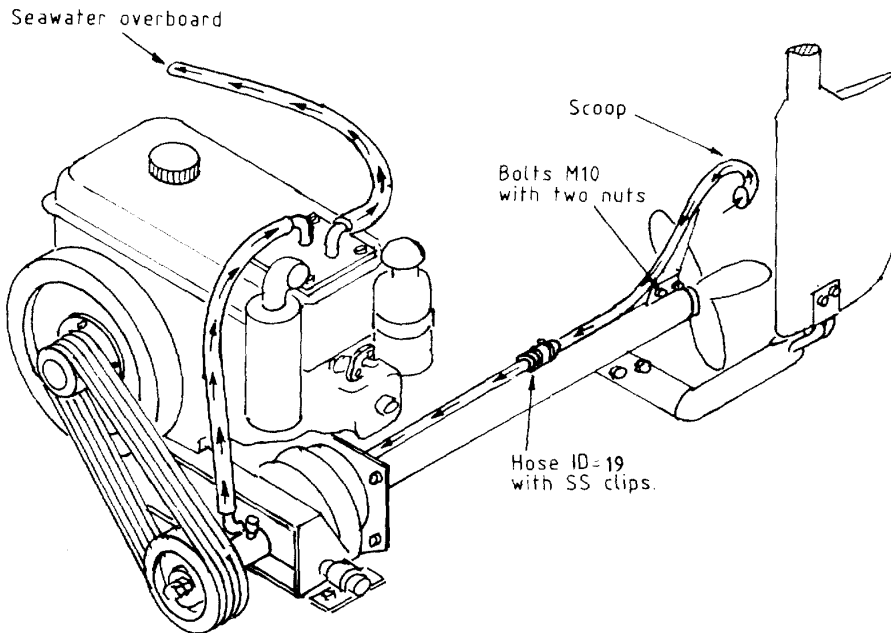


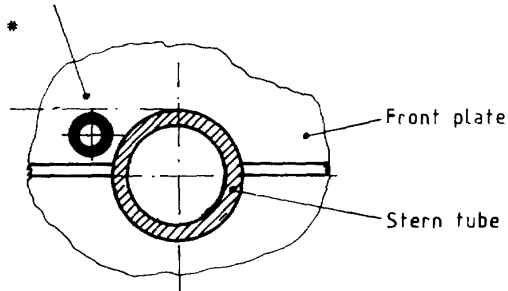
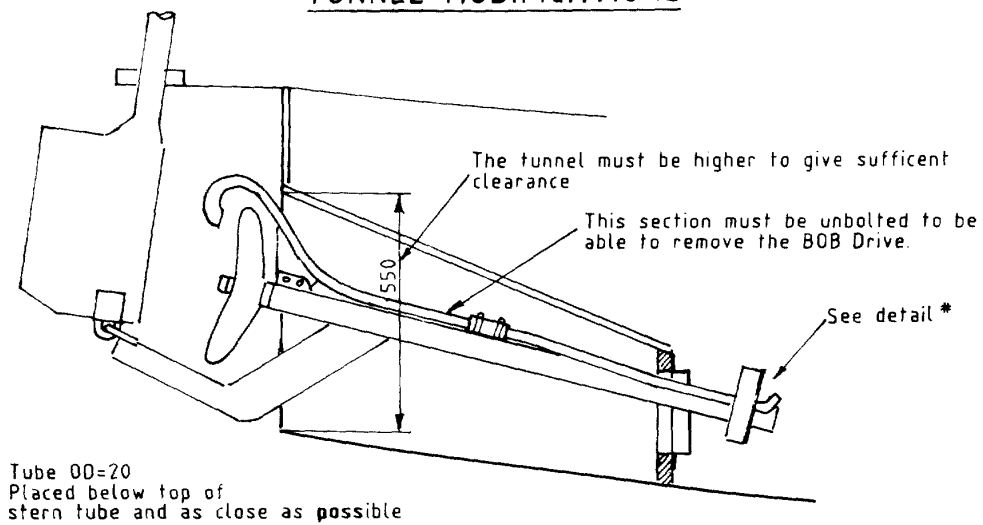
## SEAWATER COOLING SYSTEM

31

This system is not suitable where there is sand mixed in the seawater (surf crossing and beach landing)

