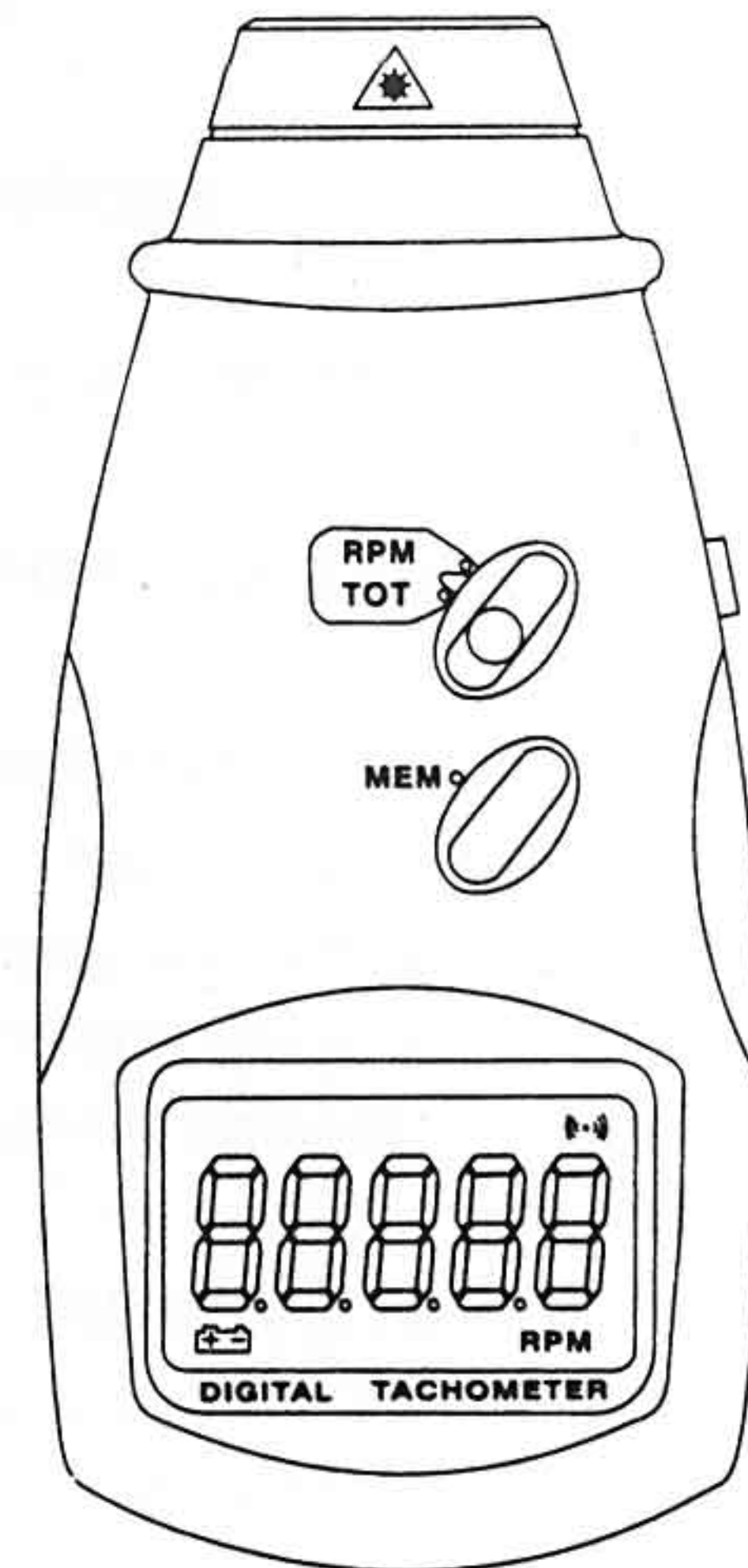


DIGITAL TACHOMETER



OPERATION MANUAL

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1. FEATURES

- * The instrument is delicate and rugged, This tachometer used the durable, Long-Lasting components and a strong, light weight ABS plastic housing. The housing has been Carefully shaped to fit comfortably in either hand.
- * This tachometer is used the micro computer (CPU) technique, photoelectrical technique, and junction Laser technique for one instrument combine PHOTO TACH. (RPM) & CONTACT TACH. (RPM, m/min), & TOT.
- * Wide measuring range and High resolution.
- * High visible (no parallax) digital LCD display.
- * The last displayed value/max. Value /min. Value/ may be automatically stored in memory and can be displayed by pressing MEMORY CALL BUTTON.
- * Low battery voltage indication.

