



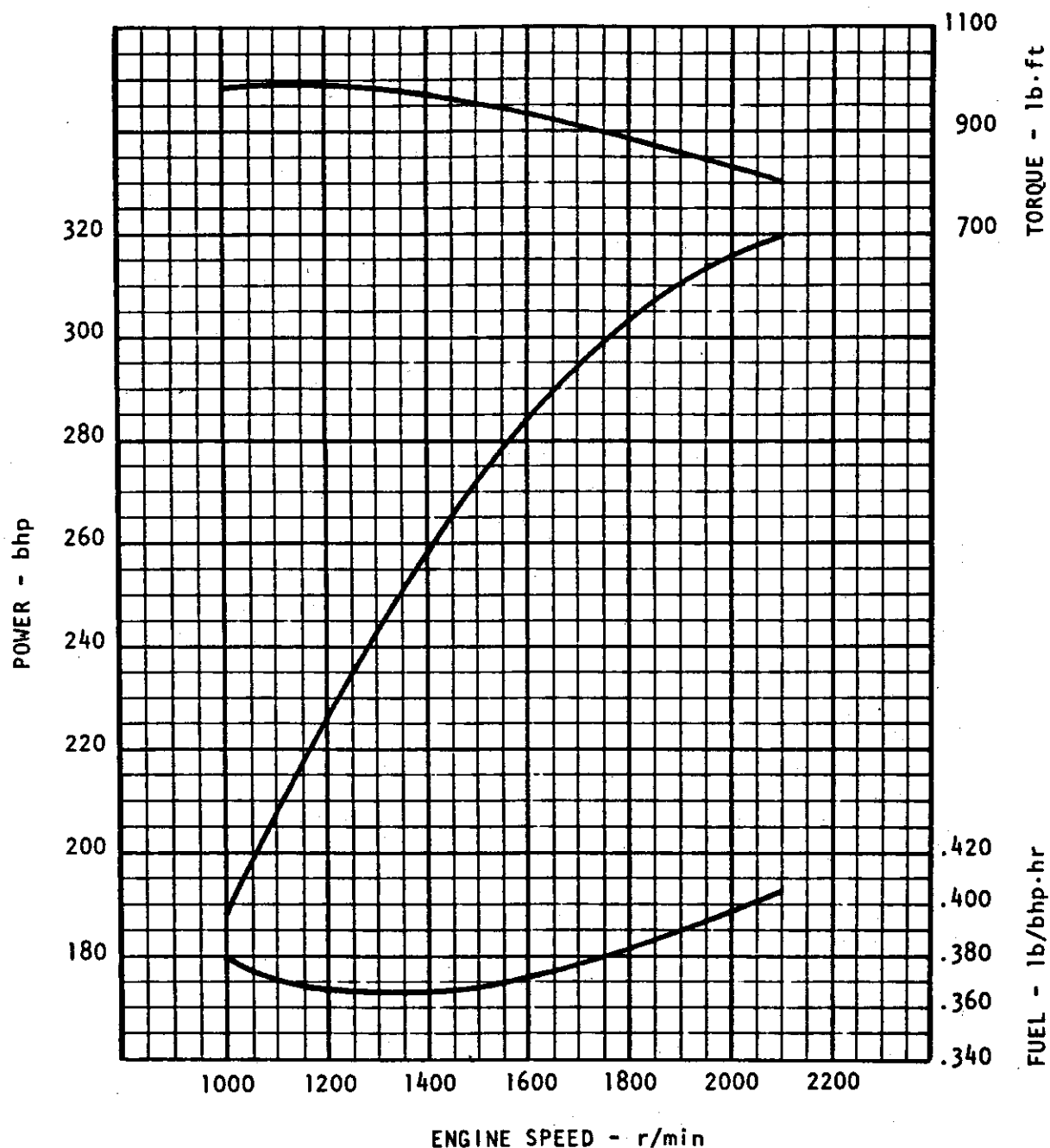
ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

APPLICATION: AUTOMOTIVE - COACH
DIESEL FUEL - NO. 2
CERTIFICATION: CALIFORNIA 1985

MODEL: 6V-92TAC

320 bhp @ 2100 r/min
989 lb·ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-8067-32-68
DATE: 2-11-85
REV./DATE:
SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	6V-92TA COACH
Number of Cylinders.....	6
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	552(9.05)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1750(533)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV7511(1.23A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	2250
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	3.0(0.75)

Physical Data

Size	
Length-in(mm).....	37.6(955)
Width-in(mm).....	37.6(955)
Height-in(mm).....	48.0(1220)
Weight, dry-lb(kg).....	2020(920)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	9.4(239)
Above Crankshaft (y axis)-in(mm).....	10.2(259)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	VARIES WITH MODEL
Maximum Allowable Static Bending Moment at Rear Face of FN Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	9F90/1.470
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	131.6(59.7)
Fuel Consumption-gal/hr(L/hr).....	18.8(71.2)
Fuel Spill Rate-lb/hr(kg/hr).....	450(204)
Fuel Spill Rate-gal/hr(L/hr).....	64.4(244)
Total Fuel Flow-lb/hr(kg/hr).....	582(264)
Total Fuel Flow-gal/hr(L/hr).....	83.2(315)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	37(140)
Oil Pan Capacity	
High-qt(L).....	20(19)
Low-qt(L).....	16(15)
Total Engine Oil Capacity with Filters-qt(L).....	22(21)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	VARIES WITH MODEL
Front down - degrees.....	VARIES WITH MODEL
Side tilt - degrees.....	VARIES WITH MODEL

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	597
Smoke	
Rated Speed - Bosch Number.....	0.8
Peak Torque Speed - Bosch Number.....	1.1
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	10900(192)
Engine Radiated Heat-Btu/min(kW).....	1770(31.1)
Coolant Flow-gal/min(L/min).....	160(606)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	24.5(23.2)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.6(0.017)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-in H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1140(32.3)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	52.2(176)
Recommended Intake Pipe Dia.-in(mm).....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2520(71.4)
Exhaust Temperature-°F(°C).....	725(385)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	5.0(127)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	320(239)
Full Load Speed-r/min.....	2100
Peak Torque-lb ft(N m).....	989(1341)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	109(752)
Friction Power	
Rated Speed-bhp(kW).....	79(59)
Peak Torque Speed-bhp(kW).....	32(24)
Altitude Capability-ft(m).....	10000(3050)
Torque Available at 800 r/min-lb ft (N m).....	665(902)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2100	320(239)	800(1085)	.405(246)
1950	314(234)	846(1147)	.393(239)
1800	303(226)	884(1199)	.382(232)
1600	284(212)	932(1264)	.371(226)
1400	258(192)	968(1312)	.366(223)
1200	226(169)	989(1341)	.366(223)
1000	188(140)	987(1338)	.379(231)

Note: Performance shown is with Diesel No. 2 fuel.

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8067-32-68
Date: 2-11-85
Rev./Date:
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

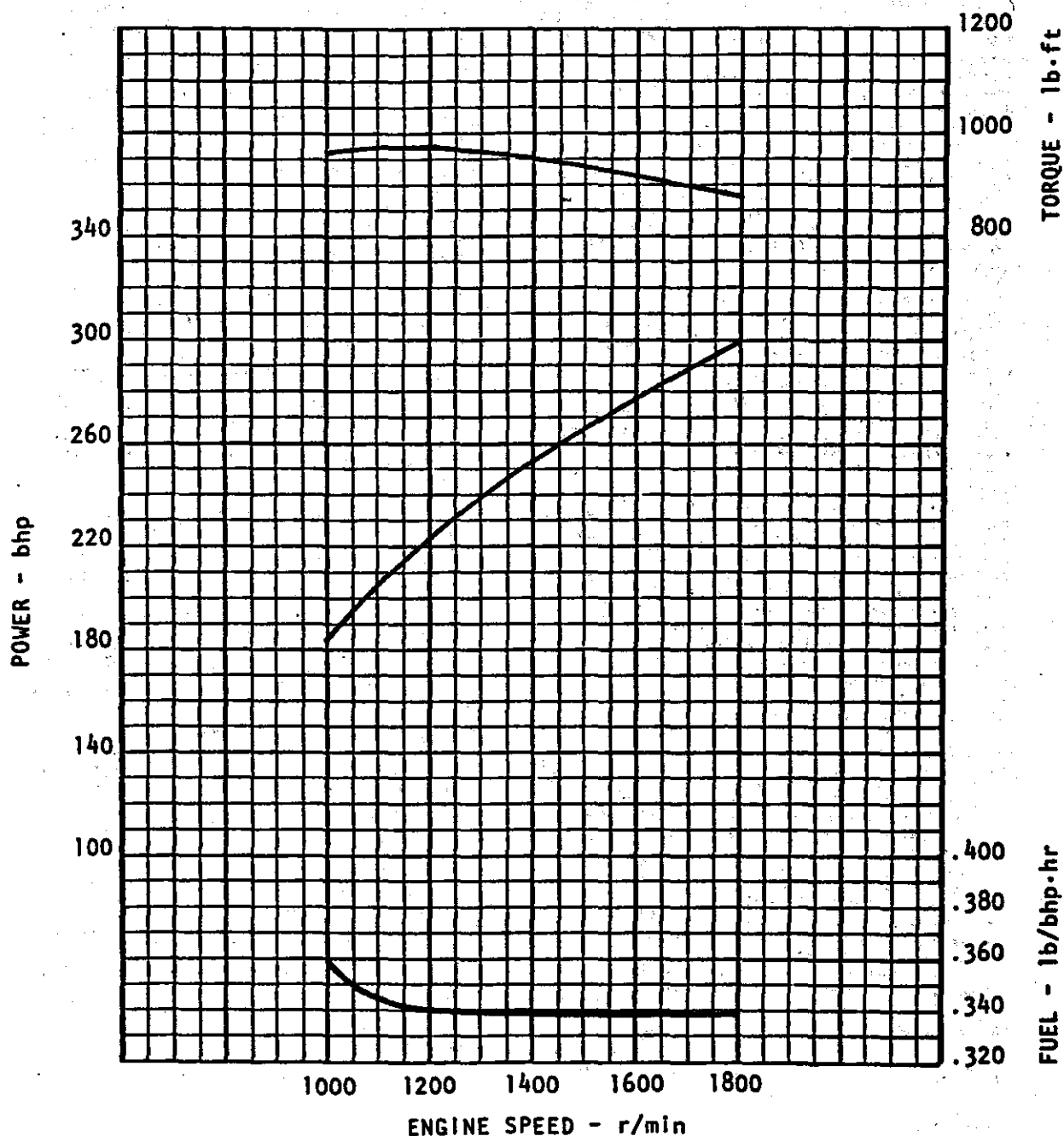
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 6V-92T A/A

300 bhp @ 1800 r/min

975 lb-ft @ 1200 r/min



• POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (994Pa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.855 SPECIFIC GRAVITY AT 60°F);
10 in. H₂O (2.54kPa) AIR INLET RESTRICTION; 15 in. H₂O (3.7kPa) EXHAUST
BACK PRESSURE; 16 in. H₂O (4.0kPa) CHARGE AIR COOLER SYSTEM PRESSURE
DROP; 97°F (36.1°C) CHARGE AIR COOLER SYSTEM TEMPERATURE OUT.
• VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO
CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-8067-32-64

DATE: 10-26-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8067-7361
Number of Cylinders.....	6
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	552(9.05)
Compression Ratio.....	18.0:1
Piston Speed-ft/min(m/min).....	1500(457)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TA7501(2.69 A/R)
Charge Air Cooling System.....	AIR/AIR
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	1925
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	2.6(0.65)

Physical Data

Size	
Length-in(mm).....	37.6(955)
Width-in(mm).....	37.6(955)
Height-in(mm).....	48.0(1220)
Weight, dry-lb(kg).....	2020(920)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	9.4(239)
Above Crankshaft (y axis)-in(mm).....	10.2(259)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	NOT AVAILABLE
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	9J85/1.464
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	106.2(48.2)
Fuel Consumption-gal/hr(L/hr).....	15.2(57.5)
Fuel Spill Rate-lb/hr(kg/hr).....	50.3(228)
Fuel Spill Rate-gal/hr(L/hr).....	72.0(273)
Total Fuel Flow-lb/hr(kg/hr).....	609(276)
Total Fuel Flow-gal/hr(L/hr).....	87.2(330)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	34(121)
Oil Pan Capacity	
High-qt(L).....	20(19)
Low-qt(L).....	16(15)
Total Engine Oil Capacity with filters-qt(L).....	22(21)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	482
Smoke	
Rated Speed - Bosch Number.....	0.2
Peak Torque Speed - Bosch Number.....	0.2
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	5420(95.3)
Charge Air Cooler Heat Rejection-Btu/min(kW).....	2700(47.5)
Engine Radiated Heat-Btu/min(kW).....	1500(26.4)
Coolant Flow-gal/min(L/min).....	140(530)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	24.5(23.2)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.6(0.017)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lb H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	910(25.8)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	41.6(140)
Recommended Intake Pipe Dia.-in(mm).....	6.0(152)
Maximum Allowable Charge Air Cooler	
System Pressure Drop-in H ₂ O(kPa).....	41(10.2)
Maximum Allowable Charge Air Cooler Out Temperature-°F(°C).....	110(43)
Exhaust System	
Exhaust Flow-ft ³ /min(m ³ /min).....	1710(48.4)
Exhaust Temperature-°F(°C).....	550(288)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.0(6.8)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	5.0(127)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	300(224)
Full Load Speed-r/min.....	1800
Peak Torque-lb ft(N m).....	975(1322)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	120(827)
Friction Power	
Rated Speed-bhp(kW).....	63(47)
Peak Torque Speed-bhp(kW).....	33(25)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-lb ft (N m).....	NOT AVAILABLE

Engine Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
1800	300(224)	875(1186)	.338(205)
1600	278(207)	913(1238)	.339(206)
1400	253(189)	949(1286)	.339(206)
1200	223(166)	975(1322)	.340(207)
1000	184(137)	966(1310)	.359(218)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8067-32-64
Date: 10-26-84
Rev./Date:
Sht. 2 of 2



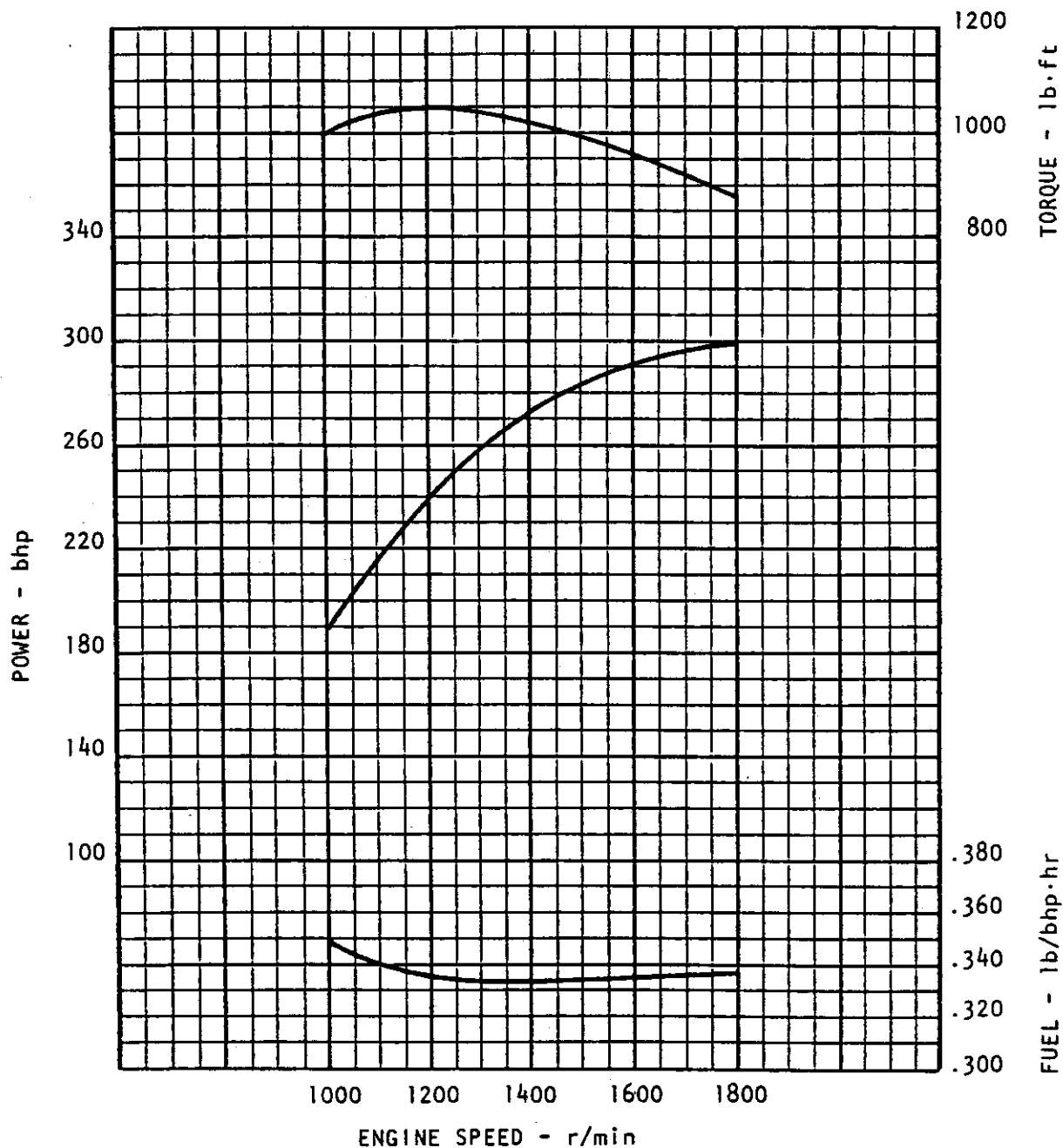
ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 6V92T A/A DDEC
300 bhp @ 1800 r/min
1050 lb·ft @ 1200 r/min



• POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F);
10 in. H₂O (2.5kPa) AIR INLET RESTRICTION; 15 in. H₂O (3.7kPa) EXHAUST
BACK PRESSURE; 16 in. H₂O (4.0kPa) CHARGE AIR COOLER SYSTEM PRESSURE
DROP; 97°F (36.1°C) CHARGE AIR COOLER SYSTEM TEMPERATURE OUT.
• VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO
CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-8067-32-71

DATE: 7-17-85

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8067-7T60
Number of Cylinders.....	6
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	552(9.05)
Compression Ratio.....	18.0:1
Piston Speed-ft/min(m/min).....	1500(457)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TA7502(2.95 IN ²)
Charge Air Cooling System.....	AIR/AIR
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	1800/1925
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	2.6(0.65)

Physical Data

Size	
Length-in(mm).....	37.6(955)
Width-in(mm).....	37.6(955)
Height-in(mm).....	48.0(1220)
Weight, dry-lb(kg).....	2020(920)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	9.4(239)
Above Crankshaft (y axis)-in(mm).....	10.2(259)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	NOT AVAILABLE
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector Part No./Timing.....	5234770/1.460
Cert Code.....	0001
Fuel Consumption-lb/hr(kg/hr).....	104.7(47.5)
Fuel Consumption-gal/hr(L/hr).....	15.0(56.8)
Fuel Spill Rate-lb/hr(kg/hr).....	522(237)
Fuel Spill Rate-gal/hr(L/hr).....	74.7(283)
Total Fuel Flow-lb/hr(kg/hr).....	627(284)
Total Fuel Flow-gal/hr(L/hr).....	89.7(340)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	34(121)
Oil Pan Capacity	
High-qt(L).....	20(19)
Low-qt(L).....	16(15)
Total Engine Oil Capacity with filters-qt(L).....	22(21)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

Smoke	
Rated Speed - Bosch Number.....	0.2
Peak Torque Speed - Bosch Number.....	0.2
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	5420(95.3)
Charge Air Cooler Heat Rejection-Btu/min(kW).....	2700(47.5)
Engine Radiated Heat-Btu/min(kW).....	1500(26.4)
Coolant Flow-gal/min(L/min).....	140(530)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	24.5(23.2)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure, (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	20(138)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)

Cooling Index

Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.6(0.017)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-ig H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	910(25.8)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	42.8(145)
Recommended Intake Pipe Dia.-in(mm).....	6.0(152)
Maximum Allowable Charge Air Cooler System Pressure Drop-in H ₂ O(kPa).....	41(10.2)
Maximum Allowable Charge Air Cooler Out Temperature-°F(°C).....	110(43)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1750(49.6)
Exhaust Temperature-°F(°C).....	575(302)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.0(6.8)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	5.0(127)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	300(224)
Full Load Speed-r/min.....	1800
Peak Torque-lb ft(N m).....	1050(1424)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	120(827)
Friction Power	
Rated Speed-bhp(kW).....	63(47)
Peak Torque Speed-bhp(kW).....	33(25)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-lb ft (N m).....	665(900)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
1800	300(224)	875(1186)	.336(204)
1600	291(217)	955(1295)	.335(204)
1400	272(203)	1020(1383)	.333(203)
1200	240(179)	1050(1424)	.335(204)
1000	189(141)	993(1346)	.348(212)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8067-32-71
Date: 7-17-85
Rev./Date:
Sht. 2 of 2



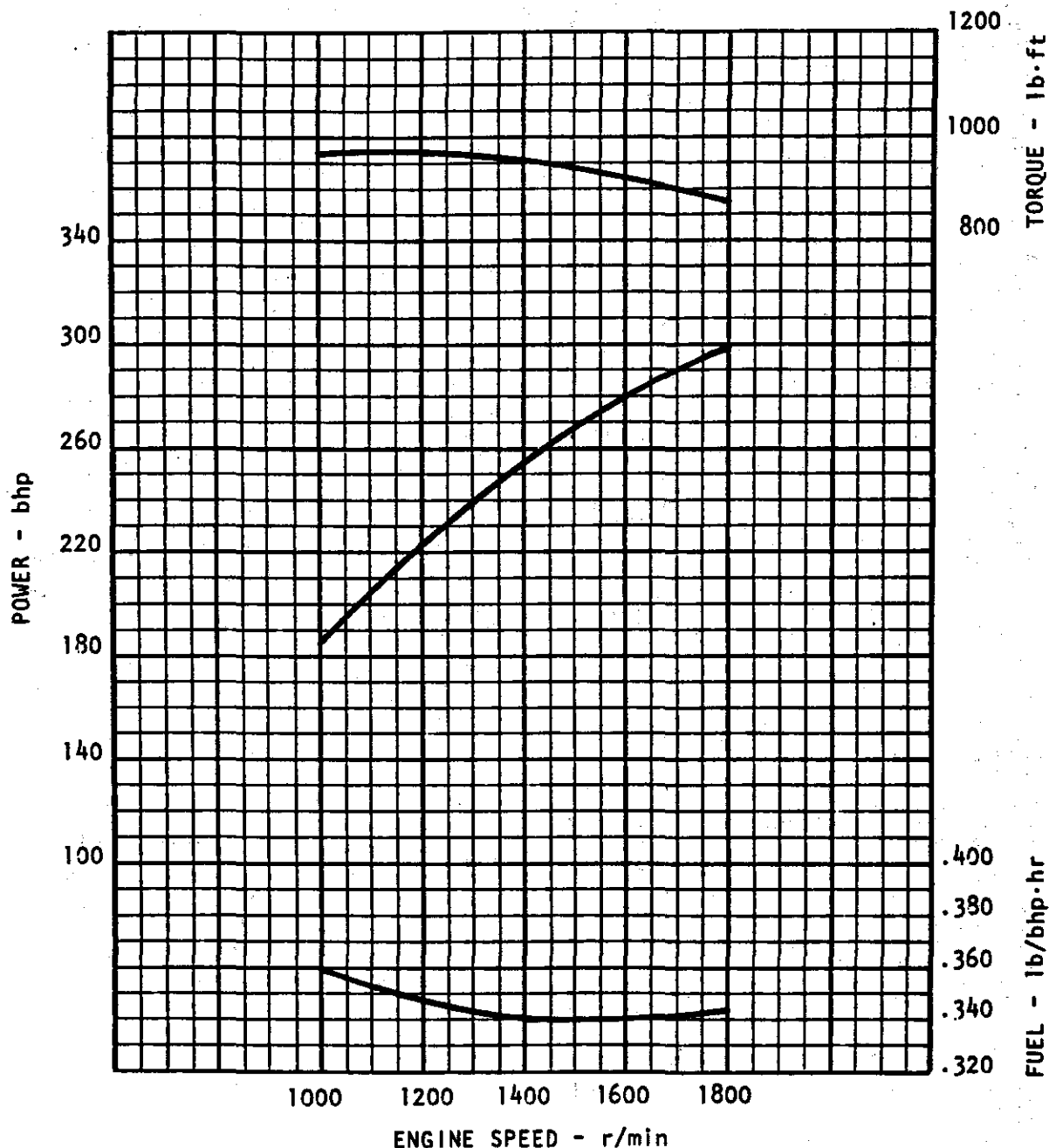
ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 6V-92TALCC
300 bhp @ 1800 r/min
975 lb·ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-8067-32-65
DATE: 11-29-84
REV./DATE:
SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8067-7863
Number of Cylinders.....	6
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	552(9.05)
Compression Ratio.....	18.0:1
Piston Speed-ft/min(m/min).....	1500(457)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV7511(1.08 A/R)
Charge Air Cooling System.....	ALCC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	1925
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	2.6(0.65)

Physical Data

Size	
Length-in(mm).....	37.6(955)
Width-in(mm).....	37.6(955)
Height-in(mm).....	48.0(1220)
Weight, dry-lb(kg).....	2020(920)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	9.4(239)
Above Crankshaft (y axis)-in(mm).....	10.2(259)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	NOT AVAILABLE
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	9H85/1.475
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	108.2(49.1)
Fuel Consumption-gal/hr(L/hr).....	15.5(58.7)
Fuel Spill Rate-lb/hr(kg/hr).....	512(232)
Fuel Spill Rate-gal/hr(L/hr).....	73.2(277)
Total Fuel Flow-lb/hr(kg/hr).....	620(281)
Total Fuel Flow-gal/hr(L/hr).....	88.7(336)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	34(121)
Oil Pan Capacity	
High-qt(L).....	20(19)
Low-qt(L).....	16(15)
Total Engine Oil Capacity with filters-qt(L).....	22(21)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	491
Smoke	
Rated Speed - Bosch Number.....	0.4
Peak Torque Speed - Bosch Number.....	0.4
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	8750(153)
Engine Radiated Heat-Btu/min(kW).....	1470(25.8)
Maximum Radiator Flow-gal/min(L/min).....	45(170)
Thermostat.....	Stat #1 Stat #2
Start to Open-°F(°C).....	177(81) 160(71)
Fully Open-°F(°C).....	197(92) 177(81)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	24.5(23.2)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Max. Cyl. Hd. Coolant Temp. Out-°F(°C).....	210(99)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.6(0.017)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-in H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	910(25.8)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	40.2(136)
Recommended Intake Pipe Dia.-in(mm).....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1840(52.1)
Exhaust Temperature-°F(°C).....	625(329)
Maximum Allowable Back	
Pressure-in Hg(kPa).....	2.0(6.8)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	5.0(127)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	300(224)
Full Load Speed-r/min.....	1800
Peak Torque-lb ft(N m).....	975(1322)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	120(827)
Friction Power	
Rated Speed-bhp(kW).....	60(45)
Peak Torque Speed-bhp(kW).....	32(24)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-lb ft (N m).....	505(685)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
1800	300(224)	875(1186)	343(208)
1600	280(209)	919(1246)	348(207)
1400	255(190)	957(1298)	340(207)
1200	223(166)	975(1322)	347(211)
1000	185(138)	972(1318)	360(219)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8067-32-65
Date: 11-29-84
Rev./Date:
Sht. 2 of 2



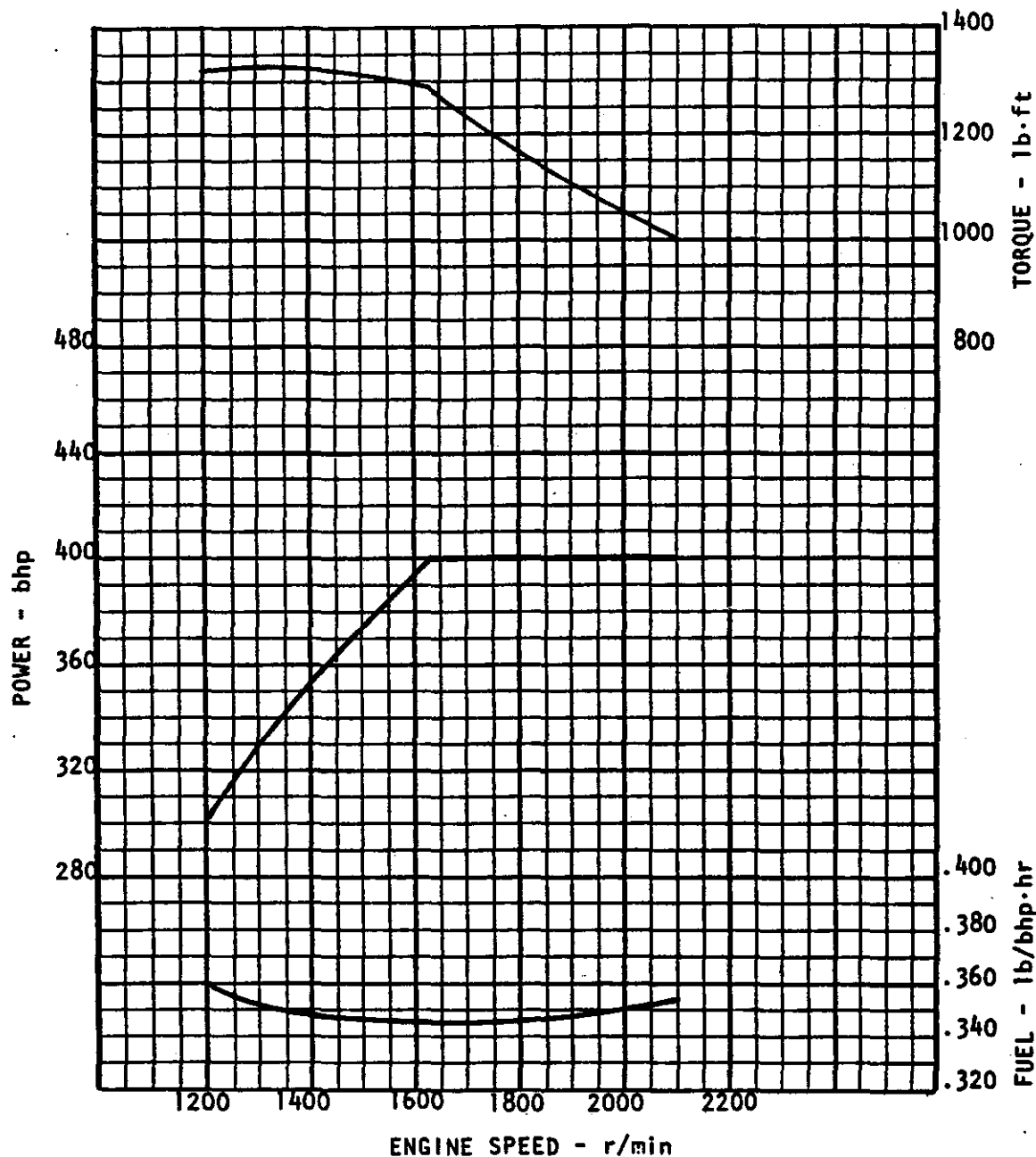
ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 8V-92TTA
400 bhp @ 2100 r/min
1330 lb·ft @ 1300 r/min



AIR INTAKE RESTRICTION - in. H₂O (mm H₂O) . . . 10(250)
EXHAUST RESTRICTION - in. H₂O (mm H₂O) . . . 15(380)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BARMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW-hr = lb/bhp-hr × 0.608
TORQUE: N-m = lb-ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

B. S. Peruch

STAFF ENGINEER

CURVE NO.
E4-8087-32-45

DATE: 5-17-84
REV./DATE: 1/12-13-84
SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8087-7840
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	4.84x5.00(123x127)
Displacement-In ³ (L).....	736(12.1)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1750(533)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TY8511(1.39 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	2250
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	3.5(0.87)

