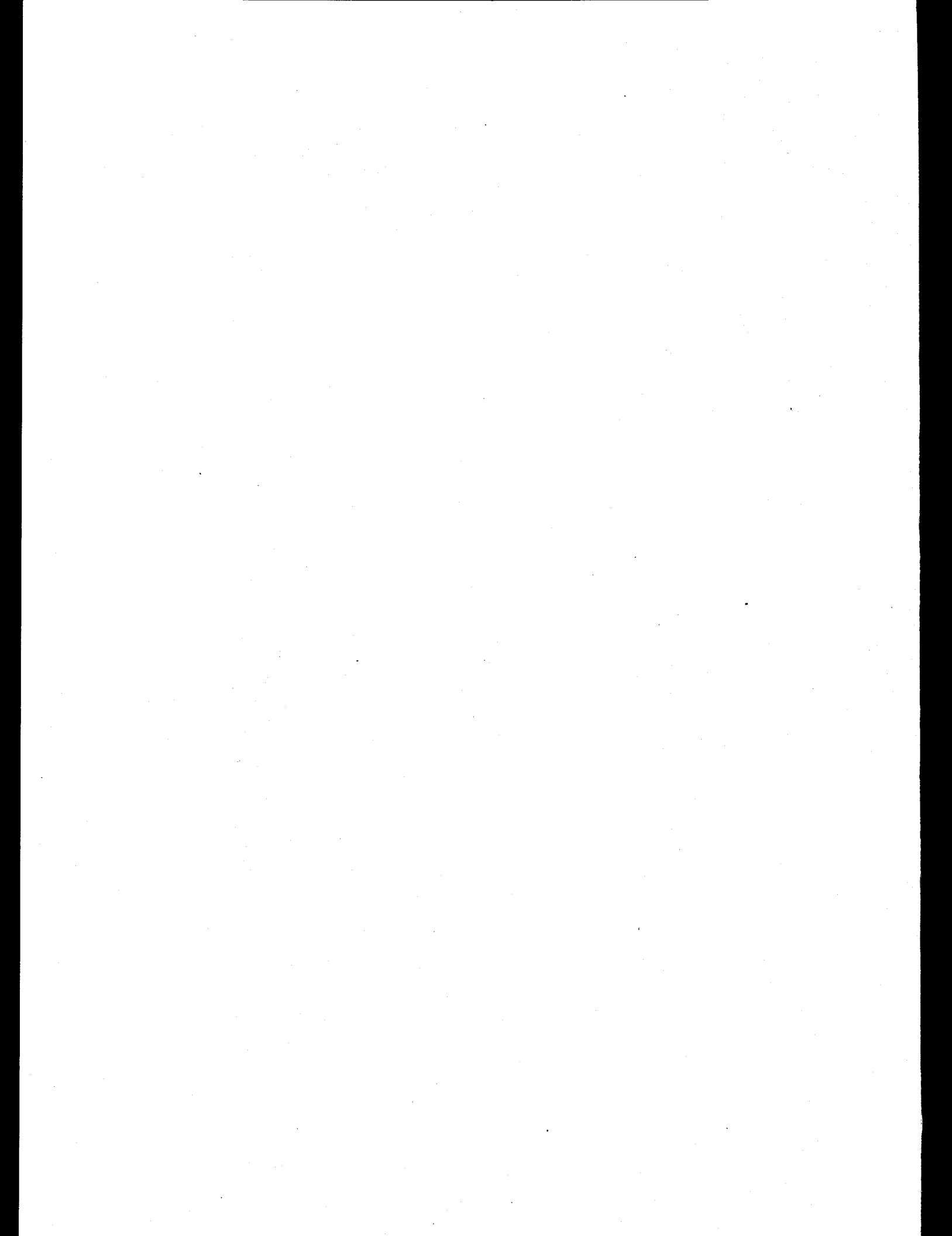

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INSTRUCTION MANUAL

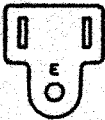
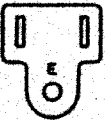
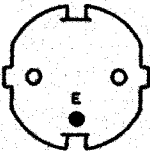
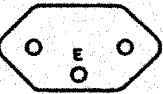
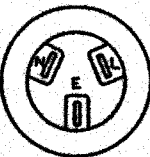
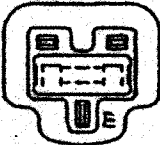
