

# Service-Information



BMW Motorrad GmbH  
Service Ett/cb/fm

R 60/6 - R 90 S motorcycles  
Technical  
Group 31

Munich, Dec '75  
1/75 (199 M) e

Subject: Front forks - damping and springing

## Damping

To prevent the front forks from compressing too far or bottoming over undulating surfaces, a suspension damper with a harder compression phase has been developed. The updated compression phase is particularly suitable for machines with the twin disc brake which are normally ridden in an enthusiastic manner.

The compression phase damping action has been modified by omitting one lateral passage at the base of the damper tube, thus restricting the flow of the hydraulic fluid still further.

The new damper tube

Part number 31 42 1 234 474

has been introduced recently for all motorcycles equipped at the Berlin factory with twin disc brakes.

The modification came into force as follows:

R 90 S US from frame number 498 0520

and as special equipment - Ref. number 54.2 - as follows:

R 60/6 US from frame number 492 0637

R 75/6 US " " " 494 0641

R 90/6 US " " " 496 7803

The modified damper tube can be installed subsequently on all /6 motorcycles so far produced, without any further modifications being necessary.

In order to offer interested riders the 'harder' compression rate at reasonable cost, a narrower-bore damper jet (floating, see drawing on page 4) has been released:

Part number 31 42 1 234 506

Identification: peripheral groove

Kenntnis genommen - Pris connaissance - Noted - Tomado nota - Preso conoscenza					Ablage - Archives - File - Archivio	
Betriebsleitung Direction	Werkstatt Atelier	KD-Annahme Reception clientele	Gewahrt.-Sachb. Inspecteur garantie	Teiledienst Service pieces detachees	Betriebsleitung Direction	Werkstatt Atelier

- 2 -

This also stiffens the tension phase of the dampers, but provides the desired effect without installation of the new damper tube.

### Warning

Install the narrower-bore damper jets only in the threaded rings at the lower ends of the fixed fork tubes. Never install the narrower-bore jet as the spring-loaded valve plate on the damper piston (lower spring mounting), as this would severely increase the tension phase rating.

If a motorcycle is normally ridden extremely hard, the narrow bore jet together with the new damper tube may offer improved handling and ride, since the combination of both modified parts will stiffen the compression phase still further.

By way of enlargement on our Service Information 1/74(117 M) issued in May 1974, we quote again below the approved makes and grades of shock absorber oil:

<u>Manufacturer</u>	<u>Oil grade</u>
Aral	1010
BP	Aero Hydraulic 1
Castrol	DB Hydraulic Fluid
Castrol	Shock Absorber 1-318
Shell	Aero Fluid 4
Shell	4001 Shock Absorber Oil

Oil content of each fork tube:

Initial filling	280 cm <sup>3</sup>
Oil change	265 cm <sup>3</sup>

### Springing

In Service Information 4/72 (053 M) dated Dec '72, we gave details of front fork springs developed for the /5 models.

On /6 motorcycles, only the two stiffest (highest-rate) versions are installed.

Spring 1 - Part number 31 42 1 231 358  
 Length 567 mm  
 Wire dia. 4 mm

Used on R 90 S from start of production

Spring 2 - Part number 31 42 1 232 017  
 Length 543 mm  
 Wire dia. 4.25 mm

Used on Specified if machine is equipped with a front enclosure, e.g. the BMW FULL FAIRING (not the BMW Cockpit)

- 3 -

Reminder: As you will be aware, our full fairing is not approved for the R 90 S.

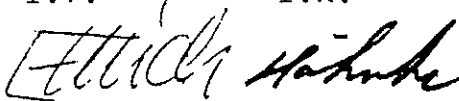
These springs are also recommended for COMPETITION purposes, in combination with the hardest available damper compression rate (new damper tube and narrower jet).

Our objective in supplying all our motorcycles with specific suspension rates and settings rather than others is to ensure maximum safety and comfort in all riding conditions.

However, since BMW motorcycles are purchased for a variety of different purposes, some modification to the standard version's settings may prove necessary and acceptable. We offer factory fitting of these special components, but the special equipment can, of course, be supplied to you for subsequent installation.

We will accordingly be issuing recommendations shortly for the correct equipment of any motorcycle with items from our product range, in order to suit it to the purposes intended.

Sincerely yours,  
BMW MOTORRAD GMBH  
München  
i.V. i.A.



Ettlich Höhnke

For illustrations, see page 4