Physical Data

Size	
Length-In(mm).....	43.9(1115)
Width-In(mm).....	37.6(955)
Height-In(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance	
From R.F.O.B. (x axis)-In(mm).....	13.3(338)
Above Crankshaft (y axis)-In(mm).....	11.4(290)
Right of Crankshaft (z axis)-In(mm).....	0.0(0.0)
Installation Drawing.....	5102974
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	9690/1.458
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	141.4(64.1)
Fuel Consumption-gal/hr(L/hr).....	20.2(76.5)
Fuel Spill Rate-lb/hr(kg/hr).....	469(213)
Fuel Spill Rate-gal/hr(L/hr).....	67.1(254)
Total Fuel Flow-lb/hr(kg/hr).....	610(277)
Total Fuel Flow-gal/hr(L/hr).....	87.3(330)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	37(140)
Oil Pan Capacity	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-In(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	641
Socks	
Rated Speed - Bosch Number.....	0.4
Peak Torque Speed - Bosch Number.....	0.2
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	11300(199)
Engine Radiated Heat-Btu/min(kW).....	1900(33.4)
Coolant Flow-gal/min(L/min).....	187(708)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure, (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lg H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1325(37.5)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	38.5(130)
Recommended Intake Pipe Dia.-In(mm).....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2690(76.2)
Exhaust Temperature-°F(°C).....	630(332)
Maximum Allowable Back	
Pressure-In Hg(kPa).....	3.0(10.1)
Recommended Exhaust Pipe Dia.	
Single-In(mm).....	6.0(152)
Dual-In(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-In Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	400(298)
Full Load Speed-r/min.....	2100
Peak Torque-lb ft(N m).....	1330(1803)
Peak Torque Speed-r/min.....	1300
BMEP-lbf/in ² (kPa).....	102(703)
Friction Power	
Rated Speed-bhp(kW).....	106(79)
Peak Torque Speed-bhp(kW).....	44(33)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-lb ft (N m).....	790(1071)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2100	400(298)	1000(1356)	.354(215)
1950	400(298)	1077(1460)	.349(212)
1800	400(298)	1167(1582)	.345(210)
1600	393(293)	1290(1749)	.345(210)
1400	353(263)	1324(1795)	.347(211)
1300	329(245)	1330(1803)	.351(214)
1200	301(225)	1317(1786)	.360(219)



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

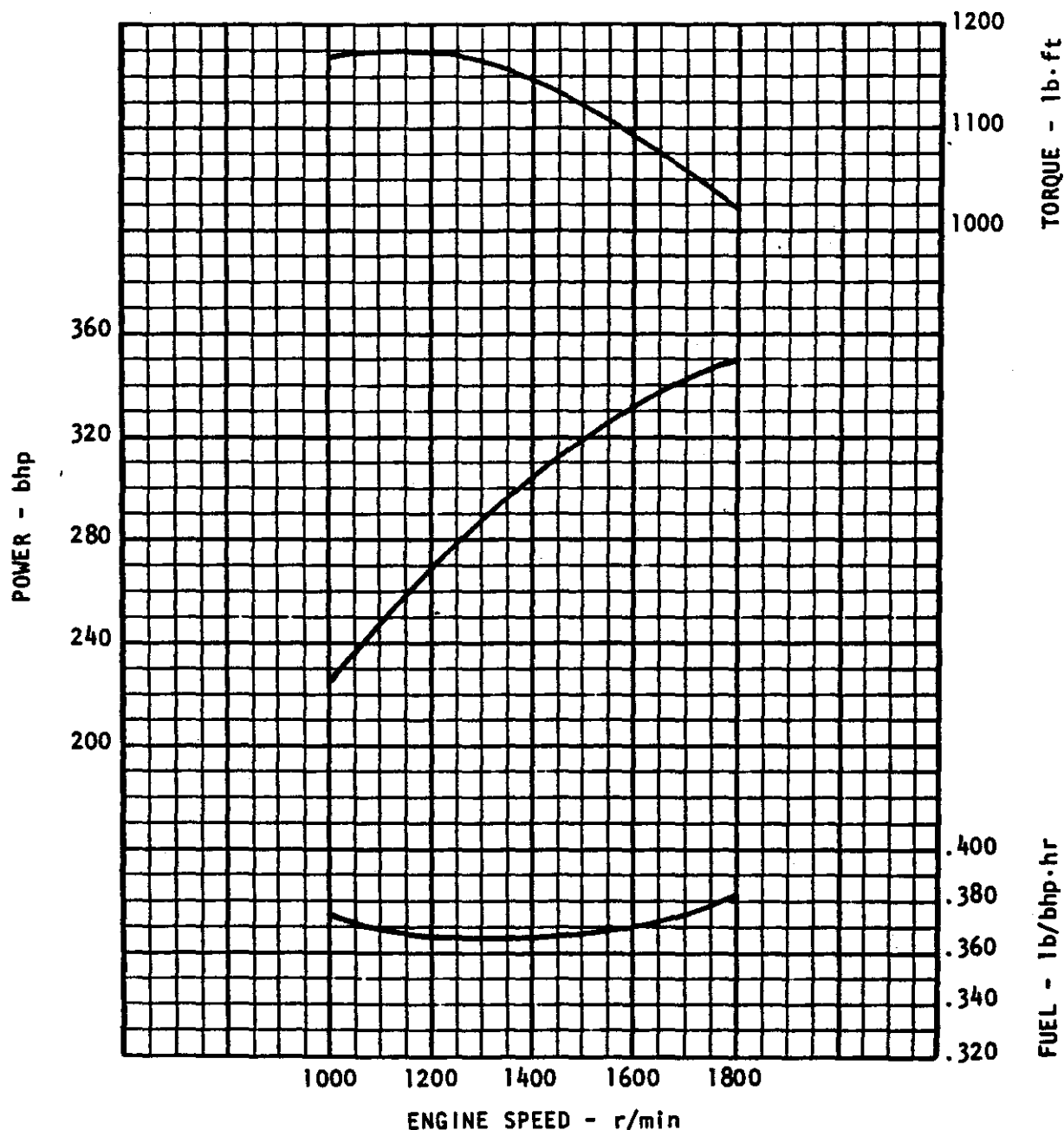
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: 8V-92TAC

350 bhp @ 1800 r/min

1175 lb·ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

S. S. Hatcher

STAFF ENGINEER

CURVE NO.

E4-8087-32-53

DATE: 8-6-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8087-7840
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	736(12.1)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1500(457)
Valves Per Cylinder.....	4
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV8512(1.23 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	1925
Thrust Bearing Load Limit.....	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	3.1(0.77)

Physical Data

Size.....	
Length-in(mm).....	43.9(1115)
Width-in(mm).....	37.6(955)
Height-in(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance.....	
From R.F.O.B. (x axis)-in(mm).....	13.3(338)
Above Crankshaft (y axis)-in(mm).....	11.4(290)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	5102974
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	7675/1.508
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	133.8(60.7)
Fuel Consumption-gal/hr(L/hr).....	19.1(72.3)
Fuel Spill Rate-lb/hr(kg/hr).....	454(206)
Fuel Spill Rate-gal/hr(L/hr).....	65.0(246)
Total Fuel Flow-lb/hr(kg/hr).....	588(268)
Total Fuel Flow-gal/hr(L/hr).....	84.0(318)
Maximum Allowable Fuel Pump Suction.....	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size.....	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure.....	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	34(129)
Oil Pan Capacity.....	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits.....	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	611
Smoke.....	
Rated Speed - Bosch Number.....	0.7
Peak Torque Speed - Bosch Number.....	0.6
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	11700(206)
Engine Radiated Heat-Btu/min(kW).....	1885(33.1)
Coolant Flow-gal/min(L/min).....	160(606)
Thermostat.....	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet.....	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index.....	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection.....	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit.....	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-in H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1130(32.0)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	46.5(157)
Recommended Intake Pipe Dia.-in(mm).....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2345(66.4)
Exhaust Temperature-°F(°C).....	655(346)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.4(8.1)
Recommended Exhaust Pipe Dia. Single-in(mm).....	6.0(152)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F).....	
12 Volt System.....	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System.....	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit.....	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	350(261)
Full Load Speed-r/min.....	1800
Peak Torque-lb ft(N m).....	1175(1593)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	105(724)
Friction Power.....	
Rated Speed-bhp(kW).....	79(59)
Peak Torque Speed-bhp(kW).....	39(29)
Altitude Capability-ft(m).....	10000
Torque Available at 900 r/min-lb ft (N m).....	525(712)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BMEP lb/bhp hr (g/kW hr)
1800	350(261)	1021(1384)	.382(232)
1600	332(248)	1090(1478)	.370(250)
1400	303(226)	1137(1542)	.366(223)
1200	268(200)	1175(1593)	.366(223)
1000	223(166)	1171(1588)	.374(227)



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

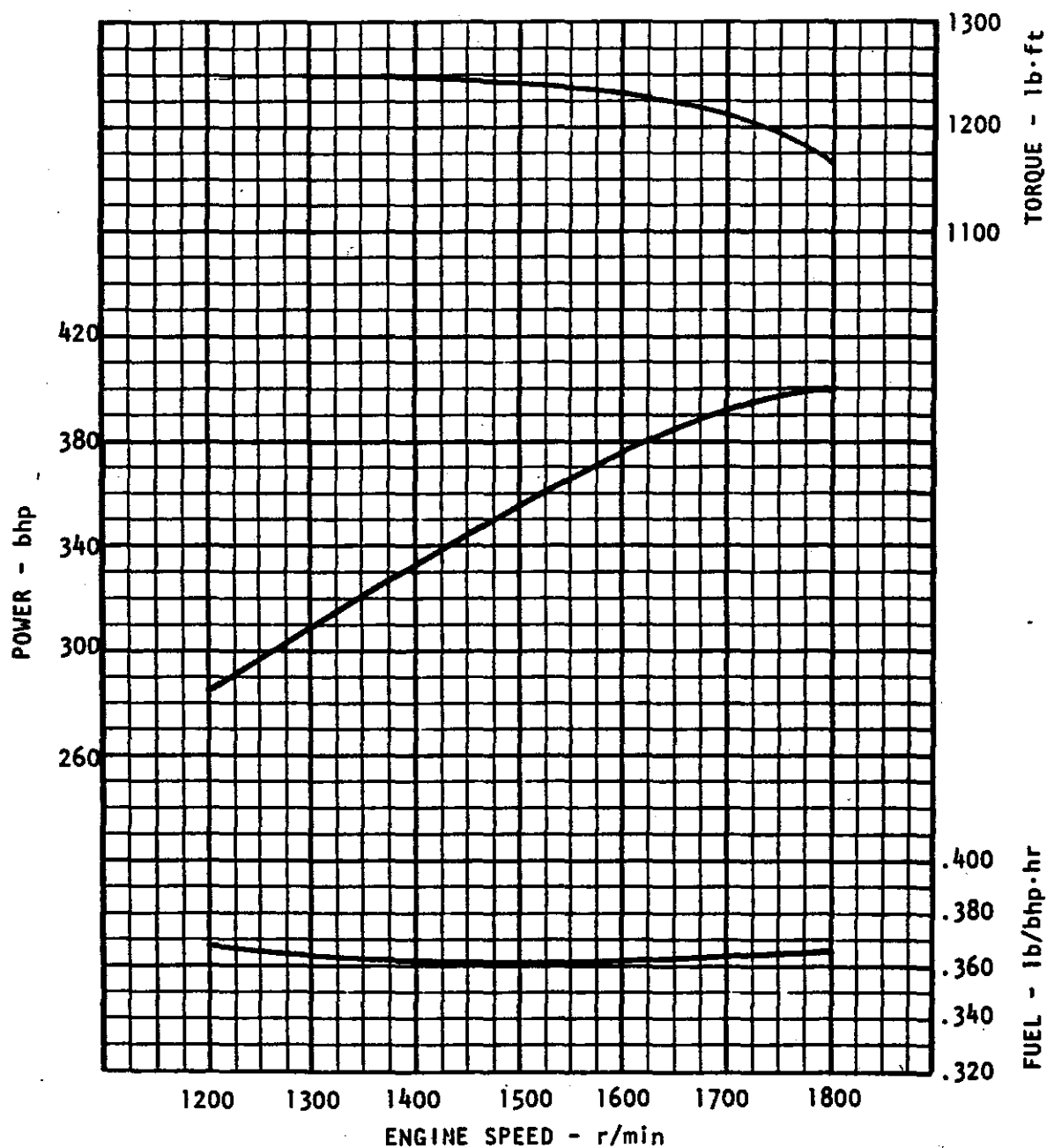
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: 8V-92TAC

400 bhp @ 1800 r/min

1250 lb·ft @ 1300 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

• POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BARMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).

• CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356

• VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-8087-32-52

DATE: 8-3-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8087-7840
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	736(12.1)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1500(457)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5" VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV8511(1.39 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	2.00:1
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	1925
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	3.1(0.77)

Physical Data

Size	
Length-in(mm).....	43.9(1115)
Width-in(mm).....	37.6(955)
Height-in(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance	
From B.F.O.B. (x axis)-in(mm).....	13.3(338)
Above Crankshaft (y axis)-in(mm).....	11.4(290)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	5102974
Maximum Allowable Static Bending Moment at Rear Face of FW Hg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	9F90/1.520
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	151.5(68.7)
Fuel Consumption-gal/hr(L/hr).....	21.7(82.1)
Fuel Spill Rate-lb/hr(kg/hr).....	364.9(166)
Fuel Spill Rate-gal/hr(L/hr).....	52.2(198)
Total Fuel Flow-lb/hr(kg/hr).....	516(235)
Total Fuel Flow-gal/hr(L/hr).....	73.9(280)
Maximum Allowable Fuel Pump Section	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	34(129)
Oil Pan Capacity	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	687
Smoke	
Rated Speed - Bosch Number.....	0.6
Peak Torque Speed - Bosch Number.....	1.0
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	11770(207)
Engine Radiated Heat-Btu/min(kW).....	2120(37.3)
Coolant Flow-gal/min(L/min).....	160(606)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(35.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-in H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1340(37.9)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	40.0(135)
Recommended Intake Pipe Dia.-in(mm).....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2795(79)
Exhaust Temperature-°F(°C).....	660(349)
Maximum Allowable Back	
Pressure-in Hg(kPa).....	2.4(8.1)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	6.0(152)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	400(298)
Full Load Speed-r/min.....	1800
Peak Torque-lb ft(N m).....	1250(1695)
Peak Torque Speed-r/min.....	1300
BMEP-lbf/in ² (kPa).....	120(827)
Friction Power	
Rated Speed-bhp(kW).....	79(59)
Peak Torque Speed-bhp(kW).....	44(33)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-lb ft (N m).....	325(712)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BEP lb/bhp hr (g/kW hr)
1800	400(298)	1167(1582)	.365(222)
1600	376(280)	1234(1673)	.361(220)
1400	332(248)	1245(1688)	.361(220)
1300	309(231)	1250(1695)	.364(221)
1200	285(213)	1218(1651)	.367(223)



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

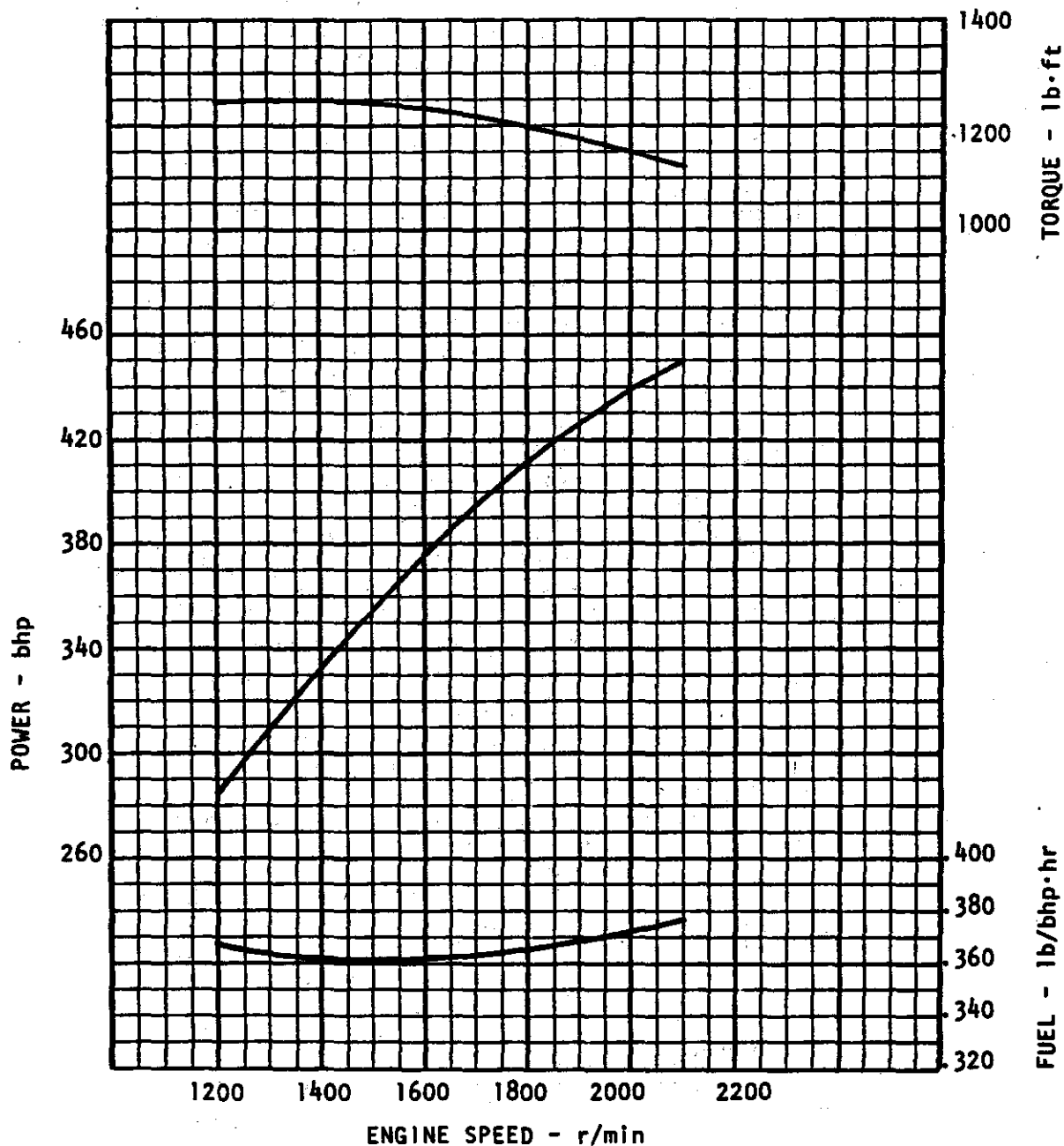
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: 8V-92TAC

450 bhp @ 2100 r/min

1250 lb·ft @ 1300 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

• POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).

• CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356

• VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY;

B. S. Horvath

STAFF ENGINEER

CURVE NO.

E4-8087-32-50

DATE: 8-2-84

REV./DATE: 1/8-17-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8087-7840
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	736(12.1)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1750(533)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV8511(1.39 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	8Y-PASS
Blower Drive Ratio.....	2.00:1
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	2250
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	3.5(0.87)

Physical Data

Size	
Length-in(mm).....	43.9(1115)
Width-in(mm).....	37.6(955)
Height-in(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	13.3(338)
Above Crankshaft (y axis)-in(mm).....	11.4(290)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	5102974
Maximum Allowable Static Bending Moment	
at Rear Face of FW Hsg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	9F90/1.520
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	170.4(77.3)
Fuel Consumption-gal/hr(L/hr).....	24.4(92.3)
Fuel Spill Rate-lb/hr(kg/hr).....	392(178)
Fuel Spill Rate-gal/hr(L/hr).....	56.1(212)
Total Fuel Flow-lb/hr(kg/hr).....	563(256)
Total Fuel Flow-gal/hr(L/hr).....	80.5(305)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	37(140)
Oil Pan Capacity	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with	
filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	773
Smoke	
Rated Speed - Bosch Number.....	0.9
Peak Torque Speed - Bosch Number.....	1.0
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	13550(238)
Engine Radiated Heat-Btu/min(kW).....	2280(40.1)
Coolant Flow-gal/min(L/min).....	187(708)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive	
of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C)....	210(99)
Minimum Top Tank Temperature-°F(°C)....	160(71)
Minimum Coolant Fill Rate-	
gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10%	
of Cooling System Capacity-Whichever	
is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise	
(Ambient Air to Engine Inlet)-°F(°C)....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lb H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1450(41.1)
Engine Air Box/Manifold Pressure-	
in Hg(kPa).....	45.8(155)
Recommended Intake Pipe Dia.-in(mm)....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	3080(87.2)
Exhaust Temperature-°F(°C).....	680(360)
Maximum Allowable Back	
Pressure-in Hg(kPa).....	3.0(10.1)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	6.0(152)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of	
Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	450(336)
Full Load Speed-r/min.....	2100
Peak Torque-lb ft(N m).....	1250(1695)
Peak Torque Speed-r/min.....	1300
BMEP-lbf/in ² (kPa).....	115(794)
Friction Power	
Rated Speed-bhp(kW).....	106(79)
Peak Torque Speed-bhp(kW).....	44(33)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-	
lb ft (N m).....	525(712)

Engine

Speed	Power	Torque	BSEC
r/min	bhp(kW)	lb ft(N m)	lb/bhp hr
			(g/kW hr)
2100	450(336)	1125(1525)	.376(229)
1950	432(322)	1163(1577)	.370(225)
1800	411(307)	1199(1626)	.365(222)
1600	376(280)	1234(1673)	.361(220)
1400	332(248)	1245(1688)	.361(220)
1300	309(230)	1250(1695)	.364(221)
1200	285(213)	1247(1691)	.367(223)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8087-32-50
Date: 8-2-84
Rev./Date: 1/8-17-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

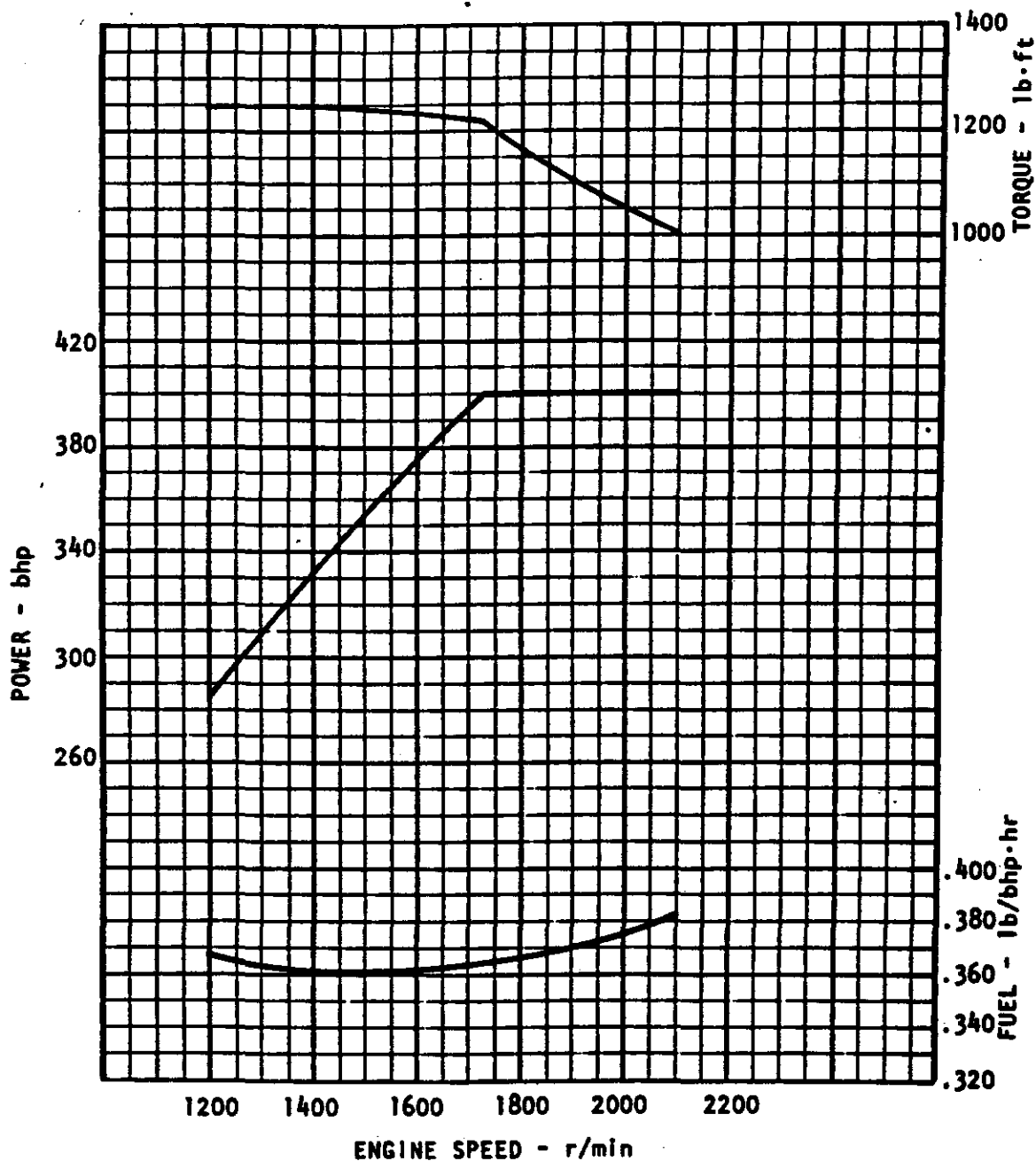
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: 8v-92TTAC

400 bhp @ 2100 r/min

1250 lb·ft @ 1300 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.91 in. Hg (99kPa) DRY BARMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW-hr = lb/bhp-hr × 0.608
TORQUE: N-m = lb·ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

B. S. Gorman

STAFF ENGINEER

CURVE NO.

E4-8087-32-51

DATE: 8-3-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8087-7840
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	736(12.1)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1750(533)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV8511(1.39 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	2.00:1
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	2250
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	3.5(0.87)

Physical Data

Size	
Length-in(mm).....	43.9(1115)
Width-in(mm).....	37.6(955)
Height-in(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	13.3(338)
Above Crankshaft (y axis)-in(mm).....	11.4(290)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	5102974
Maximum Allowable Static Bending Moment at Rear Face of FW Hg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	9F90/1.520
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	153.0(69.4)
Fuel Consumption-gal/hr(L/hr).....	21.9(82.9)
Fuel Spill Rate-lb/hr(kg/hr).....	392(178)
Fuel Spill Rate-gal/hr(L/hr).....	56.1(212)
Total Fuel Flow-lb/hr(kg/hr).....	545(247)
Total Fuel Flow-gal/hr(L/hr).....	78(295)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	37(140)
Oil Pan Capacity	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	694
Smoke	
Rated Speed - Bosch Number.....	0.9
Peak Torque Speed - Bosch Number.....	1.0
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Stu/min(kW).....	12000(211)
Engine Radiated Heat-Stu/min(kW).....	2061(36.2)
Coolant Flow-gal/min(L/min).....	187(708)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)...	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(3.0)
Clean Air Cleaner-in H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1370(38.8)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	41.0(138.5)
Recommended Intake Pipe Dia.-in(mm)....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2845(80.6)
Exhaust Temperature-°F(°C).....	655(346)
Maximum Allowable Back Pressure-in Hg(kPa).....	3.0(10.1)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	6.0(152)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	400(298)
Full Load Speed-r/min.....	2100
Peak Torque-lb ft(N m).....	1250(1695)
Peak Torque Speed-r/min.....	1300
BMEP-lbf/in ² (kPa).....	102(706)
Friction Power	
Rated Speed-bhp(kW).....	106(79)
Peak Torque Speed-bhp(kW).....	44(33)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-lb ft (N m).....	523(712)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BMEP lb/bhp hr (g/kW hr)
2100	400(298)	1000(1356)	.382(232)
1950	400(298)	1077(1460)	.372(226)
1800	400(298)	1167(1582)	.366(223)
1600	376(280)	1234(1673)	.361(220)
1400	332(248)	1245(1688)	.361(220)
1300	309(230)	1250(1695)	.364(221)
1200	285(213)	1247(1691)	.367(223)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. 24-8087-32-51
Date: 8-3-84
Rev./Date:
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

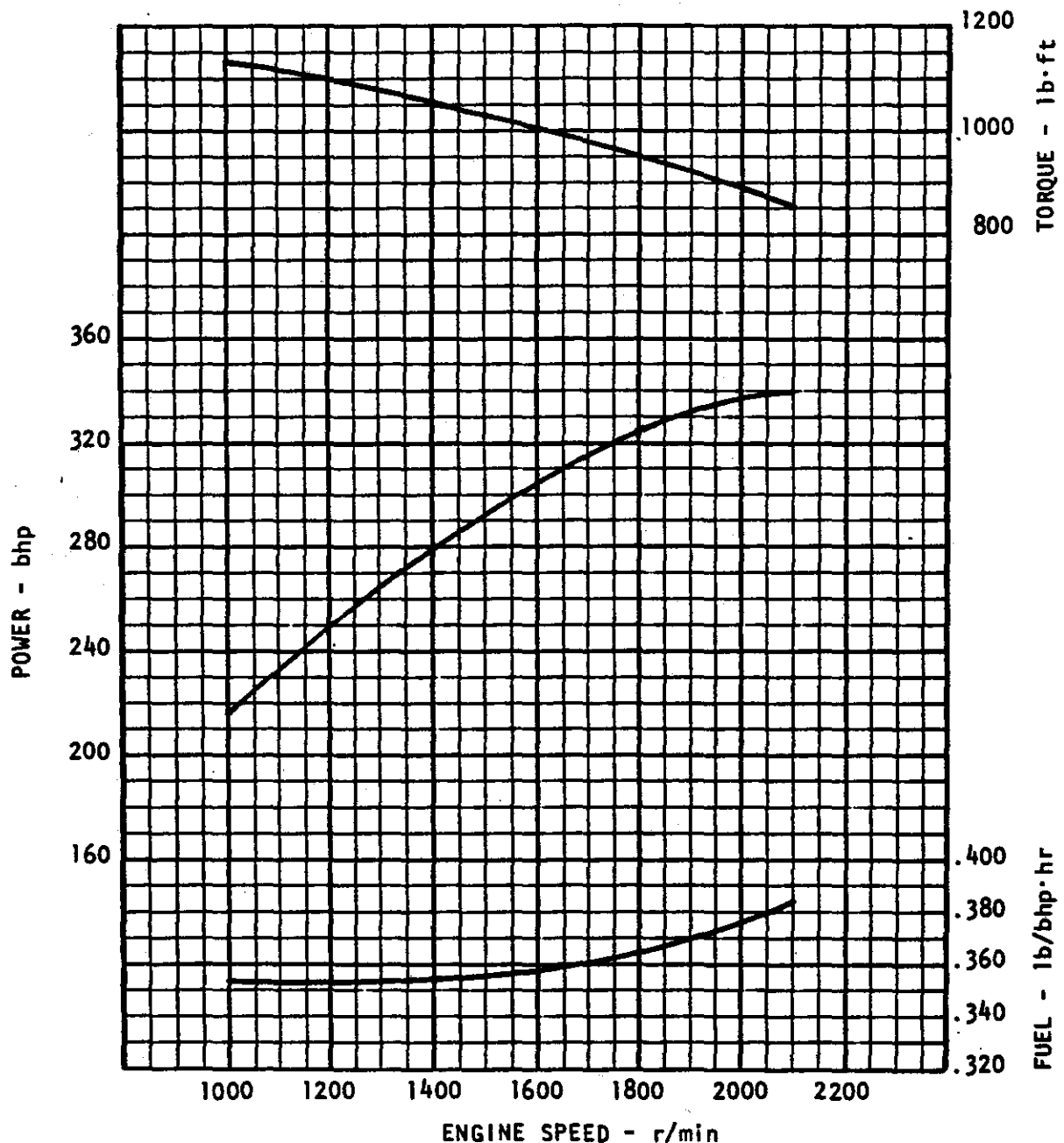
APPLICATION: AUTOMOTIVE - COACH
DIESEL FUEL - NO. 2

CERTIFICATION: FEDERAL 1985

MODEL: 8V-92TA

340 bhp @ 2100 r/min

1134 lb·ft @ 1000 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.85) SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

B. S. Winkler

STAFF ENGINEER

CURVE NO.

