

# ***DOOSAN MARINE DIESEL ENGINES***

**Doosan Infracore**  
Engine



## CORPORATE PROFILE



Doosan Infracore ranks among the world's leading makers of construction equipment, machine tools and engines required to build and maintain infrastructure. We were founded in 1937 and have since achieved an unrivalled position in the world. In the 1990s, we have grown to become a truly global player through technological advancements, acquisitions and new product developments.

Doosan Infracore built a global network of large production facilities and sales subsidiaries, along with extensive dealer networks in all regions of the world including North America, Europe and China. Doosan Infracore continues to secure the latest products and technologies in line with the growing demand for green engines and boosting customer value.

### Introduction of Engine Business Group

The history of the Doosan Infracore Engine BG goes back to 1958 by offering diesel engines, and the unit today produces and supplies diesel and natural gas engines with high performance and fuel-efficiency for commercial vehicles, military vehicles, construction equipment, generators and ships around the world. Doosan Infracore is emerging as a global engine producer by developing a full line-up of diesel and gas models that meet increasingly strict environmental regulatory standards.

With the introduction of our new compact diesel Tier 4 final and EU Stage IIIB & IV compliant engines, Doosan Infracore is positioned to become one of the world's top 5 engine makers with advanced environmentally-friendly technologies.

#### Contents

Introduction	_02	<b>Doosan Marine Diesel Engines Line-up</b>	
History & Award	_03		
Power ratings of Doosan Engines	_05	In-line Type	_09
Specification of the Product	_06	V Type	_27

## HISTORY & AWARD



1950~70's — 1980~90's — 2000's — 2010's

### 1950's

1958 Marine Engine (AVL)

### 1970's

1975 Medium duty Engines (MAN license)  
- D0846, D2156

1979 Light duty Engines (ISUZU license)  
- 4BA1, 6BB1 (2.8, 5.4L)

### 1980's

1983 Large Engines (MAN license)  
- D28 Series (15, 18, 22L)

Grand Prix of Quality Control (Honor of President/ Korea)

1985 'STORM' engine, (the first in-house designed model, 8, 12L)

1986 Iron Medal of Industry with STORM engine (Honor of President/ Korea)

1988 Small Engines  
- 3AB1, C223, C240, 4BC2 (1.8, 2.2, 2.4, 3.3L)

### 1990's

1994 Acquire ISO 9001/9002

1995 'DE & DV' series (8, 12, 15L)

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 'GE' series  
- CNG engine for city bus (12L)

### 2000's

2000 Best Award on Engine with GE12Ti engine (NGV2000)

2001 Tier II engine

2004 Euro III engine with Common-rail system

2006 GM Group Supplier of the Year (SOY) award

2007 Euro IV engine

2008 CNG engine assembly plant in Atlanta  
- US07 certified

2009 Joint Venture with XCMG in China : XDEC

### 2010's

2010 Euro V engine. US10 CNG engine (supplied to LA Metro Bus)

2011 Tier IV-Interim engine

2012 XDEC, start of production

Engine plant in China

Start of production of Doosan Compact Diesel Engines (1.8, 2.4, 3.4L)

# DOOSAN MARINE DIESEL ENGINES SPECIFICATION



## POWER RATINGS OF DOOSAN ENGINES



### Marine rating to ISO 3046

#### (1) Heavy Duty

- Operation hours : unlimited per year, unlimited per day
- Average load application : up to 90%
- Percentages of time at full load : up to 80%
- Typical gearbox ratio : 2.5~6

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

#### (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%
- Typical gearbox ratio : 2~3.5

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

#### (3) Light Duty

- Operation hours : up to 1,000hr per year, up to 5hrs per day
- Average load application : up to 50%
- Percentages of time at full load : up to 20%
- Typical gearbox ratio : 1~2.5

