AUTODYN SERIES

BY SUPERFLOW

CHASSIS DYNAMOMETERS

WWW.SUPERFLOW.COM 1.888.442.5546

AXILINE · DTS · HICKLIN · SUPERFLOW · TCRS

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 true mechancial AWD synchronization

WE WERE THE FIRST
To offer a windows® based data acquisition system

WE WERE THE FIRST
With independent torque measurement at front & rear axle

AUTODYN™ - ENGINEERED TO BE BETTER

The SuperFlow® AutoDyn™ chassis dynamometers were designed with one goal: to provide the most accurate and repeatable testing possible. Every square inch of the AutoDyn's™ were engineered to be better from the true Mechanical AWD Synchronization system to the solid steel frame construction, which reduces noise and vibration, no detail has been spared. It is no coincidence that our chassis dynamometers are used all over Europe at the best Audi®, Mercedes® and BMW® tuners and also throughout the United States at the companies that define the automotive performance and racing industries. You might actually be surprised to learn who all uses a SuperFlow® AutoDyn™, as they're probably the best kept secret in performance chassis dynamometers. Come and see why hundreds of companies trust the SuperFlow® AutoDyn's™ for all of their testing needs.

THE SUPERFLOW® AUTODYN™ ADVANTAGES

PUSH-BUTTON WHEEL BASE ADJUSTMENT

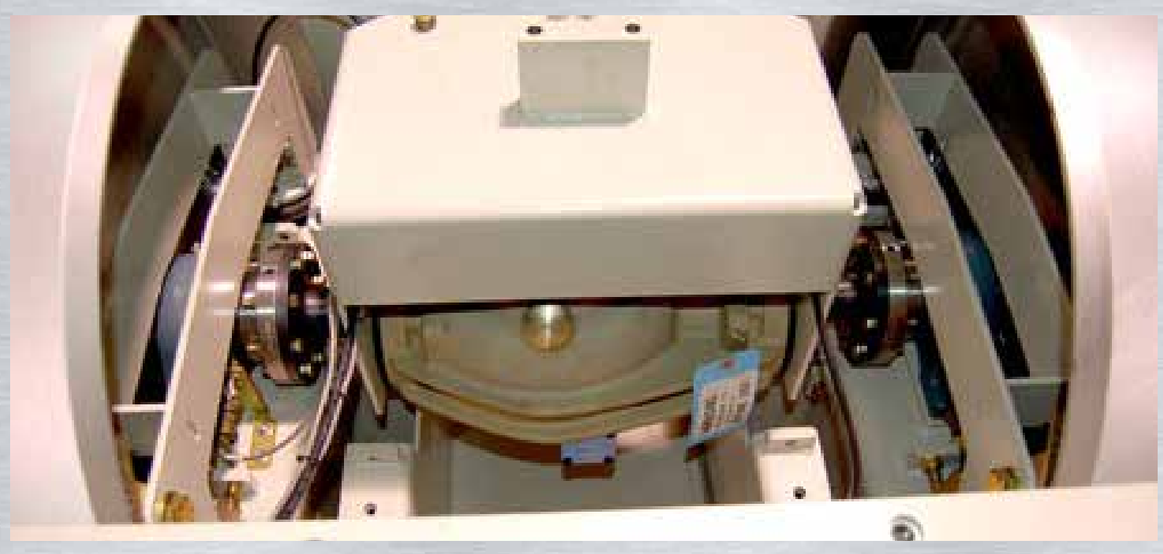
Push-button wheel base adjustment is not only convenient; it's also the right way to accommodate AWD vehicles because it allows the vehicles to be loaded in the same position on the rolls every time. Non-adjustable cradle rolls systems that simply stack rolls together to accommodate AWD vehicles produce inconsistencies in testing as one vehicle might land between rolls and another may land on top of the rolls, creating a different testing environment for each vehicle.

ROAD SIMULATION TECHNOLOGY

Mechanical linkage and a true understanding of Road Load Simulation have made SuperFlow® AutoDyn's™ unrivaled in this category. SuperFlow® Road Simulation Technology accurately loads vehicles according to their inertia, aerodynamic losses and rolling losses, not simply a pre-determined curve based only on the inertia of the vehicle.

