

# **Repair Manual**

## **R 80 GS – R 100 R**



**BMW Motorrad GmbH + Co.**  
Service Department

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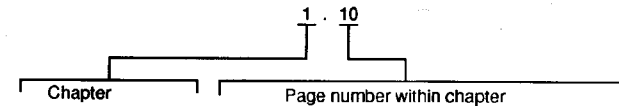
# Introduction

This Workshop Manual is intended to ensure that all major maintenance and repair work is carried out expertly. If used regularly by workshop personnel, it will add to the practical and theoretical knowledge provided by the Service Training School, and therefore make it easier to achieve the required high service quality standards.

A new edition will be issued if amendments or additions (supplements) are needed. The sections of the manual concerned will be marked with the new issue date. Microfiches which are rendered out of date as a result should be destroyed without delay.

All information contained in illustrations or descriptions refers to standard production motorcycles or those fitted with Original BMW Accessories and not modified in any other way.

- The Workshop Manual is laid out in the logical working order: removal, stripping down (dismantling), repair, assembly, installation.
- The contents are divided up into separate chapters. The page numbering means:



- The work to be performed during an Inspection is stated in an Inspection and Maintenance Schedule. The various levels of Inspection work are designated with Roman figures: I, II, III. The same designations are used in the work descriptions which follow, so that a continuous work sequence is assured.
- Where necessary, the work descriptions state which BMW special tools are to be used.

When the need arises, repair instructions are also issued in the form of Service Information bulletins. Their contents are incorporated into the next issue of the Workshop Manual. In addition, you are recommended to refer to the illustrated Parts microfiche as a further source of information.

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Published by: BMW Motorrad GmbH + Co.  
Triebstraße 32  
8000 München 50  
Federal Republic of Germany

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Printed in Western Germany

### SUMMARY OF MAIN GROUPS

New Old	1-3	4	5	6	7	8	9	10	11	12	13	14
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**Note:**

The form and structure of the Workshop Manual have been revised; the main groups and their numbering have also changed.

Since the contents of individual main groups are closely related, they have now been grouped together into chapters of their own. This makes it easier to locate the required information and gain access to the group concerned.

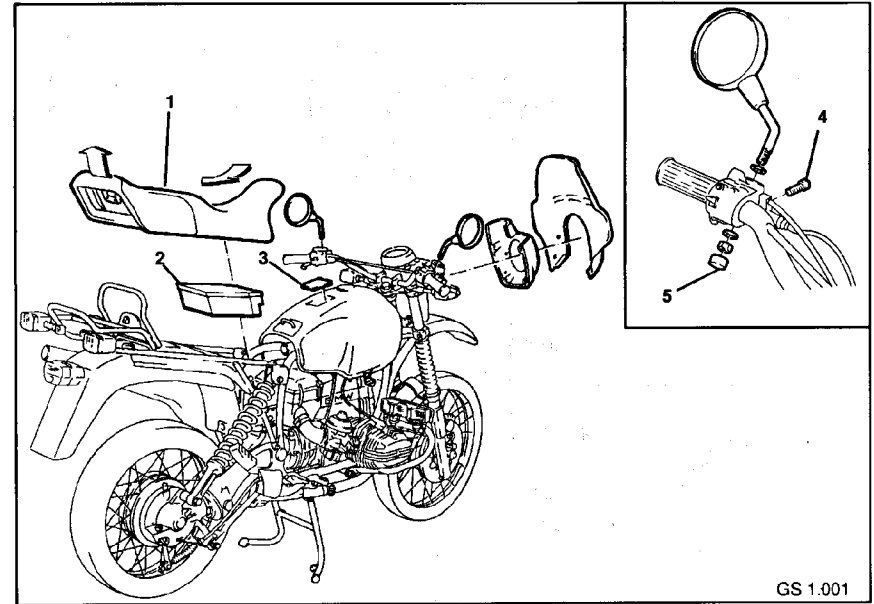
The old and new main group numbers are compared in this summary. The black areas indicate the actual status of the manual.

