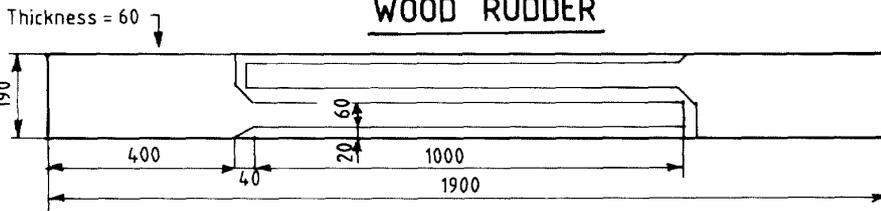
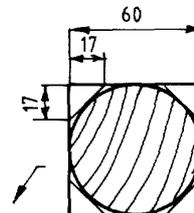
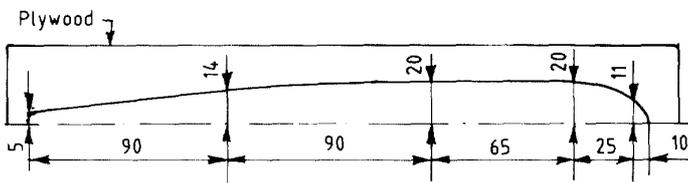
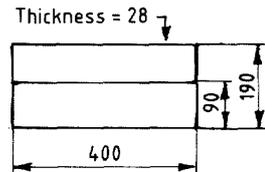
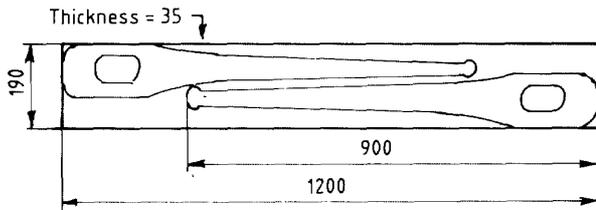


WOOD RUDDER

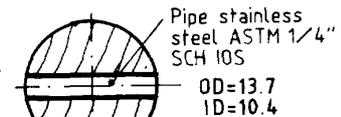
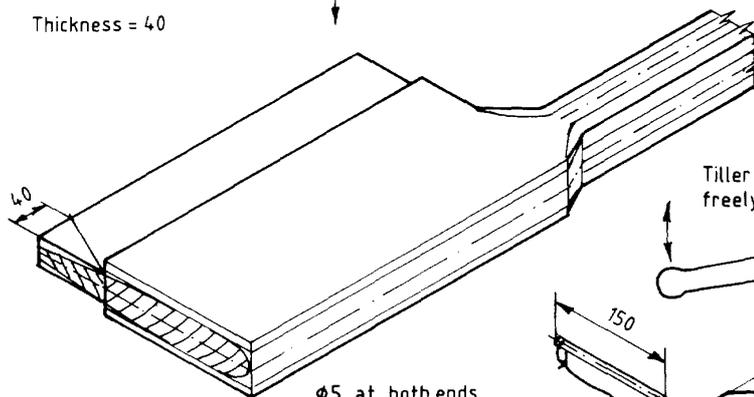


Use a heavy and strong timber



PATTERN FOR RUDDER BLADE

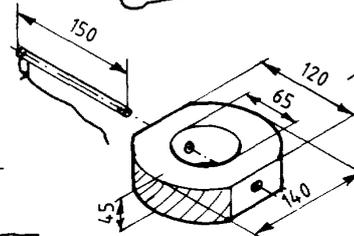
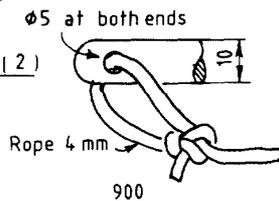
Thickness = 40



Tiller should move freely up and down

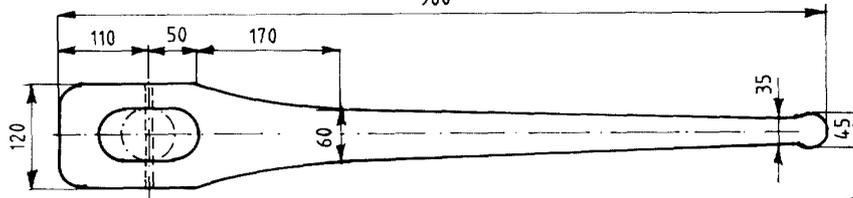
Stop wood block (see page 27)

STAINLESS STEEL PINS (2)
Ø10x150



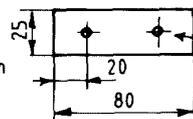
Do not drill hole for locking pin (see page 26)

Hole 12 for lifting rope

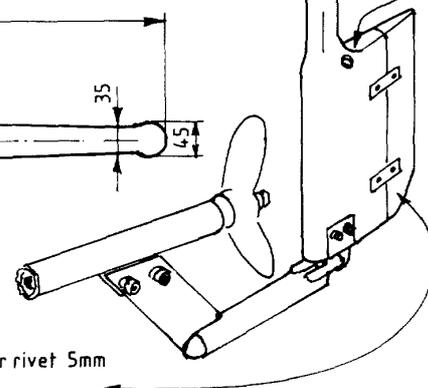


RUDDER STRAPS (4)

