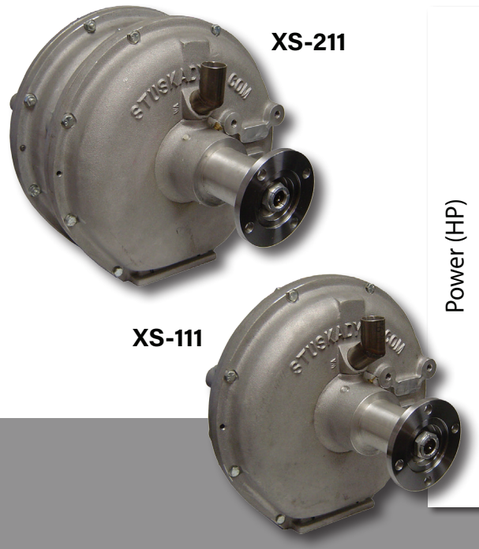
How a Water Brake Dynamometer Works

StuskaDyno™

TrackMaster
Product Brochure

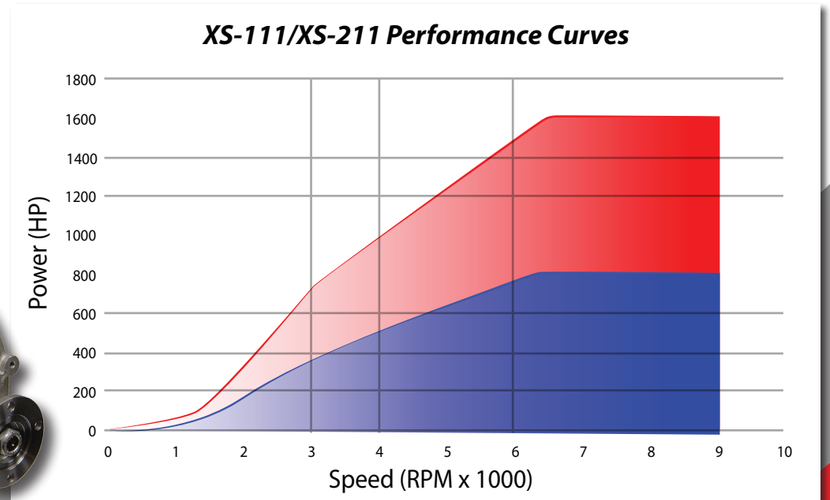
How a Water Brake Dynamometer Works

Stuska water brakes use water flow to create a controllable resistance to the engine. The greater the volume of water in the water brake, the greater the load. Stuska water brakes can easily perform continuous, steady load tests by adjusting the water flow through the dynamometer to match the desired load. Sweep tests are made even easier through the use of our QuikStik LC throttle and Automatic Load Control.



XS-211

XS-111



Stuska Dynamometers - A Division of Power Test, Inc.

Power Test, Inc. is an industry leader in the design manufacture and sale of dynamometers, heavy equipment testing systems and related data acquisition and control systems. The Power Test team of innovative engineers, designers, software developers and sales consultants will **MAKE YOUR TESTING EASY** with logical solutions. Our exceptional product life and manufacturing expertise made us an industry-leading dynamometer manufacturer, as evidenced by our first machine sold, which is still in active use today!

StuskaDyno™

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TrackMaster

Complete Dyno System

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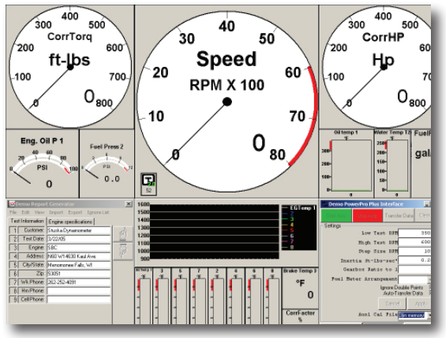
Stuska TrackMaster

The Stuska TrackMaster dynamometer system offers exceptional engine testing capabilities with proven water brake technology and a sophisticated, yet easy-to-use, data acquisition package.

The heart of the TrackMaster system is the proven Stuska water brake dynamometer. Stuska dynamometers were introduced to the market in 1963 as a low cost, durable, high performance dynamometer. The fact that thousands of these dynamometers have been sold and many systems are still in operation after more than 20 years is proof of their reliability. Available with either the 800 HP (XS-111) or 1600 HP (XS-211) water brakes, the Stuska TrackMaster system is constructed to meet your needs and is the most affordable turn-key dynamometer system on the market.

