
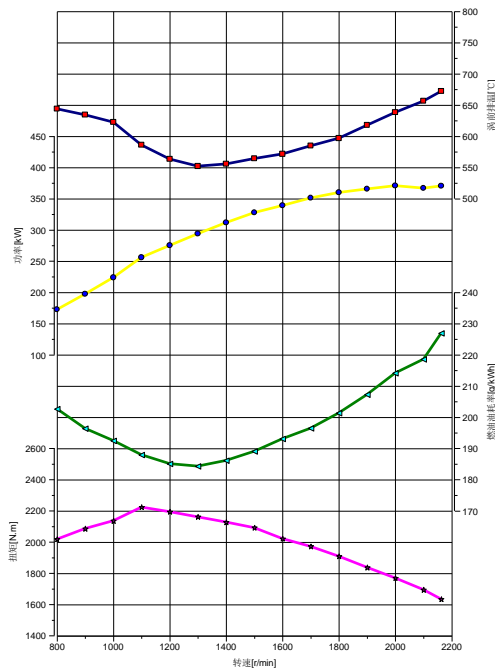


# Shanghai Diesel Engine Co., Ltd.

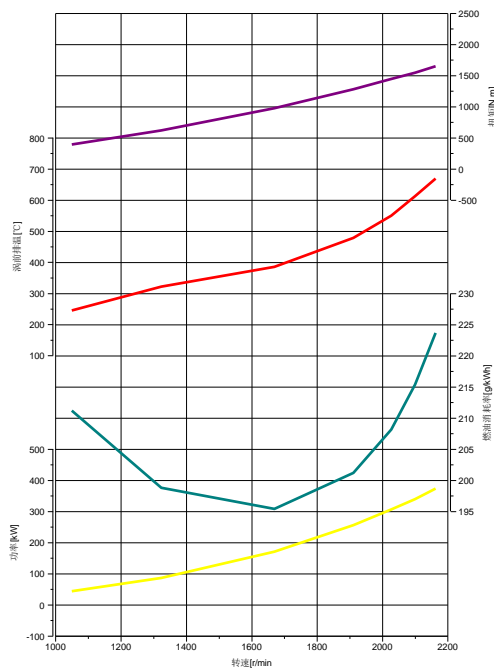
	SDEC <b>SPECIFICATIONS for Marine Engine</b>		Engine Model SC12E460.21CA1	
			Order No E4590	
	Displacement	11.8L	Rated power/speed	340/2100 kW/r/min
	Bore	128mm	Overload power/speed	374/2163 kW/r/min
	Stroke	153mm	Oceangoing rated power/speed	334/2100 kW/r/min
	Cylinder No.	6	Oceangoing overload power/spee	368/2163 kW/r/min
	Fuel system	Mechanical	Type	Turbocharged and intercooled

Cert: CCS, IMO Tier II

SC12E460.21CA1外特性曲线



SC12E460.21CA1推进特性曲线



external characteristic curve			propelling characteristic curve			
speed	power	torque	speed	power	torque	fuel consumption
r/min	kW	N. m	r/min	kW	N. m	g/kW. h
2163	370.0	1634	2163	372.8	1647	223.6
2100	366.6	1694	2100	338.9	1541	215.3
2000	370.6	1770	2027	305.8	1440	208.1
1900	365.5	1837	1911	255.2	1275	201.2
1800	359.7	1908	1670	169.9	971	192.4
1700	351.2	1972	1324	85.2	615	198.8
1600	338.8	2021	1050	42.6	388	211.2
1500	327.6	2092	672	2.3	32	471.2
1400	311.4	2127				

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1300	293.8	2162			
1200	275.0	2194			
1100	255.9	2224			
1000	223.8	2136			
900	197.1	2085			
800	172.6	2018			

remark:

★The measurement of rated power&speed is according to standard reference condition under ISO 8665(atmospheric pressure 100kpa, ambient temperature 25℃, Relative humidity 30%, intercooler inlet temperature 25℃),without any accessories, the guaranteed max power after running-in

