

# **Fahrgestell Typ 461, 463**

**Bestell-Nr. 6510 5779 02**

**Printed in Germany**

**0396 0.6 / 0500 0.05 ff**

## Contents

Chapter	Coordinates	Page
<b>1 General</b>		
Survey of types and components	B1	1.1/1
Model coding	D1	1.2/1
Structure of chassis no.	D1	1.2/1
Installation survey	E1	1.3/1
Vehicle dimensions	L1	1.4/1
Weights	B3	1.5/1
Service Products, Capacities	E3	1.6/1
Testing on dynamometer	H3	1.7/1
Performances / Fuel consumption	L3	1.8/1
<b>2 Jacking up</b>	H4	2.1/1
<b>3 Differential locks</b>		
General information on differential locks	P4	3.1/1
System differential locks	Q4	3.2/1
Differential locks warning lamp	A5	3.2/2
Functional diagram, diesel engine	B5	3.3/1
Functional diagram, gasoline engine	D5	3.3/2
Installation diagram of pneumatic system	E5	3.4/1
Functional diagram of hydraulic system	L5	3.5/1
Installation diagram of hydraulic system	N5	3.6/1
Installation diagram of mechanical system (axles)	O5	3.7/1
Installation diagram of mechanical system (transfer case)	P5	3.7/2
Installation diagram of electrical system (to 02/94)	Q5	3.8/1
Installation diagram of electrical system (as from 03/94)	D6	3.9/1
New features and modifications of differential lock	G6	3.10/1

## Model survey

461	461.2	461.227 – Chassis with cab – Wheelbase 3120	(BA9)	– 230 GE
		.229 – Box-body vehicle – Wheelbase 2850	(BA4)	
		.238 – Station wagon – Wheelbase 2400	(BA3)	
		.239 – Station wagon – Wheelbase 2850	(BA6)	
		.249 – Pick-Up – Wheelbase 2850	(BA5)	
		.266 – Open vehicle – Wheelbase 2400	(BA7)	
		.267 – Open vehicle – Wheelbase 2850	(BA10)	
	461.3	461.323 – Chassis with cab – Wheelbase 3400	(BA9)	– 290 GD
		.328 – Box-body vehicle – Wheelbase 2850	(BA4)	
		.329 – Chassis with cab – Wheelbase 3120	(BA9)	
		.337 – Station wagon – Wheelbase 2400	(BA3)	
		.338 – Station wagon – Wheelbase 2850	(BA6)	
		.341 – Pick-Up – Wheelbase 2850	(BA5)	
		.367 – Open vehicle – Wheelbase 2400	(BA7)	
		.368 – Open vehicle – Wheelbase 2850	(BA10)	
463	463.2	463.200 – Convertible	(BA1)	– 200 GE
		.220 – Station wagon	(BA3)	G 200 <sup>1)</sup> 2)
		.221 – Station wagon, long wheelbase	(BA6)	
		463.204 – Convertible	(BA1)	– 230 GE
		.224 – Station wagon	(BA3)	G 230 <sup>1)</sup> 2)
		.225 – Station wagon, long wheelbase	(BA6)	
		463.207 – Convertible	(BA1)	– 300 GE
		.227 – Station wagon	(BA3)	G 300 <sup>1)</sup> 2)
		.228 – Station wagon, long wheelbase	(BA6)	
		463.228 – Station wagon, long wheelbase <sup>3)</sup>	(BA6)	– 500 GE V8
		463.208 – Convertible	(BA1)	– G 320
		.230 – Station wagon	(BA3)	
		.231 – Station wagon, long wheelbase	(BA6)	
	463.3	463.304 – Convertible	(BA1)	– 250 GD <sup>1)</sup> 2)
		.324 – Station wagon	(BA3)	
		.325 – Station wagon, long wheelbase	(BA6)	
		463.307 – Convertible	(BA1)	– 300 GD
		.327 – Station wagon	(BA3)	G 300 <sup>1)</sup> 2)
		.328 – Station wagon, long wheelbase	(BA6)	Diesel
		463.300 – Convertible	(BA1)	– 350 GD
		.320 – Station wagon	(BA3)	Turbo
		.321 – Station wagon, long wheelbase	(BA6)	G 350 <sup>1)</sup> TURBO- DIESEL

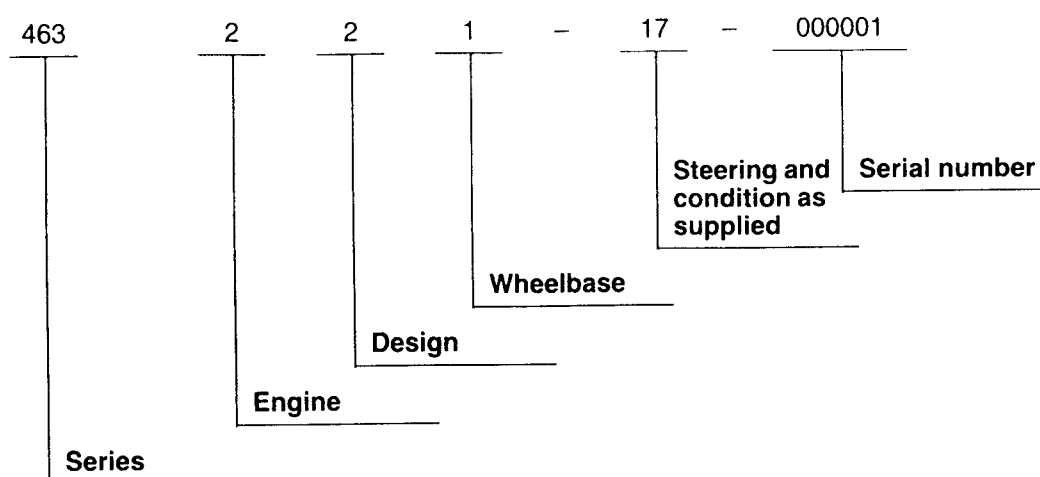
BA = Design

1) from 09/93

2) End of production

3) Special model

## Model coding



## Structure of chassis number

Series	461	463																								
Engine	2 = Gasoline engine M 102 E 23  3 = Diesel OM 602	2 = Gasoline engine M 102 E 20 Gasoline engine M 102 E 23 Gasoline engine M 103 E 30 Gasoline engine M 104 E 32  3 = Diesel OM 602 Diesel OM 603 Diesel OM 603 D 35 A																								
Design	2 = Box-body vehicle, chassis with cab 3 = Station wagon 4 = Pick-up 6 = open vehicle	2 = Convertible 1 = - 2 = Station wagon																								
Wheelbase	<table> <tr> <td>0 = short</td><td>M 102 E 20</td><td>2400</td></tr> <tr> <td>1 = long</td><td>M 102 E 20</td><td>2850</td></tr> <tr> <td>4 = short</td><td>M 102 E 23/OM 602</td><td>2400</td></tr> <tr> <td>5 = long</td><td>M 102 E 23/OM 602</td><td>2850</td></tr> <tr> <td>6 = -</td><td></td><td></td></tr> <tr> <td>7 = short</td><td>M 103 E 30/OM 603</td><td>2400</td></tr> <tr> <td>8 = long</td><td>M 103 E 30/OM 603</td><td>2850</td></tr> <tr> <td>9 = -</td><td></td><td></td></tr> </table>		0 = short	M 102 E 20	2400	1 = long	M 102 E 20	2850	4 = short	M 102 E 23/OM 602	2400	5 = long	M 102 E 23/OM 602	2850	6 = -			7 = short	M 103 E 30/OM 603	2400	8 = long	M 103 E 30/OM 603	2850	9 = -		
0 = short	M 102 E 20	2400																								
1 = long	M 102 E 20	2850																								
4 = short	M 102 E 23/OM 602	2400																								
5 = long	M 102 E 23/OM 602	2850																								
6 = -																										
7 = short	M 103 E 30/OM 603	2400																								
8 = long	M 103 E 30/OM 603	2850																								
9 = -																										
Steering and condition as supplied	13 = Left-hand drive installed 23 = Right-hand drive installed 19 = Left-hand steering installed, AMG special equipment 50 = Left-hand steering, vehicle set 52 = Left-hand steering CKD chassis with cab 53 = Left-hand drive CKD, <b>COMPLETE</b> -vehicle 63 = Right-hand drive CKD, <b>COMPLETE</b> -vehicle																									
Serial number	Consecutive number of manufactured vehicles																									

## Installation survey

Vehicle	Model	461.227	461.266	461.267	461.238	461.229	461.249	461.239
	Sales designation	230 GE						
	Design	BA9	BA7	BA10	BA3	BA4	BA5	BA6
Engine	Model	102.979	102.996		102.979			
	Sales designation	M 102 E 23						
	Installation	Standard						
Clutch	Model	-						
	Sales designation	M 228 F & S T 228 LUK without two-mass flywheel						
	Installation	Standard						
Transmission	Model	717.443						
	Sales designation	GL 76/27 P-5						
	Installation	Standard						
Transmission - automatic	Model	-						
	Sales designation	-						
	Installation	-						
Transfer case	Model	750.602						
	Sales designation	VG 080						
	Installation	Standard						
Front axle	Model	730.323	730.311					
	Sales designation	AL 0/1C-1,3/5,286	AL 0/1C-1,3/5,286 AL 0/1C-1,3/4,877')					
	Installation	Standard						
Rear axle	Model	741.513	741.509					
	Sales designation	HL 0/12S-2,3/5,286	HL 0/5S-1,8/5,286 HL 0/5S-1,8/4,857')					
	Installation	Standard						
Steering	Model	765.502			765.503			
	Sales designation	LS 2B						
	Installation	Standard						
Steering pump	Model	-						
	Sales designation	Vickers VT 161						
	Installation	Standard						
Structure	Model	460.622	461.712	461.792	460.632	460.672	460.692	460.682
	Sales designation	-						
	Installation	Standard						

1) Special equipment

## Installation survey

Vehicle	Model	461.329	461.367	461.368	461.337	461.328	461.341	461.338
	Sales designation	290 GD						
	Design	BA9	BA7	BA10	BA3	BA4	BA5	BA6
Engine	Model	602.942	602.947		602.942			
	Sales designation	OM 602 D 29						
	Installation	Standard						
Clutch	Model	-						
	Sales designation	M 228 F & S    T 228 LUK with two-mass flywheel						
	Installation	Standard						
Transmission	Model	717.443						
	Sales designation	GL 76/27 P-5						
	Installation	Standard						
Transmission – automatic	Model	722.384 <sup>1)</sup> .385		-				
	Sales designation	W4A 028		-				
	Installation	SA 028 375 Code G 40		-				
Transfer case	Model	750.602						
	Sales designation	VG 080						
	Installation	Standard						
Front axle	Model	730.323	730.312					
	Sales designation	AL 0/1C-1,3/5,286	AL 0/1C-1,3/4,857 AL 0/1C-1,3/5,286 <sup>2)</sup> 3)					
	Installation	Standard						
Rear axle	Model	741.513	741.518					
	Sales designation	HL 0/12S-2,3/5,286	HL 0/5S-1,8/4,857 HL 0/5S-1,8/5,286 <sup>2)</sup> 3)					
	Installation	Standard						
Steering	Model	765.502			765.503			
	Sales designation	LS 2B						
	Installation	Standard						
Steering pump	Model	-						
	Sales designation	Vickers VT 161						
	Installation	Standard						
Structure	Model	460.623	461.713	461.793	460.633	460.673	460.693	460.683
	Sales designation	-						
	Installation	Standard						

1) 4th gear blocked

2) With tires 255/75 R 15, 7.00 R 16, 7.50 R 16

3) As special equipment with tires 205/75 R 16, 225/75 R 16 only for countries without EC/ECE regulations.

## Installation survey

Vehicle	Model	463.200 <sup>1)2)</sup> .220 <sup>1)2)</sup> .221 <sup>1)3)</sup>	463.204 <sup>2)</sup> .224 <sup>2)</sup> .225 <sup>3)</sup>	463.207 <sup>2)</sup> .227 <sup>2)</sup> .228 <sup>3)</sup>	463.208 <sup>2)</sup> .230 <sup>2)</sup> .231 <sup>3)</sup>
	Sales designation	200 GE G 200	230 GE G 230	300 GE G 300	G 320
Engine	Model	102.965	102.989	103.987	104.996
	Sales designation	M 102 E 20	M 102 E 23	M 103 E 30	M 104 E 32
	Installation	Standard			
Clutch	Model	–			
	Sales designation	M 228 F & S T 228 LUK		M 240 F & S T 240 LUK	–
	Installation	Standard			–
Transmission	Model	717.439			–
	Sales designation	GL 76/27K-5			–
	Installation	Standard			–
Transmission – automatic	Model	–	722.396	722.397	722.372
	Sales designation	–	W4A 028		
	Installation	–	SA		Standard
Transfer case	Model	750.650			750.651
	Sales designation	VG 150 - 3W / 2,16			
	Installation	Standard			
Front axle	Model	730.305		730.391	730.395
	Sales designation	AL 0 / 3 C – 1,3 / 5,286		AL 0 / 3 C – 1,3 / 4,857	
	Installation	Standard			
Rear axle	Model	741.505 741.506 <sup>4)</sup>		741.110 741.114 <sup>5)</sup>	741.120 741.121 <sup>3)</sup>
	Sales designation	HL 0 / 11 S – 1,8 / 5,286		HL 0 / 11 S – 1,8 / 4,857	
	Installation	Standard			
Steering	Model	765.503			
	Sales designation	LS 2B			
	Installation	Standard			
Steering pump	Model	–			
	Sales designation	Vickers VT 161			
	Installation	Standard			
Structure	Model	463.512 <sup>2)</sup> .532 <sup>2)</sup> .582 <sup>3)</sup>		463.518 <sup>2)</sup> .538 <sup>2)</sup> .588 <sup>3)</sup>	463.516 <sup>2)</sup> .536 <sup>2)</sup> .586 <sup>3)</sup>
	Sales designation	–			
	Installation	Standard			

1) Model, country-specific e.g. Italy

2) Wheelbase 2400 mm

3) Wheelbase 2850 mm

4) In vehicle model 463.221 / 225

5) In vehicle model 463.228

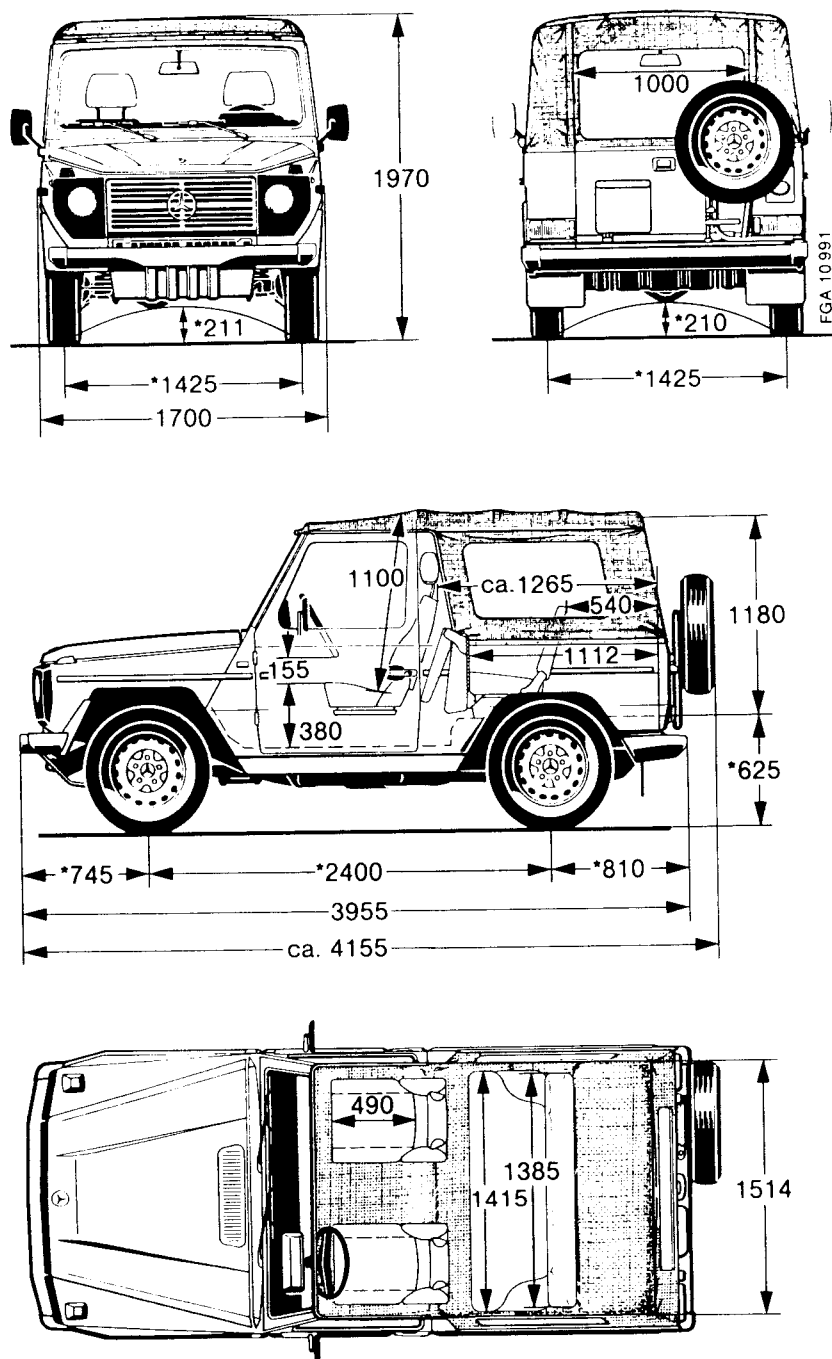
## Installation survey

Vehicle	Model	463.304 <sup>1)</sup> .324 <sup>1)</sup> .325 <sup>2)</sup>	463.307 <sup>1)</sup> .327 <sup>1)</sup> .328 <sup>2)</sup>	463.300 <sup>1)</sup> .320 <sup>1)</sup> .321 <sup>2)</sup>	463.228 <sup>2)</sup>
	Sales designation	250 GD	300 GD G 300 Diesel	350 GD Turbo G 350 Turbo-diesel	500 GE V8 <sup>5)</sup>
Engine	Model	602.931	603.931	603.972	117.965
	Sales designation	OM 602	OM 603	OM 603 D 35 A	M 117 E 50
	Installation	Standard			
Clutch	Model	—			
	Sales designation	M 228 F & S T 228 LUK		—	—
	Installation	Standard		—	—
Transmission	Model	717.439		—	—
	Sales designation	GL 76/27K-5		—	—
	Installation	Standard		—	—
Transmission – automatic	Model	—	722.399	722.398	722.382
	Sales designation	—	W4A 028		
	Installation	—	SA	Standard	
Transfer case	Model	750.650		750.651	
	Sales designation	VG 150 - 3W / 2,16			
	Installation	Standard			
Front axle	Model	730.305		730.392 .394 <sup>4)</sup>	730.391
	Sales designation	AL 0 / 3 C – 1,3 / 5,286		AL 0 / 3 C – 1,3 / 4,111	AL 0 / 3 C – 1,3 / 4,375
	Installation	Standard			
Rear axle	Model	741.505 741.506 <sup>3)</sup>		741.116 .122 <sup>4)</sup> .123 <sup>2)</sup> <sup>4)</sup>	741.114
	Sales designation	HL 0 / 11 S – 1,8 / 5,286		HL 0 / 11 S – 1,8 / 4,111	HL 0 / 11 S – 1,8 / 4,375
	Installation	Standard			
Steering	Model	765.503			
	Sales designation	LS 2B			
	Installation	Standard			
Steering pump	Model	—			
	Sales designation	Vickers VT 161			
	Installation	Standard			
Structure	Model	463.513 <sup>1)</sup> .533 <sup>1)</sup> .583 <sup>2)</sup>		463.515 <sup>1)</sup> .535 <sup>1)</sup> .585 <sup>2)</sup>	463.585 <sup>2)</sup>
	Sales designation	—			
	Installation	Standard			

- 1) Wheelbase 2400 mm  
 2) Wheelbase 2850 mm  
 3) In vehicle model 463.325 / 328  
 4) from 6.94  
 5) Special model



