F10 Introduction

Edited for the U.S. market by:
BMW Group University
Technical Training
4/1/2010

BMW Service

General information

Symbols used

The following symbol / sign is used in this document to facilitate better comprehension and to draw attention to particularly important information:

Contains important safety guidance and information that is necessary for proper system functioning and which it is imperative to follow.

Information status and national-market versions

The BMW Group produces vehicles to meet the very highest standards of safety and quality. Changes in terms of environmental protection, customer benefits and design make it necessary to develop systems and components on a continuous basis. Consequently, this may result in differences between the content of this document and the vehicles available in the training course.

As a general principle, this document describes left-hand drive vehicles in the European version. Some controls or components are arranged differently in right-hand drive vehicles than those shown on the graphics in this document. Further discrepancies may arise from market-specific or country-specific equipment specifications.

Additional sources of information

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

- in the Owner's Handbook
- in the integrated service technical application

Contact: conceptinfo@bmw.de

The information in the document is part of the BMW Group technical training course and is intended for its trainers and participants. Refer to the latest relevant BMW Group information systems for any changes/supplements to the technical data.

Information status: **December 2009**

F10 Introduction

Contents

F10 Introduction

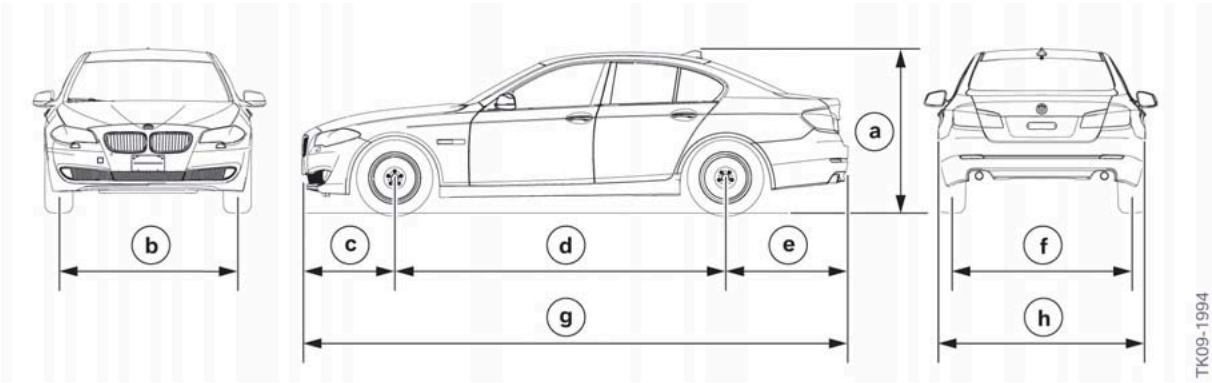
1. Introduction

1.1. The new BMW 5 Series Saloon

The F10 5 Series was introduced in to the US market in March of 2010. The vehicle is available in 528i, 535i and 550i models.

BMW 5 Series Sedan

1.1.1. Dimensions



BMW 5 Series Sedan, exterior dimensions

Index	Explanation
a	Vehicle height, empty (1464 mm)[1]
b	Track width of basic wheels, front (1600 mm)
c	Overhang, front (832 mm)
d	Wheelbase (2968 mm)

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Index	Explanation
e	Overhang, rear (1099 mm)
f	Track width of basic wheels, rear (1627 mm)
g	Vehicle length (4899 mm)
h	Vehicle width without exterior mirrors (1860 mm)

[1] With roof-mounted antenna: 1475 mm.

Comparison of F10 with the E60

		F10	E60
Vehicle height, empty	[mm]	1464	1467
Track width, front	[mm]	1600	1558
Overhang, front	[mm]	832	856
Wheelbase	[mm]	2968	2888
Overhang, rear	[mm]	1099	1111
Track width, rear	[mm]	1627	1582
Vehicle length	[mm]	4899	4855
Vehicle width without exterior mirrors	[mm]	1860	1846
Vehicle width over exterior mirrors	[mm]	2094	2030
Turning circle Ø (at vehicle kerb weight)	[m]	11.95	11.4
Shoulder room, front	[mm]	1480	1455
Shoulder room, rear	[mm]	1427	1454
Elbow room, front	[mm]	1518	1485
Elbow room, rear	[mm]	1485	1496
Maximum headroom, front (without slide/tilt sunroof)	[mm]	1028	1028
Maximum headroom, front (with slide/tilt sunroof)	[mm]	992	992
Maximum headroom, rear (without slide/tilt sunroof)	[mm]	973	967
Maximum headroom, rear (with slide/tilt sunroof)	[mm]	965	955
Luggage compartment capacity	[liters]	520	520

Weight and payload

Refer to the following table for the weight and payload of the F10 with automatic transmission according to the German Standardization Institute (DIN).

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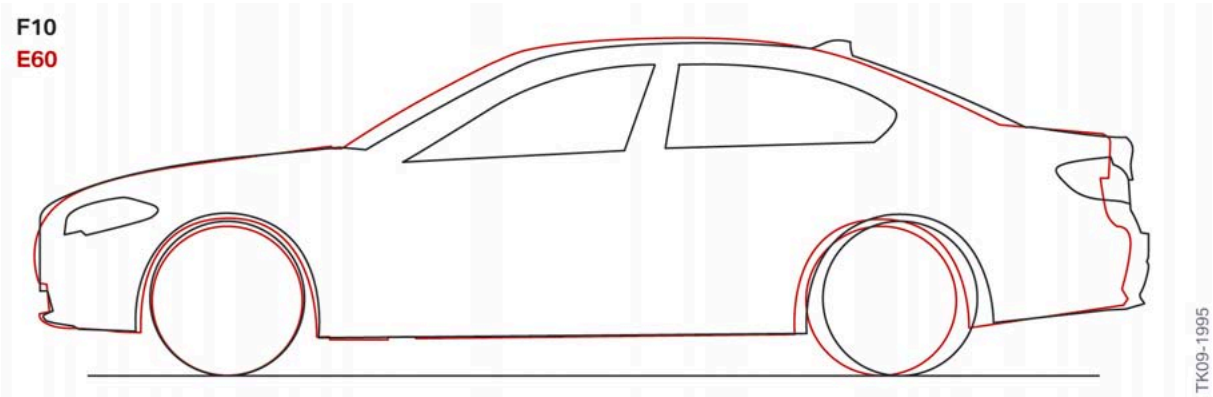
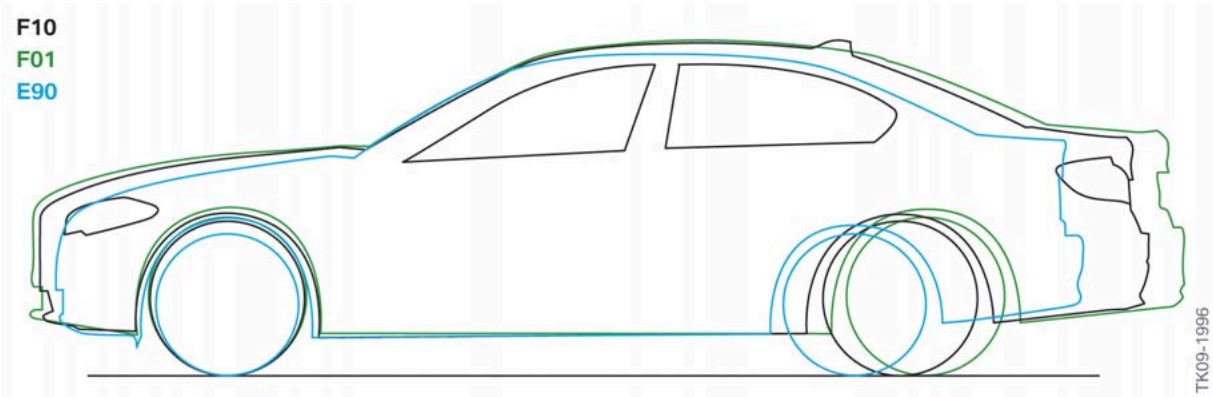
1. Introduction

Vehicle	Vehicle curb weight (DIN)	Payload
F10 528i	1730 kg/3814 lb	480 kg/1058 lb
F10 535i	1855 kg/4090 lb	480 kg/1058 lb
F10 550i	1985 kg/4376 lb	450 kg 992 lb

