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4th Generation M3 Body

Model: E90, E92

Production: 2/2008

OBJECTIVES

After completion of this module you will be able to:

- Identify the changes made to the M3 when compared with the series E92

Bodyshell

Due to changes to the wheel arch and the carbon roof, the bodyshell components shown in blue have a different part number to the series model E92.



E92 M3 bodyshell components, view from above



E92 M3 bodyshell components, view from below

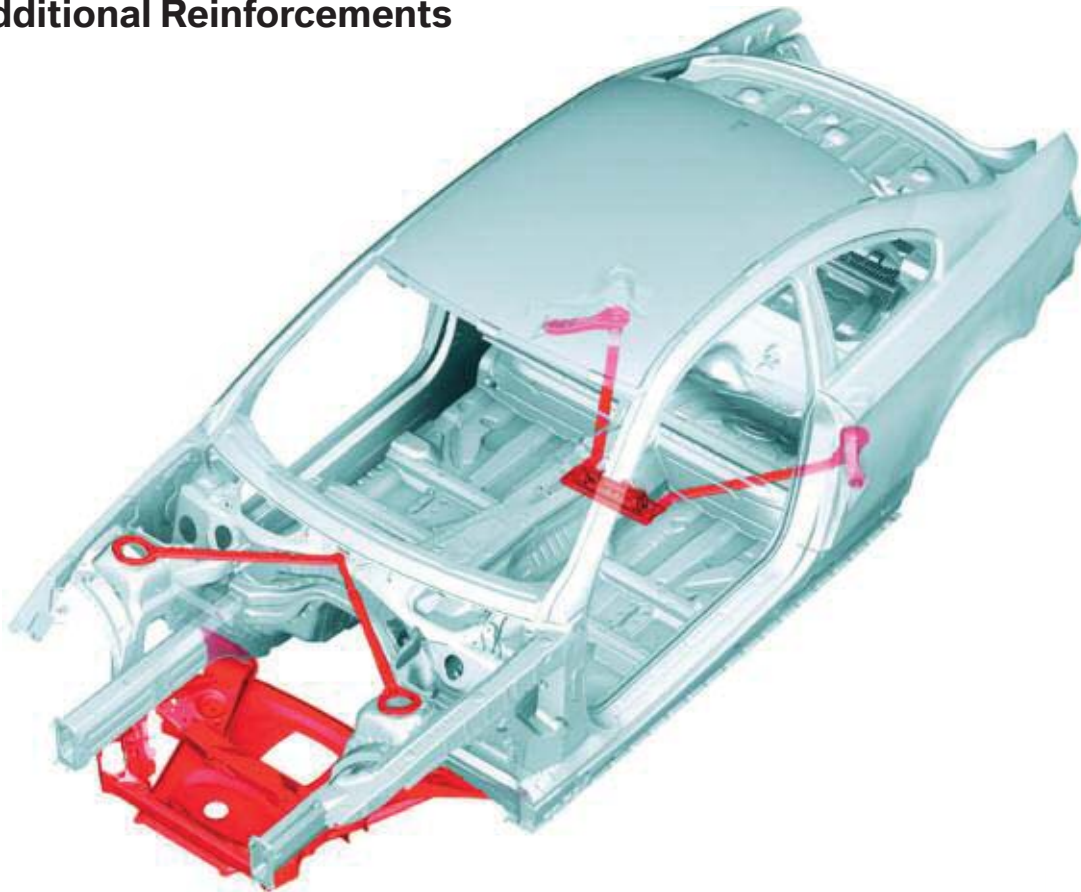
New body side panels which are 20mm wider each side over the flared rear wheel arches are typical of the 'M' design.

To ensure the necessary M3 wheel clearance at the rear wheel arch, the side frame wheel arch has been extended by approximately 20 mm, and the 180° joining lip edge inside the wheel arch has been rolled upwards to further increase the wheel clearance in the wheel housing.