E4-8087-32-54

DATE: 8-6-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8V-92TA AUTOMOTIVE
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	736(12.1)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1750(533)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED
Configuration	
Turbocharger.....	TV8512(1.23 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	BY-PASS 83Z
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	2250
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	3.5(0.87)

Physical Data

Size	
Length-in(mm).....	43.9(1115)
Width-in(mm).....	37.6(955)
Height-in(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	13.3(338)
Above Crankshaft (y axis)-in(mm).....	11.4(290)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	5102974
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	9865/1.470
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	130.7(59.3)
Fuel Consumption-gal/hr(L/hr).....	18.7(70.8)
Fuel Spill Rate-lb/hr(kg/hr).....	486(220)
Fuel Spill Rate-gal/hr(L/hr).....	69.6(263)
Total Fuel Flow-lb/hr(kg/hr).....	618(279)
Total Fuel Flow-gal/hr(L/hr).....	88.3(334)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	37(140)
Oil Pan Capacity	
High-qt(L).....	75(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with Filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	593
Smoke	
Rated Speed - Bosch Number.....	0.6
Peak Torque Speed - Bosch Number.....	0.4
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Stu/min(kW).....	10250(180)
Engine Radiated Heat-Stu/min(kW).....	1760(31.0)
Coolant Flow-gal/min(L/min).....	187(708)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	160(71)
Minimum Coolant Fill Rate	
gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Degeneration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise	
(Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-in H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1120(31.7)
Engine Air Box/Manifold Pressure	
in Hg(kPa).....	44.7(151)
Recommended Intake Pipe Dia.-in(mm).....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2230(63.1)
Exhaust Temperature-°F(°C).....	610(321)
Maximum Allowable Back	
Pressure-in Hg(kPa).....	3.0(10.1)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	6.0(152)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	340(254)
Full Load Speed-r/min.....	2100
Peak Torque-lb ft(N m).....	1134(1537)
Peak Torque Speed-r/min.....	1000
MEFP-lbf/in ² (kPa).....	87(600)
Friction Power	
Rated Speed-bhp(kW).....	106(79)
Peak Torque Speed-bhp(kW).....	44(33)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-1b ft (N m).....	770(1044)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	MEFC lb/bhp hr (g/kW hr)
2100	340(254)	850(1152)	384(234)
1950	335(250)	902(1223)	373(227)
1800	325(242)	948(1285)	364(221)
1600	305(227)	1001(1357)	357(217)
1400	280(209)	1050(1424)	354(215)
1200	250(186)	1094(1483)	352(214)
1000	216(161)	1134(1537)	353(215)

Note: Performance shown is with Diesel No. 2 fuel.

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8087-32-54
Date: 8-6-84
Rev./Date:
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

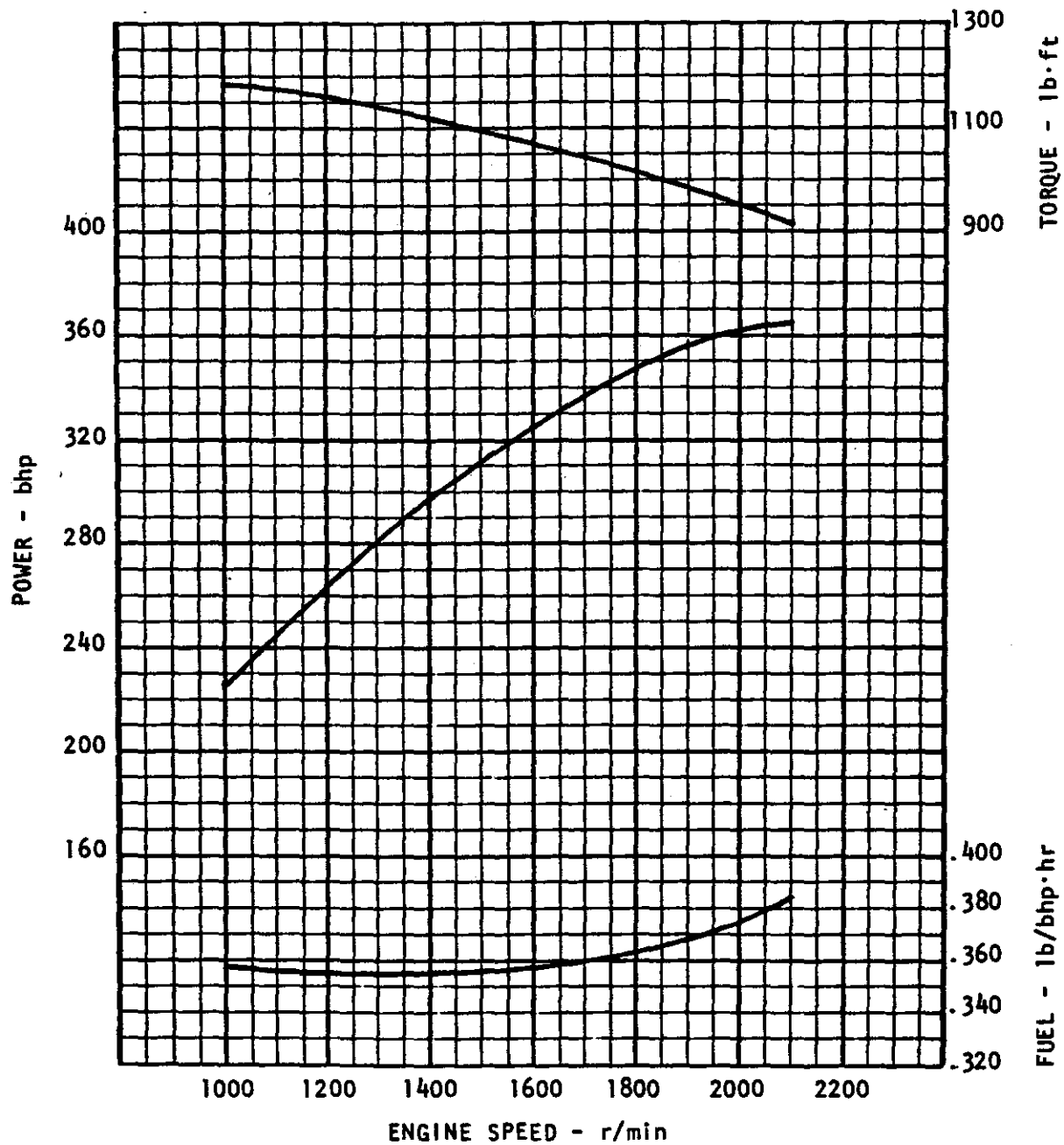
APPLICATION: AUTOMOTIVE - COACH
DIESEL FUEL - NO. 2

CERTIFICATION: FEDERAL 1985

MODEL: 8V-92TA

365 bhp @ 2100 r/min

1187 lb·ft @ 1000 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).

- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356

- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

B. S. Hinkle

STAFF ENGINEER

CURVE NO.

E4-8087-32-55

DATE: 8-6-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	SV-92TA AUTOMOTIVE
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.84x5.00(123x127)
Displacement-in ³ (L).....	736(12.1)
Compression Ratio.....	17.0:1
Piston Speed-ft/min(m/min).....	1750(533)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV8512(1.23 A/R)
Charge Air Cooling System.....	JWAC
Blower Type.....	BY-PASS 83Z
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	2250
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	3.5(0.87)

Physical Data

Size	
Length-in(mm).....	43.9(1115)
Width-in(mm).....	37.6(955)
Height-in(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	13.3(338)
Above Crankshaft (y axis)-in(mm).....	11.4(290)
Right of Crankshaft (z axis)-in(mm).....	0.0(0.0)
Installation Drawing.....	5102974
Maximum Allowable Static Bending Moment	
at Rear Face of FW Hg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	9E70/1.470
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	140.0(63.5)
Fuel Consumption-gal/hr(L/hr).....	20.0(75.8)
Fuel Spill Rate-lb/hr(kg/hr).....	486(220)
Fuel Spill Rate-gal/hr(L/hr).....	69.6(263)
Total Fuel Flow-lb/hr(kg/hr).....	626(339)
Total Fuel Flow-gal/hr(L/hr).....	89.6(284)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	37(140)
Oil Pan Capacity	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with	
Filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-in(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	635
Smoke	
Rated Speed - Bosch Number.....	0.6
Peak Torque Speed - Bosch Number.....	0.4
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	11000(193)
Engine Radiated Heat-Btu/min(kW).....	1885(33.2)
Coolant Flow-gal/min(L/min).....	187(708)
Thermostat	
Start to Open-°F(°C).....	177(81)
Fully Open-°F(°C).....	197(92)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive	
of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Maximum Top Tank Temperature-°F(°C)....	210(99)
Minimum Top Tank Temperature-°F(°C)....	160(71)
Minimum Coolant Fill Rate-	
gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10X	
of Cooling System Capacity-Whichever	
is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise	
(Ambient Air to Engine Inlet)-°F(°C)....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-in H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1150(32.6)
Engine Air Box/Manifold Pressure-	
in Hg(kPa).....	47.3(159.8)
Recommended Intake Pipe Dia.-in(mm)....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2320(65.7)
Exhaust Temperature-°F(°C).....	625(329)
Maximum Allowable Back	
Pressure-in Hg(kPa).....	3.0(10.1)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	6.0(152)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-in Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of	
Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	365(272)
Full Load Speed-r/min.....	2100
Peak Torque-lb ft(N m).....	1187(1609)
Peak Torque Speed-r/min.....	1000
MEFP-lbf/in ² (kPa).....	93.5(645)
Friction Power	
Rated Speed-bhp(kW).....	106(79)
Peak Torque Speed-bhp(kW).....	44(33)
Altitude Capability-ft(m).....	10000
Torque Available at 800 r/min-	
lb ft (N m).....	780(1058)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	MEFC lb/bhp hr (g/kW hr)
2100	365(272)	913(1238)	.384(234)
1950	360(269)	970(1315)	.371(226)
1800	347(259)	1012(1372)	.363(221)
1600	325(242)	1067(1447)	.357(217)
1400	297(222)	1114(1510)	.355(216)
1200	265(198)	1155(1566)	.354(215)
1000	226(168)	1107(1609)	.357(217)

Note: Performance shown is with Diesel No. 2 fuel.

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8087-32-55
Date: 8-6-84
Rev./Date:
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

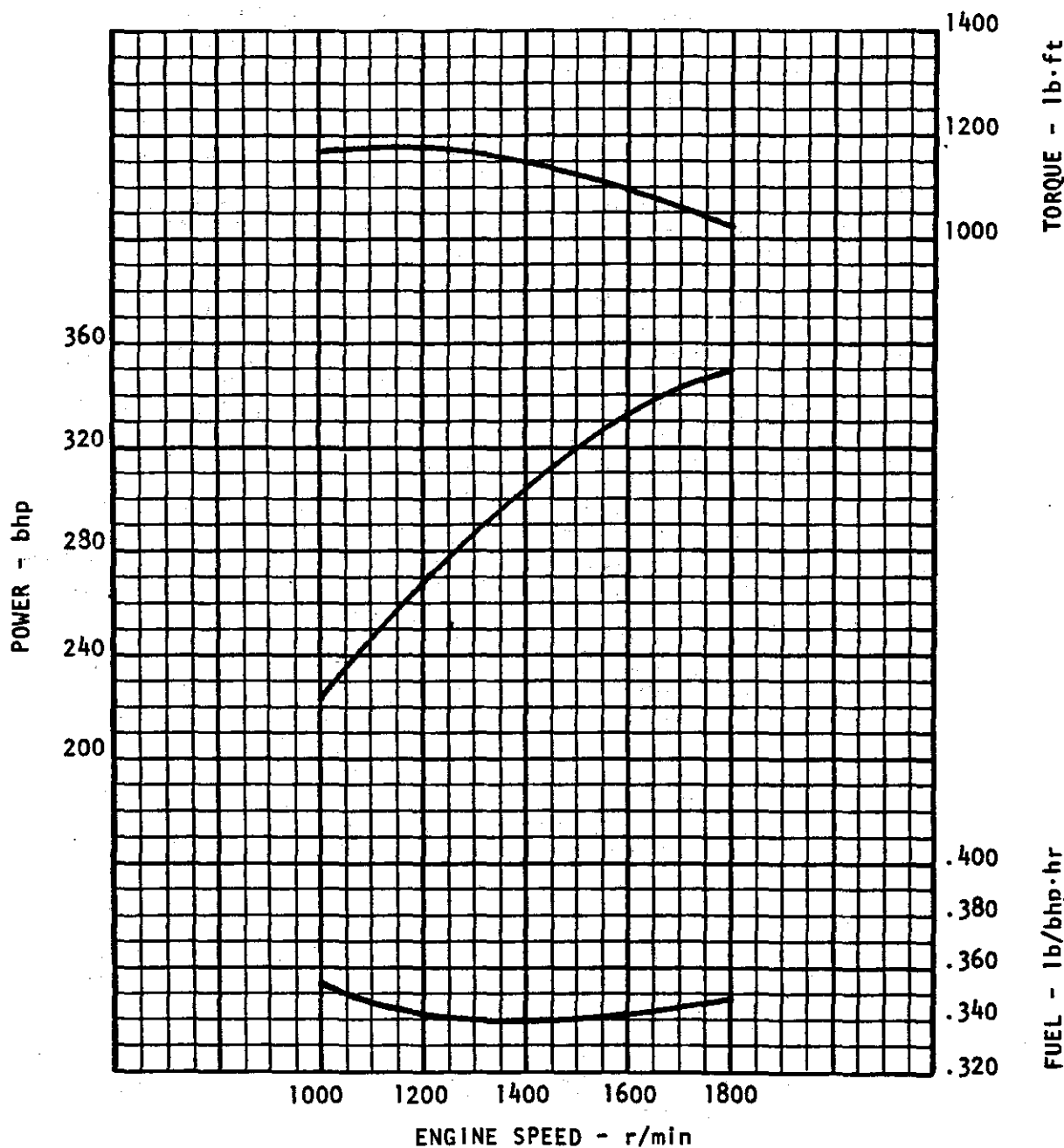
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 8V-92TALCC

350 bhp @ 1800 r/min

1175 lb·ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BARMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746

FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356

- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY

STAFF ENGINEER

CURVE NO.

E4-8087-32-59

DATE: 11-29-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8087-7870
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	4.84x5.00(123x127)
Displacement-In ³ (L).....	736(12.1)
Compression Ratio.....	18.0:1
Piston Speed-ft/min(m/min).....	1500(457)
Valves Per Cylinder.....	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TV8512(1.23 A/R)
Charge Air Cooling System.....	ALCC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	1925
Thrust Bearing Load Limit.....	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	3.1(0.77)

Physical Data

Size.....	
Length-In(mm).....	43.9(1115)
Width-In(mm).....	37.6(955)
Height-In(mm).....	49.5(1257)
Weight-dry-lb(kg).....	2420(1100)
Center of Gravity Distance.....	
From R.F.O.B. (x axis)-In(mm).....	13.3(338)
Above Crankshaft (y axis)-In(mm).....	11.4(290)
Right of Crankshaft (z axis)-In(mm).....	0.0(0.0)
Installation Drawing.....	NOT AVAILABLE
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	7675/1.470
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	126.4(57.3)
Fuel Consumption-gal/hr(L/hr).....	18.1(68.5)
Fuel Spill Rate-lb/hr(kg/hr).....	505(229)
Fuel Spill Rate-gal/hr(L/hr).....	72.3(274)
Total Fuel Flow-lb/hr(kg/hr).....	631(286)
Total Fuel Flow-gal/hr(L/hr).....	90.4(342)
Maximum Allowable Fuel Pump Suction.....	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size.....	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure.....	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	34(129)
Oil Pan Capacity.....	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-In(mm).....	0.101(2.57)
Engine Angularity Limits.....	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	573
Smoke.....	
Rated Speed - Bosch Number.....	NOT AVAILABLE
Peak Torque Speed - Bosch Number.....	NOT AVAILABLE
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	10850(191)
Engine Radiated Heat-Btu/min(kW).....	1810(31.8)
Maximum Radiator Flow-gal/min(L/min)....	40(151)
Thermostat.....	Stat #1 Stat #2
Start to Open-°F(°C).....	177(81) 160(71)
Fully Open-°F(°C).....	197(92) 177(81)
Maximum Water Pump Inlet.....	
Restriction-In Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Max. Cyl. Hd. Coolant Temp. Out-°F(°C).....	210(99)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index.....	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection.....	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)....	30(16.7)
Air Intake Restriction Maximum Limit.....	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-Ig H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1085(30.7)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	42.3(143)
Recommended Intake Pipe Dia.-In(mm)....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2180(61.7)
Exhaust Temperature-°F(°C).....	620(327)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.4(8.1)
Recommended Exhaust Pipe Dia. Single-In(mm).....	6.0(152)
Dual-In(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F).....	
12 Volt System.....	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System.....	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit.....	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	350(261)
Full Load Speed-r/min.....	1800
Peak Torque-lb ft(N m).....	1175(1593)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	105(724)
Friction Power.....	
Rated Speed-bhp(kW).....	79(59)
Peak Torque Speed-bhp(kW).....	39(29)
Altitude Capability-ft(m).....	10000(3050)
Torque Available at 800 r/min-lb ft (N m).....	505(685)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSFC lb/bhp hr (g/kW hr)
1800	350(261)	1021(1384)	.348(212)
1600	333(248)	1093(1482)	.342(208)
1400	305(228)	1144(1551)	.339(206)
1200	268(200)	1175(1593)	.341(207)
1000	223(166)	1171(1588)	.353(215)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8087-32-59
Date: 11-29-84
Rev./Date:
Sht. 2 of 2



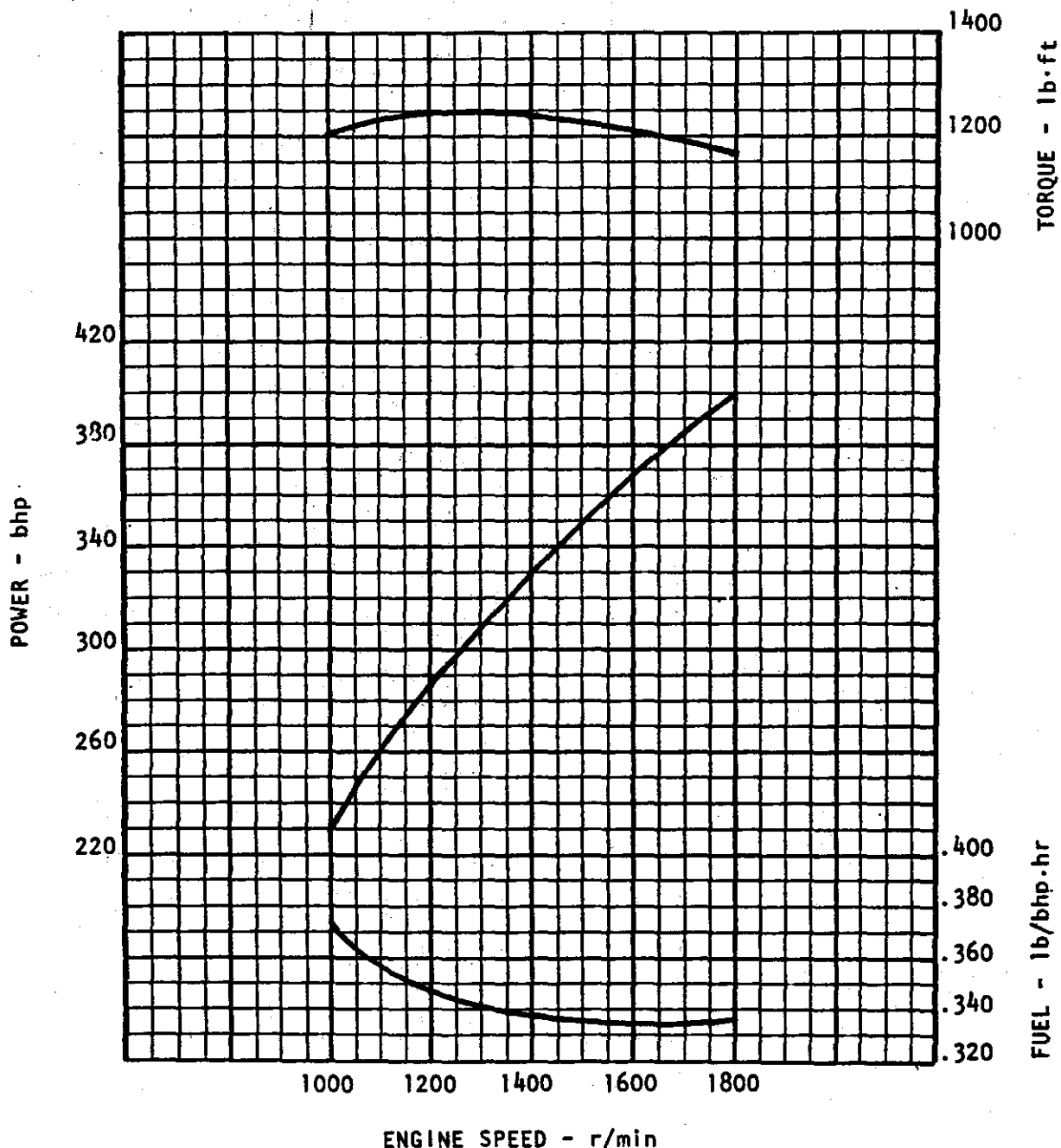
ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 8V-92TALCC
400 bhp @ 1800 r/min
1250 lb·ft @ 1300 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

• POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (38°C) FUEL INLET TEMPERATURE (.85) SPECIFIC GRAVITY AT 60°F).
• CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356
• VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO
CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

EA-8087-32-60
DATE: 11-29-84
REV./DATE:
SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	8087-7870
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	4.84x5.00(123x127)
Displacement-In ³ (L).....	736(12.1)
Compression Ratio.....	18.0:1
Piston Speed-ft/min(m/min).....	1500(457)
Valves Per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	63.5° VEE - 2 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	TY8511(1.39 A/R)
Charge Air Cooling System.....	ALCC
Blower Type.....	BY-PASS
Blower Drive Ratio.....	1.95:1
Low Idle Speed-r/min.....	500
High Idle Speed-r/min.....	1925
Thrust Bearing Load Limit	
Continuous-lbf(N).....	600(2670)
Intermittent-lbf(N).....	1800(8000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	3.1(0.77)

Physical Data

Size	
Length-In(mm).....	43.9(1115)
Width-In(mm).....	37.6(955)
Height-In(mm).....	49.5(1257)
Weight, dry-lb(kg).....	2420(1100)
Center of Gravity Distance	
From R.F.O.B. (x axis)-In(mm).....	13.3(338)
Above Crankshaft (y axis)-In(mm).....	11.4(290)
Right of Crankshaft (z axis)-In(mm).....	0.0(0.0)
Installation Drawing.....	NOT AVAILABLE
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	9G85/1.475
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	142.9(64.8)
Fuel Consumption-gal/hr(L/hr).....	20.4(77.2)
Fuel Spill Rate-lb/hr(kg/hr).....	503(228)
Fuel Spill Rate-gal/hr(L/hr).....	72.0(273)
Total Fuel Flow-lb/hr(kg/hr).....	646(293)
Total Fuel Flow-gal/hr(L/hr).....	92.4(350)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	49-70(338-483)
Low Idle-lbf/in ² (kPa).....	5(34)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	34(129)
Oil Pan Capacity	
High-qt(L).....	25(24)
Low-qt(L).....	19(18)
Total Engine Oil Capacity with filters-qt(L).....	27(26)
Bypass Oil Filter Orifice-In(mm).....	0.101(2.57)
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	30
Side tilt - degrees.....	NOT AVAILABLE

Emission Data

CO-gm/hr.....	NOT AVAILABLE
HC-gm/hr.....	NOT AVAILABLE
NO _x -gm/hr.....	NOT AVAILABLE
SO ₂ -gm/hr.....	648
Smoke	
Rated Speed - Bosch Number.....	0.5
Peak Torque Speed - Bosch Number.....	0.4
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	11670(205)
Engine Radiated Heat-Btu/min(kW).....	1980(34.8)
Maximum Radiator Flow-gal/min(L/min)....	40(151)
Thermostat.....	Stat #1 Stat #2
Start to Open-°F(°C).....	177(81) 160(71)
Fully Open-°F(°C).....	197(92) 177(81)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0.0(0.0)
Engine Coolant Capacity-qt(L).....	29.0(27.4)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	NOT AVAILABLE
Max. Cyl. Hd. Coolant Temp. Out-°F(°C)....	210(99)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44.4)
Maximum Air to Water Diff.-°F(°C).....	100(55.6)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.8(0.023)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-In H ₂ O(kPa).....	12(3.0)
Engine Air Flow - ft ³ /min(m ³ /min).....	1220(34.6)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	36.5(123)
Recommended Intake Pipe Dia.-In(mm)....	6.0(152)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	2610(73.9)
Exhaust Temperature-°F(°C).....	690(366)
Maximum Allowable Back	
Pressure-In Hg(kPa).....	2.4(8.1)
Recommended Exhaust Pipe Dia.	
Single-In(mm).....	6.0(152)
Dual-In(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-In Hg(kPa).....	NOT APPLICABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1900
Below 32°F(0°C)-A.....	2500
24 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	400(298)
Full Load Speed-r/min.....	1800
Peak Torque-lb ft(N m).....	1250(1695)
Peak Torque Speed-r/min.....	1300
BMEP-lbf/in ² (kPa).....	120(827)
Friction Power	
Rated Speed-bhp(kW).....	79(59)
Peak Torque Speed-bhp(kW).....	44(33)
Altitude Capability-ft(m).....	10000(3050)
Torque Available at 800 r/min-lb ft (N m).....	620(841)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSFC lb/bhp hr (g/kW hr)
1800	400(298)	1167(1582)	.336(204)
1600	367(274)	1205(1634)	.334(203)
1400	329(245)	1234(1673)	.337(205)
1300	309(231)	1250(1695)	.339(206)
1200	285(213)	1247(1691)	.346(210)
1000	229(171)	1203(1631)	.373(227)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-8087-32-60
Date: 11-29-84
Rev./Date:
Sht. 2 of 2



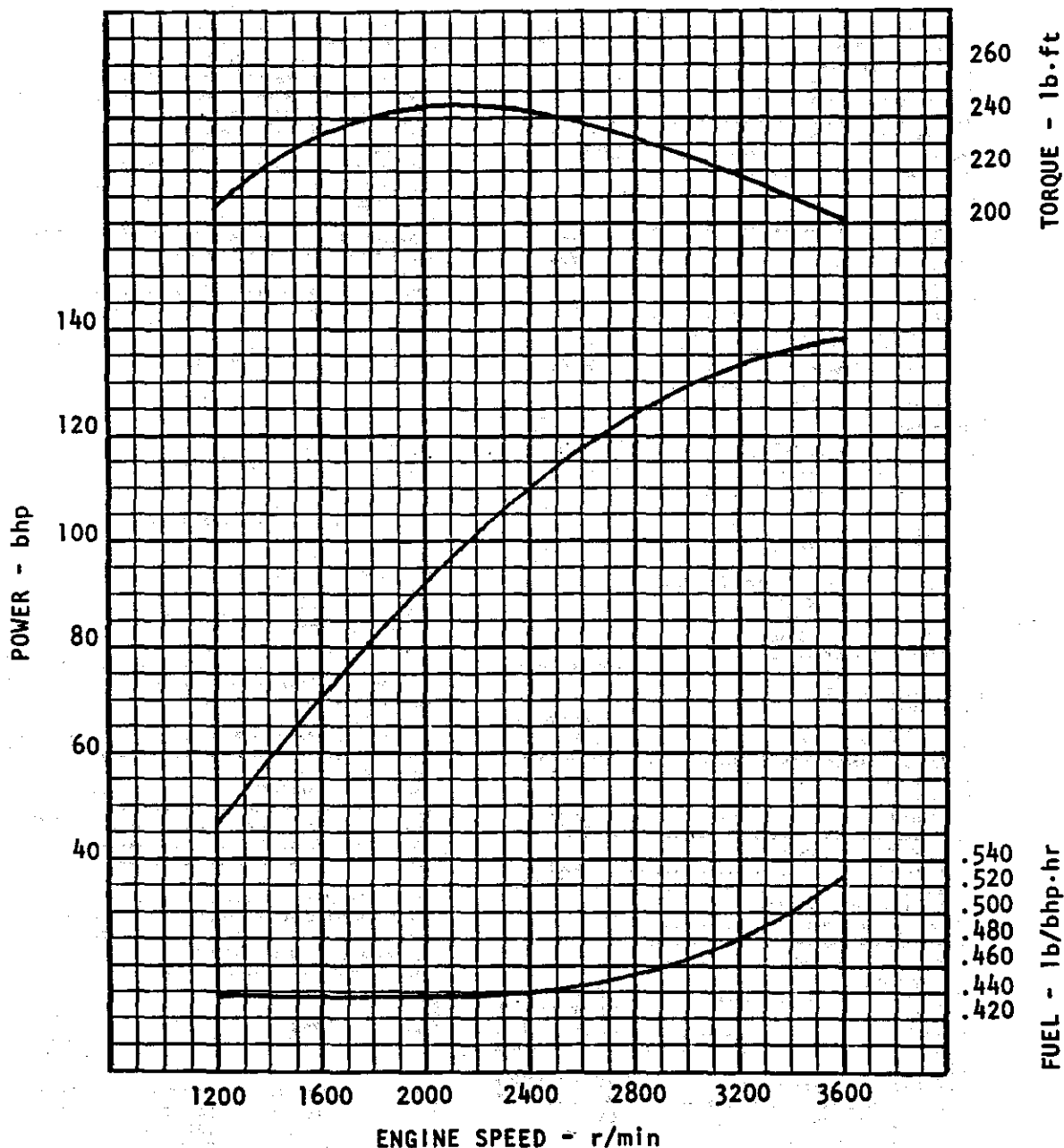
ENGINE PERFORMANCE CURVE

RATING: RATED POWER - BASIC ENGINE

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 6.2 G LIGHT DUTY
138 bhp @ 3600 r/min
245 lb·ft @ 2000 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

[Signature]

STAFF ENGINEER

CURVE NO.