1.1.2. Silhouette comparison



F10 Silhouette comparison with BMW 5 Series Sedan E60

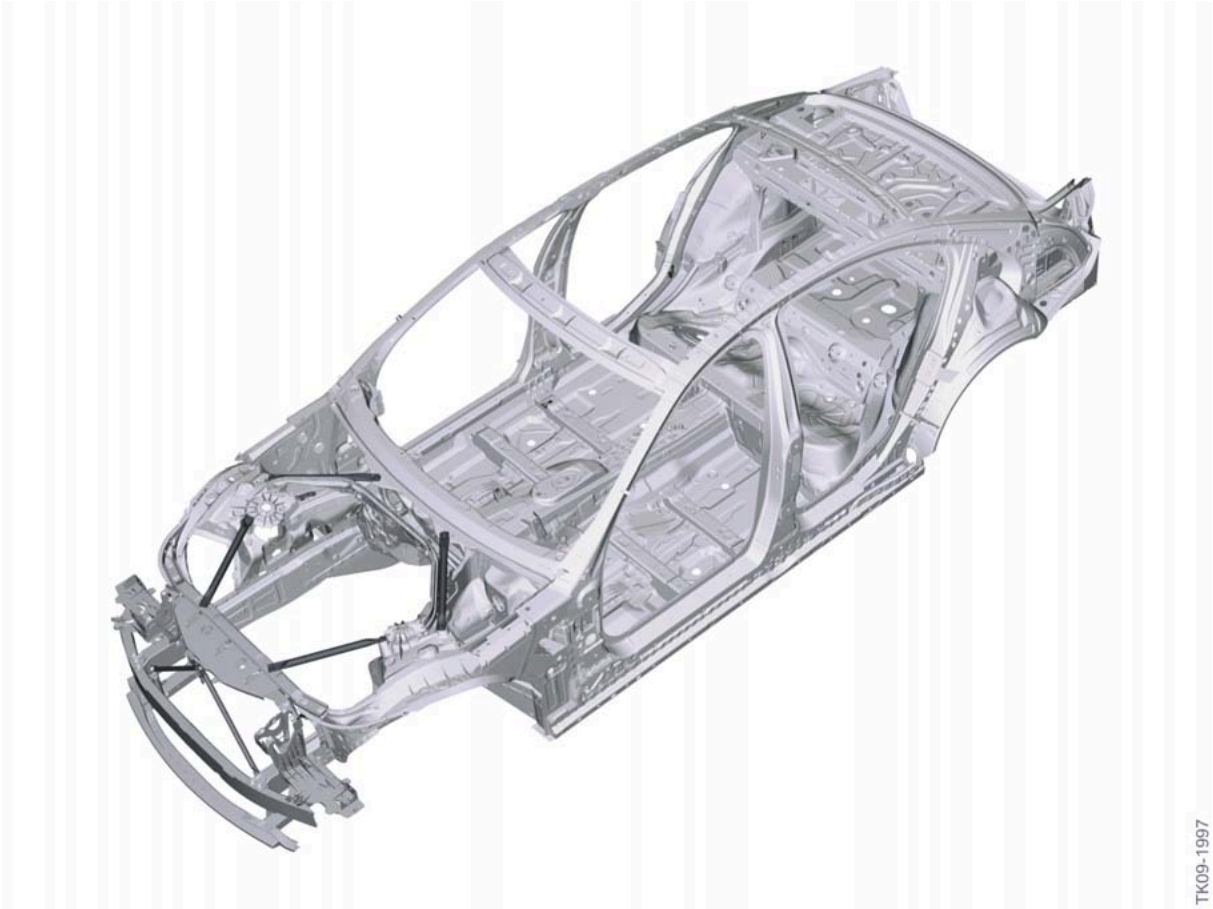


F10 Silhouette comparison with BMW 7 Series Sedan F01 and BMW 3 Series Sedan E90

F10 Introduction

2. Body

2.1. Bodyshell



F10 Bodyshell (body in white)

2.1.1. Introduction

As with other models, the use of lightweight materials was a major requirement in the F10 design. This involves the intelligent deployment of increased-strength multiphase steels and super high strength (press hardened) steels. In the F10, the average strength of the body materials has increased by 55% compared to the E60.

The lightweight materials contribute significantly to the overall reduction in vehicle weight, and in combination with the rigidity of the body structure.

The lightweight materials used on the F10 body structure contribute directly to its:

- Driving Dynamics
- Reduction of fuel consumption
- Reduction of CO_2 emissions
- Passive safety

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2. Body

Weight saving features of the F10 bodyshell

- Strut towers are made of die-cast aluminum
- High proportion of multiphase steels (20 % of the body skeleton weight)
- High proportion of hot-formed steels (14 % of the body skeleton weight)

The die-cast aluminum strut towers reinforce the front section by ensuring the necessary rigidity that the component design requires to withstand the loads. Compared to a conventional steel-shell structure, the more compact design has significantly reduced the installation space and the weight in the front section. This provides a more uniform axle-load distribution, among other benefits.

The increased-strength multiphase steels and super high strength hot-formed steels combine low weight with maximum strength for the safety passenger cell, thus contributing significantly to passive safety.

For hot-formed steels, an innovative further development known as passive corrosion protection is used. Previously, no suitable hot-formed sheet metal materials with cathodic corrosion protection had been available on the market. With the development of press-hardening, a method is now available that enables mass production of galvanized hot-formed components. The components fabricated in this way can be used in the wet area without corrosion of the base material. There is no need for additional corrosion protection measures for this steel.

2.1.2. Materials

A modern vehicle body has to fulfill many different requirements. Despite small exterior dimensions, it is to provide the largest possible passenger compartment . In the event of an accident, it must provide the passengers with the best possible protection. All assemblies, such as the engine and transmission, are supported by the body against the torque they generate. Futhermore, the body must have high static and, above all, dynamic rigidity to guarantee the excellent driving characteristics typical of BMW vehicles.

In addition, the supporting structure of the vehicle must have high fatigue strength and be able to be repaired with reasonable effort and cost in the event of an accident.

To fulfill all these requirements, BMW applies a manufacturing strategy that produces each part from the material that is best suited for its function.

The two terms "aluminum" and "steel" are only the generic terms for the wide variety of alloys used in the construction of the body.

These different alloys have quite different properties.

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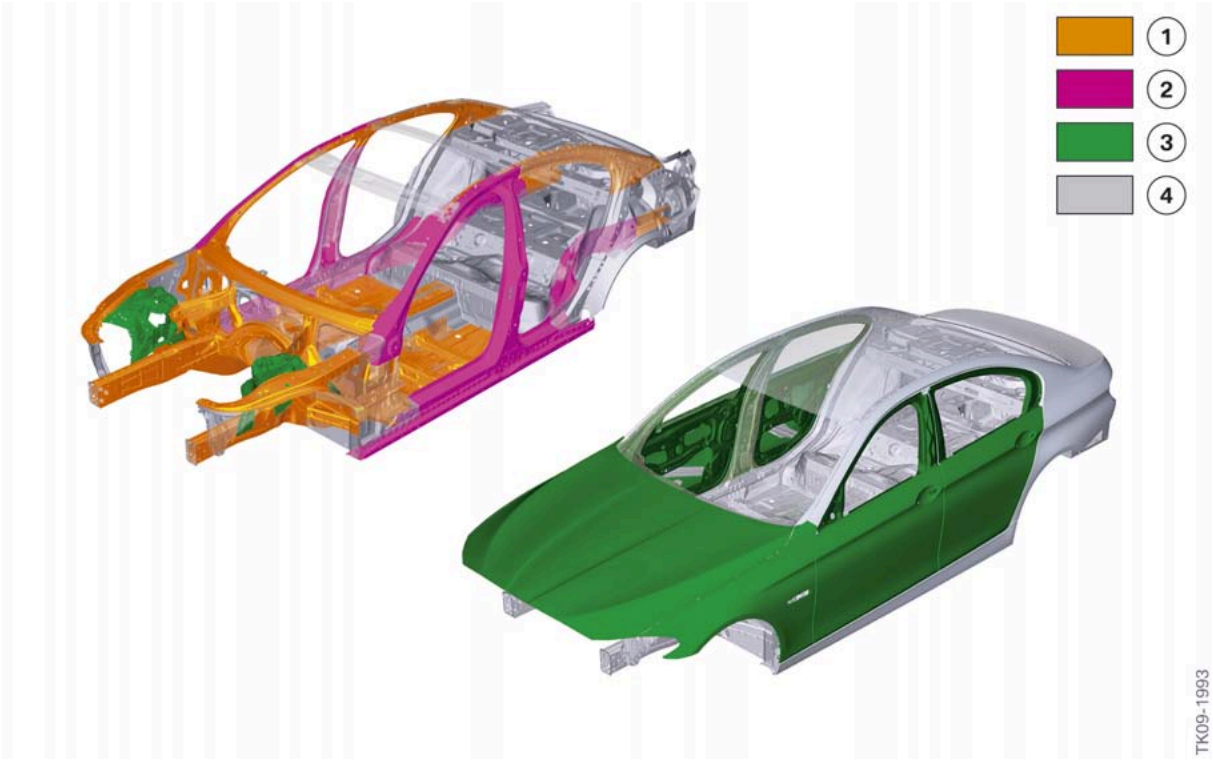
2. Body



F10 Material qualities of the bodyshell

Index	Explanation
1	Multiphase steels (> 300 MPa)
2	Hot-formed steels (> 900 MPa)
3	Aluminum
4	Other steels (< 300 MPa)

Multiphase steels are steels with a structure that consists of multiple phases. Advanced-strength multiphase steels with a yield strength $R_{p0.2}$ of 300 to 600 MPa include, for example, dual-phase steels and TRIP steels. Advanced-strength multiphase steels with a yield strength $R_{p0.2}$ over 600 MPa include, for example, complex-phase steels and martensite-phase steels.

