

D 5966
Roller Follower Wear Test
Final Report Cover Sheet
Report Packet Version No.

Conducted For:

	V = Valid
	I = Invalid

Test Number			
Test Stand	Stand Run	Engine	Engine Run
Date Completed		Time Completed	
Oil Code ^A			
Formulation/Stand Code			
Alternate Codes			

In my opinion this test _____ been conducted in a valid manner in accordance with the Test Method D 5966 and the appropriate amendments through the Information Letter System. The remarks included in the report describe the anomalies associated with this test.

^A CMIR or Non-Reference Oil Code

Submitted By: _____ **Testing Laboratory**

Signature

Typed Name

Title

**D 5966
Roller Follower Wear Test
Form 1
Test Lab Affidavit**

Reference Oil Test					Non-Reference Oil Test					
Lab	Stand	Stand Run	Engine	Engine Run	Lab	Stand	Stand Run	Engine	Engine Run	
Start Date	Date Completed	End of Test Time		Test Length	Start Date	Date Completed	End of Test Time		Test Length	
CMIR	TMC Oil Code		Viscosity Grade		Oil Code				Viscosity Grade	
Laboratory Oil Code					Laboratory Oil Code					
Engine Displacement					Formulation Stand Code					
Average Wear (mils)					Average Wear (mils)	Severity Adjustment	Adjusted Average Wear			

D 5966
Roller Follower Wear Test
Form 2
Summary of Roller Follower Wear

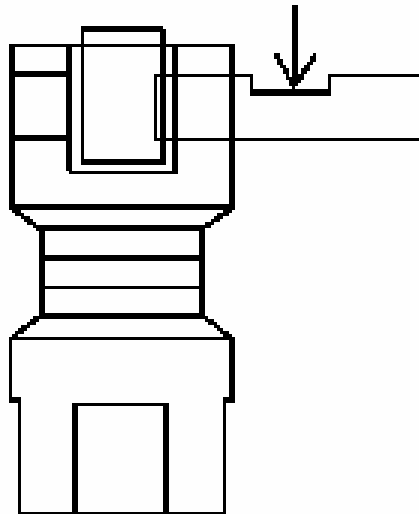
Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Lifter Part Number

Profilometer Wear Measurements in Mils

Lifter Number	Wear (Mils)	Lifter Number	Wear (Mils)
1L		1R	
2L		2R	
3L		3R	
4L		4R	
5L		5R	
6L		6R	
7L		7R	
8L		8R	
Wear Statistics			
Minimum	Maximum	Average	Std. Deviation

Wear is measured at location shown by arrow



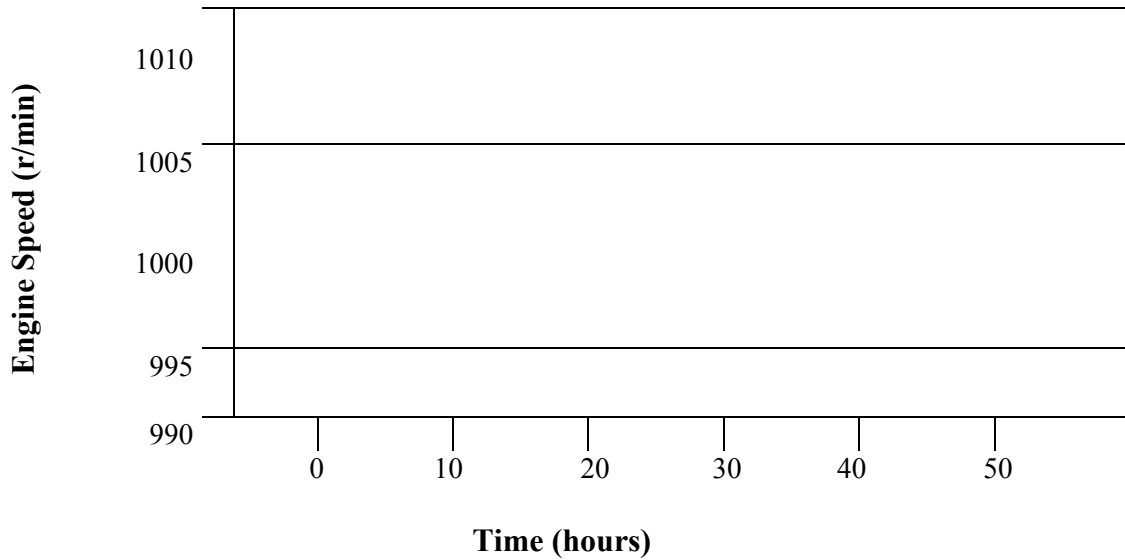
D 5966
Roller Follower Wear Test
Form 3
Operational Data Summary - Engine Speed

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Engine Speed (r/min)

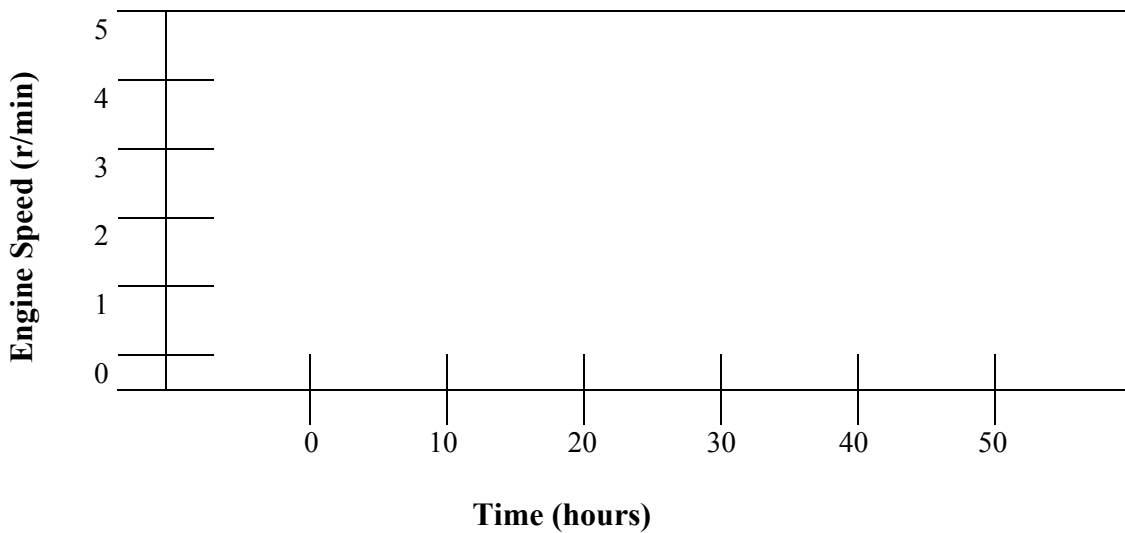
Process Mean

$\bar{X}_{av} =$



Process Variability (s)

$S_{av} =$



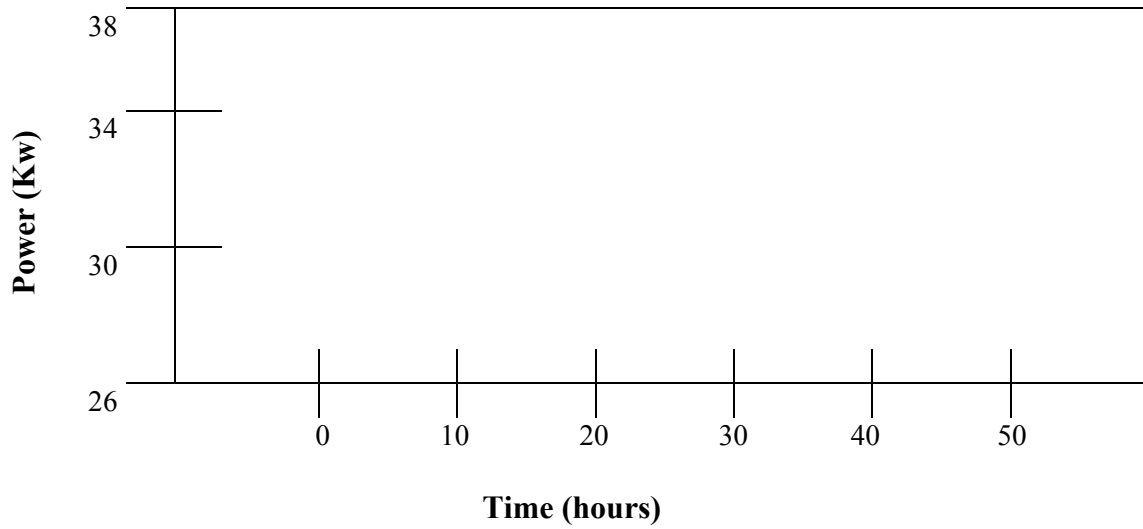
D 5966
Roller Follower Wear Test
Form 4
Operational Data Summary – Power