E4-3087-11-1

DATE: 1-17-85

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	3087-7000
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	3.98x3.82(101x97)
Displacement-in ³ (L).....	379(6.2)
Compression Ratio.....	21.3:1
Piston Speed-ft/min(m/min).....	2292(698)
Valves Per Cylinder.....	1
Intake.....	1
Exhaust.....	1
Combustion System.....	INDIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	650
High Idle Speed-r/min.....	4000
Thrust Bearing Load Limit.....	
Continuous-lbf(N).....	150(665)
Intermittent-lbf(N).....	560(2489)
Engine Crankcase Vent System.....	CLOSED
Maximum Pressure-in H ₂ O(kPa).....	-4(-1)

Physical Data

Size.....	
Length-in(mm).....	29.5(750)
Width-in(mm).....	27.2(692)
Height-in(mm).....	27.4(696)
Weight, dry-lb(kg).....	701(318)
Center of Gravity Distance.....	
From R.F.O.B. (x axis)-in(mm).....	12.0(306)
Above Crankshaft (y axis)-in(mm).....	5.3(134)
Right of Crankshaft (z axis)-in(mm).....	-1.2(30)
Installation Drawing.....	23500162
Maximum Allowable Static Bending Moment.....	
at Rear Face of FW Hsg-lbf ft(N m).....	0

Fuel System

Fuel Injector/Timing.....	BOSCH #DNOSD 253
Fuel Injection Pump/Timing.....	DB2-4427
Fuel Consumption-lb/hr(kg/hr).....	72.5(32.9)
Fuel Consumption-gal/hr(L/hr).....	10.4(39.4)
Fuel Spill Rate-lb/hr(kg/hr).....	43.9(19.9)
Fuel Spill Rate-gal/hr(L/hr).....	6.3(23.8)
Total Fuel Flow-lb/hr(kg/hr).....	116.4(52.8)
Total Fuel Flow-gal/hr(L/hr).....	16.7(63.2)
Maximum Allowable Fuel Pump Suction.....	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size.....	
Primary - Micron.....	15
Secondary - Micron.....	NOT APPLICABLE

Lubrication System

Oil Pressure.....	
Rated Speed-lbf/in ² (kPa).....	40-50(278-345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	180-260(82-127)
Oil Flow-gal/min(L/min).....	3.5(13.2)
Oil Pan Capacity.....	
High-qt(L).....	6.0(5.7)
Low-qt(L).....	5.0(4.7)
Total Engine Oil Capacity with.....	
filters-qt(L).....	7.0(6.6)
Bypass Oil Filter Orifice-in(mm).....	NOT APPLICABLE
Engine Angularity Limits.....	
Front up - degrees.....	20
Front down - degrees.....	15
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	NOT APPLICABLE
Smoke.....	
Rated Speed - Bosch Number.....	NOT APPLICABLE
Peak Torque Speed - Bosch Number.....	NOT APPLICABLE
Noise - dB(A) @ 1m.....	98.1
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	6000(106)
Engine Radiated Heat-Btu/min(kW).....	1330(23)
Coolant Flow-gal/min(L/min).....	66(249)
Thermostat.....	
Start to Open-°F(°C).....	190(88)
Fully Open-°F(°C).....	212(100)
Maximum Water Pump Inlet.....	
Restriction-in Hg(kPa).....	3.0(10)
Engine Coolant Capacity-qt(L).....	13.2(12.5)
Minimum Pressure Cap-lbf/in ² (kPa).....	15.0(103)
Maximum Coolant Pressure (Exclusive.....	
of Pressure Cap)-lbf/in ² (kPa).....	40(278)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate.....	
gal/min(L/min).....	3.0(11.4)
Cooling Index.....	
Minimum Air to Boil-°F(°C).....	110(50)
Maximum Air to Water Diff.-°F(°C).....	102(61)
Ram Air Flow - Miles/hr(km/hr).....	NOT APPLICABLE
Deaeration-Air Injection.....	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10%.....	
of Cooling System Capacity-Whichever.....	
Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise.....	
(Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit.....	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lb H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	310(8.8)
Engine Air Box/Manifold Pressure.....	
In Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-in(mm).....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	950(27.0)
Exhaust Temperature-°F(°C).....	1180(637)
Maximum Allowable Back.....	
Pressure-in Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia.....	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back.....	
Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F).....	
12 Volt System.....	
Above 32°F(0°C)-A.....	1050
Below 32°F(0°C)-A.....	1050
24 Volt System.....	
Above 32°F(0°C)-A.....	NOT APPLICABLE
Below 32°F(0°C)-A.....	NOT APPLICABLE
Maximum Allowable Resistance of.....	
Starting Circuit.....	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	NOT APPLICABLE

Performance Data

Power Output-bhp(kW).....	138(103)
Full Load Speed-r/min.....	3600
Peak Torque-lb ft(N m).....	245(332)
Peak Torque Speed-r/min.....	2000
BMEP-lbf/in ² (kPa).....	80(551)
Friction Power.....	
Rated Speed-bhp(kW).....	78(58)
Peak Torque Speed-bhp(kW).....	27(20)
Altitude Capability-ft(m).....	12000(3660)
Torque Available at 800 r/min-.....	
lb ft (N m).....	131(178)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
3600	138(103)	201(273)	.525(319)
3200	134(100)	220(298)	.480(292)
2800	124 (93)	233(316)	.450(274)
2400	111 (83)	243(330)	.440(268)
2000	93 (69)	245(332)	.438(266)
1600	71 (53)	233(316)	.438(266)
1200	47 (35)	206(279)	.438(266)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-3087-11-1
Date: 1-17-85
Rev./Date:
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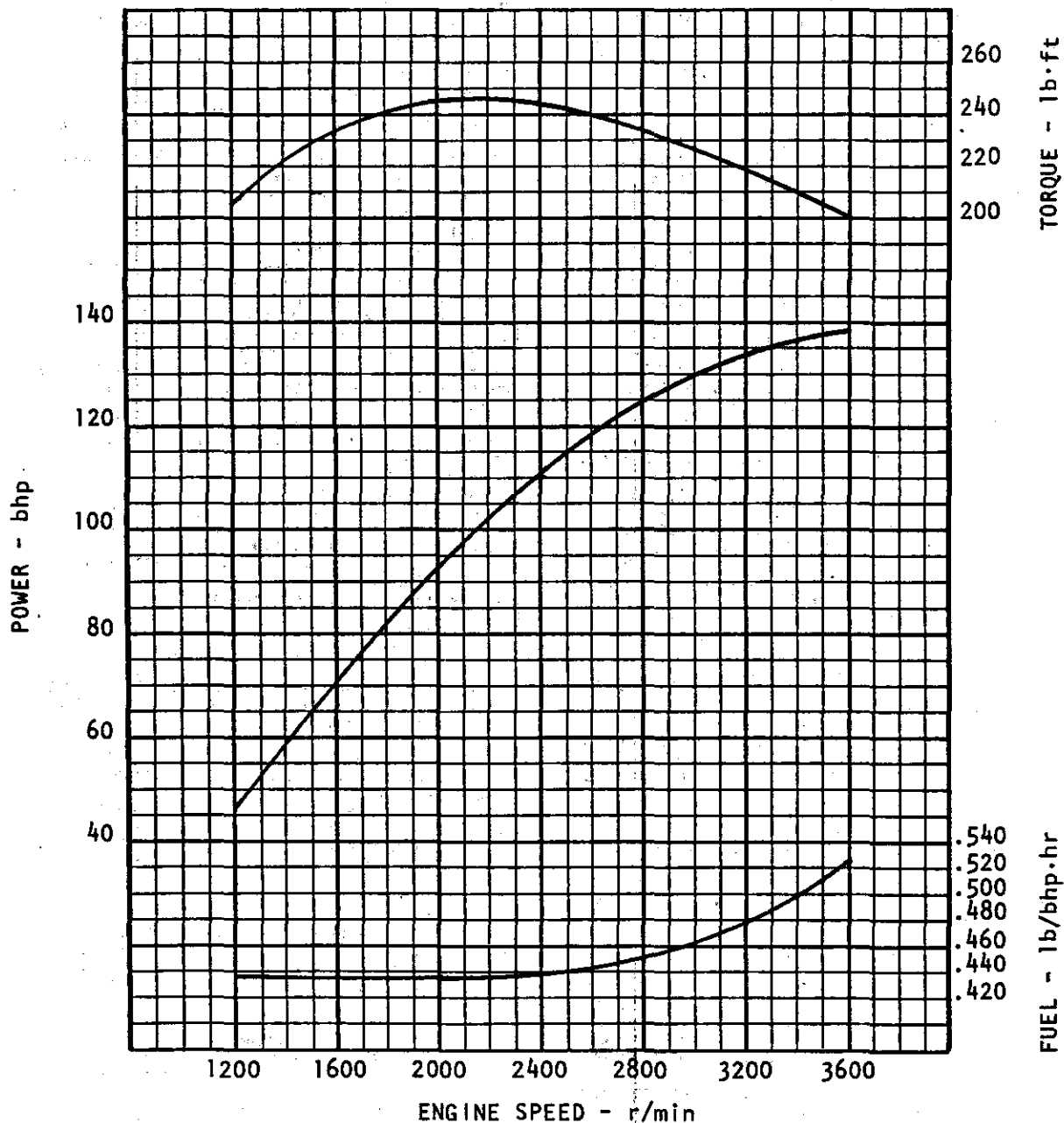
ENGINE PERFORMANCE CURVE

RATING: RATED POWER - BASIC ENGINE

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: 6.2-C,K LIGHT DUTY
138 bhp @ 3600 r/min
245 lb·ft @ 2000 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BARDHETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

J. Feilly
STAFF ENGINEER

CURVE NO.

E4-3087-12-11
DATE: 11-29-84
REV./DATE: 2/1-8-85
SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	3087-7000
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	3.98x3.82(101x97)
Displacement-In ³ (L).....	379(6.2)
Compression Ratio.....	21.3:1
Piston Speed-ft/min(m/min).....	2292(698)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	INDIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	650
High Idle Speed-r/min.....	4000
Thrust Bearing Load Limit	
Continuous-lbf(N).....	150(665)
Intermittent-lbf(N).....	560(2489)
Engine Crankcase Vent System.....	CLOSED
Maximum Pressure-In H ₂ O(kPa).....	-4(-1)

Physical Data

Size	
Length-In(mm).....	29.5(750)
Width-In(mm).....	27.2(692)
Height-In(mm).....	27.4(696)
Weight, dry-lb(kg).....	701(318)
Center of Gravity Distance	
From R.F.O.B. (x axis)-In(mm).....	12.0(306)
Above Crankshaft (y axis)-In(mm).....	5.3(134)
Right of Crankshaft (z axis)-In(mm).....	-1.2(30)
Installation Drawing.....	23500162
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m)....	0

Fuel System

Fuel Injector/Timing.....	BOSC #0N0SD 248
Fuel Injection Pump/Timing.....	D82-4425
Fuel Consumption-lb/hr(kg/hr).....	72.5(32.9)
Fuel Consumption-gal/hr(L/hr).....	10.4(39.4)
Fuel Spill Rate-lb/hr(kg/hr).....	43.9(19.9)
Fuel Spill Rate-gal/hr(L/hr).....	6.3(23.8)
Total Fuel Flow-lb/hr(kg/hr).....	116.4(52.8)
Total Fuel Flow-gal/hr(L/hr).....	16.7(63.2)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	15
Secondary - Micron.....	NOT APPLICABLE

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	40-50(278-345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	180-260(82-127)
Oil Flow-gal/min(L/min).....	3.5(13.2)
Oil Pan Capacity	
High-qt(L).....	6.0(5.7)
Low-qt(L).....	5.0(4.7)
Total Engine Oil Capacity with filters-qt(L).....	7.0(6.6)
Bypass Oil Filter Orifice-In(mm).....	NOT APPLICABLE
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	15
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO _x -gm/hr.....	NOT APPLICABLE
Smoke	
Rated Speed - Bosch Number.....	NOT APPLICABLE
Peak Torque Speed - Bosch Number.....	NOT APPLICABLE
Noise - dB(A) @ 1m.....	98.1
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	6000(106)
Engine Radiated Heat-Btu/min(kW).....	1330(23)
Coolant Flow-gal/min(L/min).....	66(249)
Thermostat	
Start to Open-°F(°C).....	190(88)
Fully Open-°F(°C).....	212(100)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	3.0(10)
Engine Coolant Capacity-qt(L).....	13.2(12.5)
Minimum Pressure Cap-lbf/in ² (kPa).....	15.0(103)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	40(278)
Maximum Top Tank Temperature-°F(°C)....	210(99)
Minimum Top Tank Temperature-°F(°C)....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	110(50)
Maximum Air to Water Diff.-°F(°C).....	102(61)
Ram Air Flow - Mile/hr(km/hr).....	NOT APPLICABLE
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lg H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	310(8.8)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-In(mm)....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	950(27.0)
Exhaust Temperature-°F(°C).....	1180(637)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia.	
Single-In(mm).....	4.0(102)
Dual-In(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1050
Below 32°F(0°C)-A.....	1050
24 Volt System	
Above 32°F(0°C)-A.....	NOT APPLICABLE
Below 32°F(0°C)-A.....	NOT APPLICABLE
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	NOT APPLICABLE

Performance Data

Power Output-bhp(kW).....	138(103)
Full Load Speed-r/min.....	3600
Peak Torque-lb ft(N m).....	245(332)
Peak Torque Speed-r/min.....	2000
BMEP-lbf/in ² (kPa).....	80(551)
Friction Power	
Rated Speed-bhp(kW).....	78(58)
Peak Torque Speed-bhp(kW).....	27(20)
Altitude Capability-ft(m).....	12000(3660)
Torque Available at 800 r/min-lb ft (N m).....	131(178)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
3600	138(103)	201(273)	.525(319)
3200	134(100)	220(298)	.480(292)
2800	124 (93)	233(316)	.450(274)
2400	111 (83)	243(330)	.440(268)
2000	93 (69)	245(332)	.438(266)
1600	71 (53)	233(316)	.438(266)
1200	47 (35)	206(279)	.438(266)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-3087-12-11
Date: 11-29-84
Rev./Date: 2/1-8-85
Sht. 2 of 2



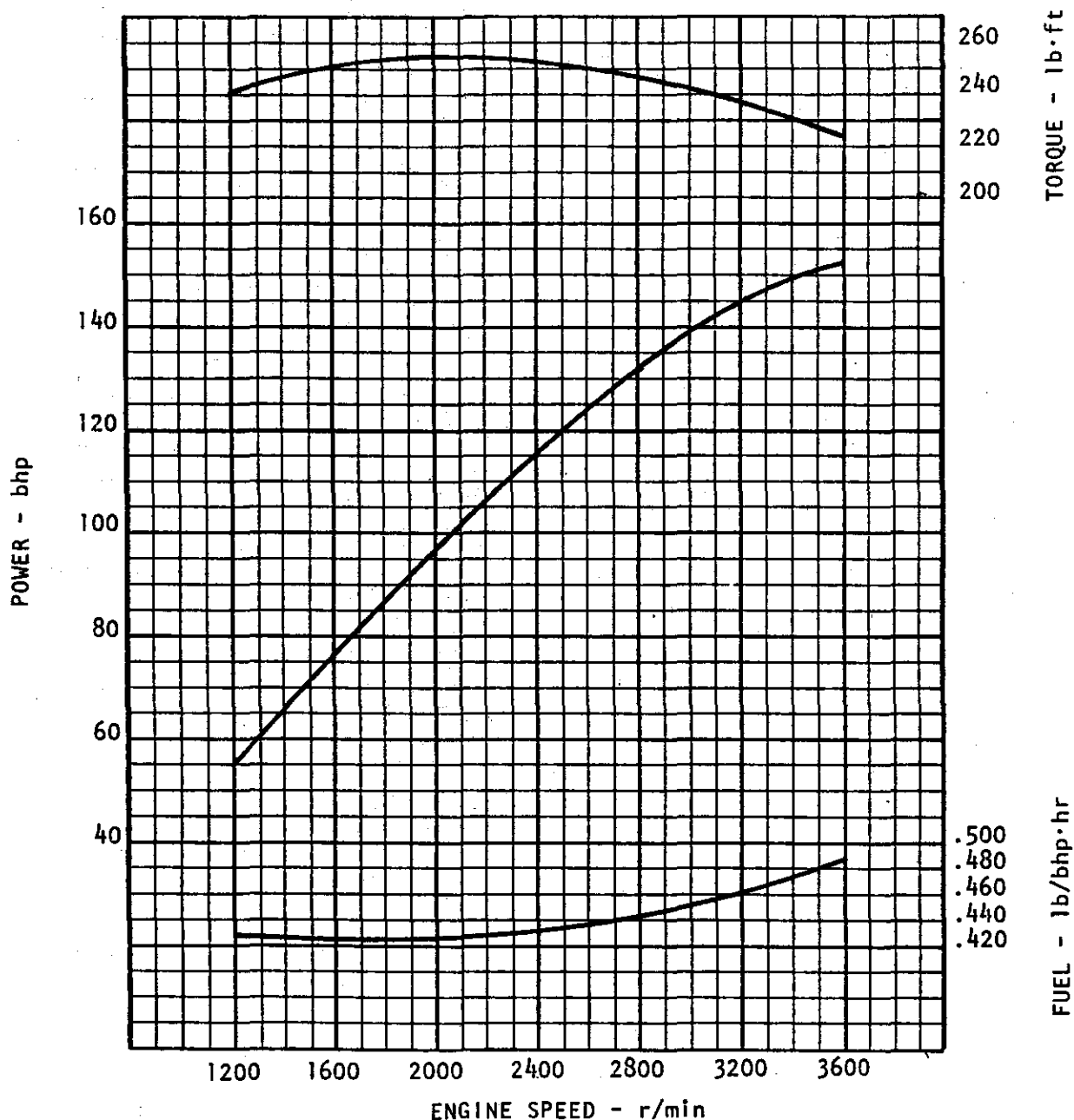
ENGINE PERFORMANCE CURVE

RATING: RATED POWER - BASIC ENGINE

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL & CALIF. 1985

MODEL: 6.2 - G HEAVY DUTY
153 bhp @ 3600 r/min
257 lb·ft @ 2000 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

J. J. Kelly
STAFF ENGINEER

CURVE NO.

E4-3087-12-10

DATE: 9-4-84

REV./DATE: 1/11-13-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	3087-7000
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	3.98x3.82(101x97)
Displacement-In ³ (L).....	379(6.2)
Compression Ratio.....	21.3:1
Piston Speed-ft/min(m/min).....	2292(698)
Valves Per Cylinder.....	
Intake.....	1
Exhaust.....	1
Combustion System.....	INDIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	650
High Idle Speed-r/min.....	4000
Thrust Bearing Load Limit.....	
Continuous-lbf(N).....	150(665)
Intermittent-lbf(N).....	560(2489)
Engine Crankcase Vent System.....	CLOSED
Maximum Pressure-In H ₂ O(kPa).....	-4(-1)

Physical Data

Size.....	
Length-In(mm).....	29.5(750)
Width-In(mm).....	26.5(674)
Height-In(mm).....	29.6(750.6)
Weight, dry-lb(kg).....	701(318)
Center of Gravity Distance.....	
From R.F.O.B. (x axis)-In(mm).....	12.0(306)
Above Crankshaft (y axis)-In(mm).....	5.3(134)
Right of Crankshaft (z axis)-In(mm).....	-1.2(30)
Installation Drawing.....	23500162
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	0

Fuel System

Fuel Injector/Timing.....	BOSCH #DNOSD 253
Fuel Injection Pump/Timing.....	DB2-4411
Fuel Consumption-lb/hr(kg/hr).....	74.7(33.9)
Fuel Consumption-gal/hr(L/hr).....	10.7(40.5)
Fuel Spill Rate-lb/hr(kg/hr).....	41.7(18.9)
Fuel Spill Rate-gal/hr(L/hr).....	6.0(22.7)
Total Fuel Flow-lb/hr(kg/hr).....	116.4(52.8)
Total Fuel Flow-gal/hr(L/hr).....	16.7(63.2)
Maximum Allowable Fuel Pump Suction.....	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size.....	
Primary - Micron.....	15
Secondary - Micron.....	NOT APPLICABLE

Lubrication System

Oil Pressure.....	
Rated Speed-lbf/In ² (kPa).....	40-50(278-345)
Low Idle-lbf/In ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	180-260(82-127)
Oil Flow-gal/min(L/min).....	3.5(13.2)
Oil Pan Capacity.....	
High-qt(L).....	6.0(5.7)
Low-qt(L).....	5.0(4.7)
Total Engine Oil Capacity with filters-qt(L).....	7.0(6.6)
Bypass Oil Filter Orifice-In(mm).....	NOT APPLICABLE
Engine Angularity Limits.....	
Front up - degrees.....	20
Front down - degrees.....	15
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	NOT APPLICABLE
Smoke.....	
Rated Speed - Bosch Number.....	NOT APPLICABLE
Peak Torque Speed - Bosch Number.....	NOT APPLICABLE
Noise - dB(A) @ 1m.....	98.1
Certification Approval.....	FED. & CALIF. 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	7300(128)
Engine Radiated Heat-Btu/min(kW).....	1370(23)
Coolant Flow-gal/min(L/min).....	66(249)
Thermostat.....	
Start to Open-°F(°C).....	190(88)
Fully Open-°F(°C).....	212(100)
Maximum Water Pump Inlet.....	
Restriction-In Hg(kPa).....	3.0(10)
Engine Coolant Capacity-qt(L).....	13.2(12.5)
Minimum Pressure Cap-lbf/In ² (kPa).....	15.0(103)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/In ² (kPa).....	40(278)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index.....	
Minimum Air to Boil-°F(°C).....	110(50)
Maximum Air to Water Diff.-°F(°C).....	102(61)
Ram Air Flow - Mile/hr(km/hr).....	NOT APPLICABLE
Deaeration-Air Injection.....	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit.....	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lg H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	310(8.8)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-In(mm).....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1000(28.4)
Exhaust Temperature-°F(°C).....	1230(666)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia. Single-In(mm).....	4.0(102)
Dual-In(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F).....	
12 Volt System.....	
Above 32°F(0°C)-A.....	1050
Below 32°F(0°C)-A.....	1050
24 Volt System.....	
Above 32°F(0°C)-A.....	NOT APPLICABLE
Below 32°F(0°C)-A.....	NOT APPLICABLE
Maximum Allowable Resistance of Starting Circuit.....	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	NOT APPLICABLE

Performance Data

Power Output-bhp(kW).....	153(114)
Full Load Speed-r/min.....	3600
Peak Torque-lb ft(N m).....	257(348)
Peak Torque Speed-r/min.....	2000
BMEP-lbf/In ² (kPa).....	88(606)
Friction Power.....	
Rated Speed-bhp(kW).....	78(58)
Peak Torque Speed-bhp(kW).....	27(20)
Altitude Capability-ft(m).....	12000(3660)
Torque Available at 800 r/min-lb ft (N m).....	210(285)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
3600	153(114)	223(302)	.488(297)
3200	145(108)	238(323)	.462(281)
2800	132 (98)	248(336)	.442(269)
2400	116 (87)	254(344)	.433(263)
2000	97 (72)	257(348)	.429(261)
1600	77 (57)	253(343)	.427(260)
1200	55 (41)	241(327)	.429(261)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-3087-12-10

Date: 9-4-84

Rev./Date: 1/11-13-84

Sht. 2 of 2



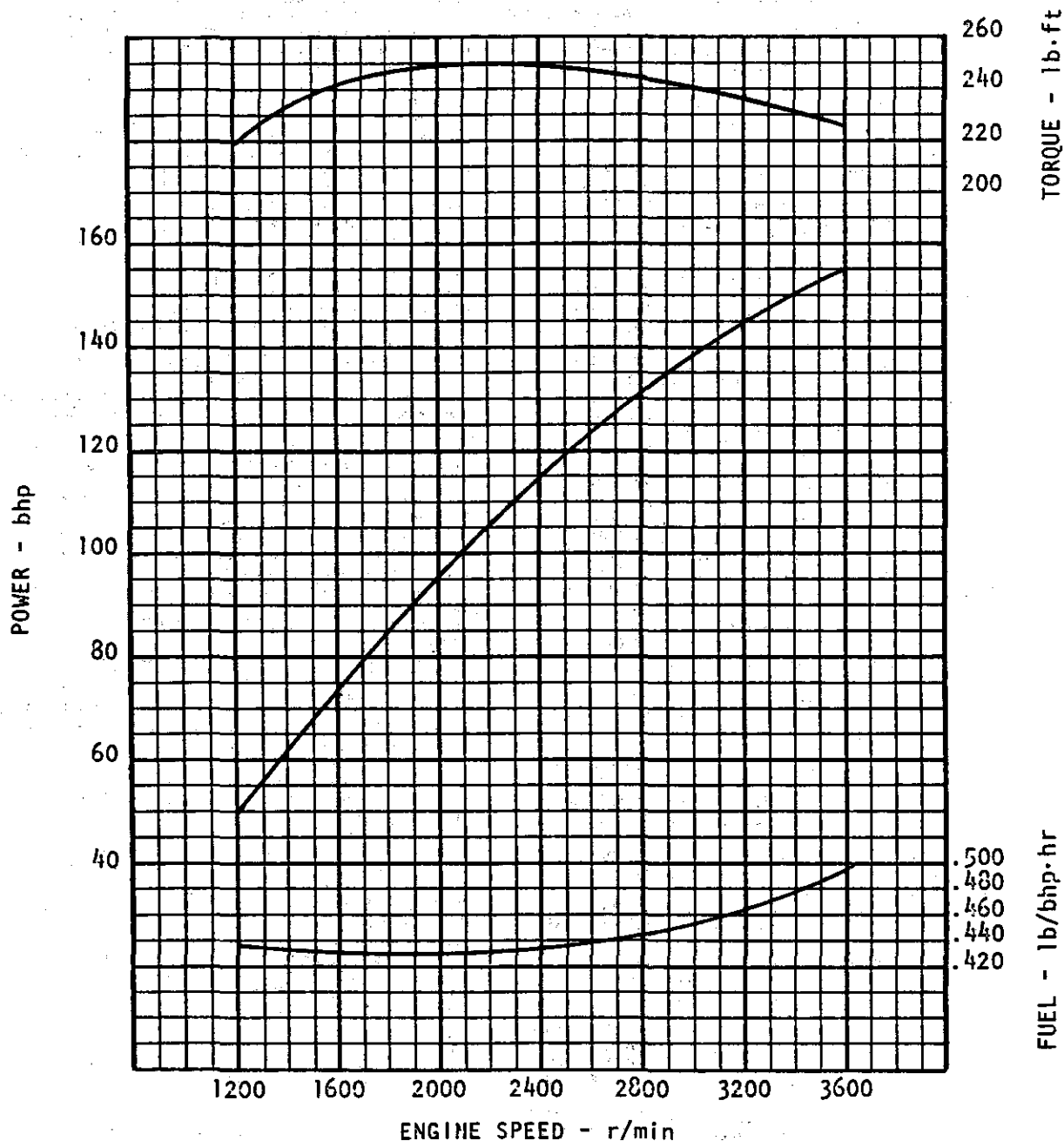
ENGINE PERFORMANCE CURVE

RATING: RATED POWER - BASIC ENGINE

APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL & CALIF. 1985

MODEL: 6.2 - C,K,P HEAVY DUTY
155 bhp @ 3600 r/min
250 lb·ft @ 2000 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW-hr = lb/bhp-hr × 0.608
TORQUE: N·m = lb·ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

[Signature]

STAFF ENGINEER

CURVE NO.

E4-3087-12-3

DATE: 8-6-84

REV./DATE: 2/11-13-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	3087-7000
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	3.98x3.82(101x97)
Displacement-in ³ (L).....	379(6.2)
Compression Ratio.....	21.3:1
Piston Speed-ft/min(m/min).....	2292(698)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	INDIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	650
High Idle Speed-r/min.....	4000
Thrust Bearing Load Limit	
Continuous-lbf(N).....	150(665)
Intermittent-lbf(N).....	560(2489)
Engine Crankcase Vent System.....	CLOSED
Maximum Pressure-in H ₂ O(kPa).....	-4(-1)

Physical Data

Size	
Length-in(mm).....	29.5(750)
Width-in(mm).....	27.2(692)
Height-in(mm).....	27.4(696)
Weight, dry-lb(kg).....	701(318)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(306)
Above Crankshaft (y axis)-in(mm).....	5.3(134)
Right of Crankshaft (z axis)-in(mm).....	-1.2(30)
Installation Drawing.....	23500162
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	0

Fuel System

Fuel Injector/Timing.....	BOSC #0NOSD 248
Fuel Injection Pump/Timing.....	DB2-4410
Fuel Consumption-lb/hr(kg/hr).....	76.6(34.7)
Fuel Consumption-gal/hr(L/hr).....	11.0(41.6)
Fuel Spill Rate-lb/hr(kg/hr).....	39.8(18.1)
Fuel Spill Rate-gal/hr(L/hr).....	5.7(21.6)
Total Fuel Flow-lb/hr(kg/hr).....	116.4(52.8)
Total Fuel Flow-gal/hr(L/hr).....	16.7(63.2)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	15
Secondary - Micron.....	NOT APPLICABLE

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	40-50(278-345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	180-260(82-127)
Oil Flow-gal/min(L/min).....	3.5(13.2)
Oil Pan Capacity	
High-qt(L).....	6.0(5.7)
Low-qt(L).....	5.0(4.7)
Total Engine Oil Capacity with filters-qt(L).....	7.0(6.6)
Bypass Oil Filter Orifice-in(mm).....	NOT APPLICABLE
Engine Angularity Limits	
Front up - degrees.....	20
Front down - degrees.....	15
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	NOT APPLICABLE
Smoke	
Rated Speed - Bosch Number.....	NOT APPLICABLE
Peak Torque Speed - Bosch Number.....	NOT APPLICABLE
Noise - dB(A) @ 1m.....	98.1
Certification Approval.....	FED. & CALIF. 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	7300(128)
Engine Radiated Heat-Btu/min(kW).....	1400(24)
Coolant Flow-gal/min(L/min).....	66(249)
Thermostat	
Start to Open-°F(°C).....	190(88)
Fully Open-°F(°C).....	212(100)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	3.0(10)
Engine Coolant Capacity-qt(L).....	13.2(12.5)
Minimum Pressure Cap-lbf/in ² (kPa).....	15.0(103)
Maximum Coolant Pressure, (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	40(278)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	110(50)
Maximum Air to Water Diff.-°F(°C).....	102(61)
Ram Air Flow - Mile/hr(km/hr).....	NOT APPLICABLE
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement for 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lb H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	310(8.8)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-in(mm).....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	940(26.7)
Exhaust Temperature-°F(°C).....	1240(671)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	1050
Below 32°F(0°C)-A.....	1050
24 Volt System	
Above 32°F(0°C)-A.....	NOT APPLICABLE
Below 32°F(0°C)-A.....	NOT APPLICABLE
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.0012
24 volt system - ohm.....	NOT APPLICABLE

Performance Data

Power Output-bhp(kW).....	155(116)
Full Load Speed-r/min.....	3600
Peak Torque-lb ft(N m).....	250(339)
Peak Torque Speed-r/min.....	2000
BMEP-lbf/in ² (kPa).....	90(620)
Friction Power	
Rated Speed-bhp(kW).....	78(58)
Peak Torque Speed-bhp(kW).....	27(20)
Altitude Capability-ft(m).....	12000(3660)
Torque Available at 800 r/min-lb ft (N m).....	210(285)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
3600	155(116)	226(306)	.494(300)
3200	145(108)	238(323)	.465(283)
2800	131 (98)	246(334)	.447(272)
2400	114 (85)	249(338)	.436(265)
2000	95 (71)	250(339)	.433(263)
1600	73 (55)	240(325)	.432(263)
1200	50 (37)	219(297)	.438(266)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-3087-12-3
Date: 8-6-84
Rev./Date: 2/11-13-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

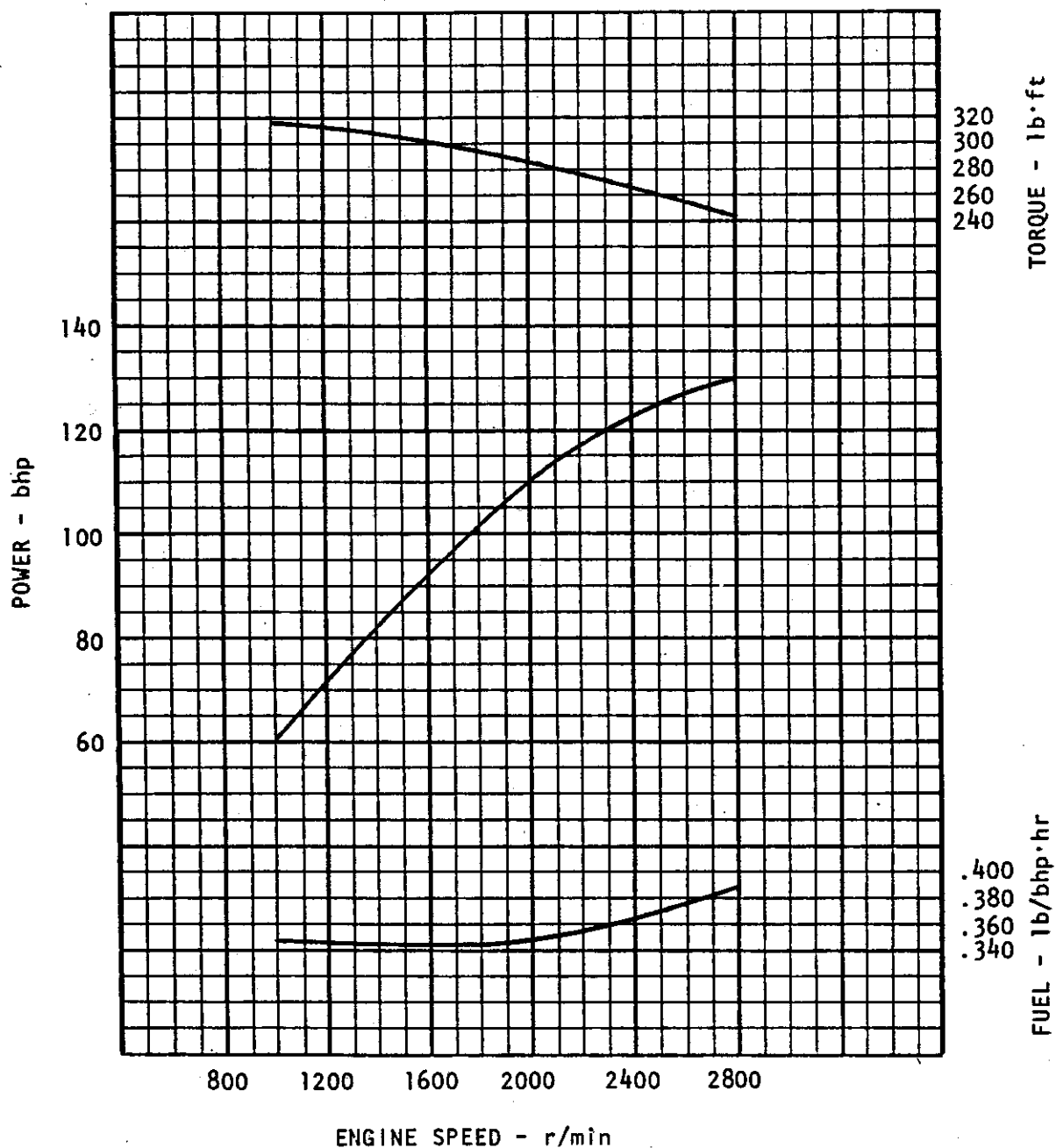
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: V8-8.2

130 bhp @ 2800 r/min

318 lb·ft @ 1000 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST RESTRICTION - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BARMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N-m = lb-ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

E.L. Kornblum

STAFF ENGINEER

CURVE NO.