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Before reselling to other corporations
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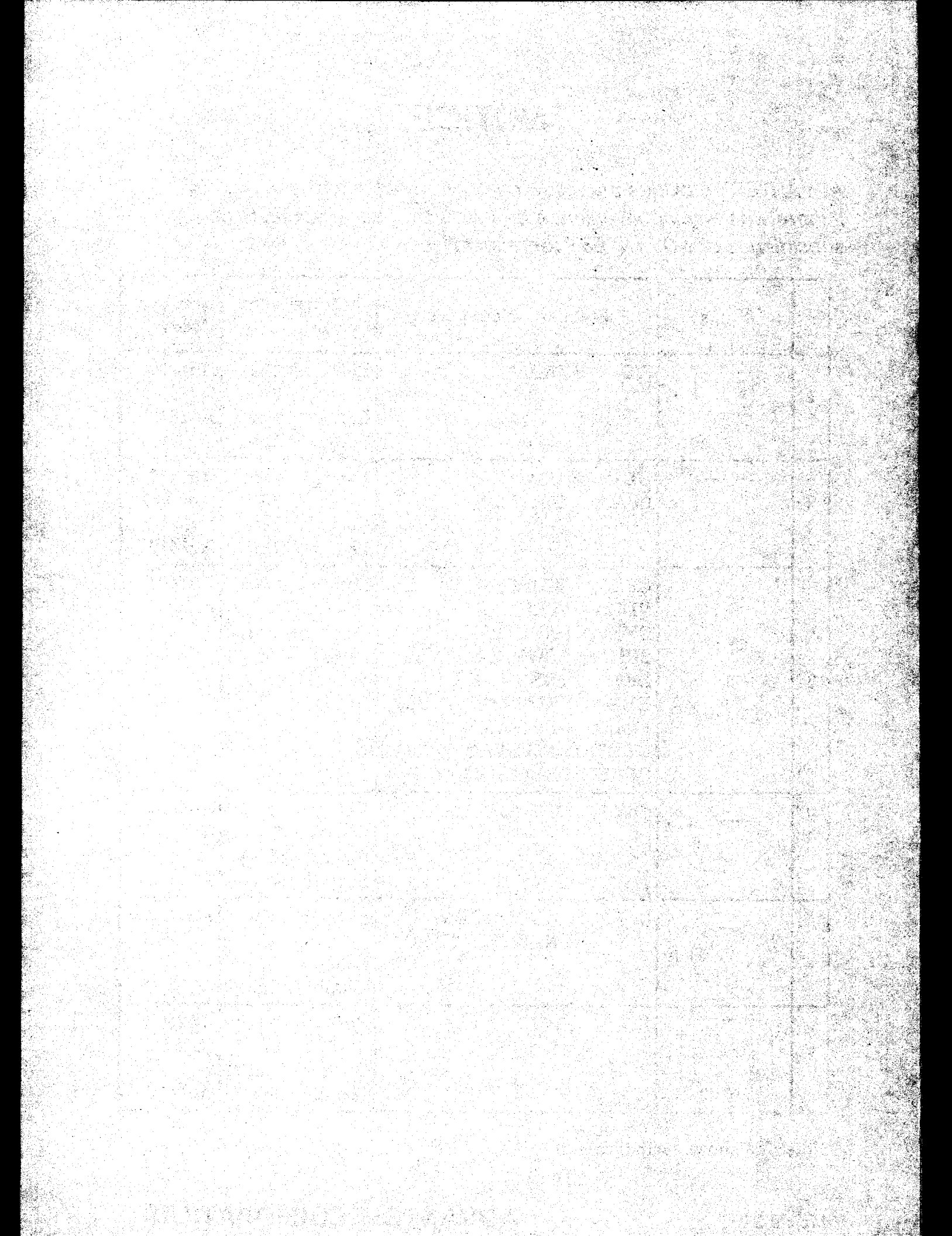


NOTICE

ADVANTEST provides the following power cables for each country.
If there was any inconvenience on your use, please contact our subsidiaries or ADVANTEST representatives.

