

ENGINE DYNAMOMETERS

BY SUPERFLOW

ENGINE DYNO SERIES



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AXILINE

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SUPERFLOW® - THE INDUSTRY STANDARD

For more than 40 years, SuperFlow® has been designing and manufacturing industry leading flowbenches, engine dynamometers, chassis dynamometers and advanced Windows® based data acquisition systems. Today, with more than 10,000 products in the field, SuperFlow® is far and away the most experienced and well rounded manufacturer in the industry offering the most complete

selection of test equipment. SuperFlow's® four major brands, Axiline®, Hicklin® Engineering, SuperFlow® and TCRS®, test or rebuild every component of the drive train from the engine and transmission to the torque converter, drive shaft and axles. Come see why thousands have already trusted SuperFlow® for all of their testing needs.

SUPERFLOW'S® MANY INDUSTRY FIRSTS

WE WERE THE FIRST

To offer up to 139 user configurable channels of data acquisition standard.

WE WERE THE FIRST

To offer a Windows® based data acquisition system

WE WERE THE FIRST

To bring you two new dynamometers from the most respected companies in engine testing, SuperFlow® and DTS®

SUPERFLOW® AND DTS®, NOW BETTER THAN EVER

SuperFlow® and Dynamic Test Systems, the two companies that defined the engine dynamometer industry are now together, under one roof. With more than 2,500 engine dynamometer systems commissioned worldwide, it's hard to match our quality, craftsmanship and service. The new SF-902S and the SF-Powermark represent the culmination of nearly 80 years of combined corporate experience. We leveraged that knowledge with of a team of key development staff to streamline our new product

offering. We can now test everything from single cylinder motorcycle and ATV engines to blown alcohol drag motors with either the SF-902S or the SF-Powermark. Our advanced WinDyn® Data Acquisition Systems offer up to 139 user configurable channels of data acquisition along with unmatched monitoring and data analysis capabilities. Come see why thousands of companies have already chosen SuperFlow® for all of their testing needs.



Colorado Springs, CO Facility

SF - POWERMARK

The SF-Powermark features a rugged and durable power absorption unit with a 2" diameter main shaft machined from solid stock 17-4PH stainless steel and it's the only absorber available with cross vented rotors for smooth and fast water flow. Integrated starters are built into the system so a bell housing, flywheel or engine starter is not required. A torsionally compliant driveshaft connects the engine to the dyno enabling you to run right off the engines crank shaft while 4.5" constant velocity joints ensure smooth power transfer. The included roll around engine docking cart offers great versatility to adapt to various types of engines and its stainless steel runners mean easy adjustment of the engine supports without any rust. The cart is also compatible with the SF-902S to allow maximum

versatility. The tool tray has cutouts for storing spark plugs and lambda probes; it's also a convenient area to mount ignition system components. To keep the test cell organized, the integrated boom houses both the sensor box and cooling tower, plus it has cable stays to route transducer wires cleanly between the sensor box and the engine. The included non-pressurized cooling tower mounts to the boom assembly behind the dyno, out of the way. The new sensor box also mounts to the boom and includes 4 liquid crystal displays (LCDs) to view any channel from the WinDyn® software system. WinDyn's® pre-defined test sequences allow for standard tests at the push of a button so you're up and running immediately. The test editor allows you to write any custom test you prefer with ease.

SPECIFICATIONS

ABSORBER TYPE	Water brake, bi-directional
MAXIMUM SPEED	15,000 RPM
HORSEPOWER CAPACITY	2,500 hp (1,864 kW)
TORQUE CAPACITY	1,750 lb.-ft (2,373 N-m)

STANDARD CONFIGURATION

TEMPERATURE	16-channel thermocouple panel 12 closed tip thermocouples, 1/8" 12 swagelock fittings 12 ten foot extension cables
PRESSURE	10-channel pressure panel 2 transducers (0-300 psi, ±60 psi)
AIR / FUEL	2 pre-configured analog inputs
FUEL FLOW	2 fuel flow measurement turbines
AIR FLOW	1 air flow measurement turbine

