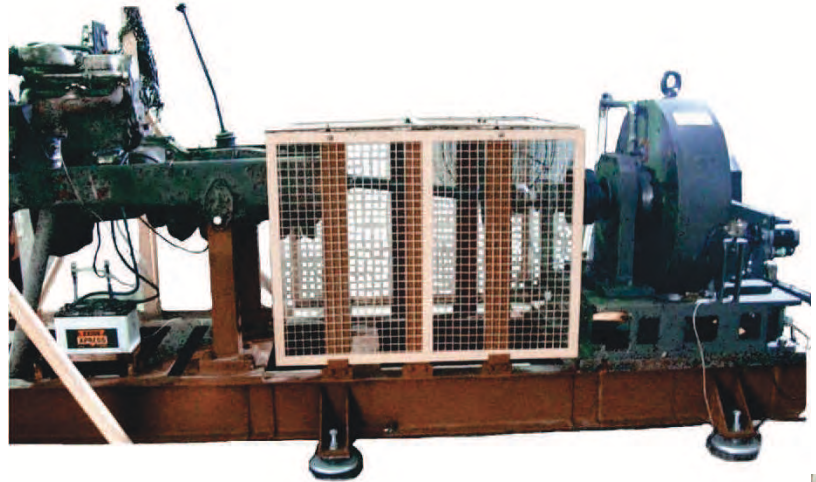


## Dynamometers & Test Benches, to test ...

### ◆ ENGINES

- \* Petrol Engines
- \* Diesel Engine
- \* Gasoline Engines
- \* Kerosene Engine



### ◆ GEARBOXES

- \* Automotive Gears & Gear Boxes
- \* Industrial Gears & Gear boxes
- \* Transmissions

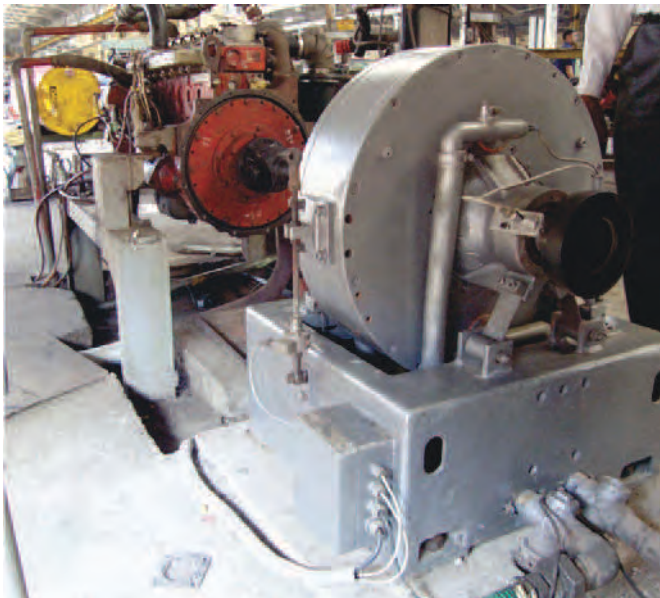


### ◆ MOTORS

- \* AC Motors
- \* DC Motors
- \* Pneumatic Motors
- \* Hydraulic Motors
- \* BLDC Motors



### ◆ SHAFT & AXLES Etc...



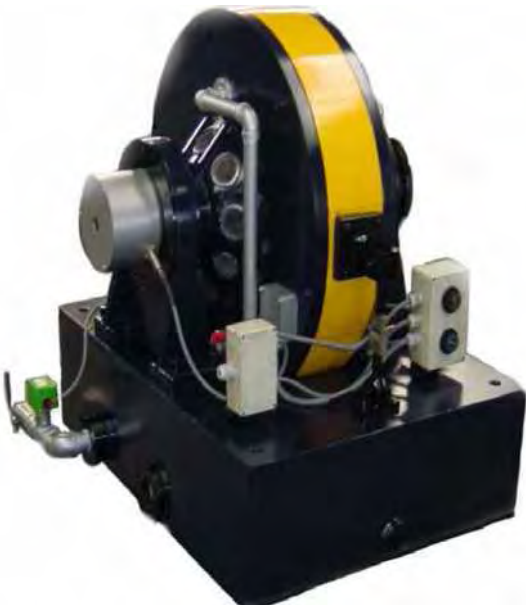


**Dynamometers employed to test Engines are:**

◆ **Eddy Current dynamometers:**

**Water Cooled** - in wide Torque rating range from tiny 1 Nm to massive 5000 Nm. In self cooled & Water/coolant cooled version depends on Power rating. Speeds upto 30000 RPM.

