MODEL **DT-29**

Instructions

PRESTIGE MEDICAL®

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I. SAFETY PRECAUTIONS

- Follow the maintenance advice shown in this instruction manual.
- This instrument must only be used for the purposes described in this manual.
- Operate only in ambient temperatures between 50°F and 104 °F.
- Store the device in a clean, dry area.
- Do not expose the instrument to electric shocks.
- Do not expose to extreme temperature conditions of >122°F or < 40°F.
- Do not use at relative humidity higher than 85%.
- The protective glass over the lens is the most fragile part of the instrument; do not touch the glass of the lens with your fingers.
- Clean the glass with a cotton swab lightly moistened with 70% alcohol.
- Do not expose the instrument to sunlight or to water.
- Do not drop the instrument.
- Should a problem occur with your DT-29 Infrared Thermometer, please contact your dealer or Prestige Medical. Do not attempt to repair this instrument yourself.

THE MANUFACTURER RESERVES THE RIGHT TO ALTER THE SPECIFICATIONS OF THE PRODUCT WITHOUT PRIOR NOTICE

II. INTRODUCTION

The DT-29 Infrared Thermometer has been developed using the latest infrared technology. This technology allows the body temperature to be taken at a distance of about 3cm-5cm from the forehead. Delivering precise, instantaneous readings without skin contact, the DT-29 is currently the most suitable thermometer for no risk temperature measurement. It has been demonstrated that this method of temperature measurement is more precise than tympanic thermometry and better tolerated than rectal thermometry (1). However, as with other types of thermometers, it is essential to use the DT-29 properly in order to obtain reliable and stable results. You are therefore advised to read this instruction manual and observe the safety precautions carefully before use.

(1) Greenes D, Fleisher G. Accuracy of a Noninvasive Temporal Artery Thermometer for Use in Infants. Arch Pediatr Adolesc Med 2001;155:376.

III. PRECAUTIONS BEFORE USE

The DT-29 Infrared Thermometer is pre-set at the factory.
It is not necessary to calibrate the device before using.

To ensure reliable and stable results, the instrument will advise you each time there is a significant environmental ambient temperature change. Allow the DT-29 to acclimate to the new ambient temperature for fifteen to twenty minutes. It is important to allow for an approximately one minute interval between two measurements for the most accurate readings.

IV. OPERATING PRINCIPLE

All objects, solid, liquid or gas, emit energy by radiation. The intensity of this energy depends on the temperature of the object. The DT-29 Infrared Thermometer is able to measure the temperature of a person by the heat energy the person emits. This measurement can be taken by an external temperature probe on the device that permanently analyzes and registers the ambient temperature. As the clinician holds the instrument near the body and activates the radiation sensor, the measurement is taken instantly by detection of the forehead heat. Body heat can therefore be measured without any interference from the heat of the surrounding environment.

THE DIFFERENT METHODS OF TEMPERATURE MEASUREMENT

Core temperature

Core temperature is the most precise measurement and involves measuring the temperature in the pulmonary artery by means of a catheter equipped with a thermal probe which can read the temperature in situ. The same method is employed for probes measuring the esophageal temperature. However, such invasive temperature measurement methods require specific equipment and expertise and are not practical for everyday use.

Rectal thermometry

Rectal temperature adjusts slowly in comparison to the change in body internal temperature. It has been demonstrated that this temperature remains raised long after the internal temperature of the patient has started to drop and vice versa.

Oral thermometry

Oral temperature is easily influenced by recent ingestion of food or drinks and by breathing through the mouth. To measure oral temperature, the mouth must remain closed and the tongue lowered for three to four minutes, a difficult task for young children to accomplish.

Axillary (armpit) temperature

Although it may be easy to measure axillary temperature, it has been proven that it does not provide an accurate measurement of the patient's internal temperature. To take this type of temperature, the thermometer must be wedged tightly over the axillary artery. Despite the low sensitivity and relative inaccuracy of axillary temperature in detecting fever, this method is recommended by The American Academy of Pediatrics as a screening test for fever in newborns.

Tympanic thermometry

In order to obtain a precise temperature reading, good command of the measurement technique is required. The thermometer probe must be placed as close as possible to the warmest part of the external ear canal. An incorrectly placed probe could lead to a false temperature reading.

NORMAL TEMPERATURES ACCORDING TO MEASUREMENT METHOD

MEASUREMENT METHOD	NORMAL TEMP
RECTAL	97.8°- 100.4° F
ORAL	95.9°- 99.5° F
AUXILLARY	94.4°- 99.14°F
AURICULAR	96.4°- 100.4° F
FOREHEAD	96.4°- 100.4° F

The temperature of the human body varies throughout the day. It can also be influenced by numerous external factors: age, sex, type and thickness of skin, hormonal supplements and others.

The DT-29 Infrared Thermometer has been designed to produce an instant forehead temperature representing core temperature reading *without* touching the skin. Since the body temperature is permanent and regular at the forehead, it allows precise measurement of the temperature. Efficiency, speed and comfort of taking a temperature from this area makes it ideal compared with other temperature measurements methods.