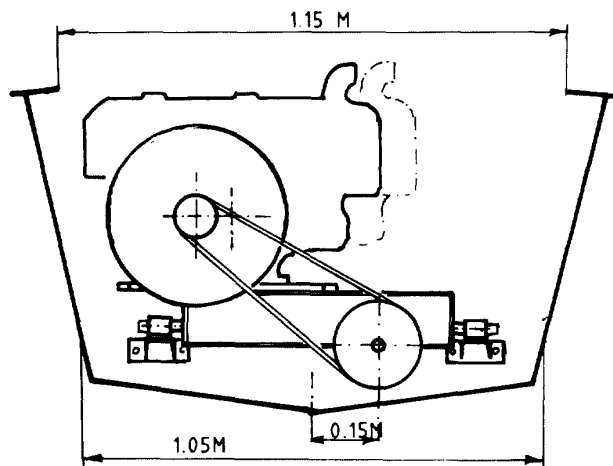


## TUNNEL MODIFICATIONS



## WIDTH REQUIREMENTS FOR INSTALLATION

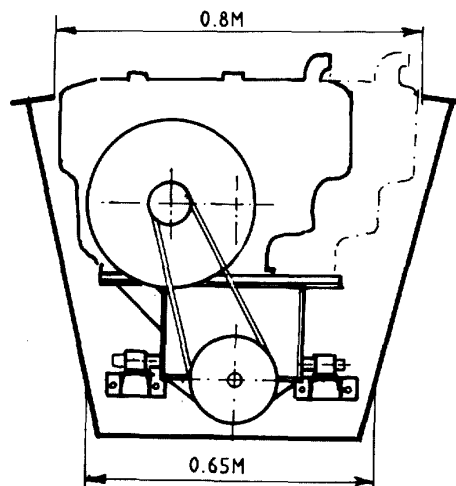
32



### SIDE MOUNTED ENGINE

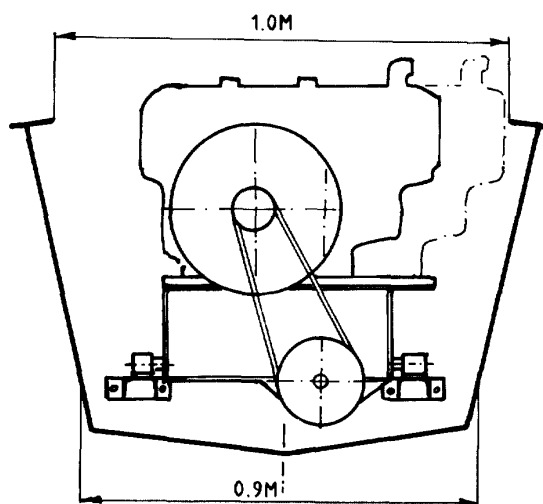
The side mounted engine gives a low installation with passage on one side.

Note that the tunnel is not on centre.



### TOP MOUNTED ENGINE WITH NARROW BASE

This is the only installation possible in a narrow canoe.



### TOP MOUNTED ENGINE WITH A WIDE BASE

The wider base gives less force on the pivots and should be used whenever the width of the craft allows.

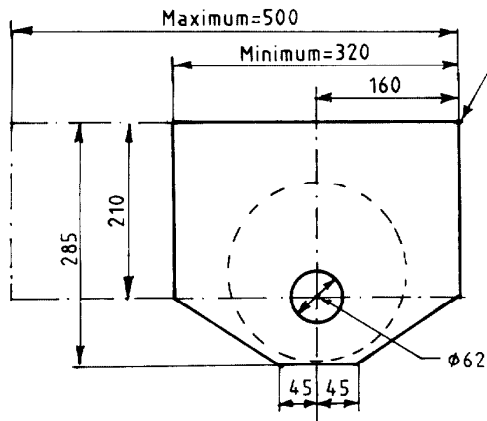
Note that the tunnel is not on centre.

