Probe Master Inc.

Calibration Procedures Model 4236

This procedure is for use by qualified service personnel to adjust 4236 properly.

The equipments required are listed in Table 1.

No.	Item	Minimum Requirements
1	Power Supply	6 VDC/90mA or 9 VDC/ 330 mA mains adaptor or 4xAA cells or power lead
2	DMM	DC Accuracy < 0.5%
3	Function Generator	Maximum Frequency > 10 MHz Sine-wave Distortion < 1%
4	Oscilloscope	Bandwidth >= 20 MHz Accuracy <= 2 %

Table 1

This procedure is divided into following steps:

A. Prepare the probe for adjustment.
B. Adjust input bias voltage: VRA.
C. Adjust output offset voltage: VRC.
D. Adjust square-wave compensation for +input: VCA.
E. Adjust square-wave compensation for –input: VCB.
F. Adjust CMRR at 60 Hz: VRB.
G. Adjust CMRR at 1 MHz: VCB.

A. Prepare the probe for adjustment.

A-1. Use a small flat screwdriver to peel the both panels off, referring to Fig.1.

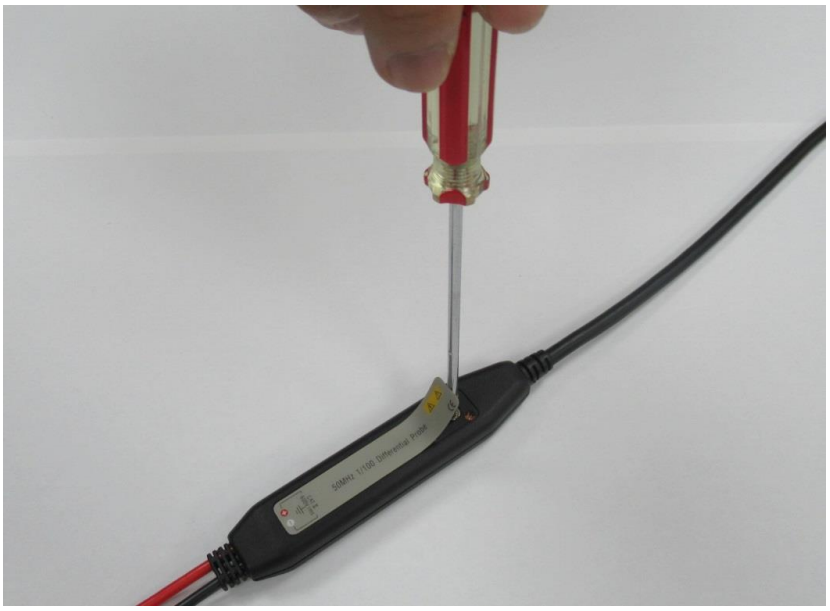


Fig.1

Fig.1a.

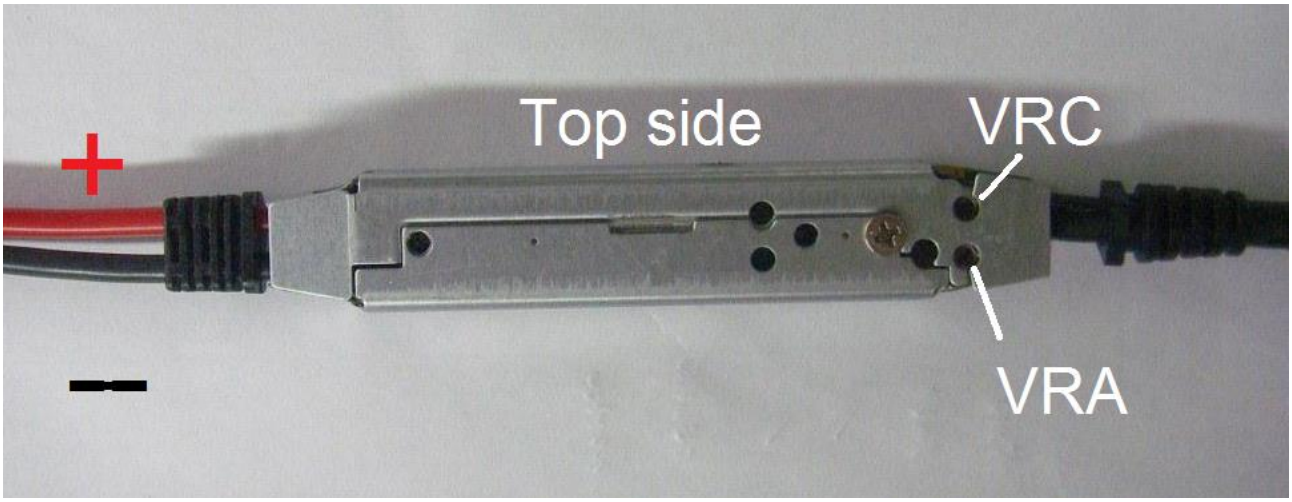
A-2. Loosen the four screws on the plastic cases. referring to Fig.1a.