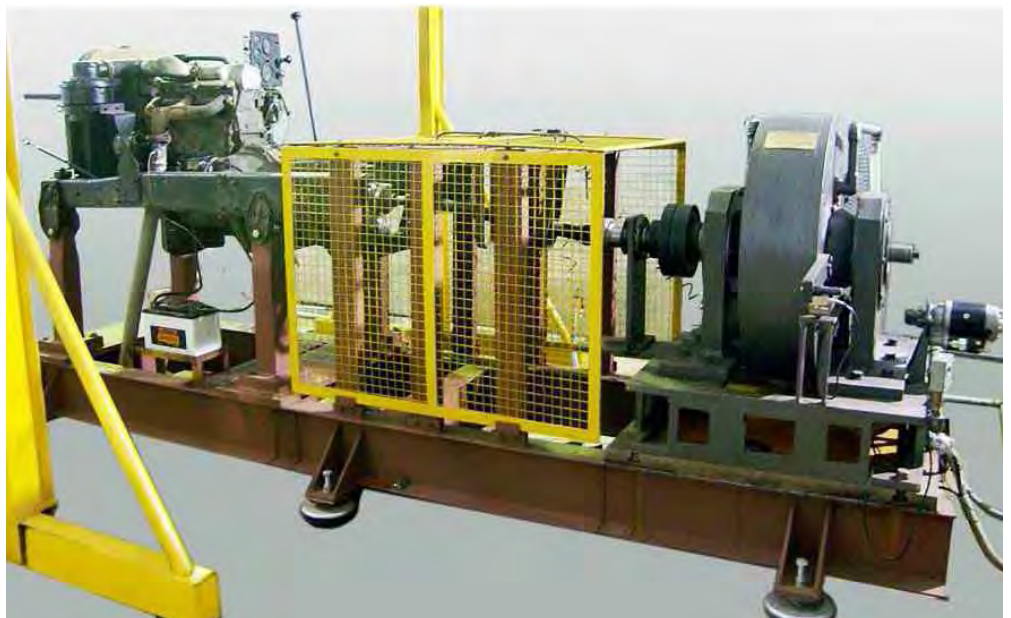
Eddy current dynamometer, A simple dynamic load system for accurate testing of all type of Electric Motors, Air Motors, Hydraulic Motors, Engines and other rotating machinery's. It provides the ideal solution for accurate analysis of Power, Torque, Speed, Fuel and Lubrication consumption and quick pass / fail testing of all type of Electric Motors, Engines, Gears and other Rotating Machineries.

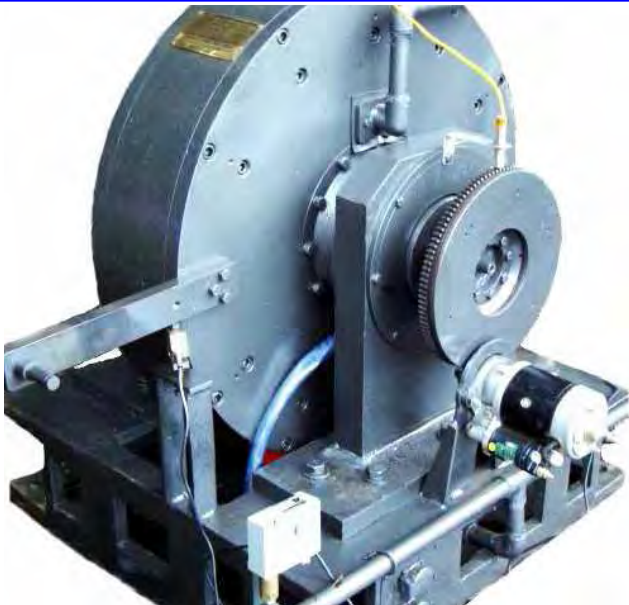


Eddy current dynamometer absorbs power & measures Torque and Speed characteristics with a unique braking system, which provides frictionless torque loading (0% to 100%) constant / variable torque load, independent of shaft speed. Torque is transmitted by a magnetic field with out friction or wear. It eliminates mechanical loading to the prime mover, providing longer life. In Eddy Current Dynamometers torque increases as the speed increases, reaching peak torque at rated speed. EC dynamometers have low inertia as a result of small rotor diameter and a low residual torque of 1%.



