



BMW E21

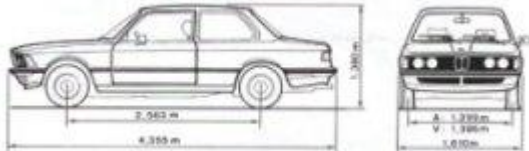

1975-1982

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2. BMW 3-series E21, European model 1975

Engine	323i	320i	320	318	316
Production dates:	11/77 - 01/82	11/75 - 03/77	08/75 - 03/77	08/75 - 07/80	08/75 - 07/80
Type:	inline watercooled 6	inline watercooled 4	inline watercooled 4	inline watercooled 4	inline watercooled 4
Bore x Stroke mm	80 x 76.8	89 x 80	89 x 80	89 x 71	84 x 71
Displacement cc	2315	1990	1990	1766	1573
Valve Operation	SOHC	SOHC	SOHC	SOHC	SOHC
Valves / cyl	2	2	2	2	2
Compression Ratio	9.5 : 1	9.3 : 1	8.1 : 1	8.3 : 1	8.3 : 1
Injection / Carburetor:	Bosch K-Jetronic	Bosch K-Jetronic	Solex DIDTA 32/32	Solex DIDTA 32/32	Solex DIDTA 32/32
Max Torque	190Nm @ 4500	175Nm @ 4350	160Nm @ 3700	145Nm @ 4000	125Nm @ 4000
BHP (DIN)	143 @ 5800	125 @ 5700	109 @ 5800	98 @ 5800	90 @ 6000
Engine type code	M 20	M 10	M 10	M 10	M 10
Timing by:	belt	chain	chain	chain	chain
CO %	1-2	3.0 (max)	1.5	1.5	1.5
Idle speed (RPM)	850-950	850-950	850-950	850-950	850-950
					
Chassis and Drivetrain					
Transmission	4 speed manual	4 speed manual	4 speed manual	4 speed manual	4 speed manual
Front suspension	MacPherson struts, coil springs, anti-roll	MacPherson struts, coil springs, anti-roll	MacPherson struts, coil springs, anti-roll	MacPherson struts, coil springs, anti-roll	MacPherson struts, coil springs, anti-roll

	bar	bar	bar	bar	bar
Rear suspension	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar
Axle Ratio	3.45	3.64	3.91	3.91	4.10
General					
Wheelbase (mm)	2563	2563	2563	2563	2563
Track front/rear (mm)	1388/1401	1387/1396	1366/1376	1366/1376	1366/1376
Brakes front/rear	Ventilated disc / massive disc	Ventilated disc / Drum	Ventilated disc / Drum	Ventilated disc / Drum	Ventilated disc / Drum
Wheels/Tires	steel 13"x5.5J / 185/70HR13	steel 13"x5.5J / 185/70HR13	steel 13"x5.5J / 185/70HR13	steel 13"x5.5J / 185/70HR13	steel 13"x5J / 165SR13
Maximum Speed (kph)	200	182	170	165	160
Acceleration 0-100 kph	8.7	9.9	11.2	11.9	13.8
Weight (kgs)	1110	1090	1030	1020	1010
Battery (Ah)	55	55	44	36	36
Standard Equipment	(including equipment of lower range models)				
	Electronic ignition	Model-badge in front grill		Halogen headlights H4	Chrome window frames
		Rev counter		Lighted glove compartment	Rear safety belts: 2 auto, 1 manual
		Luxury interior trim, w/cloth door panels		Toolbox	Bilux headlights
		Dual halogen headlights H4			Quartz clock



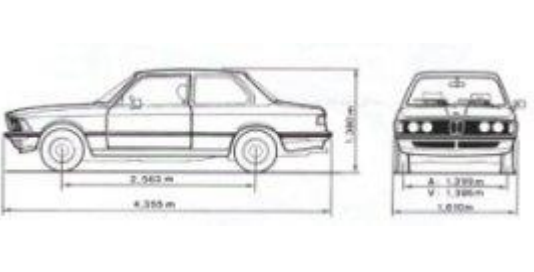

		Lighted hood & bonnet			
Options					
Power steering rack					
5-speed manual gearbox					
3-speed automatic gearbox					
Tinted glass					
Manual sunroof, metal					
Leather 3-spoke sports steering wheel					
Leather gear knob					
Headlights wipers					
Rev counter					
Alloy wheels (13")					
Rear headrests					
Recaro and/or leather seats					
Bavaria radio-cassette					
Extended tool kit					
Powered antenna					
Fog lights (mounted under front bumper)					
Clearcoated metallic paint					

