

Test Cell Integration Solutions...

Dynamometers • Controls
Data Acquisition • Automation



MIDWEST & DYNAMATIC

Midwest™ & Dynamatic™ Eddy Current Dynamometers

New Dynamometer Manufacturing



Dynamatic Models from 40 to 2200hp

Improving Upon Time-Tested Tradition

Going back to the 1920's, Midwest and Dynamatic have been time-honored and well-respected manufacturers of eddy-current dynamometers. Today's materials, technology, engineering and manufacturing techniques have all contributed to significant improvements in eddy current dynamometer design and manufacturing. Midwest and Dynamatic Dynamometers' combined model lines offer a wide range of choices, and are a natural fit with DyneSystems' controls, test automation and data acquisition products. Having all components produced under one roof, with regular collaboration between departments, provides an obvious advantage when integrating a system.

Two Year Factory Warranty on New Eddy Current Dynamometers

Why Eddy Current?

The development of the eddy-current dynamometer has made available to the industry simple, low cost, compact torque measuring equipment for a large spectrum of test purposes. The speed-torque characteristics of these dynamometers are ideal for engine testing and their versatility also allows effective use of these units in testing transmissions, turbines, electric motors, gears, pumps and many other machines.

- Torque readings are smooth and easy to instrument through the "cushioning effect" of a magnetic field
- Field excitation requirements are below the 1% of total dyno horsepower, for easy control
- Eddy-current dynamometers have few rotating parts - only rotor and shaft bearings
- Water cooling permits a container-type housing, resulting in low sound level and reducing air disturbance to a minimum
- Horsepower ratings are based on continuous duty
- Bi-directional speed and torque measurement

Engineered for Decades of Dependable Service

Midwest and Dynamatic dynamometers have built their reputation on being robustly engineered for a long life of demanding service. Availability of replacement parts is assured after many years of reliable service - see OEM remanufacturing information, page 3.



Any Dry Gap model can be configured for vertical shaft applications



Midwest Models from 5 to 4000hp

Today's Eddy Current Dynamometer

Dynamometer models with lower inertia and higher speed capabilities have been designed to meet higher technology demands in the engine and motor industries. Midwest models range from 5 to 4000 horsepower, and are available in both wet and dry gap construction. Dynamatic models are available from 40 to 2200 hp, and are also available with both wet gap and dry gap construction. Custom dynamometers with higher horsepower and speed ratings may be available upon request.

This wide range of Midwest and Dynamatic eddy current dynamometer models can often be further customized for an even better fit with your application. Please see dynamometer model specifications on page 4.

Vertical format (photo above, right) for vertical-shaft testing applications, is available for virtually any dry gap eddy current dynamometer from 5hp to 2,000hp.

All new and remanufactured Midwest™ and Dynamatic™ eddy current dynamometer models are manufactured and tested (when possible) in our production plant, and carry a **two year factory warranty**.

www.dynesystems.com

The Ultimate in Small Engine Dynamometers

The dynamometer of choice for small engine manufacturers and test facilities worldwide

To accommodate testing of small engines with both vertical and horizontal shaft orientations, DyneSystems provides a compact dynamometer “tilt stand” that locks in the horizontal or vertical positions, with fixtures for mounting and coupling both styles of engines during test. These units can be configured with an AC (motoring and absorbing) dynamometer, or an Eddy Current (absorbing) dynamometer, depending on the application.

The two-position tilt stand (shown at right in its horizontal shaft position) is rated for engines from 3 to 75 hp. The portable cart shown below is rated from fractional to 40 hp and locks into multiple positions to simulate real-life engine orientation during operation.

- Speed feedback



Vertical/Horizontal tilt stand for testing engines or motors up to 75hp



Multi-position portable cart for testing engines or motors up to 40hp

- Integrated electric starter for starting the engine
- Electric actuator for selecting position
- Trunnion mounted or inline transducer
- Calibration arms, and weights
- Safety Interface Sensors:
 - Temperature faults
 - Coolant flow faults
- With Inter-Loc V or Dyn-Loc IV Digital Dynamometer Controller:
 - Torque measurement and regulation
 - Speed measurement and regulation
 - Horsepower calculation

Integration and Control

When these dynamometers are integrated with other devices, test systems can include digital dynamometer and throttle control, data acquisition, test automation, air measurement, fuel measurement, emissions measurement, and combustion analysis.

OEM Remanufactured Eddy Current Dynamometers

Important Benefits of OEM Dynamometer Remanufacturing

- Your company’s ISO Certification may be adversely affected if your dynamometer is rebuilt by a non-OEM shop
- As the OEM for Midwest and Dynamatic Eddy Current Dynamometers, our remanufacturing process returns these units to a “like-new” status and makes them fully compliant to OEM specifications.

Two Year Full Factory Warranty

We provide a full Two Year Factory Warranty with each remanufactured dynamometer as a measure of our confidence in these units.

Get those tired, old dynamometers back in service!

Our dynamometer team specializes in remanufacturing Midwest and Dynamatic dynamometers, with the capability of restoring model years as far back as the 1920’s to today’s improved OEM specifications.

Remanufactured pre-owned dynamometers available

Are you in the market for a pre-owned eddy current dynamometer? We maintain an extensive inventory of pre-owned Midwest and Dynamatic dynamometers, ready to be rebuilt. See our website, or contact the sales department, for a list of currently available models.



Before and after remanufacturing
OEM quality to the core

Remanufacturing done right - with a Factory Warranty!

Your OEM Certified Remanufactured Dynamometer’s warranty covers two years, parts and labor.

