



Mercedes-Benz

Sprinter with All-Wheel Drive



Get a grip of your driving.

Improved traction, more steering stability and better handling safety: drivers operating in mountainous areas or in regions with prolonged snow cover will appreciate the benefits of a van with All-Wheel Drive. The same applies to companies from the building trade or gardening and landscaping. But van drivers are also confronted with wet and slippery roads in everyday operating conditions. The innovative AWD technology and outstanding comfort of the Sprinter 4x4 make life a whole lot easier for van drivers. High traction, improved handling stability and ADAPTIVE ESP® enhance safety and put the pleasure back into accelerating and cornering – even in adverse weather conditions or when towing a trailer.

4x4 Innovation

Mercedes-Benz can look back on a long tradition of AWD technology: construction site vehicles, off-road vehicles and SUVs have been demonstrating their outstanding capabilities on difficult road surfaces for many years. The benefits of All-Wheel Drive can now be enjoyed in Mercedes-Benz Vans in the shape of the Sprinter 4x4 – ensuring improved traction and better handling safety. A key advantage: in place of conventional differential gear systems with mechanical locks, brake force distribution is subject to intelligent control using the 4ETS electronic traction system.

Road going vehicles can encounter difficult, low-traction conditions that can present a danger – for example, driving on ice, snow, slush and wet leaves or on wet or split friction surfaces. Under these conditions, Mercedes-Benz All-Wheel Drive will deliver substantially improved handling, particularly during hill starts or when accelerating or cornering.

All-wheel drive: intelligence and operating comfort.

The key electronic control system for AWD in the Sprinter 4x4 is called ADAPTIVE ESP®/4ETS. It removes the need for mechanical differential locks, the disadvantages of which include heavy weight and demanding operation. ADAPTIVE ESP®/ 4ETS is activated should one or more wheels begin to lose traction on a slippery surface. The system automatically applies the appropriate braking force to each of the spinning wheels and simultaneously increases tractive power to the wheels which still have sufficient grip. The result is a significant increase in traction.

Improved driving safety - with ADAPTIVE ESP.®

Traction is important, but it is not everything. ESP® also plays a pivotal role in controlling your vehicle. The AWD Vito and Sprinter models show no compromise in this department: it delivers the full functionality of ADAPTIVE ESP® (measures and responds to the vehicle's current load condition).

Advantages at a glance

- Improved traction on snow, ice, slush and on wet and slippery road surfaces in general
- Improved directional stability in critical situations
- Engine power is distributed in a ratio of 35 : 65 to the front and rear wheels respectively
- Full ADAPTIVE ESP® functionality
- Maintenance-free AWD design for low running costs
- All-wheel drive only marginally increases vehicle weight, thus ensuring a high payload capacity



Introducing the Sprinter 4x4.

Boasting a large choice of combinations and optional* extras, the Sprinter offers a solution to virtually every transportation task – with two wheelbases, two body lengths and two roof heights and if you are operating on difficult road surfaces and in critical driving conditions, the Sprinter 4x4 with selectable All-Wheel Drive is the ideal choice.

The Sprinter with selectable All-Wheel-Drive.

Poor road surfaces, slush or wet, low-friction surfaces such as earth or gravel can quickly take conventional vans to the limits of their capabilities. A van is generally not permanently confronted with severe traction conditions, however conditions tend to alternate between “normal” road surfaces and difficult surfaces. This is where the Sprinter 4x4 with selectable All-Wheel Drive is in its element. The Sprinter 4x4 uses rear-wheel drive for standard operation. Front-axle operation can be activated by the driver at the push of a button. This is also possible when the vehicle is moving (at speeds of up to around 10 km/h). The high quality of this manually selectable solution is underlined by the fact that the functions of ADAPTIVE ESP®, ABS and ASR are available without

restriction in 4x4 and 4x2 operating modes. ADAPTIVE ESP®/ 4ETS responds very quickly and sensitively in critical driving conditions, thus helping to ensure better handling safety.

Featuring power distribution in the ratio 35:65 at the front and rear axles, the vehicle helps to deliver optimised dynamic torque distribution in AWD mode, helping to enable it to retain its agility even at higher speeds.

The Sprinter 4x4 is deployed across a huge variety of operating sectors and applications: from the single and dual cab chassis for the building industry, gardening and landscaping to the panel van for transporting goods or use as a service vehicle.