# CHASSIS - TOP MOUNTED ENGINE

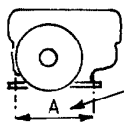
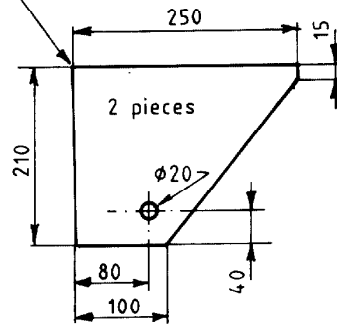
33

STEEL PLATE : 6mm

## ① FRONT PLATE

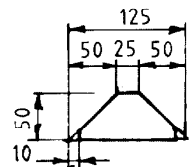
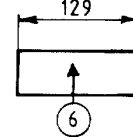
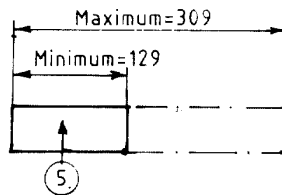
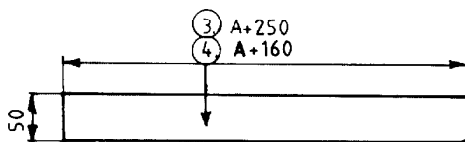


## ② BRACKETS

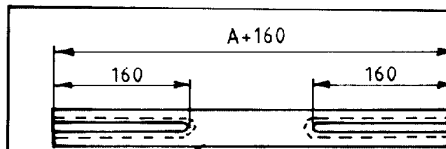


A=Distance between engine bolts

FLAT IRON : 6x50



## ⑦ BRACKET (short base only)



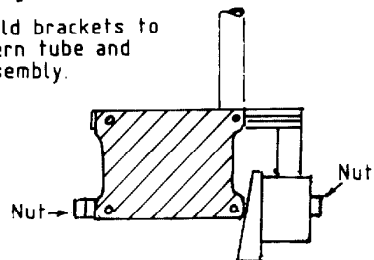
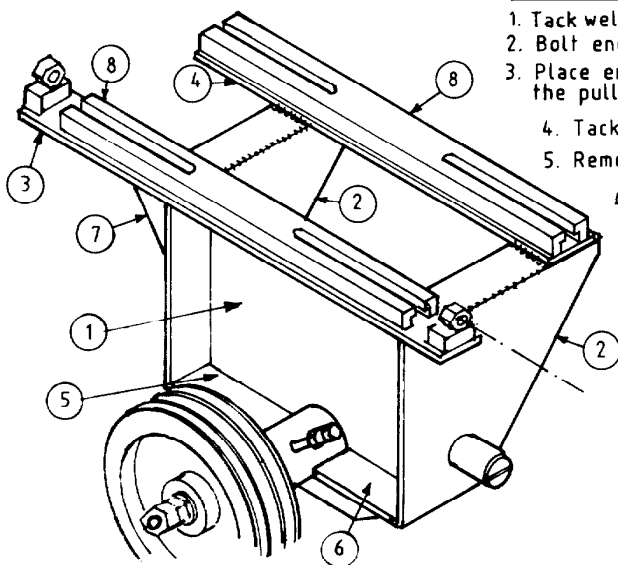
## ⑧ ENGINE MOUNT 20x40 2 pieces