The hot-formed manganese-boron steels are ultra-high-strength steels with a yield strength $R_{p0.2}$ of over 900 MPa.

Weight proportions

The proportion of advanced-strength multiphase steels, super high strength hot-formed steels and aluminum is increasing. These measures decrease the vehicle weight while still guaranteeing maximum strength of the bodyshell.

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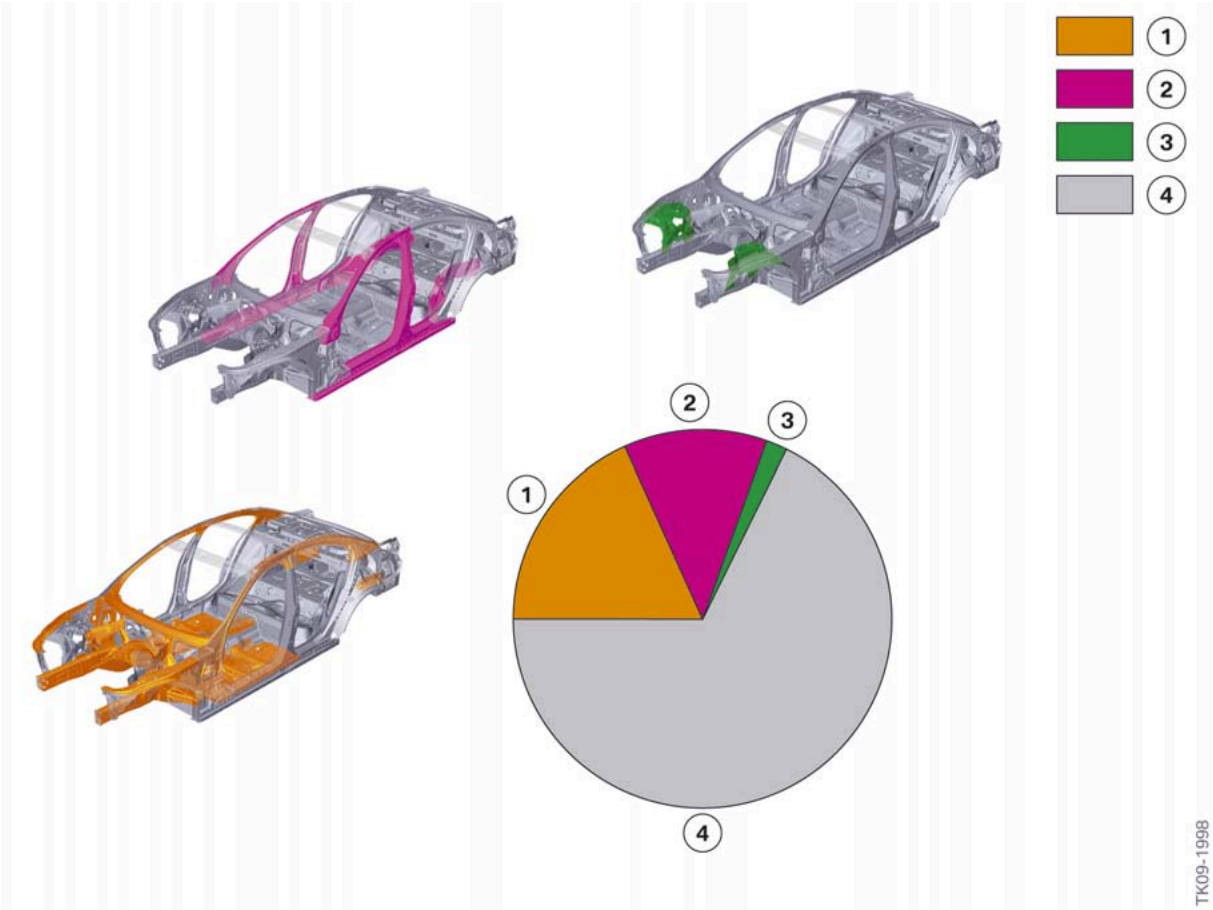
2. Body



F10 Bodyshell, distribution of the material qualities

Index	Explanation
1	Multiphase steels (> 300 MPa), proportion 20%
2	Hot-formed steels (> 900 MPa), proportion 12%
3	Aluminum, proportion 2%
4	Other steels (< 300 MPa), proportion 66 %

2.1.3. Corrosion protection and tightness

In order to optimize anti-corrosion protection, the body of the F10 is constructed primarily from galvanized sheet metal and aluminum or aluminum sandwich sheet metals. Welding, adhesive bonding and riveting are the assembly techniques used.

The overlaps of the panels are designed to minimize the joint surfaces, to prevent bondline corrosion. The penetration of water into the body structure is prevented in the design engineering of the vehicle by adhering and sealing the joint surfaces.

In particularly critical areas, expanding foam parts are used to seal the body cavities against moisture. Doubled up sheets in wet zones are double-sealed and, if necessary, they are also treated with wax to ensure a water tight seal.

If necessary, the overlaps of the panels in dry zones are sealed to prevent dust from getting inside.

Corrosion-critical material pairing is avoided. The combinations of material substrates and joining methods were chosen with meticulous care in order to avoid corrosion risks.

Coating process

In the painting process, the bodyshell is dipped and:

- Alkaline-cleaned
- Phosphated (roughening the surface for better adhesion)
- Cathodic-dip coated (anticorrosion coating that coats the insides of all body cavities).

The organic paint coat is then baked on.

Furthermore, the body is sealed with PVC and protected by filler, topcoat and clear coat paints on the outer skin.

Critical parts of the body of the F10 are specially treated with cavity preservation sealant.

The objectives are:

- Three years without any visible corrosion whatsoever
- Twelve years without rust penetration
- High level of protection against water and dust intrusion.

2.1.4. Front section

Regarding the repair of the F10 front section, compared to the F01, there are no major changes.

As on previous vehicles, body struts are used to increase the rigidity of the front section.

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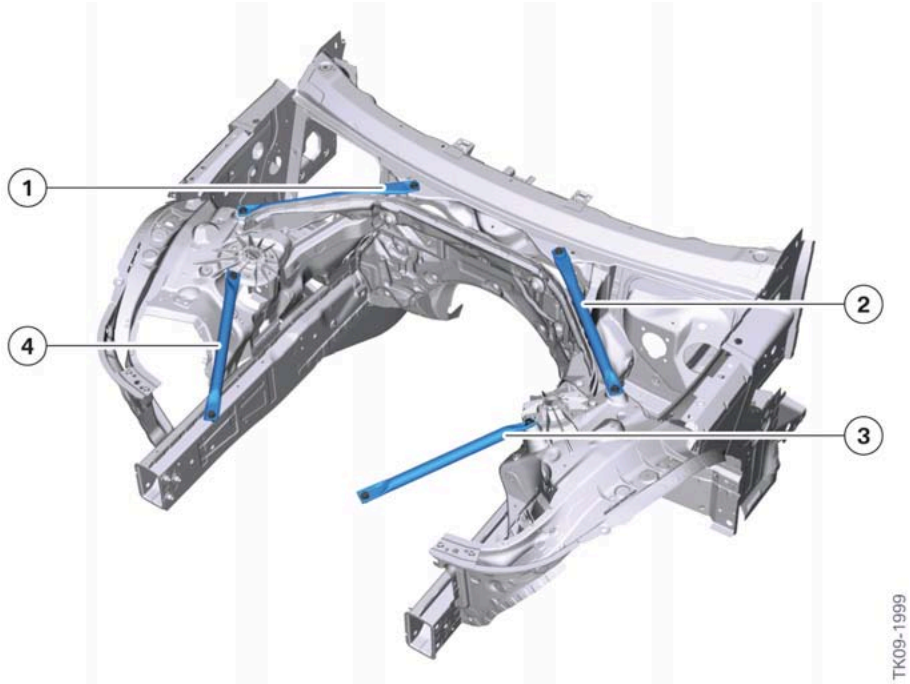
2. Body



F10 Front section

Index	Explanation
1	Rear right strut
2	Rear left strut
3	Front left strut
4	Front right strut

Note: When installing and dismantling the struts, it is mandatory to observe the repair instructions!

