Application and Engineering Data

Basic Technical Data

Manufacturer	Perkins
Model	1104D-E44TG1
Number of cylinders	4
Cylinder arrangement	Vertical in-line
Cycle	Four stroke
Induction system	Turbocharged
Compression ratio	16.2:1
Bore	4.13 in (105 mm)
Stroke	5.0 in (127 mm)
Cubic capacity	268.5 cu in (4.4L)
Direction of rotation	Counter clockwise (from flywheel)
Firing order	1,3,4,2
Governor type	ECM, Isochronous 0.25%
Gross engine power	98 hp (72.8 kWb)
Electropak net engine power	96 hp (71.8 kWm)
Brake mean effective pressure	160 psi (1102 kPa)
Combustion air flow (at rated speed)	208 cfm (5.9 m³/min)
Exhaust gas flow (max)	519 cfm (14.7 m³/min)
Exhaust gas mass flow (max)	15.9 lb/min (7.2 kg/min)
Exhaust gas temperature in manifold (max)	1060 °F (571 °C)
Boost pressure ratio	2.2
Overall thermal efficiency (net)	35 %

Cooling System

Coolant	
Total System Capacity	
With radiator	4.4 gal (16.5 L)
Without radiator	1.8 gal (7.0 L)
Engine coolant flow	37 gpm (169 Lpm)
Maximum top tank temperature	233 F (112 C)
Temperature rise across engine (rating dependent)	43.9-44.6 F (6.6-7.0 C)
Thermostat operation range	185-203 F (85-95 C)
Recommended coolant:	50/50

Exhaust System

Maximum back pressure	2.1 psi (15 kPa)
Exhaust outlet size	2.5 in (64 mm)

Lubrication System

Lubricating oil capacity total system	2.2 gal (8.4 L)
Maximum sump capacity	1.8 gal (6.9 L)
Minimum sump capacity	1.5 gal (5.6 L)
Maximum engine operating angles (front up, front down, right side or left side)	25º

Lubricating Oil Pressure

Oil Temperature (continuous operation)	257 F (125 C)
Oil Temperature (maximum intermittent operation)	275 F (135 C)

Electrical System

Type	12 V neg earth
Alternator type	Denso A115i
Alternator Voltage	12V
Alternator Output	65-175 A
Starter motor type	Iskra
Starter motor voltage	12 V
Starter motor power	4.3 hp (3.2 kW)
Minimum cranking speed	100 rpm

Induction System

Maximum air intake restriction

Clean filter	0.73 psi (5 kPa)
Dirty filter	1.2 psi (8 kPa)
Air filter type	Paper element

Duct allowance with 50% glycol

Ambient Capacity of Radiator:	128 °F (53 °C)
Max Restriction of Radiator:	0.5 in/H2O (0.125 kPa)
Radiator Air Flow:	2118 scfm (60 m³/min)

Fuel System

Type of injection	Direct
Fuel injection pump	Common rail
Fuel atomizer	Unit injector / multi-hole

Fuel Lift Pump

Max flow through customer filter	0.58 gpm (2.2 Lpm)
Maximum suction head	1.7 m (5.6 ft)

Fuel Consumption

110% Load	5.31 gph (20.1 Lph)
100% Load	4.4 gph (18.7 Lph)
75% Load	3.4 gph (16.5 Lph)
50% Load	2.4 gph (12.2 Lph)