See page 17 for details on slot

### ASSEMBLY

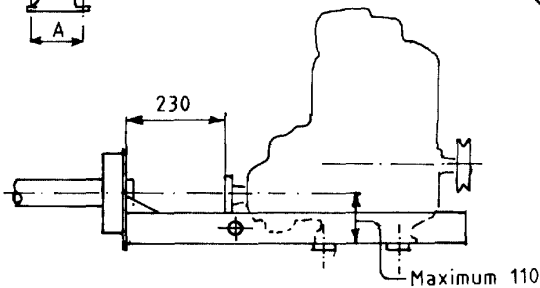
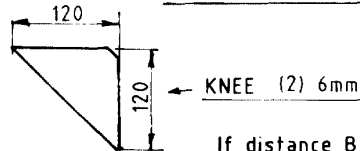
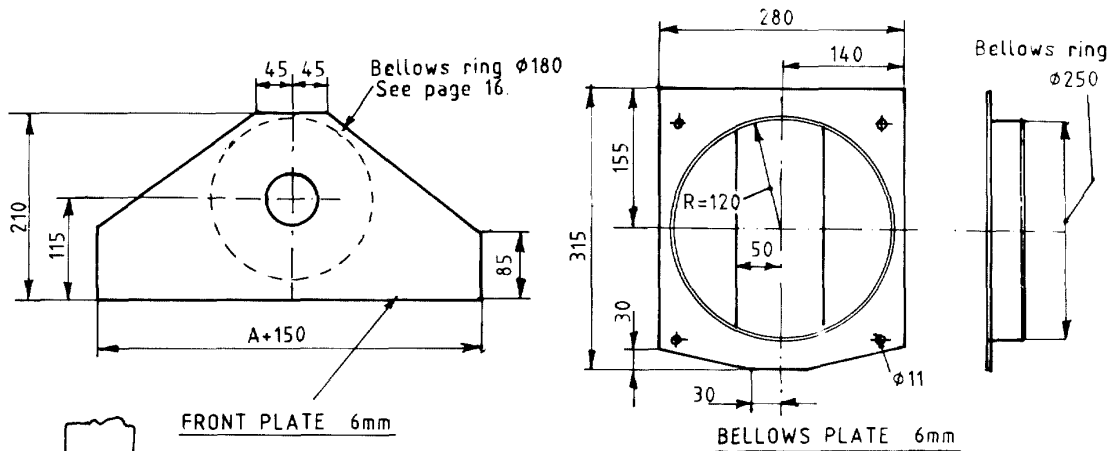
1. Tack weld ⑧ to ③ and ④
2. Bolt engine to ⑧ in extreme right position
3. Place engine on chassis and move until the pulleys are in a vertical line
4. Tack weld ③ and ④ to ① and ② and stern tube
5. Remove engine.

6. Weld brackets to stern tube and assembly.

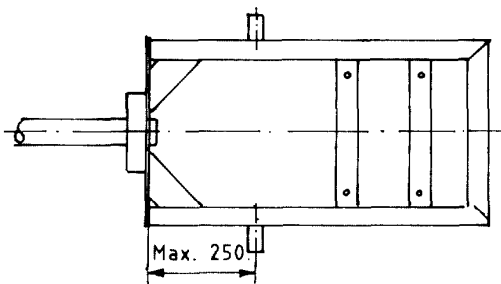
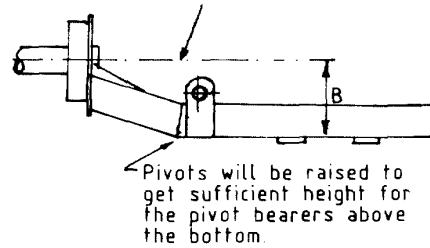


If there is insufficient space to use a 12x180 bolt, use a block of wood and a wedge to shift the engine.

# CHASSIS - FORWARD MOUNTED ENGINE



If distance B is greater than 110, engine bed like this.



