

## Engine Specification Sheet



Model	Ratings HP (kW) @ Rated speed rpm	
	1540	1760
CH12-159-E (UL)	1036(772)	1207(900)
CH12-159-E (FM)		1187 (885)

ENGINE SPECIFICATIONS		
Basic Engine	Chongqing Cummins	
Type	4 Cycle; V-Type; water cooled; 12 Cylinder	
Aspiration	Turbocharged +Water Cooled	
Bore and Stroke	mm×mm	159x159
Displacement	L	38
Compression Ratio	13.9:1	
Rotation Viewed from flywheel	Counter Clockwise	
Dry Weight Approx.	kg	4590
Dimension Approx. (L*W*H)	mm	2545*1475*1760
Crankshaft Centerline Height	mm	650
Oil Capacity	L	130
Coolant Capacity - Engine + Heat Exchanger	L	210



MODEL  
**CH12-159-E**

Engine Equipment	Standard	Optional	
Air Cleaner	Drip proof	N/A	
Alternator	24V-DC, 70Amps with Belt Guard	N/A	
Coupling	Bare Flywheel	N/A	
Engine Heater	220V-AC, 2*4500 Watt	110V-AC, 2*4000 Watt	
Exhaust Flex Connection	2*DN150	N/A	
Exhaust Protection	Metal Guard	N/A	
Flywheel Housing	SAE 0	N/A	
Flywheel Power Take Off	SAE 18	N/A	
Fuel Connections	Flexible hoses according ISO 15540	N/A	
Fuel Filter	Full flow, cartridge type	N/A	
Governor, Speed	Constant speed, mechanical	N/A	
Heat Exchanger	Shell and Tube Type	N/A	
Instrument Panel	Build on Engine	N/A	
Junction Box	Integrated in control panel	N/A	
Lube Oil Cooler	Jacket Water Cooled	N/A	
Lube Oil Filter	Full flow, cartridge type	N/A	
Lube Oil Pump	Gear Driven, Gear Type	N/A	
Manual Start Control	Dual Manual Start Contactors	N/A	
Overspeed Control	Electronic instrument panel, test on instrument panel	N/A	
Raw Water Cooling Loop w/ Alarms	Galvanized	Seawater (All 316 SS)	
Raw Water Solenoid Operation	Automatic from Fire Pump Controller and from Engine Instrument Panel (for Horizontal Fire Pump Applications)	N/A	
Run - Stop Control	On Instrument Panel with Control Position Warning Light	N/A	
Starters	24V-DC,2* 8.9KW	N/A	
Throttle Control	Adjustable speed control	N/A	
Water Pump	Centrifugal Type, Gear Driven	N/A	
All data is based on the engine operating with fuel system, lubricating oil pump, air cleaner, and alternator; not included are compressor, fan, optional equipment, and driven components.;Data is based on operation at SAE standard J1394 conditions of 300ft (91,4m) altitude, 29.61 in.(752mm) Hg dry barometer, and 77°F (25°C) intake air temperature, using 0# diesel fuel follow the standard GB 252-2011.			
Altitude above which output should be Limited		m (ft.)	91 (300)
Correction Factor per 305m.(1,000ft.) above Altitude Limit		3%	
Temperature above which output should be Limited		°C (°F)	25 (77)
Correction Factor per 5.6°C (10°F) above Temperature Limit		1%	
Remark:			
1.All data certified within 5%; 2.TBD - To Be Determined; 3.N/A - Not Applicable;			