2. SPECIFICATIONS

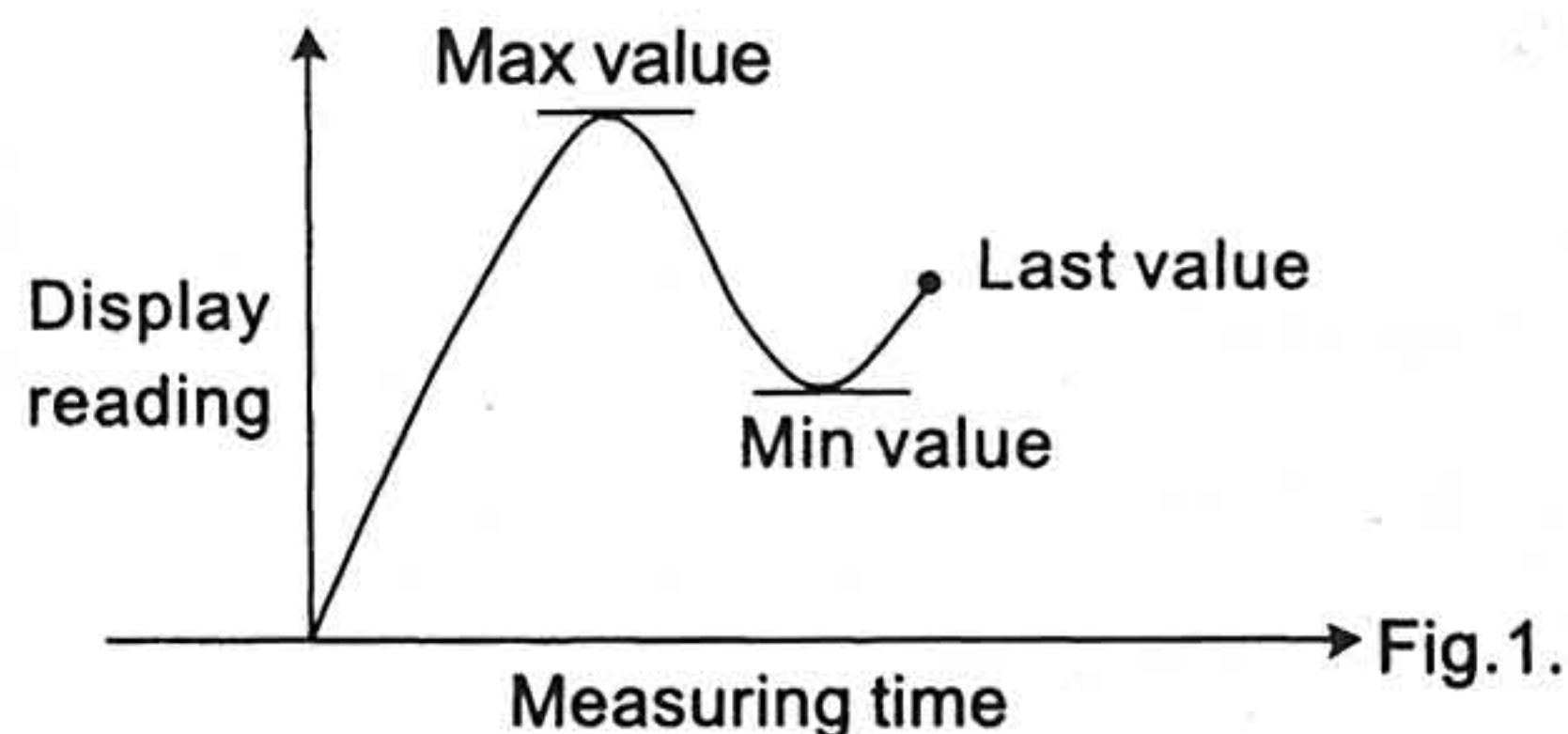
Display:	5 digits, 15mm (0.6") LCD
Accuracy:	$\pm(0.05\%+1 \text{ digit})$.
Sampling Time:	0.5 sec (over 120 RPM).
Range select:	Auto-Ranging
Memory:	The max. Value/Min. Value/Last Displayed Value will be automatically stored in memory.
Detecting Distance:	50mm to 500 mm(PHOTO).
Time Base:	Quartz crystal.
Power Consumption:	Approx 50mA
Battery:	4X1.5V AA Size Battery.
Operation Temp:	0°C~50°C.
Dimension:	160X72X37mm
Weight:	30g (including battery).

