上海柴油机股份有限公司
SHANGHAI DIESEL ENGINE CO.,LTD.

Model:SC12E420D2

◎ POWER RATING

Engine Speed	Type of	Engine Power	
rpm	Operation	kW	Ps
1500	Prime Power	280	380
	Standby Power	308	420

-. The engine performance is as per GB/T2820.

-. Ratings are based on GB/T1147.1.

---Prime power is available for an unlimited number of hours per year in a variable load application. The permissible average power output over 24 hours of operation shall not exceed 80% of the prime power rating.

---Standby power is available in the event of a utility power outage or under test conditions for up to 200 hours of operation per year. The permissible average power output over 24 hours of operation shall not exceed 80% of the standby power rating.

◎ SPECIFICATIONS

O Engine Model	SC12E420D2
O Engine Type	In-line,4 strokes, water-cooled 4 valves, Turbo charged air-to-air intercooled
O Combustion type	Direct injection
O Cylinder Type	Wet liner
O Number of cylinders	6
O Bore × stroke	128(5.04) × 153(6.03) mm(in.)
O Displacement	11.8(720) lit.(in3)
O Compression ratio	17 : 1
O Firing order	1-5-3-6-2-4
O Injection timing	14°BTDC
O Dry weight	Approx.1070 kg (2,359 lb)
O Dimension (L×W×H)	1787×918×1294 mm (70.4×36.2×51 in.)
O Rotation	Counter clockwise viewed from

◎ FUEL CONSUMPTION

O Power	lit/hr
25%	17.8
50%	35.1
75%	51.4
100%	68.6
110%	78.1

◎ FUEL SYSTEM

O Injection pump	Longkou in-line “P” type
O Governor	Electric type
O Feed pump	Mechanical type
O Injection nozzle	Multi hole type
O Opening pressure	250 kg/cm2 (3556 psi)

	Flywheel
○ Fly wheel housing	SAE NO.1
○ Fly wheel	SAE NO.14

◎ MECHANISM

○ Type	Over head valve
○ Number of valve	Intake 2, exhaust 2 per cylinder
○ Valve lashes at cold	Intake 0.40mm (0.0158 in.)
	Exhaust 0.65mm (0.0256 in.)

◎ VALVE TIMING

	Opening	Close
○ Intake valve	15 deg. BTDC	30 deg. ABDC
○ Exhaust valve	45 deg. BBDC	13 deg. ATDC

◎ COOLING SYSTEM

○ Cooling method	Fresh water forced circulation
○ Water capacity (engine only)	23.2 liters (6.12 gal.)
○ Pressure system	Max. 0.5 kg/cm2 (7.11 psi)
○ Water pump	Centrifugal type driven by belt
○ Water pump Capacity	515 liters (136 gal.)/min at 1,500 rpm (engine)
○ Thermostat	Wax–pellet type Opening temp. 85°C Full open temp. 95°C
○ Fuel filter	Full flow, cartridge type
○ Used fuel	Diesel fuel oil

◎ LUBRICATION SYSTEM

○ Lub. Method	Fully forced pressure feed type
○ Oil pump	Gear type driven by crankshaft
○ Oil filter	Full flow, cartridge type
○ Oil pan capacity	High level 41 liters (10.82 gal.) Low level 33 liters (8.71 gal.)
○ Angularity limit	Front down 25 deg. Front up 35 deg. Side to side 35 deg.
○ Lub. Oil	Refer to Operation Manual

◎ ENGINEERING DATA

○ Water flow	515 liters/min @1,500 rpm
○ Heat rejection to coolant	32.1 kcal/sec @1,500 rpm
○ Heat rejection to CAC	11.2 kcal/sec @1,500 rpm
○ Air flow	17.5 m3/min @1,500 rpm
○ Exhaust gas flow	46.3 m3/min @1,500 rpm
○ Exhaust gas temp.	600 °C @1,500 rpm
○ Max. permissible restrictions	
Intake system	3 kPa initial 6 kPa final

