Reference Manual



F06 COMPLETE VEHICLE



Technical Training

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Technical training.

Product information.

F06 Complete Vehicle



Edited for the U.S. market by:

BMW Group University
Technical Training
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General information

Symbols used

The following symbol/schematic diagram is used in this document to facilitate better comprehension or to draw attention to very important information:



Contains important safety information and information that needs to be observed strictly in order to guarantee the smooth operation of the system.

Information status and national-market versions

BMW Group vehicles meet the requirements of the highest safety and quality standards. Changes in requirements for environmental protection, customer benefits and design render necessary continuous development of systems and components. Consequently, there may be discrepancies between the contents of this document and the vehicles available in the training course.

This document basically relates to the European version of left hand drive vehicles. Some operating elements or components are arranged differently in right-hand drive vehicles than shown in the graphics in this document. Further deviations may arise as a result of the equipment specification in specific markets or countries.

Additional sources of information

Further information on the individual topics can be found in the following:

- Owner's Handbook
- Integrated Service Technical Application.

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The information contained in this document forms an integral element of the technical training of the BMW Group and is intended for the trainer and participants in the seminar. Refer to the latest relevant information systems of the BMW Group for any changes/additions to the technical data.

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1. Introduction

BMW is once again venturing into a new vehicle segment with the Gran Coupe. The third model in the BMW 6-Series after the Convertible and Coupe is the first four-door Coupe in the brand's history.

The BMW 6-Series Gran Coupe offers space for up to five occupants. The particularly slim-design B-pillar trim panel in the area of the footwell and the door opening which reaches to the rear make possible comfortable entry and exit for rear seat passengers. The luggage compartment offers a storage volume of 460 liters (1,265 ft³).

The F06 BMW 640i was the first model to be launched to the US market in the early summer of 2012 with other models versions to follow shortly thereafter.

| Model | Market introduction |
|----------------------------|---------------------|
| BMW 640i Gran Coupe | 06/2012 |
| BMW 650i Gran Coupe | 07/2012 |
| BMW 650i xDrive Gran Coupe | 07/2012 |

From a technical viewpoint, the F06 is based on the F10 and the F13. Therefore many components and operating principles are already known. The same applies to the engines and transmissions.

1.1. Further information

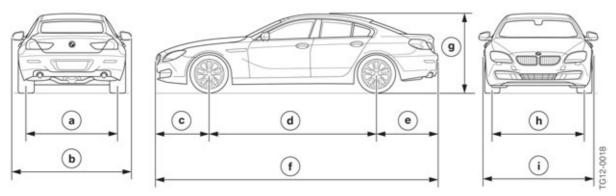
The descriptions of the F10 and F13 can be found in the following training materials available on ICP and TIS:

- F10 General Vehicle Electronics
- F10 Driver Assistance Systems
- F10 Entertainment and Communication
- F10 Passive Safety System
- F10 Displays, Indicators and Controls
- F10 Chassis Dynamics
- F10 Powertrain
- F12/F13 Introduction
- F12/F13 General Vehicle Electronics
- F12/F13 Entertainment and Communication
- F12/F13 Passive Safety System
- F12/F13 Displays, Indicators and Controls
- F12/F13 Chassis Dynamics
- F12/F13 Powertrain.

1. Introduction

1.2. Dimensions

The F06 is 113 mm (4.5 in) longer and 23 mm (0.9 in) higher than the F13 and has the same width. The wheelbase is also 113 mm (4.5 in) longer than that of the F13.

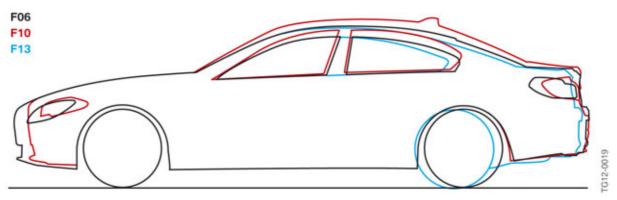


Garage dimensions F06 BMW 6-Series Gran Coupe

| Index | Explanation | | F06 | F13 | F10 |
|-------|--|--------------|-----------------|-----------------|-----------------|
| а | Rear track width, basic wheels | [mm (in)] | 1665 (65.6) | 1657 (65.2) | 1627 (64.1) |
| b | Vehicle width with exterior mirror | [mm (in)] 20 |)81(81.9)2(| 081(81.9) | 2064 (81.2) |
| С | Front overhang | [mm (in)] | 941 (37) | 941 (37) | 832 (32.7) |
| d | Wheelbase | [mm (in)] | 2968 (116.9) | 2855 (112.4) | 2968 (116.9) |
| е | Rear overhang | [mm (in)] | 1098 (43.2) | 1098 (43.2) | 1099 (43.2) |
| f | Vehicle length | [mm (in)] | 5009 (197.2) | 4896 (192.8) | 4905 (193.1) |
| g | Vehicle height, empty | [mm (in)] | 1392 (54.8) | 1369 (53.9) | 1464 (57.6) |
| h | Front track width, basic wheels | [mm (in)] | 1600 (63) | 1600 (63) | 1600 (63) |
| i | Vehicle width excluding exterior mirrors | [mm (in)] | 1894 (74.6) | 1894 (74.6) | 1860 (73.2) |

