DOOSAN INFRACORE GENERATOR ENGINE

DP086TA

Ratings	Gross Engir	ne Output	Net Engine Output		
(kWm/PS)	Standby	Prime	Standby	Prime	
1500rpm(50Hz)	152/207	137/186	147/200	132/179	
1800rpm(60Hz)	187/254	168/228	179/243	160/218	

Ratings Definitions

The power ratings of Emergency Standby and Prime are in accordance with ISO 8528.

Fuel Stop power in accordance with ISO 3046.

Electric power (kWe) must be considered cooling fan loss, alternator efficiency, altitude derating and ambient temperature.

<u>STANDBY POWER RATING</u> is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. A standby rated engine should be sized for a maximum of an 80% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating.

<u>PRIME POWER RATING</u> is available for an unlimited number of hours per year in variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 24 hours. The Total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour withing a 12 hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

© GENERAL ENGINE DATA

SENERAL ENGINE DATA	
○ Engine Model	DP086TA
○ Engine Type	4-Cycle, In-line, 6-Cylinder Diesel, water cooled, Turbo charged
Bore x stroke	111 x 139 mm
	8.071 liters
O Compression ratio	
○ Rotation	Counter clockwise viewed from Flywheel
○ Firing order	152624
○ Injection timing	19°+1° RTDC
	790kg(with Fan)
- D: (1)A(1)	1,242 x 746 x 1,113 mm
○ Fly wheel housing	SAE NO.1M
○Fly wheel	Clutch N() 14M
ONumber of teeth on flywheel	102
© ENGINE MOUNTING	
Maximum Bending Moment at Rear Face to Block	1325 N ⋅ M
© EXHAUST SYSTEM	
Maximum Back Pressure	5.9 kPa
O AIR INDUCTION SYSTEM	
Maximum Intake Air Restriction	
. With Clean Filter Element	2.16 kPa
. With Dirty Filter Element	6.23 kPa
○ Max. static pressure after Radiator	0.125 kPa



© COOLING SYSTEM

Water circulation by centrifugal pump on engine	9.		
○ Cooling method	Fresh water forced circulation		
ି Coolant capacity	Engine Only: Approx. 14 lit., With Radiator : Approx 44 lit.(standard)		
○ Coolant flow rate	166 liters / min		
○ Pressure Cap	Max. 49 kPa		
○ Water Temperature			
- Maximum for standby and Prime	103℃		
- Before start of full load	40.0℃		
○ Water pump	Centrifugal type driven by belt		
○ Thermostat Type and Range	Wax – pellet type, Opening temp. 71°C , Full open temp. 85°C		
○ Cooling fan	Blower type, Plastic , 660 mm diameter, 7 blade		
Max. external coolant system restriction	Not Available		
© LUBRICATION SYSTEM			
Force-feed lubrication by gear pump, lubricating	g oil cooling in cooling water circuit of engine.		
○ Lub. Method	Fully forced pressure feed type		
	Gear type driven by crank-shaft gear		
○ Oil pump ○ Oil filter			
	Full flow, cartridge type		
Oil pan capacity	Max. 15.5 liters , Min. 12 liters		
○ Lub oil pressure	Idle Speed : Min 100 kPa		
	Governed Speed : Min 250 kPa		
	120℃		
Angularity limit	Front down 15 deg , Front up 15 deg , Side to side 15 deg		
○ Lubrication oil	Refer to Operation Manual		
◎ FUEL SYSTEM			
Bosch type in-line pump with integrated, electron	magnetic actuator.		
	WUXI WEIFU HIGH-TECH CO.,LTD		
○ Governor	Electric type (all speed control)		
○ Speed drop	C2 Class (ISO 9529)		
○ Feed pump	Machanical type in injection name		
○ Injection nozzle	Multi hole type		
	21.0 MPa		
○ Fuel filter	Full flow, cartridge type with water drain valve		
Maximum fuel inlet restriction	10 kPa		
Maximum fuel return restriction	60 kPa		
○ Fuel feed pump Capacity	175 liters / hr		
Ollsed fuel	Diesel fuel oil		
© ELECTRICAL SYSTEM	Dieser ruer on		
Battery Charging Alternator	28.5V x 45A alternator		
○ Voltage regulator	Built-in type IC regulator		
○ Starting motor	24V x 6.0 kW		
○ Battery Voltage	24V		
○ Battery Capacity	100 Ah (recommended)		
Starting aid (Option)	Block heater		



