

H30543

Ticker Timer

NFU639



Purpose

The Ticker Timer makes marks 50 times per second (every 0.02s) on self-marking paper tape, eliminating the need for carbon paper discs or pens. The tape can be attached to moving trolleys or falling bodies, and provides a clear record of the motion of these objects.

Power Supply

The Ticker Timer can be driven by any AC supply capable of delivering at least 2A at 2V AC. The unit must NOT be operated at voltages significantly greater than 2V AC.

Long periods of continuous operation are best avoided by switching off when the desired tape has been produced.

A Basic Experiment

Insert a length of self-marking tape and connect a 2V AC supply. Switch on the supply and pull the tape through the Ticker Timer, slowly at first, then more quickly. Switch off after use.

A clear record of the motion will be obtained with sharp dots, and no 'smearing' or 'double-dotting'. Do not worry if the tape appears to be blank immediately after the experiment, the dots will be fully 'developed' within one minute.

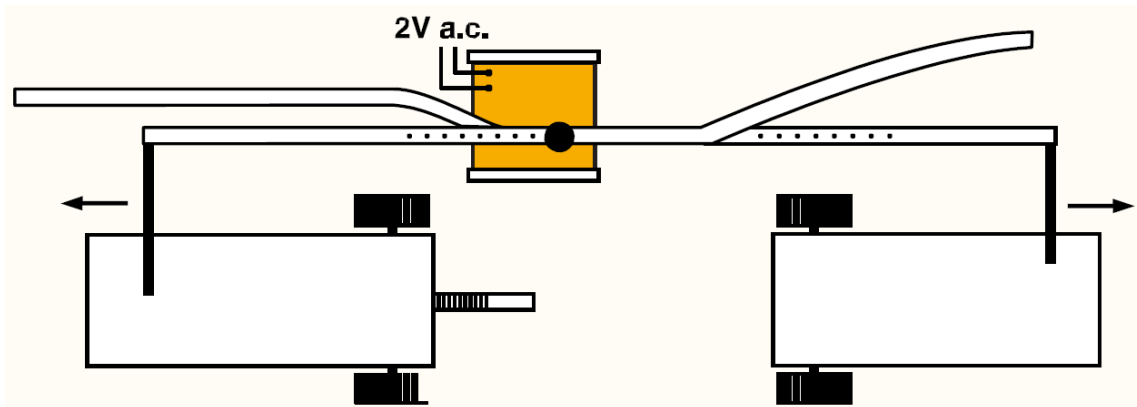
Note that tape can be fed through the timer in either direction. The direction indicated on the unit gives the smoother feed into the striking mechanism.

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Using the Unit

The UNILAB Ticker Timer can be used in many dynamics experiments: a trolley accelerating down a slope or under the action of an applied force; momentum transfer; 'explosions' where two trolleys fly apart.

For the latter experiment, it is possible to mark 2 independent tapes simultaneously if they are running in opposite directions, as shown:



A rod, supplied with the Ticker Timer, allows the unit to be clamped in a vertical position for experiments on acceleration due to gravity.

For some experiments, it is necessary to use two Ticker Timers. Using stackable 4mm plug leads, both units may be connected to a single power supply, which must be capable of delivering at least 4A at 2V AC.

Adjusting the Ticker Timer

The mechanism only needs adjustment if the motor has been replaced, or possibly if the unit has been dropped.

You will need an a.c. supply variable over the range 0 to 2 volts (a Spacesaver Power Signal generator could be used) and an accurate meter to check a.c. voltages in that range. Use a crosspoint screwdriver to remove the right-hand end panel, then lift out the back panel.

Connect the 2 volt a.c. supply and loosen the screw which fixes the 'hammer' to the motor's spindle. Check that the spindle can oscillate freely while you reduce the supply to 200mV.

This 'centres' the motor's oscillation. Now hold the hammer so that the striking pin is about 1mm away from the anvil/paper guide and tighten the screw.

With the timer the right way up, increase the supply voltage slowly, at 700mV it should start hammering and at 900mV it should be giving a steady buzz. If not, the flat metal strip with a rubber pad, fixed to the edge of the case, should be bent slightly, to restrict the amplitude of the hammer's swing. Increase the supply to 2 volts, the buzzing should remain steady but increase in loudness.


Spares

Reels of Self-marking Tape: A41890

Safety advice

This advice is not a replacement for a formal risk assessment, which should be carried out according to your school or LEA policy.

Disposal of Waste Electrical and Electronic Equipment (WEEE)



Do not dispose of this product with household waste

- For the proper treatment, recovery and recycling please take this product to an appropriate collection point.
- If you are unsure where this is, contact your Local Authority
- By disposing of this product correctly you will be providing positive help to the environment.

Warranty, repairs and spare parts:

The Ticker Timer is guaranteed for a period of one year from the date of delivery to the customer. This warranty does not apply to defects resulting from the action of a user such as misuse, improper wiring, any operations outside of its specification, improper maintenance or repair, or unauthorized modification.

Our liability is limited to repair or replacement of the product. Any failure during the warranty period should be referred to Customer Services.

In the event of a fault, the Ticker Timer should be referred to the Philip Harris recommended repair agent.

Please contact Customer Services or techsupport@philipharris.co.uk for advice

Instructions for authorized service technicians:

For any manufacturer specific parts please refer to our recommended repairer. Please refer to product specific risks that may affect service personnel, the protective measures and verification of the safe state after repair.

Supplier details:

Philip Harris Education, 2 Gregory Street, Hyde, Cheshire SK14 4RH

Orders and Information Tel: 0845 120 4521

Fax: 0800 138 8881

Repairs Tel: 0845 120 3211

E-mail: techsupport@philipharris.co.uk

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