Advantages at a glance

- Available weight variants include 3.55t and 4.49t gross vehicle weight ratings
- Selectable All-Wheel Drive in conjunction with the 4ETS electronic traction system
- A low-range drive ratio for driving on difficult terrain comes as standard
- ADAPTIVE ESP®
- Choice of manual or automatic transmission (Manual not available on V6 models)
- The selectable AWD system can be manually activated while the vehicle is in motion and ensures reduced fuel consumption compared with vehicles with permanent All-Wheel Drive
- Available with a high-torque, economical four-cylinder CDI diesel engine or a highly powerful V6 CDI diesel engine



Technology of the future which you can benefit from today.

Opting for All-Wheel Drive for your Mercedes-Benz Van means embracing technology at its best. The close integration of mechanical components and the ADAPTIVE ESP®/4ETS electronic control system is an ideal solution, offering exemplary traction and outstanding handling safety – even in critical driving conditions.

How 4ETS works.

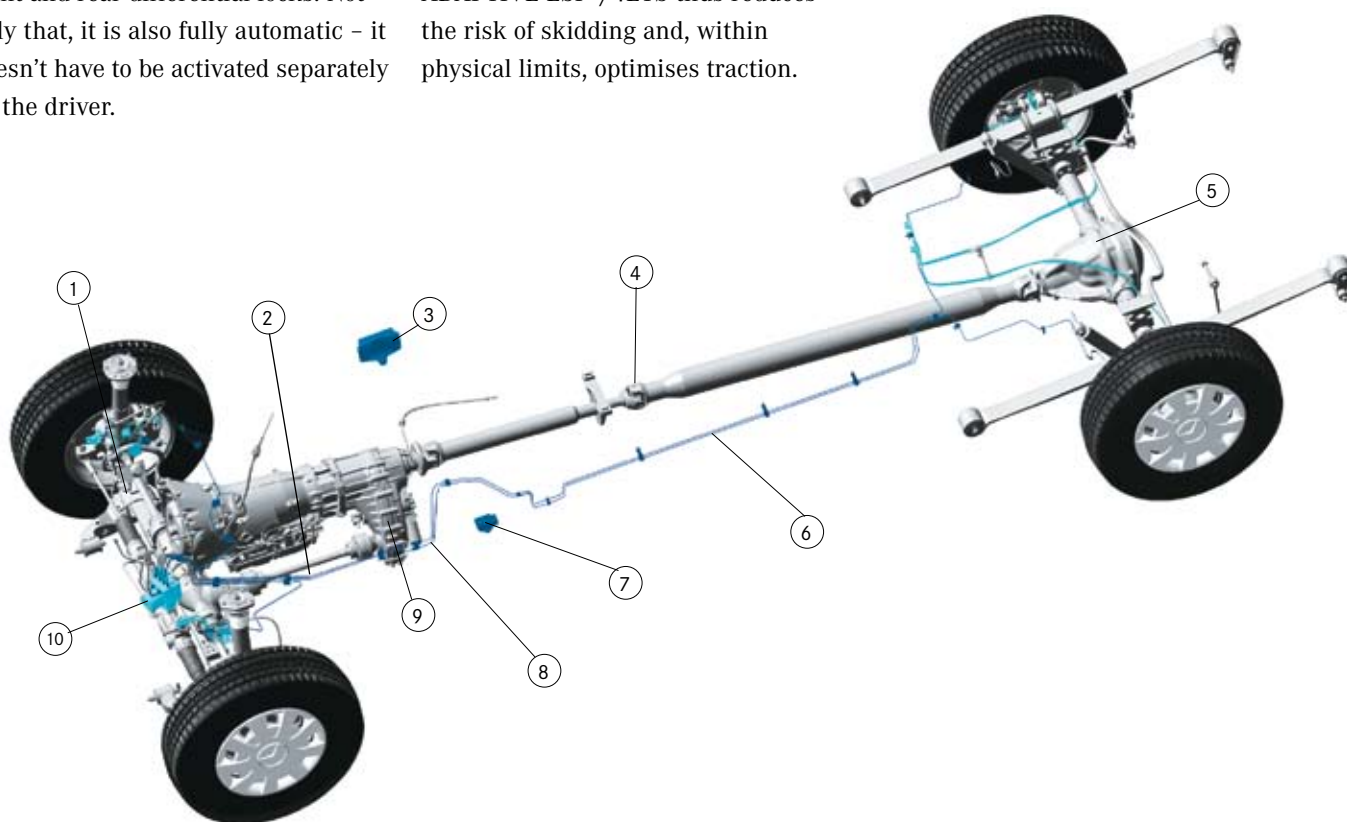
The 4ETS electronic traction system permanently monitors the speeds of all drive wheels and adjusts them if necessary. At the first sign of wheel spin when accelerating or negotiating a slope, 4ETS applies brake pressure to the wheel or wheels concerned. This transfers more power to the wheels that still have sufficient traction. 4ETS therefore dispenses with the need for conventional centre, front and rear differential locks. Not only that, it is also fully automatic – it doesn't have to be activated separately by the driver.