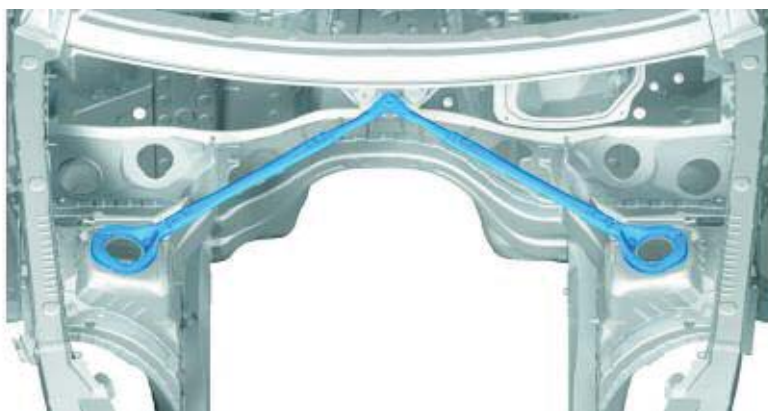
E92 M3 Rear wheel arc

Additional Reinforcements



E92 M3 Overview of additional bolted-on reinforcements

The E92 M3 is equipped with a v-shaped reinforcement brace in the engine compartment, known as the dome strut, which consists of five separate components. It is secured to the suspension strut dome and screwed centrally to the middle of the bulkhead.



E92 M3 Dome strut

The E92 M3, just like the E46 M3, is equipped with a reinforcement plate, known as the thrust panel, made from aluminum alloy.

The thrust panel primarily increases the torsional strength while also acting as a lower motor cover and oil pan protection. The thrust panel is fitted to the axle carrier with six bolts from below, and has two openings for changing the oil.



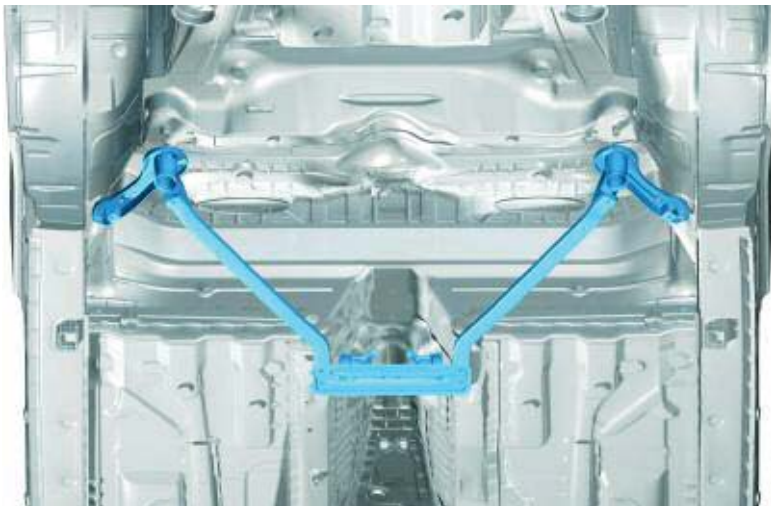
E92 M3 thrust panel

The V-shaped braces used in the rear underbody area of the series production E92 have been strengthened and adapted.

M3 - Permanently welded to the tension strut and screwed to the body with the transmission tunnel bridge

