



SU103N

Type	Rated RPM	Ratings (kW/PS)	
		Gross Engine Output	Net Engine Output
-U	3000	17.9/24.3	17.2/23.4
-U1	3000	16.4/22.3	15.7/21.3



◎ GENERAL ENGINE DATA

▶ Engine Model	SU103N
▶ Engine Type	3-Cycle, In-line, Diesel, Water cooled, N/A
▶ Bore x stroke	Ø75 x 76 mm
▶ Displacement	1.007 liters
▶ Compression ratio	21:1
▶ Rotation	Counter clockwise viewed from Flywheel
▶ Firing order	1-2-3
▶ Injection timing	18° BTDC
▶ Dry weight	101kg (with Fan)
▶ Dimension (L x W x H)	513 x 482 x 553 mm
▶ Flywheel housing	SAE No.5
▶ Flywheel	Clutch No.7-1/2
▶ Number of teeth on flywheel	98

◎ ENGINE MOUNTING

- ▶ Max. Bending Moment at Rear Face to Block -

◎ EXHAUST SYSTEM

- ▶ Max. Back Pressure 9.8kPa

◎ COOLING SYSTEM

Water circulation by centrifugal pump on engine.

▶ Cooling method	Fresh water forced circulation
▶ Coolant capacity (Engine Only)	1.6 liters
▶ Coolant flow rate	liters / min
▶ Pressure Cap	90kPa
▶ Water Temperature	
- . Maximum for standby and Prime	110°C
- . Before start of full load	40°C
▶ Water pump	Centrifugal type driven by belt

This is normally attained after a running period of about 100 hours and Image shown may not be actual engine.



▶ Thermostat Type and Range	Wax – pellet type□ Opening temp. 82°C , Full open temp. 95°C
▶ Cooling fan	Suction type, Polypropylene, Dia : Ø315mm, 5 blade
▶ Max. external coolant system restriction	Not Available

◎ LUBRICATION SYSTEM

Force-feed lubrication by gear pump	
▶ Lub. Method	Fully forced pressure feed type
▶ Oil pump	Gear type driven by crank-shaft gear
▶ Oil filter	Full flow, cartridge type
▶ Oil capacity	Max. 3.8 liters
▶ Lub oil pressure	Idle Speed : Min 70 kPa Governed Speed : Min 245kPa
▶ Maximum oil temperature	121°C
▶ Angularity limit	Front down 30 deg , Front up 30 deg□ Side to side 30 deg
▶ Lubrication oil	SAE 10W-30 or SAE 15W-40(Above -10°C)

◎ FUEL SYSTEM

Bosch type in-line pump	
▶ Injection pump	K-type mini pump
▶ Governor	Mechanical centrifugal + Woodward APECS 4800
▶ Speed drop	-
▶ Feed pump	Diaphragm type pump
▶ Injection nozzle	Throttle type
▶ Opening pressure	14.7 ~ 15.7Mpa
▶ Fuel filter	Full flow, cartridge type
▶ Maximum fuel inlet restriction	-
▶ Maximum fuel return restriction	-
▶ Fuel feed pump capacity	24 liters / hr
▶ Used fuel	Diesel fuel oil

◎ ELECTRICAL SYSTEM

▶ Battery Charging Alternator	12V x 75A alternator
▶ Voltage regulator	Built-in type IC regulator
▶ Starting motor	12V x 1.7 kW
▶ Battery Voltage	12V
▶ Battery Capacity	64AH(recommended)
▶ Starting aid (Option)	Glow plug

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◎ VALVE SYSTEM

▶ Type	Overhead valve type	
▶ Number of valve	Intake 1, exhaust 1 per cylinder	
▶ Valve lashes at cold	Intake 0.15mm , Exhaust 0.15mm	
▶ Valve timing	Open	Close
- . Intake valve	8 deg. BTDC	38 deg. ABDC
- . Exhaust valve	44 deg. BBDC	8 deg. ATDC

◎ PERFORMANCE DATA

▶ Governed Engine speed	rpm	3000	3000
▶ Engine Idle Speed	rpm	1350	1350
▶ Over speed limit	rpm	3200	3200
▶ Gross Eng. Power	kW	17.9	16.4
	PS	24.3	22.3
▶ BMEP	Mpa	7.24	6.64
▶ Mean Piston Speed	m/s	7.6	7.6
▶ Friction Power	kW	-	-
	PS	-	-
▶ Specific fuel consumption	L/hr	5.7	5.7
▶ Fan Power	kW	-	-
▶ Sound Pressure at 1m from the each side of Cylinder Block (Without Fan)	dB(A)	-	-

The all data and the specific fuel consumption are based on ISO 3046/1, Standard reference conditions are in accordance with 298 K(25° Celsius) air temperature, 100kPa(1000mbar) air pressure, 60% relative humidity, 110m(361ft) altitude.