ADAPTIVE ESP®/4ETS - ideal for All-Wheel Drive.

When braking or cornering, 4ETS and ADAPTIVE ESP® act as a team. At the first sign of wheel lock or if the vehicle threatens to lose traction and skid, ADAPTIVE ESP® stabilises the vehicle by applying precisely metered braking to one or more wheels and/or adjusting engine torque. This keeps the vehicle on track and, at the same time, can reduce stopping distances. ADAPTIVE ESP®/4ETS thus reduces the risk of skidding and, within physical limits, optimises traction.

A low-range drive ratio.

The low-range drive ratio enhances operational versatility on difficult terrain. An intermediate gear in the transfer case reduces the transmission ratio between engine and wheels by around 40 %, with a corresponding increase in drive torque. This makes it possible to manoeuvre extra slowly and sensitively.

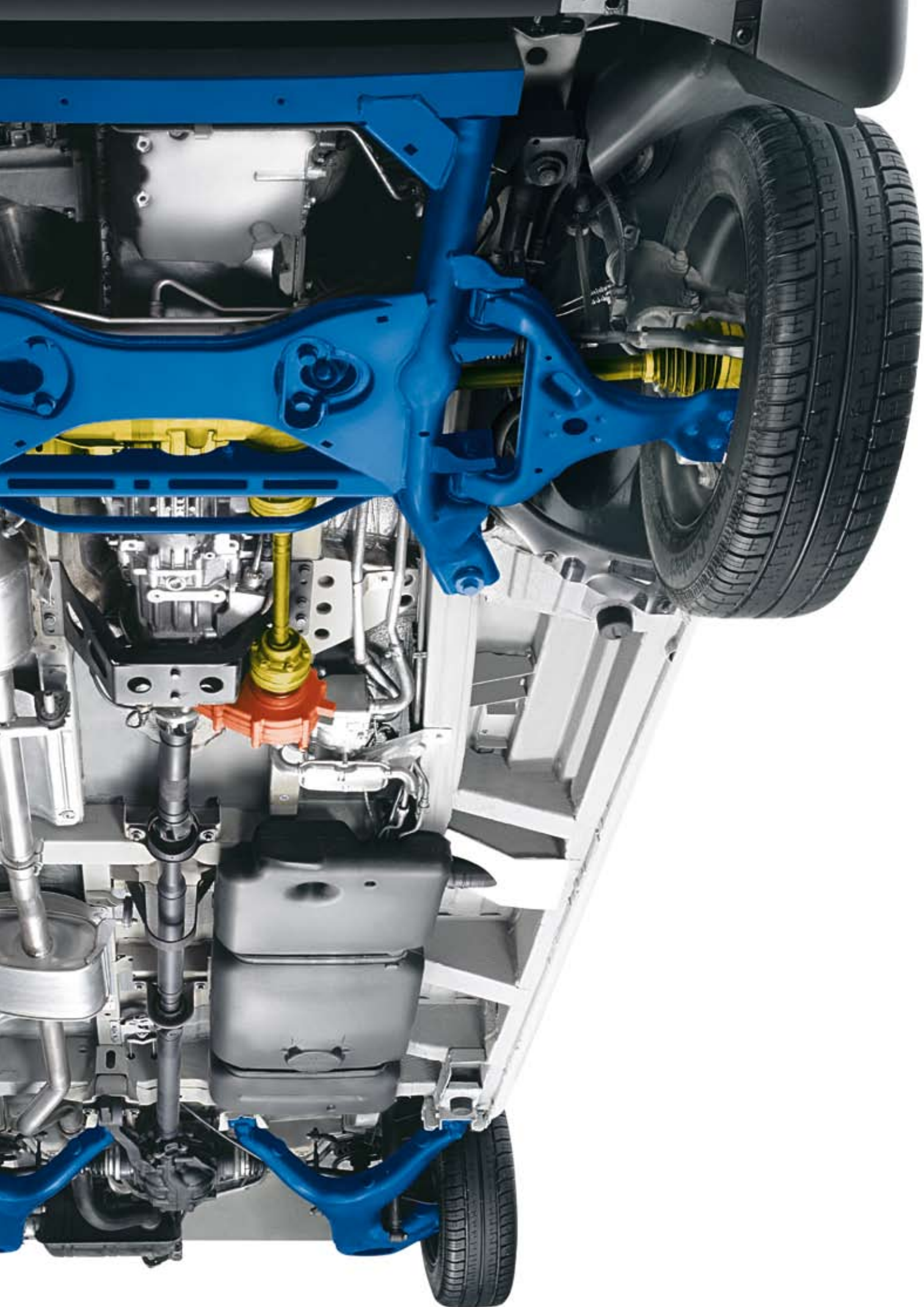


Selectable All-Wheel Drive system with manual transmission

- 1. Front axle with half-shafts and differential
- 2. Drive shaft to front axle
- 3. Transfer case control unit

- 4. Drive shaft to rear axle (propeller shaft)
- 5. Rear axle with half-shafts and differential
- 6. Brake line
- 7. Yaw sensor
- 8. Activator for selectable All-Wheel Drive

- 9. Transfer case
- 10. Electro-hydraulic control unit for ADAPTIVE ESP®/4ETS



Sprinter 4x4 technical data

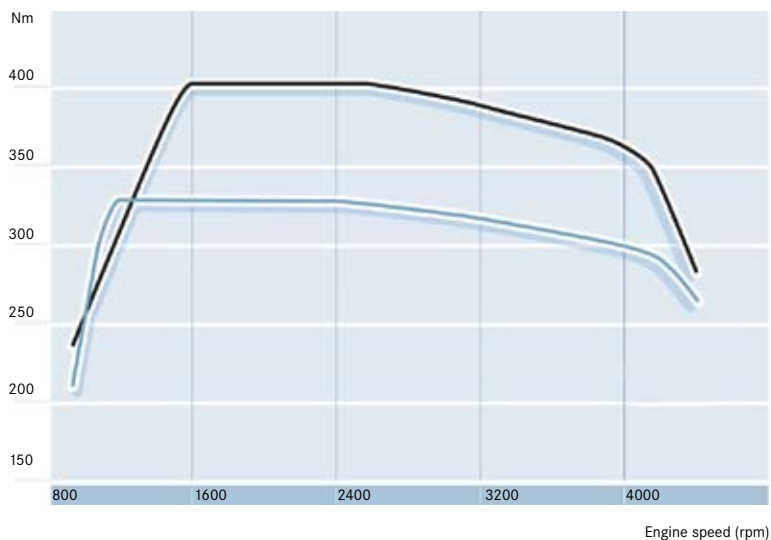
