CHESTER

MODEL
CH6-159-E

Engine Specification Sheet

Model	Ratings HP (kW) @ Rated speed rpm	
	1470	1760
CH6-159-E（UL）	577(430)	673(502)
CH6-159-E（FM）		671 (500)

ENGINE SPECIFICATIONS		
Basic Engine	Chongqing Cummins	
Type	4 Cycle; In-line; water cooled; 6 Cylinder	
Aspiration	Turbocharged +Water Cooled	
Bore and Stroke	mm×mm	159x159
Displacement	L	18.9
Compression Ratio	13.9:1	
Rotation Viewed from flywheel	Counter Clockwise	
Dry Weight Approx.	kg	2250
Dimension Approx. (L*W*H)	mm	2155*1195*1935
Crankshaft Centerline Height	mm	440
Oil Capacity	L	38
Coolant Capacity - Engine + Heat Exchanger	L	60

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	110V-AC
Exhaust Flex Connection	DN125	N/A
Exhaust Protection	Metal Guard	N/A
Flywheel Housing	SAE 0	N/A
Flywheel Power Take Off	SAE 14	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,9.5KW	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	CH6-159-E	**Date**	**2021/6/18**
Drawing No.	CH6-159-E.00	**Performance Curve No.**	**C06159**
Rated Power	**673 HP @1760 RPM**	**Reference No.**	**14DS001E**
	502 KW @ 1760 RPM	**Version**	**A**

GENERAL ENGINE DATA				
Type			4 Cycle;In-line; water cooled; 6 Cylinder	
Aspiration			Turbocharged +Coolant Cooled	
Bore and Stroke			mm×mm	159x159
Cylinder Liner Type			☑ Wet	☐ Dry
Displacement			L	18.9
Compression Ratio			13.9:1	
Firing Order			1-5-3-6-2-4	
Combustion System			Direct Injection	
Rotation Viewed from front of engine			CW	
Valves Per Cylinder			Intake :2 Exhuast :2	
Valves lashes at cold		Intake	mm	0.36
		Exhaust	mm	0.69
Ignition Type			Compression(Diesel)	
Charge Air Cooling Type			Raw Water	
Dry Weight Approx.			kg	2250
Dimension Approx. (L*W*H)			mm	2155*1195*1935
Flywheel/ Flywheel House Dimension			14"/ SAE 0	
EXHAUST SYSTEM				
Exhaust Gas Temp. at max. rating/power			℃	513
Exhaust Gas Flow at Max. output			m^3/h	6703
Max. Allowable Back Pressure			kpa	10
Minimum Exhaust Pipe Diameter			DN	200
AIR INTAKE SYSTEM				
Air Cleaner Type			Dry Type	
Air Flow at Max. output			m^3/h	2580
Air Inlet Restriction Dirty			kpa	6.2
Air Inlet Restriction Clean			kpa	3.7
LUBRICATION SYSTEM				
Oil Capacity			L	38
Max. Sump Oil Temp.			℃	121
Normal Operating Oil Pressure Range			bars	3.4~4.8
Oil Pressure at Idle			bar	1.38
COOLING SYSTEM				
Coolant Capacity - Engine + Heat Exchanger			L	60
Thermostat Range		Start Open	℃	82
		Full Open	℃	93
Coolant Pressure Cap			bar	0.9
Max. Engine Coolant Temp.			℃	96
Engine Coolant Flow at Full Load			m^3/h	45
Raw Water Cooling Capacity			m^3/h	18
Raw Water Pressure			bar	2

