

# Service Manual

## CIRCUIT DESCRIPTIONS REPAIR & ADJUSTMENTS



The photo shows the silver version of DT-570.

ORDER NO.  
ARP 1119-0

AUDIO DIGITAL TIMER

# DT-570(BK)

# DT-570

DT-570 (BK) is Black versions of DT-570.

MODEL DT-570 (BK) AND DT-570 COMES IN FIVE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model		Power requirement	Destination
	DT-570 (BK)	DT-570		
NEM	○	○	AC 220V only	European continent
KU	○	—	AC120V only	U.S.A.
S	○	—	AC110V, 120V, 220V, 240V (switchable)	General market
S/G	○	—	AC110V, 120V, 220V, 240V (switchable)	U.S. Military
YB	○	○	AC240V only	United Kingdom

- This service manual is applicable to the NEM type.
- As to the KU, S, S/G and YB, please refer to the additional service manual (ARP1143).

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# 1. SPECIFICATIONS

Time display ..... Digital display with fluorescent display tube  
 Timer type ..... 24-hour type (24-hour display)  
 Timer setting ..... Only one ON/OFF time setting in minimum units of minutes within a 24-hour period  
 Sleep timer ..... Setting in minimum units of minutes up to 1 hour 59 minutes  
 Time accuracy ..... Synchronized with line frequency  
 Timer accuracy ..... Within + 0.1 sec. of time displayed  
 Sleep timer accuracy ..... Within -59 sec. of set time

## Power section, others

Power requirements . . NEM model; a.c. 220 volts~, 50Hz  
 YB model; a.c. 240 volts~, 50 Hz

AC outlet capacity power . . . . . NEM model; 500 W max.  
 (inductive load)

YB model, 1000 W max.(inductive load)  
 Power consumption . . . . . 6 W

## Other functions

- AC OUTLET "on" display (red LED lights)
- Timer operation display (green LED lights)
- Power failure display (time display winks)

Dimensions ..... 420 (W) x 52 (H) x 142 (D) mm  
 16-9/16 (W) x 2-1/16 (H) x 5-11/16 (D) in

Weight ..... 1.7 kg (3 lb 12 oz)

## Accessories

Operating Instructions (English/German/French/Italian) . . . . 1

### NOTE:

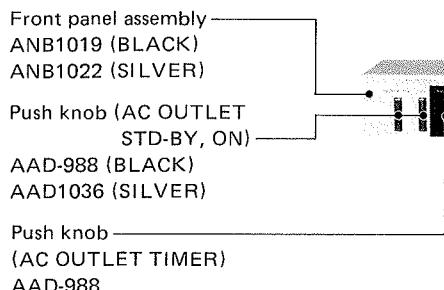
Specifications and design are subject to possible modification without notice due to improvements.

# 2. PARTS LOCATIONS

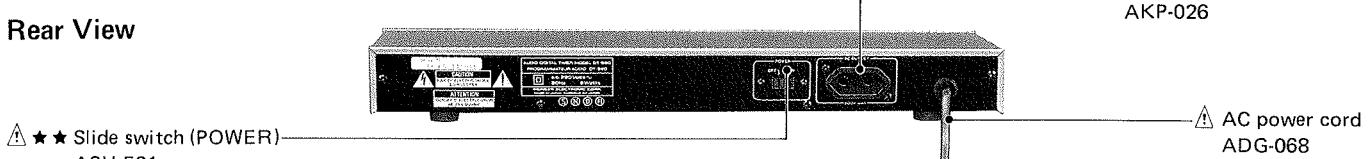
### NOTES:

- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★  
*This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