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Power (kW)

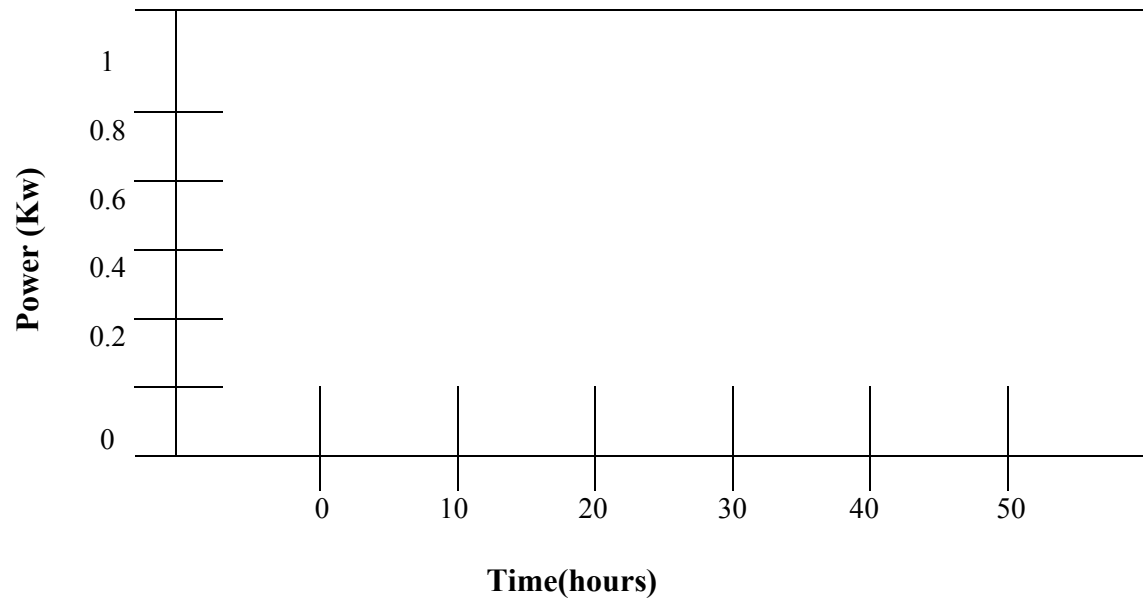
Process Mean

X_{av} =



Process Variability (s)

S_{av} =



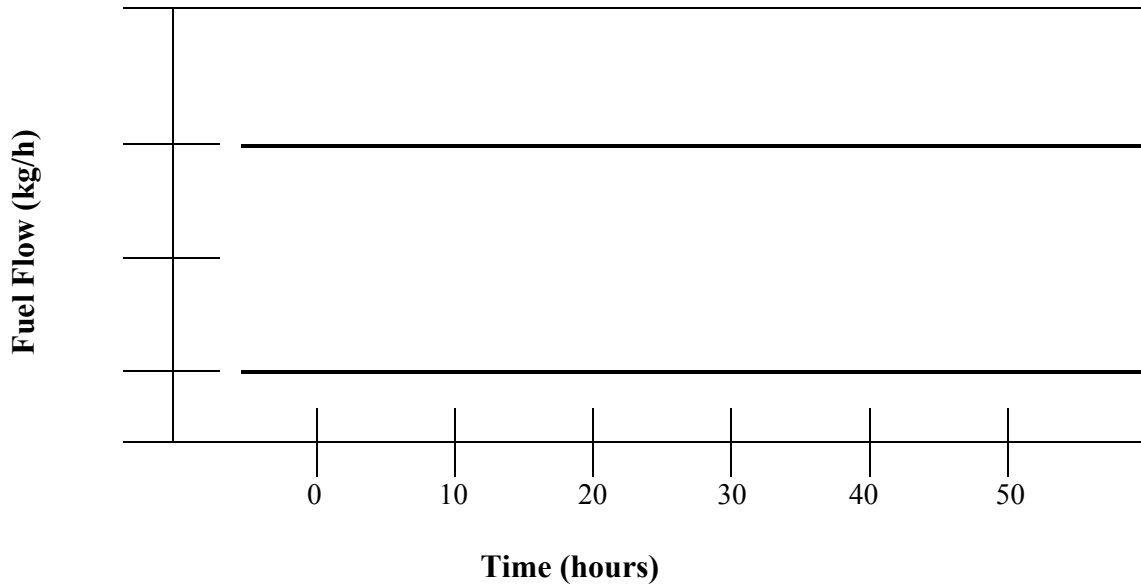
D 5966
Roller Follower Wear Test
Form 5
Operational Data Summary – Fuel Flow

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Fuel Flow (kg/h)

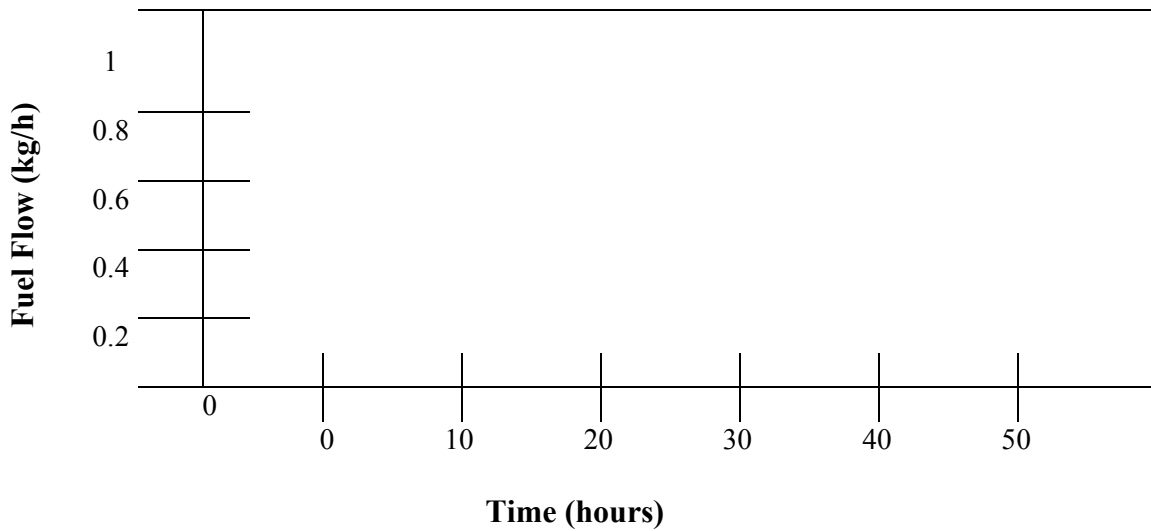
Process Mean

X_{av} =



Process Variability (s)

