

# MT-100 Contact Pocket Tachometer

## Operation Manual

**Nidec**



### Warning

When using the master wheel, do not use an extension shaft as the wheel may come off of the shaft and cause damage or injury.

Although the tachometer is able to achieve higher measurements than what is listed, the master wheel has a maximum speed limitation of 5000 ft/min (for safety reasons).

When a high-speed rotating object is measured for hours using a cone or funnel-shaped contact probe the surface of the probe in contact with the object may become very hot.

When making surface speed or distance measurements, ensure that the 6" circumference wheel's perimeter is parallel to the object to be measured.



The MT-100 Contact Pocket Tachometer with microprocessor technology possesses the precision of the standard Shimpo Tachometer line, yet within a compact, pocket-style enclosure. The MT-100 provides users with the capabilities of measuring and recording speeds of rotational, linear and surface plus total length. These battery-operated tachometers feature the same rugged, high quality components that have made Shimpo tachometers the benchmark in the industry. The user-friendly, value-packed units feature memory storage; quick selection unit's button; length functions; retrieval of last, maximum and minimum values; plus each unit comes standard with a free N.I.S.T. calibration certificate. Each unit ships in a protective carrying case which includes a cone adapter, funnel adapter and 6" circumference wheel.

### SPECIFICATIONS

**Display Range:** Revolutions: 1.0 – 25,000 RPM , 0.1 - 99,999 Rev. (total) Speed Using 6" Cir. Wheel: meters/min: 0.1 - 3,809.8; yards/min: 1.0 - 4,166.4; inch/min: 3 - 99,999; feet/min: 0.2 - 12,499 Length Using 6" Cir. Wheel: meters: 0.01 - 99,999; yards: 0.01 - 99,999; feet: 0.1 - 99,999; inch: 1 - 99,999

**Accuracy:** Revolution: 1.0 - 599.9 rpm:  $\pm 1$  rpm, 600 - 25,000 rpm:  $\pm 0.006\%$  of reading  $\pm 0.5$  digit Surface Speed, Length:  $\pm 0.4\%$  of reading  $\pm 1$  digit

**Display:** 5 digit 0.47" (12 mm) high LCD

**Memory System:** Readings are stored in memory and retained for 5 minutes (last, max., min., and 10 user logged measurements)