Series E92 - they are screwed to the tension strut and welded to the bridge

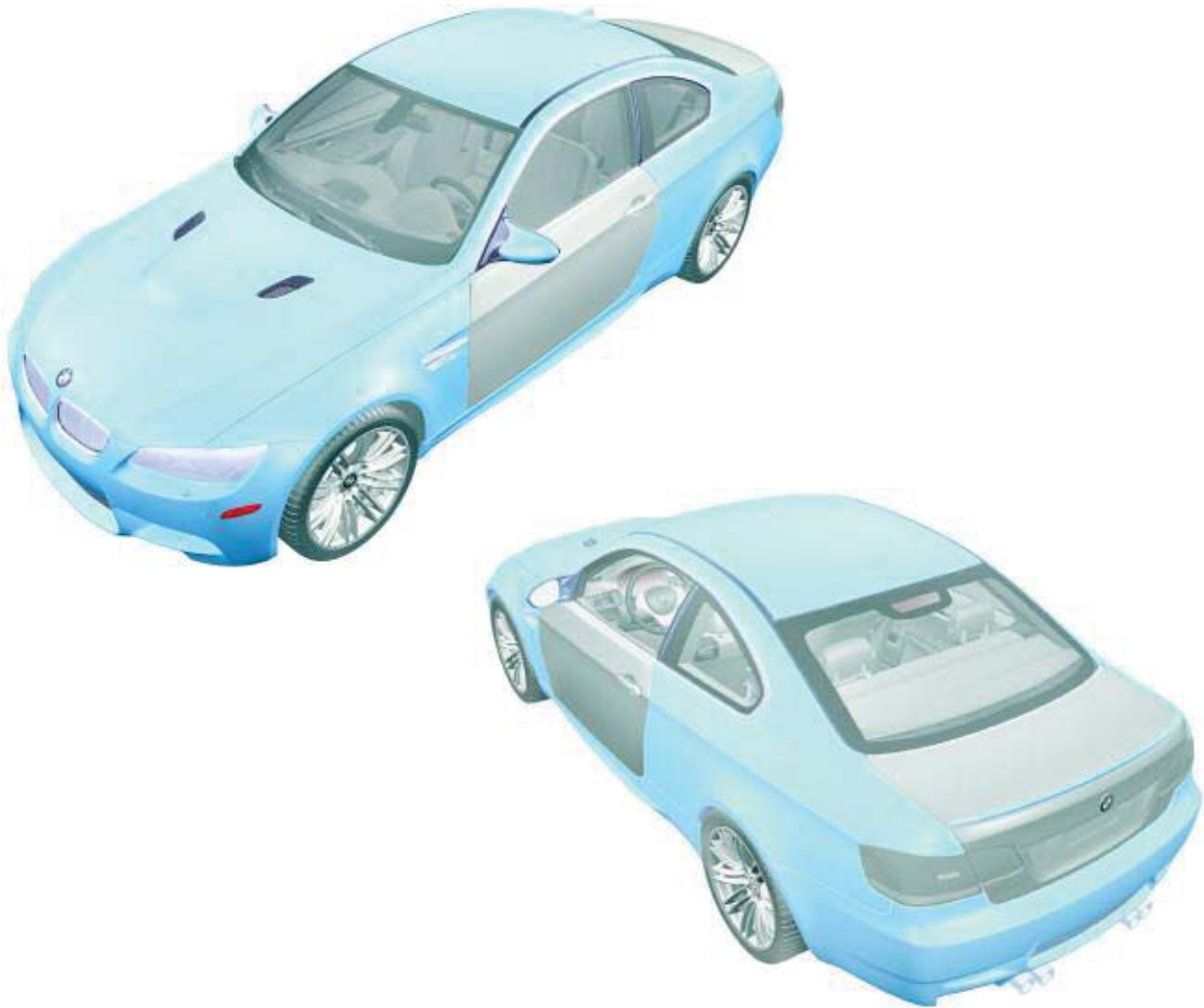
The bridge has been strengthened and adapted. In the M3, it is also used to mount the exhaust line.



E92 M3 Rear axle braces and transmission tunnel bridge

Exterior Body

View of M3-specific external body components



The doors and the tailgate are taken from the series-model E92. All other external body components are new (shown in blue).

Hood

New "Powerdome" aluminum hood lid with air apertures. The aperture on the left when viewed in the direction of travel is used for incoming engine air, and the right-hand aperture offers optical symmetry.