1. Introduction

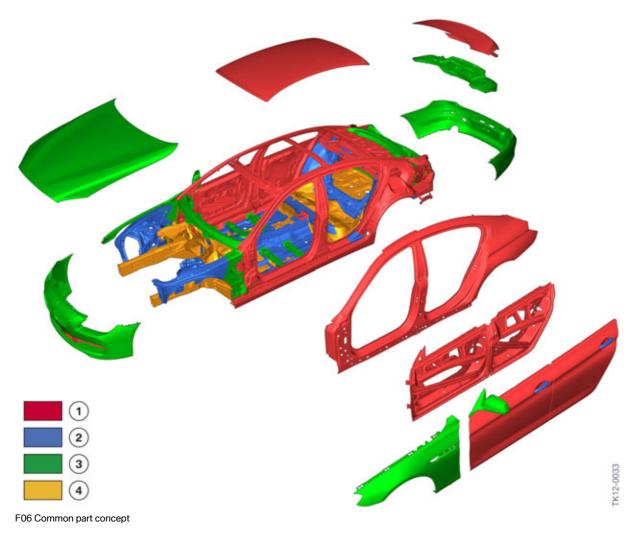
1.3. Silhouette comparison



Silhouette comparison of F06, F10 and F13

2. Body

As a basis for the F06 bodyshell the F10/F13 body concept is used. The side frame with roof structure and the frameless doors have been newly developed for the F06.



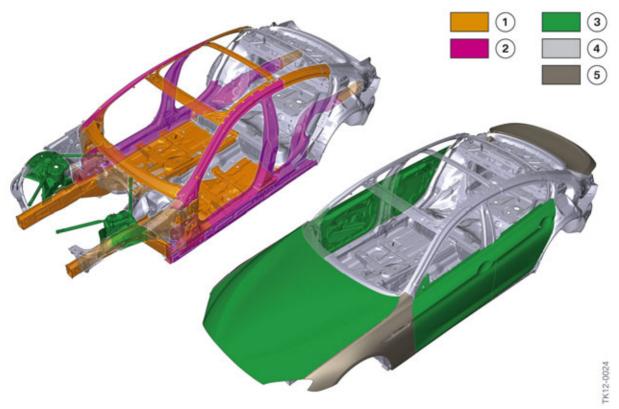
| Index | Explanation |
|-------|---------------------|
| 1 | New part F06 |
| 2 | F10 common part |
| 3 | F13 common part |
| 4 | F10/F13 common part |

2.1. Bodyshell construction

The material mix in the F06 corresponds to the greatest possible extent to the F13. The four doors with frameless side windows and the engine hood are made from aluminium. Also a high content of light alloy is used for the construction of the axle and the engines. The front spring supports are made of die-cast aluminium, the front fenders are plastic and the luggage compartment lid is made from

2. Body

glass fiber composite material. The use of high-strength multiphase steels and hot-formed, high-strength steels is credited for the maximum strength and optimized weight of the passenger safety cell.



F06 Bodyshell construction materials

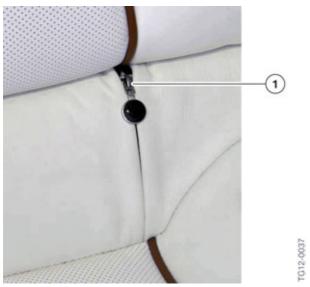
| Index | Explanation |
|-------|--------------------------------|
| 1 | Multi-phase steels (> 300 MPa) |
| 2 | Hot-formed steels (> 900 MPa) |
| 3 | Aluminum |
| 4 | Other steels (< 300 MPa) |
| 5 | Plastics |

2.2. Passive safety

The Passive safety equipment comprises front airbags, side airbags integrated in the backrests, head airbags for the front and rear seats, three-point automatic seat belt for all five seats, active head restraints, belt force limiter and belt tensioner at front, as well as ISOFIX child seat mountings in the rear passenger compartment.

The ISOFIX child seat mountings are concealed for the first time behind a zip fastener.

