VOLKE

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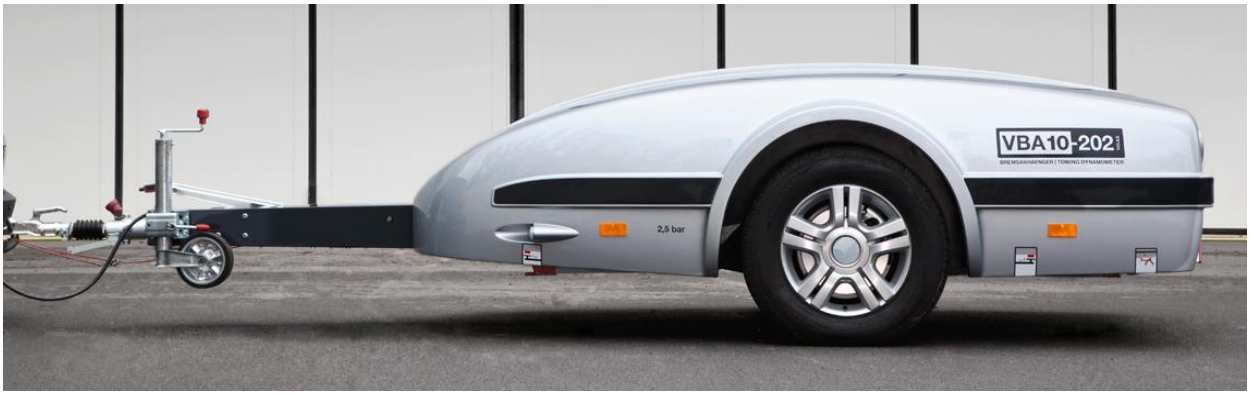
VOLKE Towing Dynamometer VBA10-2xx
175kW – 10kN



Maximum drawbar pull	**10.000 N (limited by maximum power above 63 kph, cf. drawbar pull map, page 5)**
Continuous drawbar pull	**9.000 N up to 46 kph** **5.200 N up to 80 kph** **2.760 N up to 150 kph** **Detailed information in drawbar pull map (page 5)**
Max.-/ continuous power	**175 / 115 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** **- 1st gear (0 to 72 kph)** **- 2nd gear (5 to 110 kph)** **- 3rd 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. (1st and 2nd-gear use only)** **This option is part of the option package. Operating permission carried out by the respective local approval body.**

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Trailer superstructure and hood	**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.** **Forklift suited lifting points at the rear, workshop lifting platform compliant. Multiple lashing points available**
Chassis	**Independent suspension, semi-trailing link type** **Alloy-wheels, dim. 6,5J x 16, fitted with 215 /65 R16 tyres** **Hydraulic overrun brake operating hydraulic disc brakes. For reversing purpose a back pressure valve is activated by the towing vehicle´s backup light signal.** **Parking brake operation on brake discs with warning device**
Electrics	**1 Bosch generator, charging current: 120 A** **Charging capability above 10 kph** **Optional: Charging capability above 5 kph** **24 V main power supply, 2 batteries**
Weights	**Laden weight approx.: 1.550 kg (for drawbar pull up to 10.000 N** **Unladen weight approx.: 1.100 kg (for drawbar pull up to 6.700N)** **Tongue load: 50 - 60 kg**
Outer dimensions	**length: 4.200 mm width: 1.800 mm height: 1.100 mm (approx.)**