All models			Valve margins (cold)	in (mm)	out (mm)
Fuel tank (ltrs)	58 (51+7)		4 cyl. > 81	.15	.20
Cylinder head	Aluminum		316 81>	.20	.20
Lubricant (motoroil)	SAE 10W40 SE		318i 81>	.20	.25
Gearbox oil - manual	SAE 80		all 6-cyl.	.25	.25
Change quantity 4 sp.	1 litre				
Change quantity 5 sp.	1.4 litres				
Gearbox oil - auto	Dexron ATF		Firing order		
Change quantity auto	2 litres		4 cylinder	1 - 3 - 4 - 2	
Diff oil	SAE 90 Transmission		6 cylinder	1 - 5 - 3 - 6 - 2 - 4	
Change quantity diff	0.95 litres				
Power steering	Dexron ATF 77				
Change quantity	1.2 litre				
Coolant 4-cylinder	7.2 litres				
Coolant 6-cylinder	12 litres				
Brake / Clutch	ATE/Castrol/DOT 4				
Fuel	Leaded ROZ 98				

Units produced total for all E21 3-series 1978-1982: 1,001,521

3. BMW 3-series E21, European model 1981

Engine	323i	320/6	318i	316	315
Production dates:	11/77 - 01/82	08/77 - 08/82	08/80 - 12/82	08/80 - 12/81	02/81 - 08/82
Type:	inline watercooled 6	inline watercooled 6	inline watercooled 4	inline watercooled 4	inline watercooled 4
Bore x Stroke mm	80 x 76.8	80 x 66	89x71	89 x 71	84 x 71
Displacement cc	2315	1990	1766	1766	1573
Valve Operation	SOHC	SOHC	SOHC	SOHC	SOHC
Valves / cyl	2	2	2	2	2
Compression Ratio	9.5 : 1	9.2 : 1	10 : 1	9.5 : 1	9.5 : 1
Injection / Carburetor:	Bosch K-Jetronic	Solex 4A1	Bosch K-Jetronic	Solex 2B4	Solex 1B2
Max Torque	190Nm @ 4500	160Nm @ 4000	148Nm @ 4500	143Nm @ 4000	110Nm @ 3200
BHP (DIN)	143 @ 5800	122 @ 6000	105 @ 5800	90 @ 5500	75 @ 5800
Max rev count (RPM)	6400	6400	6400	6400	6400
Engine type code	M 20	M 20	M 10	M 10	M 10
Timing by:	belt	belt	chain	chain	chain
CO %	1-2	1.5	1.1	1.0	1.5

Idle speed (RPM)	850-950	800-900	850-950	900	850-950
Oil pressure	0.5 to 1.2 bar at idle to over 4.0 bar running				
Fan belt size (mm)	9.5 x 950	9.5 x 950	9.5 x 975 (auto 950)	9.5 x 875 (auto 850)	9.5 x 875
Alternator (Bosch)	0120489718 (65A)	0120489686 (55A)	0120489718 (65A)	0120489645 (45A)	
with built in controller no.	0192052004	0192052004	0192052004	0192052004	
Starter motor (Bosch)	0001311125		0001311100		
					
<u>Chassis and Drivetrain</u>					
Transmission	5 speed manual	4 speed manual	4 speed manual	4 speed manual	4 speed manual
Front suspension	MacPherson struts, coil springs, anti-roll bar	MacPherson struts, coil springs, anti-roll bar	MacPherson struts, coil springs, anti-roll bar	MacPherson struts, coil springs, anti-roll bar	MacPherson struts, coil springs, anti-roll bar
Rear suspension	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar	Semitrailing arms, coil springs, anti-roll bar
Axle Ratio	3.45	3.64	3.91	3.91	4.10
<u>General</u>					
Wheelbase (mm)	2563	2563	2563	2563	2563
Track front/rear (mm)	1388/1401	1387/1396	1366/1376	1366/1376	1366/1376
Alignment (front toe in-mm)	1.5 (+/- 0.5 mm)				

