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## Benetech GM8905

# Benetech GM8905 Digital Laser Tachometer User Manual

Model: GM8905

## INTRODUCTION

This manual provides instructions for the safe and effective operation of the Benetech GM8905 Digital Laser Tachometer. This device is designed for non-contact measurement of rotational speed (RPM) using a laser, offering precise readings for various industrial and mechanical applications.



Image description: A front view of the Benetech GM8905 Digital Laser Tachometer, showing its black casing, LCD display with "9999.9 RPM" shown, and orange control buttons for MEM, Power, and Light. A yellow laser warning symbol is visible at the top.

## SAFETY INFORMATION

Please read all safety warnings and instructions carefully before using this product. Failure to follow these instructions may result in injury or damage to the device.

- **Laser Safety:** Do not look directly into the laser beam. Laser radiation can cause eye damage. Do not point the laser at people or animals.
- **Proper Use:** Use the device only as described in this manual. Any unauthorized modifications or repairs will void the warranty and may pose safety risks.
- **Environmental Conditions:** Keep the device away from water, high humidity, and extreme temperatures. Do not operate in explosive atmospheres.
- **Battery Handling:** Dispose of batteries properly according to local regulations. Do not mix old and new batteries or different types of batteries.

## PRODUCT OVERVIEW

The Benetech GM8905 is a portable, non-contact digital tachometer designed for accurate RPM measurements. It features a large LCD display, memory function, and a precise laser pointer for easy targeting.



Image description: The Benetech GM8905 Tachometer laid out with its instruction manual, two AAA batteries, reflective tape, and product packaging.

## Components

- **Laser Emitter:** Projects the laser beam onto the target surface.
- **Photoelectric Receiver:** Detects the reflected laser light to calculate RPM.
- **LCD Display:** Shows measurement readings, units, and status indicators.
- **MEM Button:** Cycles through Maximum, Minimum, Average, and Last measurement values.
- **Power Button:** Turns the device on or off.
- **Light Button:** Activates or deactivates the display backlight.
- **Battery Compartment:** Located at the rear, holds two 1.5V AAA batteries.

## SETUP

### 1. Battery Installation

1. Locate the battery compartment cover on the back of the device.
2. Slide the cover open.
3. Insert two 1.5V AAA batteries, ensuring correct polarity (+/-) as indicated inside the compartment.
4. Close the battery compartment cover securely.



Image description: The Benetech GM8905 Tachometer inside its packaging, alongside its instruction manual and two AAA batteries, indicating the items included for setup.

## 2. Applying Reflective Tape

For accurate non-contact measurements, a piece of reflective tape must be applied to the rotating object.

- Cut a small piece of the provided reflective tape (approximately 10-30mm long).
- Attach it to the rotating shaft, disk, or wheel where you intend to measure RPM. Ensure the tape is flat, smooth, and securely adhered to prevent detachment during rotation.
- The reflective tape provides a distinct target for the laser beam, allowing the tachometer to count rotations.

## OPERATING INSTRUCTIONS

### 1. Powering On/Off

Press the **Power** button (⏻) to turn the tachometer on. The LCD display will illuminate. To turn it off, press and hold the **Power** button for approximately 2 seconds. The device also features an automatic shutdown function, turning off after 60 seconds of inactivity to conserve battery life.

### 2. Taking a Measurement

1. Ensure the reflective tape is properly applied to the rotating object.
2. Hold the tachometer firmly and point the laser beam towards the reflective tape on the rotating object. The laser emitter is located at the top front of the device.
3. Maintain a measuring distance between 50mm and 500mm (approximately 2 to 20 inches) for optimal accuracy.
4. The current RPM reading will be displayed on the LCD screen. Ensure the laser spot consistently hits the reflective tape for stable readings.




Image description: A side view of the Benetech GM8905 Tachometer, highlighting the laser emitter at the front, which projects the beam for RPM measurement.

### 3. Using Memory Functions (MAX/MIN/AVG/LAST)

During or after a measurement session, press the **MEM** button (  ) repeatedly to cycle through the stored measurement values:

- **MAX:** Displays the maximum RPM recorded during the current measurement session.
- **MIN:** Displays the minimum RPM recorded during the current measurement session.
- **AVG:** Displays the average RPM calculated from the measurements taken.
- **LAST:** Displays the last measured RPM value before entering memory mode.

