

VOLKE Towing Dynamometer VBA130

900kW – 130kN



The Volke-Towing-Dynamometer in the form of a semi-trailer is specially designed for testing semitrailer tractors and heavy trucks to meet European requirements. It consists of a heavy duty, hot-dip galvanized and painted steel frame with air-suspended axles. The Towing Dynamometer generates a drawbar pull up to 130 kN, which corresponds to driving on a 30% incline with a combination weight of over 40t. The drawbar pull measurement takes place via a specially developed, high-precision sensor directly at the king pin. It is also possible to operate the towing dynamometer on public roads.

The extensive cooling equipment ensures a high continuous performance of the digitally controlled, air-cooled eddy current brakes. The towing dynamometer operates completely independently. The connection to the tractor unit is made via the standard compressed air and electrical connection. With the help of a dolly, the towing dynamometer can be used for a wide variety of truck designs.

The use of customer-specific axles and other customer-specific requirements can be taken into account.



It is operated via remote control with colour display and a menu-driven user interface. Function keys and a haptic multifunction knob for the main functions enable intuitive use of the numerous functions.

Standard operating modes are draw-bar control and speed control. More options like hill profile mode, dynamic trailer simulation, online slope correction, dead weight trailer simulation etc. can be selected.



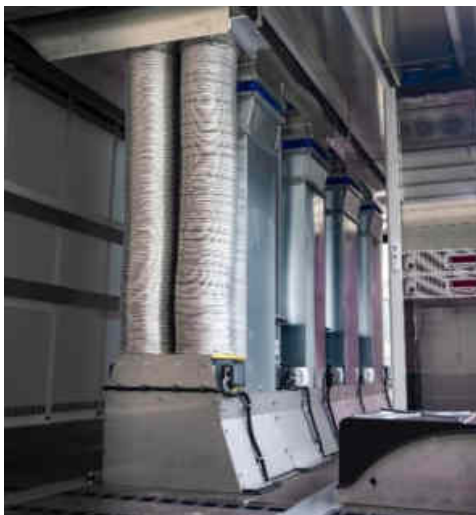
Technical Specifications Towing Dynamometer

Trailer superstructure	<ul style="list-style-type: none"> - Two-axle semi-trailer, both axles braked by ECB - King pin according to DIN ISO 1726 - Two coupled axle drives with active oil cooling - Heavy-duty steel frame construction hot-dip galvanized and painted (RAL colour of your choice) - Ballasting with concrete weights for loading up to the maximum total weight, load securing according to VDI 2700, load handling from top and from sides - Heavy duty trailer landing legs in front for full load support (20.000kg) - Lighting and light signal device according to EC directives 76/756/EWG ff - Two-line compressed air brake system according to EC directives 71/320/EEC ff or ECE R13 - Curtain sider tarpaulin adapted to the requirements of the towing dynamometer like access to control and cooling of the aggregates (optional) - Sliding Roof in the front and rear area for loading and unloading the ballast weights via crane (optional) - Trailer coupling at rear of trailer for connecting another dynamometer trailer for tandem operation (optional) - Road approval (optional)
Drawbar pull measurement	<ul style="list-style-type: none"> - Via a specially developed, high-precision sensor directly measured at the king pin
Speed measurement	<ul style="list-style-type: none"> - Via ABS wheel speed sensors (slip-dependent)
Max drawbar pull Detailed information in drawbar pull map page 6	<ul style="list-style-type: none"> - 130 kN (10 to 20km/h) - 90 kN (up to 36 km/h) - 45 kN (up to 90 km/h)
Continuous drawbar pull	<ul style="list-style-type: none"> - 90 kN (at 20 km/h) - 36 kN (at 90 km/h)
Max power	<ul style="list-style-type: none"> - 900 kW (above 36 km/h)
Continuous power Values for version with option 65 - active cooling	<ul style="list-style-type: none"> - 500 kW (above 20 km/h) - 550 kW (above 23 km/h) - >700 kW (above 32 km/h)
Speed range	<ul style="list-style-type: none"> - 0 - 100 km/h (public road max. 80 km/h)
Continuous braking device	<ul style="list-style-type: none"> - 4 air-cooled eddy current brakes (ECB) - Air ducts and additional electric fans to improve cooling capacity (optional) - Driven via cardan shafts and axle drives - Control via digitally controlled power electronics
Electrical System/ Power Supply	<ul style="list-style-type: none"> - Autonomous power supply (diesel-generator), no power supply from tractor unit needed - Voltage converter 400/230 VAC to 24 VDC - Batteries for operation of the control even without generator

Weights	- Weight dry approx.:	12.500 kg
	- GVW, approx. (public road):	35.000 kg
	- GVW, approx., maximum approx.:	38.000 kg
	- Fifth wheel load max. approx.:	17.000 kg
	- Axle load (public road):	18.000 kg
	- Axle load maximum:	21.000 kg
Dimensions	- Length approx.:	11.200 mm
	- Width approx.:	2.550 mm
	- Height approx.:	3.950 mm
	- Fifth wheel height approx.:	1.100 mm