★The measurement of oceangoing power&speed is according to specified environmental condition under IACS (atmospheric pressure 100kpa, ambient temperature 25℃, Relative humidity 60%, intercooler inlet temperature 32℃),without any accessories, the guaranteed max power after running-in

★Power tolerance: the max tolerance between rated power or overload power should not above 5%

## General specification

Engine model.....	SC12E460.21CA1
Usage.....	Marine Propulsion
Type.....	Turbochaged&Intercooled
Rated Power/Speed.....kW/r/min	340/2100
Overload power/speed.....kW/r/min	374/2163
Oceangoing rated power/speed.....kW/r/min	334/2100
Oceangoing overload power/speed.....kW/r/min	368/2163
Max torque @1100r/min.....N.m	2200
Max unload stable speed.....r/min	2310
max output power of crankshaft front end.....	100%
Compression Ratio.....	16.5:1
Average piston speed.....m/s	11.03
Ignition Order.....	1-5-3-6-2-4
Net Weight.....kg	1308
Speed Governing Rate.....%	≤10
min unload speed.....r/min	≤650±25
Fuel system.....	mechanical pump, dual walled fuel pipe
advance angle of injection.....° CA	13.5±0.5
max temp of inlet fuel.....℃	45
Max fuel inlet flow.....℃	5.75
max temp of return fuel.....℃	84
Max fuel return flow.....L/min	3.85
Air intake pressure.....kpa	200
Air intake flow.....kg/h	2037
Exhaust flow.....kg/h	2110

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Exhaust temp.....°C	≤580
Cooling system.....	Seawater-fresh water double sys
open temp of thermostat.....°C	82
full-open temp of thermostat.....°C	93
Crankshaft Rotation.....	Anticlockwise (From flywheel)
Oversize(L×W×H).....mm	1698*860*1227
Max allowable air inlet restriction.....kpa	6
Max allowable air outlet restriction.....kpa	10
oil pan capacity.....L	36
declared working condition oil pressure.....MPa	0.4~0.6
infeed.....°	22.5
Incline& trim.....°	10
swing rolling.....°	45
pitch.....°	20

**★power output interface**

flywheel house: SAE1# 12×M10 depth30mm bore 38mm      flywheel: SAE14# 8×M12 depth 20mm bore 28mm  
 belt pulley: 6groove C type, with flange

**★seawater pump**

transmission: 2.31      self-suction=2m, suction duration≤45s;  
 rpm n=3100rpm, flow Q≥34m<sup>3</sup> /h,      lift H=20m;

**★alternator**

rated power 1.5KW      rated voltage 28V  
 rated speed 6000r/min      rated current 70A  
 connection mode: double

**★starter**

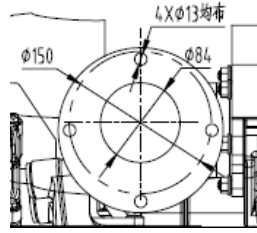
rated power: 10kW      rotation direction: clockwise(from drive end)  
 rated voltage: 24V      connection mode: double

**★instrument system**

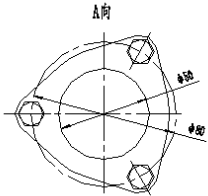
low oil pressure alarm value: 0.25MPa      over speed alarm value:115% rated speed  
 Low oil pressure stop value: 0.20MPa      over speed stop value:120% rated speed  
 High water temp alarm value: 95°C      High oil temp alarm value: 115°C  
 Electromagnet: DC24V,N.0 type

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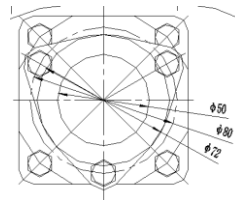
★exhaust pipe outlet size (bellow)