S_{av} =



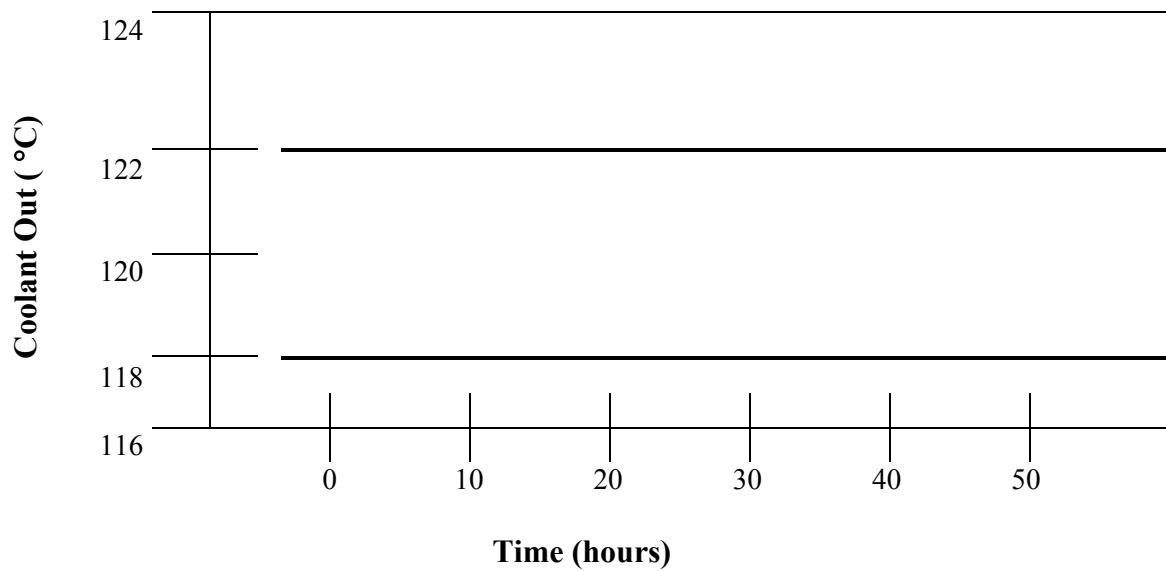
D 5966
Roller Follower Wear Test
Form 6
Operational Data Summary – Coolant Output Temperature

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Coolant Out Temperature

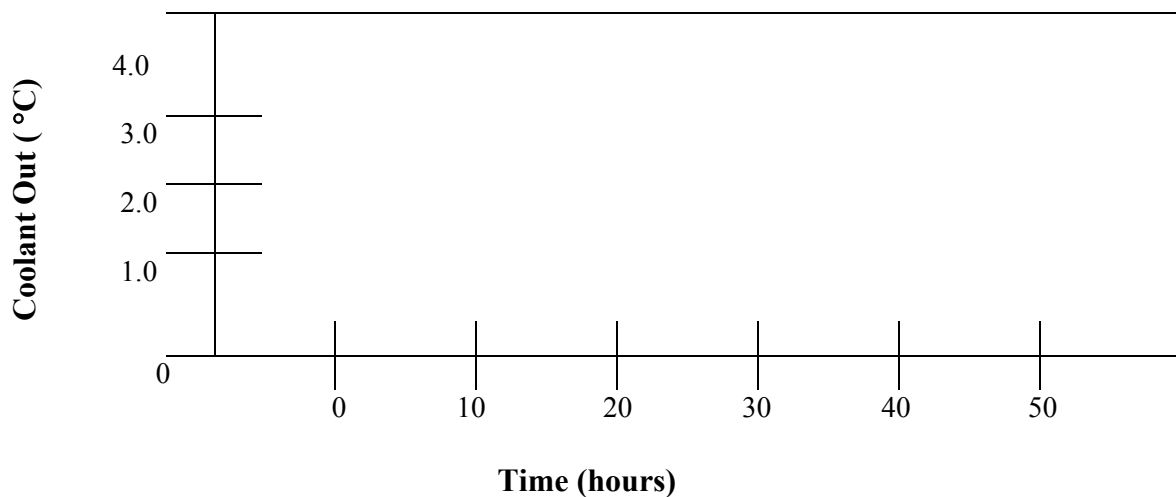
Process Mean

\bar{X}_{av} =



Process Variability (s)

S_{av} =



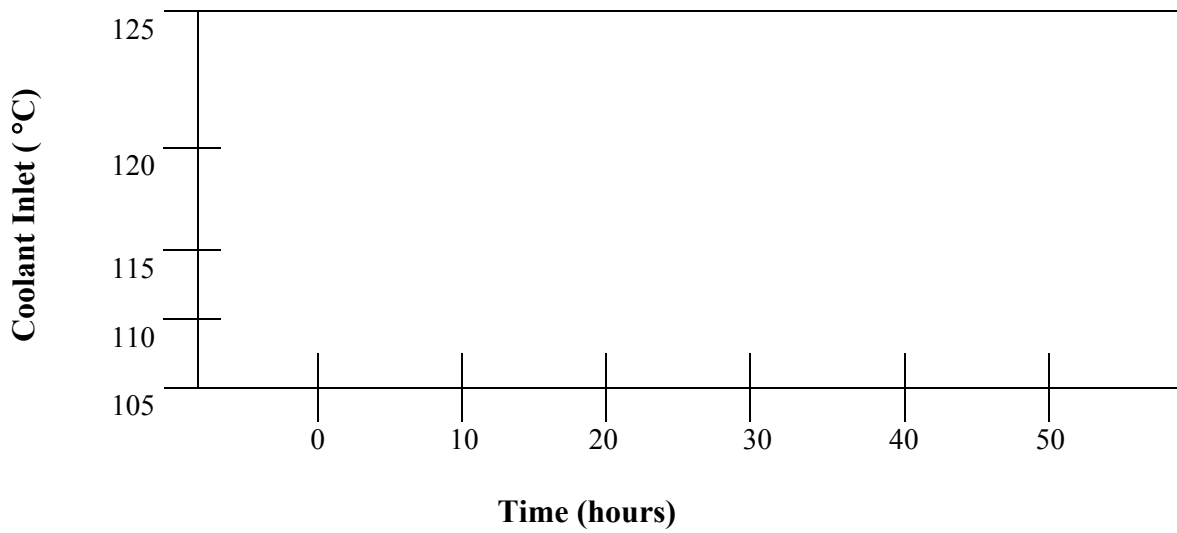
D 5966
Roller Follower Wear Test
Form 7
Operational Data Summary – Coolant Inlet Temperature

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Coolant Inlet Temperature

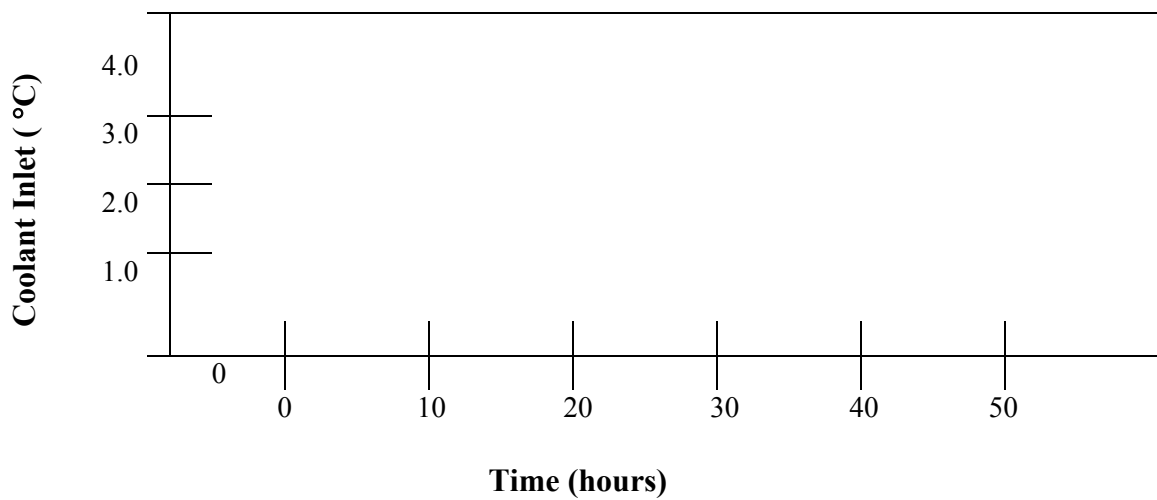
Process Mean

\bar{X}_{av} =



Process Variability (s)

