



# MONARCH INSTRUMENT

*Instruction Manual*

## **Pocket Tach 99 (PT99) Noncontact Tachometer**



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## SAFEGUARDS AND PRECAUTIONS



**WARNING** - This product emits a visible beam of red LED light. Avoid exposure. The use of optical viewing aids (binoculars, for example) may increase the ocular hazard. (This is not a laser product.)

**CAUTION** - The red LED beam should not be intentionally aimed at people or animals.



Read and follow all instructions in this manual carefully, and retain this manual for future reference.

Do not use this instrument in any manner inconsistent with these operating instructions or under any conditions that exceed the environmental specifications stated.

This instrument is not user serviceable. For technical assistance, contact the sales organization from which you purchased the product.



To comply with worldwide regulations such as the U.S. Environmental Protection Agency Resource Conservation and Recovery Act (RCRA) and EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE), you must not discard this electrical/electronic product in domestic household waste. The electronic components in this device may contain environmentally harmful substances. **DO NOT DISPOSE** of this product as unsorted municipal waste. This product needs to be RECYCLED and disposed of in accordance with environmental regulations in the country of use; contact your local authorities for more information. This product may be returnable to your distributor for recycling; contact the distributor for details.

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Monarch Instrument's Limited Warranty applies.

See [www.monarchinstrument.com](http://www.monarchinstrument.com) for details.

Warranty Registration and Extended Warranty Coverage information is available online at [www.monarchinstrument.com](http://www.monarchinstrument.com).

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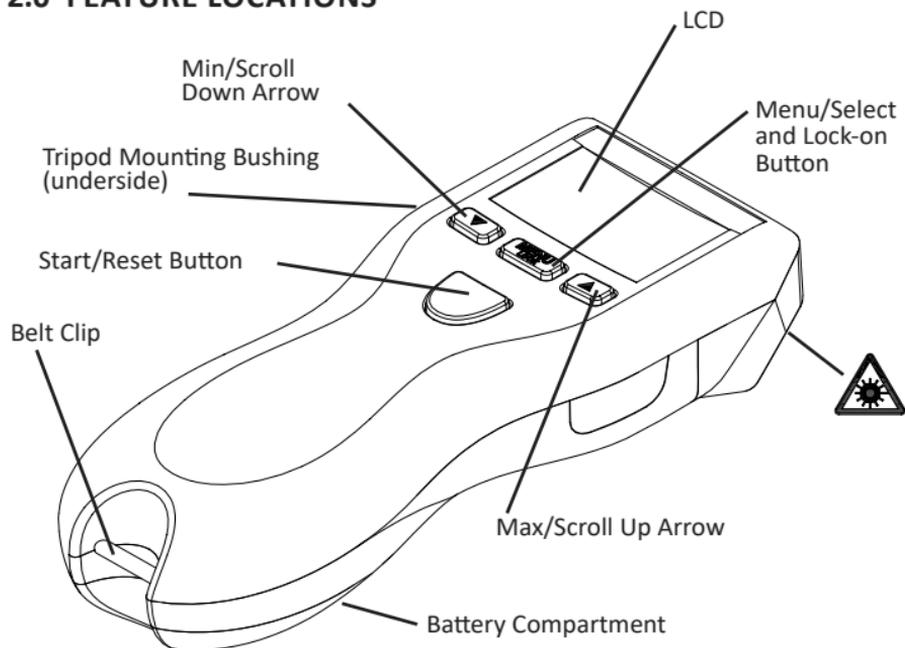
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## 1.0 DESCRIPTION

The Pocket Tach 99 is a handheld precision optical tachometer designed to make noncontact measurements of rotational speeds from 5 to 99,999 RPM at a distance of up to 36 inches [91.44 cm] from a reflective target and at an angle of up to 30° off perpendicular. The unit has the ability to recall maximum and minimum values. The unit can be tripod mounted and locked on for continuous measurements.