Power Dome aluminum hood lid

Fenders

An advanced plastic material is used for the front side panels, which are wider than those used on the series E92. The side panels include the model-specific "M side gills" with integrated side indicators and M3 emblem.



Front fender (side panel)

Roof

The roof on the E92 M3 is manufactured from carbon fiber. This has reduced the overall vehicle mass on the upper level of the car by approximately 5 kg, therefore considerably lowering the center of gravity.

A roof rack system can be assembled on the E92 M3 with carbon fiber roof. The roof has specific inserts for roof luggage rack brackets.

The repair procedures and options are similar to or the same as the M6.

If the sunroof option is selected, a steel roof similar to the series model E92 is fitted.



E92 M3 Carbon roof

Side Sills

The side sills are more highly accentuated, in accordance with the M design criteria.



Side sill trim

Exterior Rear View Mirrors

The 'M' designed exterior door mirrors have an optimized air flow design. The mirror surface area is larger to comply with future legislation. The mirror base mounting has been adapted to suit the new mirror unit.

The functions of the outside mirrors are the same as the series production E92. Driver and passenger mirrors are electrically heated and adjusted.

The cover cap of the exterior mirror housing is painted in the body color.



Tailgate

The tailgate is taken from the series production E92. The rear spoiler (Gurney) is attached as a standard feature on the E92 M3.



Tailgate and spoiler (Gurney)

Wheel Well Covers

The new M3 is fitted with larger wheel housing covers that accommodate the larger wheels and flared wheel arches. The front wheel housing cover has been adapted specifically to meet the M3 requirements.



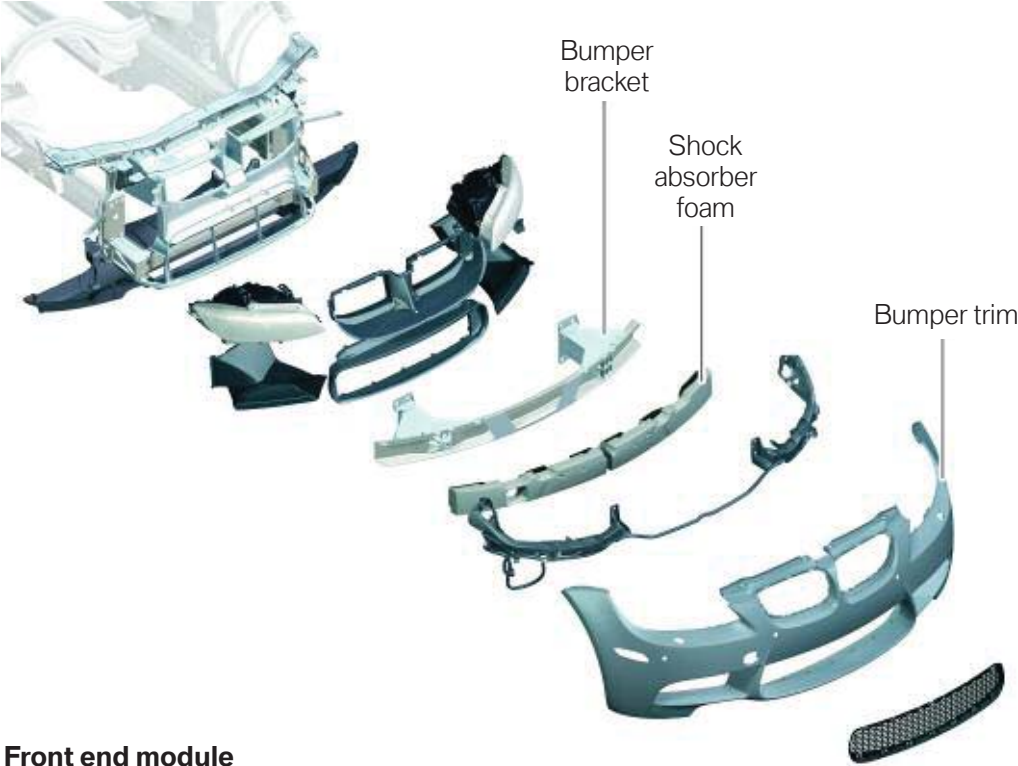
Front wheel housing cover



Rear wheel housing cover

Front End Module

The front end module has a new single piece M-specific thermoplastic bumper trim and is fitted to a reinforced lightweight plastic bracket.