Accessories:

Carrying case	1 pc.
Reflecting tape marks	(700mm)
Operation manual.....	.1 pc.

3. MEMORY CALL BUTTON OPERATION

- 3-1. A readout (the Last value, max. value, min. value) obtained immediately before turning off the MEASURING BUTTON is automatically memorized. For example, please refer to the following Fig. 1.



- 3-2. That Memorized value can be displayed on the indicator whenever.
- First push-To display the Last value: "LA" and "the Last value" will be displayed by turn.
 - Second push-To display the maximum value: "UP" and "the max. value" will be displayed by turn.
 - Third push-To display the minimum value: "dn" and "the min. value" will be displayed by turn.

4. BATTERY REPLACEMENT

- When it is necessary to replace the battery (battery voltage less than approx. 4.5V), "E" will appear on the display.
- Slide the battery cover away, from the instrument and remove the battery.

C. Install the batteries (4X1.5V AA/UM-3) into the case. Permanent damage to the circuit may result from incorrect installation.

D. If the instrument is not to be used for any period, remove batteries.

5. PHOTO TACHOMETER

Test Range: 2.5 to 99,999 RPM (r/min)
Resolution: 0.1 RPM (2.5 to 999.99 RPM)
1 RPM (over 1000 RPM)

Total Test Range: 1~99999

5-1. Front panel descriptions

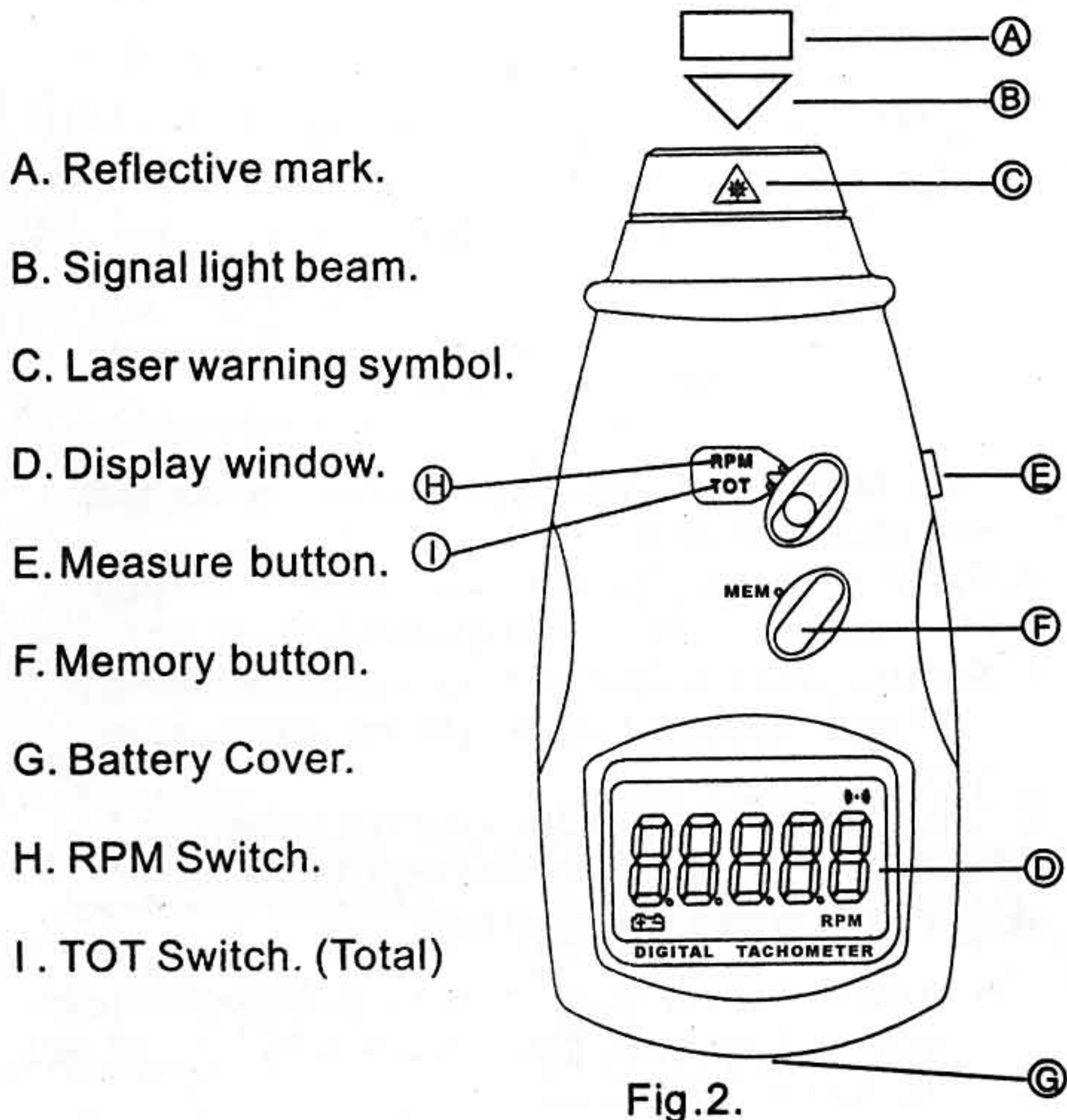


Fig.2.

5-2. Measuring procedure

Slide the function switch to "RPM" position. Apply a reflective mark to the object being measured. Depress the MEASURE BUTTON, and align the visible light beam with the applied target. Verify that the MONITOR INDICATOR lights when the target aligns with the beam (about 1 to 2 seconds).

