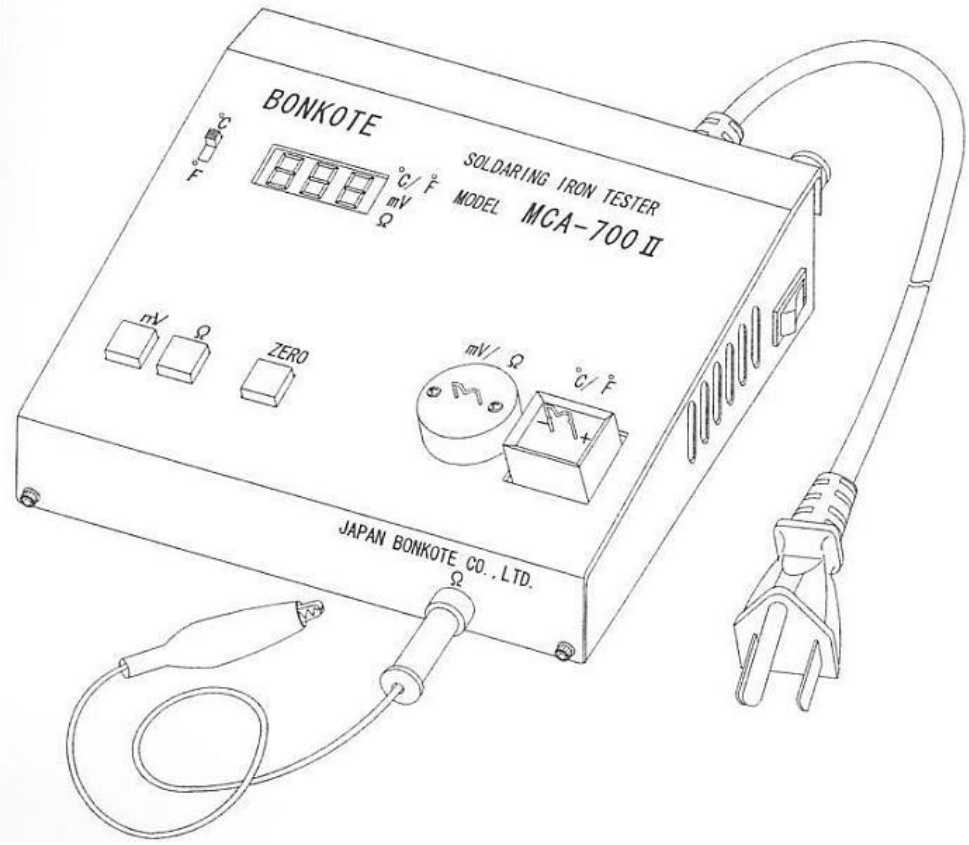
MCA-700 Ⅱ

Instruction manual



Preparation in April 2006

The 1st edition

JAPAN BONKOTE CO.,LTD.

Contents

Preface ・・・

Preface

Thank you very much for purchasing Tester model MCA-700Ⅱ.
For using this machine properly, Please read through this instruction manual before use.

Notes for installation and use

Be sure to read this manual before using this machine.

⚠ CAUTION!

①This machine is designed with earth specification. Please be sure to use an earth-quipped receptacle.

②Refrain from place where the machine would be exposed too much moisture, direct sunshine, much dust and vibration.

③Be sure to grab the power plug, when inserting and pulling out the plug.

④Be sure to pull out the power plug, when the machine is not used.

⑤Be sure to use genuine parts(like Temperature sensor, Sensor unit, etc.).

※Using non-genuine parts, It may cause malfunction, deterioration of effect.

⑥Please note it will be eliminated for Guarantee when remodeling or using non-genuine parts.

⑦Before maintenance (replacement of fuse, etc.) be sure to set the power switch to OFF, pull out the power plug from the receptacle.

⑧Do not use this machine for purpose other than the original purpose.