A-3. Remove the plastic cases. Fig.2 shows the location of adjustments on topside and bottom side of the metal case.

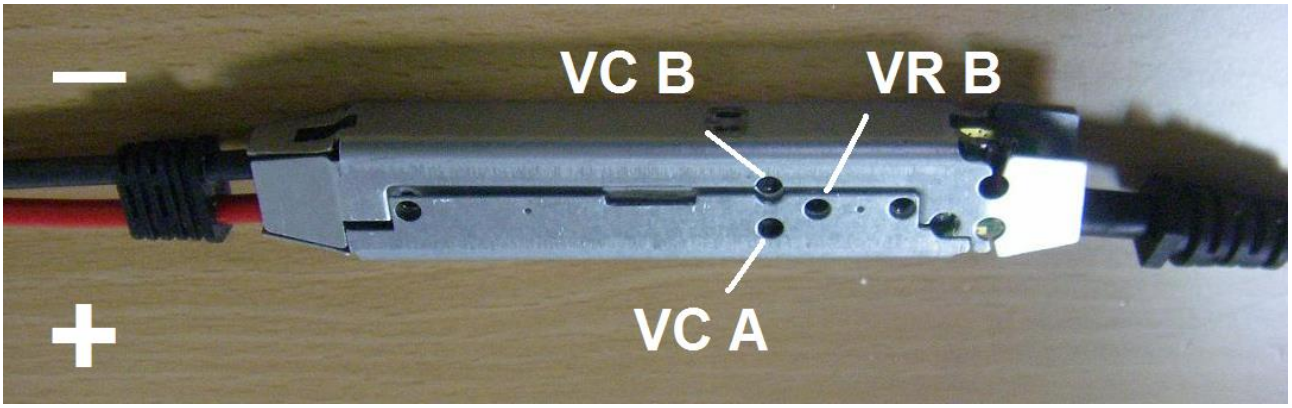
A-4. Connect the power source.

A-5. Allow the probe and test equipments to warm up 20 minutes at an ambient temperature of 18 degree Celsius to 28 degree Celsius.

A-6. In order to make following operation easier, use one plastic case to support the metal case and the input head.



Top side



Bottom side

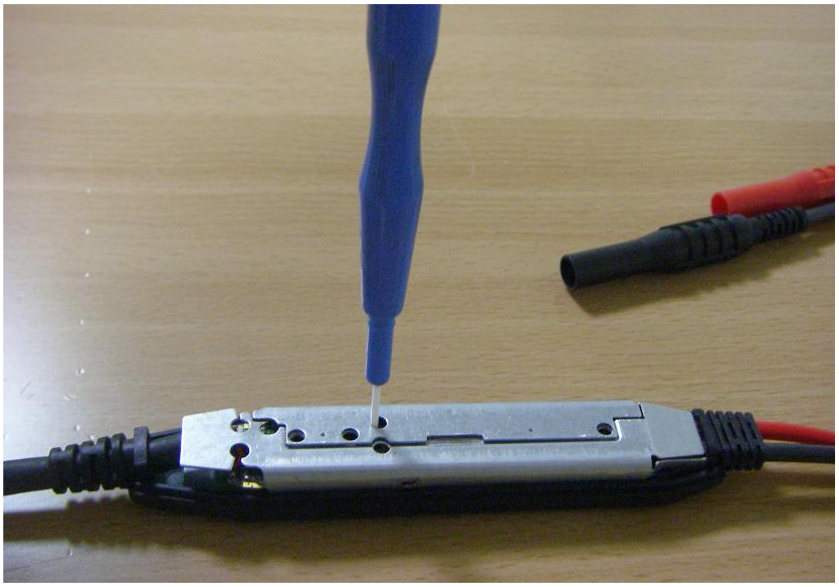


Fig. 2

B. Adjust input bias voltage

B-1. Connect the probe as shown in Fig.3.