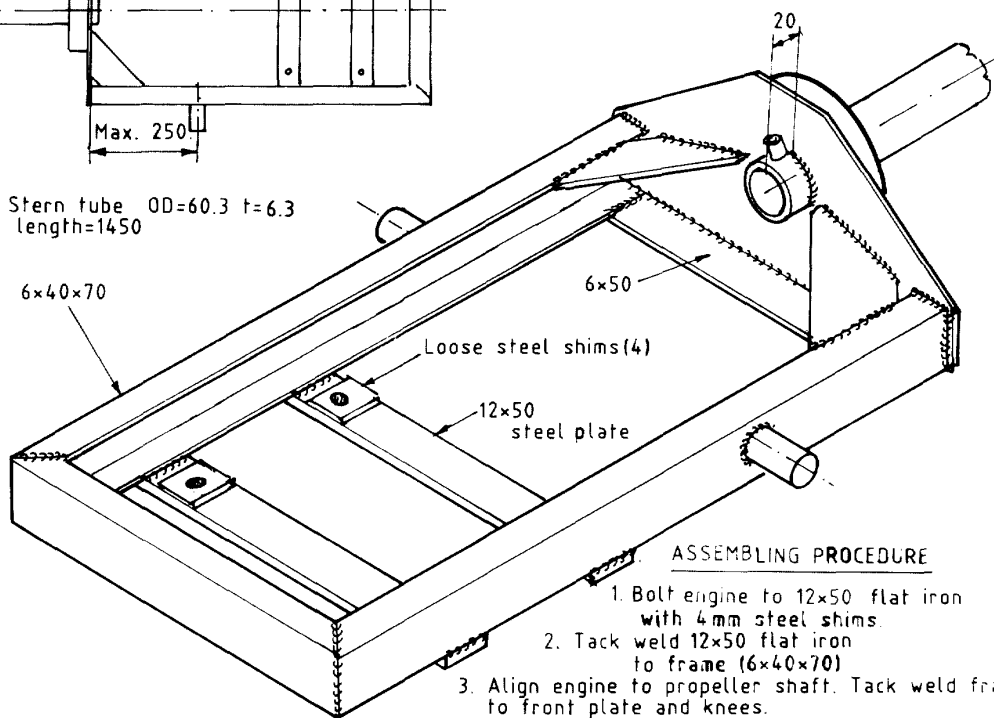
Stern tube OD=60.3 t=6.3  
length=1450

6x40x70

6x50

Loose steel shims(4)

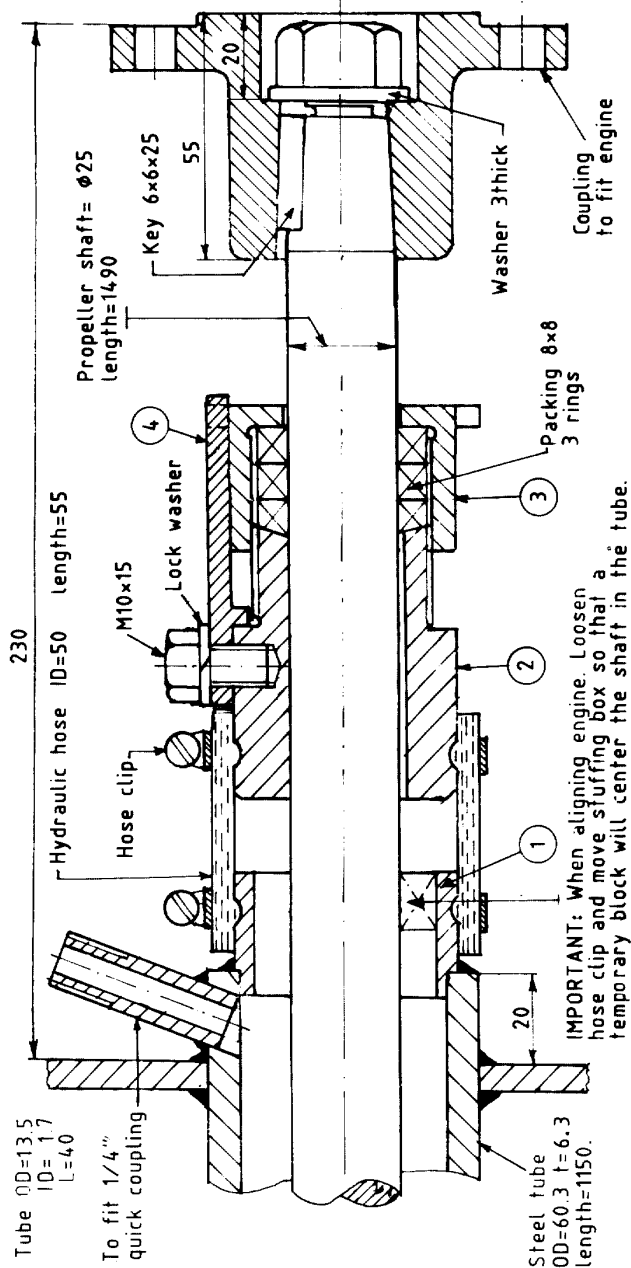
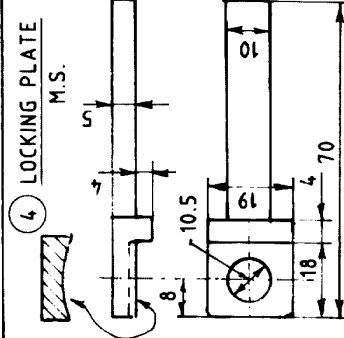
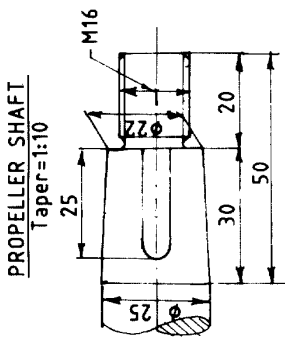
12x50  
steel plate