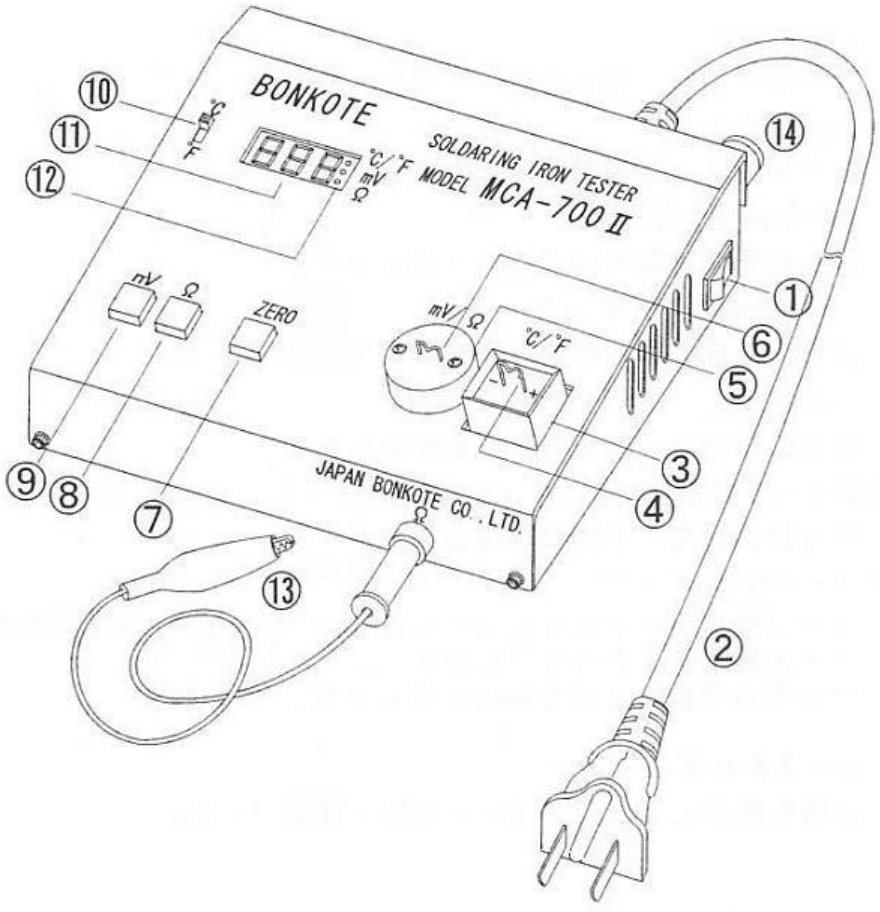
MODEL
MCA-700 Ⅱ

(Digital tester for soldering iron)

1. Features

1. Measurement of iron tip temperature, leak voltage and earth line resistance by MCA-700 Ⅱ.
2. Well management of soldering iron with corresponding to MIL standard, etc.,
3. Sensor replacement is speedy by one-touch insert type, which is designed considering running cost.

2. Name and function of each part



① Power switch
This is a switch for starting this tester. Set this switch ON, after making sure of proper power source.

② Power supply code
Supply power to tester.

③ Sensor unit (SAT-1)
This is a base for fixing temperature sensor. This base should be replaced when its contact section has been deteriorated.

④ Temperature sensor (SC-006)
This is a sensor for measuring the temperature of iron tip. Measure the temperature by slightly contact the iron tip with this sensor after putting a small amount of solder onto iron tip.
※Please refer How to measure

⑤ Terminal unit (MTU-1)
This is a base for fitting the pin (LR-01) used to measure the earth line resistance and leak voltage.

⑥ LR pin (LR-01)
This is a pin for measuring the earth line resistance and leak voltage.
When value is increased by oxidation of contact section, please use sandpaper to remove it, or exchange to new LR pin.

⑦ Zero adjustment button
This is a button for nullifying this tester's own resistance and adjusting to 0Ω.

⑧ Resistance measurement button
This is a button for selecting the earth line resistance measurement mode.

⑨ Leak voltage measurement button
This is a button for selecting leak voltage measurement mode.

⑩ ℃ / ° F selecting switch
This is a button for selecting an indication mode between Celsius and Fahrenheit.

⑪ Display
This is a display for showing a measured value or selected mode.

⑫ Measurement mode lamp
These are lamp for showing a current measurement mode.

⑬ Earth clip
This is a clip for gripping the earth line end when measuring the earth line resistance of soldering iron and using a power receptacle other than 3-P receptacle.
Use it when nullifying this tester's own resistance ⑦.

