

**YANMAR**

**OPERATION MANUAL**

**4JM-TE**

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**MARINE DIESEL ENGINE**

**MODEL 4JM-TE**

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To insure that you get the proper parts, we need accurate data on your particular engine. The information needed is outlined in the illustration

below. For handy reference, please record the information in the spaces provided under the illustrations.

Engine Model Name Plate

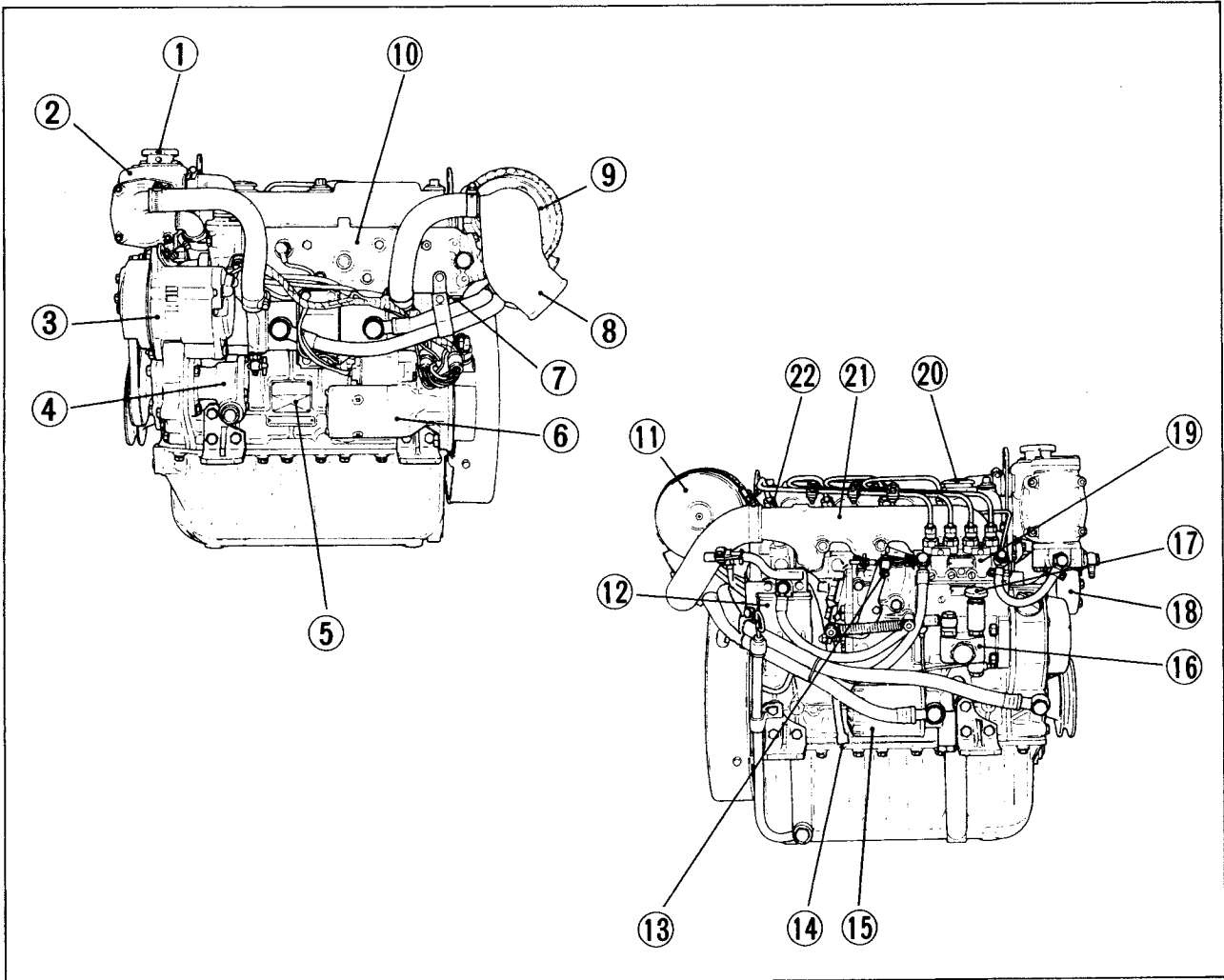
|  |          |        |   |  |                   |    |  |  |                     |          |  |  |            |  |   |  |   |
|--|----------|--------|---|--|-------------------|----|--|--|---------------------|----------|--|--|------------|--|---|--|---|
| <div style="border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border-bottom: 1px solid black;">MODEL</td> <td style="border-bottom: 1px solid black;">4JM-TE</td> <td style="width: 10%; text-align: center;">•</td> <td style="width: 5%;"></td> </tr> <tr> <td style="border-bottom: 1px solid black;">CONT. RATING H.P.</td> <td style="border-bottom: 1px solid black;">45</td> <td></td> <td></td> </tr> <tr> <td style="border-bottom: 1px solid black;">SPEED OF CRANKSHAFT</td> <td style="border-bottom: 1px solid black;">3400 rpm</td> <td></td> <td></td> </tr> <tr> <td style="border-bottom: 1px solid black;">ENGINE NO.</td> <td style="border-bottom: 1px solid black;"></td> <td style="text-align: center;">•</td> <td></td> </tr> </table> <div style="text-align: center; margin-top: 5px;"> </div> </div> | MODEL    | 4JM-TE | • |  | CONT. RATING H.P. | 45 |  |  | SPEED OF CRANKSHAFT | 3400 rpm |  |  | ENGINE NO. |  | • |  | <ul style="list-style-type: none"> <li>• Your engine model</li> </ul> <div style="border: 1px solid black; height: 20px; width: 100%; margin-bottom: 10px;"></div> <ul style="list-style-type: none"> <li>• Your engine number</li> </ul> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| MODEL  | 4JM-TE   | •      |   |  |                   |    |  |  |                     |          |  |  |            |  |   |  |   |
| CONT. RATING H.P.  | 45       |        |   |  |                   |    |  |  |                     |          |  |  |            |  |   |  |   |
| SPEED OF CRANKSHAFT  | 3400 rpm |        |   |  |                   |    |  |  |                     |          |  |  |            |  |   |  |   |
| ENGINE NO.   |          | •      |   |  |                   |    |  |  |                     |          |  |  |            |  |   |  |   |