★cooling system

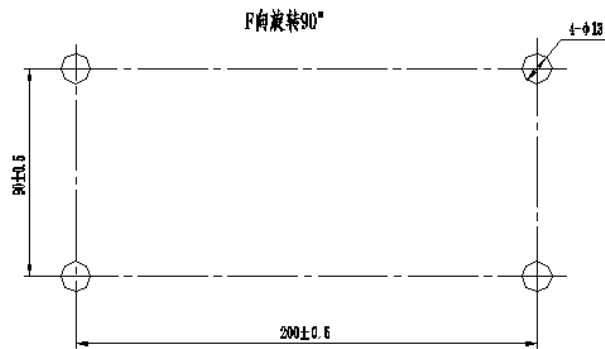


Seawater pump inlet size



Seawater pump outlet size

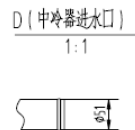
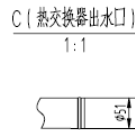
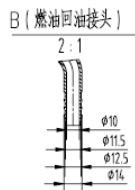
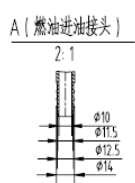
Seawater pump install footing size



★fuel system

Fuel transfer pump inlet pipe size

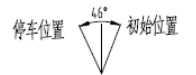
fuel pump return pipe size



E 油门手柄位置  
(每台泵的全负荷位置和怠速位置可能不同)

