ENGINE DATA SHEET

Construction Engine Model: KTA-1150-C **Date: DEC. 1986** **Data Sheet No.: 3243331**
Performance Curve: KC-1775
CPL: 0447 **Installation Drawing: 3236336**

GENERAL ENGINE DATA

Maximum Output (500 ft. & 85°F [150m & 29°C])–BHP (kW)	600 (448)
Speed @ Maximum Output–RPM	2100
Type	4 Cycle; In-line; 6 Cylinder
Aspiration	Turbocharged and Aftercooled
Bore–in. (mm) × Stroke–in. (mm)	6.25 (159 × 6.25 (159)
Displacement–in.^{3} (litre)	1150(18.9)
Compression Ratio	14.5: 1
Dry Weight (with standard accessories)–lb. (kg.)	3725 (1 691)
Wet Weight (with standard accessories)–lb. (kg)	3880 (1 762)
C.G. Distance from Front Face of Block–in. (mm)	22 (359)
C.G. Distance above Crank Centerline–in. (mm)	9 (229)
Firing Order	1-5-3-6-2-4

ENGINE MOUNTING

Maximum Allowable Bending Moment at Rear Face of Block–lb.-ft. (N-m)	1000 (1 350)

EXHAUST SYSTEM

Maximum Allowable Back Pressure–in. Hg (mm Hg)	3.0 (75)
Exhaust Pipe Size-Normally Acceptable–in. (mm) dia.	5.0 (125)

AIR INDUCTION SYSTEM

Maximum Allowable Intake Restriction-Clean Element–in.H_2O (mm H_2O)	15 (380)
-Dirty Element-in. H_2O (mm H_2O)	25 (635)
Minimum Allowable Dirt Holding Capacity–g/CFM (g/ litre /s)	25 (53)

COOLING SYSTEM

Coolant Capacity (engine only)–U.S. qt. (litre)	32 (30)
Standard Thermostat–(modulating Range)–°F (°C)	175-195 (80-90)
Maximum Coolant Pressure (exclusive of pressure cap)–PSI (kPa)	35 (240)
Minimum Allowable Pressure Cap–PSI (kPa)	7 (50)
Maximum Allowable Top Tank Temperature–°F (°C)	200 (95)
Minimum Recommended Top Tank Temperature–°F (°C)	160 (70)
Minimum Fill Rate–U.S. GPM (litre/min).	5 (20)
Maximum Initial Fill Time–min.	5
Minimum Coolant Expansion Space–% of System Capacity	5
Maximum Allowable Deaeration Time–min.	25
Drawdown* Must Exceed the Volume Not Filled at Initial Fill	
Minimum Allowable Drawdown* – U.S. qt. (litre)	12 (11)

* Drawdown does not include expansion space. It is suggested that initial design be at least 10% of system capacity.

LUBRICATION SYSTEM

Oil Pressure @ Idle–PSI (kPa)	20 (138) Minimum
@ Rated Speed–PSI (kPa)	50-70 (345-480)
Oil Flow @ Maximum Rated Speed (nominal)–U.S. GPM (litre/min)	40 (150)
Flow Required for By-Pass Filter at No Load Governed Speed– U.S. GPM (litre/min.)	1.5-4.0 (6-15)
By-Pass Filter Size–in.^{3} (litre)	750 (12.3)
By-Pass Filter Capacity–U.S. gal. (litre)	2.9 (11.0)
Oil Capacity of Standard Pan (High-Low)–U.S. gal. (litre)	10.0-8.5 (38-32)
Total System Capacity of Standard Engine (including by-pass filter)– U.S. gal. (litre)	15.5 (59)
Angularity of Standard Pan–Front Down	30°
• Front Up	30°
Side to Side	30°

FUEL SYSTEM

Maximum Fuel Consumption @ Rated HP & Speed–lb./hr. (kg/h)	226 (103)
–U.S. GPH (litre/h)	32.2 (112)
Maximum Fuel Flow to Pump @ Rated HP & Speed–lb./hr. (kg/h)	660 (300)
–U.S. GPH (litre/h)	93.3 (353)
Maximum Allowable Restriction to Pump–Clean Filter–in. Hg (mm Hg)	4.0 (100)
–Dirty Filter–in. Hg (mm Hg)	8.0 (200)
Maximum Allowable Return Line Restriction–in. Hg (mm Hg)	4.0 (100)

ELECTRICAL SYSTEM

Minimum Recommended Battery Capacity	0°F CCA
Cold Soak @ 32°F (0°C) and Above – 12 volt Starter	
–24 volt Starter	640
Cold Soak @ 0°F to 32°F (-18°C to 0°C)–12 volt Starter	
–24 volt Starter	900
Maximum Allowable Resistance of Starting Circuit–	
With 12 volt Starter–Ohms	
With 24 volt Starter–Ohms	0.002

