

AT-25 0-20 SECOND SHOT DURATION TIMER

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DESCRIPTION

The AT-25 is a specialized instrument for measuring the duration ON time of high current low voltage magnetic particle inspection machines.

FEATURES

1. Infinite Display Hold.
2. Automatic Reset and Update.
3. Accuracy exceeds existing military and industrial specifications for calibrating MPI Shot Timers.
4. Digital LCD Meter.
5. Manual Timer and reset provided.
6. Portable battery operated.
7. Clip lead hook up for head and coil measurements.

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SPECIFICATIONS

- A. Signal Input - AC or DC 1 Volt min. 20 Volt max. Z=50 ohms
- B. Meter Display - 3½ DPM 12.5mm (.5 inch) high LCD digits.
 - 1. Range - 0.06 to 19.99 seconds
 - 2. Accuracy - 2% ± 1 digit of reading
- C. Auto Reset Time - 0.5 seconds
- D. Temperature - 0 to 45°C operating
- E. Range - -40 to 60°C Storage without battery
- F. Battery - 9V Alkaline A-1604
- G. Low Battery - 7V
- H. Size HxWxL - 84.76 x 91.4 x 146.1mm
(1.92 x 3.6 x 5.75 inches)
- I. Weight - 227g (8oz) with battery

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OPERATING PROCEDURE**A. GENERAL**

1. Switch PWR ON.
2. DPM may read any random number when POWER is first applied.
3. Press manual Reset button momentarily.
DPM will reset to $0.00 \pm .01$
4. Check left of DPM for low battery LED. If LED stays on, change battery. Accuracy is not guaranteed while low battery LED is flashing.
5. Pressing Reset button between timing shots is not necessary. AT-25 will automatically reset to 0.00 internally while displaying previous reading indefinitely.
6. Allow 0.5 seconds between readings for AT-25 to Auto Reset.

B. MANUAL TIMER

1. Press timer push button for manual stop watch timing. Release push button to stop. Clip leads are redundant for this operation.

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OPERATING PROCEDURE

C. Automatic Mode Head Shot Check

- 1. Remove any parts under test from between head and tail stock.**
- 2. Clip leads from AT-25 Timer to head and tail stock pads.**
- 3. Place output current setting of your machine to a mid- position.**
- 4. Apply power to your machine's head stock and read shot Duration Time on AT-25. Check at least 3 shot times to insure you machine's Timer is consistent.**

D. Automatic Mode Coil Shot Check

- 1. Clip leads from AT-25 Timer across Coil input lugs.**
- 2. Adjust output current to coil for 2000 Amps or more to obtain enough signal input (1V) for AT-25 to accurately measure Timing.**
- 3. Check Coil shot at least 3 times to insure your machine's Timer is consistent.**

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MAINTENANCE

A. Battery Replacement

- 1. PWR switch OFF.**
- 2. Slide battery compartment lid off.**
- 3. Remove battery just far enough out of compartment to reach battery clip. Remove battery clip.**
- 4. Install new 9V Alkaline battery and re-install into battery compartment. Slide lid back on case.**

B. Cleaning

- 1. PWR switch OFF.**
- 2. Use soap and water or alcohol based cleaners only. Any other type of cleaners may damage plastic.**

C. Clip Leads

- 1. Check connections to banana plugs and clips for frayed or loose wires.**

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MAINTENANCE

D. Calibration

1. Calibrate to NIST (NBS) Time standards at least yearly. Test Systems International, Inc. can provide factory repair and certified calibration service.
2. Required Test Equipment NIST (NBS) Traceable
 - a: Function generator able to provide a 0 to 2V Pk square wave 0.50 to 10.00 seconds into a 50 ohms load.
 - b: Oscilloscope to monitor function generator output pulse to NIST or WWV Time Standards.
3. Procedure
 - a: PWR ON.
 - b: Press Reset and insure 0.00 reading. Adjust internal zero pot if necessary while pressing reset button.
 - c: Apply 10.00 second pulse to clip lead input. Adjust internal time pot if necessary.

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WARRANTY

Seller warrants that any T.S.I products furnished hereunder will, at the time of shipment, be free from defects in material and workmanship under normal use and will conform to sellers applicable standard written specifications. Sellers sole obligation hereunder shall be limited to, at sellers option either crediting buyer the purchase price of, or replacing any product for which (I) written notice of non-conformance hereunder is received within one year after shipment, and (II) after sellers authorization are returned pre-paid to seller and (III) satisfaction to be nonconforming. Any such replacement shall not extend the period within which such warranty can be asserted. This warranty shall not apply to products which seller determines have by buyer, or another, been subjected to operating and/or environmental conditions in excess of the maximum values in the applicable specifications or otherwise have been subjected to misuse, neglect, improper installation, repair, alterations, or damage.

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AT-25 QUICK BREAK TEST

OK + QUICK BREAK + NG

OPERATION

Quick Break Test operates automatically while shot duration timer test is being performed on coil shot.

LED will come on when AT-25 power is turned ON. As Shot Duration Test is performed and timer is running, the Green OK LED will turn ON and the Red NG LED will turn OFF. When the timer stops the Red NG LED will stay on if the current fall time exceeds 180msec for coil test. If fall time is correct Red NG LED will go OFF and Green OK LED will remain ON.

Press Manual Time button to test Quick Break operation. Green LED will stay ON. Turn Power Switch OFF and ON to reset.

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