



Doosan Infracore
Engines & Materials

Doosan Marine Diesel Engines



Doosan Infracore

The Introduction of Engines and Materials BG

We started producing diesel engines for the first time in 1958. Our production facility is located in Incheon, Korea and entered full production under the license of MAN technology in 1975 and ISUZU technology in 1979. Furthermore, we began to produce the CNG engine in 1998 so that our reinforced line up from Diesel engine to Natural Gas engine could supply more various choices and meet the various needs for customers.

We have two sites in Korea : an engine production facility and foundry shops producing cast components in Incheon, and an engine R&D facility in Kunsan.

We have steadily expanded our business on the foundation of accumulated technology & know-how, continued investment in R&D, and our abundant experience of developing over 1,200 different

applications for the various equipments. We now produce 66 typical models under the 1,200 horsepower.

Currently, with streamlined and integrated production facilities including iron casting, machining, and assembly line, the Incheon engine shop has the annual capacity of 20,000 units for small engine, 24,000 units for medium, 12,000 units for large, and 8,000 units for marine application engines. The Incheon foundry shop has the annual capacity of 36,000 tons.

The business organization in terms of its goods is largely divided into four groups - commercial vehicle engine, industrial engine, marine engine, and genset.



Engines & Materials BG



History

- 1958 Produce the Marine Engines co-developed with AVL
- 1975 Begin to produce of medium duty engines under license of MAN(Germany)
- 1979 Begin to produce of light duty engines under license of ISUZU(Japan)
- 1985 Produce our own designed engine, STORM series
- 1994 Acquire the ISO9001 certification
- 1995 Produce our own designed engine, DE & DV series (EURO- I)
- 1997 Acquire ISO14001 certification
- 1998 Produce EURO-II engines(TIS) and CNG engines
- 2004 Produce DL08, DV11(EURO-III, TIER-III)
- 2006 Start to produce DL06(EURO-III, TIER-III)
- 2007 Produce EURO 4 engines (DL06 S, DL08 S, DV11 S)
- 2008 Reached One-million diesel engine produce on March.

Quality Award

- 1983 Grand Prix of Quality Control (Honor of President/ Korea)
- 1986 Iron Medal of Industry with STORM engine (Honor of President/ Korea)
- 1994 Acquire ISO 9001/9002
- 1995 Gold Medal of Q.C.C. Contest(Honor of President/ Korea)
- 1996 Grand Prix Tech. of Environmental Reservation with DE12TI engine (Honor of President/ Korea)
- 1997 Grand Prix of Quality Management (Honor of President/ Korea)
- Acquire ISO 14001
- 1999 Korean 100 Technology of 20th century with GE12TI CNG Engine (Seoul Economy Daily, Ministry of Science and Technology/Korea)
- 2000 Best Award on Engine with GE12TI engine (NGV2000)
- 2006 Award on GM Group Supplier of the Year (SOY)

Products

- Vehicle and Industrial Engine Group** Diesel & CNG Engine for Truck, Bus and Agricultural/ Construction Machinery, etc
- Marine Engine Group** Diesel Engine for marine propulsion and Generator
- Generator Engine Group** Diesel & NG Engine for Generator
- Materials Group** Cast Iron Products
Aluminum Cast Products
Sintered Metal Products

Doosan Marine Diesel Engines

Marine Propulsion Engines

Model	Type		Displacement (Liter)	Bore x Stroke (mm)	Output (ISO 3046 kW(ps)/rpm)			Dimension (L x W x H) (mm)	Dry Weight (kg)	Emission
	No. of Cyl.	Aspiration			Heavy Duty	Medium Duty	Light Duty			
L066TI	L 6	TI	5.8	102 x 118	132(180)/2,200	-	-	1,042 x 800 x 915	535	TIER-II
L136	L 6	NA	8.1	111 x 139	118(160)/2,200	-	-	1,188 x 764 x 926	743	TIER-I
L136T	L 6	TC	8.1	111 x 139	147(200)/2,200	-	177(240)/2,500	1,188 x 766 x 926	748	TIER-I
L136TI	L 6	TI	8.1	111 x 139	169(230)/2,200	-	-	1,188 x 825 x 926	773	TIER-I
L086TI	L 6	TI	8.1	111 x 139	210(285)/2,100	232(315)/2,300	265(360)/2,500	1,188 x 827 x 962	790	TIER-II
MD196T	L 6	TC	11.1	123 x 155	206(280)/2,000	-	-	1,235 x 855 x 1,073	975	TIER-I
MD196TI	L 6	TI	11.1	123 x 155	235(320)/2,000	-	-	1,235 x 855 x 1,073	1,009	TIER-I
L126TI	L 6	TI	11.1	123 x 155	265(360)/2,000	294(400)/2,100	-	1,235 x 855 x 1,073	1,060	TIER-II
V158TI	V 8	TI	14.6	128 x 142	353(480)/1,800	397(540)/2,100	500(680)/2,300	1,337 x 1,223 x 1,074	1,350	TIER-I
V180TI	V 10	TI	18.3	128 x 142	441(600)/1,800	478(650)/2,100	603(820)/2,300	1,495 x 1,223 x 1,169	1,550	TIER-I
V222TI	V 12	TI	21.9	128 x 142	530(720)/1,800	588(800)/2,100	736(1,000)/2,300	1,653 x 1,223 x 1,199	1,750	TIER-I
4V158TI	V 8	TI	14.6	128 x 142	390(530)/1,800	441(600)/2,100	603(820)/2,300	1,202 x 1,237 x 1,095	1,540	TIER-II
4V222TI	V 12	TI	21.9	128 x 142	588(800)/1,800	647(880)/2,100	883(1,200)/2,300	1,518 x 1,245 x 1,180	1,920	TIER-II

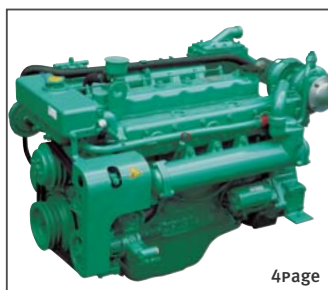
Marine Auxiliary Engines

Model	Type		Displacement (Liter)	Bore x Stroke (mm)	Output ISO 3046		Dimension (L x W x H) (mm)	Dry Weight (kg)	Emission
	No. of Cyl.	Aspiration			kW(ps)/1800rpm	kW(ps)/1500rpm			
AD066TI	L 6	TI	5.8	102 x 118	110(150)	96(130)	1,042 x 800 x 915	535	TIER-II
AD136	L 6	NA	8.1	111 x 139	93(126)	77(105)	1,188 x 764 x 926	735	TIER-I
AD136T	L 6	TC	8.1	111 x 139	125(170)	107(145)	1,188 x 766 x 926	748	TIER-I
AD136TI	L 6	TI	8.1	111 x 139	138(188)	115(157)	1,188 x 825 x 926	773	TIER-I
AD086TI	L 6	TI	8.1	111 x 139	186(253)	151(205)	1,188 x 827 x 962	790	TIER-II
AD196T	L 6	TC	11.1	123 x 155	181(246)	154(210)	1,235 x 855 x 1,073	975	TIER-I
AD196TI	L 6	TI	11.1	123 x 155	199(270)	173(235)	1,235 x 855 x 1,073	1,009	TIER-I
AD126TI	L 6	TI	11.1	123 x 155	247(336)	206(280)	1,193 x 854 x 1,072	1,060	TIER-II
AD158TI	V 8	TI	14.6	128 x 142	353(480)	302(410)	1,337 x 1,223 x 1,074	1,295	TIER-I
AD180TI	V 10	TI	18.3	128 x 142	441(600)	357(485)	1,495 x 1,223 x 1,169	1,545	TIER-I
AD222TI	V 12	TI	21.9	128 x 142	530(720)	446(606)	1,653 x 1,223 x 1,199	1,735	TIER-I
4AD158TI	V8	TI	14.6	128 x 142	390(530)	325(442)	1,205 x 1,237 x 1,111	1,540	-
4AD222TI	V12	TI	21.9	128 x 142	588(800)	490(667)	1,521 x 1,243 x 1,236	1,920	-

