A1. Report Forms
TEST METHOD D5967

VERSION T8 VERSION 20020717

METHOD: CCCCCCCC

CONDUCTED FOR:

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

T-8A: C	V = VALID; THE REFERENCE OIL/NON-REFERENCE OIL WAS EVALUATED IN ACCORDANCE WITH THE TEST PROCEDURE.
T-8: C	I = INVALID; THE REFERENCE OIL/NON-REFERENCE WAS NOT EVALUATED IN ACCORDANCE WITH THE TEST PROCEDURE.
T-8E: C	N = NOT INTERPRETABLE; THE NON-REFERENCE OIL RESULTS CANNOT BE INTERPRETED AND SHALL NOT BE USED IN DETERMINING AN AVERAGE TEST RESULT USING MULTIPLE TEST CRITERIA.

STAND: CCCCC	STAND RUN NO.: CCCC	ENGINE NO.: CCCCCC	ENGINE HOURS: CCCC
END OF TEST DATE: YYYYMMDD		END OF TEST TIME: HH:MM	
OIL CODE/CMIR: [A] CCCCCC			
T-8 FORMULATION/STAND CODE: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
T-8E FORMULATION/STAND CODE: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
ALTCODE1: CCCCCCCCCCCCCCC	ALTCODE2: CCCCCCCCCCCCCCC	ALTCODE3: CCCCCCCCCCCCCCC	

[A] CMIR or Non-Reference Oil Code

SUBMITTED BY: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

Testing Laboratory

Signature Image

Signature

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

Typed Name

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

Title

TEST METHOD D5967
FORM 1
TEST RESULT SUMMARY

T-8 FORMULATION/STAND CODE:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
T-8E FORMULATION/STAND CODE:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
TEST LENGTH:[A]	S1234

REFERENCE OIL TEST						NON-REFERENCE OIL TEST				
CMIR CODE NO.: CCCCCC						OIL CODE NO.: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
TMC OIL NO.	TEST LAB	TEST STAND NO.	TEST STAND RUN NO.	ENGINE BLOCK SERIAL NO.	REBUILD BLOCK HOURS	TEST LAB	TEST STAND NO.	TEST STAND RUN NO.	ENGINE BLOCK SERIAL NO.	ENGINE BLOCK HOURS
CCCCCC	CC	CCCCC	CCCC	CCCCCC	CCCC	CC	CCCCC	CCCC	CCCCCC	CCCC
DATE TEST STARTED: YYYYMMDD		DATE TEST COMPLETED: YYYYMMDD		EOT TIME: HH:MM		DATE TEST STARTED: YYYYMMDD		DATE TEST COMPLETED: YYYYMMDD		EOT TIME: HH:MM
Laboratory Oil Code:			CCCCCCCCCCCCCCCCCCCC			Laboratory Oil Code:			CCCCCCCCCCCCCCCCCCCC	
SAE Viscosity:			CCCCCCC			SAE Viscosity:			CCCCCCC	

VISCOSITY SLOPE 100 - 150 h, cSt/h	S.123	**VISCOSITY SLOPE 100 - 150 h, cSt/h**	S.123
VISCOSITY INCREASE AT 3.8% TGA, cSt	S12.12	**VISCOSITY INCREASE AT 3.8% TGA, cSt**	S12.12
		SEVERITY ADJUSTMENT FOR VISCOSITY INC. AT 3.8% TGA, cSt	S12.12
		ADJUSTED VISCOSITY INCREASE AT 3.8% TGA, cSt	S12.12
RELATIVE VISCOSITY AT 4.8%, TGA (50% LOSS) [B]	S12.12	**RELATIVE VISCOSITY AT 4.8%, TGA (50% LOSS)** [B]	S12.12
		SEVERITY ADJUSTMENT FOR RELATIVE VISCOSITY	S12.12
		ADJUSTED RELATIVE VISCOSITY (50% LOSS) [B]	S12.12
RELATIVE VISCOSITY AT 4.8%, TGA (100% LOSS) [B]	S12.12	**RELATIVE VISCOSITY AT 4.8%, TGA (100% LOSS)** [B]	S12.12
		SEVERITY ADJUSTMENT FOR RELATIVE VISCOSITY	S12.12
		ADJUSTED RELATIVE VISCOSITY (100% LOSS) [B]	S12.12
TGA SOOT % AT 250 h	S123.1	**TGA SOOT % AT 250 h**	S123.1
TGA SOOT % AT 300 h	S123.1	**TGA SOOT % AT 300 h**	S123.1
AVERAGE OIL CONSUMPTION AT 250 h (g/kW-h)	S1.123	**AVERAGE OIL CONSUMPTION AT 250 h (g/kW-h)**	S1.123
OIL FILTER DELTA AT 250 h, kPa	S123	**OIL FILTER DELTA AT 250 h, kPA**	S123