Engine Data Sheet

Min. Raw Water Temp.		℃	15.6
Raw Water Pipe Size	Raw Water Inlet	G1 1/2"	
	Raw Water Outlet	G2"	
HEATER SYSTEM			
Wattage		W	4500
Voltage AC		V	220
ELECTRICAL SYSTEM-DC			
System Voltage(Nominal)		V	24
Starter motor		Kw	9.5
Recommended Battery Capacity		AH	200
Cold Cranking Amperes @ -18℃ (0°F)		CCA	1000
Reserve Capacity (RC)		Min	407
Charging Alternator Output		Amps	70
Max. Starter Cranking Amps @4.5℃ (0°F)		Amps	606
Min. Cranking Speed Required for Unaided Cold Start		rpm	175
FUEL SYSTEM			
Injection Pump			
Injection Advance Angle		°	IQ
Minimum Supply line Size		mm	19
Minimum Return line Size		mm	16
Fuel Management Control		Mechanical	
Max. Fuel Consumption		g/kw,h	215
Idle Speed		rpm	675
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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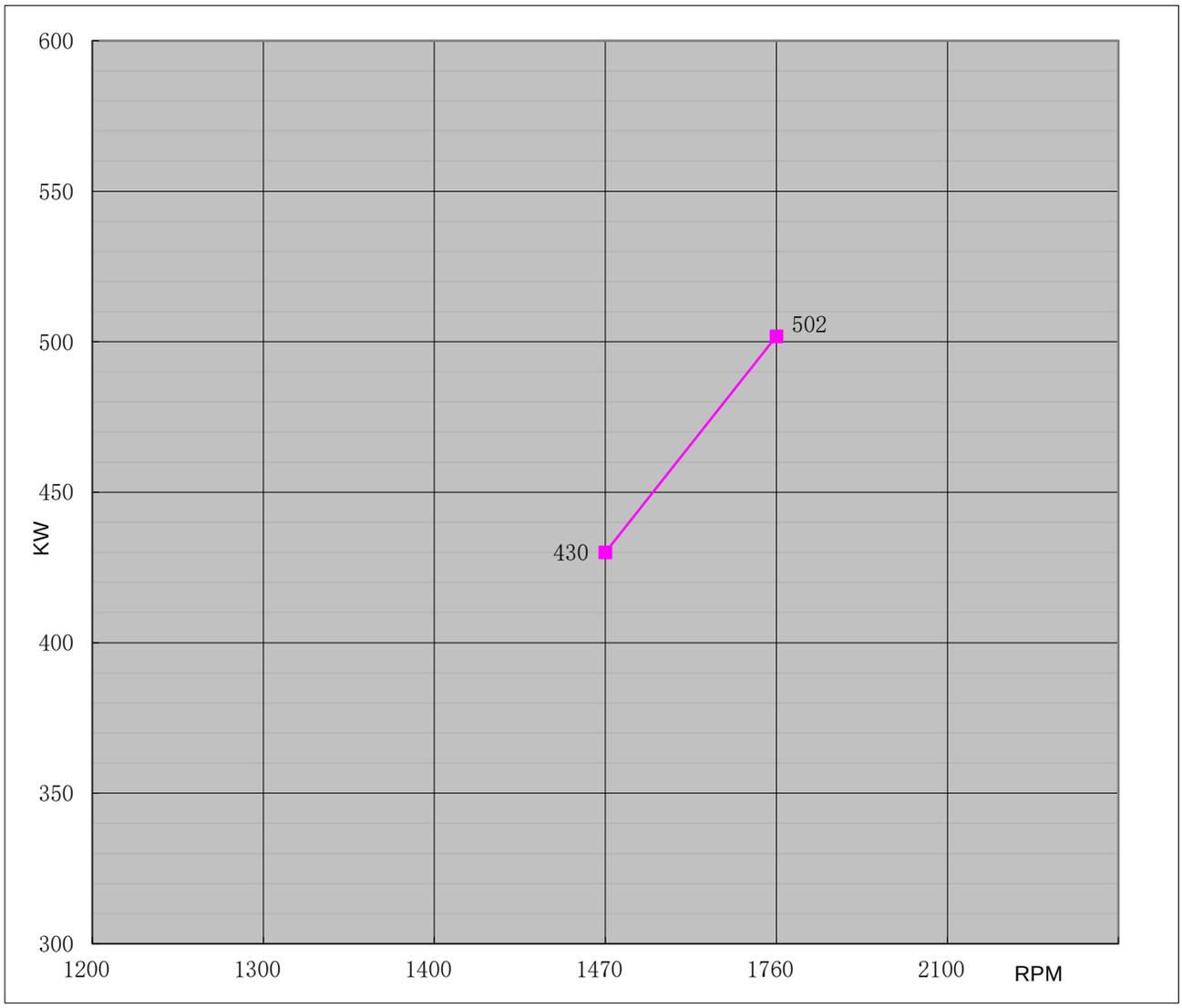
DIESEL ENGINE

Engine Model	CH6-159-E	Curve No.	C06159	Date	2021/6/8
Displacement	18.90 L	Aspiration	Turbocharged+water cooled	Power Standard	UL/FM
Bore	159 mm	Cylinder Qty.	6, In Line	502 KW @ 1760 r/min	
Stroke	159 mm	Fuel System	Mechanical	673 HP @ 1760 r/min	



Torque

Speed	Torque	
RPM	N-m	lb-ft.
1200		
1300		
1400		
1470	2794	2060
1760	2723	2008
2100		

Output Power

Speed	Output Power	
RPM	KW	HP
1200		
1300		
1400		
1470	430	577
1760	502	673
2100		

Fuel Consumption

Speed	Consumption	
RPM	g/KW-HR	lb/BHP-HR
1200		
1300		
1400		
1470	205	0.337
1760	205	0.337
2100		

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