\* Application : Yacht, Cruising vessel, Fast boat, Fire pump

### Conversion data

$$1 \text{ hp} = 0.7457 \text{ kW}$$

$$1 \text{ hp} = 1.01387 \text{ PS}$$

$$1 \text{ lbft} = 0.138255 \text{ kgfm}$$

$$760 \text{ mmHg} = 1,013 \text{ mbar} = 101.3 \text{ kPa}$$

$$1 \text{ kgf/cm}^2 = 98 \text{ kPa}$$

$$1 \text{ g/PS}\cdot\text{h} = 1.359 \text{ g/kW}\cdot\text{h}$$

$$1 \text{ PS} = 0.98632 \text{ hp}$$

$$1 \text{ PS} = 0.7355 \text{ kW}$$

$$1 \text{ kgfm} = 9.8066 \text{ Nm}$$

$$1 \text{ cid} = 16.38 \text{ cm}^3$$

$$1 \text{ Lb/hph} = 447.38 \text{ g/PS}\cdot\text{h}$$

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

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

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

## DOOSAN MARINE DIESEL ENGINES



## DOOSAN MARINE DIESEL ENGINES



### Marine Propulsion Engines

Model	Type		Displacement (Liter)	Bore x Stroke (mm)	Output (ISO 3046)			Dimension (L x W x H) (mm)	Dry Weight (kg)	Emissions
	No. of Cyl.	Aspiration			Heavy Duty kW(PS)/rpm	Medium Duty kW(PS)/rpm	Light Duty kW(PS)/rpm			
L066TI	L6	TI	5.8	102*118	132(180) / 2,200	-	-	1,352 * 800 * 917	535	TIER-II
L136	L6	NA	8.1	111*139	118(160) / 2,200	-	-	1,266 * 875 * 937	743	TIER-I
L136T	L6	TC	8.1	111*139	147(200) / 2,200	-	177(240) / 2,500	1,351 * 893 * 937	748	TIER-I
L136TI	L6	TI	8.1	111*139	169(230) / 2,200	-	-	1,364 * 911 * 937	773	TIER-II
L086TI	L6	TI	8.1	111*139	210(285) / 2,100	232(315) / 2,300	265(360) / 2,500	1,364 * 919 * 965	790	TIER-II
MD196T	L6	TC	11.1	123*155	206(280) / 2,000	-	-	1,397 * 931 * 1,077	975	TIER-I
MD196TI	L6	TI	11.1	123*155	235(320) / 2,000	-	-	1,397 * 933 * 1,077	1,009	TIER-II
L126TI	L6	TI	11.1	123*155	265(360) / 2,000	294(400) / 2,100	-	1,414 * 933 * 1,077	1,060	TIER-II
V158TI	V8	TI	14.6	128*142	353(480) / 1,800	397(540) / 2,100	500(680) / 2,300	1,657 * 1,226 * 1,397	1,350	TIER-II
V180TI	V10	TI	18.3	128*142	441(600) / 1,800	478(650) / 2,100	603(820) / 2,300	1,815 * 1,227 * 1,576	1,550	TIER-II
V222TI	V12	TI	21.9	128*142	530(720) / 1,800	588(800) / 2,100	736(1,000) / 2,300	1,973 * 1,233 * 1,606	1,750	TIER-II
4V158TI	V8	TI	14.6	128*142	390(530) / 1,800	441(600) / 2,100	588(800) / 2,300	1,558 * 1,237 * 1,334	1,540	TIER-II
4V222TI	V12	TI	21.9	128*142	588(800) / 1,800	647(880) / 2,100	883(1,200) / 2,300	1,874 * 1,243 * 1,548	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)	Emissions
	No. of Cyl.	Aspiration			kW(PS)@1800rpm	kW(PS)@1500rpm			
AD066TI	L6	TI	5.8	102*118	110(150)	96(130)	1,042 * 800 * 891	535	TIER-II
AD136	L6	NA	8.1	111*139	93(126)	77(105)	1,182 * 770 * 925	735	TIER-I
AD136T	L6	TC	8.1	111*139	125(170)	107(145)	1,182 * 770 * 925	748	TIER-I
AD136TI	L6	TI	8.1	111*139	138(188)	115(157)	1,182 * 825 * 925	773	TIER-II
AD086TI	L6	TI	8.1	111*139	186(253)	151(205)	1,182 * 825 * 962	790	TIER-II
AD196T	L6	TC	11.1	123*155	181(246)	154(210)	1,193 * 854 * 1,072	975	TIER-I
AD196TI	L6	TI	11.1	123*155	199(270)	173(235)	1,193 * 854 * 1,072	1,009	TIER-II
AD126TI	L6	TI	11.1	123*155	247(336)	206(280)	1,193 * 854 * 1,072	1,060	TIER-II
AD158TI	V8	TI	14.6	128*142	353(480)	302(410)	1,037 * 1,222 * 1,074	1,295	TIER-II
AD180TI	V10	TI	18.3	128*142	441(600)	357(485)	1,195 * 1,222 * 1,169	1,545	TIER-II
AD222TI	V12	TI	21.9	128*142	530(720)	446(606)	1,353 * 1,222 * 1,199	1,735	TIER-II
4AD158TI	V8	TI	14.6	128*142	390(530)	325(442)	1,205 * 1,237 * 1,117	1,540	TIER-II
4AD222TI	V12	TI	21.9	128*142	588(800)	491(667)	1,521 * 1,243 * 1,236	1,920	TIER-II