TRUNNION MOUNTED DIFFERENTIALS

Precision, trunnion mounted differentials allow individual torque measurement of each axle (AWD models) so you can see total torque thru the RPM range and also the torque split between the front and rear axles to tune for drivability. They also allow accurate measurement of dyno losses so the inertia of the dyno does not affect the test results. Further, it means SuperFlow® dynos are not susceptible to inaccuracies based on heat in the dyno components like the differentials and couplings.



MECHANICAL AWD SYNCHRONIZATION

SuperFlow® pioneered mechanical AWD synchronization and we've enjoyed the imitation attempts since (belts, gearboxes, electronic synchronization, etc.), but the truth is driveshafts are the only correct method because they don't stretch under heavy loads and they are a positive mechanical connection. If you're serious about tuning AWD cars, the AWD SuperFlow® AutoDyn's™ are the only option.

THE SUPERFLOW® AUTODYN™ ADVANTAGES

EDDY CURRENT ABSORPTION CAPABILITIES

High capacity eddy current absorbers allow for both inertia and loaded testing. On all models, they're coupled to each other and to the rolls with positive mechanical couplings like differentials and driveshafts. This allows accurate measurement of parasitic horsepower losses in each individual dyno we manufacture. WinDyn® is loaded with this data at the factory to compensate for the losses and provide accurate readings.

LARGE CONTACT PATCH

Our large 30" and 42" diameter, single-roll dynamometers provide superior traction with minimum tire deflection. This means vehicles can be secured to the dyno in a linear fashion without adding unneeded downforce (which won't be there on the track). This reduces heat build-up during testing so tires are not put through damaging heat cycles. Comparative cradle roll systems cause tire deflection in two points at each tire producing more heat in the tires, and less accurate measurement by the dyno.

AUTODYN™ 880E ALL-WHEEL-DRIVE

There is a reason that the AutoDyn™ 880E AWD is used all over the world by some of the most respected names in automotive performance. That reason is simple: SuperFlow® has perfected the art of accurate road simulation via a simple and reliable mechanical linkage. SuperFlow's® Road Simulation Technology (RST) utilizes heavy-duty differentials and a steel drive shaft to synchronize the front and rear roll speeds along with eddy-current brakes to accurately load vehicles according to their inertia, aerodynamic losses and rolling losses. SuperFlow® RST prevents damage to the differentials and viscous couplings of AWD vehicles and removes the chance of activating a vehicles traction control system or ABS while accurately loading each vehicle as if it were traveling down the road or track.

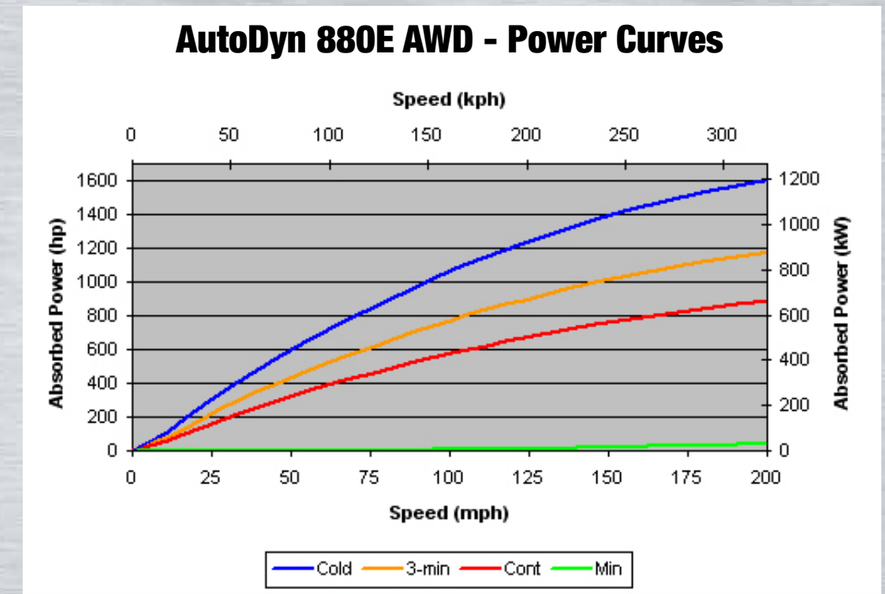
SuperFlow® RST is much simpler and more accurate than complicated belt systems that stretch and break or inconsistent electronically synced systems that allow the front and rear rollers to spin at different speeds, causing driveline windup and damaging driveline components. Differentials and driveshafts allow SuperFlow® to accurately measure and compensate for the parasitic losses of every dyno produced so that each one leaves the factory calibrated with its own inertia and parasitic data. The end result is the most accurate torque and power measurement available. Further, torque is measured using two temperature-compensated load cells, one at each roll set, so you're not only able to see total torque across the rpm range, but also the torque split between the front and rear axles.