⑭ Fuse holder
This contains a protective fuse (0.5A).

3. How to use

3-1. Inspection and check

(1)Check power source

Connect this tester to power supply, only after making sure that the commercial power in your region is a power source (50/60Hz) appropriate to this tester.

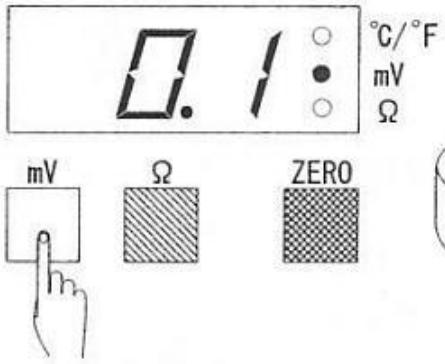
(2)Check each measurement mode

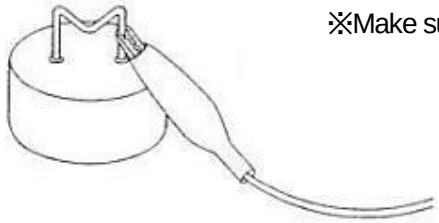
①Temperature measurement mode

Setting power switch on, then display indicates near-room temperature.

※Make sure that LED indicates ℃/ ° F.

②Leak voltage measurement mode

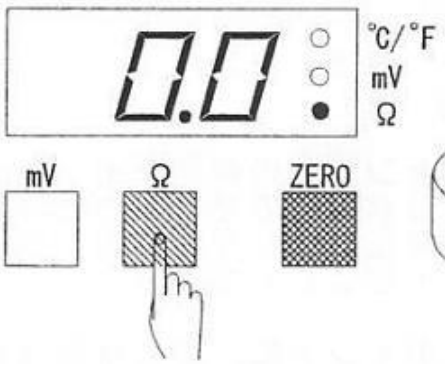


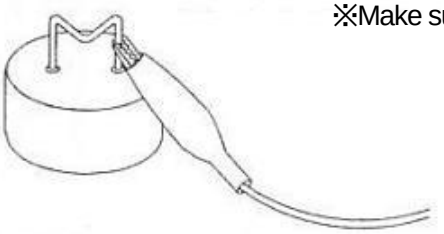


Connecting earth clip and LR pin, and press leak voltage measurement button (yellow), display indicates 0~0.1mV.

※Make sure that LED indicates mV.

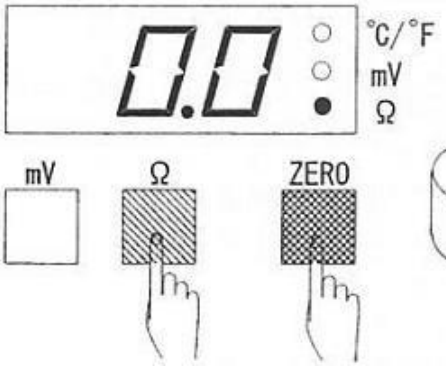
③Earth line resistance measurement mode

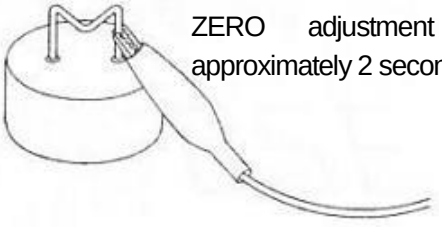




Connecting earth clip and LR pin, and press Earth line resistance measurement button (red), display indicates 0Ω.

※Make sure that LED indicates Ω.





※ In case that the tester generates its own resistance at ②,③, nullify the resistance by simultaneously holding down the earth line resistance measurement button (red) and the ZERO adjustment button (black) for approximately 2 seconds.

