ABOUT TECHNOMECH

Technomech, a partnership company since 1981 started business with Control Panels assembly. 1992 was turning point in history of Technomech with the launch of Water Brake Dynamometers and similarly in 2006 it launched The Eddy Current Dynamometers. Till December 2017, it has made about 1000+

installation all over India in various fields. To cater to the increasing demand and to give effective service to customers, Technomech shifted from Tiny Industrial Estate in Kondhwa to 6,000 sqft State-Of-The-Art infrastructure facility named ETHOS, in Hadapsar Industrial Estate.

ETHOS stands for value based culture with everyone involved, and it portrays in our Mission and Vision.

Technomech has a very strong base of customers in Engineering colleges, IITs, Polytechnics, and in Research organizations, OEMs, engine & Prime Mover manufactures all over India.

Its has recently launched LabView based Data Acqusition System considering the need for standardized software demand from the customers.

EDDY CURRENT DYNAMOMETERS

Eddy Current Dynamometers are used for Testing Engines from 5HP to 1000HP capacity. Precision Strain Gauge type Load Cell are used for sensing the Torque developed by the Engines.

Its rugged and rigid design of Power absorbing systems are ensured for long working life. This is achieved by electroless nickel plating to the most critical parts which are always in contact with cooling water.

Standard Features:

1. High accuracy Strain Gauge Load Cell
2. Electroless Nickel plated water passages
3. Dry running is avoided by water flow switch.
4. Bi-directional operations
5. Low inertia of Rotar
6. Smooth running of Rotor
7. Rugged construction
8. Long Life service
9. Compact design

Principle Of Operations:

When the current flow through the field coils, then magnetic field is produced. If the toothed rotar is rotated in the field, the magnetic flux changes and eddy current are produced in the end wall of cooling plate. These Eddy Currents buildup an opposite magnetic field and decelerate the rotar. The braking torque is transfered via the trunion bearing mounted body to the load cell. The dynamomemter load is regulated by changing the excitation current.

Energising Coils:

The coils are fully encapsulated in two pieces. These are insulated from the main body with high quality insulating material. This gives very optimum distribution of flux throughout the working area. Because of this in case of low speed torque it gives best results of air flow from the center of dyanometer. This features ensures rapid response of reliability under the serveral loading conditions.

Control:

The power absorbed by the dynamomemter is controlled by varying the energising current at the field coil. System is provided with Closed Loop Control by giving feedback signal from Load Cell for Torque & from RPM Sensor for Speed. Both Manual & Automatic Control Systems are provided along with PC based Data Acqusition & Control System.

Accessories Available:

1. Engine starting arrangement
2. Calibration equipments (S.I. or Imperial)
3. Universal Propeller Shaft
4. Motor Rotar locking device
5. Universal Engine Test Bed with common frame
6. Volumetric & Gravimetric Fuel Measurement
7. SS Magnetic Filter
8. Safety Guard

Water Connections:

Very high grade flexible rubber hoses are used for water inlet & outlet lines. Hoses are being very flexible no effect on calibration & sensitivity of dynamometers. The dynamometer cooling passages and cooling plates are electroless nickel plated which gives longer life. The cooling plates are designed for radial expansion without water leakages and prevent any kind of distortion.

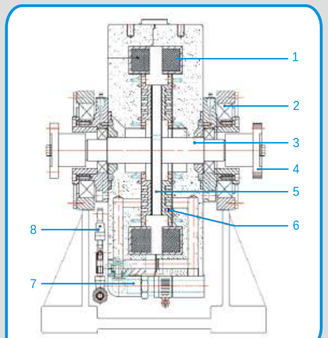
Water Line Sizes

No.	MODEL TME	Inlet & Outlet BSP (inches)
1	5	1/2
2	10	3/4
3	20	3/4
4	50	1
5	100	1
6	150	1
7	200	1 1/2
8	300	1 1/2
9	500	2
10	1000	2 1/2