The AutoDyn™ 880E AWD's large 42" knurled rolls provide superior traction and minimal tire deflection so testing is as close to real world conditions as possible. Cradle roll systems deflect the tire in two locations which builds more heat in the tire and results in less accurate hp measurement than large single roll dynos like the AutoDyn™ 880E AWD.

SPECIFICATIONS

ROLL DIAMETER	42" (107 cm)
PEAK POWER	2,500 HP (1,864 kW)
PEAK ABSORBED POWER	1,600 HP (1,193 kW)
MAX SPEED	200 mph (322 km/h)
TRACK WIDTH[1]	40" inside - 84" outside (102 cm - 213 cm)
DIMENSIONS[2]	102 x 47 x 173 (out) - 158 (in) in. (259 x 119 x 439-401 cm)
WHEELBASE	88" - 134" (224 - 340 cm)
BASE SYSTEM INERTIA[3]	3,467 lbs. (1,573 kg)
AXLE WEIGHT	14,000 lbs (6,350 kg)
AIR REQUIREMENTS	50 - 100 psi (345 - 690 kPa)
POWER REQUIREMENTS	110 - 250 VAC / 15 - 8 A, 208 - 250 VAC / 40A

[1]Other track widths available, call 1.888.442.5546 for more details.
[2]Different track widths change dimensions.
[3]Other inertia's available, call for more details.



AUTODYN™ 30 ALL-WHEEL-DRIVE

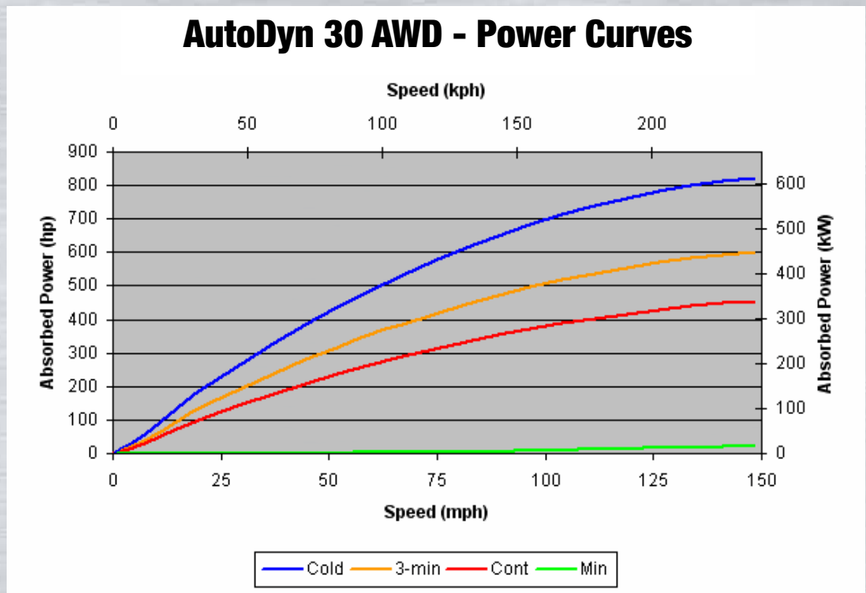
Just like the AutoDyn™ 880E AWD, the AutoDyn™ 30 AWD uses SuperFlow® Road Simulation Technology (RST) to mechanically synchronize the front and rear roll speeds and accurately load each vehicle. This is done with precise, race-inspired differentials and a steel drive shaft that connects the front and rear rollers along with an eddy-current brake to accurately load vehicles according to their inertia, aerodynamic losses and rolling losses. SuperFlow® RST prevents damage to the differentials of AWD vehicles and removes the chance of activating the traction control system or ABS, while accurately loading each vehicle as if it were traveling down the road or track.

