Contents

English Version

I. Disclaimers, Exclusions and Limitations of Liability

PLEASE READ AND NOTE PRESIDIUM WARRANTY TERMS AND CONDITIONS as stated in the warranty card. Presidium warranty for its testers are subject to proper use by its users in accordance with all the terms and conditions as stated in the relevant user handbook and shall cover only manufacturing defects.

In pursuing continuous product improvement and enhancements, Presidium reserves the right to revise the product software data, including the OTi Mechanical, Hardware, and Firmware.

Presidium explicitly disclaims any and all liability for the usage of UV lights in our product. This product is designed within determined preset safety limits. Any improper or prolonged usage may without a doubt expose a user, any person nearby or otherwise living creature to the effects of UV-RADIATION.

Presidium shall not be responsible for any damage or loss resulting from the use of this tester or handbook, and under no circumstances shall Presidium, its manufacturer or any of its subsidiaries, licensors, distributors, reseller, servant and/or agent be liable for any direct or indirect damages, resulting from the use of this tester.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, under no circumstances shall Presidium, its manufacturer or any of its subsidiaries, licensors, distributors, reseller, servant and/or agent be responsible for any special, incidental, consequential or indirect damages howsoever caused.

The tester or OTi referred to in this handbook is provided and/or sold on an “as is” basis. Except as required by applicable law, no warranties of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

II. About this book

Thank you for purchasing OTi by Presidium.

This handbook is designed to help you set up your tester and describes all you need to know about how to use your tester accurately and take care of it in line with its requirements. Please read these instructions carefully and keep them handy for future reference.

This book also contains the terms and conditions in relation to the use of the tester including the **Disclaimer, EXCLUSION and Limitation of Liability clauses stated above in section I.**

III. About the OTi by Presidium

OTi is developed as a handheld PRESIDIUM DIAMOND VERIFICATION INSTRUMENT® to help identify colourless diamond against CVD/HPHT lab grown colourless diamond, all types of moissanite and all diamond simulants.[1] It is suitable for testing on both loose and mounted stones, including jewelry pieces with a closed back setting.

Based on invention of Professor Julian Goldsmid from University of New South Wales in Australia, OTi distinguish between diamonds and moissanite from diamond simulants using principles of thermal conductivity.

Through advanced proprietary technology, OTi also measures the UV light absorbance ability of diamonds, CVD/HPHT/Type IIA and moissanites. With its touch screen colour LCD display, OTi provides a clear and accurate result of “Diamond”, “CVD/HPHT/Type IIa”,“Moissanite” and “Simulant” within 3 seconds.

OTi has been subjected to thorough factory quality control, and will generally give a clear and reliable reading of the gemstone being tested under proper use. However, you are advised to conduct further supporting tests.

[1]PRESIDIUM DIAMOND VERIFICATION INSTRUMENT is a registered trademark of Presidium Instruments Pte Ltd.

IV. Technical Specifications

Presidium Universal Power Adaptor Information:

- Input Voltage: 100 – 240Vac
- Input Frequency: 50 – 60Hz
- Rating Output Current: 1.5A (7.5W)
- Rating Output Voltage: 5V

Power and Battery

- DC 1.5V (3) x AAA Lithium rechargeable or Lithium non-rechargeable batteries or Power Bank via provided USB cable is recommended
- USB port to be used with supplied USB cable and appropriate Presidium Universal USB Power Adaptor (not included in your package)
- Minimum Power rating: 5V, 1A (5W)

Dimension and Weight

- Length: 105mm
- Width: 70mm
- Height: 24.8mm
- Weight: 106 grams

V. Operations

Recommended Operating Conditions

- Colorless Diamonds against CVD/HPHT lab grown diamonds, moissanites and diamond simulants
- Color Grade: D color to J color
- Minimum gemstone's table width: 1.6mm
- Approximate minimum carat size according to the shape of gemstone:
  - Round Brilliant Cut: 0.06ct
  - Princess Cut: 0.07ct
  - Marquise Cut: 0.1ct
  - Baguette Cut: 0.17ct
- Cut: All proportional diamond cuts
- Mounted jewelry: For jewelry in all types of settings
  * Do take note that some claws may obstruct the UV light from entering the gemstones and obstruct the test.