[A] Test length is discussed in sections 1.2, 4.1, A8.3.1 and A9.3.1.

[B] Relative viscosities are calculated using shear loss determined by D6278.

TEST METHOD D5967
FORM 2

OPERATIONAL SUMMARY[A]

Laboratory	CC	Start Date	YYYYMMDD
Test Number[B]	CCCCC -CCCC -CCCCCC-CCCC	Oil Code	CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		

TEST PARAMETER	SPECIFICATION	AVERAGE	STD. DEV.	MINIMUM	MAXIMUM
Engine Speed, r/min	1800 ± 5	S12345	S12345	S12345	S12345
Torque, N-m	1369 - 1398	S1234	S1234	S1234	S1234
Fuel Flow, kg/h	63.28 ± 0.63	S12.12	S12.12	S12.12	S12.12
Humidity, g/kg	Report	S1.1		S1.1	S1.1
Blowby, L/min	Report	S12.1		S12.1	S12.1
TEMPERATURES	**SPECIFICATION**	**AVERAGE**	**STD.DEV**	**MINIMUM**	**MAXIMUM**
Coolant Out, °C	85 ± 3	S1234	S1234	S1234	S1234
Coolant In, °C	Report Only	S1234	S1234	S1234	S1234
Oil, °C	100 - 107	S1234	S1234	S1234	S1234
Fuel In, °C	40 ± 1	S1234	S1234	S1234	S1234
Intake Air, °C	25 ± 3	S1234	S1234	S1234	S1234
Intake Manifold, °C	43 ± 3	S1234	S1234	S1234	S1234
Pre-Turb. (F), °C	602 - 632	S1234	S1234	S1234	S1234
Pre-Turb. (R), °C	602 - 632	S1234	S1234	S1234	S1234
TailPipe, °C	455 - 474	S1234	S1234	S1234	S1234
PRESSURES	**SPECIFICATION**	**AVERAGE**	**STD.DEV**	**MINIMUM**	**MAXIMUM**
Oil Gallery, kPa	372 - 441	S1234		S1234	S1234
Crankcase, kPa	0.50 ± 0.25	S1.12	S1.12	S1.12	S1.12
Exhaust, kPa	3.1 ± 0.4	S1.1	S1.1	S1.1	S1.1
Oil Filter Delta, kPa	138 Max.				S123
Inlet Air Res., kPa	2.5 ± 0.25	S12.12	S12.12	S12.12	S12.12
Intake Manifold, kPa	186 - 199	S123	S123	S123	S123
Compressor Discharge, kPa	Report	S123	S123	S123	S123
Intercooler Delta, kPa	13.6 Maximum	S1.1	S1.1	S1.1	S1.1

A
ALL DATA VALUES SHOWN ARE BASED ON TEST LENGTH REPORTED ON FORM1

B
TEST NUMBER IS: STAND - STAND RUN NO. - ENGINE SERIAL NO. - ENGINE HOURS

TEST METHOD D5967
FORM 4
OIL ANALYSIS SUMMARY

Laboratory:	CC	Start Date:	YYYYMMDD
Test Number:	CCCCC - CCCC - CCCCCC - CCCC	Oil Code:	CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		

