

SF-250A POWERSPORTS DYNO

SuperFlow's SF-250A CycleDyn Powersports dyno can be configured to test Motorcycles, ATVs and Side by Sides making it the most versatile powersports dynamometer available. Optional AC motoring capabilities provide an economical solution for emissions type testing.

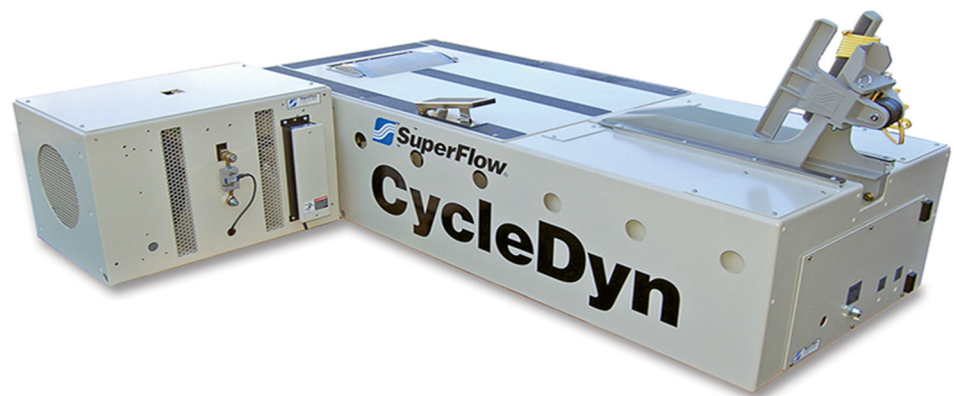


Overview

The SuperFlow CycleDyn chassis dyno is used worldwide by motorcycle dealerships, educational institutions, and professional race teams to test motorcycles, karts, ATVs (quads), and similar vehicles within a safe, controlled environment. It is rated for 750+ hp (inertia), 500+ hp (eddy-current) and 200mph. The CycleDyn motorcycle dyno utilizes SuperFlow's rugged, impact resistant hand held controller for easy operation. The CycleDyn is available as inertia only, with eddy-current load for controlled acceleration, steady state (mapping) and step tests, or with eddy-current load and an AC motor. Loaded models also perform inertia only runs, giving users the capabilities of two dynos in one unit.

Because it is manufactured by SuperFlow, the CycleDyn delivers on both price and quality. This motorcycle dyno is not constructed with a cheap angle iron frame wrapped in thin sheet metal. Instead, we use sturdy steel plates and weld them at the seams to create a strong, vibration resistant enclosure and sealed air compartment for the innovative road speed fan options. The CycleDyn comes standard with a motorized front wheel restraint that accepts motorcycles with

wheelbases from 48" - 72" (122 – 183cm) and an air-actuated front wheel clamp. It also comes standard with a temperature compensated load cell (eddy-current models) for precise torque measurement during loaded testing. Also standard is a complete data acquisition and control system that includes with our industry leading WinDyn software. So, whether you want to add a profit center to your business, justify customer purchases, or increase the on-track performance of your race motorcycles, the CycleDyn high-performance motorcycle chassis dynamometer can handle it.



Typical Applications Include:

- Racing
- Performance testing and tuning
- Research and Development
- Diagnostics
- Durability and quality control
- Emissions and fuel consumption testing
- Education
- Vehicle certification



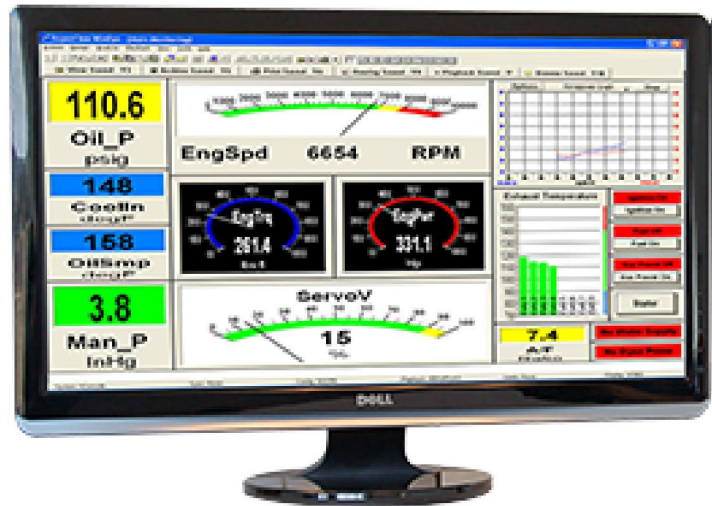
WinDyn – Software and Data Acquisition System

The WinDyn Software and Data Acquisition system is included and offers features, expandability and configurability not seen anywhere else. The sensor box has 139 channels available for data acquisition of items like boost, oil pressure, throttle position, etc. and can be outfitted to read directly from the vehicle's OBDII port. Data collection happens at 1,000 to 2,500 Hz depending on the channel so no details are missed. Ten software screens are completely user configurable so live data can be viewed in a manner that makes sense to you. The handheld controller is rugged, dependable and easy to use. Simply select the test menu, then the type of test you want to run and follow the prompts to start testing. Our test scripts guide you through the process and only require a few clicks to start testing.

