

MAINTENANCE

Maintenance and General Information - Operating Fluids

1.0 INTRODUCTION

These operating fluids specifications describe the standards which are necessary for approval and application for BMW automobiles. Operating fluids are arranged in vehicle group category and are approved for all assemblies. Before applying operating fluids, it is important to make sure that the specifications and manufacturing codes on the container conform with those on the enclosed specification list.

BMW of North America has also approved various fluids for use which are not available through the Parts Department, but may be obtained locally.

2.0 CORROSION PROTECTION FOR VEHICLE IN LONG-TERM STORAGE

Location-inside of a building whenever possible or covered parking lot (especially convertibles).

Replace engine oil and filter after engine reaches operating temperature. Run engine several minutes after replacing oil. Engine oil must be replaced every 12 months. Factory engine oil (in new cars) can remain in the engine up to 12 months.

Check/correct electrolyte level in battery cells.

Disconnect battery ground lead to avoid discharging battery through current draw of electrical equipment. Or, switch off battery main disconnect switch (if equipped).

Recharge battery.

Inspect undercoating for damage and repair as necessary.

Inspect wax coating in engine compartment, on engine, underbody and axles. Repair as necessary.

Operate air conditioner monthly for 10 minutes in order to lubricate the seals and the expansion valve. Note: The air conditioner will only work at temperatures above 37°F/3°C.

PRE-DELIVERY CARS

Replace brake fluid if car has been parked outdoors longer than six (6) months.

Fill the vehicle fuel tank with fresh fuel in order to prevent condensation inside the tank (applies only to metal fuel tanks).

Check, and if needed, correct the coolant level and concentration of long-term antifreeze and corrosion inhibitor.

Apply brakes to dry the brake discs of any moisture and spray them with a corrosion inhibitor. Spray the

complete brake assemblies after parking the car at its final storage location.

Do not apply the parking brake. Brake linings could seize when the parking brake is applied for an extended period of time. Rather, engage first gear (manual transmissions) or "park" position (automatic transmissions) to hold vehicle stationary.

Increase inflation pressure on all road tires to 50 psi.

Thoroughly clean the entire car, including underside, engine and engine compartment.

3.0 CONVERSION TABLE

CONVERSION TABLE

Liters	US Gallons	US Pints	Liters	US Gallons	US Pints
0.5	0.132	1.055	8.0	2.112	16.904
1.0	0.264	2.113	9.0	2.376	19.017
2.0	0.538	4.226	10.0	2.640	21.130
3.0	0.792	6.339	11.0	2.904	23.243
4.0	1.056	8.452	12.0	3.168	25.356
5.0	1.320	10.565	13.0	3.432	27.469
6.0	1.584	12.678	14.0	3.696	29.582
7.0	1.848	14.791	15.0	3.960	31.695

Conversion Factors:

Liters in US Gallons x 0.264

US Gallons in Liters x 3.785

Liters in US Pints x 2.113

US Pints in Liters x 0.473

4.0 ALTERNATE UNIVERSAL LUBRICANTS AND WORKSHOP SUPPLIES

ALTERNATE UNIVERSAL LUBRICANTS AND WORKSHOP SUPPLIES REFERENCE

BMW P/N	Description/Application	3M P/N	Wurth P/N	Loctite P/N
81 22 9 400 208 ⁽¹⁾	Lubricant/Contact Cleaner Spray Stops electrical and mechanical faults due to water, moisture, rust, dirt and friction. Colorless, neutral, free of grease and silicone, suitable for		89360/1	24379

all applications.
Examples: Stops
moisture on distributor,
generator, ignition coil,
starter, spark plugs, coils,
relays, contacts, etc.
Prevents metal parts
from corroding. Stops
rubber and plastic parts
from aging prematurely.
Applications: from -50°C
to +150°C.

81 22 9 400 229 ⁽¹⁾	Hand Cleaner Removes stubborn stains and grit without attacking skin. Contains special skin protectant. Does not clog pipes.	893900	25108
81 22 9 400 720 ⁽¹⁾	Molybdenum Disulfide 8876 (MOS2) Spray Loosens rust, eliminates squeaking and similar noises, prevent rust seizure. Displaces water on ignition components to allow quick starting. Insulates electrical systems against moisture and stops corrosion.		24378
81 22 9 407 138 ⁽¹⁾	Stain Remover Removes tar, oil and grease stains from seat covers, leather upholstery and painted plastic components.	89024	
81 22 9 407 174 ⁽¹⁾	Bearing Grease A water repellent high- pressure grease for lubricating flywheel gear rings, starter motor pinions, etc., and also as an acid-proof grease for battery terminal posts.	893530	
81 22 9 407 301 ⁽¹⁾	Loctite 574 Anaerobic, silicone sealant for aluminum flange surfaces. Provides	893574	24018

81 22 9 407 388	(1) Adhesive Remover Removes all residual or excess adhesive, sealing and coating compounds, wax, grease or oil films from painted and plastic surfaces, i.e. before installing front or rear spoilers and decor strips.	8984		
81 22 9 407 394	(1) Loctite 380 Black cyanacrylate adhesive for joining metals, rubber, PVC.	8155	893 4103	38050
81 22 9 407 524	(1) Contact Cement Powerful adhesive for leather and leatherette, rubber moldings, seats, rubber mats, noise-absorbent materials, etc. Has good heat resistance and does not attack paint. See and .	1357HP		
81 22 9 407 629	(1) High-Adhesion Lubricant Long-life high-adhesion lubricant for clutch and brake linkages, spring struts, stabilizers, idler levers and pivots.	8878		20029
81 22 9 407 711	(1) Universal Lube Spray Colorless lubricant with high lubricant content. Eliminates squeaks and grating noises from spring seat bases. Lubricates door stops and locks, seat adjustment mechanism, etc. Resistant to temperatures between-50°C and 120°C.	8878	893106	20029
(1) *These items are no longer available through BMW NA Parts Department.				

The above alternate suppliers can be contacted below:

ALTERNATE SUPPLIERS REFERENCE

3M 19460 Victor Parkway Livonia, MI 48152 (800) 521-8180	Wurth USA, Inc. 93 Grant Street Ramsey, NJ 07446 (800) 526-5228	Kem Krest, Inc. (Loctite) 1919 Superior Street Elkhart, IN 46515 (800) 285-5917
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5.0 APPROVED OPERATING FLUIDS SOURCES

APPROVED OPERATING FLUIDS SOURCES REFERENCE

Group	Description, S.I. Bulletin	Product Name, Source	Telephone
11	Engine Oil, SAE 5W-50	"Syntec FSX" Castrol Inc., Piscataway, NJ	732-980-9100
11	Oxygen Sensor Lubricant	Bostik "Never-Seez" NSBT-16 Bostik Findley, Middleton, MA	888-603-8558
11	Intake & Vacuum System Leak Detector S.I. Bulletin B 11 03 92 (3500)	"LiquiMoly (Lubro Moly) Motor Lecksucher" 2021 W.A.W.D.	800-477-9293
11	Cold Weld Epoxy	"J-B Weld" J-B Weld Company, Sulphur Springs, TX	903-885-7696
13	Loctite 290 Throttle Housing Fasteners S.I. Bulletin B 13 06 91 (3440)	"Loctite 290" Kem Krest, Inc., Elkhart, IN	800-285-5917
18	Copper Paste Exhaust System Joints S.I. Bulletin B 18 03 89 (1954)	"8945" 3M Automotive Trades Division, Livonia, MI	800-521-8180
23	Synthetic Transmission Fluid	"Mobil SHC 630" Mobil Oil Corporation	800-582-3645
34	Brake Component Lubricant S.I. Bulletins B 34 02 94 & B 34 05 98	Bostik "Never-Seez" NSBT-16 Bostik Findley, Middleton, MA	888-603-8558
36	Loctite 638 (green) Affix wheel hub covers	"Loctite 680" Kem Krest, Inc., Elkhart, IN	800-285-5917
36	Loctite Cleaner 755 Loctite 242 M5 Wheel Covers S.I. Bulletin B 36 03 90 (3182)	"Loctite Cleaning Solvent 755" "Loctite 242" Kem Krest, Inc., Elkhart, IN	800-285-5917
41	Structural Adhesive S.I. Bulletin B 41 01 95 (4150)	"DP420 Epoxy Adhesive with 3M EPX Applicator" 3M Industrial Tapes and Specialties Division, Livonia, MI	800-521-8180
54	Renax GL1	"Poliplex #1" Fuchs	800-323-7755

		Lubricants Corp., Harvey, IL	
61	Rubberized Super Glue	"893 4103" Wurth USA, Inc., Ramsey, NJ	800-526-5228
62	Contact Cleaner Spray IC Acoustic Transmitter S.I. Bulletin B 62 04 92 (3539)	"CRC QD Contact Cleaner Spray 5101" CRC Industries, Warminster, PA	800-272-8963
63	Silicone Gasket Material Turn Signals S.I. Bulletin B 63 05 91 (3313)	"Permatex Form-A-Gasket 6B-80627" Kem Krest, Inc., Elkhart, IN	800-285-5917
64	AC System Disinfectant S.I. Bulletin B 64 08 91 (3373)	"Airguard" J.J. Products, Inc., East Orange, NJ	800-654-2356
64	AC System Treatment	"Airsept" The Auto Doctor, Tucker, GA "893540-U" Wurth USA, Inc., Ramsey, NJ	404-662-6778 800-526-5228
97	Brushable Seam Sealer Seals spot-welded, riveted, or bolted seams and joints. Brushable consistency remains flexible. Retains brush marks appearance.	"8901021" Wurth USA, Inc., Ramsey, NJ	800-526-5228
97	Body Seal, Beige Underbody Seal, Black Permanent, flexible protection against stone chipping damage. Fast drying and paintable.	"0892091 U" "0893075 U" Wurth USA, Inc., Ramsey, NJ	800-526-5228
97	Seam Sealer, Grey Fast drying, paintable, silicone-free sealant for special spray gun application.	"0893228 U" Wurth USA, Inc., Ramsey, NJ	800-526-5228
99	Paint Cleaner	"Machine Cleaner 1" and "Hi-Tech Cleaner 2" Meguiar's Inc., Irvine, CA	800-854-8073
99	Machine Glaze	"Mirror Glaze 3" Meguiar's Inc., Irvine, CA	800-854-8073
99	Paint Sealer	"Sealer and Reseal Glaze 7" Meguiar's Inc., Irvine, CA	800-854-8073
99	Paint Swirl Remover	"Hi-Tech Swirl Remover 9" Meguiar's Inc., Irvine, CA	800-854-8073

MAINTENANCE

Maintenance and General Information - Repair Instructions - X6

00 DANGER OF POISONING IF OIL IS INGESTED/ABSORBED THROUGH THE SKIN

Danger of poisoning!

Ingesting oil or absorbing through the skin may cause poisoning!

Possible symptoms are:

- Headaches
- Dizziness
- Stomach aches
- Vomiting
- Diarrhoea
- Cramps/fits
- Unconsciousness

PROTECTIVE MEASURES/RULES OF CONDUCT

- Pour oil only into appropriately marked containers
- Do **not** pour oil into drinking vessels (drinks bottles, glasses, cups or mugs)
- Observe country-specific safety regulations

FIRST AID MEASURES

- Do not induce vomiting.

If the person affected is still conscious, he/she must rinse out their mouth with water, drink plenty of water and consult a doctor immediately.

If the person affected is unconscious, do not administer anything by mouth, place the person in the recovery position and seek immediate medical attention.

00 RISK OF INJURY IF OIL COMES INTO CONTACT WITH EYES AND SKIN

Danger of injury!

Contact with eyes or skin may result in injury!

Possible symptoms are:

- Impaired sight
- Irritation of the eye
- Reddening of the skin
- Rough and cracked skin

PROTECTIVE MEASURES/RULES OF CONDUCT

- Wear protective goggles
- Wear oil-resistant protective gloves
- Observe country-specific safety regulations

FIRST AID MEASURES

- **Eye contact:** Rinse eyes immediately with plenty of water for at least 15 minutes; if available, use an eye-rinsing bottle. If irritation of the eyes persists, consult a doctor.
- **Skin contact:** Wash off with soap and water immediately. If irritation persists, consult a doctor.

NOTE: Do not use solvents/thinners.

00 SAFETY INSTRUCTIONS FOR HANDLING OIL

WARNING: Danger of poisoning if oil is ingested/absorbed through the skin! See 00 Danger of poisoning if oil is ingested/absorbed through the skin.
Risk of injury if oil comes into contact with eyes and skin! See 00 Risk of injury if oil comes into contact with eyes and skin.

RECYCLING

Observe country-specific waste-disposal regulations.

Measures if oil is unintentionally released:

- **Personal precautionary measures:** Danger of slipping! Keep non-involved persons away from the work area. Wear personal protective clothing/equipment.
- **Environmental protection measures:** Prevent oil from draining into drain channels, sewerage systems, pits, cellars, water and the ground.
- **Limiting spread:** Use oil blocks to prevent the surface spread of oil.
- **Cleaning procedure:** Bind and dispose of escaped oil with nonflammable absorbents.

NOTE: Do not flush oil away with water or aqueous cleaning agents.

00 00 PRE-DELIVERY CHECK

QUALITY ASSURANCE BY BMW SERVICE

Model:

Vehicle identification number:

(Please tick where appropriate)

If necessary Quick Reference Guide:

Included with the vehicle:

The vehicle document wallet is left in the vehicle:

Discussed and handed over

Owner's Handbook(s)

Service Record Booklet

Master key/remote control

If necessary - spare key

Glovebox

Storage box

Luggage compartment

I hereby confirm that I have received the vehicle in perfect condition.

.....

.....

Place and date

Signature of vehicle owner

Fig. 1: Pre-Delivery Check Procedure (1 Of 3)
Courtesy of BMW OF NORTH AMERICA, INC.

PRE-DELIVERY CHECK BY BMW SERVICE

Scopes of inspection:

To be kept with the workshop documents

The following work must be carried out on the vehicle by BMW Service prior to delivery.

* Denotes optional extra or national-market specification. Observe possible changes in this regard.

Model:

Vehicle identification number:

Battery main switch*	Not OK	OK
Removal and connection, carry out following scopes if necessary	O	O
Power windows*: Initialize system	O	O
Glass sunroof*: Initialize system	O	O
Steering angle adjustment or initialize active front steering*	O	O

Equipment pack scopes	Not OK	OK
Fit	O	O

With BMW Group Tester	Not OK	OK
Carry out "CBS pre-delivery check" in the Service Function path under Maintenance	O	O
Deactivate transportation mode	O	O
Reset average mileage/kilometres driven	O	O
Enter first registration	O	O
Set on-board date	O	O
Set statutory inspection dates*	O	O
Enter service telephone numbers	O	O
Check battery, observe notes/information in Tester	O	O
Clear fault memory	O	O
Carry out vehicle test, eliminate faults if necessary	O	O

Engine compartment	Not OK	OK
Check for cleanliness	O	O

Washer fluid reservoir	Not OK	OK
Check fill level and top up if necessary, where required with antifreeze additive	O	O

Sticker	Not OK	OK
Attach sticker for BMW Group Mobile Service	O	O

Body, interior equipment, floor plate	Not OK	OK
Check for transportation damage	O	O

Spring blocker*	Not OK	OK
Remove	O	O

Tyres	Not OK	OK
Check tyre pressures; if provided, also compact or spare wheel	O	O
Initialise Run Flat Indicator	O	O

Winter tyres*	Not OK	OK
Attach V-max. sticker	O	O

Service Record Booklet	Not OK	OK
Stamp pre-delivery check / enter vehicle identification number	O	O

Include documents (Glovebox / Storage box / Luggage compartment)	Not OK	OK
Owner's Handbook	O	O
Service Record Booklet	O	O
Contact brochure	O	O
BMW Group Mobile Service brochure	O	O
Include BMW key or remote control (make note of number)	O	O

Fig. 2: Pre-Delivery Check Procedure (2 Of 3)
Courtesy of BMW OF NORTH AMERICA, INC.

Telltale/warning lamps and Check Control		Not OK	OK
Check for incorrect indication and eliminate faults if necessary		☐	☐
Navigation		Not OK	OK
If necessary, install navigation road map(s)		☐	☐
BMW TeleServices		Not OK	OK
Activated	Yes / No	☐	☐
Service and parking brake		Not OK	OK
In event of transportation and immobilization periods of 3-6 weeks is to be checked for correct operation		☐	☐
In event of transportation and immobilization periods of more than 6 weeks		☐	☐
Brake in		☐	☐
Interior rearview mirror with digital compass*		Not OK	OK
Calibrate system		☐	☐
Preservation, cleaning		Not OK	OK
Remove transportation lock		☐	☐
Dewax and clean vehicle as prescribed		☐	☐
.....			
Date	Mechanic	Workshop Manager	

Fig. 3: Pre-Delivery Check Procedure (3 Of 3)
 Courtesy of BMW OF NORTH AMERICA, INC.

00 LIFTING VEHICLE WITH A LIFTING PLATFORM

WARNING: Danger to life!

Read and follow operating instructions for lifting platform.

Do not exceed carrying capacity of lifting platform.

NOTE: The lifting platform must comply with the relevant statutory accident prevention regulations and be serviced according to the manufacturer's instructions.

IMPORTANT: Risk of damage!

Before driving onto a lifting platform, make sure there is sufficient ground clearance between the lifting platform and the car.

The vehicle may only be raised with the lifting platform at the four jacking points.

IMPORTANT: Risk of damage!

Align support plates (2) of lifting platform arms to jacking points (1) in such a way that no adjoining components are touched and thereby damaged.

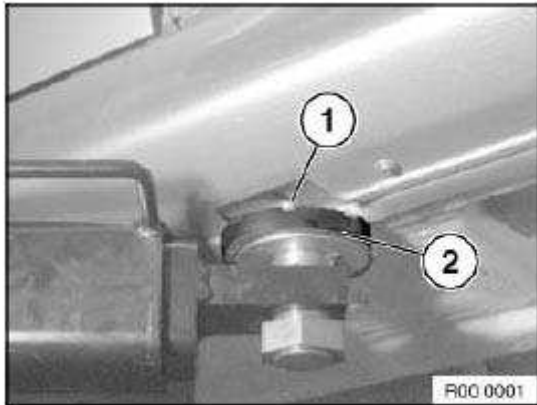


Fig. 4: Identifying Support Plates And Jacking Points

Courtesy of BMW OF NORTH AMERICA, INC.

00 NOTES ON USING REPAIR INSTRUCTIONS, TECHNICAL DATA, TIGHTENING TORQUES

Cross-references to "Technical Data" and "Tightening Torques" must be complied with.

If there are no cross-references to tightening torques in the repair instructions, the excerpts from the **company standard BMW N 600 02.0** must be observed, see **00 EXCERPT FROM COMPANY STANDARD BMW GS 90003-2** .

00 RAISING VEHICLE WITH TROLLEY JACK

IMPORTANT: Observe the following trolley-jack-related instructions:

1. Use only BMW-distributed/approved trolley jacks which have rubber plate contact points.
2. Trolley jacks must be regularly serviced and always checked for functional reliability before they are used!
3. Check the rubber plate on the trolley jack prior to each use, replacing if necessary.

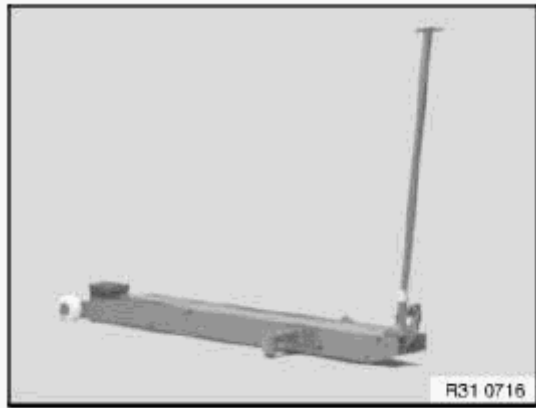


Fig. 5: Identifying Trolley Jack
Courtesy of BMW OF NORTH AMERICA, INC.

WARNING: The vehicle may be raised with a trolley jack only at the following jacking points!

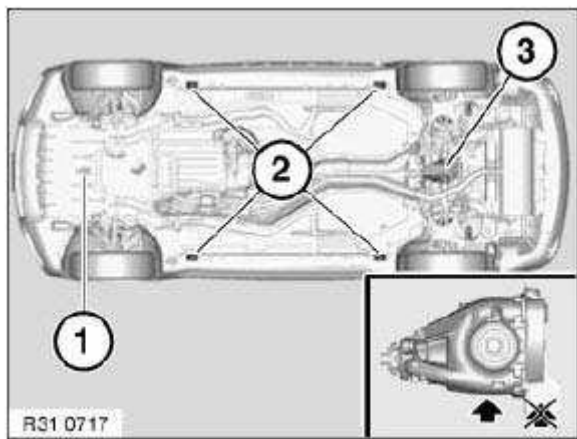


Fig. 6: Identifying Car Jacking Point Points
Courtesy of BMW OF NORTH AMERICA, INC.

1. Car jacking point
2. Side car jacking points
3. Rear differential

Risk of damage: It is not permitted to raise the vehicle at the rear differential cover!

00 SYMBOLS USED AND INFORMATION IN REPAIR INSTRUCTIONS

WARNING: Precautionary rules and measures which protect mechanics and other personnel against injury (including life-threatening injuries).

Example:

WARNING: Danger of scalding!

Only perform this work after engine has cooled down.

IMPORTANT: Specific instructions and precautionary measures which prevent damage to the vehicle or to vehicle parts. Failure to comply with the above will invalidate any warranty claims.

The caution symbol is used in all repair instructions.

However, use of the warning word "Caution!" is not binding in every case.

The notes, instructions and precautionary measures mentioned above retain their validity.

NOTE: Particular information on improved procedures for operation, testing, adjustment and upkeep.

Also indicates the end of a repair section.

Recycling:

Observe country-specific waste-disposal regulations

General information:

Refers to other instructions: such as e.g.:

Necessary preliminary tasks;

Further instructions: refer to operating instructions for balancing machine.

Replacement:

Carry out programming/coding.

NOTE: Many electronic control units must be programmed/coded (e.g. when replaced).

NOTE:

- **Connect BMW diagnosis system**

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD protection).

NOTE: Electronic control units and other electronic components - if handled incorrectly - can be damaged or destroyed by electrostatic discharge.

00 0 TEST SPECIFICATIONS FOR TECHNICAL VEHICLE INSPECTION

TEST SPECIFICATIONS

1.0	Vehicle identification
1.1	Cross-model test specifications Raising BMW Group vehicles, see 00 Lifting vehicle with a lifting platform.
1.2	Test instructions for all-wheel drive vehicles on roller dynamometers. See 34 00 ... TESTING AWD VEHICLES ON DYNAMIC BRAKE AND POWER ANALYZERS (E30, E34, E46, E53, E83, E60, E61, E90, E91, E92, E70, E71) .
2.0	Test specifications for mechanical brake components on BMW vehicles
2.1	Determining brake pad thickness
2.1.1	Determining brake pad thickness, vehicles without CBS
2.1.2	Determining brake pad thickness, vehicles with CBS and Light Crystal Display (CID)
2.1.3	Determining brake pad thickness, vehicles with CBS and Central Information Display (CID)
2.2	Minimum brake disc thickness
2.3	Permissible brake pads
2.4	Test instructions for ABS and DSC braking and stability systems
3.0	Electromechanical parking brake (EMF)
3.1	EMF scope of inspection 1: Permanent telltale lamps 7 Series, E65, E66, E67, E68
3.2	EMF scope of inspection 1: Permanent telltale lamps X5, X6 model series, E70, E71
3.3	EMF scope of inspection 2: Checking braking action
4.0	Airbag and restraint systems
5.0	Checking backlash on rack-and-pinion steering
6.0	Function check Electric Power Steering (EPS)
7.0	Test specification, active front steering
8.0	Test specification wheel control joint front axle 3 Series/E46 and Z3/E36
9.0	Test specification wheel carrier-swinging arm ball joint, vehicles with integral rear axle
10.0	Testing rear axle carrier 3 Series/E46, first reg.: 12/1997 - 08/2001
11.0	Testing of Electronic Damping Control (EDC)
12.0	Dynamic Drive Active Roll Stabilization (ARS)
13.0	Testing of light systems
13.1	Headlight dew on cover glass
13.2	Halogen headlights
13.3	Xenon headlights
13.4	Xenon headlights with adaptive headlights
13.5	Turning lights
13.6	Test specifications for LED light fields of legally prescribed lights on BMW vehicles
13.7	Test specification High-Beam Assistant
13.8	Setup, type of light fields

14.0	Test specifications and instructions for Active Cruise Control
14.1	Test specifications for wheel and tire combinations on BMW vehicles
14.2	Test specification Runflat on BMW vehicles
14.3	Test specification HDC Hill Descent Control

00 00 ... BATTERY: CHECKING DISPLAY. IF NECESSARY, RECHARGE BATTERY

IMPORTANT: Observe safety instructions for handling vehicle battery , see 61 00 ... SAFETY INSTRUCTIONS FOR HANDLING VEHICLE BATTERY .

VEHICLES WITH LOW-MAINTENANCE BATTERY

Check acid level, top up with distilled water if necessary

If level drops below Max. marking, top up distilled water to Max. marking.

VEHICLES WITH MAINTENANCE-FREE BATTERY

IMPORTANT: For information on how to proceed, refer to

Battery charging , see 61 20 ... BATTERY CHARGING .

Issue a separate invoice if the battery is recharged.

00 00 ... BODY AND UNDERBODY: CHECKING FOR CORROSION AND DAMAGE

Inspect chassis, underbody and wheel arches and check for corrosion and damage.

NOTE: It is absolutely essential to rectify any identified faults after consulting the customer and to issue a separate invoice.

00 00 ... BODY: CHECK FOR CORROSION (EXCEPT CAVITIES)

- Visually inspect underbody and attachment parts (brake lines, exhaust system branch, sills) for corrosion and check for damage.
- Check wheel arches for corrosion.
- Open doors and check A-, B- and C-pillars for corrosion, especially door hinges.
- Check door frame for corrosion, folding back door seal slightly if necessary.
- Check outer body for stone impacts, scratches or damage to paintwork and associated corrosion.

IMPORTANT: If damage to the underbody is identified:

- If necessary, remove panels from underbody.
- Check mountings and fixtures and brake and fuel lines for damage, corrosion and correct installation position.

Rectify identified faults after consulting with customer and issue a separate invoice.

00 00 ... BRAKE LINES AND CONNECTIONS: VISUAL INSPECTION FOR LEAKS, DAMAGE AND CORRECT POSITION

CHECK BRAKE LINES AND CONNECTIONS

- Visual inspection in visible area for:
 - Check brake fluid level in expansion tank
 - leaks
 - traces of fluid
 - damage
 - crushing/flattening
 - correct routing of brake lines
 - correct seating of brake lines in holders

NOTE: Detected faults must urgently be repaired after consultation with the customer!

00 00 ... CBS RESET

IMPORTANT: The CBS maintenance jobs can be reset in the car. It is always recommended to reset the CBS jobs via the diagnosis system. It is only possible to code the statutory intervals specific to individual countries with the diagnosis system.

CBS RESET WITH DIAGNOSIS SYSTEM

IMPORTANT: To be able to check and/or correct the car's on-board date properly, the diagnosis system requires the correctly set tester system date!

The jobs may only be reset after the service measure has been completed.

The brake pads can only be reset with a new brake pad wear sensor.

The CBS jobs can be reset via the diagnosis system on the following path:

- Start diagnosis
- Carry out vehicle identification

- Function selection
- Service functions
- Maintenance
- CBS reset



Fig. 7: Diagnosis Screen

Courtesy of BMW OF NORTH AMERICA, INC.

CBS RESET IN THE CAR

The service jobs can be reset in the car at the instrument cluster. Here, the availability of a service job is reset to 100 % (corresponding to new component). The availability is an internal computing value (not visible to the operator).

NOTE: **A reset is only possible in the car if:**

- there is no Check Control message
- availability of the service job is under 80 %
- on-board date must be correctly set

Resetting of a service job must always be carried out **after** a maintenance measure has been completed.

The resetting procedure is aborted by a timeout or a terminal change.

Switch on ignition.

Press the trip odometer reset button (referred to as button in the following) for approx. 10 seconds until the 1st service job appears in the LC display.

Bring up the next item by briefly pressing the button again. Select desired service job.



Fig. 8: Identifying Trip Odometer Reset Button
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: The upper display in the instrument cluster is illuminated by a service symbol (e.g.: an oil can denotes an oil change).

The lower display in the instrument cluster indicates the time or distance remaining until the next service (e.g.: 29000).

If the job is to be reset, press the button again for approx. 3 seconds until the message "Reset?" appears.

Acknowledge the reset by pressing the button for 3 seconds.



Fig. 9: Identifying Trip Odometer Reset Button
 Courtesy of BMW OF NORTH AMERICA, INC.

CBS RESET OF INSPECTIONS/TESTS REQUIRED BY LAW

Input the target for the inspections/test required by law (vehicle / emissions) by clicking on the job with the controller in the CBS menu of the Control Display at:



Fig. 10: Screen Display - CBS Menu

Courtesy of BMW OF NORTH AMERICA, INC.

- Press controller to call up **i** menu
- Select **Info sources** and press controller
- Select **Service** and press controller
- Select **Service requirements** and press controller
- Select **Stat. vehicle insp .** and press controller
- Select **Status** and press controller
- Select **Schedule date for service** and press controller
- The target month or the target year can be set and acknowledged by turning and pressing

00 00 ... CHECK WINDSCREEN WASH/WIPE SYSTEM

- Check wipe pattern for smearing; if necessary, replace **wiper blades** after consulting with customer, see **61 61 041 REPLACING BOTH WINDSCREEN WIPER BLADES**
- The spray jet must emerge uniformly from the spray nozzle, replace **nozzle** if necessary and issue a separate invoice, see **61 71 015 REMOVING AND INSTALLING/REPLACING A SPRAY NOZZLE IN WINDSCREEN WASHER SYSTEM**.

00 00 ... CHECKING COOLANT LEVEL AND CONCENTRATION, CORRECTING IF NECESSARY

- Check connections, hose clamps and hoses for coolant residues and damage such as e.g. cracks.
- Check coolant level in expansion tank. Coolant level must be between Min. and Max. markings. If necessary, top up coolant to max. fill level. If there is no coolant, also identify the cause and notify the customer.
- In event of topping up: Check concentration with antifreeze tester (special tool) in coolant expansion tank.

If necessary, drain off the difference quantity at the coolant drain plug and top up with recommended

coolant (issue a separate invoice).

00 00 ... CHECKING HORN, HEADLIGHT FLASHERS AND HAZARD WARNING SYSTEM

HORN

Check function.

NOTE: In the case of twin-tone fanfares, make sure that both fanfares are working properly.

HEADLIGHT FLASHER

Activate headlight flashers, check high-beam headlights and blue indicator lamp in instrument cluster for correct operation.

HAZARD WARNING SYSTEM

Check function.

NOTE: After consultation with the customer, rectify faults and issue a separate invoice.

00 00 ... CHECKING INSTRUMENT AND INDICATION FIELD LIGHTING, HEATER BLOWER

INSTRUMENT LIGHTING

Check function of instrument and indicator/warning lamps.

INDICATION FIELD LIGHTING

Check function of light switches; dimmer; controls; heater/air conditioning; rear window demister; radio; (depending on equipment) on-board computer; power windows; electric sunroof; fog lamp.

HEATER

Check function of all blower stages, air distribution and air outlet.

NOTE: After consultation with the customer, rectify faults and issue a separate invoice.

00 00 ... CHECKING LIGHTING SYSTEM

- Check lighting system for correct operation:
 - Check headlights, rear lights and associated telltale/indicator lamps

- Check headlight adjustment
- Check side lights, parking lights, dipped-beam and main-beam headlights for correct operation
- Check headlight flasher for correct operation
- Check signal horn
- Check left/right direction indicators and hazard warning system for correct operation
- Check brake lights for correct operation
- Check reversing lights and license plate lights for correct operation
- Check front and rear fog lights for correct operation
- Check interior lights (assembly: interior lights, footwell lights, luggage compartment lights, glovebox light) for correct operation
- Check instrument and indication field lighting

00 00 ... CHECKING ROADWORTHINESS (TEST DRIVE)

○ Checking roadworthiness

- Take vehicle for a test drive, checking service and parking brakes in the process
- For vehicles with rear disc brakes, **brake in parking brake as instructed** , see **34 41 006 ADJUSTING PARKING BRAKE** .
- **Check function of parking brake** , see **34 00 012 PARKING BRAKE FUNCTION CHECK** .
- Check steering for play, ease of movement and directional stability
- Check clutch for problem-free disengagement and non-spasmodic driving off at normal operating temperature
- Check function of all drive positions and driving programs in cars with automatic transmissions
- Visually inspect shock absorbers for leaks
- Check indicator/warning lamps and Check Control system for correct operation
- Check due date for statutory roadworthiness and exhaust emission tests and advise customer of test dates

00 00 ... DIAGNOSTIC BRIEF TEST

Connect diagnostic system to OBD socket.