Stainless steel
Thickness = 2 mm

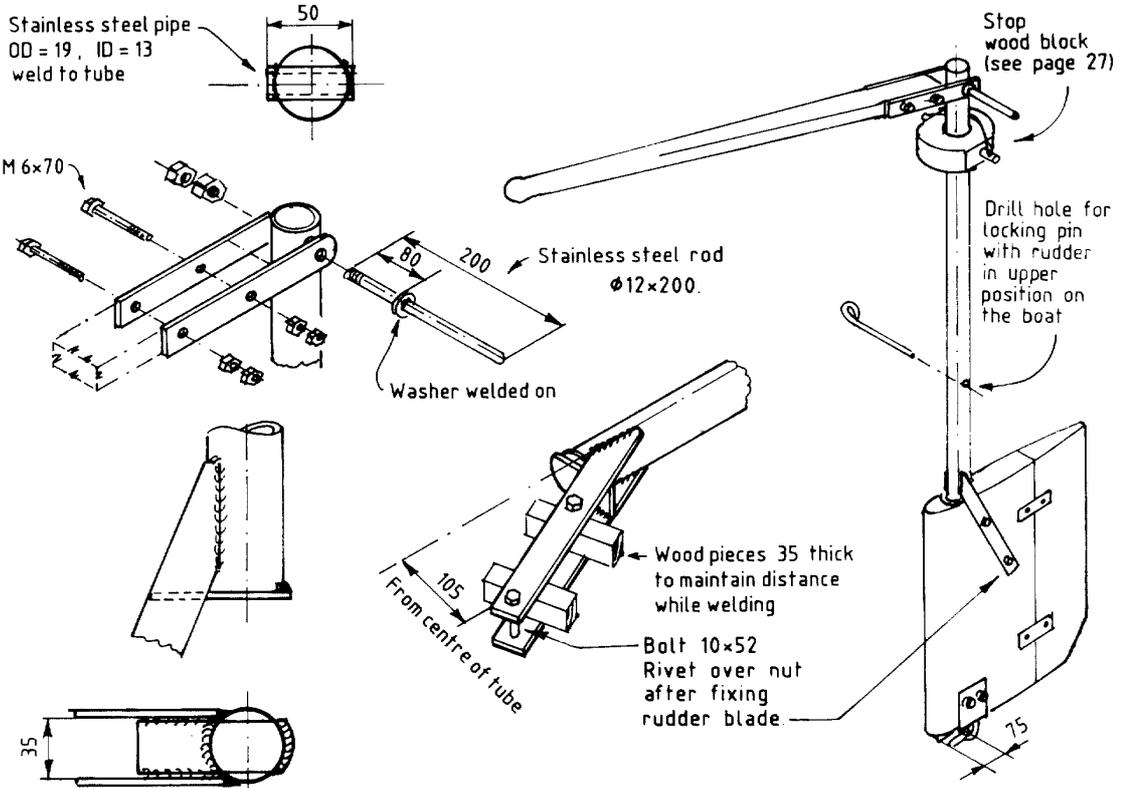
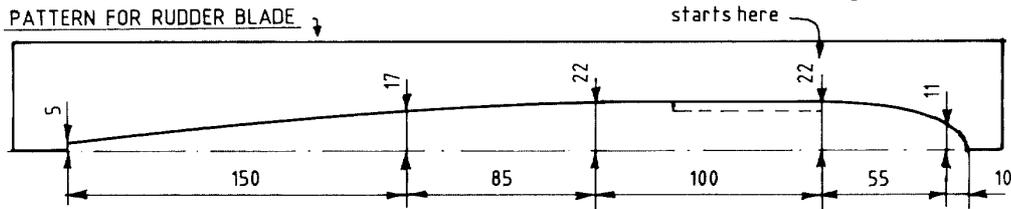
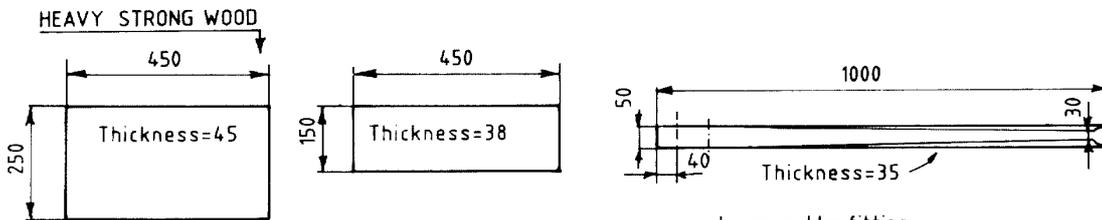
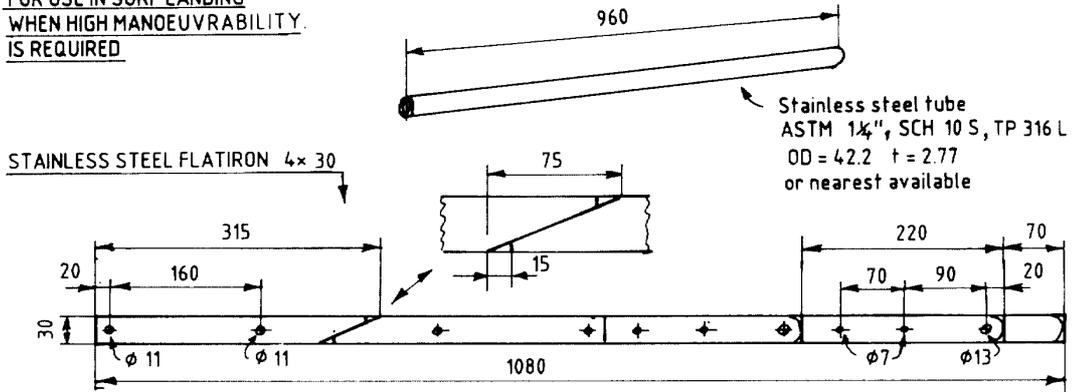


Copper rivet 5mm

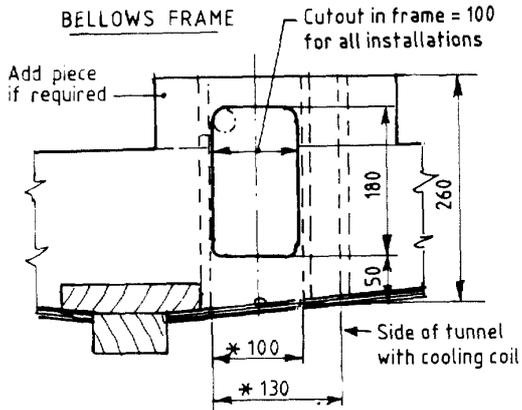
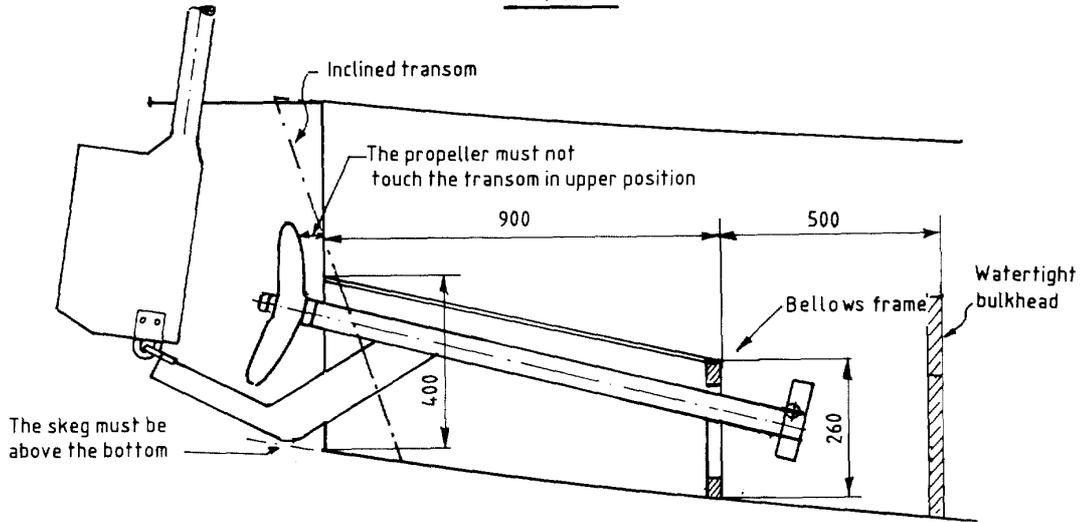