Working temperature

- Operating temperature: 18°C – 27°C (65°F - 80°F)
- Storage temperature: 10°C - 51°C (50°F - 124°F)
- Air Relative Humidity: 35 - 65%

The tester is designed with the following objectives:

- Help in the identification of colorless diamonds against CVD/HPHT lab grown colorless diamonds, moissanites and diamond simulants.
- Test for loose and mounted stones
- Stylish ergonomic handheld design for portability and ease of use
- Provide consistent and reliable test results under proper use and understanding of its functions

The capabilities of the OTi by Presidium are as follows:

- Test on colorless diamonds (From D to J color) with a minimum table width of 1.60mm x 1.60mm (approx. 0.06 carat for Round Brilliant cut)
- Test on polished stones of all proportional diamond cuts
- Can be used on both loose stones and mounted stones jewelry in all settings
- Fast testing time of 3 seconds

The user is cautioned against using OTi by Presidium on the following as it may affect the accuracy of the readings:

- Diamond of colors other than colorless (D to J)
- Diamond smaller than the recommended parameter
- Rough gemstones

The OTi by Presidium features the following:

- Clear display of results for “Diamond”, CVD/HPHT/ Type IIa”, “Moissanite” and “Simulant”
- Resistive touch screen
- Replaceable and Retractable probe function that maintains constant pressure between optical probe tip and gemstone
- Auto Shutdown Feature
- User-safe function to shut off UV light when not in testing
- USB Inlet for connecting to external power source via Presidium Universal USB adaptor
- International voltage compatibility
- Low battery indicator
- Powered either through the use of non-rechargeable, rechargeable Lithium Batteries or Power Bank or USB adaptor
- Stone Rest

Included in the package:

- OTi by Presidium
- Protective Carrying Pouch
- Stone rest
- Quick Guide
- QR Code Card
- USB Cable
- Replaceable Probe Set

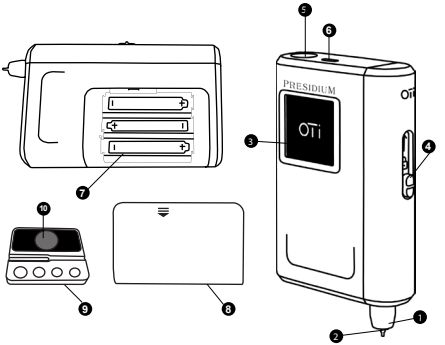


Fig. 1

1	Replaceable Probe Set
2	Probe Tip
3	Display Screen with resistive touch screen
4	Sliding Knob
5	On/Off/Back Button
6	USB Inlet
7	Battery Compartment (beneath the cover)
8	Battery Cover
9	Stone Rest
10	Round Disk

Powering up the OTi by Presidium

This tester can be powered either through electrical power via the Presidium Universal USB Adaptor (not included in your package) or through the use of Lithium batteries or Power Bank via the provided USB cable.

If electrical power is preferred, please ensure that only the Presidium Universal USB Adaptor is used.

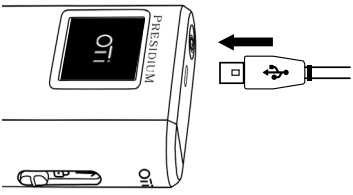


Fig. 1.1

If batteries are preferred, please use 3 x AAA batteries. The use of Lithium batteries is recommended as it should generally give approximately 1.5 hours of continuous operation, while the use of non-lithium batteries is not recommended due to its low power output.

Remove the battery cover by sliding down on the back of the tester. (Fig 1.2).

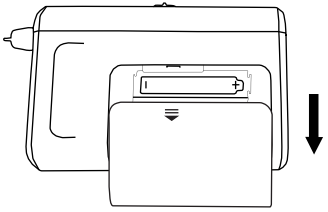


Fig. 1.2

Take note of the positive (+) and negative (-) directions of the batteries when inserting them into the tester (Fig. 1.3).

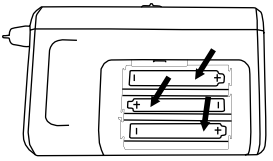


Fig. 1.3

Turning on/off the OTi by Presidium

Slide probe tip out by pushing the slider knob downwards as shown in Fig. 1.4.1

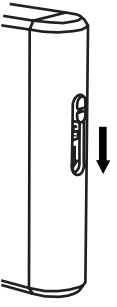


Fig. 1.4.1

Press and hold the button (Fig. 1.4.2) to turn ON/OFF the tester.

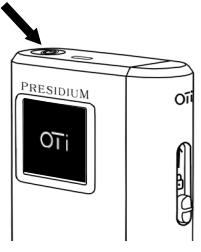


Fig. 1.4.2

“PRESIDIUM” logo will appear on the display screen, followed by Product name.

Fig. 1.4.3

If tip is not installed properly, error will be shown. Refer to troubleshooting guide for further action.

