

Utility Vehicles and Trucks (4x4) Vario

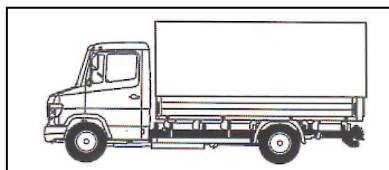
A new class for military tasks



Mercedes-Benz Vario 815 DA (4x4) light truck



Mercedes-Benz



Utility Vehicles and Trucks Model Vario (4x4)

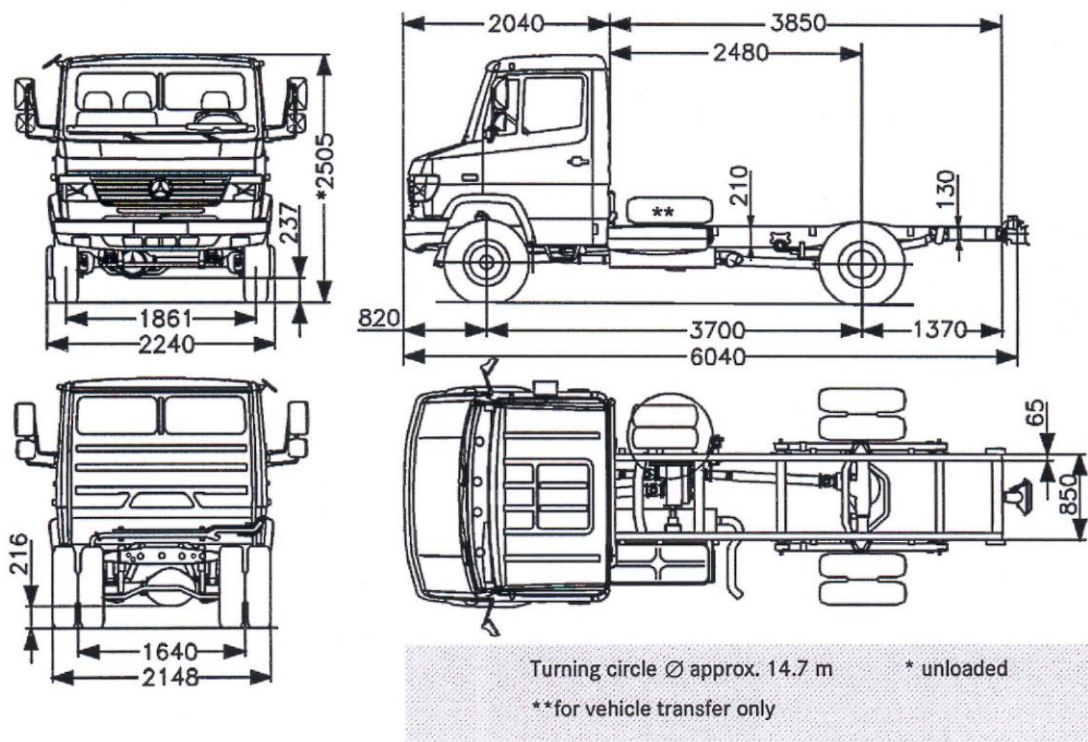
1996

Utility Vehicles and Trucks Model Vario (4x4)

Vehicle Type	Payload	Wheelbase (mm)	Type	Engine Output EURO IV	Mx. Torque
813 DA (4x4)	2.5 – 4.2 to	3,700 / 4,250	R4	95 kW / 129 hp	500 Nm
814 DA (4x4)	2.5 to	3,700	R4	100 kW / 136 hp	520 Nm
815 DA (4x4)	2.5 – 4.2 to	3,700 / 4,250	R4	90 kW / 152 hp	580 Nm
816 DA (4x4)	2.5 – 4.2 to	3,700 / 4,250	R4	115 kW / 156 hp	1,600 Nm
818 DA (4x4)	2.5 – 4.2 to	3,700 / 4,250	R4	130 kW / 177 hp	1,600 Nm

Background

The commercial and militarised Mercedes-Benz truck L 508 D (Düsseldorfer Transporter), in service with the German Army since 1975, with a payload rating of two tonnes was simply known as the LKW 2 t mil at its time. The light truck had no cross-country capability and represented a reliable vehicle for second-line duties like workshop, ambulance and even under the designation O 309 D as crewbus for up to 14 passengers. Never really replaced in service with the German Army Mercedes-Benz developed as a successor the Model Vario with enhanced capabilities such as four-wheel drive, thus adding tactical capabilities to a second-line vehicle. Thus, the Vario per se establishes a new category within the Mercedes-Benz range of military vehicles. By acknowledging the obvious similarities the origin of the Vario can not be denied.