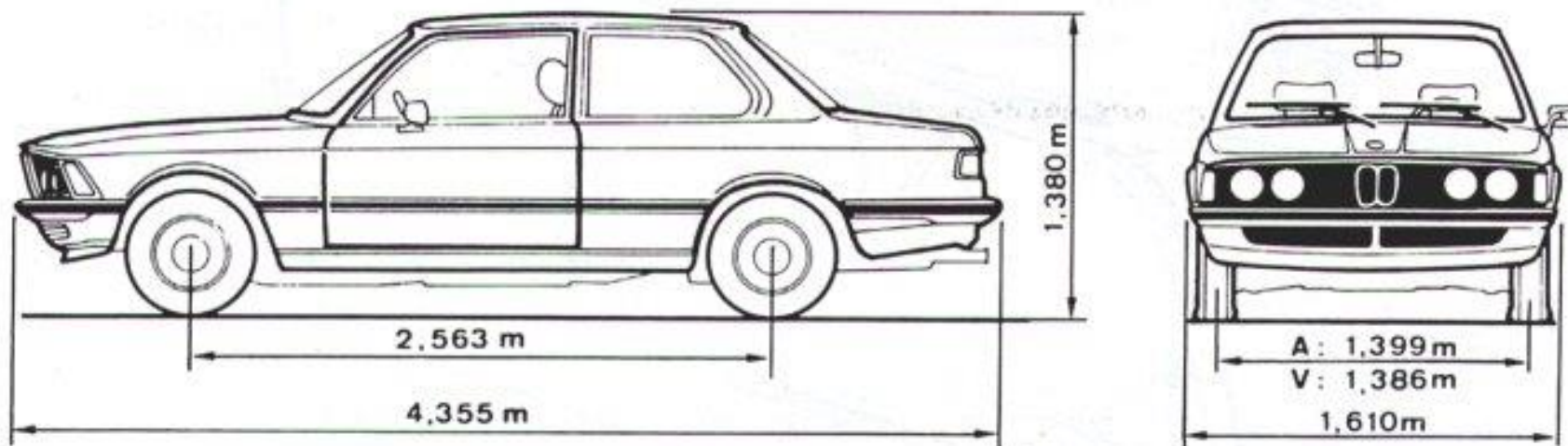
Alignment (rear toe in - mm)	2.0 (+/- 0.8 mm)				
Brakes front/rear	Vented disc / massive disc	Vented disc / Drum	Vented disc / Drum	Vented disc / Drum	Vented disc / Drum
Wheels/Tires	steel 13"x5.5J / 185/70HR13	steel 13"x5.5J / 185/70HR13	steel 13"x5.5J / 185/70HR13	steel 13"x5.5J / 185/70HR13	steel 13"x5J / 165SR13
Maximum Speed (kph)*	201	180	173	167	160
Acceleration 0-100 kph*	8.3	10.0	11.5	12.5	14.0
Weight (kgs)	1110	1090	1030	1020	1010
Battery (Ah)	55	44	44	44	44
Fuel consumption (DIN litres/100 km) - with standard 5 - gearbox					
@ 90 km/h	6.8	7.2	6.3	6.2	6.0
@ 120 km/h	9.1	9.6	8.4	8.3	8.2
city	12.8	13.0	10.4	11.0	10.5
*figures from tests in leading German car magazines					
Standard Equipment	(including equipment of lower range models)				
	Tinted glass	Model-badge in front grill		Chrome window frames	Heated rear window
	Power mirrors L+R	Rev counter with integrated LED clock		Lighted glove compartment	Power mirror L
		Luxury interior trim, w/cloth door panels		Toolbox	Bilux headlights
		Dual halogen headlights H4		Halogen headlights H4	Quartz clock
		Lighted hood &		Integrated rear fog	Rear safety belts: 2

		bonnet		light	auto, 1 manual
					Electronic ignition
Options					
Power steering rack					
5-speed manual gearbox (eco or sports)					
3-speed automatic gearbox					
Tinted glass					
Manual sunroof, metal					
Leather 3-spoke sports steering wheel					
Leather gear knob					
Headlights wipers					
Rev counter with integrated LED clock					
Alloy wheels (13")					
Rear headrests					
Recaro and/or leather seats					
Bavaria radio-cassette					
Extended tool kit					
Powered antenna					
Power mirror R					
Fog lights (mounted under front bumper)					
Clearcoated metallic paint					