OVALVE SYSTEM

○ Туре	Overhead valve type		
 Number of valve 	Intake 1, exhaust 1 per cylinder		
 Valve lashes at cold 	Intake 0.3mm, Exhaust 0.3mm		
 Valve timing 			
	Opening Close		
Intake valve	16 deg. BTDC 36 deg. ABDC		
Exhaust valve	46 deg. BBDC 14 deg. ATDC		

O PERFORMANCE DATA	Prime Power		wer	Standby Power	
○ Governed Engine speed	rpm	1500	1800	1500	1800
○ Engine Idle Speed	rpm	800	800	800	800
Over speed limit	rpm	1650	1980	1650	1980
○ Gross Engine Power Output	kW	137	168	152	187
	ps	186	228	207	254
O Break Mean effective pressure	Мра	1.36	1.39	1.51	1.55
○ Mean Piston Speed	m/s	6.95	8.34	6.95	8.34
○ Friction Power	kW	18	24	18	24
	ps	24.47	32.63	24.47	32.63
 Specific fuel consumption 					
25% load	liters/hr	9.2	11.5	10.1	12.7
50% load	liters/hr	17.4	21.0	18.2	22.9
75% load	liters/hr	25.5	30.3	27.2	33.7
100% load	liters/hr	33.7	41.3	37.9	46.0
O Maximum Lube oil consumption	g/h	130.4	159.9	144.7	178.0
○ Fan Power	kW	5	8	5	8
○ Sound Pressure at 1m from the	each side of	Cylinder Block			
(without Fan)	dB(A)	98.3	100.7	98.3	100.7

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

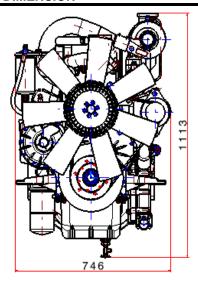
Operation At Elevated Temperature And Altitude: The engine may be operated at :

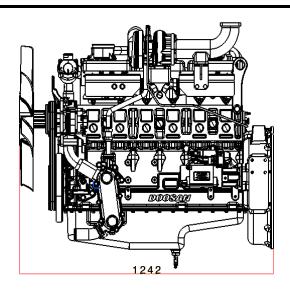
1800 rpm & 1500rpm up to 750~ 1000m and 30°C without power deration

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

Engine Data with Dry Type Exh	naust Manifo	ıld			
○ Intake Air Flow	m3/min	13.49	20.19	14.33	21.28
○ Exhaust gas temp. after turbo.	°C	137	543	610	582
○ Exhaust Gas Flow	m3/min	-	40.9	33.9	44.6
○ Heat Rejection to Exhaust	kW	118.8	145.5	133.6	162.0
○ Heat Rejection to Coolant	kW	51.6	63.3	58.1	70.4
○ Heat Rejetion to Intercooler	kW	-	-	-	-
○ Radiated Heat to Ambient	kW	12.0	14.8	13.5	16.4
○ Cooling water circulation	liters/min	130	150	130	150
○ Cooling fan air flow	m3/min	190	224	190	224







♦ CONVERSION TABLE

in. = $mm \times 0.0394$

 $PS = kW \times 1.3596$

 $psi = kg/cm2 \times 14.2233$

in3 = lit. x 61.02

 $hp = PS \times 0.98635$

 $lb = kg \times 2.20462$

 $kW = Kcal/sec \times 0.239$

 $lb/ft = N.m \times 0.737$

U.S. $gal = lit. \times 0.264$

kW = 0.2388 kcal/s

 $lb/PS.h = g/kW.h \times 0.00162$

 $cfm = m^3/min \times 35.336$

Mpa = Pa x 1000 = bar x 10

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Speccifications are subject to change without prior notice