## Engine Data Sheet

Engine Model	CH12-159-E	Date	2019/6/12	
Drawing No.	CH12-159-E.00	Performance Curve No.	C12159	
Rated Power	1207 HP @1760 RPM	Reference No.	14DS001E	
	900 KW @ 1760 RPM	Version	A	
GENERAL ENGINE DATA				
Type		4 Cycle;V-Type; water cooled; 12 Cylinder		
Aspiration		Turbocharged +Water Cooled		
Bore and Stroke		mmxmm	159x159	
Cylinder Liner Type		<input checked="" type="checkbox"/> Wet <input type="checkbox"/> Dry		
Displacement		L	38	
Compression Ratio		13.9:1		
Firing Order		1R-6L-5R-2L-3R-4L-6R-1L-2R-5L-4R-3L		
Combustion System		Direct Injection		
Rotation Viewed from front of engine		CW		
Valves Per Cylinder		Intake :2 Exhaust :2		
Valves lashes at cold	Intake	mm (inch)	0.36	
	Exhaust	mm (inch)	0.69	
Ignition Type		Compression(Diesel)		
Charge Air Cooling Type		Raw Water		
Dry Weight Approx.		kg	4590	
Dimension Approx. (L*W*H)		mm	2545*1475*1760	
Flywheel/ Flywheel House Dimension		18"/ SAE 0		
Torque at rated RPM		N.m	4884	
EXHAUST SYSTEM				
Exhaust Gas Temp. at max. rating/power		°C	612	
Exhaust Gas Flow at Max. output		m³/h	11902	
Max. Allowable Back Pressure		kpa	10	
Minimum Exhaust Pipe Diameter		DN	2x150	
AIR INTAKE SYSTEM				
Air Cleaner Type		Dry Type		
Air Flow at Max. output		m³/h	2200	
Air Inlet Restriction Dirty		kpa	6.2	
Air Inlet Restriction Clean		kpa	3.7	
LUBRICATION SYSTEM				
Oil Capacity		L	130	
Max. Sump Oil Temp.		°C	121	
Normal Operating Oil Pressure Range		bars	3.1~4.5	
Oil Pressure at Idle		bar	1.38	
COOLING SYSTEM				
Coolant Capacity - Engine + Heat Exchanger		L	210	
Thermostat Range	Start Open	°C	80	
	Full Open	°C	90	
Coolant Pressure Cap		bar	0.9	
Max. Engine Coolant Temp.		°C	93	
Engine Coolant Flow at Full Load		m³/h	94	
Raw Water Cooling Capacity		m³/h	42	