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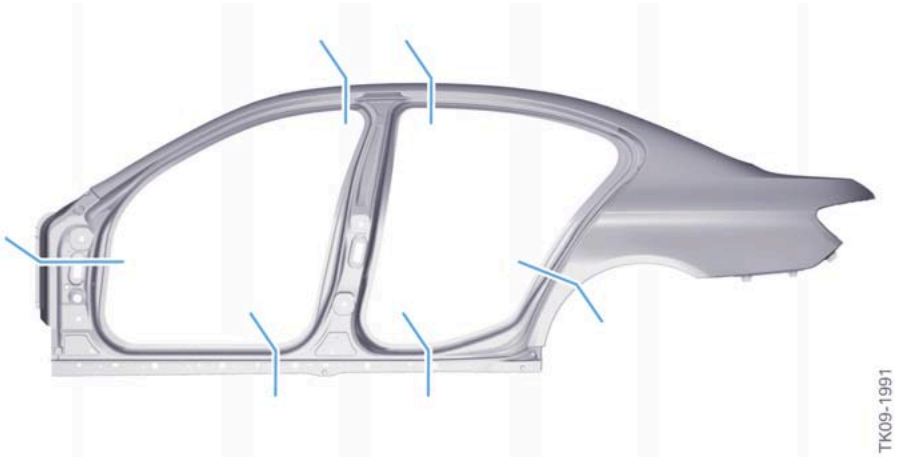
2. Body

2.1.5. Side frame



F10 Separation points for repair

When performing a body repair, the separation points listed above should be used where possible.

F10 Spare part sections

The rear side panel is welded to the bodyshell at the factory. However, if it needs to be replaced in the field, the rear side panel is to be bonded and riveted.

2.1.6. Roof

The roof is welded to the bodyshell at the factory. However, if it needs to be replaced in the field, the roof is to be bonded and riveted.

2.1.7. Rear Section

Regarding the repair of the F10 rear section, compared to the F01, there are no major changes.

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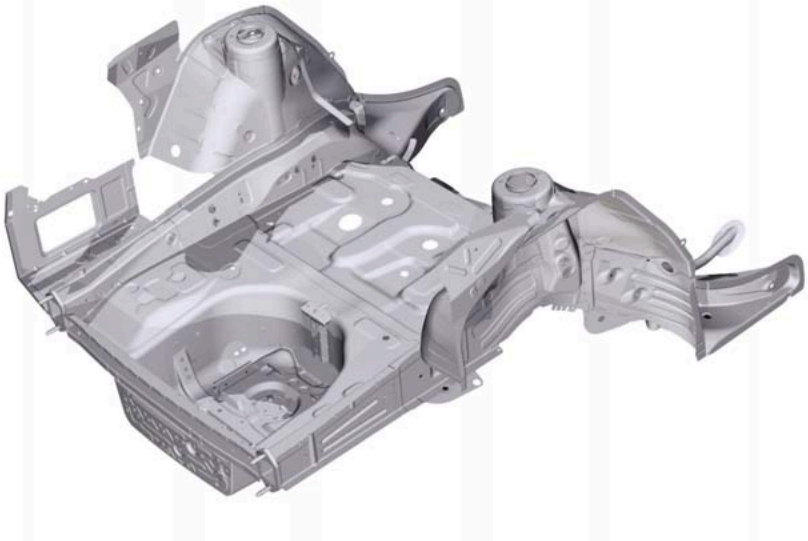
2. Body



F10 Rear section

2.1.8. Rear trim panel

The rear trim panel is welded to the bodyshell at the factory. However, if it needs to be replaced in the field, the rear trim panel is to be bonded and riveted.

F10 Rear trim panel

F10 Introduction

2. Body

2.2. Pedestrian Protection

The front section of the bodyshell of the F10 incorporates several pedestrian-protection measures. An impact absorber is installed between the bumper support and the bumper trim to provide protection for leg impact. The hood and the front fenders are made of aluminum and incorporate deformation elements. These design measures are adopted to produce a defined dissipation of energy in the event of an accident.

2.3. Doors

As with the F01, the doors of the F10 are made of aluminum reinforced with sheet-metal intrusion beams.

F10 Front and rear doors

F10 intrusion beams on the doors

Large stamped sheet metal intrusion beams within the doors transfer force to the body and ensure high rigidity and component quality. The implementation of very deep stamping in the fabrication of the inner door panel structure and the clever use of a hinge reinforcement have enable a sophisticated design/contour of the exterior.

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2. Body

The window frame area fulfills the highest requirements for rigidity. It is a single section made of only two sheet-metal parts with minimum dimensions. Even in the visually sensitive window frame area, the intensive BMW exterior design queues where able to be implemented.

Advantages of this design are:

- Reduced CO_2 emissions and increased driving dynamics due to decreased weight (23 kg per vehicle lighter than a comparable steel version)
- Interior impression of an improved spaciousness.
- Allows more light into the passenger compartment
- Improved visibility
- Window frames look lighter and slimmer when the doors are closed
- When the doors are open, the window frames look solid with a high-quality appeal
- Maximum form stability of the separate components provided by one-piece inner door panels
- Lowest possible number of components for the door structure
- Laser welding and structural adhesive bonding as the joining technologies of the door structure.

BMW has already made frequent use of aluminum door structures in the past, e. g. for the E52, E63, E64. However, only since the F01 have aluminum doors been produced for vehicles in large quantities.

The development objective for the F10 door structure, therefore, was to implement the familiar concept for an aluminum door from the F01 as a door that can be manufactured even in larger quantities at acceptable costs.

However, aluminum is not as easy to shape as steel, so aluminum stamping parts are much more difficult to manufacture than their steel counterparts, particularly when the stamping depths are considerable.

With the development of a new structure concept (with large braces to transmit force), manufacturing feasibility was ensured without having to forego the proven metal plate component construction methods.

2.4. Trunk lid

Regarding the repair of the F10 trunk lid, there are no major changes, compared to the F01.

Features of the trunk lid:

- Self-opening trunk lid
- Tension springs are located in horizontal position below the water gutter as for the F01
- Spindle drives are used instead of the tension springs for vehicles with automatic trunk lid (“Power tailgate” option 316)
- Trunk lid trim and toolkit as for F01

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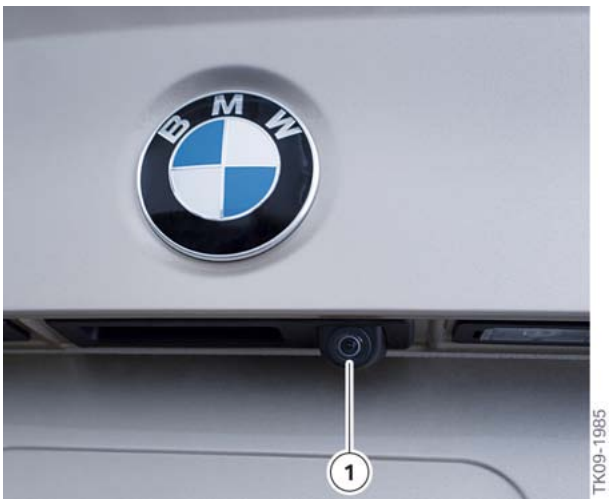
- Rear lights in the trunk lid, bulb are replaced as on F01
- New trunk lid push-button
- Rear view camera (option 3AG) integrated in the housing of the trunk lid push-button.



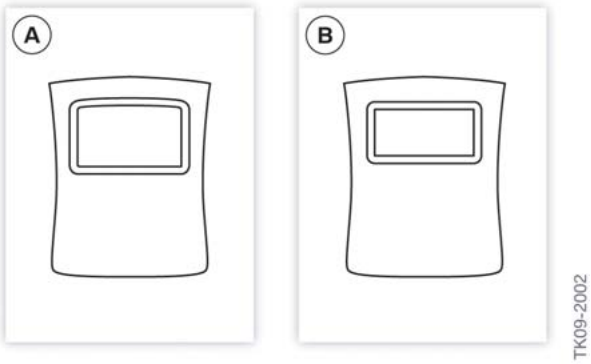
F10 Rear view camera

Index	Explanation
1	Rear View camera

2.5. Sliding/tilting sunroof

An electrical glass sunroof is standard equipment on all F10 models.

It is designed as a slide/tilt sunroof system that is operated from the interior.



Comparison of contour roof and standard slide/tilt sunroof

Index	Explanation
A	Contour roof
B	Standard slide/tilt sunroof

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2. Body

As with the F01, the front edge of the glass panel runs parallel to the windshield/roof edge (contour roof) and thus makes the appearance of the complete vehicle more harmonious. The larger glass area gives the passenger compartment a bright, spacious feeling. Thus the sensation of space is improved.

