DOOSAN INFRACORE INDUSTRIAL ENGINE

D18

Intermittent rating kW(HP) / rpm	Max. torque N.m(kg.m) / rpm	EPA/CARB Compliance	EU Compliance
24.6(33) / 2400	110(11.2) / 1600	Tier4 F	Stage3A
36.6(49) / 2800	165(16.8) / 1800	Tier4 F	Stage3B

◎ MECHANICAL SYSTEM

o Engine Model	D18
o Engine Type	In-line 3 cycle Diesel, water cooled, Turbo-intercooler
o Combustion type	Direct injection
o Cylinder Type	Linerless
o Number of cylinders	3
o Bore x stroke	90 x 94 mm
o Displacement	1.794 lit.
o Compression ratio	17.0 : 1
o Firing order	1-2-3
o Dry weight	198 kg (w/o starter, alternator, aftertreatment)
o Dimension(LxWxH)	740.4 x 566.7 x 769.9 mm (with DOC)
o Rotation	Counter clockwise viewed from Flywheel
o Fly wheel housing	SAE NO.4M (SAE J617)
o Fly wheel	Clutch 10"(SAE J620)
o Number of teeth (Flywheel)	104

◎ ENGINEERING DATA

o Water flow	120 liters/min @2,800 rpm (49HP)
o Heat rejection	
-.to coolant	7.8 kcal/sec @2,800 rpm (49HP)
-.to coolant	5.4 kcal/sec @2,400 rpm (33HP)
-.to CAC	1.3 kcal/sec @2,800 rpm (49HP)
-.to CAC	0.8 kcal/sec @2,400 rpm (33HP)
o Air flow	3,426 liter/min @2,800 rpm (49HP)
o Exhaust gas temp.	750 °C↓ @2,800 rpm
o Max. permissible restrictions	
-.Intake system	2.16 kPa clean filter 6.23 kPa dirty filter
-.Exhaust system	15 kPa max.

◎ VALVE SYSTEM

o Type	Over head valve
o Number of valve	Intake 2, exhaust 2 per cylinder
o Valve lashes (@ cold)	Intake 0.4mm Exhaust 0.45mm

◎ FUEL SYSTEM

o Injection pump	DELPHI DFP 4.4
o Governor	Controlled by ECU
o Feed pump	N/A
o Injection nozzle	Multi hole type
o Fuel filter	Full flow, cartridge type
o Used fuel	EN590

◎ LUBRICATION SYSTEM

o Lub. Method	Fully forced pressure feed type
o Oil pump	Gear type driven by crankshaft
o Oil filter	Full flow, cartridge type
o Oil pan capacity	High level 6.31iters Low level 2.8 liters
o Angularity limit	35 deg all around
o Lub. Oil	10W30 CJ-4 (Refer to Operation Manual)
o Maximum oil temp	135℃ at main oil gallery
○ Lub oil pressure	Idle Speed : Min 100 kPa

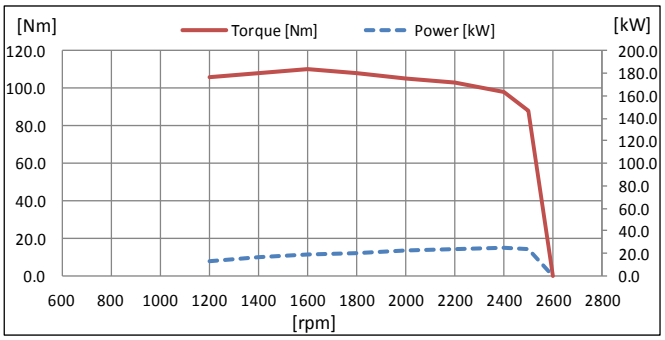
◎ COOLING SYSTEM

o Cooling method	Fresh water forced circulation
o Water capacity (engine only)	Approx. 3.3 lit
o Water pump	Centrifugal type driven by belt
o Thermostat	Wax – pellet type Opening temp. 82°C Full open temp. 97°C
o Cooling fan	-
○ Water Temperature	110℃ (max.)