Switch on ignition.

Carry out vehicle identification.

Click on Brief test.

The brief test is carried out.

NOTE: **For motor vehicle diagnostics, the brief test is essential for evaluating possible stored diagnostic trouble codes. In the brief test, the control units are**

physically identified in succession and their fault memories read out.

If the fault memory has been read out, the faults appear in the "Fault pattern selection" mask in the "Fault memory contents" field.

Check identified faults and if necessary rectify these faults after consulting with customer.

00 00 ... INFORMATION/WARNING LABELS

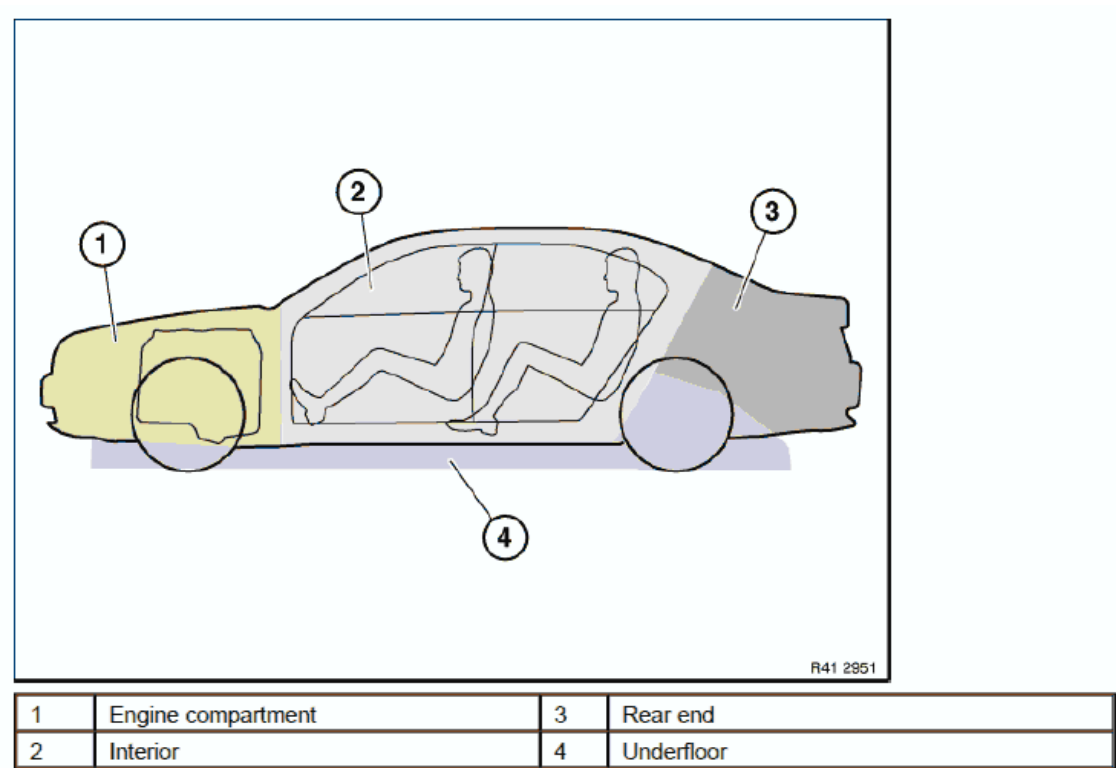


Fig. 11: Identifying Brief Test Area
Courtesy of BMW OF NORTH AMERICA, INC.

INFORMATION CHART

Location:	Information/warning label:	Country:
Various components	Replacement identification -spare parts-	US, CDN
Various components	Anti-theft protection	US, CDN
Engine compartment (1):		
Battery	Battery sticker	Gulf States
Electronics box cover	High-voltage identification	Worldwide
Headlights/engine compartment	Mercury (xenon headlights)	Worldwide
Engine compartment/raw air snorkel	Aluminium screws/bolts	Worldwide

Cylinder head cover	Ignition coil	Worldwide
Engine compartment/end panel	BMW High Performance Oil	US, not CDN
Engine compartment/end panel	Premair	US
Engine compartment	ICES CDN	CDN
Engine compartment	EC nameplate	Worldwide, not US, CDN, Japan, Australia, Gulf States
Engine compartment/hood/bonnet	Refrigerant	Worldwide
Engine compartment/hood/bonnet	Production date	Australia, Great Britain
Engine compartment/hood/bonnet	Exhaust gas	Australia, US, CDN
Engine compartment/brake booster	Brake fluid	CDN
Engine compartment/hood/bonnet	Exterior paint	Worldwide
Engine compartment/hood/bonnet	BMW genuine spare parts	Worldwide
Interior (2):		
Windscreen, top right	Airbag -windscreen	Europe
Windscreen	CCC	China
Windscreen	Vehicle identification number	US, CDN, Gulf States, Great Britain&South Africa
I Drive	A/C menu	US, CDN
Passenger compartment/instrument panel	Airbag, instrument panel	US, CDN
Interior/sun visor	Airbag -sun visor	US, CDN
Steering wheel/speedometer	Top speed -210 km/h- Only with optional equipment and for car rental	Germany
Complete vehicle, bodyshell:		
B-pillar	Airbag symbol (front passenger)	Worldwide (not US and CDN)
B-pillar	Vehicle identification number	Brazil
B-pillar	Manufacturer's certificate	US, CDN, Gulf States
B-pillar	Tyre inflation pressure	Europe, US, CDN, Australia
B-pillar	Runflat indicator	Worldwide
B-pillar	Side airbag	Worldwide
B-pillar	Nameplate	China
Door, driver's side	Towing	Worldwide
Rear end (3):		
Fuel cap/hood/bonnet	Independent heating	Europe
Filling area	Refuelling	US, CDN, Europe
Filling area, instrument cluster (plug)	OBD system	US, CDN
Trim, striker	Nose weight (only with optional equipment)	Worldwide
Trim, cross-member (through-	Lock, through-loading (only with	Worldwide

loading)	optional equipment)	
Luggage compartment cover	Retractable hardtop	Worldwide
Luggage compartment trim panel on side panel	Retractable hardtop	Worldwide
Tool box lid (E60)	HWS fluid	US
Rear lid trim (E61)	HWS fluid	US
Underfloor (4):		
Vehicle jack	Vehicle jack	Australia
Front axle carrier	Airbag (basic setting)	Worldwide
Tension strut with hydromount	Do not lash down	Worldwide
Key: US= United States CDN= Canada CCC= Car Communication Computer OBD= On-Board Diagnosis		

00 00 ... MICROENCAPSULATED SCREWS

Screw locking is a means to preventing a screwed connection from being loosened by external influences.

After the screw has been coated with the adhesive, the adhesive remains inactive until it is activated by capsule breakage when the screw is inserted and then cures at room temperature.

Installation:

- Microencapsulated screws (Loctite) must be replaced and may **not** be reused
- Screw connection must be completed within 20 mins. (start of curing)
- Microencapsulated screws must **not** be retightened
- Thread of nut must be cleaned beforehand in event of repeated use

00 00 ... NOTES ON MANEUVERING IN EVENT OF POWER FAILURE

NOTE: In the event of a power failure or electrical fault, the electromechanical parking brake and the transmission interlock can be manually released.

Observe following sequence:

1. Secure vehicle against rolling, e.g. with chocks.
2. Manually release **electromechanical parking brake** , see **34 41 ... ELECTROMECHANICAL PARKING BRAKE - EMERGENCY RELEASE** .
3. Then manually release **interlock** of automatic transmission, see **24 34 ... MANUAL EMERGENCY RELEASE OF TRANSMISSION LOCK** .

00 00 ... RAISING BMW MULTI-TRAILER

CAUTION: Twin-strut underfloor platforms and twin-pillar lifting platforms are suitable for raising the BMW multi-trailer.

Lifting platforms with drive-on surfaces are not suitable for raising in order to carry out maintenance and repair work.

The lifting platform must comply with the relevant statutory accident prevention regulations and be serviced according to the manufacturer's instructions. It is essential to follow the lifting platform operating instructions, in particular the safety instructions and carrying capacity!

Make sure you adhere to the BMW-recommended work area of 5 x 7 m and to an escape route of 0.6 m between two lifting platforms.

Before raising the BMW multi-trailer, please observe the following points:

- Raise the trailer only when it is unloaded
- Remove a supplied loading ramp from the loading ramp frame so that all chassis areas of the BMW multi-trailer are freely accessible
- There must be sufficient clearance between the carrier arms/flat girder bridges and the GFK aprons or the front guard of the BMW multi-trailer
- The BMW multi-trailer must always be positioned in the middle of the lifting platform.

CAUTION: You will need special additional supports for the lifting platform in order to bridge the difference in height between longitudinal member and lower edge of GFK side apron or front guard of the BMW multi-trailer. The minimum height of the additional supports is 145 mm. Use only the additional supports approved by the platform manufacturer or specified in these repair instructions.

You will find appropriate examples in the repair instructions for the majority of lifting platforms present in BMW workshops. For lifting platforms that are not named, the relevant manufacturers will offer you appropriate additional supports. Please contact directly the manufacturer of the lifting platform used in your dealership.

CAUTION: The BMW multi-trailer may only be raised by its longitudinal members. Do not under any circumstances raise the BMW multi-trailer by the GFK aprons. Make sure the additional supports bear the longitudinal members over their entire width and no attachments or wiring harnesses are touched or jammed. Check the securing equipment of the additional supports for correct seating. Under no circumstances should any work be carried out underneath the BMW multi-trailer if it is not adequately secured against slipping off the lifting platform.

The areas (2) on the longitudinal members (1) marked in the adjacent diagram are the best areas for attaching the additional supports.

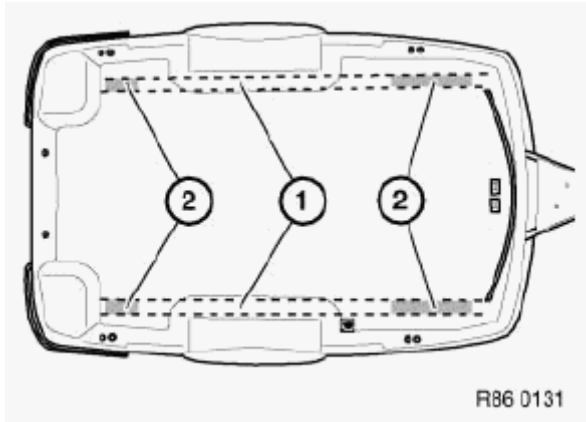


Fig. 12: Identifying Longitudinal Members Area
Courtesy of BMW OF NORTH AMERICA, INC.

GENERAL NOTES ON USING TWIN-PILLAR LIFTING PLATFORMS

For the twin-pillar lifting platforms described, the BMW multitailer is positioned in the direction of travel on the platform. For lifting platforms which do not create sufficient clearance between disk wheel and carrier arms, move the BMW multitailer against the direction of travel onto the platform.

BECKER & SOHNE TWIN-STRUT UNDERFLOOR PLATFORM

The BMW multi-trailer can only be raised if it is supported at right angles to the direction of travel. For raising, use the high additional supports (1) of Becker & Sohne.

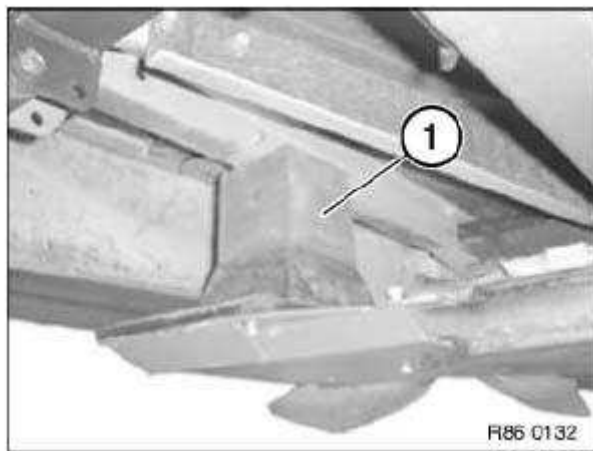


Fig. 13: Identifying Underfloor Platform Supports
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Also lash the BMW multi-trailer to the flat girder bridges of the lifting

platform. Flag the protruding tow hitch and the drawbar member of the BMW multi-trailer conspicuously so as to prevent injury, e.g. with a red cloth.

MAHA TWIN-PILLAR LIFTING PLATFORM

The BMW multi-trailer can only be raised if you use the support plate attachment sleeves for transporters (1). Position the axle of the BMW multi-trailer in the direction of travel in front of the pillars of the platform in order to obtain the specified lifting ranges and to establish sufficient clearance between disk wheel and carrier arms. The long carrier arms raise the front and the short carrier arms raise the rear of the BMW multi-trailer.

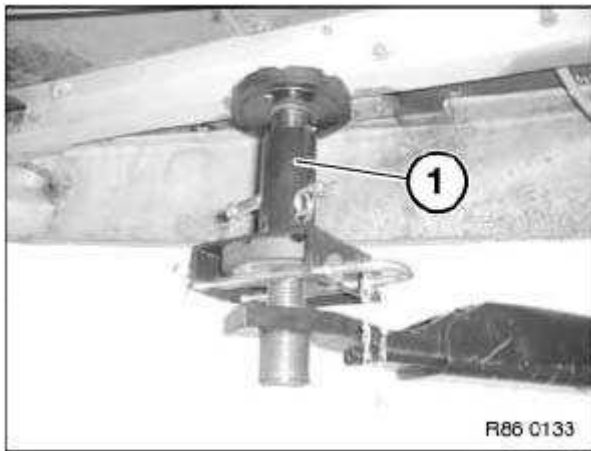


Fig. 14: Identifying MAHA Twin-Pillar Lifting Platform
Courtesy of BMW OF NORTH AMERICA, INC.

ROMAICO-LIFT TWIN-PILLAR LIFTING PLATFORM

The BMW multi-trailer can only be raised if you use the 146 mm high attachments (1). Position the axle of the BMW multi-trailer in the direction of travel in front of the pillars of the platform in order to obtain the specified lifting ranges and to establish sufficient clearance between disk wheel and carrier arms. The long carrier arms raise the front and the short carrier arms raise the rear of the BMW multi-trailer.

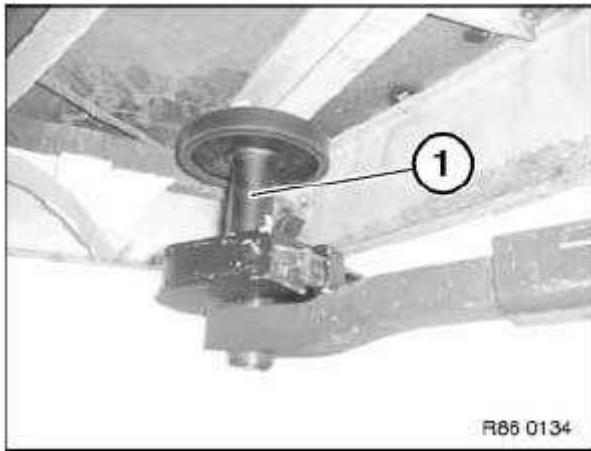


Fig. 15: Identifying Romaico-Lift Twin-Pillar Lifting Platform
 Courtesy of BMW OF NORTH AMERICA, INC.

WORKING PIT

The BMW multi-trailer can be serviced or repaired in conjunction with a working pit if the following measures are taken into consideration. The BMW multi-trailer must be secured against slipping/tilting sideways. The drawbar jockey wheel must be firmly secured against rolling.

00 00 ... SEAT BELTS: CHECKING CONDITION OF BELT STRAP, FUNCTION OF INERTIA REEL MECHANISM, LOCKING REEL, BELT BUCKLE

BELT STRAP, RETRACTOR MECHANISM, BELT INTERLOCK

Pull out strap and make sure it emerges without jerking.

Check belt strap for

- folding
- unravelling
- pinches
- cracks and tears
- traces of melting
- clip as retractor lock

Retract belt strap; here the inertia reel mechanism must retract the strap automatically and without squeaking noises, the last section of the strap may have to be fed in.

Pull out belt strap in short tugs - locking reel must lock.

BELT BUCKLE

The tongue on the belt strap must easily snap into place with an audible click.

When the "Press" button is pressed, the tongue must be ejected from the buckle under spring pressure.

NOTE: If the seat belt is damaged, you must replace the seat belt completely after consulting the customer; issue a separate invoice for this work.

Instructions on how to proceed, refer to 72 11 .. CHECKING AUTOMATIC SAFETY BELT .

00 00 ... STEERING COMPONENTS: CHECKING FOR ZERO CLEARANCE, LEAKS, DAMAGE AND WEAR

CHECKING PLAY

- For hydraulically assisted steering systems, the engine must be running
- For electrically assisted steering systems, the ignition must be on
- Steering wheel:
- Move steering wheel back and forth and check for play
- Tie rod joint:

There must no clearance between tie rod arm (2) and tie rod joint (1).

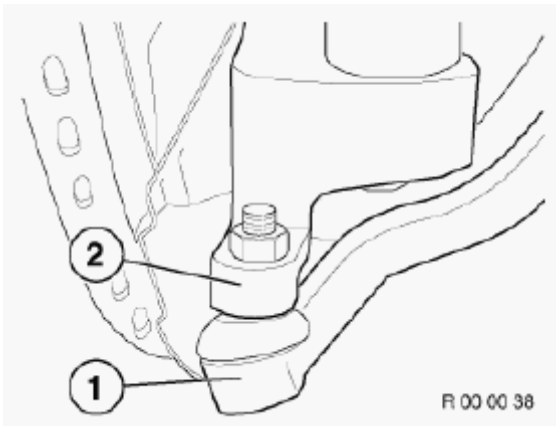
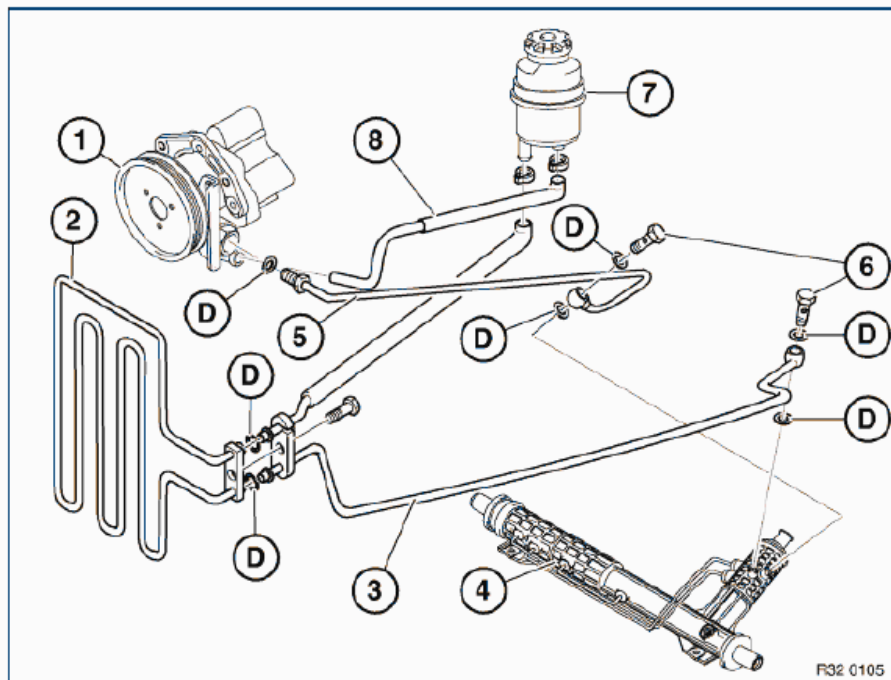


Fig. 16: Identifying Clearance Between Tie Rod Arm And Tie Rod Joint
Courtesy of BMW OF NORTH AMERICA, INC.

CHECKING FOR LEAKS

The following illustration shows the arrangement of the power steering components and lines.



1	Pump	6	Hollow screw
2	Power steering cooler	7	Container
3	Return line	8	Suction hose
4	Steering gear	D	Sealing ring
5	Pressure line		

Fig. 17: Identifying Arrangement Of Power Steering Components And Lines
Courtesy of BMW OF NORTH AMERICA, INC.

Check all visible connections, hoses, lines and steering gear for traces of fluid.

CHECKING FOR DAMAGE AND WEAR

Check gaiters, flexible disc and axle and tie rod sleeves for damage (e.g. cracks, holes), for leaks or missing clamping bands on gaiters.

00 00 ... STEERING FLUID RESERVOIR: CHECK OIL LEVEL

IMPORTANT: Adhere to the utmost cleanliness. Do not allow any dirt to enter the hydraulic system.

Using contaminated equipment to add fluid may introduce dirt particles into the fluid reservoir and significantly reduce the service life of the power steering system. Do not use any filler funnels or similar!

VISUAL INSPECTION AND LEAK TEST

Check connections, hoses and steering gear for traces of fluid.

CHECKING FLUID LEVEL

Check fluid level with engine switched off at expansion tank of power steering/ride-height control system. The fluid temperature should be approx. 20°C here.

Ensure that the cap is fully screwed in prior to the fill level check.

If necessary, add hydraulic fluid (refer to Service Information Operating Fluids) up to Max. marking (1).



Fig. 18: Checking Fluid Level

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: If the fluid level has dropped to the Min. marking (2), you must check the power steering and ride-height control for leaks and issue a separate invoice for this work.

It is not enough merely to top up the fluid .

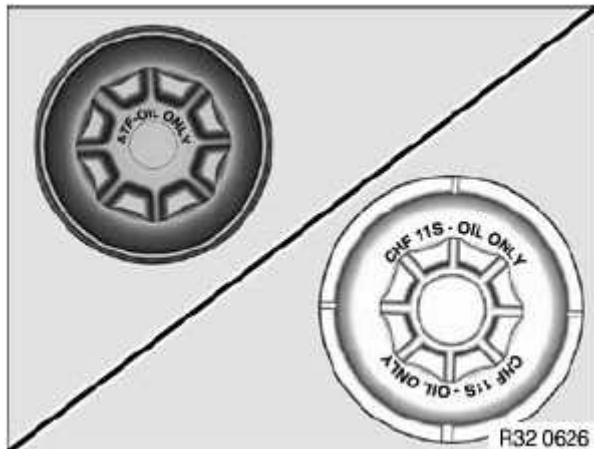


Fig. 19: Identifying Reservoirs Caps With Identification Marks

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: To avoid mix-ups when filling with hydraulic fluid, mark the fluid reservoirs or their caps with identification marks.

ATF Automatic transmission fluid

CHF Pentosin CHF11S

00 00 ... TIRES: CHECKING INFLATION PRESSURE, CORRECTING IF NECESSARY (INCL. SPARE WHEEL), CHECKING EXTERNAL CONDITION, TREAD DEPTH, PATTERN

○ Checking tire inflation pressure:

- Check tire inflation pressure in accordance with information plate on B-pillar
- The inflation pressure in the spare wheel must be 0.5 bar higher than the maximum specified value on the information plate
- Initialize **Run Flat Indicator** , see **36 11 000 INITIALIZING RUN FLAT INDICATOR (RPA)** .

○ Checking tire condition:

- Check tread depth of all tires with tire tread gauge
- Check tire tread surfaces and side walls for incisions and foreign particles such as nails or screws
- Check tire tread pattern for localized flattening and wear on one side; if necessary, carry out wheel/chassis alignment after consulting with customer and issue a separate invoice for this work

NOTE:

- For details of approved wheel-tire combinations, refer to KSD CD
- For reasons of driving safety, only use tires of the same type and tread pattern on a single vehicle
- Inform customer of any incorrect or worn tires

00 00 ... UNDERBODY INCL. ALL VISIBLE COMPONENTS: CHECKING FOR DAMAGE, LEAKS, CORROSION

○ Visually inspect underbody:

- For leaks (transmission, fuel system, brake components, steering)
- For correct routing of electrical leads (brake pad sensor, pulse generator)
- For leaks (shock absorber) and mounting (springs) - rebound
- Damage to underbody
- Corrosion on underbody

IMPORTANT: If damage to the underbody is identified:

- If necessary, remove panels from underbody.
- Check mountings and fixtures and brake and fuel lines for damage and correct installation position.

Rectify identified faults after consulting with customer and issue a separate invoice.

00 00 ... UPKEEP MEASURES FOR STORED VEHICLES (NEW AND USED CARS) AND VEHICLES TO BE LAID UP AT CUSTOMER'S PREMISES

IMPLEMENTATION REFERENCE CHART

Measure	Vehicles	Implementation
Renew outer skin preservation (new cars must always be stored in preserved condition; preservation/depreservation instructions, refer to Component Group 97)	New cars	every 6 months; Tropical countries every 4 months
Release parking brake	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Engage gear or selector lever position "P" for automatic	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Check covering of interior equipment	New cars	in general
Increase tire inflation pressure to 3.5 bar	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
If battery master switch is fitted, switch off	New cars	in general
Charge battery	New cars	every 6 weeks batteries disconnected from vehicle electrical system every 12 weeks in general before handover to customer
	Used cars	every 6 weeks batteries disconnected from vehicle electrical system every 12 weeks

	Customer cars to be laid up (instructions to customer)	every 6 weeks batteries disconnected from vehicle electrical system every 12 weeks
Change brake fluid and reset service interval indicator (clock symbol only)	New cars	lay-up periods > 6 months, change before handover of vehicle to customer
	Used cars	lay-up periods > 6 months, change before handover of vehicle to customer
Check convertible top for possible damage	New cars	in general before handover to customer
	Used cars	in general before handover to customer
Park convertibles, if possible, under a roof	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Check for damage to paintwork and exterior/interior equipment	New cars	in general before handover to customer
	Used cars	in general before handover to customer
Change engine oil and oil filter when engine is at normal operating temperature	New cars	from 12 months lay-up period before handover of vehicle to customer
	Used cars	from 12 months lay-up period before handover of vehicle to customer
	Customer cars to be laid up (instructions to customer)	from 12 months lay-up period before handover of vehicle to customer
Check coolant concentrate	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Apply hand and foot brakes when dry	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general

Perform surface protection: Vehicle washing with inside cleaning and subsequent preservation of paintwork and chrome. Clean rubber seals on hoods/bonnets, rear lids and doors and apply talc or glycerine. Perform cleaning, preservation and subsequent treatment of engine, engine compartment, underbody, axles and assemblies with BMW-approved materials.	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Switch on A/C system once a month for 10 minutes	Used cars	necessary in order to retain full operational capability of gaskets and expansion valve (omitted in case of R134a refrigerant, identified by rating plate in engine compartment)
	Customer cars to be laid up (instructions to customer)	necessary in order to retain full operational capability of gaskets and expansion valve (omitted in case of R134a refrigerant, identified by rating plate in engine compartment)

00 00 ... WINDSCREEN WASHER SYSTEM: CHECKING FLUID LEVEL, TOPPING UP IF NECESSARY

- Top up windscreen washer fluid reservoir, if necessary rear window washer fluid reservoir and (depending on equipment specification) intensive cleaning reservoir up to edge or mark.

IMPORTANT: A ph-neutral BMW window cleaning agent (antifreeze in winter) must always be added to the water.

00 00 005 INTERROGATING FAULT MEMORIES IN DIAGNOSIS SYSTEM

Connect diagnostic system to OBD socket.

Switch on ignition.

Carry out vehicle identification.

Click on Brief test.

The brief test is carried out.

NOTE: For motor vehicle diagnostics, the brief test is essential for evaluating possible stored diagnostic trouble codes. In the brief test, the control units are physically identified in succession and their fault memories read out.

If the fault memory has been read out, the faults appear in the "Fault pattern selection" mask in the "Fault memory contents" field.

00 00 105 STANDARD SCOPE OF SERVICE

- Standard scope of service
 - **Diagnosis brief test** (US only), see 00 00 ... Diagnostic brief test.
 - Check Control messages
 - Check telltale and warning lamps

00 00 555 INTERROGATING FAULT MEMORIES IN DIAGNOSIS SYSTEM

Connect diagnostic system to OBD socket.

Switch on ignition.

Carry out vehicle identification.

Click on Brief test.

The brief test is carried out.

NOTE: For motor vehicle diagnostics, the brief test is essential for evaluating possible stored diagnostic trouble codes. In the brief test, the control units are physically identified in succession and their fault memories read out.

If the fault memory has been read out, the faults appear in the "Fault pattern selection" mask in the "Fault memory contents" field.

00 00 602 SERVICE - INTAKE MUFFLER

- Change **air cleaner element in accordance with** repair instructions, see 13 72 001 REPLACING AIR FILTER ELEMENT (N54) .
- Reset CBS **display** according to factory specification

00 00 610 SERVICE - ENGINE OIL (PETROL/GASOLINE VEHICLES FROM 03/2009)

- Service - engine oil
 - Change **engine oil and oil filter** , see 11 00 ... SERVICE - ENGINE OIL (N54) .
 - **Hand parking brake** , see 34 41 006 ADJUSTING PARKING BRAKE .
 - Brake in and check for correct function
 - Air conditioning or automatic air conditioning

- Change **microfilter for interior ventilation** , see **64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION** .
- If necessary, change **microfilter for recirculated air** , see **64 31 017 REPLACING RECIRCULATED AIR MICROFILTER** .
- At every 2nd engine oil change
 - Replace **spark plugs** , see **12 12 011 REPLACING ALL SPARK PLUGS (N53, N54, N63)** .
 - **Intake silencer: change air filter element** . Shorten intervals accordingly for vehicles operated in dusty regions, see **13 72 001 REPLACING AIR FILTER ELEMENT (N54)** .

00 00 610 SERVICE - ENGINE OIL (PETROL/GASOLINE VEHICLES FROM 10/2008 TO 02/2009)

- **Service - engine oil**
 - Change **engine oil and oil filter** , see **11 00 ... SERVICE - ENGINE OIL (N54)** .
 - **Hand parking brake** , see **34 41 006 ADJUSTING PARKING BRAKE** .
 - Brake in and check for correct function
 - air conditioning or automatic air conditioning
 - Change **microfilter for interior ventilation** , see **64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION** .
 - If necessary, change **microfilter for recirculated air** , see **64 31 017 REPLACING RECIRCULATED AIR MICROFILTER** .
 - At every 2nd engine oil change
 - Replace **spark plugs** , see **12 12 011 REPLACING ALL SPARK PLUGS (N53, N54, N63)** .
 - At every 3rd engine oil change
 - **Intake silencer: change air filter element** . Shorten intervals accordingly for vehicles operated in dusty regions, see **13 72 001 REPLACING AIR FILTER ELEMENT (N54)** .

00 00 610 SERVICE - ENGINE OIL (PETROL/GASOLINE VEHICLES UP TO 09/2008)

- **Service - engine oil**
 - Change **engine oil and oil filter** , see **11 00 ... SERVICE - ENGINE OIL (N54)** .
 - **Hand parking brake** , see **34 41 006 ADJUSTING PARKING BRAKE** .
 - Brake in and check for correct function
 - Air conditioning or automatic air conditioning
 - Change **microfilter for interior ventilation** , see **64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION** .
 - Change **microfilter for recirculated air** , see **64 31 017 REPLACING RECIRCULATED AIR MICROFILTER** .

- At every 3rd engine oil change
 - **Intake silencer: change air filter element** . Shorten intervals accordingly for vehicles operated in dusty regions, see **13 72 001 REPLACING AIR FILTER ELEMENT (N54)** .
 - Replace **spark plugs** , see **12 12 011 REPLACING ALL SPARK PLUGS (N53, N54, N63)** .

00 00 612 SERVICE - FRONT BRAKES

- Service - front brakes
 - **Change brake pads** , clean brake air ducts, see **34 11 000 REMOVING AND INSTALLING/REPLACING BRAKE PADS ON BOTH DISC BRAKES (2 PISTONS)** or **34 11 000 REMOVING AND INSTALLING/REPLACING BRAKE PADS ON BOTH FRONT DISC BRAKES (1 PISTON)** .
 - **Brake discs** , see **34 11 220 REMOVING AND INSTALLING/REPLACING BOTH FRONT BRAKE DISCS** .
 - Check surface and thickness

NOTE:

- Clean brake air ducts.
- Replace brake discs if they are below the minimum brake disc thickness and if scoring, heat cracks or thickness difference are detected, see **34 11 FRONT BRAKE E71** .
- Apply a thin coat of grease to wheel centering on light alloy wheels, refer to Service Information Operating Fluids.
- Issue a separate invoice for replacing the brake discs.