SuperFlow® does not use complicated belt systems that stretch and break or inconsistent electronically synced systems that allow the front and rear rollers to spin at different speeds, causing driveline windup and damaging driveline components. Differentials and driveshafts allow SuperFlow® to measure and compensate for the parasitic losses of every dyno produced so that each one leaves the factory calibrated with its own inertia and parasitic data. The end result is the most accurate torque and power measurement available. Further, torque is measured using two temperature-compensated load cells, one at each roll set, so you can see total torque across the rpm range, and also the torque split between the front and rear axles.

The 30" knurled rolls provide superior traction and minimal tire deflection so testing is accurate and repeatable. It combines the low profile frame commonly found on cradle roll systems with the added traction benefits of a large single roll dyno so it works perfect in a pit of with a 4-post lift. It features push-button wheel base adjustment so it easily accommodates most AWD vehicles on the road today.

SPECIFICATIONS

ROLL DIAMETER	30" (76.2 cm)
PEAK POWER	2,500 HP (1,864 kW)
PEAK ABSORBED POWER	850 HP (633.8 kW)
MAX SPEED	175 mph (282 km/h)
TRACK WIDTH	26" inside - 100" outside (66 cm - 254 cm)
DIMENSIONS	120 x 35 x 170 (out) - 133 (in) in. (305 x 89 x 432-338 cm)
WHEELBASE	92" - 130" (234 cm - 330 cm)
BASE SYSTEM INERTIA	2,400 lbs. (1,089 kg)
AXLE WEIGHT	8,000 lbs per axle (3,629 kg)
AIR REQUIREMENTS	50 - 100 psi (345 - 690 kPa)
POWER REQUIREMENTS	110 VAC / 15A or 250 VAC / 8A and 208-250 VAC / 20A



AUTODYN™ 849 TWO-WHEEL-DRIVE

The AutoDyn™ 849 two-wheel-drive chassis dyno is unrivaled in the marketplace. Its dual eddy current absorbers provide 1,600 horsepower of absorption capability and its large 42" diameter rolls create one of the largest contact patches available to the market. The size of the rolls and their knurled surface generate superior traction and cause minimal tire deflection so testing is as close to real world conditions as possible. These features make the AutoDyn™ 849 perfect for anyone who is serious about tuning high horsepower vehicles. It has the low end torque to handle the biggest diesel pickup trucks and the high end horsepower to handle turbocharged and nitrous equipped two wheel drive cars.