**Detection:** Backlit LCD

**Resolution:** 60 ~12,000 FPM = 0.1 FPM; 12,001~120,000 FPM = 1 FPM; 1~200 HZ = 0.01 Hz; 201~2000 = 0.1 Hz

**Over Range Indicator:** Flashing numerals

**Power Requirement:** 3 AA 1.5V batteries

**Operating Temperature:** 32° - 113°F (0° - 45°C)

**Construction:** ABS Resin housing

**Product Weight:** 0.37 lb (170 g)

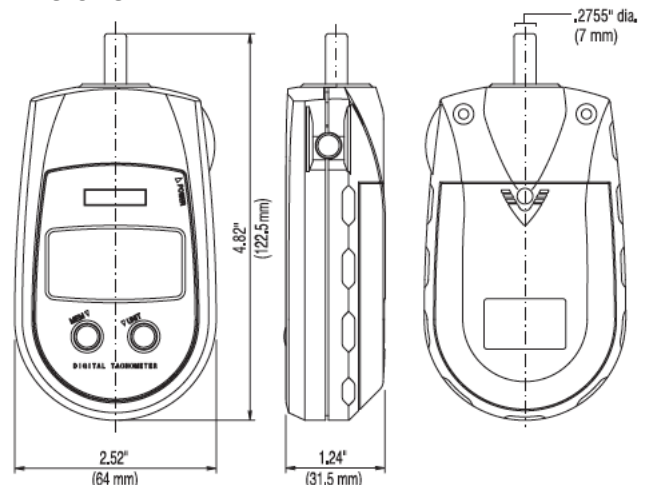
**Package Weight:** 12 V Pulse Input

**Dimensions:** 4.83"L x 2.52"W x 1.24"H (122.5 mm x 64 mm x 31.5 mm))

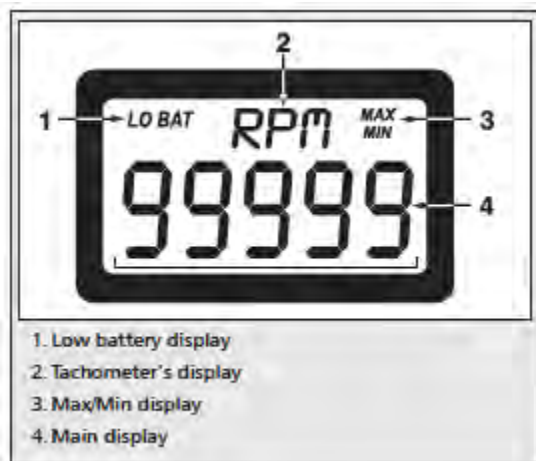
**Warranty:** 2-Year

**Included Accessories:** Three AA Batteries, cone adapter, funnel adapter, master wheel (6" cir.) carrying case, NIST certificate

### DIMENSIONS



### DISPLAY



## OPERATION

### Contact Measurements

Measuring rotation speed using the cone or funnel-shaped contact probe:

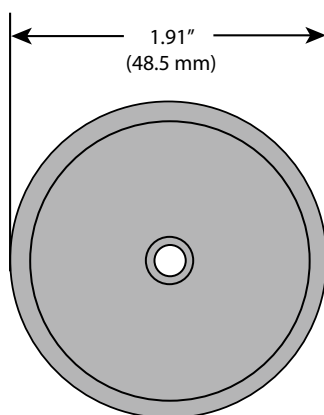
1. Attach the cone or funnel adapter to the tachometer by placing on the adapter shaft. Align the shaft pin with the notch of the adapter stem.
2. Press the POWER button to turn the tachometer on.
3. Select RPM (revolutions per minute) or REV (total number of revolutions) by pressing the UNIT button.
4. Press and hold down the POWER button to start measuring.
5. Bring the contact probe into contact with the object to be measured by touching the contact probe slowly to the center of the rotating object. If the measuring range of the tachometer is exceeded, "OVR" will appear on the tachometer's display.
6. Press and hold the POWER button to take another measurement.
7. Press the UNIT button to convert between ranges.

Measuring surface speed and distance using the 6" circumference wheel.

1. Attach the 6" circumference wheel to the tachometer by placing the wheel on the adapter shaft. Align the shaft pin with the notch of the wheel stem.
2. Press the POWER button to turn the tachometer on.
3. Press the UNIT button to select measuring unit: meters/minute [m/M], yards/minute [Y/M], inches/minute [I/M], feet/minute [F/M], meters [m], yards [Yrd], inch [IN], or feet [FT].
4. Bring the 6" circumference wheel into contact with the object to be measured by slowly touching the contact wheel to the moving object.
5. Press and hold down the POWER button to start measuring.
6. Press the UNIT button to convert between ranges.

**NOTE:** When using the master wheel, accuracy can be affected as much as 0.3% of reading.

### 6" Circumference Wheel Dimensions



### Memory Function

The tachometer's memory capabilities are as follows:

1. Minimum, maximum and last measurements are re-corded automatically by the tachometer.
2. Ten selectable measurements can be programmed into memory by pressing the MEM button while the POWER button is fully depressed (M1, M2, M3, ... M10).
3. The average value of sequentially stored memory, up to ten, can be viewed by pressing the memory button.

**NOTE:** If the memory button (MEM) is not selected while the POWER button is pressed the measurement will not be re-corded into its memory location. The memory will be recorded automatically into memory if the measurement made is the maximum, minimum or last measurement.

To delete stored memories do one of the following:

1. Press the MEM button for five seconds or more. All memory will be erased after [CCCCC] is displayed.
2. Changing the units of measurements and then making additional measurements.
3. Memory will be automatically erased if the TACHOMETER turns off automatically after five minutes.

### Battery Replacement

When "LO BAT" flashes on the display, replace the batteries with new ones.

To replace the batteries:

1. Slide open the battery cover (located on the rear of the tachometer).
2. Remove old batteries and insert three fresh AA size batteries, observing proper polarity. Do not mix old and new batteries.
3. Slide the battery cover back into place.

**NOTE:** Do not mix old and new batteries, and when replacing batteries, use AA batteries. The tachometer may be damaged if liquid leaks from the batteries. This may happen if the batteries are left inside the tachometer's enclosure for long periods of time. Remove the batteries after using the tachometer.

### TROUBLESHOOTING

No Display:

- Confirm that the POWER button is operating properly.
- Confirm that the batteries are fresh. Install new batteries.
- Confirm that the batteries are inserted into the tachometer with correct polarity.