



## Test Monitoring Center

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T-12 Information Letter 13-2  
Sequence No. 12  
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*ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.*

TO: Mack Mailing List  
SUBJECT: Procedure Update – Phase 2 Intake Manifold Pressure Specs

A discrepancy in the T12 test procedure has been discovered. In the ranged parameters section for Phase II, intake manifold pressure should have an operating range of 302 - 312 kPa instead of 308 kPa +/- 1.5 kPa. Table 1 and Table A3.1 have both been revised and are attached.

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Attachment  
c: [ftp://ftp.astmtmc.cmu.edu/docs/diesel/mack/procedure\\_and\\_ils/T-12/il13-2.pdf](http://ftp.astmtmc.cmu.edu/docs/diesel/mack/procedure_and_ils/T-12/il13-2.pdf)

Distribution: Email

(Revises D7422-13 as amended by 13-01)

**TABLE 1 Test Conditions**

Parameters	Limits	
	Phase I	Phase II
Time, h	100	200
Injection Timing, °BTDC	Variable	21
Controlled Parameters <sup>A</sup>		
Speed, r/min	1800	1200
Fuel Flow, kg/h	59.2	63.5
Intake CO <sub>2</sub> Level, %	3.09 ± 0.05	1.42 ± 0.05
Exhaust CO <sub>2</sub> Level, %	9.10–9.40	9.78–10.08 typical
Inlet Manifold Temp., °C	90	80
Coolant Out Temp., °C	66	108
Fuel In Temp., °C	40	40
Oil Gallery Temp., °C	88	116
Intake Air Temp., °C	25	25
Ranged Parameters <sup>B</sup>		
Inlet Air Restriction, kPa	3.5–4.0	3.5 - 4.0
Inlet Manifold Pressure, kPa	266 nominal	302 - 312
Exhaust Back Pressure, kPa	2.7–3.5	2.7–3.5
Crankcase Pressure, kPa	0.25–0.75	0.25–0.75
Uncontrolled Parameters		
Torque, N·m <sup>C</sup>	Record	Record
Exhaust Temp., °C		
Pre-turbine	Record	Record
Tailpipe	Record	Record
Oil Sump Temp., °C	Record	Record
Coolant In Temp., °C	Record	Record
EGR Pre-Venturi Temp., °C	Minimum 104	Minimum 104
Intercooler Out Temp., °C	Minimum 30	Minimum 30
Inlet Air Dew Point, °C	Record	Record
Inlet Air Humidity, g/kg	Record	Record
Blowby, L/min	Record	Record
EGR Pre-Venturi Pressure, kPa	Record	Record
Pre-turbine Exhaust Pressure, kPa	Record	Record
Main Gallery Oil Pressure, kPa	Record	Record
Oil Filter ΔP, kPa	Not to exceed 138 <sup>D</sup>	Not to exceed 138 <sup>D</sup>

**TABLE A3.1 Quality Index and Average Calculation Values**

Control Parameter	Units	Quality Index Threshold	Quality Index U & L Values				Over & Under Range Values	
			U		L		Low	High
Speed <sup>A</sup>	r/min	0.000	1802.5	1202.5	1797.5	1197.5	1063	1937
Fuel Flow <sup>A</sup>	kg/h	0.000	60.20	64.50	58.20	62.50	4.4	118.3
Inlet Manifold Temp.	°C	0.000	90.8	80.8	89.2	79.2	33.4	126.5
Coolant Out Temp.	°C	0.000	66.9	108.9	65.1	107.1	16.7	157.3
Fuel In Temp.	°C	0.000		40.5		39.5	12.6	67.4
Oil Gallery Temp.	°C	0.000	88.6	116.6	87.4	115.4	55.1	148.9
Intake Air Temp.	°C	0.000		26.0		24.0	-29.8	79.8
Ranged Parameter	Units	Range		Over & Under Range Values				
							Low	High
Inlet Air Restriction	kPa	3.5 – 4.0					0	14
Inlet Manifold Pressure	kPa	266 nominal	302 – 312				0	400
Exhaust Back Pressure	kPa	2.7 – 3.5					0	16
Crankcase Pressure	kPa	0.25 – 0.75					0	3
Intake CO <sub>2</sub>	%	3.09 ± 0.05	1.42 ± 0.05				0	5