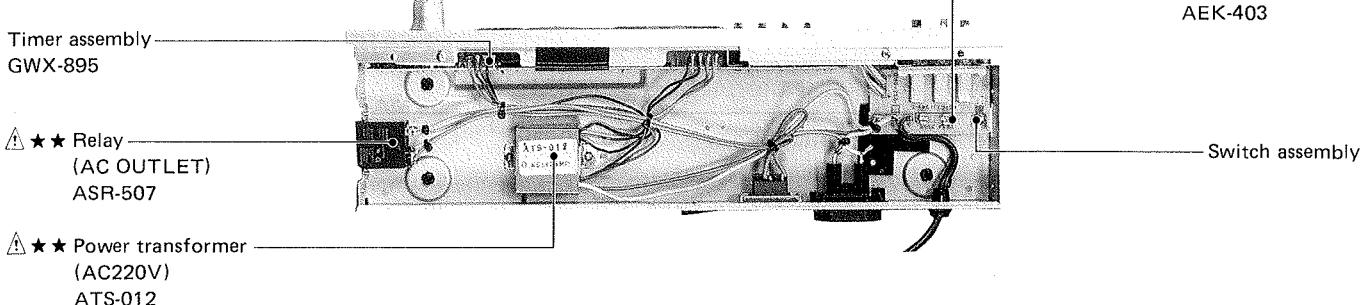
### Front View



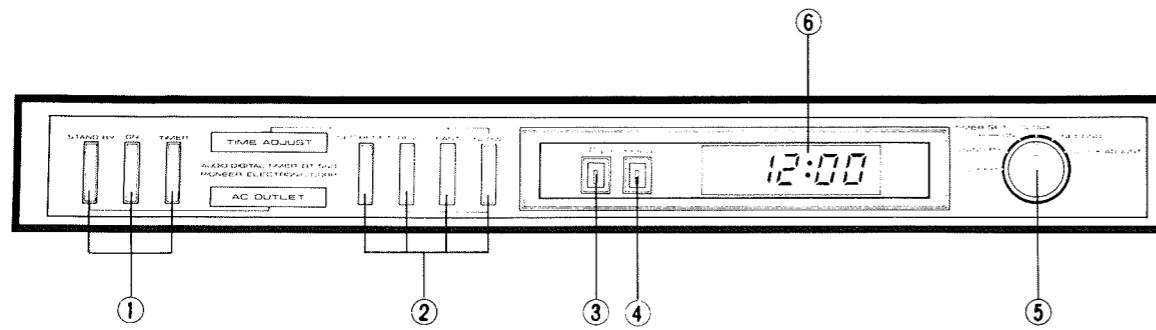
### Rear View



### Top View with Bonnet Removed



### 3. FRONT PANEL FACILITIES



#### ① AC OUTLET SELECTORS

These switch on and off the power flowing to the rear panel AC OUTLET.

**STAND-BY:** Used to switch off the power of the connected audio components regardless of the timer operation (set times).

**ON:** Used to switch on the power of the connected audio components regardless of the timer operation (set times).

**TIMER:** Used to switch ON and OFF the power of the connected audio components with the timer operation.

#### ② TIME ADJUST SWITCHES

These are used to adjust the time/displayed times in line with the setting of the mode selector.

**SEC RESET:** When this switch is depressed with the mode selector in the SECOND position, the second display of the present time is reset to **0:00** and when released the seconds are counted up from **0:00 → 0:01 → 0:02 → etc.**, and the rightmost minute digit and seconds are displayed.

**REV:** When the FAST or SLOW switch is depressed while this switch is in the depressed position, the displayed time is reversed rapidly or slowly. (This function does not work when the sleep timer function is set.)

**FAST:** When this switch is depressed, the displayed time is forwarded rapidly.

**SLOW:** When this switch is depressed, the displayed time is forwarded slowly.

#### ③ AC OUTLET INDICATOR (red)

This lights when power is being supplied to the AC OUTLET on the rear panel.

#### ④ TIMER INDICATOR (green)

This lights when the AC OUTLET-TIMER selector is depressed.

#### ⑤ MODE SELECTOR

This is used to select the timer's function.

**SLEEP:** Used to set the operating time (1 minute to 1 hour 59 minutes) until the power of the audio components operating is to be set OFF.

#### TIMER SET-STAND-BY:

Used to set the time at which the power to the connected audio components is set OFF.

#### TIMER SET-ON:

Used to set the time at which the power to the connected audio component is set ON.

#### CLOCK:

Used to display the present time (hours & minutes).

#### SECOND:

Used to adjust the seconds of the present time and check the seconds of the present time.

#### CLOCK ADJUST:

Used to adjust the clock to the present time.