NORMAL TEMPERATURES ACCORDING TO AGE

Age	°C	°F
0-2 years	36.4-38.0	97.5-100.4
3-10 years	36.1-37.8	97.0-100.0
11-65 years	35.9-37.6	96.6-99.7
> 65 years	35.8-37.5	96.4-99.5

PRACTICAL CONSIDERATIONS WHEN TAKING A TEMPERATURE

- In order to ensure that precise and accurate temperature measurements are obtained, it is essential that each user has received adequate information on and training in the temperature measurement technique when using this device.
- It is essential to remember that although procedures such as taking a patient's temperature may be simple they must not be trivialized.
- Temperature should be taken in a neutral context. The patient must not have undertaken vigorous physical activity prior to taking his/her temperature and the room temperature must be moderate.
- Be aware of physiological variations in temperature when evaluating the results: temperature increases by 1.0F° between 6am and 3pm. Women have a temperature that is higher, on average, by around .5F°. Their temperature also varies in accordance with their menstrual cycle. It rises by 1.0F° in the second half of the cycle and at the early stages of pregnancy.
- When sitting, temperature is lower by about 0.5 to 0.8F° than when standing.

HOW TO TAKE A TEMPERATURE

Aim at the forehead, over the right eyebrow, from a distance of about 2 inches, press the measurement button and the temperature is instantly displayed. The reliability of the measurement cannot be guaranteed if the temperature is measured over another part of the body (e.g., arm, torso...).

ADDITIONAL CONSIDERATIONS BEFORE USE

Please observe the following before taking any temperature measurement to ensure a stable and reliable result:

- Push back hair from the forehead
- Wipe away any perspiration from the forehead
- Avoid any drafts (e.g. from nasal cannula, air conditioning...)
- Allow a 1 minute interval between two measurements.
- Each time there is a significant change in the ambient temperature due to a change in the environment, let the DT-29 acclimate to this new ambient temperature for at least 15 minutes before using it.

V. DESCRIPTION OF THE NON CONTACT INFRARED THERMOMETER

PRESTIGE
MEDICAL®

Non-Contact Infrared Thermometer
Model: DT-29
Batteries: 2xAAA(1.5V) 3V
Measuring distance: 3cm~5cm
Manufactured for Prestige Medical

IP22

Made in China

VI. FUNCTIONS

1. Specially designed to measure the body temperature of regardless of the room temperature.
2. Audible alert when body temperature measures over 100.4^{o} F (Body Mode).
3. Quick and reliable results.
4. Stores the 32 last measurements.
5. Crisp, easy-to-read back-lit digital LCD display.
6. Data displayed in Celsius or Fahrenheit.
7. Automatic shut-off (energy saver).
8. Small, convenient, easy to use.

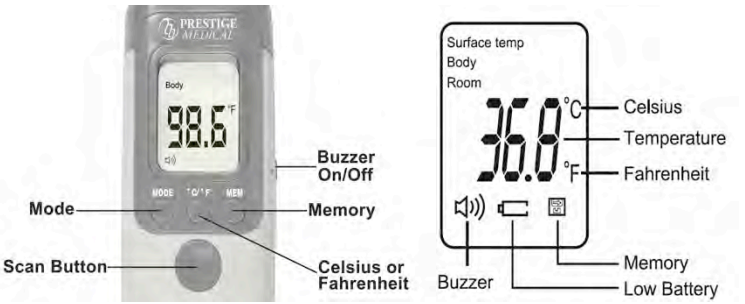
Additional function:

The DT-29 Infrared Forehead Thermometer can also be used to measure the temperature of a baby-bottle or bath,(by using the Surface Temp function) or room temperature (by using the Room function).

VII. USE

1. Install battery
2. For the first use or when inserting new batteries please allow 10 minutes for the device to stabilize.
3. Aim at the forehead over the right eyebrow from a distance of 5 cm (2 in) and press the measuring key. The temperature is displayed in 1 second.
4. Before taking the temperature, make sure to remove hair and perspiration from the forehead.

VIII. SETTING AND FUNCTION OF MENU



CONFIGURATION AND FUNCTION OF MENU

1. Setting the mode

a. Press Mode button, and the screen will display: Body...°F

b. Press again and the screen will display: Surface Temp...°F

c. Press again and the screen will display: Room...°F

Note: The instrument default is set to BODY mode

2. Press the °C/ °F button to transfer between Celsius and Fahrenheit. The instrument default is set to Fahrenheit mode.

3. Press MEM (Memory) button, which will then display the last temperature, and allows for a view of the last 32 measurements taken. Press MEM (Memory) button for 5 seconds, all data in memory will be deleted.

4. Press the “Buzzer On/Of” button to open or close the buzzer voice. The instrument default is set to Buzzer on mode.

Important!
The surface body temperature differs from the internal body temperature.
To obtain the interanl temperature ,always use the "BODY"mode.
Please make sure to select"SURFACE TEMP"mode for an external area reading.

