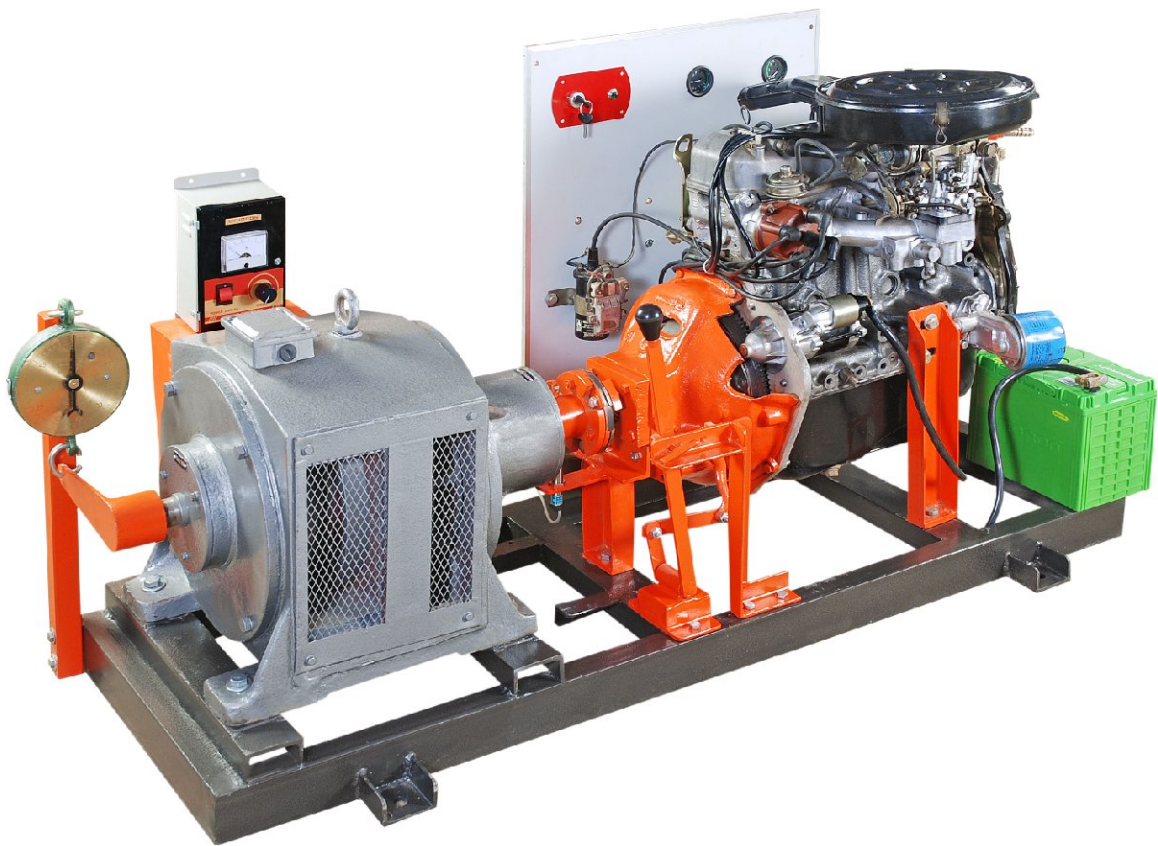
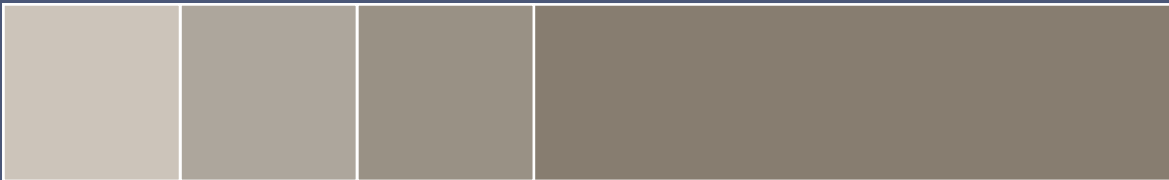