# DOOSAN MARINE DIESEL ENGINES LINE-UP



## DOOSAN MARINE DIESEL ENGINES LINE-UP IN-LINE TYPE

IN-LINE TYPE



L066TI



L136



L136T



L136TI



L086TI



MD196T



MD196TI



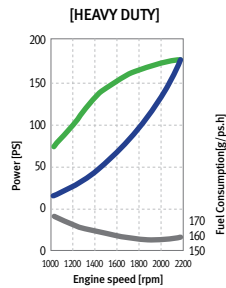
L126TI

## DOOSAN MARINE DIESEL ENGINES



- MODEL
- L066TI (HEAVY DUTY)
- : 180PS (132kW) / 2,200rpm

### Performance Curve



## L066TI Specification

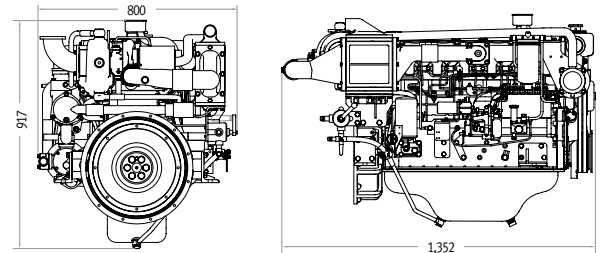


IN-LINE TYPE

### Engine Specification

Model	Units	L066TI
Engine type		4 cycle, In line, direct-injection, water cooled with turbo charger & inter-cooler
Rating output (B.H.P)	PS(kW)/rpm	180(132)/2,200
Displacement	cc	5,785
Cylinder number - bore(ø) x stroke	mm	6-ø102 x 118
Flywheel housing & fly wheel (inch)		SAE 3 & 11 1/2
Low idling rpm	rpm	725 ± 25
No load max. rpm	rpm	below 2,530
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	166.8
@ rated power	lit. / h	35.87
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)
	pressure	kg/cm <sup>2</sup> Full : 3.5, Idle : 1.2
Direction of revolution	crankshaft	Counter clockwise viewed from stern side
Engine size(L x W x H)	without M/G	mm 1,352 x 800 x 917
Engine dry weight	without M/G	kg 535

### Engine Dimension



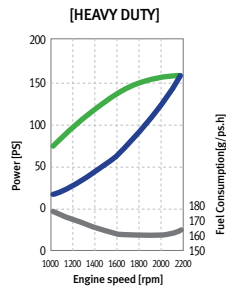
## DOOSAN MARINE DIESEL ENGINES

# L136



- MODEL
- L136 (HEAVY DUTY)
- : 160PS (118kW) / 2,200rpm

### Performance Curve



## L136 Specification

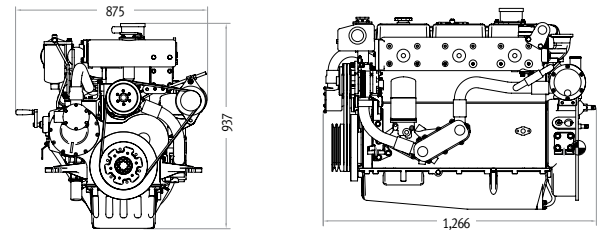


IN-LINE TYPE

### Engine Specification

Model	Units	L136
Engine type		4 cycle, In line, direct- injection, water cooled aspirated naturally
Rating output (B.H.P)	PS(kW)/rpm	160(118)/2,200
Displacement	cc	8,071
Cylinder number - bore(ø) x stroke	mm	6-ø111 x 139
Flywheel housing & fly wheel (inch)		SAE 2 & 11 1/2
Low idling rpm	rpm	725 ± 25
No load max. rpm	rpm	below 2,530
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
@ rated power	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 )
	pressure	kg/cm <sup>2</sup> Full : 3.5 , Idle : 1.2
Direction of revolution	crankshaft	Counter clockwise viewed from stern side
Engine size(L x W x H)	without M/G	mm 1,266 x 875 x 937
Engine dry weight	without M/G	kg 743

### Engine Dimension



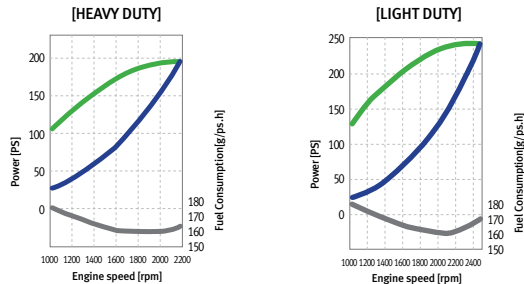
## DOOSAN MARINE DIESEL ENGINES

# L136T



- MODEL
- L136T (HEAVY DUTY)  
: 200PS (147kW) / 2,200rpm
- L136TL (LIGHT DUTY)  
: 240PS (177kW) / 2,500rpm

### Performance Curve



## L136T Specification

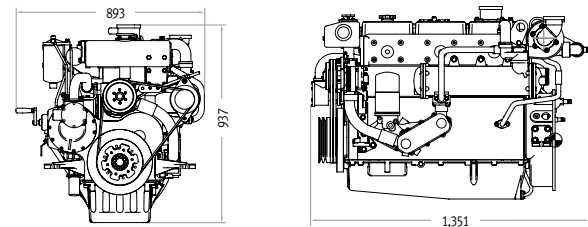


IN-LINE TYPE

### Engine Specification

Model	Units	L136T	L136TL
Engine type		4 cycle, In line, direct injection, water cooled with turbo charger	
Rating output (B.H.P)	PS(kW)/rpm	200(147)/2,200	240(177)/2,500
Displacement	cc	8,071	
Cylinder number - bore(ø) x stroke	mm	6-ø111 x 139	
Flywheel housing & fly wheel (inch)		SAE 2 & 11 1/2	
Low idling rpm	rpm	725 ± 25	
No load max. rpm	rpm	below 2,530	below 2,875
Compression ratio		16.7 : 1	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
@ rated power	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 )	
	pressure kg/cm <sup>2</sup>	Full : 3.5, Idle : 1.2	
Direction of revolution	crankshaft	Counter clockwise viewed from stern side	
Engine size(L x W x H)	without M/G mm	1,351 x 893 x 937	
Engine dry weight	without M/G kg	748	