### 4. Backlight

Press the **Light** button (  ) to turn the LCD backlight on or off. This feature improves visibility of the display in low-light conditions.

## MAINTENANCE

### Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners, solvents, or corrosive chemicals, as these can damage the casing or display. Keep the laser emitter and photoelectric receiver lenses clean and free of dust or debris to ensure accurate readings.

### Battery Replacement

When the low battery indicator appears on the display, replace the batteries promptly to ensure continued accurate readings. Refer to the "Battery Installation" section for detailed instructions.

### Storage

If the device will not be used for an extended period, remove the batteries to prevent leakage and potential damage. Store the tachometer in a cool, dry place, away from direct sunlight, extreme temperatures, and high humidity.

## TROUBLESHOOTING

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
No display/Device won't turn on	Dead or incorrectly installed batteries	Replace batteries, ensuring correct polarity.
Inaccurate or unstable readings	Reflective tape not properly applied Measuring distance too far/close Laser emitter/receiver obstructed or dirty Strong ambient light interference	Reapply reflective tape smoothly and securely. Adjust measuring distance (50-500mm). Clean laser emitter and receiver lenses. Reduce strong ambient light if possible.
"Err" message on display	Measurement out of range or no signal detected	Ensure target RPM is within range (2.5-99999 RPM) and laser is properly aimed at the reflective tape.
Device shuts off unexpectedly	Automatic shutdown activated (60 seconds inactivity) or low battery	Turn device back on. Replace batteries if the low battery indicator is present.

## SPECIFICATIONS

The following table outlines the technical specifications of the Benetech GM8905 Digital Laser Tachometer.

LCD display	5-digit large screen LCD display, with word height of 18mm
Unit	rpm
Range	2.5-99999rpm
Resolution ratio	0.1rpm(2.5~999.9rpm) 1rpm(1000~99999rpm)
Basic precision	$\pm(0.1\%n+5d)$ rpm;(2.5~999.9rpm) $\pm(1\%n+5d)$ rpm;(1000~99999rpm)
Laser power	CLASS II 2~5mW
Sampling ratio	Once/second
Measurement distance	50-500mm
Time base	Quartz crystal
Automatic shutdown	The instrument will shut down after 60 seconds without any pressing.
Operation environment	0~50°C;32~122°F;10%~90%RH
Storage environment	-10~80°C;-14~176°F;10%~75%RH
Power supply	2x1.5V AAA battery
Dimension	55.7*29.9*127mm
Weight	106g
Equipped with 3 bars of silver reflection tag (200mm*12mm)	

Image description: A detailed table listing the technical specifications of the Benetech GM8905 Tachometer, including LCD display type, unit, range, resolution, precision, laser power, sampling ratio, measurement distance, time base, automatic shutdown, operation environment, storage environment, power supply, dimension, and weight.

Feature	Specification
Measuring Range	2.5 ~ 99999 RPM

Feature	Specification
Resolution	0.1 RPM (2.5 ~ 999.9 RPM), 1 RPM (1000 ~ 99999 RPM)
Basic Precision	$\pm(0.1\%n + 5d)$ RPM (2.5 ~ 999.9 RPM) $\pm(1\%n + 5d)$ RPM (1000 ~ 99999 RPM)
Laser Power	Class II, 2 ~ 5 mW
Sampling Ratio	Once/second
Measurement Distance	50 ~ 500 mm (2 ~ 20 inches)
Time Base	Quartz Crystal
Automatic Shutdown	After 60 seconds of inactivity
Operation Environment	0 ~ 50°C (32 ~ 122°F), 10% ~ 90% RH
Storage Environment	-10 ~ 80°C (14 ~ 176°F), 10% ~ 75% RH
Power Supply	2 x 1.5V AAA Battery
Dimensions	55.7 x 29.9 x 127 mm
Weight	106 grams (3.74 ounces)
UPC	732140088524

## WARRANTY AND SUPPORT

For warranty information or technical support regarding your Benetech GM8905 Digital Laser Tachometer, please refer to the documentation provided with your purchase or contact the retailer directly. Keep your purchase receipt as proof of purchase for any warranty claims.