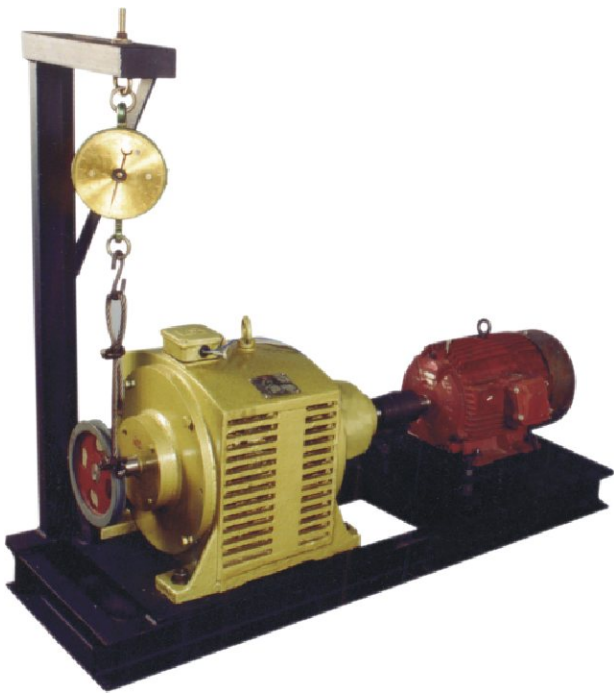
POWERMAG

EDDY CURRENT ADJUSTABLE DYNAMOMETER



THE COMPLETE TEST SYSTEM FOR
ENGINES | ELECTRIC MOTORS | HYDRAULIC MOTORS | GEAR BOXES
COUPLINGS | BELTS | OTHER ROTATING MACHINERIES

SIMPLE RUGGED CONSTRUCTION • SIMPLE INSTALLATION • HIGH PERFORMANCE WITH RELIABILITY



“POWERMAG” a simple eddy current adjustable dynamometer, is a totally new concept in dynamic load system for accurate testing applications of all type of, engines, electric motors, hydraulic motors, gear boxes, couplings, belts and other rotating machinery's. The need for a dynamic load system which allows flexibility of applications in an economical way has been felt for a longtime in technical education institutions, research & development laboratories and quality control in industry. “POWERMAG” eddy current adjustable dynamometer provides the ideal solution for such applications.

OPERATING PRINCIPLE

The primary elements of POWERMAG adjustable dynamometer are an eddy current clutch, a tachometer, and a separate solid state controller. POWERMAG eddy current adjustable dynamometer absorb power, torque and speed characteristics with a unique hysteresis braking system which provides frictionless torque loading (0% to 100% constant/variable torque load) independent of shaft speed. The eddy current adjustable dynamometer provides torque by the use of two basic components- a reticulated pole structure with output shaft which connected to the spring balance weighing gear load and a speciality steel rotor drum with input shaft assembly-fitted together but not in physical contact. The prime mover under test suitably arranged on a common bed plate could drive the input. Until the pole structure is energized, the rotor drum can spin freely on its shaft bearings.

When a magnetizing force from the field coil is applied to the pole structure, the air gap becomes a flux field and the rotor is magnetically restrained, providing a braking action between pole structure and rotor drum. A solid state electronic controller is used to excite the field coil. The torque is proportional to coil current. An integral tachogenerator is mounted on the input rotor shaft, to give voltage and frequency proportional to speed, which is used for speed indication (RPM), so that simultaneously torque and speed of the motor can be read under 0% to 100% load test.

POWERMAG eddy current adjustable dynamometer tests of all kinds and when equipped with them carries out various dynamic characteristic tests and operating mode tests of all type of motors, engines and other rotating machineries.

APPLICATIONS

POWERMAG eddy current adjustable dynamometer are widely used in technical education institutions, research & development laboratories, quality control in industry, defence organizations, etc., for accurate analysis of power, torque, speed, fuel and lubrication consumption and quick pass/fail testing of all type of engines, motors and other rotating machinery.

UNIQUE FEATURES

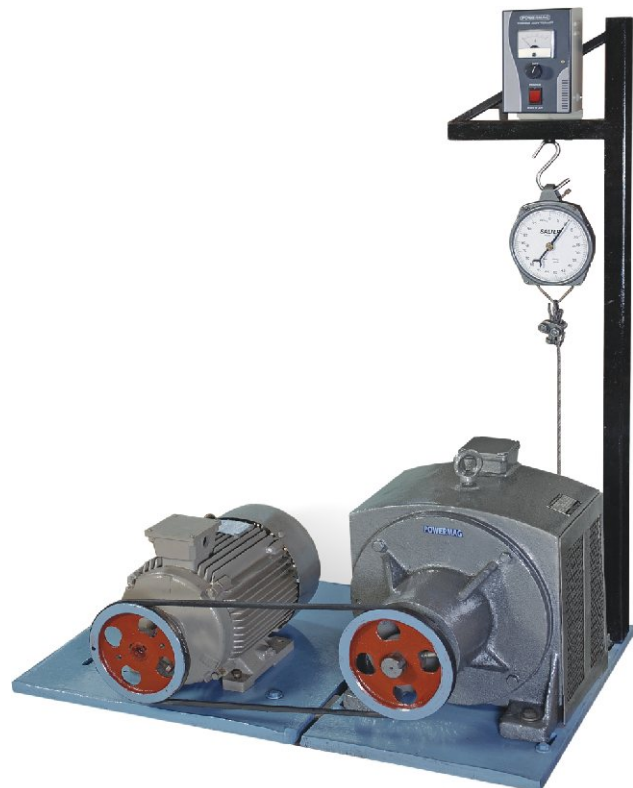
POWERMAG eddy current adjustable dynamometer possesses certain unique features, which gives it a clear advantage over conventional loading systems.