5-3. Measuring consideration

5-3.1. REFLECTIVE MARK

Cut and peel adhesive tape provided into approx. 12mm (0.5") squares and apply one square to each rotation shaft.

- The non-reflective area must always be greater than the reflective area.
- If the shaft is normally reflective, it must be covered with black tape or black paint before attaching reflective tape.
- Shaft surface must be clean and smooth before applying reflective tape.

5-3.2. VERY LOW RPM MEASUREMENT

As it is easy to get high resolution and fast sampling time. If measuring the very low RPM values, suggest user to attach more "REFLECTIVE MARKS" averagely. Then divide the reading shown by the number of "REFLECTIVE MARKS" averagely. Then divide the reading shown by the number of "REFLECTIVE MARKS" to get the real RPM.

5-4. Battery removal

If the instrument is not to be used for any extended period, remove batteries.

6. CONTACT TACHOMETER

Measurement:	CONTACT TACH -5 to 19,999 RPM) SURFACE SPEED (m/min) -0.05 to 1,999.9 m/min SURFACE SPEED (ft/min) -0.2 to 6,560 ft/min
Resolution:	CONTACT TACH 0.1RPM(0.5 to 999.9 RPM) 1RPM (over 1,000 RPM) SURFACE SPEED (mi/min) 0.01m/min(0.05 to 99.99 m/min) 0.1 m/min (over 100 m/min) SURFACE SPEED (ft/min) 0.1 ft/min (0.1 to 999.9 ft/min) 1ft/min(over 1,000 ft/min)

6-1. Front panel descriptions.

- A. Surface speed wheel
- B. RPM adapter
- C. Shaft
- D. Display window.
- E. Measure button.
- F. Memory call button.
- G. Battery Cover.
- H. Function switch.