Fig. 1.4.4

To turn OFF the tester, press and hold the power button (Fig. 1.4.2). Slide probe tip back into the tester by pressing down on the slider, internal spring will retract the probe tip automatically.

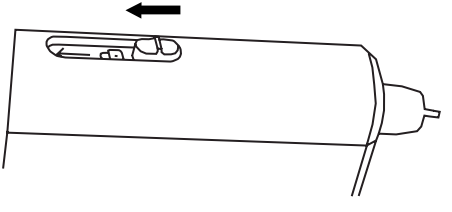


Fig. 1.4.5

Cleaning of gemstone prior to testing

Prepare a clean tissue or jewelry cloth. Carefully retrieve the gemstone with tweezers and place the gemstone face down on its table facet. (Fig 1.5a)

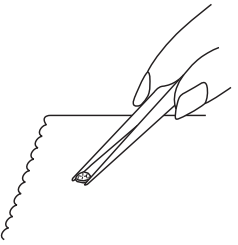


Fig. 1.5a

Gently rub the table of the gemstone against the tissue/ jewelry cloth (Fig. 1.5b).

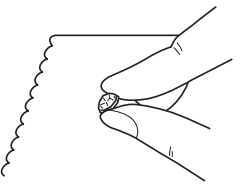


Fig. 1.5b

If your stone is mounted in jewelry, please carefully clean the stone (Fig 1.6).

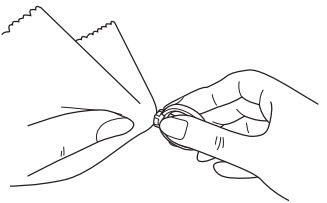


Fig. 1.6

Operating Conditions

The gemstone should be clean and dry before testing. Elaborate cleaning procedures are not normally necessary.

The recommended testing temperature is 23°C - 27°C or 74°F - 80°F. Please allow the gemstone or jewelry piece to adjust to room temperature prior to testing.

Exposure and/or operation of the tester outside the room temperature would affect the results and performance of the tester.

Low Battery is indicated by the icon at the top right-hand corner of the display screen.

Please change the batteries when low battery icon is shown. No tests will be able to be performed when battery is low.

Note: The power-saving feature will ensure the tester shuts down automatically after 5 minutes of inactivity when powered by battery.

Do not leave worn out batteries in the battery compartment as the batteries may corrode or leak and damage the circuitry of the tester. Batteries should be removed when the instrument is expected to be stored for an extended period of time.

Batteries do not have to be removed when the electrical power via a power adaptor is used.

Fig. 2.1

To begin testing, press the “Test” icon as indicated. (Fig. 2.1)

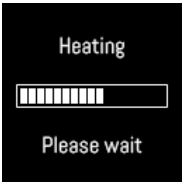


Fig. 2.2a

Wait for the tip to heat up.

Fig. 2.2b

If probe tip fails to heat up, an error message will be shown. Refer to troubleshooting guide for further action.

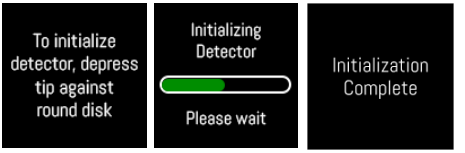


Fig. 2.3

To initialize detector, depress the tip against the round disk. Hold the tester in this position till the testing bar on the screen is completed.

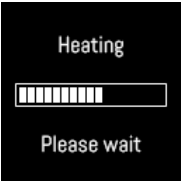


Fig. 2.3a

Wait for the tip to heat up.

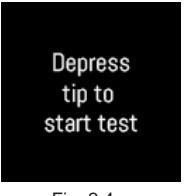


Fig. 2.4

When prompted, depress probe tip 90 degrees perpendicular to the table of the gemstone. Testing will begin. You will need to hold the tester in this position till the testing bar on the screen is completed. (Fig. 2.5)

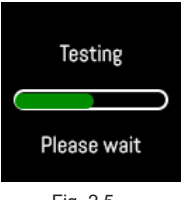


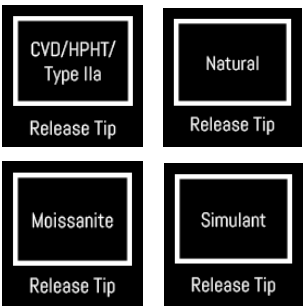
Fig. 2.5

It is important not to remove the tester from the gemstone during test. As the tester detects 'lift' from gemstone and test will have to be reconducted. A result will not be shown.