TECHNICAL SPECIFICATIONS

No.	PARAMETERS	UNIT	MODEL TME									
			5	10	20	50	100	150	200	300	500	1000
	ACCURACY											
1	Torque	Nm	24	48	80	100	160	350	500	1200	2000	4500
2	Speed	RPM	6500	6500	6500	6500	7500	6500	6500	6000	4500	3500
	WATER SUPPLY											
3	Min. Flow	LPM	15	30	50	60	100	150	180	200	250	300
4	Min. Supply Pressure	kg/cm^2	1	1	1.5	1.5	2	2	2.5	3	3	3
5	Max. Inlet Temperature	°C	35	35	35	35	35	35	35	35	35	35
	ELECTRICAL											
6	Max. Current	A	5	5	5	5	5	5	5	5	5	5
7	Max. Supply Voltage	V AC	250	250	250	250	250	250	250	250	250	250
8	Energising Coil Voltage	V	35	45	55	60	75	75	90	110	125	170
	MECHANICAL											
9	Length	mm	310	370	370	370	570	770	735	820	800	1310
10	Width	mm	290	350	355	355	395	450	540	590	680	720
11	Height	mm	365	418	447	507	620	665	720	945	965	1250
12	Approximate Weight	Kg	70	130	170	220	370	400	600	1200	1400	2800
	ENVIRONMENTAL											
13	Relative Humidity	%	90 non condensing									
14	Operating Temp.	°C	10 to 55									

GENERAL ARRANGEMENT

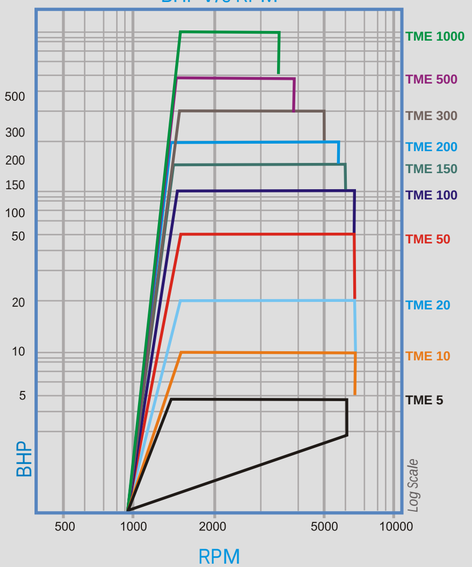


1: Energising Coil
2: Trunnion Bearing
3: Shaft
4: Tooth Wheel
5: Rotor
6: Cooling Passages
7: Water Cooling Connectors
8: Load Cell

PERFORMANCE GRAPHS

No.	MODEL TME	Max. Power BHP	Max. Torque Nm	Max. Speed RPM
1	5	5	24	6500
2	10	10	48	6500
3	20	20	80	6500
4	50	50	100	6500
5	100	100	160	7500
6	150	150	300	6500
7	200	200	500	6500
8	300	300	1200	6000
9	500	500	2000	4500
10	1000	1000	4500	3500

BHP v/s RPM



ADVANTAGE

- Dedicated Electronics Design, Development Team and State Of The Art Software Team with experience in LabView.
- Sold over 2000 Dynamometers of various capacity ranging from 5 HP to 1000 HP and over 25 Fully Integrated Computerised Engine Test Systems successfully installed.
- Vast 35+ years experience and techincal know-how in all engineering aspects.
- All In-house Mechanical manufacturing Facility with 3 dedicated Test Beds.
- Field proven Electronics and Instrumentation components lead to enhanced reliability.
- Design and Deployed various SPM in field of Education Laboratory Testing across countries.

Get all these ADVANTAGES at Technomech!

DYNAMOMETER CONTROL UNIT (DCU)

TM92E is in-house developed precise controller for Torque. It is in-house developed microprocessor based instrument with unbeatable reliability and best-in-class repeatability. DCU is well known for precise and fast action in controlling the Torque. Speed measurement is done using 60 teeth gear arrangement which is cost effective and highly accurate.