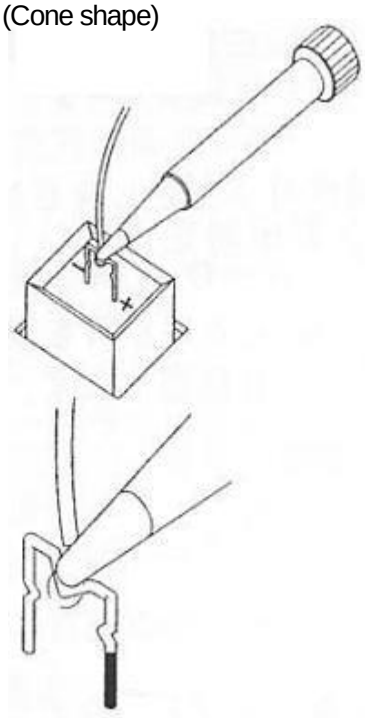
3-2. How to measure

(1)Iron tip measurement

①Put a small amount of solder onto the iron tip as shows following diagram. Then slightly press the iron tip to center of thermal sensor and measure the temperature. To measure uniformly, applying solder as enveloped center of the sensor.

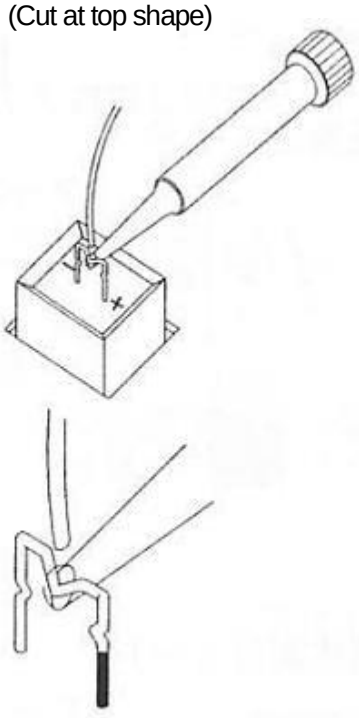
Example of contact

B type
(Cone shape)



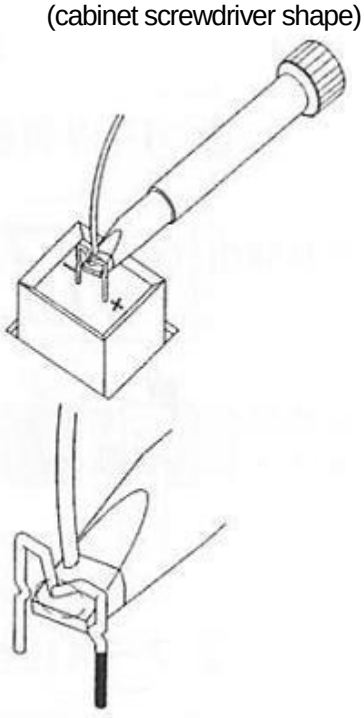
Red

C type
(Cut at top shape)

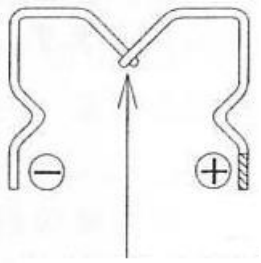


Red

D type
(cabinet screwdriver shape)



Red



Red

Measuring point

※Note)

Measurement point of temperature sensor is intersection of center. Make sure that iron tip and small amount of solder is contacted to the intersection.

In case that carbonized flux sticks to the measurement point, please remove it by sandpaper or moistened cloth with alcohol.

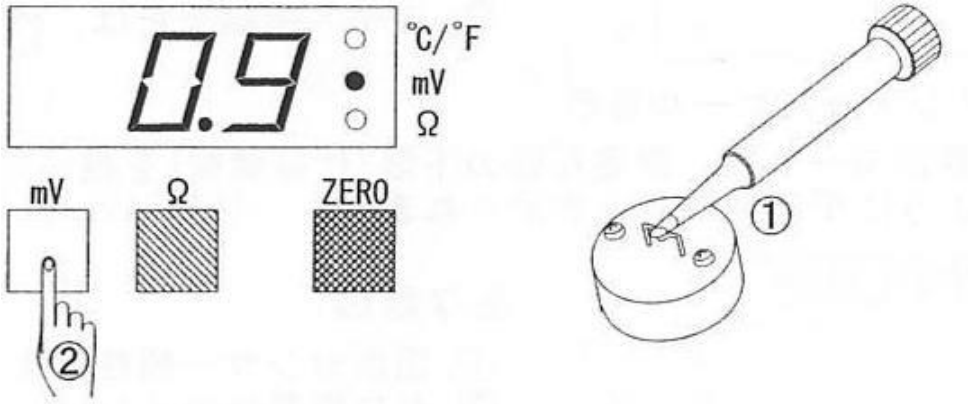
②After followed above instruction, read the measured value when the displayed value became stable.

