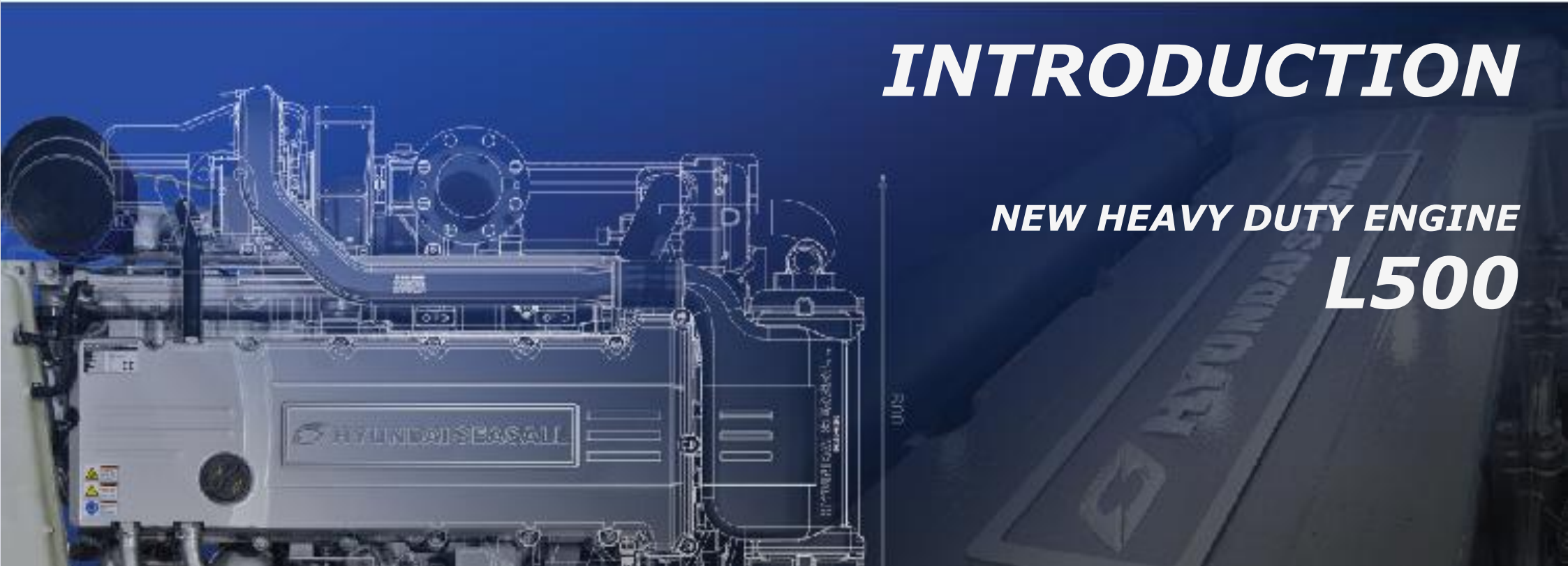


INTRODUCTION

***NEW HEAVY DUTY ENGINE
L500***

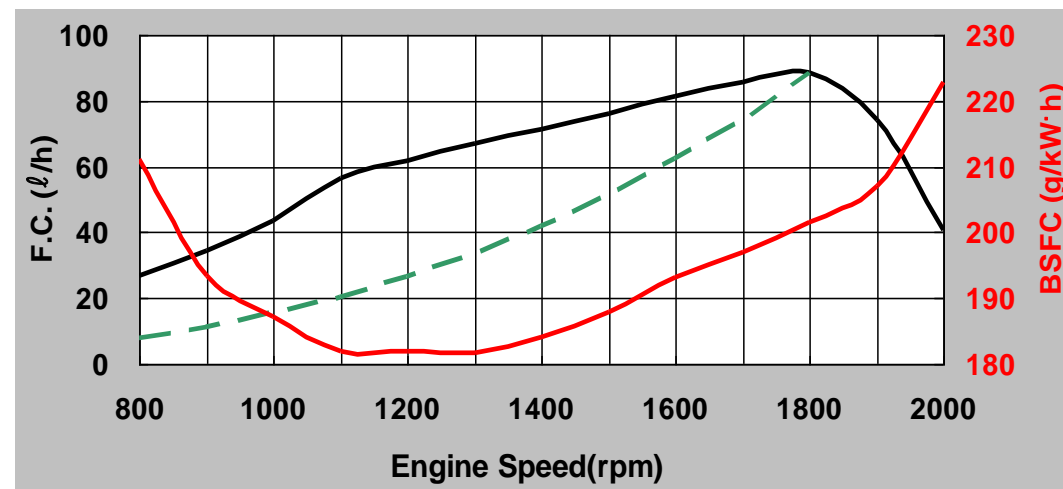
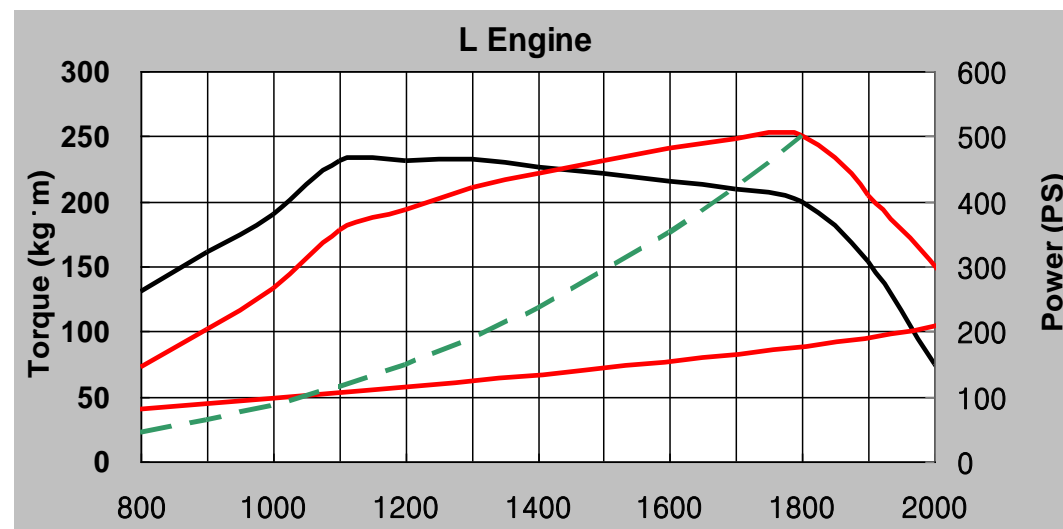