ALTERNATIVE LARGE RUDDER

FOR USE IN SURF LANDING
WHEN HIGH MANOEUVRABILITY
IS REQUIRED

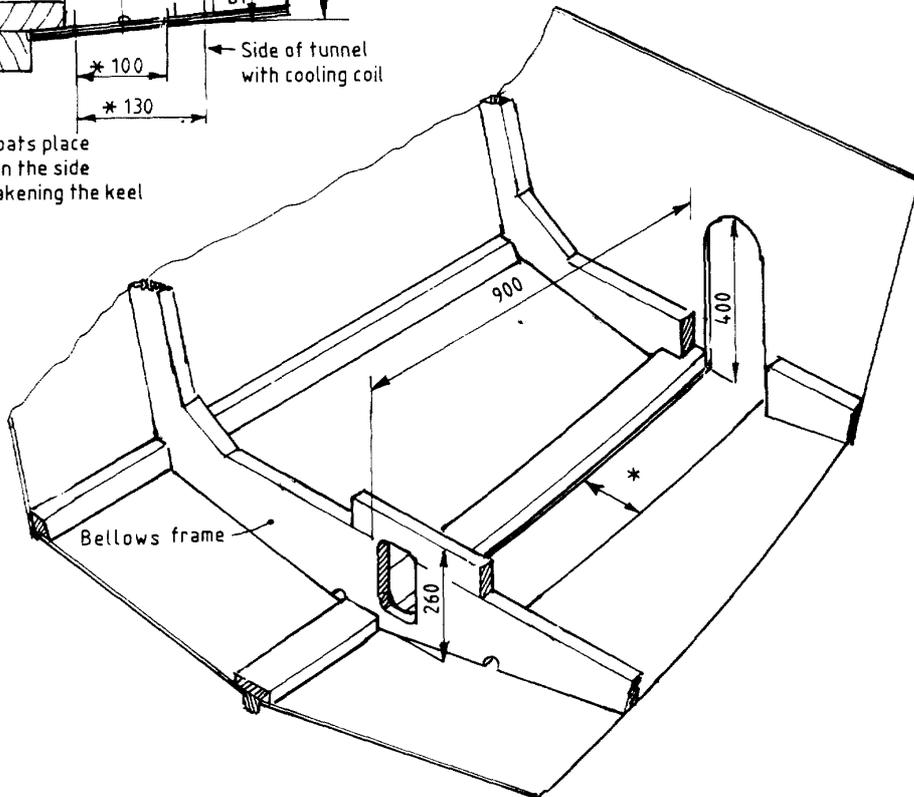


TUNNEL



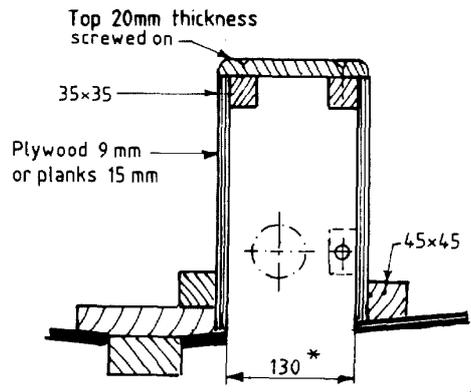
* The width of the tunnel measured on the inside will depend on whether cooling coil for the water cooling system is placed inside the tunnel.
 The inside width of the tunnel:
 With cooling coil = 130mm
 Without cooling coil = 100mm