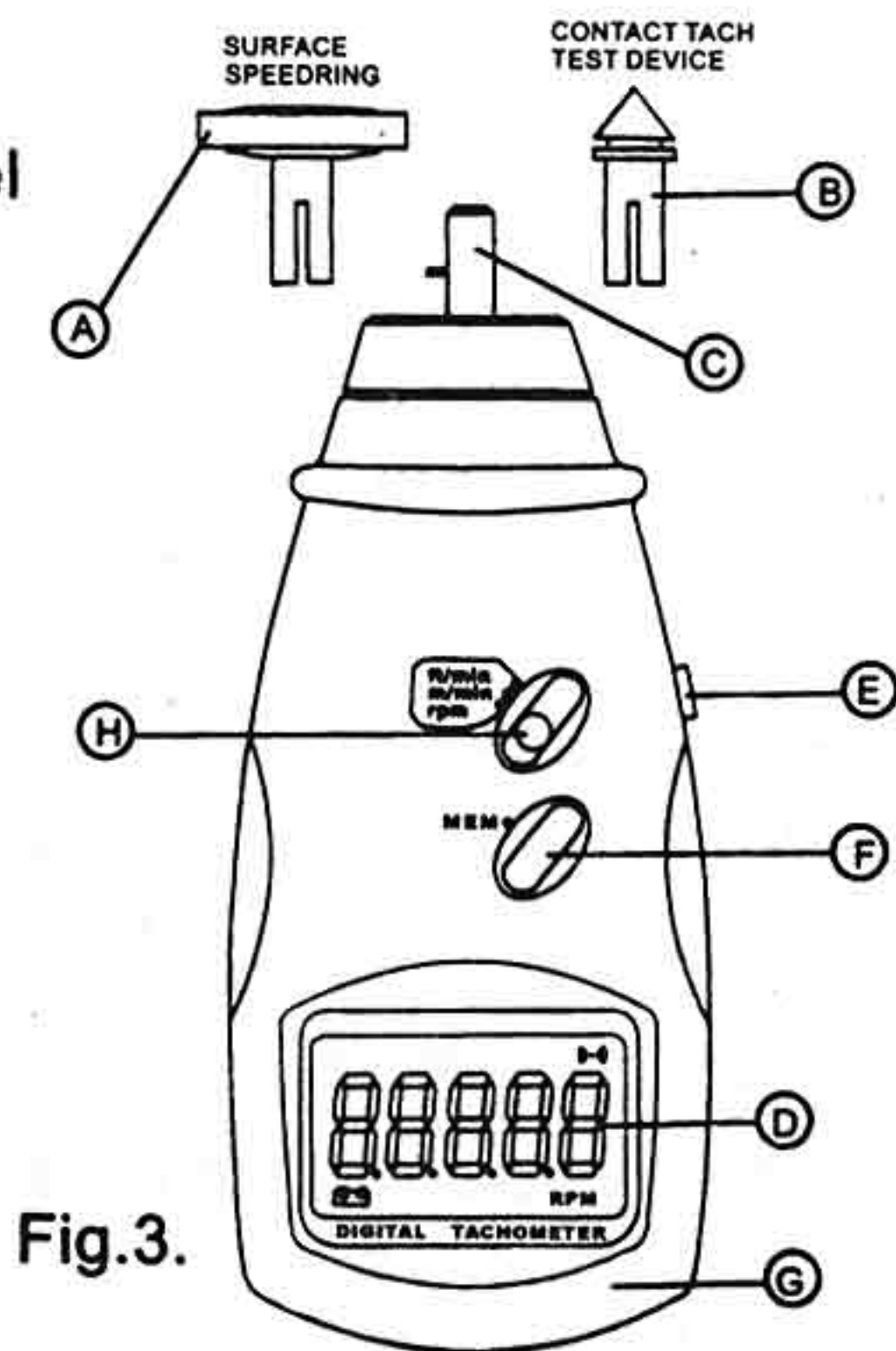


Fig.3.

6-2. Measuring procedure

(1) RPM MEASUREMENT

- A. Slide the FUNCTION SWITCH to "RPM" position.
- B. Install the proper RPM ADAPTER on the SHAFT.
- C. Depress the MEASURING BUTTON and lightly pressing the RPM ADAPTER against the center hole of rotating shaft. Be certain to keep alignment straight. Release the MEASURING BUTTON when the display reading stabilizes (about 1 to 2 seconds).

(2) SURFACE SPEED MEASUREMENT

- A. Slide the FUNCTION SWITCH to "m/min." or "ft/min".
- B. Install the SURFACE SPEED WHEEL on the SHAFT instead of the RPM ADAPTER.
- C. Depress the MEASUREING BUTTON and simply attaching the SURFACE SPEED WHEEL to the detector. Release the MEASURING BUTTON when the display reading stabilizes (about 1 to 2 seconds).

