

SF-2700

Diesel Engine Dynamometer



Test all the critical power characteristics of your heavy duty diesel engines and not only measure power, but also characterize it across the entire engine speed range. See where the engine performs well, and where there is room for improvement. Evaluate modifications one at a time, then as a complete system to understand how a set of changes work with each other. Quantify your engine development efforts with the SF-2700.

Heavy-Duty Water Brake Absorber

SuperFlow's SF-2700 Diesel Engine Dynamometer features a heavy duty water brake power absorber rated for

- 2,800 hp at 6,000 RPM
- 2,500 lb. ft. of torque at 1500 RPM

A closed loop electro-hydraulic servo control system allows for four modes of power control:

- Position
- Torque
- Speed
- Power Law

The SF-2700 easily performs

- Initial break-in runs
- Acceleration tests
- Steady state tests
- Step tests
- Life cycle tests
- Custom user-defined tests

Three Choices of Throttle-Actuators

- Hydraulic for smooth manual operation to 'feel' what the engine is doing
- Cable for precise control
- Electronic Rotary Actuator for automated and part-throttle tests

Take Control of Your Test Cell

Control room fans, oil heaters and dyno water supply pumps manually or via automated test profiles. Regulate oil or coolant temperature from the console, or automatically during warm-up, testing and cool down cycles. Manual controls include knobs, buttons, switches, meters, digital touch screens, and throttle control lever.

Accuracy, Repeatability and Speed

The SF-2700 is designed for professionals who require accuracy, repeatability and speed. SuperFlow customers report repeatability within two-tenths of one percent on identical systems in different test cells. SuperFlow helps engine builders achieve this level of repeatability without sacrificing time through precise control of all engine temperatures and pressures, fully automated test cycles and WinDyn ProFilter Technology.

Docking Cart

SuperFlow XCards allow you to quickly move engines in and out of the test cell. XCards reduce downtime by allowing you to stage one engine while testing another. Changing engines in the test cell is simple: unhook the fuel supply, airflow turbine, oil / coolant lines and sensors from the tested engine and roll it out of the cell. Roll in the next engine, dock the XCard to the dyno and reconnect those lines; you can start testing again in minutes.

Temperature Controlled Oil and Coolant Systems

Changes in coolant and oil temperatures can add or subtract horsepower from dyno pulls on the same engine under otherwise identical conditions. SuperFlow oil and coolant temperature control systems hold these temperatures within $\pm 3^{\circ}$ F ($\pm 1.7^{\circ}$ C) to keep tests VERY repeatable. These control systems help you replicate the normal operating conditions of an engine. And because these systems preheat the block, warm-up periods are short. You can also drain the systems for fast engine changes after the test series is complete.

Automated Testing = Consistency

The SF-2700 can perform automated tests to ensure consistent results and help eliminate operator-induced variances. Automated load and electronic throttle control make for repeatable testing and free you up to monitor live test data. Built in safety limits protect the engine.

Built-In Tests Simplify the Dyno Testing Process

Push a button to select the type of predefined tests. Turn knobs to set Start, End and Cool Down speeds. Increase to full throttle and push the Start Test button to automatically Run and Save the test. While the test is running, you can monitor 76 sensors and 35 calculated channels, sampled up to 4K Hz, in real time, on the console's built in panel meters, gauges, and touch-screen monitors or on the WinDyn software screen.

Exclusive WinDyn Software: Powerful. Easy to Use.

It's Easy. WinDyn software, runs on a PC and lets you analyze tests live as you collect data. Select one of the built-in tests for acceleration, step, steady-state, lifecycle and break-in or create your own tests. WinDyn displays live data with panel meters, bar graphs, X-Y plots and digital displays.

And It's Powerful. WinDyn ProFilter technology provides superior test repeatability for acceleration test data... ProFilter automatically saves data in RPM increments of your choice with no filter offset or delay. Want to change default screens or test profiles? No problem. WinDyn is user-configurable. You can look at raw or filtered data and view or edit calculated channels, to see or change exactly how your data is standardized. Powerful editors let you write your own complex test profiles and take control of every aspect of the test. Nothing is hidden, unless you want it to be, with built-in password protect features.