SPECIFICATION

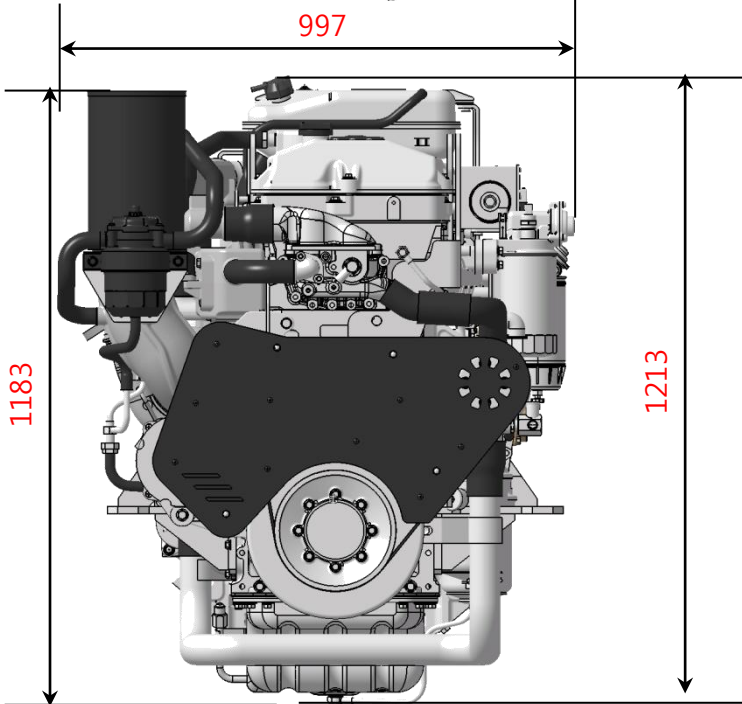
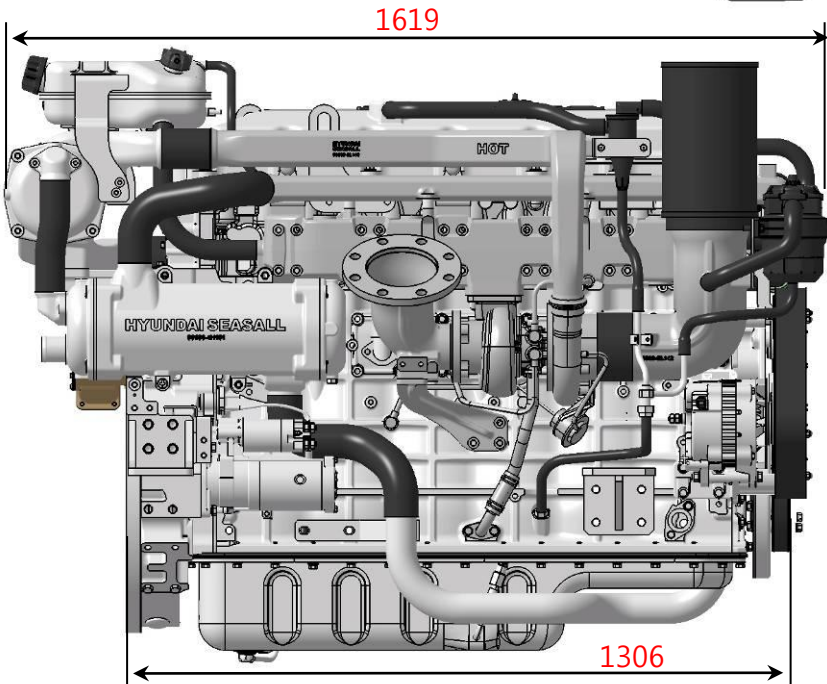
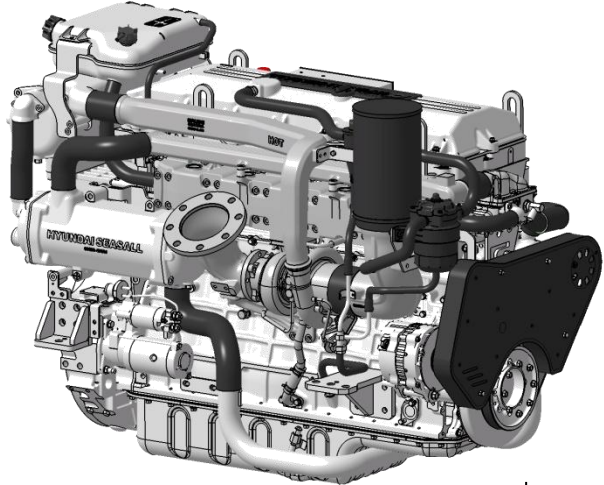
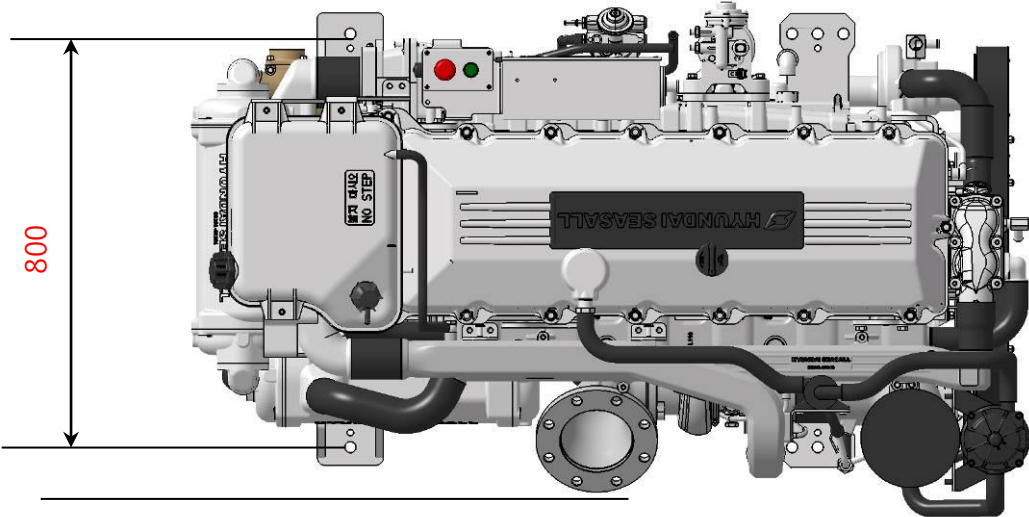


