

### **Towing or jump-starting**

Towing or jump-starting with an external battery is possible with cold engine and cooled-down catalytic converter system. However, repeated starting attempts should be avoided. In order to protect the catalytic converter system, further attempts must be stopped with the engine at operating temperature unless it starts **immediately**.

### **Misfiring**

Misfiring poses a particular threat to the pre-catalytic converters as the air-fuel mixture is converted in the hot catalytic converter. This could lead to thermal overloading of the pre-catalytic converters. If increased misfiring occurs, the engine must only be operated for a short period with low load. Eliminate the cause of the damage without delay. If in doubt, check the catalytic converters for thermal damage after the faults on the ignition system have been eliminated.

### **Checking the catalytic converter system for thermal damage**

Thermal overload first leads to damage in the pre-catalytic converter. This can be checked by visually inspecting the removed exhaust system. Performance complaints after engine troubles point to thermal overloading of the catalytic converter. Remains of the melted catalytic converter are clogging the exhaust pipe.

### **Driving on the roller-type dynamometer**

The pre-catalytic converter becomes red-hot faster under higher load due to the increased thermal output. This is of no consequence.

### **Fuel additives**

These are not advisable on catalytic converter vehicles. Ensure that only the specified fuel quality is used.

### **Use of leaded fuel**

If leaded fuel was used by mistake, check the function of the lambda control. If the sensor is faulty, it should be replaced. If the exhaust value exceeds  $< 0.5\%$  CO, the entire catalytic converter system must be replaced.

### **Engine oils**

The same oil recommendations (approved products, oil change intervals etc.) apply to vehicles **with** catalytic converter as for vehicles **without** catalytic converter.

### **Smell**

The deposit of sulfur constituents from the fuel on the catalytic converter can lead to the formation of hydrogen sulfide. Hydrogen sulfide generates a strong smell even in smallest concentrations, but is not harmful to health.

**Fire hazard (parking in open terrain)**

The surfaces of the underfloor catalytic converters in our closed loop catalytic converter vehicles are thermally insulated in order to ensure an effective emission control under all operating conditions. With correctly operating engine, the temperatures are therefore not higher than on conventional muffler systems. Excessive temperatures are created only if unburned air-fuel mixture enters the catalytic converter (e.g. by a faulty ignition or injection system).