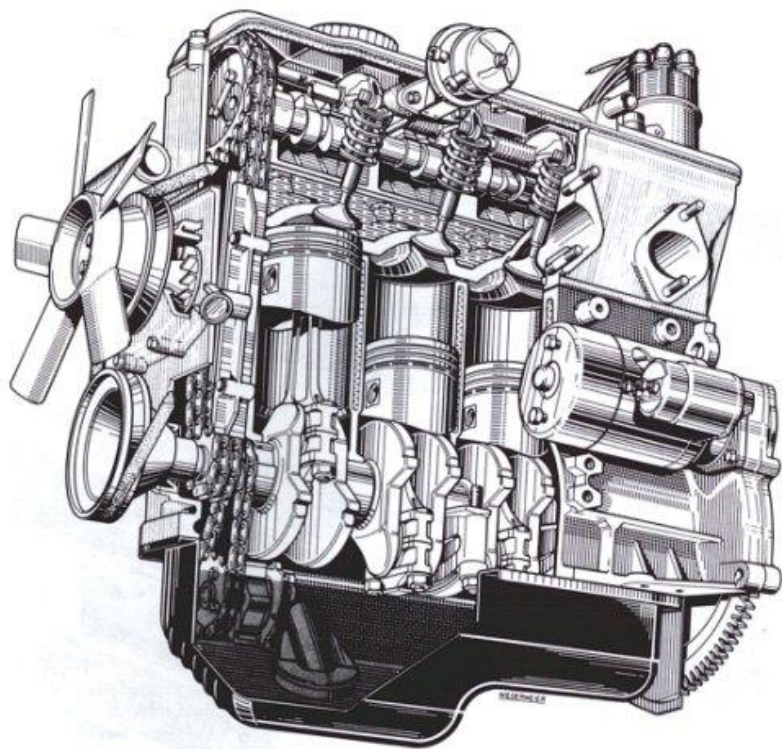
All models			Valve clearances (cold)	in (mm)	out (mm)
Fuel tank (ltrs)	58 (51+7)		4 cyl. > 81	.15	.20
Cylinder head	Aluminum		316 81>	.20	.20
Lubricant (motoroil)	SAE 10W40 SE		318i 81>	.20	.25
Change quantity 4 cyl.	3.75 litres		all 6-cyl.	.25	.25
Change quantity 6 cyl.	4.00 litres				
Including oil filter add	0.25 litre		Min. Brake disc thickness - front solid		10.7 mm
Gearbox oil - manual	SAE 80			- front vented	20.0 mm
Change quantity 4 sp.	1 litre			- rear	8.0 mm
Change quantity 5 sp.	1.4 litres			Handbr. lever travel	5-8 clicks
Gearbox oil - auto	Dexron ATF		Firing order		
Change quantity auto	2 litres		4 cylinder	1 - 3 - 4 - 2	
Diff oil	SAE 90 Transmission		6 cylinder	1 - 5 - 3 - 6 - 2 - 4	
Change quantity diff	0.95 litres				
Power steering	Dexron ATF 77		Spark Plugs		
Change quantity	1.2 litre		Bosch	W 8 D or W 7 DC	
Coolant 4-cylinder	7.2 litres		Champion	N 10 Y	
Coolant 6-cylinder	12 litres		Gap:	0.6 +/- 0.1 mm	
Brake / Clutch	ATE/Castrol/DOT 4				
Fuel	Leaded ROZ 98				

