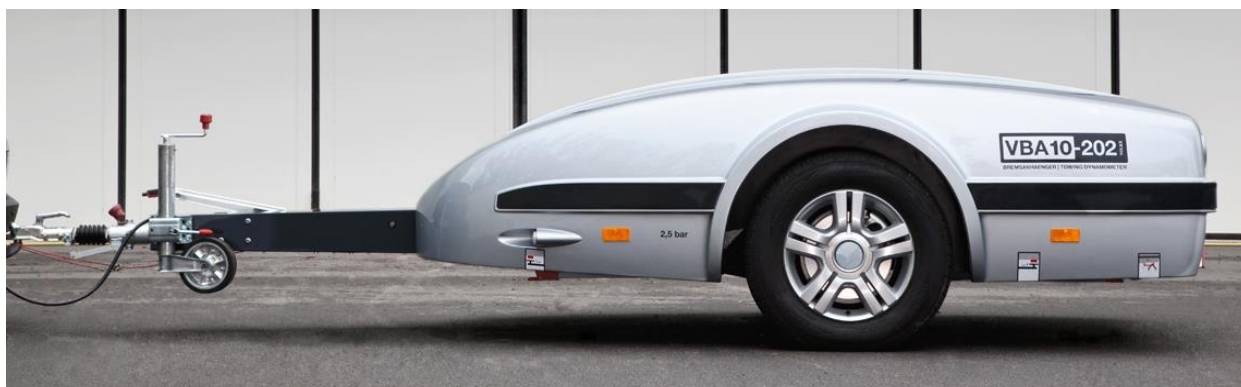


VOLKE Towing Dynamometer VBA09-2xx 150kW – 9kN



Maximum drawbar pull	9.000 N (limited by maximum power above 60 kph, cf. drawbar pull map, page 5)
Continuous drawbar pull	9.000 N up to 40 kph 6.000 N up to 60 kph 2.320 N up to 155 kph Detailed information in drawbar pull map (page 5)
Max.-/ continuous power	150 / 100 kW
Speed range	0 - 160 kph (max. speed on public road based on country-specific regulations) Limitation of operation speed is applicable by a password query
Continuous braking device	1 Air-cooled eddy current brake (ECB) with air ducts and additional electric fan to improve cooling capacity Operated by thyristor-impulse-controller Rev limiter: When reaching the ECB rev limit, dynamometer and remote control resound a warning tone
Transmission	Three-speed gearbox, manually shiftable at standstill - Neutral gear - 1 st gear (0 to 72 kph) - 2 nd gear (5 to 110 kph) - 3 rd gear (10 to 160 kph) Axle gear oil-cooled
Drawbar pull measurement	Via linear roller-bearing-mounted towbar and HBM U2A load cell
Speed measurement	Via ABS wheel speed sensors (slip-dependent)
Public road approval	„100-kph-permission“ for motor highways (Europe) Option: Operating permission for public roads. Modified ballast weight and additional lighting needed. (1 st and 2 nd -gear use only) This option is part of the option package. Operating permission carried out by the respective local approval body.

Trailer superstructure and hood	<p>Hot-dip galvanized and powder coated steel tube frame with hinged fiberglass hood. Support for ballast weight. Storage box for accessories sealed against dust and road spray.</p> <p>Forklift suited lifting points at the rear, workshop lifting platform compliant. Multiple lashing points available</p>
Chassis	<p>Independent suspension, semi-trailing link type</p> <p>Alloy-wheels, dim. 6,5J x 16, fitted with 215 /65 R16 tyres</p> <p>Hydraulic overrun brake operating hydraulic disc brakes. For reversing purpose a back pressure valve is activated by the towing vehicle's backup light signal.</p> <p>Parking brake operation on brake discs with warning device</p>
Electrics	<p>1 Bosch generator, charging current: 120 A</p> <p>Charging capability above 10 kph</p> <p>Optional: Charging capability above 5 kph</p> <p>24 V main power supply, 2 batteries</p>
Weights	<p>Laden weight approx.: 1.450 kg (for drawbar pull up to 9.000 N</p> <p>Unladen weight approx.: 1.050 kg (for drawbar pull up to 6.350N)</p> <p>Tongue load: 40 - 75 kg</p>
Outer dimensions	length: 4.200 mm width: 1.800 mm height: 1.100 mm (approx.)