The glass panel and the sliding trim are all-electric and are operated using a switch in the roof function center (FZD).

The usual control and operation logic for the slide/tilt sunroof is maintained:

- **To open the roof-**
  Push the switch to the rear
- **To close the roof-**
  Push the switch forward
- **Set roof to vent position-**
  Push the switch up.

The operation and control logic for opening the sliding trim is similar to that of the panorama-roof configurations. The operating logic corresponds to the direction of movement of the components and thus can be understood easily by the customer.

The sliding trim is integrated in the interior design of the headlining, providing a high-class interior effect.

To eliminate the risk of possible injuries, an anti-trap mechanism for the glass panel and for the gear mechanism cover is implemented over the entire travel path complying with the local legal requirements.

2.5.1. Dimensions

Dimensions		**F10**	**E60**
Glass panel length	[mm]	Approx. 601	Approx. 487
Glass panel width	[mm]	Approx. 915	Approx. 921

Aperture size		**F10**	**E60**
Glass panel fully opened	[mm]	Approx. 394	Approx. 401

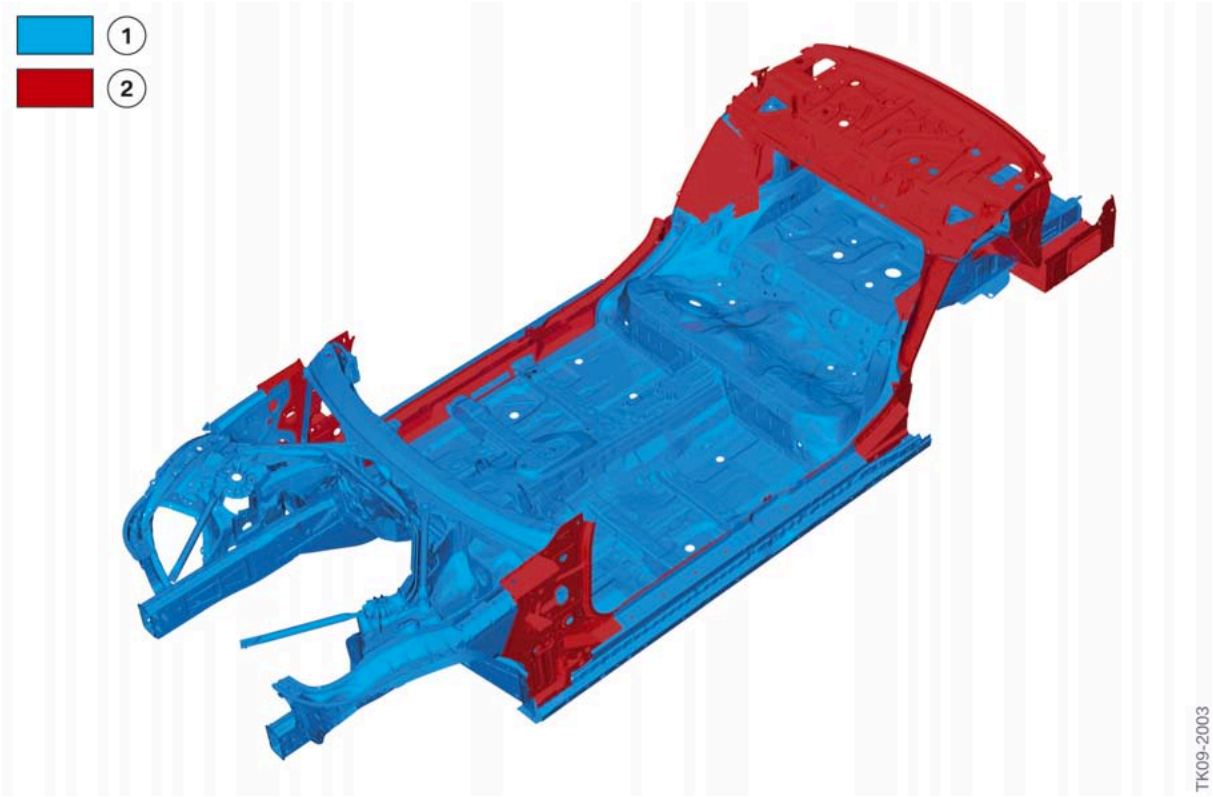
Glass panel in vent position		**F10**	**E60**
Vent gap of glass panel	[mm]	Approx. 22	Approx. 32
Vent gap of sliding trim	[mm]	Approx. 85	Approx. 75

2.5.2. Dismantling/installation and setting

Component	Notes
Glass panel	Possible with installed slide/tilt sunroof unit and installed roofliner
Sliding trim	Possible with glass panel removed
Drive of glass panel	Possible with roof function center removed
Drive of sliding trim	Possible with roofliner removed

2.6. Common parts strategy

The objective of the common parts strategy is to enable the most stringent standards to be implemented at reasonable cost.



F10 Front section, floor assembly and rear section

Index	Explanation
1	Common part
2	New part

F10 Introduction

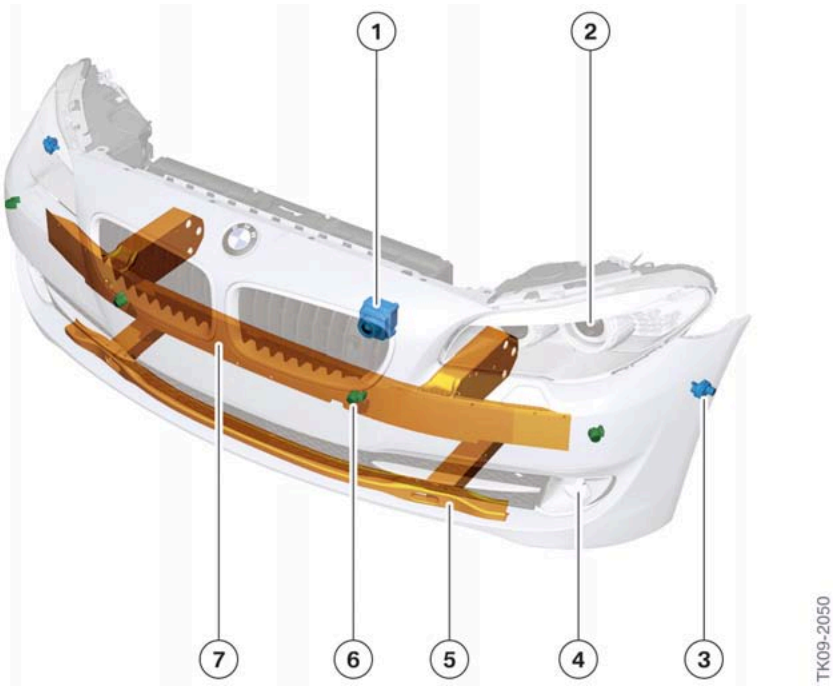
3. Exterior and Interior Equipment

3.1. Exterior equipment

3.1.1. Front Bumper Carrier

The front bumper carrier of the F10 can be completely separated from the rest of the vehicle. It consists of the bumper, the lights, multiple sensors, and cover panels.

Note: Always follow proper repair instructions!



F10 Front bumper carrier

Index	Explanation
1	Night Vision Camera
2	Xenon headlights
3	Bumper camera
4	Fog lights
5	Lower bumper support
6	Sensor (Park Distance Control)
7	Upper bumper carrier

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3. Exterior and Interior Equipment

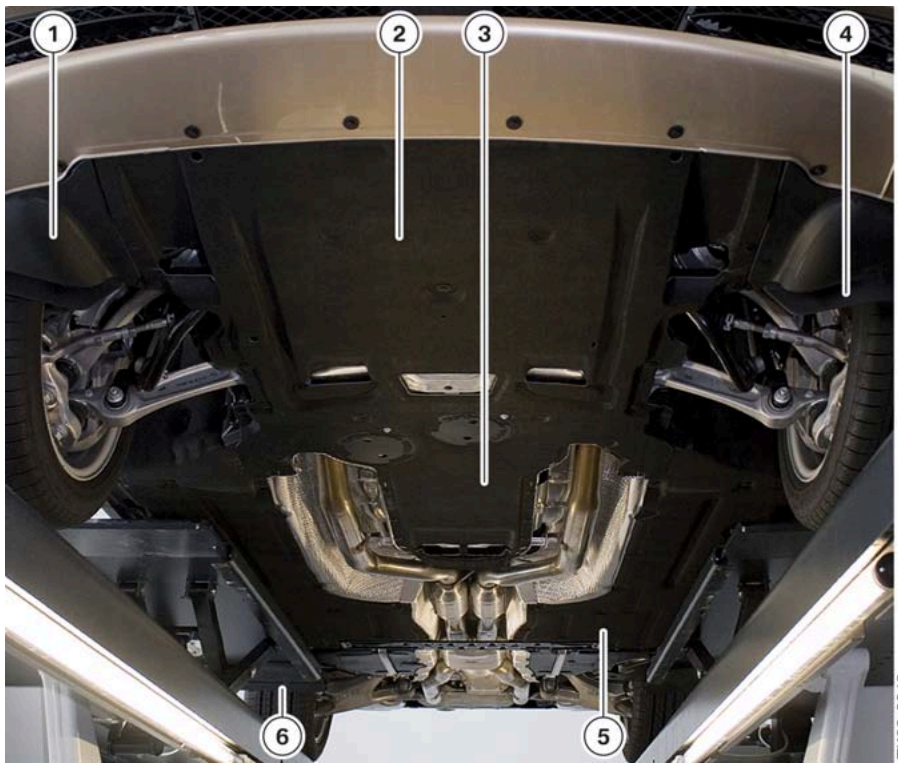
3.1.2. Rear bumper

The rear bumper carrier (with the impact absorber) is bolted to the bodyshell structure. It can absorb low-speed impacts (at least 4 km/h/2.5 mph) without damage to the bodywork.