**NOTE:** The output indication on the engine name plate (Cont. rating 45HP/3400 rpm, DIN.6270A) conforms with the Export Inspection Regulations of Marine Propulsion Engines of the Japanese Government. Model 4JM-TE however has a rated output of 50HP/3600 rpm (DIN.6270B rating).

## I. Engine specifications

|  |                |   |
|--|----------------|---|
| Model  |                | 4JM-TE (without marine gear box)                            |
| Type   |                | Vertical 4-cycle turbo-charged water-cooled diesel engine   |
| No. of cylinders                               |                | 4   |
| Continuous rating output (DIN 6270A)<br>Hp/rpm |                | 45/3400   |
| 1-hr rating output (DIN 6270B) Hp/rpm          |                | 50/3600   |
| Combustion system                              |                | Swirl chamber type  |
| Firing order                                   |                | 1-3-4-2 (bTDC 7.5±1)  |
| Turbocharging system                           |                | Exhaust turbocharger  |
| Direction of rotation                          | Crankshaft     | Counter-clockwise viewed from flywheel                      |
| Lubricating system                             | Engine         | Forced lubrication with internal gear pump                  |
| Lube oil capacity                              | Crank case     | 7ℓ  |
| Cooling system                                 |                | Fresh water cooling by centrifugal pump with heat exchanger |
| Cooling water capacity                         | Water tank     | 5.5ℓ  |
|  | Sub-tank       | 0.8ℓ  |
| Starting system                                |                | Electric  |
| Electrical equipment                           | Starting motor | 12V – 1.8kW   |
|  | Alternator     | 12V – 55A   |
| Dry weight                                     | kg (lbs)       | 227 (500)   |

## II. Names of parts



| No. | Names of Parts                        | No. | Names of Parts                   |
|-----|---------------------------------------|-----|----------------------------------|
| 1   | Pressure cap (water feed port)        | 12  | Fuel oil filter                  |
| 2   | Fresh water tank (fresh water cooler) | 13  | Speed control lever              |
| 3   | Alternator                            | 14  | Oil dipstick                     |
| 4   | Cooling water pump (sea water)        | 15  | Lube oil filter                  |
| 5   | Engine model name plate               | 16  | Fuel feed pump                   |
| 6   | Starting motor                        | 17  | F.O. priming knob                |
| 7   | Exhaust manifold water drain plug     | 18  | Cooling water pump (fresh water) |
| 8   | Mixing elbow                          | 19  | Fuel oil injection pump          |
| 9   | Turbo-charger                         | 20  | Lube oil feed port               |
| 10  | Exhaust manifold                      | 21  | Air intake manifold              |
| 11  | Air intake silencer                   | 22  | Fuel injection valve             |