E4-4087-11-9

DATE: 10-2-80

REV./DATE: 2/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7130
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	18.3:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.0(0.25)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1124(510)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.3(313)
Above Crankshaft (y axis)-in(mm).....	5.8(148)
Right of Crankshaft (z axis)-in(mm).....	2.9(73)
Installation Drawing.....	8920839/8920853
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	4A40/44.25
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	50.6(23)
Fuel Consumption-gal/hr(L/hr).....	7.2(27)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	542(246)
Total Fuel Flow-gal/hr(L/hr).....	77.5(293)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	246
HC-gm/hr.....	16
NO _x -gm/hr.....	632
SO ₂ -gm/hr.....	228
Smoke	
Rated Speed - Bosch Number.....	3.0
Peak Torque Speed - Bosch Number.....	4.0
Noise - dB(A) @ 1m.....	98.4
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	3640(64)
Engine Radiated Heat-Btu/min(kW).....	930(16.3)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C)....	210(99)
Minimum Top Tank Temperature-°F(°C)....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)...	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lb H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	330(9.3)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-in(mm)....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	810(23)
Exhaust Temperature-°F(°C).....	880(471)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.2(7.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	130(97)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	318(431)
Peak Torque Speed-r/min.....	1000
BMEP-lbf/in ² (kPa).....	74(510)
Friction Power	
Rated Speed-bhp(kW).....	56(43)
Peak Torque Speed-bhp(kW).....	12(9)
Altitude Capability-ft(m).....	7500(2280)
Torque Available at 800 r/min-lb ft (N m).....	315(427)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	130(97)	244(331)	.389(237)
2400	123(92)	268(363)	.364(221)
2000	110(82)	287(389)	.349(212)
1600	92(69)	302(409)	.344(209)
1200	72(54)	314(426)	.345(210)
1000	60(45)	318(431)	.348(212)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-11-9
Date: 10-2-80
Rev./Date: 2/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

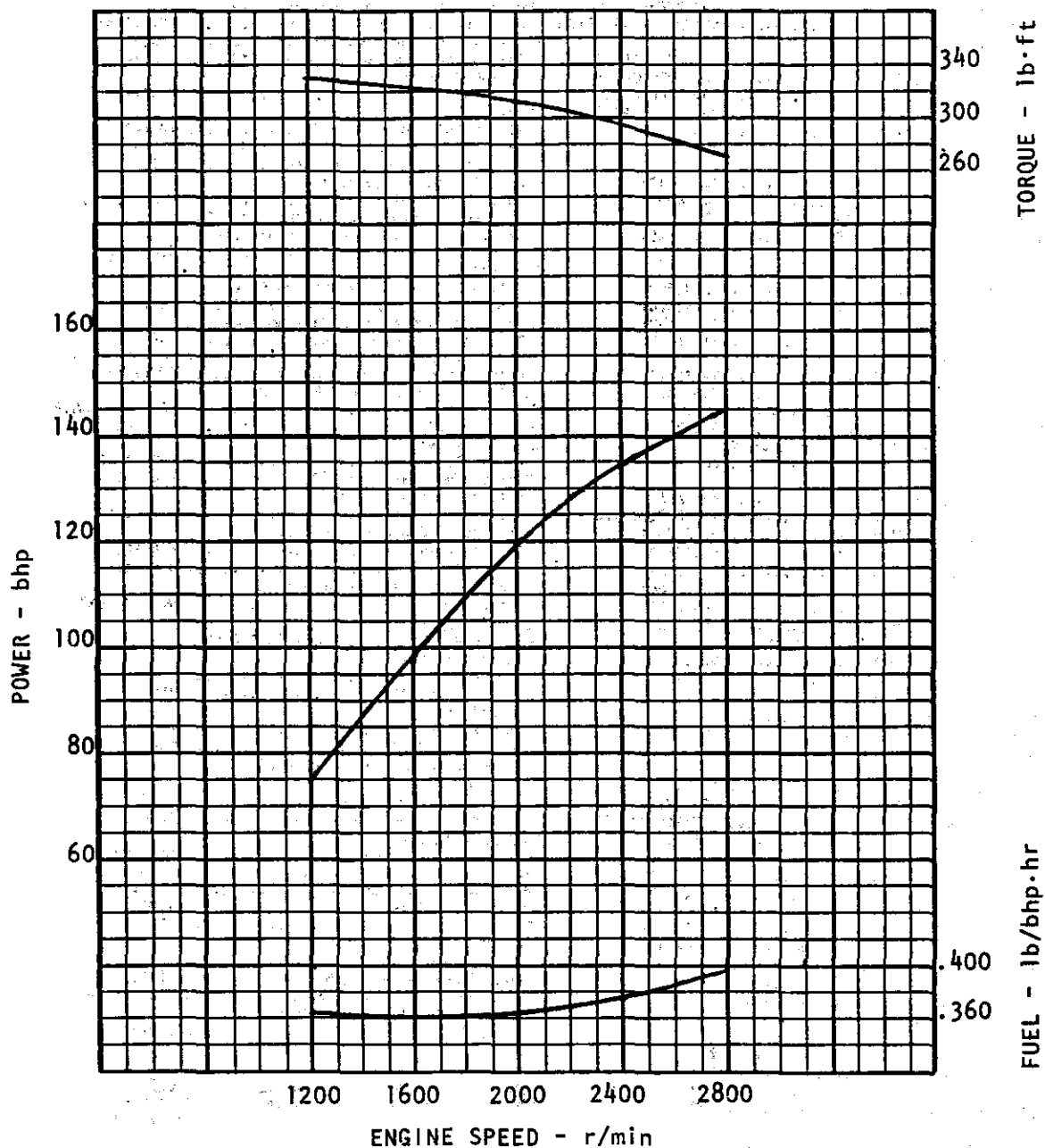
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: V8-8.2

145 bhp @ 2800 r/min

330 lb-ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O(kPa) . . . 10 (2.5)

EXHAUST RESTRICTION - in. H₂O(kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N-m = lb-ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

Sgt. L. K. Lumb

STAFF ENGINEER

CURVE NO.

E4-4087-11-10

DATE: 4-22-83

REV./DATE: 4/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7145
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	4.25x4.41(108x112)
Displacement-In ³ (L).....	500(8.2)
Compression Ratio.....	18.3:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	1.0(0.25)

Physical Data

Size	
Length-In(mm).....	35.0(890)
Width-In(mm).....	32.3(820)
Height-In(mm).....	32.7(830)
Weight-dry-lb(kg).....	1139(517)
Center of Gravity Distance	
From R.F.O.B. (x axis)-In(mm).....	12.3(313)
Above Crankshaft (y axis)-In(mm).....	5.8(148)
Right of Crankshaft (z axis)-In(mm).....	2.9(73)
Installation Drawing.....	8920893
Maximum Allowable Static Bending Moment at Rear Face of FM Hdg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	4845/43.8
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	57.6(26.1)
Fuel Consumption-gal/hr(L/hr).....	8.2(31.0)
Fuel Split Rate-lb/hr(kg/hr).....	491(223)
Fuel Split Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	549(249)
Total Fuel Flow-gal/hr(L/hr).....	78.5(297)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-In(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	280
HC-gm/hr.....	18
NO _x -gm/hr.....	720
SO ₂ -gm/hr.....	260
Smoke	
Rated Speed - Bosch Number.....	3.0
Peak Torque Speed - Bosch Number.....	4.0
Noise - dB(A) @ 1m.....	99.3
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4100(72)
Engine Radiated Heat-Btu/min(kW).....	1060(18.7)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-In H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	320(9.1)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-In(mm).....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	840(23.8)
Exhaust Temperature-°F(°C).....	950(510)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.2(7.4)
Recommended Exhaust Pipe Dia.	
Single-In(mm).....	4.0(102)
Dual-In(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	145(108)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	330(447)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	82(565)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	15(11)
Altitude Capability-ft(m).....	7500(2280)
Torque Available at 800 r/min-lb ft (N m).....	320(436)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	145(108)	272(369)	.397(241)
2600	140(104)	283(384)	.386(235)
2400	135(101)	295(400)	.374(227)
2000	119 (89)	313(424)	.363(221)
1600	98 (73)	322(437)	.361(220)
1400	87 (65)	326(442)	.362(220)
1200	75 (56)	330(447)	.363(221)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-11-10
Date: 4-22-83
Rev./Date: 4/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

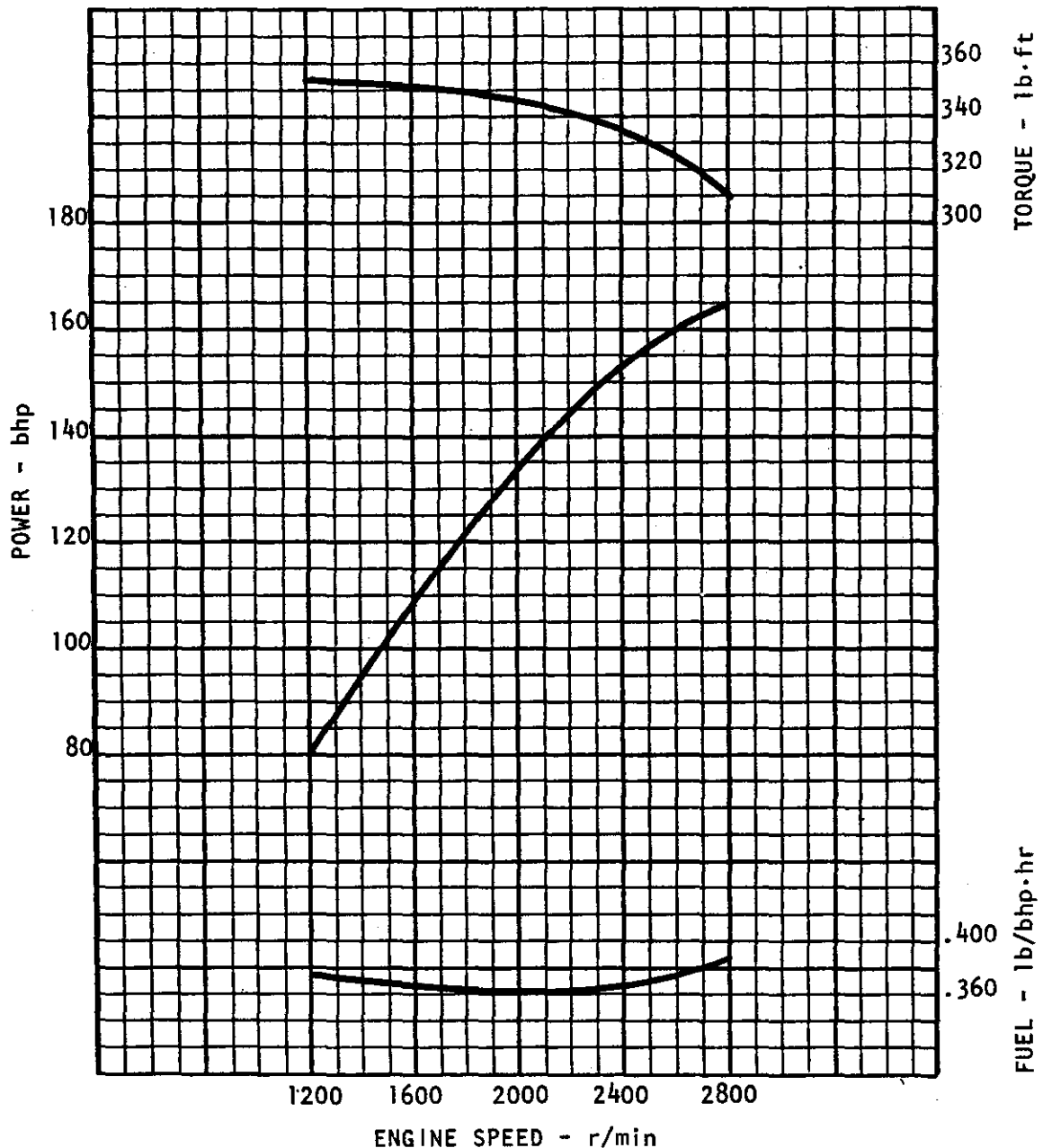
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: V8-8.2

165 bhp @ 2800 r/min

354 lb-ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST RESTRICTION - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N-m = lb-ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

St. Kambou

STAFF ENGINEER

CURVE NO.

E4-4087-11-11

DATE: 4-22-83

REV./DATE: 4/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7100
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	18.3:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.0(0.25)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1139(517)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.3(313)
Above Crankshaft (y axis)-in(mm).....	5.8(148)
Right of Crankshaft (z axis)-in(mm).....	2.9(73)
Installation Drawing.....	8920853
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4A53/43.8
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	63.8(29.0)
Fuel Consumption-gal/hr(L/hr).....	9.1(34.4)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	555(252)
Total Fuel Flow-gal/hr(L/hr).....	79.4(300)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	617
HC-gm/hr.....	16
NO _x -gm/hr.....	729
SO ₂ -gm/hr.....	289
Smoke	
Rated Speed - Bosch Number.....	4.0
Peak Torque Speed - Bosch Number.....	5.8
Noise - dB(A) @ 1m.....	99.4
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4650(82)
Engine Radiated Heat-Btu/min(kW).....	1180(21)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Raw Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lb H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	320(9.1)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-in(mm).....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	920(26.1)
Exhaust Temperature-°F(°C).....	1080(580)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.2(7.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	165(123)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	354(480)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	93(640)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	15(11)
Altitude Capability-ft(m).....	7500(2280)
Torque Available at 800 r/min-lb ft (N m).....	330(447)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	165(123)	309(419)	.387(235)
2600	160(119)	323(438)	.376(229)
2400	153(114)	335(454)	.368(224)
2000	133(99)	349(473)	.362(220)
1600	107(80)	352(477)	.366(223)
1400	94(70)	354(480)	.373(227)
1200	81(60)	354(480)	.376(229)

All values at rated speed and power and with standard engine hardware, unless otherwise noted.

Curve No. E4-4087-11-11
Date: 4-22-83
Rev./Date: 4/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

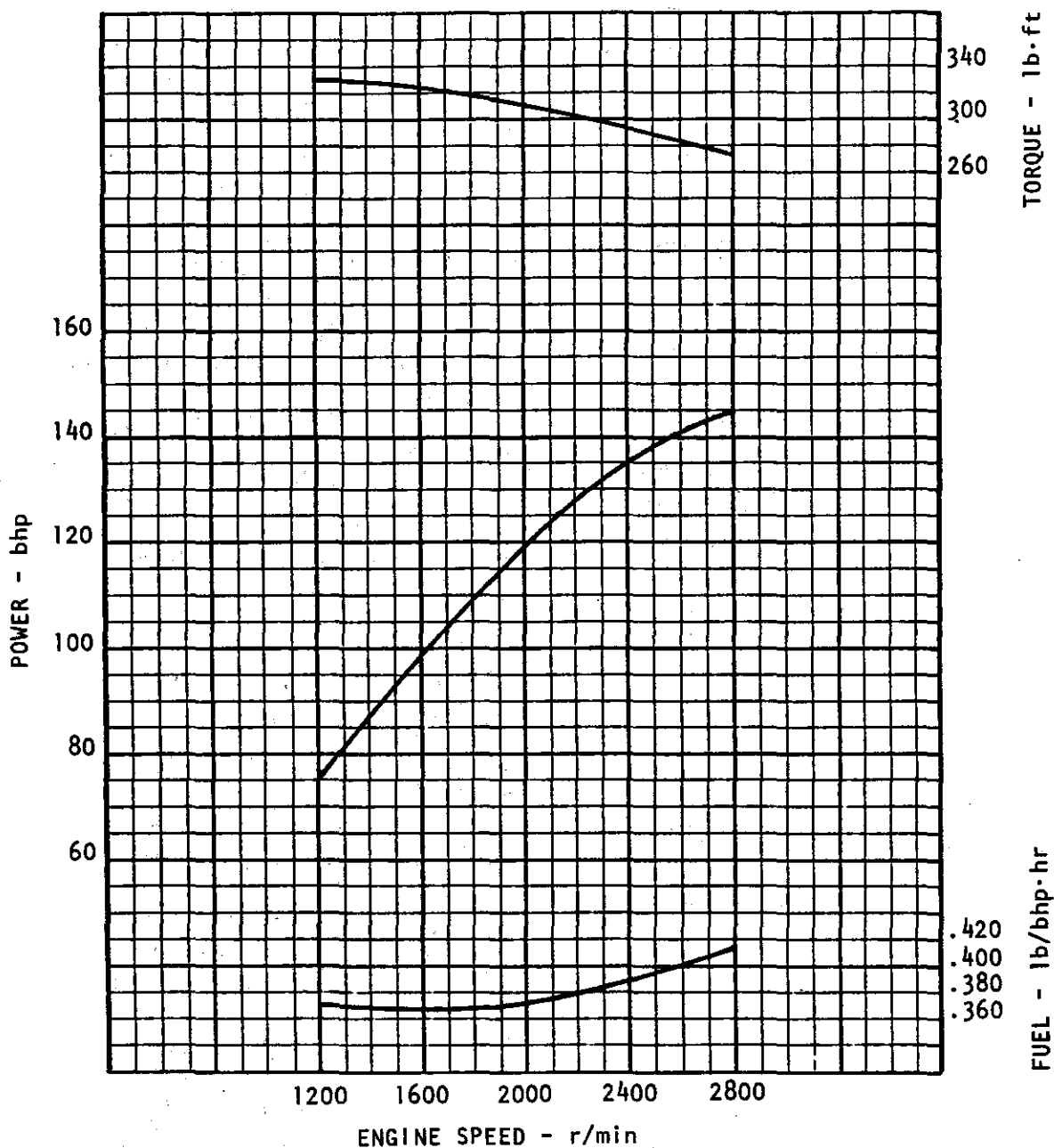
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: V8-8.2

145 bhp @ 2800 r/min

330 lb·ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) 10 (2.5)

EXHAUST RESTRICTION - in. H₂O (kPa) 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356

• VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

S.L. Kernblum

STAFF ENGINEER

CURVE NO.

E4-4087-11-15

DATE: 8-9-83

REV./DATE: 2/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7145
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	4.25x4.41(108x112)
Displacement-In ³ (L).....	500(8.2)
Compression Ratio.....	18.3:1
Piston Speed-ft/min(a/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	1.0(0.25)

Physical Data

Size	
Length-In(mm).....	33.0(890)
Width-In(mm).....	32.3(820)
Height-In(mm).....	32.7(830)
Weight, dry-lb(kg).....	1139(517)
Center of Gravity Distance	
From R.F.O.B. (x axis)-In(mm).....	12.3(313)
Above Crankshaft (y axis)-In(mm).....	5.8(148)
Right of Crankshaft (z axis)-In(mm).....	2.9(73)
Installation Drawing.....	8920853
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	4845/44.45-TDC
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	60.2(27.3)
Fuel Consumption-gal/hr(L/hr).....	8.6(32.6)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	552(250)
Total Fuel Flow-gal/hr(L/hr).....	78.9(299)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with	
Filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-In(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	220
HC-gm/hr.....	10
NO _x -gm/hr.....	500
SO ₂ -gm/hr.....	270
Smoke	
Rated Speed - Bosch Number.....	3.1
Peak Torque Speed - Bosch Number.....	3.9
Noise - dB(A) @ 1m.....	98.6
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4285(75)
Engine Radiated Heat-Btu/min(kW).....	1115(19.6)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - M10/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-In H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	317(8.9)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-In(mm).....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	880(24.9)
Exhaust Temperature-°F(°C).....	1030(554)
Maximum Allowable Back	
Pressure-In Hg(kPa).....	2.2(7.4)
Recommended Exhaust Pipe Dia.	
Single-In(mm).....	4.0(102)
Dual-In(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back	
Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	145(108)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	330(447)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	82(565)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	15(11)
Altitude Capability-ft(m).....	5000(1520)
Torque Available at 800 r/min-lb ft (N m).....	328(445)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	145(108)	272(369)	.415(252)
2600	141(105)	285(385)	.401(244)
2400	135(101)	295(400)	.390(237)
2000	119 (89)	312(423)	.374(227)
1600	99 (74)	325(441)	.368(224)
1400	87 (65)	326(442)	.369(224)
1200	75 (56)	330(447)	.371(226)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-11-15
Date: 8-9-83
Rev. Date: 2/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

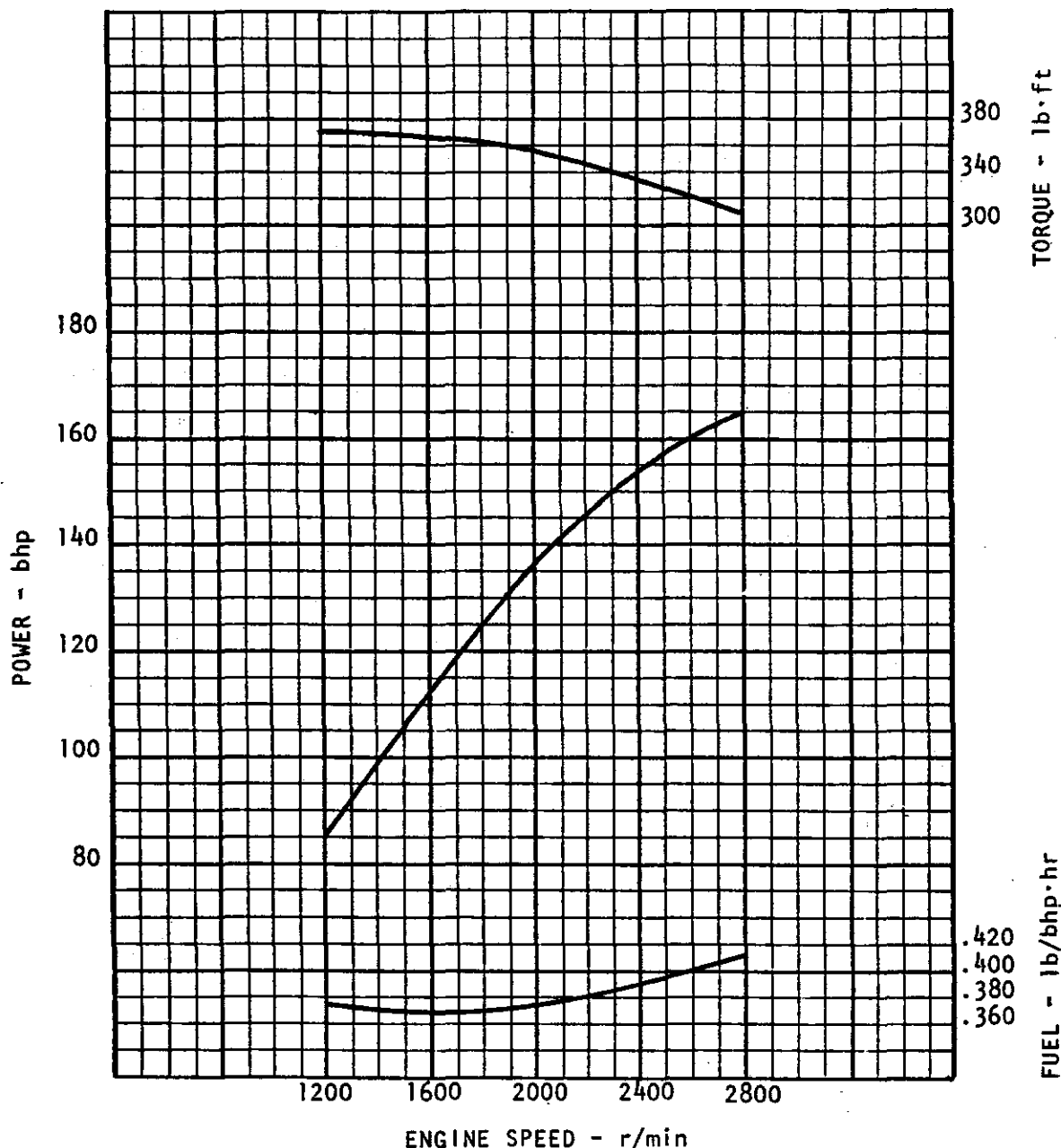
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: V8-8.2

165 bhp @ 2800 r/min

370 lb·ft @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST RESTRICTION - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

B.L. Kuntz

STAFF ENGINEER

CURVE NO.

E4-4087-11-16

DATE: 8-31-83

REV./DATE: 2/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7100
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	18.3:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	NATURALLY ASPIRATED

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.0(0.25)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1139(517)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.3(313)
Above Crankshaft (y axis)-in(mm).....	5.8(148)
Right of Crankshaft (z axis)-in(mm).....	2.9(73)
Installation Drawing.....	8920853
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4855/44.25-TDC
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	68.1(30.9)
Fuel Consumption-gal/hr(L/hr).....	9.7(36.7)
Fuel Split Rate-lb/hr(kg/hr).....	491(223)
Fuel Split Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	559(254)
Total Fuel Flow-gal/hr(L/hr).....	80.0(303)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	490
HC-gm/hr.....	5
NO _x -gm/hr.....	500
SO _x -gm/hr.....	310
Smoke	
Rated Speed - Bosch Number.....	3.9
Peak Torque Speed - Bosch Number.....	5.0
Noise - dB(A) @ 1m.....	98.7
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4865(86)
Engine Radiated Heat-Btu/min(kW).....	1265(22.3)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-in H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	338(9.6)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	NOT APPLICABLE
Recommended Intake Pipe Dia.-in(mm).....	4.0(102)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	980(27.8)
Exhaust Temperature-°F(°C).....	1100(593)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.2(7.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	3.0(76)
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	165(123)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	370(502)
Peak Torque Speed-r/min.....	1200
BMEP-lbf/in ² (kPa).....	93(640)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	15(11)
Altitude Capability-ft(m).....	5000(1520)
Torque Available at 800 r/min-lb ft (N m).....	368(499)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	165(123)	309(419)	.413(251)
2600	160(119)	323(438)	.401(244)
2400	153(114)	335(454)	.389(237)
2000	136(101)	357(484)	.375(228)
1600	112 (84)	368(499)	.369(224)
1400	98 (73)	369(500)	.371(226)
1200	85 (63)	370(502)	.374(227)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-11-16
Date: 8-31-83
Rev./Date: 2/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

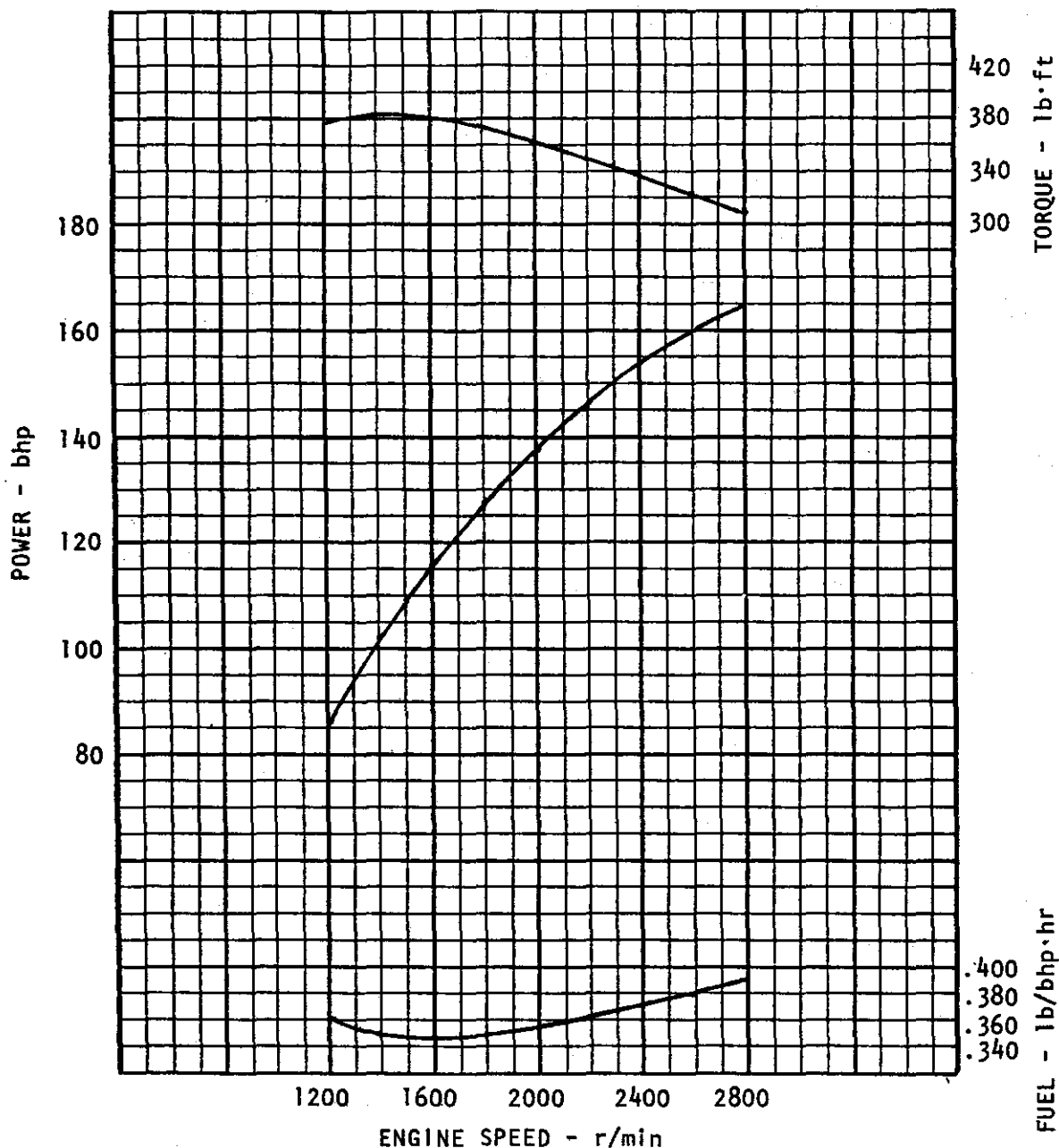
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: V8-8.2T

165 bhp @ 2800 r/min

383 lb·ft @ 1400 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST RESTRICTION - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

John K. Kuntz

STAFF ENGINEER

CURVE NO.