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

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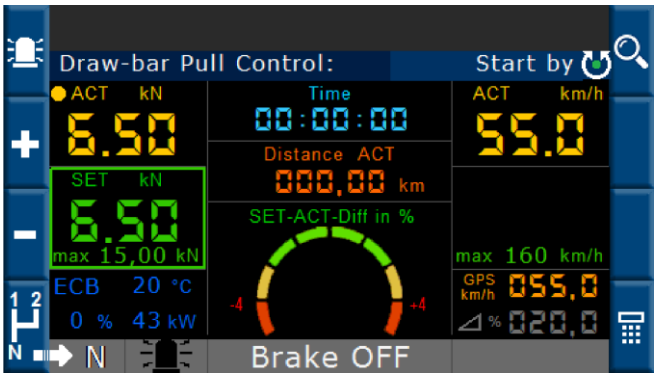
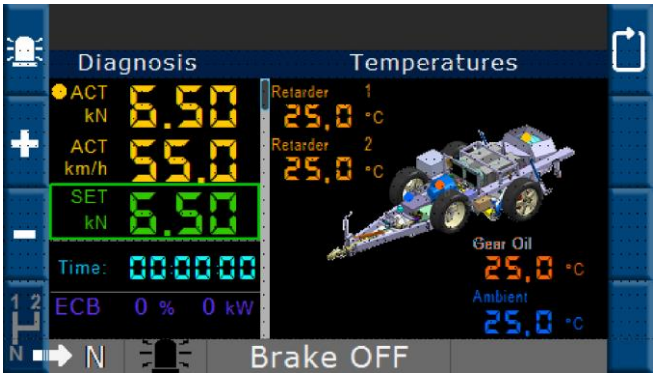
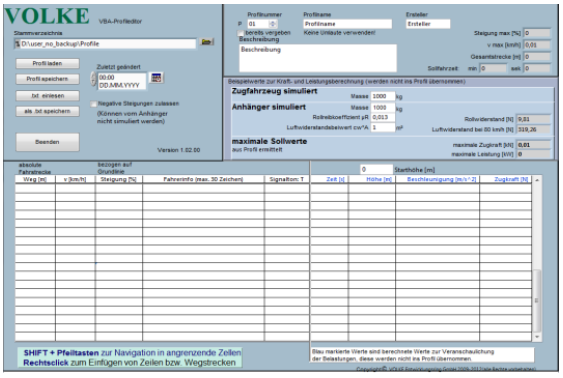


Operational View (Draw-bar Pull Control)

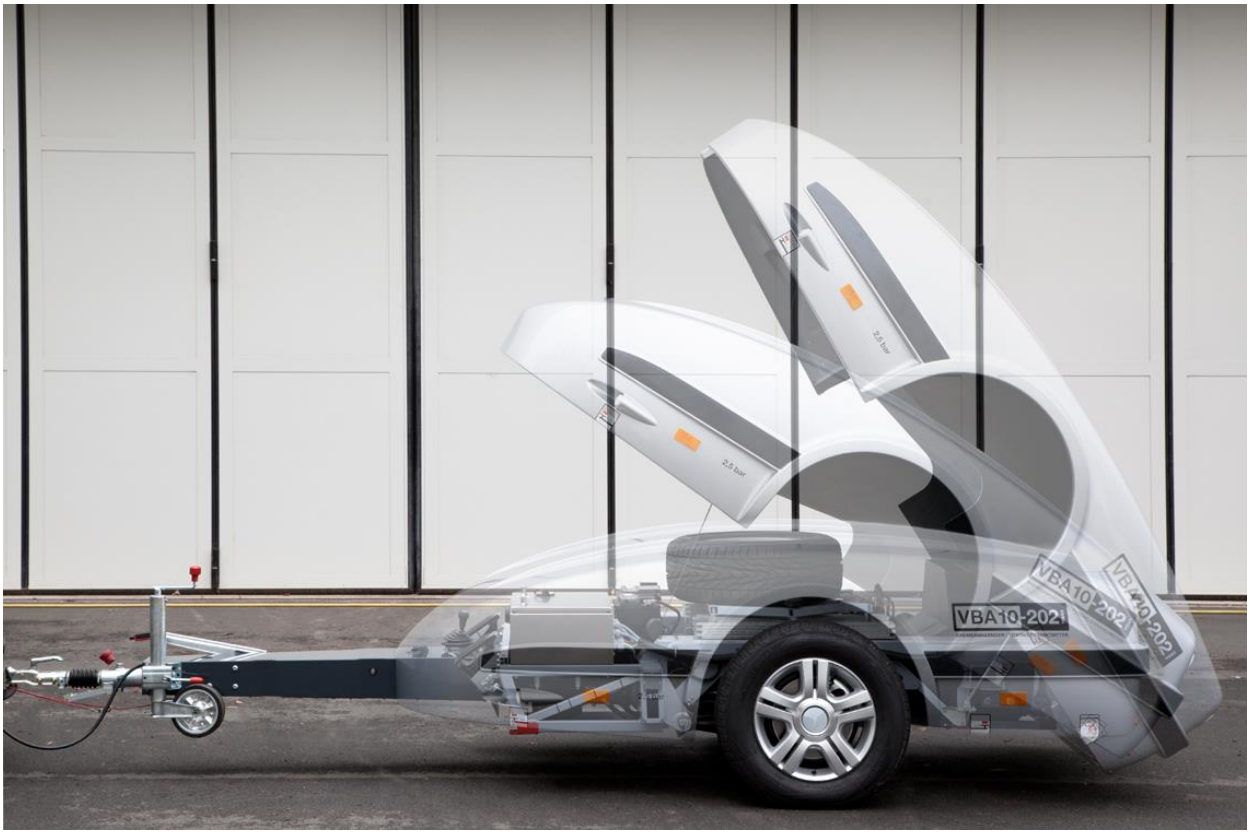
Drivers Display (option)



