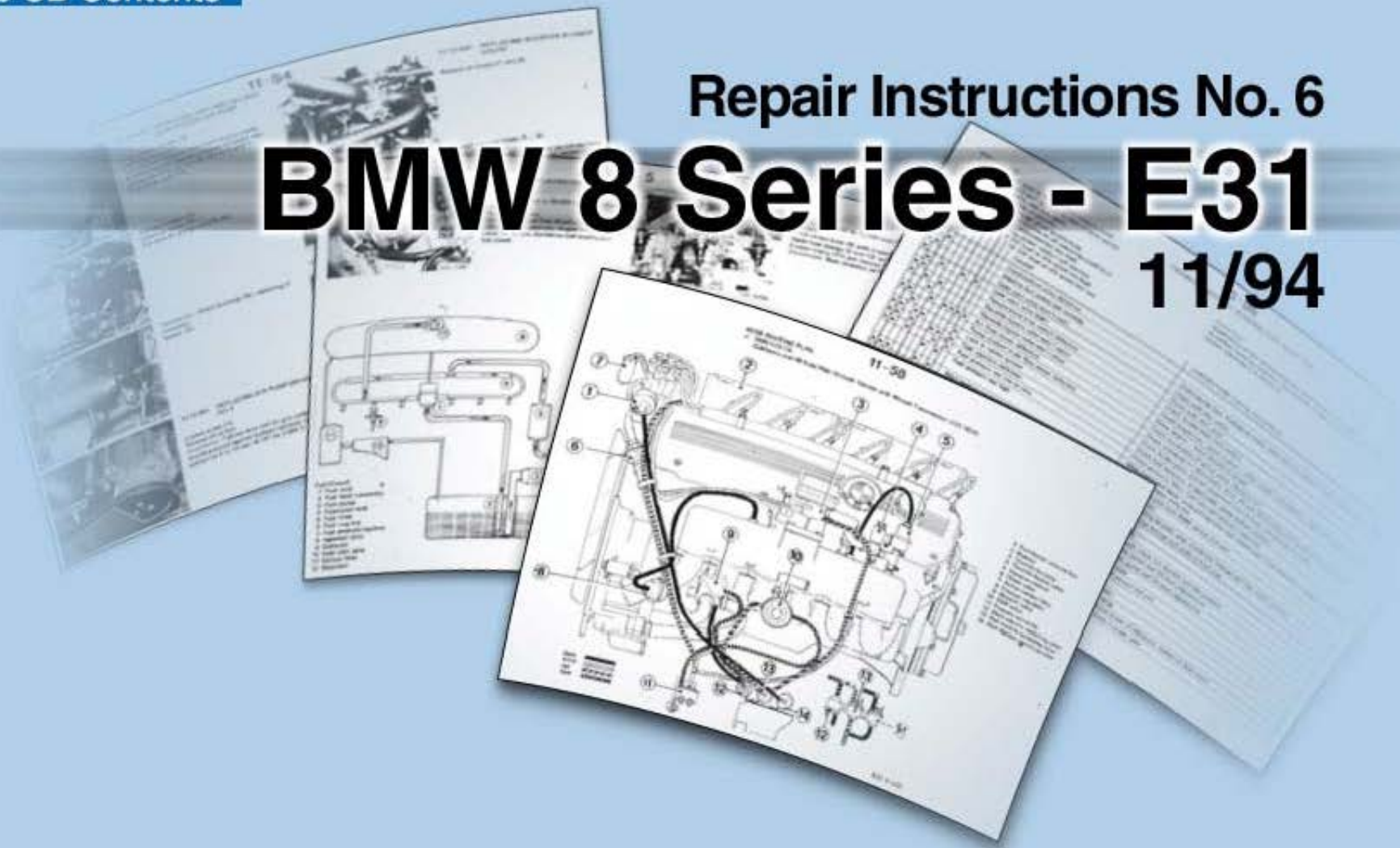


Repair Instructions No. 6

BMW 8 Series - E31

11/94



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BMW Maintenance System

The maintenance operations are valid up to model year 93.

From model year 94, see Inspection Sheet.

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BMW Maintenance System – USA

Maintenance operations are valid until model year 93.

From model year 94, see Inspection Sheet.

00 00 009	Pre-delivery inspection	00-	20
215	BMW run-in check at 2000 km (1200 miles)	00-	26
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231	BMW inspection II = inspection I + additional work	00-	31
249	BMW engine oil service	00-	33
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INTRODUCTION

These Repair Instructions are to assist you in performing the necessary maintenance and repair work expertly and correctly. This complements the practical and theoretical training given in our service training schools.