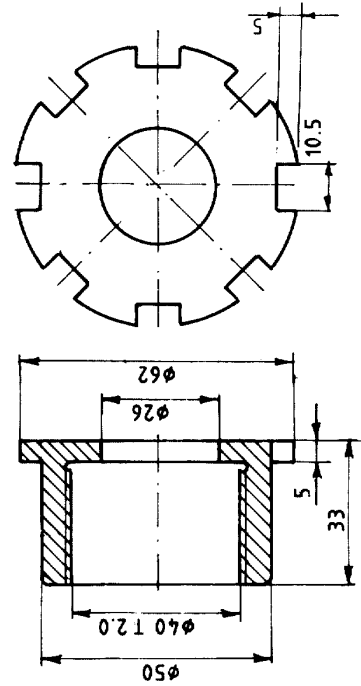
## ASSEMBLING PROCEDURE

1. Bolt engine to 12x50 flat iron with 4mm steel shims.
2. Tack weld 12x50 flat iron to frame (6x40x70)
3. Align engine to propeller shaft. Tack weld frame to front plate and knees.
4. Remove engine and weld assembly.

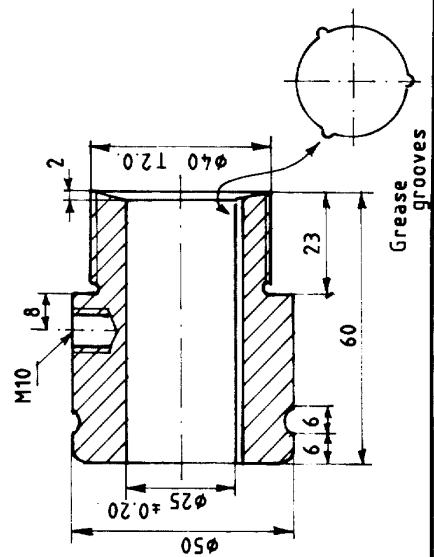
# FORWARD MOUNTED ENGINE-FLEXIBLE STUFFING BOX



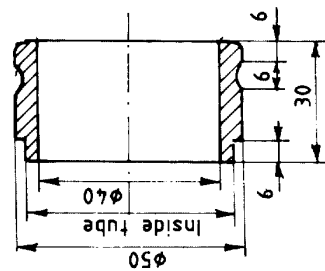
③ PACKING CAP  
Brass



② STUFFING BOX  
Brass

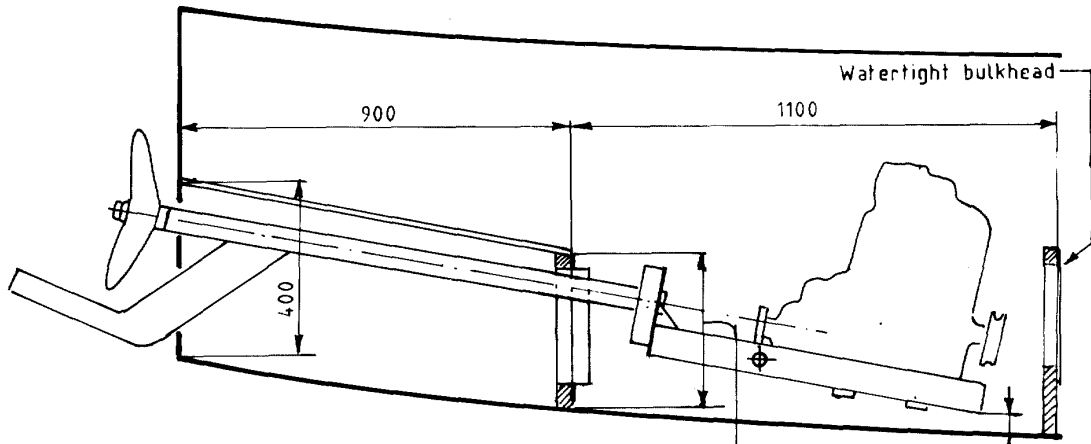


① EXTENSION SOCKET  
M.S.