#### ⑥ TIME DISPLAY

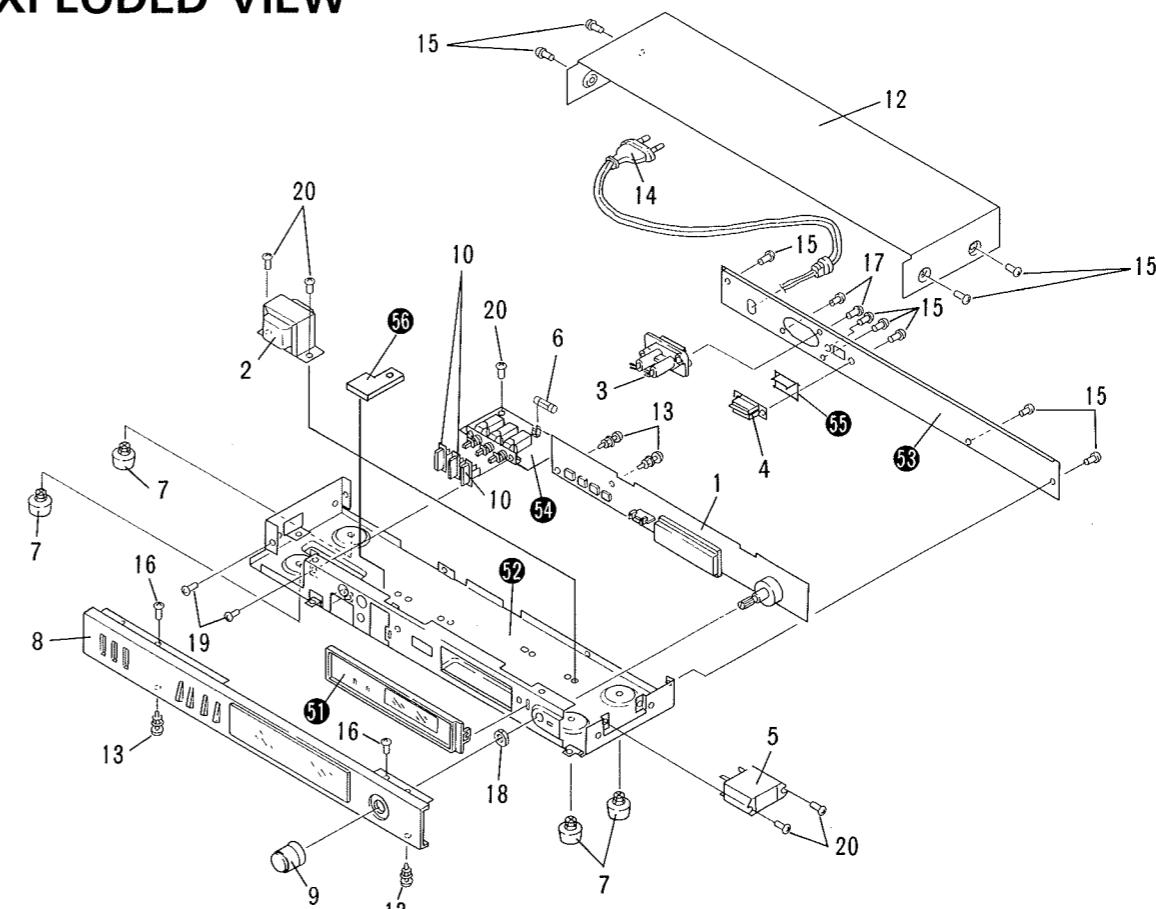
The time is displayed as it relates to the mode selector or TIME ADJUST switch settings in the following table.

Display	Example of display	Mode selector	TIME ADJUST switch
Time until sleep operation is due to go OFF.	<b>1:30</b> 1 hr 30 min.	SLEEP	FAST SLOW
Display of OFF time set by timer.	<b>8:00</b>	TIMER SET-STAND-BY	FAST SLOW REV
Display of ON time set by timer	<b>7:30</b>	TIMER SET-ON	FAST SLOW REV
Display of present time	<b>17:38</b>	CLOCK	—
Display of seconds and rightmost digit of present time minute	<b>8:25</b> 8 min. 25 sec.	SECOND	—
Display for adjusting seconds correctly of present time	<b>5:00</b> 5 min. 00 sec.	SEC RESET	
Display for adjusting hours and minutes of present time	<b>12:05</b>	CLOCK ADJUST	FAST SLOW REV

#### NOTE:

When the unit's power plug is connected to a household AC outlet, the "0:00" time display will wink. It also winks when there has been a power failure while the unit was working and the power has been restored.