	Plugs	Standards/Countries	Ratings/Color/ Length	Accessory Codes
1		JIS : JAPAN	Rating :125V 7A Color :Black Length :2m	A01402 A01412
2		UL : USA CSA : CANADA	Rating :125V 7A Color :Black Length :2m	A01403 (Opt.95) A01413
3		CEE : EUROPE VDE : FRG OVE : AUSTRIA SEMKO : SWEDEN DEMKO : DENMARK KEMA : NETHERLANDS FIMKO : FINLAND NEMKO : NORWAY CEBEC : BELGIUM	Rating :250V 6A Color :Gray Length :2m	A01404 (Opt.96) A01414
4		SEV : SWITZERLAND	Rating :250V 6A Color :Gray Length :2m	A01405 (Opt.97) A01415
5		SAA : AUSTRALIA NEWZELAND	Rating :250V 6A Color :Gray Length :2m	A01406 (Opt.98)
6		BS : UK	Rating :250V 6A Color :Black Length :2m	A01407 (Opt.99) A01417

Note : "E" shows earth (ground).



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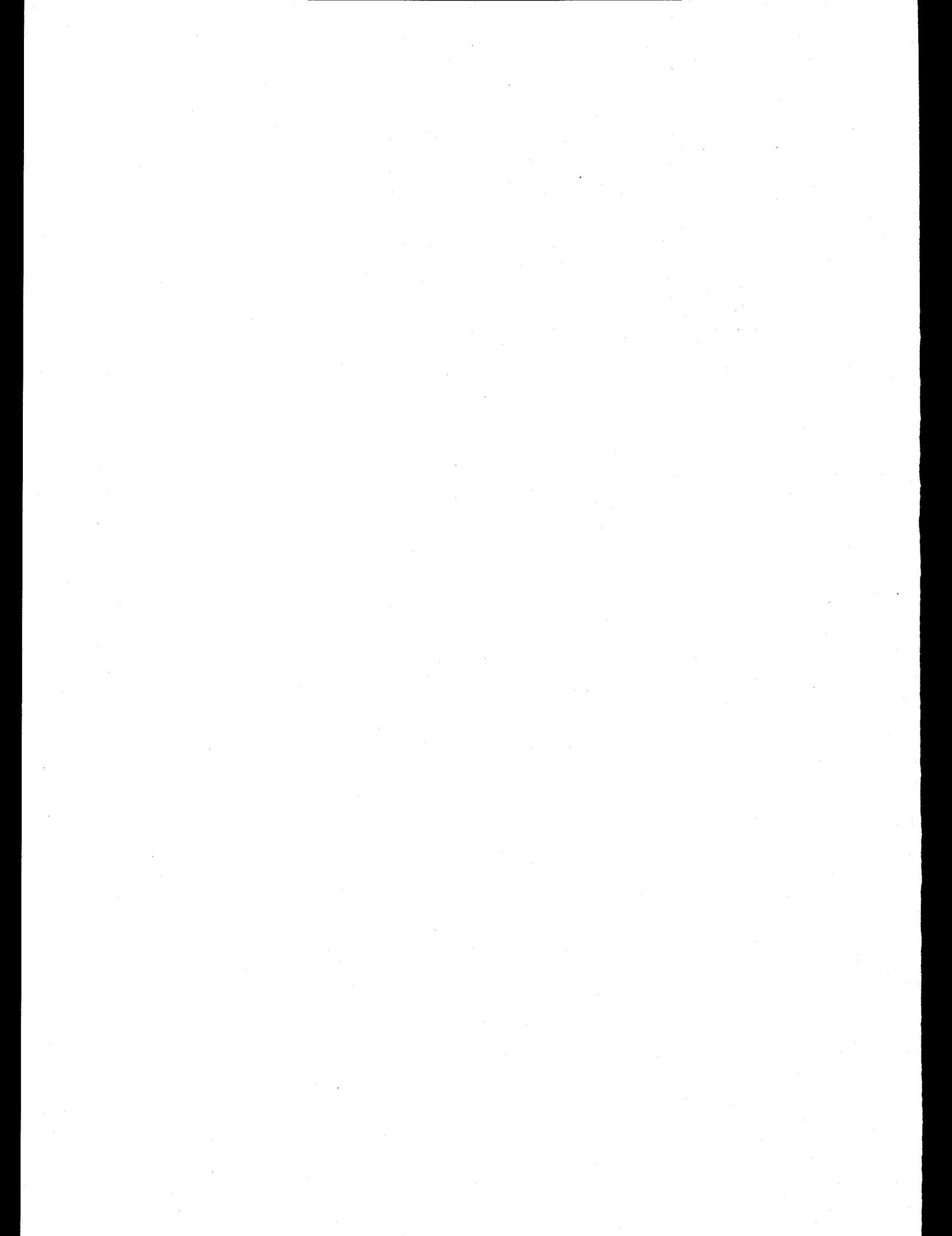
Preface