\bar{S}_{av} =



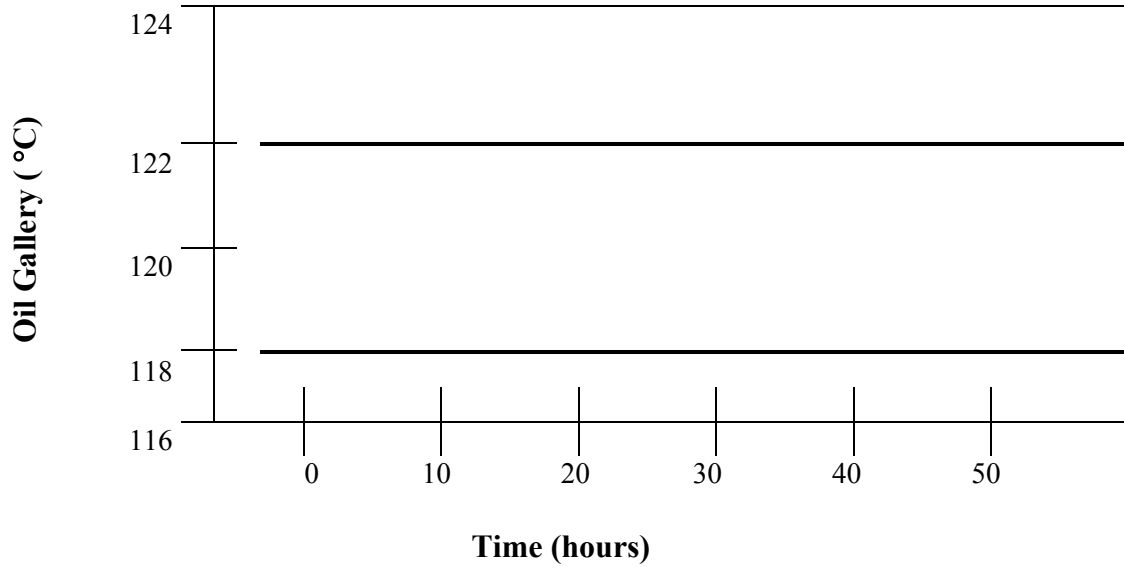
D 5966
Roller Follower Wear Test
Form 8

Operational Data Summary – Oil Gallery Temperature

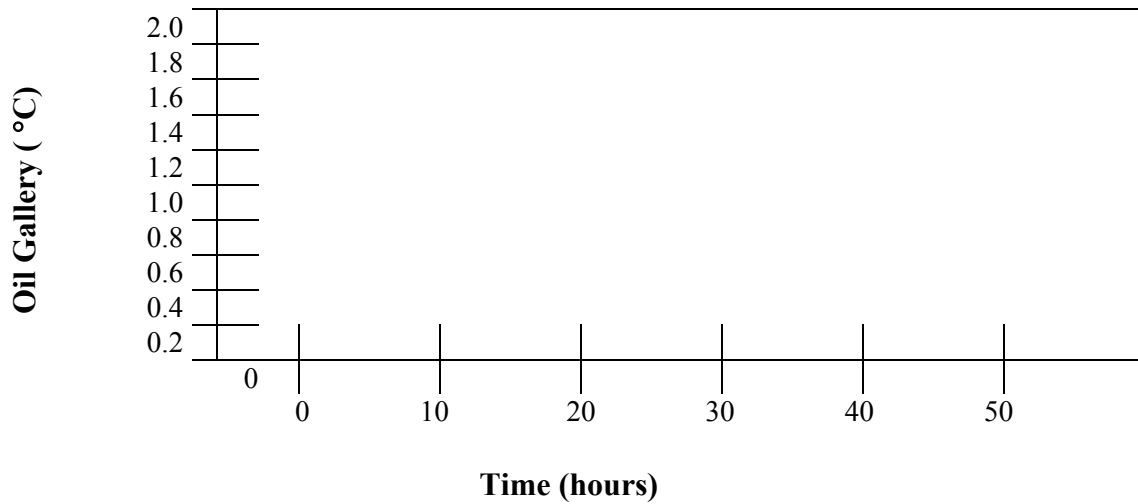
Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Oil Gallery Temperature

Process Mean
X_{av} =



Process Variability (s)
S_{av} =

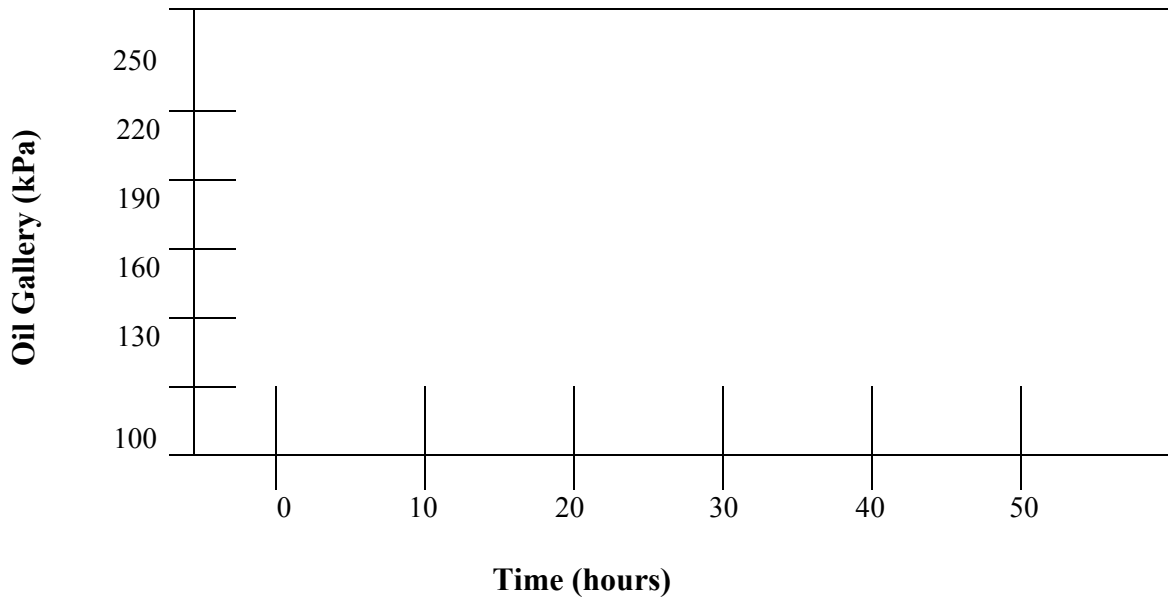


D 5966
Roller Follower Wear Test
Form 9
Operational Data Summary – Oil Gallery Pressure

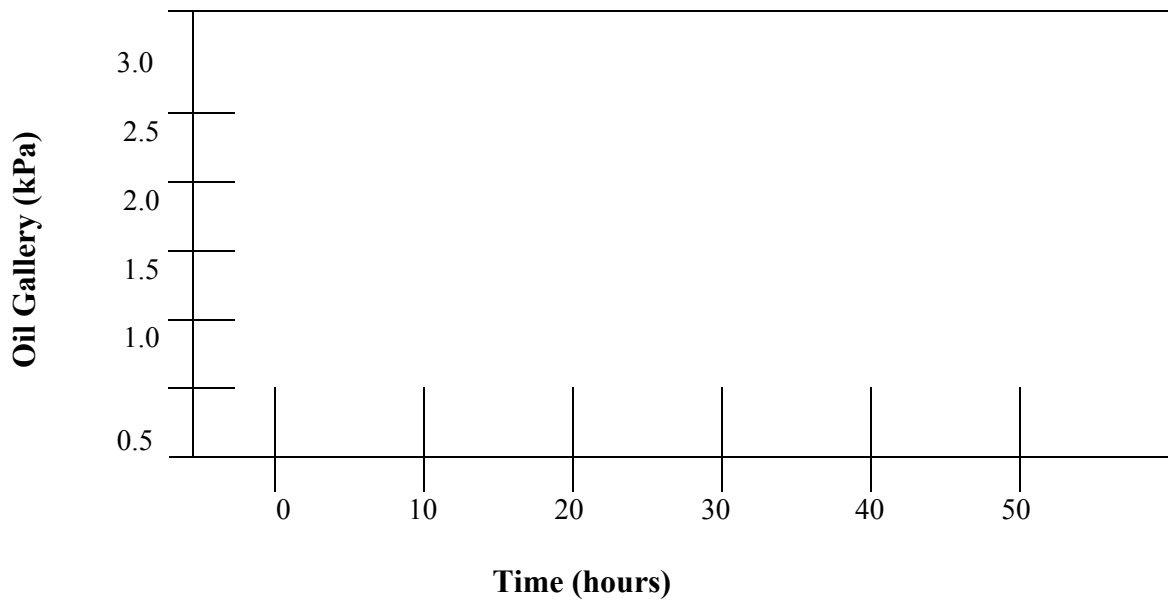
Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Oil Gallery Pressure