PowerPro

The PowerPro data acquisition system is a powerful desktop PC operating in a Microsoft Windows® environment. Data collected by the Sensor Interface Device (SID) is transmitted to the Commander Computer where it is displayed in an easy-to-read and fully-customizable virtual dashboard. Dynamometer and engine data can be viewed on the PowerPro Main Display screen, including Sweep Tracer real-time graph. Meanwhile data is automatically collected and calculated for post-test review.



PowerPro Commander Virtual Dashboard

PowerPro Features

- Operator-friendly “Virtual Dashboard” has easy-to-read on-screen displays
- Fully configurable sensors with color changing displays to quickly indicate alarm conditions
- Customize sensor units, ranges, alarm values, and even the language of display if desired
- Automatically record data for easy diagnostics, including graphing, table formats and spread sheets
- Completely customizable data reporting, including your company logo, workshop information, customer information, and engine manufacturer specifications
- Easy-to-use menu system minimizes operator learning curve
- Save data to hard drive, send customer reports via e-mail, and print out diagnostic data on the spot

The collection of data is just the start. PowerPro monitors the acceleration rate of the dynamometer and corrects the data based upon the rate of change from one reading to the next. What this means is that if an engine is swept quickly, slowly, or inconsistently, the PowerPro software compensates for the changes and standardizes the results with inertia compensation. Back-to-back repeatable pulls prove it. The result is no more lost data caused by accelerating the engine too fast.

Once the data has been recorded, it is presented in neat, easily understood graphs, tables, and spreadsheets. Data can also be viewed on-screen via the software's View/Chart feature. Furthermore, data can be exported into Microsoft® Excel spreadsheet software. All tests can be stored and easily recalled. The reports can even be e-mailed to others. For professional looking results, color reports are easily printed and can include your company logo.

Automatic Load Control

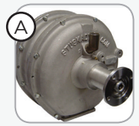
Stuska's revolutionary Automatic Load Control allows the operator to perform smooth, repeatable tests, while maintaining the engine's natural sweep.

Available with the QuikStik throttle control (shown) or as a stand alone unit, Stuska's Automatic Load Control and PowerPro make an unbeatable combination.

TrackMaster Features

Additional sensors and options are available to customize this system to meet your testing needs!

Stuska engineers are constantly developing new products to meet the demands of current technology. The Sensor Interface Device (SID) features 17 temperature inputs, 4 pressure inputs, 3 configurable frequency inputs and 3 configurable analog inputs. This allows for an adaptable range of testing possibilities.



Water Brake Dynamometer

The heart of the TrackMaster dynamometer system is the Stuska water brake. Available in 800 HP (XS-111) and 1600 HP (XS-211) versions.

PowerPro Commander PC

The PowerPro software displays Live Gauges and Graphs on the configurable virtual dashboard. The saved test data can be reviewed with interactive graphs and spreadsheets or detailed customizable test reports.

QuikStik LC Joystick

The QuikStik LC features easy one-handed operation and Automatic Load Control to achieve smooth, repeatable testing, while maintaining the engine's natural sweep.

QuikStik Throttle Actuator

The Throttle Actuator is directly controlled through the QuikStik Joystick. It allows control of ignition and engine starting both at the control desk and in the test cell.

Sensor Interface Device (SID)

The SID accepts a series of high and low temperature, fuel flow, pressure, general purpose auxiliary, engine torque and RPM measurements. The measurements are collected and displayed as data in RPM increments or elapsed time of the test.

Cooling Column

A thermostatically controlled engine cooling column is provided with every system. The integrated rolling stand allows for rapid removal and placement flexibilty. Optional pressurized cooling column available.

Integrated Starter/Flywheel

The TrackMaster Base Module is equipped with an integrated high torque electric starter and flywheel, eliminating the need for an engine-mounted starter and capable of handling magneto fired, high compression, and large C.I.D. engines.

Docking Cart

The TrackMaster Docking Cart features a sturdy structural steel frame with adjustable front and rear supports. This allows engine mounting without the need for a bellhousing. Simply level the engine and correct alignment is assured.

LC Pump and Controller

The LC Controller uses signals sent from the QuikStik Joystick and the dynamometer to automatically maintain desired load points and sweep rates through the application-specific LC water pump. This eliminates the need for expensive servo valves.

Optional Equipment

- Additional Docking Carts
- Analog Gauge Package
- Additional Engine Mounting Kits
- Mass Air Flow Sensors
- Integrated Weather Station
- Oxygen Sensors
- PowerPro Expansion
- T/A Total Automation Control