

# AccuDyne™ AC Motoring Dynamometers

The AccuDyne™ line of AC motoring dynamometers has been specifically developed to meet the most rigorous engine and powertrain testing requirements for passenger, commercial, military, and heavy duty off-road vehicles. Their extremely accurate speed and torque control, as well as very low inertia, make them ideal for all types of steady state and transient testing protocols including 40 CFR 1065 and World Harmonized transient cycles. The AccuDyne™ family is available in sizes ranging from fractional to over 2,000 Hp.



Dyno One offers a wide range of customer specific solutions that will provide the customer with many years of reliable service, with minimal maintenance required.

## Compatible with a wide range of testing applications, including:

Steady state and transient test cycles

Fuel and lubrication testing

Transmission testing

Testing of race engines and powertrains

Road load profiles, including inertia simulation

Engine and drivetrain component testing

End-of-line cold and hot testing during engine production

Friction rig testing

## Benefits

- High control and measurement accuracy
- Most units are air cooled. No need for facility coolant systems
- Fast dynamic response due to low inertia and high-speed flux vector control
- Cost effective - Regenerative systems pay for themselves over time via lower operating costs
- Configured to meet specific customer applications
- Ease of maintenance
- Extremely short installation time
- High reliability and long life

## Features

- Full four-quadrant operation
- Line-regenerative or resistive braking
- Full torque available at stall (zero rpm)
- True zero torque (no load) capability
- High speed capability
- Very fast dynamic response
- Seamless transfer between motoring and absorbing modes
- Exceptional control stability
- Wide dynamic torque measurement range
- Power efficient IGBT regeneration
- Optional engine simulation
- Optional gear shift simulation
- Optional vehicle inertia simulation

## Mechanical

AccuDyne™ AC Dynamometers are typically supplied with a riser stand designed for mounting them directly to a customer's bed-plate or inertia mass, while maintaining the required centerline height for the specific application.

### AccuDyne Dynamometer Systems offer

- Solid mechanical design
- Forced air cooling
- Winding and bearing temperature safeties
- Wide ambient temperature operation range: 0 to 40°C
- Wide ambient relative humidity range: 95%, non-condensing
- Overload capability up to 200% for up to 60 seconds
- Optional portable docking cart systems available

### Features

- High accuracy torque flange with integrated amplifier
- Accuracy of 0.05% full scale
- High precision frequency output signal
- Optional daily calibration check of the torque flange by means of shunt calibration
- Optional mechanical calibration arms quoted on request

## Power electronics

The power electronics cabinet houses vector drives and ancillary equipment required for control of the AccuDyne™ AC Dynamometer and auxiliary devices. The cabinet connects directly to the facility AC mains.

### Features

- Low noise IGBT interface to AC mains
- Fully compliant with IEEE-519 specification
- IGBT flux vector dynamometer drives
- High efficiency directed air flow cooling system
- Wide ambient temperature operation range: 0 to 40°C
- Wide ambient relative humidity range: 95%, non-condensing

### System Controls

When integrated with a DynoLAB™ PT Test Cell Control System, one or more AccuDyne™ AC Dynamometers become a powerful engine and powertrain test bed. The precise control of the AccuDyne combined with the powerful functionality and flexibility of the DynoLAB PT creates a test environment perfect for simple, long-term durability... or the most rigorous simulation, certification, or engineering validation testing.

# Available options and accessories

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## Engine simulation

Precise simulation of engine torque pulses. Allows the AccuDyne to replace the engine in many types of component testing.

## Full stall torque options:

This option allows for full torque, including overload, at stall (zero speed).

## Engine mountings:

Robust engine mounts for use with existing test cell base plate. Vibration isolation is included.

## Driveshafts:

A variety of pre-manufactured or custom driveshafts can be selected to match your particular needs. These can be provided in manual or automatic docking configurations. In addition, a properly selected torsionally compliant coupling can be provided to dampen mechanical resonances inherent in all powertrain test systems.

## Vehicle inertia simulation

Simulate in-vehicle operation in the dynamometer cell.

## Low speed option:

Provides for precise control at very low rotational speeds. Typically used for clutch and drive line slip testing.

## Engine carts:

Wheeled docking carts, sized for your particular application, allow for easy transport of the engine or drive-train component to the test cell. Docking carts provide precise alignment and rigid attachment to the dynamometer with integral locking mechanism. Vibration isolation is included. Optional match plates can be provided for automatic connection of fluid and electrical lines when the cart docks to the dynamometer receiver.