Mercedes-Benz Vario 814 DA dimensions

In general the Mercedes-Benz series of tactical vans including the **Vito**, **Sprinter** and **Vario** with GVW of between 2.6 and 7.5 tonnes have been designed for second-line short-range transport duties, crew transport or for Military Police (MP) applications. In addition the new vans offer much more in performance and comfort. The Vario was shown for the first time at the International Commercial Vehicle Motor Show in Hanover between September 21 and 29 in 1996.

Today, the Mercedes-Benz Vario is attracting growing interest in the non-civilian user segment. Equipped with four-wheel drive the Vario excels on marginal terrain. In comparison to its GVW the available payload has left former limits far behind to unsurpassed levels.



The Mercedes-Benz Vario is a payload giant in comparison to its GVW.

This military payload capacity of 2.5 tonnes opens up a wide range of operational options for the light truck, while the newly developed engine producing a max. torque of 580 Nm at 1,500 rpm ensures that the Vario has the power to get the job done.

The Vario was shown for the first time at the International Commercial Vehicle Motor Show in Hanover between September 21 and 29 in 1996.

When the Vario has to stop because of terrain features only the Unimog or its four-legged sisters and brothers may proceed.

Technical Description

The layout of the Mercedes-Benz utility vehicle or light truck Vario is conventional and represents basically a commercial utility vehicle adapted for military applications. Offered with regular or crew cab the Vario can be delivered with three different wheelbases (3,150 / 3,700 / 4,250 mm), though the first one is not part of the regular production effort. All models use a parallel monoframe chassis. The fully enclosed steel cab is of commercial-pattern semi-forward control type with seats for the driver and up to two passengers. A four-door crew cab is optional. The rear platform can be configurated to carry troops, shelters, or box-bodies of various types. Container carriers or tipping rear bodies are also available.

The Mercedes-Benz Vario is powered by a Mercedes-Benz OM 904 LA four-cylinder in-line turbocharged diesel engine with intercooling developing between 95 kW (129 hp) to up to 130 kW (177 hp) with 500 to up to 675 Nm torque at 1,600 – 2,300 rpm. Four different transmissions are offered:

- Mercedes-Benz S5-42 five-speed all synchromesh manual
- Mercedes-Benz G60-6/9.201 six-speed manual
- Mercedes Benz AT 542 five-speed fully automatic
- Mercedes-Bent G56 six-speed fully automatic.

All these transmissions are delivered with a VG 550-3W/1.67 transfer box. The 6-speed synchromesh transmission combines an enhanced power transfer capability for operations in marginal terrain with an economic fuel consumption on roads. All-wheel drive can be activated by a switch, though the vehicle has to stop. For difficult and especially slippery surfaces the longitudinal differential can be locked, thus establishing a rigid connection between front and rear axles. The longitudinal differential lock is controlled through pressurised air valves on the rear axle. A differential lock on the rear axle is standard.

The latest generation of Mercedes-Benz Vario vehicles have internally ventilated disc brakes front and rear combined with ABS.

In comparison to its GVW the Mercedes-Benz Vario payload capability is unsurpassed.

Utility Vehicles and Trucks Model 815 Vario (4x4)		
Model	Ausführung	Utility Vehicle and Truck
Type	Typ	815 Vario
Manufacturer	Hersteller	Mercedes-Benz / DaimlerChrysler AG, Department IGB/S HPC 161

		D-76742 Woerth, Germany
Introduction into service	Einführung	2000
Cab seating	Sitzplätze Fahrerhaus	1 + 2
Seats (rear)	Sitzplätze (hinten)	n/a