Durable • Dependable • Proven Design



Eddy Current Dynamometers for Every Application

Standard Product Overview

Midwest-Dynamatic Dry-Gap Dynamometers						Midwest-Dynamatic Wet-Gap Dynamometers					
HP	Inertia lb*ft ²	Model Number	Base Speed	Max. Speed	Max. Tq. (lb*ft)	HP	Inertia lb*ft ²	Model Number	Speed RPM	Max. Speed	Max. Tq. (lb*ft)
5	0.04	MW-3HS	3600	18000	7.3	125	1.4	DM-8061	3900	12000	168.3
						125	1.4	DM-8061HS	3900	16000	168.3
10	0.14	MW-46	3000	7000	17.5	175	1.4	DM-8062	5350	12000	175.1
10	0.14	MW-46HS	3000	12000	17.5	175	1.4	DM8062HS	5350	16000	175.1
						200	5.2	DM-8081	2800	8000	375.1
20	0.24	MW-48HS	2900	18000	36.2	200	5.2	DM-8081HS	2800	12000	375.1
						250	15.7	MW-1014W	2500	6000	525.2
30	0.75	MW-66	3000	6000	52.5	250	15.7	MW-1014WHS	2500	10000	525.2
30	0.75	MW-66HS	3000	12000	52.5	275	5.2	DM-8082	3800	8000	380.1
						275	5.2	DM-8082HS	3800	12000	380.1
40	0.75	DM-66DG	3300	6000	63.7	300	17.7	DM-8101	2150	6000	732.8
40	0.75	DM-66DGHS	3300	12000	63.7	300	17.7	DM-8101HS	2150	10000	732.8
						300	15.7	MW-310	2500	6000	630.2
50	3.6	MW-758	2000	6000	131.3	300	15.7	MW-310HS	2500	10,000	630.2
50	3.6	MW-758	2000	12000	131.3	350	5.2	DM-8083	4700	8000	391.1
						350	5.2	DM-8083HS	4700	12000	391.1
75	1.4	DM-8060	3400	12000	115.9	400	75	MW-314	1200	5000	1750.7
75	1.4	DM-8060HS	3400	16000	115.9	400	75	MW-314HS	1200	8000	1750.7
						400	55	MW-915	1000	4000	2100.8
150	5.2	DM-8080	2600	9000	303	450	17.7	DM-8102	3100	6000	762.4
150	5.2	DM-8080HS	2600	12000	303	450	17.7	DM-8102HS	3100	10000	762.4
						500	37	DM-8121	1750	6000	1500.6
175	15.7	MW-1014A	2500	6000	367.6	500	37	DM-8121HS	1750	7500	1500.6
175	15.7	MW-1014AHS	2500	10000	367.6	500	111	MW-1519W	1200	5000	2188.3
						500	111	MW-1519WHS	1200	6500	2188.3
200	17.7	DM-8100	1800	6000	583.6	500	65.3	MW-512	1750	6000	1500.6
200	17.7	DM-8100HS	1800	10000	583.6	500	65.3	MW-512HS	1750	8000	1500.6
						600	124	DM-1519W	1200	5000	2626.0
300	37	DM-8120	1100	6000	1432.4	600	124	DM-1519WHS	1200	6500	2626.0
300	37	DM-8120HS	1100	7500	1432.4	600	17.7	DM-8103	4100	6000	768.6
300	111	MW-1519A	1000	5000	1575.6	600	17.7	DM-8103HS	4100	10000	768.6
300	111	MW-1519AHS	1000	6500	1575.6	600	110	MW-315	1200	5000	2626.0
						600	108	MW-515	1200	5000	2626.0
500	183	DM-8160	800	4000	3282.5	650	37	DM-8122	2200	6000	1551.7
500	183	DM-8160HS	800	6000	3282.5	650	37	DM-8122HS	2200	7000	1551.7
						750	410	MW-318	1200	5000	3282.5
700	677	MW-2025A	1000	3600	3676.4	800	37	DM-8123	2700	6000	1556.1
700	677	MW-2025AHS	1000	4500	3676.4	800	37	DM-8123HS	2700	7000	1556.1
700	698	DM-2025	600	3600	6127.3	1000	183	DM-8161	1400	4000	3751.4
700	698	DM-2025HS	600	4500	6127.3	1000	183	DM-8161HS	1400	6000	3751.4
						1000	460	MW-518	1000	5000	3751.4
2000	4646	MW-3232	1000	3000	10504.0	1000	190	MW-918	1400	4000	3751.4
						1200	677	MW-2025W	1000	3600	6302.4
						1200	677	MW-2025WHS	1000	4500	6302.4
						1200	985	MW-322	1000	3600	6302.4
						1250	183	DM-8162	1750	4000	3751.4
						1250	183	DM-8162HS	1750	6000	3751.4
						1500	183	DM-8163	2100	4000	3751.4
						1500	183	DM-8163HS	2100	6000	3751.4
						1500	698	DM-2025-1	925	3600	8516.8
						1500	698	DM-2025-1HS	925	4500	8516.8
						1500	1450	MW-324	1200	4000	6565.0
						1500	940	MW-521	1200	4000	6565.0
						1500	485	MW-924	1200	4000	6565.0
						1800	698	DM-2025-2	1100	3600	8594.1
						1800	698	DM-2025-2HS	1100	4500	8594.1
						2000	3200	MW-328	900	3500	11671.1
						2000	1295	MW-928	900	3500	11671.1
						2200	698	DM-2025-3	1300	3600	8888.0
						2200	698	DM-2025-3HS	1300	4500	8888.0
						3000	6000	MW-332	800	3500	19695.0
						4000	1367	MW-932	1500	3000	14005.3

$$\frac{\text{HP} \times 5252}{\text{RPM}} = \text{TORQUE}$$