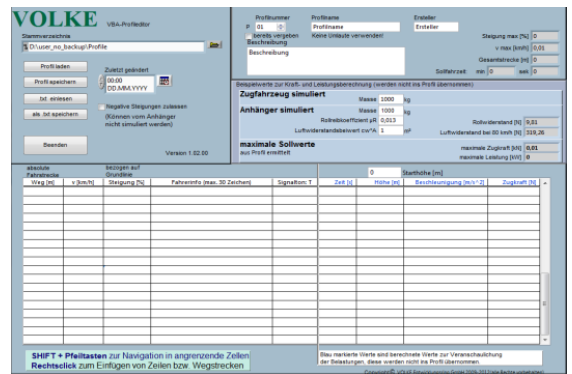


Control	<p>Waterproof (IP67) control unit, passive cooled</p> <p>Powerful, robust and modular control system(National Instruments), controller and FPGA</p> <p>Diagnosis functions and monitoring of various system parameters, e.g. battery voltage, ECB voltage and temperature, air temperature etc.</p> <p>Acoustic warnings during operation in case of unlocked hood, active parking brake or reaching ECB rev limit.</p>
Remote control	<p>4,3" TFT LCD integrated in casing. Dimensions approx.: 200 x 11 x 65 mm (WxHxD)</p> <p>Menu based control via function buttons, push/turn control knob and an emergency shut-off button.</p> <p>User interface displays all current operation parameters and warnings.</p> <p>Communication between remote control and towing dynamometer via CAN-Bus, cable connection to remote control Ø approx.. 7 mm</p> <p>Additional CAN-Bus interface for data logging process parameters by remote control (e.g., drawbar pull, speed)</p> <p>Externally supplied setpoint via CAN-Bus</p> <p>Online help function with brief instruction, security advices etc.</p> <p>Available menu languages: english, german</p>