00 00 614 SERVICE - REAR BRAKES

- Service - rear brakes
 - **Change brake pads** , clean brake air ducts, see **34 21 200 REMOVING AND INSTALLING OR REPLACING BRAKE PADS ON BOTH REAR DISC BRAKES (TEVES FLOATING CALIPER)** .
 - **Brake discs** , see **34 21 320 REMOVING AND INSTALLING OR REPLACING BOTH REAR BRAKE DISCS** .
 - Check surfaces and thickness.
 - If necessary: Replace
 - **Handbrake** , see **34 41 220 REMOVING AND INSTALLING/REPLACING ALL HANDBRAKE SHOES** .
 - Check condition, brake lining thickness and function
 - If necessary: Replace

NOTE:

- Clean brake air ducts.

- Replace brake disks if they drop below minimum thickness and in event of scoring, heat cracks or thickness difference, see 34 21 REAR BRAKE DISCS E71 .
- Apply a thin coat of grease to wheel centering on light alloy wheels, refer to Service Information Operating Fluids.
- Issue a separate invoice for replacing the brake discs and handbrake shoes.

00 00 616 SERVICE - MICROFILTER

- Service - microfilter
 - Heating/air conditioning: change microfilter / carbon canister , see 64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION or 64 31 017 REPLACING RECIRCULATED AIR MICROFILTER .

00 00 618 SERVICE - BRAKE FLUID

- Service - brake fluid
 - Changing brake fluid , see 34 00 025 REPLACING FLUID IN ABS/ASC+T BRAKE SYSTEM .

IMPORTANT: Read and comply with general notes and information on brakes, see 34 00 ... GENERAL INFORMATION .

00 00 622 SERVICE - SPARK PLUGS

- Service - spark plugs
 - Replace spark plugs. See 12 12 011 REPLACING ALL SPARK PLUGS (N53, N54, N63) .

00 00 624 SERVICE - VEHICLE CHECK

- Service - vehicle check
 - **Diagnosis brief test** (not US), see 00 00 ... Diagnostic brief test.
 - Check **horn, headlight flashers and hazard warning system** , see 00 00 ... Checking horn, headlight flashers and hazard warning system.
 - Check **instrument and indication field lighting and heater blower** , see 00 00 ... Checking instrument and indication field lighting, heater blower.
 - Check **lighting system** , see 00 00 ... Checking lighting system.
 - **Seat belts:** check condition of belt strap, function of inertia reel mechanism, locking reel and belt buckle 00 00 ... Seat belts: checking condition of belt strap, function of inertia reel mechanism, locking reel, belt buckle.
 - Check **windscreen wash/wipe system** , see 00 00 ... Check windscreen wash/wipe system.

- **Body: Check for corrosion** (except cavities), see 00 00 ... Body: Check for corrosion (except cavities).
- **Tires:** Check tread depth, pattern, external condition and inflation pressure and correct if necessary (compact wheel as well), see 00 00 ... Tires: checking inflation pressure, correcting if necessary (incl. spare wheel), checking external condition, tread depth, pattern
- Initialize **Run Flat Indicator** , see 36 11 000 INITIALIZING RUN FLAT INDICATOR (RPA) .
- Check **battery** (magic eye), if necessary recharge battery (issuing a separate invoice for this work), see 00 00 ... Battery: Checking display. If necessary, recharge battery.
 - Check display (magic eye)
 - If necessary: Charge battery
- **Steering fluid reservoir:** Check fluid level, see 00 00 ... Steering fluid reservoir: Check oil level.
- Check **coolant level and concentration** , top up if necessary, see 00 00 ... Checking coolant level and concentration, correcting if necessary.
- **Windscreen washer system:** Check fluid level, top up if necessary, see 00 00 ... Windscreen washer system: checking fluid level, topping up if necessary.
- **Brake lines and connections:** Check for leaks, damage and correct position, see 00 00 ... Brake lines and connections: visual inspection for leaks, damage and correct position.
- **Underbody incl. all visible components:** check for damage, leaks, corrosion, see 00 00 ... Underbody incl. all visible components: checking for damage, leaks, corrosion.
- **Steering components:** check for zero clearance, leaks, damage and wear, see 00 00 ... Steering components: checking for zero clearance, leaks, damage and wear.
- Check **roadworthiness** (test drive):, see 00 00 ... Checking roadworthiness (test drive).
 - Brakes
 - Steering
 - Shock absorbers
 - Transmission

00 11 237 CHECKING/TOPPING UP FLUID LEVEL IN AUTOMATIC TRANSMISSION (GA6HP26Z)

IMPORTANT: Failure to comply with this requirement will result in serious damage to the automatic transmission!

Installation:

Tighten down filler plug using

1. Hexagon wrench 8 A/F
2. torque wrench
3. Socket 8 A/F

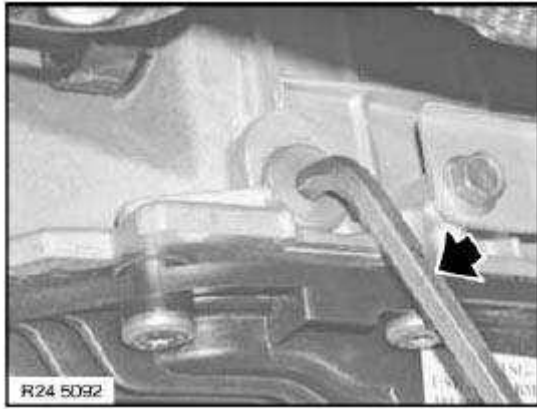


Fig. 20: Tightening Down Filler Plug
Courtesy of BMW OF NORTH AMERICA, INC.

TOPPING UP TRANSMISSION FLUID AFTER A REPAIR

Stand vehicle on a level surface and secure against rolling off.

Undo filler plug (1).

Installation

Replace sealing ring.

Top up transmission fluid until it emerges from filling orifice.

Start engine.

Replenish transmission fluid until it emerges from filling orifice.

Screw in filler plug (1).

Tightening torque: See **24 11 TRANSMISSION HOUSING, TRANSMISSION OIL SUMP** .

Press brake pedal to floor and shift through all gears several times at idle speed. Then shift to "P" position (Park).

Then check fluid level.

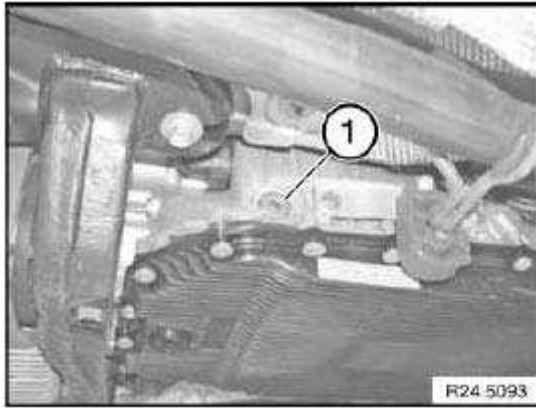


Fig. 21: Identifying Filler Plug
 Courtesy of BMW OF NORTH AMERICA, INC.

CHECKING FLUID LEVEL

- Call up Service functions (Drive) in BMW diagnosis system
- Carry out fluid level check in accordance with instructions

00 11 259 CHANGING OIL IN REAR DIFFERENTIAL (DYNAMIC PERFORMANCE CONTROL) AND DISPOSING OF USED OIL

NOTE: The rear differential has three oil chambers. The outer chambers (1, 3) contain the oil "SAF carbon mod", but with different filling capacities. The middle chamber (2) contains the "SAF XO Burmah Castrol" oil. The oils will mix if the rear differential is subject to a change in position in excess of 45°.

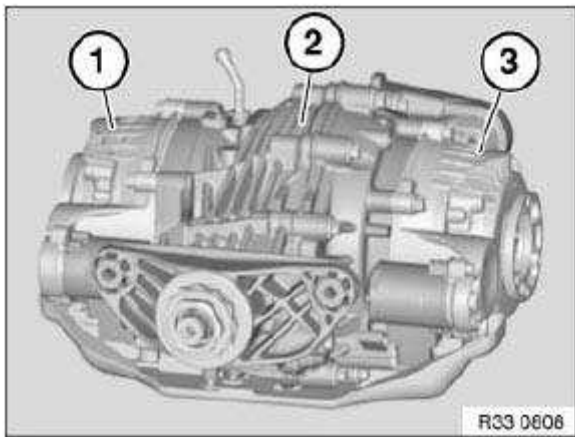


Fig. 22: Identifying Outer And Middle Chambers
 Courtesy of BMW OF NORTH AMERICA, INC.

WARNING: Risk of burning if exhaust system is touched!

Danger of poisoning if oil is ingested/absorbed through the skin! See 00 Danger of poisoning if oil is ingested/absorbed through the skin.

Risk of injury if oil comes into contact with eyes and skin! See 00 Risk of injury if oil comes into contact with eyes and skin.

NOTE: Only change oil when rear differential is at normal operating temperature.

Recycling:

Catch and dispose of escaping rear differential oils.

Observe country-specific waste-disposal regulations

Place oil collecting apparatus underneath.

Open oil drain plugs (1).

Drain and dispose of rear differential oils.

Replace oil drain plugs (1).

Tightening torque, see **33 11 REAR DIFFERENTIAL CASE WITH COVER** .

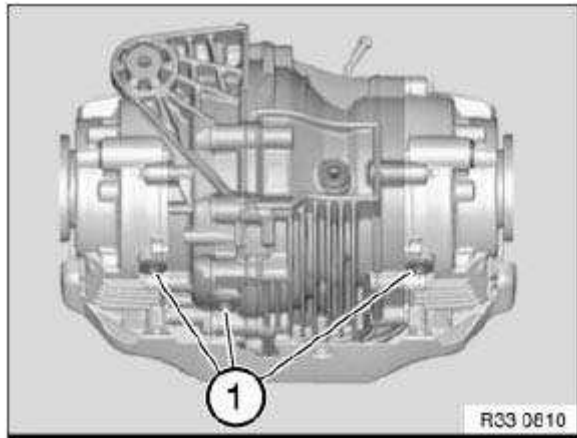


Fig. 23: Identifying Oil Drain Plugs

Courtesy of BMW OF NORTH AMERICA, INC.

Open oil filler plugs (1) and pour up to lower edge of opening for oil filler plugs (1).

Open oil filler plug (2) and pour up to lower edge of opening for oil filler plug (2).

Replace oil filler plugs (1, 2).

Tightening torque, see **33 11 REAR DIFFERENTIAL CASE WITH COVER** .

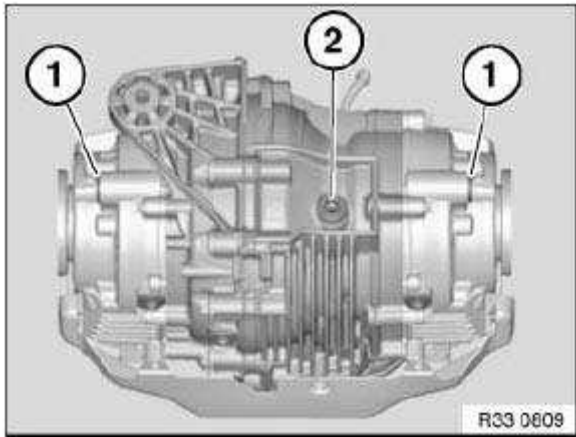


Fig. 24: Identifying Oil Filler Plugs

Courtesy of BMW OF NORTH AMERICA, INC.

11 00 REMOVING AND INSTALLING/REPLACING FRONT IGNITION COIL COVER (N54)

Necessary preliminary tasks:

Release screws (arrow).

Tightening torque 11 12 6AZ. See **11 12 CYLINDER HEAD WITH COVER** .

Remove ignition coil cover (1) towards top.

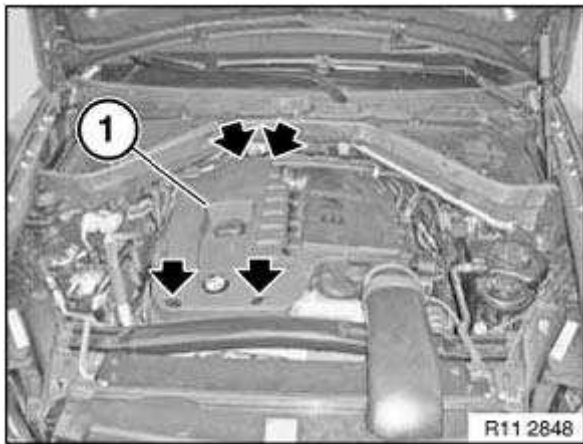


Fig. 25: Identifying Front Ignition Coil Cover And Screws

Courtesy of BMW OF NORTH AMERICA, INC.

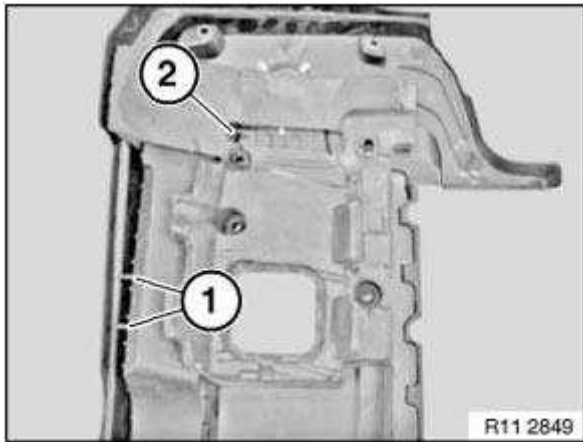


Fig. 26: Identifying Connections

Courtesy of BMW OF NORTH AMERICA, INC.

11 00 REMOVING AND INSTALLING/REPLACING IGNITION COIL COVER (N54)

Necessary preliminary tasks:

- Remove microfilter filter housing. See **64 31 081 REMOVING AND INSTALLING/REPLACING MICROFILTER HOUSING** .

Release screws.

Tightening torque 11 12 7AZ. See **11 12 CYLINDER HEAD WITH COVER** .

Remove ignition coil cover (1) towards top.

NOTE: For purposes of improved clarity, illustration and descriptions shows wiring harness and tension strut removed.

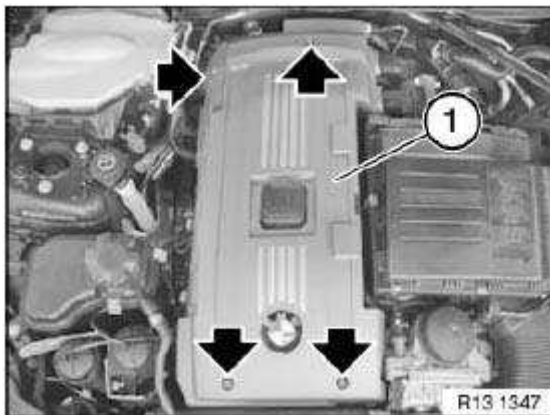


Fig. 27: Lifting Off Acoustic Cover

Courtesy of BMW OF NORTH AMERICA, INC.

11 00 REMOVING AND INSTALLING/REPLACING REAR IGNITION COIL COVER (N54)

Necessary preliminary tasks:

- Remove front ignition coil cover. See **11 00 Removing and installing/replacing ignition coil cover (N54).**
- Remove clean air pipe. See **13 71 150 REMOVING CLEAN AIR PIPE (N54) .**

Release screws.

Tightening torque 11 12 7AZ. See **11 12 CYLINDER HEAD WITH COVER .**

Remove rear ignition coil cover (1) towards top.

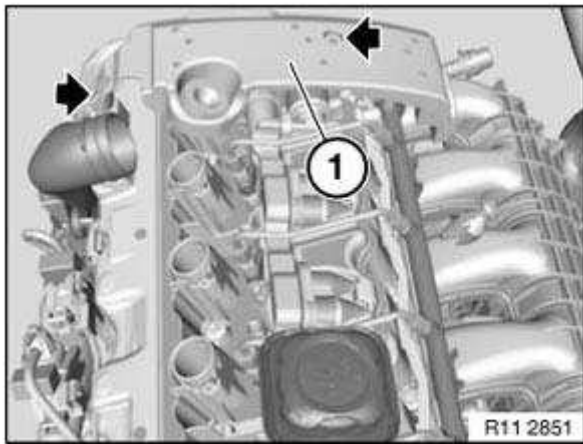


Fig. 28: Identifying Rear Ignition Coil Cover

Courtesy of BMW OF NORTH AMERICA, INC.

32 31 ... NORMALIZATION OF ELECTRIC STEERING COLUMN ADJUSTMENT

NOTE: Normalization must be carried out after the following work:

- Removal or replacement of control panel in heater-A/C system or of steering column
- Repair work to electric steering column adjustment
- Coding/programming of IHKA control unit

Normalization of electric steering column adjustment is possible via the diagnosis system under the following path:

- Diagnosis
- Function selection
- Service functions
- Chassis
- Electric steering column adjustment



Fig. 29: Diagnosis Screen

Courtesy of BMW OF NORTH AMERICA, INC.

61 00 ... NOTES ON HANDLING WIRING HARNESSES AND CABLES

IN GENERAL

To avoid damage, observe the following instructions:

- Avoid compressive and tensile loads
- Make sure cables are laid without kinks or abrasions
- Ensure non-contacting routing at sharp-edged body parts; use muckets if necessary
- Secure additionally laid cables/leads with cable ties

IN ADDITION

Shielded cables (coaxial cables):

IMPORTANT: Shielded cables must not be repaired!

- This may lead to indifferences in noise radiation and interference immunity at contact points in the shield
- To satisfy the requirements of the type approval, it is essential to replace shielded cables completely

Fibre-optic cables:

NOTE: Fibre-optic cables are colored differently as follows:

- Green = **MOST** (**M**edia **O**riented **S**ystems **T**ransport) fibreoptic cables
- Yellow = **ISIS** (**I**ntegrated **S**ervice **I**nformation **S**erver) fibreoptic cables
- Orange=repair fibre-optic cables

IMPORTANT:

- Fibre-optic cables are permitted to show only one junction point (bridge), replace fibre-optic cables if necessary
- Smallest permissible bending radius is 25 mm
- Avoid effects of heat > or = 85°

Treating cables and fibre-optic cables . See 61 13 ... TREATING CABLES AND FIBRE-OPTIC CABLES .

FlexRay:

It is possible to repair the FlexRay. In the event of damage, the cables can be joined with conventional **butt connectors** . See 61 13 ... BUTT CONNECTOR FOR REPAIRING A PLUG CONNECTION .

NOTE:

- The cable is a twisted cable. If possible, maintain twisted cable after repair.

Airbag cables:

Repairing airbag cables . See 61 00 ... REPAIRING AIRBAG CABLES .

Ribbon cables:

Repairing ribbon cables . See 61 13 ... REPAIRING RIBBON CABLES .

86 10 ... POSITIONING OF MULTITRAILER HOOD FOR MAINTENANCE AND REPAIR WORK

IMPORTANT: At least two persons are needed to install and remove the hood from the platform.

Before installing and removing the hood, secure the BMW multitrailer and the entire combination against rolling. For this purpose, use the parking brake and the chocks of the BMW multitrailer.

The hood can also be set up and lowered with the aid of the universal lift available from BMW in conjunction with the roof racks and the hood adapter. Under no circumstances should work of any kind be carried out below the suspended hood.

For maintenance and repair work, raise the hood using a lifting platform. Twin-column lifting platforms, body lifting platforms and twin-stamp underfloor platforms are suitable. The seating plates and areas of the lifting platform must be adjustable according to the dimensions of **Fig. 30**.

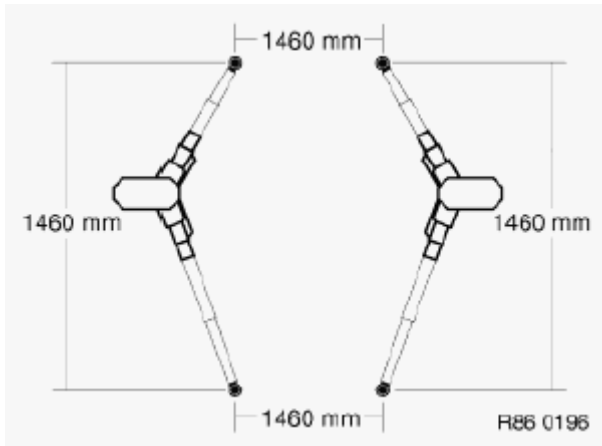


Fig. 30: Identifying Seating Plates Dimensions
Courtesy of BMW OF NORTH AMERICA, INC.

The lifting platform must conform to the relevant legal provisions of the accident prevention regulations and be serviced as specified. Comply with the lifting platform operating instructions, in particular the safety instructions and the carrying capacity.

Make sure you adhere to the BMW-recommended work area of 5 x 7 m and to an escape route of 0.6 m between two lifting platforms.

Please comply with the following instructions before raising the hood:

- Raise only when it is unloaded;
- Ensure sufficient clearance between the seating plates/seating areas and the GFP edge of the hood;
- The hood must always be positioned in the middle of the lifting platform.

IMPORTANT: The hood may only be raised at the pin (1). Under no circumstances may the hood be raised at the GFP edge of the hood (2). See **Fig. 31**. Exclusively for removal of pin (1), raise the hood in the GFP area.

Also refer to:

86 21 ... REMOVING CENTERING PIN FROM MOUNTING BRACKET .

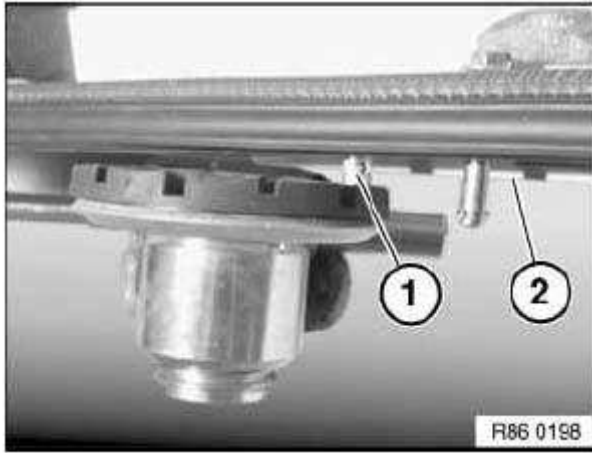


Fig. 31: Identifying Hood Pin
Courtesy of BMW OF NORTH AMERICA, INC.

MAINTENANCE

Maintenance and General Information - Repair Instructions - X6

00 DANGER OF POISONING IF OIL IS INGESTED/ABSORBED THROUGH THE SKIN

Danger of poisoning!

Ingesting oil or absorbing through the skin may cause poisoning!

Possible symptoms are:

- Headaches
- Dizziness
- Stomach aches
- Vomiting
- Diarrhoea
- Cramps/fits
- Unconsciousness

PROTECTIVE MEASURES/RULES OF CONDUCT

- Pour oil only into appropriately marked containers
- Do **not** pour oil into drinking vessels (drinks bottles, glasses, cups or mugs)
- Observe country-specific safety regulations

FIRST AID MEASURES

- Do not induce vomiting.

If the person affected is still conscious, he/she must rinse out their mouth with water, drink plenty of water and consult a doctor immediately.

If the person affected is unconscious, do not administer anything by mouth, place the person in the recovery position and seek immediate medical attention.

00 RISK OF INJURY IF OIL COMES INTO CONTACT WITH EYES AND SKIN

Danger of injury!

Contact with eyes or skin may result in injury!

Possible symptoms are:

- Impaired sight
- Irritation of the eyes
- Reddening of the skin
- Rough and cracked skin

PROTECTIVE MEASURES/RULES OF CONDUCT

- Wear protective goggles
- Wear oil-resistant protective gloves
- Observe country-specific safety regulations

FIRST AID MEASURES

- **Eye contact:** Rinse eyes immediately with plenty of water for at least 15 minutes; if available, use an eye-rinsing bottle. If irritation of the eyes persists, consult a doctor.
- **Skin contact:** Wash off with soap and water immediately. If irritation persists, consult a doctor.

NOTE: Do not use solvents/thinners.

00 SAFETY INSTRUCTIONS FOR HANDLING OIL

WARNING: DANGER OF POISONING if oil is ingested/absorbed through the skin!
RISK OF INJURY if oil comes into contact with eyes and skin!

RECYCLING

Observe country-specific waste-disposal regulations.

Measures if oil is unintentionally released:

- **Personal precautionary measures:** Danger of slipping! Keep non-involved persons away from the work area. Wear personal protective clothing/equipment.
- **Environmental protection measures:** Prevent oil from draining into drain channels, sewerage systems, pits, cellars, water and the ground.
- **Limiting spread:** Use oil blocks to prevent the surface spread of oil.
- **Cleaning procedure:** Bind and dispose of escaped oil with nonflammable absorbents.

NOTE: Do not flush oil away with water or aqueous cleaning agents.

00 PRE-DELIVERY CHECK

QUALITY ASSURANCE BY BMW SERVICE

Vehicle identification number:

If necessary Quick Reference Guide:

Owner's Handbook(s)
Service Record Booklet
Master key/remote control
If necessary - spare key

Glovebox
Storage box
Luggage compartment

Place and date

Signature of vehicle owner

Fig. 1: BMW Service Quality Assurance Sheet
Courtesy of BMW OF NORTH AMERICA, INC.

PRE-DELIVERY CHECK BY BMW SERVICE

Scopes of inspection: To be kept with the workshop documents

The following work must be carried out on the vehicle by BMW Service prior to delivery.

* Denotes optional extra or national-market specification. Observe possible changes in this regard.

Model:

Vehicle identification number:

Battery main switch*	Not OK	OK
Removal and connection, carry out following scopes if necessary	☐	☐
Power windows*: Initialize system	☐	☐
Glass sunroof*: Initialize system	☐	☐
Steering angle adjustment or initialize active front steering*	☐	☐

Equipment pack scopes	Not OK	OK
Fit	☐	☐

With BMW Group Tester	Not OK	OK
Carry out "CBS pre-delivery check" in the Service Function path under Maintenance	☐	☐
Deactivate transportation mode	☐	☐
Reset average mileage/kilometres driven	☐	☐
Enter first registration	☐	☐
Set on-board date	☐	☐
Set statutory inspection dates*	☐	☐
Enter service telephone numbers	☐	☐
Check battery, observe notes/information in Tester	☐	☐
Clear fault memory	☐	☐
Carry out vehicle test, eliminate faults if necessary	☐	☐

Engine compartment	Not OK	OK
Check for cleanliness	☐	☐

Washer fluid reservoir	Not OK	OK
Check fill level and top up if necessary, where required with antifreeze additive	☐	☐

Sticker	Not OK	OK
Attach sticker for BMW Group Mobile Service	☐	☐

Body, interior equipment, floor plate	Not OK	OK
Check for transportation damage	☐	☐

Spring blocker*	Not OK	OK
Remove	☐	☐

Tyres	Not OK	OK
Check tyre pressures; if provided, also compact or spare wheel	☐	☐
Initialise Run Flat Indicator	☐	☐

Winter tyres*	Not OK	OK
Attach V-max. sticker	☐	☐

Service Record Booklet	Not OK	OK
Stamp pre-delivery check / enter vehicle identification number	☐	☐

Include documents (Glovebox / Storage box / Luggage compartment)	Not OK	OK
Owner's Handbook	☐	☐
Service Record Booklet	☐	☐
Contact brochure	☐	☐
BMW Group Mobile Service brochure	☐	☐

Fig. 2: BMW Service Pre-Delivery Check Sheet (1 Of 2)
Courtesy of BMW OF NORTH AMERICA, INC.

Include BMW key or remote control (make note of number)	O	O
Telltale/warning lamps and Check Control	Not OK	OK
Check for incorrect indication and eliminate faults if necessary	O	O
Navigation	Not OK	OK
If necessary, install navigation road map(s)	O	O
BMW TeleServices	Not OK	OK
Activated Yes / No	O	O
Service and parking brake	Not OK	OK
In event of transportation and immobilization periods of 3-6 weeks is to be checked for correct operation	O	O
In event of transportation and immobilization periods of more than 6 weeks	O	
Brake in		O
Interior rearview mirror with digital compass*	Not OK	OK
Calibrate system	O	O
Preservation, cleaning	Not OK	OK
Remove transportation lock	O	O
Dewax and clean vehicle as prescribed	O	O
..... Date	 Mechanic	 Workshop Manager

Fig. 3: BMW Service Pre-Delivery Check Sheet (2 Of 2)
 Courtesy of BMW OF NORTH AMERICA, INC.

00 LIFTING VEHICLE WITH A LIFTING PLATFORM

WARNING: Danger to life!
 Read and follow operating instructions for lifting platform.
 Do not exceed carrying capacity of lifting platform.

NOTE: The lifting platform must comply with the relevant statutory accident prevention regulations and be serviced according to the manufacturer's instructions.

IMPORTANT: Risk of damage!
 Before driving onto a lifting platform, make sure there is sufficient ground clearance between the lifting platform and the car.

The vehicle may only be raised with the lifting platform at the four jacking points.

IMPORTANT: Risk of damage!

Align support plates (2) of lifting platform arms to jacking points (1) in such a way that no adjoining components are touched and thereby damaged.

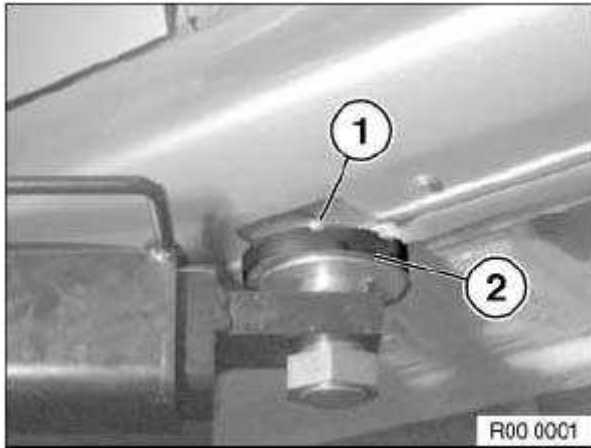


Fig. 4: Aligning Support Plates Of Lifting Platform Arms To Jacking Points

Courtesy of BMW OF NORTH AMERICA, INC.

00 ... NOTES ON USING REPAIR INSTRUCTIONS, TECHNICAL DATA, TIGHTENING TORQUES

Cross-references to "Technical Data" and "Tightening Torques" must be complied with.

00 ... RAISING VEHICLE WITH TROLLEY JACK

IMPORTANT: Observe the following trolley-jack-related instructions:

1. Use only BMW-distributed/approved trolley jacks which have rubber plate contact points.
2. Trolley jacks must be regularly serviced and always checked for functional reliability before they are used!
3. Check the rubber plate on the trolley jack prior to each use, replacing if necessary.

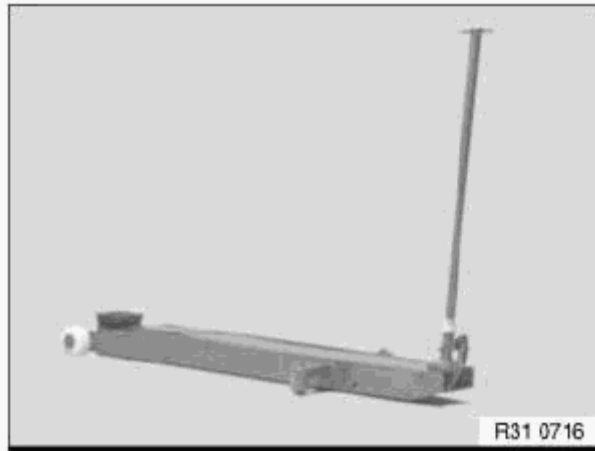


Fig. 5: Identifying Trolley Jacks

Courtesy of BMW OF NORTH AMERICA, INC.

WARNING: The vehicle may be raised with a trolley jack only at the following jacking points!

1. Car jacking point
2. Side car jacking points
3. Rear differential

Risk of damage: It is not permitted to raise the vehicle at the rear differential cover!

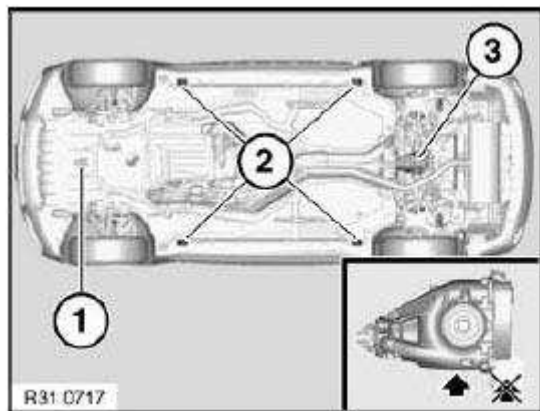


Fig. 6: Identifying Car Jacking Point

Courtesy of BMW OF NORTH AMERICA, INC.

00 ... SYMBOLS USED AND INFORMATION IN REPAIR INSTRUCTIONS

WARNING: Precautionary rules and measures which protect mechanics and other personnel against injury (including life-threatening injuries).

Example:

WARNING: Danger of scalding!