The bumper system is a consumer-protection-compliant (low-speed impact) design that prevents damage to the vehicle's body structure. The consumer protection requirements are set forth in Europe by the German "Allianz" center for technology (AZT) and in the USA by the Insurance Institute for Highway Safety (IIHS). Deformation elements are specifically designed to lower repair costs.

3.1.3. Underbody design

The smooth vehicle underbody prevents air turbulence beneath the vehicle, this produces less drag and better road grip.



F10 Underbody panels (aerodynamic measures)

Modifying the vehicle underbody or removing the underbody panels will result in changes of the air flow which can have a negative effect on the road grip.

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3. Exterior and Interior Equipment

Index	Explanation
1	Front bottom cover
2	Engine compartment panel
3	Transmission panel
4	Air guide, flat
5	Underbody side panels
6	Air guide, flat

3.2. Interior equipment

3.2.1. Dimensions

		F10	E60
Shoulder room, front	[mm]	1480	1455
Shoulder room, rear	[mm]	1427	1454
Elbow room, front	[mm]	1518	1485
Elbow room, rear	[mm]	1485	1496
Maximum headroom, front (without slide/tilt sunroof)	[mm]	1028	1028
Maximum headroom, front (with slide/tilt sunroof)	[mm]	992	992
Maximum headroom, rear (without slide/tilt sunroof)	[mm]	973	967
Maximum headroom, rear (with slide/tilt sunroof)	[mm]	965	955
Luggage compartment capacity	[liters]	520	520

3.2.2. Dashboard

As in the F07, a one-piece foam dashboard with a rigid foam support is installed in the F10.

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3. Exterior and Interior Equipment

F10 Passenger compartment, dashboard

The dashboard is foam-backed. The upper part is available in black or, for a bright interior color, also in "dark dolomite".

The interior color is continued in the bottom dashboard. This area below the decorative strip is available in the following colors:

- Black
- Everest grey
- Veneto beige
- Oyster
- Cinnamon brown

Highlights

- The cockpit is inclined towards the driver at an angle of approximately 7 degrees, this gives a clear orientation to the driver.
- Enhancement of decorative strips and fresh air grill by means of accentuating strips
- Fold-out DVD changer for 6 DVDs (option 696) in the glove box
- Folding compartment on the driver's side
- Sturdy cup holder in the center console

The attractive decorative strips lift as they terminate where they meet the doors. The decorative strips are available in high-gloss black or, as optional equipment, in finely polished aluminum or various types of wood.

In addition, the appearance of the fresh-air grille is enhanced by a chrome inlay on the adjusting lever for changing the air flow direction. For better operation at night, the F10 has added lighting to the thumbwheel on the center fresh-air grille. With the optional equipment 4-zone climate control (option 4NB), the thumbwheels on the outer fresh-air grille are also illuminated.

With the optional equipment 2-zone (option 534) or 4-zone climate control (option 4NB), the outer louvres and corresponding center bars on the center fresh-air grille have a galvanized finish.

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For vehicles with the optional equipment 4-zone climate control, various ventilation levels can be selected using the thumbwheels on the center fresh-air grille.

- **Draft-free ventilation:**
  Air flow is fanned out for a lower intensity
- **Maximum amount of air:**
  Air is partially fanned out and bundled. This enables maximum air supply.
- **Direct ventilation:**
  Air is bundled and can be specifically directed at one point.

The steel rod glove box hinge design of the F01 was replaced with a film type hinge on the F10.

F10 Glove box hinge

Index	Explanation
A	Film hinge (F10)
B	Steel rod (F01)

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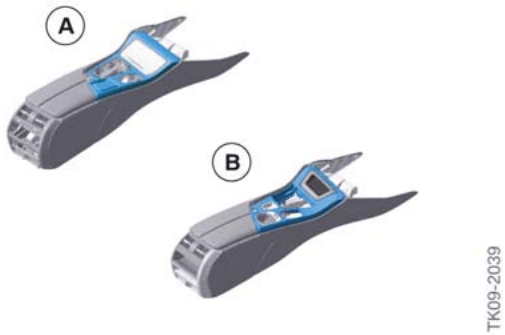
3. Exterior and Interior Equipment

3.2.3. Center console



F10 Center console

Index	Explanation
A	Center console for automatic transmission
B	Center console for manual transmission

Unlike the F01, a two-piece center console is installed in the F10. This consists of the center console carrier and the corresponding functional carrier, depending on the transmission installed (manual or automatic).

According to the equipment selected, the center armrest and the side bar on the driver's side come in either PVC leatherette, Dakota leather or Nappa leather with side double-lap seams.

The decorative areas of the dashboard are reflected in the center console decorative strip.

The rear passenger compartment also features galvanized inlays in the adjusting levers for changing the flow direction of the fresh-air grille. In addition, with the optional equipment 4-zone IHKA the symbols on the thumbwheel are illuminated.

With the optional equipment rear seat entertainment (option 6FG) or 4-zone IHKA, one storage compartment is omitted in each case and replaced by the corresponding operating controls.

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3. Exterior and Interior Equipment

3.2.4. Storage options, front

F10 Storage options, front

Index	Explanation
1	Folding compartment
2	Front door storage

The folding compartment on the driver's side provides an additional storage area within the driver's reach.

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3. Exterior and Interior Equipment

F10 Storage options, front

Index	Explanation
1	Cup holder/storage/ashtray (depending on the vehicle equipment)
2	Cup holder/storage/ashtray (depending on the vehicle equipment)
3	Center armrest
4	DVD changer
5	Glove box
6	Storage net

The front center armrest can be locked and is available on request with a side snap-in adapter. To connect an external audio device, such as a CD or MP3 player, an AUX-In connector and, on request, a USB audio interface is provided (with option 6FL).

The DVD changer for 6 DVDs (option 696) has been positioned in a fold-out unit in the glove box. This allows the capacity of the glove box to be used, even for vehicles with DVD changer. A handle marked with the relevant information is used for operation. The right side of the glove box contains a USB connection for import and export of data on a USB stick (e. g. Personal Profile or music collections).

Vehicles with automatic transmission

The cup holders are located in the front area of the center console. They have been positioned for optimal ergonomics and equipped with robust mechanisms that provides optimum stability of the cups and beverages placed in them. Between the cup holders, there is a 12V socket.

Behind the controller, there is another storage compartment.

Vehicles with manual transmission

The front area of the center console contains a storage compartment and a 12V socket.

The cup holder is located behind the controller. A second cup holder is below the front center armrest.

3.2.5. Rear storage options

F10 Rear storage options

Index	Explanation
1	Storage compartment in center armrest
2	Remote control (with option 6FG, rear seat entertainment)
3	Cup holder
4	Door panel
5	Storage compartment in front seat backrest

The center armrest contains two cup holders and a storage compartment. With the optional equipment rear seat entertainment (option 6FG), the remote control can be stowed in the storage compartment.

3.2.6. Front seats

The following front seat variants are available for selection in the F10:

- 20-way power front Comfort seats with memory (standard)
- ZAV Active vent seat package

The available ZAV Active vent seat package includes

- Multi contour seats (lumbar support)
- Front ventilated seats
- Active front seats
- Heated front seats

The front seats are largely identical to the front seats in the F07.

The following table provides an overview of the available optional equipment.

Seat equipment

	Seat adjustment, electrical, with memory (option 459)	**Comfort seat, electrically adjustable (option 456)**
Seat memory	Standard	Standard
Seat heating for driver/ passenger	Option 494	Option 494
Lumbar support for driver/ passenger	Option 488	Standard
Active seat for driver/front passenger	---	Option 455
Active seat ventilation, front	Option 453	Option 453
Ambient light	Option 4UR	Option 4UR
Rear seat entertainment	Option 6FG	Option 6FG

Seat adjustment

The comfort seat are essentially identical with the front seats in the F01.

