



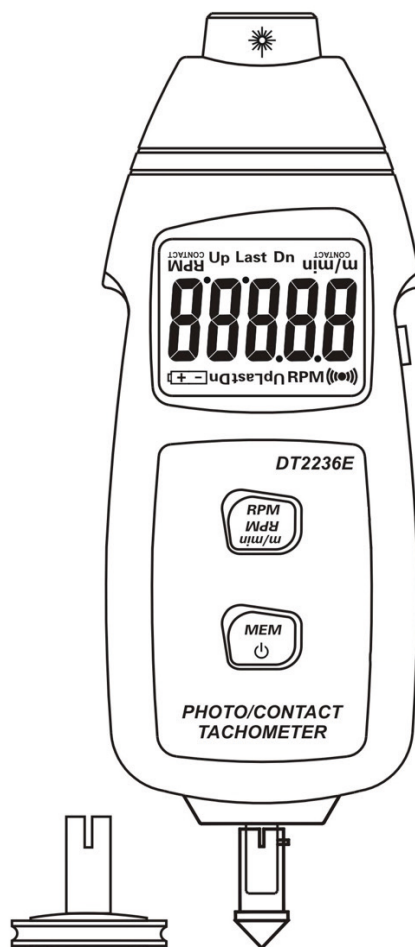
USER MANUAL

INSPECTION

Diesella

HIGH-PRECISION PHOTO/CONTACT DUAL-USE TACHOMETER

15117465



SAVE THIS MANUAL

Keep this manual and the receipt of your purchase in a safe and dry place for future reference in terms of functions, descriptions, specifications, operation and precautions. Write down the product serial number on the back of the manual (*or month and year of purchase, if the product has no number*).

UNPACKING

When unpacking, make sure that the product is intact and undamaged.

If any parts are missing or broken, please call **+45 7633 8888** as soon as possible.



Please read this material before using the product to avoid serious injury.
 This document must be kept in a safe place and passed on together with the device.

I. FUNCTION:

1. Microprocessor (mcu) chip, photoelectric technology, anti interference technology and semiconductor laser.
2. Wide measuring range and high resolution.
3. Large LCD display, clear reading, no parallax.
4. Automatically store the maximum value **Up**, minimum value **Dn** and the last measurement **Last**, store about 500 measurement values at the same time, convenient for users to count and analyze the measurement data
 (The measurement data is automatically refreshed when you press [Measurement key]).
5. When the battery voltage is too low, the meter displays the prompt symbol [+ -].
6. Contact measurement and non-contact measurement, one instrument for two purposes.
7. Streamlined ergonomic shaped design.
8. The shell is made of light and strong ABS plastic.
9. The meter has an automatic shutdown function; it switches off automatically after five minutes if it has not been used.



II. SPECIFICATIONS

| | | | | | | | |
|-------------------------------|---|---------------------------|--|-----------------------|--|-------------------------------|---|
| Display: | 5-digit large-screen LCD display, character height 18mm | | | | | | |
| Measuring range: | 2.5 ~ 99999 RPM (r/min) non-contact speed 0.5 ~ 19999 RPM (r/min) contact speed 0.05 ~ 1999.9 m/min (m/min) contact surface speed | | | | | | |
| Resolution: | <table border="0"> <tr> <td>Non-contact speed:</td> <td>0.1 RPM (r/min) (2.5 ~ 999.9 RPM) 1 RPM (r/min) (over 1000 RPM)</td> </tr> <tr> <td>Contact speed:</td> <td>0.1 RPM (r/min) (0.5 ~ 999.9 RPM) 1 RPM (r/min) (over 1000 RPM)</td> </tr> <tr> <td>Contact surface speed:</td> <td>0.01m/min (m/min) (0.05 ~ 99.99m/min) 0.1 m/min (m/min) (over 100 m/min)</td> </tr> </table> | Non-contact speed: | 0.1 RPM (r/min) (2.5 ~ 999.9 RPM) 1 RPM (r/min) (over 1000 RPM) | Contact speed: | 0.1 RPM (r/min) (0.5 ~ 999.9 RPM) 1 RPM (r/min) (over 1000 RPM) | Contact surface speed: | 0.01m/min (m/min) (0.05 ~ 99.99m/min) 0.1 m/min (m/min) (over 100 m/min) |
| Non-contact speed: | 0.1 RPM (r/min) (2.5 ~ 999.9 RPM) 1 RPM (r/min) (over 1000 RPM) | | | | | | |
| Contact speed: | 0.1 RPM (r/min) (0.5 ~ 999.9 RPM) 1 RPM (r/min) (over 1000 RPM) | | | | | | |
| Contact surface speed: | 0.01m/min (m/min) (0.05 ~ 99.99m/min) 0.1 m/min (m/min) (over 100 m/min) | | | | | | |
| Measurement accuracy: | ±(0.05 % + 1 digit) | | | | | | |
| Sampling time: | 0.6 seconds (above 100 rpm) | | | | | | |
| Range selection: | Automatic switching | | | | | | |
| Time base: | 6MHz quartz crystal vibrator | | | | | | |
| Effective distance: | 50mm ~ 500mm (photoelectric type) | | | | | | |
| Size: | 155 × 70 × 35mm (without contact accessories) | | | | | | |
| Power supply: | 3 × 1.5V AA batteries | | | | | | |