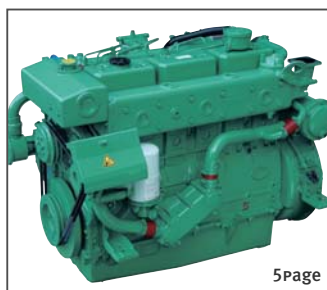
Doosan Marine Diesel Engine Line-up

160PS~1,200PS

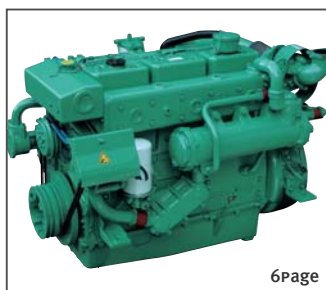
In-line Type



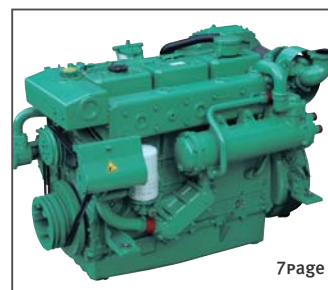
L066TI



L136



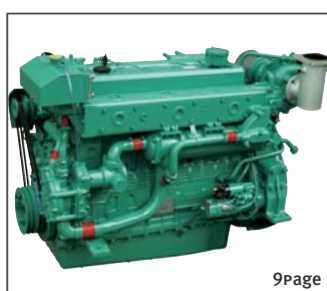
L136T



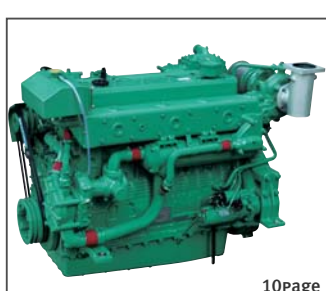
L136TI



L086TI



MD196T

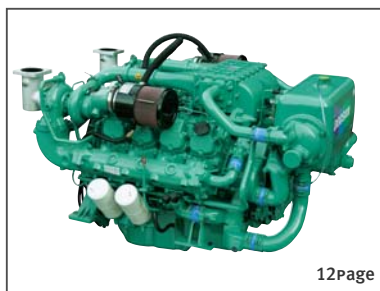


MD196TI

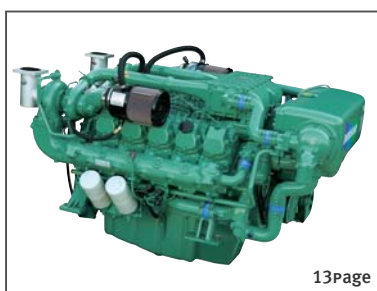


L126TI

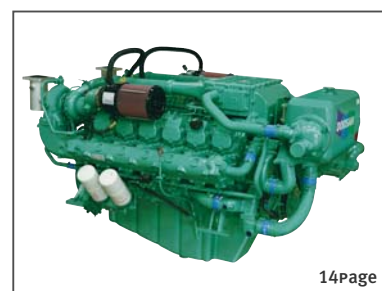
V Type



V158TI



V180TI



V222TI

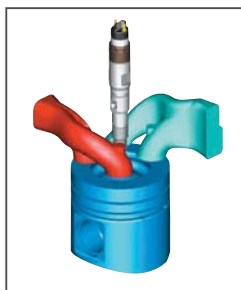
4Valve Type



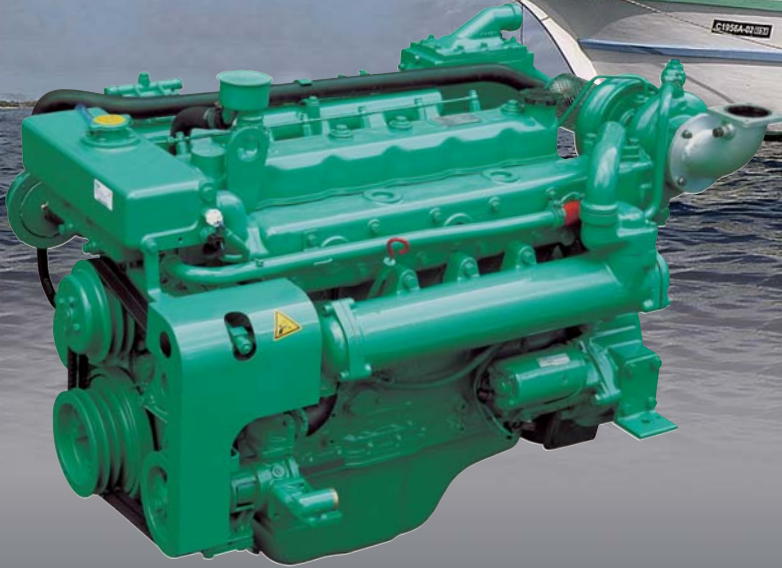
4V158TI



4V222TI



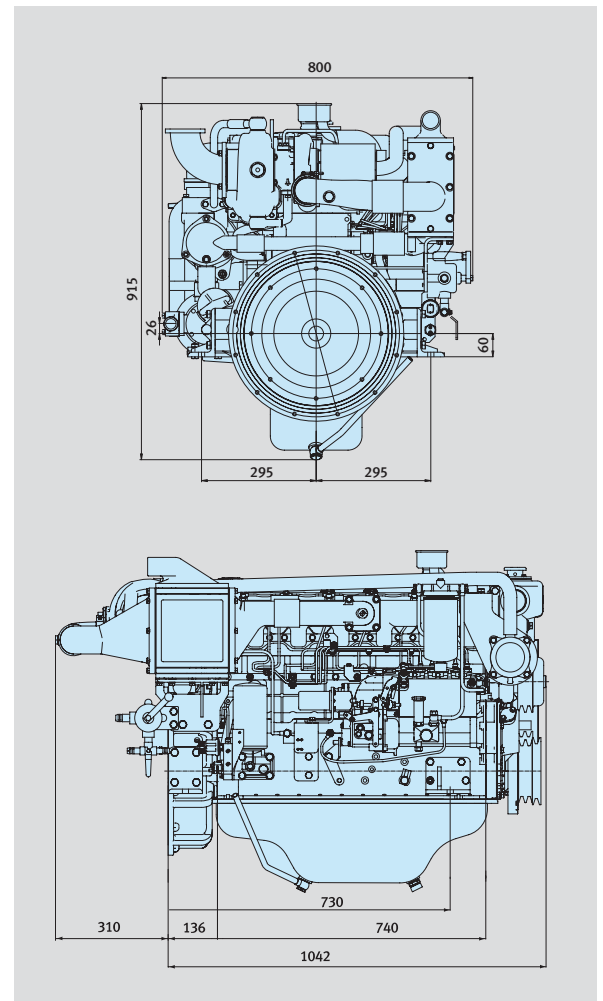
New Combustion System
4-Valve per cylinder design increases air flow and allows central and vertical injectors mounting for improved combustion and low emission.

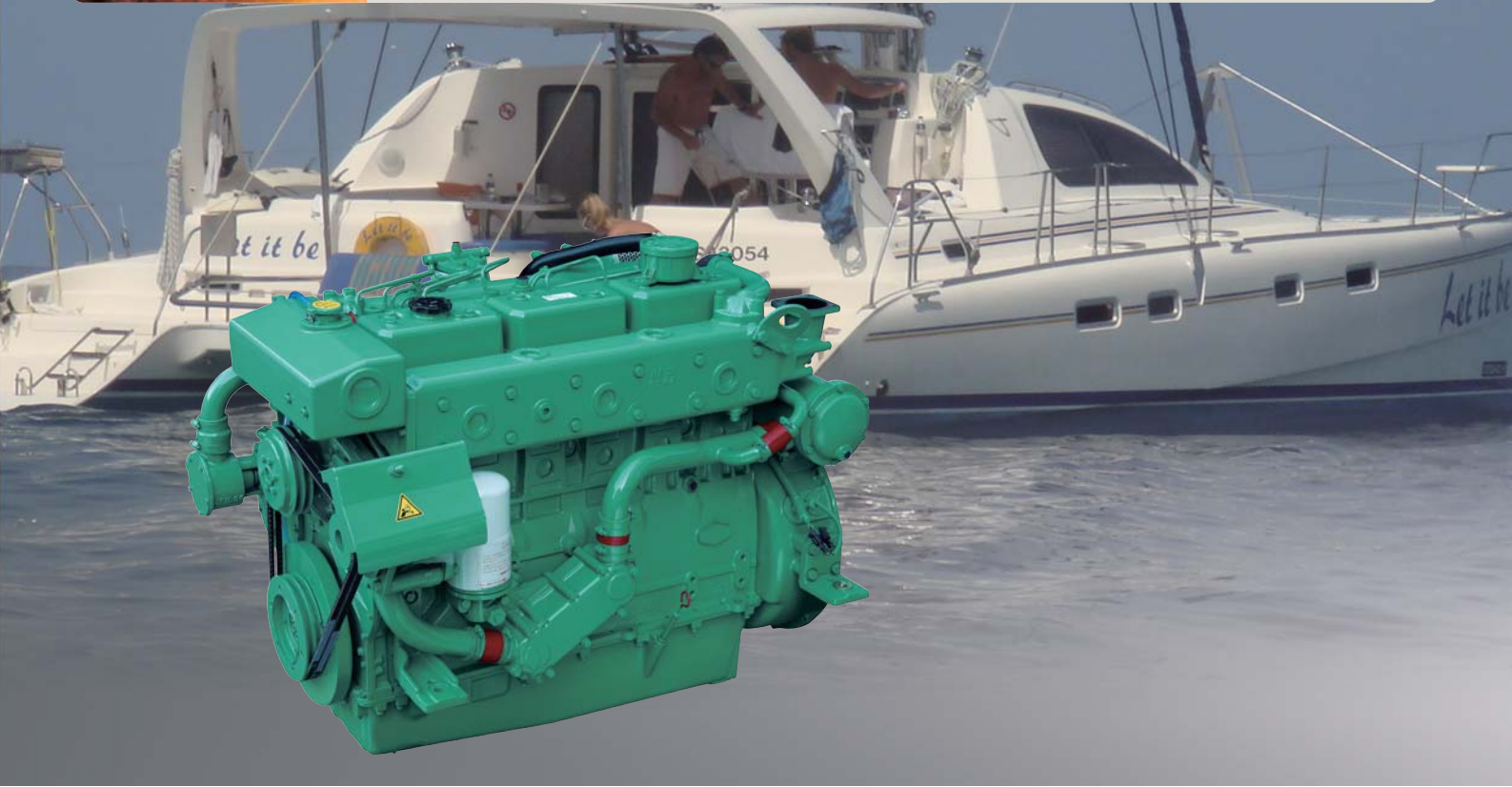


Main Specification

Model	Units	L066TIH
Engine type		4cycle, In line, direct-injection, water cooled with wet turbo charger & inter-cooler
Rating output	PS(kW) / rpm	180(132) / 2,200
Displacement	cc	5,785
Cylinder number - bore × stroke	mm	6 - 102 × 118
Flywheel housing & fly wheel		SAE 3 & 11 1/2
Low idling rpm	rpm	750 ± 25
No load max. rpm	rpm	below 2,420
Compression ratio		19.5 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4
Governor type of injection pump		Mechanical all speed (R.S.V)
Fuel consumption(only Ref.)	g / PS.h	159
	liter/h	34.5
Starting system		Electric Starting by starter motor
Starter motor capacity	V - kW	24 - 4.5
Alternator capacity	V - A	24 - 45
Battery	V - Ah	24 - 100
Cooling system		Indirect sea water cooling with heat exchanger
Cooling water capacity	Max. / Min.	lit 25 / 20
Fresh water pump type		Centrifugal type, driven by V-belt
Sea water pump type		Rubber impeller type driven by V-belt
Lubricating oil(Engine)	Pan capacity	lit Max : 19, Min : 14 (Engine total : 21 / 20)
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side
Engine Size(L×W×H)	Without M/G	mm 1,042 × 800 × 915
Engine dry weight	Without M/G	kg 535

