

# Service-Information Motorcycle



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Service Department

Group: 11  
Engine

January, 1993  
11 055 93  
(2575)

For USA Only

## Vibrations - K-1, K1100LT and K100RS 16-valve

**Complaint:** The rider and passenger may complain of an uncomfortable level of vibration in the handlebars, seat and foot rest area.

In a few cases the entire engine was replaced in an attempt to satisfy the customer. In addition to this, the crankshaft, connecting rods and pistons have been replaced. The complaint was still not rectified.

### Adjustments: 1. Engine

The following must be corrected prior to going any further.

-Check ignition timing statically, adjust to 0.24 mm BTDC

**Do not attempt to time with a timing light!**

-Check and adjust, if necessary, the CO value to: 1.5 ± 0.5%

-Synchronize the four throttle bodies using the BMW Synchro Tester.

### 2. Frame

The engine must be secured to the frame without stress. Use the following procedure to check engine to frame mounting.

#### A. K1 Rigid Front Engine Mounts

- A.1. Screw in all 5 bolts loosely by hand, but not as far as the bolt head.
- A.2. Tighten at the front right and rear right (bolting points 1 and 4).

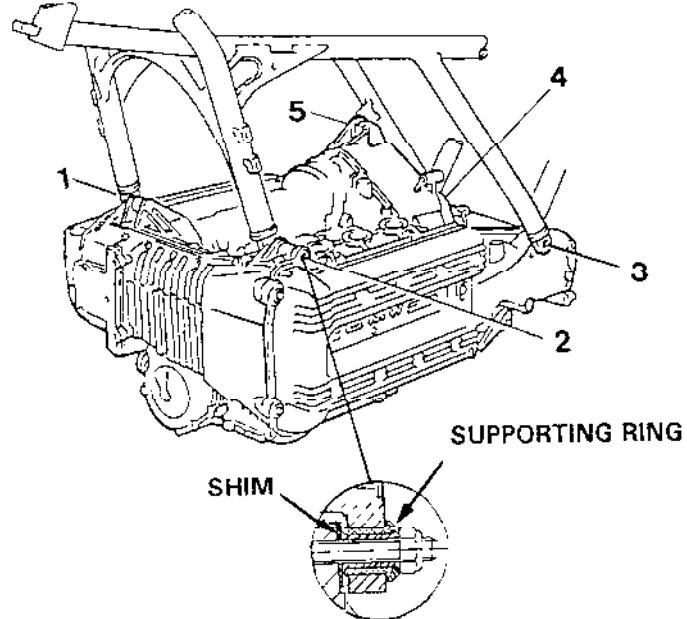
Please initial and route to the following before filing

Service	Parts	Sales	Warranty	Technicians

A.3. Shim the bolt at the intermediate flange and tighten (5).

A.4. Tighten at the front left and rear left (2 and 3).

Tightening torque 45 Nm (32.5 ft/lb)



B. K100RS 16V (frame attached resiliently to engine at front mounts, same as K1100LT).

B.1. Screw in all 5 bolts loosely by hand, but not as far as the bolt heads. When assembling, insert a 1 mm shim at the right front between the crankcase and rubber mountings, with a supporting ring on the outside (1).

B.2. Tighten bolts at the right front, rear right and then rear left (1, 4 and 3).

B.3. Shim the bolt at the left front and install the supporting ring on the outside. Insert the bolt and tighten (2).

B.4. Shim at the intermediate flange, insert the bolt and tighten (5).

Tightening torque 45 Nm (32.5 ft/lb)

#### Shim Thickness

<u>Thickness</u>	<u>Part Number</u>
0.5	46 71 2 312 160
0.75	46 71 2 312 161
1.0	46 71 2 311 547
1.25	46 71 2 311 548
1.5	46 71 2 311 549
1.75	46 71 2 311 550
2.0	46 71 2 311 551
2.25	46 71 2 311 552
2.5	46 71 2 311 553
2.75	46 71 2 311 554
3.0	46 71 2 311 555
3.25	46 71 2 311 556
3.5	46 71 2 311 557
3.75	46 71 2 311 558
4.0	46 71 2 311 599

### 3. Handlebar Rubber mounts on K1 and K100RS

The handlebar on these models is mounted in the upper fork bridge with rubber bushings. Metal rings are vulcanized into the bushings.

If the metal ring inside the bushing is able to contact the fork bridge, vibration can transfer to the handlebar. To prevent this from happening, the diameter of the metal ring has been reduced. The new bushings are available under:

Part Number - 32 71 2 307 364

4. If engine noise occurs with vibration, check that the clutch carrier retaining nut on the engine output shaft is properly torqued.

Tightening Torque is: 140 Nm (101 ft/lb)

Then loosen and tighten again to: 100 Nm (72 ft/lb)

We are convinced that this information will help eliminate vibration complaints effectively.

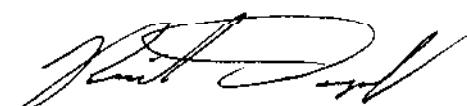
Please remember when discussing complaints with your customers that it is not possible to eliminate all vibrations completely, especially in the primary impulse zone.

Very truly yours,

BMW of North America, Inc.



Frank Stevens  
National Service Manager  
Motorcycle Group



Richard Dampf  
National Technical Manager

FS:tb/456.9