Only perform this work after engine has cooled down.

IMPORTANT: Specific instructions and precautionary measures which prevent damage to the vehicle or to vehicle parts. Failure to comply with the above will invalidate any warranty claims.

The caution symbol is used in all repair instructions.

However, use of the warning word "Caution!" is not binding in every case.

The notes, instructions and precautionary measures mentioned above retain their validity.

NOTE: Particular information on improved procedures for operation, testing, adjustment and upkeep.

Also indicates the end of a repair section.

Recycling:

Observe country-specific waste-disposal regulations

General information:

Refers to other instructions: such as e.g.:

Necessary preliminary tasks;

Replacement:

Carry out programming/coding.

NOTE: Many electronic control units must be programmed/coded (e.g. when replaced).

NOTE:

- Connect BMW diagnosis system

IMPORTANT: Read and comply with notes on protection against electrostatic damage (ESD protection).

NOTE: Electronic control units and other electronic components - if handled incorrectly - can be damaged or destroyed by electrostatic discharge.

00 0 TEST SPECIFICATIONS FOR TECHNICAL VEHICLE INSPECTION

SPECIFICATIONS CHART

1.0	Vehicle identification
1.1	Cross-model test specifications Raising BMW Group vehicles, see 00 Lifting vehicle with a lifting platform
1.2	Test instructions for all-wheel drive vehicles on roller dynamometers, see 34 00 ... TESTING AWD VEHICLES ON DYNAMIC BRAKE AND POWER ANALYZERS (E30, E34, E46, E53, E83, E60, E61, E90, E91, E92, E70, E71) or 34 00 009 NOTES ON BRAKE AND STABILITY SYSTEMS (ASC+T AND DSC) ON ROLLER DYNAMOMETERS .
2.0	Test specifications for mechanical brake components on BMW vehicles
2.1	Determining brake pad thickness
2.1.1	Determining brake pad thickness, vehicles without CBS
2.1.2	Determining brake pad thickness, vehicles with CBS and Light Crystal Display (CID)
2.1.3	Determining brake pad thickness, vehicles with CBS and Central Information Display (CID)
2.2	Minimum brake disc thickness
2.3	Permissible brake pads
2.4	Test instructions for ABS and DSC braking and stability systems
3.0	Electromechanical parking brake (EMF)
3.1	EMF scope of inspection 1: Permanent telltale lamps 7 Series, E65, E66, E67, E68
3.2	EMF scope of inspection 1: Permanent telltale lamps X5, X6 model series, E70, E71
3.3	EMF scope of inspection 2: Checking braking action
4.0	Airbag and restraint systems
5.0	Checking backlash on rack-and-pinion steering
6.0	Function check Electric Power Steering (EPS)
7.0	Test specification, active front steering
8.0	Test specification wheel control joint front axle 3 Series/E46 and Z3/E36
9.0	Test specification wheel carrier-swinging arm ball joint , vehicles with integral rear axle
10.0	Testing rear axle carrier 3 Series/E46 , first reg.: 12/1997 - 08/2001
11.0	Testing of Electronic Damping Control (EDC)
12.0	Dynamic Drive Active Roll Stabilization (ARS)
13.0	Testing of light systems
13.1	Headlight dew on cover glass
13.2	Halogen headlights
13.3	Xenon headlights
13.4	Xenon headlights with adaptive headlights
13.5	Turning lights
13.6	Test specifications for LED light fields of legally prescribed lights on BMW vehicles
13.7	Test specification High-Beam Assistant
13.8	Setup, type of light fields
14.0	Test specifications and instructions for Active Cruise Control
14.1	Test specifications for wheel and tire combinations on BMW vehicles
14.2	Test specification Runflat on BMW vehicles
14.3	Test specification HDC Hill Descent Control

00 00 ... BATTERY: CHECKING DISPLAY. IF NECESSARY, RECHARGE BATTERY

IMPORTANT: Observe safety instructions for handling vehicle battery , refer to 61 00 ... SAFETY INSTRUCTIONS FOR HANDLING VEHICLE BATTERY .

VEHICLES WITH LOW-MAINTENANCE BATTERY

Check acid level, top up with distilled water if necessary

If level drops below Max. marking, top up distilled water to Max. marking.

VEHICLES WITH MAINTENANCE-FREE BATTERY

Check charge start by way of magic eye

IMPORTANT: For information on how to proceed, refer to BATTERY CHARGING .
Issue a separate invoice if the battery is recharged.

00 00 ... BODY AND UNDERBODY: CHECKING FOR CORROSION AND DAMAGE

Inspect chassis, underbody and wheel arches and check for corrosion and damage.

NOTE: It is absolutely essential to rectify any identified faults after consulting the customer and to issue a separate invoice.

00 00 ... BODY: CHECK FOR CORROSION (EXCEPT CAVITIES)

- Visually inspect underbody and attachment parts (brake lines, exhaust system branch, sills) for corrosion and check for damage.
- Check wheel arches for corrosion.
- Open doors and check A-, B- and C-pillars for corrosion, especially door hinges.
- Check door frame for corrosion, folding back door seal slightly if necessary.
- Check outer body for stone impacts, scratches or damage to paintwork and associated corrosion.

IMPORTANT: If damage to the underbody is identified:

- If necessary, remove panels from underbody.
- Check mountings and fixtures and brake and fuel lines for damage, corrosion and correct installation position.

Rectify identified faults after consulting with customer and issue a separate invoice.

00 00 ... BRAKE LINES AND CONNECTIONS: VISUAL INSPECTION FOR LEAKS, DAMAGE AND CORRECT POSITION

CHECK BRAKE LINES AND CONNECTIONS

- Visual inspection in visible area for:
 - Check brake fluid level in expansion tank
 - leaks
 - traces of fluid
 - damage
 - crushing/flattening
 - correct routing of brake lines
 - correct seating of brake lines in holders

NOTE: Detected faults must urgently be repaired after consultation with the customer!

00 00 ... CBS RESET

IMPORTANT: The CBS maintenance jobs can be reset in the car. It is always recommended to reset the CBS jobs via the diagnosis system. It is only possible to code the statutory intervals specific to individual countries with the diagnosis system.

CBS RESET WITH DIAGNOSIS SYSTEM

**IMPORTANT: To be able to check and/or correct the car's on-board date properly, the diagnosis system requires the correctly set tester system date!
The jobs may only be reset after the service measure has been completed.
The brake pads can only be reset with a new brake pad wear sensor.**

The CBS jobs can be reset via the diagnosis system on the following path:

- Start diagnosis
- Carry out vehicle identification
- Function selection
- Service functions
- Maintenance
- CBS reset



Fig. 7: Identifying CBS Reset With Diagnosis System
Courtesy of BMW OF NORTH AMERICA, INC.

CBS RESET IN THE CAR

The service jobs can be reset in the car at the instrument cluster. Here, the availability of a service job is reset to 100 % (corresponding to new component). The availability is an internal computing value (not visible to the operator).

NOTE: **A reset is only possible in the car if:**

- there is no Check Control message
- availability of the service job is under 80 %
- on-board date must be correctly set

Resetting of a service job must always be carried out **after** a maintenance measure has been completed.

The resetting procedure is aborted by a timeout or a terminal change.

Switch on ignition.

Press the trip odometer reset button (referred to as button in the following) for approx. 10 seconds until the 1st service job appears in the LC display.

Bring up the next item by briefly pressing the button again. Select desired service job.

NOTE: **The upper display in the instrument cluster is illuminated by a service symbol (e.g.: an oil can denotes an oil change).**
The lower display in the instrument cluster indicates the time or distance remaining until the next service (e.g.: 29000).



Fig. 8: Identifying Trip Odometer Reset Button
 Courtesy of BMW OF NORTH AMERICA, INC.

If the job is to be reset, press the button again for approx. 3 seconds until the message "Reset?" appears.

Acknowledge the reset by pressing the button for 3 seconds.

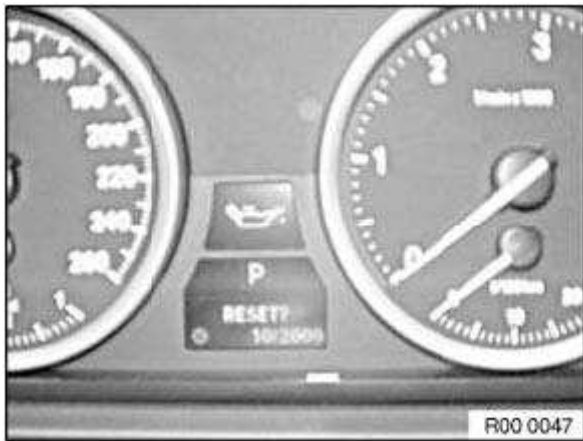


Fig. 9: Identifying Reset Button
 Courtesy of BMW OF NORTH AMERICA, INC.

CBS RESET OF INSPECTIONS/TESTS REQUIRED BY LAW

Input the target for the inspections/test required by law (vehicle/ emissions) by clicking on the job with the controller in the CBS menu of the Control Display at:

- Press controller to call up i menu
- Select **Info sources** and press controller
- Select **Service** and press controller
- Select **Service requirements** and press controller
- Select **Stat. vehicle insp.** and press controller

- Select **Status** and press controller
- Select **Schedule date for service** and press controller
- The target month or the target year can be set and acknowledged by turning and pressing



Fig. 10: Identifying CBS Control Display
 Courtesy of BMW OF NORTH AMERICA, INC.

00 00 ... CHECK WINDSCREEN WASH/WIPE SYSTEM

- Check wipe pattern for smearing; if necessary, replace wiper blades after consulting with customer
- The spray jet must emerge uniformly from the spray nozzle, replace nozzle if necessary and issue a separate invoice

00 00 ... CHECKING COOLANT LEVEL AND CONCENTRATION, CORRECTING IF NECESSARY

- Check connections, hose clamps and hoses for coolant residues and damage such as e.g. cracks.
- Check coolant level in expansion tank. Coolant level must be between Min. and Max. markings. If necessary, top up coolant to max. fill level. If there is no coolant, also identify the cause and notify the customer.
- In event of topping up: Check concentration with antifreeze tester (special tool) in coolant expansion tank.

If necessary, drain off the difference quantity at the coolant drain plug and top up with recommended coolant (issue a separate invoice).

00 00 ... CHECKING HORN, HEADLIGHT FLASHERS AND HAZARD WARNING SYSTEM

HORN

Check function.

NOTE: In the case of twin-tone fanfares, make sure that both fanfares are working properly.

HEADLIGHT FLASHER

Activate headlight flashers, check high-beam headlights and blue indicator lamp in instrument cluster for correct operation.

HAZARD WARNING SYSTEM

Check function.

NOTE: After consultation with the customer, rectify faults and issue a separate invoice.

00 00 ... CHECKING INSTRUMENT AND INDICATION FIELD LIGHTING, HEATER BLOWER

INSTRUMENT LIGHTING

Check function of instrument and indicator/warning lamps.

INDICATION FIELD LIGHTING

Check function of light switches; dimmer; controls; heater/air conditioning; rear window demister; radio; (depending on equipment) on-board computer; power windows; electric sunroof; fog lamp.

HEATER

Check function of all blower stages, air distribution and air outlet.

NOTE: After consultation with the customer, rectify faults and issue a separate invoice.

00 00 ... CHECKING LIGHTING SYSTEM

- Check lighting system for correct operation:
 - Check headlights, rear lights and associated telltale/indicator lamps
 - Check headlight adjustment
 - Check side lights, parking lights, dipped-beam and main-beam headlights for correct operation
 - Check headlight flasher for correct operation
 - Check signal horn
 - Check left/right direction indicators and hazard warning system for correct operation
 - Check brake lights for correct operation
 - Check reversing lights and license plate lights for correct operation

- Check front and rear fog lights for correct operation
- Check interior lights (assembly: interior lights, footwell lights, luggage compartment lights, glovebox light) for correct operation
- Check instrument and indication field lighting

00 00 ... CHECKING ROADWORTHINESS (TEST DRIVE)

- Checking roadworthiness
 - Take vehicle for a test drive, checking service and parking brakes in the process
 - For vehicles with rear disc brakes, **adjust parking brake as instructed** see **34 41 006 ADJUSTING PARKING BRAKE** .
 - **Check function of parking brake** , see **34 00 012 PARKING BRAKE FUNCTION CHECK** .
 - Check steering for play, ease of movement and directional stability
 - Check clutch for problem-free disengagement and non-spasmodic driving off at normal operating temperature
 - Check function of all drive positions and driving programs in cars with automatic transmissions
 - Visually inspect shock absorbers for leaks
 - Check indicator/warning lamps and Check Control system for correct operation
 - Check due date for statutory roadworthiness and exhaust emission tests and advise customer of test dates

00 00 ... DIAGNOSTIC BRIEF TEST

Connect diagnostic system to OBD socket.

Switch on ignition.

Carry out vehicle identification.

Click on Brief test.

The brief test is carried out.

NOTE: For motor vehicle diagnostics, the brief test is essential for evaluating possible stored diagnostic trouble codes. In the brief test, the control units are physically identified in succession and their fault memories read out. If the fault memory has been read out, the faults appear in the "Fault pattern selection" mask in the "Fault memory contents" field. Check identified faults and if necessary rectify these faults after consulting with customer.

00 00 ... INFORMATION/WARNING LABELS

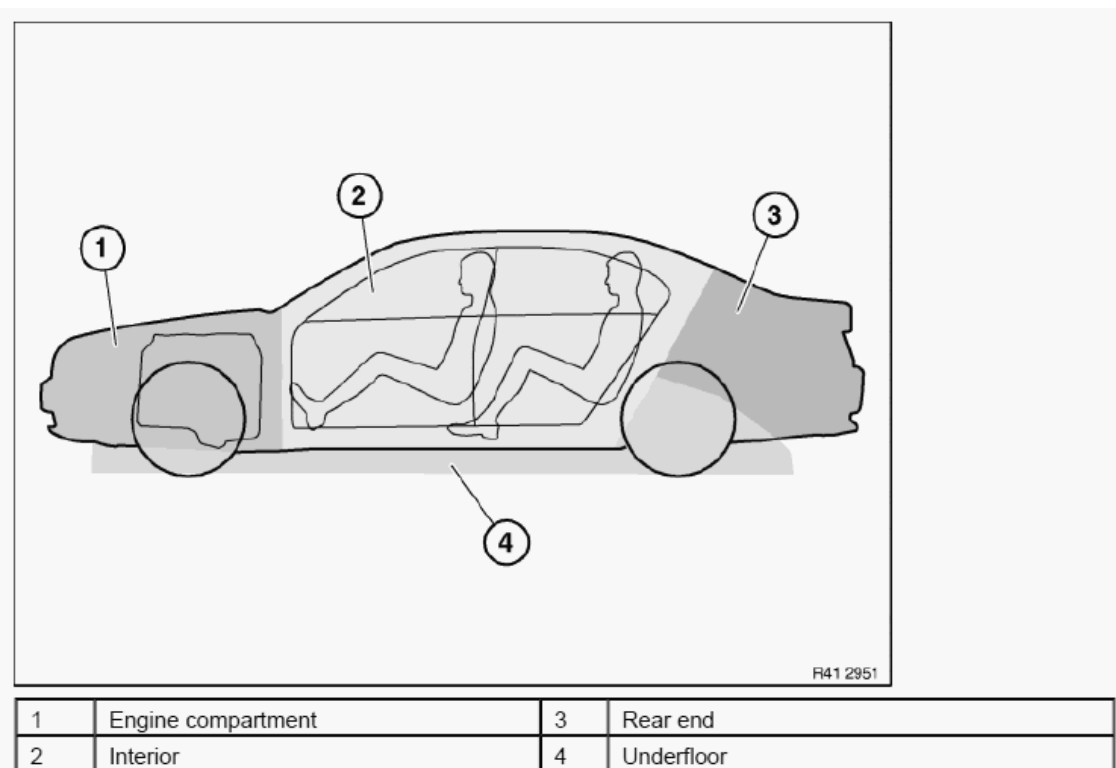


Fig. 11: Identifying Information/Warning Labels Location
 Courtesy of BMW OF NORTH AMERICA, INC.

INFORMATION/WARNING LABELS LOCATION REFERENCE

Location:	Information/warning label:	Country:
Various components	Replacement identification - spare parts-	US, CDN
Various components	Anti-theft protection	US, CDN
Engine compartment (1):		
Battery	Battery sticker	Gulf States
Electronics box cover	High-voltage identification	Worldwide
Headlights/engine compartment	Mercury (xenon headlights)	Worldwide
Engine compartment/raw air snorkel	Aluminium screws/bolts	Worldwide
Cylinder head cover	Ignition coil	Worldwide
Engine compartment/end panel	BMW High Performance Oil	US, not CDN
Engine compartment/end panel	Premair	US
Engine compartment	ICES CDN	CDN
Engine compartment	EC nameplate	Worldwide, not US, CDN, Japan, Australia, Gulf States
Engine compartment/hood/bonnet	Refrigerant	Worldwide
Engine compartment/hood/bonnet	Production date	Australia, Great Britain
Engine compartment/hood/bonnet	Exhaust gas	Australia, US, CDN
Engine compartment/brake	Brake fluid	CDN

booster		
Engine compartment/hood/bonnet	Exterior paint	Worldwide
Engine compartment/hood/bonnet	BMW genuine spare parts	Worldwide
Interior (2):		
Windscreen, top right	Airbag - windscreen	Europe
Windscreen	CCC	China
Windscreen	Vehicle identification number	US, CDN, Gulf States, Great Britain & South Africa
I Drive	A/C menu	US, CDN
Passenger compartment/instrument panel	Airbag, instrument panel	US, CDN
Interior/sun visor	Airbag - sun visor	US, CDN
Steering wheel/speedometer	Top speed -210 km/h- Only with optional equipment and for car rental	Germany
Complete vehicle, bodyshell:		
B-pillar	Airbag symbol (front passenger)	Worldwide (not US and CDN)
B-pillar	Vehicle identification number	Brazil
B-pillar	Manufacturer's certificate	US, CDN, Gulf States
B-pillar	Tyre inflation pressure	Europe, US, CDN, Australia
B-pillar	Runflat indicator	Worldwide
B-pillar	Side airbag	Worldwide
B-pillar	Nameplate	China
Door, driver's side	Towing	Worldwide
Rear end (3):		
Fuel cap/hood/bonnet	Independent heating	Europe
Filling area	Refuelling	US, CDN, Europe
Filling area, instrument cluster (plug)	OBD system	US, CDN
Trim, striker	Nose weight (only with optional equipment)	Worldwide
Trim, cross-member (through-loading)	Lock, through-loading (only with optional equipment)	Worldwide
Luggage compartment cover	Retractable hardtop	Worldwide
Luggage compartment trim panel on side panel	Retractable hardtop	Worldwide
Tool box lid (E60)	HWS fluid	US
Rear lid trim (E61)	HWS fluid	US
Underfloor (4):		
Vehicle jack	Vehicle jack	Australia
Front axle carrier	Airbag (basic setting)	Worldwide
Tension strut with hydro-mount	Do not lash down	Worldwide

Key:

US = United States

CDN= Canada

CCC= Car Communication Computer

OBD= On-Board Diagnosis

00 00 ... MICROENCAPSULATED SCREWS

Screw locking is a means to preventing a screwed connection from being loosened by external influences.

After the screw has been coated with the adhesive, the adhesive remains inactive until it is activated by capsule breakage when the screw is inserted and then cures at room temperature.

Installation:

- Microencapsulated screws (Loctite) must be replaced and may **not** be reused
- Screw connection must be completed within 20 mins. (start of curing)
- Microencapsulated screws must not be retightened
- Thread of nut must be cleaned beforehand in event of repeated use

00 00 ... NOTES ON MANEUVERING IN EVENT OF POWER FAILURE

NOTE: In the event of a power failure or electrical fault, the electromechanical parking brake and the transmission interlock can be manually released.

Observe following sequence:

1. Secure vehicle against rolling, e.g. with chocks.
2. Manually release **electromechanical parking brake** , see 34 41 ... ELECTROMECHANICAL PARKING BRAKE - EMERGENCY RELEASE .
3. Then manually release interlock of automatic transmission, see 24 34 ... MANUAL EMERGENCY RELEASE OF TRANSMISSION LOCK .

00 00 ... RAISING BMW MULTI-TRAILER

CAUTION: Twin-strut underfloor platforms and twin-pillar lifting platforms are suitable for raising the BMW multi-trailer.
Lifting platforms with drive-on surfaces are not suitable for raising in order to carry out maintenance and repair work.

The lifting platform must comply with the relevant statutory accident prevention regulations and be serviced according to the manufacturer's instructions. It is essential to follow the lifting platform operating instructions, in particular the safety instructions and carrying capacity!

Make sure you adhere to the BMW-recommended work area of 5 x 7 m and to an escape route of 0.6 m between two lifting platforms.

Before raising the BMW multi-trailer, please observe the following points:

- Raise the trailer only when it is unloaded
- Remove a supplied loading ramp from the loading ramp frame so that all chassis areas of the BMW multi-trailer are freely accessible
- There must be sufficient clearance between the carrier arms/flat girder bridges and the GFK aprons or the front guard of the BMW multi-trailer
- The BMW multi-trailer must always be positioned in the middle of the lifting platform.

CAUTION: You will need special additional supports for the lifting platform in order to bridge the difference in height between longitudinal member and lower edge of GFK side apron or front guard of the BMW multi-trailer. The minimum height of the additional supports is 145 mm. Use only the additional supports approved by the platform manufacturer or specified in these repair instructions.

You will find appropriate examples in the repair instructions for the majority of lifting platforms present in BMW workshops. For lifting platforms that are not named, the relevant manufacturers will offer you appropriate additional supports. Please contact directly the manufacturer of the lifting platform used in your dealership.

CAUTION: The BMW multi-trailer may only be raised by its longitudinal members. Do not under any circumstances raise the BMW multi-trailer by the GFK aprons. Make sure the additional supports bear the longitudinal members over their entire width and no attachments or wiring harnesses are touched or jammed. Check the securing equipment of the additional supports for correct seating. Under no circumstances should any work be carried out underneath the BMW multi-trailer if it is not adequately secured against slipping off the lifting platform.

The areas (2) on the longitudinal members (1) marked in the adjacent diagram are the best areas for attaching the additional supports.

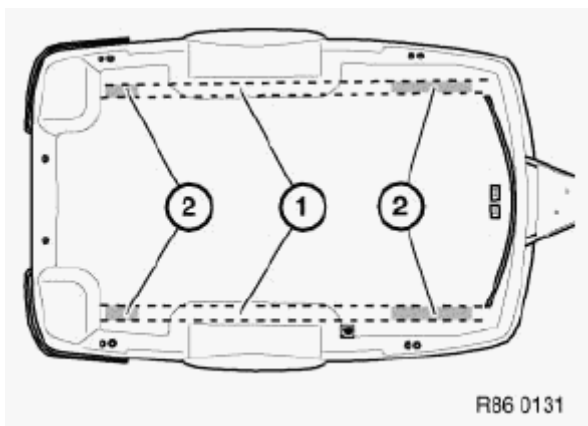


Fig. 12: Identifying Additional Supports Attaching Areas
 Courtesy of BMW OF NORTH AMERICA, INC.

General notes on using twin-pillar lifting platforms

For the twin-pillar lifting platforms described, the BMW multitailer is positioned in the direction of travel on the platform. For lifting platforms which do not create sufficient clearance between disk wheel and carrier arms, move the BMW multitailer against the direction of travel onto the platform.

BECKER & SOHNE TWIN-STRUT UNDERFLOOR PLATFORM

The BMW multi-trailer can only be raised if it is supported at right angles to the direction of travel. For raising, use the high additional supports (1) of Becker & Sohne.

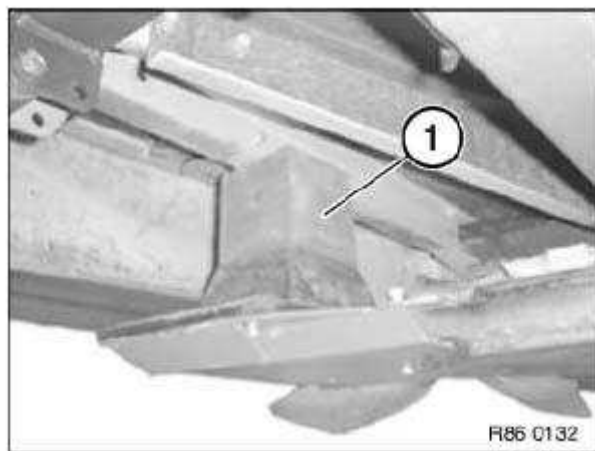


Fig. 13: Identifying Additional Supports Of Becker & Sohne Twin-Pillar Lifting Platforms
 Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Also lash the BMW multi-trailer to the flat girder bridges of the lifting platform. Flag the protruding tow hitch and the drawbar member of the BMW multi-trailer conspicuously so as to prevent injury, e.g. with a red cloth.

MAHA TWIN-PILLAR LIFTING PLATFORM

The BMW multi-trailer can only be raised if you use the support plate attachment sleeves for transporters (1). Position the axle of the BMW multi-trailer in the direction of travel in front of the pillars of the platform in order to obtain the specified lifting ranges and to establish sufficient clearance between disk wheel and carrier arms. The long carrier arms raise the front and the short carrier arms raise the rear of the BMW multi-trailer.

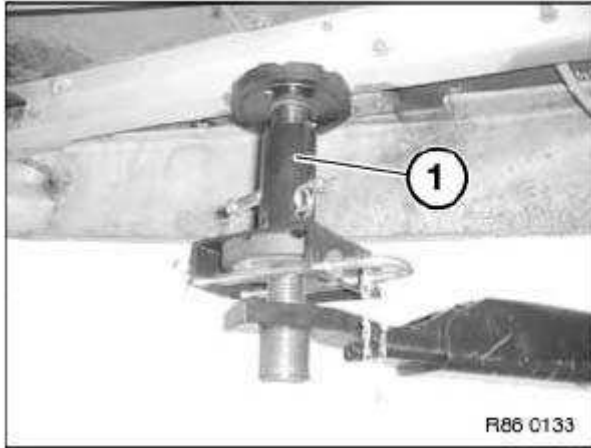


Fig. 14: Identifying MAHA Twin-Pillar Lifting Platform Attachments
Courtesy of BMW OF NORTH AMERICA, INC.

ROMAICO-LIFT TWIN-PILLAR LIFTING PLATFORM

The BMW multi-trailer can only be raised if you use the 146 mm high attachments (1). Position the axle of the BMW multi-trailer in the direction of travel in front of the pillars of the platform in order to obtain the specified lifting ranges and to establish sufficient clearance between disk wheel and carrier arms. The long carrier arms raise the front and the short carrier arms raise the rear of the BMW multi-trailer.

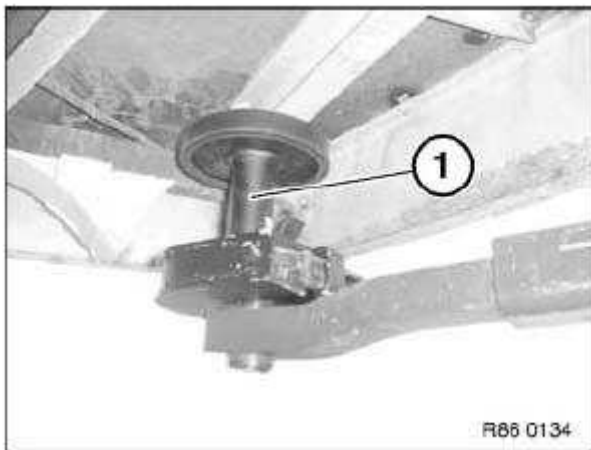


Fig. 15: Identifying Romaico-Lift Twin-Pillar Lifting Platform Attachments
Courtesy of BMW OF NORTH AMERICA, INC.

WORKING PIT

The BMW multi-trailer can be serviced or repaired in conjunction with a working pit if the following measures are taken into consideration. The BMW multi-trailer must be secured against slipping/tilting sideways. The drawbar jockey wheel must be firmly secured against rolling.

00 00 ... SEAT BELTS: CHECKING CONDITION OF BELT STRAP, FUNCTION OF INERTIA REEL MECHANISM, LOCKING REEL, BELT BUCKLE

BELT STRAP, RETRACTOR MECHANISM, BELT INTERLOCK

Pull out strap and make sure it emerges without jerking.

Check belt strap for

- folding
- unraveling
- pinches
- cracks and tears
- traces of melting
- clip as retractor lock

Retract belt strap; here the inertia reel mechanism must retract the strap automatically and without squeaking noises, the last section of the strap may have to be fed in.

Pull out belt strap in short tugs - locking reel must lock.

BELT BUCKLE

The tongue on the belt strap must easily snap into place with an audible click.

When the "Press" button is pressed, the tongue must be ejected from the buckle under spring pressure.

NOTE: If the seat belt is damaged, you must replace the seat belt completely after consulting the customer; issue a separate invoice for this work.
Instructions on how to proceed, refer to 72 11 .. CHECKING AUTOMATIC SAFETY BELT .

00 00 ... STEERING COMPONENTS: CHECKING FOR ZERO CLEARANCE, LEAKS, DAMAGE AND WEAR

CHECKING PLAY

- For hydraulically assisted steering systems, the engine must be running

- For electrically assisted steering systems, the ignition must be on

- Steering wheel:

Move steering wheel back and forth and check for play

- Tie rod joint:

There must no clearance between tie rod arm (2) and tie rod joint (1).

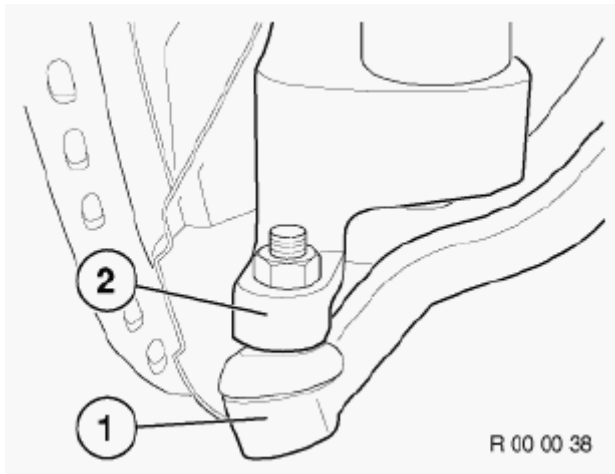
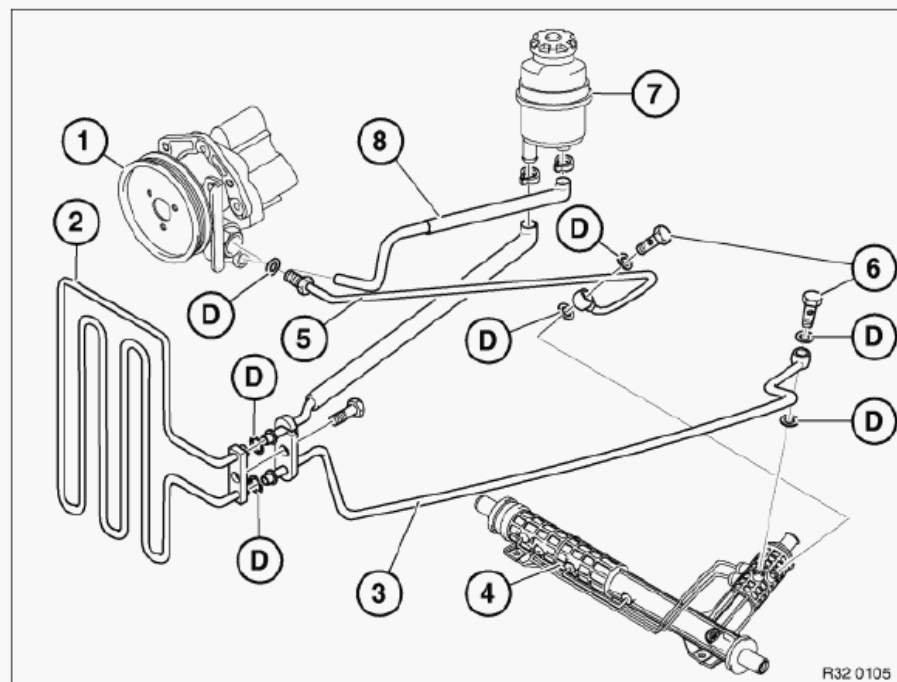


Fig. 16: Identifying Clearance Between Tie Rod Arm And Tie Rod Joint
Courtesy of BMW OF NORTH AMERICA, INC.

CHECKING FOR LEAKS

The following illustration shows the arrangement of the power steering components and lines.



1	Pump	6	Hollow screw
2	Power steering cooler	7	Container
3	Return line	8	Suction hose
4	Steering gear	D	Sealing ring
5	Pressure line		

Fig. 17: Identifying Power Steering Components And Lines
Courtesy of BMW OF NORTH AMERICA, INC.

