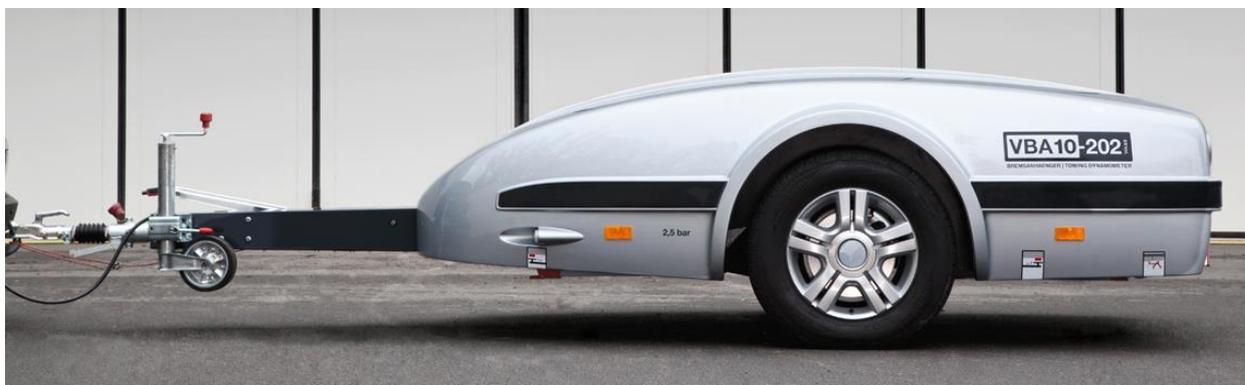


VOLKE Towing Dynamometer VBA09-2xx 150kW – 9kN



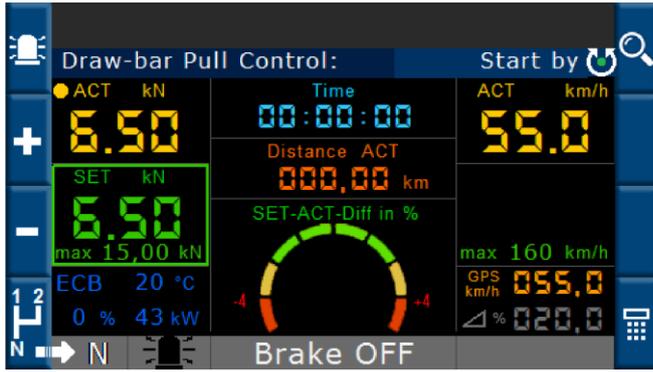
Maximum drawbar pull	9.000 N (limited by maximum power above 60 kph, cf. drawbar pull map, page 5)
Continuous drawbar pull	9.000 N up to 40 kph 6.000 N up to 60 kph 2.320 N up to 155 kph Detailed information in drawbar pull map (page 5)
Max.-/ continuous power	150 / 100 kW
Speed range	0 - 160 kph (max. 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	<p>length: 4.200 mm width: 1.800 mm height: 1.100 mm (approx.)</p>



<p>Control</p>	<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>
<p>Remote control</p>	<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>

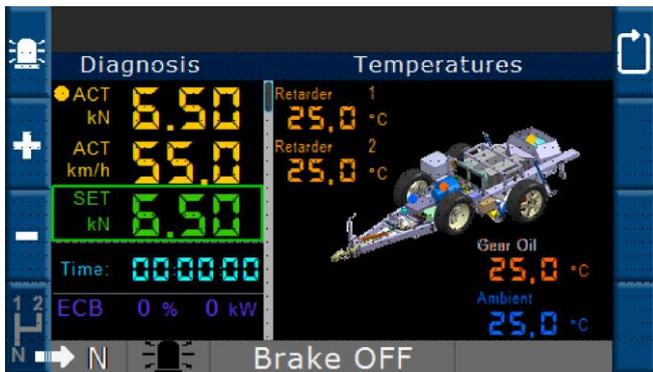




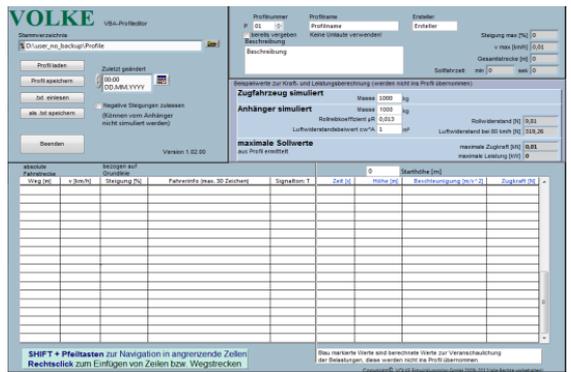
Operational View (Draw-bar Pull Control)