## Vehicle dimensions

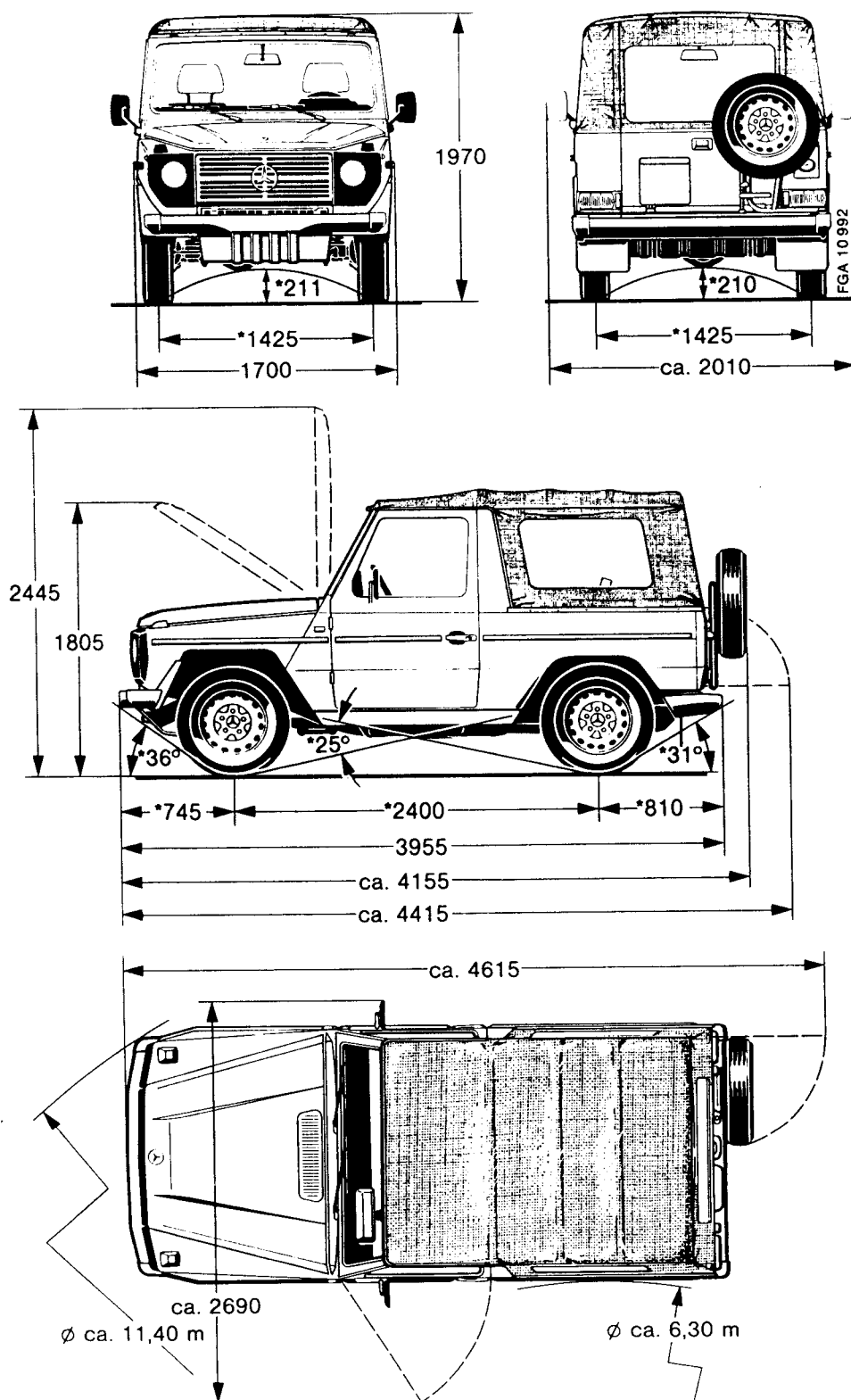


Dimensions, without load, tyres 255/65 R 16

<sup>1)</sup> At max. permissible load

**Open vehicle, Wheelbase 2400 mm**

## Vehicle dimensions

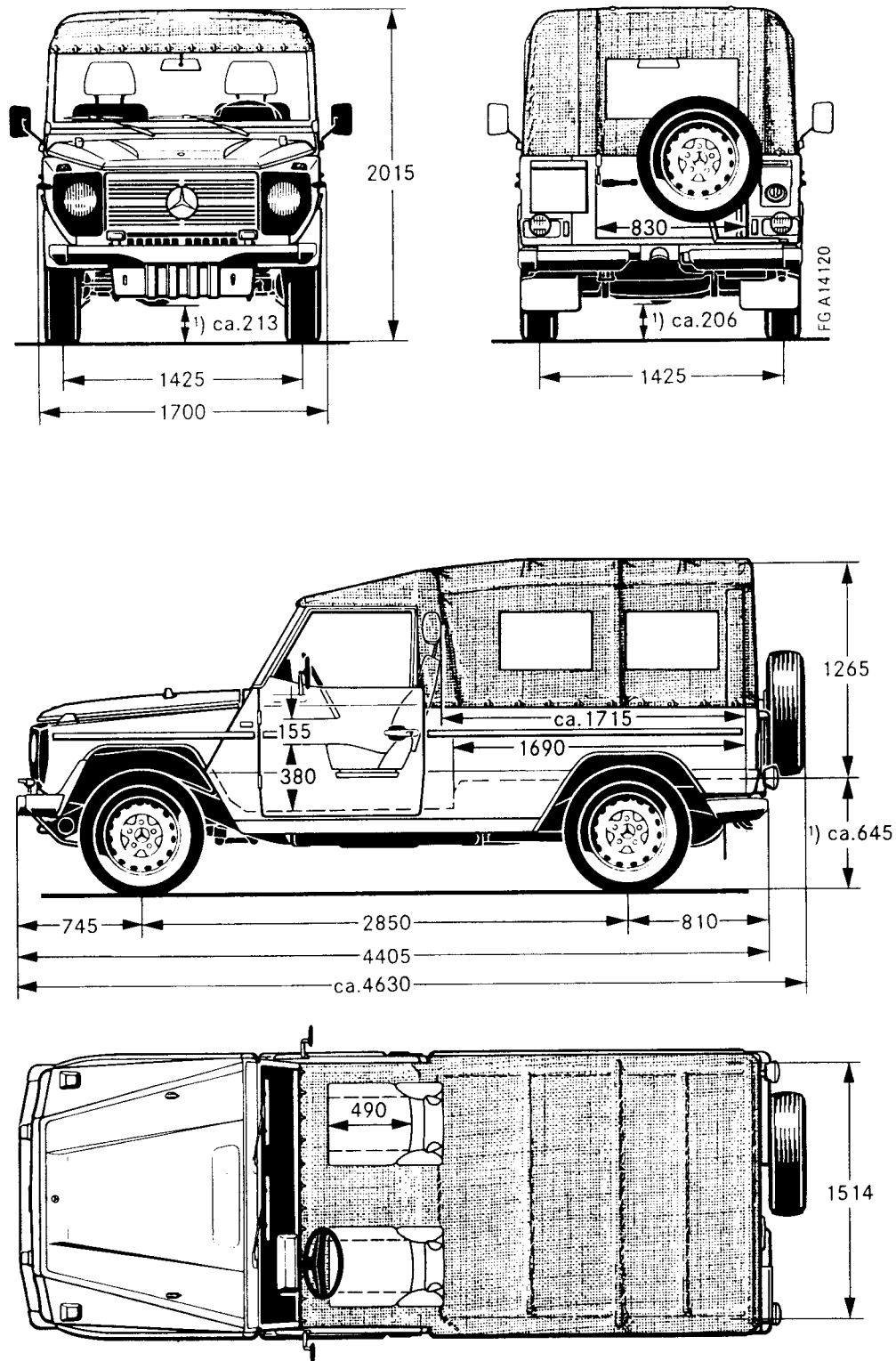


Dimensions, without load, tyres 255/65 R 16

'1) At max. permissible load

Open vehicle, Wheelbase 2400 mm

## Vehicle dimensions

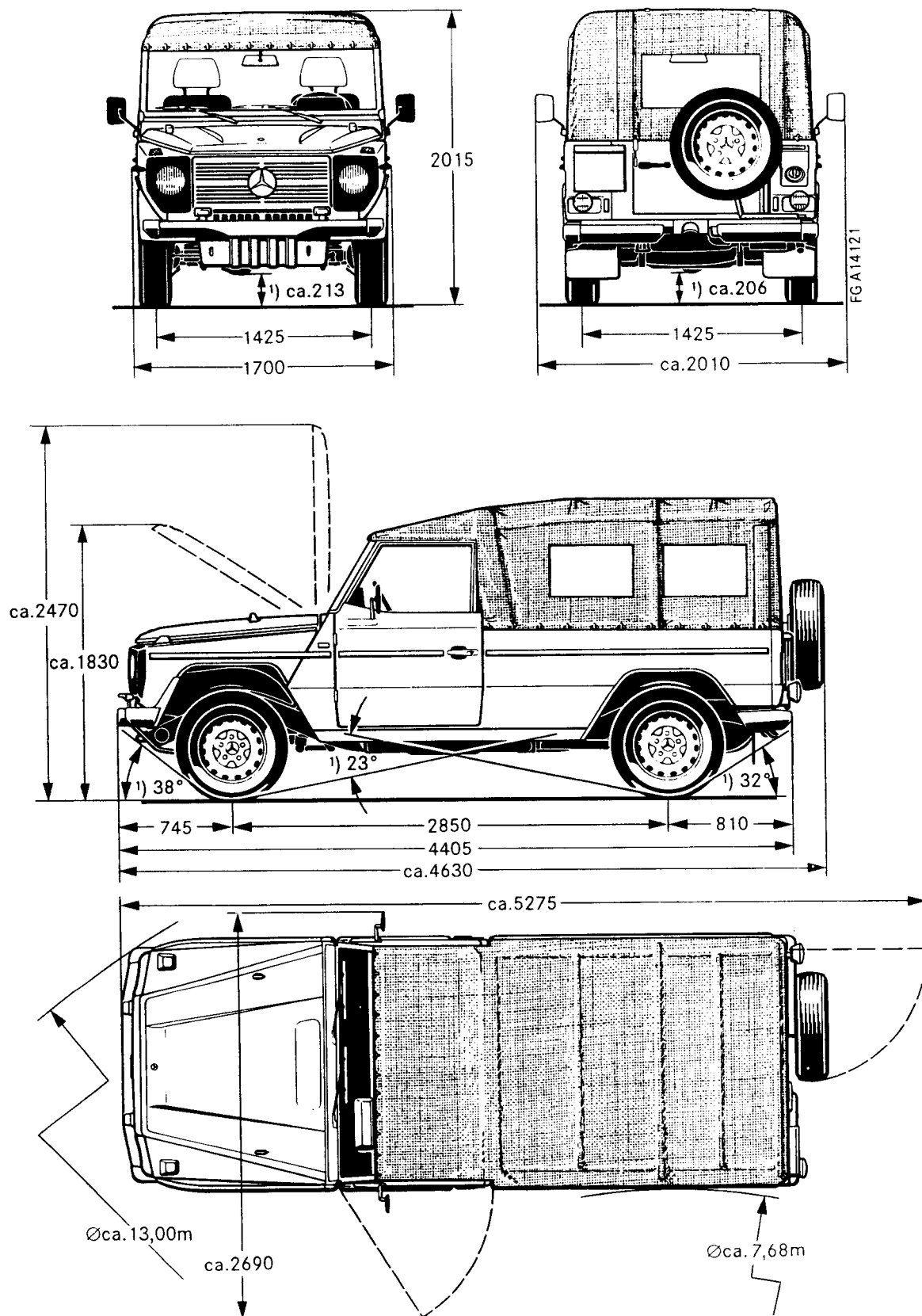


Dimensions, without load, tyres 205 R 16

<sup>1)</sup> At max. permissible load

Open vehicle, Wheelbase 2850 mm

## Vehicle dimensions

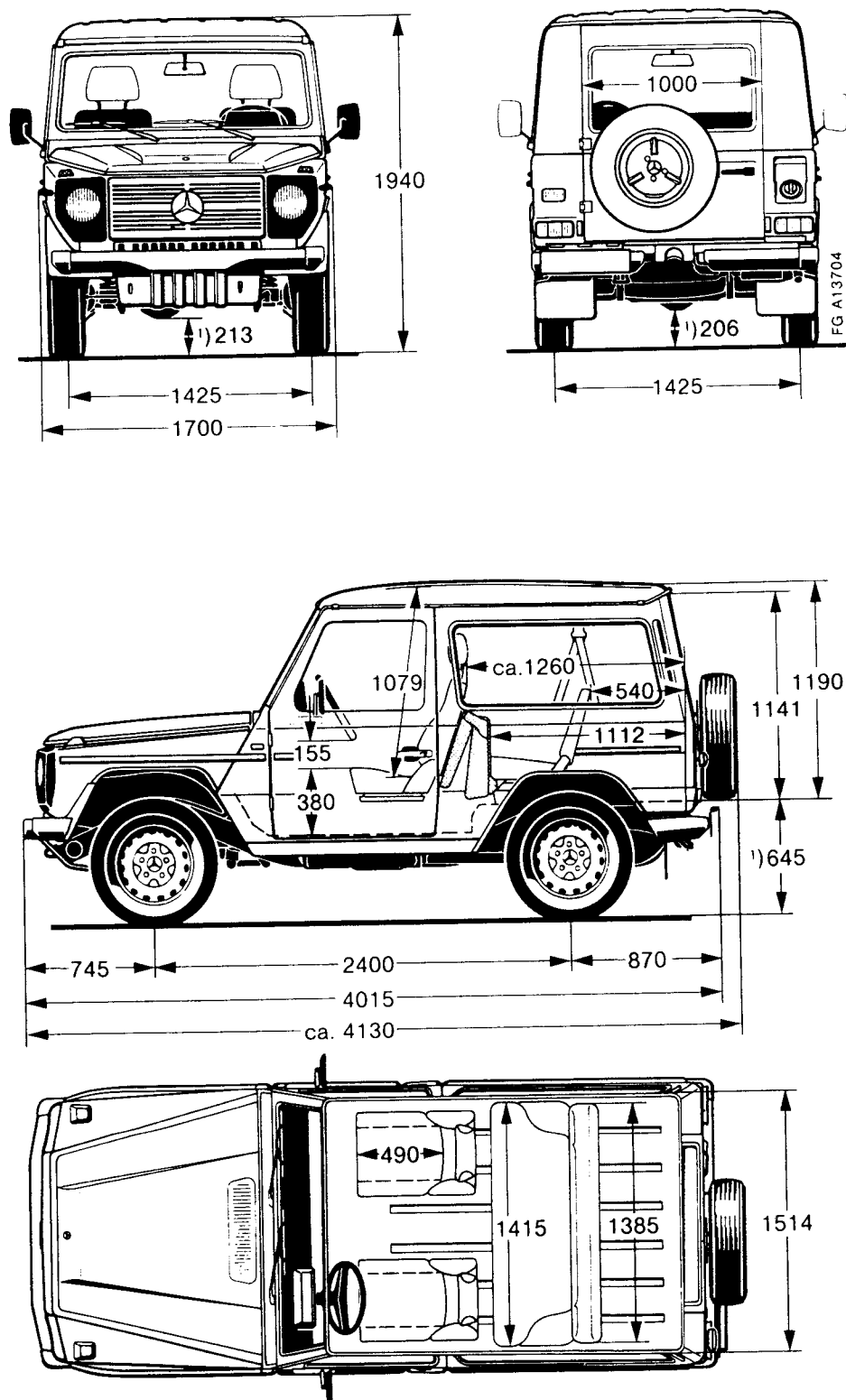


Dimensions, without load, tyres 205 R 16

$\uparrow$ ) At max. permissible load

**Open vehicle, Wheelbase 2850 mm**

## Vehicle dimensions

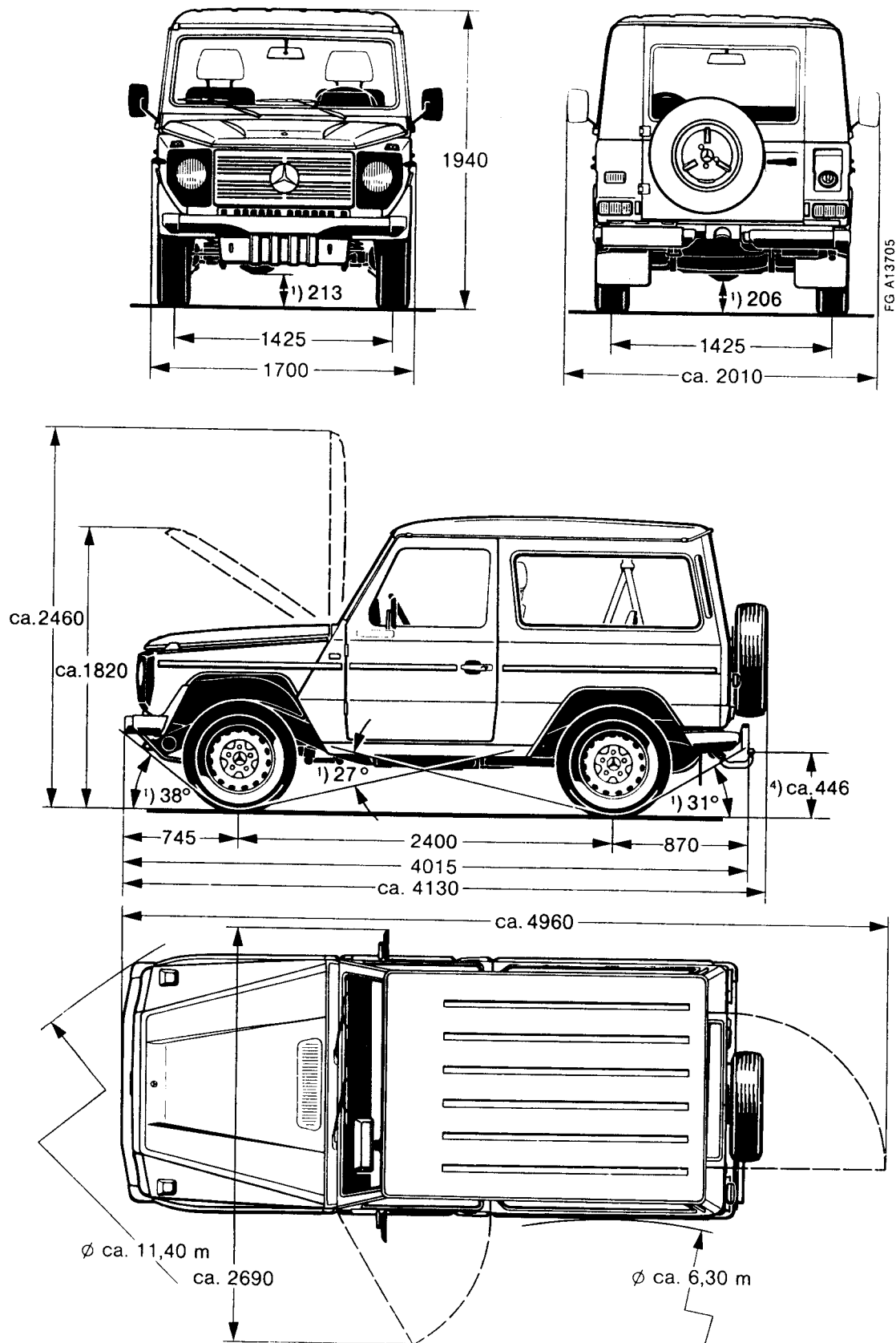


Dimensions, without load, tyres 205 R 16

1) At max. permissible load

Station wagon, Wheelbase 2400 mm

## Vehicle dimensions



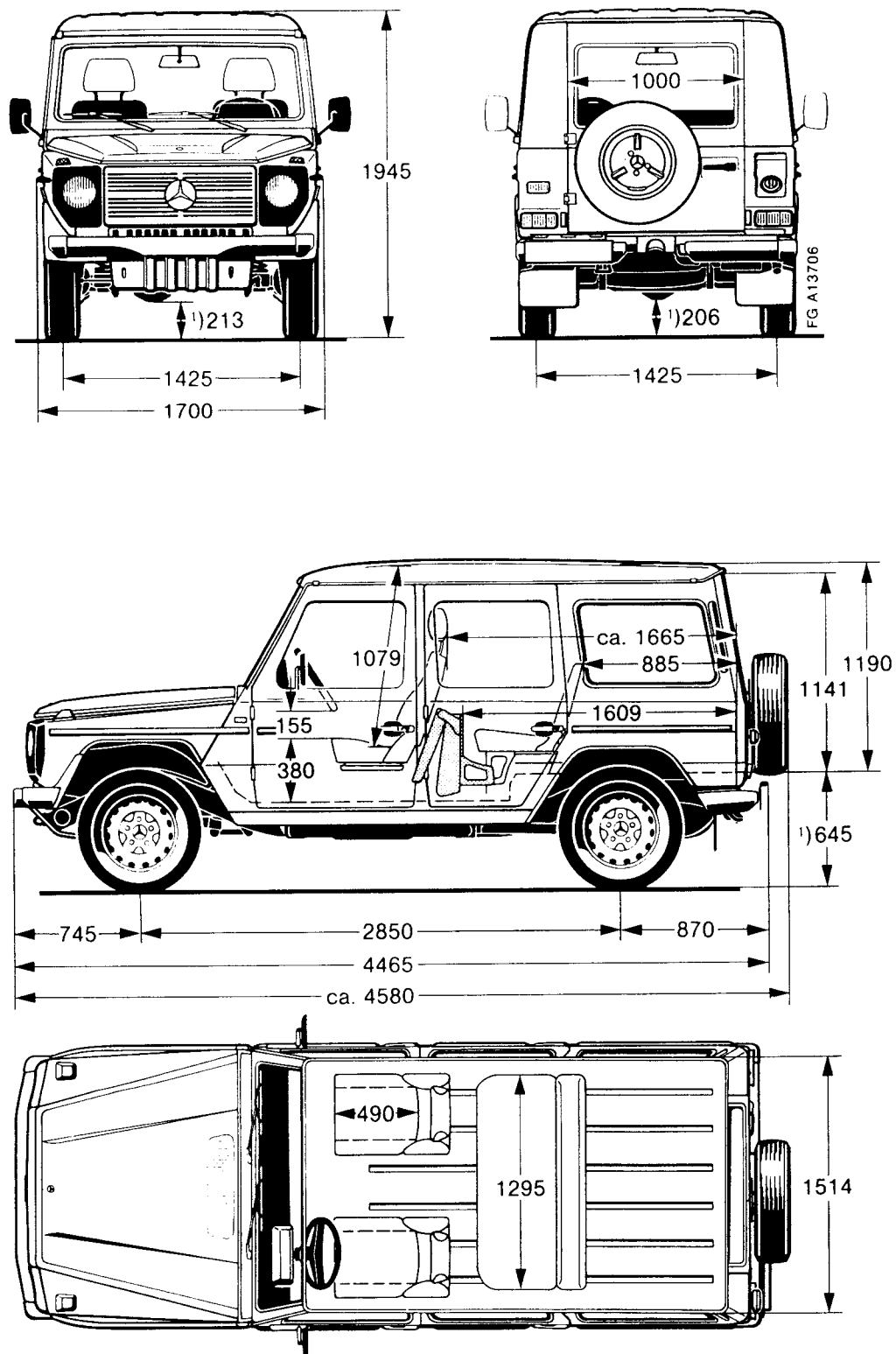
Dimensions, without load, tyres 205 R 16

<sup>1)</sup> At max. permissible load

<sup>4)</sup> With trailer coupling (special equipment)

Station wagon, Wheelbase 2400 mm

## Vehicle dimensions

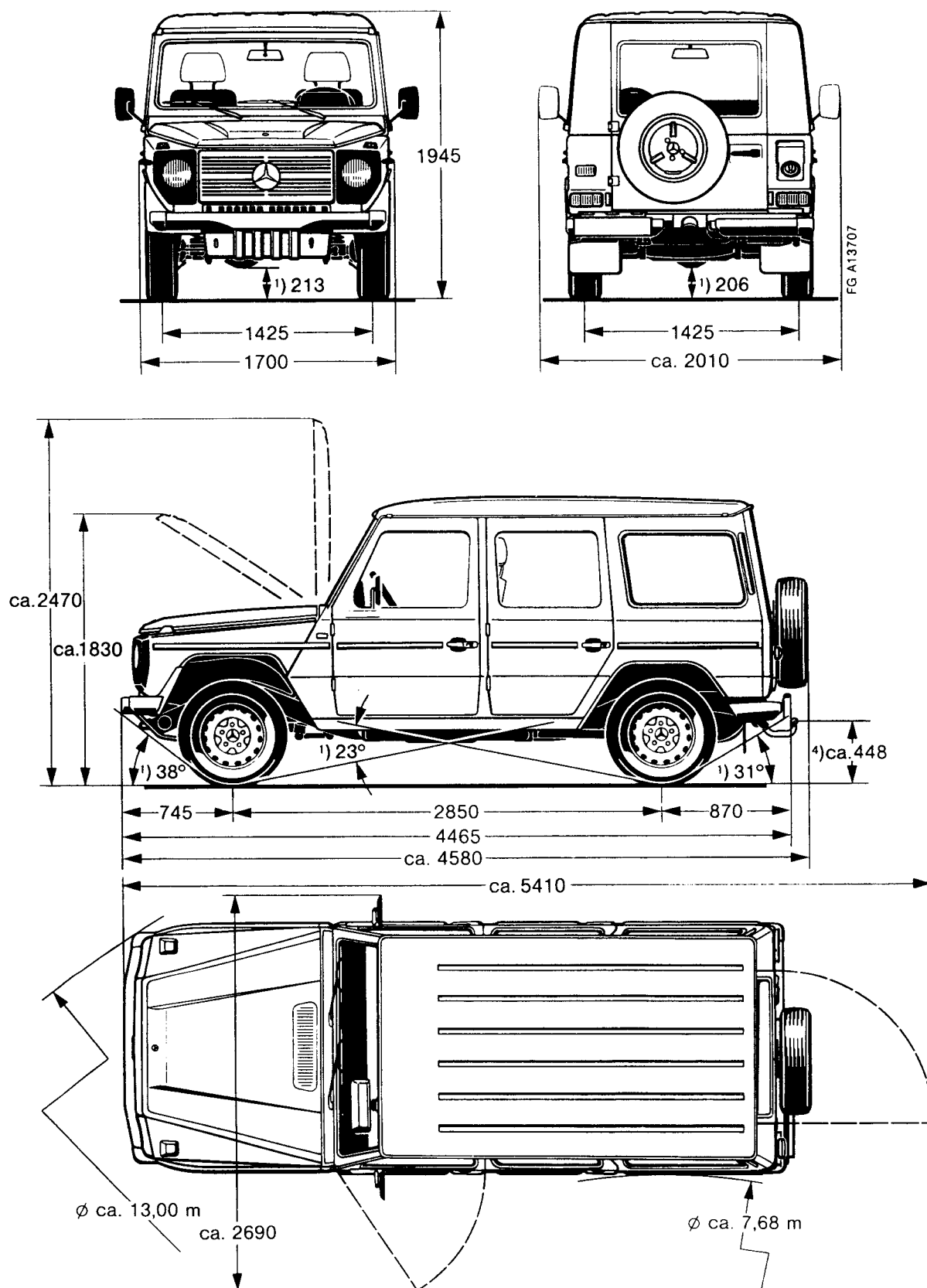


Dimensions, without load, tyres 205 R 16

<sup>1)</sup> At max. permissible load

**Station wagon, Wheelbase 2850 mm**

## Vehicle dimensions



Dimensions, without load, tyres 205 R 16

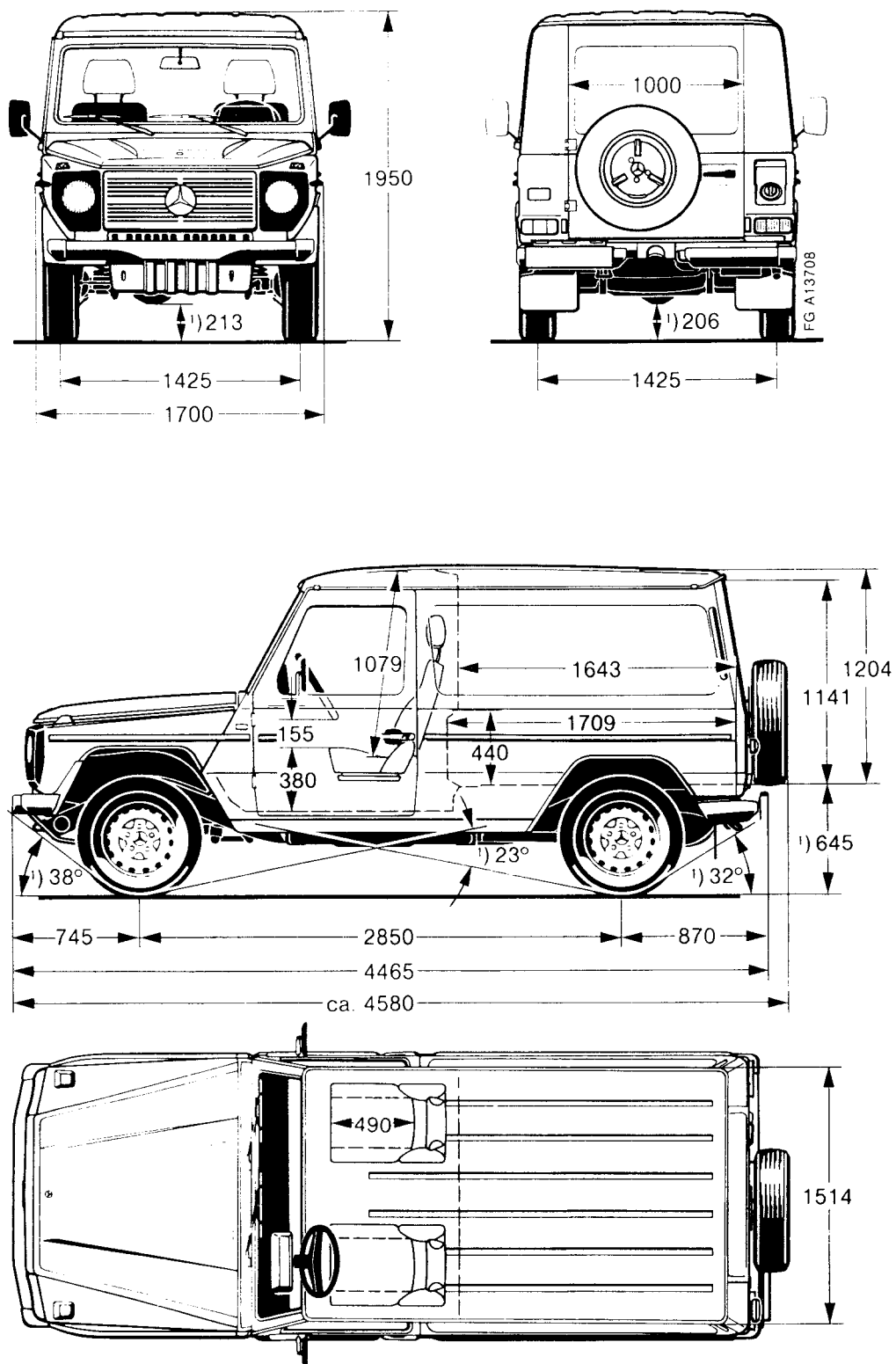
1) At max. permissible load

4) With trailer coupling (special equipment)