2. Body



F06 ISOFIX child seat mountings

| Index | Explanation |
|-------|---|
| 1 | ISOFIX child seat mountings behind zip fastener |

3. Powertrain

3.1. Powertrain variants

The F06 is available in the following powertrain variants:

| | BMW 640i Gran Coupe | BMW 650i Gran Coupe | BMW 650i Gran Coupe xDrive |
|---|--------------------------|--------------------------|-------------------------------|
| Engine | N55B30O0 | N63B44O1 | N63B44O1 |
| Power output [kW(HP)] at speed [rpm] | 235 (315) 5800 – 6000 | 330 (450) 5500 – 6000 | 330 (450) 5500 – 6000 |
| Torque [Nm (ft lb] at speed [rpm] | 450 (330) 1300 – 4500 | 650 (480) 2000 – 4500 | 650 (480) 2000 – 4500 |
| Exhaust emissions legislation | ULEVII | ULEVII | ULEVII |
| Automatic transmission | GA8HP45Z | GA8HP70Z | GA8HP70Z |
| Rear axle differential | HAG 205AL | HAG 225AL | HAG 225AL |

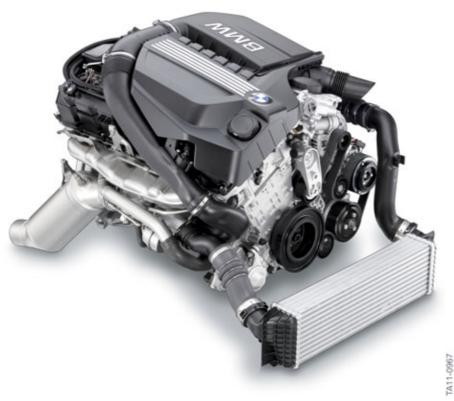
3.2. Further information

The descriptions of the engines and the eight-speed automatic transmission can be found in the following training reference manuals:

- N55 engine training material
- N63TU engine training material (to be released in the 2nd half of 2012)
- Automatic Transmission GA8HP.

3. Powertrain

3.3. N55 engine



N55 engine

The N55 engine is the successor to the N54 engine. Technical updates and modifications make it possible to use only one exhaust turbocharger. The technical data has remained virtually the same - with reduced costs and improved quality.

Special features:

- Mono exhaust turbocharger (TwinScroll)
- Air-gap-insulated exhaust manifold six in two; engine-proximate catalytic converter
- Direct fuel injection with central injector location, solenoid valve injectors
- 3rd generation Valvetronic
- Upstream Digital Engine Electronics (MEVD17.2 Bosch), integrated in air intake system, FlexRay-compatible
- Lightweight crankshaft
- Map-controlled oil pump
- Uniform single-belt drive across all model series
- Initially introduced in the F07 and then installed in other models.

3. Powertrain

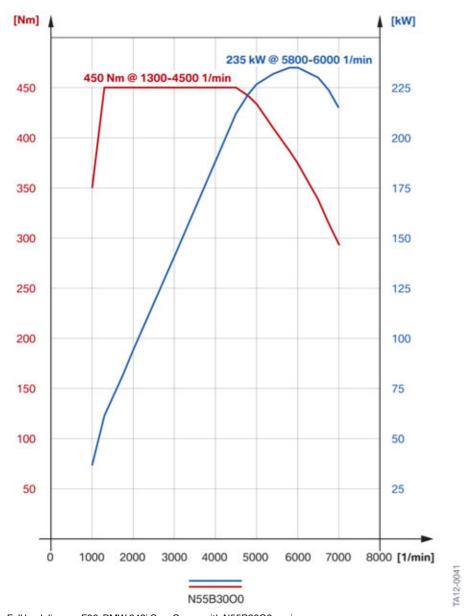
3.3.1. Technical data

| | | N55B30O0 BMW 640i Gran Coupe (F06) |
|------------------------------------|-----------------------|---------------------------------------|
| Design | | in-line 6 |
| Valves per cylinder | | 4 |
| Engine control | | MEVD17.2.6 |
| Displacement | [cm ³] | 2979 |
| Stroke/Bore hole | [mm] | 89.6/84.0 |
| Power output at engine speed | [kW (HP)] [rpm] | 235 (315) 5800 - 6000 |
| Torque at engine speed | [Nm (ft lb)] [rpm] | 450 (330) 1300 – 4500 |
| Compression ratio | [ε] | 10.2:1 |
| Fuel grade | | RON 91 – 98 |
| Exhaust emissions legislation | | ULEVII |
| Fuel consumption complying with EU | [l/100 km] | 7.7 |
| Acceleration 0 – 60 mph | [s] | 5.4 |

3.3.2. Full load diagram

Despite its low fuel consumption, the N55 engine is characterized by its high power and torque properties.