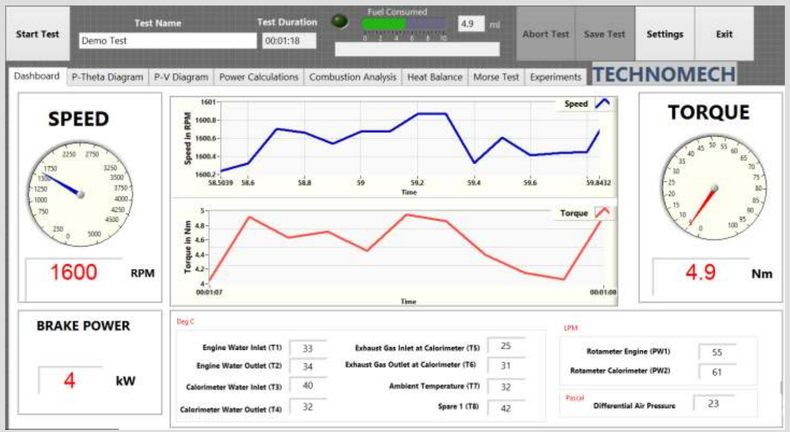
FEATURES

- ✔ Highly precise Torque Control
- ✔ Easy Loading & Unloading
- ✔ Password Protected Program
- ✔ Over Speed Protection
- ✔ Over Torque Protection
- ✔ Modbus RTU protocol
- ✔ Current Retransmission O/P
- ✔ Built-in Power Card
- ✔ Analog and Digital Isolation

TM 92E

LabVIEW® DATA ACQUISITION SYSTEM

Technomech has in-house team working dedicatedly on LabVIEW from National Instruments. With its continuous R&D, Technomech has developed a a superior Data Acquisition System. Here is a glimpse of the Dashboard and short list of the features provided by the application. Full customization is available as per user requirements.



FEATURES

- ✔ Speed & Torque High Speed Datalogging
- ✔ P-Theta and P-V Diagrams
- ✔ Power Calculations
- ✔ Combustion Analysis
- ✔ Fuel Measurement
- ✔ Combustion Analysis
- ✔ Heat Balance Sheet
- ✔ Morse Test
- ✔ All Efficiencies calculations
- ✔ Reports in CSV formats

FEATURES

- Easy to operate
- Smooth running
- Highly accurate & reliable
- Easy for maintenance
- Sturdy design
- Proven field performance
- Vibration free operation
- High MTBF & Low MTTR

OUR OTHER PRODUCTS

- ✔ Waterbrake (Hydraulic) Dynamometers
- ✔ Engine Test Sytems for 2 stroke / 4 stroke multi cylinder Petrol Engines
- ✔ Engine Test Sytems for 2 stroke / 4 stroke multi cylinder Diesel Engines
- ✔ Fully Computerized Engine Test Systems using National Instruments' LabVIEW software.
- ✔ Fuel Measurement System

Currently we are developing Air Cooled Dynamometers and it will be launched very soon!

ACCESSORIES

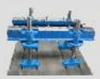
Temperature Sensors & Indicator

RPM Sensors & Indicator

Scanner & Datalogger

Load Cell & Indicator

Universal Engine Test Bed



Universal Propeller Shaft

CLIENTS

- ✔ Birla Institute of Technology, Ranchi & Deoghar
- ✔ Siemens, Chennai
- ✔ Samyak Motors, Coimbatore
- ✔ KC Engineers, Ambala
- ✔ Aditya Automation, Rajkot
- ✔ Apex Innovation, Sangli, MH
- ✔ North Street Cooling Towers, Noida
- ✔ Dilip Buildcon, Indore
- ✔ Mahabal Auto Ancillaries, Sangli, MH
- ✔ Gentek Power, Una, HP

and many more ...

Client are listed randomly!

CONTACT US

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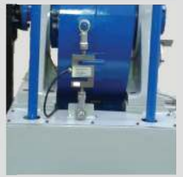
- Kolhapur, New Shahupuri
- Pimpri-Chinchwad, Bhosari MIDC

Due to continuous development, product specifications are likely to change.

With DCU & LabVIEW SCADA

Eddy Current Dynamometers



- Bi-directional Working ✔
- Low Inertia, Long Life ✔
- Smooth Running ✔
- Sturdy Design ✔
- Highly Accurate ✔
- Easy To Operate ✔
- Vibration Free Working ✔

TECHNOMECH

Since 1981!

A Reliable Source for Prime Mover Test Equipments