Station wagon, Wheelbase 2850 mm



## Vehicle dimensions

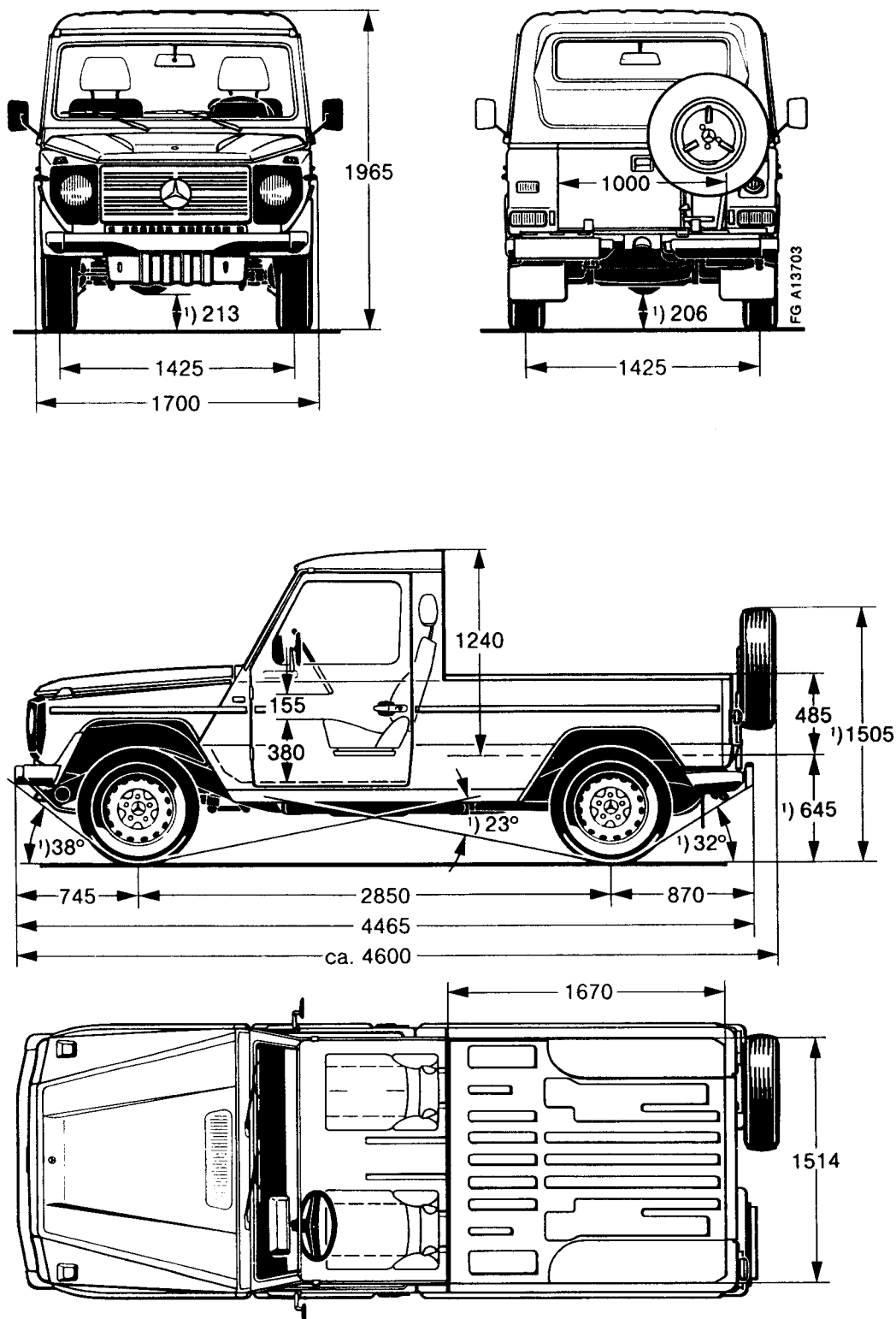


Dimensions, without load, tyres 205 R 16  
 \*At max. permissible load

Clearance circle approx. 13,00 m

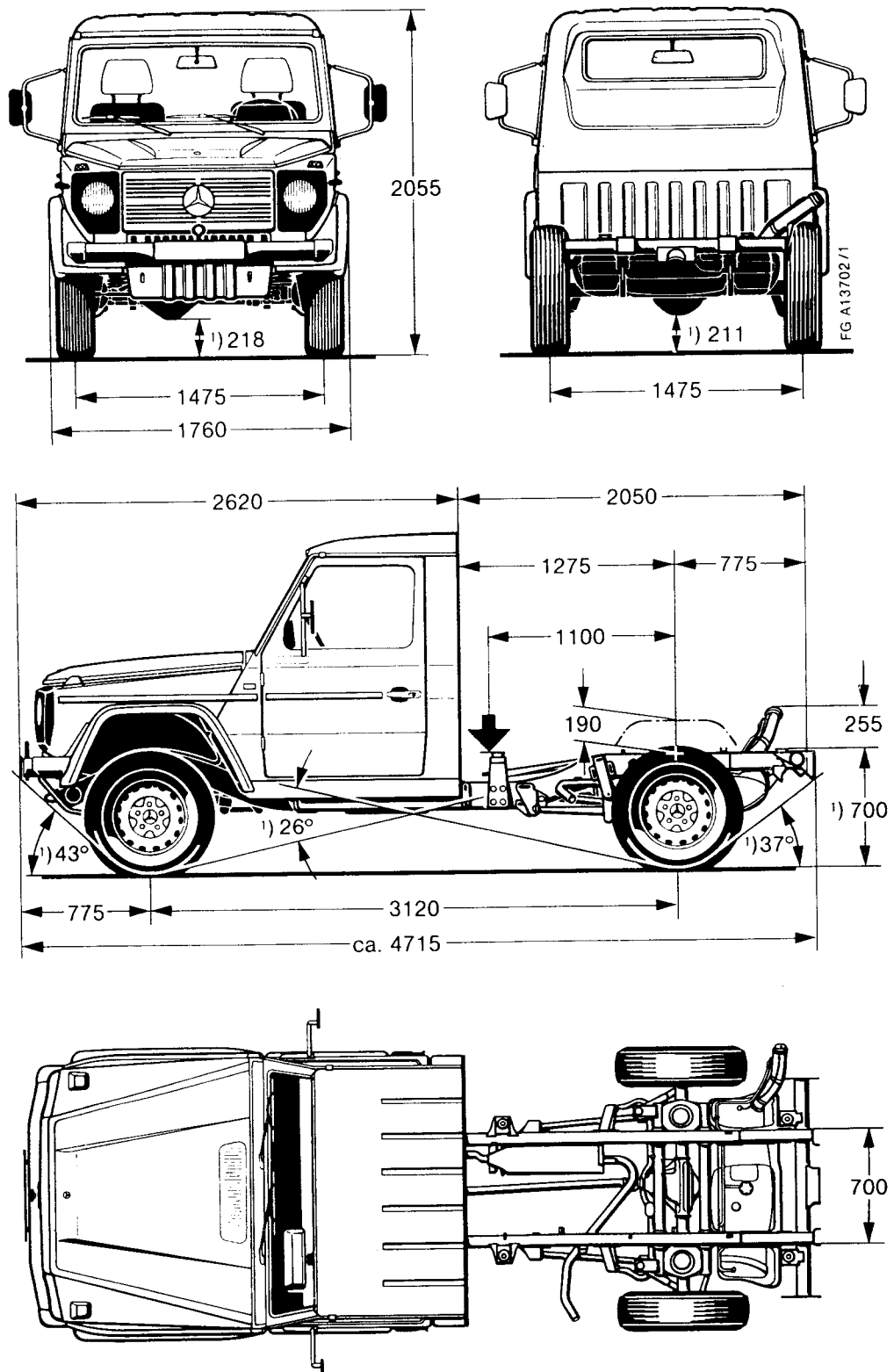
**Box-body vehicle, Wheelbase 2850 mm**

## Vehicle dimensions



Pick-up, Wheelbase 2850 mm

## Vehicle dimensions



Dimensions, without load, tyres 225/75 R 16  
 '1) At max. permissible load

Turning circle dia approx. 14,40 m

**Chassis, Wheelbase 3120 mm**

Technical drawings of the Mercedes-Benz T2 transporter, showing dimensions in millimeters (mm) and degrees (°).

**Front View:**

- Overall height: 2089
- Ground clearance (front): 1) 252
- Wheelbase: 1555
- Overall width: 1840

**Rear View:**

- Ground clearance (rear): 1) 245
- Wheelbase: 1555
- Reference: FG A13988

**Side View:**

- Overall length: 2620
- Wheelbase: 1555
- Overhang (rear): 630
- Front wheel offset: 775
- Front wheel steering angle: 1) 45°
- Front wheel steering angle (steering rack): 1) 22°
- Rear wheel offset: 3400
- Rear wheel steering angle: 1) 35°
- Overall length (approximate): ca. 4815
- Front wheel offset (ground clearance): 190
- Rear wheel offset (ground clearance): 205
- Rear wheel offset (ground clearance): 1) 743

**Engine View:**

- Engine height: 700

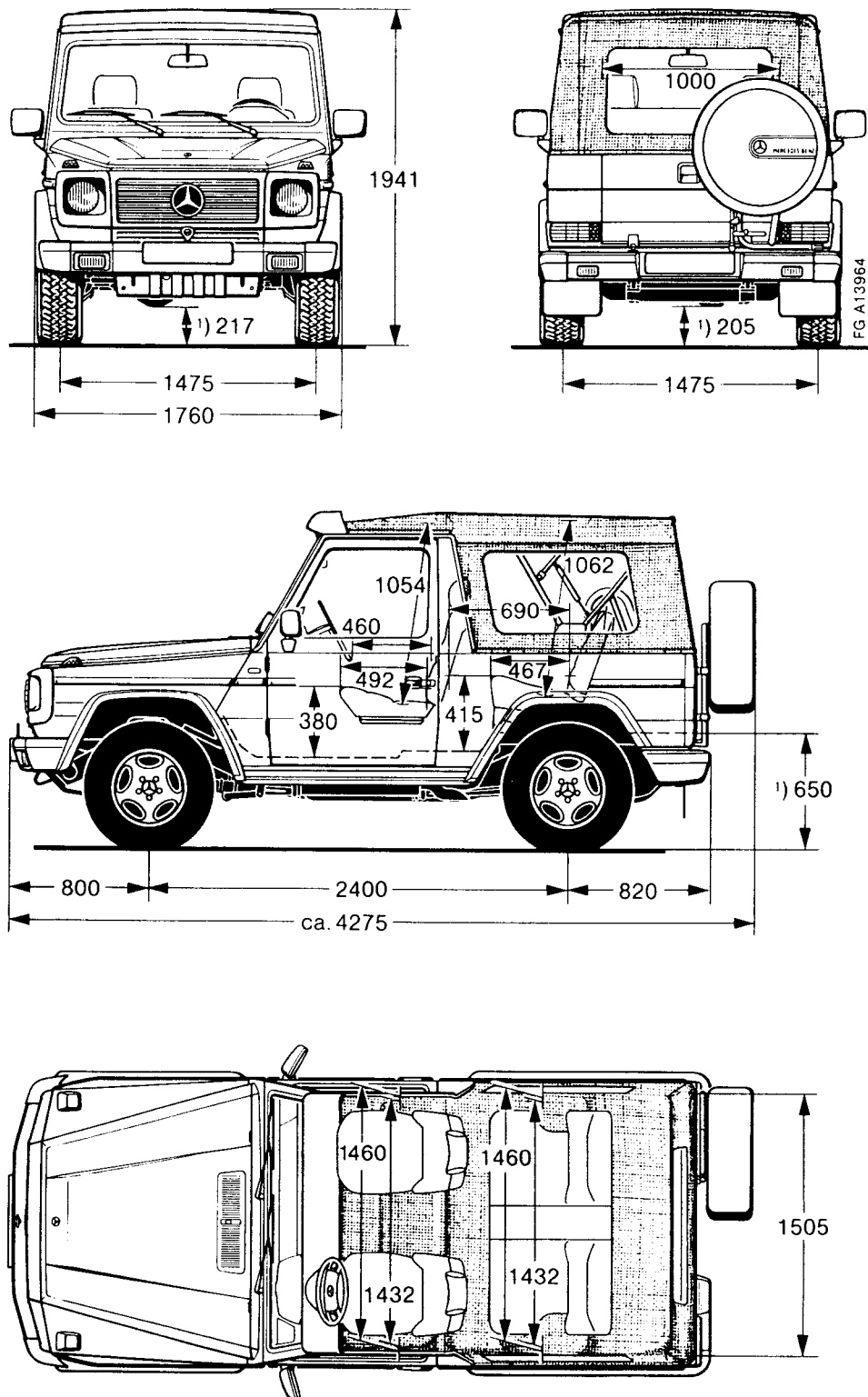
Dimensions, without load, tyres 235 R 17,5

Turning circle dia approx. 14,50 m

1) At max. permissible load

**Chassis, Wheelbase 3400 mm**

## Vehicle dimensions

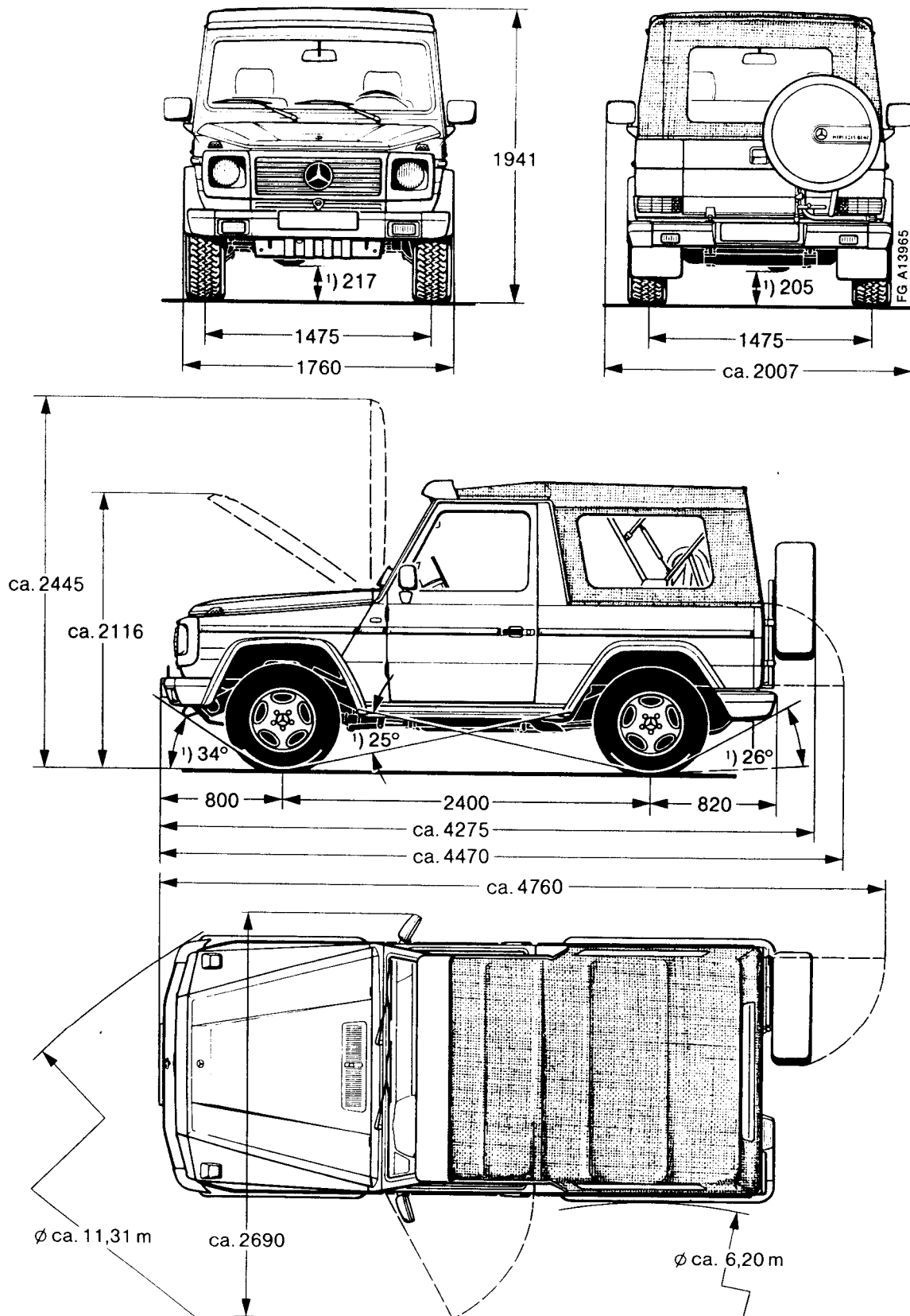


Dimensions, without load, tyres 255/65 R 16

1) At max. permissible load

Convertible, Wheelbase 2400 mm

## Vehicle dimensions

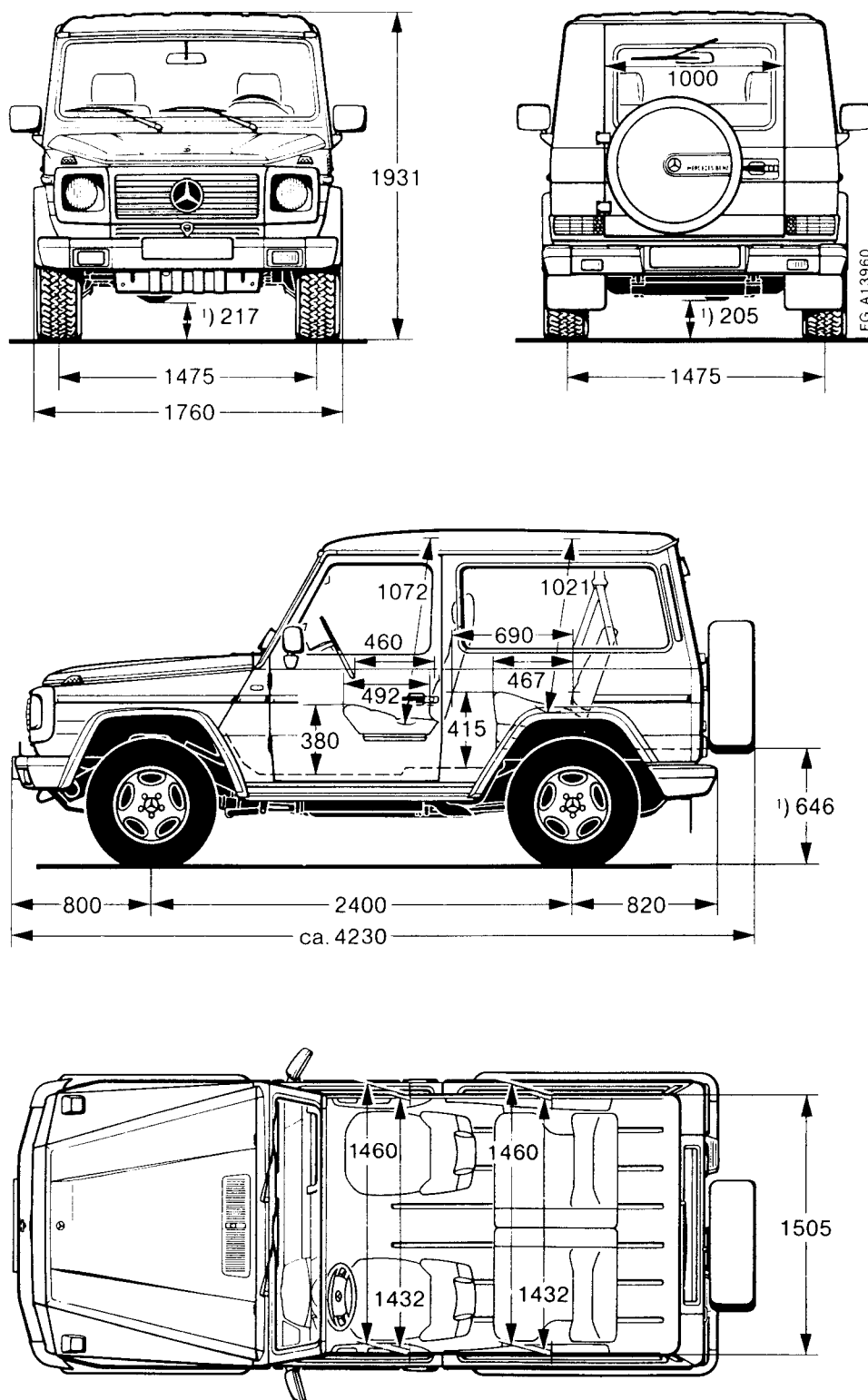


Dimensions, without load, tyres 255/65 R 16

<sup>1)</sup> At max. permissible load

**Convertible**, Wheelbase 2400 mm

## Vehicle dimensions

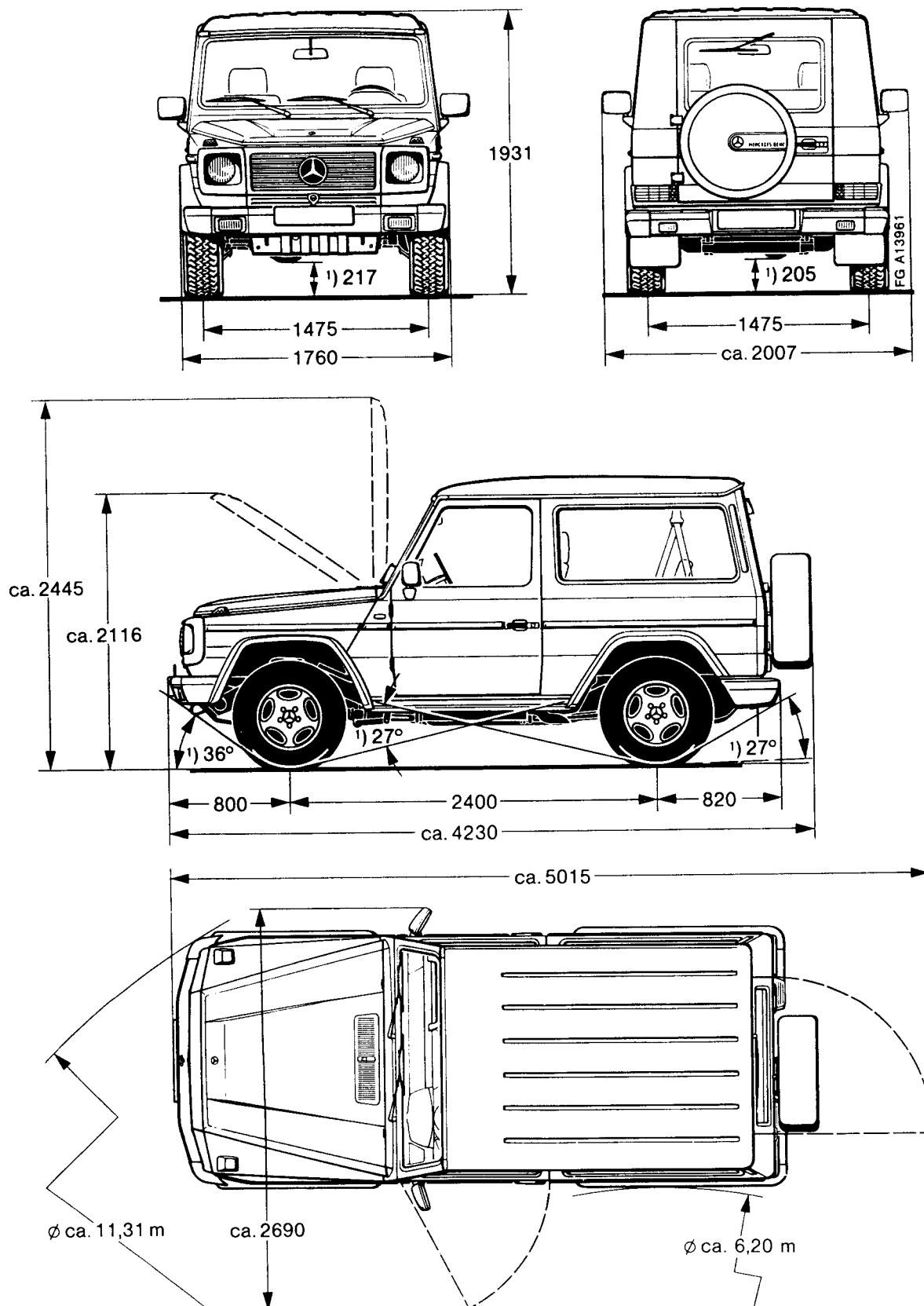


Dimensions, without load, tyres 255/65 R 16

1) At max. permissible load

Station wagon, Wheelbase 2400 mm

## Vehicle dimensions



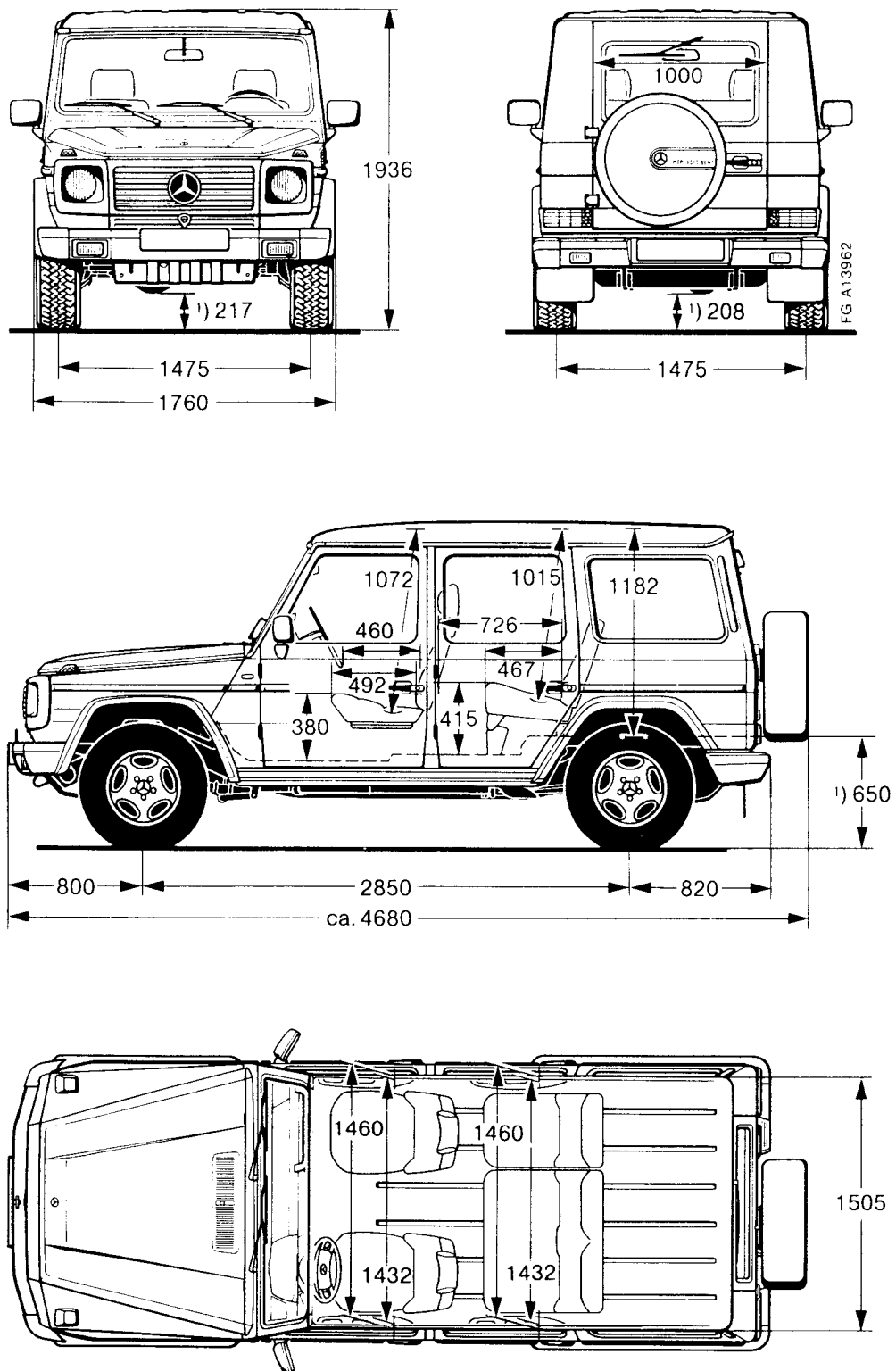
Dimensions, without load, tyres 255/65 R 16

