A1. Report Forms
TEST METHOD D5967

VERSION 20020717

METHOD:

CONDUCTED FOR:

T-8A:	V = VALID; THE REFERENCE OIL/NON-REFERENCE OIL WAS EVALUATED IN ACCORDANCE WITH THE TEST PROCEDURE.
T-8:	I = INVALID; THE REFERENCE OIL/NON-REFERENCE WAS NOT EVALUATED IN ACCORDANCE WITH THE TEST PROCEDURE.
T-8E:	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:	STAND RUN NO.:	ENGINE NO.:	ENGINE HOURS:
END OF TEST DATE:		END OF TEST TIME:	
OIL CODE/CMIR: [A]			
T-8 FORMULATION/STAND CODE:			
T-8E FORMULATION/STAND CODE:			
ALTCODE1:	ALTCODE2:	ALTCODE3:	

[A] CMIR or Non-Reference Oil Code

SUBMITTED BY: _____
Testing Laboratory

_____
Signature

_____
Typed Name

_____
Title

TEST METHOD D5967
FORM 1
TEST RESULT SUMMARY

T-8 FORMULATION/STAND CODE: T-8E FORMULATION/STAND CODE:									TEST LENGTH: *A*	
REFERENCE OIL TEST						**NON-REFERENCE OIL TEST**				
CMIR CODE NO.:						OIL CODE NO.:				
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
DATE TEST STARTED:		DATE TEST COMPLETED:		EOT TIME:		DATE TEST STARTED:		DATE TEST COMPLETED:		EOT TIME:
Laboratory Oil Code:						Laboratory Oil Code:				
SAE Viscosity:						SAE Viscosity:				

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

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	Start Date
Test Number [B] _ _ _	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