### Engine Dimension





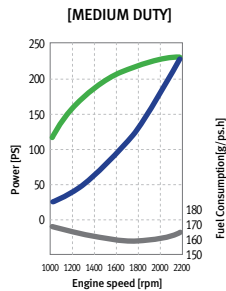
## DOOSAN MARINE DIESEL ENGINES

# L136TI



- MODEL
- L136TI (HEAVY DUTY)
- : 230PS (169kW) / 2,200rpm

### Performance Curve



## L136TI Specification

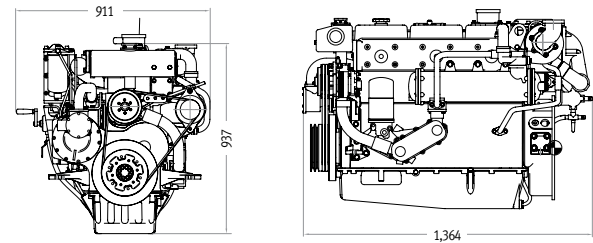


IN-LINE TYPE

### Engine Specification

Model	Units	L136TI
Engine type		4 cycle, In line, direct-injection, water cooled with turbo charger & inter-cooler
Rating output (B.H.P)	PS(kW)/rpm	230(169)/2,200
Displacement	cc	8,071
Cylinder number - bore(ø) x stroke	mm	6 - ø111 x 139
Flywheel housing & fly wheel (inch)		SAE 2 & 11 1/2
Low idling rpm	rpm	725 ± 25
No load max. rpm	rpm	below 2,530
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	161.7
@ rated power	lit. / h	44.43
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 )
	pressure	kg/cm <sup>2</sup> Full : 3.5 , Idle : 1.2
Direction of revolution	crankshaft	Counter clockwise viewed from stern side
Engine size(L x W x H)	without M/G	mm 1,364 x 911 x 937
Engine dry weight	without M/G	kg 773

### Engine Dimension



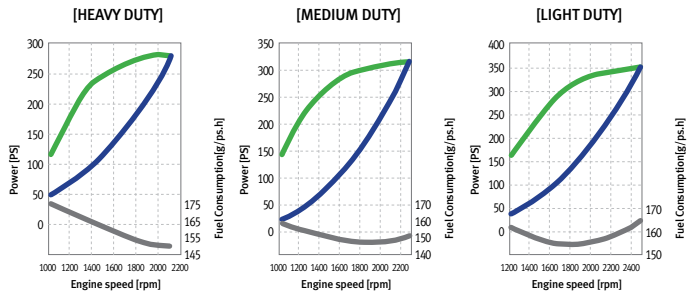
## DOOSAN MARINE DIESEL ENGINES

# L086TI



- MODEL
  - L086TIH (HEAVY DUTY)  
: 285PS (210kW) / 2,100rpm
  - L086TIM (MEDIUM DUTY)  
: 315PS (232kW) / 2,300rpm
  - L086TIL (LIGHT DUTY)  
: 360PS (265kW) / 2,500rpm

### Performance Curve



## L086TI Specification

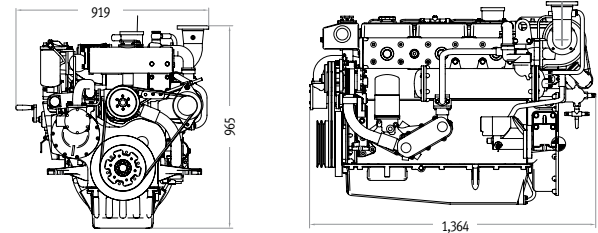


IN-LINE TYPE

### Engine Specification

Model	Units	L086TIH	L086TIM	L086TIL
Engine type		4 cycle, In line, direct-injection, water cooled with wet turbo charger & inter-cooler		
Rating output (B.H.P)	PS(kW)/rpm	285(210)/2,100	315(232)/2,300	360(265)/2,500
Displacement	cc	8,071		
Cylinder number - bore(ø) x stroke	mm	6 - ø111 x 139		
Flywheel housing & fly wheel (inch)		SAE 2 & 11 1/2		
Low idling rpm	rpm	750 ± 25		
No load max. rpm	rpm	below 2,415	below 2,645	below 2,875
Compression ratio		16.7 : 1	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	166	172.6	166.5
@ rated power	lit. / h	56.52	64.96	71.61
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)	
	pressure	kg/cm <sup>2</sup>	Full : 3.5, Idle : 1.2	
Direction of revolution	crankshaft	Counter clockwise viewed from stern side		
Engine size(L x W x H)	without M/G mm	1,364 x 919 x 965		
Engine dry weight	without M/G kg	790		