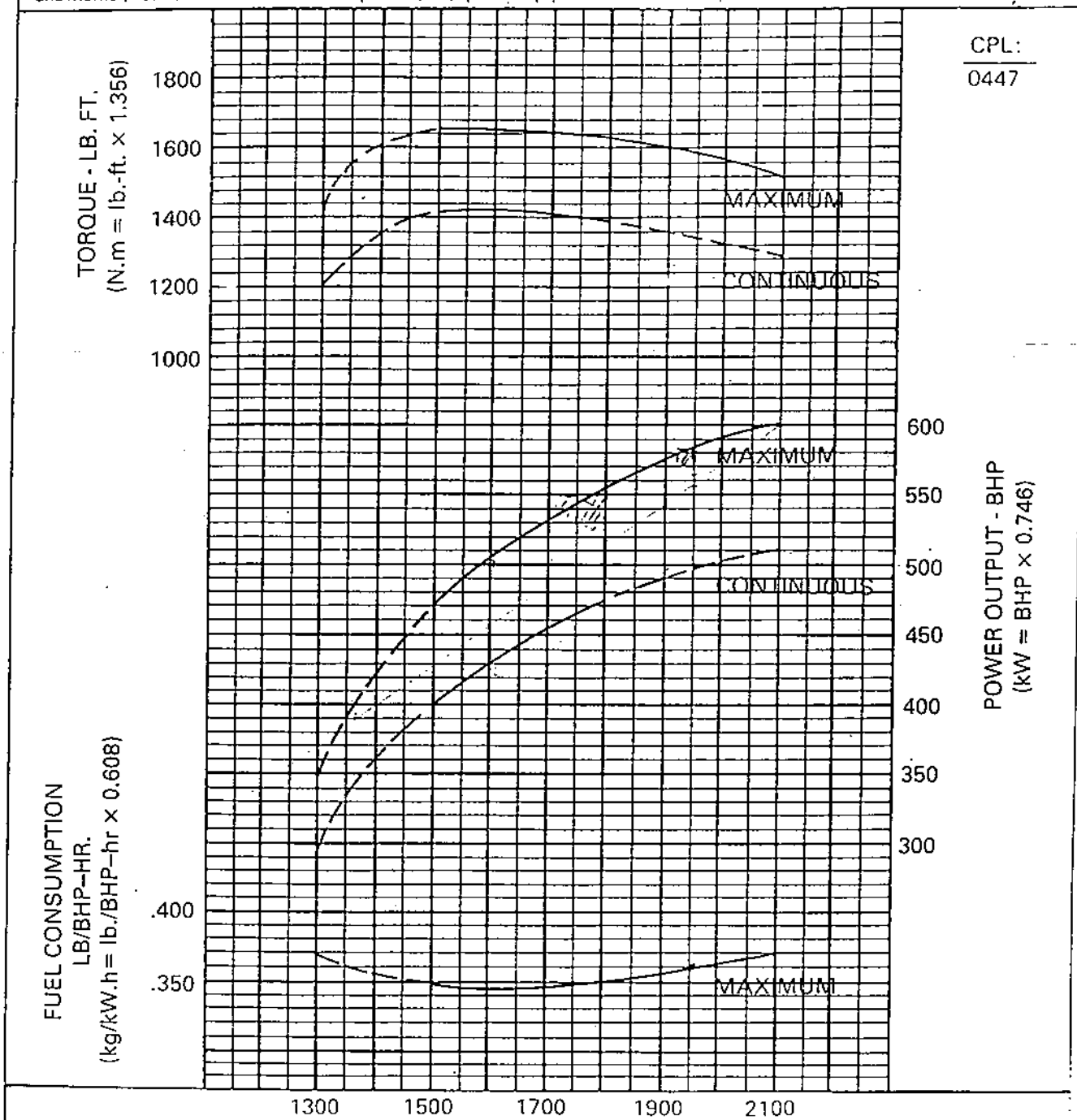
ENGINE PERFORMANCE CURVE	ENGINE MODEL: KTA-1150-C	CURVE NUMBER: KC-1775
	ASPIRATION: TURBOCHARGED & AFTERCOOLED	DATE: DEC 1986 / BY: ENGG

DISPLACEMENT: 1150 in³ (18.9 liters) NO. OF CYLINDERS: 6
BORE: 6.25 in (159 mm) STROKE: 6.25 in (159 mm)