(2)Leak voltage measurement

①Clean the iron tip and put a small amount of solder onto the iron tip, then slightly press the iron tip to the LR pin.

②Press leak voltage measurement button (yellow) and measure the value.

※Make sure LED indicates mV.

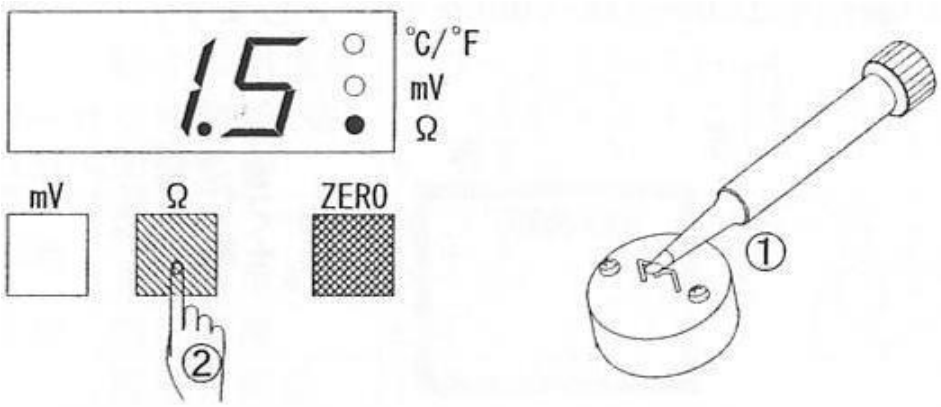


(3)Earth line resistance measurement

①Clean the iron tip and put a small amount of solder onto the iron tip, then slightly press the iron tip to the LR pin.

②Press earth line resistance measurement button (red) and measure the value.

※Make sure LED indicates Ω.



※Note)

1). Make sure to use same wall socket for power supply of soldering iron and MCA-700II. Indicated value of earth line resistance may be bigger than actual value by inserting to different wall socket.

2). The value of Earth line resistance and Leak voltage may be indicated bigger if stain of carbonized flux sticks to LR pin. Please remove the stain by cloth soak in alcohol sometimes.

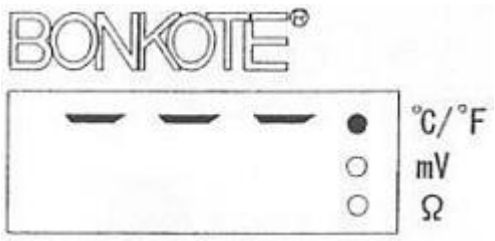
3). If using 2pin plug soldering iron with external earth terminal such as clip, please connect the external earth terminal to MCA-700II earth clip and measure.

4). 2pin plug soldering iron which specification without earth terminal cannot be measured, but the temperature measurement is possible.

3-3. Error indication

(1)Over scale indication

At each measurement mode, the display indicates as figure below when the value exceeds upper limit of measurement range (refer specification). (Refer trouble shootings)



Main cause)

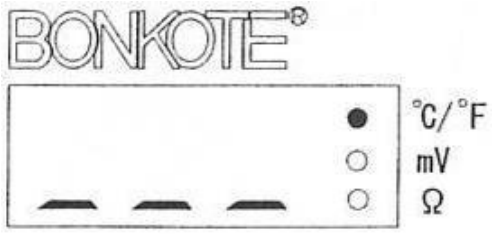
①Breaking of the temperature sensor or unfixed

②Occurrence of excessive leak from iron tip

③Breaking of the earth or unfixed

(2)Under scale indication

At each measurement mode, the display indicates as figure below when the each value exceed lower limit of measurement range (refer specification). (Refer trouble shootings)



Main cause)

①Opposite pole of temperature sensor or malfunction

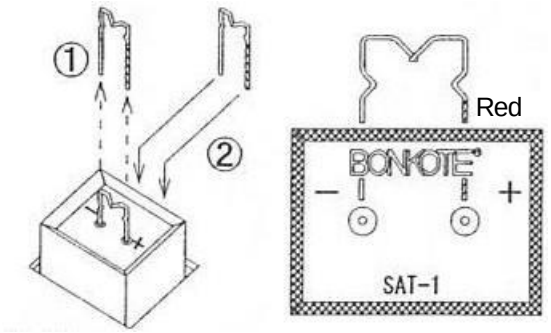
②Gap at Zero adjusting

3-4. Replacement of sensor

(1)Replacement of temperature sensor (SC-006)

①This is designed with speedy by one-touch insert type. Pull out SC-006 as figure below.