Cooling is provided by a water circulation system, which passes inside the stator to dissipate heat generated by the braking power. The water cooling in the EC Dynamometer provides high continuous power ratings & has typical accuracy ratings of  $\pm 0.3\%$  to  $\pm 0.5\%$  full scale, depending on size and system configuration and a very long lifetime. Mounting orientation of Eddy Current Dynamometers is in any direction, Horizontal, Vertical or inclined.





Eddy Current Dynamometer is Bi-directional, Dry-gap Type. Being Dry operation, the only resistance to movement of the rotor is bearing friction and the minimal windage effect. With zero excitation, an almost no-load condition is achieved over the entire speed range

- **High Accuracy** strain gauge load cell for Torque measurement.
- **Precise Control** even at low loads and rapid changes in demands.
- **Bi-directional operation.**
- **Low Inertia rotor.**
- **Balanced Rotor shaft** assembly on precision bearings ensures **smooth operation.**
- Single excitation coil, molded in epoxy.
- **High Reliability in extreme conditions.**  
Electroless nickel plating of cooling passages ensures **corrosion free operation.**
- **'O' ring pipe** connection to **minimize error in torque calibration** due to variation in water supply pressure.

## SPECIFICATIONS

- Power range 50 Watts ~ 1000 Kw
- Torque range 1 ~ 5000 Nm
- Speed range 0 ~ 15000 r/min
- Cooling: Water / Coolant
- Cooling Water Pressure: 1– 2 Bar
- Water Outlet temperature Max 65°C.
- Torque measurement accuracy 0.5% FS, resolution 0.1 Nm.
- Speed measurement accuracy 1r/min

## APPLICATIONS

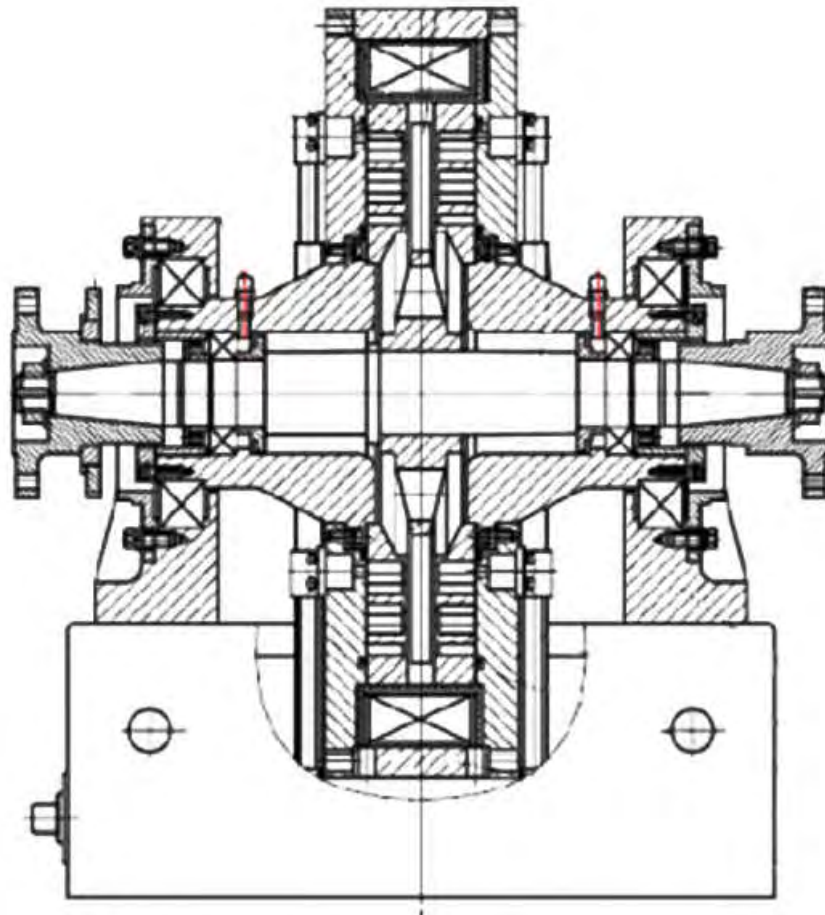
For Torque, Speed, Power, Performance & Endurance testing of:

- Electric Motors, Hydraulic Motors, Pneumatic Motors,
- Internal Combustion Engine, Diesel Engines, Gasoline Engines, Kerosene Engines,
- Transmission, Differential Gear Boxes,
- Gear Box—Automotive & Industrial Gear Boxes,
- Turbines—Gas, Steam,
- Pumps,
- Shafts, Axles,
- Agricultural Machinery
- Mining Machinery
- Petroleum drilling





Model	Max Absorbed Power		Max Braking Torque	Constant Torque Nm - rpm Range	Constant Power KW - rpm Range	Moment of Inertia	Water Flow
	KW	HP	Nm	RPM	RPM	KgM <sup>2</sup>	Ltr/Hr
WED-0055S	0.64	0.85	1	1500 -6100	14000	0.0001	25
WED-03S	3	4	5	1500-5730	14000	0.0004	110
WED-05S	5.5	7.5	10	1500-5252	14000	0.0006	200
WED-11S	11	15	21	1500-5000	13000	0.0028	400
WED-15S	15	20	40	1500-4665	12000	0.0055	600
WED-22S	22	30	50	1400-4201	12000	0.0055	800
WED-38S	38	50	90	1400-4031	11000	0.018	1400
WED-55S	55	75	125	1250-4201	11000	0.036	2000
WED-75S	75	100	175	1200-4092	10000	0.044	3000
WED-150S	150	200	425	1160-3370	9000	0.16	5000
WED-188S	187	250	590	1150 -3026	8000	0.41	6500
WED-220S	220	300	750	900- 2801	8000	0.54	7200
WED-300S	300	400	1200	875 -2387	6000	0.63	10000
WED-373S	375	500	1780	810 - 2000	6000	0.95	12500
WED-450S	450	600	2820	740 -1562	5500	3.28	15000
WED-670S	650	900	4000	650-1590	4200	9.90	21000
WED-750S	750	1000	5000	620-1432	4000	15.86	24000

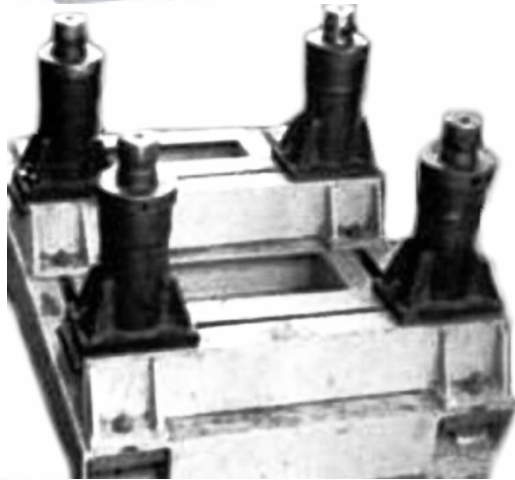


Our Proprietary APPSYS ENGINE TEST software developed for Engine test to monitor & display Engine mechanical Power, Toque, Speed, Temperature parameters, Pressure parameters, Crank Angle position detection etc.

PC Auto & PC Manual mode selector Soft push button switch on Monitor screen. In PC Auto mode, Data is captured on predetermined (Site settable) time & Torque Loading in 100 steps (independently settable), whereas in PC Manual mode – Data is captured manually by pressing data capture soft button on screen. Captured data is exported to MS Excel in Table forms & in Graphs form to show Torque-Speed characteristics, Speed-Power characteristics, Fuel consumption—Torque characteristics. Torque-Speed Oscillations at steady state Torque at different temperatures, Temp measurements etc. & custom characteristics required by clients.







Engine Test Stands, Mounting Bed with T- slots having X, Y & Z adjustment for Length, Width & Height adjustments with mechanical / hydraulic jacks or scissor type lift platform with raise / lower lever & position lock, is supplied for Engine mounting with Cardan / Propeller shaft & adaptors between Engine and the loading device (Dynamometer) and necessary transducers. The test bench, being rigidly supported on four anti-vibration mounts.

Accessories such as Fuel consumption & Flow measurement, Engine starting system, Throttle actuator, Shut down actuator, Temperature measurements with RTD sensors, Pressure measurements, Crank angle position detection, are also offered along with engine testing dynamometer.

**APPLICATION SYSTEMS**

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