E4-4087-31-21

DATE: 10-21-83

REV./DATE: 2/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7300
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	16.9:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4A53/43.6
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	64.3(29.2)
Fuel Consumption-gal/hr(L/hr).....	9.2(34.8)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	556(252)
Total Fuel Flow-gal/hr(L/hr).....	79.5(301)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-In(mm).....	0.0621(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	92
HC-gm/hr.....	25
NO _x -gm/hr.....	1170
SO ₂ -gm/hr.....	290
Smoke	
Rated Speed - Bosch Number.....	0.8
Peak Torque Speed - Bosch Number.....	2.7
Noise - dB(A) @ 1m.....	98.5
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4640(81.6)
Engine Radiated Heat-Btu/min(kW).....	1190(20.9)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure, (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-In H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	490(13.9)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	15(51)
Recommended Intake Pipe Dia.-in(mm).....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1220(34.6)
Exhaust Temperature-°F(°C).....	880(471)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.8(9.3)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	165(123)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	383(519)
Peak Torque Speed-r/min.....	1400
BMEP-lbf/in ² (kPa).....	92.8(640)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	18(13)
Altitude Capability-ft(m).....	16000(4900)
Torque Available at 800 r/min-lb ft (N m).....	325(441)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	165(123)	309(419)	.390(237)
2600	160(119)	323(436)	.379(231)
2400	154(115)	336(456)	.370(225)
2000	137(102)	361(489)	.355(216)
1600	116 (87)	380(515)	.347(211)
1400	102 (76)	383(519)	.349(212)
1200	86 (64)	376(510)	.361(220)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-21
Date: 10-21-83
Rev./Date: 2/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

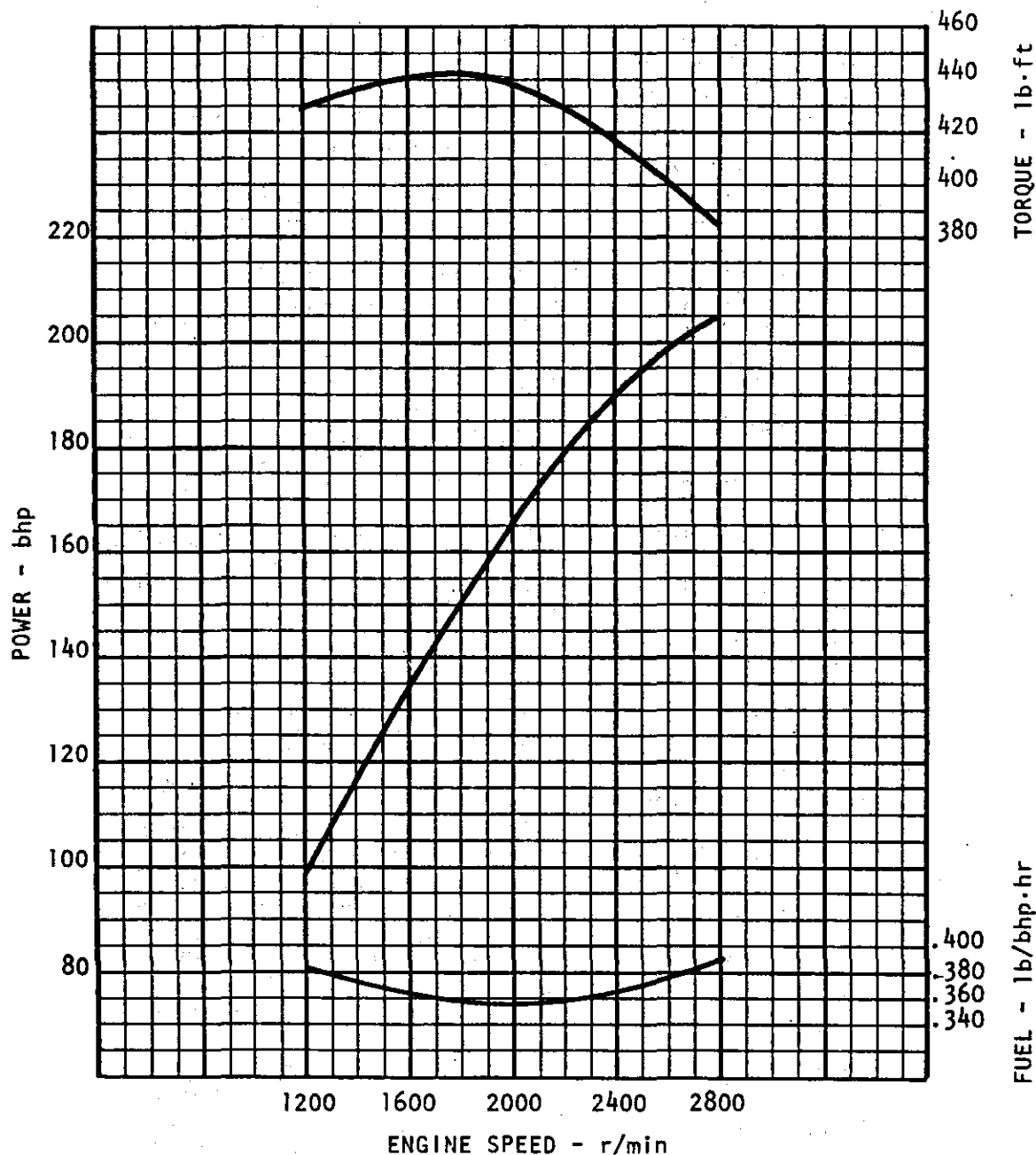
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: V8-8.2T

205 bhp @ 2800 r/min

442 lb·ft @ 1700 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST RESTRICTION - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356

• VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

E. R. Kuntz

STAFF ENGINEER

CURVE NO.

E4-4087-31-16

DATE: 4-28-83

REV./DATE: 4/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7300
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	16.9:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight-dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.3(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4C65/44.25
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	80.2(36.4)
Fuel Consumption-gal/hr(L/hr).....	11.5(43.5)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	572(259)
Total Fuel Flow-gal/hr(L/hr).....	81.8(310)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.5)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	171
HC-gm/hr.....	32
NO _x -gm/hr.....	1033
SO ₂ -gm/hr.....	364
Smoke	
Rated Speed - Bosch Number.....	1.8
Peak Torque Speed - Bosch Number.....	3.8
Noise - dB(A) @ 1m.....	98.8
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	5640(99)
Engine Radiated Heat-Btu/min(kW).....	1450(26)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure ₂ (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-ig H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	530(15.0)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	26(88)
Recommended Intake Pipe Dia.-in(mm).....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1440(40.8)
Exhaust Temperature-°F(°C).....	1000(538)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.8(9.3)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	205(153)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	442(599)
Peak Torque Speed-r/min.....	1700
BMEP-lbf/in ² (kPa).....	116(800)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	25(19)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 800 r/min-lb ft (N m).....	384(520)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	205(153)	385(522)	.391(238)
2600	198(148)	400(542)	.380(231)
2400	190(142)	416(564)	.370(225)
2000	168(125)	441(598)	.357(217)
1700	143(107)	442(599)	.363(221)
1600	134(100)	440(597)	.367(223)
1400	116 (87)	435(590)	.375(228)
1200	98 (73)	429(582)	.385(234)

All values at rated speed and power and with standard engine hardware, unless otherwise noted.

Curve No. E4-4087-31-16
Date: 4-28-83
Rev./Date: 4/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

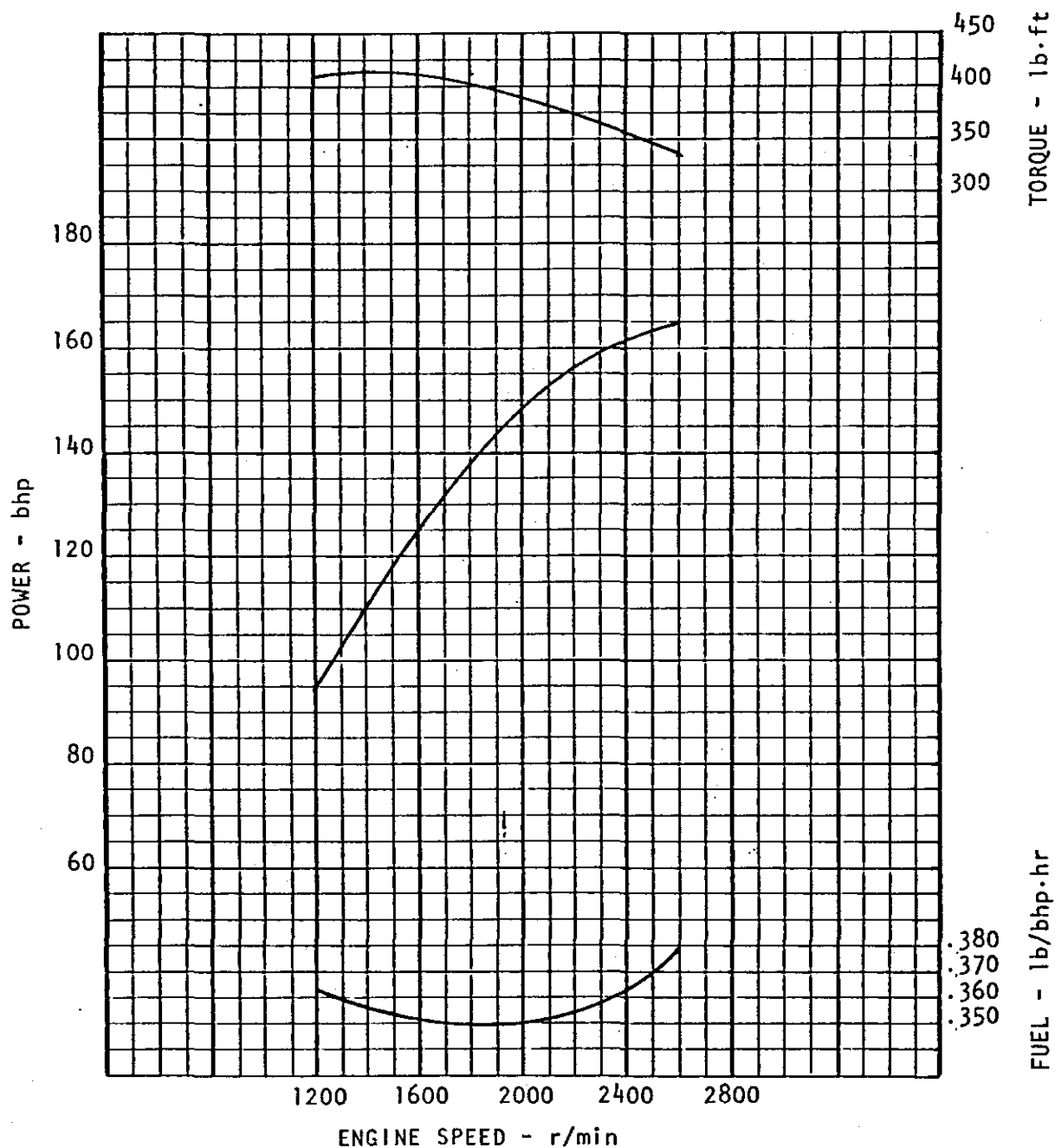
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: V8-3.2T

.165 bhp @ 2600 r/min

418 lb·ft @ 1400 r/min

AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-4087-31-26

DATE: 10-8-84

REV./DATE: 2/3-25-85

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7355
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	16.9:1
Piston Speed-ft/min(m/min).....	1910(581)
Valves Per Cylinder	

Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	2850
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4J60/47.80-B.C.
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	62.5(28.3)
Fuel Consumption-gal/hr(L/hr).....	8.9(33.7)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	553.5(251.1)
Total Fuel Flow-gal/hr(L/hr).....	79.2(299.8)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	18(68)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	283
Smoke	
Rated Speed - Bosch Number.....	1.9
Peak Torque Speed - Bosch Number.....	NOT AVAILABLE
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4620(81)
Engine Radiated Heat-Btu/min(kW).....	1150(20)
Coolant Flow-gal/min(L/min).....	67(250)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-In H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	450(12.7)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	14.7(49.6)
Recommended Intake Pipe Dia.-in(mm).....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1120(31.7)
Exhaust Temperature-°F(°C).....	880(471)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	165(123)
Full Load Speed-r/min.....	2600
Peak Torque-lb ft(N m).....	418(567)
Peak Torque Speed-r/min.....	1400
BMEP-lbf/in ² (kPa).....	100(689)
Friction Power	
Rated Speed-bhp(kW).....	49(37)
Peak Torque Speed-bhp(kW).....	18(13)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 600 r/min-lb ft (N m).....	360(488)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2600	165(123)	333(452)	.379(230)
2400	162(121)	355(481)	.366(223)
2200	157(117)	375(509)	.355(216)
1600	124 (93)	407(552)	.351(213)
1400	111 (83)	418(567)	.356(216)
1200	94 (70)	411(557)	.364(221)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-26
Date: 10-08-84
Rev./Date: 2/3-25-85
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

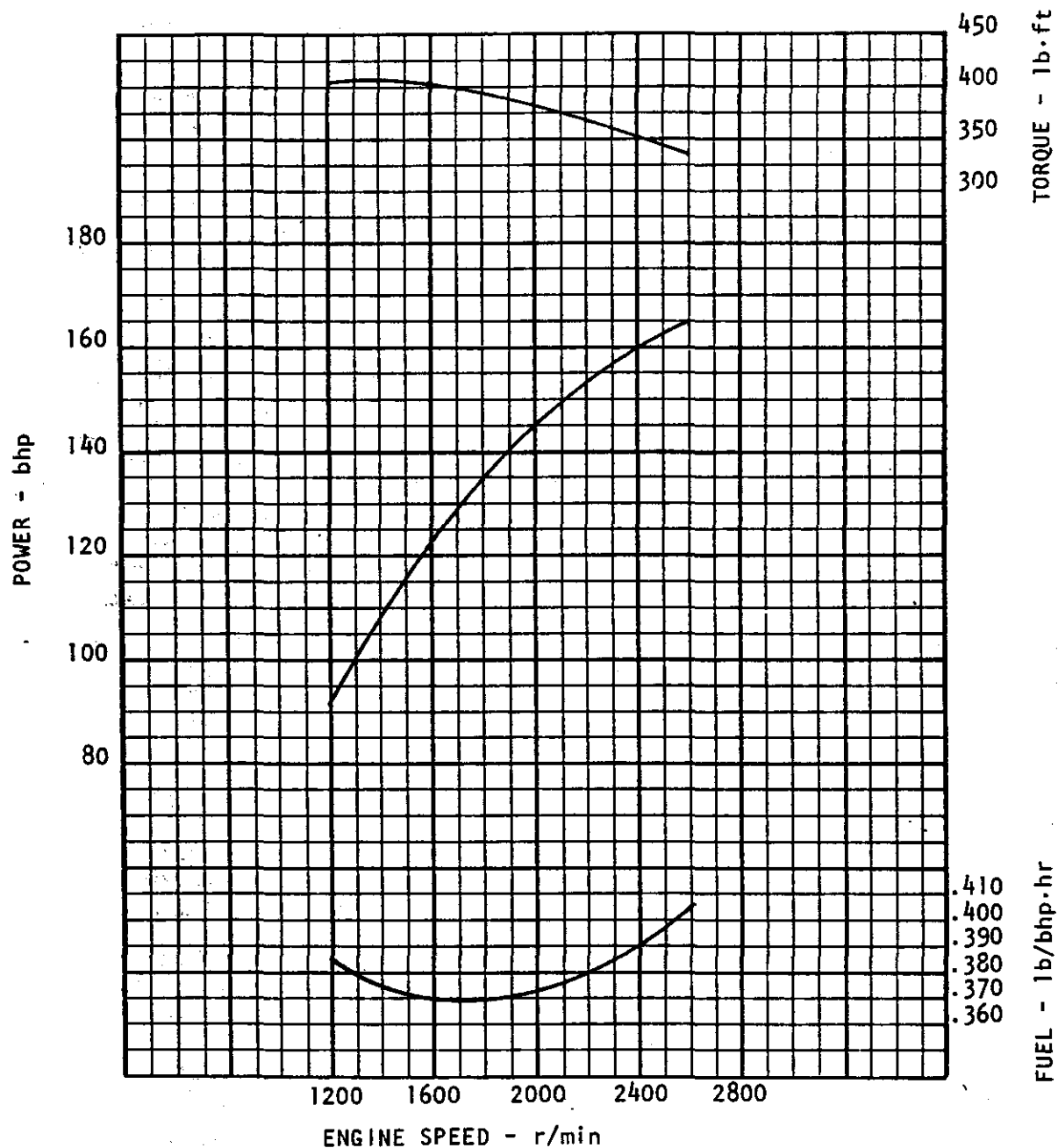
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: V8-8.2T

165 bhp @ 2600 r/min

405 lb·ft @ 1400 r/min

AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-4087-31-27

DATE: 10-8-84

REV./DATE: 1/11-13-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7355
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	17:1
Piston Speed-ft/min(m/min).....	1910(581)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	4K60/44.45-T.D.C.
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	67.0(30.4)
Fuel Consumption-gal/hr(L/hr).....	9.6(36.3)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	558(253)
Total Fuel Flow-gal/hr(L/hr).....	79.9(302.5)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	304
Smoke	
Rated Speed - Bosch Number.....	1.7
Peak Torque Speed - Bosch Number.....	NOT AVAILABLE
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4620(81)
Engine Radiated Heat-Btu/min(kW).....	1230(22)
Coolant Flow-gal/min(L/min).....	67(250)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet Restriction-in Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C)....	210(99)
Minimum Top Tank Temperature-°F(°C)....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-ig H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	490(13.9)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	19.7(66.5)
Recommended Intake Pipe Dia.-in(mm)....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1300(36.8)
Exhaust Temperature-°F(°C).....	960(516)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	165(123)
Full Load Speed-r/min.....	2600
Peak Torque-lb ft(N m).....	405(549)
Peak Torque Speed-r/min.....	1400
BMEP-lbf/in ² (kPa).....	100(689)
Friction Power	
Rated Speed-bhp(kW).....	49(37)
Peak Torque Speed-bhp(kW).....	18(13)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 800 r/min-lb ft (N m).....	360(486)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2600	165(123)	333(452)	.406(247)
2400	160(119)	350(475)	.390(237)
2000	145(108)	381(517)	.372(226)
1600	123 (92)	404(548)	.369(224)
1400	108 (81)	405(549)	.375(228)
1200	92 (69)	403(546)	.385(234)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-27
Date: 10-08-84
Rev./Date: 1/11-13-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

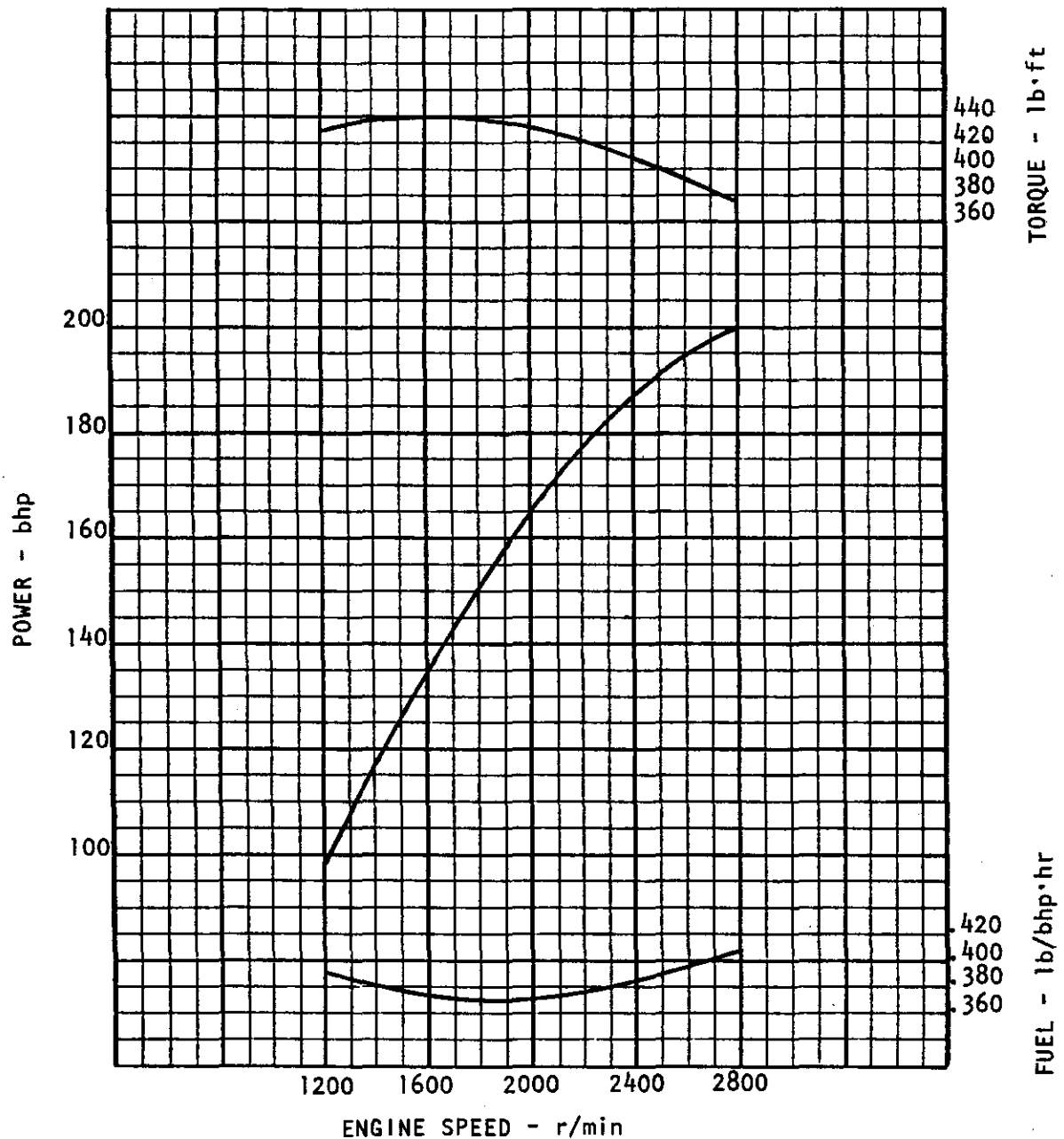
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: V8-8.2T

200 bhp @ 2800 r/min

440 lb·ft @ 1700 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST RESTRICTION - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

SL Kambhampati

STAFF ENGINEER

CURVE NO.

E4-4087-31-18

DATE: 8-15-83

REV./DATE: 3/10-8-84

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7300
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	16.9:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	

Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4E67/44.75-TDC
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	81.8(37.1)
Fuel Consumption-gal/hr(L/hr).....	11.7(44.3)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	573(260)
Total Fuel Flow-gal/hr(L/hr).....	82(310)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-Int(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	70
HC-gm/hr.....	93
NO _x -gm/hr.....	735
SO ₂ -gm/hr.....	370
Smoke	
Rated Speed - Bosch Number.....	2.0
Peak Torque Speed - Bosch Number.....	3.7
Noise - dB(A) @ 1m.....	98.4
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	5600(98.6)
Engine Radiated Heat-Btu/min(kW).....	1500(26.4)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet Restriction-in Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure, (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lb H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	580(16.4)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	30.5(102.8)
Recommended Intake Pipe Dia.-in(mm).....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1520(43.0)
Exhaust Temperature-°F(°C).....	950(510)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.8(9.3)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	200(149)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	440(597)
Peak Torque Speed-r/min.....	1700
BMEP-lbf/in ² (kPa).....	113(780)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	25(19)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 800 r/min-lb ft (N m).....	374(507)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	200(149)	375(508)	.409(249)
2600	194(145)	392(531)	.396(241)
2400	187(139)	409(555)	.385(234)
2000	164(122)	431(584)	.373(227)
1700	142(106)	440(597)	.373(227)
1600	134(100)	439(595)	.374(228)
1400	117 (87)	438(594)	.382(232)
1200	98 (73)	429(582)	.393(239)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-18
Date: 8-15-83
Rev./Date: 3/10-8-84
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

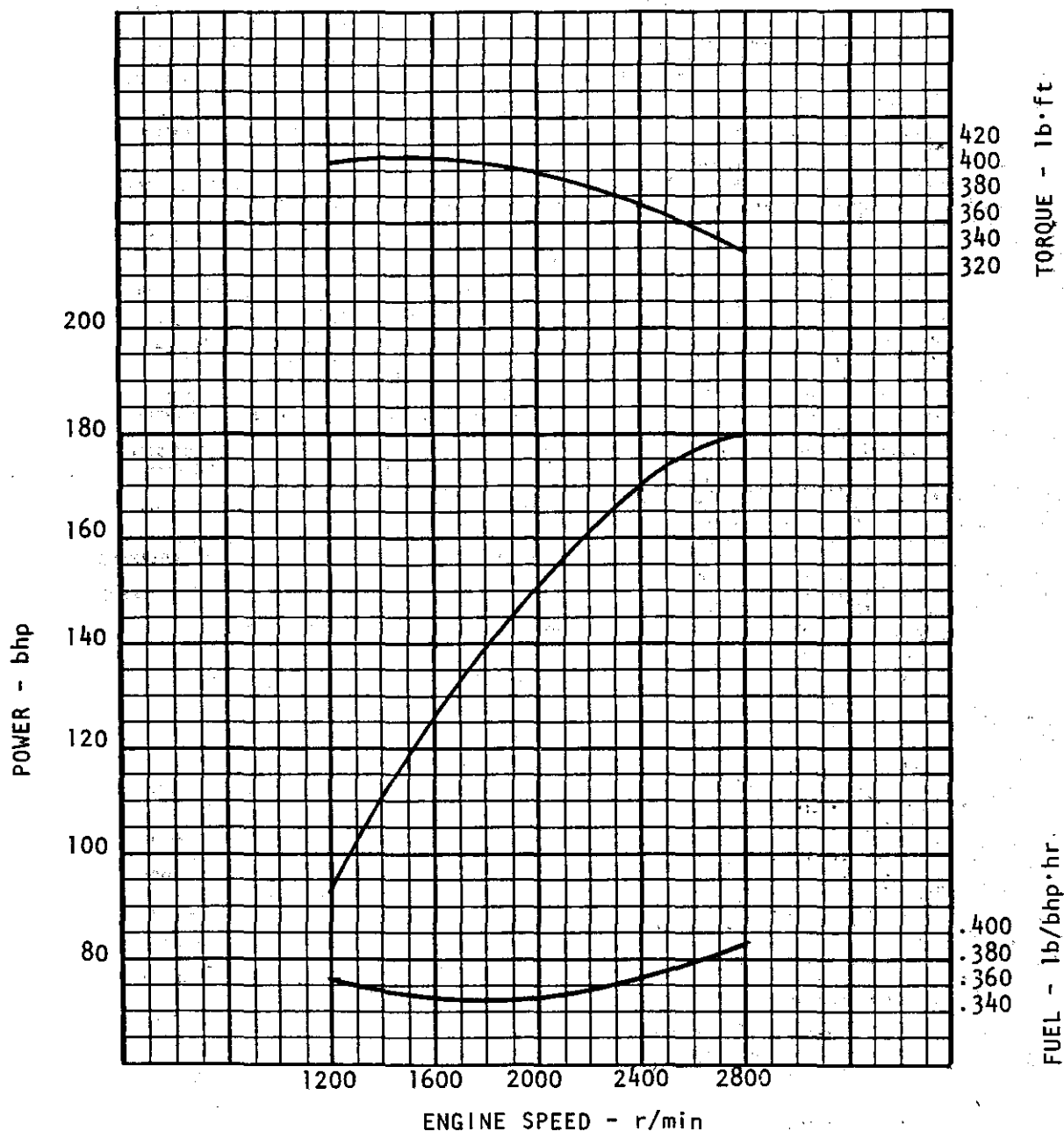
RATING: GROSS POWER - BASIC ENGINE

MODEL: V8-8.2T

APPLICATION: AUTOMOTIVE - COACH
DIESEL FUEL NO. 1

180 bhp @ 2800 r/min
412 lb·ft @ 1500 r/min

CERTIFICATION: FEDERAL 1985



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.816 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp × 0.746
FUEL: kg/kW·hr = lb/bhp·hr × 0.608
TORQUE: N·m = lb·ft × 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

[Signature]

STAFF ENGINEER

CURVE NO.

E4-4087-31-24

DATE: 10-3-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7340
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	17.4:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder.....	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit.....	
Continuous-ibf(N).....	300(1330)
Intermittent-ibf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size.....	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance.....	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-ibf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4H60/47.80-8.C.
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-ib/hr(kg/hr).....	70.6(32.0)
Fuel Consumption-gal/hr(L/hr).....	10.6(40.1)
Fuel Spill Rate-ib/hr(kg/hr).....	470(213)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-ib/hr(kg/hr).....	541(245)
Total Fuel Flow-gal/hr(L/hr).....	81.0(307)
Maximum Allowable Fuel Pump Suction.....	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size.....	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure.....	
Rated Speed-ibf/in ² (kPa).....	50(345)
Low Idle-ibf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity.....	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-In(mm).....	0.062(1.57)
Engine Angularity Limits.....	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	320
Smoke.....	
Rated Speed - Bosch Number.....	NOT AVAILABLE
Peak Torque Speed - Bosch Number.....	NOT AVAILABLE
Noise - dB(A) @ 1m.....	98.6
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4980(88)
Engine Radiated Heat-Btu/min(kW).....	1300(22.9)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat.....	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet.....	
Restriction-In Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-ibf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-ibf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index.....	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection.....	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit.....	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-In H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	510(14.4)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	21(71)
Recommended Intake Pipe Dia.-in(mm).....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1270(35.9)
Exhaust Temperature-°F(°C).....	880(471)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.8(9.3)
Recommended Exhaust Pipe Dia. Single-In(mm).....	4.0(102)
Dual-In(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F).....	
12 Volt System.....	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System.....	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit.....	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	180(134)
Full Load Speed-r/min.....	2800
Peak Torque-ib ft(N m).....	412(559)
Peak Torque Speed-r/min.....	1500
BMEP-ibf/in ² (kPa).....	102(703)
Friction Power.....	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	20(15)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 800 r/min-ib ft (N m).....	328(445)

Engine

Speed r/min	Power bhp(kW)	Torque ib ft(N m)	BSFC lb/bhp hr (g/kW hr)
2800	180(134)	338(458)	.392(238)
2400	170(127)	372(504)	.366(223)
2100	157(117)	393(533)	.354(215)
1800	139(104)	406(550)	.350(213)
1500	118 (88)	412(559)	.353(215)
1200	93 (69)	405(549)	.363(221)

NOTE: Performance shown is with Diesel No. 1 Fuel.