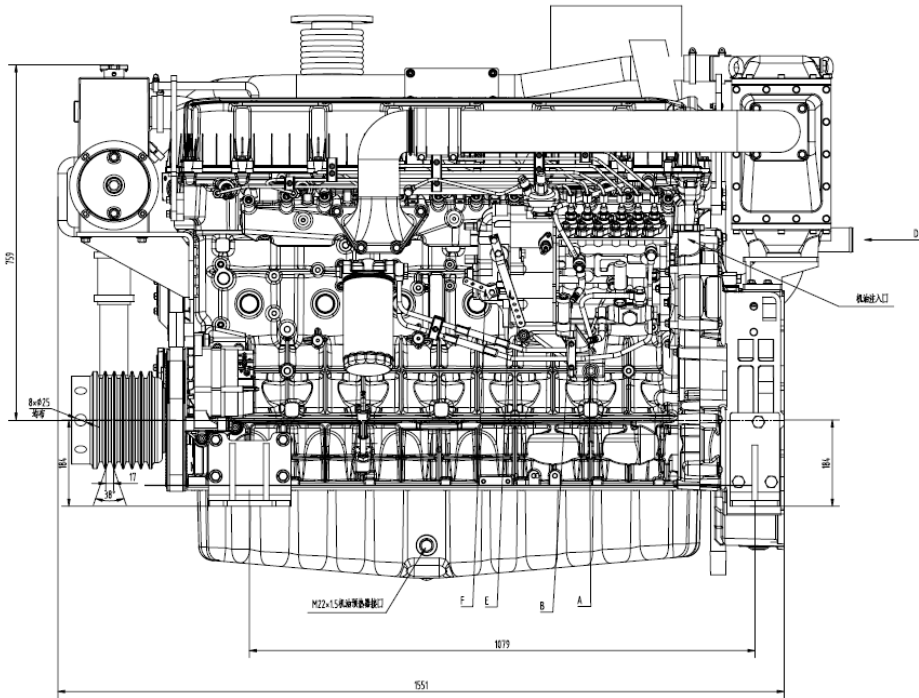


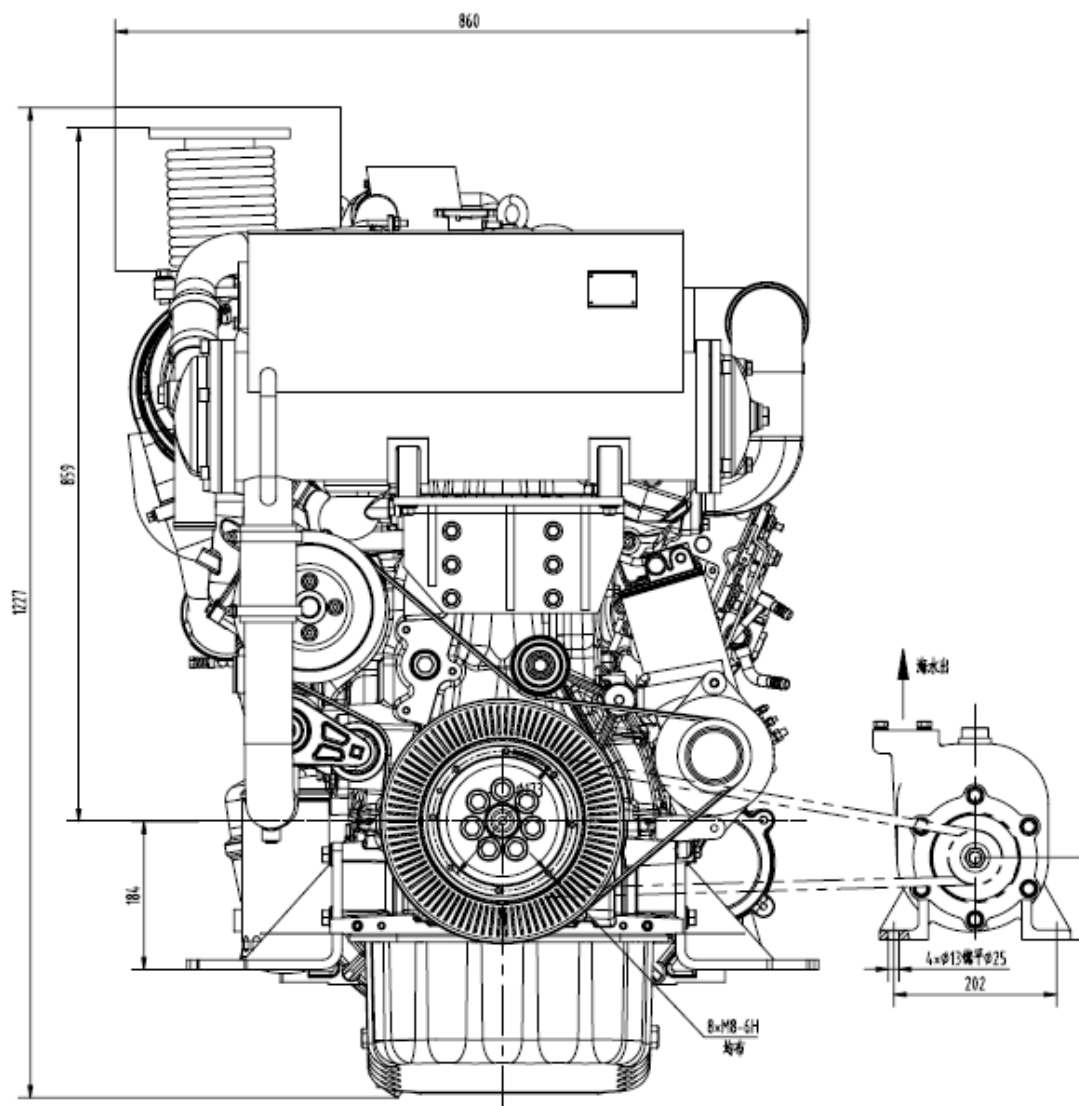
F 停车手柄位置  
(每台泵的停车位置可能不同)