Beginning with 1985 models, Repair Instructions are divided into:

- Repair Instructions for the Series
- The Repair Instructions (3, 5, 6, 7 and 8 Series) describe removal, installation and replacement of construction groups on the vehicle.
- Construction Group Repair Instructions for BMW Automobiles
- The Construction Group Repair Instructions (Main Groups 11, 12, 13, 23, 24 and 33) describe removal, installation and replacement of construction groups on removed assemblies. Testing instructions and troubleshooting charts also feature in the Construction Group Repair Instructions.

For all Technical Data (tightening torques, adjustment values etc.) technical data microfilms are provided.

The Repair Instructions (microfilm or manual) illustrate work which is only possible to perform on standard production cars, i.e. not applicable to cars which have been subsequently modified.

The structure of these Repair Instructions is based on the same numbering system as the flat rate manuals (FR numbers),

Cross references to other FR (Flat Rate) numbers are only intended as assistance and must not be used for extension of the flat rates.

The individual page numbering, for example 64 – 11/8 means:

- 64 Main Group
- 11 Sub-group
- 8 Serial numbers

All the special tools mentioned in the Repair Instructions are summarized in the special tool microfiche, order no. 01 99 9 699 422. The use of special tool is illustrated in the descriptions of various repair operations.

Normally, the Repair Instructions only describe the removal work required for each operation. Installation takes place in reverse order. If it does not, *installation notes* are provided to explain the correct procedure.

In contrast to this, the removal and installation operations for complex tasks are described separately.

The Service Information bulletins provide regular information on improvements and modifications. As an additional source of information, we recommend using the illustrated parts microfiches.

**BAYERISCHE MOTOREN WERKE AG
CENTRAL SERVICE DEPARTMENT**

Page Cross Reference:

Those pages in the page cross reference plan which are underlined (e.g. 11) are new or revised.

GENERAL INFORMATION

PRECAUTIONS FOR WORKING WITH PARTS CONTAINING ASBESTOS

Inhaling fine asbestos dust could impair health.
Conform with these safety precautions when working with asbestos parts.

- Only work outdoors or in well ventilated rooms.
- Only use manually operated or slow running equipment, with dust extracting equipment if necessary! Only operate fast running equipment with dust extracting attachments.
- Moisten parts prior to machining whenever possible.
- Never blow out brake and clutch parts.
- Moisten dust, fill in containers which can be sealed perfectly and scrap in a manner which prevents danger.
- Asbestos waste and scrapped parts must be collected in perfectly sealed containers marked accordingly and then eliminated without danger for human beings or the environment.

GENERAL INFORMATION

Important When Disconnecting Battery!

Disconnect the battery by disconnecting the ground lead on the battery. Disconnecting the battery will cancel fault memories of control units, so that fault memories must

always be investigated after reconnection of the battery.

Always disconnect both ground wires — otherwise danger of short circuit!

Note after reconnection of the battery!

Re-initialization of the front power windows: Shut the doors, shut the windows using the switch, hold the switch pressed at least 3 seconds.

Re-initialization of the sun roof: shut the sun roof using the switch and hold the switch pressed at least 3 seconds.

Checking initialization: automatic tip closing should work. If not, repeat the above procedures.

Important With Connected Battery!

Working on components, wire connections and so on could cause faults in fault memories of the concerned control units. If disconnection of the battery is specified in the Repair Manual for the carrying out of repairs, there must always be conformance with this in the interest of safety.

Windshield Wipers (Wiper Operating Motor)

Intermittent wiping and wiper speed 1 are switched off by a protector in case of failure. The protector remains active even after eliminating the fault. It can be cancelled by turning the ignition off (terminals 15 and R) for 3 minutes.

Car with Interlock System

If a component of the interlock system was removed and installed or the installed position of the interlock cable changed, the following function check must be carried out.

1. Move selector lever of automatic transmission into "P".
2. Remove ignition key.
3. Press button on selector lever.
4. If the selector lever can be moved out of "P", the interlock cable must be adjusted - refer to Group 25.
5. Switch ignition on.
6. Press button on selector lever.
7. If the selector lever cannot be moved out of "P", the interlock cable must be adjusted - refer to Group 25.

INSTRUCTIONS FOR REMOVING AND INSTALLING ELECTRONIC CONTROL UNITS

Important!