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-24

Date: 10-03-84

Rev./Date:

Sht. 2 of 2



ENGINE PERFORMANCE CURVE

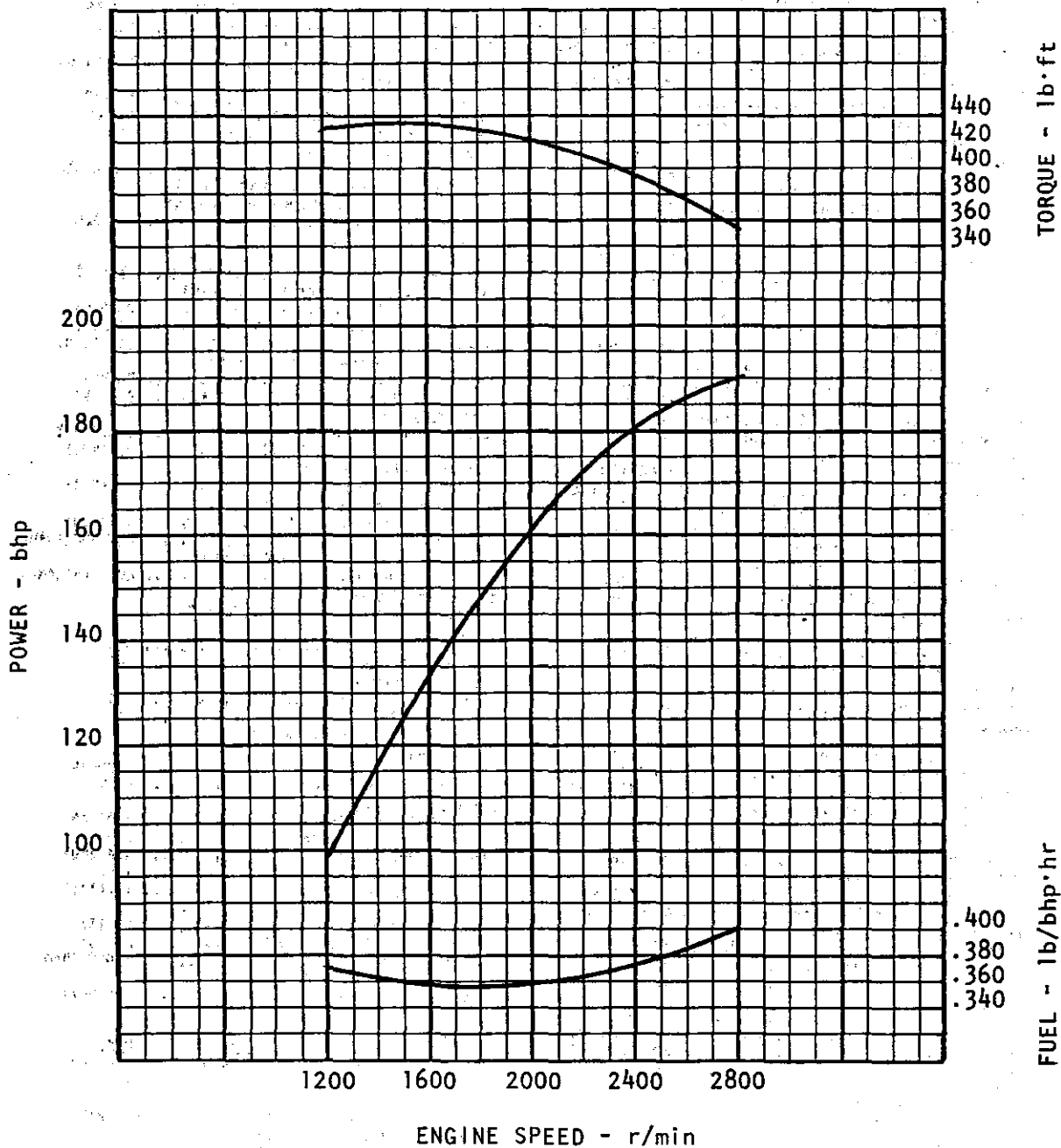
RATING: GROSS POWER - BASIC ENGINE

MODEL: V8-8.2T

APPLICATION: AUTOMOTIVE-COACH
DIESEL FUEL NO. 2

190 bhp @ 2800 r/min
434 lb·ft @ 1500 r/min

CERTIFICATION: FEDERAL 1985



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)

EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

S. L. Kuntz

STAFF ENGINEER

CURVE NO.

E4-4087-31-25

DATE: 10-1-84

REV./DATE:

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7340
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	17.4:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4H60/47.80-B.C.
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	76.0(34.5)
Fuel Consumption-gal/hr(L/hr).....	10.9(41.3)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	567(257)
Total Fuel Flow-gal/hr(L/hr).....	81.2(307)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	345
Smoke	
Rated Speed - Bosch Number.....	1.6
Peak Torque Speed - Bosch Number.....	3.7
Noise - dB(A) @ 1m.....	98.6
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	5260(93)
Engine Radiated Heat-Btu/min(kW).....	1400(24.6)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boli-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-In H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	330(15.0)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	24(81)
Recommended Intake Pipe Dia.-in(mm).....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1360(38.5)
Exhaust Temperature-°F(°C).....	920(493)
Maximum Allowable Back	
Pressure-In Hg(kPa).....	2.8(9.3)
Recommended Exhaust Pipe Dia.	
Single-In(mm).....	4.0(102)
Dual-In(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back	
Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	190(142)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	434(588)
Peak Torque Speed-r/min.....	1500
BMEP-lbf/in ² (kPa).....	107(738)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	20(15)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 800 r/min-lb ft (N m).....	374(507)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	190(142)	356(483)	400(243)
2400	180(134)	393(533)	373(227)
2100	166(124)	415(563)	361(219)
1800	147(110)	429(582)	357(217)
1500	124 (92)	434(588)	360(219)
1200	98 (73)	428(580)	370(225)

Note: Performance shown is with Diesel No. 2 fuel.

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-25
Date: 10-01-84
Rev./Date:
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

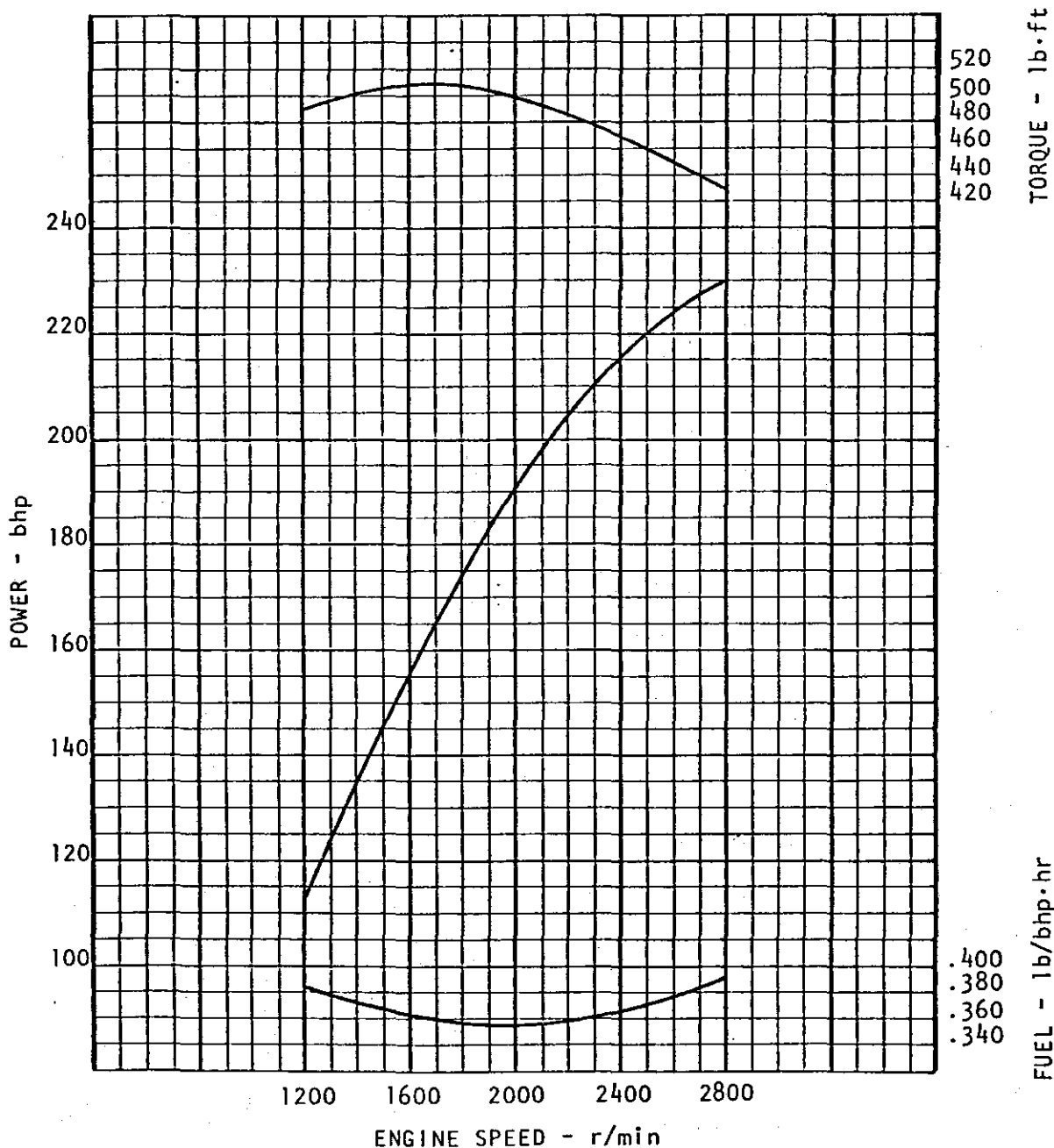
APPLICATION: AUTOMOTIVE

CERTIFICATION: FEDERAL 1985

MODEL: V8-8.2T

230 bhp @ 2800 r/min

510 lb-ft @ 1700 r/min



AIR INTAKE RESTRICTION - MINIMUM
EXHAUST BACK PRESSURE - MINIMUM

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.816 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW-hr = lb/bhp-hr x 0.608
TORQUE: N-m = lb-ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

S. L. Kaultham

STAFF ENGINEER

CURVE NO.

E4-4087-31-23

DATE: 6-20-84

REV./DATE: 2/4-8-85

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7336
Number of Cylinders.....	8
Bore and Stroke-In(mm).....	4.25x4.41(108x112)
Displacement-In ³ (L).....	500(8.2)
Compression Ratio.....	16.0:1
Piston Speed-ft/min(m/min).....	2060(627)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	3050
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-In H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-In(mm).....	35.0(890)
Width-In(mm).....	32.3(820)
Height-In(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-In(mm).....	12.0(305)
Above Crankshaft (y axis)-In(mm).....	6.4(163)
Right of Crankshaft (z axis)-In(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m)....	600(814)

Fuel System

Fuel Injector/Timing.....	4875/43.80-T.D.C.
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	90(40.8)
Fuel Consumption-gal/hr(L/hr).....	12.9(48.8)
Fuel Split Rate-lb/hr(kg/hr).....	491(223)
Fuel Split Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	581(263)
Total Fuel Flow-gal/hr(L/hr).....	83.2(315)
Maximum Allowable Fuel Pump Suction	
Clean System-In Hg(kPa).....	6(20)
Dirty System-In Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	19(72)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-In(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	342
HC-gm/hr.....	21
NO _x -gm/hr.....	1390
SO ₂ -gm/hr.....	409
Smoke	
Rated Speed - Bosch Number.....	1.4
Peak Torque Speed - Bosch Number.....	2.5
Noise - dB(A) @ 1m.....	98.8
Certification Approval.....	FEDERAL 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	6450(113)
Engine Radiated Heat-Btu/min(kW).....	1650(29)
Coolant Flow-gal/min(L/min).....	69(261)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-In Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure, (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	20(138)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	170(77)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	112(44)
Maximum Air to Water Diff.-°F(°C).....	100(56)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C)...	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-In H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-Ig H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	565(16.0)
Engine Air Box/Manifold Pressure-In Hg(kPa).....	29(98)
Recommended Intake Pipe Dia.-In(mm)....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1545(43.7)
Exhaust Temperature-°F(°C).....	1030(554)
Maximum Allowable Back Pressure-In Hg(kPa).....	2.8(9.3)
Recommended Exhaust Pipe Dia.	
Single-In(mm).....	4.0(102)
Dual-In(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-In Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	230(172)
Full Load Speed-r/min.....	2800
Peak Torque-lb ft(N m).....	510(691)
Peak Torque Speed-r/min.....	1700
BMEP-lbf/in ² (kPa).....	130(896)
Friction Power	
Rated Speed-bhp(kW).....	57(43)
Peak Torque Speed-bhp(kW).....	25(19)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 800 r/min-lb ft (N m).....	440(596)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2800	230(172)	431(584)	.391(238)
2600	223(166)	450(610)	.376(229)
2400	215(160)	470(637)	.365(222)
2000	190(142)	499(676)	.354(215)
1700	165(123)	510(691)	.360(219)
1600	155(116)	509(690)	.363(221)
1400	134(100)	503(682)	.372(226)
1200	112 (84)	490(664)	.383(233)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-23
Date: 6-20-84
Rev./Date: 2/4-8-85
Sht. 2 of 2



ENGINE PERFORMANCE CURVE

RATING: GROSS POWER - BASIC ENGINE

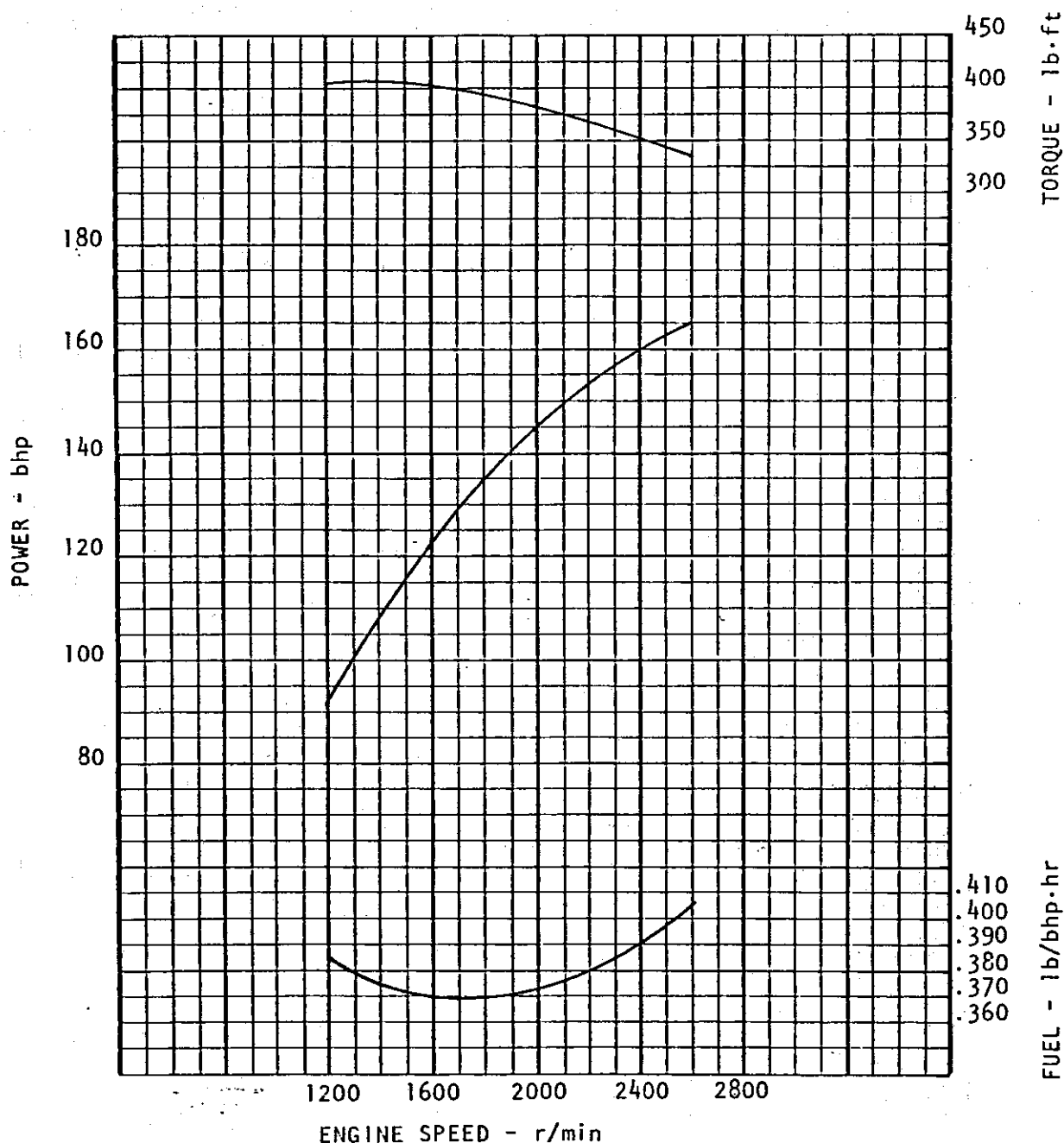
APPLICATION: AUTOMOTIVE

CERTIFICATION: CALIFORNIA 1985

MODEL: V8-8.2T

165 bhp @ 2600 r/min

405 lb·ft @ 1400 r/min

AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/kW·hr = lb/bhp·hr x 0.608
TORQUE: N·m = lb·ft x 1.356
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

S.R. Lounsbury

STAFF ENGINEER

CURVE NO.

E4-4087-31-27

DATE: 10-8-84

REV./DATE: 2/3-25-85

SHT. 1 OF 2

ENGINE SPECIFICATION DATA

General Data

Model.....	4087-7355
Number of Cylinders.....	8
Bore and Stroke-in(mm).....	4.25x4.41(108x112)
Displacement-in ³ (L).....	500(8.2)
Compression Ratio.....	16.9:1
Piston Speed-ft/min(m/min).....	1910(581)
Valves Per Cylinder	
Intake.....	1
Exhaust.....	1
Combustion System.....	DIRECT INJECTION
Engine Type.....	90° VEE-4 CYCLE
Aspiration.....	TURBOCHARGED

Configuration

Turbocharger.....	3LM-403(4.41 in ²)
Charge Air Cooling System.....	NOT APPLICABLE
Blower Type.....	NOT APPLICABLE
Blower Drive Ratio.....	NOT APPLICABLE
Low Idle Speed-r/min.....	700
High Idle Speed-r/min.....	2850
Thrust Bearing Load Limit	
Continuous-lbf(N).....	300(1330)
Intermittent-lbf(N).....	900(4000)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.5(0.37)

Physical Data

Size	
Length-in(mm).....	35.0(890)
Width-in(mm).....	32.3(820)
Height-in(mm).....	32.7(830)
Weight, dry-lb(kg).....	1162(527)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	12.0(305)
Above Crankshaft (y axis)-in(mm).....	6.4(163)
Right of Crankshaft (z axis)-in(mm).....	1.5(38)
Installation Drawing.....	8921960
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft(N m).....	600(814)

Fuel System

Fuel Injector/Timing.....	4K60/44.45-T.D.C.
Fuel Injection Pump/Timing.....	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	67.0(30.4)
Fuel Consumption-gal/hr(L/hr).....	9.6(36.3)
Fuel Spill Rate-lb/hr(kg/hr).....	491(223)
Fuel Spill Rate-gal/hr(L/hr).....	70.3(266)
Total Fuel Flow-lb/hr(kg/hr).....	558(253)
Total Fuel Flow-gal/hr(L/hr).....	79.9(302.5)
Maximum Allowable Fuel Pump Suction	
Clean System-in Hg(kPa).....	6(20)
Dirty System-in Hg(kPa).....	12(41)
Fuel Filter Micron Size	
Primary - Micron.....	30
Secondary - Micron.....	10

Lubrication System

Oil Pressure	
Rated Speed-lbf/in ² (kPa).....	50(345)
Low Idle-lbf/in ² (kPa).....	20(138)
In Pan Oil Temperature-°F(°C).....	200-250(93-121)
Oil Flow-gal/min(L/min).....	18(68)
Oil Pan Capacity	
High-qt(L).....	10.0(9.5)
Low-qt(L).....	8.0(7.6)
Total Engine Oil Capacity with filters-qt(L).....	12.0(11.4)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)
Engine Angularity Limits	
Front up - degrees.....	15
Front down - degrees.....	20
Side tilt - degrees.....	15

Emission Data

CO-gm/hr.....	NOT APPLICABLE
HC-gm/hr.....	NOT APPLICABLE
NO _x -gm/hr.....	NOT APPLICABLE
SO ₂ -gm/hr.....	304
Smoke	
Rated Speed - Bosch Number.....	1.7
Peak Torque Speed - Bosch Number.....	NOT AVAILABLE
Noise - dB(A) @ 1m.....	NOT AVAILABLE
Certification Approval.....	CALIFORNIA 1985

Cooling System

Engine Heat Rejection-Btu/min(kW).....	4620(81)
Engine Radiated Heat-Btu/min(kW).....	1230(22)
Coolant Flow-gal/min(L/min).....	67(250)
Thermostat	
Start to Open-°F(°C).....	180(82)
Fully Open-°F(°C).....	201(94)
Maximum Water Pump Inlet	
Restriction-in Hg(kPa).....	0
Engine Coolant Capacity-qt(L).....	12.5(11.8)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62)
Maximum Coolant Pressure (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	16.5(114)
Maximum Top Tank Temperature-°F(°C).....	210(99)
Minimum Top Tank Temperature-°F(°C).....	165(74)
Minimum Coolant Fill Rate-gal/min(L/min).....	3.0(11.4)
Cooling Index	
Minimum Air to Boil-°F(°C).....	104(40)
Maximum Air to Water Diff.-°F(°C).....	108(60)
Ram Air Flow - Mile/hr(km/hr).....	15(24)
Deaeration-Air Injection	
Capacity-ft ³ /min(m ³ /min).....	0.3(0.0085)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....	4.0(3.8)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F(°C).....	30(16.7)
Air Intake Restriction Maximum Limit	
Dirty Air Cleaner-in H ₂ O(kPa).....	20(5.0)
Clean Air Cleaner-lq H ₂ O(kPa).....	10(2.5)
Engine Air Flow - ft ³ /min(m ³ /min).....	490(13.9)
Engine Air Box/Manifold Pressure-in Hg(kPa).....	19.7(66.5)
Recommended Intake Pipe Dia.-in(mm).....	5.0(127)

Exhaust System

Exhaust Flow-ft ³ /min(m ³ /min).....	1300(36.8)
Exhaust Temperature-°F(°C).....	960(516)
Maximum Allowable Back Pressure-in Hg(kPa).....	2.5(8.4)
Recommended Exhaust Pipe Dia.	
Single-in(mm).....	4.0(102)
Dual-in(mm).....	NOT APPLICABLE
Exhaust Brake Max. Allowable Back Pressure-in Hg(kPa).....	NOT AVAILABLE

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1900
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	950
Maximum Allowable Resistance of Starting Circuit	
12 volt system - ohm.....	0.00075
24 volt system - ohm.....	0.002

Performance Data

Power Output-bhp(kW).....	165(123)
Full Load Speed-r/min.....	2600
Peak Torque-lb ft(N m).....	405(549)
Peak Torque Speed-r/min.....	1400
BMEP-lbf/in ² (kPa).....	100(689)
Friction Power	
Rated Speed-bhp(kW).....	49(37)
Peak Torque Speed-bhp(kW).....	18(13)
Altitude Capability-ft(m).....	13000(3950)
Torque Available at 800 r/min-lb ft (N m).....	360(488)

Engine

Speed r/min	Power bhp(kW)	Torque lb ft(N m)	BSEC lb/bhp hr (g/kW hr)
2600	165(123)	333(452)	.406(247)
2400	160(119)	350(475)	.390(237)
2000	145(108)	381(517)	.372(226)
1600	123 (92)	404(548)	.369(224)
1400	108 (61)	405(549)	.375(228)
1200	92 (69)	403(546)	.385(234)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-4087-31-27
Date: 10-08-84
Rev./Date: 2/3-25-85
Sht. 2 of 2

DIESEL ELECTRIC PRIME POWER

INDEX

<u>ENGINE</u>	<u>INJECTOR</u>	<u>HORSEPOWER (KW)</u>			<u>CURVE NUMBER</u>	<u>DATE</u>	<u>SEE NOTE</u>
		<u>1200 RPM</u>	<u>1500 RPM</u>	<u>1800 RPM</u>			
3-53N(4V)	N40		50.5 (37.7)	59 (44)	E4-5035-52-01	10-26-78	
4-53N(4V)	N40		68 (51)	80 (60)	E4-5045-52-01	10-26-78	
2-71N(2V)	N55		49.5 (37)	53.5 (40)	E4-1025-51-01	07-15-77	
3-71N	N60	65.5(48.9)	80 (64)	92 (69)	E4-1035-52-04	05-10-85	(R)
4-71N	N60	89 (66)	110 (82)	128 (95)	E4-1045-52-04	05-17-85	(R)
6-71N	N60	133 (100)	165 (123)	192 (143)	E4-1065-52-03	05-17-85	(R)
4-71T	N70		140 (104)	160 (119)	E4-1045-32-06	10-28-80	
6-71T	N70		210 (157)	238 (178)	E4-1065-32-02	10-28-80	
6V-71N	N55		156 (116)	180 (134)	E4-7065-52-01	07-15-77	
8V-71N	N60	178 (133)	220 (164)	255 (191)	E4-7085-52-05	05-20-85	(A)
8V-71N	7N65		231 (172)	274 (204)	E4-7085-52-06	05-20-85	(A)
12V-71N	N60	268 (200)	330 (247)	382 (285)	E4-7125-52-02	05-20-85	(R)
12V-71N	N65		338 (252)		E4-7125-52-04	10-31-80	
16V-71N	N60	357 (266)	440 (328)	509 (380)	E4-7165-52-04	05-21-85	(R)
8V-71T	N70		274 (204)	310 (231)	E4-7085-32-02	10-28-80	
12V-71T	N70		420 (313)	471 (351)	E4-7125-32-02	10-28-80	
16V-71T	N70		548 (409)	620 (463)	E4-7165-32-02	10-28-80	
16V-92N	9280		540 (403)	626 (467)	E4-8165-12-01	11-06-79	
8V-92T	9215		355 (265)	411 (307)	E4-8085-32-02	03-07-84	
12V-92T	9215		548 (409)	633 (472)	E4-8125-32-02	03-07-84	
16V-92T	9215		710 (530)	821 (612)	E4-8165-32-03	03-07-84	
6V-92TA	9215		282 (210)	317 (236)	E4-8065-32-03	02-16-84	
12V-149N	130		640 (477)	730 (545)	E4-9125-12-08	05-04-78	
16V-149N	130		845 (630)	975 (727)	E4-9165-12-08	05-04-78	
12V-149T	145		845 (680)	980 (731)	E4-9125-32-39	08-24-84	
16V-149T	145		1120 (836)	1315 (981)	E4-9165-32-39	08-24-84	
8V-149TI#	190		735 (548)	860 (642)	E4-9085-32-02	02-08-85	(R)
12V-149TI	190		1080 (809)	1290 (962)	E4-9125-32-38	08-24-84	
16V-149TI#	190		1470 (1097)	1730 (1291)	E4-9165-32-38	02-13-85	(R)

NOTE - (A) CURVE ADDED

(R) REVISED

PRELIMINARY

CURVE/S REMOVED - E4-7085-52-03

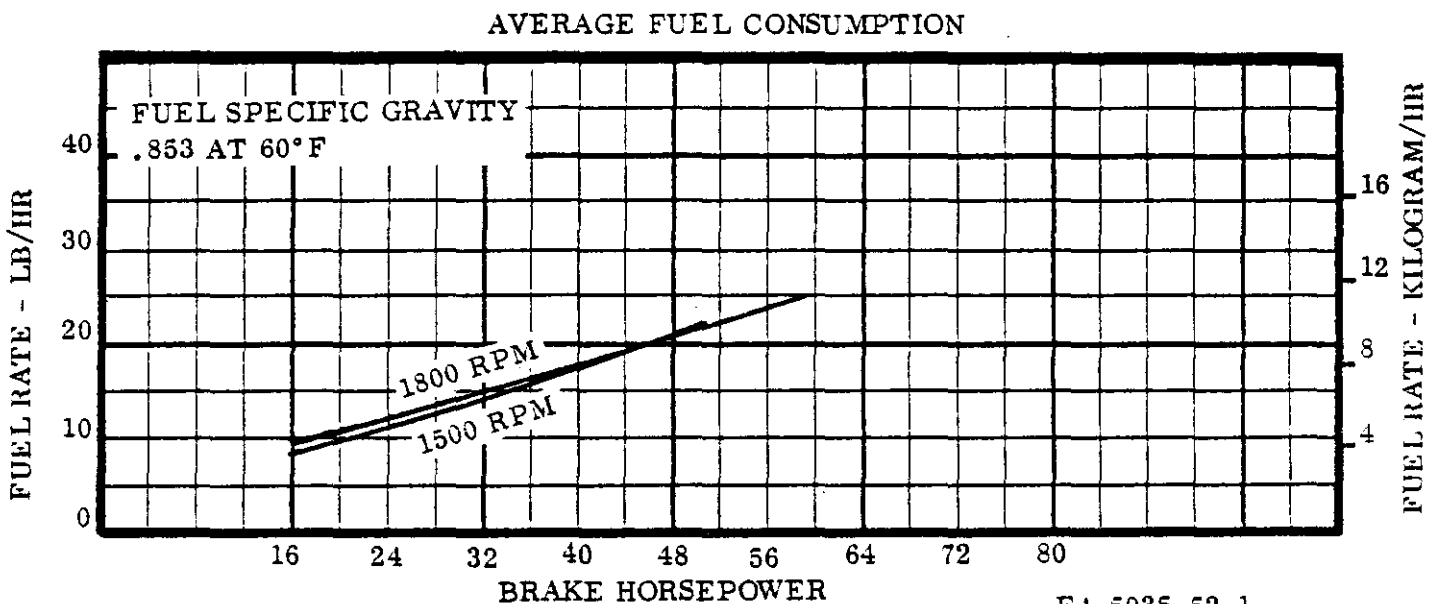
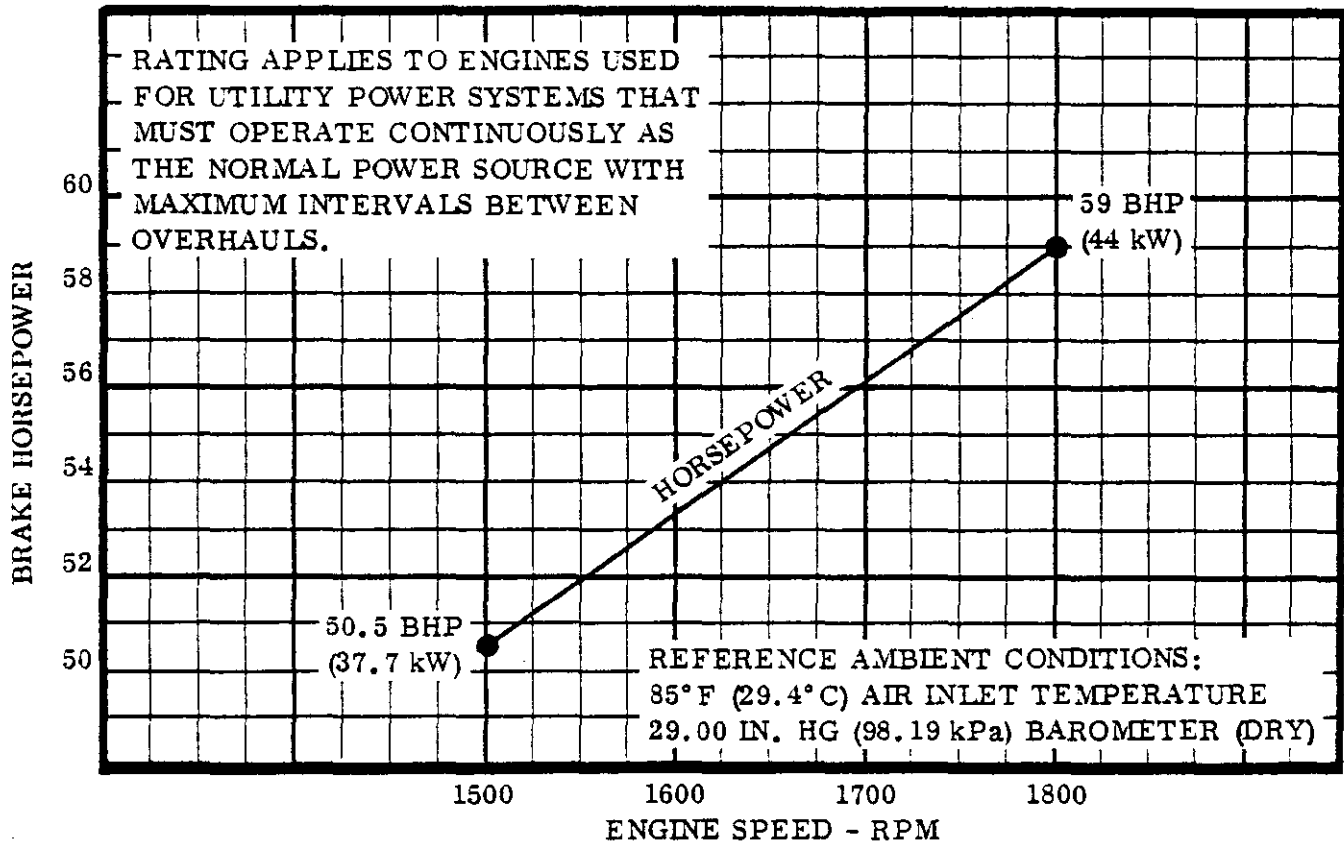
E4M-0000-00-23