**1. FITTING OUT  
MOTOR CYCLE AND  
DELIVERY INSPECTION**

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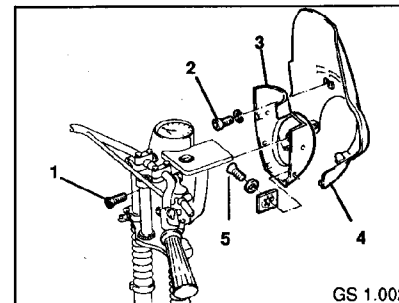
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GS 1.001

## 1.1 FITTING OUT MOTOR CYCLE

### INSTALLING WINDSHIELD



GS 1.002

- Remove windshield (4) from the enclosed carton.
- After slackening the 4 fastening screws (1), take off front section (3) of the headlamp fairing.
- Screw windshield to the front section of the headlamp fairing with 4 fastening screws (5, 2).

- Screw front section of headlamp fairing together with windshield to rear section with four fastening screws (1).

### AFFIXING HELMET STICKER

- Affix helmet sticker (3) to the middle of the top of the fuel tank behind the tank cap.

### TIGHTENING HANDLEBAR CONTROLS

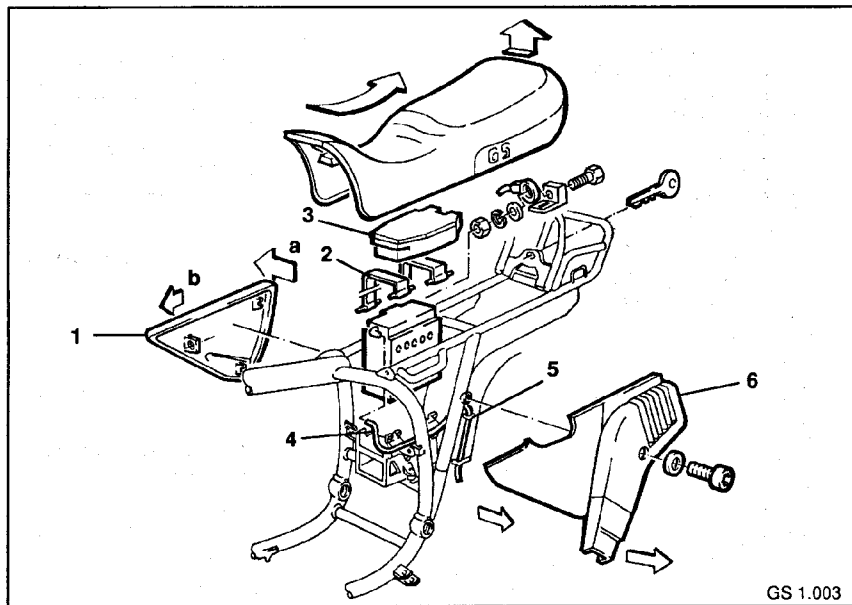
- Align lefthand and righthand handlebar controls ergonomically (fitted on loosely).
- Clamp tight by tightening each on the fastening screws (4).

### INSTALLING REAR-VIEW MIRRORS

- Install lefthand/righthand rear-view mirrors in the order shown in illustration.
- Fit on protective cap (5).
- Take off seat (1) after releasing seat lock.
- Check contents of stowage dish (2).
- Checking whether tools in stowage dish and documentation are complete.

**Contents of dish:** bike tools, breakdown assistance kit, 3 bike keys (1 folding key, 2 ridged keys).

**Documentation:** Owner's Manual, List of Dealers, First-Aid Guide.



## 1.2 DELIVERY INSPECTION

### NOTE:

The delivery inspection should be performed immediately before handing over the motor cycle to the customer.

### REMOVING BATTERY

- Take off seat.
- Remove stowage dish (3).
- Take off righthand battery cover (1) in direction of arrow.
- Lift off left battery cover (6) in direction of arrow, and loosen screw (GS only).
- Detach battery tensiing straps (2).
- Unscrew negative terminal on battery.
- Lift battery up out of mount (withdraw angled vent pipe (4) from battery if necessary).

## FILLING BATTERY WITH ELECTROLYTE

### CAUTION:

The battery contains sulfuric acid. Avoid acid coming into contact with eyes and skin or clothing. Remedy: wash contact areas with water. If acid has been swallowed, drink large quantities of milk or water.

Contact a doctor without delay. Wash out eyes with water and obtain medical treatment.