Units produced total for all E21 3-series 1978-1982: 1,001,521

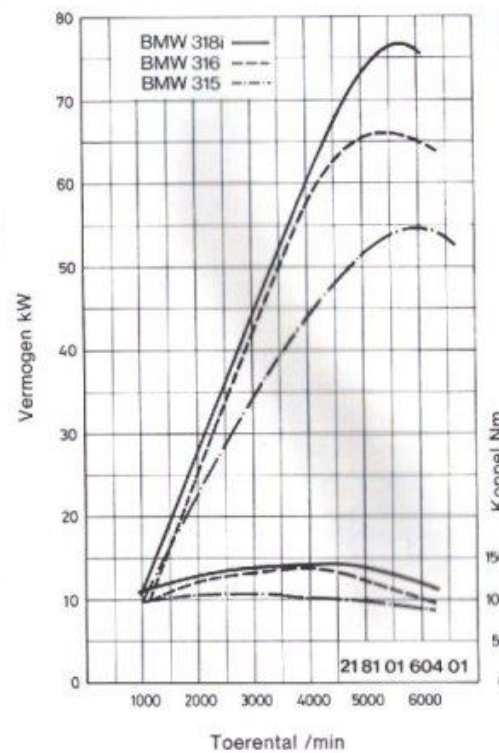
4. E21 Measure



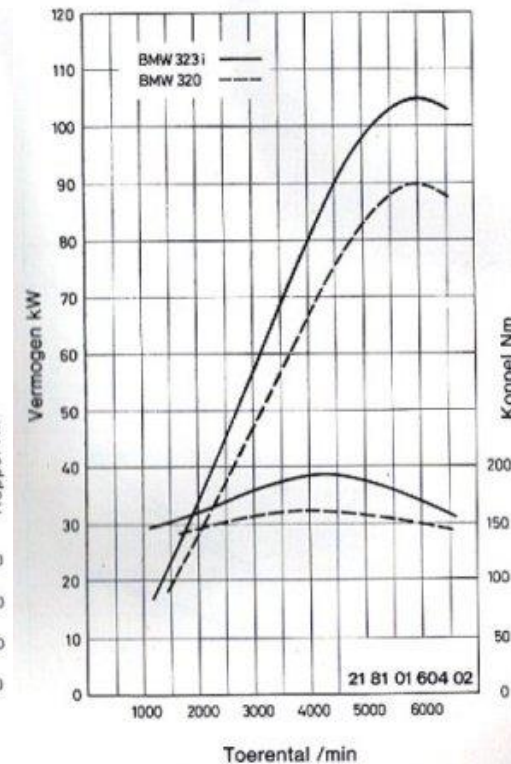
5. E21 Engine



M10

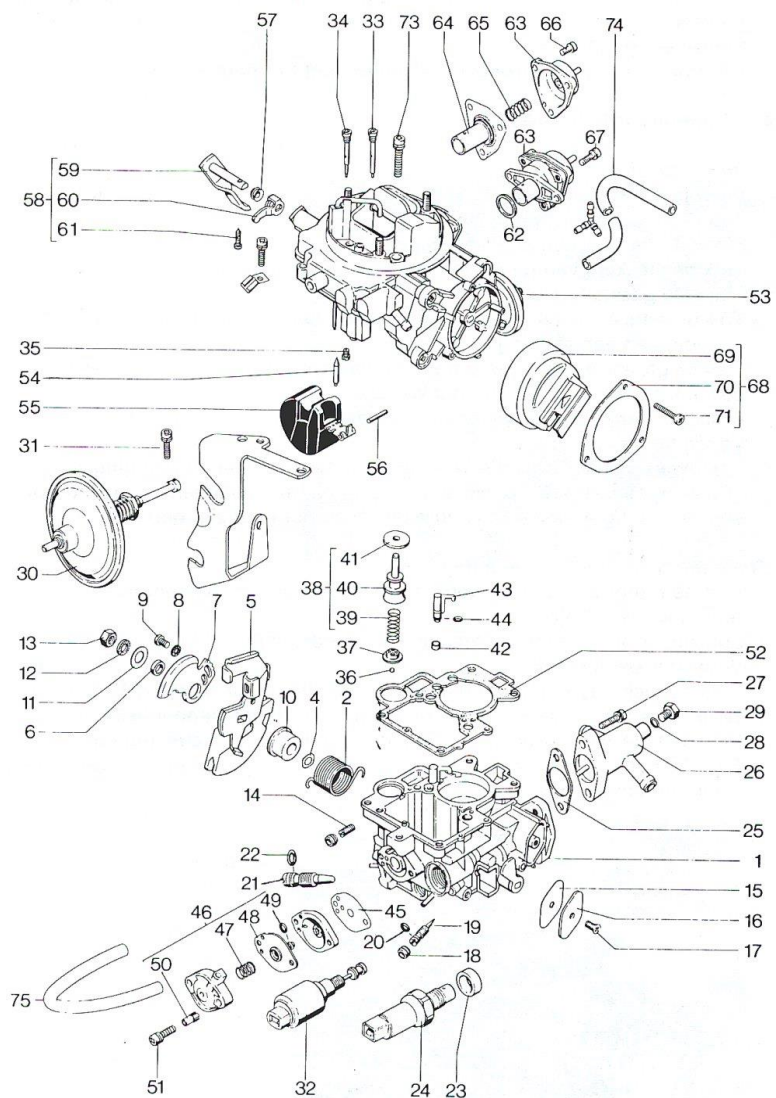


M10



M20

6. Carburator

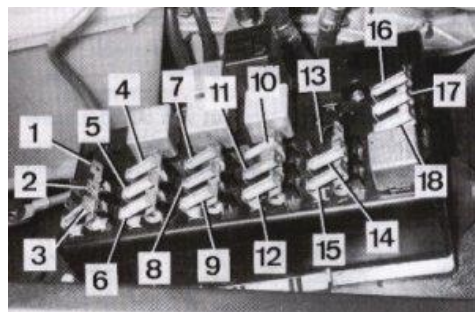


7. E21 gearbox types

4-speed		
316-318-320/4	> 08 / 77	Getrag 242/9 or 242/18
316-318-320/4	08 / 77 >	Getrag 242/18.30
320i		Getrag 242/18
320/6-323i		Getrag 242/7-50
5-speed sports		
318-318-320/4-320i	> 81	Getrag 245/2
315-316-318i	81 >	Getrag 245/10 BO
320/6-323i	81 >	Getrag 245/11 OO BJ
5-speed economy (overdrive)		
315-316-318-318i		Getrag 245/4 BN
320/6-323i		Getrag 245/288 GC
Automatic gearbox (3-speed)		
all models		ZF 3 HP-22

Gear ratios				
	4-sp	5-sp sports	5-sp economy	automatic
1 st	3.764	3.764	3.682	2.478
2 nd	2.043	2.325	2.002	1.478
3 rd	1.320	1.612	1.330	1.000
4 th	1.000	1.229	1.000	-
5 th	-	1.000	0.805	-
reverse	4.096	4.096	3.682	2.090

8. E21 fusebox



Fuse no.	Amps	Item(s)
1	8	right front fog lamp
2	8	left front fog lamp
3	16	fuel pump (inj. only), automatic choke
4	8	right headlight
5	8	left headlight
6	8	all other lights including dash and hood
7	8 (16 with 2 units)	right beam light
8	8 (16 with 2 units)	left beam light
9	8	parking light, some other lights from fuse 6 (varies)