Hours	Soot TGA %	Viscosity (cSt)	Viscosity Increase From Minimum(cSt)
S1234	S123.1	S123.12	
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	
250 (2nd)	S123.1	S123.12	
250 (Average)	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12
S1234	S123.1	S123.12	S12.12

Viscosity Increase @ 3.8% TGA Soot Level	S12.12
D6278 Unsheared Viscosity (cSt), Vu	S123.12
D6278 Sheared Viscosity (cSt), Vs	S123.12
Relative Viscosity @ 4.8% TGA Soot Level (50% Loss) [A]	S12.12
Relative Viscosity @ 4.8% TGA Soot Level (100% Loss) [A]	S12.12

ELEMENT	Parts per million (ppm) at Test Hour			
	S1234	S1234	S1234	S1234
Fe	S12345	S12345	S12345	S12345
Pb	S12345	S12345	S12345	S12345
Cu	S12345	S12345	S12345	S12345
Cr	S12345	S12345	S12345	S12345
Al	S12345	S12345	S12345	S12345
Si	S12345	S12345	S12345	S12345
Na	S12345	S12345	S12345	S12345

	Pre-Test	Post-Test	Mass Gain
Centrifugal Oil Filter mass: grams	S123.1	S123.1	S123.1

[A]Relative viscosities are calculated using shear loss determined by D5278.

TEST METHOD D5967
FORM 5

TEST FUEL ANALYSIS (LAST BATCH)

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC -CCCC -CCCCCC-CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	
T-8E Formulation/Stand Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	
Supplier CCCCCCCCCCCCCCCCCCC	Batch Identifiers CCCCCCCCCCCCCCC

Measurement	Specs.	Analysis		Test Method
		NEW	EOT	
Total Sulfur, % wt	0.03 - 0.05	S1.12	S1.12	D 2622
Gravity, ˚API	32 - 36	S1.1	S1.1	D 287 or D 4052
Hydrocarbon Composition				
Aromatics % vol	28 - 35	S1.1		D 1319
Olefin	Report	S12.1		D 1319
Saturates	Report	S12.1		D 1319
Cetane Index	Report	S1.1		D 4737
Cetane No.	42 - 48	S1.1		D 613
Copper Strip Corrosion	3 max	S123		D 130
Flash Point, ˚C	54 min	S123		D 93
Cloud Point, ˚C	-12 max	S123		D 2500
Pour Point, ˚C	-18 max	S123		D 97
Carbon Residue on 10% Residium, %	0.35 max	S1.12		D 524 (10 % Bottoms)
Water & Sediment, % Vol	0.05 max	S12.12		D 2709
Ash, % wt	0.01 max	S1.123		D 482
Viscosity, cSt @ 40˚C	2.0 - 3.2	S1.1		D 445
Distillation, ˚C				
IBP	177 - 199	S1234		D 86
10%	210 - 232	S1234		D 86
50%	249 - 277	S1234		D 86
90%	299 - 327	S1234		D 86
EP	327 - 360	S1234		D 86

TEST METHOD D5967
FORM 6

DOWN TIME AND COMMENTS

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC -CCCC -CCCCCC -CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	
T-8E Formulation/Stand Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	

Number of Downtime Occurrences	S1	

Test Hours	Date	Downtime	Reasons
HHH:MM	YYYYMMDD	HHH:MM	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
		HHH:MM	Total Downtime

Other Comments		
Number of Comment Lines	S1	

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

TEST METHOD D5967
FORM 7

CHARACTERISTICS OF THE DATA ACQUISTION SYSTEM

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC -CCCC -CCCCCC - CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	
T-8E Formulation/Stand Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	

