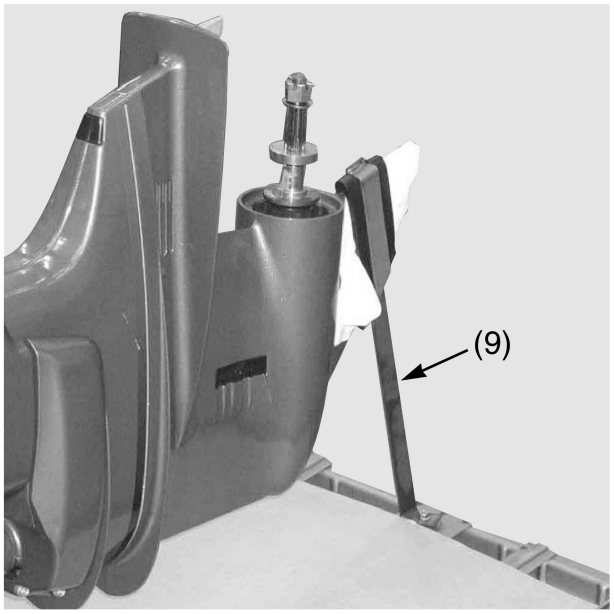
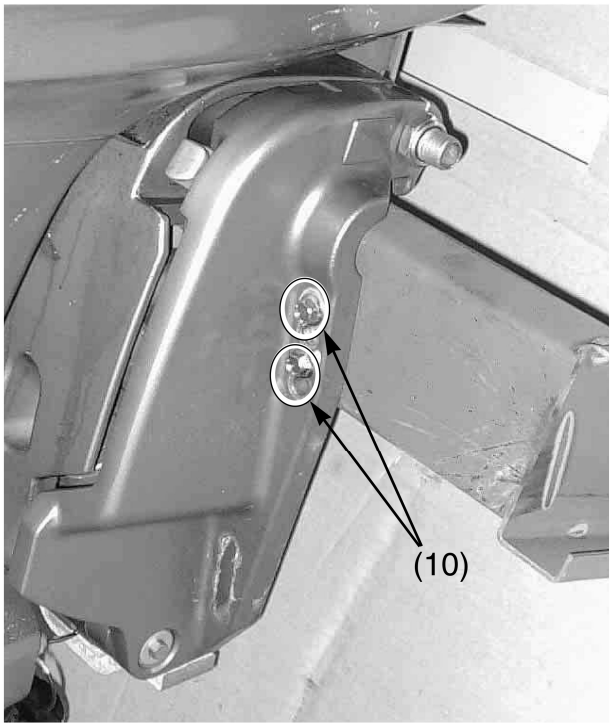
UNCRATING PROCEDURE (FOR TYPICAL STEEL FRAME)

10. Carefully lift up the motor with the bottom crate so that the lifting-harness does not contact the engine components.
    Have a helper hold the frame to avoid injury while lifting.

11. Remove the skeg holder (9) if it is attached.



12. Remove the bracket bolts (10).



MOUNTING THE OUTBOARD MOTOR

⚠ WARNING

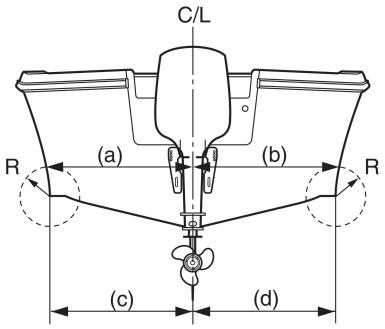
Overpowering a boat may cause severe instability. Never install an outboard motor that exceeds the maximum boat horsepower rating capacity. If a boat does not have the capacity plate, ask to the boat manufacturer.

Proper mount of outboard motor will obtain better engine performance, product reliability, fuel economy, customer satisfaction, etc.
This chapter describes the brief summary of outboard motor mount.
For the first requirement, make sure the outboard motor has clearance for full movement, from port to starboard, as well as during tilt operation.
For the motor dimensions, see the later pages.