10	16 (25 with electric sunroof)	rear windshield heating, electric sunroof
11	25	interior heater fan, air con
12	8	brake lights, radio

13	25	electric fan (or no. 18)
14	8	rev. lights, cockpit instruments
15	16	horn, indicators, all wipers & sprinklers, electric mirrors
16	16	sigarette lighter, power antenna
17	8	alarm lights, interior lights, glove compartment light, side blinkers, bonnet light
18	16	electric fan (or no. 13)

9. E21 colors

Models 1980- on

Standard paintwork		
Color no.	Name	Description
052	Hennarot	Fffffff.....eeeh bright red
086	Schwarz	Black
146	Alpinweiss	White
147	Safari beige	Light beige
173	Lapisblau	Dark blue
180	Basaltblau	Light blue
187	Savannabeige	Dark beige
194	Pusstagrun	Dark green
Metallic paintwork (clearcoat)		
060	Polaris-metallic	Grey / silver
087	Graphit-metallic	Dark grey
143	Kaschmir-metallic	Gold
149	Saphirblau-metallic	Light blue
151	Ascotgrau-metallic	Middle grey
152	Zypressengrun-metallic	Dark green

154	Brasilbraun-metallic	Brown	
157	Kastanienrot-metallic	Burgundy red	
171	Opalgrun-metallic	Light green	
178	Balticblau-metallic	Dark blue	
Upholstery colors - available in cloth and leatherette			
<i>315-316-318i</i>	<i>320/6-323i</i>	<i>Leatherette</i>	<i>Name & description</i>
0123	0094	0107	Pergament - beige
0122	0093	0106	Mocca - brown
0120	0091	0005	Anthrazit - dark grey
0121	0092	0105	Pacific - blue