### Engine Dimension



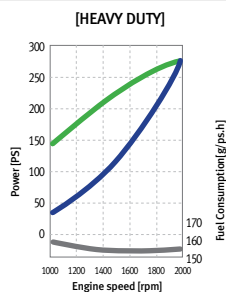
## DOOSAN MARINE DIESEL ENGINES

# MD196T



- MODEL
- MD196T (HEAVY DUTY)
- : 280PS (206kW) / 2,000rpm

### Performance Curve



## MD196T Specification

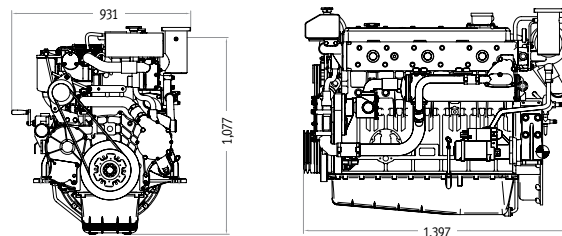


IN-LINE TYPE

### Engine Specification

Model	Units	MD196T
Engine type		4 cycle, In line, direct- injection, water cooled with wet turbo charger
Rating output (B.H.P)	PS(kW)/rpm	280(206)/2,000
Displacement	cc	11,051
Cylinder number - bore(ø) x stroke	mm	6 - ø123 x 155
Flywheel housing & fly wheel (inch)		SAE 1 & 14
Low idling rpm	rpm	725 ± 25
No load max. rpm	rpm	below 2,300
Compression ratio		17.1 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4
Governor type of injection pump		Mechanical variable speed (R.S.V)
Fuel consumption (only Ref.)	g/PS.h	156
@ rated power	lit. / h	49
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)
	Pressure	kg/cm <sup>2</sup> Full : 3.5, Idle : 1.2
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side
Engine size(L x W x H)	Without M/G	mm 1,397 x 931 x 1,077
Engine dry weight	Without M/G	kg 975

### Engine Dimension



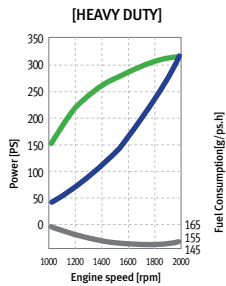
## DOOSAN MARINE DIESEL ENGINES

# MD196TI



- MODEL
- MD196TI (HEAVY DUTY)
- : 320PS (235kW) / 2,000rpm

### Performance Curve



## MD196TI Specification

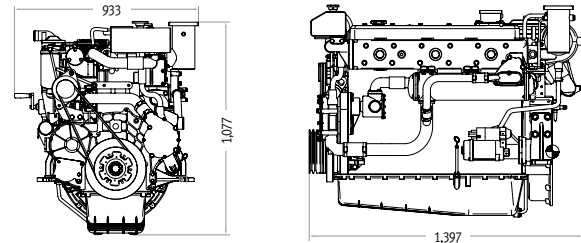


IN-LINE TYPE

### Engine Specification

Model	Units	MD196TI
Engine type		4 cycle, In line, direct-injection, water cooled with wet turbo charger & inter-cooler
Rating output (B.H.P)	PS(kW)/rpm	320(235)/2,000
Displacement	cc	11,051
Cylinder number - bore(ø) x stroke	mm	6-ø123 x 155
Flywheel housing & fly wheel (inch)		SAE 1 & 14
Low idling rpm	rpm	725 ± 50
No load max. rpm	rpm	below 2,300
Compression ratio		16.5 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4
Governor type of injection pump		Mechanical variable speed (R.S.V)
Fuel consumption(only Ref.)	g/PS.h	153.3
@ rated power	lit. / h	58.61
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)
	Pressure kg/cm <sup>2</sup>	Full : 3.5, Idle : 1.2
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side
Engine size(L x W x H)	Without M/G	mm 1,397 x 933 x 1,077
Engine dry weight	Without M/G	kg 1,009