1. Set an outboard motor on the vertical center line of boat transom.
   Measurement points are shown in the illustration.

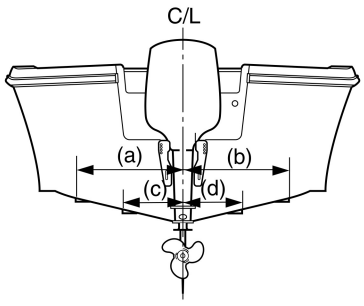
No strakes hull

Make a same radius (R) at both sides of hull, and have another measurement points.



Strakes hull

Make measurements between port and starboard strakes.



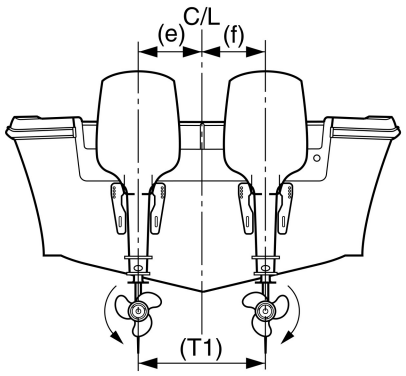
*C/L: Centerline of the transom.

To be continued.

MOUNTING THE OUTBOARD MOTOR

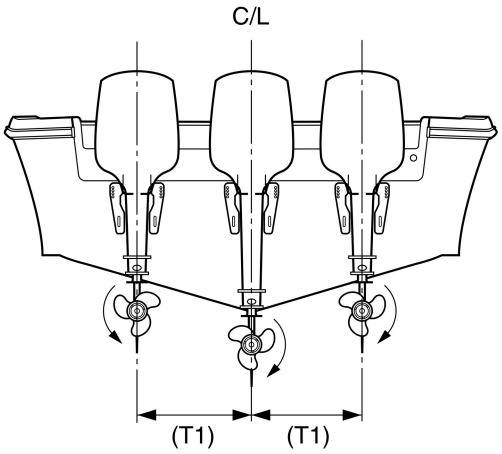
Recheck the measurements, and verify the boat transom vertical centerline is straight.
Measurements (a) and (b) should be the same, and measurement (c) and (d) should be the same.

For twin engine application, set the engines so that the distance between the boat transom center line and the motor center line should be equal for the both engines.

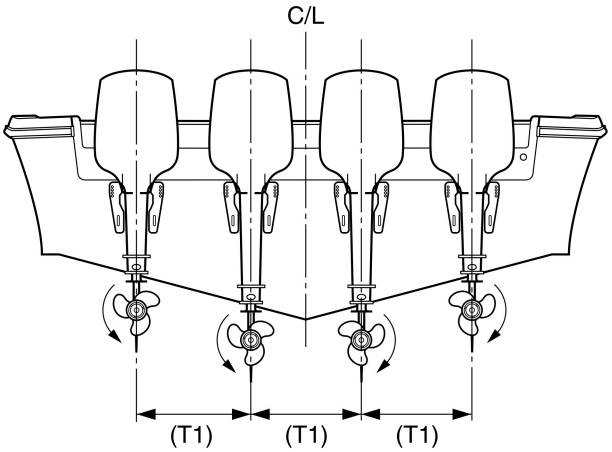


Measurements (e) and (f) should be the same.
Maintain a minimum distance (T1) that is the measurement between both vertical center-lines of outboard motor.
Minimum distance (T1) is recommended on each model, and its data is put on the dimension item.

For triple engine application, set the engines as shown below.
If a boat has V-hull, the center motor should use longer transom motor than outside engines.



For quad engine application, set the engines as shown below.
If a boat has V-hull, inner twin engine should use longer transom motor than outside engines.

