

HAMPDEN DYNAMOMETERS

Hampden HD-34 Fractional-Horsepower Dynamometer

Purpose

To aid in demonstrating and analyzing the operation of fractional-horsepower motors and engines. The **MODEL HD-34** may be run as a DC motor, driven as a DC generator, or, as a dynamometer, used to check the performance of commercial motors, and those built or repaired by students. It may also be used for testing internal combustion engines and other mechanical equipment having similar ratings.

Description

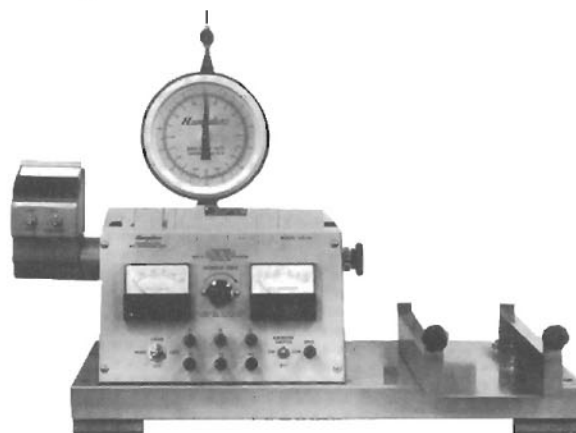
The Hampden Fractional-Horsepower Dynamometer is a separately-excited DC machine. Its shaft and frame are cradled in special sealed ball bearings to form a trunion mount, assuring a minimum of friction. Longitudinal slots in the steel bedplate allow machines of varying sizes to be tested. An adaptor panel **HD-34-AP** is available for Hampden Series 100 machines.

The sloping control panel contains an armature ammeter, armature voltmeter, "low-off-high" load switch, and a field rheostat. Each of the two screw sockets on the bedplate contains a 660-watt resistor load. Larger resistance units or ordinary light bulbs may be substituted, if desired.

The 8-inch diameter scale indicates torque in either direction of rotation in, both English units (lbf-ft) and SI units (N-m). When desired, the scale may be replaced by a load cell, in either English or SI units, and has an analog output.

Specifications

Motoring: 125V DC; 3/4 hp; 2500 rpm
Generator Absorption: 1 hp continuous
Excitation: Separately excited by 125V DC
Maximum Field Current: 0.25A
Maximum Speed: 4000 rpm
Scale Reading: 3.4-0-3.4 lbf-ft
 2.5-0-2.5 N-m



Hampden **MODEL HD-34** Fractional-Horsepower Dynamometer, shown with optional HD-34T tachometer and HD-34-AP adaptor panel. Dimensions: 23 H x 30 W x 17 D. Shipping Weight: 160 lbs.

Optional Accessories

MODEL HD-34T Tachometer Generator and Indicator,

When ordered with **MODEL HD-34**, generator is mounted to outboard shaft extension: 0-2000/4000 rpm motor is mounted on bracket alongside scale.

MODEL HD-34-FE Portable Excitation Rectifier, Used where 150V DC is not available for excitation.

MODEL HD-34-MC Master Coupler Set.

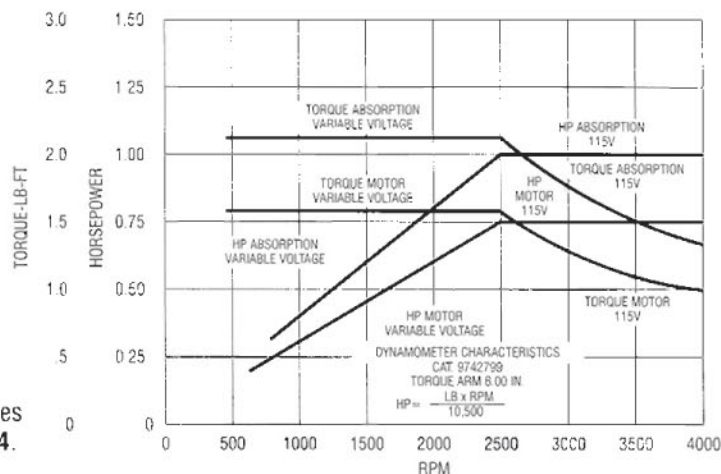
MODEL HD-34-SI Shaft-to Housing Lock Assembly, for Performing locked-rotor tests.