Check all visible connections, hoses, lines and steering gear for traces of fluid.

CHECKING FOR DAMAGE AND WEAR

Check gaiters, flexible disc and axle and tie rod sleeves for damage (e.g. cracks, holes), for leaks or missing clamping bands on gaiters.

00 00 ... STEERING FLUID RESERVOIR: CHECK OIL LEVEL

IMPORTANT: Adhere to the utmost cleanliness. Do not allow any dirt to enter the hydraulic system.

Using contaminated equipment to add fluid may introduce dirt particles into the fluid reservoir and significantly reduce the service life of the power steering system. Do not use any filler funnels or similar!

VISUAL INSPECTION AND LEAK TEST

Check connections, hoses and steering gear for traces of fluid.

CHECKING FLUID LEVEL

Check fluid level with engine switched off at expansion tank of power steering/ride-height control system. The fluid temperature should be approx. 20°C here.

Ensure that the cap is fully screwed in prior to the fill level check.

If necessary, add hydraulic fluid (refer to Service Information Operating Fluids) up to Max. marking (1).

IMPORTANT: If the fluid level has dropped to the Min. marking (2), you must check the power steering and ride-height control for leaks and issue a separate invoice for this work.

It is not enough merely to top up the fluid.

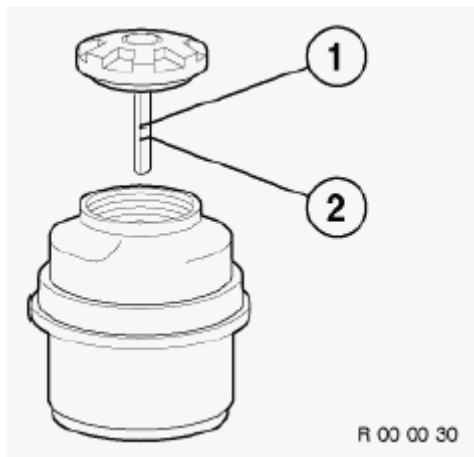


Fig. 18: Identifying Fluid Level Max. And Min. Marks
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: To avoid mix-ups when filling with hydraulic fluid, mark the fluid reservoirs or their caps with identification marks.

ATF Automatic transmission fluid

CHF Pentosin CHF 11 S

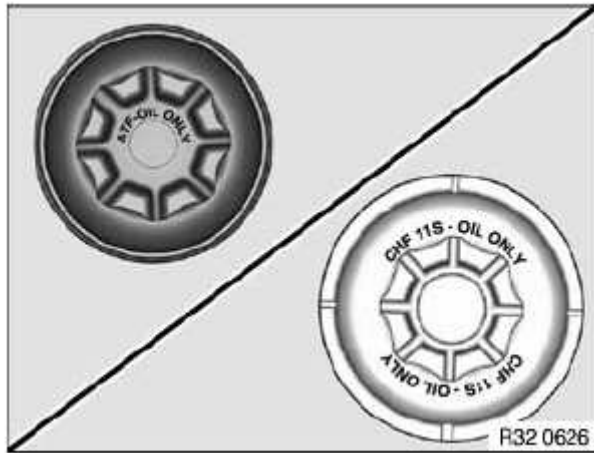


Fig. 19: Identifying Fluid Reservoirs Caps With Identification Marks
 Courtesy of BMW OF NORTH AMERICA, INC.

00 00 ... TIRES: CHECKING INFLATION PRESSURE, CORRECTING IF NECESSARY (INCL. SPARE WHEEL), CHECKING EXTERNAL CONDITION, TREAD DEPTH, PATTERN

o Checking tire inflation pressure:

- Check tire inflation pressure in accordance with information plate on B-pillar
- The inflation pressure in the spare wheel must be 0.5 bar higher than the maximum specified value on the information plate
- Initialize **Run Flat Indicator** , see **36 11 000 INITIALIZING RUN FLAT INDICATOR (RPA)** .

o Checking tire condition:

- Check tread depth of all tires with tire tread gauge
- Check tire tread surfaces and side walls for incisions and foreign particles such as nails or screws
- Check tire tread pattern for localized flattening and wear on one side; if necessary, carry out wheel/chassis alignment after consulting with customer and issue a separate invoice for this work

NOTE:

- For details of approved wheel-tire combinations, refer to KSD CD.
- For reasons of driving safety, only use tires of the same type and tread pattern on a single vehicle
- Inform customer of any incorrect or worn tires

00 00 ... UNDERBODY INCL. ALL VISIBLE COMPONENTS: CHECKING FOR DAMAGE, LEAKS, CORROSION

- o Visually inspect underbody:

- For leaks (transmission, fuel system, brake components, steering)
- For correct routing of electrical leads (brake pad sensor, pulse generator)
- For leaks (shock absorber) and mounting (springs) - rebound
- Damage to underbody
- Corrosion on underbody

IMPORTANT: If damage to the underbody is identified:

- If necessary, remove panels from underbody.
- Check mountings and fixtures and brake and fuel lines for damage and correct installation position.

Rectify identified faults after consulting with customer and issue a separate invoice.

00 00 ... UPKEEP MEASURES FOR STORED VEHICLES (NEW AND USED CARS) AND VEHICLES TO BE LAID UP AT CUSTOMER'S PREMISES

VEHICLES IMPLEMENTATION REFERENCE

Measure	Vehicles	Implementation
Renew outer skin preservation (new cars must always be stored in preserved condition; preservation/depreservation instructions, refer to Component Group 97)	New cars	every 6 months; Tropical countries every 4 months
Release parking brake	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Engage gear or selector lever position "P" for automatic	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Check covering of interior equipment	New cars	in general
Increase tire inflation pressure to 3.5 bar	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to	in general

	customer)	
If battery master switch is fitted, switch off	New cars	in general
Charge battery	New cars	every 6 weeks batteries disconnected from vehicle electrical system every 12 weeks in general before handover to customer
	Used cars	every 6 weeks batteries disconnected from vehicle electrical system every 12 weeks
	Customer cars to be laid up (instructions to customer)	every 6 weeks batteries disconnected from vehicle electrical system every 12 weeks
Change brake fluid and reset service interval indicator (clock symbol only)	New cars	lay-up periods > 6 months, change before handover of vehicle to customer
	Used cars	lay-up periods > 6 months, change before handover of vehicle to customer
Check convertible top for possible damage	New cars	in general before handover to customer
	Used cars	in general before handover to customer
Park convertibles, if possible, under a roof	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Check for damage to paintwork and exterior/interior equipment	New cars	in general before handover to customer
	Used cars	in general before handover to customer
Change engine oil and oil filter when engine is at normal operating temperature	New cars	from 12 months lay-up period before handover of vehicle to customer
	Used cars	from 12 months lay-up period before handover of vehicle to customer
	Customer cars to be laid up (instructions to customer)	from 12 months lay-up period before handover of vehicle to customer

Check coolant concentrate	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Apply hand and foot brakes when dry	New cars	in general
	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Perform surface protection: Vehicle washing with inside cleaning and subsequent preservation of paintwork and chrome. Clean rubber seals on hoods/bonnets, rear lids and doors and apply talc or glycerine. Perform cleaning, preservation and subsequent treatment of engine, engine compartment, underbody, axles and assemblies with BMW-approved materials.	Used cars	in general
	Customer cars to be laid up (instructions to customer)	in general
Switch on A/C system once a month for 10 minutes	Used cars	necessary in order to retain full operational capability of gaskets and expansion valve (omitted in case of R134a refrigerant, identified by rating plate in engine compartment)
	Customer cars to be laid up (instructions to customer)	necessary in order to retain full operational capability of gaskets and expansion valve (omitted in case of R134a refrigerant, identified by rating plate in engine compartment)

- 00 00 ... WINDSCREEN WASHER SYSTEM: CHECKING FLUID LEVEL, TOPPING UP IF NECESSARY
- Top up windscreen washer fluid reservoir, if necessary rear window washer fluid reservoir and (depending on equipment specification) intensive cleaning reservoir up to edge or mark.

IMPORTANT:

A ph-neutral BMW window cleaning agent (antifreeze in winter) must always be added to the water.
- 00 00 005 INTERROGATING FAULT MEMORIES IN DIAGNOSIS SYSTEM
- Connect diagnostic system to OBD socket.

Switch on ignition.

Carry out vehicle identification.

Click on Brief test.

The brief test is carried out.

NOTE: For motor vehicle diagnostics, the brief test is essential for evaluating possible stored diagnostic trouble codes. In the brief test, the control units are physically identified in succession and their fault memories read out. If the fault memory has been read out, the faults appear in the "Fault pattern selection" mask in the "Fault memory contents" field.

00 00 105 STANDARD SCOPE OF SERVICE

- Standard scope of service
 - **Diagnosis brief test** (US only), see 00 00 ... Diagnostic brief test.
 - Check Control messages
 - Check telltale and warning lamps

00 00 555 INTERROGATING FAULT MEMORIES IN DIAGNOSIS SYSTEM

Connect diagnostic system to OBD socket.

Switch on ignition.

Carry out vehicle identification.

Click on Brief test.

The brief test is carried out.

NOTE: For motor vehicle diagnostics, the brief test is essential for evaluating possible stored diagnostic trouble codes. In the brief test, the control units are physically identified in succession and their fault memories read out. If the fault memory has been read out, the faults appear in the "Fault pattern selection" mask in the "Fault memory contents" field.

00 00 602 SERVICE - INTAKE MUFFLER

- Change **air cleaner element in accordance with** repair instructions, see 13 72 002 REPLACING BOTH AIR FILTER ELEMENTS (N63) .

00 00 610 SERVICE - ENGINE OIL (PETROL/GASOLINE VEHICLES FROM 03/2009)

- **Service - engine oil**
- Change **engine oil and oil filter** , see 11 00 ... SERVICE - ENGINE OIL (N63) .
- **Hand parking brake** , see 34 41 006 ADJUSTING PARKING BRAKE .
 - Brake in and check for correct function
- Air conditioning or automatic air conditioning
 - Change **microfilter for interior ventilation** , see 64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION .
 - If necessary, change **microfilter for recirculated air** , see 64 31 017 REPLACING RECIRCULATED AIR MICROFILTER .
- At every 2nd engine oil change
 - Replace **spark plugs** , see 12 12 011 REPLACING ALL SPARK PLUGS (N53, N54, N63) .
 - **Intake silencer: change air filter element** . Shorten intervals accordingly for vehicles operated in dusty regions, see 13 72 002 REPLACING BOTH AIR FILTER ELEMENTS (N63) .

00 00 610 SERVICE - ENGINE OIL (PETROL/GASOLINE VEHICLES FROM 10/2008 TO 02/2009)

- **Service - engine oil**
 - Change **engine oil and oil filter** , see 11 00 ... SERVICE - ENGINE OIL (N63) .
 - **Hand parking brake** , see 34 41 006 ADJUSTING PARKING BRAKE .
 - Brake in and check for correct function
 - air conditioning or automatic air conditioning
 - Change **microfilter for interior ventilation** , see 64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION .
 - If necessary, **change microfilter for recirculated air** , see 64 31 017 REPLACING RECIRCULATED AIR MICROFILTER .
- At every 2nd engine oil change
 - Replace **spark plugs** , see 12 12 011 REPLACING ALL SPARK PLUGS (N53, N54, N63) .
- At every 3rd engine oil change
 - **Intake silencer: change air filter element** . Shorten intervals accordingly for vehicles operated in dusty regions, see 13 72 002 REPLACING BOTH AIR FILTER ELEMENTS (N63) .

00 00 610 SERVICE - ENGINE OIL (PETROL/GASOLINE VEHICLES UP TO 09/2008)

- **Service - engine oil**
- Change **engine oil and oil filter** , see 11 00 ... SERVICE - ENGINE OIL (N63) .

- **Hand parking brake** , see **34 41 006 ADJUSTING PARKING BRAKE** .
 - Brake in and check for correct function
- **Air conditioning or automatic air conditioning**
 - Change **microfilter for interior ventilation** , see **64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION** .
 - Change **microfilter for recirculated air** , see **64 31 017 REPLACING RECIRCULATED AIR MICROFILTER** .
- **At every 3rd engine oil change**
 - **Intake silencer: change air filter element** . Shorten intervals accordingly for vehicles operated in dusty regions, see **13 72 002 REPLACING BOTH AIR FILTER ELEMENTS (N63)** .
 - Replace **spark plugs** , see **12 12 011 REPLACING ALL SPARK PLUGS (N53, N54, N63)** .

00 00 612 SERVICE - FRONT BRAKES

- **Service - front brakes**
- **Change brake pads** , clean brake air ducts, see **34 11 000 REMOVING AND INSTALLING/REPLACING BRAKE PADS ON BOTH DISC BRAKES (2 PISTONS)** or **34 11 000 REMOVING AND INSTALLING/REPLACING BRAKE PADS ON BOTH FRONT DISC BRAKES (19-INCH)**
- **Brake discs** , see **34 11 220 REMOVING AND INSTALLING/REPLACING BOTH FRONT BRAKE DISCS**
 - Check surface and thickness
 - If necessary: Replace

NOTE:

- **Clean brake air ducts.**
- **Replace brake discs** if they are below the minimum brake disc thickness and if scoring, heat cracks or thickness difference are detected, see **34 11 FRONT BRAKE E71** .
- **Apply a thin coat of grease** to wheel centering on light alloy wheels, refer to **Service Information Operating Fluids**.
- **Issue a separate invoice** for replacing the brake discs.

00 00 614 SERVICE - REAR BRAKES

- **Service - rear brakes**
- **Change brake pads** , clean brake air ducts, refer to **34 21 200 REMOVING AND INSTALLING OR REPLACING BRAKE PADS ON BOTH REAR DISC BRAKES (TEVES FLOATING CALIPER)**
- **Brake discs** , refer to **34 21 320 REMOVING AND INSTALLING OR REPLACING BOTH REAR BRAKE DISCS**
 - Check surfaces and thickness.

- If necessary: Replace
- **Handbrake** , refer to **34 41 220 REMOVING AND INSTALLING/REPLACING ALL HANDBRAKE SHOES**
 - Check condition, brake lining thickness and function
 - If necessary: Replace

NOTE:

- **Clean brake air ducts.**
- **Replace brake disks if they drop below minimum thickness (refer to 34 21 REAR BRAKE DISCS E71) and in event of scoring, heat cracks or thickness difference.**
- **Apply a thin coat of grease to wheel centering on light alloy wheels, refer to Service Information Operating Fluids.**
- **Issue a separate invoice for replacing the brake discs and handbrake shoes.**

00 00 616 SERVICE - MICROFILTER

- **Service - microfilter**
- **Heating/air conditioning: change microfilter/carbon canister** , see **64 31 011 REPLACING MICROFILTER FOR INTERIOR VENTILATION** or **64 31 017 REPLACING RECIRCULATED AIR MICROFILTER** .

00 00 618 SERVICE - BRAKE FLUID

- **Service - brake fluid**
- **Changing brake fluid** , see **34 00 025 REPLACING FLUID IN ABS/ASC+T BRAKE SYSTEM** .

IMPORTANT: Read and comply with general notes and information on brakes

00 00 624 SERVICE - VEHICLE CHECK

- **Service - vehicle check**
- **Diagnosis brief test** (not US), see **00 00 ... Diagnostic brief test**.
- **Check horn, headlight flashers and hazard warning system** , see **00 00 ... Checking horn, headlight flashers and hazard warning system**.
- **Check instrument and indication field lighting and heater blower** , see **00 00 ... Checking instrument and indication field lighting, heater blower**.
- **Check lighting system** , see **00 00 ... Checking lighting system**.
- **Seat belts:** check condition of belt strap, function of inertia reel mechanism, locking reel and belt buckle, see **00 00 ... Seat belts: checking condition of belt strap, function of inertia reel mechanism, locking**

reel, belt buckle.

- Check **windscreen wash/wipe system** , see 00 00 ... Check windscreen wash/wipe system.
- **Body: Check for corrosion** (except cavities), see 00 00 ... Body: Check for corrosion (except cavities).
- **Tires:** Check tread depth, pattern, external condition and inflation pressure and correct if necessary (compact wheel as well), see 00 00 ... Tires: checking inflation pressure, correcting if necessary (incl. spare wheel), checking external condition, tread depth, pattern.
- Initialize **Run Flat Indicator** , see RUN FLAT INDICATOR : ALL MODELS .
- Check **battery** (magic eye), if necessary recharge battery (issuing a separate invoice for this work), see 00 00 ... Battery: Checking display. If necessary, recharge battery.
 - Check display (magic eye)
 - If necessary: Charge battery
- **Steering fluid reservoir** : Check fluid level, see 00 00 ... Steering fluid reservoir: Check oil level.
- Check **coolant level and concentration** , top up if necessary, see 00 00 ... Checking coolant level and concentration, correcting if necessary.
- **Windscreen washer system:** Check fluid level, top up if necessary, see 00 00 ... Windscreen washer system: checking fluid level, topping up if necessary.
- **Brake lines and connections:** Check for leaks, damage and correct position, see 00 00 ... Brake lines and connections: visual inspection for leaks, damage and correct position.
- **Underbody incl. all visible components:** check for damage, leaks, corrosion, see 00 00 ... Underbody incl. all visible components: checking for damage, leaks, corrosion.
- **Steering components:** check for zero clearance, leaks, damage and wear, see 00 00 ... Steering components: checking for zero clearance, leaks, damage and wear.
- Check **roadworthiness** (test drive);, see 00 00 ... Checking roadworthiness (test drive).
 - Brakes
 - Steering
 - Shock absorbers
 - Transmission

00 11 259 CHANGING OIL IN REAR DIFFERENTIAL (DYNAMIC PERFORMANCE CONTROL) AND DISPOSING OF USED OIL

NOTE: The rear differential has three oil chambers. The outer chambers (1, 3) contain the oil "SAF carbon mod", but with different filling capacities. The middle chamber (2) contains the "SAF XO Burmah Castrol" oil (refer to Operating Fluids). The oils will mix if the rear differential is subject to a change in position in excess of 45°.

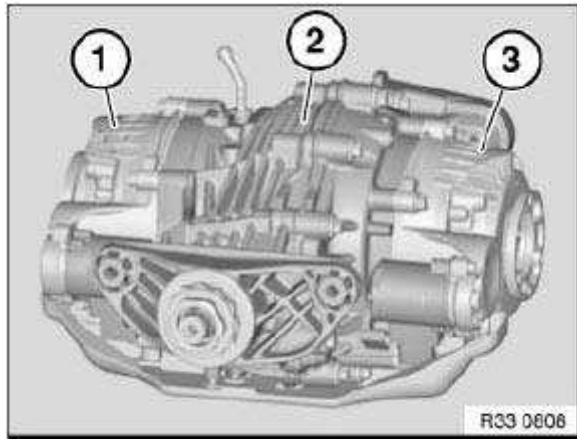


Fig. 20: Identifying Outer Chambers And Middle Chamber
 Courtesy of BMW OF NORTH AMERICA, INC.

WARNING: Risk of burning if exhaust system is touched! See DANGER OF POISONING.
 if oil is ingested/absorbed through the skin!
RISK OF INJURY if oil comes into contact with eyes and skin!

NOTE: Only change oil when rear differential is at normal operating temperature.

Recycling:

Catch and dispose of escaping rear differential oils.

Observe country-specific waste-disposal regulations

Place oil collecting apparatus underneath.

Open oil drain plugs (1).

Drain and dispose of rear differential oils.

Replace oil drain plugs (1).

Tightening torque 33 11 3AZ . See 33 11 REAR DIFFERENTIAL CASE WITH COVER .

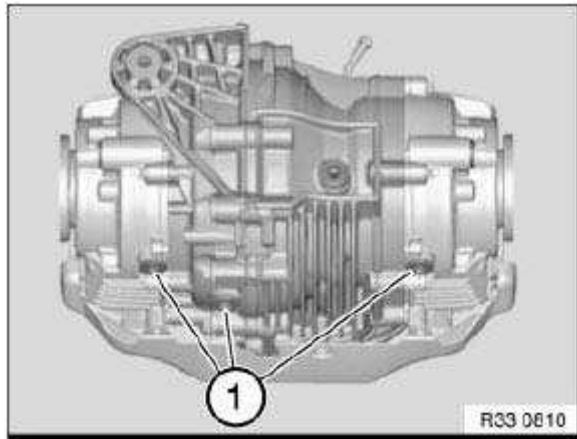


Fig. 21: Identifying Oil Drain Plugs

Courtesy of BMW OF NORTH AMERICA, INC.

Open oil filler plugs (1) and pour in "SAF carbon mod " up to lower edge of opening for oil filler plugs (1).

Open oil filler plug (2) and pour in "SAF XO Burmah Castrol " up to lower edge of opening for oil filler plug (2).

Replace oil filler plugs (1, 2).

Tightening torque 33 11 3AZ . See **33 11 REAR DIFFERENTIAL CASE WITH COVER** .

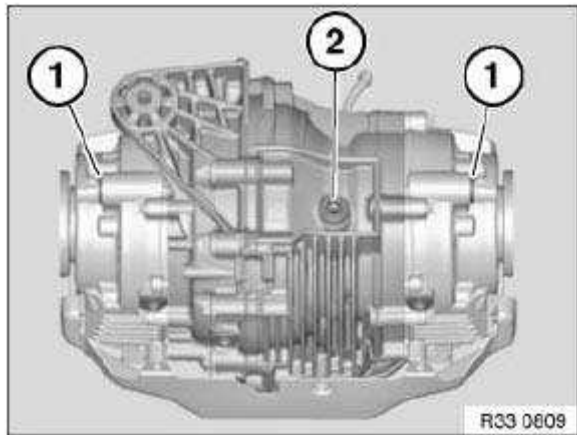


Fig. 22: Identifying Oil Filler Plugs

Courtesy of BMW OF NORTH AMERICA, INC.

00 11 500 CHECKING/TOPPING UP FLUID LEVEL IN AUTOMATIC TRANSMISSION (GA6HP19Z)

IMPORTANT: Use only the approved transmission fluid .

Failure to comply with this requirement will result in serious damage to the

automatic transmission!

Installation:

Tighten down filler plug using

1. Hexagon wrench 8 A/F
2. torque wrench
3. Socket 8 A/F

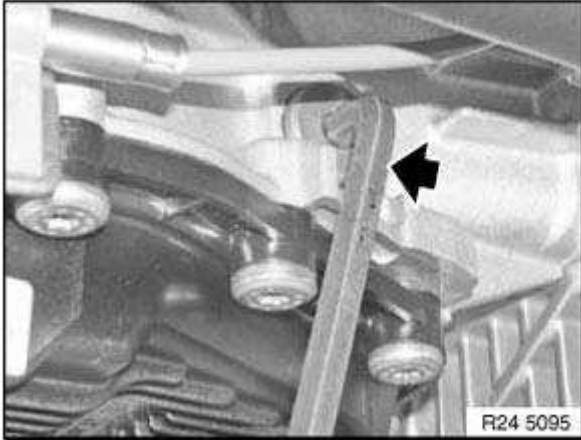


Fig. 23: Tightening Filler Plug

Courtesy of BMW OF NORTH AMERICA, INC.

TOPPING UP TRANSMISSION FLUID AFTER A REPAIR

Stand vehicle on a level surface and secure against rolling off. Undo filler plug (1).

Installation

Replace sealing ring.

Top up transmission fluid until it emerges from filling orifice.

Start engine.

Replenish transmission fluid until it emerges from filling orifice.

Screw in filler plug (1).

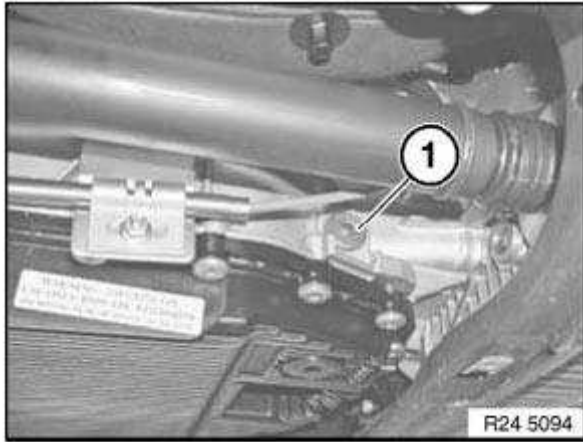


Fig. 24: Identifying Oil Filler Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Tightening torque: **24 11 7AZ** . See **33 11 REAR DIFFERENTIAL CASE WITH COVER** **24 11 TRANSMISSION HOUSING, TRANSMISSION OIL SUMP** .

Press brake pedal to floor and shift through all gears several times at idle speed. Then shift to "P" position (Park).

Then check fluid level.

CHECKING FLUID LEVEL

- Call up Service functions (Drive) in BMW diagnosis system
- Carry out fluid level check in accordance with instructions

32 31 ... NORMALIZATION OF ELECTRIC STEERING COLUMN ADJUSTMENT

NOTE: **Normalization must be carried out after the following work:**

- Removal or replacement of control panel in heater-A/C system or of steering column
- Repair work to electric steering column adjustment
- Coding/programming of IHKA control unit

Normalization of electric steering column adjustment is possible via the diagnosis system under the following path:

- Diagnosis
- Function selection
- Service functions
- Chassis

- Electric steering column adjustment



Fig. 25: Identifying CBS Reset With Diagnosis System
 Courtesy of BMW OF NORTH AMERICA, INC.

61 00 ... NOTES ON HANDLING WIRING HARNESSSES AND CABLES

IN GENERAL

To avoid damage, observe the following instructions:

- Avoid compressive and tensile loads
- Make sure cables are laid without kinks or abrasions
- Ensure non-contacting routing at sharp-edged body parts; use muckets if necessary
- Secure additionally laid cables/leads with cable ties

IN ADDITION

Shielded cables (coaxial cables):

IMPORTANT: Shielded cables must not be repaired!

- This may lead to indifferences in noise radiation and interference immunity at contact points in the shield
- To satisfy the requirements of the type approval, it is essential to replace shielded cables completely

Fibre-optic cables:

NOTE: **Fibre-optic cables are colored differently as follows:**

- Green = **MOST** (**M**edia **O**riented **S**ystems **T**ransport) fibreoptic cables
- Yellow = **ISIS** (**I**ntegrated **S**ervice **I**nformation **S**erver) fibreoptic cables

- Orange=repair fibre-optic cables

- IMPORTANT:**
- Fibre-optic cables are permitted to show only one junction point (bridge), replace fibre-optic cables if necessary
 - Smallest permissible bending radius is 25 mm
 - Avoid effects of heat > or = 85°

Treating cables and fibre-optic cables , see 61 13 ... TREATING CABLES AND FIBRE-OPTIC CABLES .

FlexRay:

It is possible to repair the FlexRay. In the event of damage, the cables can be joined with conventional, see **butt connectors** 61 13 ... BUTT CONNECTOR FOR REPAIRING A PLUG CONNECTION .

- NOTE:**
- The cable is a twisted cable. If possible, maintain twisted cable after repair.

Airbag cables:

Repairing airbag cables , see 61 00 ... REPAIRING AIRBAG CABLES .

Ribbon cables:

Repairing ribbon cables , see 61 13 ... REPAIRING RIBBON CABLES .

86 10 ... POSITIONING OF MULTITRAILER HOOD FOR MAINTENANCE AND REPAIR WORK

- IMPORTANT:** At least two persons are needed to install and remove the hood from the platform.
- Before installing and removing the hood, secure the BMW multitrailer and the entire combination against rolling. For this purpose, use the parking brake and the chocks of the BMW multitrailer.
- The hood can also be set up and lowered with the aid of the universal lift available from BMW in conjunction with the roof racks and the hood adapter. Under no circumstances should work of any kind be carried out below the suspended hood.

For maintenance and repair work, raise the hood using a lifting platform. Twin-column lifting platforms, body lifting platforms and twin-stamp underfloor platforms are suitable. The seating plates and areas of the lifting platform must be adjustable according to the dimensions of **Fig. 26**.

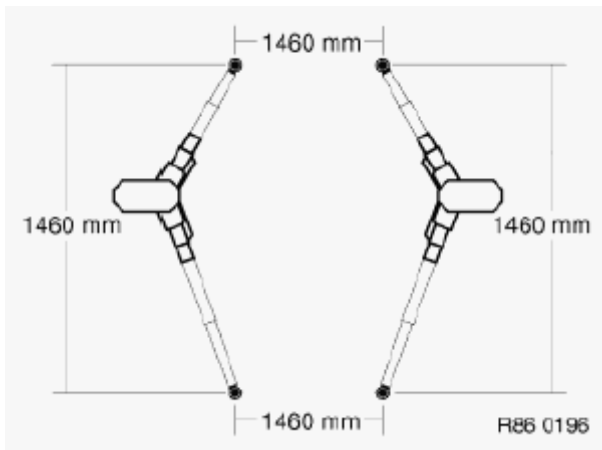


Fig. 26: Identifying Lifting Platform Dimensions
 Courtesy of BMW OF NORTH AMERICA, INC.

The lifting platform must conform to the relevant legal provisions of the accident prevention regulations and be serviced as specified. Comply with the lifting platform operating instructions, in particular the safety instructions and the carrying capacity.

Make sure you adhere to the BMW-recommended work area of 5 x 7 m and to an escape route of 0.6 m between two lifting platforms.

Please comply with the following instructions before raising the hood:

- Raise only when it is unloaded;
- Ensure sufficient clearance between the seating plates/seating areas and the GFP edge of the hood;
- The hood must always be positioned in the middle of the lifting platform.

IMPORTANT: The hood may only be raised at the pin (1). Under no circumstances may the hood be raised at the GFP edge of the hood (2). See Fig. 27. Exclusively for removal of pin (1), raise the hood in the GFP area.

Also refer to:

86 21 ... REMOVING CENTERING PIN FROM MOUNTING BRACKET .

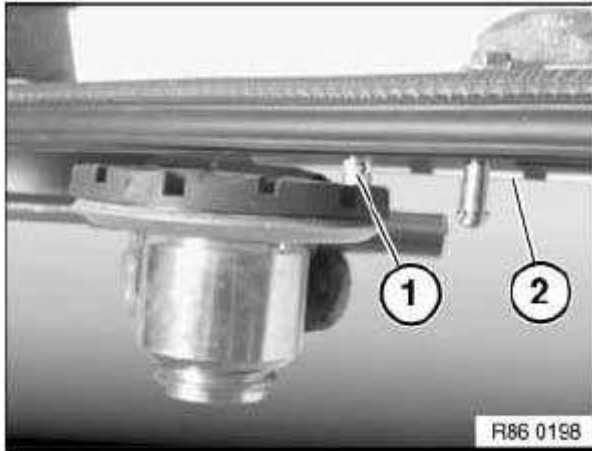


Fig. 27: Identifying Centering Pin And Hood
Courtesy of BMW OF NORTH AMERICA, INC.

GENERAL INFORMATION

Maintenance and General Information - Special Tools - X6

00 0 010 SPECIAL TOOL BOARD I

NOTE: test

Order number: 00 0 010

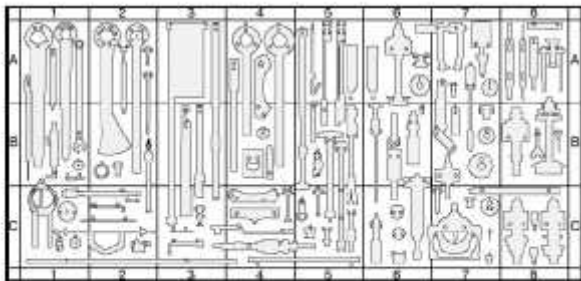
Special tool board I

00 0 011 SPECIAL TOOL BOARD I INCL. MOUNTING FIXTURE, WITHOUT FILM SHEETING

NOTE: Replaced by 00 0 224

Order number: 00 0 011

Special tool board I incl. mounting fixture, without film sheeting



W000 010

Fig. 1: Identifying Special Tool (00 0 011)

Courtesy of BMW OF NORTH AMERICA, INC.

00 0 020 SPECIAL TOOL BOARD II COMPLETE

In conjunction with: 00 0 230 This board can be used in a min. 4 m long moving special tool cabinet.

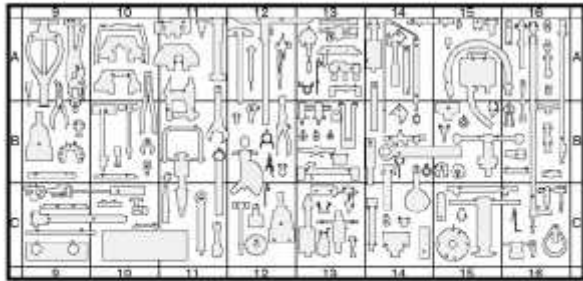
NOTE: Size 2 m x 1 m

Series: All models

Storage location: Tool cabinet

Order number: 00 0 020

Special tool board II complete



W00 0 020

Fig. 2: Identifying Special Tool (00 0 020)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 030 SPECIAL TOOL BOARD III COMPLETE

In conjunction with: 00 0 230 This board can be used in a min. 4 m long moving special tool cabinet.