1) At max. permissible load

Station wagon, Wheelbase 2400 mm



## Vehicle dimensions

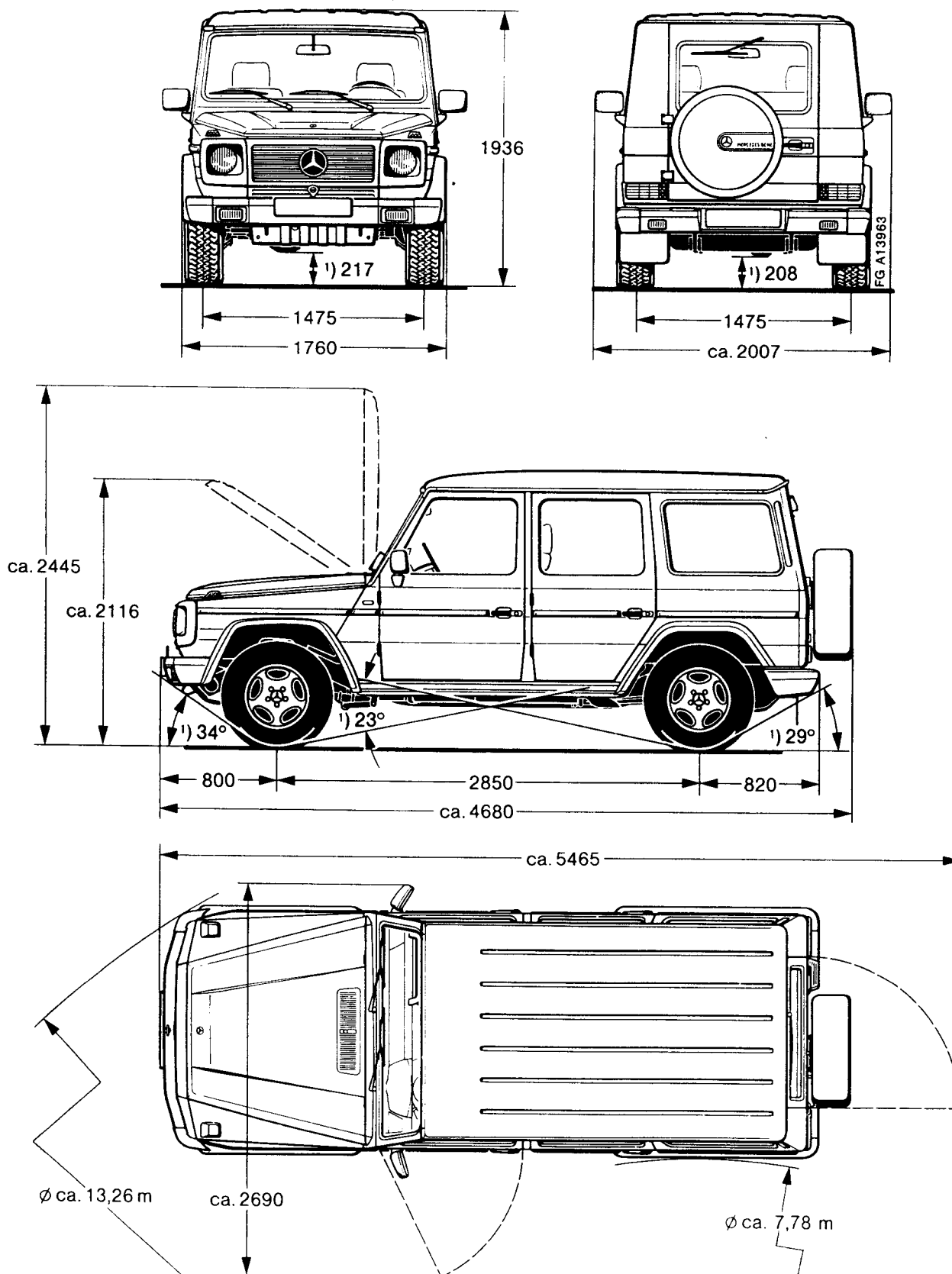


Dimensions, without load, tyres 255/65 R 16

<sup>1)</sup> At max. permissible load

Station wagon, Wheelbase 2850 mm

## Vehicle dimensions



Dimensions, without load, tyres 255/65 R 16

<sup>1)</sup> At max. permissible load

Station wagon, Wheelbase 2850 mm

**Weights – 230 GE**

Version	Station wagon	Box-body vehicle	Pick-Up	Station wagon	Chassis with cab
Model	461.238	461.229	461.249	461.239	461.227
Design	BA3	BA4	BA5	BA6	BA9
Wheelbase (mm)	2400	2850	2850	2850	3120
<b>Weight</b>					
ready for driving with full tank kg	1980	2120	2120	2120	1845
Permissible gross vehicle weight kg	2600	2900	2900	2900	3500
<b>Front axle</b>					
ready for driving with full tank kg	985	1090	1090	1090	–
Front axle load kg	1200	1350	1350	1350	1350
<b>Rear axle</b>					
ready for driving with full tank kg	995	1030	1030	1030	730
Rear axle load kg	1600	1800	1800	1800	2300
<b>permissible trailed load</b>					
braked kg	2600	2900	2900	2900	750
unbraked kg	750	750	750	750	750
<b>permissible roof load</b> kg	150	150	–	150	–

**Weights – 290 GD**

Version	Station wagon	Box-body vehicle	Pick-Up	Station wagon	Chassis with cab	Chassis with cab
Model	461.337	461.328	461.341	461.338	461.329	461.323
Design	BA3	BA4	BA5	BA6	BA9	BA9
Wheelbase (mm)	2400	2850	2850	2850	3120	3400
<b>Weight</b>						
ready for driving with full tank kg	2015	2140	2140	2140	1875	–
Permissible gross vehicle weight kg	2600	2900	2900	2900	3500	4950
<b>Front axle</b>						
curb weight full tank kg	1015	1110	1110	1110	–	–
Front axle load kg	1200	1350	1350	1350	1350	1700
<b>Rear axle</b>						
ready for driving with full tank kg	1000	1030	1030	1030	730	–
Rear axle load kg	1600	1800	1800	1800	2300	2800
<b>permissible trailed load</b>						
braked kg	2600	2900	2900	2900	750	2000
unbraked kg	750	750	750	750	750	750
<b>permissible roof load</b> kg	150	150	–	150	–	–

## Weights

Vehicle-							Front axle			Rear axle		
Type	Version			Weight ready for driving curb weight and full tank	with maximum equipment	Permissible gross vehicle weight	ready for driving curb weight and full tank	with maximum equipment	Permissible gross vehicle weight	ready for driving curb weight and full tank	with maximum equipment	Permissible gross vehicle weight
	Convertible	Station wagon, short	Station wagon, long	kg	kg	kg	kg	kg	kg	kg	kg	kg
200 GE G 200	x			2005	2105	2620 <sup>1)</sup>	1018	1095	1300	987	1010	1600 <sup>2)</sup>
		x		2060	2205	2620 <sup>1)</sup>	1030	1120	1300	1030	1085	1600 <sup>2)</sup>
			x	2195	2365	2950	1105	1200	1380	1090	1165	1800
230 GE G 230	x			2005	2142	2620 <sup>1)</sup>	1018	1125	1300	987	1017	1600 <sup>2)</sup>
		x		2060	2240	2620 <sup>1)</sup>	1030	1150	1300	1030	1090	1600 <sup>2)</sup>
			x	2195	2400	2950	1105	1230	1380	1090	1170	1800
300 GE G 300	x			2030	2167	2620 <sup>1)</sup>	1043	1150	1300	987	1017	1600 <sup>2)</sup>
		x		2085	2265	2620 <sup>1)</sup>	1055	1175	1300	1030	1090	1600 <sup>2)</sup>
			x	2220	2425	2950	1130	1255	1380	1090	1170	1800
G 320	x			2115	—	2750	1110	—	1320	1065	—	1650
		x		2215	—	2750	1105	—	1320	1110	—	1650
			x	2320	—	3050	1210	—	1410	1110	—	1800
500 GE V8			x	2400	—	3050						
250 GD	x			2015	2115	2620 <sup>1)</sup>	1043	1120	1300	972	995	1600 <sup>2)</sup>
		x		2070	2210	2620 <sup>1)</sup>	1055	1145	1300	1015	1065	1600 <sup>2)</sup>
			x	2205	2375	2950	1130	1225	1380	1075	1150	1800
300 GD G 300 Diesel	x			2035	2175	2620 <sup>1)</sup>	1063	1170	1300	972	1002	1600 <sup>2)</sup>
		x		2090	2270	2620 <sup>1)</sup>	1075	1195	1300	1015	1075	1600 <sup>2)</sup>
			x	2225	2430	2950	1150	1275	1380	1075	1155	1800
350 D Turbo	x			2115	2255	2710	1105	1210	1300	1010	1040	1650
		x		2145	2325	2710	1100	1220	1300	1045	1105	1650
			x	2240	2445	2950	1160	1285	1380	1080	1150	1800
G 350 Turbo- diesel	x			2200	—	2710	1135	—	1300	1065	—	1650
		x		2240	—	2710	1130	—	1300	1100	—	1650
			x	2345	—	3050	1225	—	1380	1120	—	1800

1) As from 1.92 increased to 2710 kg

2) As from 1.92 increased to 1650 kg

**Service products and capacities**

Component	Model	Capacity Liters	Service product For specified SAE grades and quality grades refer to MB Service Product Specifications
Engine with oil filter	230 GE	102.979 .996	Motor oil
	290 GD	602.942 .947	
Mechanical transmission	717.443	1,5	Automatic transmission fluid (ATF)
Automatic transmission	722.3	7,0	Automatic transmission fluid (ATF-Dexron II)
Transfer case	750.6	2,0	Gear oil SAE 80
Front axle	730.3	1,4	Hypoid-gear oil SAE 90
Rear axle	741.5	1,8	
Power steering	765.5	1,0	Steering gear oil or transmission gear oil
Hydraulic clutch control		0,3	Brake fluid (DOT 4 plus)
Hydraulic brake actuation		0,5	
Hydraulic differential lock actuation		0,3	
Grease nipple lubricating points on chassis and body, joint heads of all-wheel front axle			Multipurpose grease
Battery terminals			Bosch Ft 40 v 1
Fuel tank	230 GE without CAT	95 l portion for re- serve: 18l	Premium gasoline, leaded <sup>1)</sup> min. 98 RON/88 MON or premium gasoline, unleaded <sup>2)</sup> min. 95 RON/85 MON
	230 GE with CAT (Kat.)		Premium gasoline unleaded <sup>3)</sup> min. 95 RON/85 MON or regular gasoline unleaded <sup>3)</sup> min. 91 RON/82,5 MON
	230 GE with provision for retrofitting of catalytic converter (Rüf)		Premium gasoline leaded <sup>1)</sup> min. 98 RON/88 MON or premium gasoline unleaded <sup>3)</sup> min. 95 RON/85 MON or regular gasoline (leaded <sup>1)</sup> or unleaded <sup>3)</sup> ) min. 91 RON/82,5 MON
	290 GD	95 l portion for re- serve: 18l	Diesel fuel
Air conditioner		1,1 kg	Refrigerant
Refrigerant compressor		0,2	Compressor oil
Cooling system	230 GE	10,55	Coolant
(with heating system)	290 GD		
Windscreen washer and headlight washer system		7,0	Water with MB-windscreen washer solution-concentration S for summer or W for winter. Observe mixture ratio.

1) In the Federal Republic of Germany e.g. in accordance with DIN 51 600.

2) In the Federal Republic of Germany e.g. in accordance with DIN 51 607. Have ignition timing adjusted in a MERCEDES-BENZ service station.

3) In the Federal Republic of Germany e.g. in accordance with DIN 51 607.

## Service products and capacities

Component	Model	Capacity Liters when changing oil and filter	Service product For specified SAE grades and quality grades refer to MB Service Product Specifications
Engine with oil filter			
200 GE/G 200	102.965	5,8	Motor oil
230 GE/G 230	102.989		
300 GE / G 300	103.987	6,5	
G 320	104.996	8,5	
250 GD	602.931	7,0	
300 GD / G 300 Diesel	603.931	8,0	
350 GD Turbo / G 350 Turbodiesel	603.972	8,8	
500 GE V8	117.965	8,25	
Mechanical transmission	717.439	1,5	Automatic transmission fluid (ATF)
Automatic transmission	722.3	7,0	Automatic transmission fluid (ATF-Dexron II)
Transfer case	750.65	2,8	Gear oil SAE 80
Front axle	730.3	1,1	Hypoid-gear oil SAE 90
Rear axle	741.1/5	1,8	Hypoid-gear oil SAE 90
Power steering	765.503	1,0	Steering gear oil or transmission gear oil
Hydraulic clutch control		0,3	Brake fluid (DOT 4 plus)
Hydraulic brake actuation		0,5	
Hydraulic differential lock actuation		0,3	
Grease nipple lubricating points on chassis and body, joint heads of all-wheel front axle			Multipurpose grease
Battery terminals			Bosch Ft 40 v 1
Air conditioner		1,0 kg	Refrigerant
Refrigerant compressor		0,2	Compressor oil
Fuel tank	95 l portion for re- serve: 15l	Gasoline engine 102/103, vehicles with catalytic converter unleaded premium gasoline <sup>1)</sup> min. 95 RON/85 MON or regular unleaded gasoline <sup>1)</sup> min. 91 RON/82.5 MON Gasoline engine 102/103, vehicles without catalytic converter leaded premium fuel <sup>2)</sup> min. 98 RON/88 MON or unleaded pre- mium fuel <sup>3)</sup> min. 95 RON/85 MON or regular leaded or unleaded fuel min. 91 RON/82.5 MON Gasoline engine 104 HFM, vehicle with catalytic converter regu- lar unleaded fuel min. 91 RON/82.5 MON <sup>1)</sup> Gasoline engine 117.9 Vehicles with catalytic converter unleaded premium fuel <sup>1)</sup> min. 95 RON/85 MON can be used temporarily Unleaded regular fuel <sup>1)</sup> min. 91 RON/82.5 MON Diesel engine 602/603 diesel fuel	
Cooling system (with heating system)	Engine 102 Engine 103 Engine 104 Engine 117	8,5 9,0 11,8 11,5	Coolant
	Engine Engine 603	9,0 9,5	Coolant
Windscreen washer and headlight washer system		7,5	Water with MB-windscreen washer solution- concentration S for summer or W for winter. Observe mixture ratio.

1) In the Federal Republic of Germany e.g. in accordance with DIN 51 600.

2) In the Federal Republic of Germany e.g. in accordance with DIN 51 607. Have ignition timing adjusted in a MERCEDES-BENZ service station.

3) In the Federal Republic of Germany e.g. in accordance with DIN 51 607.

## Testing on the roller test bench

### Output test

Snow tires are not to be driven on chassis dynamometers. The workshop's own test bench tires must be mounted.

This test is only to be carried out in event of a complaint concerning the vehicle performance. The valid standard output values are minimum outputs. Observe barometer value and intake air temperature.

**Note:** The specified standard output values are only attained with the respectively specified fuel and the specified ignition timing adjustment. When adapting the ignition timing adjustment to other fuels, the output values might differ.

Vehicle-		Engine model	Manual transmission 3rd gear				Automatic transmission Driving position 3		
Model	Type		Speed 1/min	Stand. kW	EGR kW	CAT kW	Stand.	EGR	CAT
461.227 .229 .238 .239 .249 .266 .267	230 GE	102.979 .996	5000	64	–	63	–	–	–
461.328 .329 .337 .338 .341 .367 .368	290 GD	602.942 .947	3900	49	–	–	–	–	–

## Testing on the roller test bench

**On the brake test stand** the testing speed of 6 km/h must not be exceeded. The test duration per axle must not exceed 60 scnd.

Before operation on the vehicle performance tester, the propeller shaft to the front axle must be removed and in the transfer case the interaxle differential lock engaged. The interaxle differential lock is engaged when the red indicator lamp lights up.

**Note:** Secure bolts on output flange of transfer case!

Snow tires are not to be driven on chassis dynamometers. The workshop's own test bench tires must be mounted.

### Output test

This test is only to be carried out in event of a complaint concerning the vehicle performance. The valid standard output values are minimum outputs. Observe barometer value and intake air temperature.

**Note:** The specified standard output values are only attained with the respectively specified fuel and the specified ignition timing adjustment. When adapting the ignition timing adjustment to other fuels, the output values might differ.

Vehicle- Model	Type	Engine model	Speed  1/min	Manual transmission 3rd gear			Automatic transmission Driving position 3		
				without KAT kW	EGR kW	CAT kW	without KAT	EGR	CAT
463.200 .220 .221	200 GE <sup>1)</sup> G 200	102.965	5000	56	–	55	–	–	–
.204 .224 .225	230 GE <sup>1)</sup> G 230	102.989	5000	64	–	63	61	–	60
.207 .227 .228	300 GE <sup>1)</sup> G 300	103.987	5500	90	–	87	87	–	84
.208 .230 .231	G 320 <sup>2)</sup>	104.996	5500	–	–	–	112	–	112
.304 .324 .325	250 GD	602.931	4500	46	–	–	–	–	–
.307 .327 .328	300 GD G 300 Diesel	603.931	4500	56	–	–	53	–	–
.300 .320 .321	350 GD Turbo G 350 <sup>3)</sup> Turbo- diesel	603.972	3900	–	–	–	69	–	–

- 1) Vehicle with EZL with output < minimum output Repeat with simulated coolant temperature of 80 oC, in engines with 4-pin temperature sensor use 2 ohm decades for simulation.
- 2) Variable reference resistor HFM on Pos. 1. fuel min. 91 RON, or adjust HFM increment (as from 4. 95) with HHT to 91 RON (basic value).
- 3) Diesel fuel



**Driving performance – 230 GE**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Station wagon		Box-body vehicle		Pick-Up		Station wagon		Chassis with cab			
Model	461.238		461.229		461.249		461.239		461.227			
Design	BA3		BA4		BA5		BA6		BA9			
Wheelbase (mm)	2400		2850		2850		2850		3120			
Transmission	GL 76/27-5											
Designation												
Ratio i =												
1st gear											3,856	
2nd gear											2,182	
3rd gear											1,365	
4th gear	1,000											
5th gear	0,799											
Transfer case	VG 080											
Designation												
Ratio i =												
	Road 1,000											
	Off-road 2,143											
Rear axle transmis- sion ratio i =	5,286											
Maximum speed Vmax.	148,8		146,6		137,4		146,6		137,7			
Maximum speeds in the individual gears	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off- road		
1st gear km/h	39,5	—	39,5	—	39,5	—	39,5	—	39,8	—		
2nd gear km/h	70,1	—	70,1	—	70,1	—	70,1	—	70,5	—		
3rd gear km/h	111,6	—	111,6	—	111,6	—	111,6	—	112,2	—		
4th gear km/h	148,8	—	146,6	—	137,4	—	146,6	—	137,7	—		
5th gear approx. km/h	147,0	—	143,3	—	129,1	—	143,3	—	129,1	—		
Climbing ability												
1st gear %	37,9	80,0	33,3	80,0	33,3	80,0	33,3	80,0	26,6	67,6		
2nd gear %	19,2	46,4	17,0	40,6	16,8	40,5	17,0	40,6	13,4	32,3		
3rd gear %	10,4	26,5	9,1	23,5	8,8	23,4	9,1	23,5	6,9	18,8		
4th gear %	6,6	18,4	5,8	16,3	5,6	16,1	5,8	16,3	4,4	12,8		
5th gear %	4,5	13,3	4,0	11,7	3,9	11,5	4,0	11,7	2,9	9,0		
Acceleration with gear change												
0 to 100 km/h s	16,3		16,3		18,0		17,5		20,0			
Fuel consumption (acc. 80/1268 EEC)												
City cycle l/100 km	16,8		16,8		16,8		17,2		17,2			
90 km/h l/100 km	12,4		12,4		12,4		12,4		12,4			
120 km/h l/100 km	17,1		17,1		17,1		17,1		17,1			
Euromix l/100 km	15,4		15,4		15,4		15,6		15,6			

**Driving performance – 290 GD**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Station wagon		Box-body vehicle		Pick-Up		Station wagon		Chassis with cab	
Model	461.337		461.328		461.341		461.338		461.329	
Design	BA3		BA4		BA5		BA6		BA9	
Wheelbase (mm)	2400		2850		2850		2850		3120	
Transmission Designation	GL 76/27-5									
Ratio i =										
1st gear	3,856									
2nd gear	2,182									
3rd gear	1,365									
4th gear	1,000									
5th gear	0,799									
Transfer case Designation	VG 080									
Ratio i =	Road 1,000 Off-road 2,143									
Rear axle transmiss- ion ratio i =	4,857									
Maximum speed Vmax.	137,3		134,2		122,1		134,2		124,1	
Maximum speeds in the individual gears	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road
1st gear km/h	29,4	–	29,4	–	29,4	–	29,4	–	27,2	–
2nd gear km/h	52,0	–	52,0	–	52,0	–	52,0	–	48,1	–
3rd gear km/h	82,0	–	82,0	–	82,0	–	82,0	–	76,4	–
4th gear km/h	114,2	–	114,2	–	114,2	–	114,2	–	105,4	–
5th gear	137,3	–	134,3	–	122,1	–	134,2	–	124,1	–
approx. km/h										
Climbing ability										
1st gear %	36,2	80,0	31,9	80,0	31,9	80,0	31,9	80,0	28,2	71,7
2nd gear %	18,7	44,5	16,6	39,0	16,5	39,0	16,6	39,0	14,8	34,2
3rd gear %	10,7	25,7	9,5	22,0	9,3	22,7	9,5	22,8	8,4	20,3
4th gear %	7,0	18,1	6,1	16,1	5,9	16,0	6,1	16,1	5,4	14,2
5th gear %	4,6	13,4	4,0	11,9	3,7	11,8	4,0	11,9	3,5	10,5
Acceleration with gear change										
0 to 100 km/h s	23,1		24,0		33,0		25,0		30,0	
Fuel consumption (acc. 80/1268 EEC)										
City cycle l/100 km	12,8		13,5		12,8		13,1		13,1	
90 km/h l/100 km	9,8		9,8		9,8		9,8		9,8	
120 km/h l/100 km	15,0		15,0		15,0		15,0		15,0	
Euromix l/100 km	12,5		12,8		12,8		12,6		12,6	