Engine Dimension

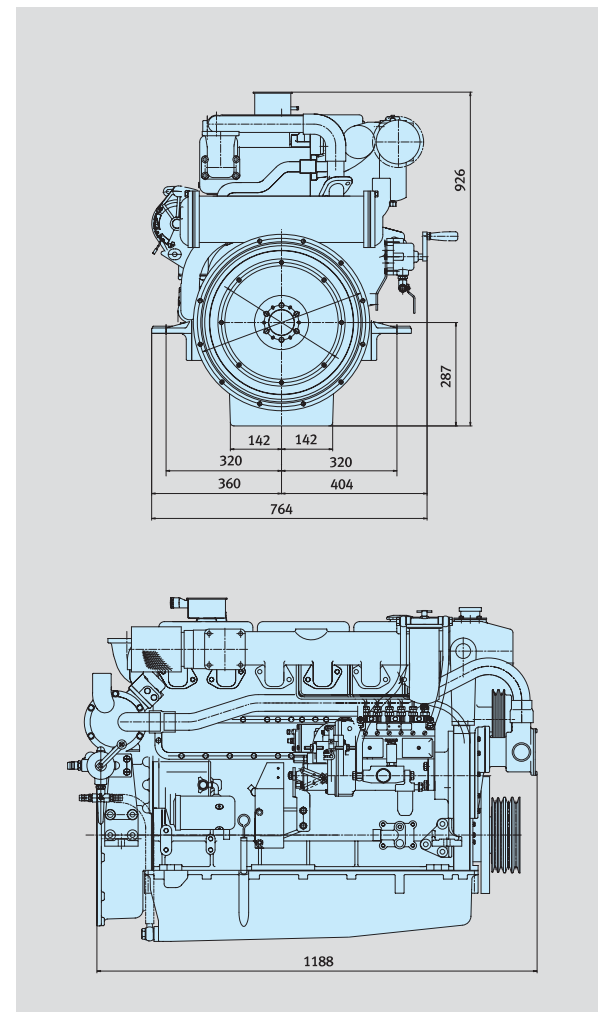




Main Specification

Model	Units	L136
Engine type		4cycle, In line, direct-injection, watercooled naturally aspirated
Rating output	PS(kW) / rpm	160(118) / 2,200
Displacement	cc	8,071
Cylinder number - bore × stroke	mm	6 - 111×139
Flywheel housing & fly wheel		SAE 2 & 11 1/2
Low idling rpm	rpm	725 ± 25
No load max. rpm	rpm	below 2,420
Compression ratio		17.6 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4
Governor type of injection pump		Mechanical all speed (R.S.V)
Fuel consumption(only Ref.)	g / PS.h	165
	Lit / h	32
Starting system		Electric Starting by starter motor
Starter motor capacity	V - kW	24 - 4.5
Alternator capacity	V - A	24 - 50
Battery	V - Ah	24 - 100
Cooling system		Indirect sea water cooling with heat exchanger
Cooling water capacity	Max. / Min.	lit 25 / 23
Fresh water pump type		Centrifugal type, driven by V-belt
Sea water pump type		Rubber impeller type driven by gear
Lubricating oil(Engine)	Pan capacity	lit Max : 23, Min : 17 (Engine total : 25)
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side
Engine Size(L×W×H)	Without M/G	mm 1,188×764×926
Engine dry weig	Without M/G	kg 743

Engine Dimension

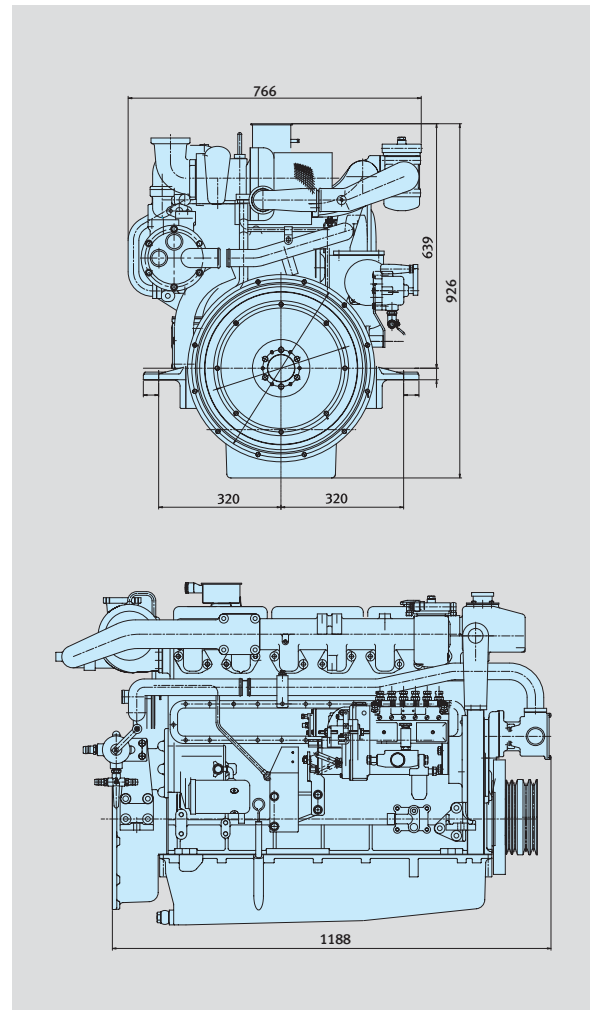


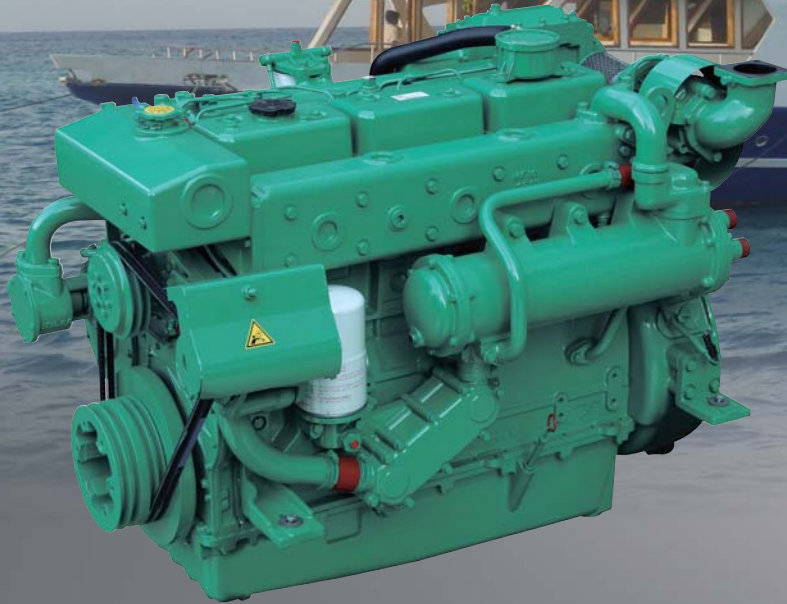


Main Specification

Model	Units	L136T	L136TL
Engine type		4cycle, In line, direct-injection, watercooled with turbo charger	
Rating output	PS(kW)/rpm	200(147) / 2,200	240(177) / 2500
Displacement	cc	8,071	
Cylinder number - bore × stroke	mm	6 - 111 × 139	
Flywheel housing & fly wheel		SAE 2 & 11 1/2	
Low idling rpm	rpm	725 ± 25	
No load max. rpm	rpm	below 2,400	below 2,750
Compression ratio		16.7 : 1	
Firing order		1 - 5 - 3 - 6 - 2 - 4	
Governor type of injection pump		Mechanical all speed (R.S.V)	
Fuel consumption (only Ref.)	g / ps.h	155	167
	Lit/h	37	48
Starting system		Electric Starting by starter motor	
Starter motor capacity	V - kW	24 - 4.5	
Alternator capacity	V - A	24 - 50	
Battery	V - Ah	24 - 100	
Cooling system		Indirect sea water cooling with heat exchanger	
Cooling water capacity	Max. / Min.	lit 27 / 25	
Fresh water pump type		Centrifugal type, driven by V-belt	
Sea water pump type		Rubber impeller type driven by gear	
Lubricating oil (Engine)	Pan capacity	lit Max : 23, Min : 17 (Engine total : 25)	
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side	
Engine Size(L×W×H)	Without M/G	mm 1,188 × 766 × 926	
Engine dry weight	Without M/G	kg 748	

