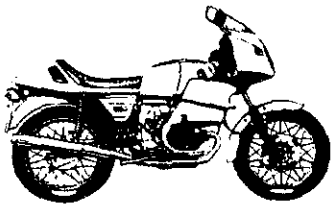

Service-Information

BMW MOTORRAD GMBH Service R-VK-10 vdw/mi	Motorcycles R80-R100RS Technic	Munich, Jan. 78 11 005 78(1040R)

For U.S. and Canada only

Subject: Maintenance of the Exhaust Emission Control System

Ladies and Gentlemen,

The motorcycles manufactured by BMW after 1/1/78 are subject to the regulations issued by the United States Environmental Protection Agency.

Among other measures to be complied with by our company the BMW dealer network will have to perform some new important tasks. In the following we have listed the most important items.

Above mentioned regulations should help to moderate the nation's air pollution dilemma. We urge you to keep this intent in mind as you sell and service motorcycles and related equipment.

In this context two pollutants must be mentioned:

Hydrocarbons (HC) which come from the internal combustion process, the exhaust system (unburned fuel), crankcase. Carbon monoxide (CO) which is emitted from internal combustion engines due to incomplete combustion (lack of sufficient oxygen).

The emission values for our motorcycles 1978/79 amount to 14 g/km HC and 17 g/km CO. In order to guarantee that these values are observed, the CO output at idle speed and operating temperature must amount to 2 % ± 0,5 % CO. This specification appears on a durable label on the rear fender under the seat (Vehicle Emission Control Information). Decisive loss of performance or other negative consequences influencing the performance must not be expected. Please follow exactly the prescribed servicing schedule during delivery inspection, the 600 miles inspection as well as all other servicing in regular intervals.

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The Clean Air Act prohibits a manufacturer from specifying that a customer must take his motorcycle only to an authorized dealer for emission related service. The Act directs EPA to adopt a parts certification program within 2 years. The Act further stipulates that emission related services may be performed by any service facility of the owner's choosing, using parts which have been certified under those regulations. But in order to avoid eventual legal or technical difficulties to the customers, it makes good sense to advise them to have the maintenance performed by competent mechanics.

Referring to warranty there exists an additional item that all emission related devices on our motorcycles are covered by 5 years or 30.000 km,*) which ever occurs first. Details regarding this new warranty policy will be forthcoming shortly.

The Federal law covering motor vehicle pollution prohibits:

"Sec. 203(a) (3) (A) for any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this title prior to its sale and delivery to the ultimate purchaser, or for any manufacturer or dealer knowingly to remove or render inoperative any such device or element of design after such sale and delivery to the ultimate purchaser".

The phrase "remove or render inoperative any device or element of design" is commonly called "tampering" and has been generally interpreted as follows:

A. Tampering does not include the temporary removal or rendering inoperative of devices or elements of design in order to perform maintenance.

B. Tampering does include:
   I. Maladjustment of vehicle components such that the emission standards are exceeded.
   II. Use of replacement parts or accessories which adversely affect emissions performance/durability.
   III. Addition of components or accessories that result in the vehicle exceeding the standards.
   IV. Permanently removing, disconnecting, or rendering inoperative any component or element of design of the emission control systems.

*) 18.600 miles

All maintenance information necessary to insure proper functioning of the emission control system must be available to anyone who wants one without discrimination or prejudice.

Following we indicate the required operations to adjust the exhaust emission system, which are up-to-date. Please note the detail modifications being already in series production:

Adjusting points gap

Take off engine cover. Turn engine with spark plugs removed, clockwise (facing against direction of travel) with the aid of Allen head bolt used to secure rotor.

Contact breaker arm (hammer) must lift fully.
Check points gap with feeler gauge: 0,35 - 0,40 mm (0,014 - 0,016 inches). If necessary replace points.

Slacken off locking screw at anvil point, insert screwdriver between the two pegs and in slot of anvil point.
Adjust points gap by turning screwdriver.
Tighten lockscrew.

Recheck gap.

Ignition Timing

Connect test lamp (12 V) or buzzer with one terminal to capacitor and earth.
Switch on ignition. Turn engine clockwise, as mentioned above, and watch marks on flywheel.

After mark (F) appeared, continue turning slowly until central mark (S) on flywheel coincides with sight aperture marking.
(Centrifugal weights in rest position). Test lamp must flash at this moment.

Checking Ignition Timing

Connect stroboscope lamp. Start engine and increase engine speed up to 3500 rpm. White spot "F" must appear in inspection hole when lighting with stroboscope lamp at flywheel.

To check ignition advance control curve, turn wheel on stroboscope lamp until TDC mark appears. The actual ignition angle (Spec.: $31^{\circ} \pm 1^{\circ}$) can be read from the lamp's scale.

At increasing engine speed flywheel mark "S" disappears upwards (adjustment commences at about 1550 rpm) until by still further increasing revolutions white spot ("F" = full advance) appears from bottom in inspection hole and at 2800 ± 200 rpm it moves to housing mark.

To check ignition delay between left and right cylinder connect stroboscope lamp alternatively to left and right ignition cable. Deviation must not exceed 2° (corresponding to 4 mm (5/32 in) on the flywheel circumference). Markings on flywheel: notches 3° above and 3° below mark (S).

Engine Idle and CO Level Adjusting

Check that the engine is at normal operating temperature throttle twist grip is completely closed, cable play 4 mm (0,16 in), choke being in "off" position, choke arm at carburetors is pressed into its lower end position.

Adjust idle mixture control screw and throttle stop screw of both carburetors to their basic settings: Tighten idle mixture control screw completely for this purpose and then loosen it by 1/2 turn.

Tighten throttle stop screw until it just touches throttle lever, then keep on tightening by one more turn.

Use Duo Test unit, BMW No. 130700, to synchronize the carburetors by alternating between the throttle stop screw and idle mixture control screw. Correct engine speed can be adjusted by turning both throttle stop screws uniformly in clockwise or counterclockwise direction.

In conjunction with this, CO-level has to be adjusted to 2 ± 0,5 % at idle speed with the idle mixture control screw.

For checking the CO-level we urge you to use a CO tester which operates on the principle of non-dispersive infrared (NDIR) analyzing, since this is the only method known to us which produces a sufficiently exact result. Insert its sensor alternately in the left and right muffler approx. 50 cm (20 in). Spark plugs must not be sooted for CO-level test. Every adjustment of the throttle stop screw requires a CO-level readjustment.

To adjust accelerator cables, increase engine speed slightly by turning the throttle twist grip. Use the above mentioned Duo Test Unit to synchronize cables.

Never let engine run longer than 10 minutes in stationary state without sufficient cooling.

Very truly yours,

BMW MOTORRAD GMBH
München

i.V. Gonzalez

i.V. Blank