# III. Engine installation

## 3-1. Inspection after unpacking

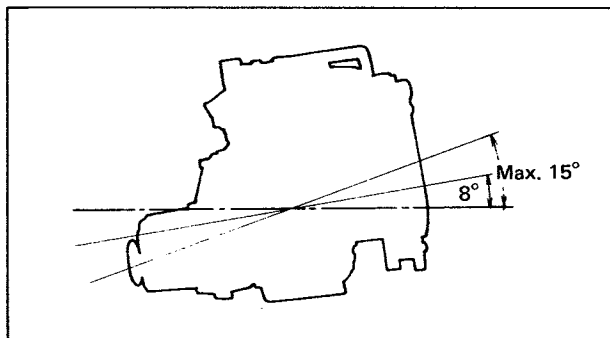
When unpacking the engine, be careful not to break the engine base.

Check the following points:

1. Have any nuts or bolts become loose or fallen off?
2. Have any parts become rusty?
3. Is there any water inside the engine?
4. Has any part of the engine been broken, chipped, or crushed?
5. Are any of the accessory parts/items broken or defective?

## 3-2. Preparation of the engine foundation plate

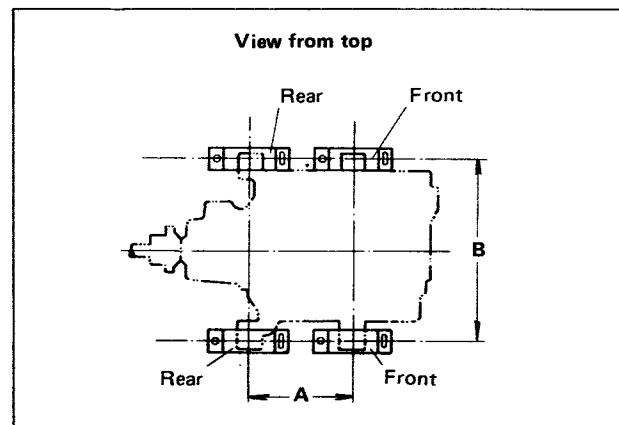
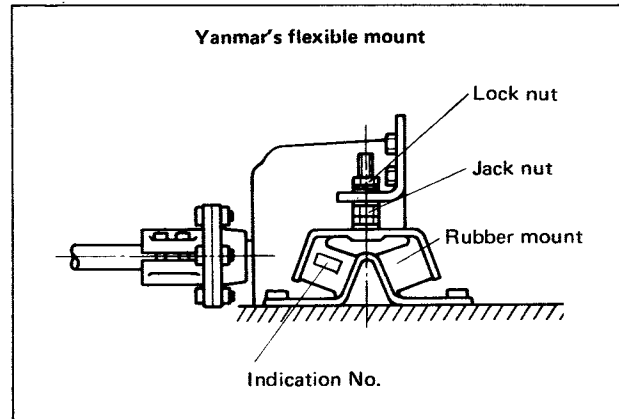
The installation angle will differ with the vessel configuration and installation location of the engine. The most suitable installation angle is 8 degrees and the maximum installation angle is 15 degrees. If the angle is larger, horsepower will be lost, engine parts will wear out faster and overall performance impaired.



## 3-3. Engine installation

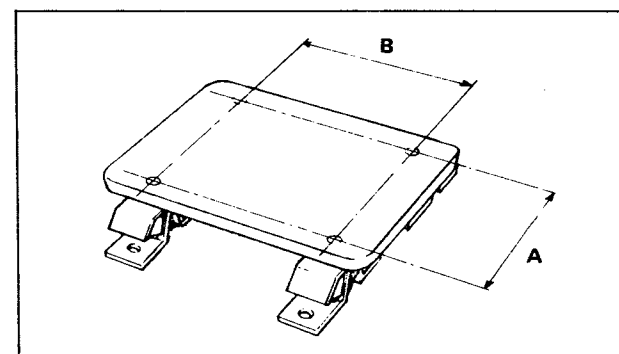
1. For engine installation, be sure to use the flexible rubber mount. Yanmar offers as an accessory flexible

mounts which match the respective engine characteristics.



| Engine model | Indication # |      | Installation distance (unit: mm) |     |
|--------------|--------------|------|----------------------------------|-----|
|              | Front        | Rear | A                                | B   |
| 4JM-TE       | 150          | 150  | 510                              | 470 |

For convenient installation, make the GUIDE PLATE as illustrated.



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