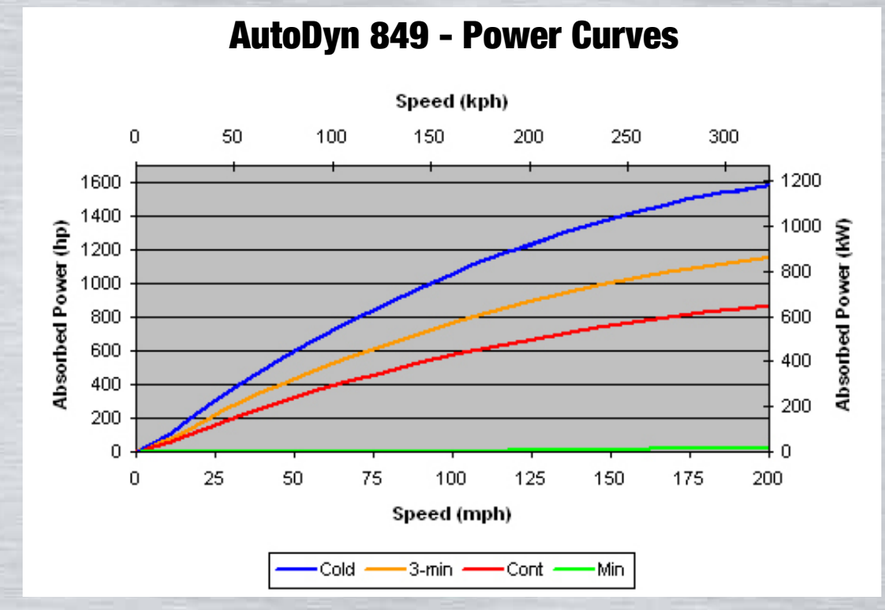
The AutoDyn™ 849's dual eddy current absorbers lets you perform loaded testing to make EFI tuning simple and fast. The absorbers are coupled directly to the rolls through a heavy-duty differential for the most accurate testing possible. The included WinDyn® Dynamometer Software makes it easy to test at varying rates of acceleration, deceleration, steady speeds, and part or full throttle through multiple gears. You can simulate circle track, road course, and high-performance street applications or use SuperFlow® Road Simulation Technology (RST) to reproduce real-world driving conditions. SuperFlow® (RST) accurately loads vehicles according to their inertia, aerodynamic losses and rolling losses so you know that when you get to the track your vehicle will perform just like it did on the dyno.

The AutoDyn™ 849 is also easily upgradeable to AWD if your testing needs were to change down the road. With the addition of a second roll set and a driveshaft to synchronize the front and rear rolls, the SF-849 quickly and affordably becomes the SF-880 AWD chassis dynamometer. This grants you the peace of mind to know that you can start with a top of the line 2WD dynamometer and easily turn it into the best AWD chassis dynamometer on the market when the time is right for you.

SPECIFICATIONS

ROLL DIAMETER	42" (107 cm)
PEAK POWER	2,500 HP (1,864 kW)
PEAK ABSORBED POWER	1,600 HP (1,193 kW)
MAX SPEED	200 mph (322 km/h)
TRACK WIDTH[1]	28" inside - 96" outside (71 cm - 243 cm)
DIMENSIONS[2]	102 x 54 x 47 in. (259 x 137 x 119 cm)
WHEELBASE	N/A
BASE SYSTEM INERTIA[3]	2,550 lbs. (1,157 kg)
AXLE WEIGHT	14,000 lbs (6,350 kg)
AIR REQUIREMENTS	50 - 100 psi (345 - 690 kPa)
POWER REQUIREMENTS	110 - 250 VAC / 15 - 8 A, 208 - 250 VAC / 40A

[1]Other track widths available, call 1.888.442.5546 for more details.
[2]Different track widths change dimensions.
[3]Other inertia's available, call for more details.



