

# Service-Information Motorcycle



BMW of N.A.  
Service Department

Group: 31  
Front Fork

January 1986  
31 013 86  
(2190)

For USA and Canada  
Only

## Front Fork Noise: 1985 R80 and K100

Complaint: when the front fork is compressed and extended, a metallic noise is heard.

Cause: The sudden change in direction of the front fork allows the damper valve to rattle slightly.

Remedy: A new damper valve assembly has been installed on production motorcycles since July, 1985.

A modification kit consisting of the following can be retrofitted:

- damper tube with valve components
- valve housing with snap ring and shim washers

### Installation Instructions:

1. Install the complete damper tube with piston ring into the fork tube, using the assembly bushing Part No. 88 88 6 314 740 (R80).
2. Carefully locate the modified valve housing in the fork tube, and shim with shim washers to eliminate play.
3. With the rubber dust cover and fork seal in position and lightly oiled, push the fork slider tubes back onto the fork tubes. (On R80's, remove the fork brace.)
4. Install the bolt which holds the damper tube into the fork slider. Do not tighten fully yet.
5. Push the slider up to the fork tube until a metallic contact is heard. Then rotate the slider two or three times around the tube in order to center the damper tubes.
6. While pushing in the fork slider, tighten the bolt which holds the damper tube into the fork slider.

7. Rotate the slider around the fixed fork tube again (while pushing) to detect any distortion in the damper tube. If distortion or stiffness is felt, loosen the bolt which holds the damper tube to the sliding tube and repeat steps 5 through 7.
8. Install the fork brace (R80), but do not tighten fully.
9. On R80 models, install the large bolt which holds the fork spring in place. This will help center the fork tubes.
10. Insert the front axle and clamp on one side only.
11. Push the slider tubes upwards until metallic contact is heard or made.
12. Tighten the other axle clamp.
13. On the R80, pull the slider tube down just far enough to tighten the fork brace bolts. Tighten in a crosswise pattern.
14. Push the sliders up and down several times to determine any distortion or stiffness in the forks.
15. If the slider tubes are stiff to move, check all components to insure that the fork is not twisted or distorted.
16. Remove the front axle.
17. Install the oil drain plugs.
18. Install the front fender.
19. Install the front wheel.
20. Install the brake calipers.
21. On R80's, remove the large bolt which holds the fork spring in place.
22. Fill the front forks with the correct quantity of oil for the model involved.
23. Relieve the front axle of all load.
24. Insert the springs and spacing sleeves into the fork tubes.

25. Install the large bolt which holds the fork spring in place.
26. Remove the motorcycle from its center stand and check the action of the front fork to make sure it is operating properly.

It is almost impossible to avoid a slight stiffness in the fork after repairs. Allow a break-in period of approximately 600 miles.

The damper piston can be unscrewed from the damper tube if it is first heated to at least 250° C. (484° F.).

When assembling, clean the threads and coat them with Loctite. Screw the piston onto the damper tube thread by hand until it is flush with the top edge of the damper tube. Harden the Loctite with a heat gun or allow to harden for 24 hours at room temperature.

Fork Oil  
Change:

The following quantities of fork oil should be used in each fork leg:

K100 (without fairing)	330	-10	cm <sup>3</sup>
K100RS and RT	360	-10	cm <sup>3</sup>
R80 (without fairing)	300	-10	cm <sup>3</sup>
R80RT	320	-10	cm <sup>3</sup>

Please use only telescopic fork oil with Part No. 31 32 9 196 902 or the oil grades stated in the Rider's Handbook.

Parts:

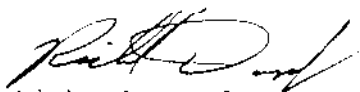
Complete modification kits are available under the following Part Numbers:

K100:	31 42 9 058 154
R80:	31 42 9 058 155

On the following page, parts are listed individually for repair purposes.

