



Test Monitoring Center

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1R Information Letter No. 10-1
Sequence No. 5
March 25, 2010

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

TO: Single Cylinder Diesel Mailing List

SUBJECT: Note Regarding Oil Pressure Limits for Oils other than 15W-40.

During the March 9, 2010 SCOTE Surveillance Panel Conference Call, the panel agreed to allow tests run on viscosity grade oils other than 15W-40 to deviate from the oil pressure limits given in the test method. Test facilities are to make every effort to maintain these pressures for oils with viscosities other than 15W-40, but when these limits cannot be achieved, these deviations are to be reported in the comments section of the test report. Tables A2.6 and A10.1 contained in Annexes A2 and A10 have been revised to include Footnote D, which describes these situations.

The attached changes to Test Method D6923 are effective March 9, 2010.

Hind Abi-Akar

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Attachment

c: ftp://ftp.astmtmc.cmu.edu/docs/diesel/scote/procedure_and_ils/1r/il10-01.pdf

Distribution: Email

(Revises Test Method D6923-09, as Amended by Information Letter 09-1)

TABLE A2.6 Quality Index Calculation Values and Plotting Axis Scale Definitions

Units	Quality Index α and β Values ^A		Over and Under Range Values ^B		Plot Axes Ranges ^C			
	α	β	Low	High	Min	Max	Increment	
Controlled Parameters								
Speed	r/min	1798.53	1801.47	1710	1890	1770	1830	10
Fuel Flow	g/min	238.97	241.03	125	245	230	255	5
Humidity	g/kg	16.78	18.82	5	21	5	40	5
Coolant Flow through Engine	L/min	73.06	76.94	0	82	60	90	5
Coolant from Head Temperature	°C	104.378	105.622	55	125	90	120	5
Oil to Manifold Temperature	°C	118.798	121.202	60	200	105	135	5
Inlet Air at Manifold Temperature	°C	59.36	60.64	20	100	50	70	5
Fuel into Head Temperature	°C	40.885	43.116	0	75	30	60	5
Oil to Manifold ^D Pressure	kPa	404.384	425.616	0	690	380	450	10
Inlet Air Pressure at Barrel	kPa(abs)	291.449	292.551	242	302	285	300	5
Exhaust Pressure at Barrel	kPa(abs)	251.15	252.85	215	315	235	265	5
Fuel Pressure	kPa	271.471	278.529	125	425	230	300	10
Uncontrolled Parameters								
Power	kW					62	72	1
Torque	N-m					335	375	10
Blowby	L/min					5	65	5
Coolant In Temperature	°C					75	100	5
Coolant Delta	°C					0	10	1
Oil to Cooler Temperature	°C					110	140	5
External Heater Oil Temperature	°C					100	165	5
Exhaust at Manifold Temperature	°C					620	670	10
Crankcase Pressure	kPa					0.0	1.5	0.1
Coolant Pressure from Engine Pump	kPa					60	95	5

^A The threshold for operational validity is 0.00.

^B Only to be used in the calculation of Quality Index and Average and does not affect how process is graphed.

^C Quality Index Scales are to range from -0.3 to 1.0 with increments of 0.1. The axis for Test Time is (0 to 504) h in 30 h increments. X-axis length should be at least 203 mm Y-axis length should be at least 140 mm.

^D Oil pressure operating specifications apply only to 15W-40 oils. Attempt to maintain these limits for all oils. When oils other than 15W-40 oils fall outside these limits, explain these deviations from the limits in the comments section of the test report.

TABLE A10.1 Warm-up, Cool-down, and Testing Conditions

Parameter	Units	Tolerance	Test Specifications				
			Step 1 5 min	Step 2 5 min	Step 3 5 min	Step 4 10 min	Step 5 60 min
Speed	r/min	± 3	1000	1000	1400	1800	1800
Power	kW		Idle	10	28	43	~ 66
BMEP	kPa		...	400	900	1140	~ 1811
Torque	N m	± 5 ^A	...	100	175	220	~ 352
Fuel Rate	g/min	± 1 ^B	...	~ 48	~ 95	~ 148	240
Fuel Timing	BTC		6	6	6	6	6
Fuel Rack	NA		~ 26	~ 38	~ 60	~ 74	~ 106
Position							
Humidity	g/kg	± 1.7	...	...	...	...	17.8
Temperatures							
Fuel at Filter	°C	± 3	~ 31	~ 32	~ 33	~ 36	42
Coolant to Jug	°C			~ 51	~ 82	~ 86	101
Coolant from Head	°C	± 3		~ 52	~ 83	~ 90	105
Oil to Cooler	°C		...	...	...	...	~ 123
Oil Manifold	°C	± 3	...	...	...	...	120
Inlet Air at Manifold	°C	± 3	...	...	60	60	60
Exhaust at Manifold	°C		~ 120	~ 275	~ 340	~ 370	~ 605
Pressures							
Fuel from Head	kPa	± 20 ^C	275	275	275	275	275
Coolant to Jug	kPa		~ 44	~ 44	~ 70	~ 81	~ 81
Oil Manifold	kPa ^D	± 20	415	415	415	415	415
Inlet Air Barrel (absolute)	kPa(abs)	± 1	120	120	157	225	292
Exhaust Barrel (absolute)	kPa(abs)	± 1	...	104	146	217	252
Crankcase	kPa						~ 0.20
Flows							
Coolant	L/min	± 2	~ 34	~ 34	~ 65	75	75
Blowby	L/min		...	...	...	~ 35	~ 35
Air	kg/h		...	...	...	...	~ 390

^A Engine controlled to Torque Specification for Steps 2, 3, 4, and 5 min of Step 5.

^B Engine controlled to Fuel Rate Specification for last 55 min of Step 5.

^C Air Pressure at coolant tower controlled to 35 kPa.

^D Oil pressure operating specifications apply only to 15W-40 oils. Attempt to maintain these limits for all oils. When oils other than 15W-40 oils fall outside these limits, explain these deviations from the limits in the comments section of the test report.