### 4. EXPLODED VIEW



#### NOTES:

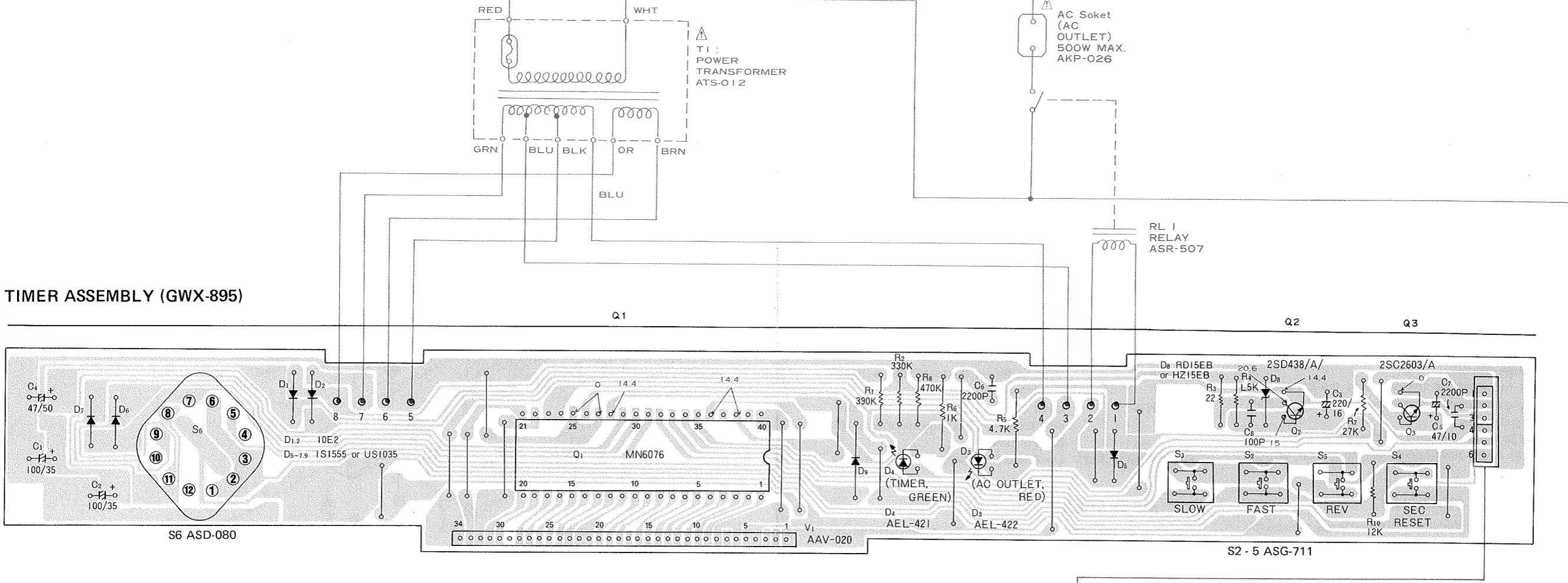
- Parts without part number cannot be supplied.
- The **▲** mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.
- ★★ GENERALLY MOVES FASTER THAN ★**  
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by **●** are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

#### Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
▲	1.	GWX-895	Timer assembly	13.	AEC-510		Nylon rivet
▲	2.	ATS-012	Power transformer (AC220V)	▲	14.	ADG-068	AC power cord
▲	3.	AKP-026	AC socket (AC OUTLET) (500W MAX)	15.	BBT30P080FZK	ABA-274	Screw (BLACK)
▲	4.	ASH-501	Slide switch (POWER, S7)	16.	BCZ30P080FMC	Screw (SILVER)	Screw
▲	5.	ASR-507	Relay	17.	MTZ30P100FZK		Screw
▲	6.	AEK-403	Fuse (T2.5A/250V)	18.	NK90FUC		Nut
▲	7.	AEC-903	Leg assembly	19.	PMZ30P060FZB		Screw
▲	8.	ANB1019	Front panel assembly (BLACK)	20.	VBZ30P060FMC		Screw
		ANB1022	Front panel assembly (SILVER)				Sub Panel
	9.	AAB-420	Rotary knob (MODE) (BLACK)	51.			Chassis
		AAB1004	Rotary knob (MODE) (SILVER)	52.			Rear panel
	10.	AAD-988	Push knob (BLACK)	53.			Switch assembly
		AAD1036	Push knob (STD-BY, ON) (SILVER)	54.			Switch spacer
		AAD-988	Push knob (STD-BY, ON) (BLACK)	55.			
	12.	ANE1017	Bonnet case (BLACK)	56.			Insulation sheet
		ANE1018	Bonnet case (SILVER)				