Ballasting with concrete weights



Air ducts and additional electric fans to improve cooling capacity



Eddy current brakes with air ducts

Control and operation

Basic equipment and optional features



Control system	<ul style="list-style-type: none"> - Powerful, robust and modular control system from National Instruments, consisting of controller, FPGA and I/O modules
Remote control	<ul style="list-style-type: none"> - 4,3" TFT LCD integrated in casing. Dimensions approx.: 200 x 110 x 65 mm (W x H x D) - Menu based control via function buttons, push/turn control knob - User interface displays all current operation parameters and warnings - Cable or wireless Communication between remote control and towing dynamometer via CAN-Bus - Additional CAN-Bus interface for data logging process parameters by remote control (e.g., drawbar pull, speed) - Externally supplied set point via CAN-Bus - Online help function with brief instruction, security advices etc. - Extensive diagnostics menu with display of process variables and error messages - Available menu languages: English, German
Features and operation modes	<ul style="list-style-type: none"> - Constant force controller - manually adjustable - Vehicle constant speed controller - manually adjustable - Constant power controller - manually adjustable - Set point ramp for speed control - In speed control mode a slew rate is integrated into the set point adjustment - Constant slope mode and trailer simulation - menu based calculation of drawbar pull with user-editable slope, towing vehicle and trailer parameters (e.g. driving resistance parameters like drag coefficient, towing vehicle weight etc.) - Hill profile mode - Menu based hill profile input, real time drawbar pull control with user-editable towing vehicle and trailer parameters (e.g. driving resistance parameters like drag coefficient, towing vehicle weight etc.) - Dynamic trailer simulation - Simulation of mass inertia of the trailer via drawbar pull control during acceleration and deceleration - Online slope correction – Actual slope is detected via Sensors and compensated by drawbar pull control for slope independent drawbar pull - Dead weight trailer simulation - Simulated increase of trailer mass via drawbar pull control during acceleration, deceleration and downward force due to actual slope

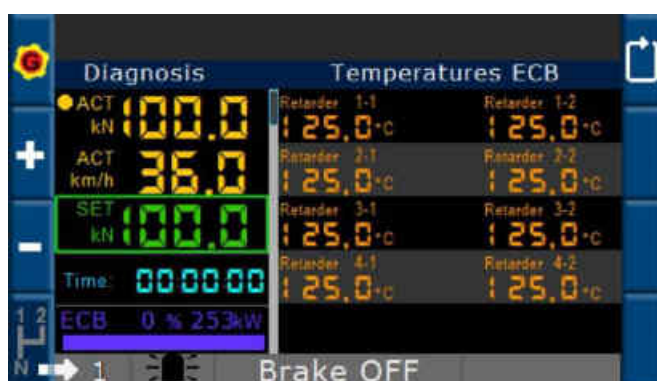
Features and operation modes	<ul style="list-style-type: none"> - Measuring of fifth wheel load (z- direction) - Anti-lock braking system - Fuel gauge - Max. operating speed can be limited by the control - Tandem operation of 2 towing dynamometers
Warnings and troubleshooting	<ul style="list-style-type: none"> - Warnings for 17 different functions e.g. for overspeed warning eddy current brake, temperature warnings. - Extensive diagnostic functions and monitoring of various system parameters, such as fuel fluid level, eddy current brake temperature, oil temperature, etc. - CAN data logger for recording various measured values and internal control and regulation variables, also to support troubleshooting
Documentation	<ul style="list-style-type: none"> - User manual and technical documentation - Service and maintenance plan - List of wear and spare parts (all spare parts can be obtained from domestic suppliers) - Wiring diagrams - CE-Certificate
Accessories	<ul style="list-style-type: none"> - Driver assistant display - additional windscreen-mounted driver assistant display containing real time operation parameters and driving hill profiles - CAN-Analog-Converter to display analog signals containing actual drawbar pull and speed in the remote control user interface - RAM mount bracket for securely attaching the remote control to the windscreen



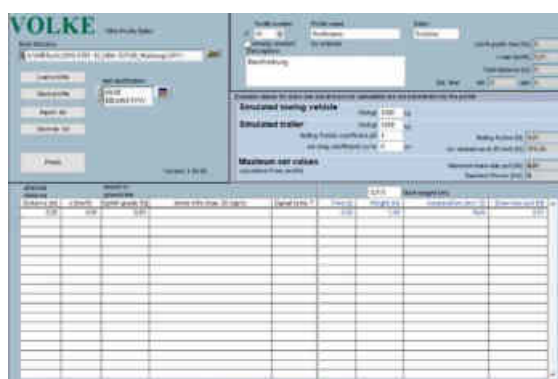
Operational View (Speed Control)



Drivers Display



Extensive diagnostic options



Editor für creating hill profiles

Drawbar Pull Chart Towing Dynamometer VBA130-9xx (900 kW - 130 kN)