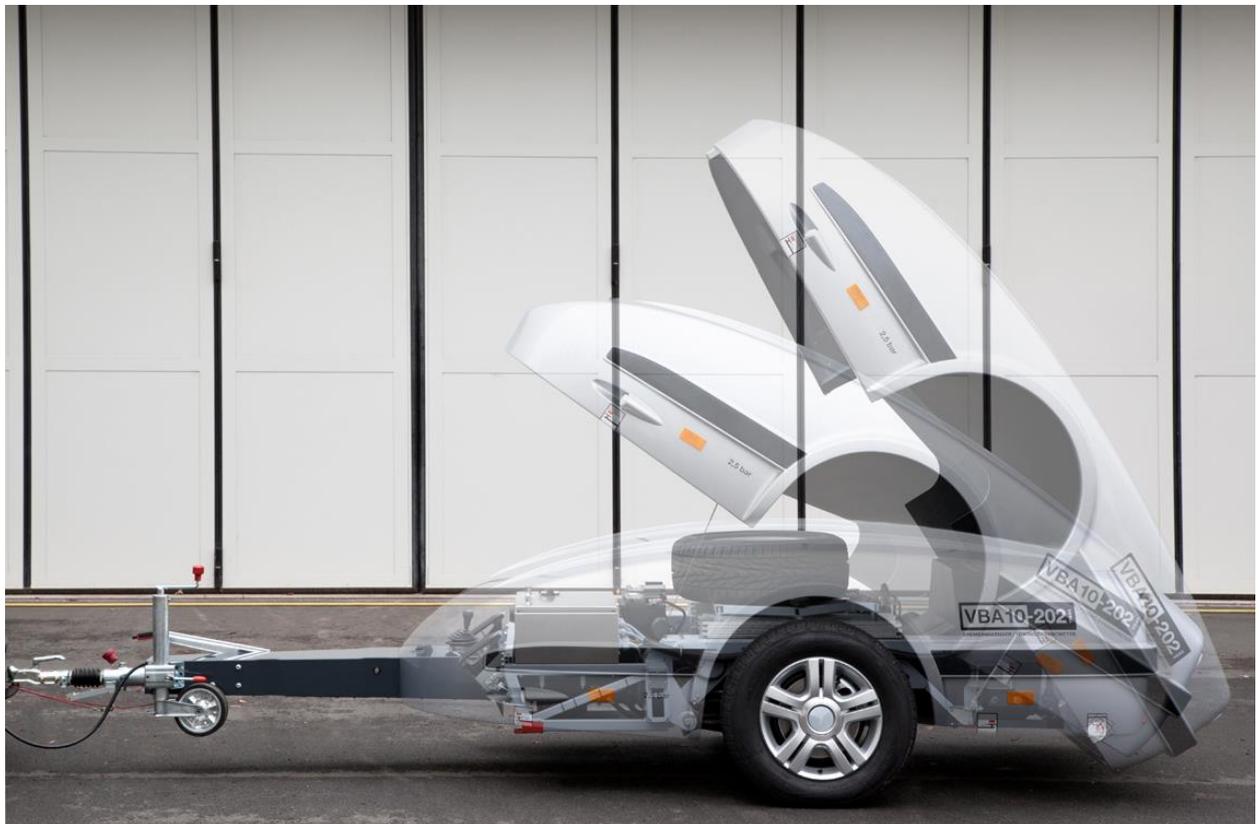
Drivers Display (option)



Extensive diagnostic options



Editor für creating hill profiles (option)



Control functions in standard configuration	Drawbar pull control Speed control Anti-lock braking system (ABS) (If tyre slip exceeds threshold the drawbar pull is reduced for a short term)
Optional features	Remote control via wireless connection and interruption-free power-supply by the towing vehicle. Driver assistant display - Additional windscreen-mounted driver assistant display containing realtime operation parameters and driving hill profiles. Set point ramp for speed control In speed control mode a slew rate is integrated into the setpoint adjustment. CAN-data logger for logging operation parameters, also used for troubleshooting and support. CAN-analog-converter to display analog signals containing actual drawbar pull and speed in the remote control user interface. 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) 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). 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 GPS-measurement for actual speed, displayed and loggable via remote control. 2 spare wheels and wheel retaining mounts inside the chassis, covered by the hood. 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. Additional control regarding actual towing vehicle values (e.g., fuel injection rate) on request.
Documentation	User manual including brief instruction and maintenance interval in english or german language. Wear and spare part list. These are mainly available from automotive suppliers. Electric wiring diagraeme

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