Battery gives off explosive gases. Avoid sparking, naked flames and smoking. When working close to batteries, always wear protective goggles.

### STORE BATTERIES AWAY FROM THE REACH OF CHILDREN!

Store batteries only in well-ventilated rooms. The filler caps must always be removed.

- Remove plugs from battery.

- Fill battery with pure electrolyte (conforming to VDE 0510, Density: 1.28 kg/l, for tropical countries 1.25 kg/l (related to electrolyte temperature of 20°C) up to specified level ("Max" mark).
- Leave battery to stand for approx. 1 hour, then shake slightly or tip (to vent) and top up electrolyte level to "Max" mark if necessary.
- Screw in plugs loosely (do not tighten fully until after battery is charged).

### CAUTION:

After being filled, the dry-charged battery attains only 60% of its rated capacity. It is therefore essential to charge battery. Avoid allowing filled batteries to stand for lengthy period when not in use. Do not fill battery with electrolyte until just before it is to be used.

## CHARGING BATTERIES

### CAUTION:

Do not exceed a maximum charging current of 10% of battery capacity.

Maximum charging temperature = 40°C.

### Example:

25 Ah-battery = charging current 2.5 Amperes  
Charging time = 5 ... 10 hours

The charged state of the battery can be checked by measuring the electrolyte density.

Electrolyte density of fully-charged battery = 1.256 ... 1.30 kg/l related to 20°C.

- Shake battery slightly after charging – gas bubbles rise to the surface.
- After the electrolyte has settled, top up with distilled water to "Max" mark, if necessary.
- Screw in plugs tight.
- Install battery.

### NOTE:

Ensure vent hose (5) is correctly routed.

### CAUTION:

Connect battery positive terminal first, then negative terminal.

- Connect vent line.

## CHECKING REAR WHEEL BOLTS ARE TIGHT

Tightening torque:  
rear wheel bolt

105 Nm

## CHECKING/CORRECTING TIRE INFLATION PRESSURE

Check tire inflation pressure when tires are cold; correct if necessary.

Solo	front	2.2 bar
	rear	2.5 bar
with pillion passenger	front	2.4 bar
	rear	2.9 bar

## CHECKING LIGHTING AND SIGNAL SYSTEM

- Main beam, dipped beam, and parking lights;
- Stop, licence plate and turn signal lamps;
- Main beam, battery charge, idling and oil pressure indicator lamps;
- Horn and any optional equipment fitted.



## CHECKING/TOPPING UP BRAKE FLUID

### Checking brake fluid:

#### CAUTION:

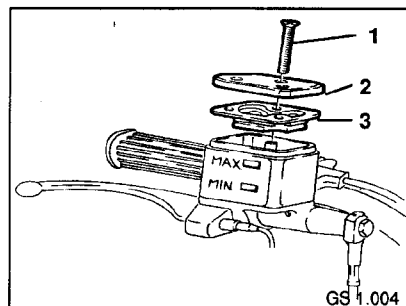
Brake fluid is caustic. Avoid contact with eyes and skin and also with clothing. Protect paintwork from contact with brake fluid.

#### CAUTION:

The brake fluid level must extend to below "MAX" mark when the reservoir is closed. The brake fluid level must never drop below the "MIN" mark.

Take care when pouring in brake fluid.

### Topping up brake fluid



- Slacken the 3 fastening screws (1) and carefully lift lid (2) off the brake fluid reservoir.
- Take off bellows (3).

#### NOTE:

Use only brake fluid conforming to quality DOT 4 (e.g. ATE brake fluid "SL").

- Top up brake fluid until just below the "MAX" mark.
- Insert bellows, fit on cover and tighten gently with 3 fastening screws.

## PERFORMING OPERATIONAL CHECK

- Clutch
- Gearshift
- Steering
- Footbrake
- Handbrake
- Operational instruments; perform test run, if necessary
- Following this, check idle setting of engine, correct if necessary; refer to adjusting carburetor (engine at normal operating temperature).

## FINAL VISUAL INSPECTION FOR LEAKS ON:

- Engine
- Transmission
- Rear axle housing
- Telescopic forks and
- Fuel system

Stamp and sign Owner's Manual as confirmation that delivery inspection has been performed.

## 2. MAINTENANCE AND INSPECTION

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