Beeping sound will be used to indicate the type of results:

- Single beep indicates Diamond
- Single long beep indicates CVD/HPHT/Type IIa Diamond
- Double beep indicates Moissanite
- No beep indicates Simulant

The testing results will be displayed on the screen.



To start next test, wait for the "Ready to Test" or until "Depress tip to start test" (Fig. 2.4) appears.

If tip is depressed before heating is completed, error will be shown.

For mounted jewelry or gemstones:

Hold the jewelry or mounted gemstone with one hand and the tester with the other hand (Fig. 2.6).

For proper operation of the tester, the probe tip should be at a upright position 90 degrees perpendicular to the table of the gemstone.

Ensure the tip is fully depressed for consistent pressure between the tip and the gemstone, for the duration of the testing bar.

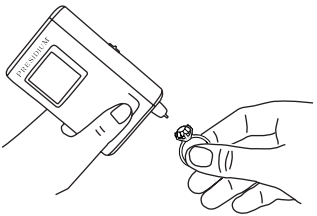


Fig. 2.6

Note: Care should be taken when testing mounted jewelry. Users must ensure that the stones are securely mounted before conducting the test as the gaps between the stone and setting might lead to a rocky contact between the tip and the stone leading to an inaccurate reading.

For loose gemstones:

Place the gemstone into the supplied stone rest while holding the tester with the other hand (Fig. 2.7).

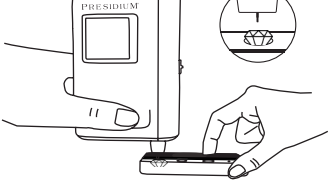


Fig. 2.7

Note: Place the stone on the stone rest instead of holding it in your fingers or the palm of your hand. If you must hold the gemstone, it is advisable to wear protective gloves to shield your skin from possible UV light exposure.

The probe tip must be placed at a right angle or perpendicular to the table of the gemstone for an accurate reading.

Tests should be conducted on the table of the gemstone only

It is advisable to conduct multiple tests on the gemstone as to ensure accuracy.

Cleaning of Probe Tip

A clean probe tip helps to attain consistent and accurate readings.

To clean the probe tip,

- Ensure the unit is switched off.
- For both optical and thermal cleaning, hold the device with the probe tip forming a right-angle (90-degree) with an alcohol wipe and any paper, respectively. Gently move in a circular motion without retracting the tip or applying too much force (Fig. 2.8).
- Repeat the same motion several times. The cleaning process is completed and the tester is now ready for use

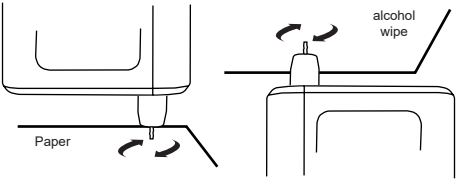


Fig. 2.8

3. READING TEST RESULTS on the OTi by Presidium

Testing specification of the tester:

Result	Description	Sound
Diamond	The tested gemstone has the characteristic light transmittance ability of a Type Ia diamond, suggesting that this could be a Natural Diamond	Single beep
CVD/HPHT/ Type IIa	The tested gemstone has the characteristic light transmittance ability of a Type IIa diamond, suggesting that this could be a CVD/HPHT/ Type IIa Diamond	Single long beep
Moissanite	The tested gemstone has the characteristic light transmittance ability of a Moissanite, suggesting that this could be a Moissanite	Double beep
Simulant	The tested gemstone has the characteristic low thermal conductivity compared to diamonds and moissanites, suggesting that this could be a Simulant	No beep

4.1 Settings Function

Press the gear icon to enter the settings function.
(Fig 4.1)

Fig. 4.1

In the Settings function, you may mute or unmute the device (Fig. 4.1a).

Fig. 4.1a

Fig. 4.1b

To view the tutorial, press the tutorial button as shown in Fig. 4.1b

Change the language by pressing on the left/right buttons to toggle between selections.

There are 6 types of languages available:

1. English
2. Simplified Chinese
3. French
4. German
5. Italian
6. Spanish

Press the navigation button to go to the first page or second page of settings function.

Fig. 4.1c

Fig. 4.1d

Press the screen rotation icon to change the screen orientation.

Fig. 4.1e

4.2 Calibration of the OTi by Presidium

All testers have been calibrated during manufacturing process and no further adjustments or user intervention to the tester is required.

However, in situations below, calibration shall be performed:

i. The probe tip has been replaced with a new probe tip
ii. Inaccurate readings when checking the functionality of the instrument.
iii. Testing under extreme temperature conditions (See section under "Operating under Extreme Conditions")

Performing Calibration of the OTi by Presidium

Fig. 4.2a

Press the screen calibration icon to enter calibration mode.