PREFACE

(1) Applicable devices

R6871E
R6871E/E-DC
R6871E-OHM

- (2) An instruction is provided if each explanation of R6871E, R6871E-DC and R6871E-OHM is different. Unless otherwise specified, explanation is common.
- (3) Change "equipment" in this manual to the usage model.



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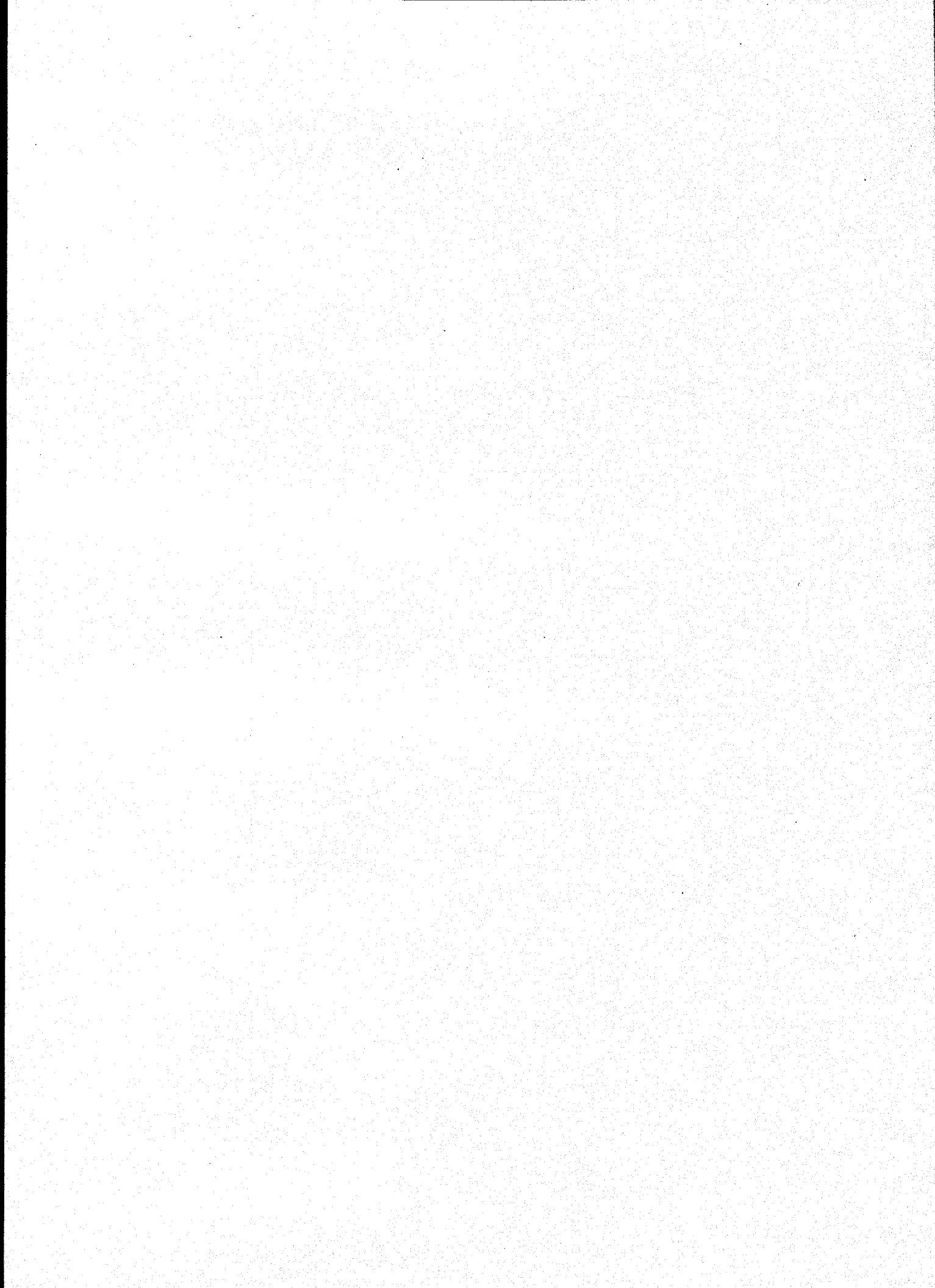
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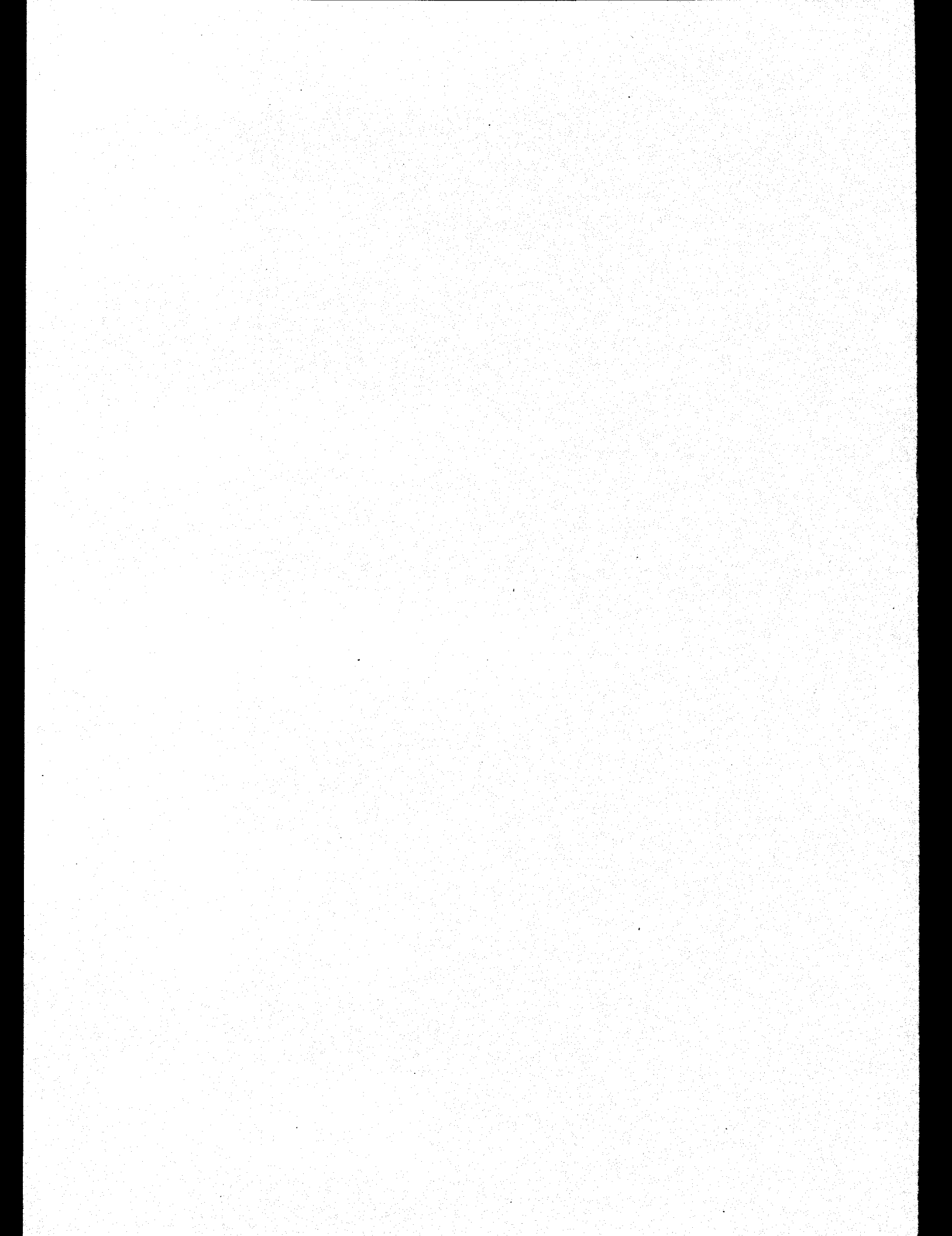
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1. BEFORE POWER ON