NOTE: **Size 2 m x 1 m**

Series: All models

Storage location: Tool cabinet

Order number: 00 0 030

Special tool board III complete



W00 0 030

Fig. 3: Identifying Special Tool (00 0 030)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 040 SPECIAL TOOL BOARD IV COMPLETE

In conjunction with: 00 0 230 This board can be used in a min. 4 m long moving special tool cabinet.

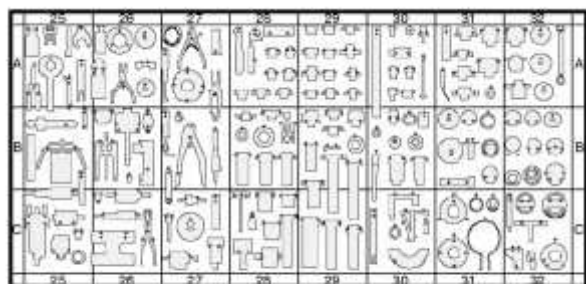
NOTE: **Size 2 m x 1 m**

Series: All models

Storage location: Tool cabinet

Order number: 00 0 040

Special tool board IV complete



W00 0 040

Fig. 4: Identifying Special Tool (00 0 040)
Courtesy of BMW OF NORTH AMERICA, INC.

Consisting of:

3 = 00 0 043 Hook set for films 10, 11 and 12

4 = 00 0 044 Film 10 (left)

NOTE: **For fields A/B/C 25 ... 27**

5 = 00 0 045 Film 11 (centre)

NOTE: **For fields A/B/C 27/28 and 29/30**

6 = 00 0 046 Film 12 (right)

NOTE: **For fields A/B/C 30 ... 32**

00 0 050 CAPTION BOARD: "SPECIAL TOOLS"

NOTE: With film sheet in the desired language - size 2000 mm x 215 mm

Storage location: Tool cabinet

Order number: 00 0 050

Caption board: "SPECIAL TOOLS"



Fig. 5: Identifying Special Tool (00 0 050)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 051 FILM SHEET, GERMAN

Order number: 00 0 051

Film sheet, German



Fig. 6: Identifying Special Tool (00 0 051)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 052 FILM SHEET, ENGLISH

Order number: 00 0 052

Film sheet, English



Fig. 7: Identifying Special Tool (00 0 052)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 053 FILM SHEET, FRENCH

Order number: 00 0 053

Film sheet, French



Fig. 8: Identifying Special Tool (00 0 053)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 054 FILM SHEET, DUTCH

Order number: 00 0 054

Film sheet, Dutch



Fig. 9: Identifying Special Tool (00 0 054)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 055 FILM SHEET, ITALIAN

Order number: 00 0 055

Film sheet, Italian



Fig. 10: Identifying Special Tool (00 0 055)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 056 FILM SHEET, SPANISH

Order number: 00 0 056

Film sheet, Spanish



Fig. 11: Identifying Special Tool (00 0 056)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 059 CAPTION BOARD WITHOUT FILM

Order number: 00 0 059

Caption board without film

00 0 060 SPECIAL TOOL BOARD V COMPLETE

In conjunction with: 00 0 230 This board can be used in a min. 4 m long moving special tool cabinet.

NOTE: **Size 2 m x 1 m**

Series: All models

Storage location: Tool cabinet

Order number: 00 0 060

Special tool board V complete

Consisting of:

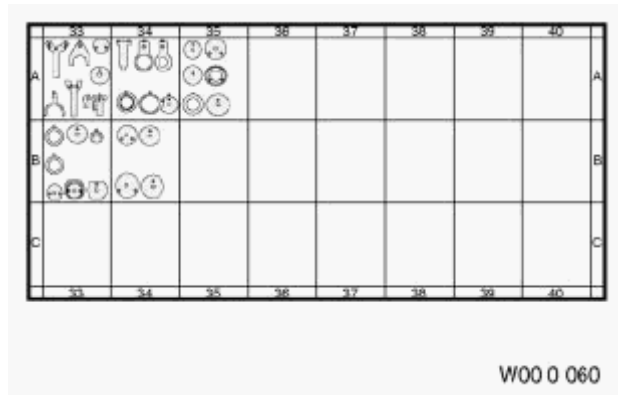


Fig. 12: Identifying Special Tool (00 0 060)
Courtesy of BMW OF NORTH AMERICA, INC.

3 = 00 0 063 Hook set for films 13, 14 and 15

4 = 00 0 064 Film 13 (left)

NOTE: For fields A/B/C 33 ... 35

5 = 00 0 065 Film 14 (centre)

NOTE: For fields A/B/C 35/36 and 37/38

6 = 00 0 066 Film 15 (right)

NOTE: For fields A/B/C 38 ... 40

7 = 00 0 224 Large special tool board 2 m x 1 m

NOTE: This special tool board serves as the back panel of basic and mounting frames and is the basis for large fixed and moving special tool boards.

In conjunction with: Hook set and films

00 0 070 SPECIAL TOOL CABINET, LENGTH 6 M

Order number: 00 0 110

Cardboard box

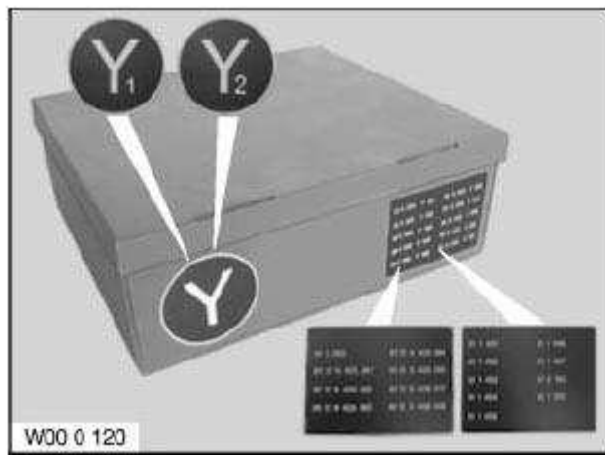


Fig. 14: Identifying Special Tool (00 0 110)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 120 CARDBOARD BOX (SET) FOR CABLE CABINET

NOTE: For storing adapter cables (cable cabinet reconditioning) 2 cardboard boxes are supplied at present: 00 0 121 = storage location Y1 00 0 122 = storage location Y2

SI number: 00 04 04 (104)

Order number: 00 0 120

Cardboard box (set) for cable cabinet

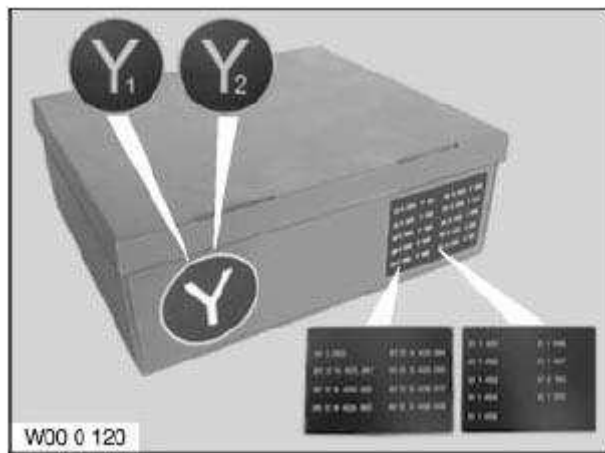


Fig. 15: Identifying Special Tool (00 0 120)
 Courtesy of BMW OF NORTH AMERICA, INC.

Consisting of:

1 = 00 0 121 Cardboard box Y1

NOTE: = storage location for adapter cables

2 = 00 0 122 Cardboard box Y2

NOTE: = storage location for adapter cables

00 0 130 SPECIAL TOOL BOARD VI COMPLETE

In conjunction with: 00 0 230 This board can be used in a min. 4 m long moving special tool cabinet.

NOTE: Storage board for older tools

Series: All models

Order number: 00 0 130

Special tool board VI complete

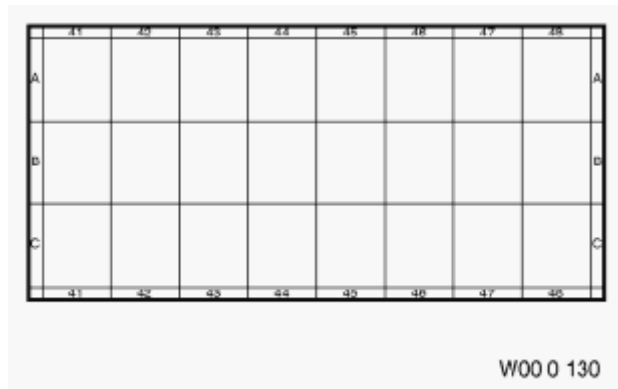


Fig. 16: Identifying Special Tool (00 0 130)
 Courtesy of BMW OF NORTH AMERICA, INC.

00 0 140 SUPPLEMENTARY HOOK SET

NOTE: Only for delivery of the supplementary hook set for converting tool boards (old to new), see also SUPPLEMENTARY HOOK SET 00 8 600

Order number: 00 0 140

Supplementary hook set

00 0 150 SPECIAL TOOL CABINET

NOTE: To accommodate 5 special tool boards. Replaced by 1x 00 0 220 complete plus 1x 00 0 221 and 1x 00 0 224

Order number: 00 0 150

Special tool cabinet

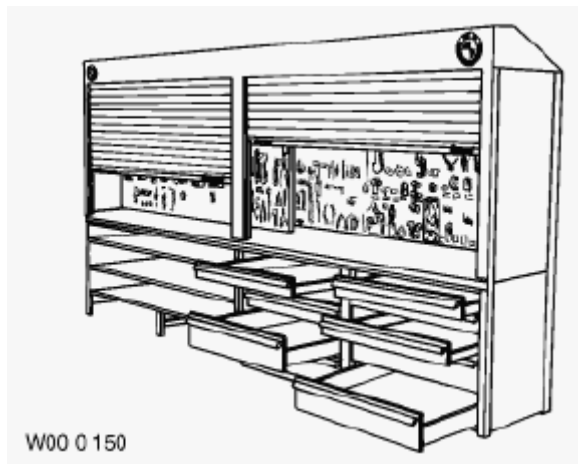


Fig. 17: Identifying Special Tool (00 0 150)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 152 SHELF

Order number: 00 0 152

Shelf

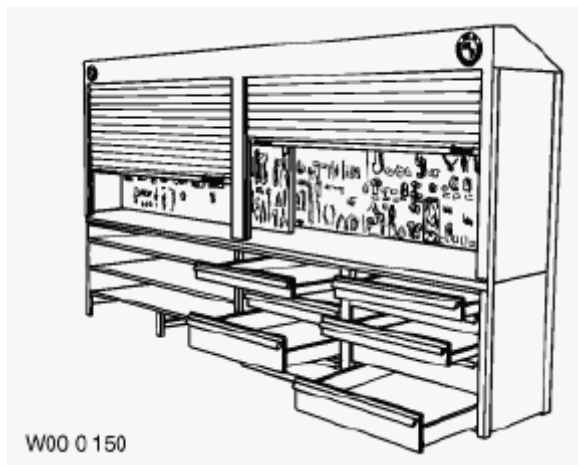


Fig. 18: Identifying Special Tool (00 0 152)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 153 WIDE-GROOVE MAT (2 MATS)

Order number: 00 0 153

Wide-groove mat (2 mats)

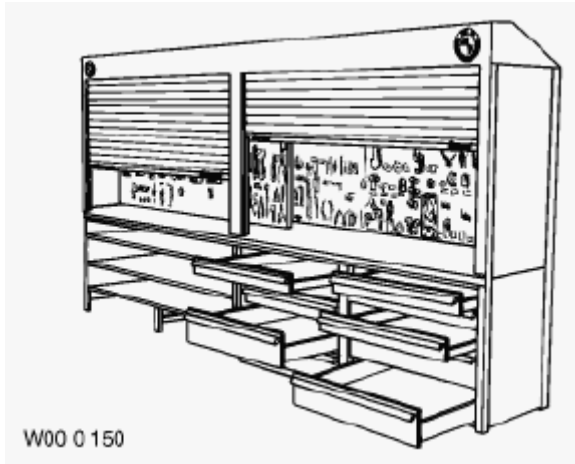


Fig. 19: Identifying Special Tool (00 0 153)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 154 DRAWER UNIT WITH 5 DRAWERS, LOCKABLE

Order number: 00 0 154

Drawer unit with 5 drawers, lockable

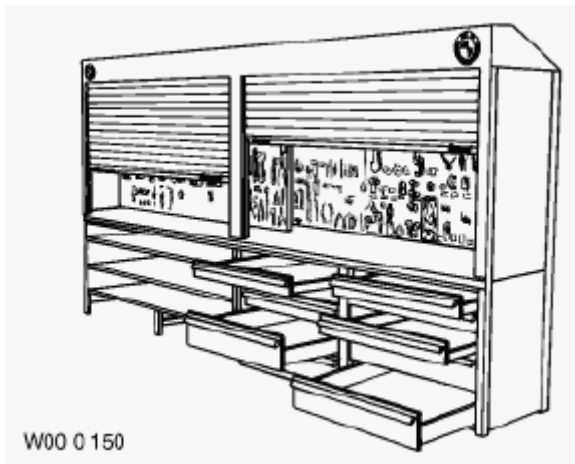


Fig. 20: Identifying Special Tool (00 0 154)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 155 REAR PANEL

Order number: 00 0 155

Rear panel

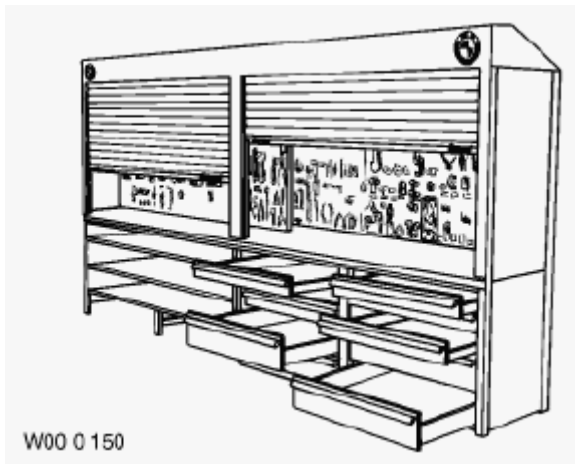


Fig. 21: Identifying Special Tool (00 0 155)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 158 LOCKABLE ROLLER SHUTTER (2)

Order number: 00 0 158

Lockable roller shutter (2)

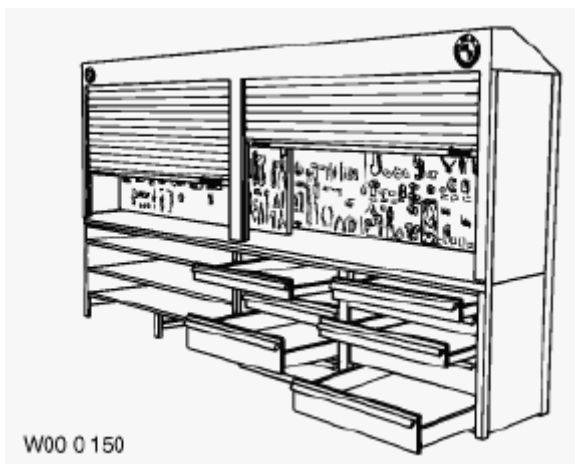


Fig. 22: Identifying Special Tool (00 0 158)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 170 PARTS CABINET

NOTE: For storing removed vehicle parts

Series: All models

Storage location: Single

SI number: 8 01 94(821)

Order number: 00 0 170

Parts cabinet

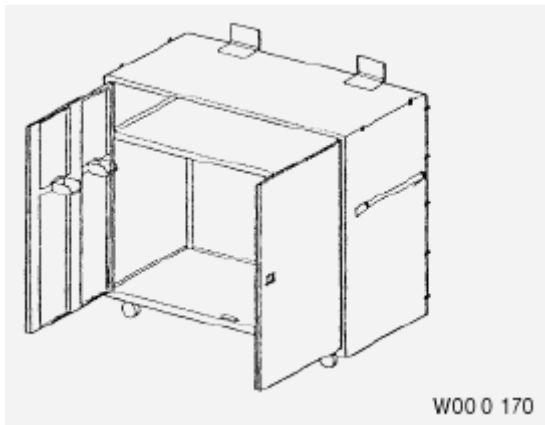


Fig. 23: Identifying Special Tool (00 0 170)

Courtesy of BMW OF NORTH AMERICA, INC.

00 0 180 CABLE CABINET II, COMPLETE

NOTE: For extended accommodation of adapter leads as well as measuring and test equipment

SI number: 0 02 99 (399)

Order number: 00 0 180

Cable cabinet II, complete

Consisting of:

1 = 00 0 182 Film set II

NOTE: For Identifying storage locations in cable cabinet II - Currently applicable status

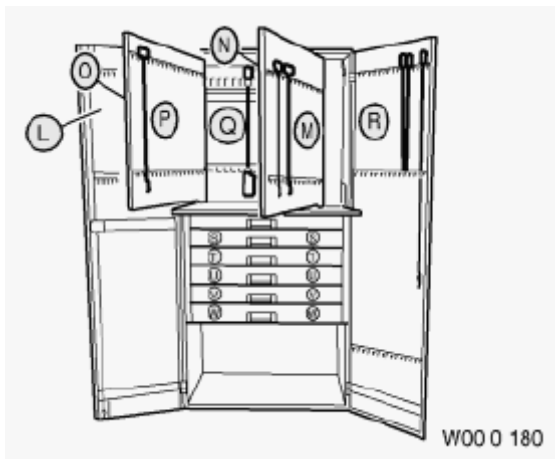


Fig. 24: Identifying Special Tool (00 0 180)

Courtesy of BMW OF NORTH AMERICA, INC.

2 = 00 0 183 Cable holder set - H -

NOTE: For cable cabinet II only 16 guide rails each with 15 straps for holding adapter cables - Currently applicable status

3 = 00 0 184 CD holder

NOTE: For holding two program CDs with sleeve - Can be fitted in cable cabinets I and II

4 = 00 0 186 Drawer block

NOTE: For cable cabinet II only

5 = 00 0 187 Holder set for test adapters

NOTE: For cable cabinet II only

6 = 00 0 188 Strap set (optional)

NOTE: 20 straps for cable holders - H - For expanding suspended cables in cable cabinets I and II

00 0 190 CABLE CABINET I, COMPLETE

NOTE: With set of films and accessories - For storing adapter cables as well as measuring devices and testers

SI number: 0 02 99 (399)

Order number: 00 0 190

Cable cabinet I, complete

Consisting of:

1 = 00 0 191 Cable cabinet

NOTE: Without contents or accessories Basis for cable cabinets I and II

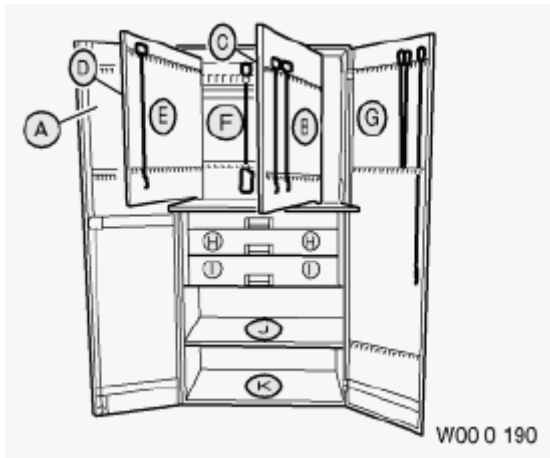


Fig. 25: Identifying Special Tool (00 0 190)
Courtesy of BMW OF NORTH AMERICA, INC.

2 = 00 0 192 Set of films I

NOTE: For identifying storage locations in cable cabinet I - valid status in each case

3 = 00 0 193 Cable holder set - H -

NOTE: For cable cabinet I only 24 guide rails each with 15 retaining straps for accommodating adapter leads

4 = 00 0 194 Cable carrier - B -

NOTE: For accommodating engine test leads For extending cable suspensions in cable cabinets I and II

6 = 00 0 195 Swivel board frame

NOTE: Carrier of cable suspensions in cable cabinets I and II

7 = 00 0 196 Drawer block

NOTE: For cable cabinet I only

8 = 00 0 197 Magnet with roller

NOTE: For improved location and spacing of swivel boards - For retrofitting in cable cabinets I and II only

9 = 00 0 198 Compartment floor

NOTE: For cable cabinet I only

10 = 00 0 199 Index

NOTE: For finding BMW special tools for automotive electrics in cable cabinets I and II

00 0 200 CROSS MEMBER

Minimum set: Mechanical tools

NOTE: To hold the engine when removing and installing the front axle support, the oil sump and the transmission

Engine: M10, M20, M20B25, M20B27, M21, M30, M30B34, M30Tur, M40, M41, M42, M43, M43TU, M44, M47, M47T2, M47TU, M50, M51, M52, M52TU, M54, M56, M57, M57D25, M57D30, M57T2, M57TU, M60, M62, M62VAN, M67, M67TU, M70, M73, M88, N40, N42, N45, N46, N52, N54, N62, N62TU, N73, S14, S38, S50B30, S50B32, S50US, S52US, S54, S62, S85, W10, W11, W17

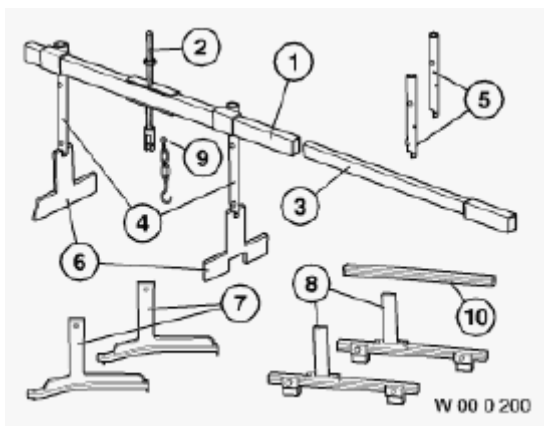


Fig. 26: Identifying Special Tool (00 0 200)
Courtesy of BMW OF NORTH AMERICA, INC.

Storage location: Single

SI number: 1 14 01 (766)

Order number: 00 0 200

Cross member

Consisting of:

1 = 00 0 201 Locating bridge

2 = 00 0 202 Spindle with hook

3 = 00 0 203 Extension

NOTE: For extending locating bridge 00 0 201 Model series: E65

4 = 00 0 204 Adapter support (2 x)

In conjunction with: 00 0 200

5 = 00 0 205 Extension

NOTE: Model series: R50, R53

6 = 00 0 206 Support foot (2 x)

NOTE: Model series: E30, E31, E32, E34, E36, Z3 6-cylinder engines only

7 = 00 0 207 Support foot (2 x)

NOTE: Model: Z3 / 4-cylinder engines only

8 = 00 0 208 Support foot (2 x) with rests (4 x)

NOTE: Model series: E38, E39, E46, E60, E65

9 = 00 0 209 Chain with hook

NOTE: Version as 11 0 003

10= 00 0 451 Profile strip

NOTE: Model series: E85

11= 00 0 452 Supports (2 x)

NOTE: **Model series: E70**

In conjunction with: 00 0 208

00 0 210 CONVERSION KIT

NOTE: **For cable cabinet**

Series: All models

Storage location: Cable cabinet

SI number: 0 02 99 (399)

Order number: 00 0 210

Conversion kit

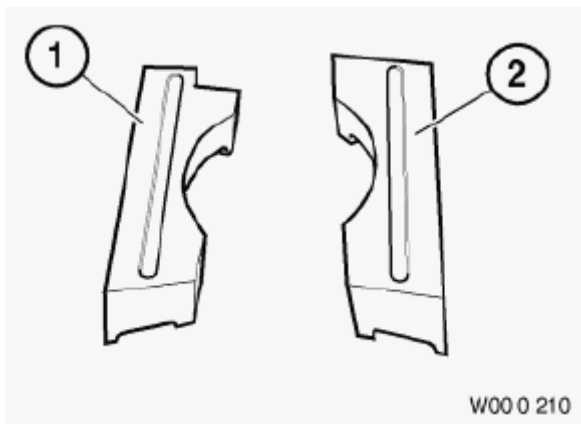


Fig. 27: Identifying Special Tool (00 0 210)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 220 SPECIAL TOOL CABINET, LENGTH 2 M

NOTE: **Dimensions: (LxHxD) 2.05 m x 2.10 m x 0.65 m For extended accommodation of special tools. IMPORTANT! Use Order No. 00 1 000 to erect a complete 6 m long special tool cabinet.**

SI number: 0 01 00 (549)

Order number: 00 0 220

Special tool cabinet, length 2 m

Consisting of:

1 = 00 0 221 Frame with roller shutter

NOTE: Basic frame for erecting a separate 2 m long special tool cabinet. **NOTE:** If ordered individually as a mounting frame, the complete scope of delivery must already be present under Order No. 00 0 220. Overall length with a mounting frame: 4 m

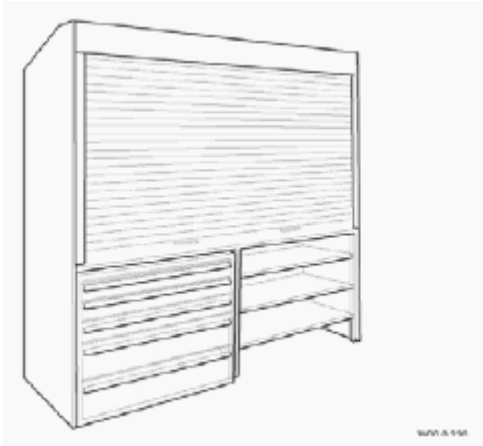


Fig. 28: Identifying Special Tool (00 0 220)
Courtesy of BMW OF NORTH AMERICA, INC.

In conjunction with: 00 0 225 / Not available without roller shutter for stability reasons!

2 = 00 0 222 Side panel, left

NOTE: Required only once for erecting the basic frame

3 = 00 0 223 Side panel, right

NOTE: Required only once for erecting the basic frame

4 = 00 0 224 Large special tool board 2 m x 1 m

NOTE: This special tool board serves as the rear panel of basic and mounting frames and is the basis for large stationary and moving special tool boards.

In conjunction with: Hook set and films

5 = 00 0 225 Roller shutter, lockable

NOTE: Included in scope of delivery 00 0 221. This order number is for reordering purposes only.

6 = 00 0 226 Side frame

NOTE: Required only once for setting up the basic frame

00 0 230 LARGE BOARD (2X1 M) WITH SET OF CASTORS

In conjunction with: Special tool boards, complete

NOTE: For retrofitting to a large special tool board for use in a special tool cabinet with a minumum length of 4 m.

Order number: 00 0 230

Large board (2x1 m) with set of castors

Consisting of:

2 = 00 0 232 Castors, top, for large board

3 = 00 0 233 Castors, bottom, for large board

00 0 240 SMALL MOVING SPECIAL TOOL BOARD WITHOUT FILMS

In conjunction with: Film and hook set

NOTE: For retrofitting a special tool cabinet from 2 m in length.

SI number: 0 01 02 (810)

Order number: 00 0 240

Small moving special tool board without films

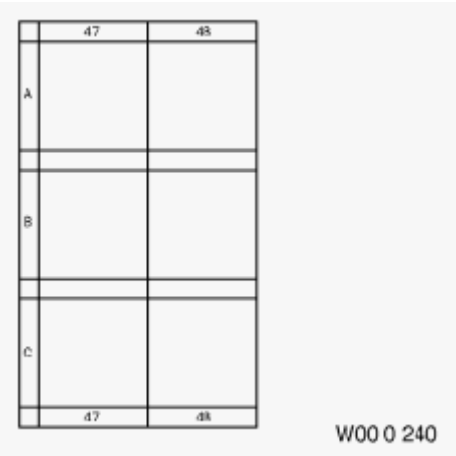


Fig. 29: Identifying Special Tool (00 0 240)
Courtesy of BMW OF NORTH AMERICA, INC.

Consisting of:

1 = 00 0 241 Small special tool board 0.65 m x 1 m

2 = 00 0 242 Castors, top

NOTE: For moving a small special tool board

3 = 00 0 243 Castors, bottom

NOTE: For moving a small special tool board

00 0 250 SHELF

NOTE: With mounting material.

SI number: 0 01 00 (549)

Order number: 00 0 250

Shelf

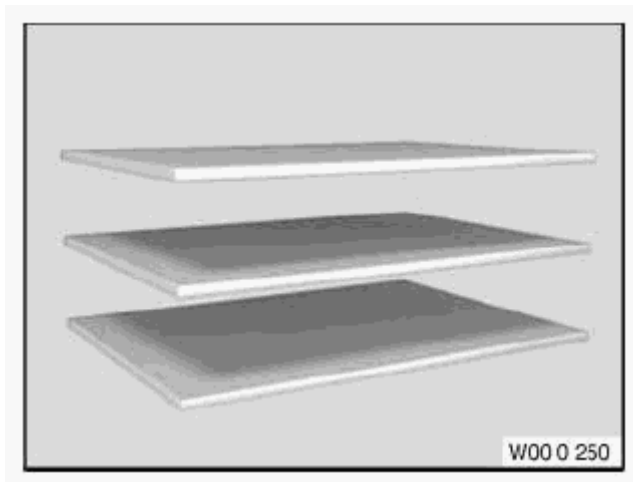


Fig. 30: Identifying Special Tool (00 0 250)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 260 DRAWER BLOCK

NOTE: With 5 lockable drawers

SI number: 0 01 00 (549)

Order number: 00 0 260

Drawer block



Fig. 31: Identifying Special Tool (00 0 260)
Courtesy of BMW OF NORTH AMERICA, INC.

00 0 270 REAR PANEL (2 PCS.)

NOTE: For sealing the rear panel (height 2 m x width 1 m) during free erection of a special tool cabinet.

SI number: 0 01 00(549)

Order number: 00 0 270

Rear panel (2 pcs.)

00 0 280 FILM SHEET AND HOOK SETS FROM SPECIAL TOOL BOARD VII

In conjunction with: 00 0 224 or appropriate number 00 0 241

NOTE: For retrofitting onto special tool boards. **NOTE:** Each film with hook set is always supplied in accordance with the current status of the special tools. Up to three films can be stuck onto a large special tool board.

Order number: 00 0 280

Film sheet and hook sets from special tool board VII

	41	42		43	44		45	46
A			A			A		
B			B			B		
C			C			C		
	41	42		43	44		45	46

W00 0280

Fig. 32: Identifying Special Tool (00 0 280)
Courtesy of BMW OF NORTH AMERICA, INC.