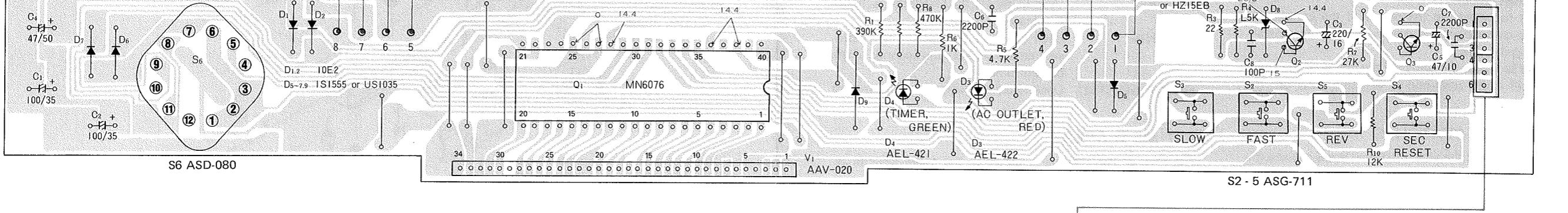
## 5. P.C. BOARDS CONNECTION DIAGRAM

A



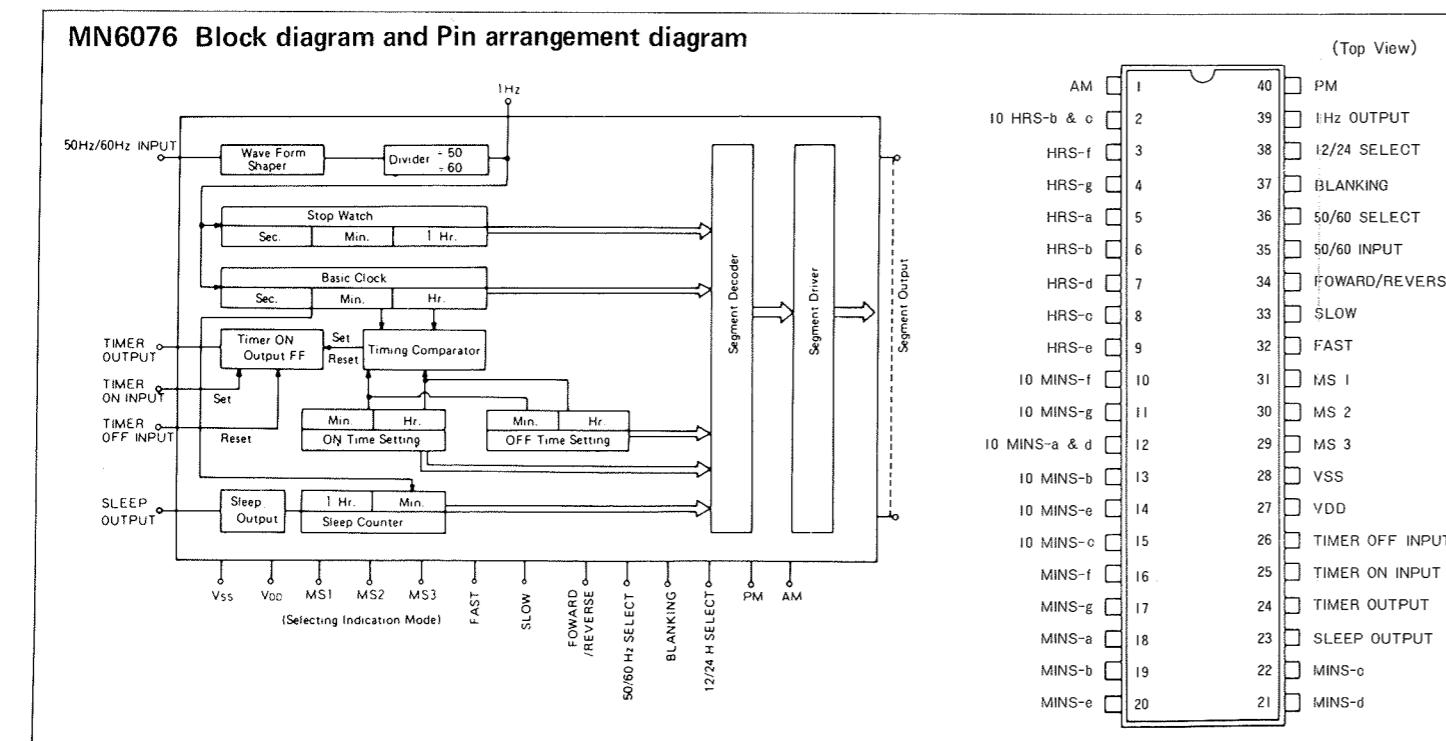
A

B

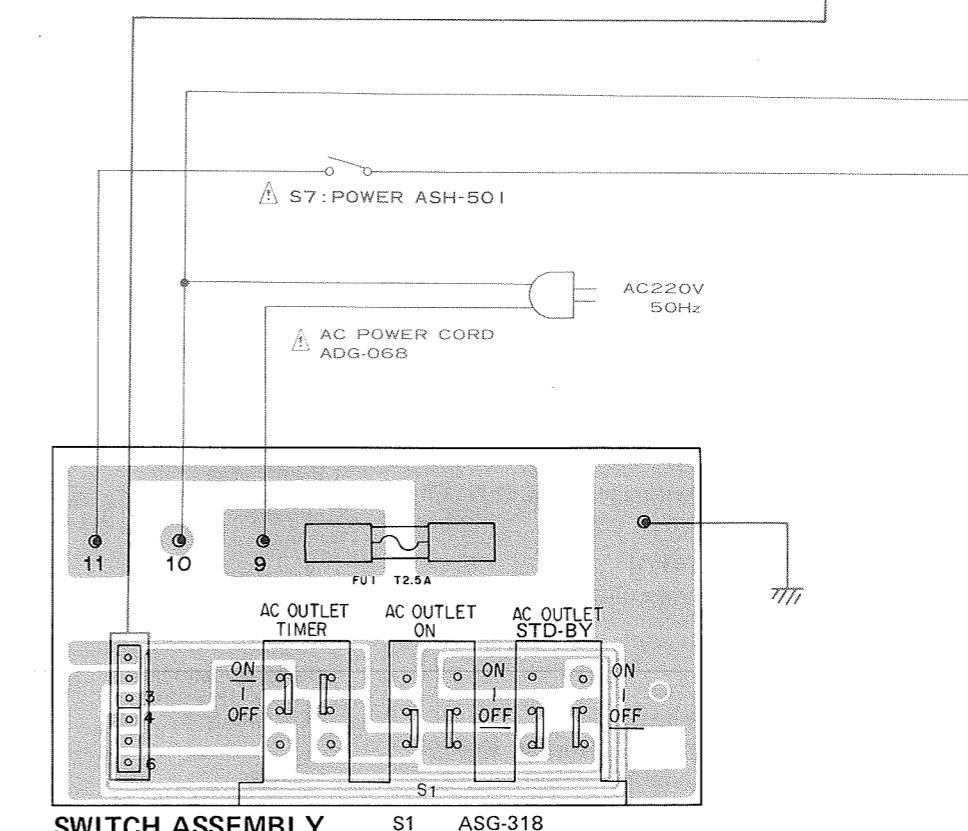


B

C



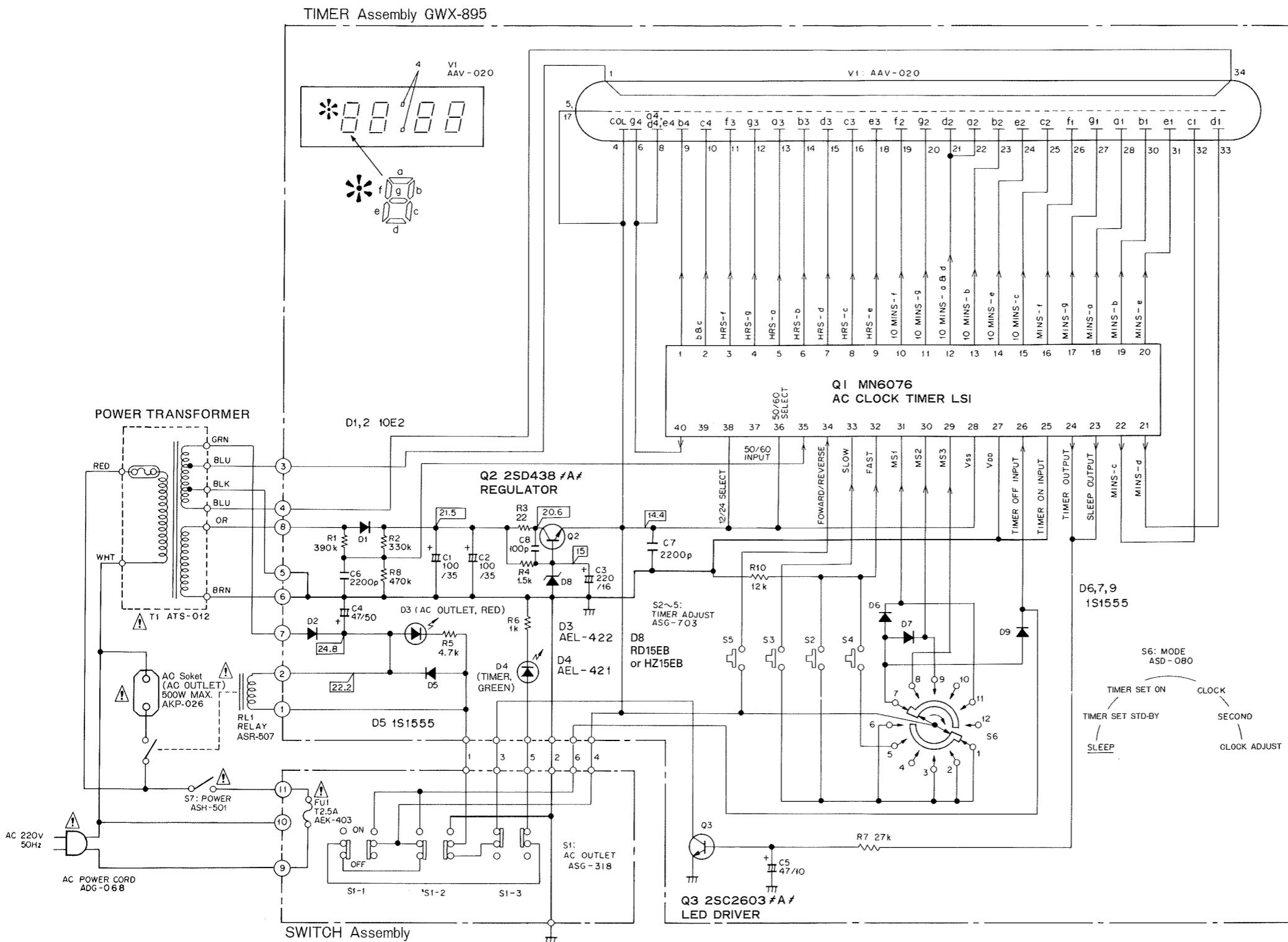
C



D

D

## 6. SCHEMATIC DIAGRAM



**1. RESISTORS:**  
Indicated in  $\Omega$ ,  $\frac{1}{4}W$ ,  $\pm 5\%$  tolerance unless otherwise noted  $k : k\Omega$ ,  
 $M : M\Omega$ ,  $(F) : \pm 1\%$ ,  $(G) : \pm 2\%$ ,  $(K) : \pm 10\%$  tolerance

**2. CAPACITORS:**  
Indicated in capacity ( $\mu F$ )/voltage (V) unless otherwise noted  $p : pF$   
