



Engine Technical Data

Revision: 0

Unit	3TNV70-ASA	3TNV70-ASA3
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General Data

Number of Cylinders	-	3
Engine Type	-	Inline, Water-Cooled, 4 Stroke Diesel
Bore x Stroke	mm x mm	70x74
Total Displacement	cc	854
Combustion type	-	Indirect Injection
Aspiration	-	Natural Aspiration
Valves per Cylinder	-	2
Compression ratio	-	23.4
Firing Order	-	1-3-2

Performance Data

Net Intermittent Power	HP [kW] / rpm	21.9 [16.3]/3600
Net Continuous Power	HP [kW] / rpm	--
Net Max Torque	ft-lb [Nm]/rpm	37.6 [51.0]/2600
Low Idle Speed	rpm	1000+/-25
High Idle Speed	rpm	3815+/-25
BMEP, Net Power	Psi [kPa]	92.2 [636]
BMEP, Cont. Power	Psi [kPa]	-

Physical Data

Direction of rotation	-	Counter Clockwise (view from flywheel)	
Length - Inches	Inches [mm]	20.8 [528]	19.8 [504]
Width - Inches	Inches [mm]	16.8 [427]	
Height - Inches	Inches [mm]	21.5 [545]	
Dry Weight	lbs [kg]	220 [100]	198 [90]
Center of Gravity:	-		
From Rear Face of Block	Inches [mm]	7.69 [195.2]	
From Crankshaft to Exhaust Side	Inches [mm]	0.20 [5]	
Above Crankshaft	Inches [mm]	3.03 [77]	

PTO System

Flywheel	-	SAE #5	
Flywheel Housing	-	SAE #5 (124 mm Depth)	Back Plate
Gear Case	-	with SAE Hydraulic Pump Flange	

Lubrication System

Inclination, Continuous	degrees	25
Inclination, 3 minutes Max.	degrees	30
Oil Pan Style	-	Shallow
Lubrication Oil Filter Type	-	Paper Element
Temperature Limit (main oil pressure passage)	°F [°C]	248 [120]
Nominal Oil Pressure	psi [kgf/cm2]	50 [3.5]
Oil Capacity, Effective	Liters	1.3
Total System Capacity	Liters	2.8
Oil Change Interval, Hours	hr	250 (50, initial)
Recommended Oil Type	API	CD, CF or higher grade

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Cooling System

Fan Type	-	Suction
Fan Diameter	Inches [mm]	11.8 [300]
Number of Blades	-	5
Fan Pulley Diameter	Inches [mm]	3.9 [100]
Crank Pulley Diameter	Inches [mm]	4.3 [110]
Fan Spacer Thickness - Inches [mm]	Inches [mm]	0.98 [25]
Max. Coolant Temp.	°F [°C]	221 [105]
Thermostat Starts Opening	°F [°C]	160±2.7 [71 ± 1.5]
Thermostat Fully Open	°F [°C]	185 [85]
Coolant Capacity (Engine)	Liters	0.9
Coolant Flow (C. W. Pump)	Liters / min	54.24
Heat Rejection at Rated Power	BTU/hr [kcal/hr]	68800 [17300]

Fuel System

Fuel Filter Type	-	Paper Element
Fuel Injection Pump Type	-	Inline Type
Water Separator (Standard)	-	Mesh size: 100-mesh/inch, water reservoir 150 cc
Max. Suction Head (Fuel pickup to Injection pump)	Inches [mm]	40 [1000]
Fuel Feed Pump Type	-	Electrical
Fuel Flow (Feed pump)	Liters / hr	60
Max. Allowable Fuel Temperature	° F [°C]	176 [80] Fuel Injection In
Required Separation Distance Between Pickup & Return	Inches [mm]	min. 4 [100]
Fuel Consumption at rated output	lb/hp-hr [g/kW-hr]	0.47 [287]

Intake System

Max. Air Intake Restriction, initial	Inch Aq [mmAq]	11.8 [300]
Max. Air Intake Restriction, replace element	Inch Aq [mmAq]	25.0 [635]
Crankcase Ventilation Type	-	Closed
Engine Air Flow (For sizing air cleaner)	ft ³ / min. [m ³ / min]	48.8 [1.38]

Exhaust System

Max. Allowable Back Pressure, initial	Inch Aq [mmAq]	39.4 [1000]
Max. Allowable Back Pressure, cleaning	Inch Aq [mmAq]	47.2 [1200]
Exhaust Air Flow @ Max Power Temp.	ft ³ / min. [m ³ /min]	176 [4.98]
Exhaust Temperature at Max. Power	° F [°C]	1076 [580]
Exhaust Temperature at Max. Torque	° F [°C]	896 [480]

Electrical System

System Voltage	Volts	12 V
Electric Stop Device	-	Stop Solenoid (Pull Coil Timer: 1 sec.)
Alternator	-	12V-40A
Starting Aid Device	-	Glow Plug, 12V
Standard pre-heat time	Seconds	3
Engine Block Heater Port	-	Exhaust Side
Starting Motor Type	-	Conventional
Starting Motor Power	kW	1.4 ± 0.3
Maximum Starter Cable Resistance	Ohm (Ω)	0.05
Maximum Battery Cable Resistance	Ohm (Ω)	0.002

Manager	S. Manager	Written/Checked
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Date: 07/15/2004

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