②Attach new temperature sensor(SC-006)



※Be careful for the pole not to insert reverse.

+pole：red marking

※Note

A margin of error may be occurred at measurement when SC-006 is being deteriorated. Please exchange to new SC-006 in early time. (Approx standard: exchange after 300 times measurement)

(Timing of exchange is depending on number of measurement times, setting temperature and etc…)

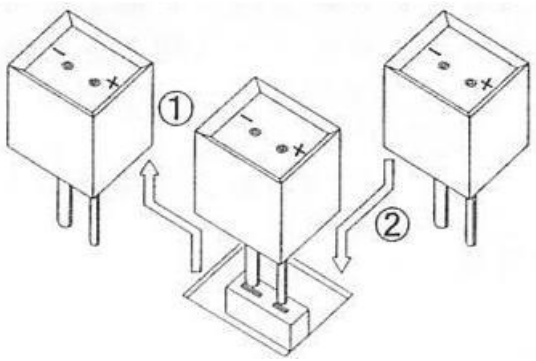
(2)Replacement of Sensor unit (SAT-1)

①Same as SC-006, pull out sensor unit.

②Attach new sensor unit(SAT-1)

※This is designed with prevention of opposite insertion.

+pole：smaller terminal(thinner)

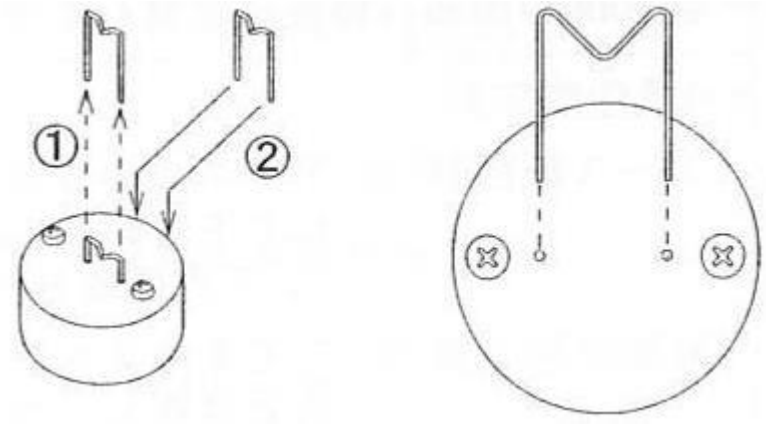


(3). Replacement of LR pin (measurement terminal: LR-01)

①LR pin is speedy by one-touch insert type. Please pull out LR pin as following figures.

②Attach new LR pin(LR-01).

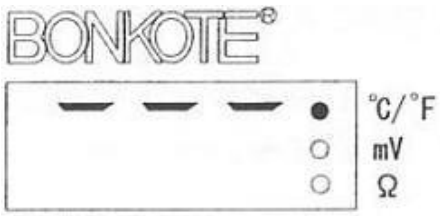
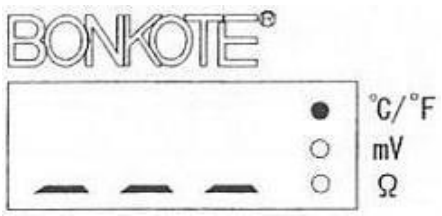
※LR pin has no pole.