### Engine Dimension



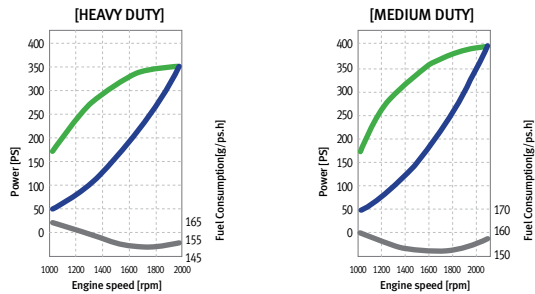
## DOOSAN MARINE DIESEL ENGINES

# L126TI



- MODEL
- L126TIH (HEAVY DUTY)  
: 360PS (265kW) / 2,000rpm
- L126TIM (MEDIUM DUTY)  
: 400PS (294kW) / 2,100rpm

Performance Curve



## L126TI Specification

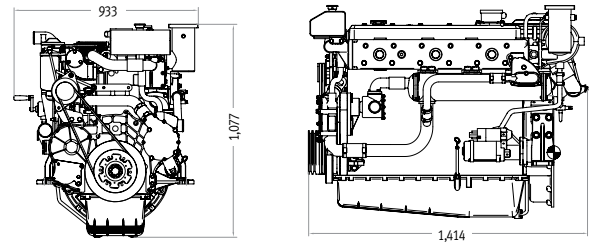


IN-LINE TYPE

Engine Specification

Model	Units	L126TIH	L126TIM
Engine type		4 cycle, In line, direct-injection, water cooled with wet turbo charger & inter-cooler	
Rating output (B.H.P)	PS(kW)/rpm	360(265)/2,000	400(294)/2,100
Displacement	cc	11,051	
Cylinder number - bore(ø) x stroke	mm	6 - ø123 x 155	
Flywheel housing & fly wheel (inch)		SAE 1 & 14	
Low idling rpm	rpm	725 ± 25	
No load max. rpm	rpm	below 2,300	below 2,415
Compression ratio		17 : 1	17 : 1
Firing order		1 - 5 - 3 - 6 - 2 - 4	
Governor type of injection pump		Mechanical variable speed (R.S.V)	
Fuel consumption(only Ref.)	g/PS.h	153.3	161
@ rated power	lit. / h	65.94	76.94
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)	
	Pressure kg/cm <sup>2</sup>	Full : 3.5, Idle : 1.2	
Direction of revolution	Crankshaft	Counter clockwise viewed from stern side	
Engine size(L x W x H)	Without M/G	mm 1,414 x 933 x 1,077	
Engine dry weight	Without M/G	kg 1,060	

Engine Dimension



# DOOSAN MARINE DIESEL ENGINES LINE-UP



## DOOSAN MARINE DIESEL ENGINES LINE-UP V TYPE



V158TI



V180TI



V222TI



4V158TI



4V222TI

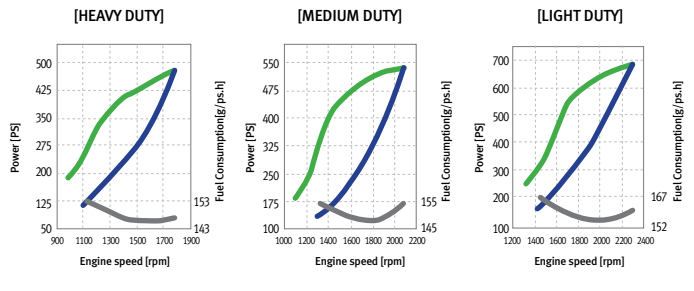
## DOOSAN MARINE DIESEL ENGINES

# V158TI



- **MODEL**
- V158TIH (HEAVY DUTY)  
: 480PS (353kW) / 1,800rpm
- V158TIM (MEDIUM DUTY)  
: 540PS (397kW) / 2,100rpm
- V158TIL (LIGHT DUTY)  
: 680PS (500kW) / 2,300rpm

### Performance Curve



## V158TI Specification

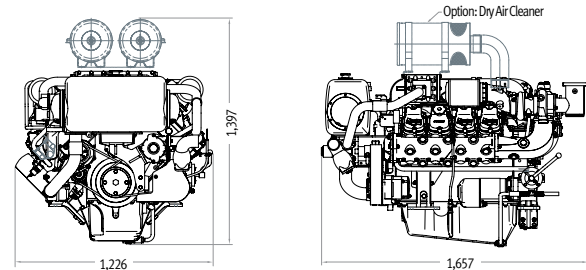


VTYPE

### Engine Specification

Model	Units	V158TIH	V158TIM	V158TIL	
Engine type		4 cycle, V type, direct-injection, water cooled with wet turbo charger & inter-cooler			
Rating output (B.H.P)	PS(kW)/rpm	480(353)/1,800	540(397)/2,100	680(500)/2,300	
Displacement	cc	14,618			
Cylinder number - bore(ø) x stroke	mm	8 - ø128 x 142			
Flywheel housing & fly wheel (inch)		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	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	163.5	169.7	185.4	
@ rated power	lit. / h	93.76	109.48	177.20	
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 pressure	lit. kg/cm <sup>2</sup>	Max : 31, Min : 25 (Engine total : 35) Full : 3.5, Idle : 1.2		
Direction of revolution	crankshaft	Counter clockwise viewed from stern side			
Engine Size (L x W x H)	without M/G	mm	1,657 x 1,226 x 1,397		
Engine dry weight	without M/G	kg	1,350	1,350	1,435

### Engine Dimension



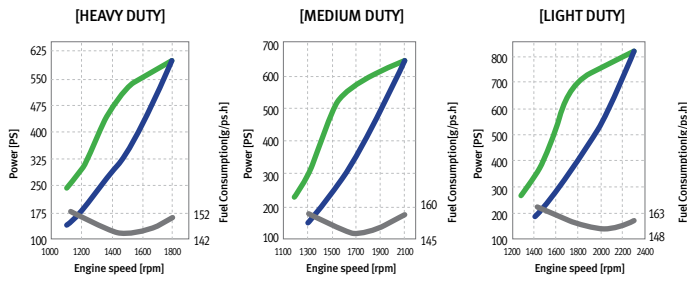
# DOOSAN MARINE DIESEL ENGINES

## V180TI



- MODEL
- V180TIH (HEAVY DUTY)  
: 600PS (441kW) / 1,800rpm
- V180TIM (MEDIUM DUTY)  
: 650PS (478kW) / 2,100rpm
- V180TIL (LIGHT DUTY)  
: 820PS (603kW) / 2,300rpm