**Driving performance – 200 GE / G 200**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Convertible		Station wagon		Station wagon	
Model	463.200		463.220		463.221	
Design	BA1		BA3		BA6	
Wheelbase (mm)	2400		2400		2850	
Transmission	5-speed					
Designation	GL 76/27K-5					
Ratio i =						
1st gear	3,856					
2nd gear	2,182					
3rd gear	1,365					
4th gear	1,000					
5th gear	0,799					
Transfer case designation	VG 150					
Ratio i =	Road 1,050					
	Off-road 2,158					
Rear axle transmission ratio i =	5,286					
Maximum speed Vmax.	136,0					
Maximum speeds in the individual gears	Road	Off-road	Road	Off-road	Road	Off-road
1st gear km/h	38,0	—	38,0	—	38,0	—
2nd gear km/h	67,0	—	67,0	—	67,0	—
3rd gear km/h	107,0	—	107,0	—	107,0	—
4th gear km/h	136,0	—	136,0	—	136,0	—
5th gear approx. km/h	133,0	—	133,0	—	133,0	—
Climbing ability						
1st gear %	31,0	80,0	31,0	80,0	27,0	68,0
2nd gear %	16,0	37,0	16,0	37,0	14,0	32,0
3rd gear %	8,5	21,0	8,5	21,0	7,5	19,0
4th gear %	5,5	15,0	5,5	15,0	4,5	13,0
5th gear %	3,5	11,0	3,5	11,0	3,0	9,0
Acceleration with gear change						
0 to 100 km/h s	20,8		20,8		22,0	
60 to 100 km/h (4th gear) <sup>1)</sup> s	20,8		20,8		22,2	
60 to 100 km/h (5th gear) <sup>2)</sup> s	34,8		34,8		37,6	
Fuel consumption (acc. 80/1268 EEC)						
City cycle l/100 km	15,7		15,7		16,0	
90 km/h l/100 km	12,0		12,0		12,0	
120 km/h l/100 km	16,0		16,0		16,0	
Euromix l/100 km	14,6		14,6		14,7	

1) In automatic transmission (3rd gear)

2) In automatic transmission (4th gear)

**Driving performance – 230 GE / G 230**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Convertible				Station wagon				Station wagon			
Model	463.204				463.224				463.225			
Design	BA1				BA3				BA6			
Wheelbase (mm)	2400				2400				2850			
Transmission	5-speed		Automatic		5-speed		Automatic		5-speed		Automatic	
Designation	GL 76/27K-5		W4A028		GL 76/27K-5		W4A028		GL 76/27-5		W4A028	
Ratio i =												
1st gear	3,856		3,871		3,856		3,871		3,856		3,871	
2nd gear	2,182		2,247		2,182		2,247		2,182		2,247	
3rd gear	1,365		1,436		1,365		1,436		1,365		1,436	
4th gear	1,000		1,000		1,000		1,000		1,000		1,000	
5th gear	0,799		–		0,799		–		0,799		–	
Transfer case	VG 150		VG 150		VG 150		VG 150		VG 150		VG 150	
Designation	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road
Ratio i =	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158
Rear axle transmission ratio i =	5,286		4,857		5,286		4,857		5,286		4,857	
Maximum speed Vmax.	145,0	–	145,0	–	145,0	–	145,0	–	145,0	–	145,0	–
Maximum speeds in the individual gears												
1st gear km/h	38,0	–	45,0	–	38,0	–	45,0	–	38,0	–	45,0	–
2nd gear km/h	67,0	–	78,0	–	67,0	–	78,0	–	67,0	–	78,0	–
3rd gear km/h	107,0	–	122,0	–	107,0	–	122,0	–	107,0	–	122,0	–
4th gear km/h	145,0	–	145,0	–	145,0	–	145,0	–	145,0	–	145,0	–
5th gear approx. km/h	145,0	–	–	–	145,0	–	–	–	145,0	–	–	–
Climbing ability												
1st gear %	38,0	80,0	36,0	80,0	38,0	80,0	36,0	80,0	34,0	80,0	31,0	80,0
2nd gear %	20,0	46,0	21,0	48,0	20,0	46,0	21,0	48,0	17,0	40,0	18,0	41,0
3rd gear %	11,0	26,0	9,0	22,0	11,0	26,0	9,0	22,0	9,0	23,0	8,0	19,0
4th gear %	6,5	18,0	4,0	14,0	6,5	18,0	4,0	14,0	5,5	16,0	3,5	12,0
5th gear %	4,5	13,0	–	–	4,5	13,0	–	–	4,0	11,0	–	–
Acceleration with gear change												
0 to 100 km/h s	17,7	–	18,4	–	17,7	–	18,4	–	18,7	–	19,5	–
60 to 100 km/h (4th gear) <sup>1)</sup> s	16,2	–	12,7	–	16,2	–	12,7	–	17,3	–	13,5	–
60 to 100 km/h (5th gear) <sup>2)</sup> s	26,2	–	22,9	–	26,2	–	22,9	–	28,1	–	24,9	–
Fuel consumption (acc. 80/1268 EEC)												
City cycle l/100 km	16,5	–	14,6	–	16,5	–	14,6	–	16,9	–	14,9	–
90 km/h l/100 km	12,7	–	12,5	–	12,7	–	12,5	–	12,7	–	12,5	–
120 km/h l/100 km	16,3	–	17,5	–	16,3	–	17,5	–	16,3	–	17,5	–
Euromix l/100 km	15,2	–	15,4	–	15,2	–	15,4	–	15,3	–	15,0	–

1) In automatic transmission (3rd gear)

2) In automatic transmission (4th gear)

**Driving performance – 300 GE / G 300**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Convertible				Station wagon				Station wagon			
Model	463.207				463.227				463.228			
Design	BA1				BA3				BA6			
Wheelbase (mm)	2400				2400				2850			
Transmission	5-speed		Automatic		5-speed		Automatic		5-speed		Automatic	
Designation	GL 76/27K-5		W4A028		GL 76/27K-5		W4A028		GL 76/27K-5		W4A028	
Ratio i =												
1st gear	3,856		3,871		3,856		3,871		3,856		3,871	
2nd gear	2,182		2,247		2,182		2,247		2,182		2,247	
3rd gear	1,365		1,436		1,365		1,436		1,365		1,436	
4th gear	1,000		1,000		1,000		1,000		1,000		1,000	
5th gear	0,799		–		0,799		–		0,799		–	
Transfer case	VG 150		VG 150		VG 150		VG 150		VG 150		VG 150	
Designation	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road
Ratio i =	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158
Rear axle transmission ratio i =	4,857		4,375		4,857		4,375		4,857		4,375	
Maximum speed Vmax.	165,0	–	165,0	–	165,0	–	165,0	–	165,0	–	165,0	–
Maximum speeds in the individual gears												
1st gear km/h	43,0	–	46,0	–	43,0	–	46,0	–	43,0	–	46,0	–
2nd gear km/h	75,0	–	80,0	–	75,0	–	80,0	–	75,0	–	80,0	–
3rd gear km/h	121,0	–	126,0	–	121,0	–	126,0	–	121,0	–	126,0	–
4th gear km/h	165,0	–	165,0	–	165,0	–	165,0	–	165,0	–	165,0	–
5th gear approx. km/h	160,0	–	–	–	160,0	–	–	–	160,0	–	–	–
Climbing ability												
1st gear %	45,0	80,0	51,0	80,0	45,0	80,0	51,0	80,0	39,0	80,0	44,0	80,0
2nd gear %	22,0	55,0	29,0	72,0	22,0	55,0	29,0	72,0	20,0	44,0	25,0	61,0
3rd gear %	12,0	30,0	11,0	26,0	12,0	30,0	11,0	26,0	10,0	25,0	9,5	23,0
4th gear %	8,0	21,0	5,5	17,0	8,0	21,0	5,5	17,0	7,0	17,0	5,0	15,0
5th gear %	5,5	15,0	–	–	5,5	15,0	–	–	4,5	13,0	–	–
Acceleration with gear change												
0 to 100 km/h s	13,5	–	14,0	–	13,5	–	14,0	–	14,2	–	14,8	–
60 to 100 km/h (4th gear) <sup>1)</sup> s	14,3	–	9,9	–	14,3	–	9,9	–	15,2	–	10,5	–
60 to 100 km/h (5th gear) <sup>2)</sup> s	21,5	–	17,3	–	21,5	–	17,3	–	23,1	–	18,4	–
Fuel consumption (acc. 80/1268 EEC)												
City cycle l/100 km	18,7	–	18,2	–	18,7	–	18,2	–	19,0	–	18,5	–
90 km/h l/100 km	13,4	–	14,2	–	13,4	–	14,2	–	13,4	–	14,2	–
120 km/h l/100 km	17,7	–	19,2	–	17,7	–	19,2	–	17,7	–	19,2	–
Euromix l/100 km	16,6	–	17,2	–	16,6	–	17,2	–	16,7	–	17,3	–

1) In automatic transmission (3th gear)

2) In automatic transmission (4th gear)

**Driving performance – G 320, 500 GE V8**

with tyres 255 R 16

with two persons = 150 kg

Vehicle type	G 320						500 GE V8	
	Convertible	Station wagon		Station wagon		Station wagon		
Model	463.208	463.230		463.231		463.228		
Design	BA1	BA3		BA6		BA6		
Wheelbase (mm)	2400	2400		2850		2850		
Transmission Designation	Automatic W4A028							
Ratio i =								
1st gear	3,871							
2nd gear	2,247							
3rd gear	1,436							
4th gear	1,000							
5th gear	–							
Transfer case Designation	VG 150					VG 150		
Ratio i =	Road 1,050 Off-road 2,158					Road 0,870 Off-road 2,158		
Rear axle transmission ratio i =	4,857							
Maximum speed Vmax.	170,0					180,0		
Maximum speeds in the individual gears	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road
1st gear km/h	53,0	–	53,0	–	53,0	–	–	–
2nd gear km/h	92,0	–	92,0	–	92,0	–	–	–
3rd gear km/h	144,0	–	144,0	–	144,0	–	–	–
4th gear km/h	170,0	–	170,0	–	170,0	–	–	–
5th gear	–	–	–	–	–	–	–	–
approx. km/h								
Climbing ability								
1st gear %	60,0	80,0	60,0	80,0	51,0	80,0	–	–
2nd gear %	40,0	80,0	40,0	80,0	35,0	80,0	–	–
3rd gear %	26,0	65,0	26,0	65,0	23,0	55,0	–	–
4th gear %	18,0	45,0	18,0	45,0	16,0	39,0	–	–
5th gear %	–	–	–	–	–	–	–	–
Acceleration with gear change								
0 to 100 km/h s	12,1		12,1		12,1		11,4	
Fuel consumption (acc. 80/1268 EEC)								
City cycle l/100 km	16,6		16,6		16,6		21,2	
90 km/h l/100 km	14,0		14,0		14,0		16,2	
120 km/h l/100 km	18,4		18,4		18,4		20,8	
Euromix l/100 km	16,3		16,3		16,3		19,4	

**Driving performance – 250 GD**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Convertible		Station wagon		Station wagon	
Model	463.304		463.324		463.325	
Design	BA1		BA3		BA6	
Wheelbase (mm)	2400		2400		2850	
Transmission designation	5-speed GL 76/27K-5					
Ratio i =						
1st gear	3,856					
2nd gear	2,182					
3rd gear	1,365					
4th gear	1,000					
5th gear	0,799					
Transfer case designation	VG 150					
Ratio i =	Road 1,050 Off-road 2,158					
Rear axle transmission ratio i =	5,286					
Maximum speed Vmax.	130,0					
Maximum speeds in the individual gears	Road	Off-road	Road	Off-road	Road	Off-road
1st gear km/h	30,0	15,0	30,0	15,0	30,0	15,0
2nd gear km/h	54,0	26,0	54,0	26,0	54,0	26,0
3rd gear km/h	86,0	42,0	86,0	42,0	86,0	42,0
4th gear km/h	117,0	57,0	117,0	57,0	117,0	57,0
5th gear approx. km/h	130,0	71,0	130,0	71,0	130,0	71,0
Climbing ability						
1st gear %	32,0	80,0	32,0	80,0	32,0	80,0
2nd gear %	17,0	38,0	17,0	38,0	17,0	38,0
3rd gear %	9,0	22,0	9,0	22,0	9,0	22,0
4th gear %	6,0	15,0	6,0	15,0	6,0	15,0
5th gear %	4,0	11,0	4,0	11,0	4,0	11,0
Acceleration with gear change						
0 to 100 km/h s	28,1					
60 to 100 km/h (4th gear) <sup>1)</sup> s	20,6					
60to 100 km/h (5th gear) <sup>2)</sup> s	31,6					
Fuel consumption (acc. 80/1268 EEC)						
City cycle l/100 km	13,5					
90 km/h l/100 km	10,5					
120 km/h l/100 km	15,2					
Euromix l/100 km	—					

1) In automatic transmission (3th gear)

2) In automatic transmission (4th gear)

**Driving performance – 300 GD / G 300 Diesel**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Convertible						Station wagon			
Model	463.307						463.327			
Design	BA1						BA3			
Wheelbase (mm)	2400						2400			
Transmission	5-speed		Automatic		Automatic		5-speed		Automatic	
Designation	GL 76/27K-5		W4A028		W4A028		GL 76/27K-5		W4A028	
Ratio i =										
1st gear	3,856		3,871		3,871		3,856		3,871	
2nd gear	2,182		2,247		2,247		2,182		2,247	
3rd gear	1,365		1,436		1,436		1,365		1,436	
4th gear	1,000		1,000		1,000		1,000		1,000	
5th gear	0,799		–		–		0,799		–	
Transfer case	VG 150		VG 150		VG 150		VG 150		VG 150	
Designation	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road
Ratio i =	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158
Rear axle transmission ratio i =	5,286		4,111		4,375		5,286		4,111	
Maximum speed Vmax.	135,0	–	135,0	–	135,0	–	135,0	–	135,0	–
Maximum speeds in the individual gears										
1st gear km/h	30,0	–	38,0	–	39,0	–	30,0	–	38,0	–
2nd gear km/h	54,0	–	66,0	–	68,0	–	54,0	–	66,0	–
3rd gear km/h	86,0	–	103,0	–	106,0	–	86,0	–	103,0	–
4th gear km/h	117,0	–	135,0	–	135,0	–	117,0	–	135,0	–
5th gear approx. km/h	135,0	–	–	–	–	–	135,0	–	–	–
Climbing ability										
1st gear %	40,0	80,0	37,0	80,0	–	–	40,0	80,0	37,0	80,0
2nd gear %	21,0	48,0	19,0	45,0	–	–	21,0	48,0	19,0	45,0
3rd gear %	12,0	27,0	11,0	25,0	–	–	12,0	27,0	11,0	25,0
4th gear %	7,5	19,0	4,5	14,0	–	–	7,5	19,0	4,5	14,0
5th gear %	5,0	14,0	–	–	–	–	5,0	14,0	–	–
Acceleration with gear change										
0 to 100 km/h s	22,2	–	22,0	–	–	–	22,2	–	22,0	–
60 to 100 km/h (4th gear) <sup>1)</sup> s	15,5	–	14,4	–	–	–	15,5	–	14,4	–
60 to 100 km/h (5th gear) <sup>2)</sup> s	22,2	–	23,2	–	–	–	22,5	–	23,2	–
Fuel consumption (acc. 80/1268 EEC)										
City cycle l/100 km	14,7	–	12,2	–	–	–	14,7	–	12,2	–
90 km/h l/100 km	10,9	–	10,8	–	–	–	10,9	–	10,8	–
120 km/h l/100 km	16,0	–	15,9	–	–	–	16,0	–	15,9	–
Euromix l/100 km	13,9	–	13,0	–	–	–	13,9	–	13,0	–

1) In automatic transmission (3th gear)

2) In automatic transmission (4th gear)



**Driving performance – 300 GD / G 300 Diesel**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Station wagon		Station wagon					
Model	463.327		463.328					
Design	BA3		BA6					
Wheelbase (mm)	2400		2850					
Transmission	Automatic		5-speed		Automatic		Automatic	
Designation	W4A028		GL76/27K-5		W4A028		W4A028	
Ratio i =								
1st gear	3,871		3,856		3,871		3,871	
2nd gear	2,247		2,182		2,247		2,247	
3rd gear	1,436		1,365		1,436		1,436	
4th gear	1,000		1,000		1,000		1,000	
5th gear	–		0,799		–		–	
Transfer case	VG 150		VG 150		VG 150		VG 150	
Designation								
Ratio i =	Road	Off-road	Road	Off-road	Road	Off-road	Road	Off-road
	1,050	2,158	1,050	2,158	1,050	2,158	1,050	2,158
Rear axle transmission ratio i =	4,375		5,286		4,111		4,375	
Maximum speed Vmax.	135,0	–	135,0	–	135,0	–	135,0	–
Maximum speeds in the individual gears								
1st gear km/h	39,0	–	30,0	–	38,0	–	39,0	–
2nd gear km/h	68,0	–	54,0	–	66,0	–	68,0	–
3rd gear km/h	106,0	–	86,0	–	103,0	–	106,0	–
4th gear km/h	135,0	–	117,0	–	135,0	–	135,0	–
5th gear approx. km/h	–	–	135,0	–	–	–	–	–
Climbing ability								
1st gear %	–	–	35,0	80,0	32,0	80,0	31,0	80,0
2nd gear %	–	–	18,0	41,0	17,0	39,0	17,0	38,0
3rd gear %	–	–	10,0	19,0	9,5	22,0	9,5	22,0
4th gear %	–	–	6,5	17,0	4,0	12,0	4,0	12,0
5th gear %	–	–	4,5	12,0	–	–	–	–
Acceleration with gear change								
0 to 100 km/h s	–	–	23,5	–	23,3	–	23,6	–
60 to 100 km/h (4th gear) <sup>1)</sup> s	–	–	16,5	–	15,4	–	15,8	–
60 to 100 km/h (5th gear) <sup>2)</sup> s	–	–	24,1	–	24,8	–	25,9	–
Fuel consumption (acc. 80/1268 EEC)								
City cycle l/100 km	–	–	15,0	–	12,5	–	–	–
90 km/h l/100 km	–	–	10,9	–	10,8	–	–	–
120 km/h l/100 km	–	–	16,0	–	15,9	–	–	–
Euromix l/100 km	–	–	14,0	–	13,1	–	–	–

1) In automatic transmission (3th gear)

2) In automatic transmission (4th gear)

**Driving performance – 350 GD Turbo / G 350 Turbodiesel**

with tyres 205 R 16

with two persons = 150 kg

Vehicle type	Convertible		Station wagon		Station wagon	
Model	463.300		463.320		463.321	
Design	BA1		BA3		BA6	
Wheelbase (mm)	2400		2400		2850	
Transmission Designation	Automatic W4A028					
Ratio i =						
1st gear	3,871					
2nd gear	2,247					
3rd gear	1,436					
4th gear	1,000					
5th gear	—					
Transfer case Designation	VG 150					
Ratio i =	Road 0,870 Off-road 2,158					
Rear axle transmission ratio i =	4,111		4,111		4,111	
Maximum speed Vmax.	145,0	—	145,0	—	145,0	—
Maximum speeds in the individual gears						
1st gear km/h	40,0	—	40,0	—	40,0	—
2nd gear km/h	69,0	—	69,0	—	69,0	—
3rd gear km/h	105,0	—	105,0	—	105,0	—
4th gear km/h	145,0	—	145,0	—	145,0	—
5th gear approx. km/h	—	—	—	—	—	—
Climbing ability						
1st gear %	52,0	80,0	52,0	80,0	52,0	80,0
2nd gear %	33,0	80,0	33,0	80,0	33,0	80,0
3rd gear %	17,0	50,0	17,0	50,0	17,0	50,0
4th gear %	8,0	28,0	8,0	28,0	8,0	28,0
5th gear %	—	—	—	—	—	—
Acceleration with gear change						
0 to 100 km/h s	17,6	—	17,6	—	17,6	—
60 to 100 km/h (4th gear) <sup>1)</sup> s	13.4	—	13.4	—	13.4	—
60 to 100 km/h (5th gear) <sup>2)</sup> s	—	—	—	—	—	—
Fuel consumption (acc. 80/1268 EEC)						
City cycle l/100 km	13,5	—	13,5	—	13,5	—
90 km/h l/100 km	11,8	—	11,8	—	11,8	—
120 km/h l/100 km	16,9	—	16,9	—	16,9	—
Euromix l/100 km	14,1	—	14,1	—	14,1	—

1) In automatic transmission (3th gear)

2) In automatic transmission (4th gear)

### Jacking up of cross-country vehicle

The following possibilities are available for jacking up:

- Jacking up with cross-country vehicle adapters and 2-post lifting platform
- Jacking up with wheel gripper adapters and 2-post lifting platform
- Jacking up with lifting and support device and pit lift
- Jacking up body and frame separately (for fitting on straightening bench)

as well as with vehicle and shop jack under axle tubes

### Jacking up with cross-country adapters and 2-post lifting platform

**Note:** The previous adapters which were valid for model 460 are **not** to be used for model 463. They are no longer available.

It is possible to order a set (4-piece) of cross-country vehicle supports which are attached to the already existing base elements (of model 460).

The supports can be attached to stands onto which the jacked up vehicle is safely lowered.

The vehicle can be lifted at the side member ends. For this purpose the cross-country vehicle adapters are required which are then attached to the supporting arms of the lifting platform.

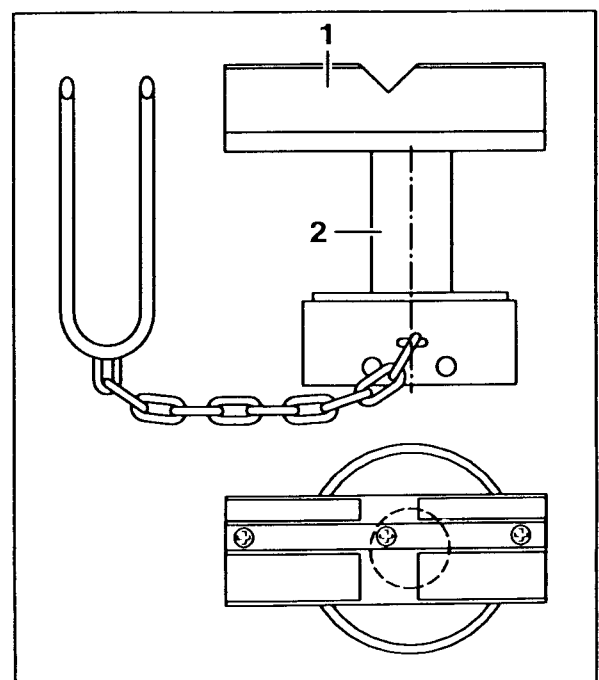
These can be used with model 463 and model 460/461.

**Note:** In vehicles with the special equipment "mounting protection", Code "C 76", the mounting protection must be removed before jacking up with adapters for the 2-post lifting platform.

1 Support  
2 Base element

2.1/1

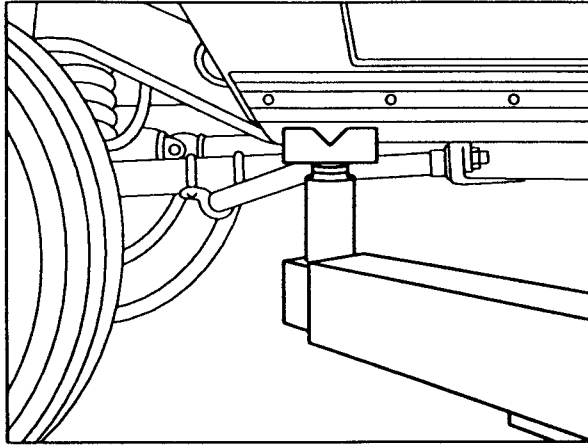
	1 set of cross-country vehicle adapters (4 base elements with 4 cross-country vehicle supports)
Manufacturer	Order no.
Company Nußbaum	88 030 000 for 2.5 t platform
Company Hofmann	64 64 299 and 64 90 373 for GT 2500 64 63 497 and 64 90 373 for Duolift 2.5
Company Zippo	00 20.14 for 2.5 t platform 00 20.17 for 5 t platform
	1 set of cross-country vehicle supports (4-piece)
Manufacturer	Order no.
Company Nußbaum	88 030 007 (plastic)
Company Hofmann	64 90 373 (hardwood)
Company Zippo	00 20.15 (plastic)



P00.60-0200-15

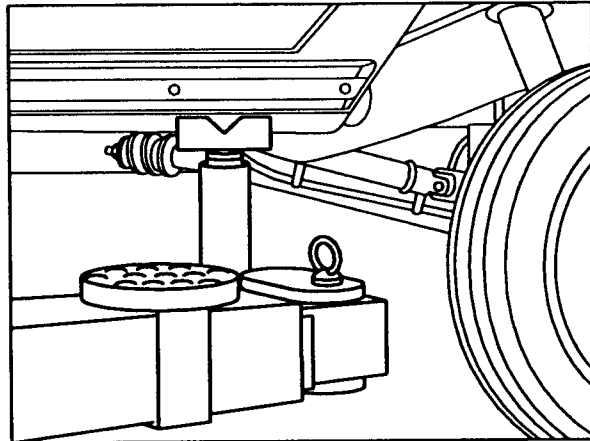
Positions for placing support on the body for jacking up the entire vehicle.

front



P00.60-0201-13

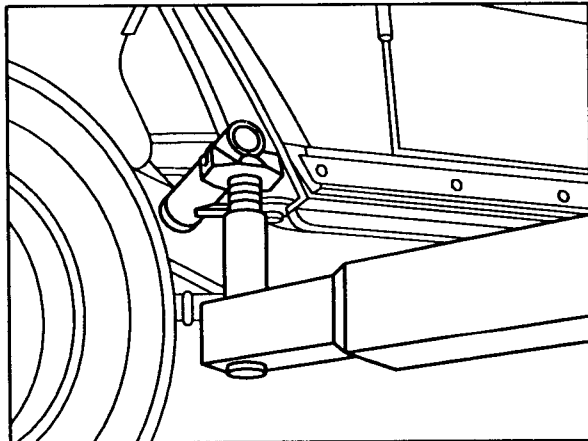
rear



P00.60-0202-13

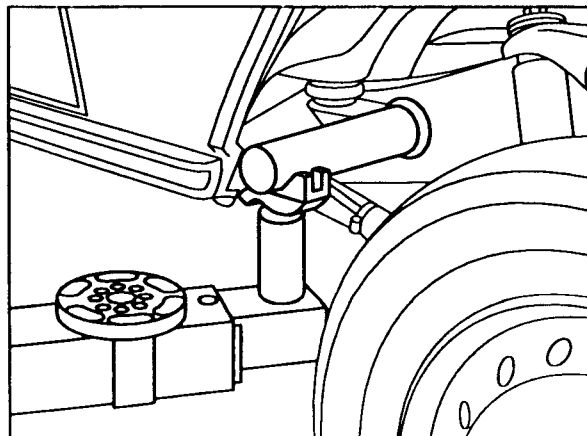
**Note:** In model 461 it is also possible to jack up the vehicle at the pipe extensions on the frame (as in model 460).

front



P00.60-0203-13

rear



P00.60-0204-13

**Jacking up with wheel gripper adapters and 2-post lifting platform**

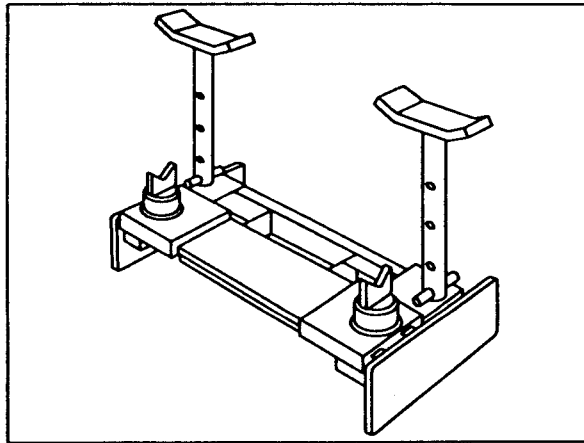
The cross-country vehicle can be lifted with 5-ton 2-post lifting platforms and the following listed wheel gripper adapters. The wheel grippers can be used up to a maximum wheel outside diameter of 900 mm.