III. PANEL DESCRIPTION (FIG.1)

1. Photoelectric window used in non-contact speed mode.
2. LCD screen.
3. [Measurement Key]: Press the button to start the measurement and release to stop.
4. [Switch Key]: Switch between three modes:
 - a. Non-Contact Speed.
 - b. Contact Speed.
 - c. Contact Surface Speed.
5. [Power key/View button]: Long press to turn on/off; short press [View] to store data.
6. Contact shaft assembly in contact mode.
7. Contact surface speed accessorie (surface speed wheel).

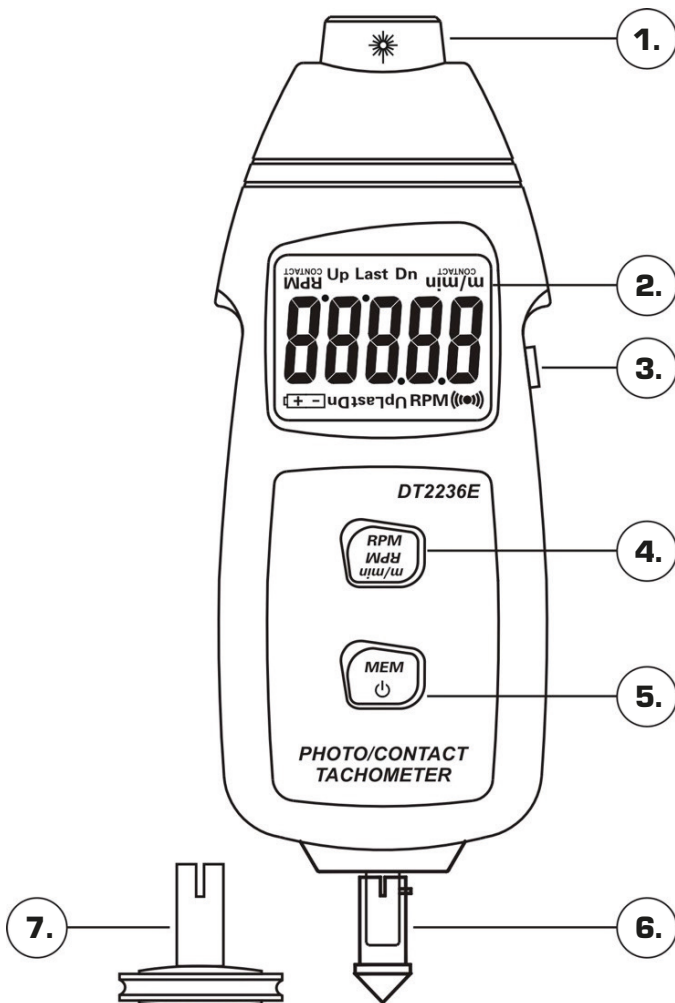


Fig. 1.

IV. OPERATION INSTRUCTIONS

- **Power on/off:** Press and hold the [Power Key] for 2 sec., the meter is turned on, and the screen display value is 0.
Default mode of the meter is [Non-Contact Speed], in this mode, press [Measurement Key] to emit red light (*NOTE: Do not aim at eyes*).
Long press [Power Key] for 2 sec. to shut down.
- **Mode switching:** Long press [Switch Key] once to switch from [Non-Contact Speed] to [Contact Speed]. At this time, the characters displayed on the LCD screen will be reversed so that the characters seen during contact measurement are also positive. If you press and hold this key once again, it will switch to [Contact Surface Speed], and so on.
- **Measure**
 1. [Non-Contact Speed] Rotation speed measurement (default mode when power-on)
 - a. Install the battery and press the [Power key], choose [Non-Contact Speed]. Then add a piece of reflective tape on the object you wish to measure and then turn it on.
 - b. Press the [Measuring Key] on the right to make the red light beam irradiate the measured target vertically (the part where the reflective paper is attached), the measurement starts, and the measured value is displayed (see Fig. 7).
 - c. After the displayed value is stable, release the [Measuring Key]. The display now shows the last value and multiple measurement data has been automatically stored in the meter, and the measurement ends.
 2. [Contact Speed] Rotation speed measurement.
 - a. Install the contact measurement accessories and switch the meter mode to [Contact Speed]. At this time, the displayed characters are automatically turned over.
 - b. Press the rubber head contacting the rotating shaft with the measured object and ensure that it rotates synchronously and coaxially with the measured object (see Fig. 8).
 - c. Press [Measuring Key] to start measurement, and release [Measuring Key] after the displayed value is stable, the measured value is automatically stored, and the measurement ends.
 3. [Contact Surface Speed] Surface speed measurement (see Fig. 9).
 - a. Install the measuring surface speed wheel and switch the mode to [Contact Surface Speed]
 - b. Hold the surface speed wheel to the measured object and ensure that it moves synchronously with the measured object.
 - c. Press [Measuring Key] to start measurement, release it after the displayed value is stable, the measured value is automatically stored, and the measurement ends.
 - d. The meter automatically saves the measured value during the measurement process, about 25 data per minute. If more data needs to be stored, the measurement time is lengthened.

