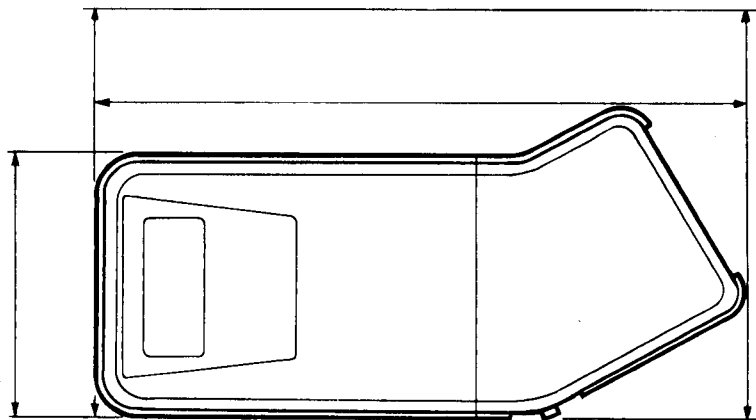




ET770

**Digital Photoelectric Tachometer**

OWNER'S MANUAL



## General Description

### **This feature-packed, easy to use Digital Photoelectric Tachometer**

electronically measures RPMs from 15 to 10,000. In shop or field. And without torque loss, too. Features include: no electrical or mechanical connections, foolproof "electronic eye," bright digital read-out with solid state circuitry. Use this compact instrument to obtain readings in close quarters on any type of moving machinery.

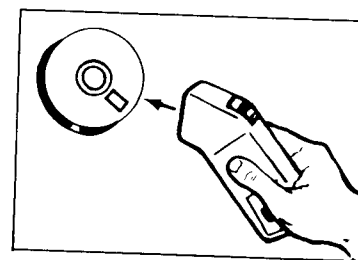
### **• Features of the ET770**

- Reads RPM's from 15 to 10,000.
- Portable. No external power required.
- Long life light bulb.
- Measures RPM's in shop or field.
- Easy to use.
- No electrical or mechanical connections.
- Solid-state electronic construction.
- Obtain readings in close quarters.
- Rugged — Polypropylene housing.
- Measures RPM electronically. NO TORQUE LOSS.
- Use on any type of moving machinery.
- Lightweight.
- Made in U.S.A.

## Operating Instructions

1. Make sure that the surface of the device to be measured is relatively clean.
2. Place reflective tape (provided with ET770 ) on clean surface of device to be measured by peeling off anti-stick back.
3. Turn ET770 to "ON" position and direct light beam at reflective tape on the revolving device to be measured from a distance of approximately 8 to 13 inches.
4. Depress the "START" button and release, holding ET770 as steady as possible for 3 seconds. The reading will be automatically locked in on the digital display. Multiply the reading by 10 this will give you the RPM.
5. Turn unit off after taking several readings by returning power switch to "OFF" position on the ET770. (The light beam will extinguish.)

## Applications of the ET770



### Using reflective tape

Initially, it is recommended that a reading be taken before the placing of the reflective tape on the device to be measured. This will show you that if there are variations on the surface of the device to be measured, they may activate the photo cell. These

variations could lead to a false reading, if a marker of sufficiently large size is not used. Care must be taken to provide a sufficient marker so that the photo-tach can distinguish the desired mark from undesired variations on the surface.

The photo-tach will also recognize multiple markers of essentially the same size. Using this method, the error in the reading can be reduced using the following formula:

$$\frac{10,000}{\text{No. of Markers}} \times .02 = \text{Max. error}$$

**Note:** Smooth surface reflecting tapes **are not** recommended, as false readings could be caused by ambient light. Part #773 tape is recommended.

### Effects of surfaces

Reflective characteristics of various types of surfaces can affect the reading of the ET770, if they are not considered. A gleaming surface of either highly polished metal or a flat white surface will reflect light back to the photo-tach. The surfaces can be dulled with flat black spray paint, if convenient. It is important to use the reflective tape, Part #773, supplied with the photo-tach. Also, experiment by holding the photo-tach at angles from 8 to 13 inches and take a few readings until a steady reading is noted.