3. Powertrain



Full load diagram F06, BMW 640i Gran Coupe with N55B30O0 engine



Note: For more information regarding the N55 (N55B30O0) engine please refer to the N55 training material available on TIS and ICP.

3. Powertrain

3.4. N63TU engine



N63TU engine

The N63TU engine replaces the predecessor N63. The fundamental further development of the N63 engine to the N63TU engine is the latest fuel-mixture generation technology Turbo-Valvetronic direct injection (TVDI). The new engine boasts better performance data at reduced fuel consumption and CO_2 emissions.

Special features:

- New control unit concept with one control unit per cylinder head
- Integration of the engine control units in the low-temperature circuit
- New cylinder head cover with adapted crankcase ventilation
- Adaptation of the cylinder head and crankshaft drive to the new Turbo-Valvetronic direct injection (TVDI)
- Use of a temperature-dependent coolant pump for achieving the operating temperature of the engine quicker.

3.4.1. Technical data

| | N63B44O1 BMW 650i Gran Coupe (F06) | N63B44O1 BMW 650i Gran Coupe xDrive (F06) |
|---------------------|--|---|
| Design | V8 | V8 |
| Valves per cylinder | 4 | 4 |
| Engine control | MEVD17.2.8 | MEVD17.2.8 |

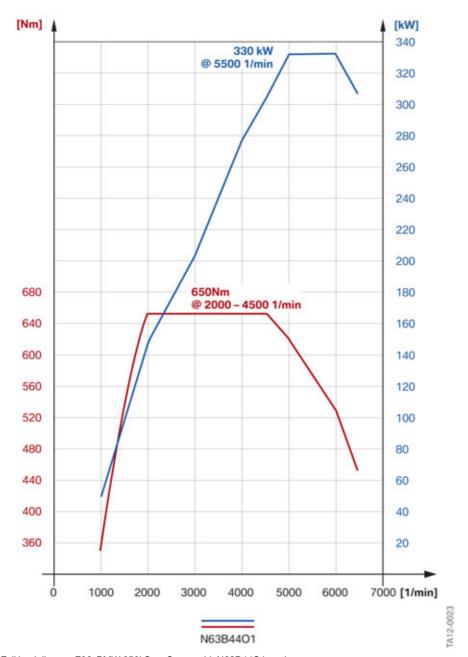
3. Powertrain

| | | N63B44O1 BMW 650i Gran Coupe (F06) | N63B44O1 BMW 650i Gran Coupe xDrive (F06) |
|------------------------------------|--------------------------|--|---|
| Displacement | [cm ³] | 4395 | 4395 |
| Stroke/Bore hole | [mm] | 88.3/89.0 | 88.3/89.0 |
| Power output at engine speed | [kW (HP)] [rpm] | 330 (450) 5500 | 330 (450) 5500 |
| Torque at engine speed | [Nm (ft lb)] [rpm] | 650 (480) 2000 – 4500 | 650 (480) 2000 – 4500 |
| Compression ratio | [ε] | 10.0 : 1 | 10.0 : 1 |
| Fuel grade | | RON 91 – 98 | RON 91 – 98 |
| Exhaust emissions legislation | | ULEVII | ULEVII |
| Fuel consumption complying with EU | [l/100 km] | 8.6 | 9.2 |
| Acceleration 0 – 60 mph | [s] | 4.5 | 4.3 |

3.4.2. Full load diagram

The N63TU engine is a further development of the well-known N63 engine. It is characterized by a significantly higher overall power and a fuller torque curve.

3. Powertrain



Full load diagram F06, BMW 650i Gran Coupe with N63B44O1 engine



Note: For more information regarding the N63TU (N63B44O1) engine please refer to the N63TU training material that will be available on TIS and ICP in the 2nd half of 2012.

3. Powertrain

3.5. GA8HP transmission

The new automatic transmissions for the F06 are GA8HP45Z and GA8HP70Z have eight forward gears and one reverse gear.



GA8HP automatic transmission

Special features:

- Significantly enhanced gear shift spontaneity.
- Greater driving and shifting comfort as a result of smaller gear jumps
- Higher control precision of the converter lockup clutch at low engine loads
- High power transmission of the converter lockup clutch
- Lower fuel consumption (-5 to -6%).

The GA8HP45Z and GA8HP70Z are newly developed transmissions that will supersede the existing GA6HP19Z TU 6-speed automatic transmission or GA6HP26Z TU. The overall gear ratio has been increased from 6.04 to 7.07; the gear ratios have become smaller, thus also reducing the differences in speed when shifting gear. The weight of the transmission has been significantly reduced by using a plastic oil sump among other things.

The electronic transmission control (EGS) control unit is integrated into the control unit network of the electronic immobilizer (EWS). This provides better protection against theft.