SF-Powermark



SF - 902S

The SF-902S houses a new absorber designed for high RPM and maximum durability. It's rated for 15,000 RPM, 1,500 HP and 1,200 lb.-ft. of torque. PTFE teflon water seals and 10-pin high speed precision ABEC bearings allow the new absorber to run at high RPM for extended testing periods without issue and the new stainless steel stator/trunnion combination provide a 75% increase in resistance to cavitations compared to similar aluminum bronze components. The included roll-around engine docking cart offers great versatility to adapt to various types of engines and its stainless steel runners mean easy adjustment of the engine supports without any rust. It's also compatible with the SF-Powermark to allow maximum versatility. The space saving dynamometer frame provides a

convenient tool tray and two bump starters to make lashing valves easy. Adaptation to the engine is simple with the optional multi-fit bell housing or the adapter of your choice. To keep the test cell organized, the integrated boom assembly houses both the sensor box and cooling tower, plus it has cable stays to route transducer wires cleanly between the sensor box and the engine. The included non-pressurized cooling tower mounts to the boom assembly behind the dyno, out of the way. The sensor box also mounts to the boom and includes 4 liquid crystal displays (LCDs) to view any channel from the WinDyn® software system. WinDyn's® pre-defined test sequences allow for standard tests at the push of a button so you're up and running immediately. The test editor allows you to write any custom test you prefer with ease.