Process Mean
 $\bar{X}_{av} =$



Process Variability (s)
 $\bar{S}_{av} =$



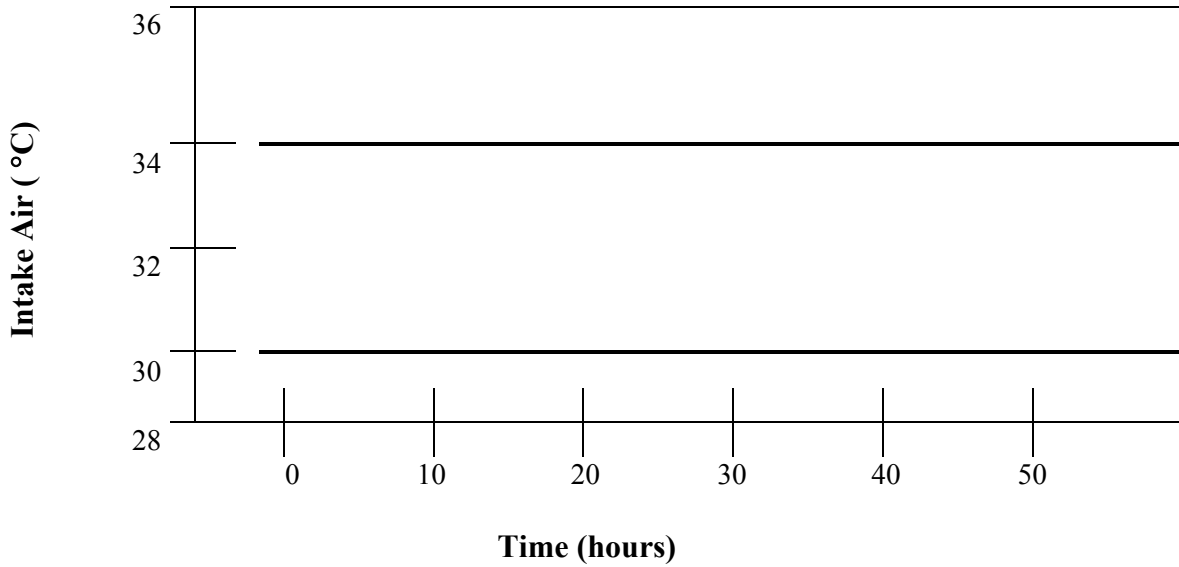
D 5966
Roller Follower Wear Test
Form 10
Operational Data Summary – Intake Air Temperature

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Intake Air Temperature

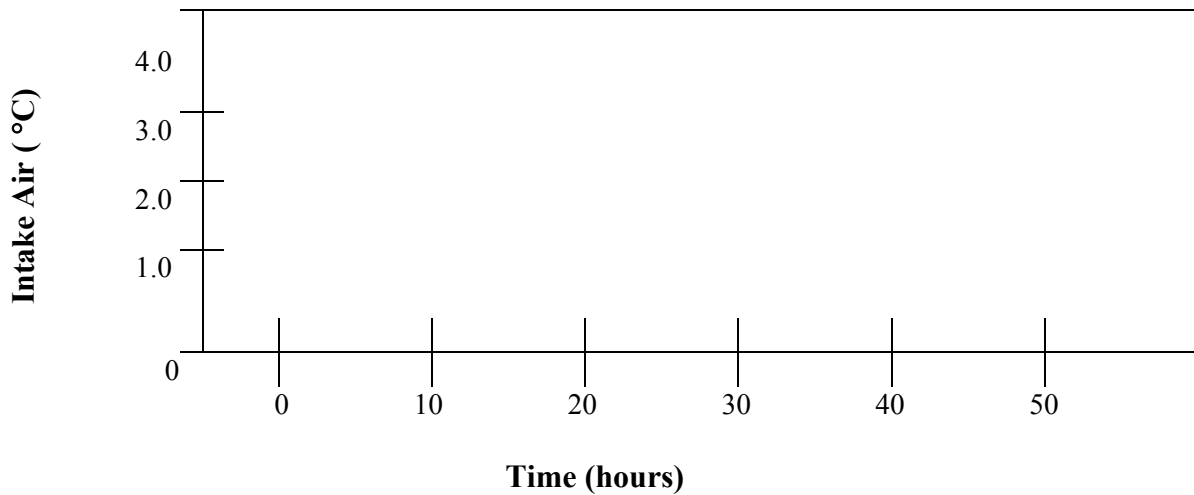
Process Mean

X_{av} =



Process Variability (s)

S_{av} =

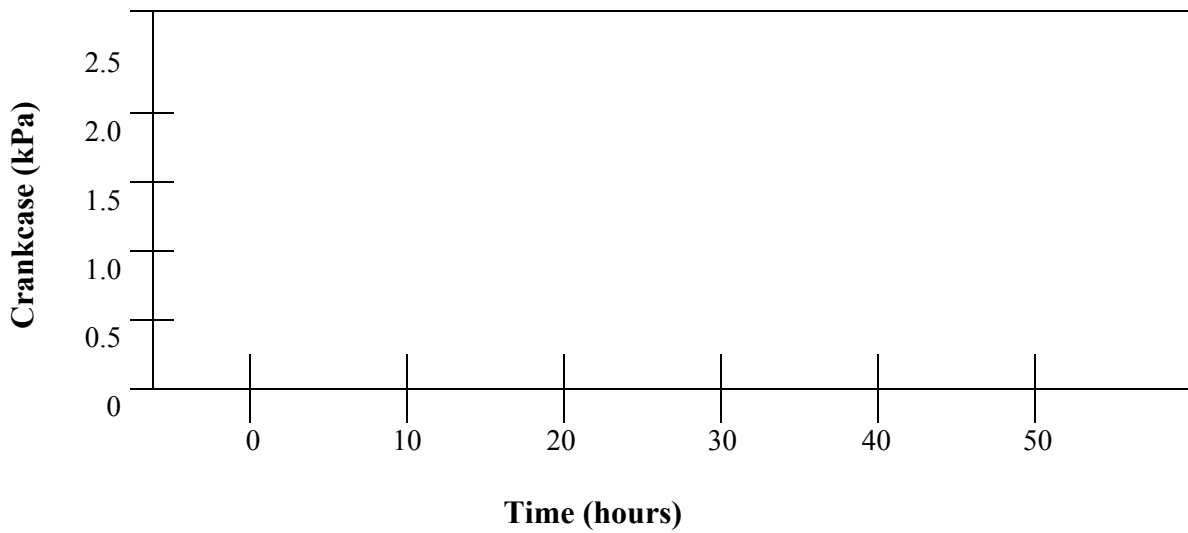


D 5966
Roller Follower Wear Test
Form 11
Operational Data Summary – Crankcase Pressure