1.1 How to Use This Manual

This manual is intended to be used by the user who is familiar with electronic measuring equipment. Figure 1-1 shows the basic configuration of this manual.

The user who uses R6871E/E-DC should read the manual from its beginning.

An experienced user is enough to read Section 2.1 of panel layout and Section 2.3 of measurement flowchart of Chapter 2.

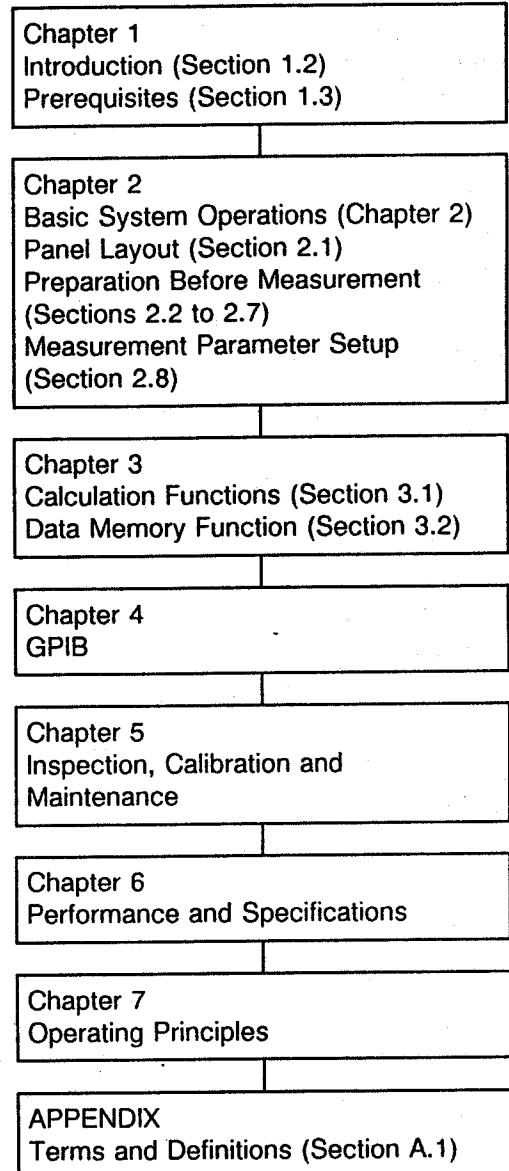


Figure 1-1 Manual Configuration

**R6871E SERIES
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1.2 Introduction

The R6871E multi-meter has five measurement functions, the R6871E-DC has two measurement functions, and the R6871E-OHM has three measurement functions.

Measurement function

Function	R6871E	R6871E-DC	R6871E-OHM
DC Voltage	○	○	○
AC Voltage	○	—	—
DC Current	○	—	—
AC Current	○	—	—
Resistance	○	○	○
Network Resistance	—	—	○

○: Enable
—: Disable

Up to 2,000 times per second of high-speed sampling has been realized based on the advanced A/D conversion technologies. Typical applications are high-speed data acquisition and measurement with the automatic test instrument.