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

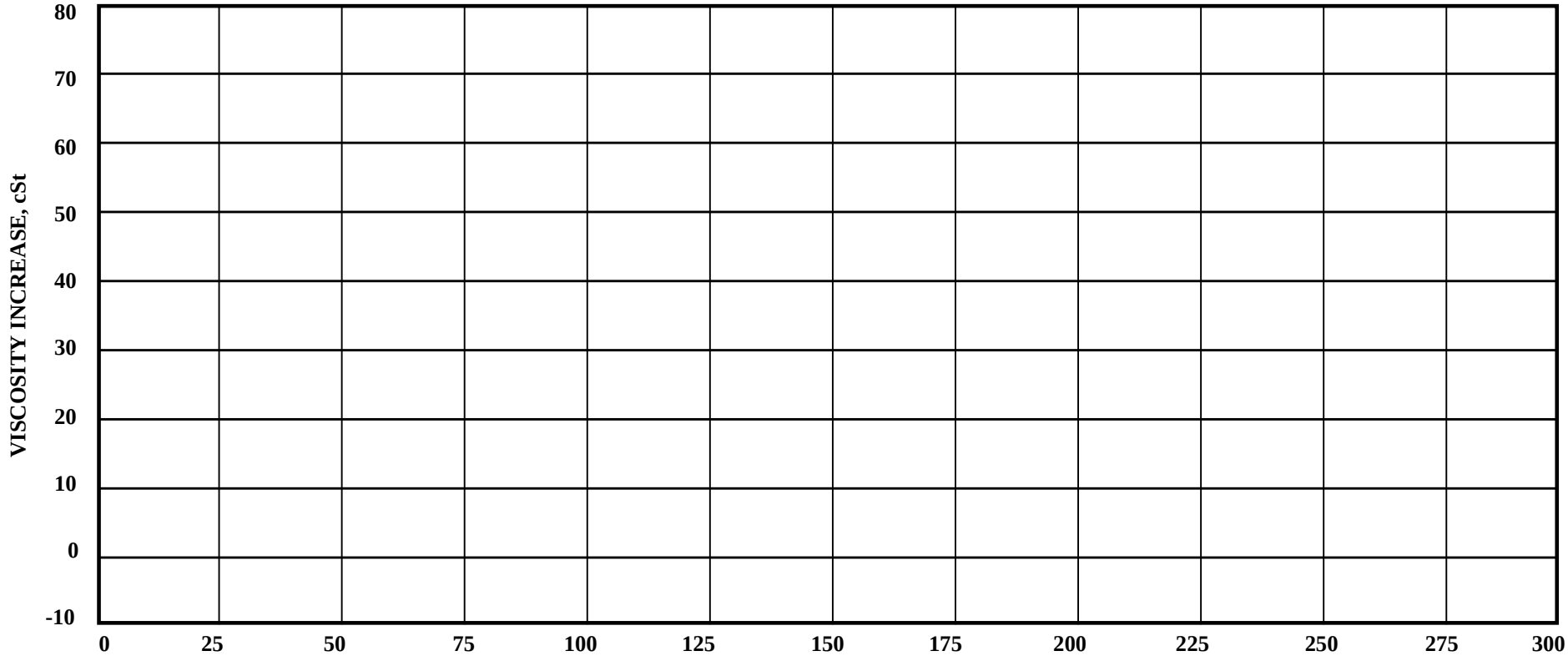
A
ALL DATA VALUES SHOWN ARE BASED ON TEST LENGTH REPORTED ON FORM1

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

TEST METHOD D5967
FORM 3

VISCOSITY INCREASE VERSUS TIME

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	



TEST METHOD D5967
FORM 4
OIL ANALYSIS SUMMARY

Laboratory:	Start Date:
Test Number: - - -	Oil Code:
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

Hours	Soot TGA %	Viscosity (cSt)	Viscosity Increase From Minimum(cSt)
250 (2nd)			
250 (Average)			

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

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

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

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

TEST METHOD D5967
FORM 5

TEST FUEL ANALYSIS (LAST BATCH)

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	
Supplier	Batch Identifiers

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

TEST METHOD D5967
FORM 6

DOWN TIME AND COMMENTS

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

Number of Downtime Occurrences			
Test Hours	Date	Downtime	Reasons
		Total Downtime	

Other Comments		
Number of Comment Lines		

TEST METHOD D5967
FORM 7

CHARACTERISTICS OF THE DATA ACQUISTION SYSTEM

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

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.							
FUEL IN.							
INTAKE AIR							
INTAKE MAN							
PRE-TURB.							
COOL. OUT							
Other							
FUEL FLOW							
ENGINE RPM							
LOAD							
INLET RESTR							
EXH. PRESS.							
OIL GAL PRES							

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	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

TIMING

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

PARTS

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

TEST METHOD D5967
FORM 9

OPERATIONAL DATA

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

ENGINE SPEED (R/MIN) PLOT

TORQUE (N-M) PLOT

FUEL FLOW (KG/H) PLOT

AVERAGE PRE-TURBINE TEMPERATURE (°C) PLOT

TAILPIPE TEMPERATURE (°C) PLOT

TEST METHOD D5967
FORM 10

OPERATIONAL DATA

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

COOLANT IN TEMPERATURE (°C) PLOT

COOLANT OUT TEMPERATURE (°C) PLOT

OIL TEMPERATURE (°C) PLOT

FUEL IN TEMPERATURE (°C) PLOT

TEST METHOD D5967
FORM 11

OPERATIONAL DATA

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

INTAKE AIR TEMPERATURE (℃) PLOT

INTAKE MANIFOLD TEMPERATURE (℃) PLOT

OIL GALLERY PRESSURE (KPA) PLOT

OIL FILTER PRESSURE (KPA) PLOT

TEST METHOD D5967
FORM 12

OPERATIONAL DATA

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

CRANKCASE PRESSURE (KPA) PLOT

EXHAUST PRESSURE (KPA) PLOT

INLET AIR RESTRICTION (KPA) PLOT

INTAKE MANIFOLD PRESSURE (KPA) PLOT

TEST METHOD D5967
FORM 13

Rotational Viscosity Analysis Summary

Laboratory	Start Date
Test Number - - -	Oil Code
T-8 Formulation/Stand Code:	
T-8E Formulation/Stand Code:	

Hours	Viscosity at 100 deg C (mPa-s)		Rate Index	
	Increasing	Decreasing	Increasing	Decreasing