Engine Dimension

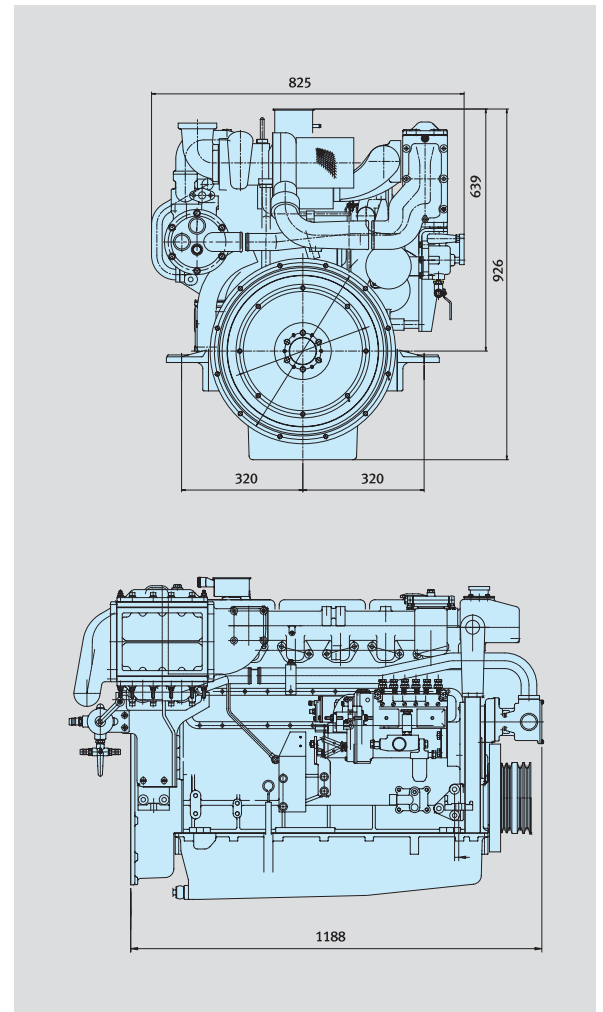


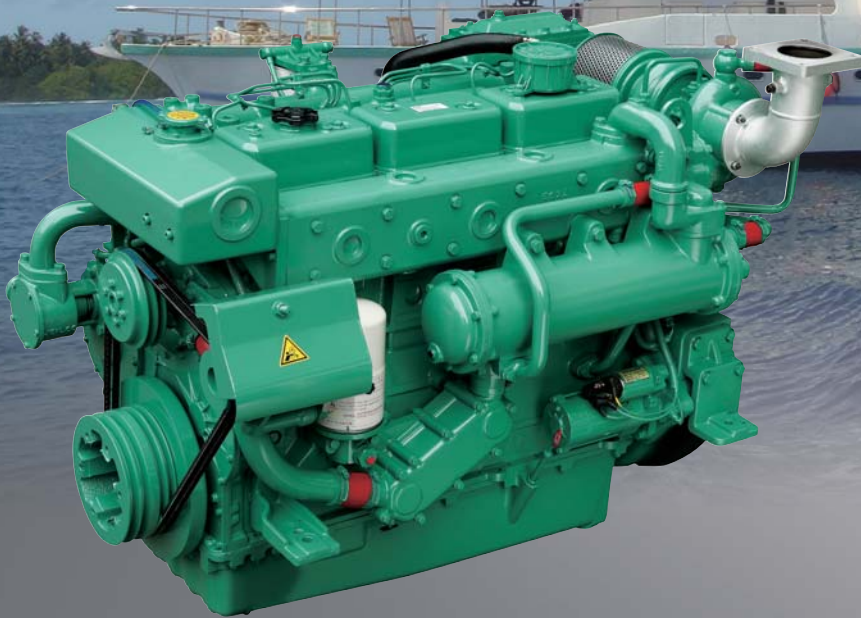


Main Specification

Model	Units	L136TI
Engine type		4cycle, In line, direct-injection, watercooled with turbo-inter cooler
Rating output	PS(kW)/rpm	230(169) / 2,200
Displacement	cc	8,071
Cylinder number -bore × stroke	mm	6 - 111×139
Flywheel housing & fly wheel		SAE 2 & 11 1/2
Low idling rpm	rpm	725 ± 25
No load max. rpm	rpm	below 2,400
Compression ratio		16.7 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4
Governor type of injection pump		Mechanical all speed (R.S.V)
Fuel consumption (only Ref.)	g / ps.h	162
	Lit/h	45
Starting system		Electric Starting by starter motor
Starter motor capacity	V - kW	24 - 4.5
Alternator capacity	V - A	24 - 50
Battery	V - Ah	24 - 100
Cooling system		Indirect sea water cooling with heat exchanger
Cooling water capacity	Max. / Min.	lit 27 / 25
Fresh water pump type		Centrifugal type, driven by V-belt
Sea water pump type		Rubber impeller type, driven by gear
Lubricating oil(Engine)	Pan capacity	lit Max : 23, Min : 17 (Engine total : 25)
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side
Engine Size(L×W×H)	Without M/G	mm 1,188×825×926
Engine dry weight	Without M/G	kg 773

Engine Dimension

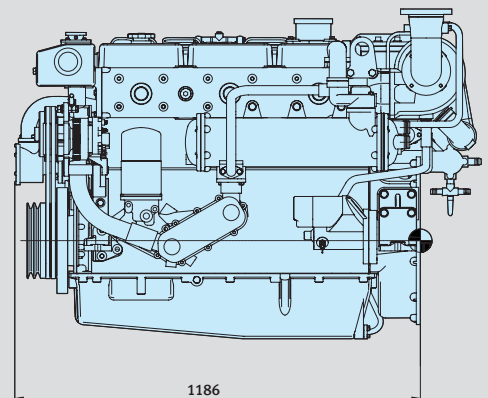
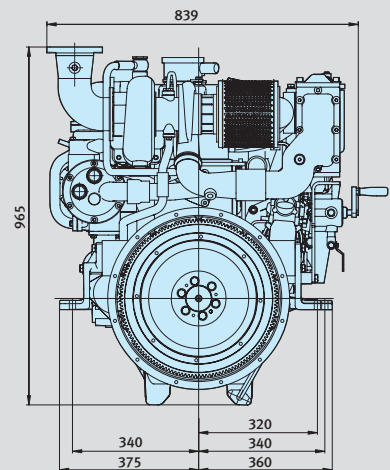


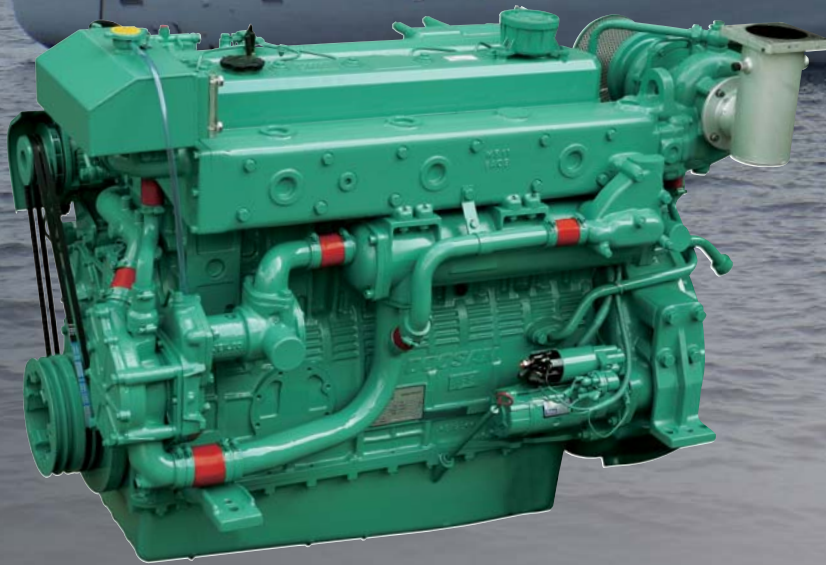


Main Specification

Model	Units	L086TIH	L086TIM	L086TIL
Engine type		4cycle, In line, direct-injection, water cooled with wet turbo charger & inter-cooler		
Rating output	PS(kW)/rpm	285(210)/2,100	315(232)/2,300	360(265)/2,500
Displacement	cc	8,071		
Cylinder number · bore × stroke	mm	6 · 111 × 139		
Flywheel housing & fly wheel		SAE 2 & 11 1/2		
Low idling rpm	rpm	750 ± 25		
No load max. rpm	rpm	below 2,310	below 2,530	below 2,750
Compression ratio		16.7 : 1		15.3 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4		
Governor type of injection pump		Mechanical all speed (R.S.V)		
Fuel consumption (only Ref.)	g / ps.h	152	163	167
	liter/h	52	62	72
Starting system		Electric starting by starter motor		
Starter motor capacity	V - kW	24 - 4.5		
Alternator capacity	V - A	24 - 50		
Battery	V - Ah	24 - 100		
Cooling system		Indirect sea water cooling with heat exchanger		
Cooling water capacity	Max. / Min.	lit 27 / 25		
Fresh water pump type		Centrifugal type, driven by V-belt		
Sea water pump type		Rubber impeller type driven by gear		
Lubricating oil (Engine)	Pan capacity	lit Max : 23, Min : 17 (Engine total : 25)		
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side		
Engine Size(L×W×H)Without M/G	mm	1,186×839×965		
Engine dry weight	Without M/G	kg 790		

Engine Dimension

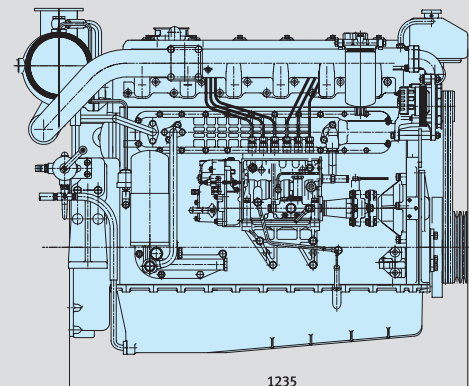
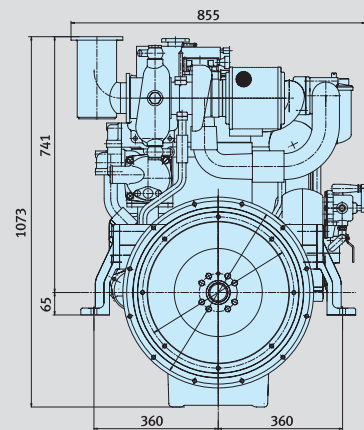