5. Recalibration of device via the F4 MENU

The DT-29 calibration is factory-set. Depending on various skin types and thickness, there may be temperature differences. The F4 function will recalibrate and if you see a difference in the reading, you must recalibrate the unit.

Instructions for recalibration:

Press the Mode and °C/ °F buttons at the same time for 3 seconds.

The screen will then display: F4

Press Mode to increase 0.1°F, press °C/ °F to reduce 0.1°F.

Press MEM button to save the setting.

In the cases of seasonal or environmental changes a verification and adjustment should be carried out.

6. CHANGING THE BATTERIES

Display: when the LCD screen displays "⊂⊃", the battery level is low. Open the lid and change the batteries, ensuring correct polarity positioning. Incorrect polarity could cause damage to the device and compromise the warranty of your DT-29. Never use rechargeable batteries. We recommend alkaline batteries.

IX. TECHNICAL CHARACTERISTICS & PRECISION

1. Normal conditions of use:

Operating temperature: 50°F~140°F (10°C ~ 40°C) Humidity : ≤ 85%

2. Power: 3 VDC (2 AAA batteries)

3. Size: 130 x 45 x 55 mm (L x W x H)

4. Weight(without batteries): 75g

5. Display Resolution: 0.1° F (0.1°C)

6. Measuring range:

In Body mode: 90°F – 109°F (32°C – 42.9°C)

In Surface Temp mode: 32°F to 140°F (0°C ~ 60°C)

In room mode: 32°F to 104°F (0°C ~ 40°C)

7. Back-light Display

8. Precision: From 96.8°F to 102.2°F (36°C to 39°C) = +/-0.2°C/F

9. Consumption: ≤ 150mW

10. Accuracy: ± 0.6° F (0.3° C)

11. Measuring distance: 1.2 – 2 in (3 cm – 5 cm)

12. Automatic turn-off: 30 sec.

DT-29 : Precision

From 34°C to 35.9°C = ± 0.3°C From 93.2°F to 96.6°F =± 0.3°F	According to ASTM Standard E1965-1998 (2003)
From 36°C to 39°C = ± 0.2°C From 96.8°F to 102.2°F = ±0.2°F	
From 39°C to 42.5°C = ± 0.3°C From 102.2°F to 108.5°F = ± 0.3°F	

Precision is not guaranteed outside temperature readings below 90°F or above 109°F (32°C to 42.9°C).

X. WARNINGS

- The protective glass over the lens is the most important and fragile part of the thermometer, please handle with care.
- Clean the glass with cotton swab, dampened with water or 70% alcohol solution.
- Use alkaline batteries whenever possible. DO NOT use rechargeable batteries.
- Remove the batteries when Instrument is not being used for an extended period of time.
- Do not expose the instrument to sunlight or water.
- Any impact will damage the instrument.

XI. ACCESSORIES SUPPLIED

User Manual

Alkaline Batteries -2 each 1.5V AAA

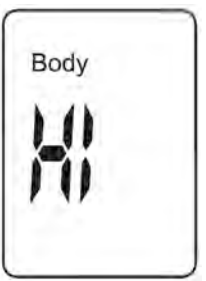
XII. TROUBLESHOOTING

If you have one of the following problems while using your DT-29 Infrared Thermometer, please refer to this breakdown service guide to help resolve the problem. If the problem persists please contact our Technical Service Department.

THE SCREEN DISPLAYS A BODY TEMPERATURE LESS THAN 89.6°F (32°C)

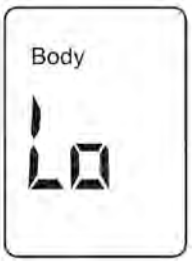
To take a body temperature the function must be on Body mode. If you're on Surface Temp mode, the 89.6°F (32°C) temperature displayed is the external skin temperature.

THE SCREEN DISPLAYS THE MESSAGE : HI



When using the DT-29 Infrared Thermometer the message HI can appear on the screen.
The analysis is above the measurement range selected, either greater than 109°F (42.9°C) in Body Mode or greater than 140°F (60°C) in Surface Temp Mode.

THE SCREEN DISPLAYS THE MESSAGE : LO



When using the DT-29 Infrared Thermometer, the message Lo can appear on the screen.

The temperature measured is under the measuring range selected, either less than 90°F (32°C) in Body Mode or less than 32°F (0°C) in Surface Temp Mode. The following messages appear in various cases:

Reasons for LO message display	Solution
Temperature reading hampered by hair, perspiration, etc.	Make sure that there is no obstruction prior to taking a temperature.
Temperature hampered by an air current (A/C).	Make sure there is no air current as this could interfere with the measuring system.
Temperature readings too close together, the thermometer did not have the opportunity to re-set.	Pause for 3~5 seconds minimum between two readings – 15 seconds pause is advised.
The measuring distance is too far.	Please maintain the measuring distance between 3 and 5 cm (1. 2 in. ~2.0 in.).

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