



## MODEL

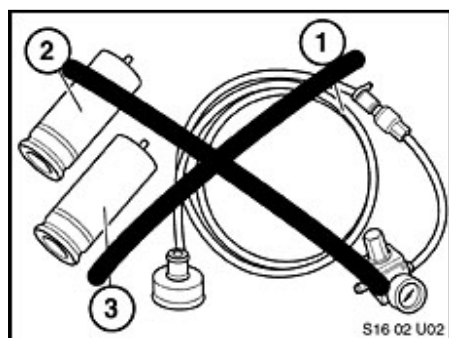
|                                                  |                                                |                                        |                                  |
|--------------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------|
| E36/7, Z3 roadster, Z3 coupe with M54 from 06/00 | E36/7, M roadster, M coupe with S54 from 03/01 | E46, 325i with M54 from 08/00          | E46, 330i with M54 from 06/00    |
| E46, 325i with M56 from 09/02                    | E46, M3 with S54 from 03/01                    | E39, 525i and 530i with M54 from 09/00 | E39, 540i with M62 TU from 09/00 |
| E39, M5 with S62 from 09/00                      | E52, Z8 with S62 from 09/00                    | E53, X5 4.4 with M62 TU from 09/99     | E53, X5 3.0 with M54 from 04/00  |

## SITUATION

When diagnosing fuel tank evaporation system related faults on **vehicles equipped with DMTL systems**, **do not externally pressurize fuel tank** using Evaporative Leak Test Tool P/N 90 88 6 161 170 in conjunction with an ultrasound detector.

**Application of an external pressure to the fuel tank creates erroneous leaks from the DMTL check valve, which can be interpreted as a real evaporation system leakage.** Analysis of parts returned to Warranty revealed that the majority of replaced DMTL modules were actually not defective.

Only appropriate DISplus/ GT1 test modules should be used to perform a fuel tank leak diagnosis (as described in RA 16 00 510).



Evaporative Leak Test Tool PN 90 88 6 161 170 (indicated as # 1) **SHOULD NOT** be used to pressurize fuel tanks on the **DMTL** equipped vehicles.

## PROCEDURE I

In case "Check Engine" light is illuminated and one of the following **internal DMTL** faults is stored in the DME:

- **142 "Module fault DMTL"** - M54 (MS43), M56 (MS45) engines
- **127 "DMTL module"**- S54 (MSS43), S62 (MSS52) engines,
- **189 "DMTL module"** M62TU (ME7.2) engine, the following diagnostic steps should be performed:

1. Clear DME fault memory
2. Check whether the fuel filler cap is installed correctly
3. Work through "**Fuel tank leakage diagnostic module DMTL**". This test module performs a reference measurement, a fuel tank system measurement and simultaneously checks the function of the DMTL pump. (Refer to "STO55 Engine Electronics" training manual for detailed description of the evaporative system monitoring). To access this test follow the path below:

**For M54, M56 equipped vehicles:**

- Function selection
- Complete vehicle

- Drive
- Engine management MS43 (MS45)
- Tank system check
- Diagnosis module tank leakage DMTL
- Test plan.

#### For M62TU, S54, S62 equipped vehicles:

- Function selection
- Complete vehicle
- Drive
- Engine control
- Digital Motor Electronics
- Test plan
- 2 Function test
- 180 DMTL tank leakage test.

4. If the internal DMTL fault code **is stored again** in DME after completion of tank leakage test, the DMTL is defective and must be replaced (refer to Repair Instruction RA 16 13 015).

After replacing the DMTL, clear DME fault memory and once again work through "Tank leakage DMTL" test module as specified above. If the repair has been done correctly, after completion of test module no faults are stored in DME memory.

5. If the internal DMTL fault code **is NOT stored again** in DME after completion of tank leakage test, DMTL pump is NOT defective and should NOT be replaced (most likely, a sporadic fault was caused by moisture condensation inside the DMTL pump). The repair is completed.

## PROCEDURE II

In case "Check Engine" light is illuminated and one of the following **fuel tank leak** faults is stored in the DME:

- **143 "Fuel tank leak diagnosis DMTL"** - M54 (MS43), M56 (MS45) engines
- **180/181 "Fuel tank leak diagnosis DMTL"** S54 (MSS43), S62 (MSS52) engines
- **187/188 "Fuel tank leak diagnosis DMTL"** M62TU (ME7.2) engine, the following diagnostic steps should be performed:

1. Clear DME fault memory
2. Check whether the fuel filler cap is installed correctly
3. Work through "**Fuel tank leakage diagnostic module DMTL**" paths described above in Procedure I.
4. If the leak is NOT detected after completion of the DMTL tank leakage diagnostic test, the system is intact (tight), and the previously stored fault code is most likely caused by the fuel filler cap being closed incorrectly (fitted crooked, not turned to the end stop, or retaining strap being trapped between filler cap and filler neck). The repair is completed. Please educate the customer about the importance of correctly fitting the fuel filler cap. Use the "OBD Brochure" (PN SD92171) found in vehicle's portfolio package as your instruction material.
5. If the leak is detected after completion of the DMTL leakage diagnostic test, further tank leak diagnosis must be carried out. The fuel system has to be pressurized internally by means of "**DMTL pump activation**" test module, and the source of a leak has to be identified by means of ultrasonic leak detector. To activate DMTL pump follow the path:

#### For M54, M56 equipped vehicles:

- Function selection
- Service functions
- Drive
- Digital Motor Electronics
- Activation, DMTL pump
- Test plan.

### For M62TU, S54, S62 equipped vehicles:

- Function selection
- Complete vehicle
- Drive
- Engine control
- Digital Motor Electronics
- Test plan
- 4 Expert mode
- 2 Component activation
- DMTL pump activation (test # 127 for S54 engine; test # 118 for M62TU, S62 engines)

During the DMTL pump activation test, DMTL valve solenoid is energized in order to isolate fuel system from the atmosphere, while at the same time, DMTL pump builds up to 1.1 bar of absolute pressure. Test module runs for approximately 15 minutes and can be repeated after a short break (cooling time of the pump).

6. After the leak is identified and its source repaired, clear DME fault memory and once again work through **"Fuel tank leakage diagnostic module DMTL"** test module as specified above in Procedure I. If the repair is done correctly, after completion of test module no faults are stored in DME memory. The repair is completed.

## WARRANTY INFORMATION

For information only.