	1 set of wheel grippers (4-piece)
Manufacturer	Order no.
Company Hofmann	64 56 347 for lifting platform GF 5.0 MB
Company Nußbaum	2.50 HDL 14000 for lifting platforms 2.50 SE and 2.50 HDL

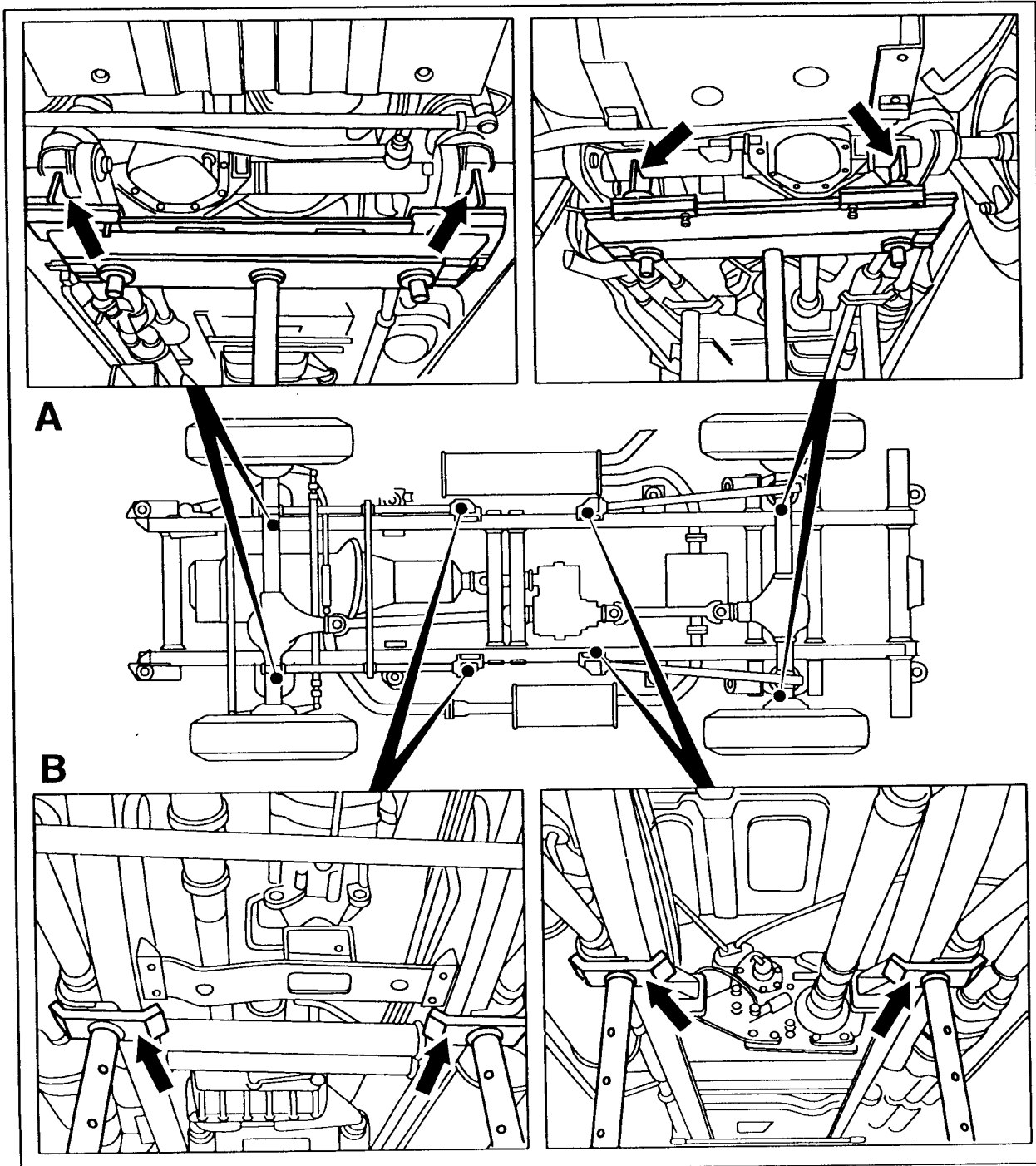
### Jacking up with lifting and support device and pit lift

Using the lifting and support device of the company Slift, by also using the pit lift, cross-country vehicles can be jacked up or axles removed.

Two men are required for the fitting.



P00.60-0205-13



P00.60-0206-61

- A Jack up
- B Support

**Jacking up the body and frame separately  
(for fitting on straightening bench)**

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Vehicles with detached front and rear axle cannot be lifted onto the straightening bench due to the risk of tipping. In such cases the body has to be lifted off the frame and each has to be fitted on the bench separately.

The body structure is lifted using the 2-post lifting platform at the side member ends of the body together with the new cross-country vehicle supports.

The frame, with installed or removed front or rear axle, can be lifted with the 2-post lifting platform in the area of the trailing arm brackets. If there is a risk of tipping, the frame must be securely clamped to the lifting platform arms.

### General information on differential locks

In the cross-country vehicle **series 463** there are three differentials in bevel gear design.

These differentials are required for equalizing the different speeds (particularly in corners) between the front and rear axle and the individual wheels, thus avoiding distortion in the drive train. This additionally provides a considerable improvement in the driving comfort!

With the installation of an interaxle differential in the 3-shaft transfer case (VG 150-3W/2,16), the anti-lock braking system can also be applied to the drive train (without limitation).

#### In comparison:

In the **series 460** and **461** there is no differential built into the transfer case (VG 080), as a result of which, in transfer case position "SA" (= on-road 4-wheel), no interaxle equalization can take place between the drive axles. The speed difference of the drive axles has to take place via the wheels/tires which results in distortion when driving on dry roads, and this can then lead to impaired driving comfort and extensive loads being exerted on the drive train.

#### Note:

In these series an anti-lock braking system (ABS) is not available!

The disadvantage of the differential gears is that on slippery roads or off the road, these differentials perform their job and equalize the different speeds of the axles and the individual wheels – which is what is wanted in this case. In order to avoid this happening, there are three differential locks installed as standard in the model 463.

Under "normal conditions" the power distribution is 50:50, this means: when driving straight ahead, on a dry road, the power to the individual axles is 50% respectively, this results in: front axle 50% and rear axle 50% traction.

With unlocked interaxle differential (in the transfer case) the driving power to the axle with less grip is lost.

If the interaxle differential is locked, this means that each driving axle receives 50% traction respectively (independent of the ground conditions) and the front and rear axle propeller shaft run at the same speed (1 : 1).

In order to avoid equalization via the individual wheels, the cross locks in the axles can be selected separately. If all differential locks have been engaged, each individual driving wheel can take up 25% traction ( $4 \times 4 = 100\% : 4 = 25\%$ ). This means that as long as just one wheel has got firm ground under it, traction can still take place via this wheel.

The differential locks are designed as claw-type locks. They are only to be engaged when the locking claw and the mating gear are rotating at the same speed. If this is not observed, considerable damage is caused in the components, which then requires extensive repair work. When the gears have engaged, the differential locks lock to 100%.

This means that very high torques can be transferred to the driving axles free of slip and thus the highest possible traction is achieved.

All Mercedes-Benz cross-country vehicles have a locking effect of 100% when all differential locks are engaged, which means that each of the 4 driving wheels rotates at the same speed, independent of the ground condition.

### Task of differential locks

Prevents spinning of a wheel or axle over uneven or slippery ground.

#### Design

- electric/electronic (Type 463)
- pneumatic (Type 463)
- hydraulic
- mechanical

#### Function

By engaging claw couplings the respective differential is locked with the corresponding output shaft. This cancels the function of the differential and effects a 100% locking action.

#### Arrangement

The differential locks are arranged on the following components:

- Front axle
- Rear axle
- Transfer case (Type 463)

#### Risk of accident!

Never drive on a firm road surface with engaged differential locks.

With engaged transfer case lock the anti-lock braking system (ABS) is switched off automatically. The ABS indicator lamp in the instrument cluster lights up.

With engaged front axle differential lock the steering properties of the vehicle are impaired.

Apply the parking brake when switching off.

#### Important! Model 463

When operating on chassis dynamometers (even for short periods) always unflange the front axle propeller shaft and engage the transfer case differential lock, otherwise serious damage is caused to the transfer case.



## Control module for differential locks

### Task

When actuated it activates the respectively selected differential lock:

- Front axle (VA)
- Transfer case (VG)
- Rear axle (HA)

Indicates the respectively switched condition by means of:

- Indicator lamps
- Switch-on indicator lamp (yellow = selected)
- Function indicator lamp (red = engaged)

### Design/function

to 02/94

- 3 Rocker switch
- Illumination and indicator lamps in bulb design
- Load relay and time limit relay separately installed

The power supply is via fuse F10 (terminal 30) as well as via fuse F13 (terminal 15).

When the ignition is switched off (terminal 15) the electronics in the time limit relay are actuated. This means that the time limit relay provides voltage to the control module of the differential lock for approx. a further 30 sec. and the locked condition remains maintained for this time period (time delay).

as from 03/94

- 3 Touch contact switch
- Illumination and indicator lamps in LED design<sup>1)</sup>
- Integrated electrical system and electronics (incl. delay switching)

1) cannot be replaced separately

The control module contains the entire control electrical system and electronics incl. the time delay.

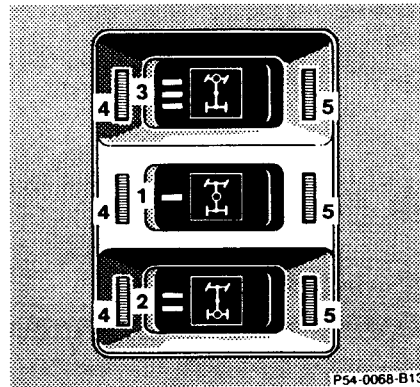
The voltage supply of terminal 30 and terminal 15 is from the relay.

Overvoltage protection ( K1/1 diesel or K1/2 gasoline engine).

When the ignition is switched off (terminal 15) the time delay is actuated. This means that for approx. a further 30 sec. the locked condition remains maintained.

### Arrangement

The control module is arranged in the middle console.



- 1 Transfer case differential lock
- 2 Rear axle differential lock
- 3 Front axle differential lock
- 4 Switch-on indicator lamps (yellow)
- 5 Function indicator lamps (red)

## Warning lamp for differential locks

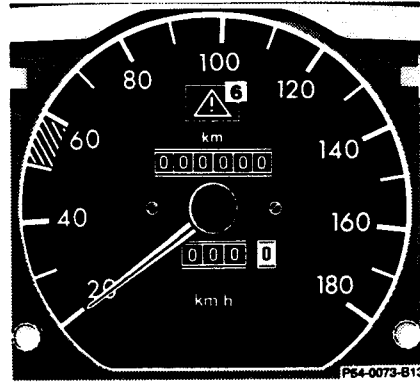
### Note:

The warning lamp is already in use in cars for the following systems:

- ASD, 4MATIC, ASR, ETS, ESP

### Task

- Indicates that at least one differential lock is selected.
- Indicates that there is still one or several differential locks engaged.
- Reminder for the driver to pay greater attention
- Additionally warns the driver that the anti-lock braking system (ABS) has been switched off by the differential lock system and is therefore not in operation.



6 Warning lamp

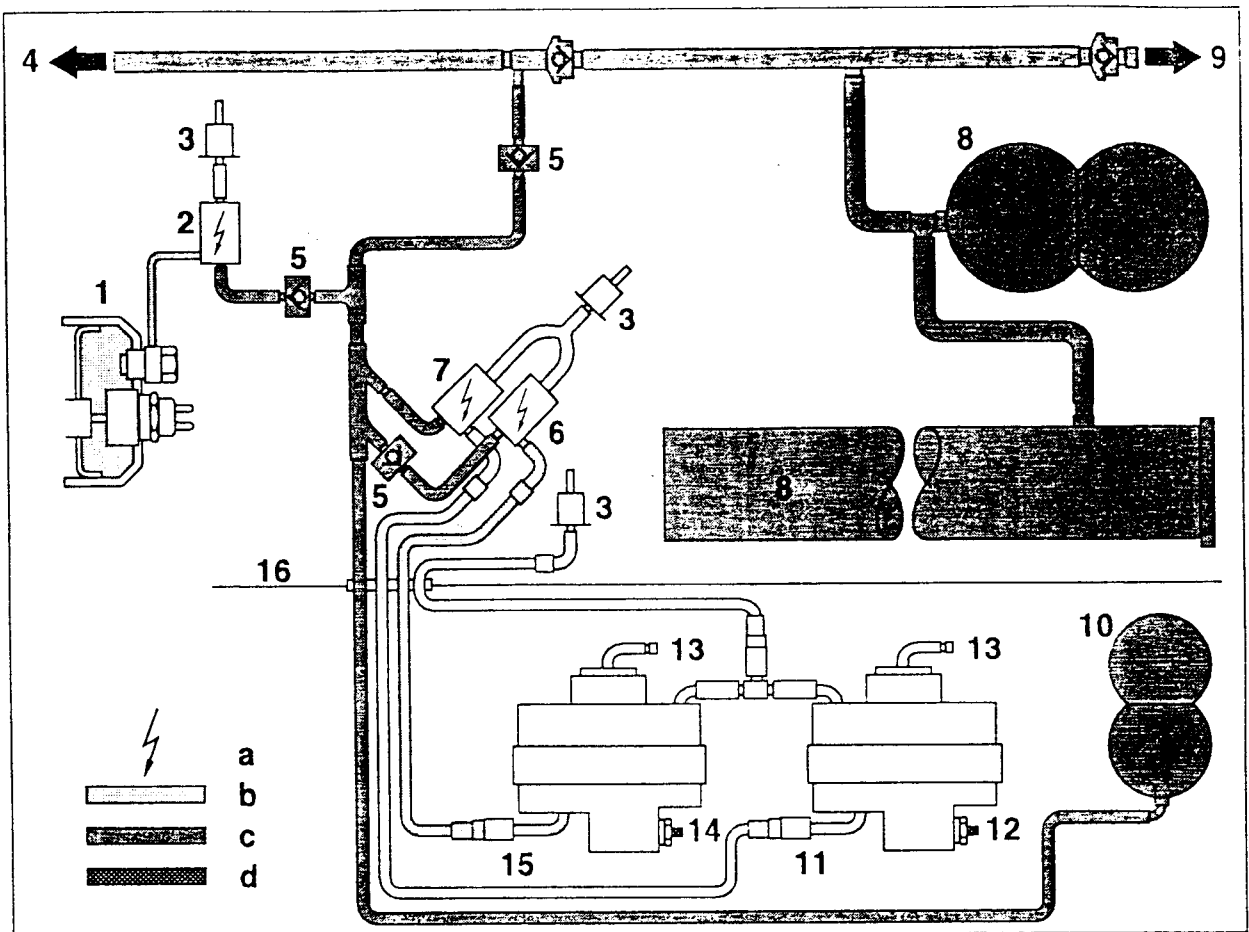
### Function

The warning lamp is actuated by the control module when selecting the differential locks.

### Arrangement

The warning lamp is integrated in the instrument cluster.

## Function diagram for diesel engine

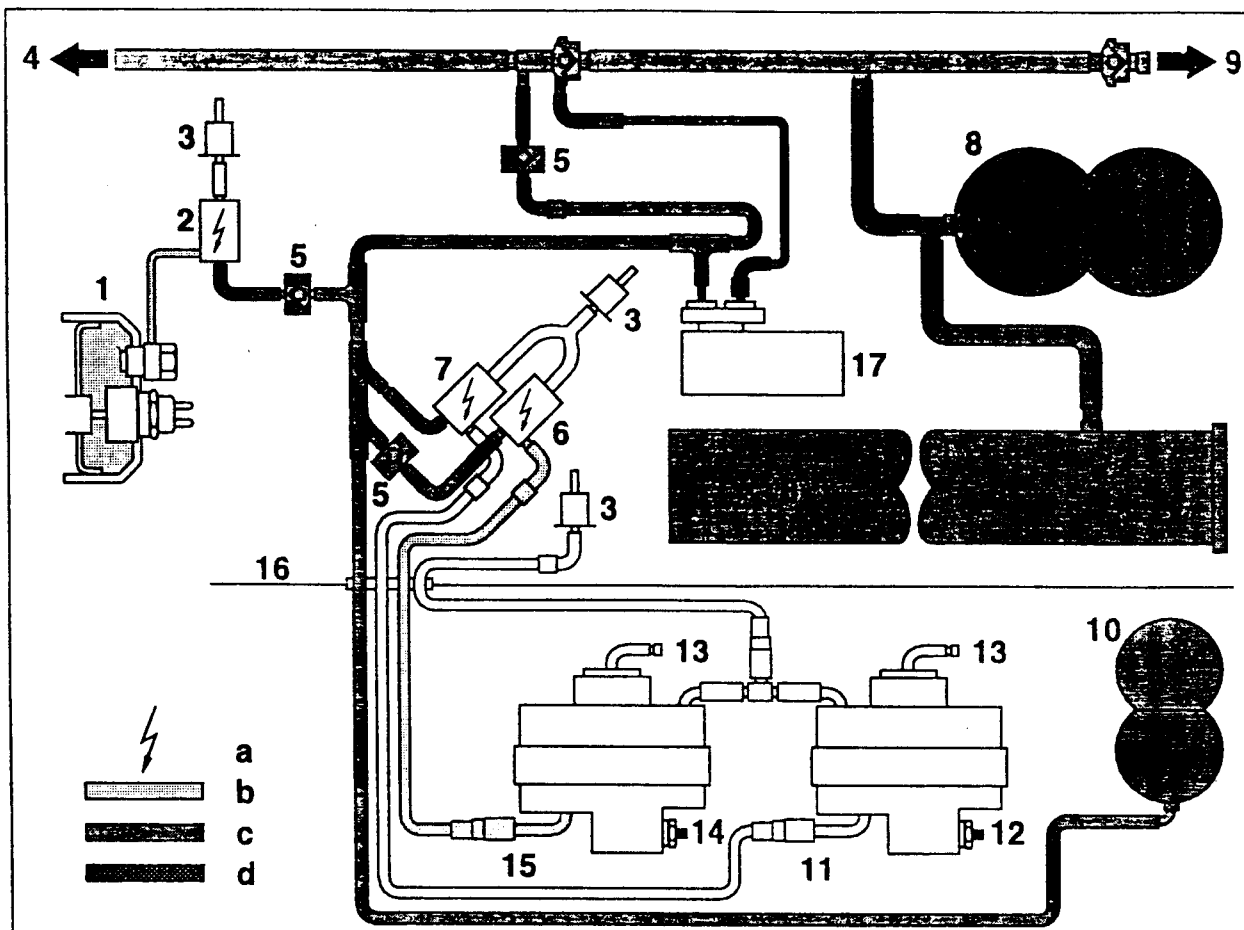


P33.40-0209-57

## Transfer case and rear axle lock engaged

- |   |  |    |   |
|---|--|----|---|
| a | engaged  | 9  | to brake assembly                         |
| b | Switching pressure   | 10 | Differential locks vacuum reservoir 0,4 l |
| c | Supply pressure  | 11 | Front axle lock pressure intensifier unit |
| d | Hydraulic pressure   | 12 | Hydraulic connection to front axle lock   |
| 1 | Transfer case  | 13 | to hydraulics supply tank                 |
| 2 | Transfer case electromagnetic switchover valve Y68   | 14 | Hydraulic connection to rear axle lock    |
| 3 | Changeover filter on electromagnetic switchover valve  | 15 | Rear axle lock pressure intensifier unit  |
| 4 | to vacuum pump, motor  | 16 | right wheelhouse                          |
| 5 | Non-return valve   |    |   |
| 6 | Rear axle lock electromagnetic switchover valve Y68/1  |    |   |
| 7 | Front axle lock electromagnetic switchover valve Y68/2                                       |    |   |
| 8 | Brake vacuum reservoir:<br>in tubular cross member 4,4 l<br>Auxiliary vacuum reservoir 1,8 l |    |   |

## Function diagram for gasoline engine



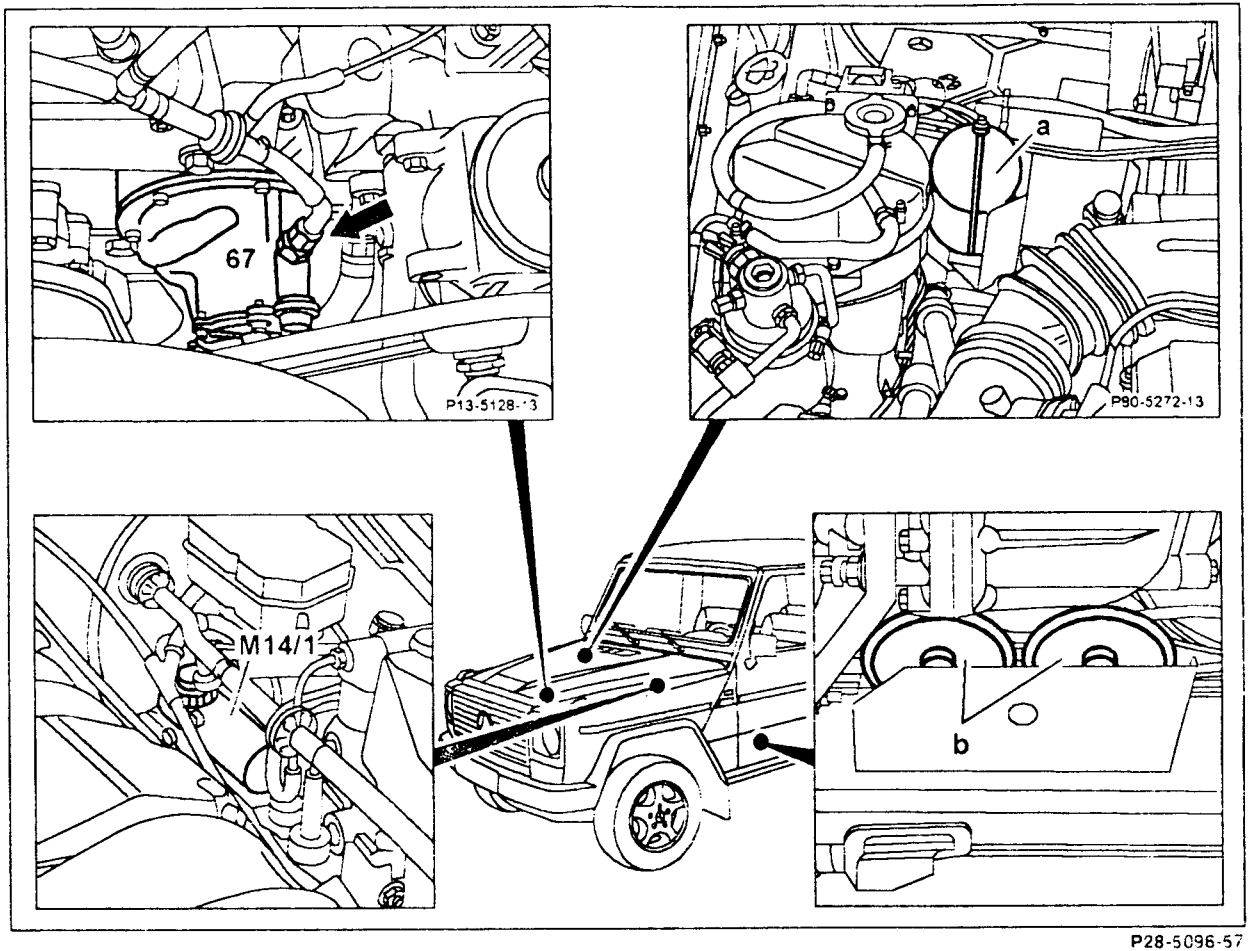
P33.40-0208-57

## Transfer case and rear axle lock engaged

- a engaged
- b Switching pressure
- c Supply pressure
- d Hydraulic pressure

- |  |  |
|--|--|
| 1 Transfer case  | 9 to brake assembly                          |
| 2 Transfer case electromagnetic switchover valve Y68   | 10 Differential locks vacuum reservoir 0,4 l |
| 3 Changeover filter on electromagnetic switchover valve  | 11 Front axle lock pressure intensifier unit |
| 4 to engine intake manifold  | 12 Hydraulic connection to front axle lock   |
| 5 Non-return valve   | 13 to hydraulics supply tank                 |
| 6 Rear axle lock electromagnetic switchover valve Y68/1  | 14 Hydraulic connection to rear axle lock    |
| 7 Front axle lock electromagnetic switchover valve Y68/2                                       | 15 Rear axle lock pressure intensifier unit  |
| 8 Brake vacuum reservoir:<br>in tubular cross member 4,4 l<br>Auxiliary vacuum reservoir 1,8 l | 16 right wheelhouse                          |
|  | 17 Electrical auxiliary vacuum pump M14/1    |

## Installation diagram of pneumatic system



- M14/1 Gasoline engine auxiliary vacuum pump  
 67 Diesel engine vacuum pump  
 a Vacuum reservoir 0,4 l  
 b Front/rear axle lock pressure intensifier unit

## Gasoline engine electrical auxiliary vacuum pump

### Task

Supplies the differential lock system with a vacuum if the prevailing intake pipe vacuum is not sufficient, so that the differential locks can be engaged.