In wooden boats place the tunnel on the side to avoid weakening the keel

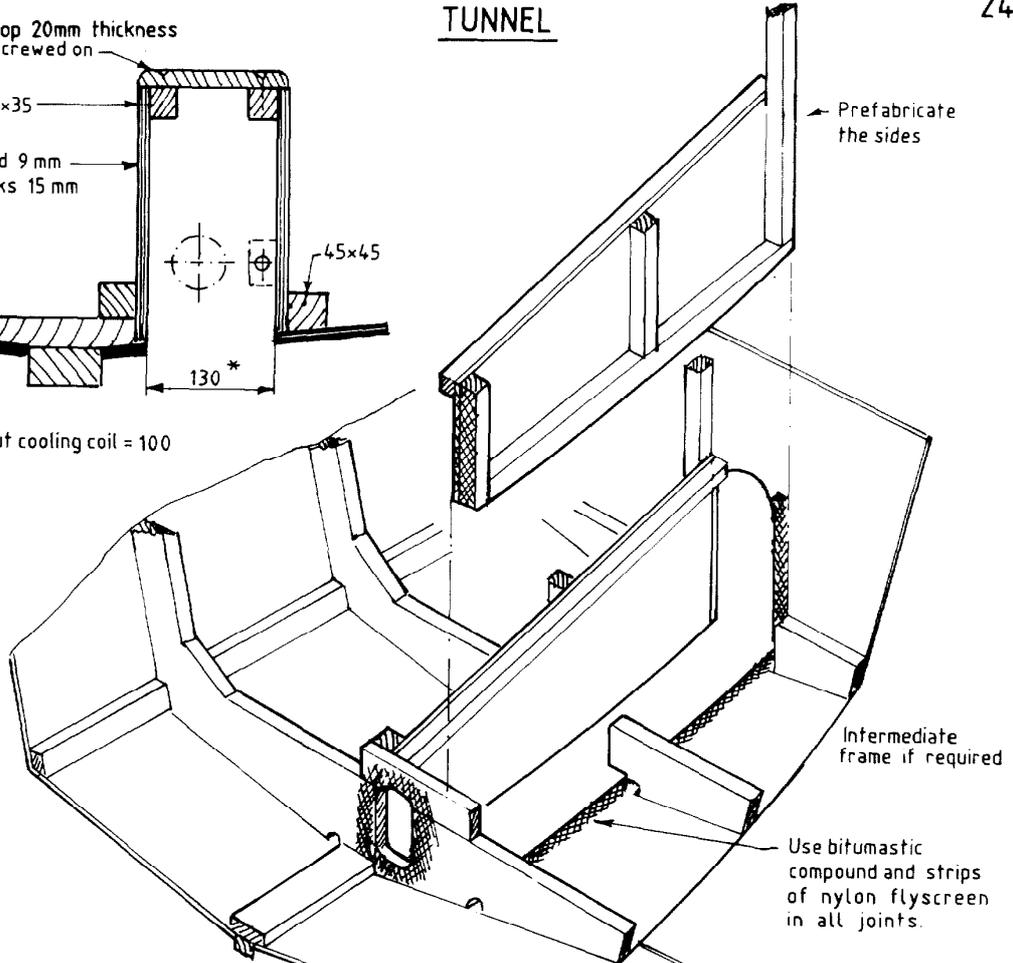


CONTINUED.

TUNNEL

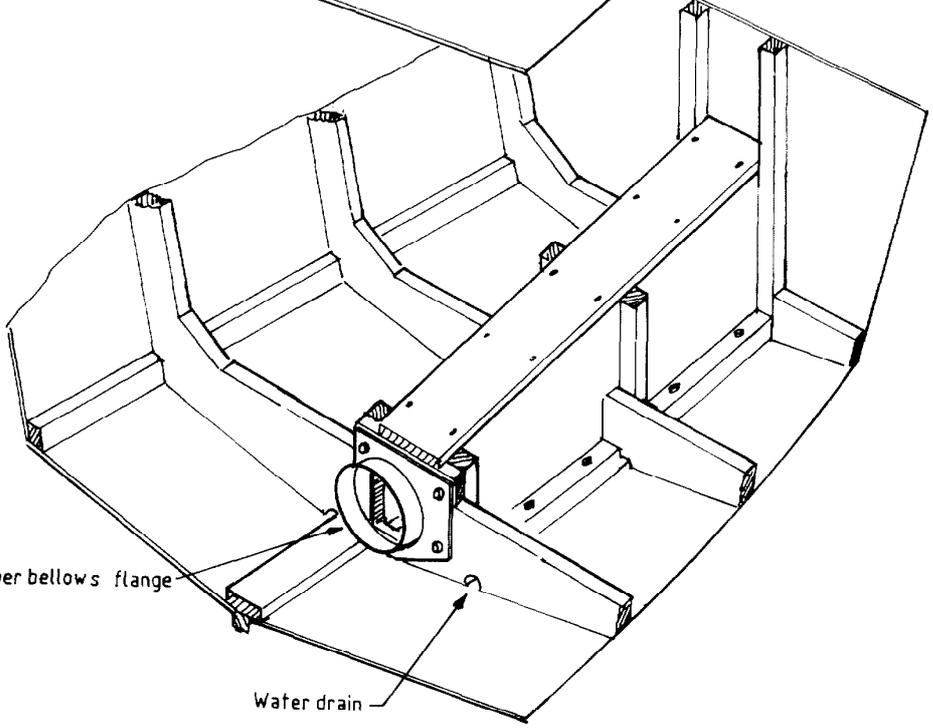


* Without cooling coil = 100



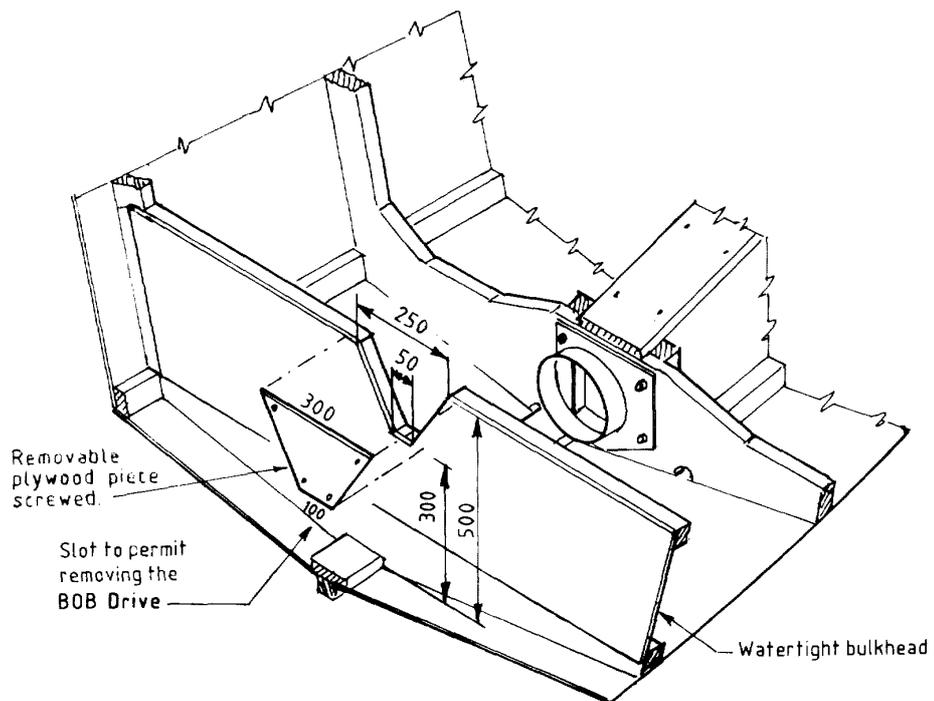
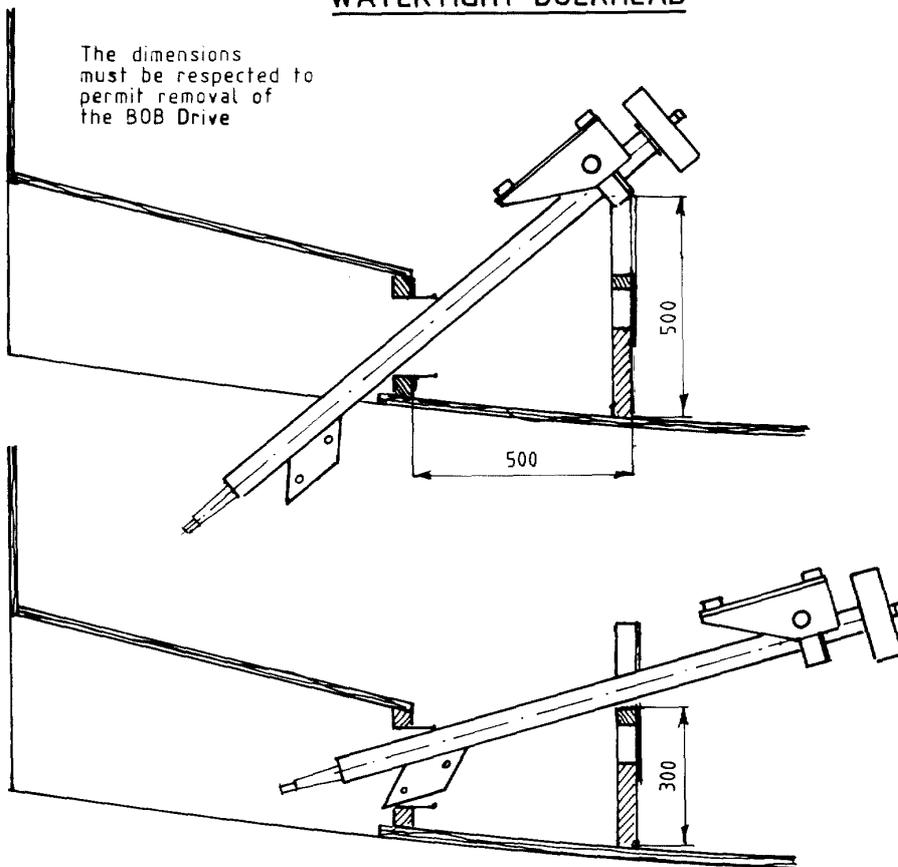
Bolt on the rubber bellows flange M12x100