L500 Commercial Diesel Engine Specifications

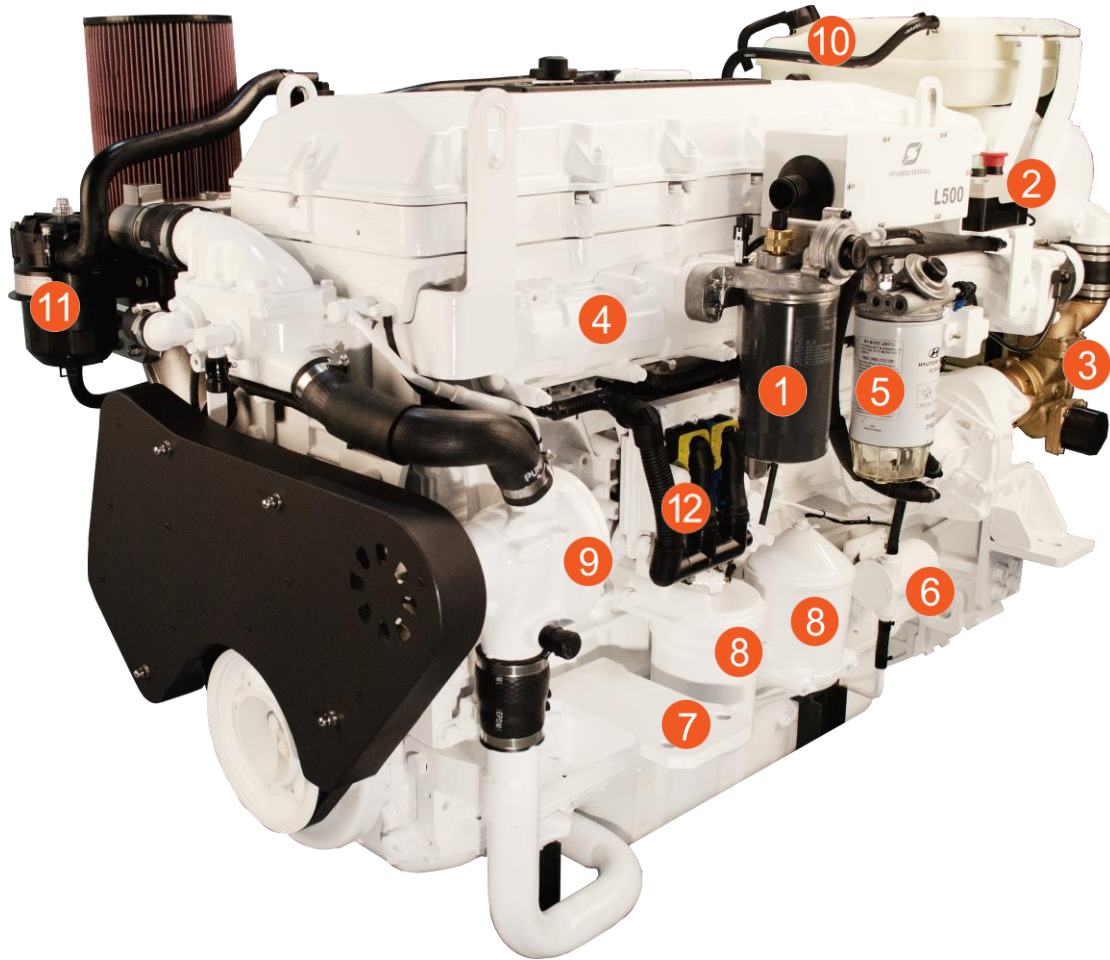
Model	L500
Specifications	
Engine Duty Rating	Heavy Duty (S1)
Configuration	4-Stroke, 4-Valve, T/C with Intercooler, Fresh Water Cooling
Output [PS (kW)]	500 (368)
RPM @ Full Load	1,800
Cylinders	I6
Displacement [cc]	12,736
Bore x Stroke [mm]	130 x 160
Compression Ratio	16.0 : 1
Max. Torque @ RPM	232 kg·m @ 1,300
Injection System	Electronic Unit Injection (EUI)
Alternator [A]	80
Electronic Engine Diagnostic	YES
Max. Fuel Consumption [l/h]	88
Dry Weight [kg]	1,310
Propulsion System	Shaftdrive