V. DATA STORE AND VIEW

1. After the measurement is completed, release the [Measurement Key], and the meter retains the display of the last value.

The maximum value, minimum value, last value and multiple instantaneous values have been automatically stored in the instrument. Short press the [Power] key again, and the stored measurement values will be displayed separately.

2. [View stored data]: After finishing the measurement, short press the [Power Key] several times to complete the cycle [View] operation

- a. Short press [Power Key] once:
Display the max. value Up, as shown in Fig. 2.
- b. Short press [Power Key] once again:
Display the min. value Dn, as shown in Fig. 3.



Fig. 2.

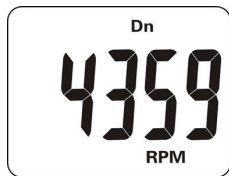


Fig. 3.

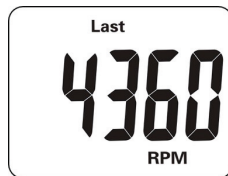


Fig. 4.

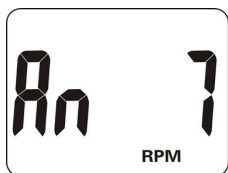
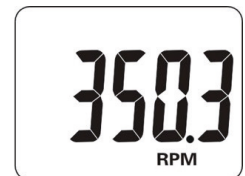
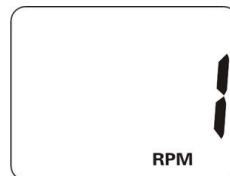


Fig. 5.

- c. Short press [Power Key] once again:
Display the last value Last, as shown in Fig. 4.
- d. Short press [Power Key] once again: Display the total number of stored instantaneous values. An 7 means that there are 7 instantaneous values to view, as shown in Fig. 5. *Note: The number 7 is an example.*
- e. Press [Power Key] again: Display the instantaneous value index number 1, and automatically jump to the corresponding instantaneous value after 1 second, so press [Power Key] several times until the last value, and then return to the display of starting point of above sequence as shown in Fig. 6.

3. Data clearing: Press [Measurement Key] once, all saved data are cleared to 0.



⋮

⋮

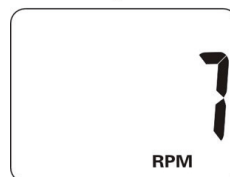



Fig. 6.

First the index number is displayed and then the value:
ie. the instantaneous value of No. 1 = 350.3 RPM.

Reminder: The above and the figures are examples of [View] data in [Non-Contact], [Contact Speed] and [Contact Surface Speed].

VI. AUTOMATIC SHUTDOWN AND BATTERY REPLACEMENT

1. If the meter is not in use, it will automatically switch off after five minutes!
2. When the battery power is too low, the battery symbol [] will appear on the left side of the display, indicating that the voltage is too low and the batteries need to be replaced.
3. Open the battery back cover and remove the old batteries.
4. Replace with 3 × 1.5V AA batteries according to the polarity marks on the case.
5. If the meter will not be used for a long time, please remove the batteries to avoid battery leakage and damage to the meter.

VII. PRECAUTIONS

1. **Use of reflective marks:** The area of reflective tape should not be too small, cut a square reflector with a width of about 12 mm and attach it to the rotating shaft.

In case the shaft is obviously reflective, it must be painted or covered with black tape. Add the reflective tape on the shaft afterwards.

Note: When sticking reflective tape, the surface of the shaft should be smooth and clean. See the schematic as shown in Fig. 7.
2. When measuring at low speed, in order to improve the measurement accuracy, it is recommended that the user paste several reflective tapes evenly on the measured object; divide the displayed data by the number of reflective tapes to get the actual measurement value.
3. The contact speed measurement accessories are divided into large cone, small cone and cylindrical three types, of which large conical and cylindrical rubber parts are suitable for low speed measurement; small cone rubber fittings are suitable for high speed measurement.