### Design

- Electric motor
- Eccentric with connecting rod and piston pump
- Diaphragm pressure switch with electrical contact

### Function

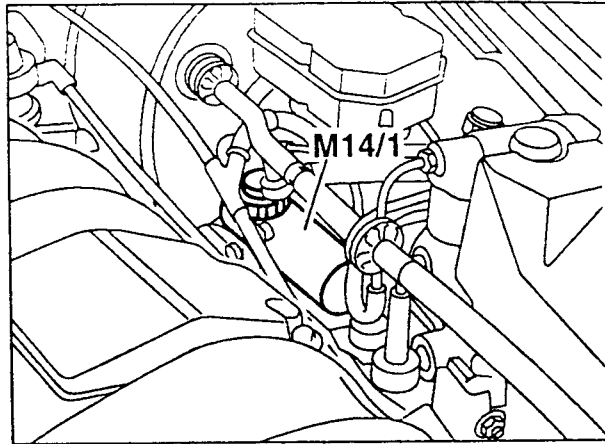
The positive actuation (terminal 15) of the vacuum pump (M) takes place by actuating a differential lock switch via the control module and the time limit relay (N11/7).

The negative actuation takes place via ground, wherein it is not actuated via the diaphragm pressure switch until there is a vacuum of  $< 0.4$  bar in the supply pressure of the lock system.

When a lock has been selected and the diaphragm pressure switch has closed the negative contact at a vacuum of  $< 0.4$  bar, the electric motor drives a piston rod via an eccentric disk and connecting rod, which generates a vacuum in the lock system.

When a vacuum of  $> 0.6$  bar is reached, the contact opens and the pump is switched off.

This can be repeated several times if several locks are actuated one after the other, or the vacuum in the lock system falls below 0.4 bar.



P54-6924-13

## Vacuum reservoir 0,4 l

### Task

Stores a vacuum volume as supply so as to be able to provide sufficient vacuum during lock actuation.

### Design

Plastic reservoir with 0.4 l capacity.

### Function

The vacuum reservoir stores a vacuum volume in the supply circuit and provides this vacuum for the rapid actuation of the differential locks.

### Arrangement

Under the right front fender on the wheelhouse or, as from introduction of the G 350 Turbo-diesel (04/92) in the engine compartment (near the fire wall).

## Electromagnetic switchover valves

### Task

- Directs the vacuum to the front axle pressure converter
- Directs vacuum to rear axle pressure converter
- Directs vacuum to the transfer case locking cylinder
- Vents diaphragm chambers upon release of the differential lock

### Design

- 3/2-way valve (3 connections/2 directions)
- Electromagnetic (12 V)

### Function

The drive of the solenoid valves is via the control module.

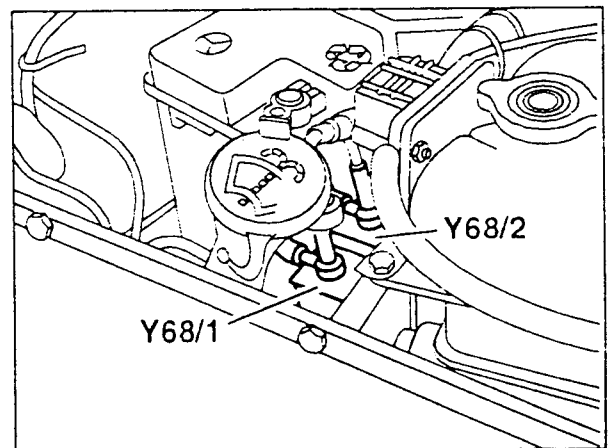
With a voltage of 12 V the solenoid valve switches to continuity and allows the available vacuum to pass into the diaphragm chamber of the respective differential lock (1st direction).

Upon release (by removal of the voltage) the solenoid valve switches over to the ventilation function (2nd direction).

### Arrangement

The electromagnetic switchover valves are arranged in the engine compartment in the fire wall area.

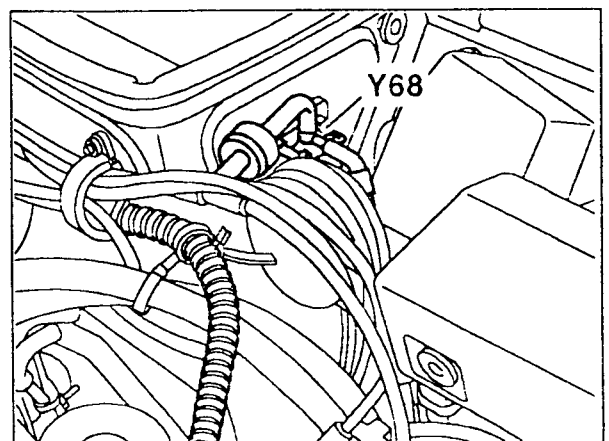
### Differential lock electromagnetic switchover valve Y68



P54-6925-13

### Rear axle lock electromagnetic switchover valve Y68/1

### Front axle lock electromagnetic switchover valve Y68/2



P54-6954-13

**Pressure intensifier unit****Task**

Converts vacuum into hydraulic pressure which is required for the actuation of the slave cylinders at the front and rear axle for operating the differential locks.

**Design**

- Vacuum piston with diaphragm
- Pressure piston with gaiter
- Piston spring
- Vacuum connection – intake side (4)
- Vacuum connection – ventilation side (1)
- Pressure connection – output (3)
- Connection from hydraulic system supply tank (2)

**Function**

By applying a vacuum to the intake connection (4) which acts upon a piston with diaphragm, this piston is pulled downward. In this way the gaiter closes the inlet ports and a hydraulic pressure is generated (depending on the intensity of the available vacuum).

The upper piston chamber is ventilated via the changeover filter (1).

When the lock is switched off, the piston is pressed up by the piston spring, the hydraulic pressure in the slave cylinder drops and the upper piston chamber is ventilated via the changeover filter.

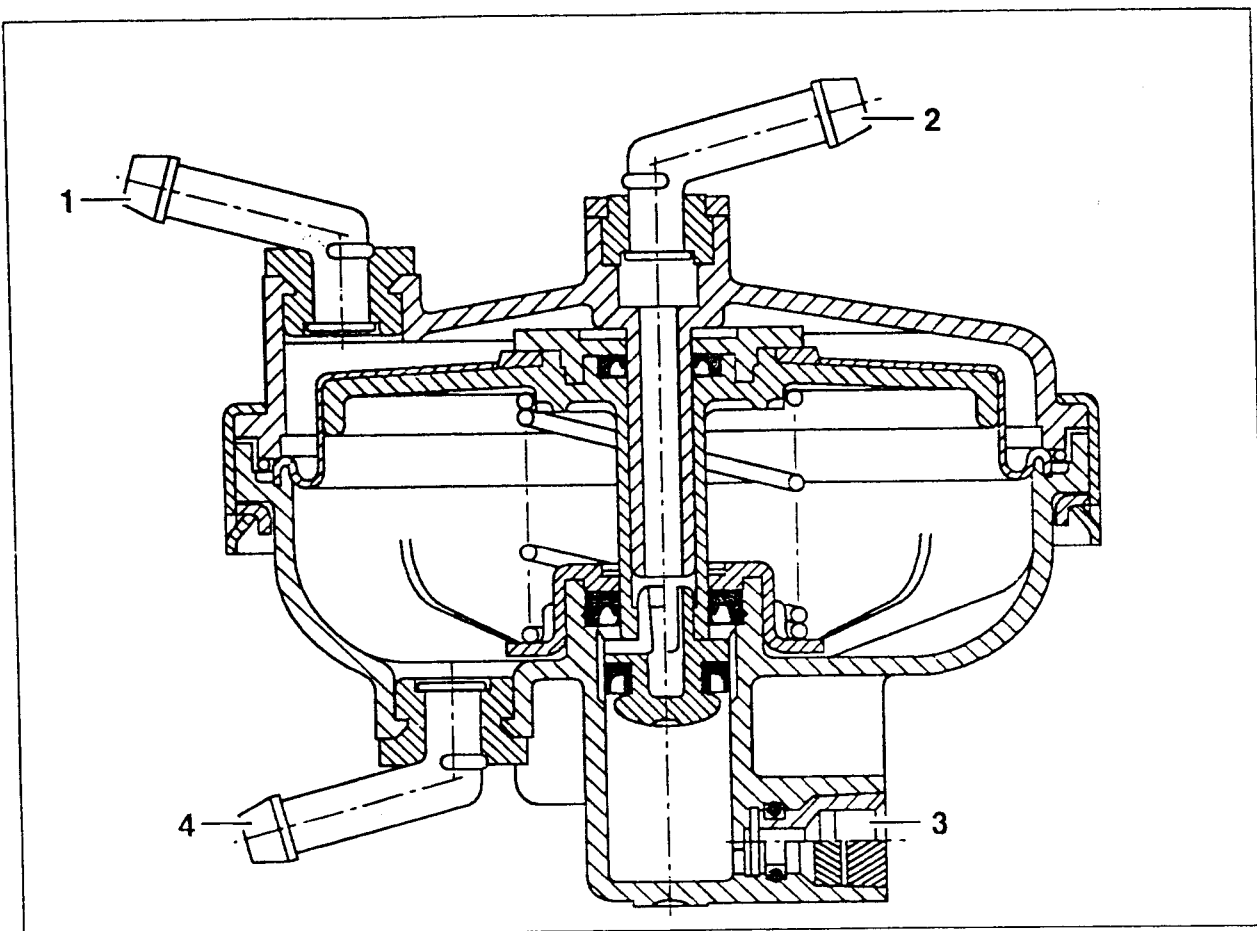
The fluid equalization takes place via the supply hole in the piston and the inlet slots in the cylinder when the piston has reached its neutral position.

**Arrangement**

- On the right wheelhouse, under the front fender

from production introduction 350 Turbo-diesel (03/92)

- Next to transfer case on frame side member

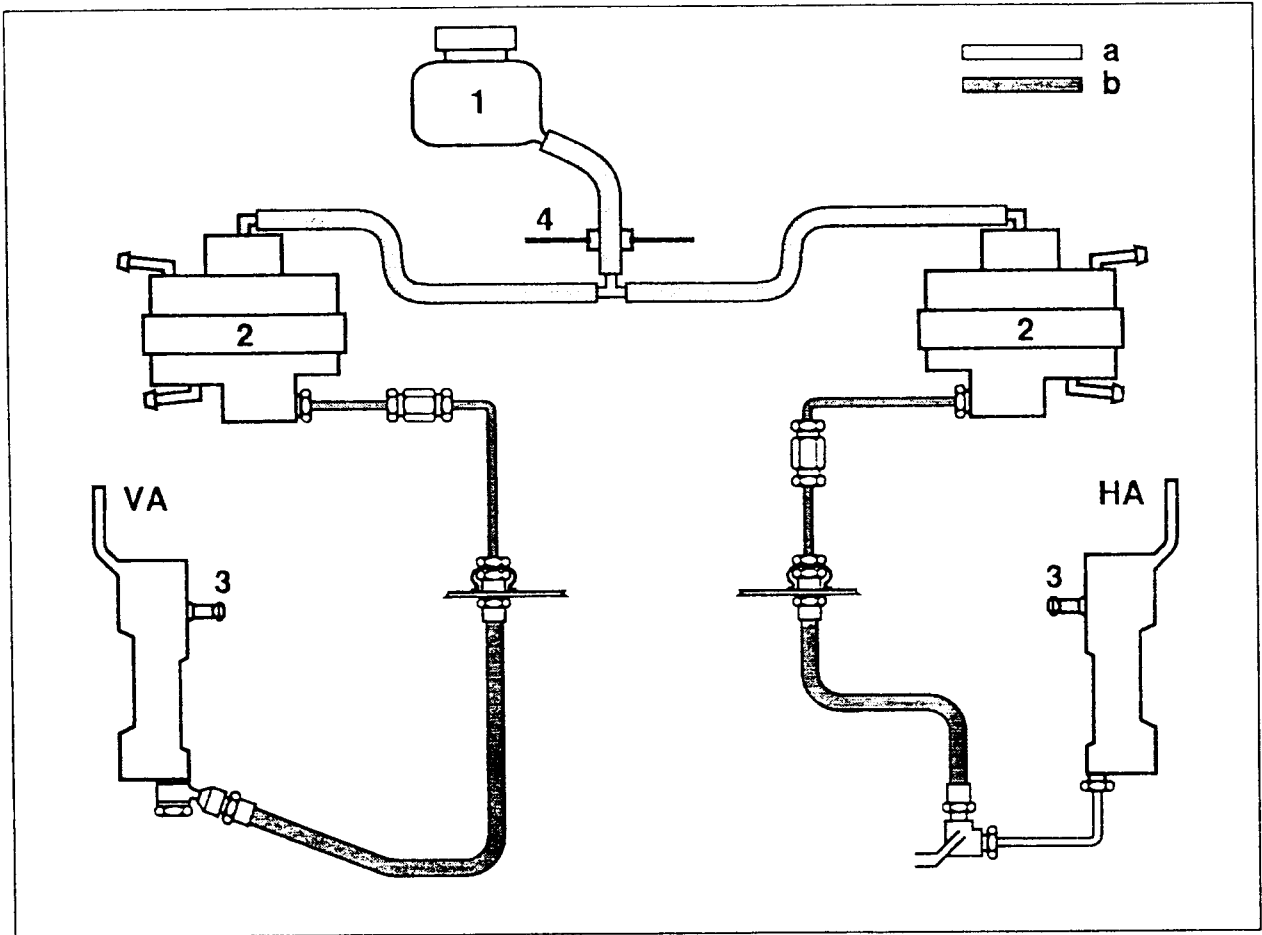


P33.40-0206-57

- 1 Ventilation
- 2 to supply tank (hydraulic system)
- 3 to shift cylinder for lock actuation
- 4 Intake connection (vacuum)



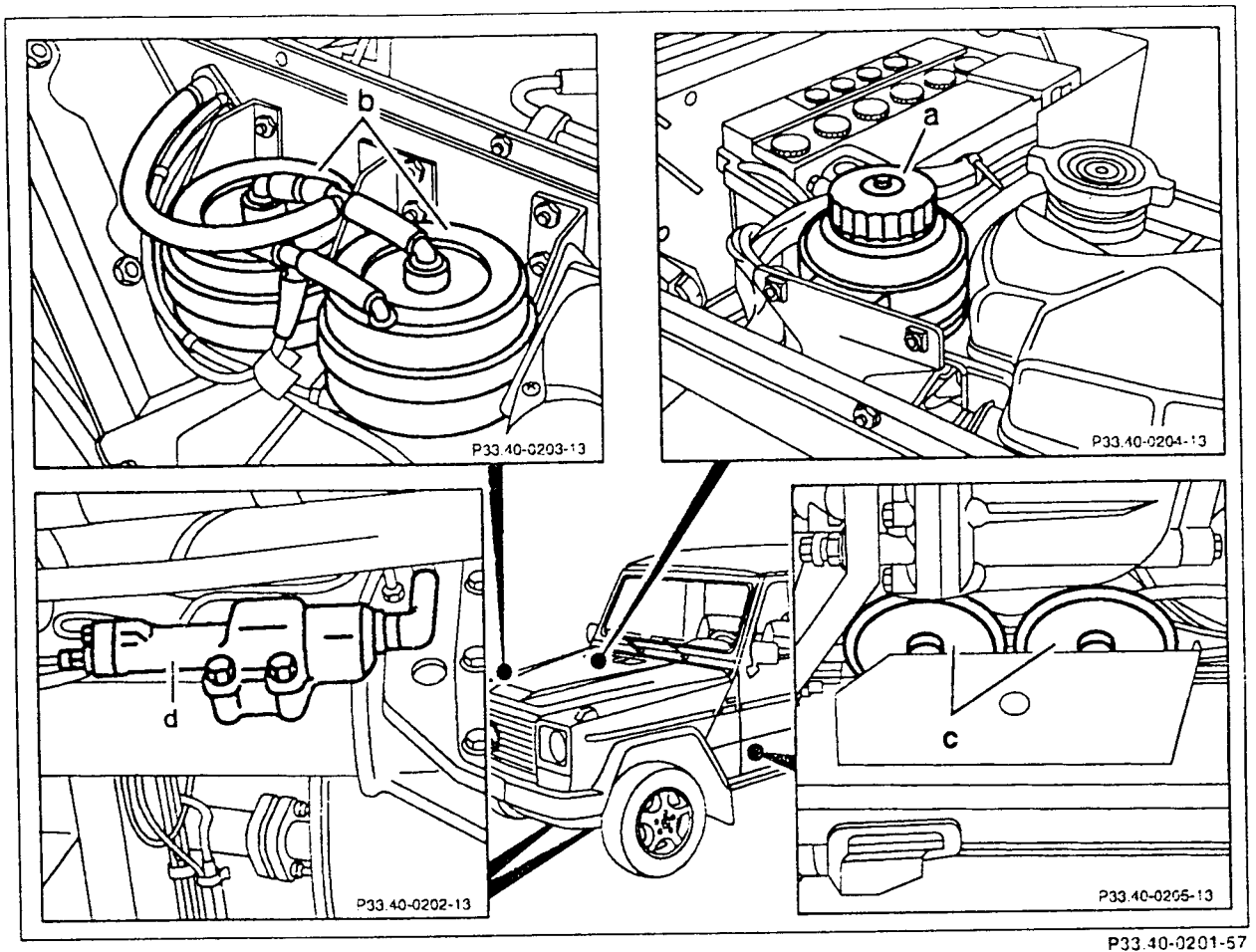
## Function diagram of hydraulic system



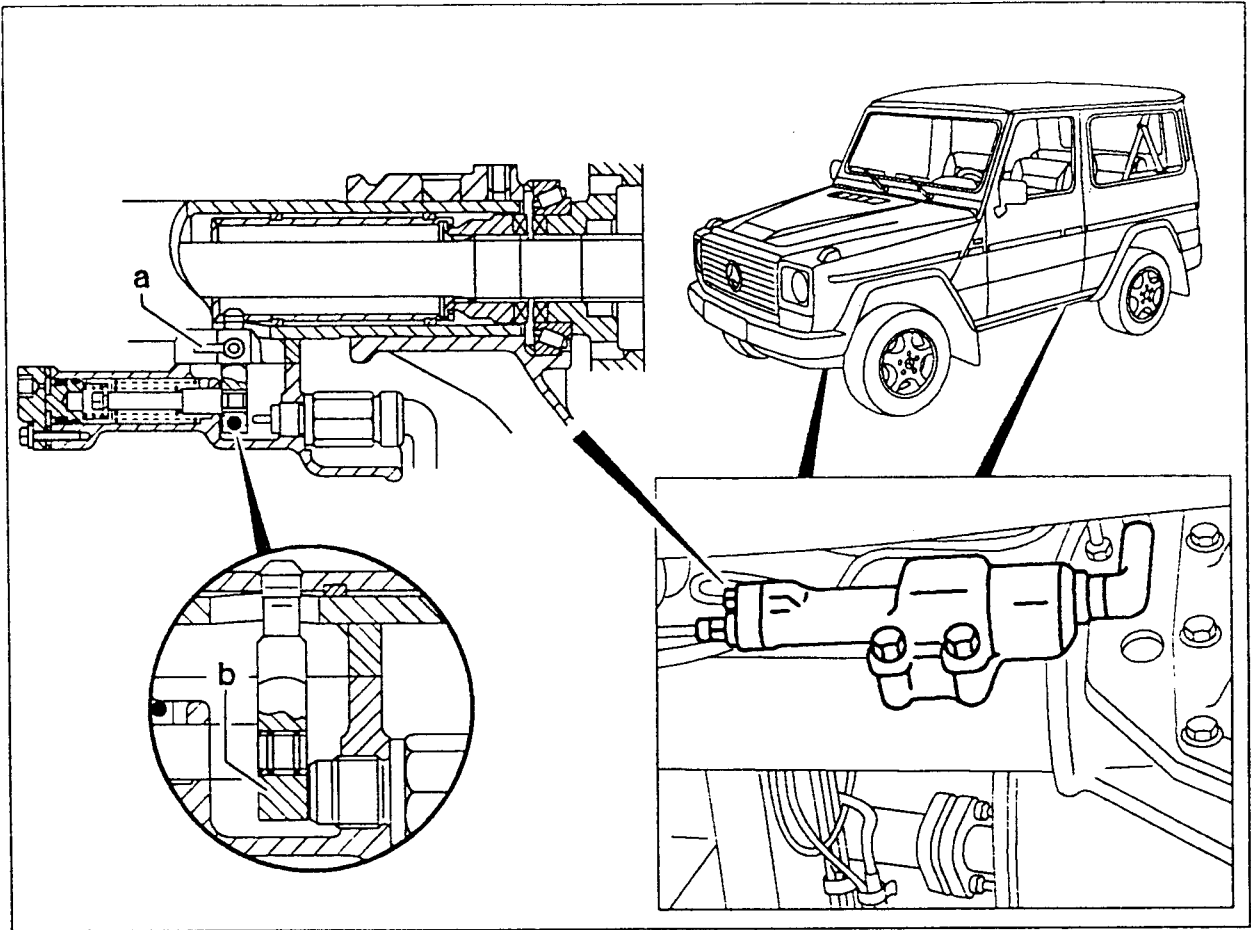
P33.40-0297-57

- 1 Hydraulic supply tank
- 2 Front/rear axle lock pressure intensifier unit
- 3 Front/rear axle lock shift cylinder
- 4 Right wheelhouse
- VA Front axle lock shift cylinder
- HA Rear axle lock shift cylinder
- a Supply
- b Hydraulic oil to shift cylinder

## Installation diagram – hydraulic system



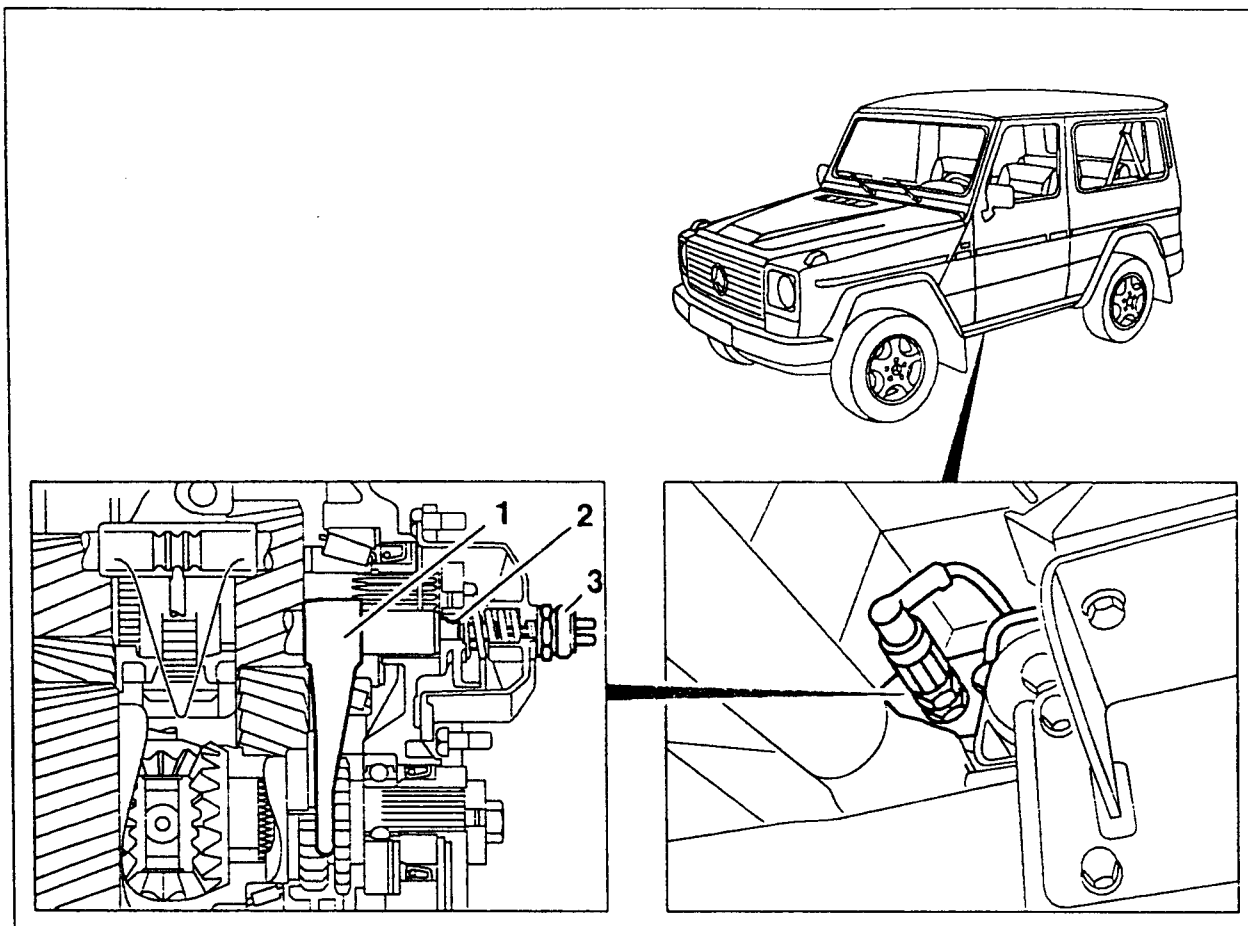
- a Supply tank
- b Front/rear axle lock pressure intensifier unit  
up to 03/92 in right wheelhouse
- c Front/rear axle lock pressure intensifier unit  
from 04/92 on frame side member (next to transfer case)
- d Front/rear axle lock shift cylinder