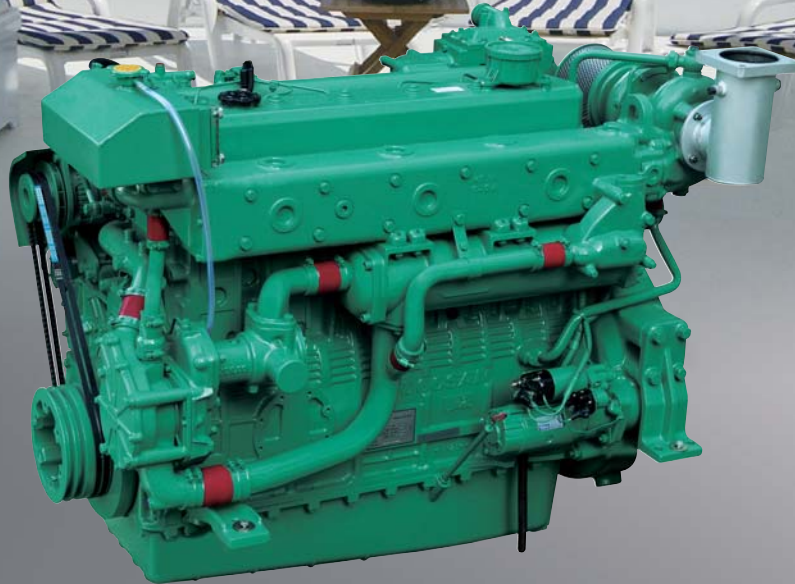


Main Specification

Model	Units	MD196T
Engine type		4 cycle, In line, direct- injection, water cooled with wet turbo charger
Rating output	PS(kW)/rpm	280(206)/2,000
Displacement	cc	11,051
Cylinder number -bore × stroke	mm	6 - 123 × 155
Flywheel housing & fly wheel		SAE 1 & 14
Low idling rpm	rpm	725 ± 25
No load max. rpm	rpm	below 2,200
Compression ratio		17.1 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4
Governor type of injection pump		Mechanical variable speed (R.Q.V)
Fuel consumption (only Ref.)	g / ps.h	162
	Lit/h	55
Starting system		Electric Starting by starter motor
Starter motor capacity	V - kW	24 - 6.0
Alternator capacity	V - A	24 - 50
Battery	V - Ah	24 - 150
Cooling system		Indirect sea water cooling with heat exchanger
Cooling water capacity	Max. / Min.	lit 24 / 19
Fresh water pump type		Centrifugal type, driven by gear
Sea water pump type		Rubber impeller type driven by gear
Lubricating oil(Engine)	Pan capacity	lit Max : 25, Min : 19 (Engine total : 27)
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side
Engine Size(L×W×H)	Without M/G	mm 1,235×855×1,073
Engine dry weight	Without M/G	kg 975

Engine Dimension

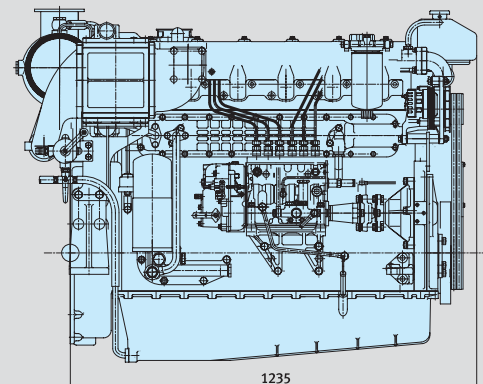
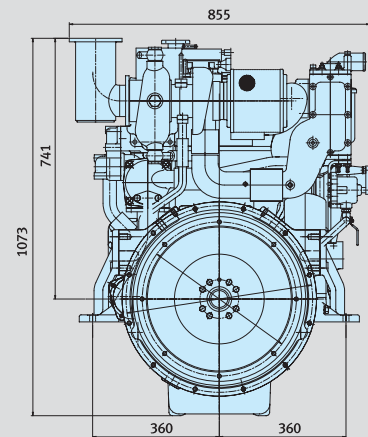




Main Specification

Model	Units	MD196TI
Engine type		4cycle, In line, direct-injection, watercooled with wet turbo charger & inter-cooler
Rating output	PS(kW) / rpm	320(235) / 2,000
Displacement	cc	11,051
Cylinder number - bore × stroke	mm	6 - 123×155
Flywheel housing & fly wheel		SAE 1 & 14
Low idling rpm	rpm	750 ± 50
No load max. rpm	rpm	below 2,200
Compression ratio		16.5 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4
Governor type of injection pump		Mechanical variable speed (R.Q.V)
Fuel consumption(only Ref.)	g / PS.h	158
	Lit / h	61
Starting system		Electric Starting by starter motor
Starter motor capacity	V - kW	24 - 6.0
Alternator capacity	V - A	24 - 50
Battery	V - Ah	24 - 150
Cooling system		Indirect sea water cooling with heat exchanger
Cooling water capacity	Max. / Min.	lit 24 / 19
Fresh water pump type		Centrifugal type, driven by gear
Sea water pump type		Rubber impeller type driven by gear
Lubricating oil(Engine)	Pan capacity	lit Max : 25, Min : 19 (Engine total : 27)
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side
Engine Size(L×W×H)	Without M/G	mm 1,235×855×1,073
Engine dry weight	Without M/G	kg 1,009

Engine Dimension

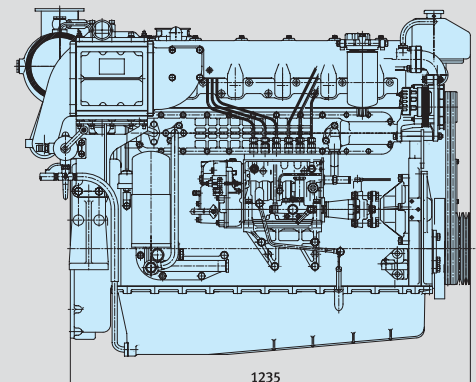
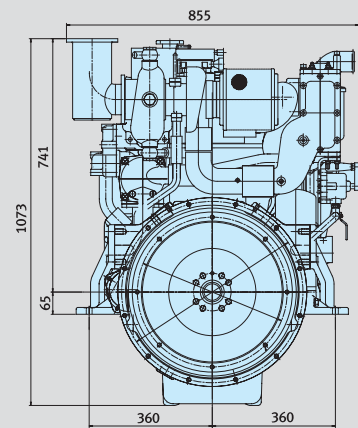




Main Specification

Model	Units	L126TIH	L126TIM
Engine type		4cycle, In line, direct-injection, water cooled with wet turbo charger & inter-cooler	
Rating output	PS(kW) / rpm	360(265) / 2,000	400(294) / 2,100
Displacement	cc	11,051	
Cylinder number - bore × stroke	mm	6 - 123 × 155	
Flywheel housing & fly wheel		SAE 1 & 14	
Low idling rpm	rpm	725 ± 25	
No load max. rpm	rpm	below 2,200	below 2,310
Compression ratio		17 : 1	
Firing order		1 - 5 - 3 - 6 - 2 - 4	
Governor type of injection pump		Mechanical variable speed (R.Q.V)	
Fuel consumption(only Ref.)	g / PS.h	154	159
	lit / h	67	77
Starting system		Electric Starting by starter motor	
Starter motor capacity	V - kW	24 - 6.0	
Alternator capacity	V - A	24 - 50	
Battery	V - Ah	24 - 150	
Cooling system		Indirect sea water cooling with heat exchanger	
Cooling water capacity	Max. / Min.	lit 24 / 19	
Fresh water pump type		Centrifugal type, driven by gear	
Sea water pump type		Rubber impeller type driven by gear	
Lubricating oil(Engine)	Pan capacity	lit Max : 25, Min : 19 (Engine total : 27)	
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side	
Engine size(L×W×H)	Without M/G	mm 1,235 × 855 × 1,073	
Engine dry weight	Without M/G	kg 1,060	