PHOTOELECTRIC SPEED

Measuring distance: 50~500 mm

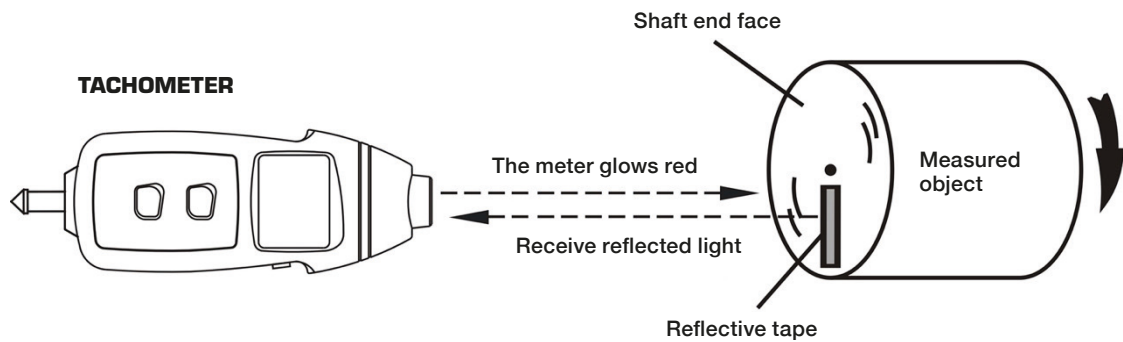


Fig. 7.

CONTACT MEASUREMENT SPEED

Place the rubber part of the instrument in the center of the shaft to make the shaft of the instrument rotate synchronously.

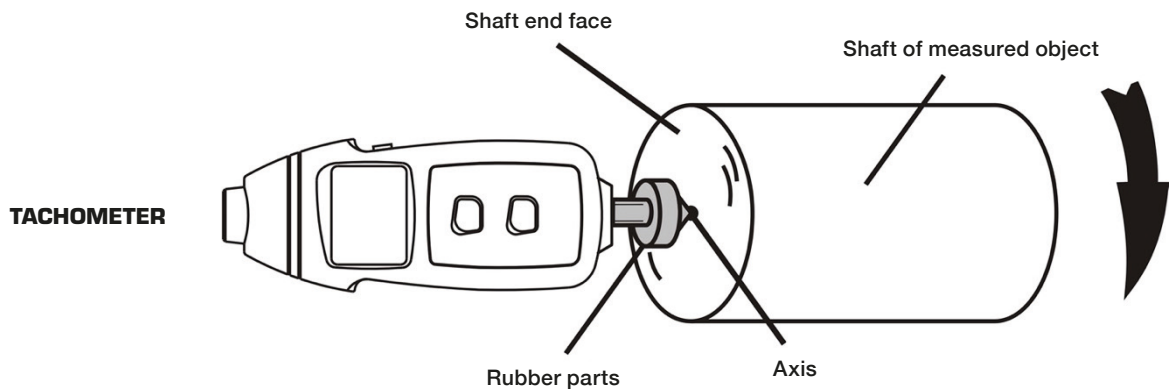


Fig. 8.

CONTACT MEASUREMENT SURFACE SPEED

The outer edge of the surface speed wheel is closely attached to the surface of the object to be measured, so that the surface speed wheel rotates synchronously.

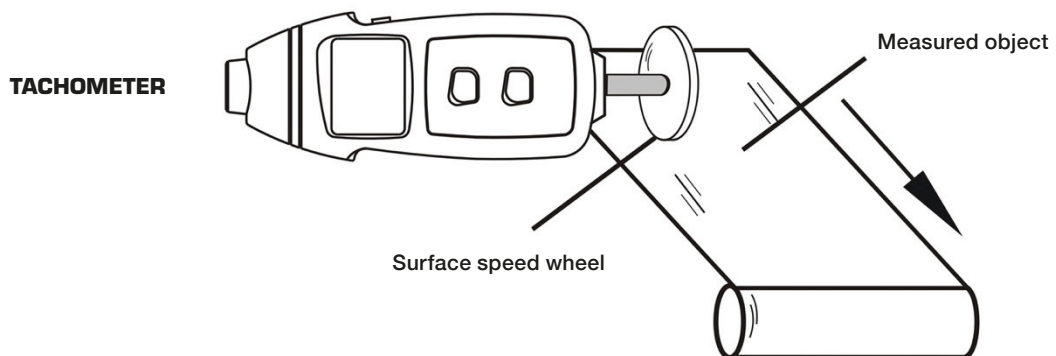


Fig. 9.