Data Acquisition

WinDyn Control and Data Acquisition System

SuperFlow's WinDyn® Software is the most feature rich system available for dynamometers today. We've included all the tools you need to make a SuperFlow® dynamometer a successful piece of your business. WinDyn® is preconfigured with industry standard tests to get you up and running quickly. But, we didn't stop there. We've also developed powerful configuration and test editors that offer you complete, customized control of the dynamometer, the test cell and the tests you're running.



WinDyn's® available 76 measured channels and 35 calculated channels let you measure and analyze data to make your products better. Our advanced electronics sample data at rates between 1,000 and 2,500 Hz depending on the channel and display it at 100 lines per second so you're sure to see the entire picture. The built in data analysis tools let you see data in a way that makes sense, and like the rest of WinDyn®, data analysis is completely user-configurable should you choose.

Start Testing Quickly WinDyn® comes preconfigured with standard tests to get you testing quickly. Pre-defined test groups automatically configure the dynamometer for standard testing. Simply select the one that matches your current needs and you're ready to run.

Test Groups

A test group is a WinDyn® file that completely configures the dynamometer for testing. By using test groups you ensure that all tests are run in the same way, regardless of the operator. Test groups configure the following:

- All channels being monitored (measured, calculations, constants and interpolations)
- Screen group of up to ten real-time data monitoring screens
- Safety limits (if desired) to protect your engine

- Test profiles (acceleration, step, steady state, break-in, life cycle, track simulation, custom, etc.)
- Sensor calibrations
- Relay controls for test cell functions (lights, pumps, fans, ignition, etc.)
- PID control parameters
- Test specifications (starting and ending speeds, engine specs, test notes, etc.)

Completely Customizable

In addition to the standard ready to run configuration supplied from the factory, you can customize WinDyn® in any manner you'd like. Write custom test profiles, design custom screen groups, add a company logo to data plots, setup print preferences for graphs and tabular data, add additional sensors or integrate emissions equipment quickly and easily. The best part about WinDyn® is its versatility: it comes fully loaded and ready to run all the standard tests you need, plus gives you the power to configure tests any way you prefer. Learn more about our advanced editors.

Test Profiles

Test profiles are a series of commands that automatically perform a test. WinDyn comes loaded with standard test profiles including acceleration, step, steady state and break-in, but the Test Profile Editor gives you the ability to write any custom test you can imagine.

Here are some examples of what WinDyn users are already doing-

- Automated one-touch tests that control every detail like-
 - powering on pumps and fans
 - powering ignition
 - turning on fuel
 - checking critical parameters like oil pressure and water temperature before
 - beginning a test sequence
 - ending the test
 - stopping the engine
- Cyclic durability tests to check engine belt life
- Reverse acceleration to simulate tractor pulling
- Transmission durability tests on chassis dynamometers
- Slope simulation

- Track lap simulation for the Pikes Peak Hill Climb, Charlotte Motor Speedway and others
- Pass/Fail tests for air filters and catalytic converters on the SF-1020SB
- Automated chassis dynamometer tests with throttle actuators
- 300-hour diesel engine durability tests
- Urban drive cycle tests
- Emissions tests

Configuration Editor

The configuration editor gives you the power to create the custom test environment you desire.

This powerful Windows® based editor allows you to define-

- Channel Definition (name, units, format, filtering, formulas, etc.)
- Control Channels (close-loop controllers for load, throttle, flow, etc.)
- Display Channels (in any language)

Once you're happy with your custom configuration, it's saved so the dynamometer can quickly be configured to your specifications before every test.

Safety Limits Editor

Safety limits prevent problematic situations like low oil pressure or overheating from damaging your engine or vehicle. They are completely user-configurable by channel (exhaust temp, oil pressure, water temp, etc.), by critical value and by resulting action. You can even setup a multi stage rev limiter. Limits are constantly monitored and if triggered the post mortem feature kicks in to provide a snap shot of data before and after the limit was triggered to assist you in determining what happened to the engine.

Test Data Perfected

WinDyn® is packed with data analysis tools that make analyzing your engine or vehicles performance easy. For each test you can view up to 10 user-defined pages in tabular format, graphical format or side-by-side. Additionally, up to 10 saved tests can be overlaid on a graph enabling you to make informed decisions quickly. Like all other WinDyn® features, all the data viewing capabilities are customizable. The test group defines which data is on each of the ten

pages and on each page's graphs. You can change this at any time, even after the test is completed.

Want to see an area of a graph in more detail? Drag a box around the area you want to see and WinDyn® immediately zooms and re-scales that portion of the graph for easy comparison. Plots are easily enhanced with your company logo before printing. They can also be exported as a bitmap or JPG for emailing to customers or posting to your website. If WinDyn's® data analysis tools aren't enough for you, export your test data to Microsoft Excel® for custom post-test analysis.