Indication without voltage is 50V except electrolytic capacitor.

**3. VOLTAGE**  
□ : DC voltage (V) at TIMER, RELAY ON.  
Value in ( ) is DC voltage at AC OUTLET OFF.

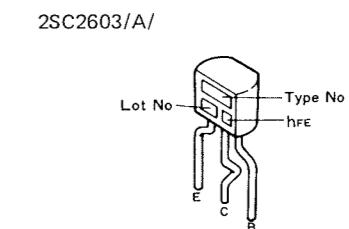
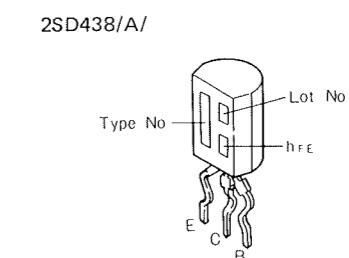
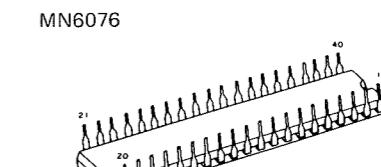
**4. OTHERS:**  
The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

**SWITCHES:**

S1-1 : AC OUTLET (STAND-BY) ON - OFF  
S1-2 : AC OUTLET (ON) ON - OFF  
S1-3 : AC OUTLET (TIMER) ON - OFF  
S2 : TIME ADJUST (FAST) ON - OFF  
S3 : TIME ADJUST (SLOW) ON - OFF  
S4 : TIME ADJUST (SEC RESET) ON - OFF  
S5 : TIME ADJUST (REV) ON - OFF  
S6 : MODE SLEEP - TIMER SET STD-BY-TIMER SET ON - CLOCK - SECOND - CLOCK ADJUST  
S7 : POWER ON - OFF

The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

**Appearance of Transistors and ICs**

## 7. ELECTRICAL PARTS LIST

## NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	$56 \times 10^1$	561.....	RDI/4PS 5 6 1 J
47kΩ	$47 \times 10^3$	473.....	RDI/4PS 4 7 3 J
0.5Ω	0R5.....	RN2H 0 5 K	
1Ω	010.....	RS1P 0 1 0 K	