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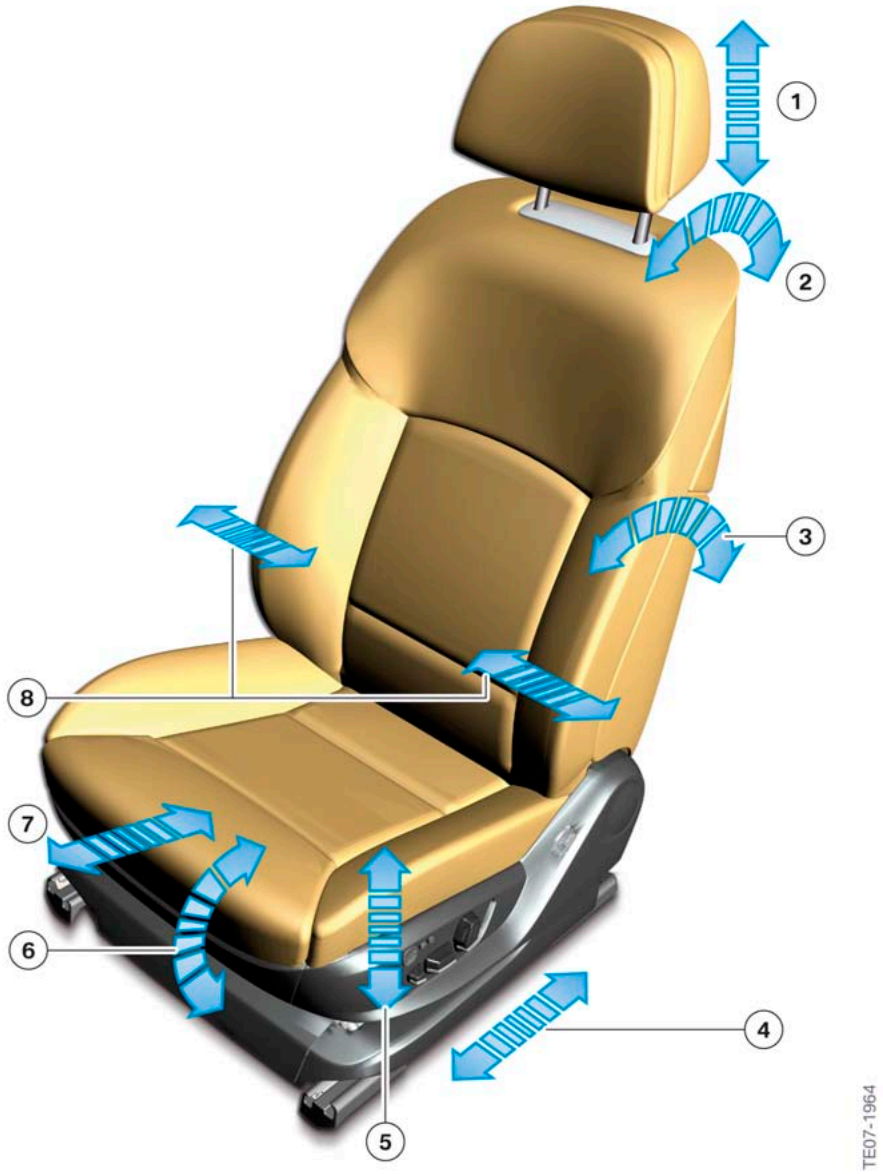
3. Exterior and Interior Equipment



F10 Maximum seat adjustment, example: comfort seat

Index	Explanation
1	Head restraint, height adjustment
2	Upper backrest adjustment
3	Backrest inclination adjustment
4	Forward/back seat adjustment
5	Seat height adjustment
6	Seat angle adjustment
7	Seat depth adjustment
8	Backrest width adjustment

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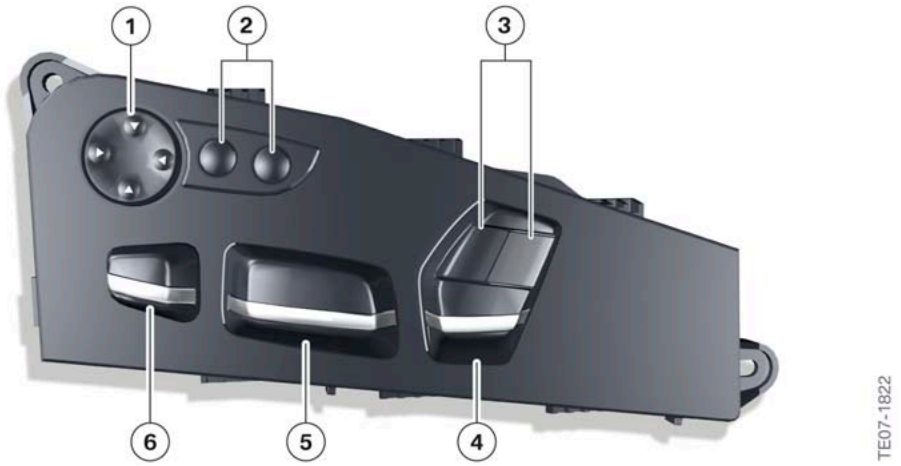
3. Exterior and Interior Equipment

Note: The Lumbar adjustment is not shown on this graphic but it counts for four other adjustments bringing the total adjustments of the Comfort seat to 20.

Seat adjustment options	Seat adjustment, electrical, with memory (option 459)	Comfort seat, electrically adjustable (option 456)
Seat height adjustment	Electrical	Electrical
Forward/back seat adjustment	Electrical	Electrical
Seat angle adjustment	Electrical	Electrical
Backrest inclination adjustment	Electrical	Electrical
Head restraint, height adjustment	Electrical	Electrical
Seat depth adjustment	Manual*	Electrical
Backrest width adjustment	---	Electrical
Upper backrest adjustment	---	Electrical

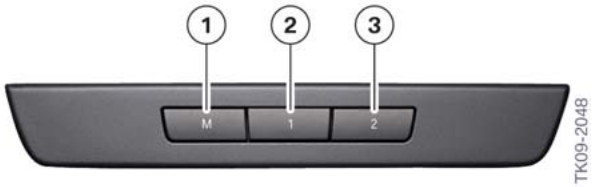


F10 Switch cluster for driver's seat adjustment (on the seat), comfort seat

Index	Explanation
1	Lumbar support adjustment
2	Backrest width adjustment
3	Upper backrest adjustment
4	Backrest inclination and head restraint height adjustment
5	Longitudinal, seat height and seat inclination adjustment
6	Seat depth adjustment

F10 Introduction

3. Exterior and Interior Equipment



F10 Switch cluster memory (on the door panel)

Index	Explanation
1	Button M (save current position)
2	Button 1 (call up stored position)
3	Button 2 (call up stored position)

Seat heating

F10 IHKA control panel

Index	Explanation
1	Seat heating button, driver's seat
2	Seat heating button, front passenger seat

Active seat ventilation

F10 IHKA control panel

Index	Explanation
1	Button, active seat ventilation, driver's seat
2	Button, active seat ventilation, front passenger seat

Side airbag

F10 Side airbag

Index	Explanation
1	Airbag module in the backrest

The front side airbag is integrated into the backrest of the driver's and front passenger's seat. The seat back extends into the side of the seat, this is called the "encompassing seat wall". When the airbag is triggered, the side is pushed slightly open, this allows the airbag to open and provide its protective function. The front seats are equipped with seat-occupancy recognition and a belt tensioner.

Crash-active headrest

The front seats are equipped with a crash-active headrest. In the fully electrical seats, the head restraint has a button for adjusting the distance to your head.

In the comfort seat, the distance is adjustable using the upper backrest adjustment.

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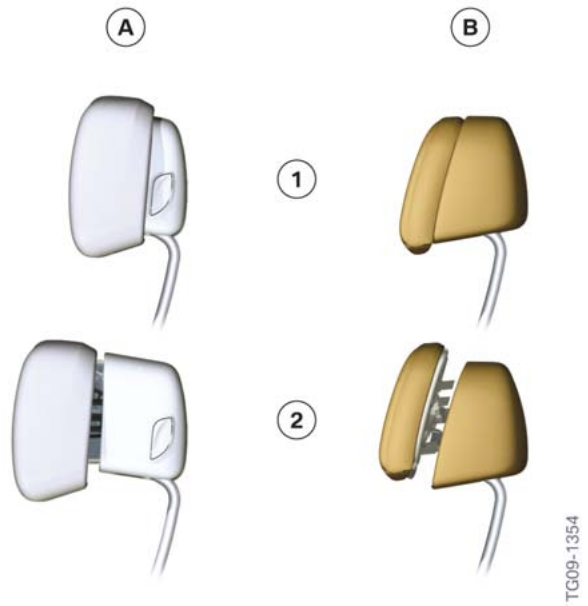
3. Exterior and Interior Equipment



F10 Crash-active head restraint

Index	Explanation
1	Comfort precision advance
2	Position of activated crash-active head restraint
A	Basic seat/sport seat
B	Comfort seat

Rear display

F10 Rear display

With the optional equipment rear seat entertainment (option 6FG) one 8.2" swivelling display is installed in the headrest of each of the front seats.