Customer Data Packs

Your customers are why you're in business. With WinDyn's® Customer Data Pack feature you can instantly create a file with their test data and the WinDyn® data viewer so they can take their results home. This data viewer includes all the same analysis tools as WinDyn® so your customers will be assured of their results.

SuperFlow Explorer

Managing data files is crucial to finding your data efficiently. The SuperFlow® Explorer, located under the tools menu, allows you to quickly navigate to the correct data, view it, plot it or print it with the click of the mouse. It can browse all folders, networks and the desktop and also create, rename, copy, move delete and manage all system folders.

Test Playback

WinDyn® allows you to replay stored tests with all meters and screens active just as they were during the original test. You can print any or all WinDyn® screens and data to most Windows® supported printers.

Handheld Controller

The handheld controller gives the operator full control of the dynamometer and the test sequence from the driver's seat. The controller is housed in a molded, impact resistant enclosure capable of withstanding years of abuse in harsh test cell environments.



Vibration dampening mounts hold the controller to the steering wheel freeing up the operators' hands to run the dyno, the vehicle and operate their tuning suite. The numerical keypad and shortcut keys make setup quick and navigation through the suite of testing options easy.

An LCD display screen will show any of a hundred data channels in real time so the operator can continuously monitor vehicle data like rpm, mph, power, torque, inlet air temperature and other measured data.

The screen also provides menus to control every aspect of the dynamometer setup including -

- Adjust the wheelbase with the push of a button
- Lock or unlock the rolls for vehicle loading
- Autozero or calibrate data channels
- Select and run any of the pre-programmed test profiles
- Manually adjust the load to mph or rpm set points
- Activate safety limits

Product Specifications

Peak Power	750 hp (559 kW)
Peak Absorbed Power	500 hp (373 kW)
Max Speed	200 mph (322 km/h)
Adjustable Wheelbase	58 - 84 in. (147 - 213 cm)
Roll Diameter	20 in. (51 cm)
Roll Width	16 in. (41 cm)
Dimensions	85L x 69W x 21H in. (216 x 174 x 53 cm)
Weight	1,800 lbs (816 kg)
Base System Inertia	323 lbs (147 kg)
Axle Weight	1,000 lbs. (454 kg)
Air Requirements	80-100 psi (552-690 kPa)
Power Requirements	Dynamometer: 240V AC, 30 amps, single phase Computer & Sensor Box: 120V-240V AC, 15-8 amps

Product Options

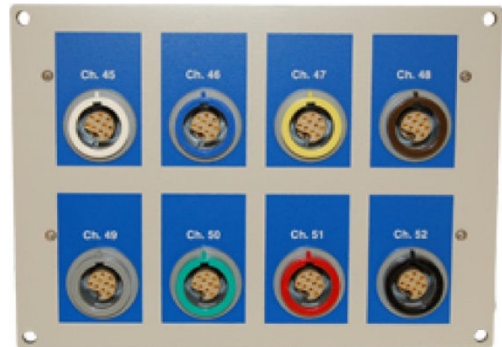
Air Fuel Kit

Air Fuel Meter Kits available in any channel count configuration. Bosch LSU 4.2 and OEM grade NTK type sensors available.



Analog Panel

8 channel analog panel to integrate exhaust gas analyzers lambda sensors, O2 sensors, etc. Select 0-1V, 0-5V, 0-10V, 0-20V or 0-30V in any combination.



Pressure Sensor Expansion Panels

The modular sensor box allows for additional 10-channel pressure panels and additional 16-channel temperature panels. Extra transducers are sold separately.



Tailpipe Air Fuel Probe

SuperFlow tailpipe exhaust probes measure the air/fuel ratio directly from tailpipe. Tailpipe probes integrate with WinDyn for live monitoring and easy posttest graphing and analysis.



Ramp Kit

Aluminum ramp kits are available for above ground installations. The 36" wide ramp is available in 72" or 94" lengths to accommodate low profiles and long vehicle.

AC Motoring Cube

The AC Motoring Cube brings emissions level test data the CycleDyn. It allows you to perform R&D economically prior to final certification. The AC cube will simulate inertia; AC cube will simulate inertia, rolling losses and aerodynamic effects with the help of an advanced motor controller and WindDyn. Perform coast downs and evaluate parasitic losses or use SuperFlow's drivers trace software to perform emission drive

ATV Deck

The ATV Deck mounts to the front of the ATV Roll to accommodate ATVs, legends cars, dwarf cars and go karts. It's available in standard length to match a standard CycleDyn or extended length for customers using the drag pack.

Drag Pack Extension

Perfect for choppers and drag bikes, the Drag Pack Extension is available in two lengths to accommodate wheelbases from 66" to 104" or 66" to 120"

ATV Roll

The ATV Roll attaches to either side of the CycleDyn base (or to the eddy current for extra wide applications) to accommodate ATVs, legends cars, dwarf cars and go karts. It is 20" in diameter, 32" wide and knurled like the base CycleDyn roll for excellent traction.



Call or email Promand today to discuss your application and dyno test requirements in detail.

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