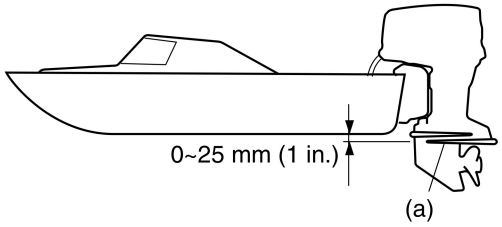


To be continued.

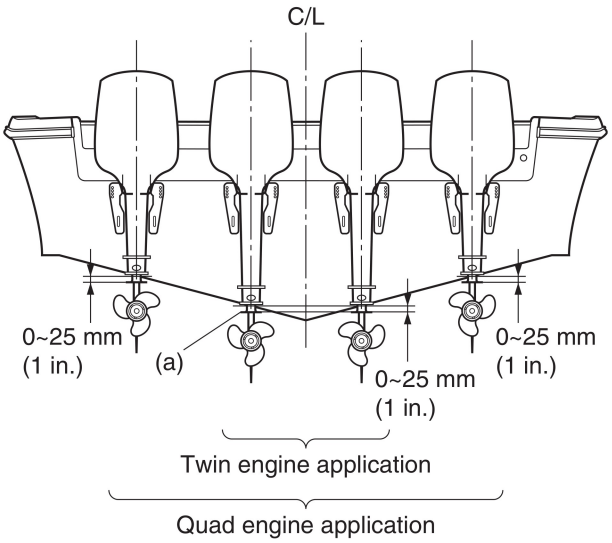
MOUNTING THE OUTBOARD MOTOR

2. Adjust the height of outboard motor so that the anti-cavitation plate is positioned to the boat transom bottom, or lowered within 25 mm (1 in.).
   For planing boats, the anti-cavitation plate should be positioned to the boat transom bottom or slightly higher.

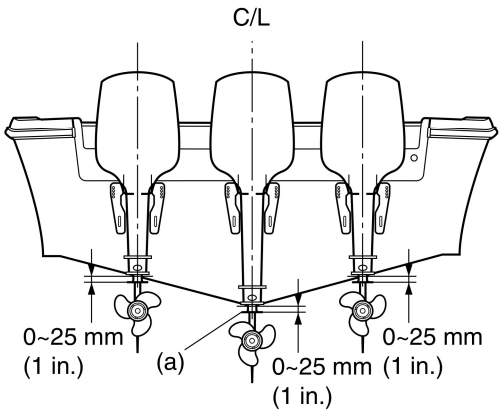
Single engine application



Twin engine application/Quad engine application



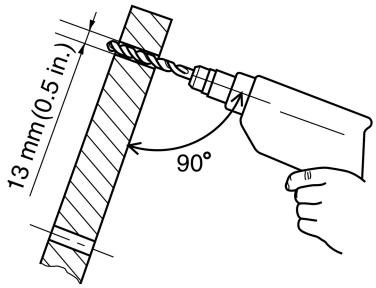
Triple engine application



(a): Anti-cavitation plate

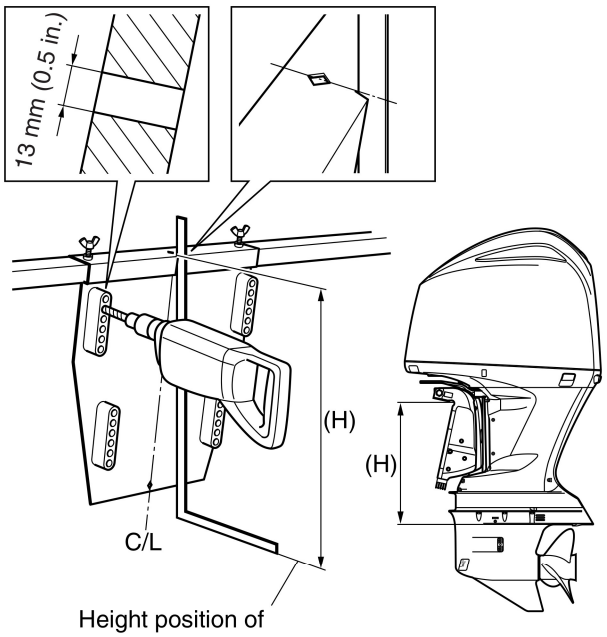
* Due to combination of a boat type and an engine type, the mount height of outboard motor varies. Therefore, the complete information is impossible to describe here.
For further information, see the instructions issued by boat manufacturer, or ask to the manufacturer.