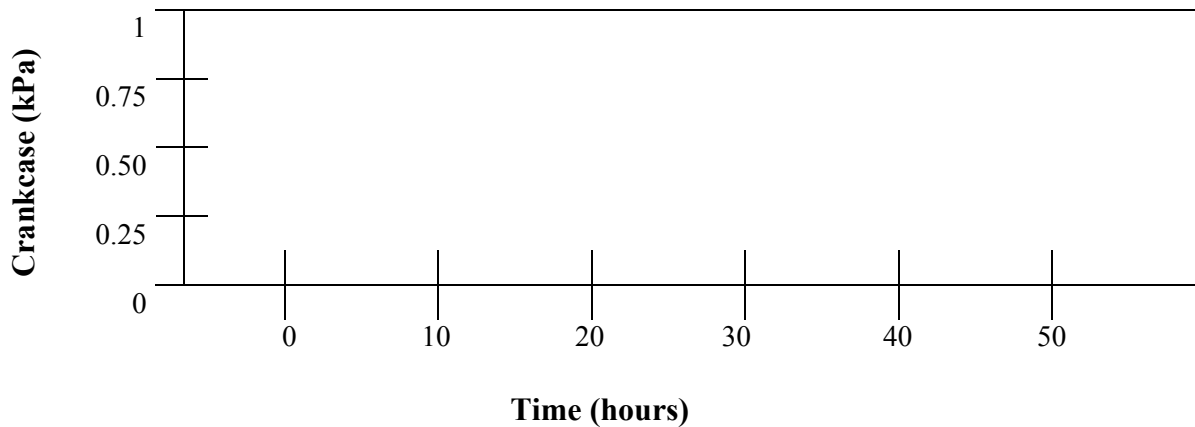
Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Crankcase Pressure

Process Mean
 $\bar{X}_{av} =$



Process Variability (s)
 $S_{av} =$



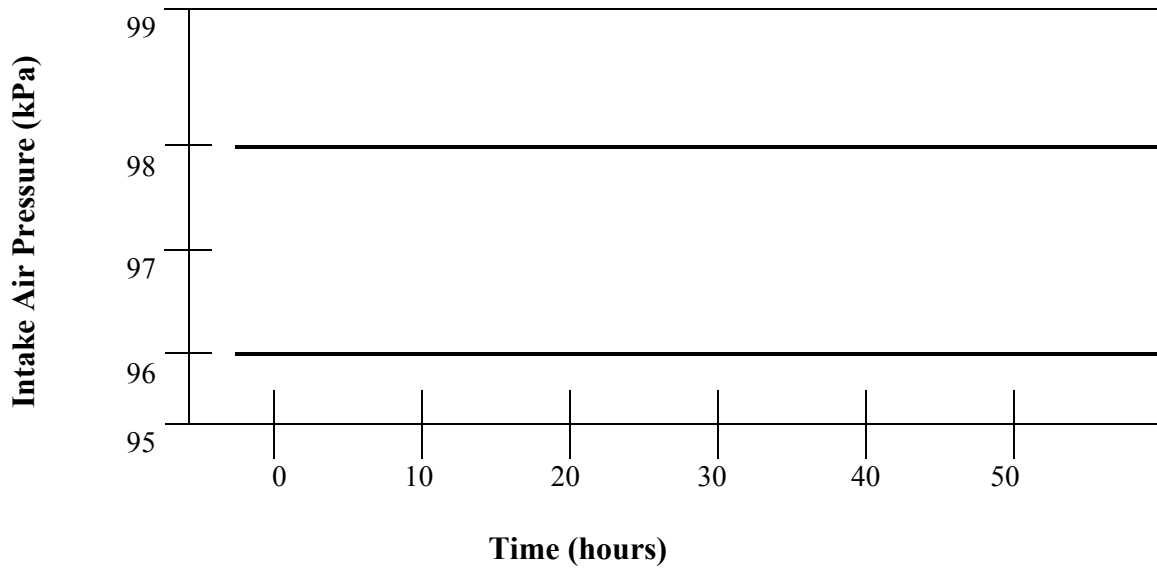
D 5966
Roller Follower Wear Test
Form 12
Operational Data Summary – Intake Air Pressure

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Intake Air Pressure

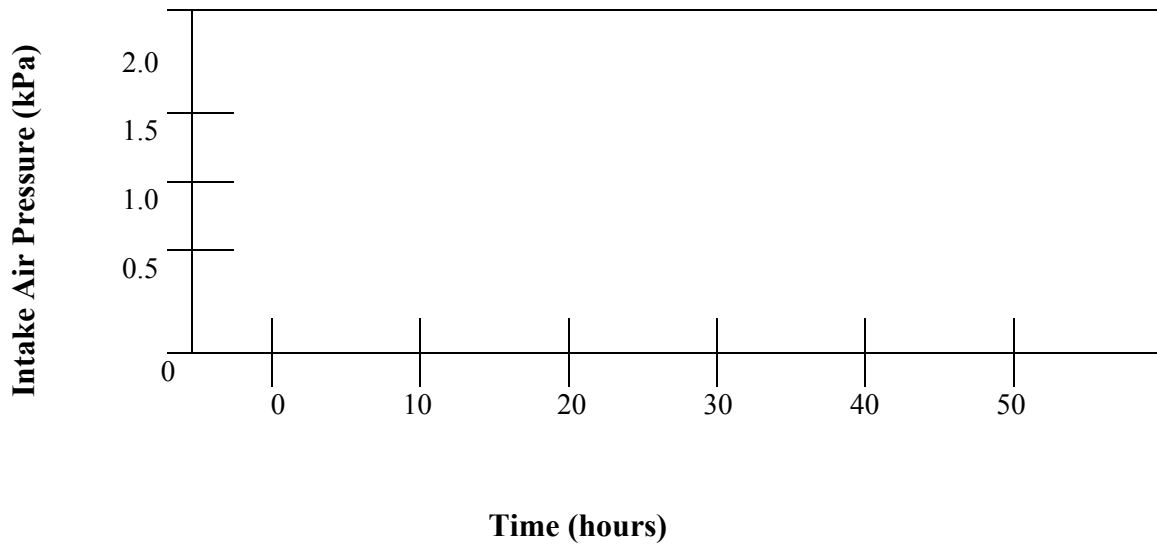
Process Mean

\bar{X}_{av} =



Process Variability (s)

S_{av} =



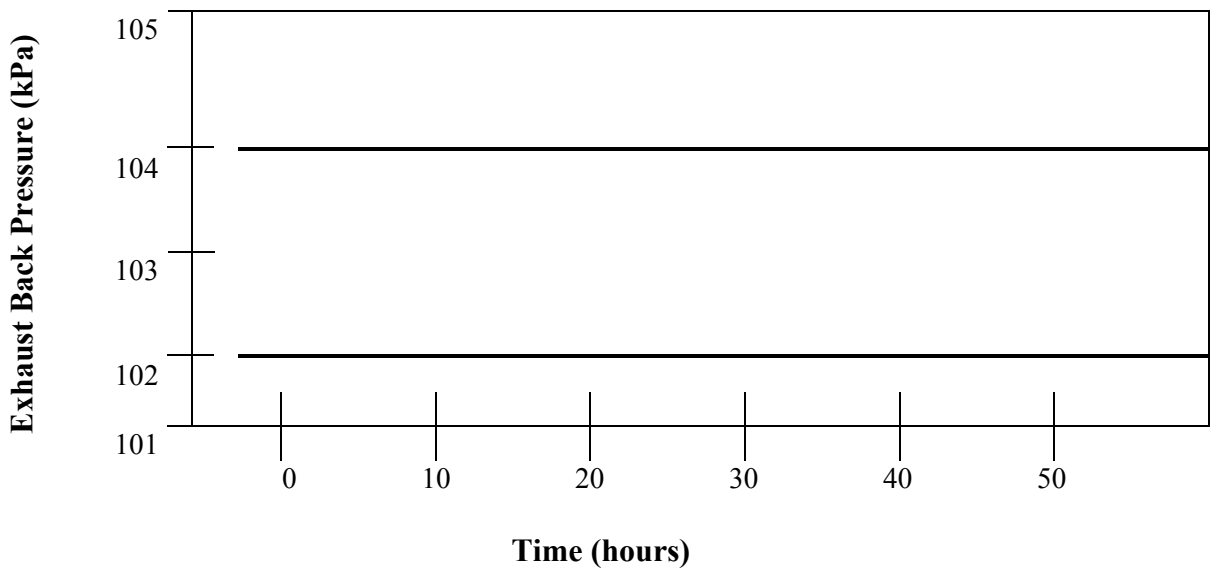
D 5966
Roller Follower Wear Test
Form 13
Operational Data Summary – Exhaust Back Pressure