B-2. The value of input bias voltage now is displayed on the digital multimeter.

B-3. Adjust VRA to make the input bias voltage as small as possible.

B-4. The criterion is -3 mV <= Vib <= +3 mV.

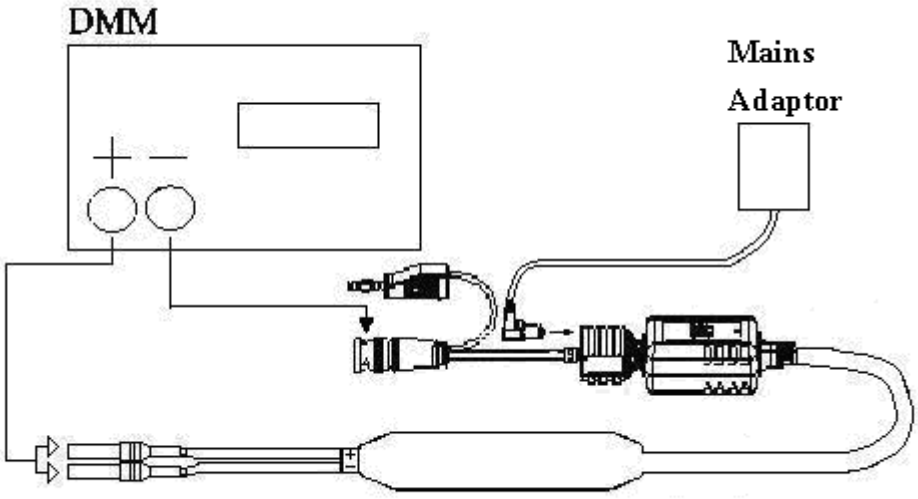


Fig. 3

C. Adjust output offset Voltage

C-1. Connect the probe as shown in Fig.4.

C-2. Adjust VRC for minimum output offset voltage.

C-3. The criterion is -1 mV <= Vout <= +1 mV.

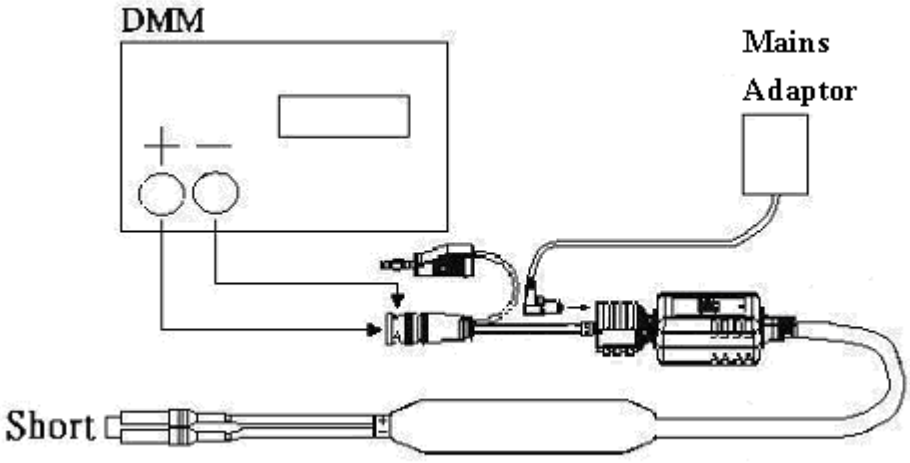


Fig. 4

D. Adjust square-wave compensation for + input.

D-1. Connect the probe as shown in Fig.5.

D-2. Set the output of the function generator to 40 Vp-p, 1 kHz square-wave.

D-3. Set the input impedance of the oscilloscope to 1 M ohm.

D-4. Adjust VCA to make the front corner roll off or overshoot of the square-wave displayed on the oscilloscope less than 4 mV.