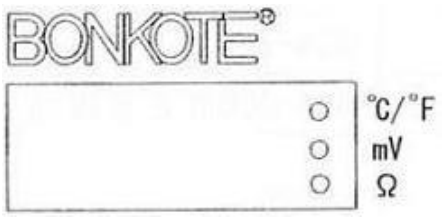
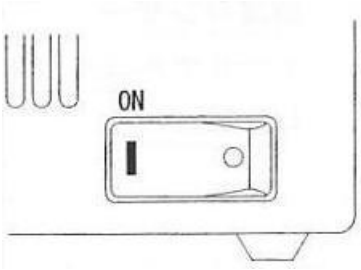
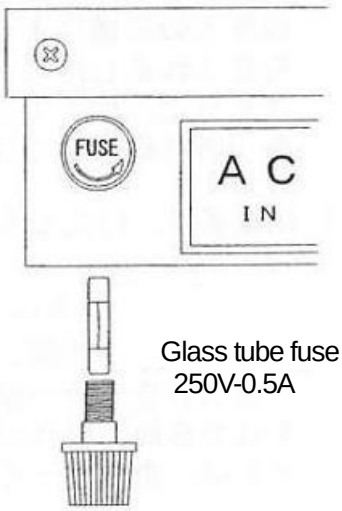


4. Main specification

Body specification	Indication method	3 digit 7segLED Digital indication
	Working temperature	0~40℃ ※accuracy guarantee is 0~30℃
	Working humidity	35~85%RH
	Body dimension	175(W) x 140(D) x 64(H) mm
	Body weight	1.25kg
Temperature measurement specification	Temperature sensor	0.75 Type K
	Measurement indication range	0~600℃/32~999° F
	Indication accuracy	±4℃/±6° F
	Indication resolution	1℃/1° F
Leak voltage measurement specification	Measurement indication range	0.0~99.9mV AC
	Indication accuracy	±(3% rdg + 0.3mV)
	Indication resolution	0.1mV
Earth line resistance measurement specification	Measurement indication range	0.0~99.9Ω
	Indication accuracy	±(4% rdg + 0.3Ω)
	Indication resolution	0.1Ω

5. Trouble shootings

Phenomena	Please check	Measures
 **Over scale error** It indicates over scale as above when the value exceeds range below. Each items range of upper limit Temperature: 600℃/999° F Leak voltage: 99.9mV Earth line resistance: 99.9Ω	Iron tip measurement *Breaking of SC-006	①Exchange to new SC-006 (Be careful for pole)
	Leak voltage measurement *Breaking of the earth line	①Confirm conduction of earth line (Slack of iron tip, etc.)
	*Malfunction of the object for measurement	①Exchange to new iron tip
	Earth line resistance measurement *Breaking of earth line	①Confirm conduction of earth line ② Confirm that soldering iron and MCA-700 Ⅱ use same wall socket
	The other *Trouble, malfunction	①Exchange sensor unit ②Break down (Please ask us repair)
 **Under scale error** It indicates under scale as above when the value exceeds range below. Each items Range of upper limit Temperature: 0℃/32° F Leak voltage: 0.0mV Earth line resistance: 0.0Ω	Iron tip measurement *Opposite pole of SC-006	①Confirm the pole
	Leak voltage measurement	①Break down (Please ask us repair)
	Earth line resistance measurement *Deviation of Zero adjusting	① Re-try Zero adjusting with connecting earth clip to LR pin.
	The other *Trouble, malfunction	①Exchange to new sensor unit ②Break down (Please ask us repair)

Phenomena	Please check	Measures
 **Display does not work**	Power switch *Switch position	①Switch ON. 
	Fuse is blown	①Exchange to new fuse  Glass tube fuse 250V-0.5A
	Breaking of power supply code	①After confirm conduction of power supply code, exchange to new power supply code. ②Insert plug of power supply code completely.
	The other *Trouble, malfunction	①Trouble inside of the body (Please ask us for repair)

6. Replacement parts

Name	Model No.	Note
Tester body	MCA-700Ⅱ	
Sensor unit	SAT-1	Compatible with MCA-900Ⅱ
Temperature sensor	SC-006	Compatible with MCA-900Ⅱ
Terminal unit	MTU-1	
LR pin	LR-01	

7. Guarantee and After service

Guarantee

Our products are shipped after several factory tests & inspections. But if you find malfunctions or defects due to problems in workmanship or transportation, please contact with your dealer or us.
The guarantee period of your system in one year after your purchase, except for replacement parts.
※Please safekeeping this manual not to lose.

After service

When you think your system does not operate properly, read this manual again to check.
If still troubles are not solved, please contact with your dealer or us.

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