It may be operated via the gear selector switch or with the shift paddles (via the (SZL) steering column switch cluster).

3. Powertrain

Mechanical torsional vibration dampers of the second generation are deployed in the torque converter:

- Turbine torsional vibration damper TTD
- Two-damper torque converter ZDW. (Diesel models only, not available in the US market).

The function and design of the converter is described in the "E70 automatic transmission section" training material available in TIS and ICP.

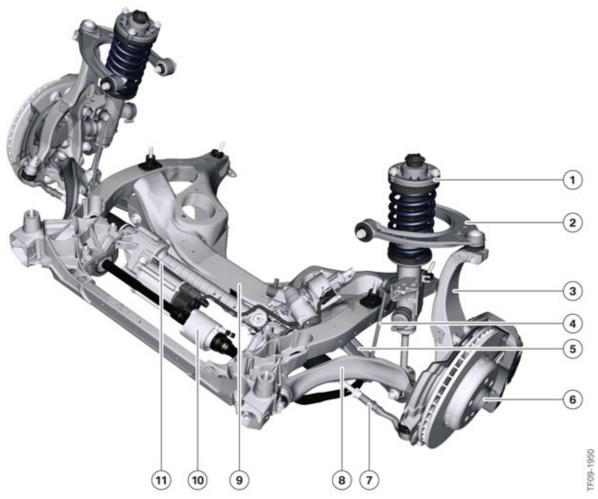
The vibration isolation reduces the slip rates at the converter lockup clutch and allows a wider operating range when it is closed. It also reduces the fuel consumed during the consumption cycle (KV01) by between 5 and 6% when compared to previous TU six-speed automatic transmissions.

3.5.1. Technical data

| | | GA8HP45Z | GA8HP70Z |
|---|-------|----------|----------|
| Maximum power (with gasoline engines) | [kW] | 250 | 380 |
| Maximum torque (with gasoline engines) | [Nm] | 450 | 700 |
| Maximum permissible engine speed in 1st to 7th gear | [rpm] | 7200 | 7200 |
| Maximum permissible engine speed, 8th gear | [rpm] | 5700 | 5700 |
| Maximum permissible engine speed, reverse gear | [rpm] | 3500 | 3500 |
| Transmission ratio 1st gear | | 4.70 | 4.70 |
| Transmission ratio 2nd gear | | 3.13 | 3.13 |
| Transmission ratio 3rd gear | | 2.10 | 2.10 |
| Transmission ratio 4th gear | | 1.67 | 1.67 |
| Transmission ratio 5th gear | | 1.29 | 1.29 |
| Transmission ratio 6th gear | | 1.00 | 1.00 |
| Transmission ratio 7th gear | | 0.84 | 0.84 |
| Transmission ratio 8th gear | | 0.67 | 0.67 |
| Transmission ratio reverse gear | | 3.30 | 3.32 |

4. Chassis and Suspension

4.1. Front axle



F06 Double-wishbone front axle

| Index | Explanation |
|-------|---|
| 1 | Spring strut |
| 2 | Wishbone, top |
| 3 | Swivel bearing |
| 4 | Anti-roll bar link |
| 5 | Wishbone, bottom |
| 6 | Wheel hub |
| 7 | Track rod |
| 8 | Trailing link |
| 9 | Front axle support |
| 10 | Anti-roll bar with hydraulic swivel motor (Dynamic Drive) |
| 11 | Electronic Power Steering (EPS) |

4. Chassis and Suspension

A further refined version of the double-wishbone front axle introduced in the E70/E71 is also used in the F06.

EDC or conventional shock absorbers can be installed in the double-wishbone front axle. It also can be equipped for the four-wheel drive configuration.

The steering gear can be fully lowered for servicing.

4.1.1. Technical data

| Designation | F06 |
|------------------------------|---|
| Caster angle | 7° 0' |
| Camber | -0° 29' ± 30' |
| Total toe-in | 10' ± 12' |
| Toe difference angle | ≤ 12' |
| Steering axis inclination | 9° 57' |
| Rim offset IS | 30 mm for 17" and 18" 33 mm for 19" and 20" |
| Kingpin offset | 2.89 mm for 17" and 18" -0.11 mm for 19" and 20" |
| Track width | 1600 mm for 17" and 18" 1594 mm for 19" and 20" |
| Maximum outer steering angle | 33° 0' |
| Maximum inner steering angle | 42° 14' |

4.1.2. Notes for Service

The following tables show when wheel alignment of the double-wishbone front axle is necessary.