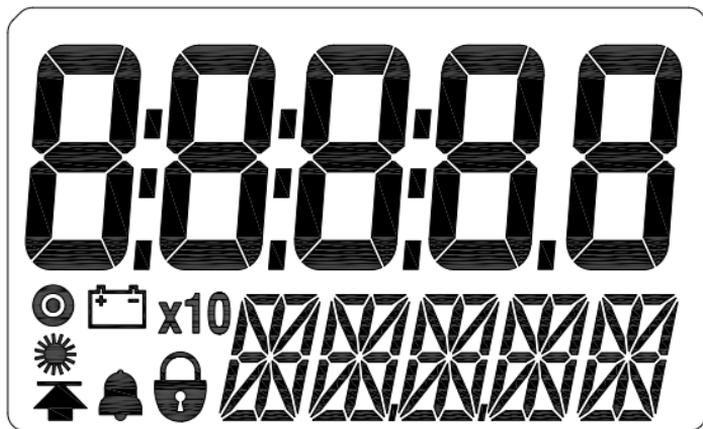
## 2.0 FEATURE LOCATIONS



### CAUTION

Red LED light emitted from this aperture. (This is not a laser product.)

### 3.0 LCD SYMBOLS



**On-Target Indicator** — blinks on whenever there is an input signal; will appear to be solid on at higher frequencies



**Low Battery icon** — indicates that the batteries are low and need to be replaced



**Times Ten icon** — indicates that the value shown is ten times that which is displayed



**LED Indicator** — red LED is on when this indicator is illuminated



**Lock icon** — indicates that the unit is locked on and making continuous measurements (Lock-on mode)

## 4.0 NONCONTACT MEASUREMENTS

### 4.1 Preparation for Measurement

1. Clean shaft

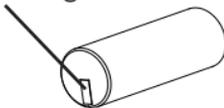
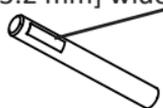


2. Apply 1/2 inch [12.7 mm] square T-5 Reflective tape



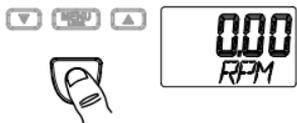
#### For Small Shafts:

As small as 1/8 inch [3.2 mm] wide on side or radius edge



### 4.2 Setup

1. Turn Power ON



- 1a. To toggle Lock On/Off



2. Enter Setup (decimal place selection)



3. Select decimal places



4. Save and exit;  
ready to measure



RPM displayed with  
selected number of  
decimal places

Unit will remember these settings (including lock on/off) even if turned off and back on.

### 4.3 Operation

Measure:



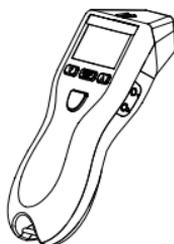
OR



*press and hold*

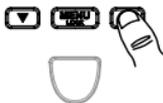


Lock on



aim LED

Recall Max:



Max Speed

Recall Min:



Min Speed

If unit Locked on: 

resets Max/Min



Power OFF:



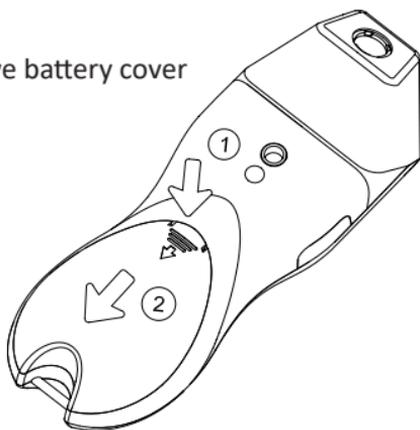
OR Automatic after 90 seconds  
if unit not Locked on