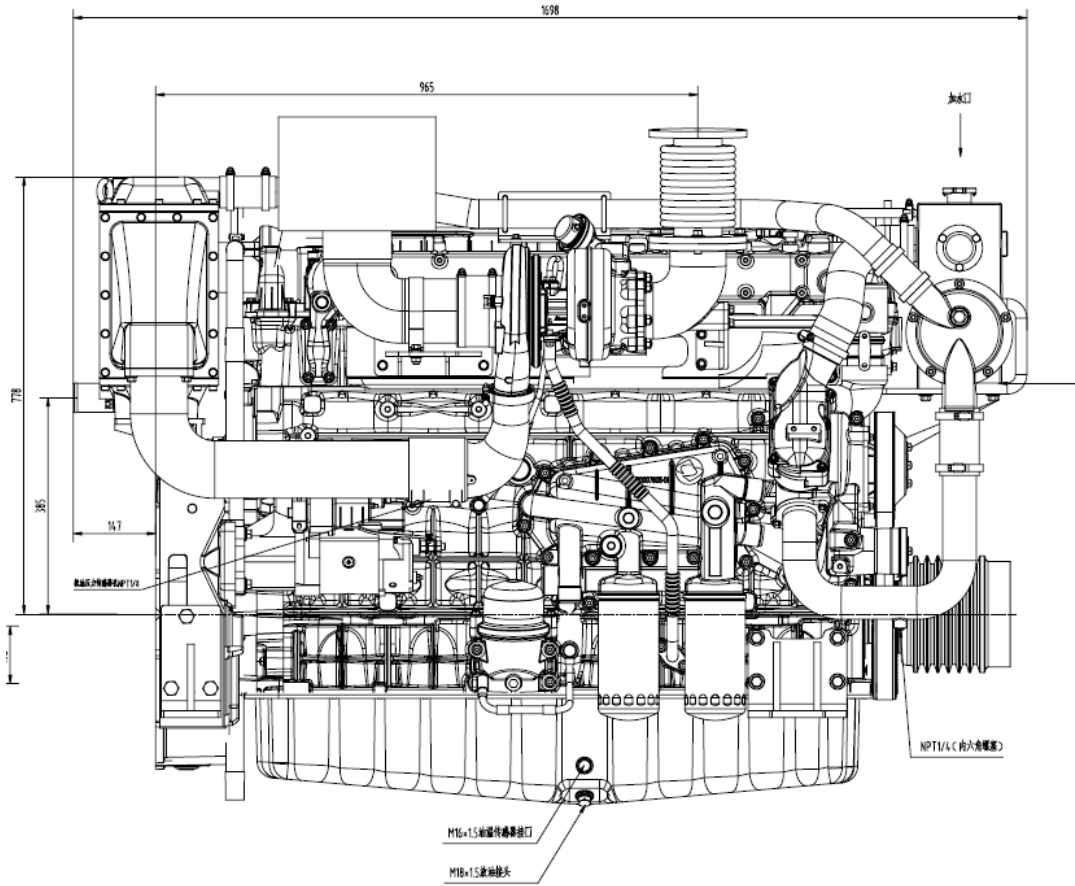


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★outline drawing

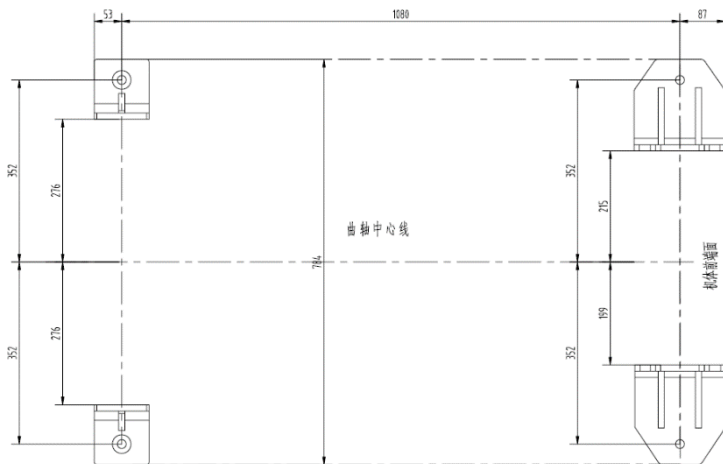






柴油机支承面局部视图

柴油机输出端剖面图



曲轴中心线

机体前缘

飞轮与飞轮壳