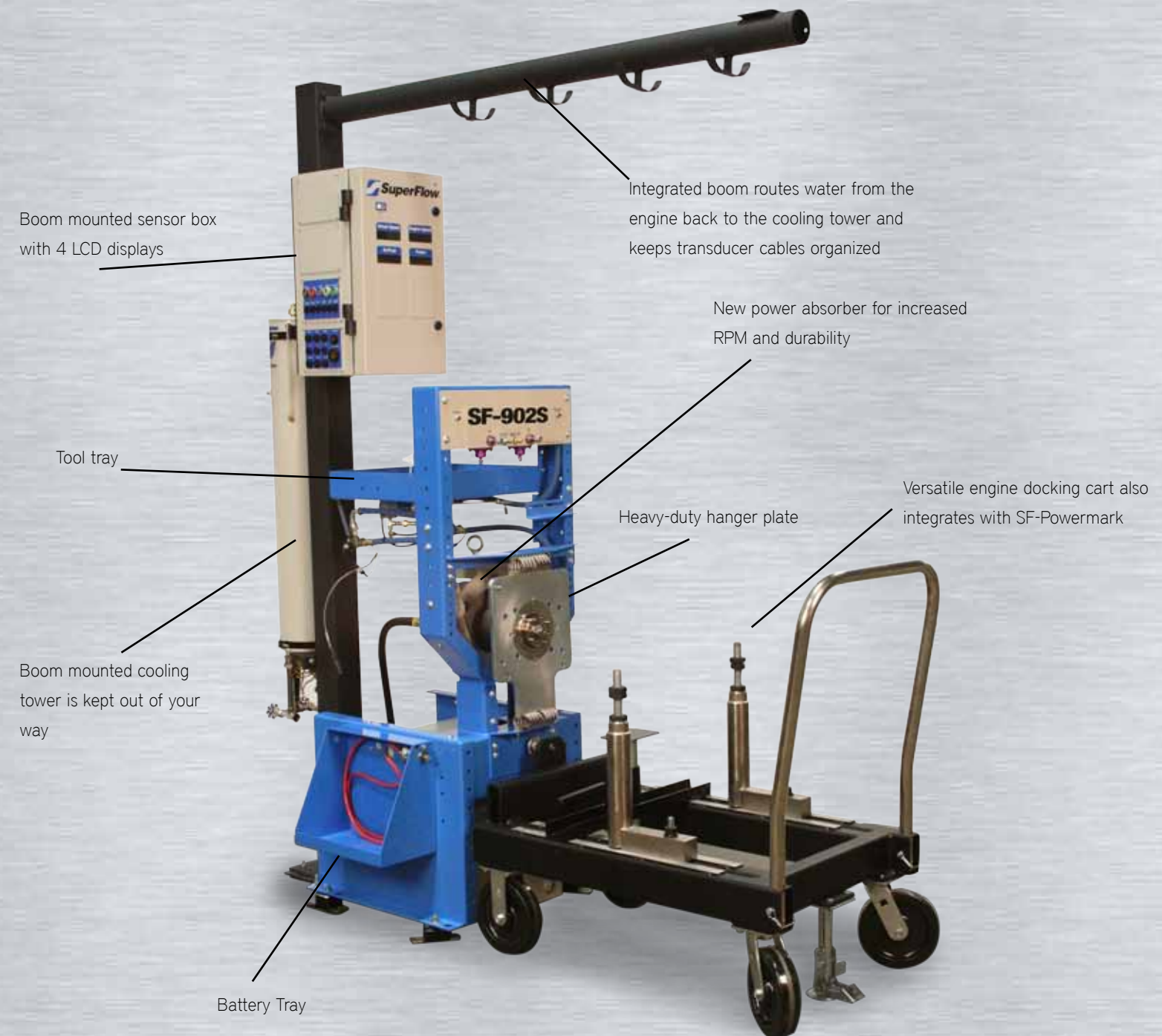
SPECIFICATIONS

ABSORBER TYPE	Water brake
MAXIMUM SPEED	15,000 RPM
HORSEPOWER CAPACITY	1,500 hp (1,119 kW)
TORQUE CAPACITY	1,200 lb.-ft (1,627 N-m)

STANDARD CONFIGURATION

TEMPERATURE	16-channel thermocouple panel 12 closed tip thermocouples, 1/8" 12 swagelock fittings 12 ten foot extension cables
PRESSURE	10-channel pressure panel 2 transducers (0-300 psi, ±60 psi)
AIR / FUEL	2 pre-configured analog inputs
FUEL FLOW	2 fuel flow measurement turbines
AIR FLOW	1 air flow measurement turbine

SF-902S



WINDYN® DATA ACQUISITION SYSTEM

SuperFlow's® advanced WinDyn® Data Acquisition System provides a wealth of pre-defined tests along with a user-friendly test editor to easily write custom tests. Standard tests can be performed and at part or wide open throttle. These include: controlled acceleration, controlled deceleration, step, steady-state, and track lap, or any custom test you write in the included test editor.



SENSOR BOX

The powerful Sensor Box includes two 32-bit microprocessors to gather data at more than 1000 Hz and display data at 100 lines per second. The standard engine dyno sensor arrangement includes: one 16 channel thermocouple panel with 12 thermocouples, one 10 channel pressure panel with 2 transducers, two analog inputs for lambda, two fuel flow channels with transducers and one airflow channel. A built in weather station measures atmospheric conditions during the test so WinDyn® can correct recorded data to world wide standards (ECE, DIN, SAE, STP, etc.). Four liquid crystal displays (LCD) can be configured to any user-selected channel. The modular sensor box design allows easy expansion for additional sensors including OBDII, air flow, fuel flow, pressure, temperature, lambda and emissions measurement devices.

POST TEST ANALYSIS

The built in post test graphing and data analysis capabilities allow you to view up to 10 user-defined pages in tabular format. When the test is complete, click the graph icon to automatically generate up to 10 different test data plots. Your tabular data and graphical data can appear side by side on the screen for easy comparison. You can also overlay test data to compare it graphically with up to 10 simultaneous overlays.

IN-TEST MONITORING

WinDyn® offers 10 custom test screens to monitor real-time test data on meters, digital readouts, bar graphs and plots. Real-time data on every screen continuously updates even when the screen is not in actively selected.