# TUNNEL-FORWARD MOUNTED ENGINE

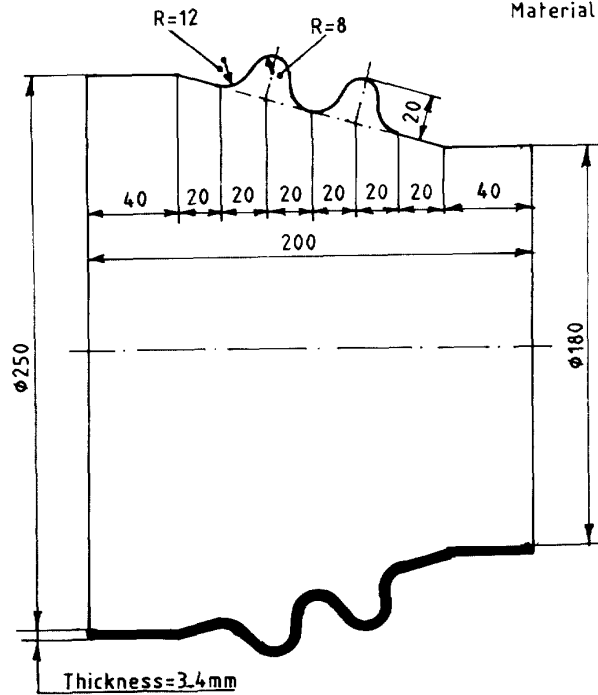
36



The minimum height of the tunnel is 340mm but might have to be higher to obtain sufficient clearance between chassis and bottom. See page 23 for width of tunnel. See page 27 for requirement in lower position. Note however that due to the greater bellows the gap between the bellows rings should be  $B=90$  on top

## ALTERNATIVE BELLOWS

Material : NEOPRENE



## ENGINE PROTECTION

37

### WATER-COOLED ENGINE

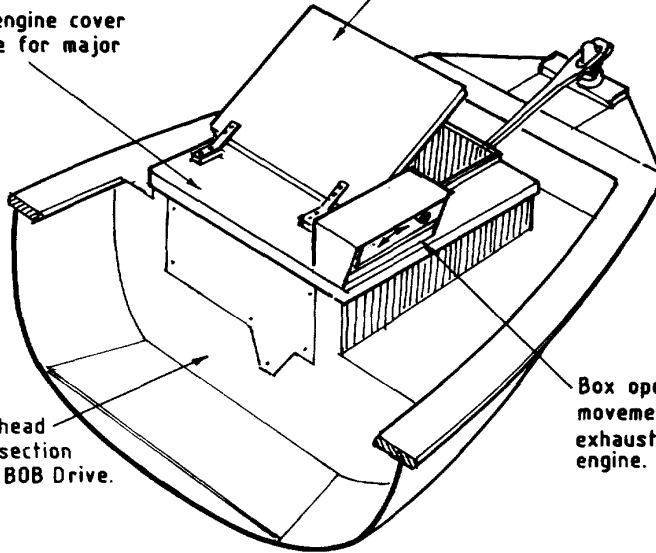
Below is shown an engine compartment for a side mounted engine.

The whole engine cover is removable for major repairs.

The lid provides access to engine for starting and maintenance. Lid can be kept half open when engine is running.

Watertight bulkhead with screwed-on section for removal of BOB Drive.

Box open on one side allows movement of extended exhaust pipe during tilting engine.

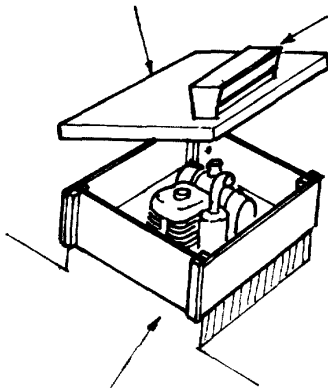


### AIR-COOLED ENGINE

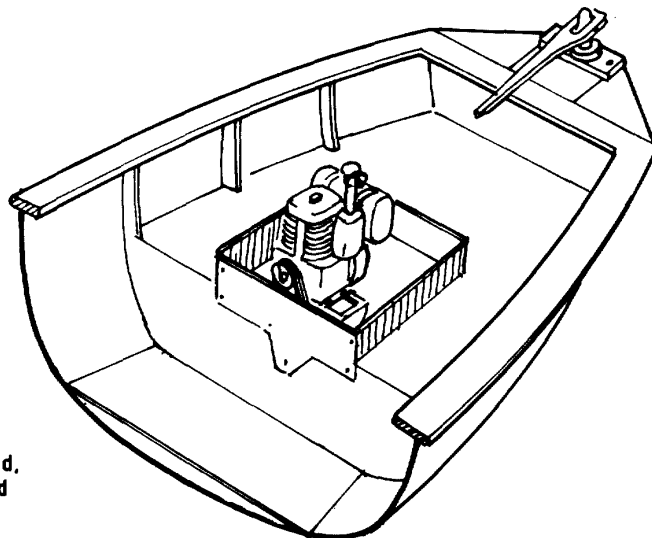
Cover for crossing heavy surf and protection of engine ashore

