



Test Monitoring Center

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Sequence IX Information Letter 21-2
Sequence Number 4
June 10, 2021

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Sequence IX Surveillance Panel

SUBJECT: 1. Corrections to Tables 8, 11 and A5.2
2. Clarification to Downtime Criteria

During the May 20, 2021 Conference call, the Surveillance Panel agreed to the following items:

1. The Sequence IX Surveillance Panel agreed to add coolant pressure and fuel temperature to Table 8 and remove Blowby, Pedal Position and Knock from Table 11. The panel also agreed to correct the Inlet Air Pressure measurement from absolute to gauge in Table A5.2.
2. The panel also agreed to clarify at which point in the test where downtime is necessary to be counted. Section 13.4 has been updated to reference then end of stage 6 as the end of an iteration.

These changes are effective May 20, 2021.

These revised text and or section(s) have been highlighted in red and included in the attached. These revisions modify ASTM Test Method D8291.

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Attachment

c: http://www.astmtmc.cmu.edu/ftp/docs/gas/sequenceix/procedure_and_ils/il21-2_ix.pdf

Distribution: Email

Revises D8291-20a as amended by Information Letter 21-1

TABLE 8 Oil-Conditioning Procedure and Test Cycle Conditions

Controlled Quantity, unit	Set Point
Inlet-air temperature, °C	30
Inlet-air pressure, kPa (gauge)	0.05
Exhaust back pressure, kPa (absolute)	104
Humidity, g/kg	11.4
Fuel pressure, kPa	450 ± 37
Coolant Pressure, kPa	70
Fuel temperature, °C	30

Table 11
Recorded Test Points

	Test Point	Units
Controlled	Engine speed	r/min
	Engine torque	N·m
	Coolant-out temperature	°C
	Oil-gallery temperature	°C
	Air-charge temperature	°C
	Inlet-air temperature	°C
	Inlet-air pressure (gauge)	kPa
	Exhaust back pressure (absolute)	kPa
	Fuel temperature	°C
	Inlet-air humidity	g/kg
	Coolant flow rate	L/min
Monitored	Intake-manifold pressure (absolute)	kPa
	Air-charge pressure (absolute)	kPa
	Barometric pressure (absolute)	kPa
	Oil-gallery pressure (gauge)	kPa
	Oil-head pressure (gauge)	kPa
	Oil-filter-In temperature	°C
	Exhaust temperature	°C
	Crankcase pressure (gauge)	kPa
	Fuel pressure (gauge)	kPa
	Power	kW
	Pre-intercooler air pressure (absolute)	kPa
	Ambient temperature	°C
	Coolant-in temperature	°C
	Coolant-out pressure (gauge)	kPa
	Blowby-flow rate	L/min
	Oil-Sump Temperature	°C
	Coolant flow rate	L/min
Equivalence ratio (λ)	Dimensionless	
PCM CAN bus channels	Ignition timing advance for #1 cylinder	°
	Absolute throttle position	%
	Engine-coolant temperature	°C
	Inlet-air temperature	°C
	Equivalence ratio (λ)	dimensionless
	Absolute load value	%
	Intake-manifold pressure (absolute)	kPa
	Fuel-rail pressure (gauge)	kPa
	Accelerator-pedal position	%
	Boost pressure - raw value (absolute)	kPa
	Turbocharger wastegate duty cycle	%
	Actual intake (A) camshaft position	°
	Actual exhaust (B) camshaft position	°
	Intake (A) camshaft position actuator duty cycle	%
	Exhaust (B) camshaft position actuator duty cycle	%
	Charge-air-cooler temperature	°C
	Cylinder 1 knock/combustion performance	count
	Cylinder 2 knock/combustion performance	count
	Cylinder 3 knock/combustion performance	count
Cylinder 4 knock/combustion performance	count	

13.4 In the space provided, note the time, date, test hour, and duration of any shutdown or off-test condition. Start counting downtime at one hour after the end of an iteration of step 6 in the test cycle (Table 9) or any time a test comes down in the middle of an iteration. The maximum allowable downtime is 48 h.

TABLE A5.2 L and U Limits and Over- and Under-Range Values

Quantity, unit	L	U	Over-range	Under-range
Speed, r/min	1730	1770	3941	0
Torque, N·m	264	274	817	0
Coolant out temperature, °C	94.5	95.5	289	0
Oil gallery temperature, °C	94.5	95.5	150	40
Air charge temperature, °C	42.5	43.5	98	0
Inlet air temperature, °C	29.5	30.5	85	0
Fuel temperature, °C	29.5	30.5	1190	0
Back pressure, kPa (absolute)	102	106	323	0
Inlet air pressure, kPa (absolute gauge)	0.03	0.07	2.2	-2.1
Humidity, g/kg	10.9	11.9	66	0
Coolant pressure, kPa (gauge)	68	72	290	0
Coolant flow rate, L/min	53	57	274	0