

SF-610 HEAVY DUTY CHASSIS DYNO

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Overview

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The SF-610 fits directly into most existing SuperFlow water brake chassis dyno pits (like the SF-601 and SF-602) so upgrading is easy. The SF-610 has a standard peak horsepower capacity of 2,000 hp, more than enough to test today's class 8 tandem axle tractors. Two high-torque eddy current power absorbers can absorb up to 1,200 HP intermittently and 500 HP continuously to perform a complete array of standard loaded tests. The rugged frame is designed for years of service and is rated for a maximum axle weight of up to 24,000 lbs.

The dual axle design accommodates both single and dual axle heavy-duty vehicles like transit buses, class 8 trucks, box trucks and moving vans. The belt connection from the front to the rear rolls allows both eddy current absorbers to apply load to either axle meaning single axle vehicles can still be tested using the full capacity of the absorbers.

The included WinDyn Data Acquisition system offers 139 customizable data channels and comes loaded with standard tests to get you up and running quickly. Standard tests include: acceleration, diesel lug down, step, steady-state and road load. Allowing technicians to safely simulate real world driving conditions like uphill grades to properly diagnose and repair vehicles.

Tests are controlled from the cab using SuperFlow's industry standard hand held controller. The rugged, impact resistant enclosure protects the handheld controller from the harsh environment of a diesel repair shop and also provides physical buttons to make sure the operator is always in control throughout the test.



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
- 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.

Sensor Box

The SuperFlow sensor box is the brain of the 139 channel WinDyn data acquisition system. Its advanced electronics measures high-resolution data at up to 2,500 Hz depending on the channel and sends the data to the operator station via a simple Ethernet connection for live monitoring.

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between the test cell and operator control room are three Ethernet cables making installation

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

Roll Diameter	18" (45 cm)
Peak Power	2,000 HP (1,491 kW)
Peak Absorbed Power	1,200 HP (intermittent) – 500 HP (continuous) (895 kW / 373 kW)
Max Speed	110 MPH (177 KM/H)
Track Width	32" inside - 108" outside (81 cm - 274 cm)
Wheelbase	46" - 60" (117 cm - 152 cm) tandem axle spacing
Base System Inertia	3,000 LBS (1,361 KG)
Axle Weight	24,000 LBS (10,886 KG)
Air Requirements	80 PSI (552 kPa) - dry, regulated, oil free
Power Requirements	Computer: 110-250 VAC, single phase 15-8 amps Dynamometer: 230 VAC, single phase, 60Hz 40 Amps

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

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