3D VIEW & DIMENSION

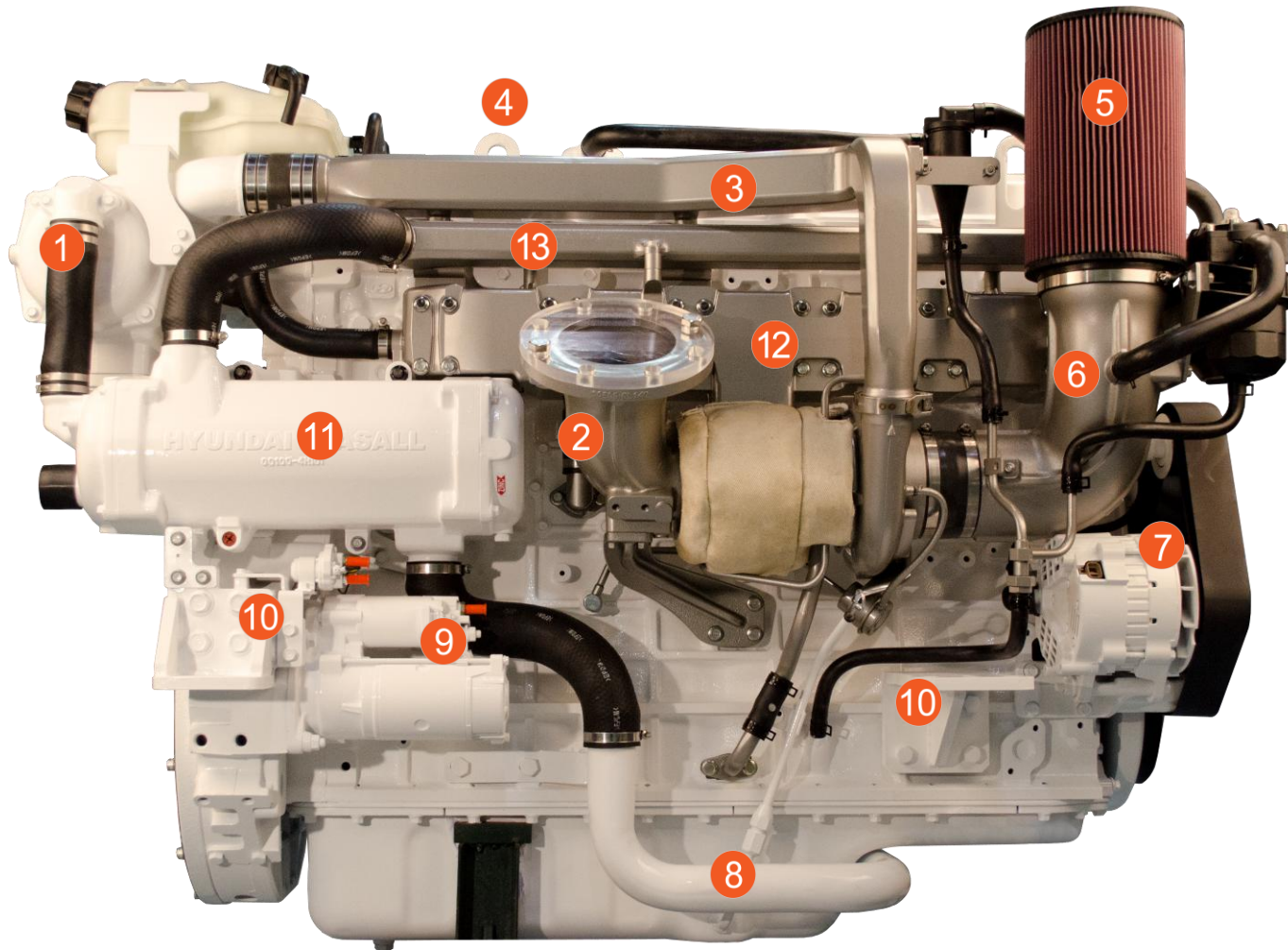


COMPONENTS (1/2)



①	FUEL FILTER
②	SWITCH BOX
③	WATER PUMP
④	AIR INTAKE MANIFOLD
⑤	WATER SEPARATOR
⑥	OIL EXTRACTION PUMP
⑦	ENGINE MOUNTING BRACKET
⑧	OIL FILTER
⑨	COOLANT WATER PUMP
⑩	EXPANSION TANK
⑪	CRANKCASE VENTILATION FILTER

COMPONENTS (2/2)

