

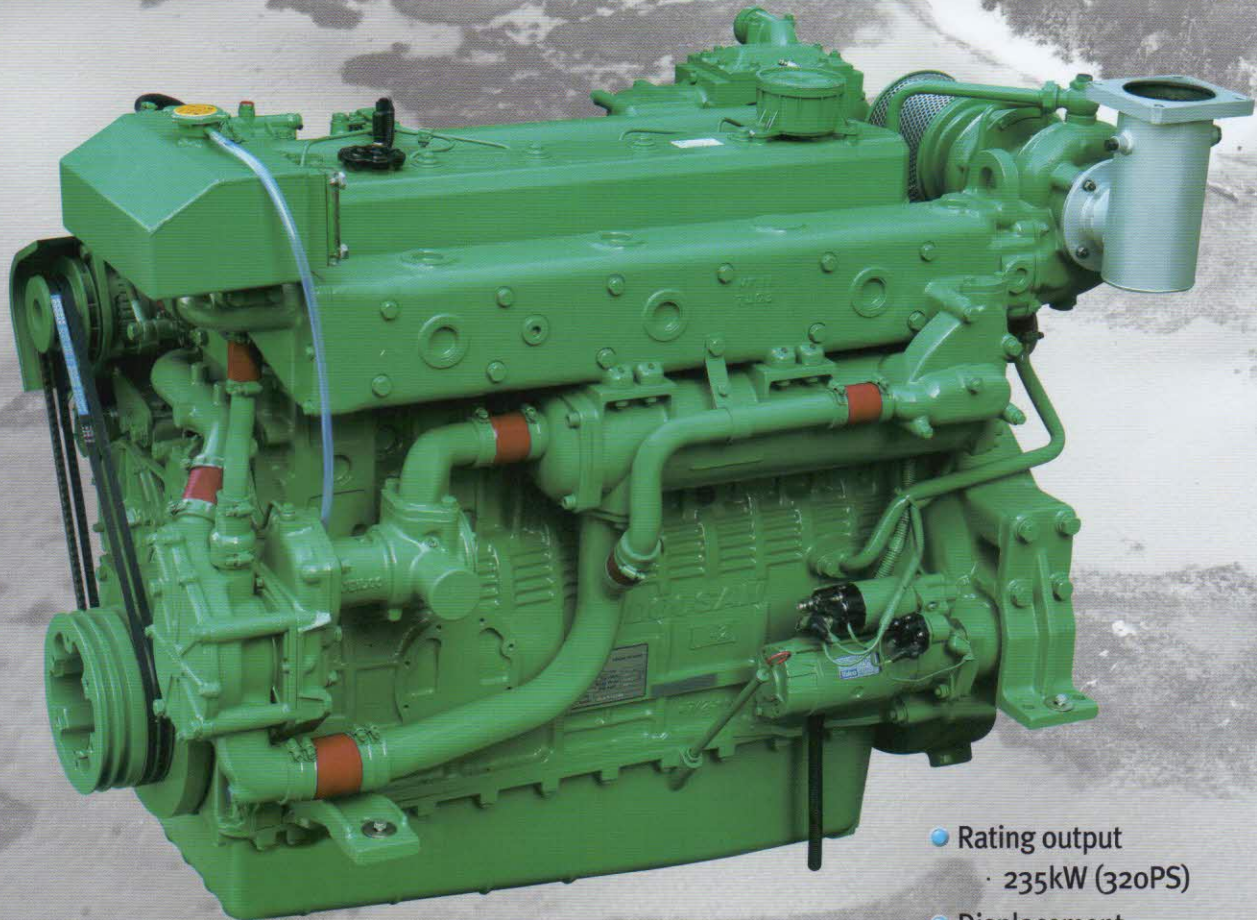


Doosan Infracore  
Engines & Materials

## Marine Diesel Engine

# MD196TI

- Compact Design
- Excellent Performance
- Low Fuel Consumption
- Easy Maintenance



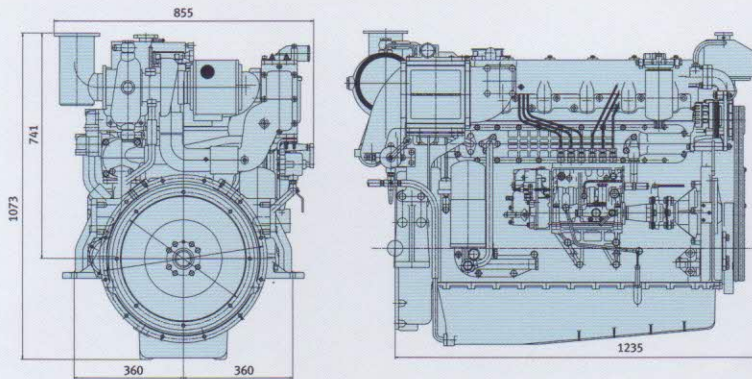
- Rating output  
· 235kW (320PS)
- Displacement  
· 11,051cc
- Dimension (L × W × H)  
· 1,235 × 855 × 1,073mm  
· Without Reduction Gear

## 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  |
| 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   |

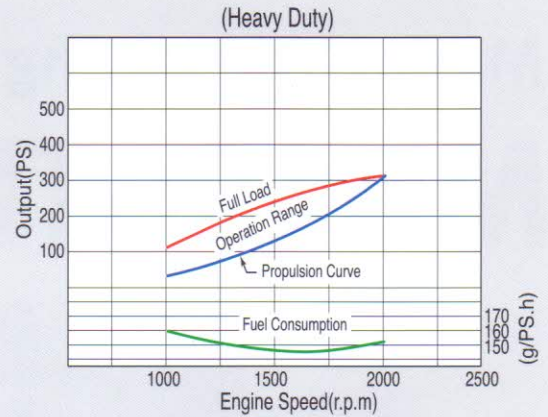
※ H : Heavy Duty, M : Medium Duty, L : Light Duty

## Engine Dimension



## Performance Curve

· Heavy duty : 235kW(320PS)@2,000rpm



### Marine rating to ISO 3046

#### (1) Heavy Duty

Operation hours are unlimited per year, at average load is up to 90 %, at full load is up to 80 %  
 Typical gearbox ratio: 2.5 ~ 6  
 (Fishing trawler, Tug boat, Pushing vessel, Cargo boat, Freighter, Ferry)

#### (2) Medium Duty

Operation hours are up to 3,000 per year, at average load is up to 70 %  
 At full load is (up to 30 % / 4hrs per 12 hour operation period)  
 Typical gearbox ratio: 2 ~ 3.5  
 (Fishing boat, Pilot boat, Escort boat, Passenger boat, Ferry, Cruising vessel)

#### (3) Light Duty

Operation hours are up to 1,000 per year, at average load is up to 50 %  
 At full load is (up to 20 % / 2hrs per 12 hour operation period)  
 Typical gearbox ratio: 1 ~ 2.5  
 (Light weight fishing boat, Yacht, Coastguard boat, Fast boat, Fire pump, Navy)

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**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

\* Specifications are subject to change without prior notice.