To perform the Function Inspection

Make a fast function check to verify the normal operation of the instrument, according to the following steps:

1. **Connect the Instrument to the Power and Push down the Power Switch Button.**
   The instrument carries out all self-check items and shows the prompt “Press any Key Enter the Operating Mode”. Press the “UTILITY” button to get access to the “FUNCTION” menu and push down F2 the menu selection button to call out the function “Recall Factory”. The default attenuation coefficient set value of the probe in the menu is 10X, shown as Fig.4.

![Fig.4 Power on the Instrument](image)

2. **Set the Switch in the Oscilloscope Probe as 10X and Connect the Oscilloscope with CH1 Channel.**
   Align the slot in the probe with the plug in the CH1 connector BNC, and then tighten the probe with rotating it to the right side.
   Connect the probe tip and the ground clamp to the connector of the probe compensator, shown as Fig.5.
3. **Press the AUTO SET Button.**

The square wave of 1 KHz frequency and 5V peak-peak value will be displayed in several seconds (see Fig.6).

![Fig.6 Auto set](image)

Check CH2 by repeating Step 2 and Step 3.
To perform the Probe Compensation

When connect the probe with any input channel for the first time, make this adjustment to match the probe with the input channel. The probe which is not compensated or presents a compensation deviation will result in the measuring error or mistake. For adjusting the probe compensation, please carry out the following steps:

1. Set the attenuation coefficient of the probe in the menu as 10X and that of the switch in the probe as 10X, and connect the oscilloscope probe with the CH1 channel. If a probe hook tip is used, ensure that it keeps in close touch with the probe. Connect the probe tip with the signal connector of the probe compensator and connect the reference wire clamp with the ground wire connector of the probe connector, and then press the button AUTOSET (see Fig.5).

2. Check the displayed waveforms and regulate the probe till a correct compensation is achieved (see Fig.7 and Fig.8).

   ![Fig.7 Displayed Waveforms of the Probe Compensation](image)

3. Repeat the steps mentioned if necessary.

   ![Fig.8 Adjust Probe](image)
To set the Probe Attenuation Coefficient

The probe has several attenuation coefficients, which will influence the vertical scale factor of the oscilloscope.

If it is required to change (check) the set value of the probe attenuation coefficient, press the function menu button of the channels used, then push down the selection button corresponding to the probe till the correct set value is shown.

This setting will be valid all the time before it is changed again.

⚠️ **Note:** The attenuation coefficient of the probe in the menu is preset to 10X when the oscilloscope is delivered from the factory.

Make sure that the set value of the attenuation switch in the probe is the same as the menu selection of the probe in the oscilloscope.

The set values of the probe switch are 1X and 10X (see Fig.9).

![Fig.9 Attenuation Switch](image)

⚠️ **Note:** When the attenuation switch is set to 1X, the probe will limit the bandwidth of the oscilloscope in 5MHz. If it is needed to use the whole bandwidth of the oscilloscope, the switch must be set to 10X.
To use the Probe Safely

The safety guard ring around the probe body protects your finger against the electric shock, shown as Fig.10.

![Fig.10 Finger Guard](image)

⚠️ **Warning:** In order to avoid suffering from the electric shock, please keep your finger behind the safety guard ring of the probe body during the operation.

In order to protect you from suffering from the electric shock during your using the probe, do not touch the metal part of the probe tip when the probe is connected to the power supply.

Before making any measurements, please connect the probe to the instrument and connect the ground terminal to the earth.

To perform Self-calibration

The self-calibration application can make the oscilloscope reach the optimum condition rapidly to obtain the most accurate measurement value. You can carry out this application program at any time, but when the range of variation of the ambient temperature is up to or over 5°C, this program must be executed.

For the performing of the self-calibration, all probes or wires should be disconnected with the input connector first. Then, press the “UTILITY” button to call out the FUNCTION menu; push down the F3 menu selection button to choose the option “Perform Self-Calibration”; finally, run the program after confirming that everything is ready now.
Introduction to the Vertical System

Shown as Fig.11, there are a series of buttons and knobs in VERTICAL CONTROLS. The following practices will gradually direct you to be familiar with the using of the vertical setting.

![Vertical Control Zone]

**Fig.11 Vertical Control Zone**

1. Use the button “VERTICAL POSITION” knob to show the signal in the center of the waveform window. The “VERTICAL POSITION” knob functions the regulating of the vertical display position of the signal. Thus, when the “VERTICAL POSITION” knob is rotated, the pointer of the earth datum point of the channel is directed to move up and down following the wave form.

Measuring Skill

If the channel is under the DC coupling mode, you can rapidly measure the DC component of the signal through the observation of the difference between the wave form and the signal ground.

If the channel is under the AC mode, the DC component will be removed by filtration. This mode helps you display the AC component of the signal with a higher sensitivity.

2. Change the Vertical Setting and Observe the Consequent State Information Change.

With the information displayed in the status bar at the bottom of the waveform window, you can determine any changes in the channel vertical scale factor.

- Rotate the vertical “VOLTS/DIV” knob and change the “Vertical Scale Factor (Voltage Division)”, it can be found that the scale factor of the channel corresponding to the status bar has been changed accordingly.

- Press buttons of “CH1 MENU”, “CH2 MENU” and “MATH MENU”, the operation menu, symbols, wave forms and scale factor status information of the corresponding channel will be displayed in the screen.
Introduction to the Horizontal System

Shown as Fig.12, there are a button and two knobs in the “HORIZONTAL CONTROLS”. The following practices will gradually direct you to be familiar with the setting of horizontal time base.

![Horizontal Control Zone](image)

Fig.12 Horizontal Control Zone

1. Use the horizontal “SEC/DIV” knob to change the horizontal time base setting and observe the consequent status information change. Rotate the horizontal “SEC/DIV” knob to change the horizontal time base, and it can be found that the “Horizontal Time Base” display in the status bar changes accordingly. The horizontal scanning speed steps from 5ns up to 100s according to the stepping mode of

   1-2.5-5---- PDS5022S/T;

   1—2—5 ---- PDS6042S, PDS6062S, PDS6062T, PDS7062T, PDS7102T.

2. Use the “HORIZONTAL POSITION” knob to adjust the horizontal position of the signal in the waveform window. The “HORIZONTAL POSITION” knob is used to control the triggering displacement of the signal or for other special applications. If it is applied to triggering the displacement, it can be observed that the waveform moves horizontally with the knob when you rotate the “Horizontal Position” knob.

3. With the “HORIZONTAL MENU” button pushed down, you can set and initiate the Window Expansion.
Introduction to the Trigger System

Shown as Fig.13, there are a knob and four buttons in the “TRIGGER CONTROLS”. The following practices will direct you to be familiar with the setting of the trigger system gradually.

![Trigger Control Zone](image)

**Fig.13** Trigger Control Zone

1. Press the “TRIG MENU” button and call out the trigger menu. With the operations of the 5 menu selection buttons, the trigger setting can be changed.

2. Use the “LEVEL” knob to change the trigger level setting.
   With the rotation of the “LEVEL” knob, it can found that the trigger indicator in the screen will move up and down with the rotation of the knob. With the movement of the trigger indicator, it can be observed that the trigger level value displayed in the screen changes.

3. Press the button “SET TO 50%” to set the trigger level as the vertical mid point values of the amplitude of the trigger signal.

4. Press the “FORCE TRIG” button to force a trigger signal, which is mainly applied to the “Normal” and “Single” trigger modes.

5. The “SET TO ZERO” button is used to reset the trigger horizontal position.