Engine Dimension

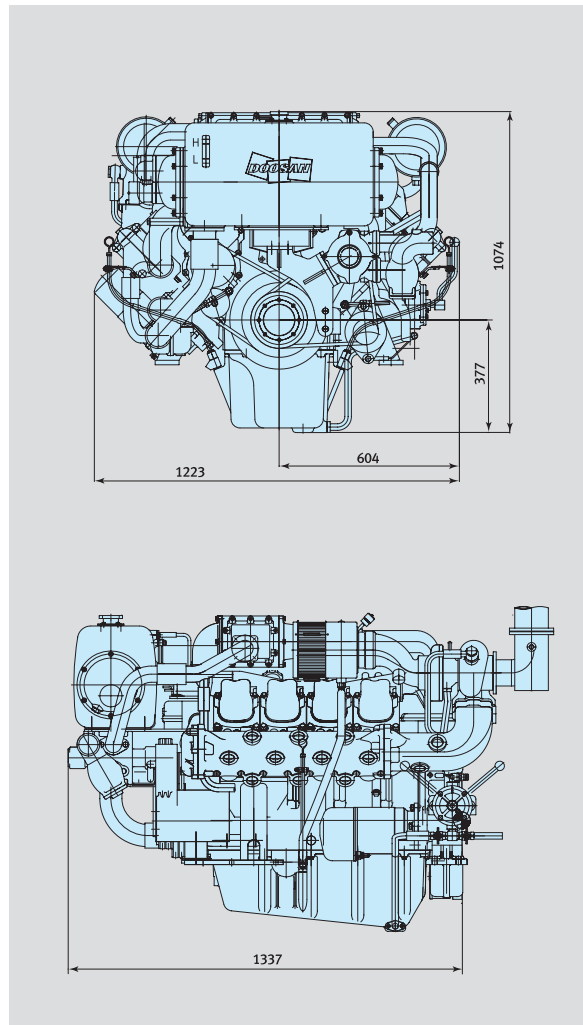


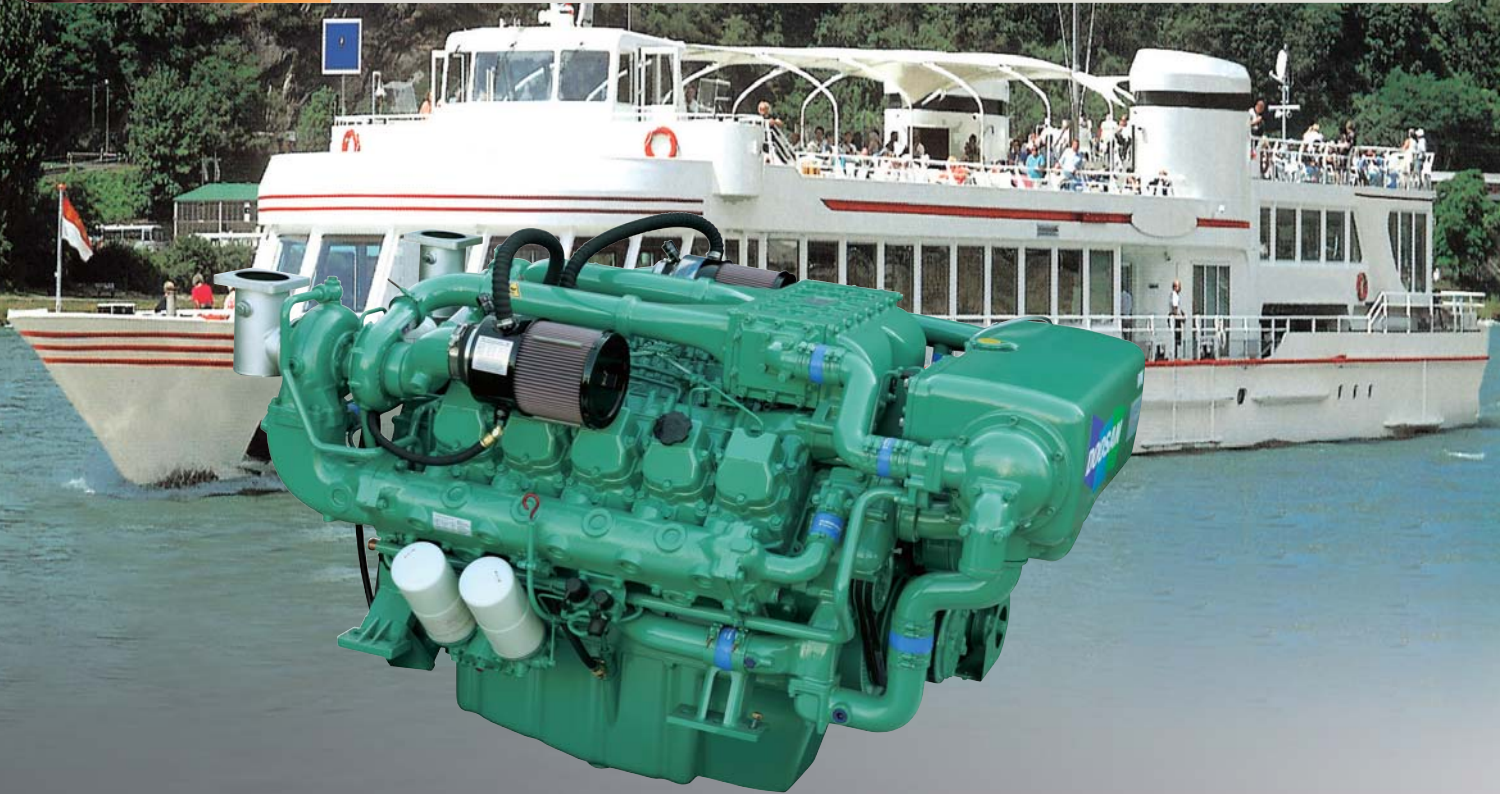


Main Specification

Model	Units	V158TIH	V158TIM	V158TIL
Engine type		4cycle, V type, direct-injection, water cooled with wet turbo charger & inter-cooler		
Rating output	PS(kW) / rpm	480(353) / 1,800	540(397) / 2,100	680(500) / 2,300
Displacement	cc	14,618		
Cylinder number - bore × stroke	mm	8 - 128 × 142		
Flywheel housing & fly wheel		SAE 1 & 14		
Low idling rpm	rpm	725 ± 25		
No load max. rpm	rpm	below 2,070	below 2,415	below 2,645
Compression ratio		15 : 1		14.6 : 1
Firing order		1 - 5 - 7 - 2 - 6 - 3 - 4 - 8		
Governor type of injection pump		Mechanical variable speed (R.Q.V)		
Fuel consumption(only Ref.)	g / PS.h	147	154	159
	Lit / h	85	100	130
Starting system		Electric Starting by starter motor		
Starter motor capacity	V - kW	24 - 6.6		
Alternator capacity	V - A	24 - 50		
Battery	V - Ah	24 - 200		
Cooling system		Indirect sea water cooling with heat exchanger		
Cooling water capacity	Max. / Min.	lit 89 / 78		
Fresh water pump type		Centrifugal type, driven by belt		
Sea water pump type		Bronze impeller type driven by belt		
Lubricating oil(Engine)	Pan capacity	lit Max : 31, Min : 25 (Engine total : 35)		
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side		
Engine Size(L×W×H)	Without M/G	mm 1,337 × 1,223 × 1,074		
Engine dry weight	Without M/G	kg 1,350		1,435

Engine Dimension

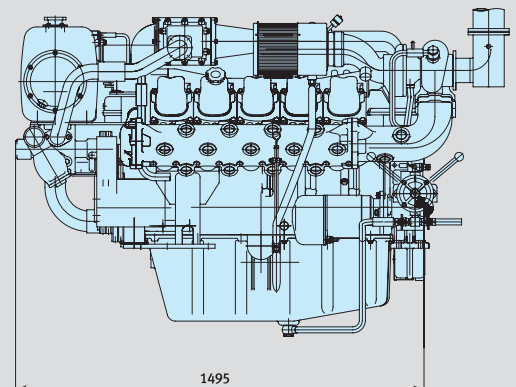
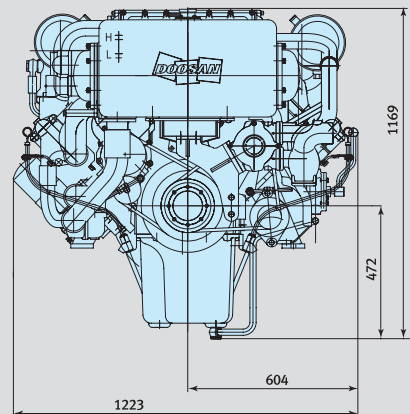


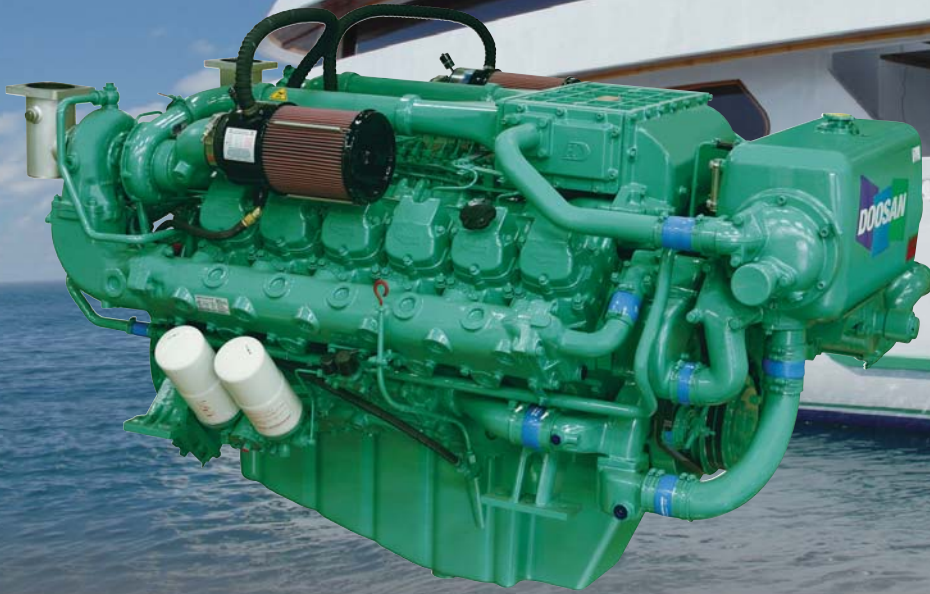


Main Specification

Model	Units	V180TIH	V180TIM	V180TIL
Engine type		4cycle, V type, direct-injection, water cooled with wet turbo charger & inter-cooler		
Rating output	PS(kW) / rpm	600(441)/1,800	650(478)/2,100	820(603)/2,300
Displacement	cc	18,273		
Cylinder number - bore × stroke	mm	10 - 128 × 142		
Flywheel housing & fly wheel		SAE 1 & 14		
Low idling rpm	rpm	725 ± 25		
No load max. rpm	rpm	below 2,070	below 2,415	below 2,645
Compression ratio		15 : 1		14.6 : 1
Firing order		1 - 6 - 5 - 10 - 2 - 7 - 3 - 8 - 4 - 9		
Governor type of injection pump		Mechanical variable speed (R.Q.V)		
Fuel consumption(only Ref.)	g / PS.h	150	156	158
	Lit / h	109	122	156
Starting system		Electric Starting by starter motor		
Starter motor capacity	V - kW	24 - 6.6		
Alternator capacity	V - A	24 - 50		
Battery	V - Ah	24 - 200		
Cooling system		Indirect sea water cooling with heat exchanger		
Cooling water capacity	Max. / Min.	lit 92 / 81		
Fresh water pump type		Centrifugal type, driven belt		
Sea water pump type		Bronze impeller type driven by belt		
Lubricating oil(Engine)	Pan capacity	lit Max : 35, Min : 28 (Engine total : 38)		
Direction of revolution	Crankshaf	Counter clockwise viewed from stern side		
Engine Size(L×W×H)	Without M/G	mm 1,495 × 1,223 × 1,169		
Engine dry weight	Without M/G	kg 1,550		1,630