Disconnecting the car's battery will cancel fault memories of control units, so that it is absolutely essential to interrogate fault memories prior to disconnection of the car's battery and to have the faults printed with the BMW Service Tester's printer. Stored faults must then be investigated.

Disconnection and connection of control unit plugs always requires that the ignition be switched off.

Removal and installation of components, relays, fuses, etc. could cause the storage of faults in fault memories of control units capable of self-diagnosis. Consequently after finishing work on the electrical system it is always necessary to interrogate fault memories, investigate stored faults and cancel the fault memories.

INSTRUCTIONS FOR WORKING ON IGNITION, DME (DIGITAL MOTOR ELECTRONICS) AND ENGINE ELECTRICAL SYSTEMS

Caution!

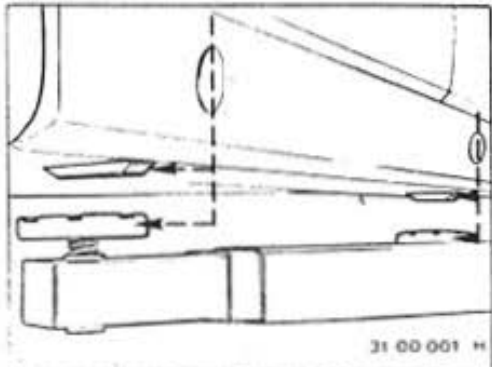
Always switch off the ignition before working on the ignition system — dangerous high tension voltage!

Always remove the DME master relay for the compression test so that the ignition final stages of the DME control unit cannot activate the ignition coils — dangerous high tension voltage!

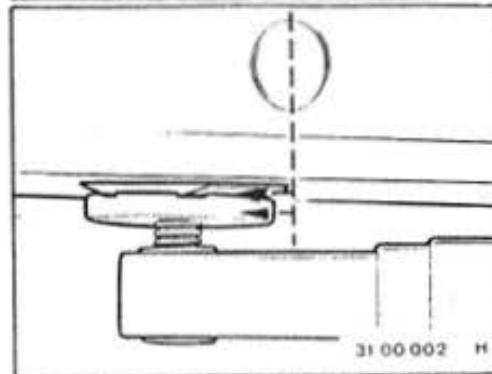
Always switch off the ignition before connecting and disconnecting the Service tester, other testers, adapters and so on as well as exchanging components.

LIFTING CAR WITH A CAR HOIST

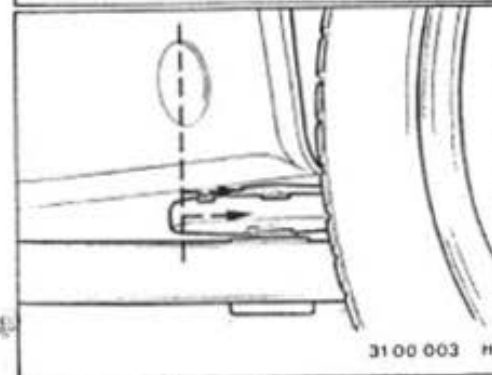
Before driving a car on the platform, make sure that there is sufficient space (clearance) between the hoist and car (spoilers, splash guards, etc.).



Car hoists must conform with local and national legislative measures concerning accident prevention and maintenance. Arms of a car hoist must always be applied only on the reinforced points of the frame members. Make sure that the underside is not damaged.



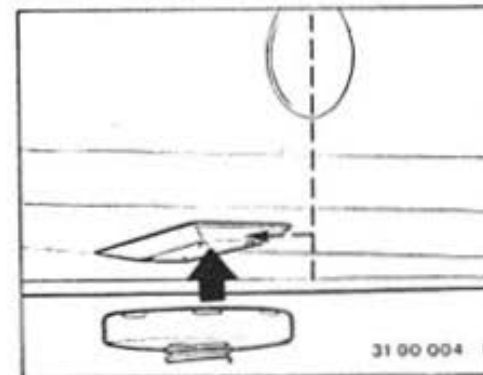
Front:
Apply rubber block of lifting arm on the front reinforcement of the frame member, below a cover for the supplied car's jack.



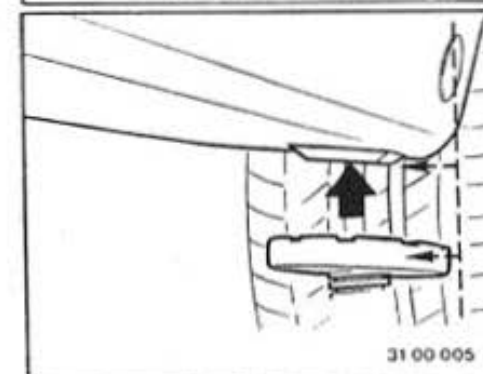
Rear:
Apply rubber block of lifting arm on the rear reinforcement of the frame member, below a cover for the supplied car's jack.