| Replace component | Wheel alignment required |
|-----------------------------------|--------------------------|
| Front axle support | YES |
| Steering box | YES |
| Wishbone, bottom | YES |
| Rubber mount for wishbone, bottom | YES |
| Trailing link | NO |
| Rubber mount for trailing link | NO |
| Wishbone, top | NO |
| Rubber mount for wishbone, top | NO |
| Track rod | YES |
| Swivel bearing | YES |
| Wheel bearing | NO |

4. Chassis and Suspension

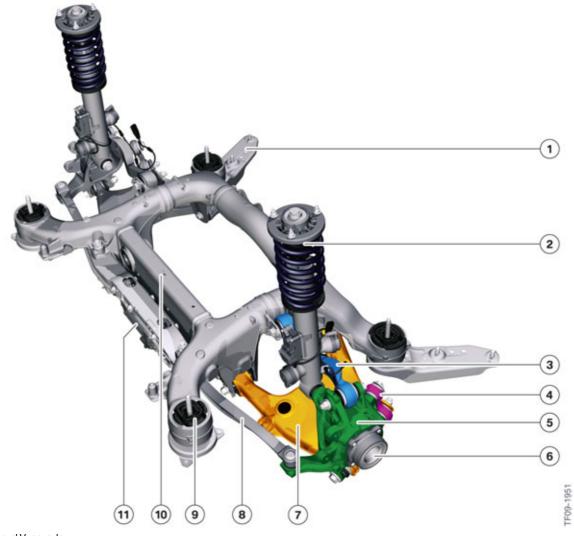
| Replace component | Wheel alignment required |
|--|--------------------------|
| Spring strut | NO |
| Coil spring | NO |
| Support bearing | NO |
| Slacken screw connection | Wheel alignment required |
| Front axle support to body (lowering) | NO |
| Steering gear to front axle support | YES |
| Bottom wishbone to front axle support | YES |
| Bottom wishbone to swivel bearing | NO |
| Trailing link to front axle support | NO |
| Trailing link to swivel bearing | NO |
| Top wishbone on body | NO |
| Top wishbone to swivel bearing | NO |
| Track rod to steering gear | NO |
| Track rod end to track rod | YES |
| Track rod end to swivel bearing | NO |
| Spring strut to bottom wishbone | NO |
| Support bearing to body | NO |
| Bottom steering shaft to steering gear | NO |
| Steering column to bottom steering shaft | NO |

4.2. Rear axle

The Integral V rear axle installed in the F06 is an innovative further development of the Integral IV rear axle from the E60/65. The epitomized lightweight rear axle made from full aluminium has been deliberately adapted to the new requirements for more power and torque.

The integral V rear axle of the F06 is designed for the Integral Active Steering chassis and suspension control system (optional equipment 2VH).

4. Chassis and Suspension



F06 Integral V rear axle

| Index | Explanation |
|-------|--|
| 1 | Compression strut |
| 2 | Spring strut |
| 3 | Wishbone, top |
| 4 | Integral link |
| 5 | Wheel carrier |
| 6 | Wheel bearing |
| 7 | Trapezoidal-link suspension (swinging arm) |

4. Chassis and Suspension

| Index | Explanation |
|-------|---|
| 8 | Camber link |
| 9 | Rubber mount for rear axle |
| 10 | Rear axle support |
| 11 | Actuator for rear axle slip angle control (HSR) |

4.2.1. Technical data

| | BMW 640i Gran Coupe | BMW 650i Gran Coupe BMW 650i Gran Coupe xDrive |
|----------------|---------------------|--|
| Rear tire | 245/45 R18 | 245/40 R19 |
| Rear wheel rim | 8 J x 18 LM | 8,5 J x 19 LM |
| Total toe-in | 14' ± 12' | 14' ± 12' |
| Camber | -1°50' ± 25' | -1°50' ± 25' |
| Track width | 1600 mm (63 in) | 1606 mm (63.8 in) |
| Rim offset IS | 30 mm | 33 mm |



Note: Option 2MZ and 2 ND includes 19" BMW Wheels (Style 349amd 351 M) (19x8.5, 245/40 R19 front and 19x9.0, 275/35 R19 rear) and 2NL and 2NM include BMW Wheels (Style 374 and 373) 20x8.5, 245/35 R20 front and 20x9.0, 275/30 R20 rear

4.2.2. Notes for Service

The following tables show when wheel alignment at the integral V rear axle is necessary.

| Replace component | Wheel alignment required |
|----------------------------|--------------------------|
| Rear axle support | YES |
| Rubber mount for rear axle | NO |
| Swinging arm | YES |
| Integral link | YES |
| Ball joint in swinging arm | YES |
| Camber link | YES |
| Wishbone | YES |
| Wheel carrier | YES |
| Wheel bearing | NO |