Water drain

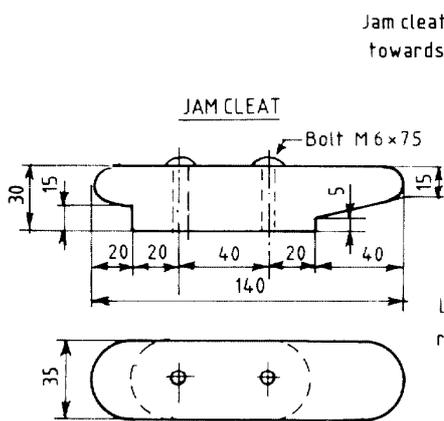
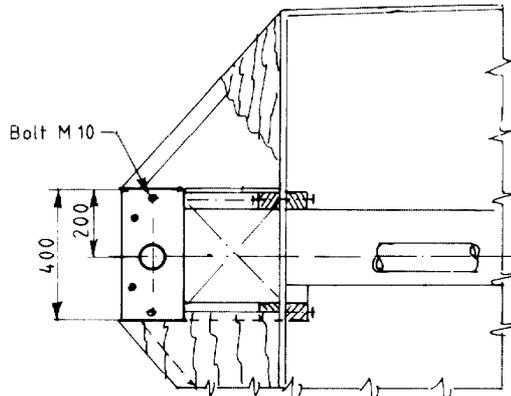
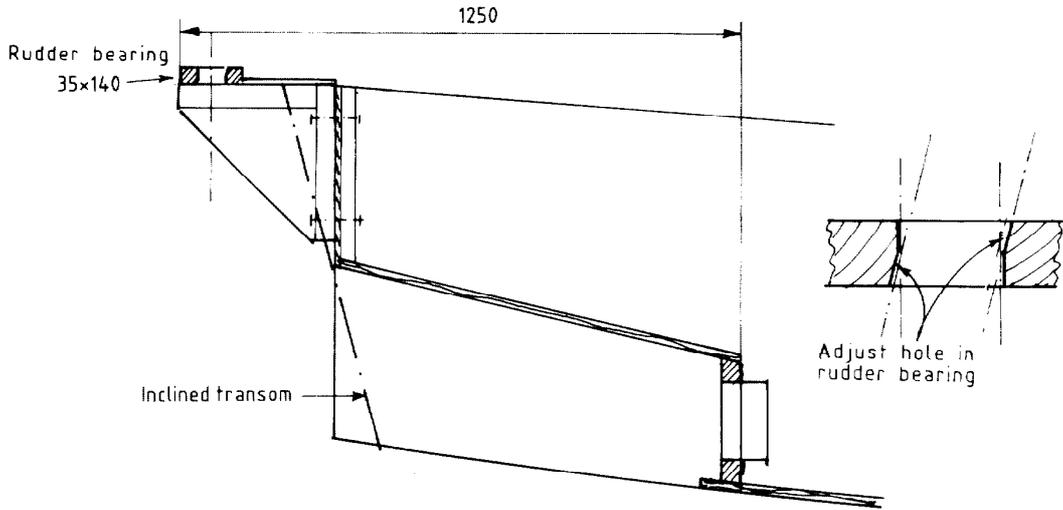