Extensive diagnosic options



Editor für creating hill profiles (option)



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Control functions in standard configuration	**Drawbar pull control** **Speed control** **Anti-lock braking system (ABS)** **(If tyre slip exceedes 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 diagrame**

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Drawbar Pull Map
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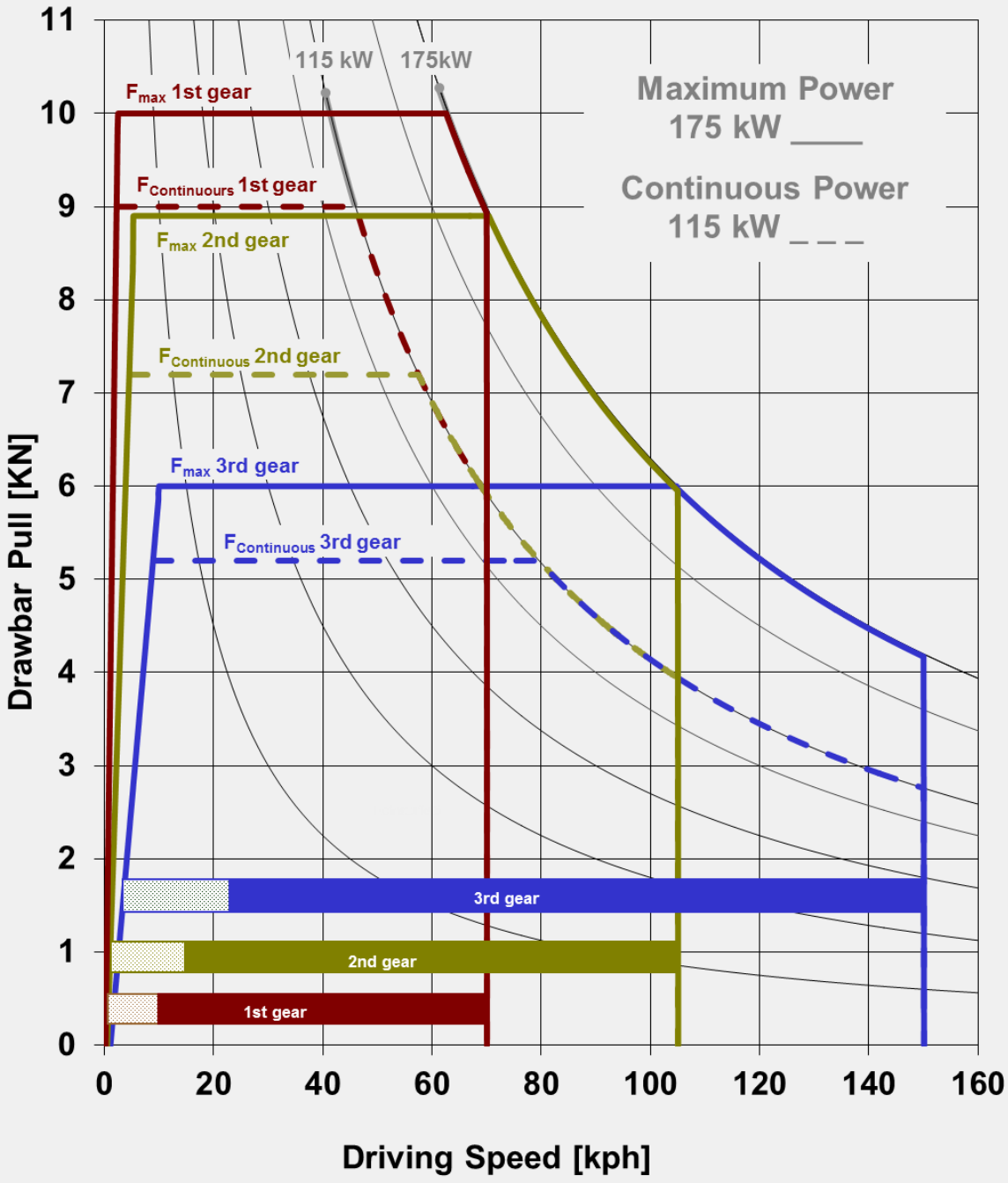
(175 kW - 10 kN)



Range I: heavy duty an continuous duty

Range II: for short time duty (t < 30 min.), eddy current brake operated by battery