Operation At Elevated Temperature And Altitude: The engine may be operated at :
1800 rpm & 1500rpm up to 750~ 1000m and 30°C without power deration

For sustained operation above these conditions, derate by 3% per 304m , and 2% per 11 °C

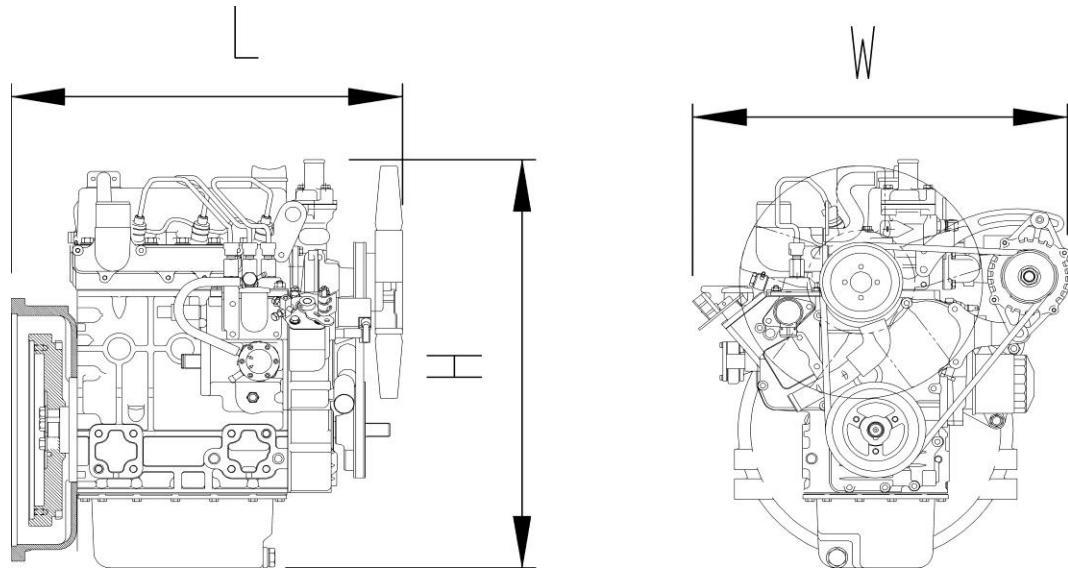
Engine Data with Dry Type Exhaust Manifold

▶ Intake Air Flow	m ³ /min	1.47	1.47
▶ Exh. gas temp. after turbo.	°C	500	500
▶ Exhaust Gas Flow	m ³ /min	1.53	1.53
▶ Heat Rejection to Exhaust	kW	-	-
▶ Heat Rejection to Coolant	kW	-	-
▶ Heat Rejection to Intercooler	kW	-	-
▶ Radiated Heat to Ambient	kW	-	-
▶ Cooling water circulation	L/min	-	-
▶ Cooling fan air flow	m ³ /min	-	-

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◆ ENGINE DIMENSION



Designation	Length(L)	Width(W)	Height(H)	Dry weight
Value	513mm	482mm	553mm	101kg

◆ CONVERSION TABLE

in. = mm x 0.0394

PS = kW x 1.3596

psi = kg/cm² x 14.2233

in³ = lit. x 61.02

hp = PS x 0.98635

lb = kg x 2.20462

kW = Kcal/sec x 0.239

lb/ft = N.m x 0.737

U.S. gal = lit. x 0.264

kW = 0.2388 kcal/s

lb/PS.h = g/kW.h x 0.00162

cfm = m³ /min x 35.336

Mpa = Pa x 1000 = bar x 10

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