

P-Code	SPN	FMI	Suspicious part	Problem description	DTC set precondition	DTC set parameter	Time or number for DTC detection	Fault behavior	System reaction	Inducement or derating	Impact on emissions	Recovery	Remark
P2080	4765	2	Aftertreatment 1 Diesel Oxidation Catalyst Intake Gas Temperature	Received invalid DOC inlet temperature data from Engine ECU via CAN	<ul style="list-style-type: none"> Battery voltage is normal IG Switch signal (ECU: V13 and V33, ACU: 18 terminal) is continuously activated more than 2 sec Starter Switch signal (ECU: V12 terminal) is not activated except within 2 sec after starter stopped CAN communication is normal between ACU and engine ECU 	Received DOC inlet temperature data is out of range, or timeout for the data message occurred	3 sec or more	DOC temperature model is affected	No action to protect hardware	Inducement pattern: SCR-system Tampering	Yes	Diagnostic counter = zero	—
P208B	5435	1	Aftertreatment 1 Diesel Exhaust Fluid Pump State	DEF priming (circulation) is failed or DEF circulation or DEF pressure is not controlled	<ul style="list-style-type: none"> Thawing process is completed DEF pump final duty is trigger value or more DEF pump is operating Before Purge process starts No DTC invalidation flag IG Switch signal (ECU: V13 and V33, ACU: 18 terminal) is activated 	DEF pump prime status is FALSE DEF flow control system is in uncontrollable (FCS_ERR) state	1 time or more	It will cause too low DEF pressure (In some cases DEF circulation cannot be operated), DEF injector over-heat may occur • DEF circulation and DEF injection can not be operated	<ul style="list-style-type: none"> Engine torque limit for DEF injector protection (Approximately 80% of normal condition) Stop suction tube heater Stop delivery tube heater Stop return tube heater Stop DEF pump heater Stop coolant valve Stop DEF pump (Torque limit) Stop DEF injection Invalidate diagnosis of system frozen 	Inducement pattern: SCR-system Tampering • DPF regeneration is inhibited	Yes	ACU restart	If the DEF pump can not be operated, engine torque needs to be limited to protect DEF injector from overheat Possible cause: • Motor pump decoupling • Motor harness failure • DEF pressure sensor failure • DEF leakage • DEF clogging
P208D	5435	3	Aftertreatment 1 Diesel Exhaust Fluid Pump State	+B short circuit of harness +B short circuit of DEF pump motor coil	<ul style="list-style-type: none"> Battery voltage is normal IG Switch signal (ECU: V13 and V33, ACU: 18 terminal) is continuously activated more than 2 sec Starter Switch signal (ECU: V12 terminal) is not activated except within 2 sec after starter stopped CAN communication is normal between ACU and engine ECU Ten times of diagnosis have not completed DEF pump motor is not operating 	When all six switches of High side Phase U, V, W and Low side Phase U, V, W are off, all the terminal monitoring voltages (V1) of three-phase U, V, W are 0.563 V or more	3 times or more	The DEF pressure cannot be possibly controlled and it will cause too high or too low pressure (In some cases DEF circulation cannot be operated), DEF overdosing or DEF injector over-heat may occur	<ul style="list-style-type: none"> Engine torque limit for DEF injector protection (Approximately 80% of normal condition) Stop suction tube heater Stop return tube heater Stop DEF pump heater Stop coolant valve Stop DEF pump (Torque limit) Stop DEF injection Invalidate diagnosis of system frozen 	Inducement pattern: SCR-system Tampering • DPF regeneration is inhibited	Yes	Either 1) or 2) 1) IG Switch turn off and Diagnostic counter = zero 2) ACU restart	<ul style="list-style-type: none"> To diagnose the DEF pump failure, diagnostic drive waves are applied 10 times as often as after ACU power turns on and after DEF pump motor turns off. During 10 times diagnosis, if failures are detected 3 times continuously, this DTC is set After 10 times of diagnosis is completed, and the DEF pump motor starts operating, the diagnostic counter goes zero (clear) If the DEF pump can not be operated, engine torque needs to be limited to protect DEF injector from overheat This DTC is detected when the DEF pump motor turns off. If this DTC occurred, action for ACU circuit protection is enabled and DEF pump motor drive continues off. After that this DTC can not be detected (need ACU restart recover the diagnosis)

(Continued)