Engine Dimension

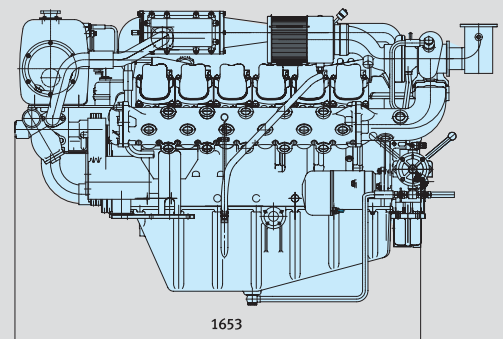
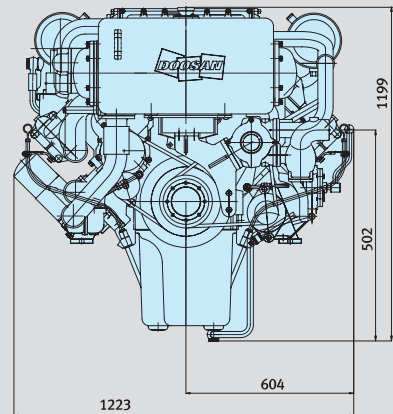




Main Specification

Model	Units	V222TIH	V222TIM	V222TIL
Engine type		4cycle, V type, direct-injection, water cooled with wet turbo charger & inter-cooler		
Rating output	PS(kW) / rpm	720(530) / 1,800	800(588) / 2,100	1,000(736) / 2,300
Displacement	c c	21,927		
Cylinder number - bore × stroke	mm	12 - 128 × 142		
Flywheel housing & fly wheel		SAE 1 & 14		
Low idling rpm	rpm	725 ± 25		
No load max. rpm	rpm	below 2,070	below 2,415	below 2,645
Compression ratio		15 : 1		14.6 : 1
Firing order		1 - 12 - 5 - 8 - 3 - 10 - 6 - 7 - 2 - 11 - 4 - 9		
Governor type of injection pump		Mechanical variable speed (R.Q.V)		
Fuel consumption(only Ref.)	g / PS.h	148	154	159
	Lit / h	129	148	191
Starting system		Electric Starting by starter motor		
Starter motor capacity	V - kW	24 - 6.6		
Alternator capacity	V - A	24 - 50		
Battery	V - Ah	24 - 200		
Cooling system		Indirect sea water cooling with heat exchanger		
Cooling water capacity	Max. / Min.	lit 98 / 87		
Fresh water pump type		Centrifugal type, driven by belt		
Sea water pump type		Bronze impeller type driven by belt		
Lubricating oil(Engine)	Pan capacity	lit Max : 40, Min : 33 (Engine total : 43)		
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side		
Engine Size(L×W×H)	Without M/G	mm 1,653 × 1,223 × 1,199		
Engine dry weight	Without M/G	kg 1,750	1,750	1,830

Engine Dimension

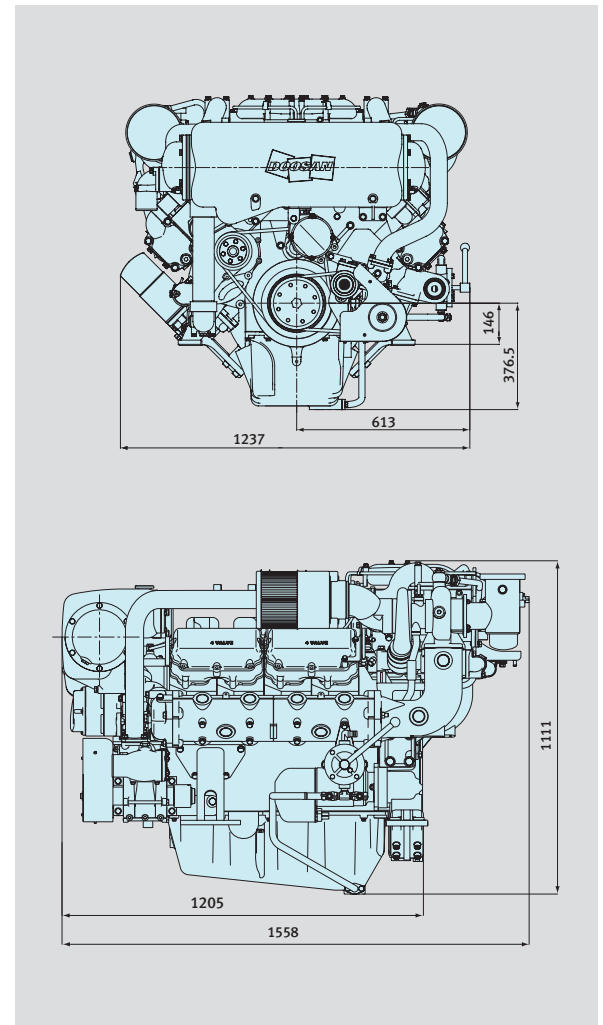




Main Specification

Model	Units	4V158TIH	4V158TIM	4V158TIL
Engine type		4 valve, 4 cycle, V type, direct- injection, water cooled with wet turbo charger & inter-cooler		
Rating output (B.H.P)	kW(PS)/rpm	390(530)/1,800	441(600)/2,100	588(800)/2,300
Displacement	cc	14,618		
Cylinder number - bore(φ) x stroke	mm	8 - φ 128 × 142		
Flywheel housing & fly wheel		SAE 1 & 14		
Valve clearance at cold In / Ex	mm	0.4 / 0.5		
Low idling rpm	rpm	725 ± 25		
No load max. rpm	rpm	below 2,070	below 2,415	below 2,645
Mean effective pressure	kg/cm ²	18.1	17.6	21.4
Mean piston speed	m/sec.	8.52	9.94	10.89
Compression ratio		14.3 : 1	14.3:1	14.3:1
Firing order		1 - 5 - 7 - 2 - 6 - 3 - 4 - 8		
Governor type of injection pump		Mechanical variable speed (R.Q.V)		
Fuel consumption	g / PS.h	153	167	166
	Lit / h	97	120	159
Starting system		Electric Starting by starter motor		
Starter motor capacity	V - kW	24 - 6.6		
Alternator capacity	V - A	24 - 50		
Battery	V - Ah	24 - 200		
Cooling system		Indirect sea water cooling with heat exchanger		
Cooling water capacity	Max. / Min.	lit. 94 / 83		
Fresh water pump type		Centrifugal type, driven by belt		
Sea water pump type		Bronze impeller type driven by belt		
Lubricating oil	pan capacity	lit. Max : 31, Min : 25 (Engine total : 35)		
	pressure	kg/cm ² Full : 3.5, Idle : 1.2		
Direction of revolution	crankshaft	Counter clockwise viewed from stern side		
Engine Size (L × W × H)	mm	1,558 × 1,237 × 1,111		
Engine dry weight	kg	1,540	1,540	1,540

Engine Dimension



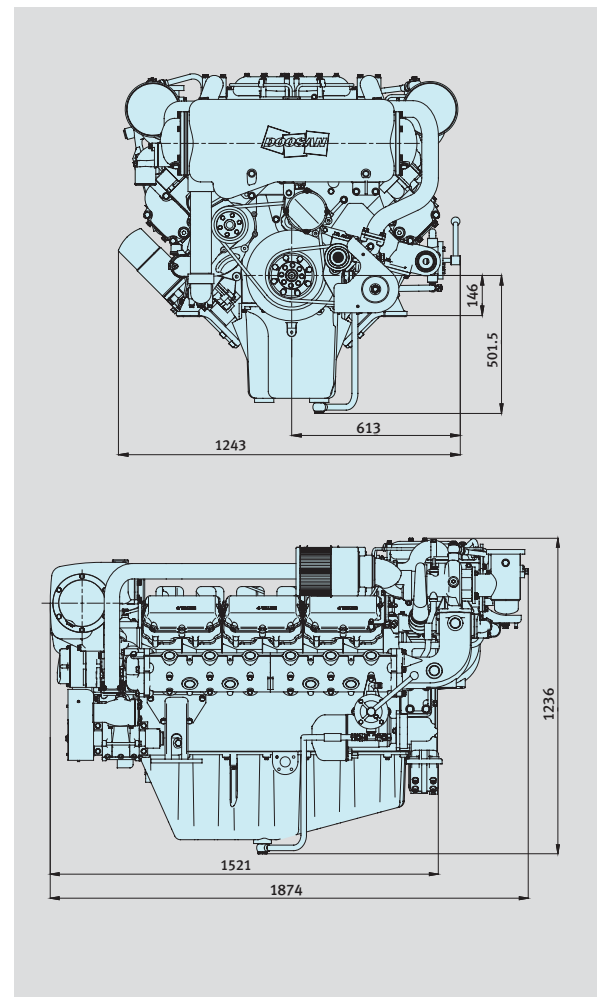


Main Specification

Model	Units	4V222TIH	4V222TIM	4V222TIL
Engine type		4 valve, 4 cycle, V type, direct - injection, water cooled with wet turbo charger & inter-cooler		
Rating output (B.H.P)	kW(PS)/rpm	588(800)/1,800	647(880)/2,100	883(1,200)/2,300
Displacement	cc	21,927		
Cylinder number - bore(φ) x stroke	mm	12 - φ 128 × 142		
Flywheel housing & fly wheel		SAE 1 & 14		
Valve clearance at cold In / Ex	mm	0.4 / 0.5		
Low idling rpm	rpm	725 ± 25		
No load max. rpm	rpm	below 2,070	below 2,415	below 2,645
Mean effective pressure	kg/cm ²	18.2	17.2	21.4
Mean piston speed	m/sec.	8.52	9.94	10.89
Compression ratio		14.3 : 1	14.3:1	14.3:1
Firing order		1 - 12 - 5 - 8 - 3 - 10 - 6 - 7 - 2 - 11 - 4 - 9		
Governor type of injection pump		Mechanical variable speed (R.Q.V)		
Fuel consumption	g / PS.h	147	150	164
	Lit / h	143	160	239
Starting system		Electric Starting by starter motor		
Starter motor capacity	V - kW	24 - 6.6		
Alternator capacity	V - A	24 - 50		
Battery	V - Ah	24 - 200		
Cooling system		Indirect sea water cooling with heat exchanger		
Cooling water capacity	Max. / Min. lit.	103 / 92		
Fresh water pump type		Centrifugal type, driven by belt		
Sea water pump type		Bronze impeller type driven by belt		
Lubricating oil	pan capacity	lit. Max : 40, Min : 33 (Engine total : 43)		
(Engine)	pressure	kg/cm ² Full : 3.5, Idle : 1.2		
Direction of revolution	crankshaft	Counter clockwise viewed from stern side		
Engine Size (L × W × H)	mm	1,874 × 1,243 × 1,236		
Engine dry weight	kg	1,920	1,920	1,920