Front end module



Plastic bumper brackets

Front bumper trim



The bumper trim is color coded to the car.

The front M3 bumper has apertures for the kidney grille, engine air inlet, PDC ultrasonic sensors (optional), the headlight-cleaning system and the mounting for the towing eye.

Front bi-xenon headlamp units are identical to the series E92. The M3 front bumper overhang is longer than that of the series E92.

Headlight Cleaning System (SWR)

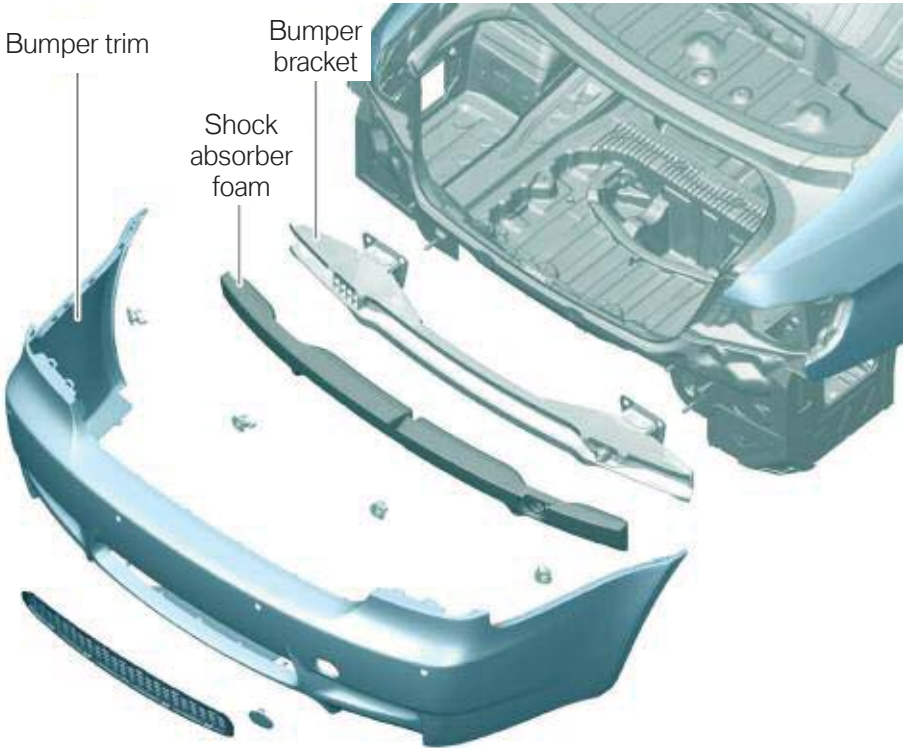
The container for the M3 headlight cleaning system is new. The design has been changed from the series E92 in order to provide the necessary space for installing the M3 side gills with integrated indicators in the M style. The filler neck and the line for the headlight cleaning system are new, together with the fixed washer nozzles on the bumper trim.

The wiring harness for the headlight cleaning system has been adapted accordingly.