Performance Curve



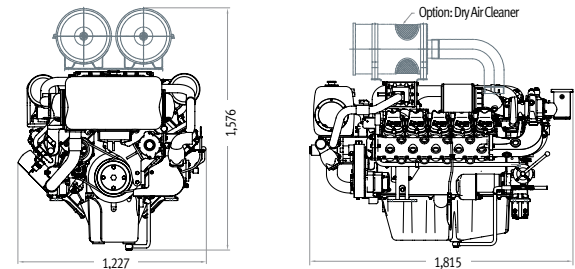
## V180TI Specification



Engine Specification

Model	Units	V180TIH	V180TIM	V180TIL	
Engine type		4 cycle, V type, direct-injection, water cooled with wet turbo charger & inter-cooler			
Rating output (B.H.P)	PS(kW)/rpm	600(441)/1,800	650(478)/2,100	820(603)/2,300	
Displacement	cc	18,273			
Cylinder number - bore(ø) x stroke	mm	10 - ø128 x 142			
Flywheel housing & fly wheel (inch)		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	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	156.2	167.5	176.6	
@ rated power	lit. / h	111.97	130.08	173.01	
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 by belt			
Sea water pump type		Bronze impeller type driven by belt			
Lubricating oil (Engine)	pan capacity	lit.	Max: 35, Min : 28 (Engine total : 38)		
	pressure	kg/cm <sup>2</sup>	Full : 3.5, Idle : 1.2		
Direction of revolution	crankshaft	Counter clockwise viewed from stern side			
Engine Size ( L x W x H )	without M/G	mm	1,815 x 1,227 x 1,576		
Engine dry weight	without M/G	kg	1,550	1,550	1,630

Engine Dimension





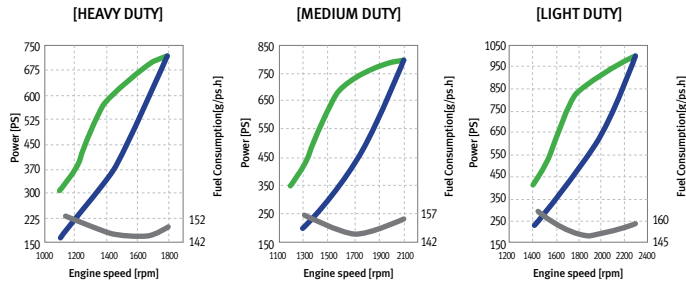
## DOOSAN MARINE DIESEL ENGINES

# V222TI



- MODEL
- V222TIH (HEAVY DUTY)  
: 720PS (530kW) / 1,800rpm
- V222TIM (MEDIUM DUTY)  
: 800PS (588kW) / 2,100rpm
- V222TIL (LIGHT DUTY)  
: 1,000PS (736kW) / 2,300rpm

### Performance Curve



## V222TI Specification

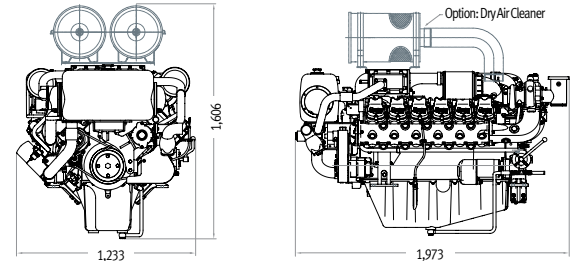


VTYPE

### Engine Specification

Model	Units	V222TIH	V222TIM	V222TIL
Engine type		4 cycle, V type, direct- injection, water cooled with wet turbo charger & inter-cooler		
Rating output (B.H.P)	PS(kW)/rpm	720(530)/1,800	800(588)/2,100	1,000(736)/2,300
Displacement	cc	21,927		
Cylinder number - bore(φ) x stroke	mm	12 - φ128 x 142		
Flywheel housing & fly wheel (inch)		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	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	159.2	167.3	176.9
@ rated power	lit. / h	136.95	159.90	211.35
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)		
	pressure	kg/cm <sup>2</sup> Full : 3.5, Idle : 1.2		
Direction of revolution	crankshaft	Counter clockwise viewed from stern side		
Engine Size ( L x W x H )	without M/G	mm 1,973 x 1,233 x 1,606		
Engine dry weight	without M/G	kg 1,750	1,750	1,830

### Engine Dimension



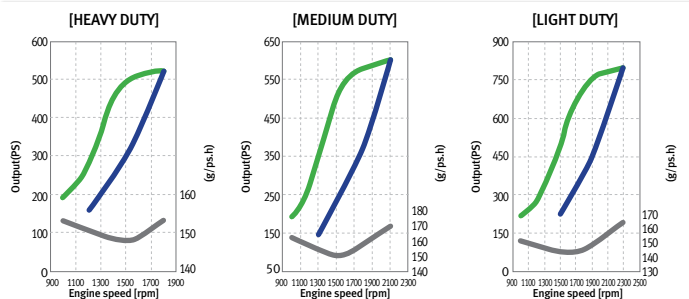
# DOOSAN MARINE DIESEL ENGINES

## 4V158TI



- MODEL
- 4V158TIH (HEAVY DUTY)  
: 530PS (390kW) / 1,800rpm
- 4V158TIM (MEDIUM DUTY)  
: 600PS (441kW) / 2,100rpm
- 4V158TIL (LIGHT DUTY)  
: 800PS (588kW) / 2,300rpm