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Exhaust Back Pressure

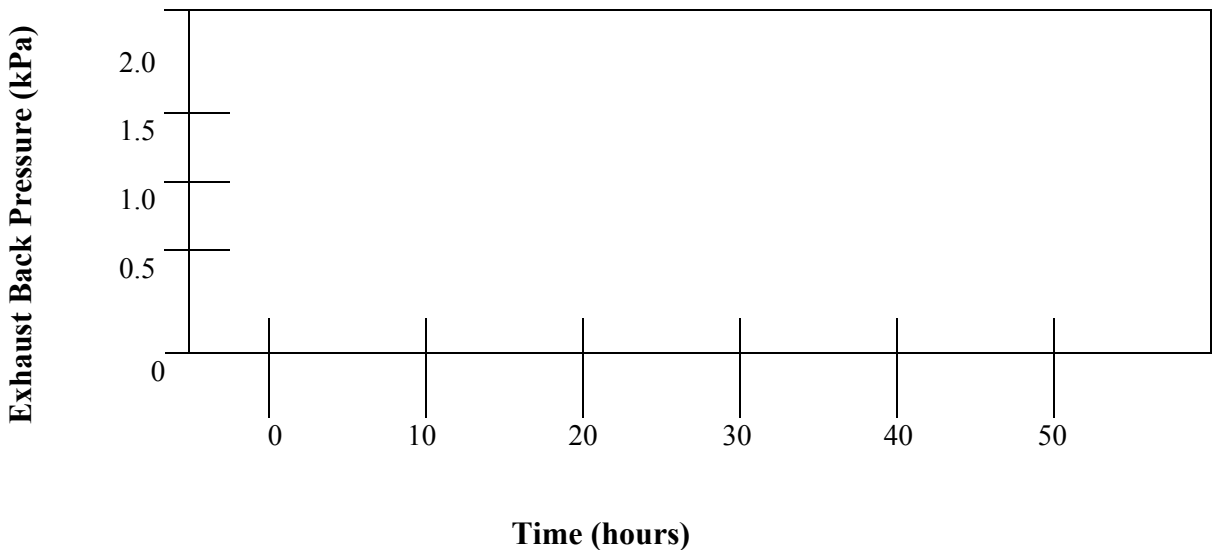
Process Mean

\bar{X}_{av} =



Process Variability (s)

S_{av} =



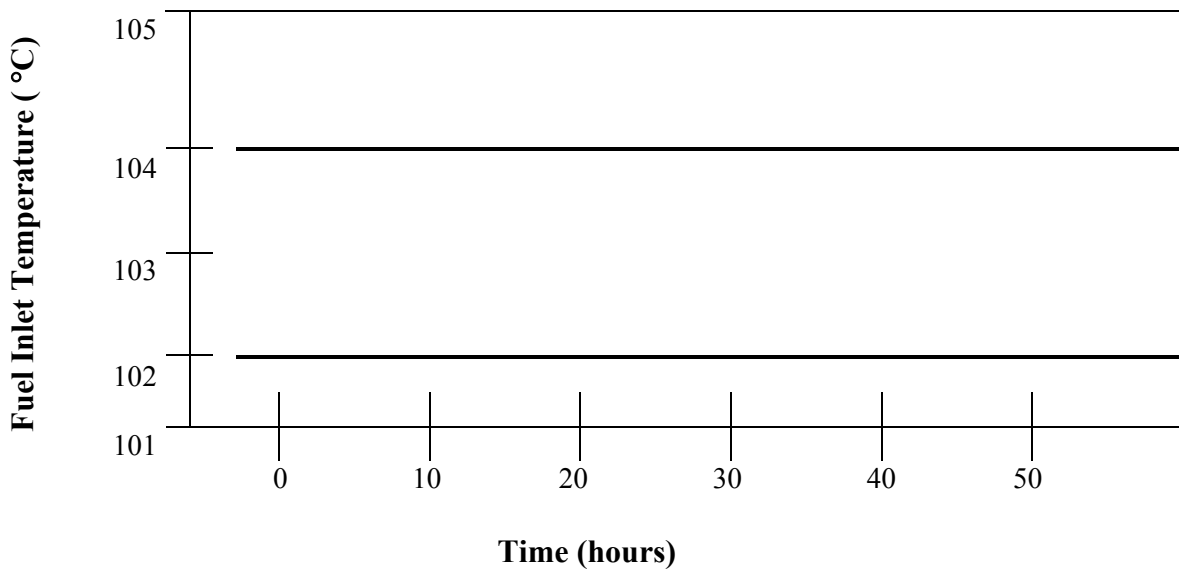
D 5966
Roller Follower Wear Test
Form 14
Operational Data Summary – Fuel Inlet Temperature

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Fuel Inlet Temperature

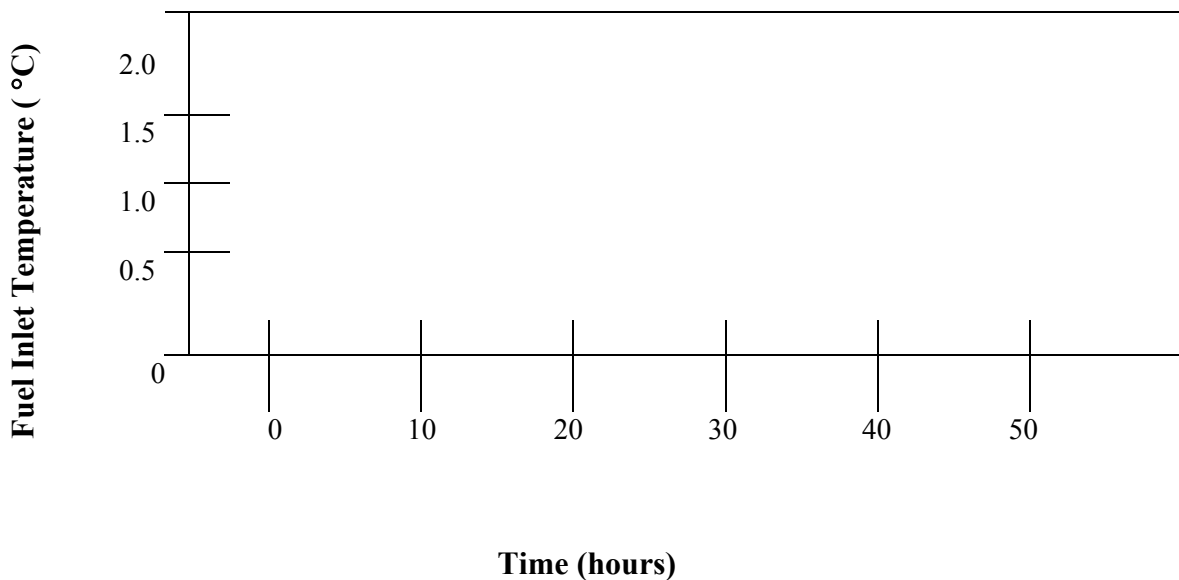
Process Mean

\bar{X}_{av} =



Process Variability (s)