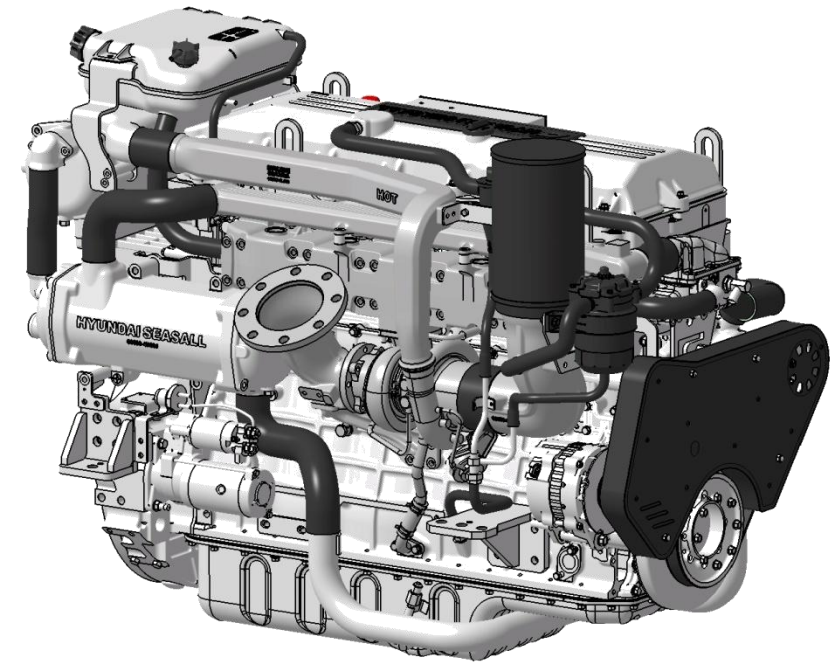


①	INTERCOOLER
②	DRY EXHAUST PIPE
③	TURBOCHARGER OUTLET PIPE
④	HANGER
⑤	AIR FILTER
⑥	AIR FILTER PIPE
⑦	BELT COVER
⑧	COOLANT PIPE HEAT EXCHANGER OUTLET
⑨	STARTER
⑩	ENGINE MOUNTING BRACKET
⑪	HEAT EXCHANGER
⑫	EXHAUST MANIFOLD
⑬	COOLANT PIPE, HEAT EXCHANGER INLET



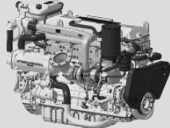
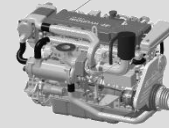







Marine Engine Characteristics – L SERIES

- Electronic Unit Injector System by controlled ECU (EUI; 2,500 bar)
- Waste Gate Turbocharger
- High heavy duty power and torque in wide rpm range
- Coolant-cooled Exhausted Manifold
