

Service-Information Motorcycle



BMW of N.A.
Service Department

Group: 16

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Fuel Tank
and Lines

16 008 R5
(2186)

For USA and Canada
Only

California Fuel Evaporation Emission System -- Boxer Models

Model: 1985 California models
1986 All U.S. models except R65

Explanation: Due to California Air Resource Board (CARB) regulations, motorcycles sold in the state of California must have evaporative emission control systems.

The system used on BMW Boxer motorcycles consists of a crankcase storage system, which controls fuel vapors.

Gas Cap: Fuel vapor (gases) from the tank are prevented from escaping by a sealed cap. The cap incorporates two (2) valves.

1. an air-bleed, to insure additional venting of the fuel tank; and
2. a safety valve to blow off gases in case of excessive fuel expansion.

Gas Tank: A small cup is mounted inside the tank near the filler neck so:

1. fuel vapors can escape when engine is off, and
2. gas tank is vented while the engine is running.

A flapper door is positioned in the filler neck to prevent over-filling of the gas tank.

(If gasoline is allowed to rise above the flapper door, it could over-flow into the small cup which is mounted inside the tank, and flow through the air solenoid and into the crankcase.)

When filling the tank, the flapper is pushed open by the service station nozzle.

continued

Gas Tank:
(con't.)

3. Prevent fuel from over-flowing from the filler neck when the gas cap is removed.

(Because this system is under a slight pressure, when the cap is removed, some pressure will escape.)

Air Solenoid:

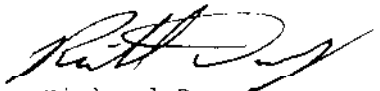
1. When the engine is off, fuel vapors escape the tank through the hose to the air solenoid, which directs the vapors into the crankcase through the pressure relief valve.
2. When the engine is started, the vapors are drawn through the crankcase ventilation system into the air intake tubes and mixed with fresh air. This mix of vapors and air is then burned by the engine.
3. When the engine is running, the air solenoid opens and the fuel tank can vent into the air filter housing.

Fuel Shut-Off Solenoid:

To prevent overflow of the carburetors when the motorcycle is stopped (which could occur when the fuel petcocks are open and the tank is under pressure) another electrical fuel shut-off solenoid is connected to the fuel hoses. This valve closes when the ignition is switched off.

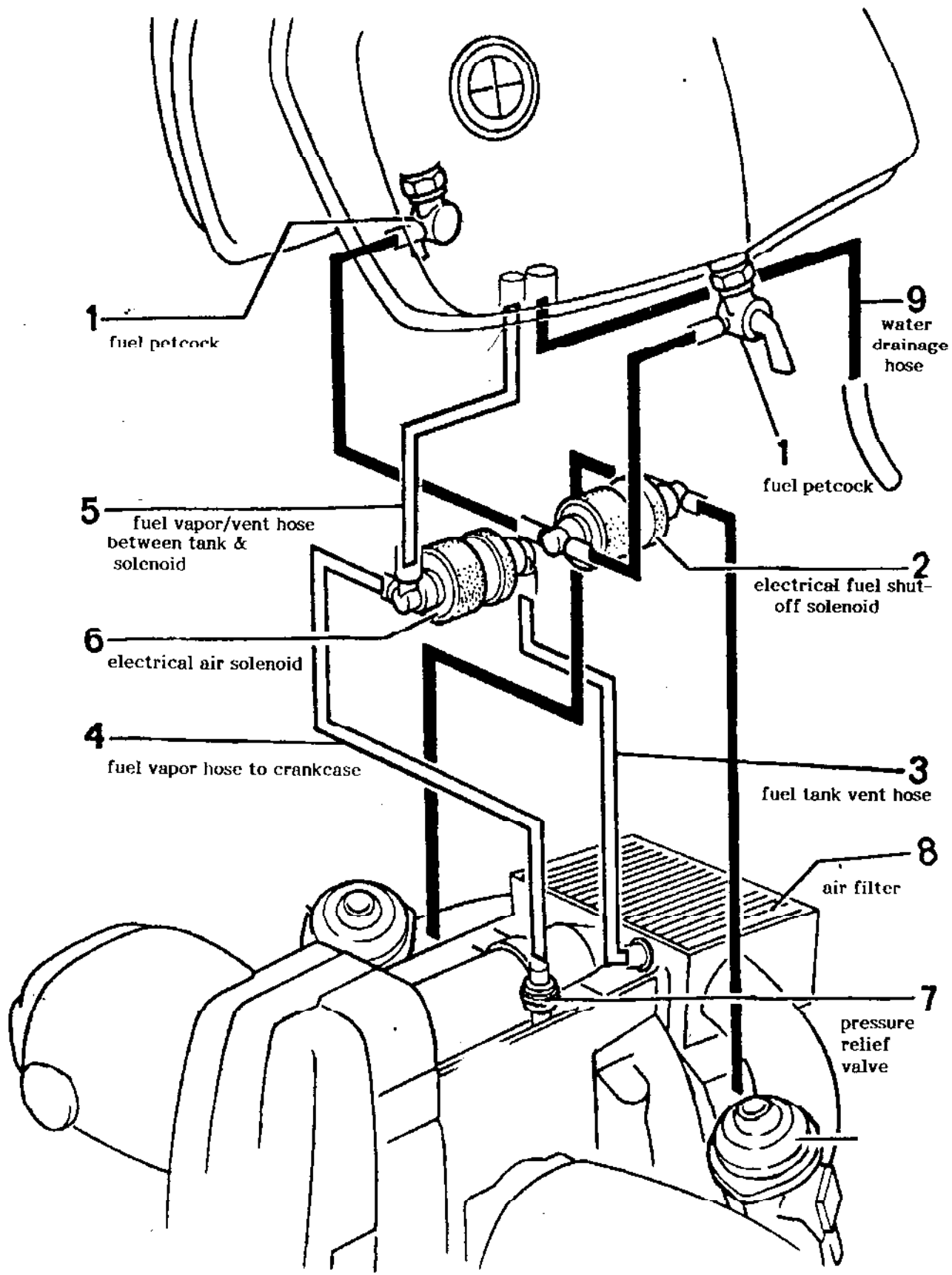
Very truly yours,

BMW OF NORTH AMERICA, INC.



Richard Dampf
National Technical Manager
Motorcycle Group

RD:ch/063



1 fuel petcock

9 water drainage hose

1 fuel petcock

5 fuel vapor/vent hose between tank & solenoid

2 electrical fuel shut-off solenoid

6 electrical air solenoid

4 fuel vapor hose to crankcase

3 fuel tank vent hose

8 air filter

7 pressure relief valve