WATERTIGHT BULKHEAD

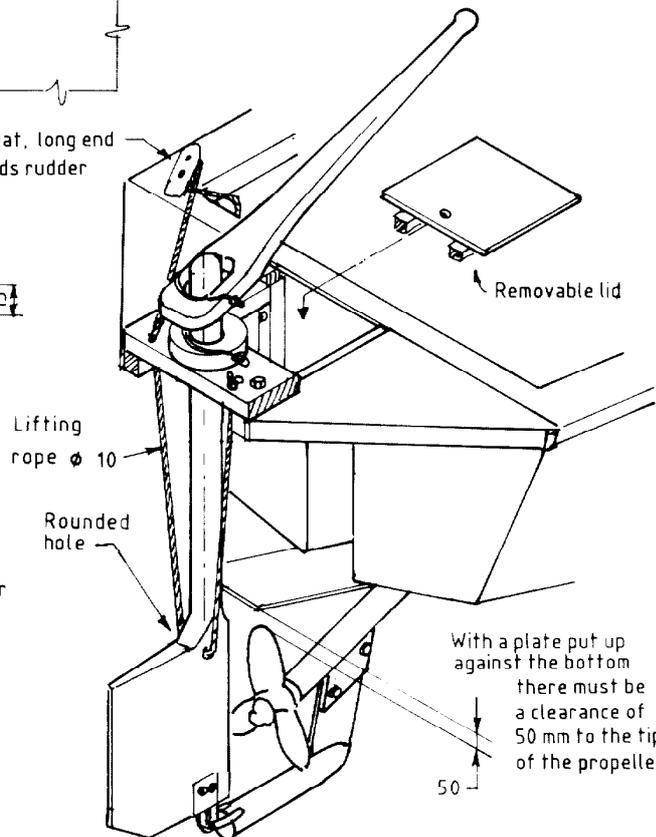
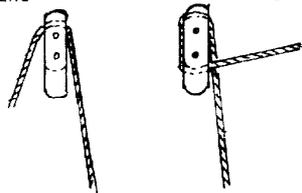
The dimensions must be respected to permit removal of the BOB Drive



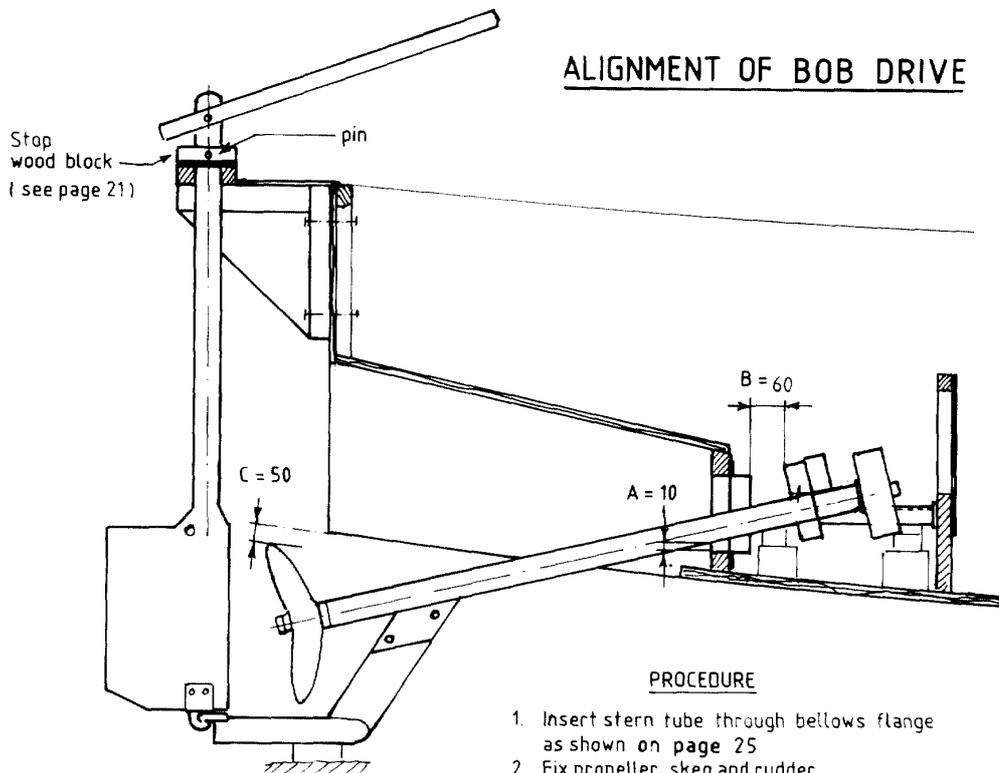
RUDDER PLATFORM



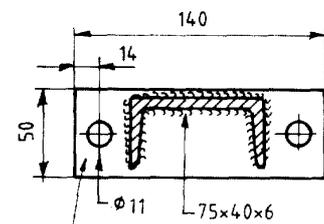
1. Take rope around short end
2. Jam rope under long end