Give Customers Their Data

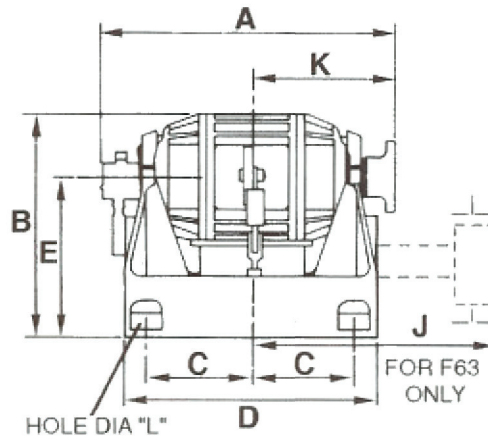
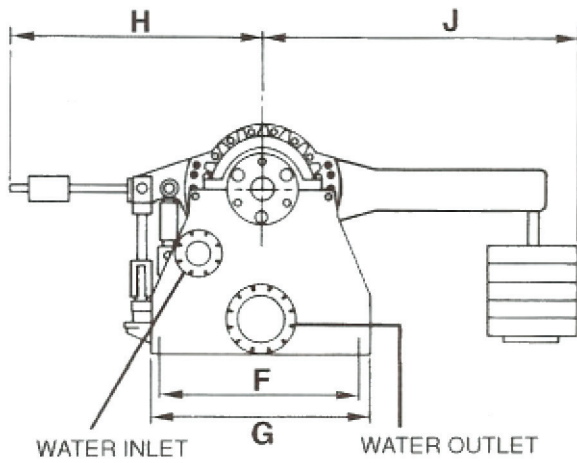
Create customer data packs, self-contained packages customers or supervisors can view and replay without having to install WinDyn on their computers. The data packs can be saved on compact disc, USB drives or other media.

Standard Features

- Unidirectional
- High resolution outlet valve control ensuring accuracy and repeatability
- Powerful electro hydraulic control system
- Deep groove ball trunnion bearings
- High accuracy strain gauge load cell
- High rigidity bedplate
- Precise and responsive closed loop control system
- Precision balanced high rigidity shaft assembly
- Grease lubricated shaft bearings

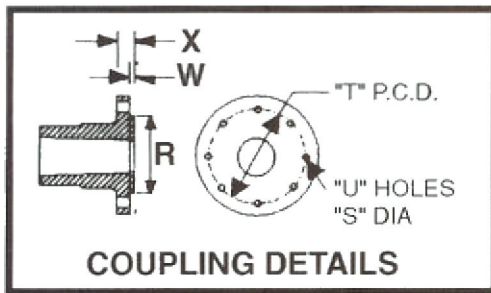
Options

- Calibration Equipment
- Water Outlet Thermocouple
- Drive Shaft & Protective Guard
- Temperature Controlled Oil and Coolant Systems



Overall Dimensions

A	B	C	D	E	F	G	H	J	K	L
28.2 in.	24.4 in.	7.8 in.	18.1 in.	17.7 in.	26.2 in.	27.8 in.	24.2 in.	35 in.	13.2 in.	0.9 in.
716 mm	620 mm	197.5 mm	460 mm	450 mm	665 mm	705 mm	615 mm	890 mm	336 mm	22 mm



COUPLING DETAILS

Coupling

R	S	T	U	W	X
4.0 in.	0.6 in.	9.8 in.	0.2 in.	0.1 in.	0.4 in.
101 mm	16 mm	250 mm	6 mm	3 mm	10 mm

SF-2700 Absorber Specifications

	UNITS	
Accuracy		
Torque Calibration Accuracy	%FS	+/-0.25
Speed Incication	rpm	+/-1(digital)
Water Supply		
Maximum Outlet Temp	°F (°C)	140 (60)
Acidity	PH	7.4 to 8.4
Suspended Particles	PPM	400 max
Flow Required	Gal / hp/hr (L / kw hr)	13 (39.1)
Minimum Main Supply Pressure	psi (bar)	40 (2.75)
Water Hardness	PPM as CaCo3	150 max
Electrical Connections		
Electro Hydraulic Power Supply	380 / 440V 3 Phase 50 or 60 Hz	
Absorber Weight Approx.	lb (kg)	880 (400)
Inertia	lb/ft2 (Kgm2)	.04 (.213)
Coupling Size	Twiflex 100 6/6	
Max Speed	8000 RPM	



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1-800-471-7701
www.superflow.com

For information on **Flowbenches, Engine Dynamometers, Chassis Dynamometers, Towing Dynamometers, Dynamometer Software and Data Acquisition and Control Systems**, contact:
3512 North Tejon, Colorado Springs CO 80907
ph: (719) 471-1746 or (800) 471-7701 • fax: (719) 471-1490 • e-mail: info@superflow.com

For information on **Transmission Dynamometers, Transmission Testers, Torque Converter Rebuilding Systems, Driveshaft Rebuilding Equipment and Brake Dynamometers**, contact:
4060 Dixon Street, Des Moines IA 50313
ph: (515) 254-1654 or (888) 442-5546 • fax: (515) 254-1656 • e-mail: products@superflow.com

Europe: Grensstraat 41A, 2243 Pulle, Belgium
ph: +32 3 4846510 • fax: +32 3 4846520 • e-mail: info@superflow.be