3. When the outboard motor mount position has been determined, mark the 4 symmetrical mount hole positions onto the boat transom. Make the mount holes of 13 mm (0.5 in.) vertically on the marking points.



* To make the mounting holes easier, use the drilling plate (P/N: 90890-06783 or YB-34465 for US).

Ex: Drilling plate (90890-06783)



To be continued.

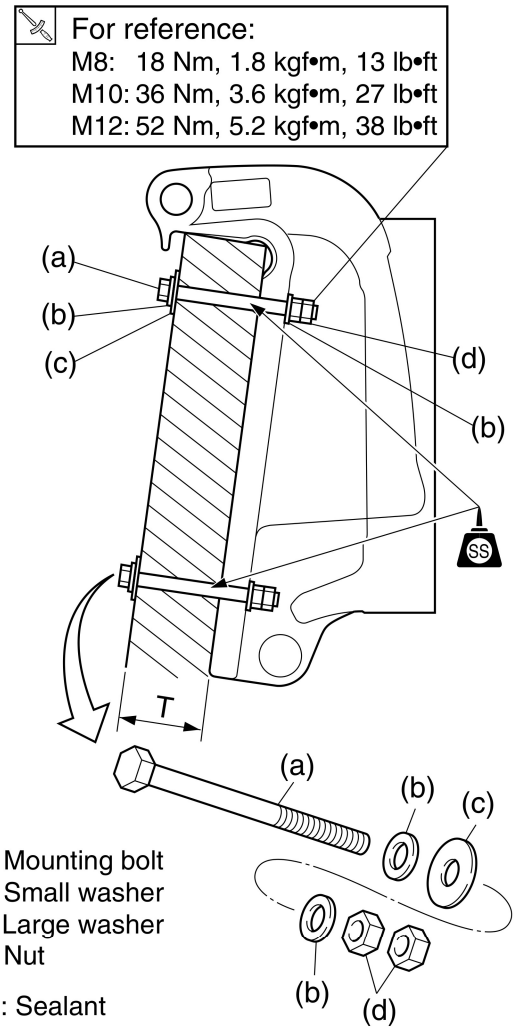
MOUNTING THE OUTBOARD MOTOR

4. Apply sealant to the mount holes, and secure the motor with supplied mount hardware.
   For tightening procedure, first tighten the inside nut, then the double nuts each other.

NOTICE

Make sure there is no clearance between boat transom and motor clamp bracket. Otherwise, the clamp bracket could break.

* The upper mount bolt is usually installed to the 2nd hole from top.



* Tighten the mounting bolts/nuts to suitable torque depending on the boat transom structure, material, design, etc.

For above 115 (V4) and F75, select the transom mount bolt depending on the boat transom thickness.

Boat transom thickness (T)	Mount bolt size	Bolt P/N
55 – 65 mm (2.17 – 2.56 in.)	M12 ×115 mm	90101-12M03
65 – 75 mm (2.56 – 2.95 in.)	M12 ×130 mm	90101-12M05
75 – 95 mm (2.95 – 3.74 in.)	M12 ×150 mm	90101-12M77
	M12 ×150 mm [High tension bolt]	90101-12031
95 – 115 mm (3.74 – 4.53 in.)	M12 ×170 mm [High tension bolt]	90101-12036

* High tension bolt is recommended for F350.