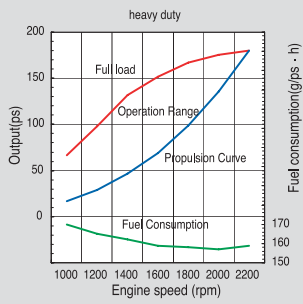
※H : Heavy Duty, M : Medium Duty, L : Light Duty

Engine Dimension

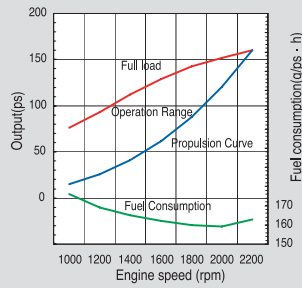


Marine engine performance curve

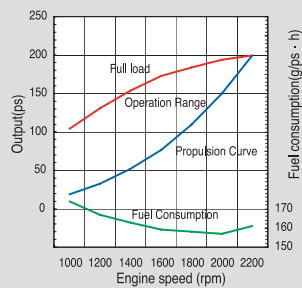
L066TI



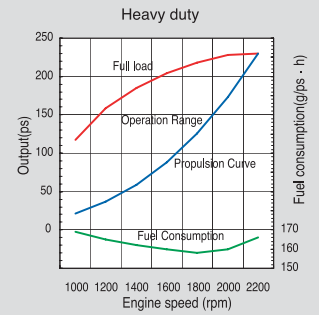
L136



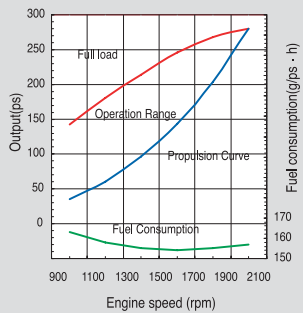
L136T



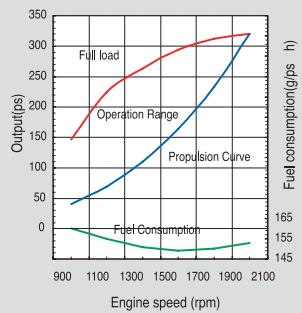
L136TI



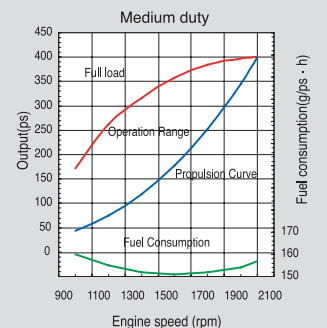
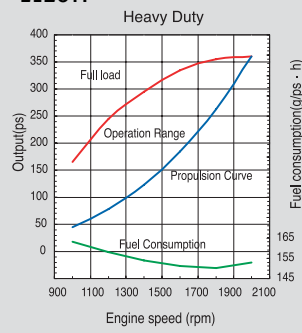
MD196T



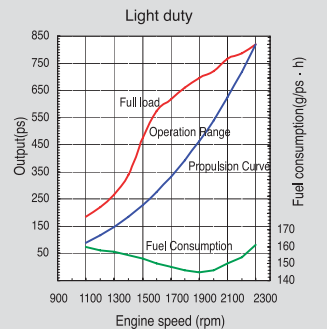
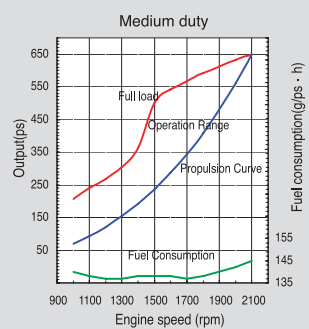
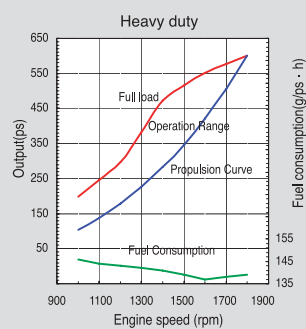
MD196TI



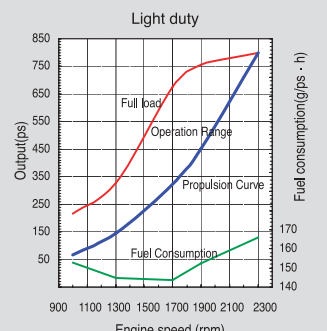
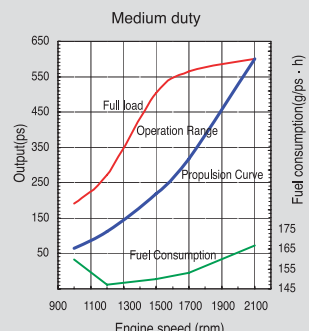
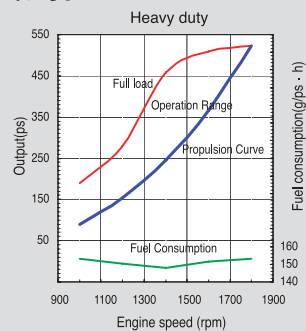
L126TI



V180TI



4V158TI



Power ratings of Doosan Engines

Automotive rating to ISO 1585(DIN 7020)

The output specified by this maximum intermittent power which should be applied to highway vehicles where great variance of engine speed and load are required. In this category are trucks, buses, high-speed road rollers. etc
This power rating is not applicable to industrial applications, marine uses and other off-highway vehicles.

Doosan vehicle catalogs and brochures are based on the above DIN standard and therefore the power ratings given do not apply to non-automotive uses.

Industrial intermittent rating to DIN6270B

The output specified by this rating is the maximum governed horsepower (i. e. maximum effective power) capable of performance an operating where some variances of engine speed and load condition are required for short periods (within one hour). The injection pump and governor are preset to a specified load and engine speed with no allowance for overload. Typical applications are wheel and crawler tractors, mechanical type excavators and power units for rock crushers and yarders.
Engine performance data contained in Doosan industrial engine catalogs and technical manuals are based on the DIN standard.

Industrial continuous rating to DIN 6270A

The output specified by this rating about 90-95% of the above maximum governed horsepower. In this case, the output must be capable of performing a given operation with sustained load and engine speeds and continuously for a 24-hour period. The injection pump and governor are preset to allow a 10% overload. Typical application are pump units, compressor, refrigeration unit, hydraulic excavators, and low speed road rollers.

Gen Set Drive rating to ISO 3046

Prime : Output available with varying load for the duration of the interruption of the normal source power

Standby : Output available with varying load for a limited time

Marine rating to ISO 3046

(1) Heavy Duty

- Operation hours : unlimited per year, unlimited per day
- Average load application : up to 85%
- Percentages of time at full load : up to 50%

**Application : Fishing trawler, Tug boat, Pushing vessel, Cargo boat, Freighter, Ferry*

(2) Medium Duty

- Operation hours : up to 3,000hr per year, up to 10hrs per day
- Average load application : up to 70%
- Percentages of time at full load : up to 30%

**Application : Fishing trawler, Pilot boat, Escort boat, Passenger boat, Freighter, Ferry, Cruising vessel*

(2) Light Duty

- Operation hours : up to 2,000hr per year, up to 5hrs per day
- Average load application : up to 50%
- Percentages of time at full load : up to 20%

**Application : Fishing trawler, Pilot boat, Escort boat, Passenger boat, Freighter, Ferry, Cruising vessel*

Conversion data

1 hp = 0.7457 kW
1 PS = 0.98632 hp
1 hp = 1.01387 PS
1PS = 0.7355 kW
1 lbft = 0.138255 kgfm
1kgfm = 9.8066 Nm
760 mmHg = 1,013 mbar = 101.3 kPa
1 kgf/cm² = 98 kPa
1 cid = 16.38 cm³
1 g/PS-h = 1.359 g/kW · h
1 Lb/hph = 447.38 g/PS · h

$$T(\text{Nm}) = \frac{9549.3 \times P (\text{kW})}{N (\text{min}^{-1})}$$

$$T(\text{kgfm}) = \frac{716.2 \times P (\text{PS})}{N (\text{min}^{-1})}$$

$$T(\text{lbft}) = \frac{5252 \times P (\text{hp})}{N (\text{min}^{-1})}$$

Doosan Marine Diesel Engines



Doosan Infracore
Engines & Materials

Seoul Office : Overseas Marketing & Sales
Engines & Materials BG
Doosan Infracore Co., Ltd.
23rd Floor, Doosan Tower, 18-12, Euljiro 6-ga,
Jung-gu, Seoul, Korea.
Tel :+82-2-3398-8530~8546
Fax :+82-2-3398-8509

Web site : <http://engine.doosaninfracore.co.kr>

AUTHORIZED DEALER

