



5 Year Warranty

- Irwin Science Education hereby warrants, to the end user ("Purchaser") who purchased the genuine Irwin Science Education product ("Product"), from an authorised Irwin Science Education reseller, ("Reseller"), that the Product will be free from defects in materials and workmanship ("Defects"), for a period of five years from the date the Product was purchased from Irwin Science Education direct or via authorised reseller. Subject to the terms and conditions indicated below.
- Irwin Science Education will repair or replace such Product or part thereof which, upon inspection by Irwin Science Education, is found to be defective, despite the Product not having been subjected to Improper Activity (defined below). Improper activity shall render this warranty void. "Improper Activity" includes any and all of the following:
Installation by anyone other than a Reseller:
Improper installation:
Use/operation/maintenance other than in accordance with Irwin Science Education's instructions and requirements within an educational/training establishment (as directed below);
Tampering by Purchaser; neglect; damage by the application of force; bending; breaks; cracks; scratches; any other act of vandalism;
Repair or alteration by anyone other than a Reseller: Use of additional components or other components that are not suitable and genuine Irwin Science Education components;
Use in a non-educational teaching environment.
- All the foregoing as determined by Irwin Science Education, in its sole judgment.
 - Instructions and recommendations for correct use of Irwin products are within the original product instructions or available for download from www.irwinscienceeducation.com.
 - Irwin Science Education's sole obligation under this limited warranty is to repair or replace, at Irwin Science Education's sole discretion any Product and/or Product component found by Irwin Science Education to have Defects. This limited warranty does not grant any other rights or give rise to any other obligation, or absolve Purchaser of the responsibility to employ any other suitable measures, by whatever means, including insurance, against the risk of personal injury or damage to property.

This limited warranty relates to product's defects only. Irwin Science Education shall be liable, in any event, for any labour costs associated with the product and its installation process. In order to facilitate the warranty service and enable Irwin Science Education to determine entitlement under this warranty, Purchaser must first have completed the online product registration registration form within 1 month of the original product purchase date, with proof of purchase from a Reseller via the printed product registration card supplied or online at www.irwinscienceeducation.com. All shipping, handling or other incidental and/or related charges are fully payable by the purchaser only and are not included in this limited warranty. Items excluded / limited from this warranty, Screws, Nuts, Bolts, Normal wear and tear, Cleaning with cleaning detergents, Improper handling and misuse.

Irwin Science Education Limited, 27 Kestrel Park, Springwood Industrial Estate, Braintree, Essex CM7 2SF
Registered in England & Wales. Company no. 08748657

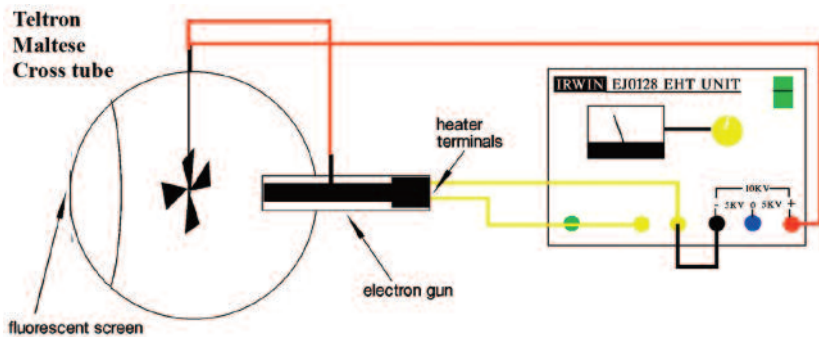
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EJO127 Extra High Tension Unit Instructions



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Read these instructions carefully before use.

Please note that the output control must always be set to fully anticlockwise before switching the unit on.

The Irwin EJ0128 EHT unit is designed for experiments requiring up to 10,000V. The unit is fitted with colour coded, shrouded 4mm output sockets, red for EHT positive, black for EHT negative, blue for EHT centre tap and yellow for heater voltage. The EHT is adjusted using a potentiometer and monitored by an analogue meter, which measures across the red and black terminals. Please note that if the red/blue or blue/black terminals (5KV) are used the meter reading will be up to 10KV. Mains voltage is controlled by an illuminated rocker switch.

The highest nominal output of the unit is 10KV. The actual maximum output achieved is dependent on the current loading – Teltron tubes draw varying amounts of current. We have turned the unit up full with various Teltron tubes and achieved between 2 and 7KV from the unit. The maximum recommended voltage for Teltron tubes is 5KV. Higher voltages are obtainable for charging electroscopes, balloons, etc. If the air is damp some internal arcing may occur – you will hear a crackling sound. Reducing the off load voltage down a little will cure this.

The Teltron tube should be connected as shown, and then the unit should be switched on. Increase the output control until the required voltage is achieved.

The heater voltage is nominally 6V at 2A and may be used to power the electron gun found in Teltron tubes. The heater voltage is protected by a solid state cut-out which will automatically reset once the fault is removed. The EHT output is current limited to 2mA, to prevent harm should an unprotected wire be touched. There is no cut-out on this output as, if a short circuit occurs, the circuitry automatically shuts down until the fault is removed.

Using the Irwin Spark Counter

Connect the spark counter to the red and blue terminals. Connect the blue terminal to the earth terminal. Adjust the EHT until the unit just stops sparking. Bring the \sim source close to the grille and observe the sparks. Note the red end of the rod contains the \sim source – only handle the rod by the unmarked end. Note that sparking stops as the source is moved away from the grille. Try interrupting the \sim particles by slipping a piece of paper, tissue paper, thin plastic bag etc. between the \sim source and the grille.

N.B. If, on removing the source, the unit continues to spark, simply reduce down the EHT slightly. Occasional random sparking of the unit indicates the detection of a cosmic ray.

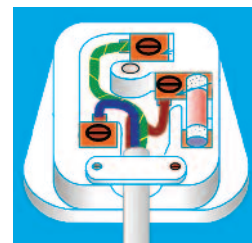


IMPORTANT - ELECTRICAL SAFETY NOTICE

Connection to mains electricity supply. This apparatus is designed to safety class 1. Before connecting to the mains electricity supply, examine the information on the apparatus rating label. Ensure that the mains supply is single phase alternating current (a.c) of frequency 50Hz at 230V, with neutral nominally at earth potential.

WARNING - THIS APPARATUS MUST BE EARTHED

Your Irwin product should come with a plug with the recommended fuse rating. However if not fitted connect the wires to a non-reversible UK 3 pin plug as follows:



Green/Yellow wire to the terminal marked:
Blue wire to terminal marked:
Brown wire to terminal marked:

E (Earth) coloured Green/Yellow
N (Neutral) or coloured Blue
L (Live) or coloured Brown

LIVE PARTS SHOULD NEVER BE EXPOSED UNLESS THE APPARATUS HAVE BEEN SWITCHED OFF AND ISOLATED FROM THE MAINS ELECTRICITY.

Electromagnetic Compatibility

The use of this apparatus outside the classroom, laboratory, study area or similar such place invalidates the conformity with the protection requirements of the Electromagnetic Conformity Directive (89/336/EEC) and could lead to prosecution.

CORRESPONDENCE:

in the event of any correspondence concerning this apparatus, please contact your supplying agent quoting their catalogue number and serial number show on the apparatus. This will help us process your enquiry quickly. Any spare parts which may be required are supplied on the understanding that the replacement of those requiring the exposure of live electrical connections will be undertaken by an electrically qualified person.