ALIGNMENT OF BOB DRIVE



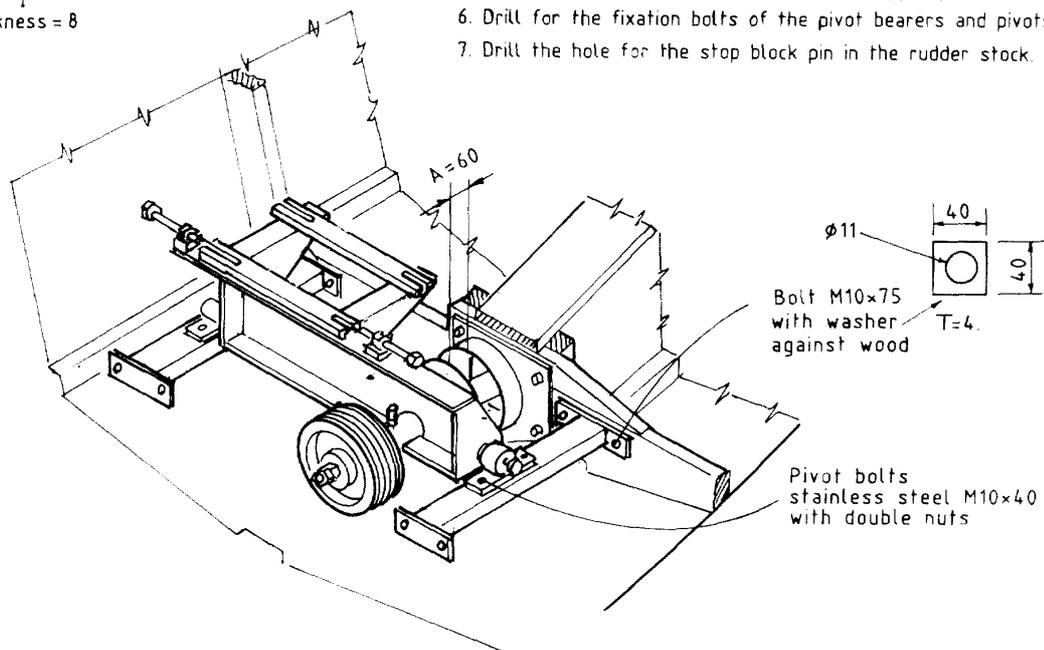
LUGS FOR PIVOT BEARERS



Thickness = 8

PROCEDURE

1. Insert stern tube through bellows flange as shown on page 25
2. Fix propeller, skeg and rudder.
3. Place pivot bearings on top of pivot bearers
4. Block up the pivot bearers and support the skeg so that the following measures are respected:
 - A. A gap of 10 mm between the stern tube and the bottom of the bellows flange hole
 - B. A distance of 60 mm between the bellows ring on top
 - C. A distance of 50 mm between the tip of the propeller and an extension of the bottom of the boat. (See page 26)
5. Raise the rudder and check that the stern tube has correct clearance to the tunnel sides in upper position.
6. Drill for the fixation bolts of the pivot bearers and pivots.
7. Drill the hole for the stop block pin in the rudder stock.



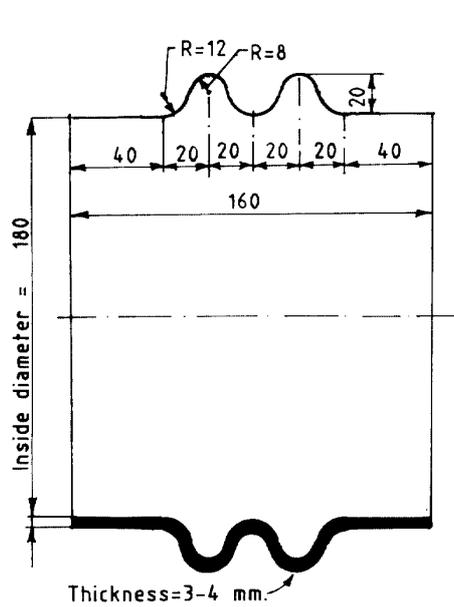
Bolt M10x75 with washer against wood

Pivot bolts stainless steel M10x40 with double nuts

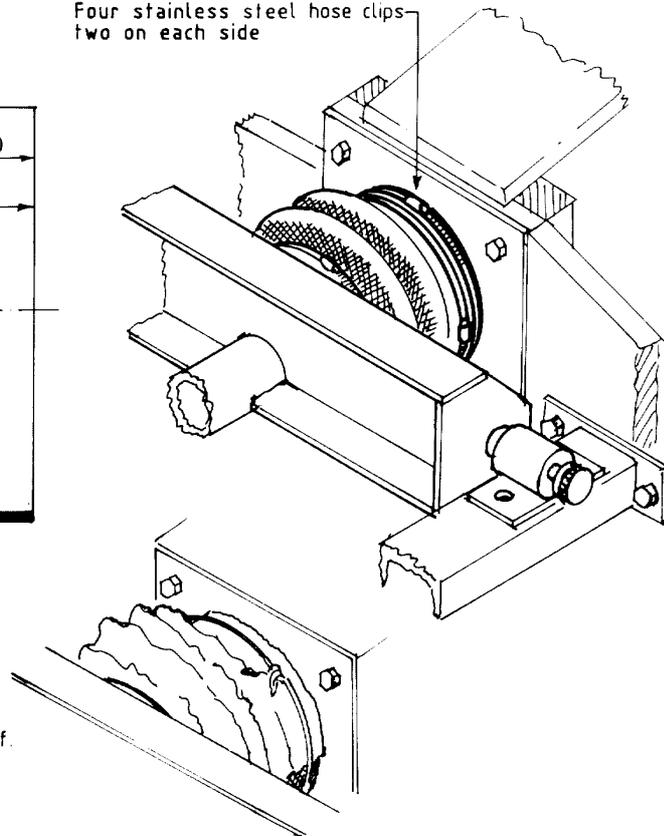
BELLOWS

28

MATERIAL : NEOPRENE



Four stainless steel hose clips—
two on each side



The bellows should be protected against direct contact with grease, oil and diesel by tying a sheet of plastic over the top half. This is especially important where the engine is mounted above the bellows.

ANTI-CORROSION TREATMENT

BEST PROTECTION RECOMMENDED WHEREVER POSSIBLE

1. Sand blasting
2. Zinc spraying
3. Two coats of enamel paint

For sand blasting and zinc spraying, plug ends of stern tube and pivot bearings.

MINIMUM PROTECTION

1. Wire brushing to remove rust
2. Two coats of anti-corrosive primer
3. Two coats of enamel paint.

FRESHWATER COOLING SYSTEM

29

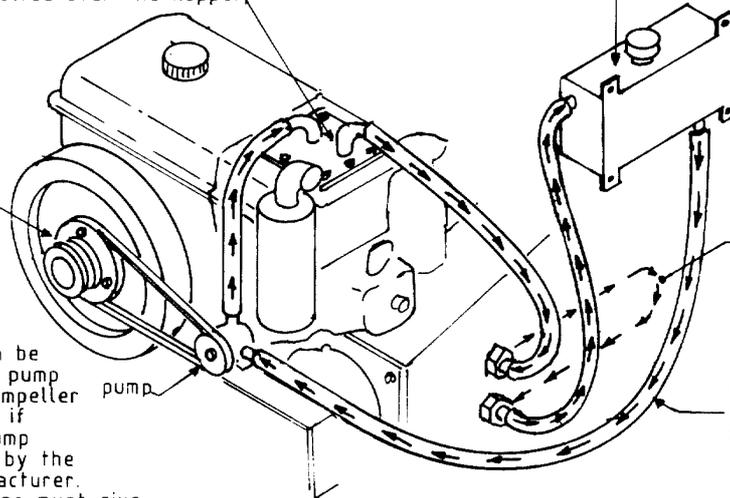
Freshwater cooling will give a longer life to the engine than seawater cooling, and will prevent problems due to sand getting into the engine when surf crossing and beach landing.

EXAMPLE 1: Converted hopper cooled engine with pump driven from pulley bolted on the flywheel.

Plate cover bolted over the hopper.

Combined pulley. See page 11.

The pump can be a centrifugal pump or a rubber impeller pump. Choose if possible a pump recommended by the engine manufacturer. The pulley size must give the correct pump speed.



Water tank 4-6 litres fixed to the boat above highest point of engine.