- Low-temperature combustion stability (Air Heater)
- Low noise Gear Train System
- Self diagnostic function (Engine Operating Indicator)
- Front PTO available (700 ~ 1900 rpm)
- Idle rpm adjustment function (500 ~ 800 rpm)
- Eco-Friendly Diesel Engine (IMO - EIAPP)
- Light, Quiet, Good Fuel-efficiency



L500 Competitive Engines



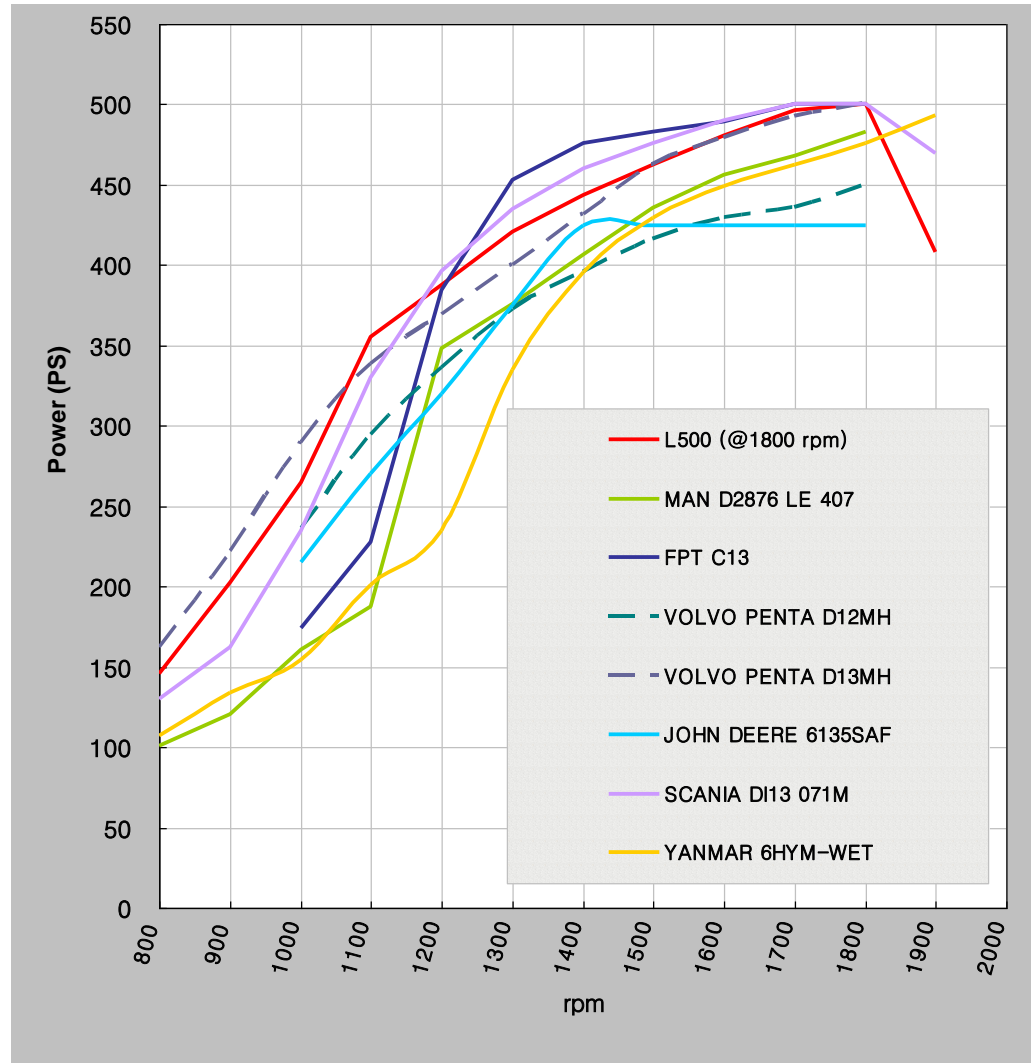
	Hyundai SeasAll	Hyundai SeasAll	MAN	FPT	VOLVO PENTA		John Deere	SCANIA	Yanmar Marine
	L500 (Preliminary)	H380	D2876HD (LE407)	C13 500D	D12MH-R1	D13MH-R1	6135SAF-M1	DI13 071M	6HYM-WET (Mechanical)
Engine (Rating)	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty
									