Ruggedness and reliability

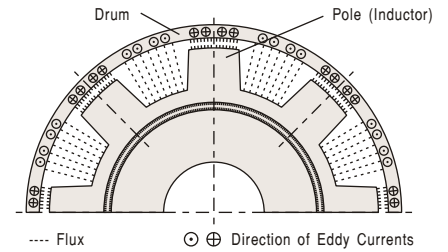
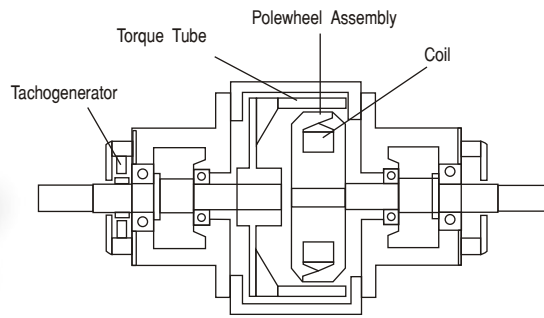
POWERMAG eddy current adjustable dynamometer functions without the need for mechanical contacts. This eliminates the main cause of wear. Further, the stationary coil is protected against adverse atmospheric conditions; the use of commutators, brushes and sliprings is avoided and control is achieved at a relatively low power level.

Ease of operation

POWERMAG electronic controller provides finger-tip operation and flexible control of the eddy current dynamometer from 0% to 100% torque load.



Eddy Current Dynamometer - Sectional View and Eddy Current Generation in Drum



FEATURES	BENEFITS
Torque is transmitted by a magnetic field without friction or wear	Eliminates mechanical contact and shock loading to the prime mover. Providing longer life
Simple Design - Dynamometer and small solid state controller	No need of DC generator with resistive load. No need of hydraulic dynamometer systems and related external loading devices like pumping arrangements. No need of pony brake, water pulley, external cooling and canvas belt. Easy to understand, install, operate and maintain
Fewer wearing parts - have only four permanently lubricated bearings	Minimum down - time
Stationery coupling coil	Eliminates all weak links like commutators, slip-rings or brushes enhancing life
Controller operates on less than 2% of input power	No need for costly, full power conversion units
One year warranty	Built to give long, reliable, low cost life in motor testing applications

SPECIFICATIONS

DYNAMOMETER	TORQUE	4.7Nm to 549Nm 0.48Kg-M to 56Kg-M
	RPM	Upto 3500 RPM (Max)
	Open ventilated	Standard
	Stationery coil	Standard
	Class 'F' Insulation	Standard
	Epoxy protection on coil	Standard
	Coil Voltages	0-80 V DC Standard
	0% - 100% constant or variable torque loads	Standard Continuous (S1) Duty
	AC Tachometer generator	Optional
	Overload	Upto 250% Short time
TORQUE CONTROLLER	Input Power	230 V AC 50 Hz Single Phase
	Wall mounted enclosure	Standard
	Output voltage, current of dynamometer stationery field coil	0 to 80V DC 2.5 Amps/5Amps
	Adjustable Potentiometer	To vary 0% - 100% torque load in Kg-M Standard
	Power ON/Off selector switch with Indication	Standard
	Protective features	Input fuses, low line voltage, line transients, isolated signal circuits, maximum torque limit - standard

Leaders In Eddy Current Dynamometers

POWERMAG CONTROL SYSTEMS [P] LTD., has been established in 1991 by a team of qualified engineers. POWERMAG has designed and manufactured a steady stream of eddy current dynamometers from 0.48 Kg-M to 56 Kg-M (4.7NM to 549NM) ratings.

POWERMAG's continuing investment in high quality production, inspection, testing and customer service ensures that POWERMAG will continue to be the leader in eddy current dynamometers well into the future. State of art of components, design and engineering combine to redefine eddy current dynamometer performance and sets new standards in maintenance free, ruggedness and flexibility.

All POWERMAG Eddy current dynamometers are manufactured in-house in a carefully controlled, multi-step process. Design standards keep projects focused and regular design reviews monitor progress. For special applications, field trials are regular occurrences to ensure functionality in the user environment. Selected customer requirements are targeted for development of systems and trials to prototype units and their testing is used to fine tune designs before further production takes place.

In this way, all of POWERMAG products are in direct response to user requirements. Monitoring of POWERMAG eddy current dynamometer is continuous. Problems and additional feature requirement are studied to attain the maximum value for users in industry.

Customer Support

POWERMAG provides control across a network of offices and distributors, which provide service and customer support. POWERMAG's key design criteria include reliability, serviceability and flexibility. Performance and ease of installation assure the customer of a world class product which can compete with any other in the market today.

Made in India by:

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