATO	711110					LLLCTRIC	AL TANTS			
Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
901 902	*1-614-430-11 *1-614-429-11	PC BOARD, SW PC BOARD, AU	DIO			D101 D102 D103	8-719-911-19 8-719-911-19 8-719-800-27	DIODE 1SS119 DIODE 1SS119 DIODE TLRG101			
C101 C102 C103	1-123-369-00 1-101-001-00 1-123-330-00	ELECT CERAMIC ELECT	4.7MF 0.001MF 22MF	20% 20%	63V 50V 25V	D104 D301	8-719-200-02 8-719-911-19	DIODE 10E2 DIODE 1SS119			
C104 C105	1-161-013-00 1-102-115-00	CERAMIC CERAMIC	0.01MF 560PF	10% 10%	25V 50V	HE101	8-658-096-02	HEAD, ERASE E	BF5-36	i	
C106	1-123-306-00	ELECT	47MF	20%	100	HRP101	8-829-336-35	HEAD (PP134-3	6T)		
C107 C108 C109	1-161-013-00 1-123-306-00 1-102-115-00	CERAMIC ELECT CERAMIC	0.01MF 47MF 560PF	10% 20% 10%	25V 10V 50V	IC301	8-759-200-49 8-759-600-00 8-759-801-12	IC TA7628P IC M51143L IC LA5523			
C110 C111 C112	1-161-055-00 1-161-047-00 1-123-369-00	CERAMIC CERAMIC ELECT	0.022MF 0.0047MF 4.7MF	10% 10% 20%	50V 50V 63V	J101 J102 J103	1-507-562-00 1-507-562-00 1-507-563-00	JACK (SAVE) JACK (LOAD) DC JACK (DC I	N 6V)		
C113 C114	1-123-380-00 1-123-379-00	ELECT ELECT	1MF 0.47MF	20% 20%	100V 100V	J104	1-507-922-00	JACK (REMOTE)			
C115	1-123-379-00	ELECT	0.47MF	20%	1000	M101 Q101	8-835-105-01 8-729-606-33	MOTOR, DC (DN TRANSISTOR 2S		•	
C116	1-123-379-00	ELECT	0.47MF	20%	100V						
						Q102	8-729-606-33	TRANSISTOR 2S			
C117 C118	1-123-369-00 1-101-001-00	ELECT CERAMIC	4.7MF 0.001MF	20%	63V 50V	Q103	8-729-606-33	TRANSISTOR 2S			
						Q104	8-729-606-33	TRANSISTOR 2S			
C119	1-123-306-00	ELECT	47MF	20%	10V	Q301	8-729-606-33	TRANSISTOR 2S	C2603-	F	
C120	1-123-356-00	ELECT	10MF	20%	50V	Q302	8-729-606-33	TRANSISTOR 2S	C2603-	F	
C121	1-123-306-00	ELECT	47MF	20%	10V	l '					
						R101	1-247-843-00	CARBON	3.3K	5%	1/6W
C122	1-123-307-00	ELECT	100MF	20%	10V	R102	1-247-815-00			5%	
C123								CARBON	220		1/6W
	1-123-309-00	ELECT	330MF	20%	10V	R103	1-247-857-00	CARBON	12K	5%	1/6W
C124	1-123-306-00	ELECT	47MF	20%	10V						
						R104	1-247-865-00	CARBON	27 K	5%	1/6W
C125	1-161-013-00		0.01MF	10%	25V	R105	1-247-891-00	CARBON	330K	5%	1/6W
C126	1-161-024-00	CERAMIC	0.082MF	10%	25V	R106	1-247-823-00	CARBON	470	5%	1/6W
C127	1-123-308-00	ELECT	220MF	20%	10V			******		-,-	-,
				,-		R107	1-247-893-00	CARBON	390K	5%	1/6W
C128	1-123-306-00	ELECT	47MF	20%	107	R108	1-247-861-00	CARBON	18K	5%	
C129	1-123-306-00	ELECT	47MF	20%	107	R109	1-247-849-00				1/6W
C131	1-106-192-00	MYLAR	0.0068MF	5%	100V	K109	1-24/-049-00	CARBON	5.6K	5%	1/6W
0131	1-100-132-00	MILAK	U. UUGONIF	3/6	1004	0110	1 047 005 00	0.000000	4700		
C122	1 101 001 00	CEDAMIC	0.00145		504	R110	1-247-895-00	CARBON	470K	5%	1/6W
C132	1-101-001-00	CERAMIC	0.001MF		50V	R111	1-247-831-00	CARBON	1K	5%	1/6W
C133 C134	1-123-306-00 1-102-106-00	ELECT CERAMIC	47MF 100PF	20% 10%	10V 50V	R112	1-247-831-00	CARBON	1K	5%	1/6W
0101	1 101 100 00	OLIMITO	10011	10%	301	R113	1-247-831-00	CARBON	1K	5%	1 /611
C135	1-102-106-00	CERAMIC	100PF	10%	50V	R113	1-247-869-00				1/6W
C301	1-161-052-00							CARBON	39K	5%	1/6W
		CERAMIC	0.012MF	10%	50V	R115	1-247-863-00	CARBON	22K	5%	1/6W
C302	1-123-356-00	ELECT	10MF	20%	50V						
						R116	1-247-847-00	CARBON	4.7K	5%	1/6W
C303	1-102-106-00	CERAMIC	100PF	10%	50V	R117	1-247-873-00	CARBON	56K	5%	1/6W
C304	1-131-455-00	TANTALUM	0.47MF	20%	16V	R118	1-247-815-00	CARBON	220	5%	1/6W
C305	1-131-375-00	TANTALUM	4.7MF	10%	100					•	•
						R119	1-247-843-00	CARBON	3.3K	5%	1/6W
C306	1-123-330-00	ELECT	22MF	20%	25V		1-247-825-00	CARBON	560	5%	1/6W
C601	1-131-347-00	TANTALUM	1MF	20%	35V		1-247-839-00			5%	
C602	1-123-330-00	ELECT	22MF	20%	25V				2.2K		1/6W
					- 1		1-247-823-00	CARBON	470	5%	1/6W
					(	R124	1-247-809-00	CARBON	120	5%	1/6W
					-		1-247-809-00	CARBON	120	5%	1/6W
					,						-,

