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Product Name :

Joule Gun

Product Code :

SLE/EAM/12



Description :

Joule Gun (Product Code: SLE/EAM/12) stores electrical energy in a bank of capacitors and, at the press of a FIRE button, releases it as a pulse through a low resistance coil that launches a small steel projectile. It turns an abstract chain of ideas – capacitor charging, energy storage, electromagnetism, mechanical energy and efficiency – into one memorable physics experimentkit for senior school and college students. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, India.

Specifications

Parameter	Detail
Energy store	Control box with five high value capacitors, switched into thecharge circuit as required
Firing	FIRE button releases the stored energy as a pulse into a low resistance coil
Projectile	Small steel projectile
Investigable variables	Voltage, time, capacity, distance, kinetic energy and potential energy
Topics covered	Energy storage, capacitor charging, mechanical energy, efficiency, electromagnetism
Mass	0.5 kg
Dimensions	220 x 110 x 80 mm, excluding coil

Typical Use

Students choose how many of the five capacitors to switch into the charge circuit, charge them, note the voltage and calculate the stored energy from $E = \frac{1}{2}CV^2$. After firing, they measure how far the steel projectile travels and use it to estimate the kinetic energy it gained, or the potential energy it would reach if launched upwards. Comparing that mechanical energy with the electrical energy stored gives a figure for efficiency, and the discussion of where the rest went – heating in the coil and wiring, sound, friction – is often the most valuable part of the lesson.

Because voltage, charging time, capacity and distance can all be changed one at a time, the apparatus supports proper fair-test investigations rather than a single demonstration, and it pairs well with force and motion work on projectiles. Treat every firing as a launch: keep the path clear, never aim the coil at anyone, and have observers wear eye protection.

Manufacturer

Jain Scientific Equipments Private Limited develops and manufactures investigative physics apparatus such as the Joule Gun under its ScienceLab brand in Ambala, Haryana. You can read about the company on its profile page.

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