AUTODYN™ 30 TWO-WHEEL-DRIVE

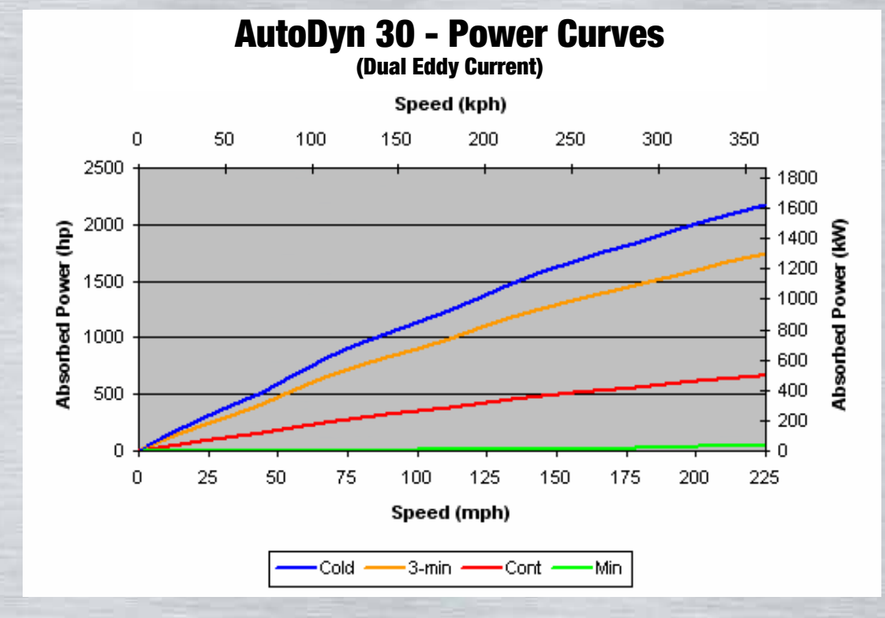
The AutoDyn™ 30 is quite possibly the most versatile chassis dynamometer on the market today. It comes standard with SuperFlow® Road Simulation Technology (RST) to accurately load vehicles according to their inertia, aerodynamic losses and rolling losses. The 2,500 hp measurement capacity and its available 2,200 hp absorption capability allow you to test just about anything a customer would bring through your door. The AutoDyn™ 30 was the first chassis dyno on the market to feature the innovative center mounted eddy current design. This design makes the footprint of the AutoDyn™ 30 very small, saving you valuable shop space without losing any of the benefits of the eddy current absorber.

Adding to it's versatility is the available upgrade paths for the AutoDyn™ 30. Should your testing needs change, the AutoDyn™ 30 can be upgraded to AWD and/or AC Motoring at any time. Adding a second roll set and a driveshaft to synchronize the front and rear rolls transforms the AutoDyn™ 30 into the AutoDyn™ 30 AWD. Adding SuperFlow's® AC electric motor allows you to motor the test vehicle to perform emissions drive cycles, inertia simulations, evaluate frictional losses and conduct many other engineering test procedures. These available upgrade paths give you great flexibility and peace of mind so that if your testing needs were to change in the future you won't need to buy an entirely new piece of equipment, simply upgrade the dyno to meet your new requirements.

Its 30" knurled rolls provide superior traction and minimal tire deflection so testing is accurate and repeatable. The AutoDyn™ 30 combines the low profile frame commonly found on cradle roll systems with the added traction benefits of a large single roll dyno so it works perfect in a pit of with a 4-post lift.

SPECIFICATIONS

ROLL DIAMETER	30" (76.2 cm)
PEAK POWER	2,500 HP (1,864 kW)
PEAK ABSORBED POWER	1,100 HP (SEC) / 2,200 HP (DEC) - (820 kW / 1,641 kW)
MAX SPEED	225 mph (362 km/h)
TRACK WIDTH	26" inside - 100" outside (66 cm - 254 cm)
DIMENSIONS	120 x 40.5 x 35 in. (305 x 103 x 89 cm)
WHEELBASE	N/A
BASE SYSTEM INERTIA	1,200 lbs. (544 kg)
AXLE WEIGHT	8,000 lbs per axle (3,629 kg)
AIR REQUIREMENTS	50 - 100 psi (345 - 690 kPa)
POWER REQUIREMENTS	110 VAC / 15A or 250 VAC / 8A and 208-250 VAC / 20A



WINDYN® DATA ACQUISITION SYSTEM

SuperFlow's® advanced WinDyn® Data Acquisition System provides a wealth of pre-defined tests. Standard tests can be performed in single-gear or all-gear and at part or wide open throttle. These include: acceleration, deceleration, step, steady-state, aero load, road load, drive cycle and track lap.

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.

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. Two set-point controllers can be operated in either open or closed loop modes. 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 optional sensors including OBDII, air flow, fuel flow, pressure, temperature, lambda and several emissions measurement devices at any time.

HAND HELD CONTROLLER

The commander is a wired handheld controller housed in a rugged impact resistant enclosure. It features an eight-line by forty-character liquid crystal display. Twenty seven keys handle data entry and test setup with ten soft-keys that are automatically labeled for function during each test. The display can show any of a hundred separate measurements in real time and provide the operator with prompts and choices for running the test.

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 use.