In addition, the R6871E/E-DC provides the digital memory function (allowing up to 10,000 data sets to be stored) with high-speed data sampling, pre-trigger functions allowing high-speed and individual event triggering, NULL function for easy offset calibration, digital smoothing functions, powerful arithmetic calculation for measurement data processing. The integration time, measurement cycle, and trigger delay time can be set for flexible measurement in various applications. The measurement reliability has greatly been enhanced through self-diagnostic functions and software calibration.

The R6871E/E-DC provides the standard full-remote control functions, trigger input, measurement end signal output via the GPIB.

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1.2. Introduction

[features]

- High-precision DC voltage and resistance measurement with 6 1/2 digit display (up to 1999999) in 0.5 ppm resolution and overrange measurement of up to 7 1/2 digit display (up to 19999999)
- High-precision DC current measurement with 5 1/2 digit display in 5 ppm resolution and overrange measurement of up to 6 1/2 digit display
- High-speed data sampling (up to 2,000 times/sec in 4 1/2 digit measurement)
- Easy change of integration time setup (9 types of setup) and highly reliable measurement against noise
- Data memory function (for storage of up to 10,000 data) and pre and delay triggering functions
- Null function allowing one-touch offset correction
- Digital smoothing functions provided
- Software calibration allowing very easy calibration
- Panel-compatible GPIB interface, trigger input, and measurement end signal output terminals are included as standard.
- Powerful arithmetic operation functions are also provided for dB, dBm, rms, statistic processing, and wire resistance temperature correction (20°C)
- Network resistance measurement which can measure resistance without switching off network
- Output of comparator operation result--only the R6871E-OHM is enabled

**R6871E SERIES
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1.3 Before Use

1.3 Before Use

1.3.1 Checking External View and Accessories

On receiving the R6871E/E-DC inspect the external view and check whether any cracks or damage has occurred during transportation.

Then, check the standard accessories according to Table 1-1 and verify each quantity and specification.

If any cracks or damage is found or if some accessories are missing, contact the sales division or agency nearest your place of business.

Address and telephone numbers are listed at the end of this manual.

Request to User : When ordering add-on attachment and the like, be good enough to stipulate the model (or stock No.) concerned.

Table 1-1 Standard Accessory List

Description	Specification	Stock No.	Q'ty	Remarks
Power cable	A01402	DCB-DD3130×01	1	
Input signal cable	MI-37	DCB-MM0412	1	For voltage, current, and 2-wired cable resistance measurement
	A01005A	AAA-A01005A	1	4-wired cable resistance measurement
Slow blow fuse	EAWK0.315A	DFT-AAR315A	2	For line voltage of 100/120V
	EAWK0.16A	DFT-AAR16A		For line voltage of 220/240V
	EAWK2A	DFT-AA2A	2	DC/AC current protection during measurement (R6871E only)
Instruction manual	—	JR6871E/E-DC	1	Japanese manual
	—	ER6871E/E-DC		English manual

**R6871E SERIES
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1.3 Before Use

1.3.2 Ambient Conditions

Use the multimeter in the temperature of 0°C to +40°C and relative humidity of 85% or less (70% RH or less in the 10-M Ω , 100-M Ω , or 1000-M Ω range).

Avoid using the R6871E/E-DC in the excessive dust, direct sun light, or corrosive gas. Also protect the multimeter from excessive vibration or mechanical shock.

1.3.3 Power Supply and Fuses

(1) Power Supply

The supply voltage is factory-present to the value indicated above the power connector on the rear panel.

Make sure that the source voltage matches the number identified.

Plug the power cable only when the POWER switch is turned off.

(2) Power Cable

To prevent any possible electrical shock, always ground the R6871E/E-DC if it is powered by the commercial power supply. The power cable plug has 3 pins. The round pin should be grounded. When using the A09034 adapter of accessory kit, ground the adapter ground pin (see Figure 1 - 2 (b)) or rear panel GND terminal.