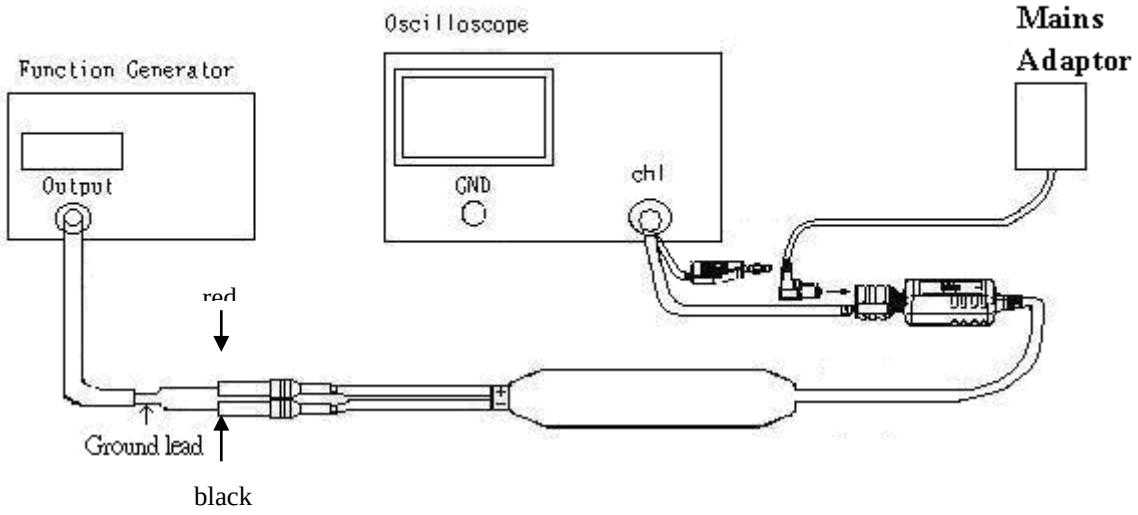


Fig. 5

E. Adjust square-wave compensation for - input.

E-1. Connect the probe as shown in Fig.6.

E-2. Set the output of the function generator to 40 Vp-p, 1 kHz square-wave.

E-3. Set the input impedance of the oscilloscope to 1 M ohm.

E-4. Adjust VCB to make the front corner roll off or overshoot of the square-wave displayed on the oscilloscope less than 4 mV.

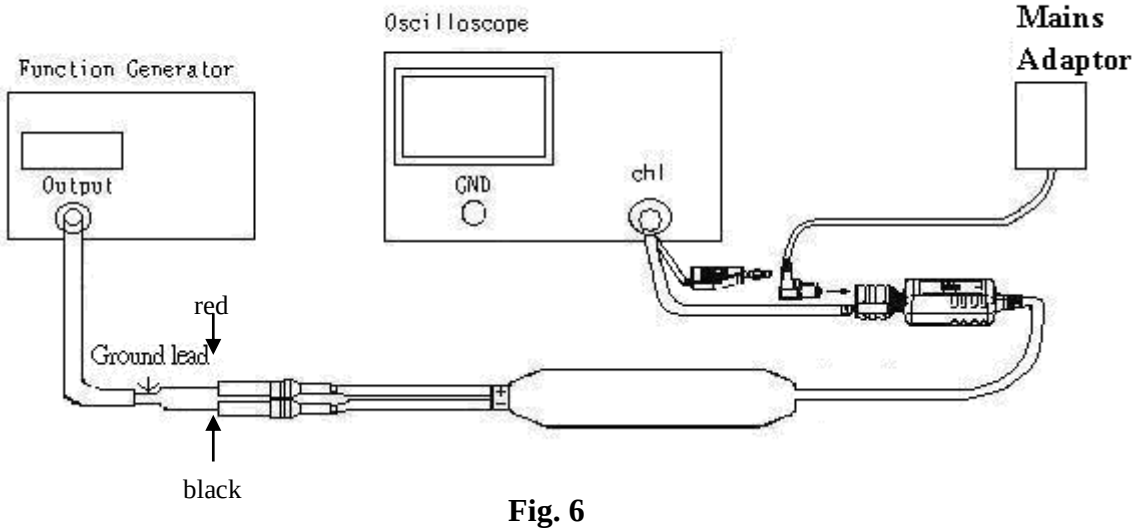


Fig. 6

F. Adjust CMRR at 60Hz

F-1. Connect the probe as shown in Fig.7.