Displacement (L)	12.7	10.0	12.8	12.9	12.13	12.78	13.5	12.7	13.7
Crankshaft Power [ps]	500 @1800rpm	380 @1800rpm	490 @1800rpm	500 @2000rpm	450 @1800rpm	500 @1800rpm	425 @1800rpm	500 @1800rpm	500 @1950rpm
Max. Torque (kgm)	232 @1300rpm	170 @1400rpm	211 @1150rpm	255 @1300rpm	206 @1400rpm	221 @1400rpm	237 @1300rpm	235 @1800rpm	204 @1400rpm
Compression Ratio	16.0 : 1	16.0 : 1	15.5 : 1	-	17.5 : 1	18.5 : 1	17.0 : 1	16.3 : 1	-
Specific Fuel Consumption (L/h)	88 @1800rpm	71 @1800rpm	95 @1800rpm	98 @2000rpm	82 @1800rpm	93 @1800rpm	79.2 @1800rpm	90 @1800rpm	89 @1950rpm
Dry weight Bobtail (kg)	1310	1120	1160	1345	1400	1520	1525	1190	1385
Emission	TBD	IMO	IMO	-	IMO, EU IWW, US EPA TIER 2	IMO, EU IWW, CCNR STAGE2	IMO, US EPA Tier 2, IWT, RCD	US Tier2, EU Stage IIIA and IMO	-
Alternator	24V - 80A	24V - 70A	-	28V 90A	24V 60A	24V 110A	-	24V 100A	-

COMPARISON (Performance Curve)