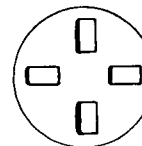
### Back light readings

Readings from several feet away are possible at some locations with lighting from natural or artificial sources. Fan blades, pulley spokes, etc., are measured with ease using this method. Just remember to divide the RPM reading by the number of blades or spokes contained on the rotating device.

### RPM readings on slow rotating devices

The ET770, being digital, has good accuracy on low RPM. It is recommended, however, that the use of multiple markers be employed, when practical. The markers should be spaced equidistant on the device.

(BE CERTAIN THAT  
THEY ARE NEVER  
CLOSER THAN  
1½ INCHES TO  
EACH OTHER.)



Any number of markers are acceptable. After you take the reading,

remember to divide the reading by the number of markers, to obtain RPM, because the addition of markers increase the RPM reading. (Be careful not to exceed the full scale limits of the ET770 when using this method.)

### Calibration

Your ET770 has been factory calibrated and should not require recalibration in the field.

## Replacement Parts

### Batteries

The light bulb and logic circuits use different power supplies (see silhouette label in battery compartment). If light bulb doesn't work, check battery group marked "**bulb supply**" on the label in the battery compartment. If the batteries check okay, replace the light bulb. If readings are erratic and unit will not calibrate, check battery group marked "**logic supply**."

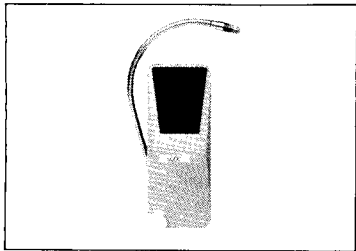
Light Bulb  
Reflecting Tape  
Carrying Case

Part #771  
Part #773  
Part #774

## Specifications

Range:  
0 to 10,000 RPM  
(no range selection necessary).  
Accuracy:  $\pm 2\%$ .  
Photo cell:  
Cadmium sulphide.  
Batteries:  
6 AA size batteries  
Operating temp. range:  
32° to 100°F (0-38°C)  
Dimensions:  
Measures 6" x 2½" x 1¾"  
(15.24 cm x 6.35 cm x 4.45 cm)  
Weight:  
9.5 ounces = 270 grams.

## Other Mac Tools Products

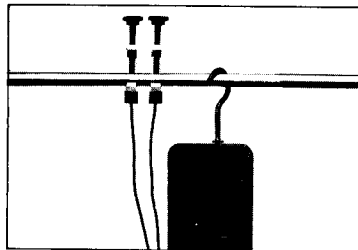


### Automatic Halogen Leak Detector

The 5000 is the most automatic halogen leak detector you can use. So simple to operate all you do is turn it on. A computer-like beeping signal increases in both speed and frequency as the leak is approached. Sensitivity: responds to leaks as small as 1/2 ounce per year. Cordless.

**Model No. AC5000**

U.S. Patents #3,742,475, #4,282,521



### Electronic Sight Glass

Astounding is what this superb instrument has been called by top air conditioning experts. It's a remarkable all new method of determining how to fill a system precisely. It couldn't be easier to use. Automatically tells you when system is full or needs refrigerant. See how easy filling and checking a refrigerant charge has become.

**Model No. AC4000**

U.S. Patent # 4,138,879

## Limited Warranty and Repair/Exchange Policy

**This instrument** is designed and produced to provide unlimited service. Should the unit be inoperative after the user has performed the recommended maintenance a no-charge repair or replacement will be made to the original purchaser. This applies to all repairable instruments which have not been tampered with or damaged. The claim must be made within one year from the date of purchase. For repair of your instrument see your supplier.

Li-151 Mac 2/84 Printed in U.S.A.