Consisting of:

1 = 00 0 281 Film sheet and hook set

NOTE: For fields A/B/C - 41 and 42

2 = 00 0 282 Film sheet and hook set

NOTE: For fields A/B/C - 43 and 44

00 0 333 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Model series: E39 - engine: M57

Order number: 00 0 333

Supplementary film / hook set

00 0 334 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Engine: S62

Order number: 00 0 334

Supplementary film / hook set

00 0 335 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Engine: S62 (Part 2)

Order number: 00 0 335

Supplementary film / hook set

00 0 336 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Engine: M67

Order number: 00 0 336

Supplementary film / hook set

00 0 337 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Transmission: F-transmission

Order number: 00 0 337

Supplementary film / hook set

00 0 338 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Model series: E53

Order number: 00 0 338

Supplementary film / hook set

00 0 339 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Special tools 24 4 137, 33 3 030, 33 3 040

Order number: 00 0 339

Supplementary film / hook set

00 0 341 SUPPLEMENTARY FILM / HOOK SET

NOTE: For mechanical tools in special tool cabinet - Engine: S54

Order number: 00 0 341

Supplementary film / hook set

00 0 342 SUPPLEMENTARY FILM AND HOOK SET

NOTE: For mechanical tools in special tool cabinet E65 / M57TU, M67

Order number: 00 0 342

Supplementary film and hook set

00 0 343 FILM AND HOOK SET

NOTE: For mechanical tools in special tool cabinet E65, N73

Order number: 00 0 343

Film and hook set

00 0 344 FILM AND HOOK SET

NOTE: For mechanical tools in special tool cabinet R50, W17

Order number: 00 0 344

Film and hook set

00 0 345 FILM AND HOOK SET

Order number: 00 0 345

Film and hook set

00 0 346 FILM AND HOOK SET

Order number: 00 0 346

Film and hook set

00 0 347 FILM AND HOOK SET

Order number: 00 0 347

Film and hook set

00 0 348 FILM AND HOOK SET

Order number: 00 0 348

Film and hook set

00 0 354 FILMS/HOOK SET E90

Order number: 00 0 354

Films/hook set E90

00 0 355 FILMS/HOOK SET

NOTE: **61 6 100, 61 6 110**

Order number: 00 0 355

Films/hook set

00 0 356 FILMS/HOOK SET

NOTE: **23 0 320**

Order number: 00 0 356

Films/hook set

00 0 357 FILMS/HOOK SET

NOTE: **For 33 4 285**

Order number: 00 0 357

Films/hook set

00 0 358 FILMS/HOOK SET

Order number: 00 0 358

Films/hook set

00 0 359 SUPPLEMENTARY FOILS + HOOKS FOR 24 2 354 & 24 4 166

Order number: 00 0 359

Supplementary foils + hooks for 24 2 354 & 24 4 166

00 0 361 SUPPLEMENTARY FILMS/HOOKS FOR N43, N47

Order number: 00 0 361

Supplementary films/hooks for N43, N47

00 0 362 SUPPLEMENTARY FILM/HOOK SET FOR S65

Order number: 00 0 362

Supplementary film/hook set for S65

00 0 363 SUPPLEMENTARY FILM/HOOK SET FOR N43

Order number: 00 0 363

Supplementary film/hook set for N43

00 0 364 SUPPLEMENTARY FILM/HOOK SET FOR N12, N14, W16

Order number: 00 0 364

Supplementary film/hook set for N12, N14, W16

00 0 365 SUPPLEMENTARY FILM/HOOK SET FOR N63 / E83 / E88 / E92

Order number: 00 0 365

Supplementary film/hook set for N63 / E83 / E88 / E92

00 0 366 SUPPLEMENTARY FILM/HOOT SET USA - UPDATE

Order number: 00 0 366

Supplementary film/hoot set USA - update

00 0 415 FILM SET 1 + 2 FOR E87

Order number: 00 0 415

Film set 1 + 2 for E87

00 0 416 FILM SET CABLE CABINET 1 FOR E90

Order number: 00 0 416

Film set cable cabinet 1 for E90

00 0 418 FILM SET CABLE CABINET 2

Order number: 00 0 418

Film set cable cabinet 2

00 0 450 DECADE NUMBER

NOTE: Reserved for consecutive sub-no. Crossmember 00 0 200. Replaced by: 00 6 040

SI number: 1 10 02 (907)

Order number: 00 0 450

Decade number

00 1 000 SPECIAL TOOL CABINET, LENGTH 6 M, COMPLETE CURRENT RANGE OF EQUIPMENT

NOTE: Range of equipment comprises: - Base frame - Films - Hooks - 5 large special tool boards - 4 small special tool boards Accessories such as storage shelves (00 0 250), drawer blocks (00 0 260) and rear panels (00 0 270) must be ordered separately.

SI number: 1 10 04 (092)

Order number: 00 1 000

Special tool cabinet, length 6 m, complete current range of equipment.

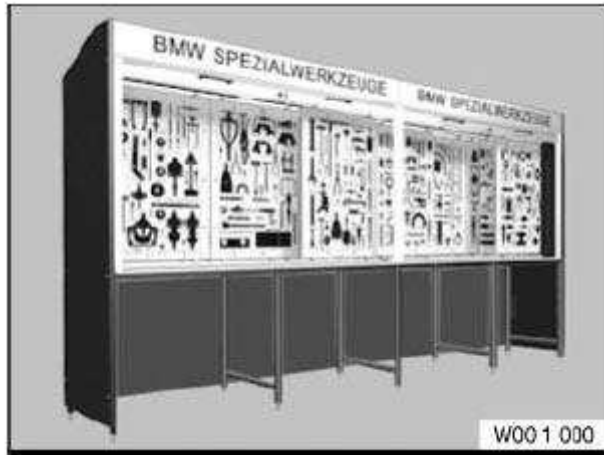


Fig. 33: Identifying Special Tool (00 1 000)

Courtesy of BMW OF NORTH AMERICA, INC.

00 1 010 SPECIAL TOOL CABINET, LENGTH 4 M AND 2 M, COMPLETE CURRENT RANGE OF EQUIPMENT

NOTE: Consisting of tool cabinet 4 m and 2 m. All boards covered with film, hook set and folding index with list. Accessories such as storage shelves (00 0 250), drawer blocks (00 0 260) and rear panels (00 0 270) must be ordered separately.

Order number: 00 1 010

Special tool cabinet, length 4 m and 2 m, complete current range of equipment.

00 1 140 E87 FILM AND HOOK SET

NOTE: E87

Order number: 00 1 140

E87 film and hook set

Consisting of:

1 = 00 1 141 Film sheet

2 = 00 1 142 Hook set

00 1 150 N 52 FILM AND HOOK SET

NOTE: N52

Order number: 00 1 150

N 52 film and hook set

Consisting of:

1 = 00 1 151 Film sheet

2 = 00 1 152 Hook set

00 1 160 FILM AND HOOK SET FOR S85

NOTE: (for action tools)

SI number: 1 12 05 (196)

Order number: 00 1 160

Film and hook set for S85

00 1 161 FILM S85

Order number: 00 1 161

Film S85

00 1 162 HOOK SET S85

Order number: 00 1 162

Hook set S85

00 1 170 FILM AND HOOK SET FOR S85

NOTE: (for store tools)

SI number: 1 12 05 (196)

Order number: 00 1 170

Film and hook set for S85

00 1 171 FILM S85

Order number: 00 1 171

Film S85

00 1 172 HOOK SET S85

Order number: 00 1 172

Hook set S85

00 1 300 TOOL CABINET, USA VERSION, COMPLETE

NOTE: Consisting of: - Tool cabinet 4 m - All boards covered with film, USA version - including hook set - including lighting

Order number: 00 1 300

Tool cabinet, USA version, complete

Consisting of:

1 = 00 1 301 2 m tool cabinet USA basic version

NOTE: Consisting of: - Tool cabinet 2 m - Large bright-finish board - including lighting

2 = 00 1 302 2 m tool cabinet USA add-on version

NOTE: Consisting of: - Tool cabinet 2 m - Large bright-finish board - including lighting

00 1 310 TOOL BOARDS, COMPLETE, USA VERSION

NOTE: Consisting of: - 3 large tool boards, covered with film - including hook set - including wall mounting

Order number: 00 1 310

Tool boards, complete, USA version

00 1 320 FILM SET, COMPLETE, USA VERSION

Order number: 00 1 320

Film set, complete, USA version

Consisting of:

1 = 00 1 321 Film no. 1 USA version

2 = 00 1 322 Film no. 2 USA version

3 = 00 1 323 Film no. 3 USA version

4 = 00 1 324 Film no. 4 USA version

5 = 00 1 325 Film no. 5 USA version

6 = 00 1 326 Film no. 6 USA version

7 = 00 1 327 Film no. 7 USA version

8 = 00 1 328 Film no. 8 USA version

9 = 00 1 329 Film no. 9 USA version

00 1 331 FILM NO. 10 USA VERSION

Order number: 00 1 331

Film no. 10 USA version

00 1 332 FILM NO. 11 USA VERSION

Order number: 00 1 332

Film no. 11 USA version

00 1 333 FILM NO. 12 USA VERSION

Order number: 00 1 333

Film no. 12 USA version

00 1 334 FILM 13 USA (A/B/C 33/34)

Order number: 00 1 334

Film 13 USA (A/B/C 33/34)

00 1 335 FILM 14 USA (A/B/C 35/36)

Order number: 00 1 335

Film 14 USA (A/B/C 35/36)

00 1 336 FILM 15 USA (A/B/C 37/38)

Order number: 00 1 336

Film 15 USA (A/B/C 37/38)

00 1 340 HOOK SET, COMPLETE, FOR 00 1 300, USA VERSION

Order number: 00 1 340

Hook set, complete, for 00 1 300, USA version

Consisting of:

1 = 00 1 341 Hook set for film no. 1 USA-Version

2 = 00 1 342 Hook set for film no. 2 USA version

3 = 00 1 343 Hook set for film no. 3 USA version

4 = 00 1 344 Hook set for film no. 4 USA version

5 = 00 1 345 Hook set for film no. 5 USA version

6 = 00 1 346 Hook set for film no. 6 USA version

7 = 00 1 347 Hook set for film no. 7 USA version

8 = 00 1 348 Hook set for film no. 8 USA version

9 = 00 1 349 Hook set for film no. 9 USA version

00 1 351 HOOK SET FOR FILM NO. 10 USA VERSION

Order number: 00 1 351

Hook set for film no. 10 USA version

00 1 352 HOOK SET FOR FILM NO. 11 USA VERSION

Order number: 00 1 352

Hook set for film no. 11 USA version

00 1 354 HOOK SET FOR FILM 13 USA

Order number: 00 1 354

Hook set for film 13 USA

00 1 355 HOOK SET FOR FILM 14 USA

Order number: 00 1 355

Hook set for film 14 USA

00 1 356 HOOK SET FOR FILM 15 USA

Order number: 00 1 356

Hook set for film 15 USA

00 1 490 ASSEMBLY STAND

NOTE: For accommodating engine, transmission and rear axle, replaced by 00 1 450 (passenger car) Release for motorcycle only!

Order number: 00 1 490

Assembly stand

Consisting of:

1 = 00 1 491 Tube frame

NOTE: Release for motorcycle only!

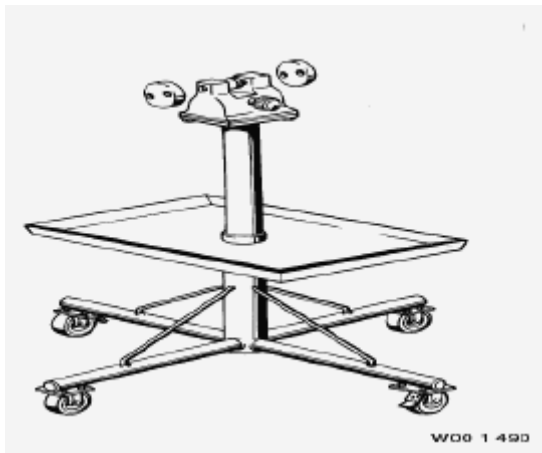


Fig. 34: Identifying Special Tool (00 1 490)
Courtesy of BMW OF NORTH AMERICA, INC.

2 = 00 1 492 Mounting head without mounting flange

NOTE: Release for motorcycle only!

3 = 00 1 493 Mounting flange (2 pcs. required)

NOTE: Release for motorcycle only!

4 = 00 1 494 Retainer

NOTE: Release for motorcycle only!

5 = 00 1 495 Lock for mounting flange

NOTE: Release for motorcycle only!

6 = 00 1 496 Release lever

NOTE: Release for motorcycle only!

7 = 00 1 497 Wheel without brake

NOTE: Release for motorcycle only!

8 = 00 1 498 Wheel with brake

NOTE: Release for motorcycle only!

9 = 00 1 499 Storage plate

NOTE: Release for motorcycle only!

00 2 010 SKID-RESISTANCE TESTER

In conjunction with: 32 1 000

NOTE: For adjusting the steering gear (measurement possible in both directions) and for checking and adjusting the bevel drive pinion and ring gear mounting in all final drives

Series: E30, E31, E32, E34, E36, E36/7, E38, E39, E46, E71, F01

Storage location: X9

Order number: 00 2 010

Skid-resistance tester

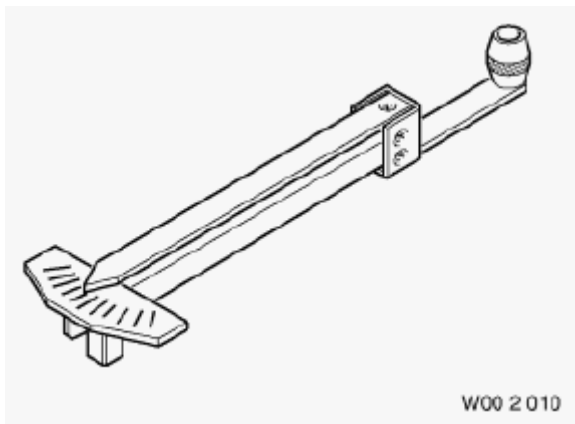


Fig. 35: Identifying Special Tool (00 2 010)
Courtesy of BMW OF NORTH AMERICA, INC.

00 2 030 UNIVERSAL HYDRO-LIFTER BASIC UNIT

In conjunction with: 23 4 050, 23 4 150, 27 1 030, 31 5 250, 33 4 420, 51 3 280

NOTE: Chassis and hydro-lifter - for removal and installation of rear axle carrier and transmission. Also for convertible top mounts.

Series: E12, E21, E23, E24, E28, E30, E30/C, E30tou, E31, E32, E32/3, E34, E34tou, E36, E36/2, E36/3, E36/5, E36/7, E36/C, E36tou, E38, E38/3, E39, E39PL, E39tou, E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93, F01, F02, R50, R52, R53, R55, R56, RR1, RR2

SI number: 1 05 90(207)

Order number: 00 2 030

Universal hydro-lifter basic unit

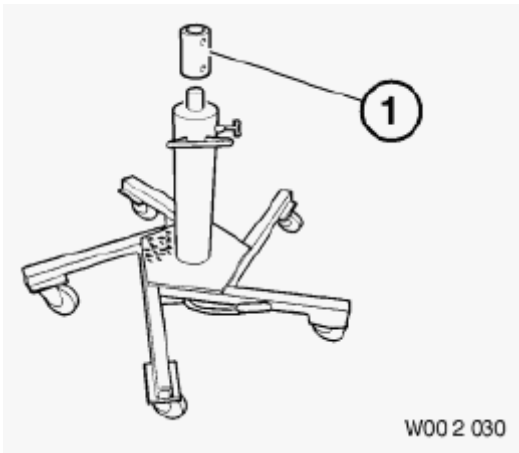


Fig. 36: Identifying Special Tool (00 2 030)
Courtesy of BMW OF NORTH AMERICA, INC.

Consisting of:

1 = 00 2 031 Adapter for transmission brackets

NOTE: **Model series: E30, E31, E32, E34, E36**

In conjunction with: 23 0 000, 24 0 130

00 2 050 TORQUE WRENCH, ADJUSTABLE FROM 1 TO 36 NM

NOTE: **For tightening ZF selector units and for adjusting brake bands BW65**

Transmission: BW 65

Order number: 00 2 050

Torque wrench, adjustable from 1 to 36 Nm

Consisting of:

1 = 00 2 051 Torque wrench without socket ratchet

2 = 00 2 052 Socket ratchet

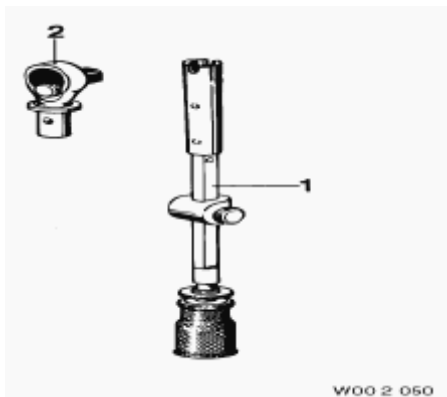


Fig. 37: Identifying Special Tool (00 2 050)
 Courtesy of BMW OF NORTH AMERICA, INC.

00 2 080 HAND PUMP

NOTE: For Lifetime oil filling

SI number: 1 01 98(294)

Order number: 00 2 080

Hand pump

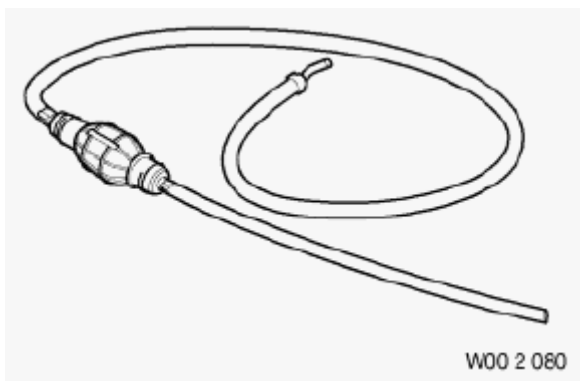


Fig. 38: Identifying Special Tool (00 2 080)
 Courtesy of BMW OF NORTH AMERICA, INC.

00 2 210 EXHAUST PIPE CUTTER

NOTE: For V2a pipe

Series: E12, E21, E23, E24, E28, E30, E30/C, E30tou, E31, E32, E32/3, E34, E34tou, E36, E36/2, E36/3, E36/5, E36/7, E36/C, E36tou, E38, E38/3, E39, E39PL, E39tou, E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E83, E85, E86, E87, E90, E91, E92, E93, R50, R52, R53, R55, R56, RR1

Storage location: Z2

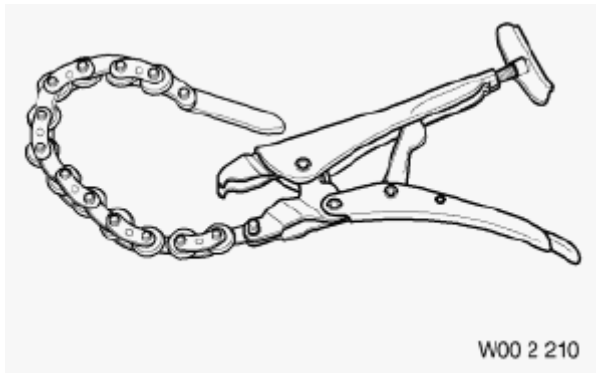


Fig. 39: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

SI number: 01 03 95 (900)

Order number: 00 2 210

Exhaust pipe cutter

Consisting of:

2 = 00 2 212 Chain

00 2 220 EXHAUST PIPE CUTTER

NOTE: For cutting V2a pipes for exhaust system.

Series: E12, E21, E23, E24, E28, E30, E30/C, E30tou, E31, E32, E32/3, E34, E34tou, E36, E36/2, E36/3, E36/5, E36/7, E36/C, E36tou, E38, E38/3, E39, E39PL, E39tou, E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93, R50, R52, R53, R55, R56, RR1, RR2, RR3

Order number: 00 2 220

Exhaust pipe cutter



Fig. 40: Identifying Special Tool (00 2 220)
 Courtesy of BMW OF NORTH AMERICA, INC.

00 2 230 BLIND RIVETING TONGS FOR PLASTIC RIVETS

NOTE: For shank diameters 3.5mm" 3.9mm and 4.5mm

Series: E53, E70, E71, E85

SI number: 01 17 08 (478)

Order number: 00 2 230

Blind riveting tongs for plastic rivets

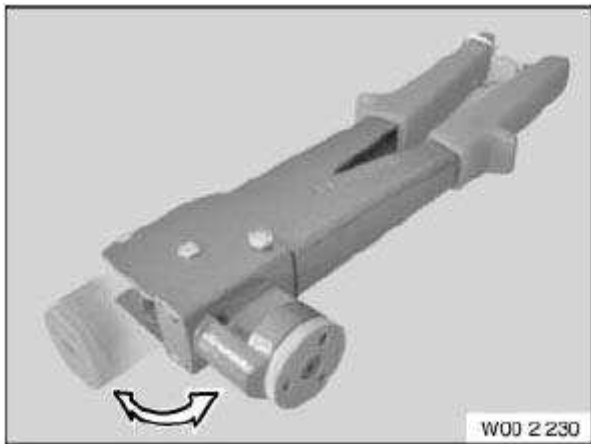


Fig. 41: Identifying Special Tool (00 2 230)
 Courtesy of BMW OF NORTH AMERICA, INC.

00 2 250 SPECIAL PLIERS FOR CABLE RECONDITIONING

NOTE: With the market introduction of engines (N46, N52 and S85), cable 12 7 420/421

can be used for diagnosis after conditioning

SI number: 02 03 04 (106)

Order number: 00 2 250

Special pliers for cable reconditioning

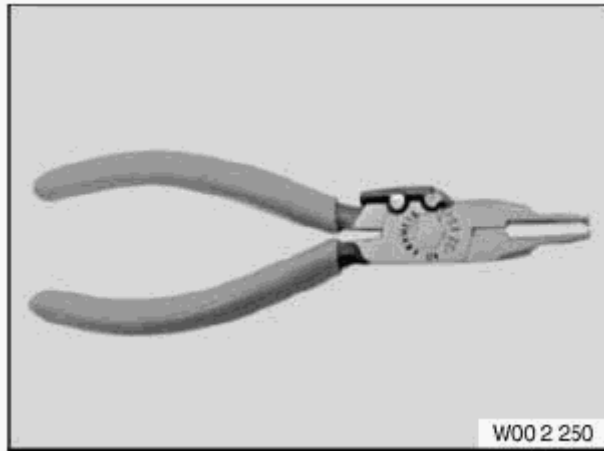


Fig. 42: Identifying Special Tool (00 2 250)
Courtesy of BMW OF NORTH AMERICA, INC.

00 2 261 ADAPTER (2 X)

SI number: 01 22 06 (307)

Order number: 00 2 261

Adapter (2 x)

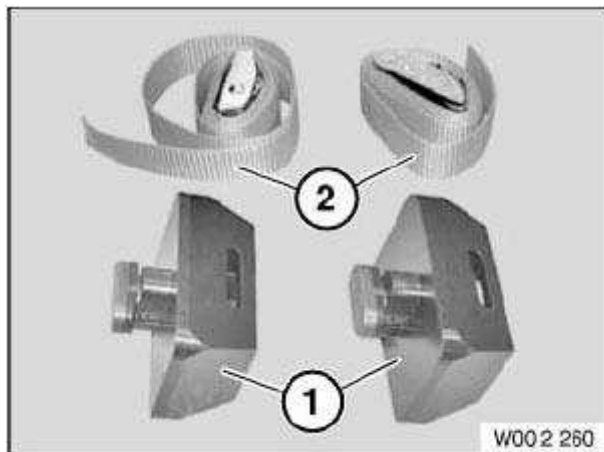


Fig. 43: Identifying Special Tool (00 2 261)
Courtesy of BMW OF NORTH AMERICA, INC.

00 2 262 TENSIONING STRAP (2 X)

SI number: 01 22 06 (307)

Order number: 00 2 262

Tensioning strap (2 x)

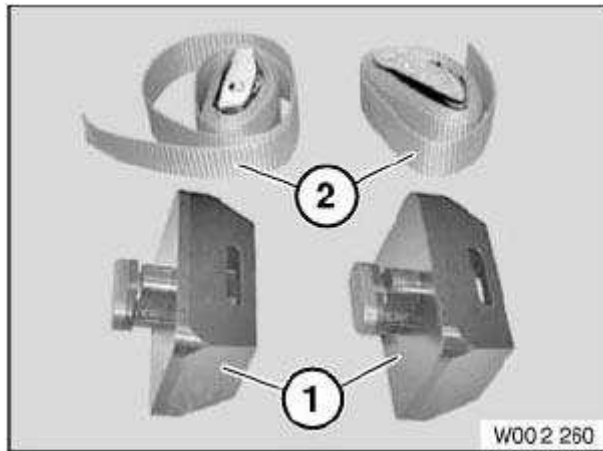


Fig. 44: Identifying Special Tool (00 2 262)
Courtesy of BMW OF NORTH AMERICA, INC.

00 2 300 ASSEMBLY STAND WITH UNIVERSAL FLANGE

NOTE: For accommodating engines from S85

Engine: M10, M20, M20B25, M20B27, M21, M30, M30B34, M30Tur, M40, M41, M42, M43, M43TU, M44, M47, M47T2, M47TU, M50, M51, M52, M52TU, M54, M56, M57, M57D25, M57D30, M57T2, M57TU, M60, M62, M62VAN, M67, M67TU, M70, M73, M88, N40, N42, N45, N46, N51, N52, N53, N54, N62, N62TU, N73, S14, S38, S50B30, S50B32, S50US, S52US, S54, S62, S85, W10, W11, W17

SI number: 01 25 04 (155)

Order number: 00 2 300

Assembly stand with universal flange

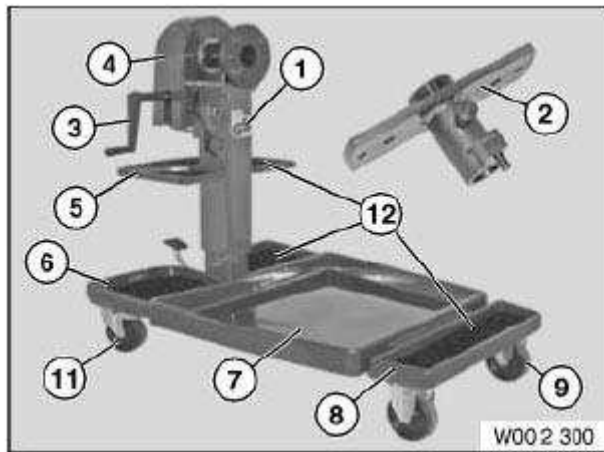


Fig. 45: Identifying Special Tool (00 2 300)
Courtesy of BMW OF NORTH AMERICA, INC.

Consisting of:

- 1 = 00 2 301 Assembly stand
- 2 = 00 2 302 Universal flange
- 3 = 00 2 303 Crank
- 4 = 00 2 304 Protection hood
- 5 = 00 2 305 Storage for small parts
- 6 = 00 2 306 Molded tray, rear
- 7 = 00 2 307 Oil drip tray
- 8 = 00 2 308 Molded tray, front
- 9 = 00 2 309 Wheel, front (without stop)
- 10 = 00 2 311 Wheel, rear (with stop)
- 11 = 00 2 312 Set of rippled mats

00 2 327 ENGINE SUPPORT PLATES

NOTE: **Engine: S62 Replaced by 11 5 420**

Order number: 00 2 327

Engine support plates



Fig. 46: Identifying Special Tool (00 2 327)

Courtesy of BMW OF NORTH AMERICA, INC.

00 2 510 DIAL GAUGE WITH FEELER

In conjunction with: 00 2 500

NOTE: Dial can be turned at outer ring to needle zero position

Engine: M10, M20, M20B25, M20B27, M21, M30, M30B34, M30Tur, M40, M41, M42, M43, M43TU, M44, M47, M47T2, M47TU, M50, M51, M52, M52TU, M54, M56, M57, M57D25, M57D30, M57T2, M57TU, M60, M62, M62VAN, M67, M67TU, M70, M73, M88, N40, N42, N45, N46, N51, N52, N52K, N53, N54, N62, N62TU, N73, S14, S38, S50B30, S50B32, S50US, S52US, S54, S62, S85, W10, W11, W17

Storage location: A5

Order number: 00 2 510

Dial gauge with feeler

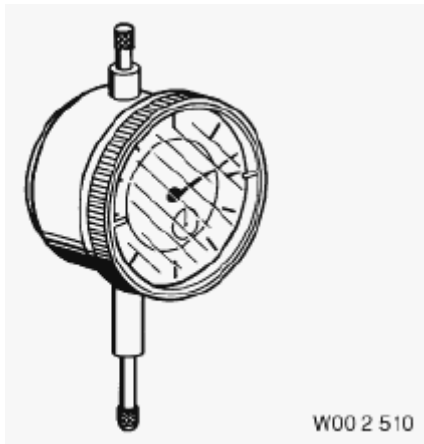


Fig. 47: Identifying Special Tool (00 2 510)
Courtesy of BMW OF NORTH AMERICA, INC.

00 2 520 TORX SOCKETS E10, E12, E14

NOTE: Replaced by Torx tool kit (see Workshop Equipment and Planning Documentation Group 9)

Order number: 00 2 520

Torx sockets E10, E12, E14

Consisting of:

1 = 00 2 521 Torx socket E10

2 = 00 2 522 Torx socket E12

3 = 00 2 523 Torx socket E14

00 2 550 DEPTH GAUGE

NOTE: E.g. for determining axial play of transmission shaft and basic adjustment dimension for installing bevel pinion in rear differentials

Transmission: 240/5, 242/4, 245/5, 245/5Sport, 260/5, 262/4, 265/5, 265/5Sport, 280/5Sport, A4S 200R, A5S 360R, A5S 390R, GS5-39DZ, rear diff. 188kom, rear diff. 220kom, rear diff. 225kom, rear diff. type G, rear diff. type K, rear diff. type M, S5D 200G, S5D 250G, S5D 260Z, S5D 280Z, S5D 310Z, S5D 320Z, S5D 390Z, S6S 420G, S6S 560G

Storage location: A5, B5

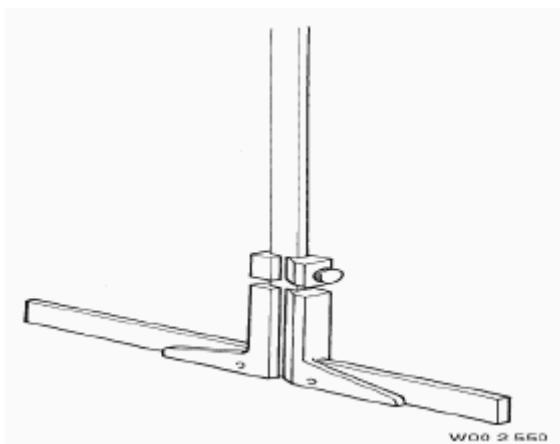


Fig. 48: Identifying Special Tool (00 2 550)

Courtesy of BMW OF NORTH AMERICA, INC.

Order number: 00 2 550

Depth gauge

00 2 590 PLASTIGAGE (5)

NOTE: For checking bearing play on crankshaft and in bigend bearings

Engine: M10, M20, M20B25, M20B27, M21, M30, M30B34, M30Tur, M40, M41, M42, M43, M43TU, M44, M47, M47TU, M50, M51, M52, M52TU, M54, M56, M57, M57D25, M57D30, M57T2, M57TU, M60, M62, M62VAN, M67, M70, M73, M88, N40, N42, N43, N45T, N46T, N53, N54, N62, N73, S14, S38, S50B30, S50B32, S50US, S52US, S54, S62, S85, W10, W11, W17

Order number: 00 2 590

Plastigage (5)

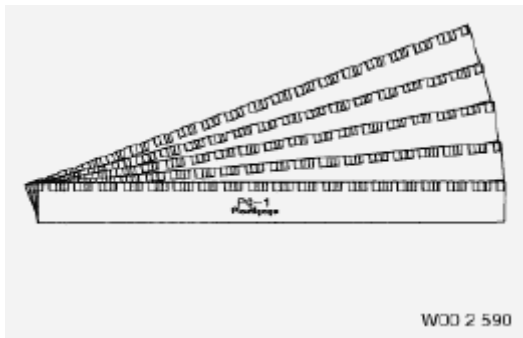


Fig. 49: Identifying Special Tool (00 2 590)
Courtesy of BMW OF NORTH AMERICA, INC.

00 3 070 AWL

NOTE: Diameter 3 mm

SI number: 01 28 06 (331)

Order number: 00 3 070

Awl

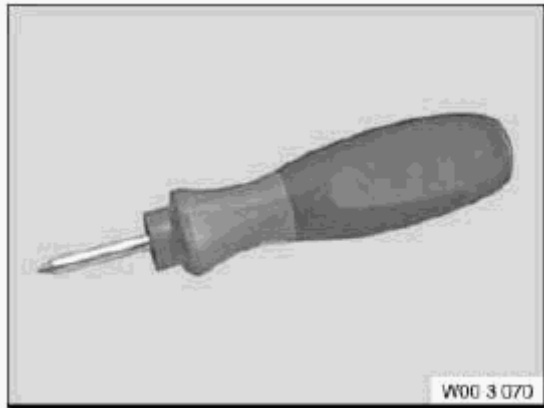


Fig. 50: Identifying Special Tool (00 3 070)
Courtesy of BMW OF NORTH AMERICA, INC.

00 4 420 CHARGER

NOTE: Charger for storage batteries in 00 4 400 and 00 4 410. > Input voltage 230 V / 50 Hz > Output voltage 1.65 V > Charge current miniature 4x400 mA > Charge current micro 4x300 mA

SI number: 1 01 05 (172)

Order number: 00 4 420

Charger



Fig. 51: Identifying Special Tool (00 4 420)
Courtesy of BMW OF NORTH AMERICA, INC.

00 5 030 SPECIAL PLIERS FOR SEAT BELT LIMITER

NOTE: Replaced by 00 5 040

Order number: 00 5 030

Special pliers for seat belt limiter

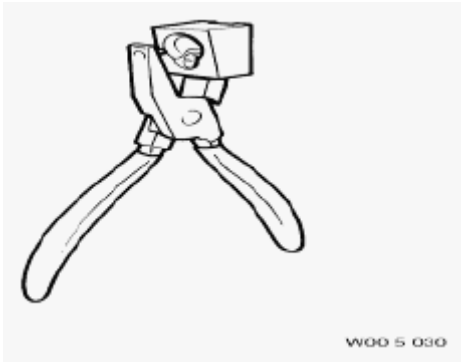


Fig. 52: Identifying Special Tool (00 5 030)
Courtesy of BMW OF NORTH AMERICA, INC.