OBD-II INTERFACE MODULE

With SuperFlow's® OBD-II Interface Module you can easily monitor and record any OBD-II data that the ECM makes available directly in our WinDyn® dynamometer software. The device plugs directly into the OBD-II port and automatically shows you the available PIDs for that vehicle. You can then quickly configure the system to display the channels that you want to monitor live on custom, user-defined WinDyn® screens. With SuperFlow's® high speed data acquisition you can close-loop control to OBD-II channels and save any of them you want for post test analysis and graphing. With the OBD-II Interface Module you're also able to read Diagnostic Trouble Codes (DTC's) and clear them once they are resolved. Contact a SuperFlow® Sales Engineer today for more information on the OBD-II Interface Module for your SuperFlow® chassis dyno.

ABOVE GROUND RAMP KIT

SuperFlow® offers lightweight aluminum ramp kits for the AutoDyn™ 11 and AutoDyn™ 30 chassis dynos. Kits include heavy-duty aluminum ramps and extended platforms that support the vehicle during testing. Because they are light-weight these ramps work great for portable dyno applications and they are easy to move in and out of place. Ramps are perfect if you are unable to install your SuperFlow® chassis dyno in a pit or when shop space is limited because they stack neatly out of the way when not in use. Contact a SuperFlow® Sales Engineer today to get the correct ramp kit for your chassis dynamometer.

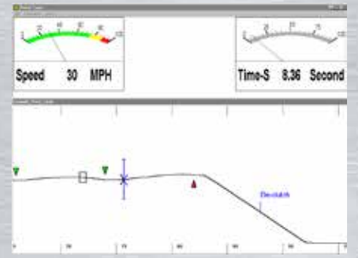
INDUCTIVE SPARK PICK-UP ASSEMBLY

SuperFlow's® Inductive Spark Pick-Up Assembly features a rugged housing that protects the device from tough shop environments and allows it to provide years of service. With user-adjustable sensitivity you're able to dial in the device exactly how you want it. The spark pick-up includes one inductive clip. For wasted spark ignition systems a second clip can be added. Contact SuperFlow® today for more information on this and other options to get the most out of your SuperFlow® chassis dyno.

DIESEL EXHAUST OPACITY METER

SuperFlow's® Diesel Exhaust Opacity Meter measures the opacity of visible smoke coming from the exhaust. It's rugged and portable design provides years of easy use. Contact SuperFlow® today for more information on this and all the available options for your SuperFlow® chassis dyno.

DRIVER'S TRACE SOFTWARE



SuperFlow's® Driver's Trace Software integrates seamlessly with your SuperFlow® chassis dynamometer and allows drivers to follow a real-time moving driver's trace on it's easy-to-read display. It can run any .csv based drive cycle and it is easy to configure. Special operations like shift points or display messages for the driver can be included in the trace so each test is accurate and repeatable. Contact a SuperFlow® Sales Engineer today for more information on our Drivers Trace Software for your chassis dynamometer.

*Requires WinDyn® 2.7 or higher.

AIR FUEL SENSORS

SuperFlow® offers several complete lambda packages and tail pipe probes for measuring air/fuel ratio. These packages integrate with WinDyn® for live monitoring and post test graphing and anaylsis.

PRESSURE PANEL

Additional 10 channel pressure panel. High and low pressure transducers available individually.

TEMPERATURE PANEL

Additional 16 channel thermocouple panels available. Extra Type K transducers sold separately.

ANALOG PANEL

8 channel analog panel to integrate exhaust gas analyzers, lambda sensors, 02 sensors, etc. Select 0-1V, 0-5V, 0-10V, 0-20V or 0-30V in any combination.

SUPERFLOW® DYNAMOMETERS & FLOWBENCHES

AUTODYN® SERIES CHASSIS 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® AutoDyn™ Series of Chassis Dynamometers.
Or visit us at superflow.com

TEST WITH THE BEST™

- Chassis Dynos
- Engine Dynos
- Transmission Dynos
- Flowbenches
- Solenoid Testers
- Valve Body Testers
- DriveShaft Rebuilding Equipment
- Torque Converter Rebuilding Systems
- Transmission Testers

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