4. Chassis and Suspension

| Replace component | Wheel alignment required |
|---|--------------------------|
| Spring strut | NO |
| Coil spring | NO |
| Support bearing | NO |
| Slacken screw connection | Wheel alignment required |
| Rear axle support to body | NO |
| Front compression strut to body | NO |
| Rear compression strut to body | NO |
| Front swinging arm to rear axle support | YES |
| Rear swinging arm to rear axle support | YES |
| Swinging arm to integral link/wheel carrier | YES |
| Integral link to wheel carrier | NO |
| Camber link to rear axle support | YES |
| Camber link to wheel carrier | NO |
| Wishbone to rear axle support | YES |
| Wishbone to wheel carrier | YES |
| Spring strut to wheel carrier/swinging arm | NO |

5. Exterior Trim

The F06 is equipped with standard with bi-xenon headlights along with LED daytime driving lights and LED rear tail lights. LED headlights are available as optional equipment SA552. All F06 vehicles will come standard with LED fog lights.

The horizontal bottom air inlet grille in the center and the L-shaped trims on the outer air inlet grilles are a new design for the F06.





F06 front and rear view



F06 Side view

The F06 has no roof-mounted antenna. The antenna components are installed in the luggage compartment lid like in the F13.

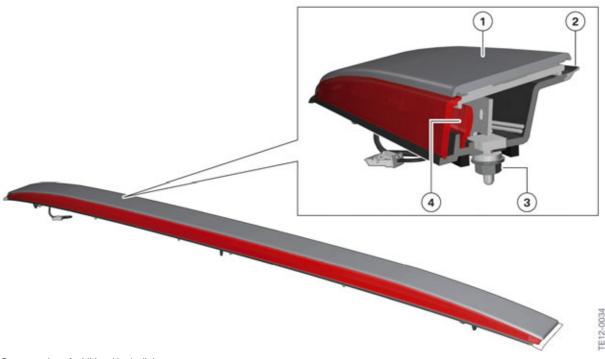
The additional brake light is integrated for the first time in a BMW in the roof and extends across the entire width of the rear window. To date, the additional brake light was either secured in the tailgate, the rear spoiler or on the inside of the rear window.

5. Exterior Trim



F06 Additional brake light

The additional brake light has a cover painted in the same color as the vehicle and is mounted at 6 attachment points on the rear roof frame.



Cross-section of additional brake light

5. Exterior Trim

| Index | Explanation |
|-------|---|
| 1 | Cover in vehicle color |
| 2 | Surrounding gasket (thermoplastic elastomer, TPE) |
| 3 | 6 mounting bolts |
| 4 | 4 circuit boards with 66 LEDs |

For the visible upgrade and differentiation to the F13, a design element with the writing "Gran Coupe" in chrome font is located behind the side window in the Hofmeister kink.



F06 design element in the Hofmeister kink

5.1. Matt paint

For BMW vehicles matt paintwork is also offered as BMW individual paintwork. The BMW individual matt paint "Frozen Bronze" metallic is available exclusively for the BMW 6-Series Gran Coupe.

For the matt paint the special clear coat with matting agent is used. This way the surface does not appear high-gloss, but in a quality matt look.

5. Exterior Trim



F06 with matt paintwork "Frozen Bronze" metallic

The handling of vehicles with matt paint requires the special care of Service employees and in particular in the workshop environment.

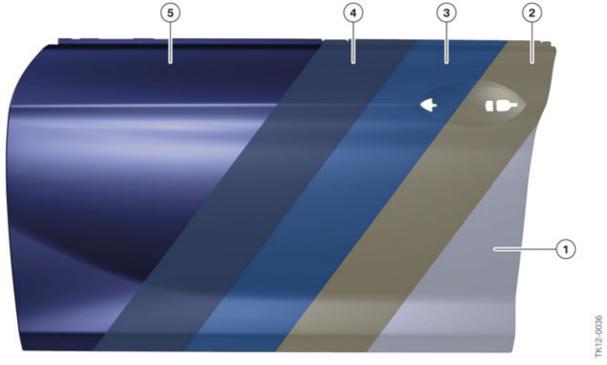


To avoid damage to the paint surface when handling vehicles with matt paint the following information must be observed:

- To avoid chafe marks on the paint surface, only **fault-free fender covers** should be used.
- Oils and greases are very difficult to remove from matt paint surfaces.
- The risk of dirt contamination by frequent touching of door handles, engine compartment and trunk lids is particularly high for light matt paints.
- Dirty or ordinary rags should never be used to wipe and rub the matt paint surface.
- **Never** allow water drops to dry on the paint surface, remove them immediately using a suitable wipe-down cloth.

The paint coating of the matt paint has the same texture as traditional paintwork and the same procedure is to be followed.