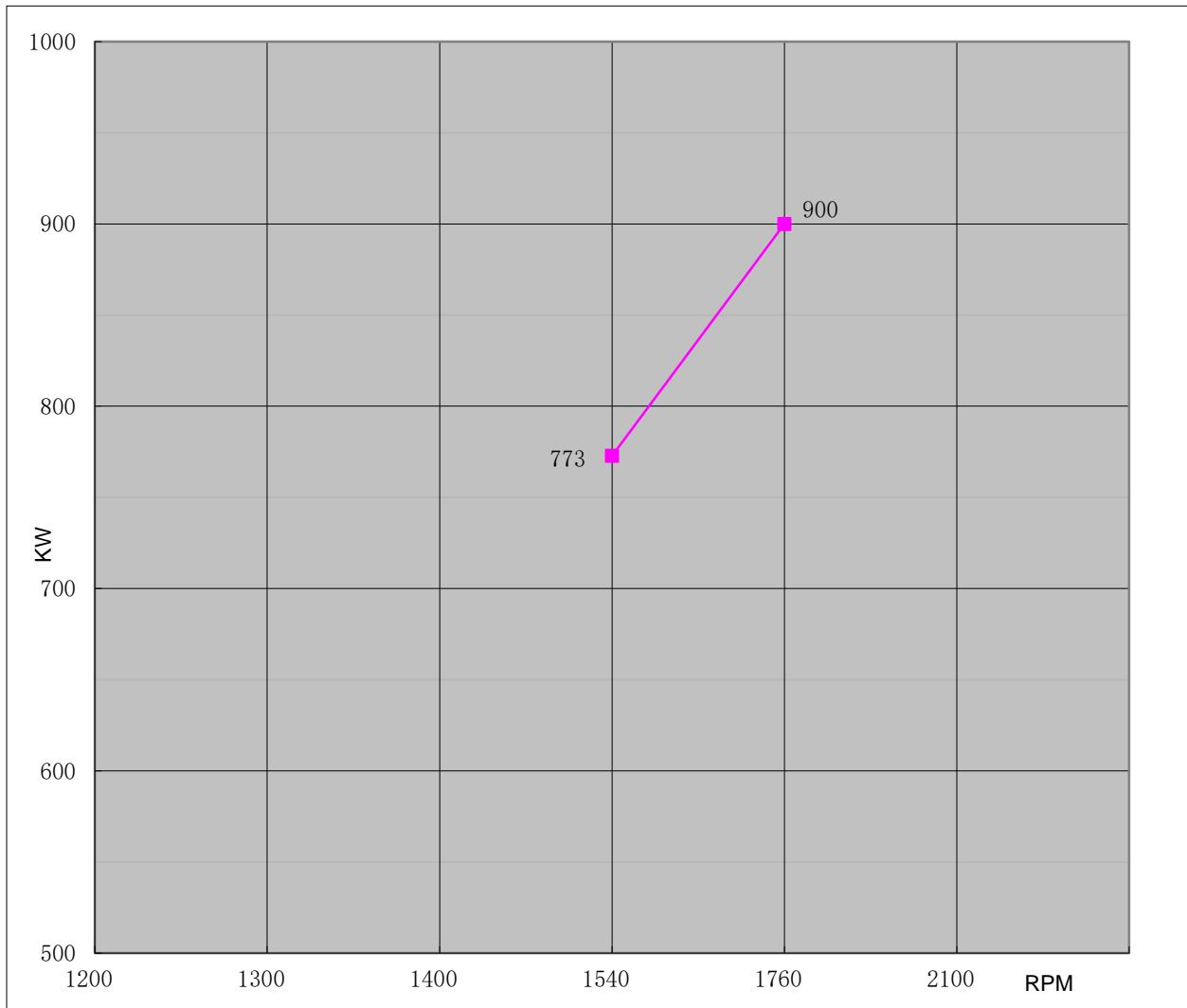
## Engine Data Sheet

Raw Water Pressure		bar	2
Min. Raw Water Temp.		°C	15.6
Raw Water Pipe Size	Raw Water Inlet	G2"	
	Raw Water Outlet	G2 1/2"	
HEATER SYSTEM			
Wattage		W	2x3000
Voltage AC		V	220
ELECTRICAL SYSTEM-DC			
System Voltage(Nominal)		V	24
Starter motor		Kw	2x8.9
Recommended Battery Capacity		AH	4x200
Cold Cranking Amperes @ -18°C (0°F)		CCA	1000
Reserve Capacity (RC)		Min	407
Charging Alternator Output		Amps	70
Max. Starter Cranking Amps @4.5°C (0°F)		Amps	570
Min. Cranking Speed Required for Unaided Cold Start		rpm	150
FUEL SYSTEM			
Injection Pump			
Injection Advance Angle		°	IC (-4.67~-4.78mm)
Minimum Supply line Size		mm	19
Minimum Return line Size		mm	16
Fuel Management Control		Mechanical	
Max. Fuel Consumption		g/kw,h	220
Idle Speed		rpm	650
Max. Governed Speed		rpm	1936
Maximum allowable fuel height above fuel pump		m	3
Governed Speed Rate		%	<10
Engine Performance Data			
Estimated free field soud pressure level at 1 meter with full-load governed speed(Includes Noise from: exhaust;: Cooling System and Driven Components)		dBa	108
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## DIESEL ENGINE

Engine Model		CH12-159-E		Curve No.		C12159	Date	2019/7/27
Displacement	38.00	L	Aspiration	Turbocharged+Water cooled		Power Standard		UL/FM
Bore	159	mm	Cylinder Qty.	12		900	KW @ 1760 r/min	
Stroke	159	mm	Fuel System	V-Type; Mechanical		1207	HP @ 1760 r/min	



Torque		
Speed RPM	Torque	
	N-m	lb-ft.
1200		
1300		
1400		
1540	4792	3534
1760	4884	3601
2100		

Output Power		
Speed RPM	Output Power	
	KW	HP
1200		
1300		
1400		
1540	773	1036
1760	900	1207
2100		

Fuel Consumption		
Speed RPM	Consumption	
	g/KW-HR	lb/BHP-HR
1200		
1300		
1400		
1540	202	0.332
1760	214	0.352
2100		

REV: A