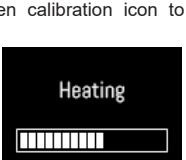


Fig. 4.2b

Wait for the tip to heat up.

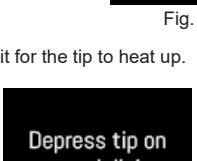


Fig. 4.2c

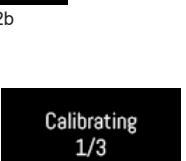


Fig. 4.2d

When prompted, depress the tip against the black disk and wait for calibration to be completed.

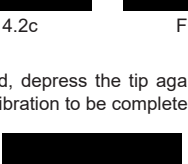


Fig. 4.2e

When prompted, release the probe tip.

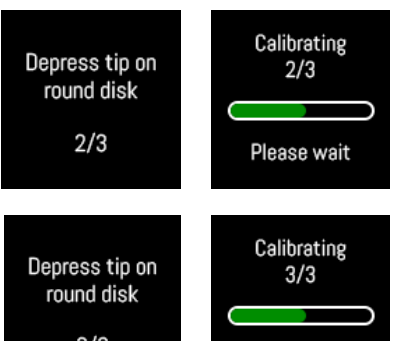


Fig. 4.2f

Repeat the action two more times.

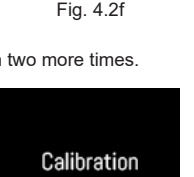


Fig. 4.2g

Message will be shown on screen when calibration is completed.

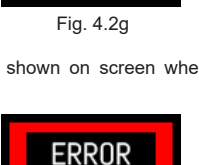


Fig. 4.2h

Error will be shown if tip is released during calibration.

5. TROUBLESHOOTING GUIDE

Below a list of possible error message and the actions to be taken.

No.	Error Message	Action
T2.1		• Reinsert probe tip and ensure that the probe is securely installed
T2.2		• Reinsert probe tip and ensure that the probe is securely installed • If problem persist, change probe tip
T2.3	Out of Calibration	• Recalibrate the device • If problem persist, change probe tip
T2.4	Please change probe tip	• Change probe tip
T2.5	Initializing Failed	• Reinstall probe tip and ensure that the probe is securely installed • Recalibrate the device and restart initialization test • If problem persist, change probe tip
T2.6	Do not depress tip	• Allow device to heat up the probe tip before testing

6. TAKING CARE of the OTi by Presidium

The probe tip is extremely sensitive and should be handled with care, especially during the replacing of the tip. Always retract probe pen when tester is not in use.

The OTi by Presidium is a product of extensive design and craftsmanship, please treat it with care.

Thank you for taking the time to go through the user handbook which will enable you to understand your recent purchase better.

Presidium also recommends that you register for product warranty by sending in the enclosed warranty registration card or registering online at
http://www.presidium.com.sg

IV. IMPORTANT NOTICE

- Due to the testing methodology, this tester is not intended to test for any coloured diamonds.

- It is advisable and recommended to wear protective eye wear or protective shielding on your hands when performing a test. This will act as safety precautions to protect yourself from potential effects of UV RADIATION due to improper or prolonged usage.

- Keep the tester dry. Precipitation, humidity, and all types of liquids or moisture can contain minerals that will corrode electronic circuits. If your tester does get wet, remove the battery, and allow the tester to dry completely before replacing it.

- Do not use or store the tester in dusty, dirty areas. Its moving parts and electronic components can be damaged.

- Do not store the tester in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.

- Do not store the tester in cold areas. When the tester returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.

- Do not attempt to open the tester other than as instructed in this handbook.

- Do not drop, knock, or shake the tester. Rough handling can break internal circuit boards and fine mechanics.

- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the tester.

- Do not paint the tester. Paint can clog the moving parts and prevent proper operation.

- Disposal of a battery into fire, or mechanically crushing or cutting of a battery, that can result in an explosion.

- Do not place, store nor use the device with batteries in automotive in hot weather, under direct sunlight or near fire. Use or storage of batteries in these places might cause leakage, fire or bursting.

- Installing the battery in reverse polarity may damage the device, or battery.

This device uses UV light and precautions must be taken to avoid looking directly at the UV light without the use of UV light protective glasses and skin protection. Do not look directly at the front of the LED or at the LED's lens when LED is operational.

If the tester is not working properly, kindly contact Presidium customer service at **service@presidium.com.sg** or:

Presidium Instruments Pte Ltd
Unit 7, 207 Henderson Road
Singapore 159550
Attn: Customer Service Executive