5. Exterior Trim



Paint coating

| Index | Explanation |
|-------|-------------------------------------|
| 1 | Phosphating 1 – 2 μm |
| 2 | KTL primer 20 μm |
| 3 | Tinted filler 30 – 40 μm |
| 4 | Water paint 12 – 25 µm |
| 5 | Two part (2K) clear coat 60 – 70 µm |

5.1.1. Dirt contamination

The sensitivity to dirt contamination of the matt paint is comparable to traditional high-gloss paints depending on the color. Residue cannot be removed by intensive rubbing as this can cause shiny areas.

5. Exterior Trim



Improper cleaning

| Index | Explanation |
|-------|--|
| 1 | Paint damage as a result of improper removal of insects |
| 2 | Paint damage as a result of removal of dirt using unsuitable auxiliary materials |

5.1.2. Mechanical stress

Matt paint has a low sensitivity to scratches, as fine scratches are less noticeable on matt surfaces than on high-gloss surfaces.

Scratches on the paint surface are problematic as these cannot be polished (which produces shiny areas), but only removed by repair painting.

5.1.3. Biological stress

Similar to gloss paints, bird droppings, resin, oils, insects, etc. must be removed as quickly as possible and without applying mechanical pressure using a suitable method and materials.

5.1.4. Chemical stress

If wax or stubborn particles such as airborne fly ash appear by accident on the paint surface, these must be removed carefully and as quickly as possible using a suitable cleaning agent and without applying mechanical pressure.

Resinous, greasy or oily substances must be kept away from the matt surface as they can generate residue that is difficult to remove.

5. Exterior Trim

5.1.5. Cleaning and care

Vehicles with matt paint can be washed in automatic car washes without car wax.

In addition, pre-cleaning using the high pressure cleaner is recommended to avoid scratches by sand, dust or other micro-particles located on the body surface.

For care of paintwork no paint cleaner or gloss conserving agent such as car wax for example can be used as car wax is only suitable for high-gloss surfaces.



To avoid paintwork damage during cleaning and care the following information must be observed:

- Do not polish! This can cause shiny areas.
- Remove insects, bird droppings, tree resin, tar, fuel and oils as quickly as possible.
- Use a soft sponge for removing and avoid heavy rubbing. (Suitable cleaning products are listed in the following table).
- Paint repairs of mechanical damage (scratches, dents, etc.) or environmental damage (etching, etc.) should only be performed by a qualified BMW Service center.
- Only use special paint sealants suitable for matt paint. Unsuitable paint sealants can change the degree of gloss considerably and lead to a stained surface.

5.1.6. Repairs

Unlike gloss paint, visible ghost lines on the paint surface caused by **the pressure iron for pressing out dents or processing using the metal hammer** cannot be removed by sanding and polishing as polishing causes too many shiny areas.

Heavy rubbing using unsuitable agents can also cause shiny areas.

A polished area on the matt effect can only be restored by repainting the entire part.

Pre-treatment

Pre-cleaning, abrasives and sanding process remain unchanged in comparison to the repair of standard paint.

Paintwork

The repair paint system corresponds fully to the procedure described in the ColorSystem Manual under chapter 4 with the exception of the clear coat.

Here the ColorSystem clear coat matt (51 91 2 296 942) and ColorSystem clear coat extra matt (51 91 2 296 943) must be used (processing instructions ColorSystem Manual, see chapter 6.5).

To select the correct color nuance it is **imperative** that the reference spray pattern is also painted with a matt clear coat as this has an impact on the color characteristics.

It is also recommended to prepare a spray pattern with varying clear coat application (wet/dry/normal).

5. Exterior Trim

A clear coat touch-up (e.g. in the C-pillar or the roof rail) is not possible as subsequent polishing would have a severe impact on the degree of gloss.

After polishing the matt effect can only be restored after fresh paint.

Finishing

Visible surface defects such as embedded dirt, rotors, etc. can **no longer** be removed by sanding and polishing.

If reworking is absolutely necessary, the relevant part must be sanded and than painted with a clear coat (base coat/clear coat if necessary).

For surface flaws in the delivery condition please also see GS 97003.

Please note again here that **polishing is not possible** as this causes **shiny areas**.

Spot repairs

Spot repairs are also not possible on matt paint.

No visibly homogeneous result can be achieved with or without spot blender as the clear coat run-out zone has a more matt finish.

6. Interior Equipment

The rear passenger compartment of the BMW 6-Series Grand Coupe offers superb travel comfort for two occupants. In addition, a third seat can be used for short distances.

The extended center console at the rear with rear-seat vents is new in the F06. By folding down the rear seat backrest in the ratio 60: 40, the capacity of the luggage compartment can be increased to 1265 liters. In addition, a through-load unit, as well as a ski bag, are also available.







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Rear passenger compartment in the F06



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