Configuration	Antriebsformel	4 x 4
Weight	Gewicht	
Weight empty chassis	Militärisches Leergewicht	3,340 kg
Weight loaded, road (GVW)	zulässiges Gesamtgewicht	7,490 kg
Weight on front axle (loaded)		2,500 kg
Weight on rear axle (loaded)		5,600 kg
Payload	Nutzlast	2,500 kg – 3,500 kg
Max. load (road)	außergewöhnliche Belastung (Straße)	4,150 kg
Max. load (cross-country)	außergewöhnliche Belastung (Gelände)	n/a
Towed load (road)	zulässige Anhängelast (Straße)	n/a
Towed load (cross-country)	zulässige Anhängelast (Gelände)	n/a
Load area	Ladefläche	n/a
Length	Länge	628 cm
Width	Breite	224 cm
Height (cab)	Höhe Fahrerhaus	250.5 cm
Height (chassis, front)	Höhe (Chassis vorne)	n/a
Height (chassis, rear)	Höhe (Chassis hinten)	n/a
Body (wheelbase 3,700 mm)	Koffer (Radstand 3.700 mm)	n/a
Body (wheelbase 4,250 mm)	Koffer (Radstand 4.250 mm)	n/a
Height (load area)	Ladehöhe über Boden	n/a
Ground clearance	Bodenfreiheit	23.7 cm
Track (front)	Spurweite (vorne)	186.1 cm
Track (rear)	Spurweite (hinten)	164 cm
Wheelbase	Radstand	3,700
Angle of approach	Böschungswinkel vorne	39°
Angle of departure	Böschungswinkel hinten	22°
Chassis frame	Rahmen	n/a
Max speed (road)	Höchstgeschwindigkeit	113 km/h
Min speed (road)	Mindestgeschwindigkeit	n/a
Range	Fahrbereich (Straße)	n/a
Fuel capacity	Kraftstoff-Vorrat	70 ltr. (100 ltr.)
Fuel consumption	Kraftstoff-Verbrauch	n/a
Gradient	Steigfähigkeit	73 %
Side slope	Querneigung, Kippgrenze	n/a
Fording (standard)	Wadfähigkeit (ohne Watsatz)	n/a
Fording (with kit)	Wadfähigkeit (mit Watsatz)	n/a
Engine	Motor	2.25 litre, 4 cylinder in-line turbocharged and intercooled 4-stroke diesel engine
Designation	Bezeichnung	OM 904 LA
Bore x Stroke	Bohrung x Hub (mm)	n/a
Displacement	Hubraum (ccm)	4,250 ccm
Output	Leistung KW (PS)/min ⁻¹	112 (152) at 2,300 rpm
Torque, max.	Drehmoment (Nm / kpm)	580 Nm at 1,200-1,500 rpm
Cooling	Kühlung	water-cooled
Power transfer	Kraftübertragung	All-wheel drive
Transmission	Getriebe	ZF Ecolite S5-42 or G56 or G60-6/9,201 6-speed synchromesh with 5 forward and 1 reverse gears or AT 542 5-speed automatic transmission
Clutch	Kupplung	MF 362 single dry disk
Transfer box	Antriebsübersetzung	Mercedes-Benz VG 550-3W/1.67 2-speed
Steering	Lenkung	Mercedes-Benz LS 4 power-assisted
Turning circle	Wendekreis	14.7 m
Axle, front	Vorderachse	AL 1/8 C-3.0 2,500 kg-rated rigid axle with stabiliser
Axle, rear	Hinterachse	HL 2/41 CS-5.6 5,600 kg-rated rigid axle with stabiliser
Suspension (front)	Radaufhängung (vorne)	Parabolic springs 3.0 to

Suspension (rear)	Radaufhängung (hinten)	Parabolic springs 5.6 to
Tyres	Bereifung	9.5 R 17.5 or 215 / 75 R 17.5
Brake (main)	Betriebsbremse	Disks front, drum rear / Disc brakes internally ventilated front and rear
Brake (parking)	Feststellbremse / Handbremse	mechanical
Brake (engine)	Motorbremse	n/a
Electrical system	Fahrzeugelektrik	24 V
Alternator (reinforced)	Wandler	80 A
Starter motor	Starteinrichtung	n/a
Batteries	Batterien	2 x 12 V, 66 Ah
Trailer socket type	Anhängeranschluß	n/a
Trailer couplings (optional)	Anhängerkupplung	n/a

Sales and Service Entry

The Mercedes-Benz Vario is in service with the armed forces of Austria (for trials), Denmark, Germany, Norway as well as the Netherlands. Based on a Mercedes-Benz Vario 814 chassis the Royal Thai Police procured a Improved Explosive Device Disposal (IEDD) vehicle in 2001. The German Armed Forces operate a fleet of crewbuses of Vario O 815 D type since 2003 which have been leased for the German Armed Forces by the BwFuhrparkService GmbH and are powered by an engine developing 110 kW. Displacement is 4,249 ccm. The bus has a capacity of 26 seats. 50 units have been procured from November 2003.



Mercedes-Benz Vario during troop trials in Austria.



Mercedes-Benz Vario with large rear platform and high tarpaulin arrangement for large-seize loads.



The Mercedes-Benz Vario utility vehicle in sand colour. The All Wheel Drive (AWD) can be recognised by the enhanced ground clearance. An air conditioning system is fitted to the roof of the vehicle. Such agile trucks are well suited for EOD teams for all governmental services if police or the military.



A Mercedes-Benz Vario of the Norwegian Army with extended cab and container platform at the rear. Note the twin rear wheel arrangement.