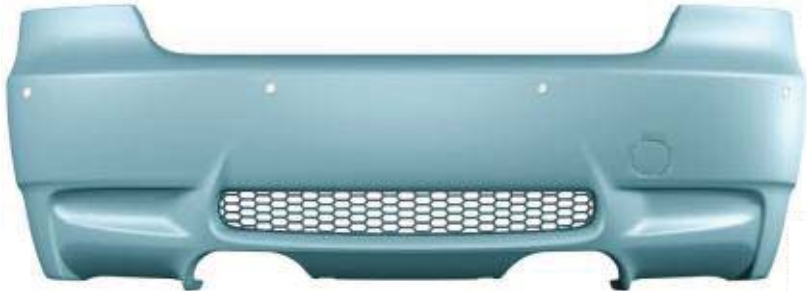
Headlight cleaning system

Rear End Module



The rear end module also features a new, single-piece bumper trim in the M style made from a special thermoplast material. The bracket is also made from reinforced lightweight plastic.

The module has apertures for the bumper grid, PDC ultrasonic sensors (optional) and the mounting for the towing hook.

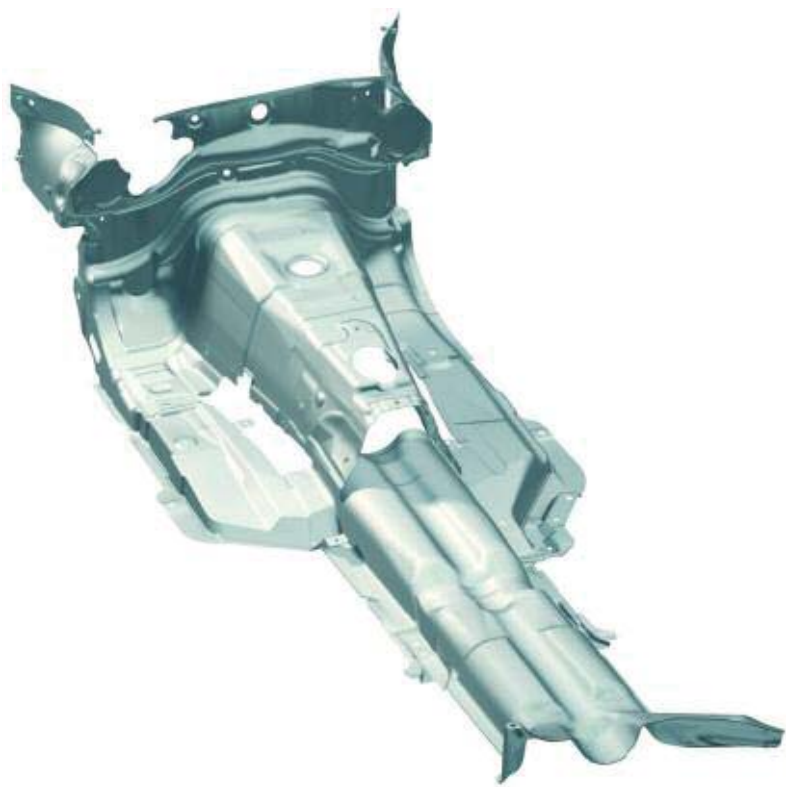


Rear bumper trim

Sound/Thermal Insulating

New sound insulation and thermal insulation covers have been installed.

The sound-insulating mats are attached in the vehicle interior to the bulkhead and transmission tunnel, and the thermal insulation is mounted in the underbody area of the exhaust system and the engine.



Sound insulating mat and thermal insulation

Other Underbody Paneling

The underbody panels have been optimized to ensure the best possible vehicle aerodynamics and the maximum possible cooling capacity for the driveline components.



Underbody Paneling

Interior Body

Luggage Compartment

The M3 floor insert in the luggage compartment has been modified to accommodate the M Mobility System.



M Mobility System

Seats

The front head restraints feature the M logo, as in the E6x M5.

The front seat backrests have been revised. The seat upholstery is the same as that used on the E92 series-model sport seat.

The frame with rear seat bench with throughloading capability has enabled further weight savings. This is achieved through the use of lighter materials, which are processed using a special method for seat construction in a sandwich design (1).



Sectional view of the frame of a rear seat back (1)



Rear seat bench