PARAMETER (1)	SENSING DEVICE (2)	CALIBRATION FREQUENCY (3)	RECORD DEVICE (4)	OBSERVATION FREQUENCY (5)	RECORD FREQUENCY (6)	LOG FREQUENCY (7)	SYSTEM RESPONSE (8)
Temperatures							
OIL @ FILT.	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
FUEL IN.	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
INTAKE AIR	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
INTAKE MAN	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
PRE-TURB.	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
COOL. OUT	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
Other							
FUEL FLOW	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
ENGINE RPM	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
LOAD	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
INLET RESTR	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
EXH. PRESS.	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC
OIL GAL PRES	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCC	CCCCCCCC

LEGEND:

(1) OPERATING PARAMETER
(2) THE TYPE OF DEVICE USED TO MEASURE TEMPERATURE, PRESSURE OR FLOW
(3) FREQUENCY AT WHICH THE MEASUREMENT SYSTEM IS CALIBRATED
(4) THE TYPE OF DEVICE WHERE DATA IS RECORDED
LG - HANDLOG SHEET
DL - AUTOMATIC DATA LOGGER
SC - STRIP CHART RECORDER
C/M - COMPUTER, USING MANUAL DATA ENTRY
C/D - COMPUTER, USING DIRECT I/O ENTRY
(5) DATA ARE OBSERVED BUT ONLY IF RECORDED OFF SPEC.
(6) DATA ARE RECORDED BUT ARE NOT RETAINED AT EOT
(7) DATA ARE LOGGED AS PERMANENT RECORD, NOTE SPECIFY IF:
SS - SNAPSHOT TAKEN AT SPECIFIED FREQUENCY
AG/X AVERAGE OF X DATA POINTS AT SPECIFIED FREQUENCY
(8) TIME FOR THE OUTPUT TO REACH 63.2% OF FINAL VALUE FOR STEP CHANGE AT INPUT

TEST METHOD D5967
FORM 8

BUILD-UP AND HARDWARE INFORMATION

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC -CCCC -CCCCCC-CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

TIMING

Lite/HPC Offset (deg)	S1.12
Piston Travel to TDC (deg)	S1.12
Timing (deg)	S1.12

PARTS

Part	Part Number	Serial Number
Injection Pump	CCCCCCCCCCCCCCCCCCC CCCCCCCCCCCCCCCCCCC	
Turbo Charger	CCCCCCCCCCCCCCCCCCC	
Cylinder Head (front)	CCCCCCCCCCCCCCCCCCC CCCCCCCCCCCCCCCCCCC	
Cylinder Head (rear)	CCCCCCCCCCCCCCCCCCC CCCCCCCCCCCCCCCCCCC	
Pistons	CCCCCCCCCCCCCCCCCCC	
Injection Nozzles	CCCCCCCCCCCCCCCCCCC	

TEST METHOD D5967
FORM 9

OPERATIONAL DATA

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC - CCCC -CCCCCC - CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

CCCCCCCCCCCCCCCCCCCC

TEST METHOD D5967
FORM 10

OPERATIONAL DATA

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC-CCCC-CCCCCC-CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

COOLANT IN TEMPERATURE (℃) PLOT

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

COOLANT OUT TEMPERATURE (℃) PLOT

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

OIL TEMPERATURE (℃) PLOT

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

FUEL IN TEMPERATURE (℃) PLOT

TEST METHOD D5967
FORM 11

OPERATIONAL DATA

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC - CCCC -CCCCCC - CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

CCCCCCCCCCCCCCCCCCCC

TEST METHOD D5967
FORM 12

OPERATIONAL DATA

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC - CCCC -CCCCCC - CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

CCCCCCCCCCCCCCCCCCCC

TEST METHOD D5967
FORM 13

Rotational Viscosity Analysis Summary

Laboratory CC	Start Date YYYYMMDD
Test Number CCCCC - CCCC -CCCCCC - CCCC	Oil Code CCCCCC
T-8 Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
T-8E Formulation/Stand Code:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

Hours	Viscosity at 100 deg C (mPa-s)		Rate Index	
	Increasing	Decreasing	Increasing	Decreasing
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123
S1234	S12.12	S12.12	S1.123	S1.123