**Installation diagram – mechanical system – front/rear axle lock**

P33.40-0200-57

**Front/rear axle lock shift cylinder**

- a Axle housing ventilation
- b Shift finger

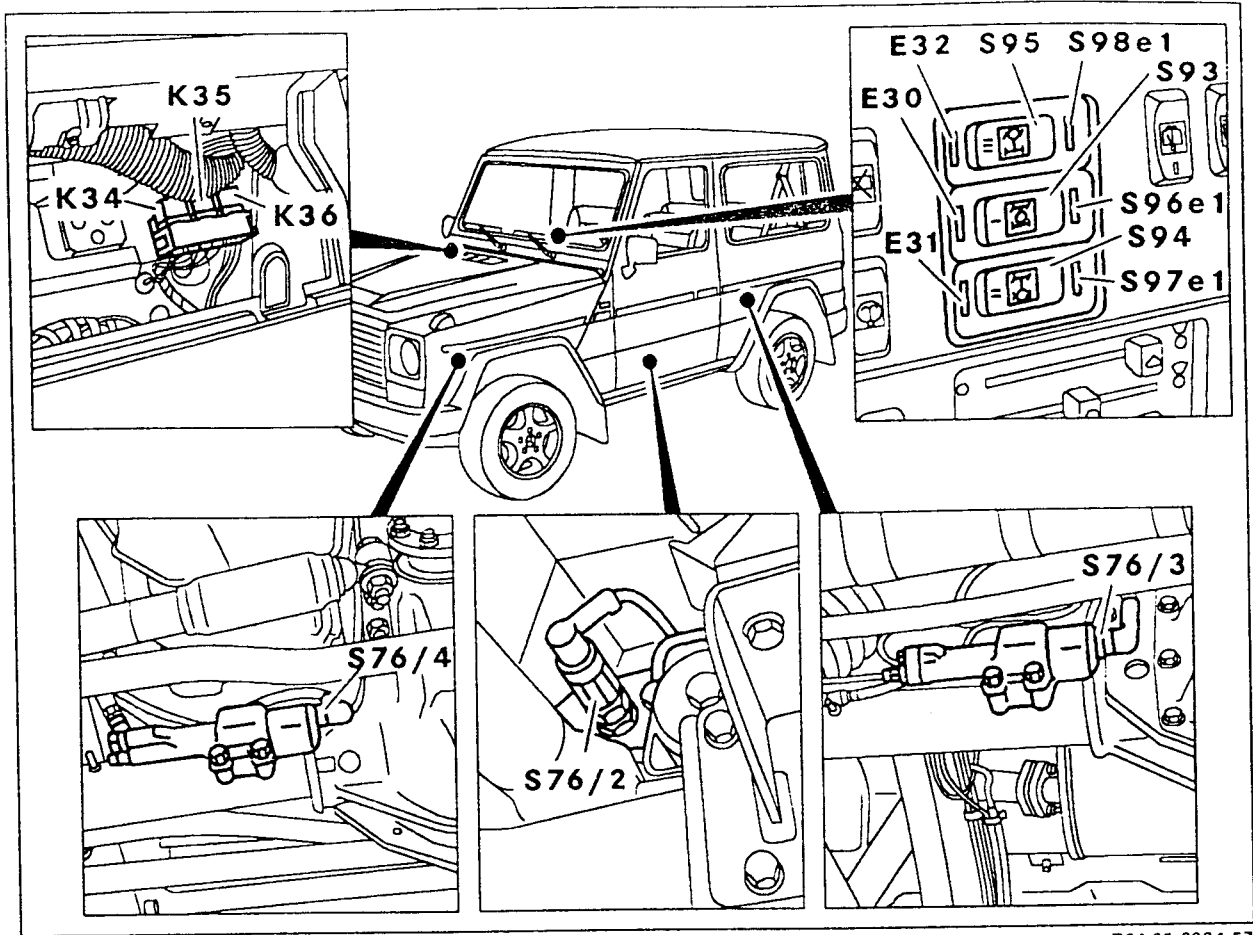
**Installation diagram – mechanical system – transfer case lock**

P28.00-0201-57

**Transfer case lock**

- 1 Shift fork
- 2 Shift cylinder
- 3 Pilot switch S76/2

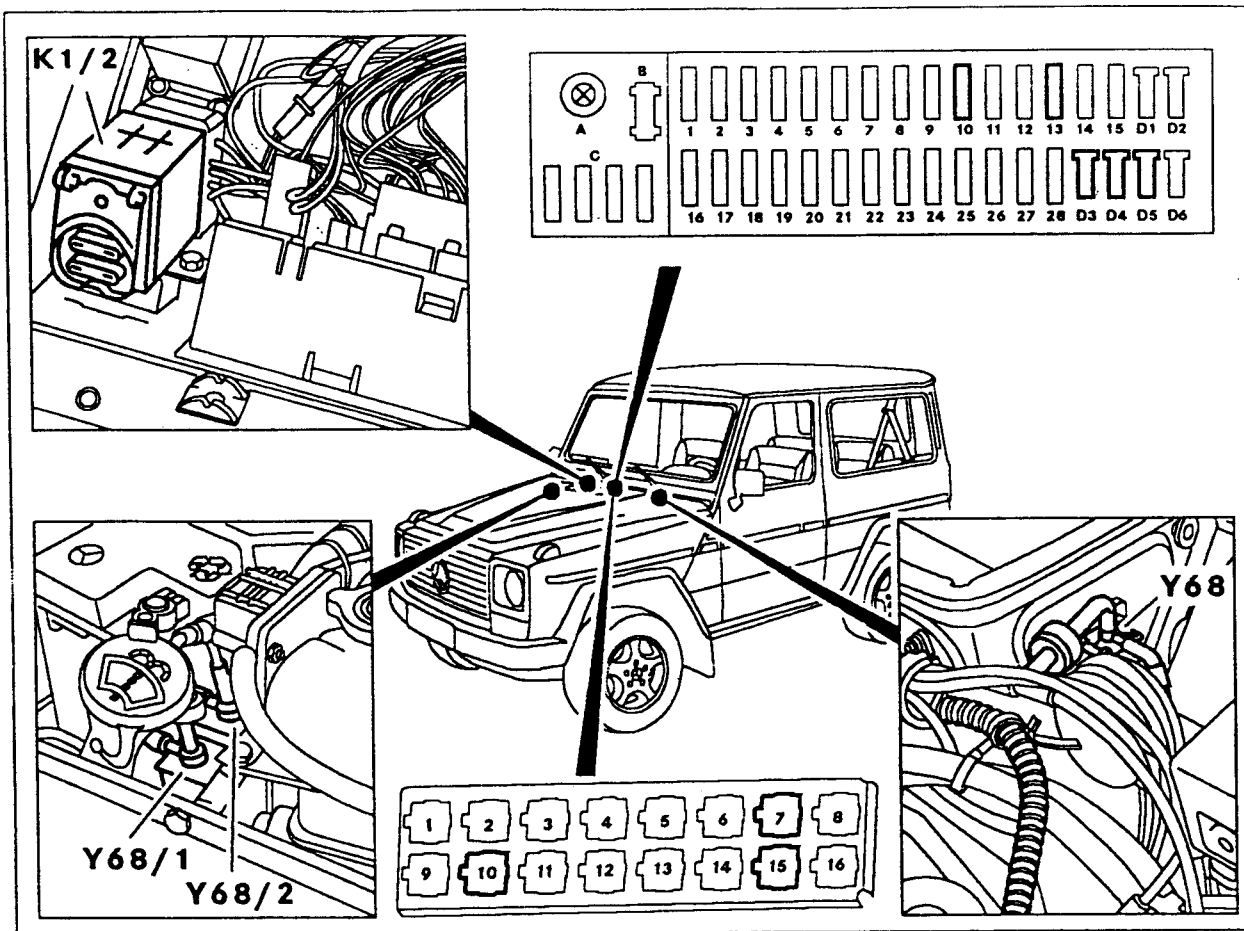
## Installation diagram – electrical system up to 02/94



P54.25-0224-57

- E30 Transfer case lock switch-on indicator lamp (yellow)
- E31 Rear axle lock switch-on indicator lamp (yellow)
- E32 Front axle lock switch-on indicator lamp (yellow)
- K34 Transfer case lock relay – additional feature with diesel engines for actuating electr. auxiliary vacuum pump M14/1
- K35 Rear axle lock relay
- K36 Front axle lock relay
- S76/2 Transfer case lock pilot switch
- S76/3 Rear axle lock pilot switch
- S76/4 Front axle lock pilot switch
- S93 Transfer case switch
- S94 Rear axle lock switch
- S95 Front axle lock switch
- S96e1 Transfer case lock function indicator lamp (red)
- S97e1 Rear axle lock function indicator lamp (red)
- S98e1 Front axle lock function indicator lamp (red)

## Installation diagram in electrical system up to 02/94



P33.40-0210-57

- D3 Transfer case lock diode
- D4 Rear axle lock diode
- D5 Front axle lock diode
- 10 Fuse – terminal 15
- 13 Fuse – terminal 30
- K1/1 Diesel engine overvoltage protection relay  
(not shown, arrangement as K1/2)
- K1/2 Gasoline engine overvoltage protection relay
- Y68 Transfer case lock electromagnetic switchover valve
- Y68/1 Rear axle lock electromagnetic switchover valve
- Y68/2 Front axle lock electromagnetic switchover valve
- 7 Shut-off relay 1 ABS K34
- 10 Differential lock time limit relay N11/7
- 15 Shut-off relay 2 ABS K32

---

**Time limit relay N11/7 to 02/94**

---

**Task**

Provides voltage to the differential lock control module.

**Design**

Relay with integrated delay electronics.

**Function**

The voltage supply is from terminal 30 via fuse F10 as well as from terminal 15 via fuse F13.

When the ignition is switched on (terminal 15) the time limit relay is actuated and provides the control module of the differential lock with voltage; in this way the respective differential locks can be selected.

When the ignition is switched off the time limit relay provides the differential lock control module with voltage for approx. a further 30 s.

In this way the respectively switched differential locks remain engaged (with the ignition off) should the engine be started again, or if the engine has stalled or switched off.

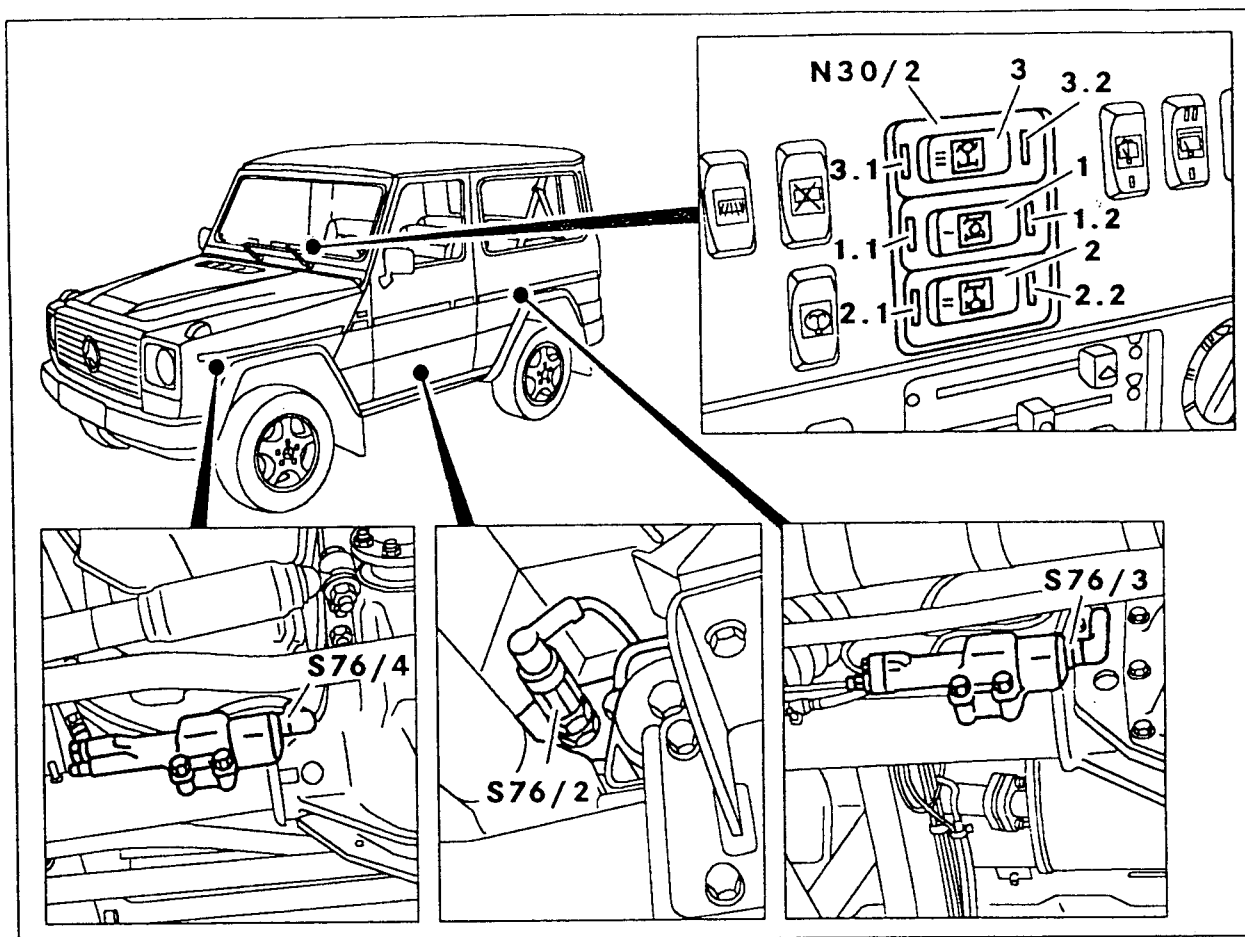
The same locked condition as before remains in operation when moving off or when continuing to drive along. The lock(s) do not have to be reactivated.

The already selected locks remain engaged although, with "ignition off", the function indicator lamps (red) go out.

**Arrangement**

The time limit relay (N11/7) is arranged in the relay block as no. 10., in the electrics compartment, under the glove compartment.

## Installation diagram – electrical system as from 03/94

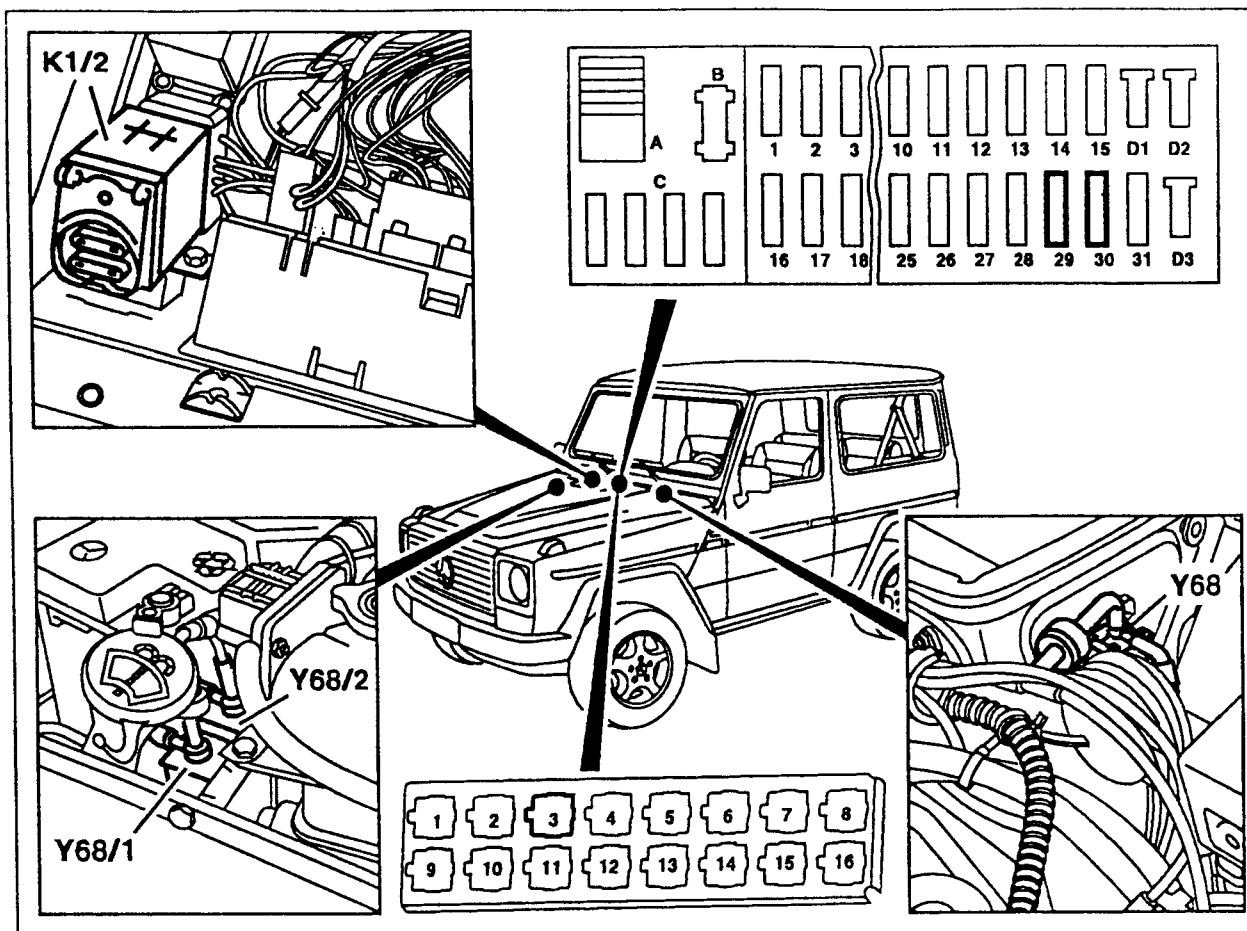


P54-6956-57

- N30/2 Switch element (differential lock control module)
- 1 Transfer case lock switch
- 1.1 Transfer case lock switch-on indicator lamp (yellow)
- 1.2 Transfer case lock function indicator lamp (red)
- 2 Rear axle lock switch
- 2.1 Rear axle lock switch-on indicator lamp (yellow)
- 2.2 Rear axle lock function indicator lamp (red)
- 3 Front axle lock switch
- 3.1 Front axle lock switch-on indicator lamp (yellow)
- 3.2 Front axle lock function indicator lamp (red)
- S76/2 Transfer case lock pilot switch
- S76/3 Rear axle lock pilot switch
- S76/4 Front axle lock pilot switch



## Installation diagram – electrical system as from 03/94



P33.40-0212-57

- 3 Relay (K36) in gasoline engines for actuating the electr. auxiliary vacuum pump M14/1
- 29 Fuse
- 30 Fuse
- K1/1 Diesel engine overvoltage protection relay (not shown, arrangement as K1/2)
- K1/2 Gasoline engine overvoltage protection relay
- Y68 Transfer case lock electromagnetic switchover valve
- Y68/1 Rear axle lock electromagnetic switchover valve
- Y68/2 Front axle lock electromagnetic switchover valve

**New features and modifications to differential lock (from 03/94 with touch contact switch function)****Control module**

From 03/94 the control module has been modified. Up to 02/94 the differential lock switches are of rocker switch design, as of 03/94 they are touch contact switches. This facilitates the operation. You only have to touch the switch in order to switch the differential locks on and off respectively.

**Control**

There is a compulsory sequence for switching on the differential locks (logic circuit) and this has not been changed:

1. Transfer case (interaxle equalization)
2. Rear axle
3. Front axle

Switching off is carried out as before.

The entire electronic control of the differential locks is integrated in the new control module. The following external components are therefore omitted:

- Time-limit relay (N11/7)
- ABS shut-off relay 2 (K33, No. 15)
- Blocking diodes in fusebox for
  - Interaxle equalization
  - Rear axle
  - Front axle
- 3 holding relays for
  - interaxle equalization
  - Rear axle
  - Front axle

**Inputs**

Kl. 30/1 Battery voltage 12 V

- from overvoltage protection relay (K1/1 or K1/2) 87L

Kl. 15/5 Ignition

- from overvoltage protection relay (K1/1 or K1/2) 30a

Kl. 31/3 Negative

- from steering column, W29/7

Kl. 58/6 Illumination

- from terminal block X6

LA/12 Function indicator lamp, transfer case differential lock

- on when negative connected from pilot switch (S76/7) on transfer case and the
- ignition is switched on

HA/13 Function indicator lamp of rear axle differential lock

- on when negative connected from pilot switch (S76/8) at rear axle and
- ignition is switched on

VA/14 Function indicator lamp of front axle differential lock

- on when negative is connected from pilot switch (S76/7) on the transfer case and
- ignition is switched on

**Illumination**

The illumination of the control module as well as the

- switch-on indicator lamps (yellow) and the
- function indicator lamps (red)

are in LED design and cannot be changed separately.

**Removal/Installation**

The removal and installation of the control module is carried out in the same manner as before.

**Time delay**

The electronics for the time delay is integrated in the control module and the time limit is 30 sec., as before.

**ABS shut-off**

The ABS shut-off via the differential locks is still carried out via the ABS shut-off relay (K32, No. 7).

The ABS shut-off relay receives negative from the differential lock control module for shutting off when the transfer case lock is selected or a further differential lock is engaged.

Manual ABS shut-off is carried out as before via the switch (S76/1) in the middle console, however via positive and not as previously via negative.

**Outputs**

LA/9 Driving of electromagnetic switchover valve (Y68) with positive for actuating the transfer case lock

Driving of the electr. auxiliary vacuum pump with positive via relay K36 (only gasoline engine)

Driving of the warning lamp in the instrument cluster with positive

internal Actuation of LED (yellow) for switch-on indicator lamp FA

HA/10 Driving of the electromagnetic switchover valve (Y68/1) with positive for actuating the rear axle lock

internal Actuation of the LED (yellow) for switch-on indicator lamp RA

VA/11 Driving of the electromagnetic switchover valve (Y68/2) with positive for actuating the front axle lock

internal Actuation of the LED (yellow) for switch-on indicator lamp FA

ABS/7 Output for ABS shut-off

- Driving of the ABS relay no. 7 (32) with negative
- Negative is applied to this output when:
- transfer case lock is actuated or
  - a differential lock is engaged.

In this way the positive line from the overvoltage protection relay (diesel engine K1/1, gasoline engine K1/2) to the ABS control unit (N30) PIN 1 is interrupted and the ABS indicator lamp is actuated.

**New features and modifications to the differential lock – Comparison**

Function	as from 03/94	to 02/94
Control module (S76)	Touch contact switch ● press on → ● press off → again	Rocker switch ● press on → on the left ● press off → on the right
Control	through control module (S76)	through control module and 3 relays
Voltage supply ABS control unit (N30) terminal 15 (PIN 1)	from overvoltage protection relay (K1/1, K1/2) via ABS shut-off relay (K32) and manual ABS switch (S76/1)	from overvoltage protection relay (K1/1)  via ABS shut-off relay 1 (K32, no. 7)
ABS shut-off (negative)	via differential lock control module (S76) (integrated in control module) ● Negative to ABS shut-off relay (K32)	through pilot switch to ● transfer case ● Rear axle ● Front axle via ABS shut-off relay (K32)
ABS shut-off (positive)	via differential lock control module (S76) (integrated in control module) ● Negative to ABS shut-off relay (K32)	via differential lock control module and ABS shut-off relay 2 (K33, No. 15) and ABS shut-off relay 1 (K32, No. 7)
manual ABS shut-off	via ABS switch (S76/1) (positive)	via ABS switch (S76/1) (negative) and ABS shut-off relay 2 (K33, No. 15) and ABS shut-off relay 1 (K32, No. 7)
Time delay	via differential lock control module (S76) (integrated in control module)	via time delay relay (N11/7, No. 10)
Illumination (terminal 58)	LEDs	Bulbs
Indicator lamps (yellow/red)	LEDs	Bulbs

**Note:** For schematic wiring diagrams refer to "Electric circuit diagrams" – Cross-country vehicle, Volume 1 1  
For diagnostics (model 463) refer to "Diagnostics manual" – Cross-country vehicle, Volume 1