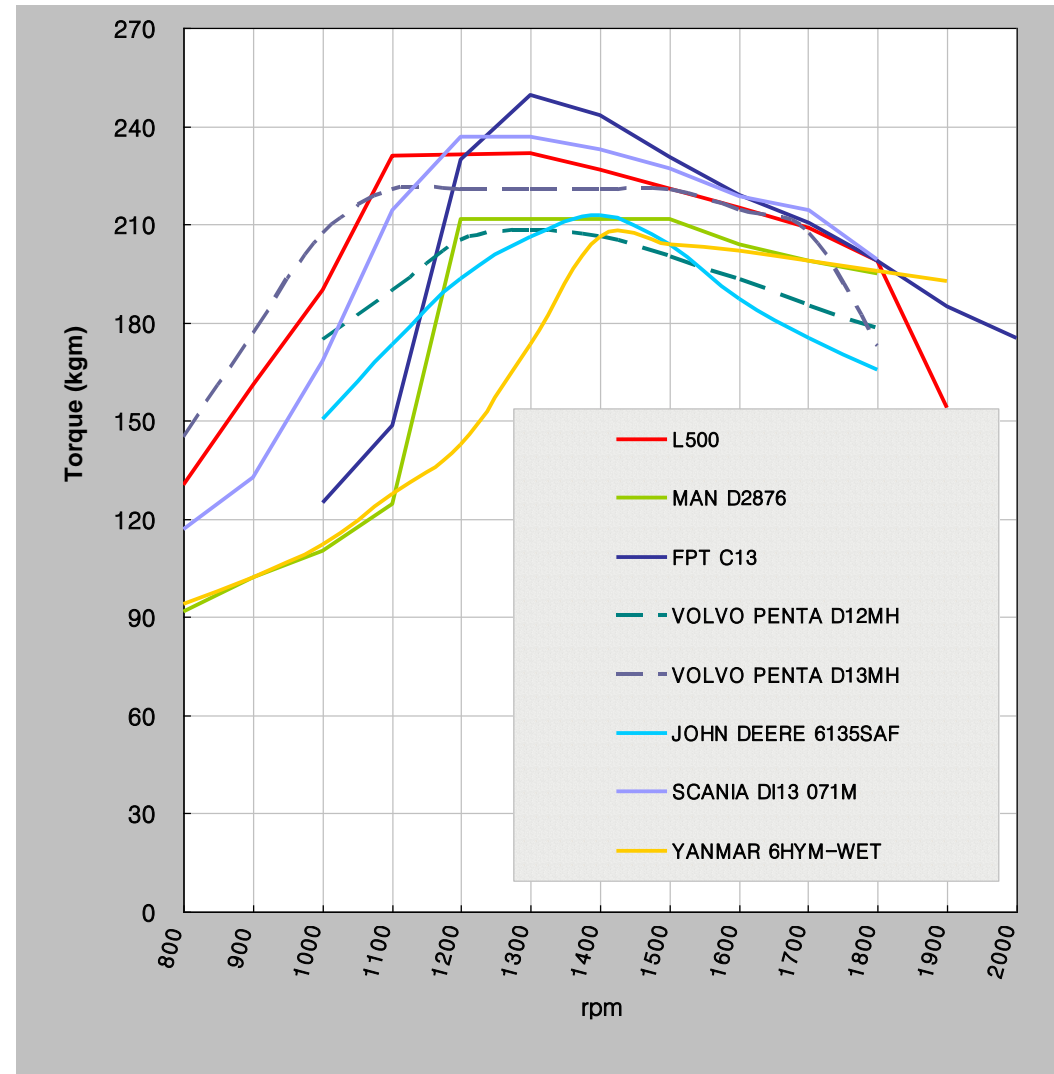
Comparison - Torque



POWER CURVES



TORQUE CURVES



LINE-UP INTRODUCTION



Certification Information

□ Applicable ▶ In Progress ● Complete - N/A

Engine Family	KST	EPA Tier2	EPA Tier3	RCD	CCNR	BSO	EIAPP IMO NO _x	Classification	MED /SOLAS
U 1.6	-	-	□	●	-	●	-	-	□
D 2.2	●	-	-	●	-	●	-	-	●
S 3.0	●	●	▶	●	-	●	●	-	●
H 10.0	●	-	-	-	-	-	●	● (▶)	-
L 12.7	▶	-	-	-	-	-	▶	▶	-

KST	The Korean Ship Safety Technology Authority
EPA	Environmental Protection Agency, Complies with 40 CFR Part 94
RCD	Recreational Craft Directive, Complies with 94/25/EC amended 2003/44/EC
CCNR	RVIR(Rhine Vessel Inspection Regulation Chapter 8a)Complies with 2008/87/EC
BSO	Bodensee-Zulassung (Lake Constance Shipping Ordinance)
EIAPP (IMO NO _x)	Exhaust emission approval, Complies with IMO 73/68 Annex VI and NO _x technical Code and/or other regulation
Classification	Type Approval of Major Class (IACS members) such as KR, LR, GL, DNV, ABS, BV, RINA etc.

※ Note : Certificates of compliance can be provided based upon potential sales volume.

LINE-UP INTRODUCTION



Line-up Program

*CRDi : Common Rail Direct Injection
 **EUI : Electronic Unit Injector

Model	U	D		S		H	L	S2	R	G
Specifications										
Displacement [cc]	1,582	2,188		2,959		9,960	12,736	2,959	2,199	5,899
Rated Power [HP/RPM]	125 @ 4,000	170 @ 3,800	150 @ 3,200	250 @ 3,800	220 @ 3,200	380 @ 1,800	500 @ 1,800	260 @ 3,800	200 @ 3,800	260 @ 2,500
Max. Torque [kg·m]	26.5	36		50		170	232	56	44.5	95
Cylinders	I-4	I-4		V-6		I-6	I-6	V-6	I-4	I-6
Fuel system	*CRDi	*CRDi		*CRDi		**EUI	**EUI	*CRDi	*CRDi	*CRDi
Ratings	S5, S4	S5, S4	S3	S5, S4	S3	S1	S1	S5, S4	S5, S4	S2,S3
Production	In Production						Dec. 2012	Jan. 2014	TBD	TBD

Note: Hyundai SeasAll has the right to make changes in any product development or information materials herein without prior notice.

※ All Hyundai SeasAll engines rated per ISO 8665
 ※ 1kW = 1.3596 metric (DIN) HP = 1.3410 HP