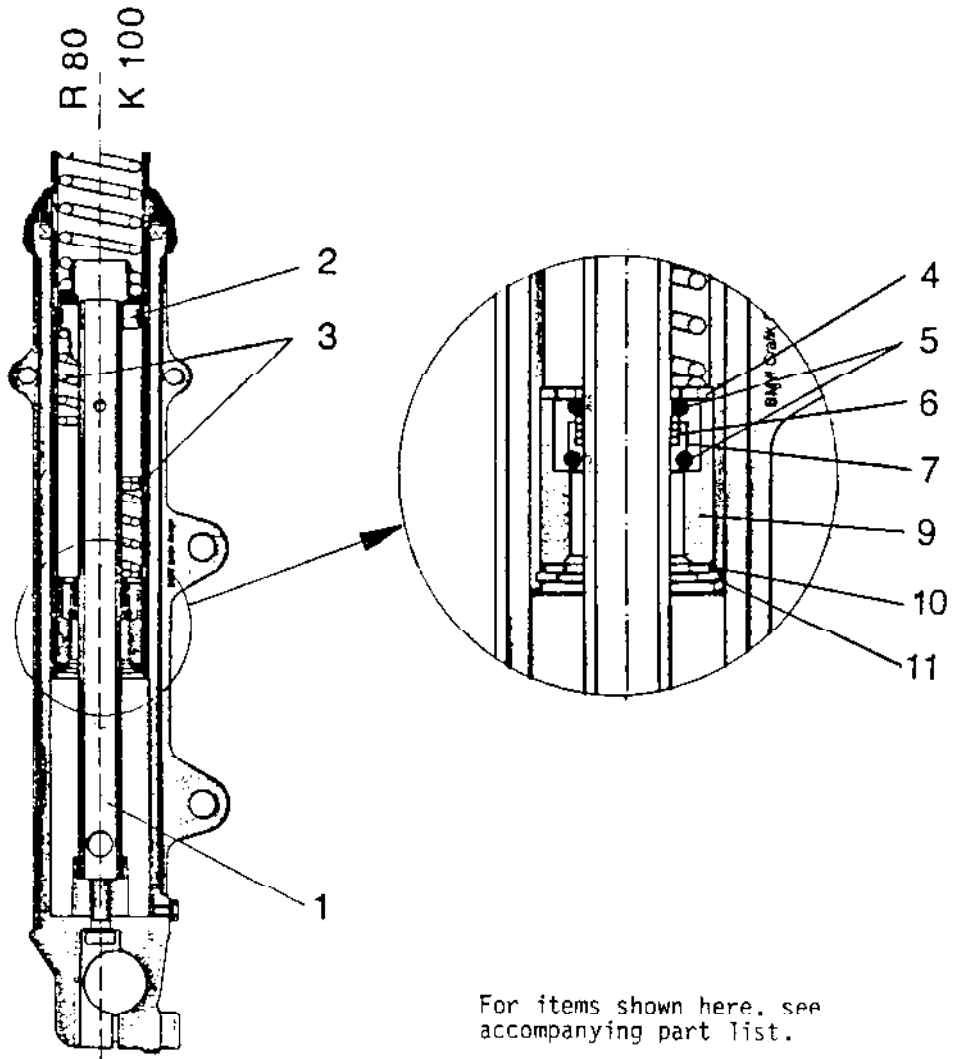
Very truly yours,

BMW OF NORTH AMERICA, INC.



Richard Dampf  
National Technical Manager  
Motorcycle Group

RD:ch/103



PARTS LIST: MODIFIED FORK DAMPING COMPONENTS

<u>ITEM</u>	<u>PART NAME</u>	<u>QUANTITY</u>	<u>K100</u>	<u>R80</u>
1	Damper tube	2	31 42 1 454 616	31 42 1 454 678
2	Damper piston	2	31 42 1 450 515	31 42 1 452 012
3	Coil spring	2	31 42 1 451 701	31 42 1 452 009
4	Perforated disc	2	31 42 1 450 535	31 42 1 452 010
5	Round-section sealing ring	4	31 42 1 452 011	31 42 1 452 011
6	Coil spring	2	31 42 1 232 057	31 42 1 232 057
7	Valve	2	31 42 1 454 620	31 42 1 454 620
8	Damper tube, complete (comprising Items 1 - 7)	2	31 42 1 454 615	31 42 1 454 677
9	Valve housing	2	31 42 1 454 621	31 42 1 454 681
10	Lock ring	2	07 11 9 934 681	07 11 9 934 660
11	Shim washer (select thickness as required)		07 11 9 932 661 (1.6mm thick) 07 11 9 932 706 (1.7mm thick) 07 11 9 932 707 (1.8mm thick) 07 11 9 932 708 (1.9mm thick) 07 11 9 932 709 (2.0mm thick)	31 42 1 457 155 31 42 1 457 156 31 42 1 457 157 31 42 1 457 158 31 42 1 457 159
12	Complete assembly kit (containing Items 8, 9, 10, and 11 above)	1	31 42 9 058 154	31 42 9 058 155