RATING
HP (kw) @ RPM
600 (448) @ 2100

All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air cleaner and muffler, not included are alternator compressor, fan, optional equipment and driven components

CPL: 0447



Curves shown above represent engine performance capabilities at SAE Standard J816c conditions of 500 ft (150 m) altitude (29.30 in Hg (736 mm Hg) dry barometer) 85 F (29 C) air intake temperature and 0.38 in Hg (9.6 mm Hg) water vapor pressure with No. 2 diesel fuel. The engine may be operated without changing the fuel setting up to 8500 ft (2600 m) altitude. For sustained operation at high load factors at higher altitudes, the fuel rate of the engine should be adjusted to limit performance by 4% per 1,000 ft (300 m) above 8500 ft (2600 m) altitude. The engine altitude capability is based upon an inlet air temperature representative of the ambient temperature for that altitude.

CERTIFIED WITHIN 5% See reverse side for application rating guidelines.

Vice President Engineering

ERFORMANCE DATA

All data is based on the engine operating with fuel system, water pump, lubricating pump, air cleaner, and muffler; not included are alternator, compressor, fan, optional equipment and driven components. Data is based on operation under SAE standard J8 16b conditions of 500 feet (150m) altitude (29.00 in. [736mm] Hg dry barometer), 85°F. (29°C) intake air temperature and 0.38 in.(9.6 mm)Hg water vapour pressure, using No.2 diesel or a fuel corresponding to ASTM D2.

All data is subject to change without notice.

Brake Mean Effective Pressure @ Rated Power–PSI (kPa)	197 (1 360)
@ Peak Torque –PSI (kPa)	216 (1 490)
Piston Speed @ 2100 RPM–ft./min. (m/s)	2188 (11.1)
Friction Horsepower @ 2100 RPM (kW)	99 (74)
@ 1500 RPM (kW)	54 (40)
Idle Speed–RPM	625
Maximum No Load Governed Speed–RPM	2450
Maximum Overspeed Capability–RPM	3150
Torque Available at Clutch Engagement (800 RPM)–lb.-ft. (N-m)	800 (1 085)
Minimum Recommended Combined Converter and Hydraulic Stall Speed–RPM	1800
Thrust Bearing Load Limit–Maximum Intermittent–lb. (N)	1500 Est. (6 700)
–Maximum Continuous–lb. (N)	750 Est. (3 350)

Chart Below Reflects Data Based on Following Variables at Conditions of Rated Power:

Coolant Temperature–°F (°C)	185 (85)	Air Intake Restriction–in. H_2O (mm H_2O)	10 (250)
Water Inlet Pressure–PSI (kPa)	7 (50)	Air Intake Temperature–°F (°C)	85 (29)
Block Pressure–PSI (kPa)	25 (170)	Exhaust Restriction–in. Hg (mm Hg)	2.0 (50)

Engine Ratings	Output BHP (kW)	Speed RPM	Torque Lb-ft (N-m)	Air Flow CFM (litre/s)	Exhaust Gas CFM (litre/s)	Exhaust Gas Temp °F (°C)	Water Flow U.S. GPM (litre/s)	Heat Reje. BTU/Min. (kW)
Maximum Full Power	600 (448)	2100	1500 (2035)	1475 (696)	3750 (1770)	920 (495)	220 (13.9)	15,140 (266)
Peak Torque	471 (351)	1500	1650 (2237)	906 (428)	2480 (1171)	1030 (554)	160 (10)	10,130 (178)
Continuous Full Power	472 (352)	1800	1377 (1867)	1100 (519)	2800 (1322)	925 (496)	190 (12)	11,100 (195)
Peak Torque	400 (298)	1500	1400 (1898)	820 (389)	2200 (1038)	1000 (538)	160 (10)	8500 (149)

RATING GUIDELINES

1. LOAD RATINGS

1.1. Maximum Rating may be used for intermittent load applications (full throttle operation is cyclically interrupted) where the average load factor does not exceed the continuous rating, and where full throttle operation does not exceed 60 minutes without interruption.

1.2. Continuous Rating may be used for constant load applications requiring uninterrupted service at full throttle for extended periods of time.

2. SPEED RATINGS

2.1. If the application qualifies for the continuous load rating the governor cut-in point shall be within the limits of the solid line portion of the continuous curve.

2.2. If the application qualifies for the maximum load rating the governor cut in point shall be set within the limits of the solid line portion of the maximum curve.

3. DEFINITIONS

3.1. Load (Speed) factor is defined as the arithmetic mean of the Load (Speed) profile of the normal duty cycle, not including prolonged periods of idle operation.