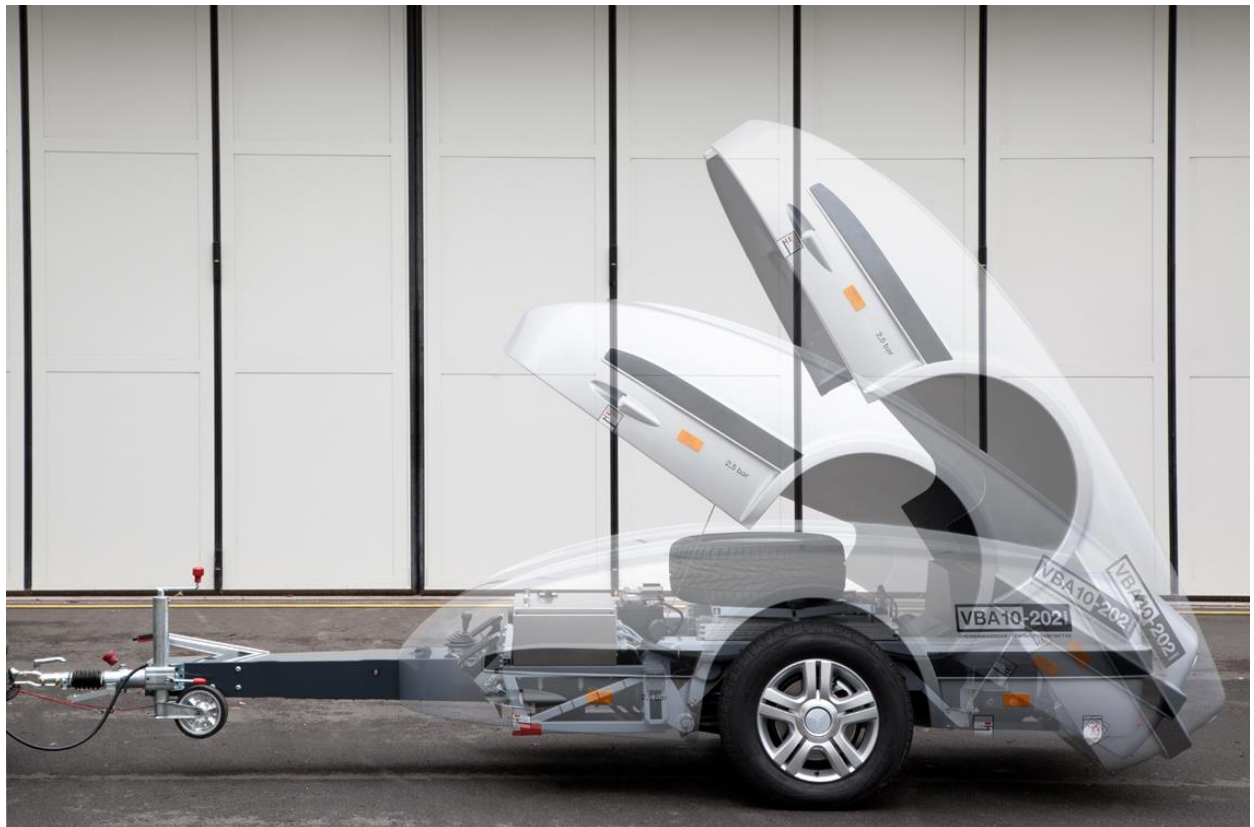




Drivers Display (option)



Editor für creating hill profiles (option)



<p>Control functions in standard configuration</p>	<p>Drawbar pull control</p> <p>Speed control</p> <p>Anti-lock braking system (ABS) (If tyre slip exceeds threshold the drawbar pull is reduced for a short term)</p>
<p>Optional features</p>	<p>Remote control via wireless connection and interruption-free power-supply by the towing vehicle.</p> <p>Driver assistant display - Additional windscreen-mounted driver assistant display containing realtime operation parameters and driving hill profiles.</p> <p>Set point ramp for speed control In speed control mode a slew rate is integrated into the setpoint adjustment.</p> <p>CAN-data logger for logging operation parameters, also used for troubleshooting and support.</p> <p>CAN-analog-converter to display analog signals containing actual drawbar pull and speed in the remote control user interface.</p> <p>Constant slope mode and trailer simulation- Menu based calculation of drawbar pull with user-editable slope, towing vehicle and trailer parameters (e.g. drag coefficient, towing vehicle weight)</p> <p>Hill profile mode - Menu based hill profile input, realtime drawbar pull control with user-editable towing vehicle and trailer parameters (e.g., drag coefficient, towing vehicle weight).</p> <p>Dynamic trailer simulation - Simulation of mass inertia of the trailer via drawbar pull control during acceleration and deceleration.</p> <p>Online slope correction – Actual slope is detected via Sensors and compensated by drawbar pull control for slope independent drawbar pull.</p> <p>Dead weight trailer simulation - Simulated increase of trailer mass via drawbar pull control during acceleration, deceleration and downward force due to actual slope</p> <p>GPS-measurement for actual speed, displayed and loggable via remote control.</p> <p>2 spare wheels and wheel retaining mounts inside the chassis, covered by the hood.</p> <p>Transport platform for transport damage prevention. For transportation duties the towing dynamometer will be tied down on the platform, forklift suited lifting points on both sides.</p> <p>Additional control regarding actual towing vehicle values (e.g., fuel injection rate) on request.</p>
<p>Documentation</p>	<p>User manual including brief instruction and maintenance interval in english or german language.</p> <p>Wear and spare part list. These are mainly available from automotive suppliers.</p> <p>Electric wiring diagram</p>

Drawbar Pull Map Towing Dynamometer VBA09-2xx (150kW - 9 kN)