7. PHOTO/CONTACT TACHOMETER

7-1. Specification

Measuring Range:	PHOTO TACH 2.5 to 99,999 RPM CONTACT TACH 0.5 to 19,999 RPM SURFACE SPEED (m/min.) 0.05 to 1,999.9 (m/min.)
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Resolution: PHOTO TACH
 0.1 RPM(2.5 to 999.9RPM)
 1RPM(over 1000 RPM)
 CONTACT TACH
 0.1RPM (0.5 to 999.9RPM)
 1RPM (over 1000 RPM)
 SURFACE SPEED (m/min)
 0.01 m/min. (0.05 to 99.99m/min)
 0.1 m/min (over 100m/min)

7-2. Front panel descriptions

D. Measure button.

E. Display window.

F. Function Switch.

G. Memory Switch.

H. Battery cover.

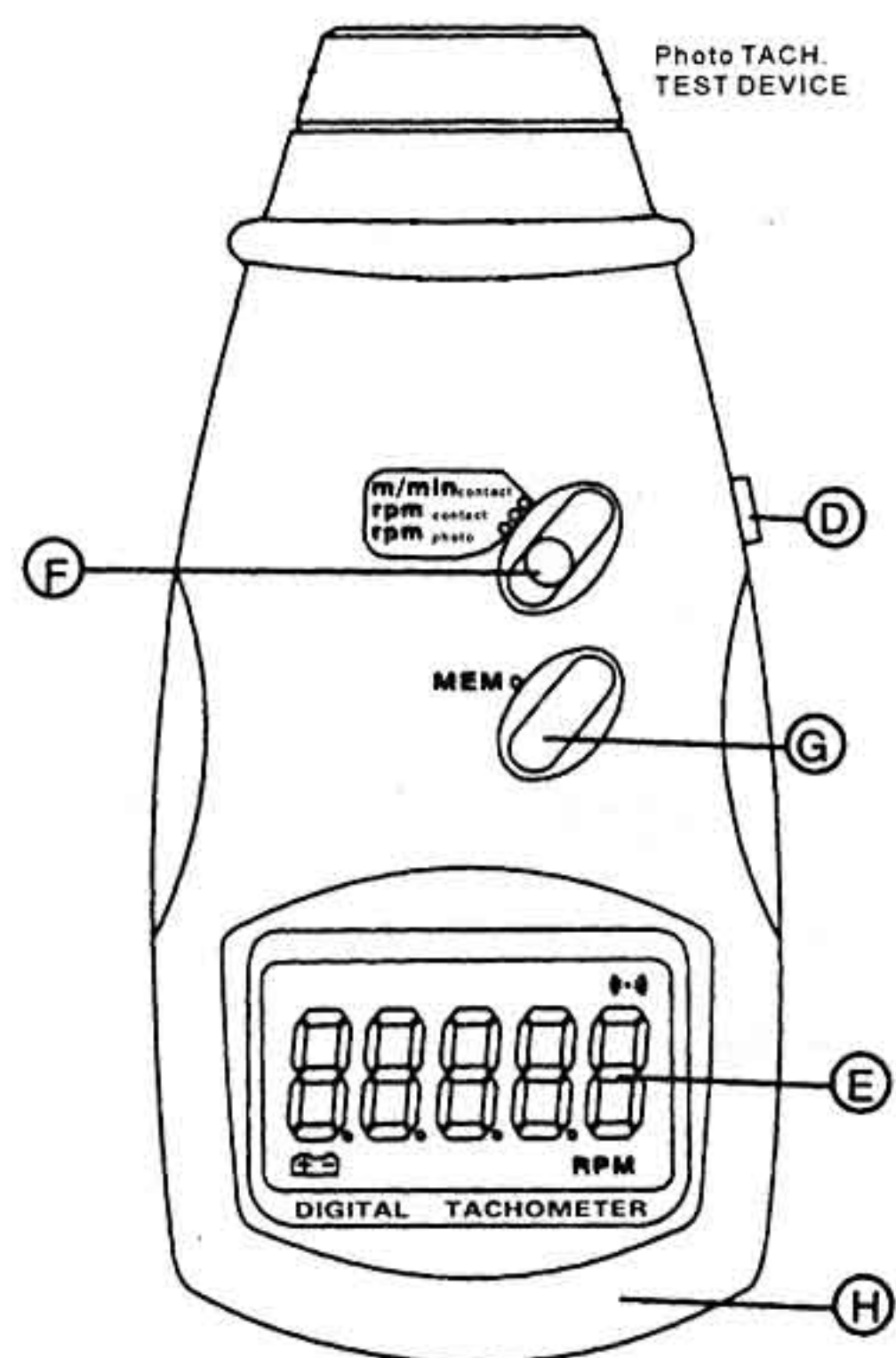


Fig.4.