Rev. 10-01-85



Detroit Diesel Allison
Division of General Motors Corporation

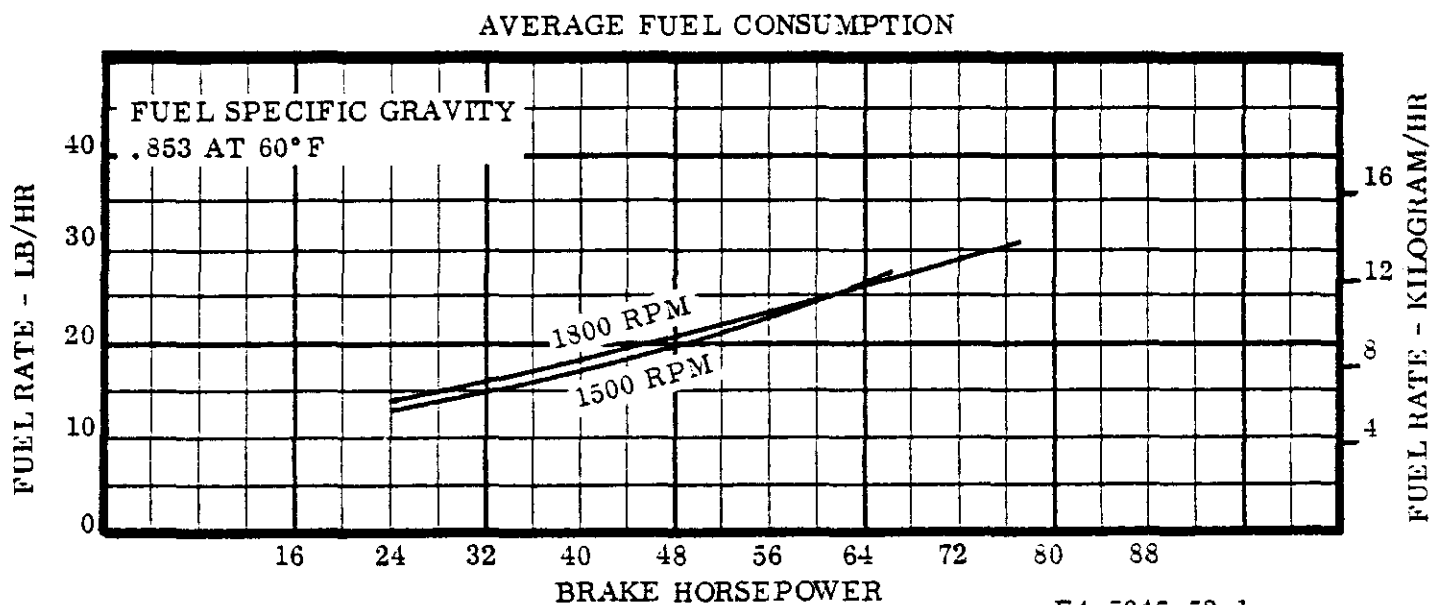
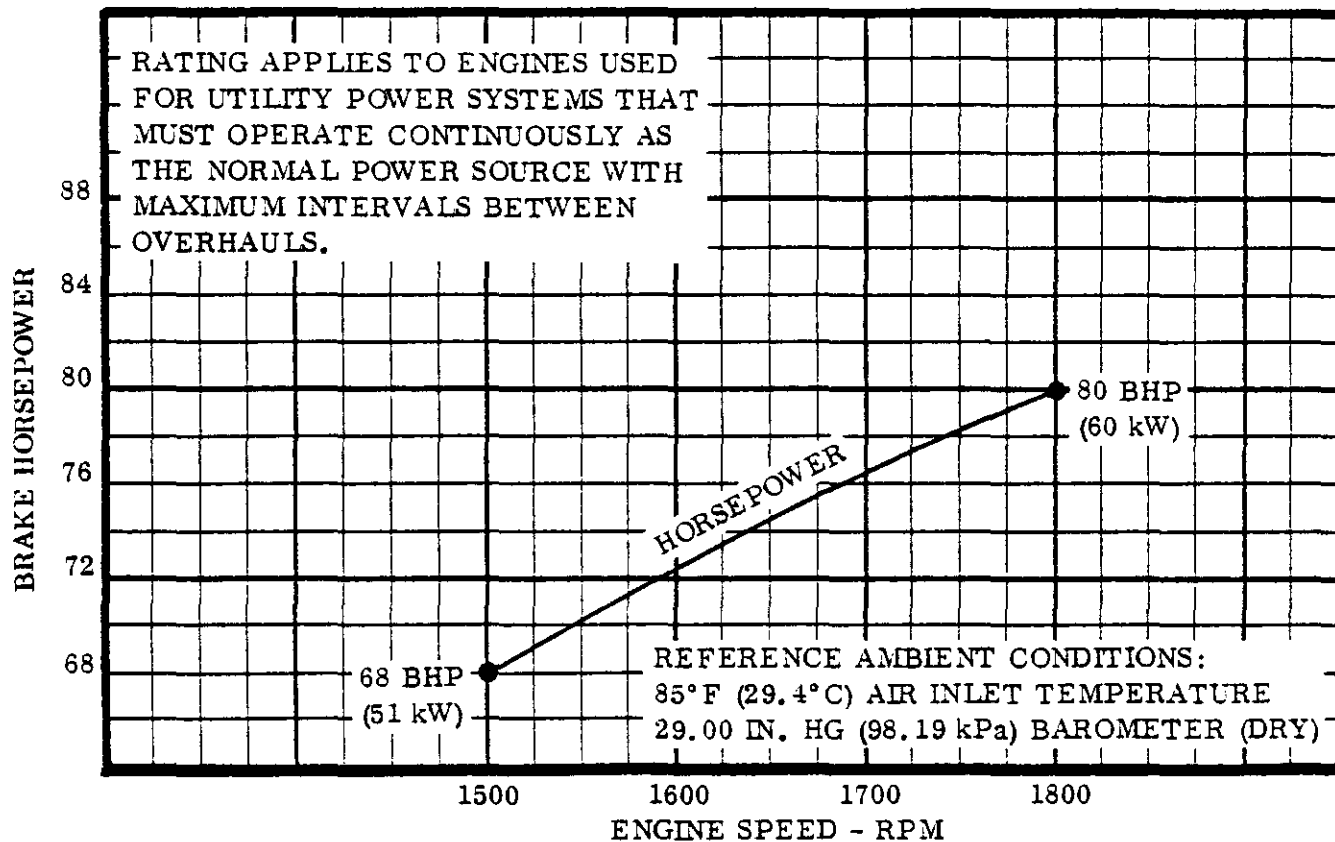
3-53N(4V) ENGINE
DIESEL ELECTRIC PRIME POWER
(WITHOUT FAN)
N40 INJECTORS





Detroit Diesel Allison
Division of General Motors Corporation

4-53N(4V) ENGINE
DIESEL ELECTRIC PRIME POWER
(WITHOUT FAN)
N40 INJECTORS



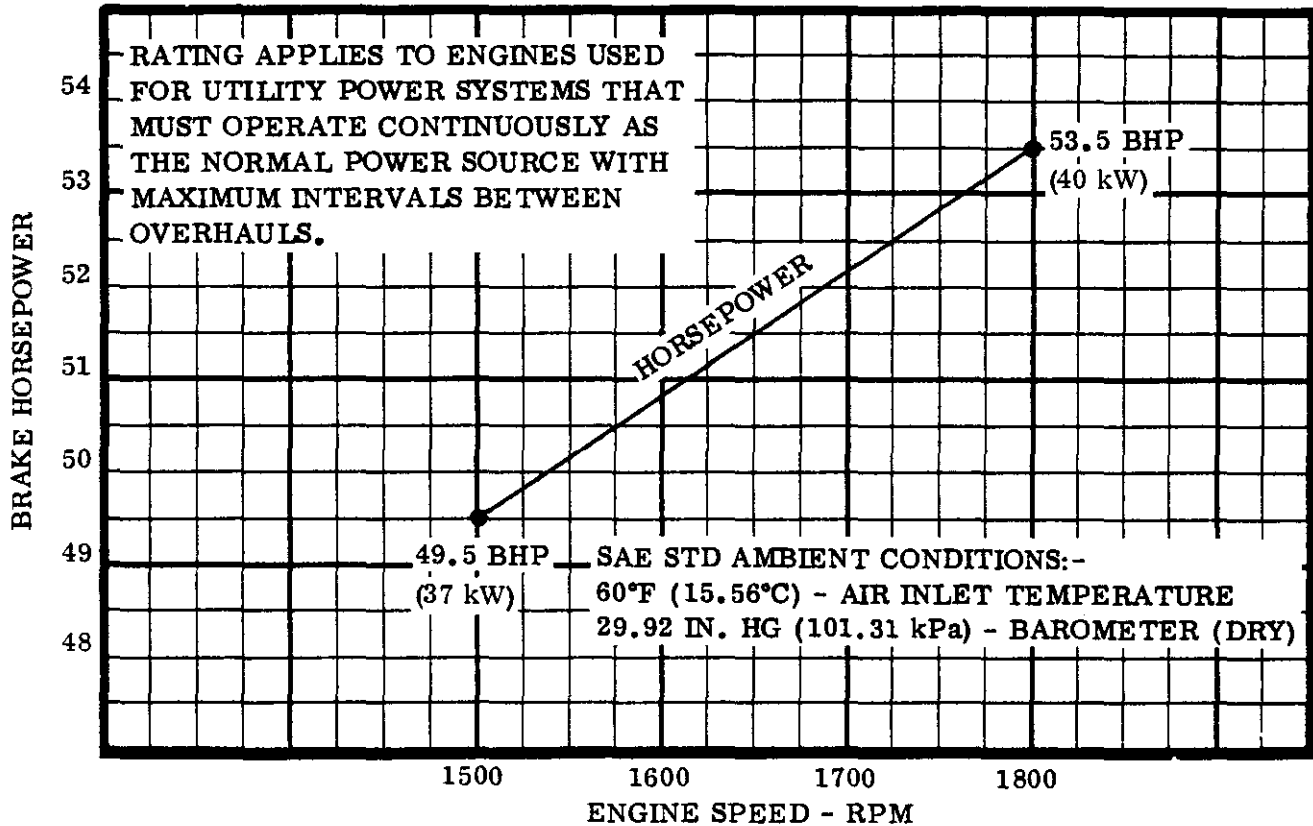
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10-26-78

ENGINEERING-TECHNICAL DATA DEPT.

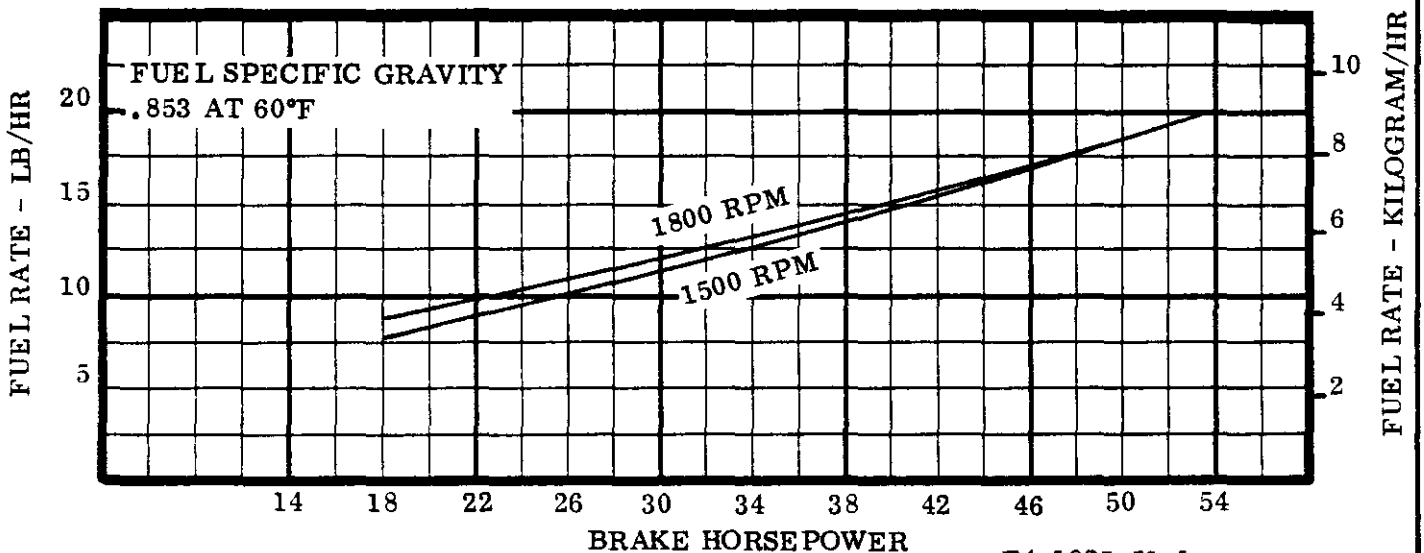


Detroit Diesel Allison
Division of General Motors Corporation

2-71N(2V) ENGINE
DIESEL ELECTRIC PRIME POWER
(WITHOUT FAN)
N55 INJECTORS



AVERAGE FUEL CONSUMPTION



DE 4033

ENGINEERING-TECHNICAL DATA DEPT.

E4-1025-51-1
Rev. 7-15-77



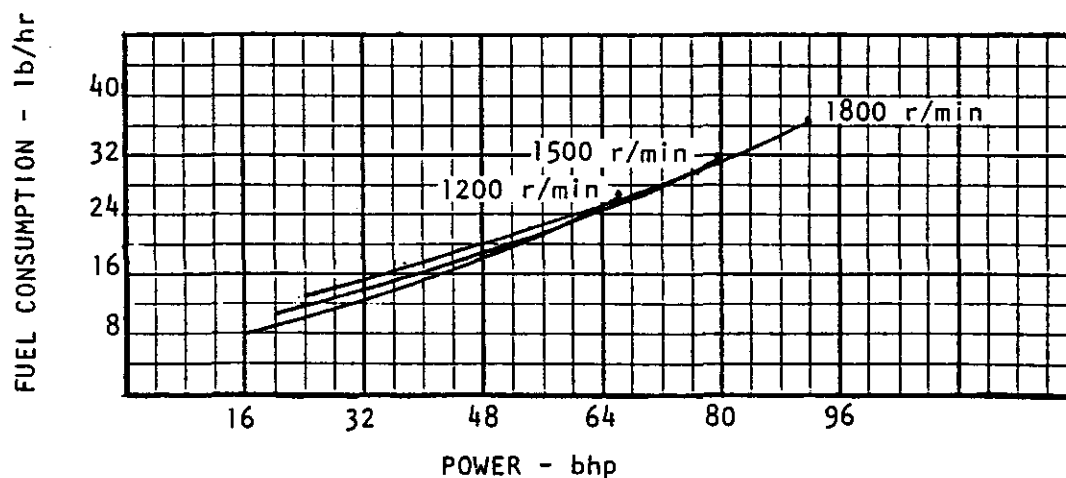
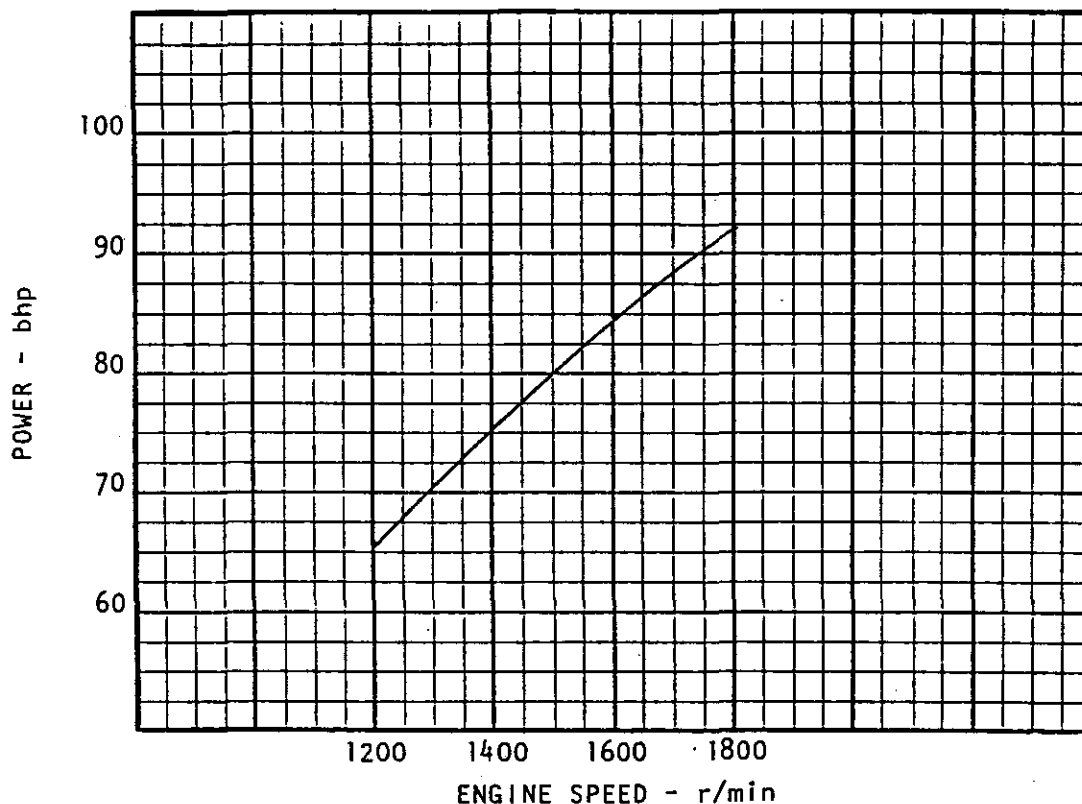
ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

MODEL: 3-71N

APPLICATION: GENERATOR
PRIME POWER

92 bhp @ 1800 r/min
80 bhp @ 1500 r/min
65.5 bhp @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/hr = lb/hr x 0.454
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO
CHANGE WITHOUT NOTICE.

CERTIFIED BY:

[Signature]
STAFF ENGINEER

CURVE NO.

E4-1035-52-4

DATE: 10-28-80

REV./DATE: 1/5-10-85

SHT. 1 OF 4

ENGINE SPECIFICATION DATA

General Engine Description

Model.....	1035-7005
Number of Cylinders.....	3
Bore and Stroke-in(mm).....	4.25x5.00(108x127)
Displacement-in ³ (L).....	213(3.49)
Compression Ratio.....	18.7:1
Valves per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	INLINE - 2 CYCLE
Aspiration.....	NATURAL

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NONE
Blower Type.....	STANDARD
Blower Drive Ratio.....	2.00:1
Thrust Bearing Load Limit	
Continuous-lbf(N).....	400(1780)
Intermittent-lbf(N).....	1200(5340)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.9(0.47)

Physical Data

Dimensions and Weight	
Length-in(mm).....	38.3(973)
Width-in(mm).....	29.4(746)
Height-in(mm).....	46.4(1178)
Weight,dry-lb(kg).....	1525(692)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	6.36(162)
Above Crankshaft (y axis)-in(mm).....	7.2(183)
Right of Crankshaft (z axis)-in(mm).....	0.47(11.9)
Installation Drawing.....	5147465
Maximum Allowable Static Bending Moment	
at Rear Face of FW Hsg-lbf ft(N m).....	0

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	625
Max. Allowable Resistance of Starting Circuit	
12 Volt System - ohm.....	0.0012
24 Volt System - ohm.....	0.002

All values at rated speed and power and with
standard engine hardware unless otherwise noted.

Curve No. E4-1035-52-4
Date: 10-28-80
Rev./Date: 1/5-10-85
Sht. 2 of 4



ENGINE PERFORMANCE CURVE

RATING: RATED BRAKE POWER

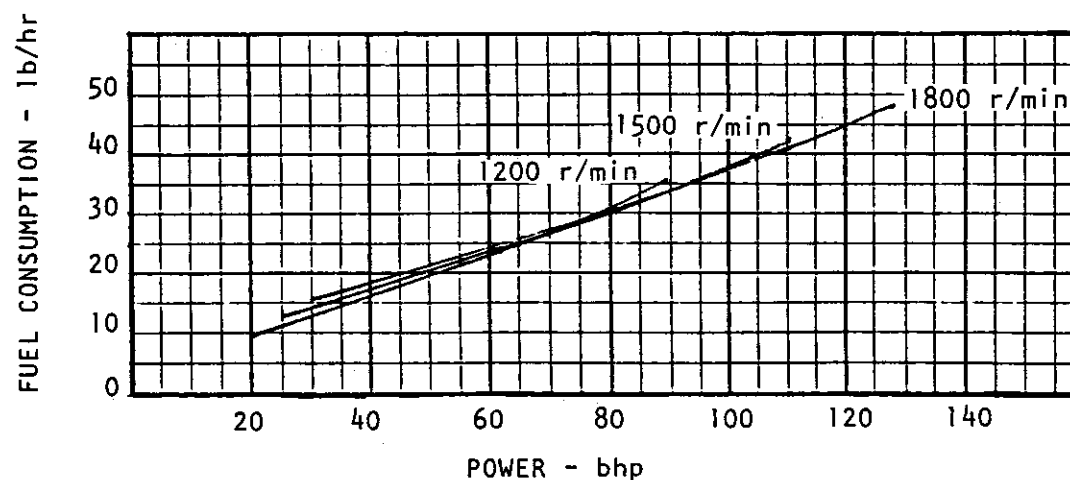
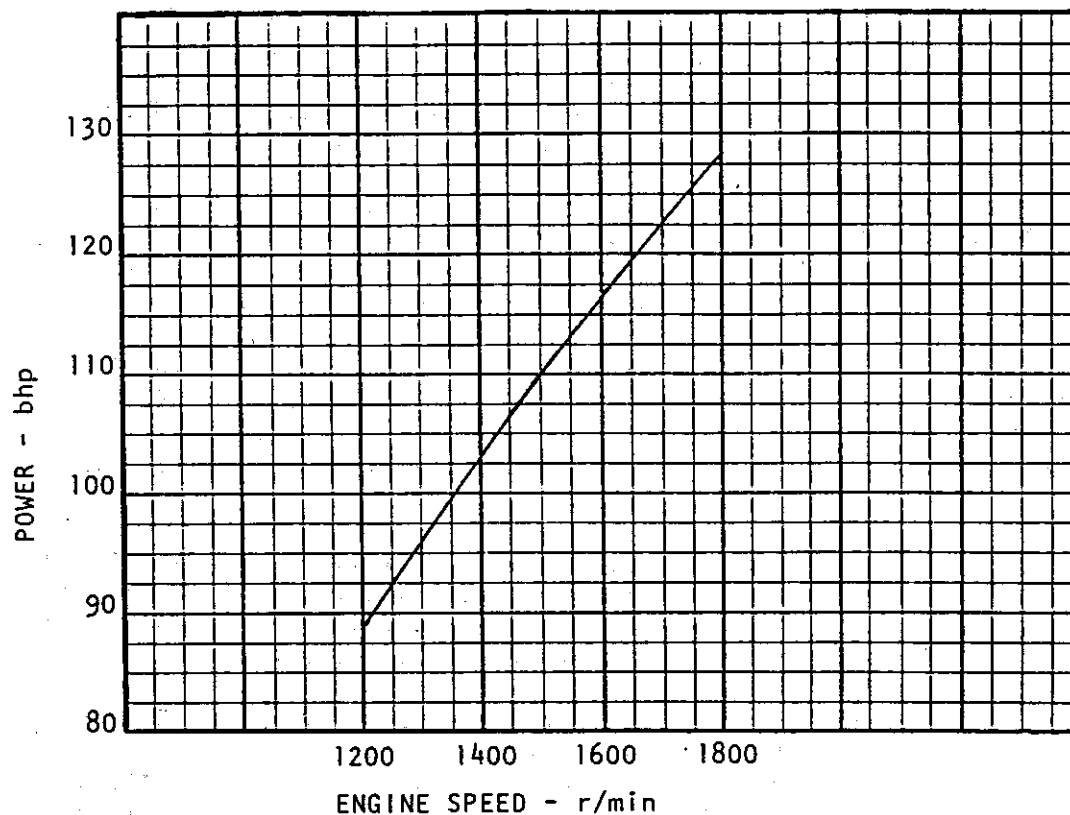
APPLICATION: GENERATOR
PRIME POWER

MODEL: 4-71N

128 bhp @ 1800 r/min

110 bhp @ 1500 r/min

89 bhp @ 1200 r/min



AIR INTAKE RESTRICTION - in. H₂O (kPa) . . . 10 (2.5)
EXHAUST BACK PRESSURE - in. H₂O (kPa) . . . 15 (3.7)

- POWER OUTPUT GUARANTEED WITHIN 5% AT SAE J1349 CONDITIONS:
77°F (25°C) AIR INLET TEMPERATURE; 29.31 in. Hg (99kPa) DRY BAROMETER;
100°F (39°C) FUEL INLET TEMPERATURE (.853 SPECIFIC GRAVITY AT 60°F).
- CONVERSION FACTORS: POWER: kW = bhp x 0.746
FUEL: kg/hr = lb/hr x 0.454
- VALUES DERIVED ARE FROM CURRENTLY AVAILABLE DATA AND SUBJECT TO CHANGE WITHOUT NOTICE.

CERTIFIED BY:

STAFF ENGINEER

CURVE NO.

E4-1045-52-4

DATE: 10-28-80

REV./DATE: 1/5-17-85

SHT. 1 OF 4

ENGINE SPECIFICATION DATA

General Engine Description

Model.....	1045-7005
Number of Cylinders.....	4
Bore and Stroke-in(mm).....	4.25x5.00(108x127)
Displacement-in ³ (L).....	284(4.66)
Compression Ratio.....	18.7:1
Valves per Cylinder	
Intake.....	NOT APPLICABLE
Exhaust.....	4
Combustion System.....	DIRECT INJECTION
Engine Type.....	INLINE - 2 CYCLE
Aspiration.....	NATURAL

Configuration

Turbocharger.....	NOT APPLICABLE
Charge Air Cooling System.....	NONE
Blower Type.....	STANDARD
Blower Drive Ratio.....	2.00:1
Thrust Bearing Load Limit	
Continuous-lbf(N).....	400(1780)
Intermittent-lbf(N).....	1200(5340)
Engine Crankcase Vent System.....	OPEN
Maximum Pressure-in H ₂ O(kPa).....	1.9(0.47)

Physical Data

Dimensions and Weight	
Length-in(mm).....	44.0(1118)
Width-in(mm).....	29.4(746)
Height-in(mm).....	46.4(1178)
Weight,dry-lb(kg).....	1780(807)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in(mm).....	10.14(258)
Above Crankshaft (y axis)-in(mm).....	7.25(184)
Right of Crankshaft (z axis)-in(mm).....	0.47(11.9)
Installation Drawing.....	5147357
Maximum Allowable Static Bending Moment	
at Rear Face of FW Hsg-lbf ft(N m).....	0

Electrical System

Recommended Battery Capacity(CCA @ 0°F)	
12 Volt System	
Above 32°F(0°C)-A.....	950
Below 32°F(0°C)-A.....	1250
24 Volt System	
Above 32°F(0°C)-A.....	475
Below 32°F(0°C)-A.....	625
Max. Allowable Resistance of Starting Circuit	
12 Volt System - ohm.....	0.0012
24 Volt System - ohm.....	0.002

All values at rated speed and power and with
standard engine hardware unless otherwise noted.

Curve No. E4-1045-52-4
Date: 10-28-80
Rev./Date: 1/5-17-85
Sht. 2 of 4

ENGINE SPECIFICATION DATA

	1800	1500	1200
Fuel System			
Fuel Injector/Timing.....	N60/1.460	N60/1.460	N60/1.460
Fuel Injection Pump/Timing.....	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
Fuel Consumption-lb/hr(kg/hr).....	48.4(22.0)	42.3(19.2)	35.4(16.1)
Fuel Consumption-gal/hr(L/hr).....	6.9(26.2)	6.1(22.9)	5.1(19.2)
Fuel Spill Rate-lb/hr(kg/hr).....	496.3(225.1)	468.3(212.4)	384.5(174.4)
Fuel Spill Rate-gal/hr(L/hr).....	71(268.8)	67(253.6)	55(208.2)
Total Fuel Flow-lb/hr(kg/hr).....	544.7(247.1)	510.6(231.6)	419.9(190.5)
Total Fuel Flow-gal/hr(L/hr).....	77.9(295.0)	73.0(276.5)	60.1(227.4)
Maximum Allowable Fuel Pump Suction			
Clean System-In Hg(kPa).....	6(20)	6(20)	6(20)
Dirty System-In Hg(kPa).....	12(41)	12(41)	12(41)
Fuel Filter Micron Size - Primary.....	30	30	30
	Secondary.... 10	10	10
Lubrication System			
Oil Pressure - normal-lbf/in ² (kPa).....	54(372)	50(345)	45(310)
In Pan Oil Temperature-°F(°C).....	200-225(93-107)	200-225(93-107)	200-225(93-107)
Oil Flow-gal/min(L/min).....	20(76)	17(64)	13(49)
Oil Pan Capacity - High-qt(L).....	20(18.9)	20(18.9)	20(18.9)
	Low-qt(L).....	15(14.2)	15(14.2)
Total Engine Oil Capacity with			
Filters-qt(L).....	22(20.8)	22(20.8)	22(20.8)
Bypass Oil Filter Orifice-in(mm).....	0.062(1.57)	0.062(1.57)	0.062(1.57)
Engine Angularity Limits			
Front up - degrees.....	16	16	16
Front Down - degrees.....	16	16	16
Side tilt - degrees.....	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Cooling System			
Engine Heat Rejection-Btu/min(kW).....	4020(70.7)	3520(62.0)	3200(56.3)
Engine Radiated Heat-Btu/min(kW).....	790(13.8)	730(12.9)	680(11.9)
Coolant Flow-gal/min(L/min).....	47(178)	40(151)	32(121)
Thermostat - Start to Open-°F(°C).....	173(78)	173(78)	173(78)
	Fully Open-°F(°C).....	186(86)	186(86)
Maximum Water Pump Inlet			
Restriction-In Hg(kPa).....	3.0(10.2)	2.0(6.7)	1.0(3.4)
Engine Coolant Capacity-qt(L).....	10.0(9.5)	10.0(9.5)	10.0(9.5)
Minimum Pressure Cap-lbf/in ² (kPa).....	9.0(62.1)	9.0(62.1)	9.0(62.1)
Maximum Coolant Pressure ₂ (Exclusive of Pressure Cap)-lbf/in ² (kPa).....	20(138)	20(138)	20(138)
Maximum Allowable Cooling System			
Static Head W/Vented Cap-ft H ₂ O(kPa)..<	50(149)	50(149)	50(149)
Maximum Top Tank Temperature-°F(°C)....	210(99)	210(99)	210(99)
Minimum Top Tank Temperature-°F(°C)....	163(73)	163(73)	163(73)
Min. Coolant Fill Rate-gal/min(L/min)..<	3.0(11.4)	3.0(11.4)	3.0(11.4)
Cooling Index			
Minimum Air to Boil-°F(°C).....	117(47.2)	117(47.2)	117(47.2)
Maximum Air to Water Diff.-°F(°C).....	95(52.8)	95(52.8)	95(52.8)
Deaeration - Air Injection			
Capacity-ft ³ /min(m ³ /min).....	0.4(0.010)	0.4(0.010)	0.4(0.010)
Drawdown - Minimum Requirement (or 10% of Cooling System Capacity-Whichever Is Larger)-qt(L).....			
	4.0(3.8)	4.0(3.8)	4.0(3.8)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

Curve No. E4-1045-52-4
Date: 10-28-80
Rev./Date: 1/5-17-85
Sht. 3 of 4