Performance Curve



## 4V158TI Specification

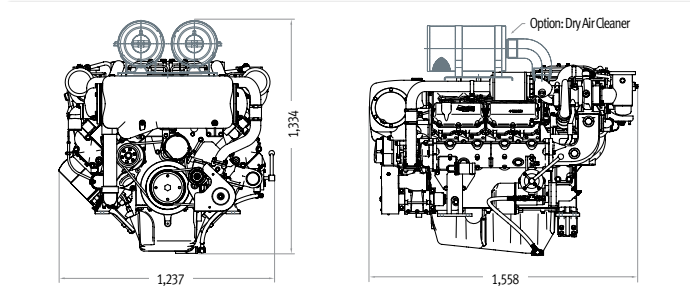


VTYPE

Engine 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)	PS(kW)/rpm	530(390)/1,800	600(441)/2,100	800(588)/2,300
Displacement	cc	14,618		
Cylinder number - bore(ø) x stroke	mm	8 - ø128 x 142		
Flywheel housing & fly wheel (inch)		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		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(only Ref.)	g / PS.h	160.4	168	180.6
@ rated power	lit. / h	101.57	120.43	172.62
Starting system		Electric Starting by starter motor		
Starter motor capacity	V - kW	24 - 6.6		
Alternator capacity	V - A	24 - 55		
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 (Engine)	pan capacity	lit.		
	pressure	kg/cm <sup>2</sup>		
Direction of revolution	crankshaft	Counter clockwise viewed from stern side		
Engine Size ( L x W x H )	without M/G	mm		
Engine dry weight	without M/G	kg	1,540	1,540

Engine Dimension



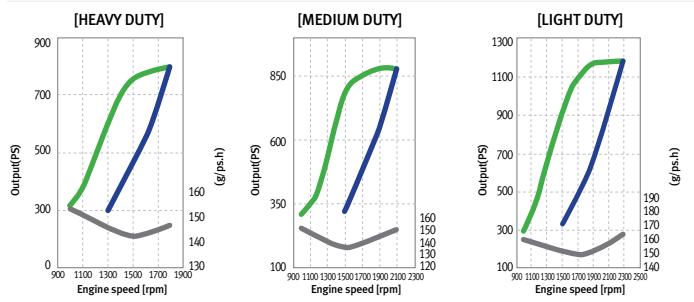
## DOOSAN MARINE DIESEL ENGINES

# 4V222TI



- MODEL
- 4V222TIH (HEAVY DUTY)  
: 800PS (588kW) / 1,800rpm
- 4V222TIM (MEDIUM DUTY)  
: 880PS (647kW) / 2,100rpm
- 4V222TIL (LIGHT DUTY)  
: 1,200PS (883kW) / 2,300rpm

### Performance Curve



## 4V222TI Specification

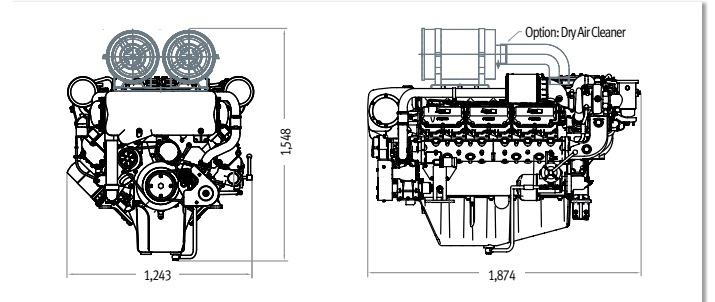


VTYPE

### Engine 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)	PS(kW)/rpm	800(588)/1,800	880(647)/2,100	1,200(883)/2,300	
Displacement	cc	21,927			
Cylinder number - bore(ø) x stroke	mm	12 - ø128 x 142			
Flywheel housing & fly wheel (inch)		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		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 (only Ref.)	g / PS.h	153	160	168	
@ rated power	lit. / h	146.24	168.22	200.72	
Starting system		Electric Starting by starter motor			
Starter motor capacity	V - kW	24 - 6.6			
Alternator capacity	V - A	24 - 55			
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 (Engine)	pan capacity	lit.	Max : 40, Min : 33 (Engine total : 43)		
	pressure	kg/cm <sup>2</sup>	Full : 3.5, Idle : 1.2		
Direction of revolution	crankshaft	Counter clockwise viewed from stern side			
Engine Size (L x W x H)	without M/G	mm	1,874 x 1,243 x 1,548		
Engine dry weight	without M/G	kg	1,920	1,920	1,960

### Engine Dimension



---

# NOTES

---



---

# NOTES

---





**XMH**

YOUR CONNECTION  
TO THE RIGHT MACHINE

**XIN MING HUA PTE LTD  
XMH ENGINEERING PTE LTD**

No. 44 Sungei Kadut Avenue  
Singapore 729667

Tel : (65) 6368 0188  
Fax : (65) 6368 0633  
Email : [sales@engine.com.sg](mailto:sales@engine.com.sg)  
Website : [www.xmh.com.sg](http://www.xmh.com.sg)



\* Specifications are subject to change without prior notice.