CONTROL CONSOLE

To compliment the two new dynos we designed an entirely new control console with a wireless touch screen tablet interface and two 22" LCD flat panel monitors. The tablet runs our new NetDyn control software and functions equally well docked in the console or wirelessly from inside the test cell. No need to turn your monitors or mount a additional monitor in the test cell for critical data to set timing advance or check oil pressure during start up, it's already there on the new tablet along with a starter button. Two PID controllers allow for either open or closed loop control of throttle and load. Four hardware defined keys take care of ignition, fuel pump, starter and fan control while four programmable buttons are available for functions of your choice. Six available user-defined toggle switches allow more test cell customization. WinDyn® runs on the included PC and handles all the live data monitoring and post test data analysis and graphing. The two 22" monitors make viewing and graphing the data from WinDyn's® 10 unique screens easy and completely customizable.



NETDYN CONTROL SOFTWARE

NetDyn is a Windows® based dynamometer control software program that provides a graphical user interface (GUI) to the dynamometer. The display is divided into five distinct areas to make operation easy and intuitive. These are: system controls, dyno controls, test controls, real-time data display and set point controls for load and throttle. NetDyn runs on an industrial, touch-screen tablet PC which docks in the control console, but also goes wireless for use in the test cell. 8 function keys provide a tactile response for crucial test and control functions while two set point controllers allow for open or closed loop testing. The real-time display includes 2 dial meters and 8 digital gauges to display any defined channels you want to see from WinDyn®. These channels can be calibrated and scaled with the click of a button and they are defined by screen 9 from WinDyn®.



OPTIONAL EQUIPMENT

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.

AIR FUEL KIT



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

OPTIONAL EQUIPMENT

SENSOR EXPANSION PANELS



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

BLOW-BY SENSOR



Measures the volumetric flow of crankcase blow-by. Two sizes available: 0.4 to 16 ACFM and .25 to 10 ACFM. Select either analog or frequency output.

ADDITIONAL DOCKING CART



Extra docking cart to save time between engine tests. Pre-stage one engine while another is being tested.

FUEL SYSTEM



High performance fuel pump and two fuel regulators. Rated at 0-800 lb/hr.

ENGINE ADAPTER



Multi-fit adapter packages for both the SF-902S and SF-Powermark. Multi-fit Bell Housing pictured for SF-902S. Universal Engine Mounting Kit available for SF-Powermark.

FUEL CANISTER



Designed to measure fuel consumption of fuel injected engines. Mid flow unit available in 20 - 720 lb./hr. High flow unit available in 30 -1070 lb./hr. Available for gas and alcohol.

PRESSURE COOLING TOWER



CT-700 Pressurized Cooling tower integrates seamlessly with boom assembly. Standard temperature range from 160° F to 230° F. Rated for continuous duty testing up to 700 HP (522 kW).

THROTTLE ACTUATOR



Rotary electric throttle control provides automated testing from computer. Morse cable options also available.

SUPERSTART



Starter option for the SF-902S includes 8" spacer box and 2 high torque starters.

RELAY BOX



Relay enclosure for up to 32 programmable user-defined relays. Commonly used to control lights, pumps, water systems, emergency stop and fire safety systems.

SUPERFLOW® DYNAMOMETERS & FLOWBENCHES

ENGINE DYNO SERIES ENGINE DYNAMOMETERS

SuperFlow® is a global market leader specializing in high-performance automotive testing and rebuilding equipment. Since the early 1970's SuperFlow® products have been used daily by professional engine builders, the military, technical schools, professional race teams, speed shops, transmission rebuilders, universities, and leading automotive manufacturers to produce powerful

and efficient vehicles. Our commitment to providing the best products and service at a great value has given us the opportunity to work with some of the most notable companies in the automotive industry. Come see why thousands of businesses have already chosen SuperFlow® for all of their testing needs.


CALL 1.888.442.5546 for more information on the SuperFlow® Engine Dynamometer Series.


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 Torque Converter Rebuilding Systems

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 Transmission Testers

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