Use the A09034 adapter or equivalent that meets the applicable electric appliances safety regulations and standards.

The adapter has 2 pins whose width differs from each other. Plug the adapter into receptacle in the correct direction. Use the KPR-13 optional adapter if necessary.

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1.3 Before Use

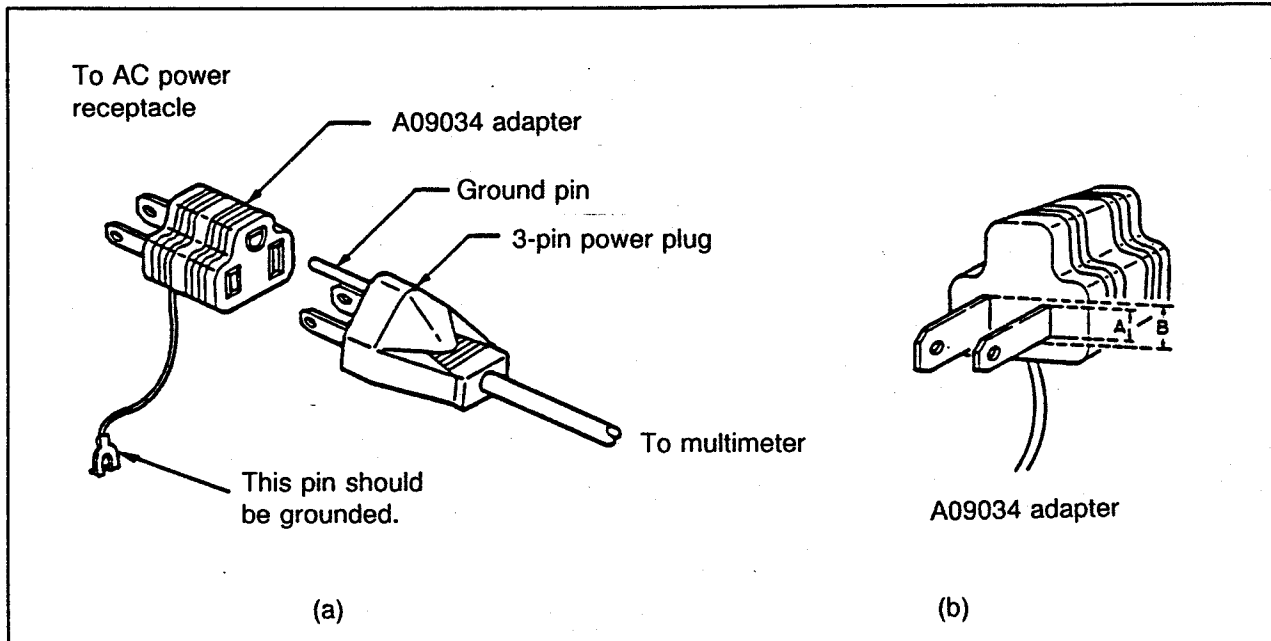


Figure 1-2 Figure Power Cable Plug and Adapter

(3) Frequency

The line frequency should be 50 or 60Hz.

For the power frequency setup, see Subsection 2.8.17 "Line frequency".

(4) Fuse Check and Replacement of Source Voltage

CAUTION

Before replacing a fuse, always unplug the power cable from the receptacle.

The line fuse is accommodated in the fuse holder of the rear panel. To make a fuse check or replacement, disconnect the power cable from the power connector and then turn the cap of the fuse holder in the direction of the arrow (↻) while slightly pressing and holding it down. The fuse can now be removed. Replace the blown fuse with a new one that meets the fuse capacity standards (see Table 1-2).

**R6871E SERIES
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Table 1-2 Fuse Capacity Standards

Card Setup Voltage	Fuse Capacity
100VAC	0.315A
120VAC	0.315A
220VAC	0.16A
240VAC	0.16A

(5) Warm-up Time

Although all functions activate upon power-on, 60 minutes or more should be allowed for warm-up to ensure the required accuracy.

MEMO



A large, empty rectangular area with rounded corners, enclosed by a solid black border. This area is intended for writing the content of the memo.