S_{av} =



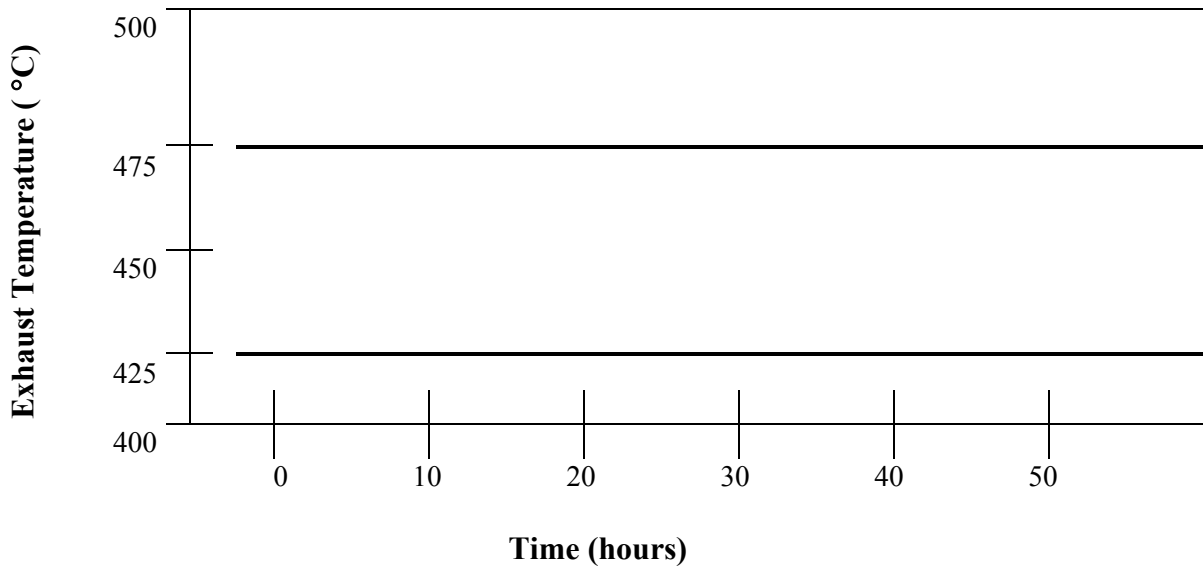
D 5966
Roller Follower Wear Test
Form 15
Operational Data Summary – Exhaust Temperature

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Exhaust Temperature

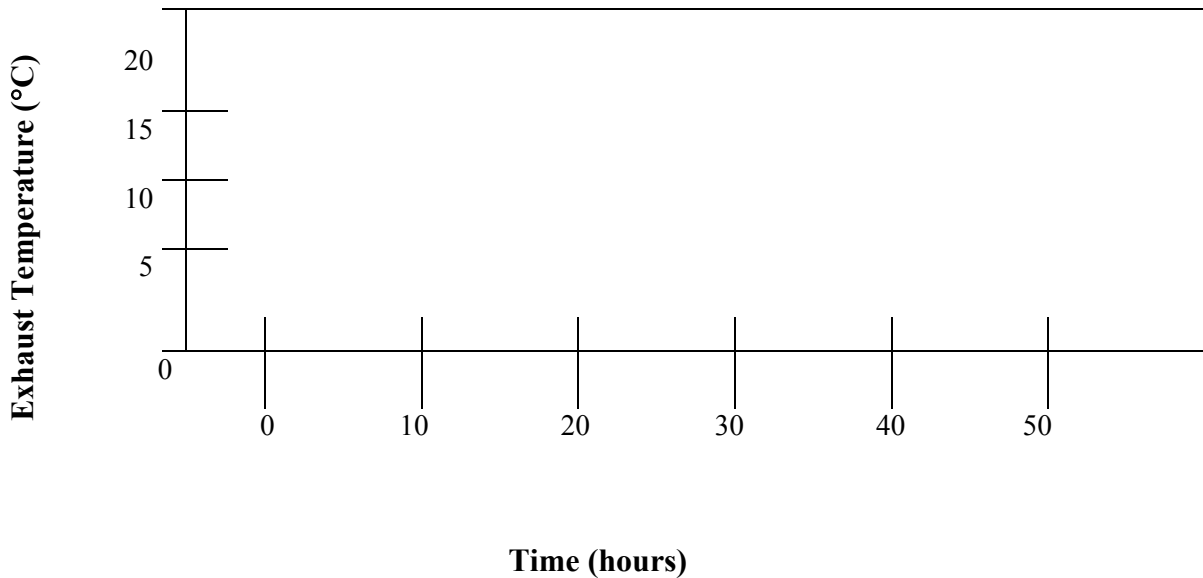
Process Mean

$\bar{X}_{av} =$



Process Variability (s)

$S_{av} =$



D 5966
Roller Follower Wear Test
Form 16
Operational Summary

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Specification						
Test Parameter	6.2L Engine	6.5L Engine	Average	Std. Dev.	Minimum	Maximum
Engine Speed, r/min	1000 ± 5	1000 ± 5				
Torque, N-m	Record	Record				
Fuel Flow, kg/h	9.0 ± 0.1	9.4 ± 0.1				
Total Oil Consumption, kg	Record	Record				

Temperatures	Specification	Average	Std. Dev.	Minimum	Maximum
Coolant Out, °C	120 ± 2				
Coolant In, °C	Report Only				
Main Oil Gallery, °C	120 ± 2				
Fuel In, °C	35 ± 2				
Intake Air, °C	32 ± 2				
Oil Sump, °C	Report				
Exhaust, °C	Report				

Pressures	Specification	Average	Std. Dev.	Minimum	Maximum
Crankcase, kPa	Report				
Back Pressure, kPa	103 ± 1				
Intake Air, kPa	97 ± 1				

D 5966
Roller Follower Wear Test
Form 17
Oil Analysis

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Hours	Viscosity, cSt @ 100°C	% Soot

Hours	Elements						
	Al	Cr	Cu	Fe	Pb	Si	Sn

D 5966
Roller Follower Wear Test
Form 21
Test Fuel Analysis (Last batch)

Laboratory	Date Completed
Test Number	
Oil Code	
Formulation/Stand Code	

Supplier	Batch Identifiers
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Measurement	Specs.	Analysis	Test Method
Total Sulfur, % Weight	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 Maximum		D 130
Flash Point, °C	54 Minimum		D 93
Cloud Point, °C	-12 Maximum		D 2500
Pour Point, °C	-18 Maximum		D 97
Carbon Residue on 10% Residium, %	0.35 Maximum		D 524 (10 % Bottoms)
Water & Sediment, % Vol	0.05 Maximum		D 2709
Ash, % Wgt.	0.01 Maximum		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

D 5966
Roller Follower Wear Test
Form 22
Characteristics of the Data Acquisition System

Laboratory	Date Completed
Test Number	
Oil Code	
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							
Main Oil G.							
Fuel In.							
Intake Air							
Oil Sump							
Exhaust							
Cool. Out							
Other							
Fuel Flow							
Engine Rpm							
Load							
Intake Pres.							
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 recorded if 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

**Roller Follower Wear Test
Form 23
American Chemistry Council Code of Practice
Test Laboratory Conformance Statement**

Test Laboratory					
Test Sponsor					
Formulation / Stand Code					
Test Number					
Start Date		Start Time		Time Zone	

Declarations

No. 1 All requirements of the ACC Code of Practice for which the test laboratory is responsible were met in the conduct of this test. Yes _____ No _____ *

No. 2 The laboratory ran this test for the full duration following all procedural requirements; and all operational validity requirements of the latest version of the applicable test procedure (ASTM or other), including all updates issued by the organization responsible for the test, were met.
Yes _____ No _____ *

If the response to this Declaration is “No”, does the test engineer consider the deviations from operational validity requirements that occurred to be beyond the control of the laboratory?
Yes _____ * No _____

No 3. A deviation occurred for one of the test parameters identified by the organization responsible for the test as being a special case. Yes _____ * No _____ *(This currently applies only to specific deviations identified in the ASTM Information Letter System)*

Check The Appropriate Conclusion

	Operational review of this test indicates that the results should be included in the Multiple Test Acceptance Criteria calculations.
	*Operational review of this test indicates that the results should not be included in the Multiple Test Acceptance Criteria calculations.

Note: *Supporting comments are required for all responses identified with an asterisk.*

Comments

Signature

Date

Typed Name

Title