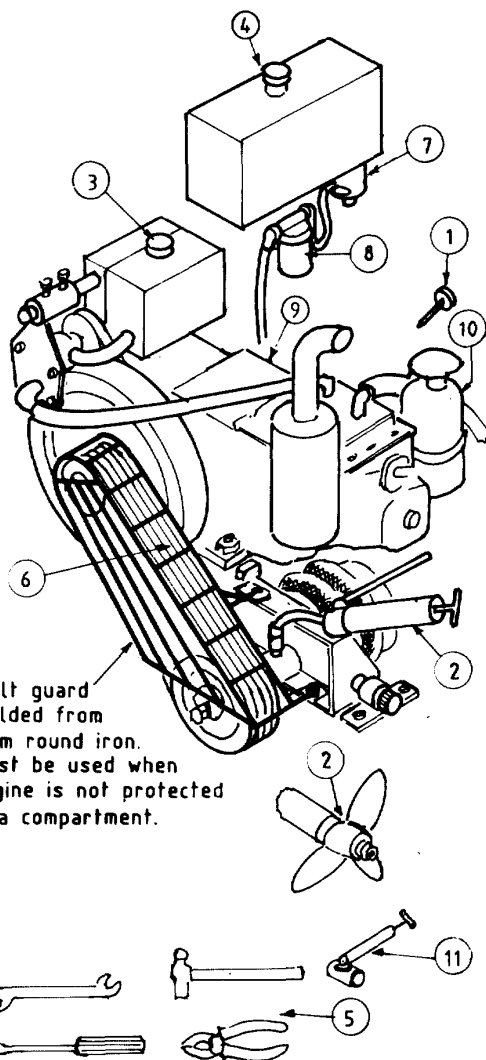
Box for exhaust

The engine installation must permit free flow of air in normal operation.



For surf-crossing where some protection is required, a raised coaming with a lid can be used. Lash down with rope.





Belt guard welded from 8mm round iron. Must be used when engine is not protected in a compartment.

## MAINTENANCE

### DAILY

1. Oil dipstick : check oil level and refill.
2. Grease gun with quick coupling. Check that grease is emerging at the propeller
3. Check freshwater level and carry spare can of freshwater for refilling.
4. Fuel level : Check level and carry extra fuel in spare can.
5. Tool kit : Always have it on board.

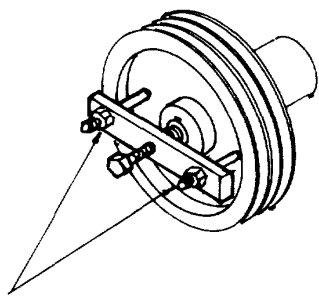
### AT REGULAR INTERVALS

6. Belts : After tensioning if some belts are slack, change all belts at the same time. Never run with less belts than specified.
7. Sump in fuel tank : Drain dirty fuel.
8. Fuel filter and water separator : Cleaning and replacement as appropriate.
9. Engine oil : Change every 100 hours.
10. Air filter : Clean or change according to manufacturer's instructions.
11. Flit pump : Clean and spray engine with diesel, using it.

Note : Apply grease on to bolts and nuts and other parts subject to corrosion.

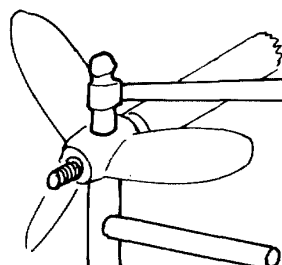
### REMOVAL OF PULLEY.

Do not use a hammer.



Bolts M10 through holes in pulley (see page 11).

### REMOVAL OF PROPELLER.



Use a heavy counterweight and strike the boss on top Do not hit the blades with a hammer.