F-2. Set the output of the function generator to 620 Vp-p 60 Hz sine-wave, and set the input impedance of the oscilloscope to 50ohm. (Add a feedthrough 50ohm terminator to the input, if the oscilloscope doesn't provide the 50 ohm input impedance.)

F-3. Adjust VRB for minimum Vout displayed on the oscilloscope.

F-4. The criterion is Vout <= 0.6 mVp-p(after excluding noise).

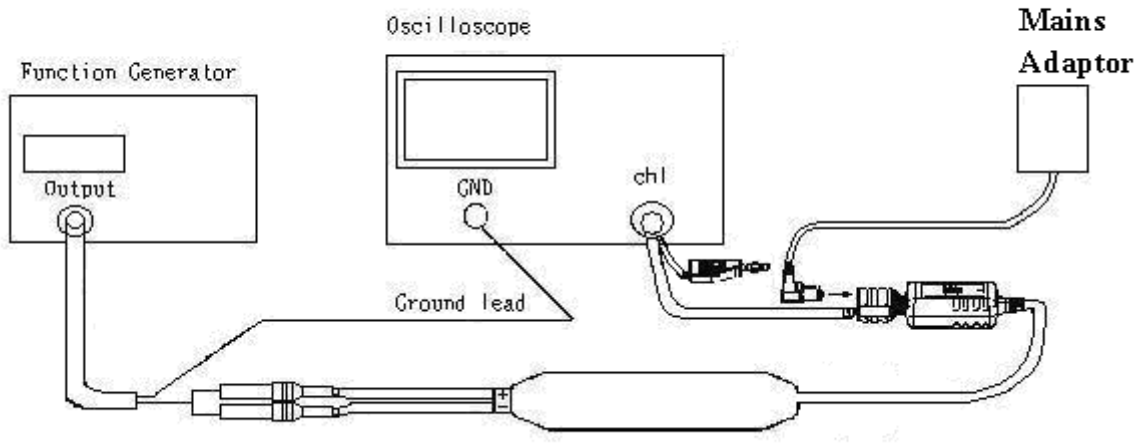


Fig. 7

G. Adjust CMRR at 1MHz

G-1. Connect the probe as shown in Fig.8.

G-2. Set the output of the function generator to be 20 Vp-p, 1 MHz, sine-wave, and set the input impedance of the oscilloscope to be 50 ohm (Add a feedthrough 50ohm terminator to the input , if the oscilloscope doesn't provide the 50ohm input impedance.)

G-3. Adjust VCB slightly for minimum Vout displayed on the oscilloscope.

G-4. The criterion is Vout <= 1 Vp-p (after excluding noise).

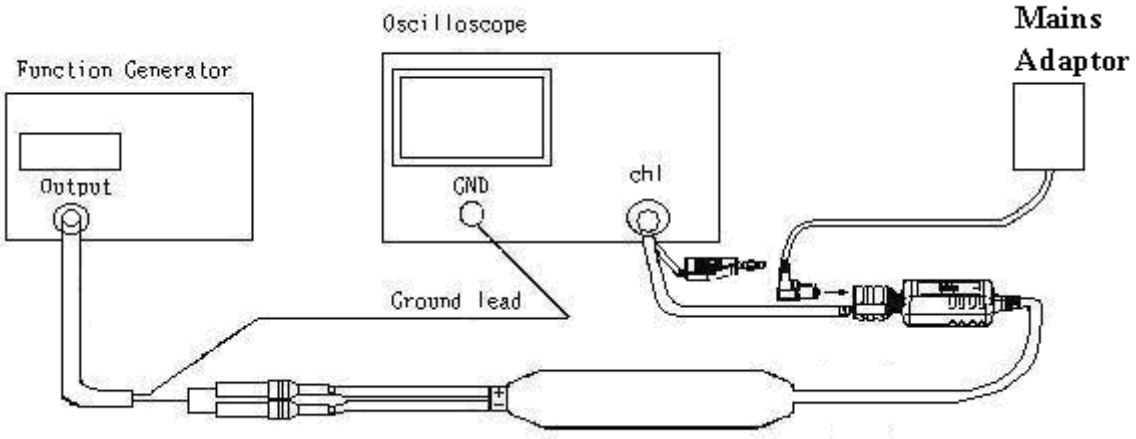


Fig. 8