◎ ELECTRICAL SYSTEM

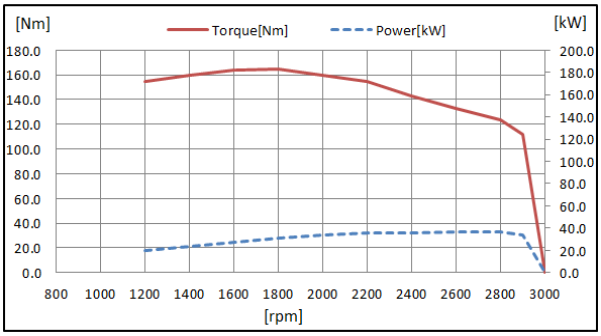
o Battery Charging Alternator	12V x 90A
o Voltage regulator	Built-in type IC regulator
o Starting motor	12V x 2.7kW
o Battery Voltage	12V
o Battery Capacity	100 Ah, 950CCA (recommended)
o Starting Aid	Glow plug

24.6KW(33HP)



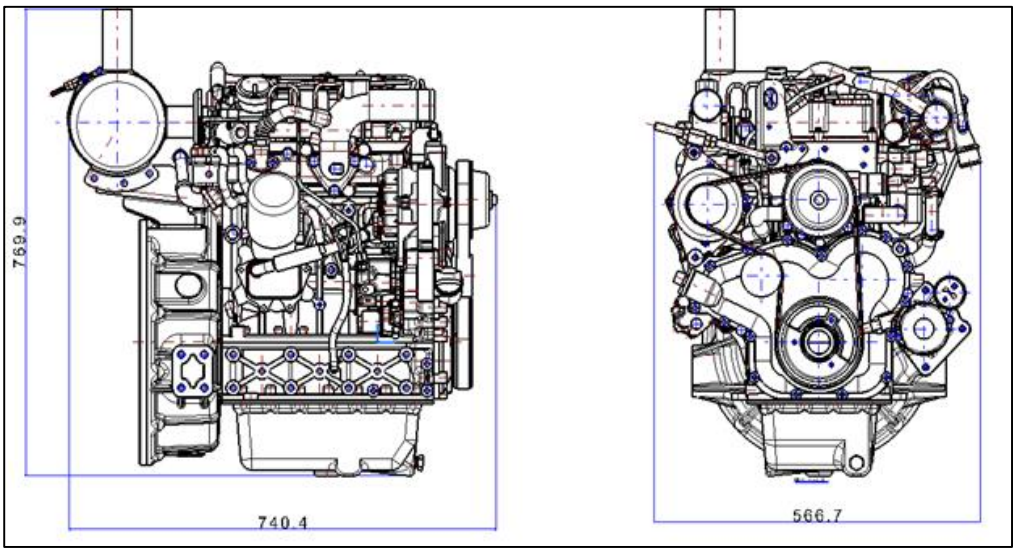
	Power			Torque	
speed	kW	PS	HP	Nm	kgm
1200	13.3	18.1	17.9	106.0	10.8
1400	15.8	21.5	21.2	108.0	11.0
1600	18.4	25.1	24.7	110.0	11.2
1800	20.4	27.7	27.3	108.0	11.0
2000	22.0	29.9	29.5	105.0	10.7
2200	23.7	32.3	31.8	103.0	10.5
2400	24.6	33.5	33.0	97.9	10.0
2500	23.1	31.4	31.0	88.2	9.0
2600	0.0	0.0	0.0	0.0	0.0

36.6KW(49HP)



	Power			Torque	
speed	kW	PS	HP	Nm	kgm
1200	19.5	26.5	26.1	155.0	15.8
1400	23.5	31.9	31.5	160.0	16.3
1600	27.5	37.4	36.8	164.0	16.7
1800	31.1	42.3	41.7	165.0	16.8
2000	33.5	45.6	44.9	160.0	16.3
2200	35.7	48.6	47.9	155.0	15.8
2400	35.9	48.9	48.2	143.0	14.6
2600	36.2	49.2	48.6	133.0	13.6
2800	36.4	49.4	48.8	124.0	12.6
2900	34.0	46.2	45.5	111.8	11.4
3000	0.0	0.0	0.0	0.0	0.0

o Dimension(LxWxH) 740.4 x 566.7 x 769.9 mm (with DOC)



◆ CONVERSION TABLE

in. = mm x 0.0394	lb/ft = N.m x 0.737
PS = kW x 1.3596	U.S. gal = lit. x 0.264
psi = kg/cm2 x 14.22	kW = 0.2388 kcal/s
in3 = lit. x 61.02	lb/PS.h = g/kW.h x 0.00162
hp = PS x 0.98635	cfm = m^3/min x 35.336
lb = kg x 2.20462	

Revised : 6th, September, 2016