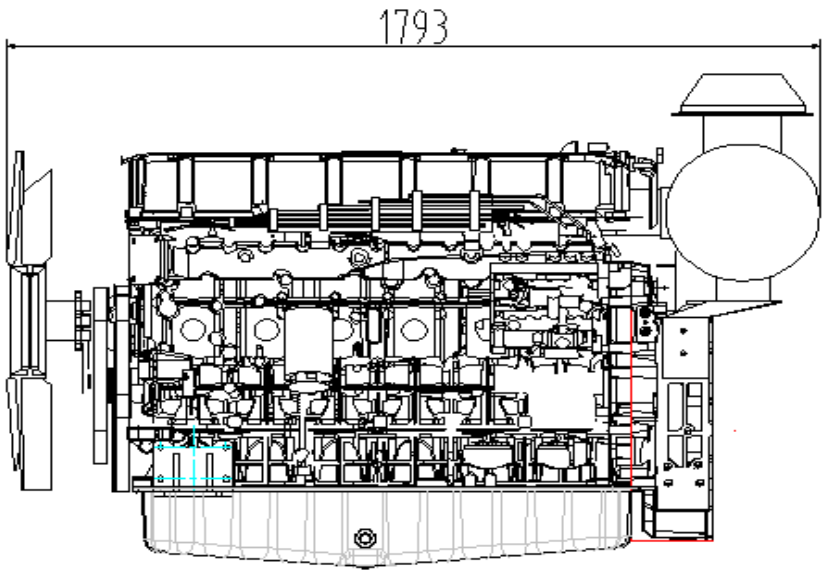
○ Cooling fan	Blower type, plastic	Exhaust system	6 kPa max.
	840 mm diameter, 8 blades	○ Max. permissible altitude	2,000 m

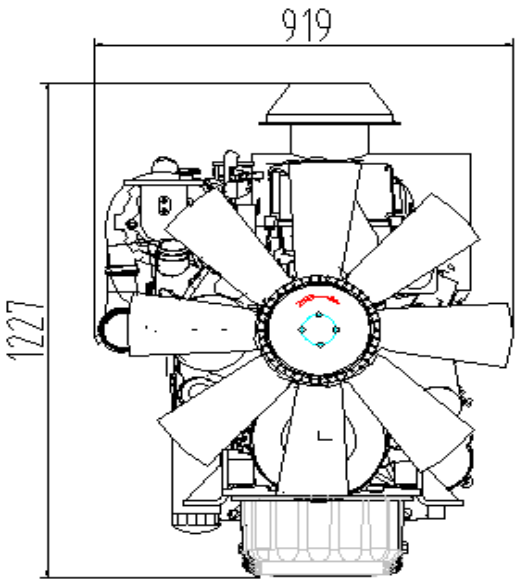
◎ ELECTRICAL SYSTEM

○ Charging generator	28V×70A
○ Voltage regulator	Built-in type IC regulator
○ Starting motor	24V×5.5kW
○ Battery Voltage	24V
○ Battery Capacity	180 AH

◆ CONVERSION TABLE

in. = mm × 0.0394	lb/ft = N.m × 0.737
PS = kW × 1.3596	U.S. gal = lit. × 0.264
psi = kg/cm2 × 14.2233	kW = 0.2388 kcal/s
in^3 = lit. × 61.02	lb/PS.h = g/kW.h × 0.00162
hp = PS × 0.98635	cfm = m3/min × 35.336
lb = kg × 2.20462	





	Initial load acceptance when engine reaches rated speed (15 seconds maximum after engine starts to crank)				2nd load application Immediately after engine has recovered to rated speed (5 seconds after initial load application)			
Engine speed	Prime power %	Load kWm (kWe) Nett	Transient Frequency deviation %	Frequency recovery time seconds	Prime power %	Load kWm (kWe) Nett	Transient Frequency deviation %	Frequency recovery time seconds
1500 rev/min	40	123	≤7	3	25	77	≤7	3