Cooling coil in tunnel. See page 30.

Radiator hose ID= 19 mm. Avoid sharp edges.

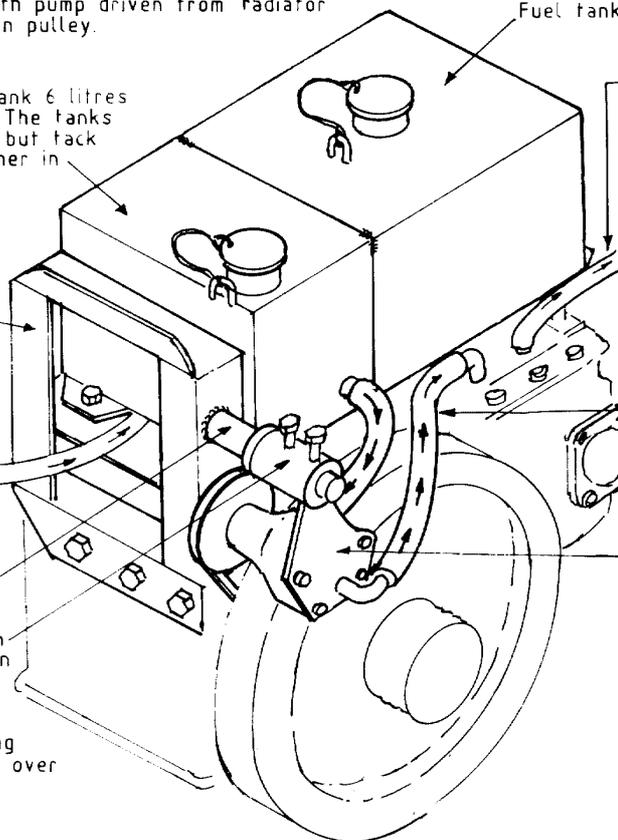
EXAMPLE 2: Converted radiator cooled engine with pump driven from radiator fan pulley.

Freshwater tank 6 litres painted blue. The tanks are separate but tack welded together in the corner.

Bracket bolted to engine

To fresh water tank.

Shaft ϕ 32 welded to bracket. The bush can be rotated on the shaft to tighten the V-belt. The V-belt is long enough to go over the flywheel.



Fuel tank 12 litres painted red

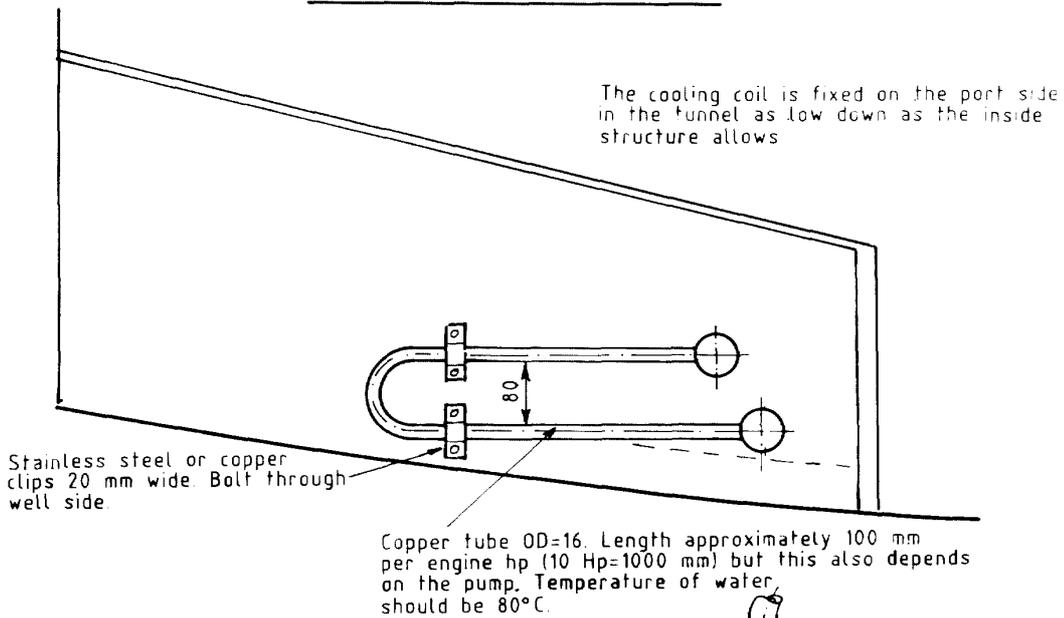
To cooling coil.

The radiator has a short life in a marine environment. In this example the radiator and fuel tank have been removed and replaced by engine mounted freshwater and fuel tanks made from stainless steel. The fuel tank can also be bolted to the side of the boat.

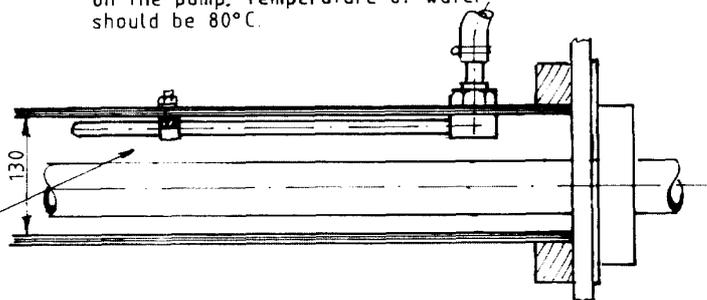
To engine.

Example: The centrifugal pump from a small tractor is driven by the radiator fan pulley behind the flywheel. A new pump backplate is welded to the bush.

COOLING COIL IN TUNNEL



The tunnel must give sufficient clearance between cooling coil and stern tube.

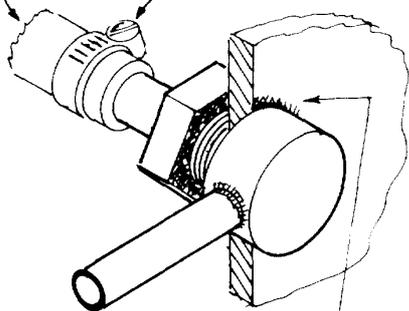


SKIN FITTING FOR COOLING COIL

Material : Bronze

Hose ID= 19

SS Hose clip



Bitumastic compound and nylon fly screen for water tightness.