MODEL H-REM-LCD Load Cell with Signal Conditioner.

MODEL HMT-3 Mobile Bench is equipped with four swivel nonconductive rubber-tired 4 casters, two of which have brakes. Bench is constructed of code gage furniture stock steel, finished in grey hammertone enamel, with a 1-1/16" plastic laminated top, edged with black trim. Bench contains a full-length storage drawer on nylon rollers.

Dimensions: 36 H x 36 W x 24 D.

MODEL HD-34-AP Adaptor Panel



Performance curves for **MODEL HD-34**.

Hampden® ENGINEERING CORPORATION

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HAMPDEN DYNAMOMETERS

Hampden Magnetic Particle Brake Dynamometer MODEL H-DYN-5-DMB-2M

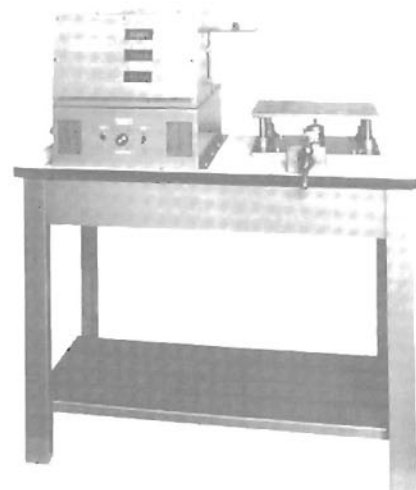
Purpose

To provide the means of loading motors or engines during performance tests and for the direct digital display of speed, torque, and horsepower.

The Hampden Magnetic Particle Brake Dynamometer is furnished complete with bench (mobile or stationary) and adjustable motor bedplate. Bench may include drawers when specified.

Specifications

Torque Range	0.4-50 lbf-ft
Speed Range	0-3600 rpm
Constant Horsepower @ 1800 rpm	1.41 hp
15-min. Horsepower @ 1800 rpm	3.00 hp
Nonexcited Drag Torque	0.40 lbf-ft
Inner Rotor Inertia	0.18 lb-ft ²
Outer Rotor Inertia	0.24 lb-ft ²
Cooling	Forced air
Digital Speed Readout	4-1/2 digits
Digital Horsepower Readout	3-1/2 digits
Brake Rectifier Adjustment	0.90V. DC
Speed Measurement	Magnetic pickup
Coupler	5, 3-jaw chuck
Supply Voltage	115V, 60Hz or 220V, 50Hz



Hampden **MODEL DYN-5-DMB-2M**
Dimensions: 49-1/2" H x 24" D.
Shipping Weight: 500 lbs.

Hampden Integral Horsepower Dynamometer MODEL HD-1204

Purpose

For the performance testing of electric motors and other machines producing up to 4 horsepower at rated speeds up to 4000 rpm.

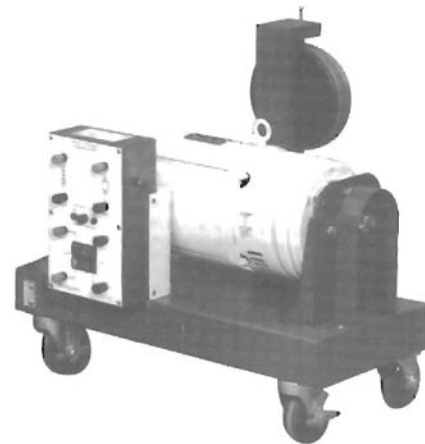
Description

The Hampden **MODEL HD-1204** is a trunnion-mounted, 4-hp dynamometer that can run as a 125 V DC motor or as a separately-excited generator (125 V: 1 A max excitation). Armature and field connections terminate on the control panel, along with the rotor search coil. The **HPT-100A** Digital Photo Tachometer is included as well

as a 36-position rotor locking pin for stalled torque measurements. The 8-inch diameter scale reads torque directly in either direction of rotation (7.5-0-7.5 lbf-ft) under both motoring and generating conditions.

Optional Accessories

MODEL HMT-4 Mobile Bench with adapter plate. Dimensions: 36" H x 48" W x 24" D
MODEL HD-34-FE Excitation Supply



Hampden Dynamometer, **MODEL HD-1204**
Dimensions: 25" H x 27" W x 24" D.
Shipping Weight: (HD-1204 only) 210 lbs.

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