00 5 040 RIVETING TOOL

NOTE: For riveting seat belt limiter

Storage location: C10

SI number: 1 05 95(932)

Order number: 00 5 040

Riveting tool

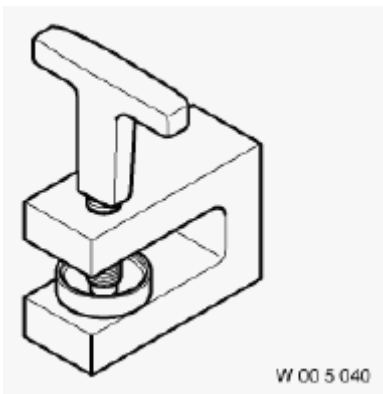


Fig. 53: Identifying Special Tool (00 5 040)
Courtesy of BMW OF NORTH AMERICA, INC.

00 5 101 FILM 1, BOARD I

SI number: 1 19 06 298

Order number: 00 5 101

Film 1, board I

00 5 102 FILM 2, BOARD I

SI number: 1 19 06 298

Order number: 00 5 102

Film 2, board I

00 5 103 FILM 3, BOARD I

SI number: 1 19 06 298

Order number: 00 5 103

Film 3, board I

00 5 104 FILM 4, BOARD II

SI number: 1 19 06 298

Order number: 00 5 104

Film 4, board II

00 5 105 FILM 5, BOARD II

SI number: 1 19 06 298

Order number: 00 5 105

Film 5, board II

00 5 106 FILM 6, BOARD II

SI number: 1 19 06 298

Order number: 00 5 106

Film 6, board II

00 5 107 FILM 7, BOARD II

SI number: 1 19 06 298

Order number: 00 5 107

Film 7, board II

00 5 108 FILM 8, BOARD II

SI number: 1 19 06 298

Order number: 00 5 108

Film 8, board II

00 5 109 FILM 9, BOARD 3

SI number: 1 19 06 298

Order number: 00 5 109

Film 9, board 3

00 5 111 FILM 10 (A/B/C 19/20)

NOTE: **Engine: N54**

Order number: 00 5 111

Film 10 (A/B/C 19/20)

00 5 112 FILM 11 (A/B/C 21/22)

NOTE: **Model series: E70**

Order number: 00 5 112

Film 11 (A/B/C 21/22)

00 5 113 FILM 12 (A/B/C 23/24)

NOTE: **GM6 and RHT**

Order number: 00 5 113

Film 12 (A/B/C 23/24)

00 5 114 FILM 13 (A/B/C 25/26)

NOTE: **F01**

Order number: 00 5 114

Film 13 (A/B/C 25/26)

00 5 201 HOOK SET

NOTE: **for film 1**

Order number: 00 5 201

Hook set

00 5 202 HOOK SET

NOTE: **for film 2**

Order number: 00 5 202

Hook set

00 5 203 HOOK SET

NOTE: **for film 3**

Order number: 00 5 203

Hook set

00 5 204 HOOK SET

NOTE: **for film 4**

Order number: 00 5 204

Hook set

00 5 205 HOOK SET

NOTE: for film 5

Order number: 00 5 205

Hook set

00 5 206 HOOK SET

NOTE: for film 6

Order number: 00 5 206

Hook set

00 5 207 HOOK SET

NOTE: for film 7

Order number: 00 5 207

Hook set

00 5 208 HOOK SET

NOTE: for film 8

Order number: 00 5 208

Hook set

00 5 209 HOOK SET

NOTE: for film 9

Order number: 00 5 209

Hook set

00 5 211 HOOK SET FOR FILM 10

NOTE: Engine: N54

Order number: 00 5 211

Hook set for film 10

00 5 212 HOOK SET

NOTE: Hook set for film 11

Order number: 00 5 212

Hook set

00 5 213 HOOK SET

NOTE: Hook set for film 12

Order number: 00 5 213

Hook set

00 5 214 HOOK SET

NOTE: Hook set for film 13 F01

Order number: 00 5 214

Hook set

00 5 301 FILM

NOTE: R56" N12" N14

Order number: 00 5 301

Film

00 5 302 FILM

NOTE: R56/W16

Order number: 00 5 302

Film

00 5 351 HOOK SET

NOTE: R56" N12" N14

Order number: 00 5 351

Hook set

00 5 352 HOOK SET

NOTE: R56/W16

Order number: 00 5 352

Hook set

00 5 451 STOCK ISSUE FILM 1

SI number: 1 19 06 298

Order number: 00 5 451

Stock issue film 1

00 5 452 STOCK ISSUE FILM 2

SI number: 1 19 06 298

Order number: 00 5 452

Stock issue film 2

00 5 453 STOCK ISSUE FILM 3

SI number: 1 19 06 298

Order number: 00 5 453

Stock issue film 3

00 5 454 STOCK ISSUE FILM 4

SI number: 1 19 06 298

Order number: 00 5 454

Stock issue film 4

00 5 455 STOCK ISSUE FILM 5

SI number: 1 19 06 298

Order number: 00 5 455

Stock issue film 5

00 5 471 HOOK SET FOR STOCK ISSUE FILM 1

SI number: 1 19 06 298

Order number: 00 5 471

Hook set for stock issue film 1

00 5 472 HOOK SET FOR STOCK ISSUE FILM 2

SI number: 1 19 06 298

Order number: 00 5 472

Hook set for stock issue film 2

00 5 473 HOOK SET FOR STOCK ISSUE FILM 3

SI number: 1 19 06 298

Order number: 00 5 473

Hook set for stock issue film 3

00 5 474 HOOK SET FOR STOCK ISSUE FILM 4

SI number: 1 19 06 298

Order number: 00 5 474

Hook set for stock issue film 4

00 5 475 HOOK SET FOR STOCK ISSUE FILM 5

SI number: 1 19 06 298

Order number: 00 5 475

Hook set for stock issue film 5

00 5 499 SUPPLEMENTARY HOOK SET

NOTE: for film 1-9

SI number: 1 19 06 298

Order number: 00 5 499

Supplementary hook set

00 6 000 FIXTURE

Minimum set: Mechanical tools

NOTE: For securing engine when removing and installing front axle carrier, oil sump and transmission.

Series: E12, E21, E23, E24, E28, E30, E30/C, E30tou, E31, E32, E32/3, E34, E34tou, E36, E36/2, E36/3, E36/5, E36/7, E36/C, E36tou, E38, E38/3, E39, E39PL, E39tou, E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93, F01, R50, R52, R53, R55, R56, RR1, RR2

Order number: 00 6 000

Fixture

Consisting of:

1 = 00 6 001 Cross-member

2 = 00 6 002 Spindle with forcing nut

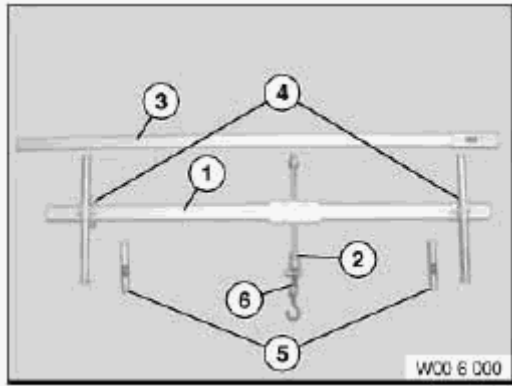


Fig. 54: Identifying Special Tool (00 6 000)
Courtesy of BMW OF NORTH AMERICA, INC.

3 = 00 6 003 Extension for cross-member

NOTE: Model series: E65

4 = 00 6 004 Support

5 = 00 6 005 Support (extension)

NOTE: Model series: R50, R53

6 = 00 6 006 Chain with hook

00 8 600 HOOK SET

NOTE: For reorganization and mounting of existing special tools on tool boards -
NOTE: The following individual tools cannot be ordered in the set!

Series: All models

Order number: 00 8 600

Hook set

Consisting of:

1 = 00 8 601 Hook No. 1

10= 00 8 612 Hook No. 12

11= 00 8 613 Hook No. 13

12= 00 8 614 Hook No. 14

13= 00 8 615 Hook No. 15

14= 00 8 616 Hook No. 16

15= 00 8 617 Hook No. 17

16= 00 8 620 Hook No. 20

17= 00 8 621 Hook No. 21

18= 00 8 622 Hook No. 22

19= 00 8 625 Hook No. 25

2 = 00 8 602 Hook No. 2

20= 00 8 626 Hook No. 26

21= 00 8 628 Hook No. 28

22= 00 8 629 Hook No. 29

23= 00 8 630 Hook No. 30

3 = 00 8 603 Hook No. 3

4 = 00 8 604 Hook No. 4

5 = 00 8 606 Hook No. 6

6 = 00 8 608 Hook No. 8

7 = 00 8 609 Hook No. 9

8 = 00 8 610 Hook No. 10

9 = 00 8 611 Hook No. 11

00 8 660 MAGNET

Storage location: Tool cabinet

Order number: 00 8 660

Magnet

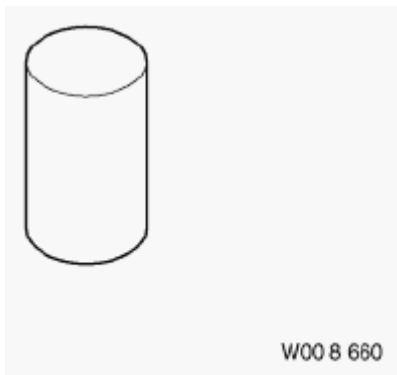


Fig. 55: Identifying Special Tool (00 8 660)
Courtesy of BMW OF NORTH AMERICA, INC.

00 8 690 WASHERS AND SCREWS

Order number: 00 8 690

Washers and screws

Consisting of:

1 = 00 8 691 Washers, 100 x

2 = 00 8 692 Screws, 100 x

3 = 00 8 693 Screws, 100 x

NOTE: For USA

4 = 00 8 694 Box 40 mm

5 = 00 8 695 Box 100 mm

6 = 00 8 696 Box 150 mm

00 9 010 TORX E18 SOCKET

Minimum set: Mechanical tools

NOTE: For releasing and tightening down transmission bolt connection on engine (aluminum bolts).

Series: E60, E61, E63, E64, E65, E71, E82, E83, E85, E87, E88, E90, E91, E92, F01, F02

Storage location: A51

SI number: 1 17 04 (130)

Order number: 00 9 010

Torx E18 socket



Fig. 56: Identifying Special Tool (00 9 010)
Courtesy of BMW OF NORTH AMERICA, INC.

00 9 110 CIRCLIP PLIERS

NOTE: External circlip - With long legs, 90° angle

Series: All models

Order number: 00 9 110

Circlip pliers

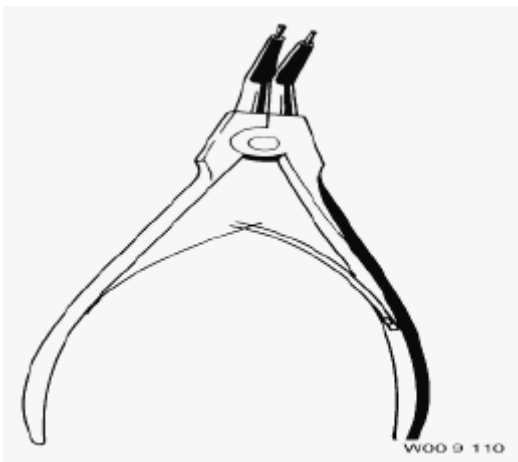


Fig. 57: Identifying Special Tool (00 9 110)

Courtesy of BMW OF NORTH AMERICA, INC.

00 9 130 MAGNET WITH 1/2" CONNECTION

Minimum set: Mechanical tools

In conjunction with: 00 9 120

NOTE: For securing angle-of-rotation disk 00 9 120 to body.

Series: E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93, F01, F02, R50, R52, R53, R55, R56, RR1, RR2

Storage location: A52

SI number: 1 17 04 (130)

Order number: 00 9 130

Magnet with 1/2" connection



Fig. 58: Identifying Special Tool (00 9 130)

Courtesy of BMW OF NORTH AMERICA, INC.

00 9 140 ANGLE-OF-ROTATION MEASUREMENT DISC 3/4" CONNECTION

NOTE: For angle-of-rotation tightening of central bolt to 600 Nm.

Engine: M47T2, M47TU, N51, N52, N53, N54, N63

Storage location: A19, B19

SI number: 1 20 06 (299)

Order number: 00 9 140

Angle-of-rotation measurement disc 3/4" connection

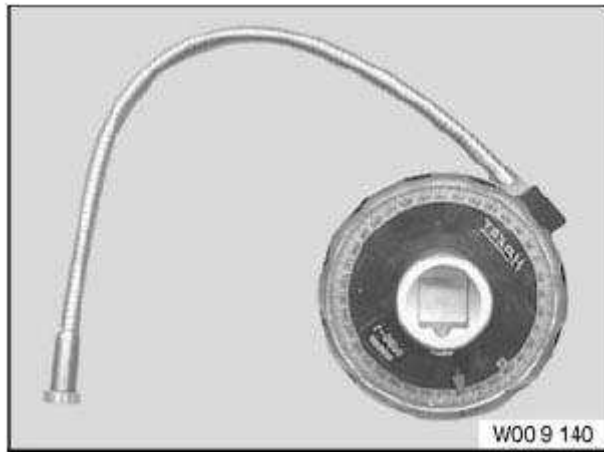


Fig. 59: Identifying Special Tool (00 9 140)
Courtesy of BMW OF NORTH AMERICA, INC.

00 9 220 BENDING LEVER (2 X)

Minimum set: Mechanical tools

In conjunction with: 00 9 230

NOTE: For adjusting windscreen wiper arms

Series: E12, E21, E23, E24, E28, E30, E31, E32, E34, E36, E36/7, E38, E52, E53, E71, E81, E82, E83, E85, E86, E87, E88, R50, R52, R53, R55

Storage location: B3

SI number: 1 10 92 (579)

Order number: 00 9 220

Bending lever (2 x)

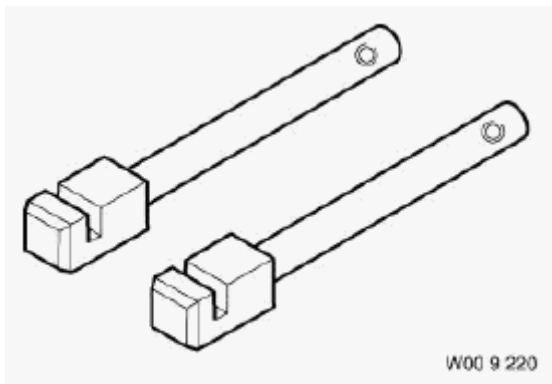


Fig. 60: Identifying Special Tool (00 9 220)
 Courtesy of BMW OF NORTH AMERICA, INC.

Consisting of:

- 1 = 00 9 221 Bending lever (wide)
- 2 = 00 9 222 Counterholder (narrow)

00 9 250 TORQUE WRENCH WITH FLEXIBLE EXTENSION

Minimum set: Mechanical tools

In conjunction with: 11 4 230 and 11 7 380

NOTE: For pretensioning timing chain. For screwing housings of control units.

Series: E12, E21, E23, E24, E28, E30, E30/C, E30tou, E31, E32, E32/3, E34, E34tou, E36, E36/2, E36/3, E36/5, E36/7, E36/C, E36tou, E38, E38/3, E39, E39PL, E39tou, E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93, F01, R50, R52, R53, R55, R56, RR1, RR2

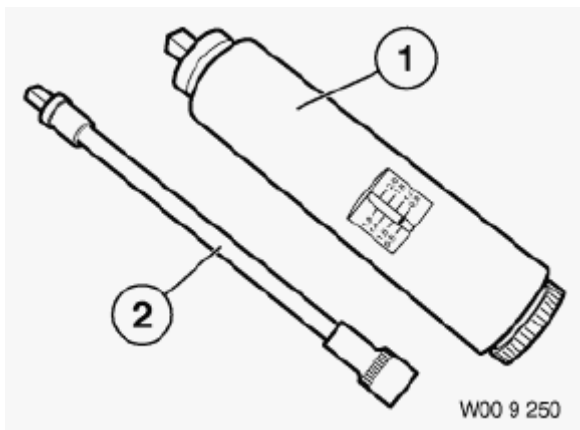


Fig. 61: Identifying Special Tool (00 9 250)
 Courtesy of BMW OF NORTH AMERICA, INC.

Storage location: B5

SI number: 1 04 96 (049)

Order number: 00 9 250

Torque wrench with flexible extension

Consisting of:

1 = 00 9 251 Torque wrench

NOTE: Torque range 0.6 ... 2.0 Nm

2 = 00 9 252 Flexible extension 150 mm

00 9 290 RIVETING TOOL

NOTE: Is replaced by 00 2 240!

Series: All models

Order number: 00 9 290

Riveting tool

00 9 310 ASSEMBLY WEDGES (SET IN PLASTIC CASE)

Minimum set: Mechanical tools

NOTE: For straightening and assembly jobs on vehicle bodies, e.g. fitting trim panels, removing window weatherstrips, repairing small-scale dents, removing residual adhesive materials, measuring gap widths, levering out trim panel parts

Series: E12, E21, E23, E24, E28, E30, E30/C, E30tou, E31, E32, E32/3, E34, E34tou, E36, E36/2, E36/3, E36/5, E36/7, E36/C, E36tou, E38, E38/3, E39, E39PL, E39tou, E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93, F01, F02, R50, R52, R53, R55, R56, RR1, RR2, RR3

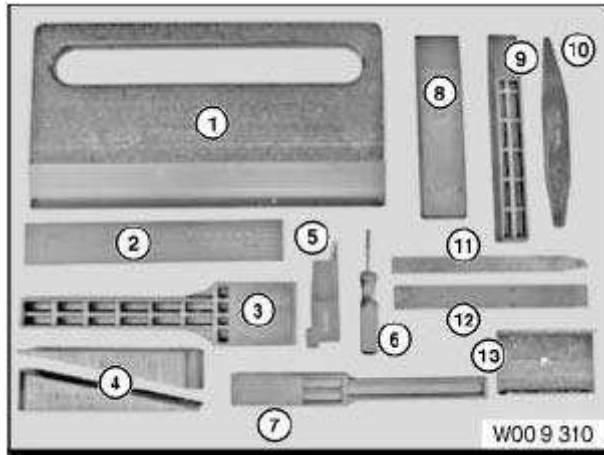


Fig. 62: Identifying Special Tool (00 9 310)
Courtesy of BMW OF NORTH AMERICA, INC.

SI number: 1 25 05 230

Order number: 00 9 310

Assembly wedges (set in plastic case)

Consisting of:

1 = 00 9 311 Trim remover

2 = 00 9 312 Striking wedge, square

3 = 00 9 313 Striking wedge, large

4 = 00 9 314 Adjustment wedges (2 x)

5 = 00 9 315 Gap wedge

6 = 00 9 316 Sealing lip wedge

9 = 00 9 319 Striking wedge, small

10= 00 9 321 Fishbone

11= 00 9 322 Plastic wedge

13= 00 9 324 Trim remover (sheet)

NOTE: For removing shaft strips from E60

14= 00 9 329 Case with insert for mounting wedges

In conjunction with: 009310

00 9 317 TRIM PANEL WEDGE

NOTE: From 11/2008 special tool is replaced by 00 9 325 (quality improvement through new material)

Order number: 00 9 317

Trim panel wedge

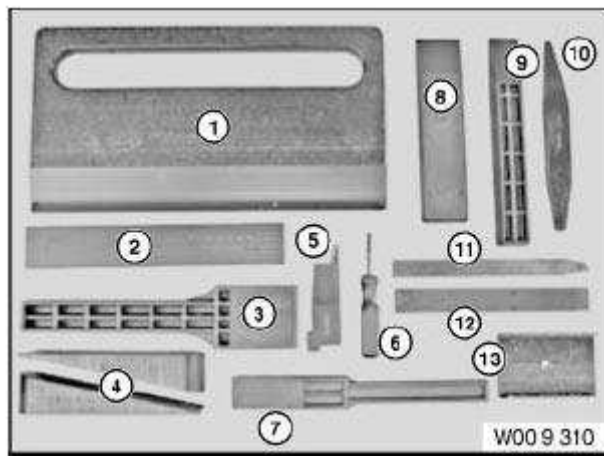


Fig. 63: Identifying Special Tool (00 9 317)
Courtesy of BMW OF NORTH AMERICA, INC.

00 9 318 MULTIPURPOSE WEDGE

NOTE: From 11/2008 special tool is replaced by 00 9 326 (quality improvement through new material)

Order number: 00 9 318

Multipurpose wedge

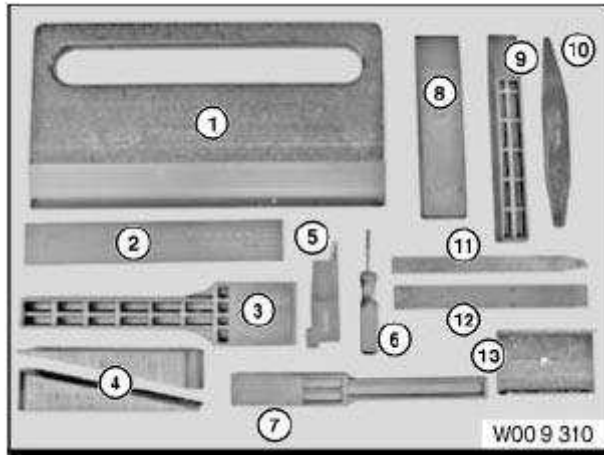


Fig. 64: Identifying Special Tool (00 9 318)

Courtesy of BMW OF NORTH AMERICA, INC.

00 9 323 CLEANING WEDGE (SCRAPER)

NOTE: From 11/2008 special tool is replaced by 00 9 327 (quality improvement through new material)

Order number: 00 9 323

Cleaning wedge (scraper)

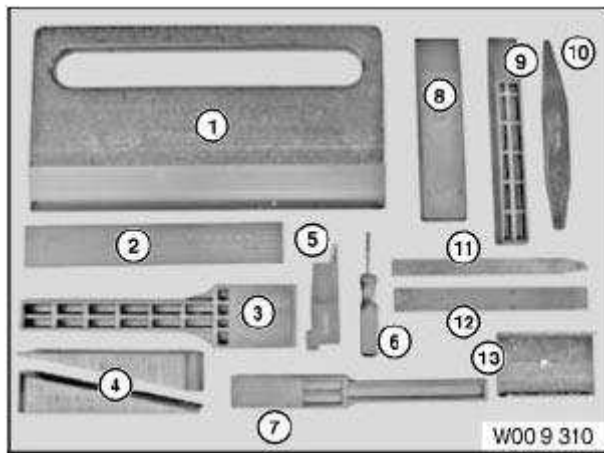


Fig. 65: Identifying Special Tool (00 9 323)

Courtesy of BMW OF NORTH AMERICA, INC.

00 9 340 DISASSEMBLY AID (2 PIECES)

Minimum set: Mechanical tools

NOTE: For levering out switch block on driver's door.

Series: E12, E21, E23, E24, E28, E30, E30/C, E30tou, E31, E32, E32/3, E34, E34tou, E36, E36/2, E36/3, E36/5, E36/7, E36/C, E36tou, E38, E38/3, E39, E39PL, E39tou, E46, E46/16, E46/2, E46/3, E46/5, E46/C, E52, E53, E60, E61, E63, E64, E65, E66, E67, E68, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93, F01, F02, R50, R52, R53, R55, R56, RR1, RR2, RR3

SI number: 1 15 99 (483)

Order number: 00 9 340

Disassembly aid (2 pieces)

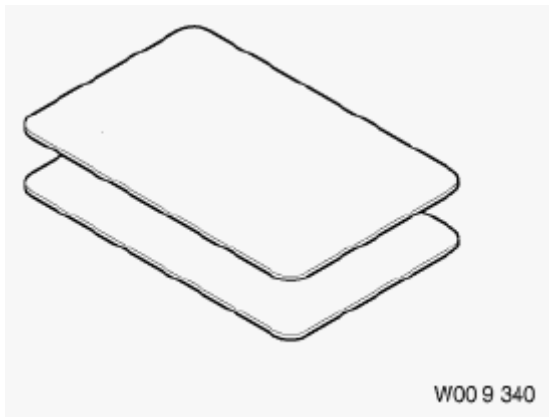


Fig. 66: Identifying Special Tool (00 9 340)
Courtesy of BMW OF NORTH AMERICA, INC.

GENERAL INFORMATION

Maintenance and General Information - Tightening Torques - X6

00 EXCERPT FROM COMPANY STANDARD BMW GS 90003-2

EXCERPT FROM COMPANY STANDARD BMW GS 90003-2 TIGHTENING TORQUE SPECIFICATIONS

	Type	Thread	Tightening specification	Measure
If there are no cross-references to tightening torques in the repair instructions, the excerpts from the company standard BMW GS 90003-2 must be observed.				
There are different screws/nuts with surface color/(surface coating) - yellow (ZN) and silver (ZNS) The maximum tightening torques are: Surface color yellow (ZN): Applicable only to shank screws with metric coarse- and fine-pitch threads according to DIN 13-28 and nuts with nut height $0.8 \times d$ according to DIN 934 and exclusively for a $\mu_{\text{tot}} = 0.125$ (screws phosphatized, nuts without subsequent treatment or galvanized. Lubrication condition: unlubricated and also oiled).				
Surface color silver (ZNS): Applicable only to shank screws with metric coarse- and fine-pitch threads according to DIN 13-28 and nuts with nut height $0.8 \times d$ according to DIN 934 and exclusively for a spread of $\mu = 0.09$ to 0.15 (screws cadmiumplated, nuts without subsequent treatment or galvanized. Lubrication condition: unlubricated and also oiled). The values specified in this table apply to all screw connections conforming to the aforementioned conditions. Not applicable when using a different surface or lubricant condition on the thread, or if the height of the nut differs.				
Not applicable to necked-down bolts, self-tapping screw connections or to connections between parts made of different materials. Attention! To be able to carry out competent repairs, it is essential to comply with the specified tightening torques. This presupposes that the required torque wrenches are subjected to regular testing. Permitted tolerance of torque wrenches $\pm 2\%$ of scale value. Approved torque wrenches and torque testers are contained in the catalogue Workshop Equipment Planning documentation.				

00 M10 AND M10 X 1 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW

GS 90003-2

M10 AND M10 X 1 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M10 thread	yellow (ZN)	M10 8.8		47 Nm
	silver (ZNS)	M10 8.8		38 Nm
	yellow (ZN)	M10 10.9		66 Nm
	silver (ZNS)	M10 10.9		56 Nm
	yellow (ZN)	M10 12.9		79 Nm
	silver (ZNS)	M10 12.9		62 Nm
M10x1 thread	yellow (ZN)	M10 x 1 8.8		54 Nm
	silver (ZNS)	M10 x 1 8.8		41 Nm
	yellow (ZN)	M10 x 1 10.9		75 Nm
	silver (ZNS)	M10 x 1 10.9		60 Nm
	yellow (ZN)	M10 x 1 12.9		91 Nm
	silver (ZNS)	M10 x 1 12.9		67 Nm

00 M12 AND M12X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

M12 AND M12X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M12 thread	yellow (ZN)	M12 8.8		82 Nm
	silver (ZNS)	M12 8.8		66 Nm
	yellow (ZN)	M12 10.9		115 Nm
	silver (ZNS)	M12 10.9		98 Nm
	yellow (ZN)	M12 12.9		140 Nm
	silver (ZNS)	M12 12.9		108 Nm
M12x1.5 thread	yellow (ZN)	M12 x 1.5		87 Nm

		8.8		
	silver (ZNS)	M12 x 1.5 8.8		68 Nm
	yellow (ZN)	M12 x 1.5 10.9		123 Nm
	silver (ZNS)	M12 x 1.5 10.9		100 Nm
	yellow (ZN)	M12 x 1.5 12.9		147 Nm
	silver (ZNS)	M12 x 1.5 12.9		110 Nm

00 M14 AND M14X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

M14 AND M14X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M14 thread	yellow (ZN)	M14 8.8		130 Nm
	silver (ZNS)	M14 8.8		104 Nm
	yellow (ZN)	M14 10.9		180 Nm
	silver (ZNS)	M14 10.9		155 Nm
	yellow (ZN)	M14 12.9		220 Nm
	silver (ZNS)	M14 12.9		170 Nm
M14x1.5 thread	yellow (ZN)	M14 x 1.5 8.8		143 Nm
	silver (ZNS)	M14 x 1.5 8.8		110 Nm
	yellow (ZN)	M14 x 1.5 10.9		200 Nm
	silver (ZNS)	M14 x 1.5 10.9		165 Nm
	yellow (ZN)	M14 x 1.5 12.9		240 Nm
	silver (ZNS)	M14 x 1.5 12.9		180 Nm

00 M16 AND M16X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

M16 AND M16X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M16 thread	yellow (ZN)	M16 8.8		200 Nm
	silver (ZNS)	M16 8.8		160 Nm
	yellow (ZN)	M16 10.9		280 Nm
	silver (ZNS)	M16 10.9		235 Nm
	yellow (ZN)	M16 12.9		340 Nm
	silver (ZNS)	M16 12.9		260 Nm
M16x1.5 thread	yellow (ZN)	M16 x 1.5 8.8		216 Nm
	silver (ZNS)	M16 x 1.5 8.8		170 Nm
	yellow (ZN)	M16 x 1.5 10.9		303 Nm
	silver (ZNS)	M16 x 1.5 10.9		250 Nm
	yellow (ZN)	M16 x 1.5 12.9		364 Nm
	silver (ZNS)	M16 x 1.5 12.9		275 Nm

00 M18 AND M18X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2**M18 AND M18X1.5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2**

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M18 thread	yellow (ZN)	M18 8.8		280 Nm
	silver (ZNS)	M18 8.8		225 Nm
	yellow (ZN)	M18 10.9		390 Nm
	silver (ZNS)	M18 10.9		330 Nm
	yellow (ZN)	M18 12.9		470 Nm
	silver (ZNS)	M18 12.9		365 Nm
M18x1.5 thread	yellow (ZN)	M18 x 1.5 8.8		313 Nm
	silver (ZNS)	M18 x 1.5		245 Nm

		8.8		
	yellow (ZN)	M18 x 1.5 10.9		440 Nm
	silver (ZNS)	M18 x 1.5 10.9		360 Nm
	yellow (ZN)	M18 x 1.5 12.9		527 Nm
	silver (ZNS)	M18 x 1.5 12.9		400 Nm

00 M4 AND M5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

M4 AND M5 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M4 thread	yellow (ZN)	M4 8.8		3 Nm
	silver (ZNS)	M4 8.8		2 Nm
	yellow (ZN)	M4 10.9		4 Nm
	silver (ZNS)	M4 10.9		3 Nm
	yellow (ZN)	M4 12.9		5 Nm
M5 thread	yellow (ZN)	M5 8.8		6 Nm
	silver (ZNS)	M5 8.8		5 Nm
	yellow (ZN)	M5 10.9		8 Nm
	silver (ZNS)	M5 10.9		7 Nm
	yellow (ZN)	M5 12.9		10 Nm
	silver (ZNS)	M5 12.9		8 Nm

00 M6 AND M7 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

M6 AND M7 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

	Type	Thread	Tightening	Measure
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			specification	
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M6 thread	yellow (ZN)	M6 8.8		10 Nm
	silver (ZNS)	M6 8.8		8 Nm
	yellow (ZN)	M6 10.9		14 Nm
	silver (ZNS)	M6 10.9		12 Nm
	yellow (ZN)	M6 12.9		17 Nm
	silver (ZNS)	M6 12.9		13 Nm
M7 thread	yellow (ZN)	M7 8.8		15 Nm
	silver (ZNS)	M7 8.8		13 Nm
	yellow (ZN)	M7 10.9		21 Nm
	silver (ZNS)	M7 10.9		19 Nm
	yellow (ZN)	M7 12.9		26 Nm
	silver (ZNS)	M7 12.9		21 Nm

00 M8 AND M8 X 1 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

M8 AND M8 X 1 - MAXIMUM TIGHTENING TORQUES ACC. TO BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to <u>EXCERPT FROM COMPANY STANDARD BMW GS 90003-2</u>	Surface color/ (surface coating)			
M8 thread	yellow (ZN)	M8 8.8		24 Nm
	silver (ZNS)	M8 8.8		19 Nm
	yellow (ZN)	M8 10.9		34 Nm
	silver (ZNS)	M8 10.9		28 Nm
	yellow (ZN)	M8 12.9		40 Nm
	silver (ZNS)	M8 12.9		32 Nm
M8x1 thread	yellow (ZN)	M8 x 1 8.8		26 Nm
	silver (ZNS)	M8 x		1 8.8 21

				Nm
	yellow (ZN)	M8 x		1 10.9 36 Nm
	silver (ZNS)	M8 x		1 10.9 30 Nm
	yellow (ZN)	M8 x		1 12.9 44 Nm
	silver (ZNS)	M8 x		1 12.9 33 Nm