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).  
 $5.62k\Omega$   $562 \times 10^3$  5621..... RNI/4SR 5 6 2 1 F

- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks  $\star\star$  and  $\star$ .
- $\star\star$  GENERALLY MOVES FASTER THAN  $\star$
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## MISCELLANEOUS PARTS

## P.C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Timer assembly	GWX-895
	Switch assembly	Non supply

## OTHERS

Mark	Symbol & Description	Part No.
$\triangle$ $\star\star$	RL1 Relay (AC OUTLET)	ASR-507
$\triangle$	AC power cord	ADG-068
$\triangle$ $\star$	T1 Power transformer (AC220V)	ATS-012
$\triangle$ $\star\star$	S7 Slide switch (POWER)	ASH-501
$\triangle$	AC socket (AC OUTLET)	AKP-026
$\triangle$ $\star\star$	FU1 Fuse (T2.5A/250V)	AEK-403

## TIMER ASSEMBLY (GWX-895)

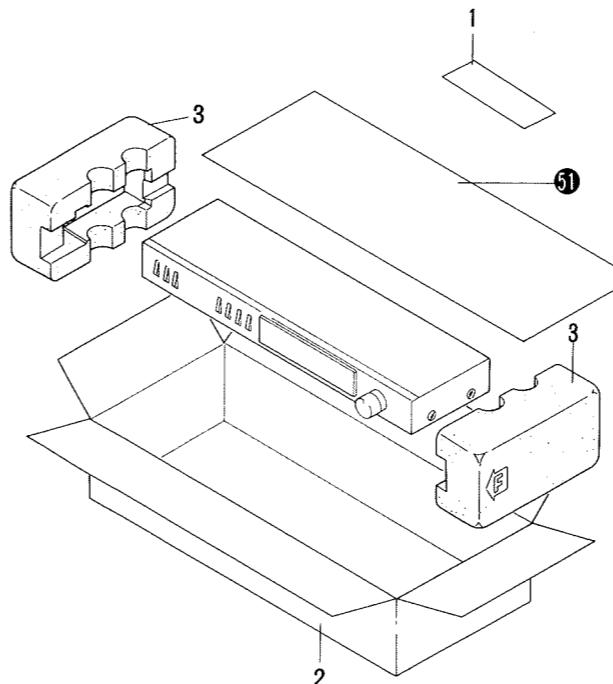
## SEMICONDUCTORS

Mark	Symbol & Description	Part No.
$\star\star$ Q1		MN6076
$\star\star$ Q2		2SD438/A/
$\star\star$ Q3		2SC2603/A/
$\star$ D1, D2		10E2
$\star$ D5 – D7, D9		1S1555 (US1035)
$\star$ D8		RD15EB (HZ15EB)
$\star$ D3 LED (AC OUTLET, RED)		AEL-422
$\star$ D4 LED (TIMER, GREEN)		AEL-421

## SWITCHES

Mark	Symbol & Description	Part No.
$\star\star$ S2 – S5	Tact switch (TIME ADJUST, ADJUST, SEC. RESET, REV)	ASG-711
$\star\star$ S6	Rotary switch (MODE SELECTOR)	ASD-080

## 8. PACKING



## Parts List

Mark	No.	Part No.	Description
1.	ARE1015		Operating instructions
2.	ADH1050		Packing case (BLACK)
	ADH1059		Packing case (SILVER)
3.	AHA-256		Side pad
51.			Sheet

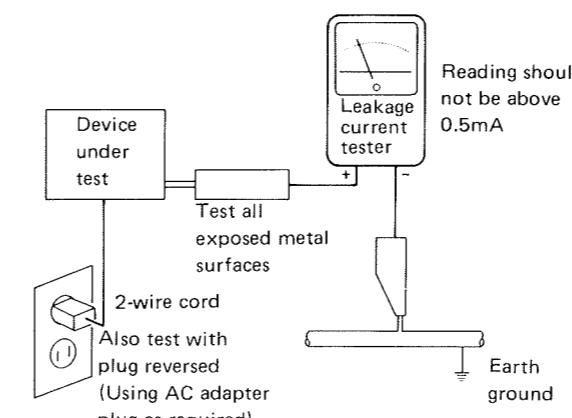
## 9. SAFETY INFORMATION

## 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

## LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

## 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a  $\triangle$  on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.