Model	315CDI 4x4	515CDI 4x4	318CDI 4x4	518CDI 4x4
Engine	OM 646 DE22LA		OM 642 DE30LA	
No. of cylinders/valves	4/4		6/4	
Arrangement	in-line		V72°	
Bore (mm)	88.0		83.0	
Stroke (mm)	88.3		92.0	
Displacement (cc)	2148		2987	
Compression ratio	18:1		18:1	
Rated output (kW/hp)	110/150		135/184	
at engine speed (rpm)	3800		3800	
Rated torque (Nm)	330		400	
at engine speed (rpm), EURO 4	1200-2400		1600-2600	
at engine speed (rpm), EU4/III	1800-2400		-	

Fuel type	Diesel	Diesel
Tank capacity (reserve)	approx. 100	approx. 100
Mixture preparation	Electronically controlled direct injection with common rail, turbocharger and charge-air cooling	

Battery (V/Ah)	12/100	12/100
Alternator (V/A)	14/180	14/180

Perm. GVW (kg)	3550	4490	3550	4490
Perm. gross combination weight (kg)	5550	6490	5550	6490

Torque curves



Angle of departure (see table)



Angle of approach

Torque curves

CDI engine OM 646 DE22LA	110kW (150Hp)
CDI engine OM 642 DE30LA	135kW (184Hp)

*CDI engines certified to EURO4/EUS Gr.III



Ramp angle (see table)

Dimensions, angle of departure

4x4	3.5t		4.49t
Body Wheelbase	MWB 3665 mm	LWB 4325 mm	LWB 4325 mm
Panel Van	21°	16°	16°

Dimensions, ramp angle

4x4	3.5t		4.49t
Body Wheelbase	MWB 3665 mm	LWB 4325 mm	LWB 4325 mm
Chassis only	22° / 23°	19° / 21°	18° / 20°



Climbing performance

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