## 5.0 BATTERIES

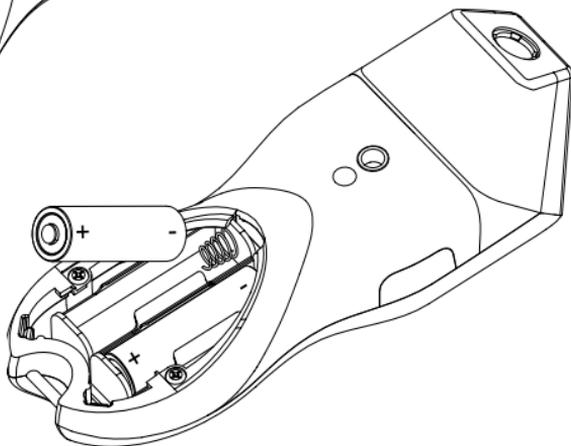
When Low Battery icon is displayed, replace batteries.



1. Remove battery cover



2. Install two 1.5 V AA  
alkaline batteries



**Note:** Both batteries face the same direction.

## 5.1 Battery Disposal



The PT99 uses (2) 1.5V AA Alkaline batteries. Make sure you remove and dispose of used batteries in accordance with environmental regulations in the country of use.



To remove the (2) batteries, see section [5.0 BATTERIES](#).

## 6.0 CLEANING

To clean the equipment, wipe with a damp cloth using mild soapy solution.

## 7.0 SPECIFICATIONS

| Specifications*  | PT99 Tachometer   |
|--|---|
| Speed Range  | 5 to 99,999 RPM   |
| Accuracy   | ±0.01% of reading or ±1 digit   |
| Resolution   | Auto-ranging: 0.001 RPM to 1.0 RPM  |
| Operating Range  | ≤ 36 in. [91.44 cm] at ≤ 30° off perpendicular  |
| Memory   | Maximum, Minimum, and Last Reading  |
| Display  | 5 digits, 5 alphanumeric LCD  |
| Light Source   | Red LED   |
| Batteries  | 2 AA 1.5 V  (DC) alkaline (included)<br>Note: batteries are not rechargeable |
| Battery Life   | 60 hours continuous typical with provided batteries   |
| Dimensions (HxWxD)   | 6.92 in. x 2.4 in. x 1.6 in.<br>[17.58 cm x 6.10 cm x 4.06 cm]  |
| <b>This product is designed to be safe for indoor use under the following conditions (per IEC61010-1):</b> |   |
| Installation Category II   | Per IEC 664   |
| Pollution Degree Level II  | Per IEC 664   |
| Temperature  | 40 °F to 105 °F (5 °C to 40 °C)   |
| Humidity   | Maximum relative humidity of 80% for temperatures up to 88 °F (31 °C) decreasing linearly to 50% relative humidity at 100 °F (40 °C); humidity non-condensing |

\*Specifications are subject to change without notice.

## 8.0 OPTIONS/ACCESSORIES

| Model               | Part Number  | Description   |
|---------------------|--------------|---|
| Padded Pouch        | 6180-047     | Padded carrying case with belt loop   |
| Latching Carry Case | 6180-048     | Latching carrying case for PT99 and accessories                               |
| Mini Tripod         | 6180-040     | Miniature tripod for use with Monarch tachometers and stroboscopes            |
| CAL-NIST            | 6109-010-CAL | NIST Traceable Certificate of Calibration (include with order or obtain RMA#) |
| T-5 Reflective Tape | 6180-070     | 5 feet [1.5 m] roll, ½ inch [13 mm] wide; additional lengths available        |



Padded Pouch  
PN: 6180-047



Latching Carrying Case  
PN: 6180-048



Mini Tripod  
PN: 6180-040



T-5 Reflective Tape  
PN: 6180-070

# Measure • Monitor • Maintain

*Monarch Instrument is committed to excellence and quality in manufacturing, sales, and service.*



*Portable  
Tachometers*



*Track-It™ Data Loggers*



*Panel Tachometers*



*Fixed Mounted  
Strobes*



*Portable Strobes*



*Frequency  
Converters*



*Speed Sensors*



*DataChart™ Paperless  
Recorders*



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