LIFTING CAR WITH A GARAGE JACK

A garage jack may also only be applied for lifting the car on the same take-up points described for the car hoist. A suitable liner (rubber, wood or plastic) must be used between the jack and car to avoid damage to the undercoating, frame members or floor plate.



Front Take-up Point



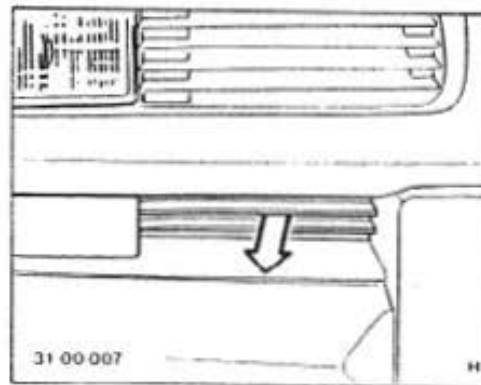
Rear Take-up Point

Important!
Conform with safety precautions and to speed specifications when a car is "driven" on a car hoist or with the rear end jacked up. Also refer to Group 26.

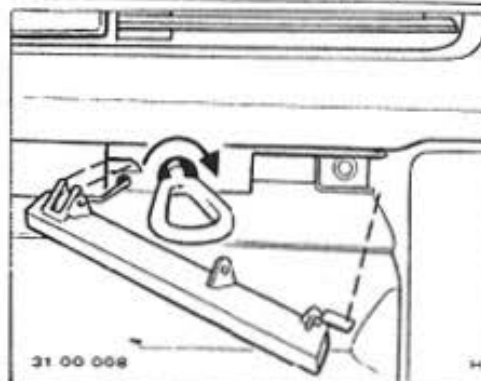
Towing

Always observe applicable legal regulations when towing.

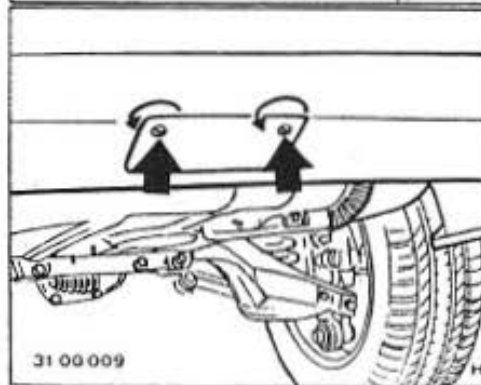
Caution!
Follow instructions in the relevant Owner's Manual.



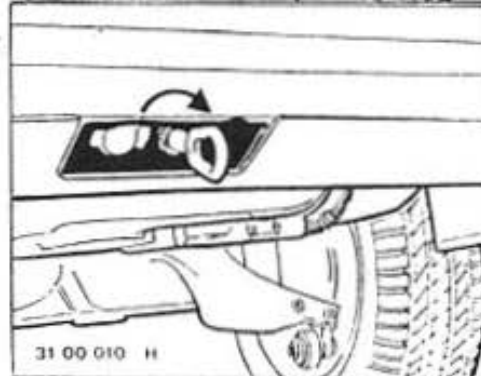
Lift off front right ornamental grille.



Screw in towing eye at front.



Open flap.



Screw in rear towing eye.

BMW MAINTENANCE SYSTEM 00 00 009 Pre-delivery inspection	General Information					Important Information!
	Repair Manual	Technical Data	Nominal Values	Operating Fluids	Owner's Manual	
Interrogate fault memories in diagnosing system.						Refer to operating instructions for BMW diagnosing system.
Brief test.						Refer to BMW service tester operating instructions. Further instructions appear on monitor.
Check / correct engine oil level.				Gr. 11		Approved oil only!
Check fuel pipes, tank and hoses for correct routing, condition and leaks.						
Check / correct level of fluid in tank for brakes and clutch.				Gr. 34		Use approved brake fluid.
Check connections and pipes of brake system for leaks, correct position and damage.						
Check / adjust parking brake lever travel.	Gr. 34					
Check wheel bolt tightening torque.		Gr. 36				
Check rim size, tire size and type as well as tire inflation pressure (including spare wheel).		Gr. 36		SI 36		