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
R126 R127 R128	1-247-805-00 1-247-807-00 1-247-815-00	CARBON 82 5% 1/6W CARBON 100 5% 1/6W CARBON 220 5% 1/6W
R129 R301 R302	1-247-869-00 1-247-895-00 1-247-839-00	CARBON 39K 5% 1/6W CARBON 470K 5% 1/6W CARBON 2.2K 5% 1/6W
R303 R304 R305	1-247-841-00 1-247-899-00 1-247-895-00	CARBON 2.7K 5% 1/6W CARBON 680K 5% 1/6W CARBON 470K 5% 1/6W
R306 R307 R309	1-247-899-00 1-247-843-00 1-247-839-00	CARBON 680K 5% 1/6W CARBON 3.3K 5% 1/6W CARBON 2.2K 5% 1/6W
R601 R602 R603 R604	1-247-857-00 1-247-865-00 1-247-845-00 1-247-857-00	CARBON 12K 5% 1/6W CARBON 27K 5% 1/6W CARBON 3.9K 5% 1/6W CARBON 12K 5% 1/6W
RV101 RV301 RV601	1-230-658-11 1-230-682-11 1-228-994-00	RES, VAR, SLIDE 10K RES, ADJ, CARBON 1M RES, ADJ, CARBON 10K
\$101 \$102 \$103		SWITCH, SLIDE (LOAD/SAVE SELECT) SWITCH, PUSH (1 KEY)(MUTE) SWITCH, SLIDE (MONITOR)
\$104 \$105 \$106	1-570-097-11 1-570-097-11 1-570-083-11	SWITCH, LEAF (FF/REW) SWITCH, LEAF (POWER) SWITCH, SLIDE (PHASE)
SP101	1-503-423-11	SPEAKER, PIEZOELECTRIC BUZZER
T101 TH601 TH602	1-433-246-00 1-806-881-11 1-800-070-XX	TRANSFORMER, BIAS OSC THERMISTOR (POSITIVE) THERMISTOR 5k

## ACCESSORY & PACKING MATERIAL

Part No.	Description
2-260-606-00 3-595-643-01 3-595-644-01	BAG, PROTECTION (FOR SET) CUSHION (LEFT) CUSHION (RIGHT)
3-595-647-01 3-701-626-00 3-760-176-11 3-760-176-41	INDIVIDUAL CARTON BAG, POLYETHYLENE(FOR INSTRUCTION MANUAL) MANUAL, INSTRUCTION MANUAL, INSTRUCTION