3.2.7. Rear seats

In the F10, a seat bench with backrest in sandwich design is installed as standard, or a Split fold-down-rear seat with through-loading with through-loading as optional equipment (option 465).

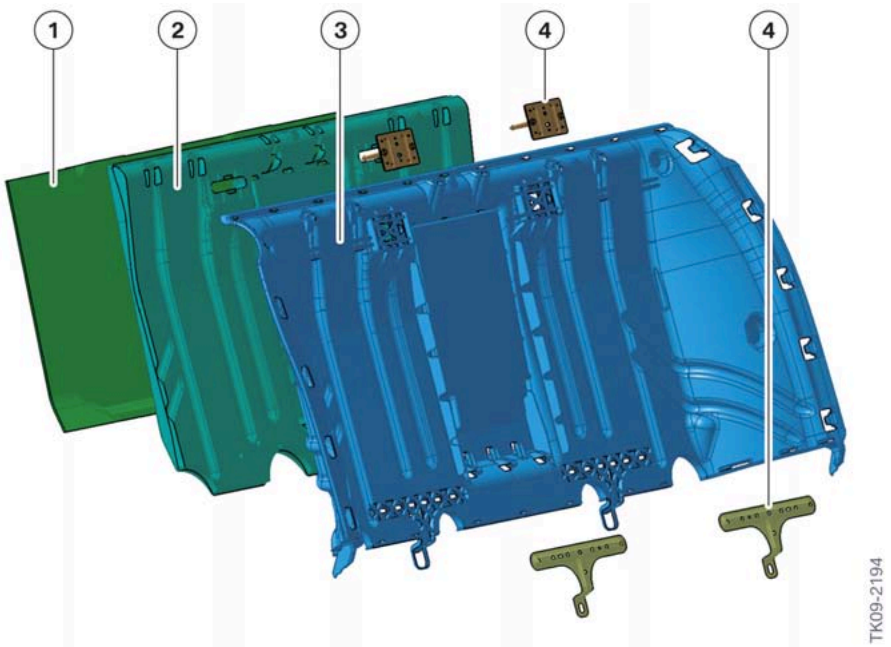
F10 Introduction

3. Exterior and Interior Equipment

Highlights

- Backrest in sandwich design (only basic seat bench)
- Center armrest (folding) with storage compartment and cup holder
- Center head restraint, folding
- Backrests, folding 40 %, 60 % or 100 % (only with through-loading system, option 465)

In the F10, a completely newly developed backrest is installed in the basic seat bench. Unlike the predecessor model, this does not consist of a metal structure, but instead of a composite material.



F10 Sandwich structure of the basic backrest

Index	Explanation
1	Counter support
2	EPP insert
3	Moulded plastic part
4	Holder (embedded in the material)

The front moulded plastic part consists of polypropylene with 30 % glass fiber (PP-GF30, impact resistant). The moulded plastic part is foamed on the rear using expanded polypropylene (EPP), a polypropylene-based particle foam.

The sandwich structure is highly stable, with a lower weight than a conventionally manufactured backrest structure.

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3. Exterior and Interior Equipment

Seat equipment

	Basic seat bench	Seat bench with through-loading system (option 465)
Seat heating for rear seats	Option 496	Option 496
Remote control in storage compartment (with rear seat entertainment)	Option 6FG	Option 6FG
Ski bag	---	Standard

Center armrest/head restraint

Another new feature in the F10 is the free-standing center armrest with separate folding head restraint in both seat bench versions.

F10 Rear seats

Unlike the E60, the center head restraint has been separated from the center armrest and designed as a folding head restraint. When folded, the view towards the rear is improved without the need to actuate the center armrest. This also contributes to active safety.

Because the head restraint is in a far forward position when folded up, it provides the center rear seat passenger a high degree of safety despite a relatively low weight.

Through-loading system

The Split fold-down-rear seat system (option 465) with through-loading makes the F10 the perfect companion to both everyday life and leisure. Thanks to the divided rear seat backrest, even bulky goods can be transported without a problem, and there is still room for occupants in the rear passenger compartment.

The rear seat backrest can be divided and folded in a 60:40 ratio. The rear seat backrest elements are unlocked from the luggage compartment.

Together with the through-loading system, a ski bag (option 464) can also be installed. This allows up to four pairs of skis or two snowboards to be transported neatly and securely. When the ski bag is not in use, it is stowed compactly behind the center armrest.

Seat heating

Seat heating (option 496) can be ordered as parts as ZCW Cold Weather Package option.

F10 Control panel for the rear IHKA

Index	Explanation
1	Seat heating button, left
2	Seat heating button, right

3.2.8. Climate control

For the F10, two versions of the integrated automatic heating / air conditioning system IHKA are available:

- 2-zone IHKA
- 4-zone IHKA (option 4NB)

Equipment

	IHKA 2 zones	IHKA 4 zones
Separate control of temperature, front left/right	X	X
Separate control of amount of air and air distribution, front left/right	X	X
Separate control of temperature, rear passenger compartment left/right	---	X
Independent ventilation	X	X
Residual heat utilization	X	X
Anti-misting	X	X
Fresh air and recirculating air filter (microfilter)	X	X
Ionizer to prevent condenser odors	X	X

	IHKA 2 zones	IHKA 4 zones
Individual automatic control with five intensity levels	X	X
Solar compensation	X	X
Automatic recirculated air control (including combination filter[2])	X	X
ALL function (driver's settings are transferred to front passenger side)	X	---
ALL function (driver's settings are transferred to front passenger side and left/rear passenger compartment)	---	X
Separate IHKA controls in rear passenger compartment (center console)	---	X
Comfort nozzle (fresh-air grille on center dashboard) with individual range of adjustment from spot (focused) to diffuse (draught-free)	---	X

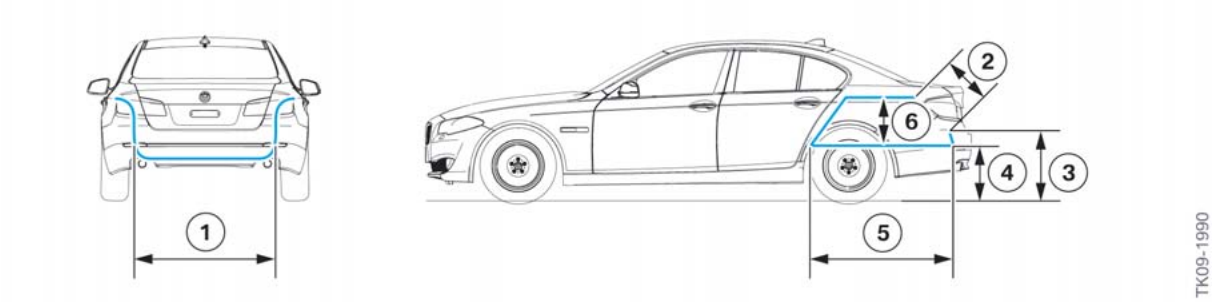
[1] A solar sensor takes into account any external light and/or heat sources that affect the climate in the passenger compartment.

[2] Combination of a carbon filter and microfilter traps dust and pollen protects against unpleasant odors.

3.3. Luggage compartment

The luggage compartment capacity is 520 liters. The luggage compartment has sufficient space for items such as four golf bags (46"), a stroller or four pairs of skis (with optional equipment ski bag, option 464). The optional seat bench with through-loading system (option 465) allows the luggage compartment capacity to be expanded even further.

3.3.1. Dimensions



F10 Luggage compartment dimensions

F10 Introduction

3. Exterior and Interior Equipment

		F10	E60
(1) Smallest luggage compartment width (between the wheel arches)	[mm]	830 – 906	832 – 907
(2) Diagonal measurement of loading opening	[mm]	487	496
(3) Loading edge height above roadway	[mm]	649	664
(4) Luggage compartment floor height above roadway	[mm]	492	490
(5) Luggage compartment floor length	[mm]	1145	1111
(6) Smallest luggage compartment height	[mm]	516	---
Largest luggage compartment width on the floor	[mm]	1344	1374
Width of rear opening – top	[mm]	1182	1332
Width of rear opening – bottom	[mm]	914	809
Luggage compartment capacity	[l]	520	520

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