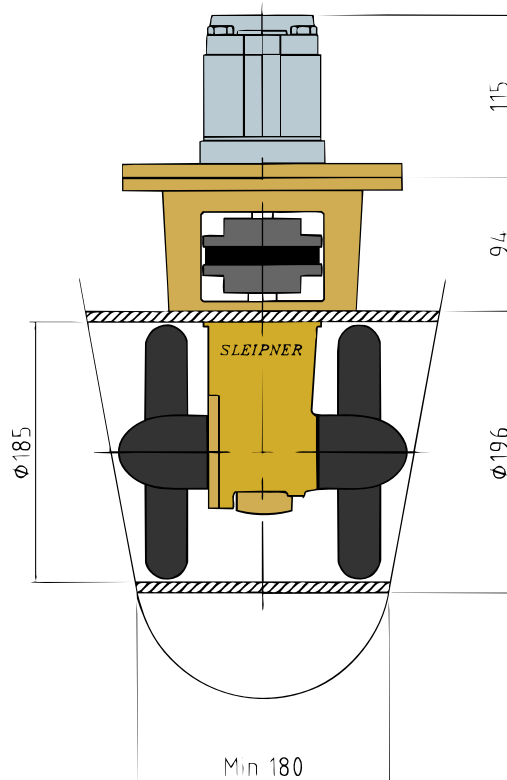


[®]**SIDE-
POWER**

*7 Hp Twin
Hydraulic version*

INSTALLATION & USERS MANUAL



MANUFACTURED IN NORWAY BY:



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ABOUT THIS MANUAL.

***THIS IS A PRELIMINARY ISSUE AND
SEVERAL IMPROVEMENTS ARE ON
THE WAY.***

***PLEASE REGISTER WITH YOUR
DEALER OR DISTRIBUTOR AND YOU
WILL SOON GET A MUCH BETTER
MANUAL, AS THE PRODUCT
DESERVES.***

INSTALLATION.

IMPORTANT NOTICE.

This thruster is supplied with a hydraulic motor only.

The rest of the hydraulic system is the responsibility of the fitter/installer and must be within the limitations that are described later in this book so that it does not damage the thruster.

It is very important to use a hydraulic valve that has flow and pressure limits that are either set within or can be adjusted to be within the limits of the thrusters capability.

We also strongly recommend that a shock valve are fitted and set to 10% - 15% above the chosen maximum pressure set in the valve.

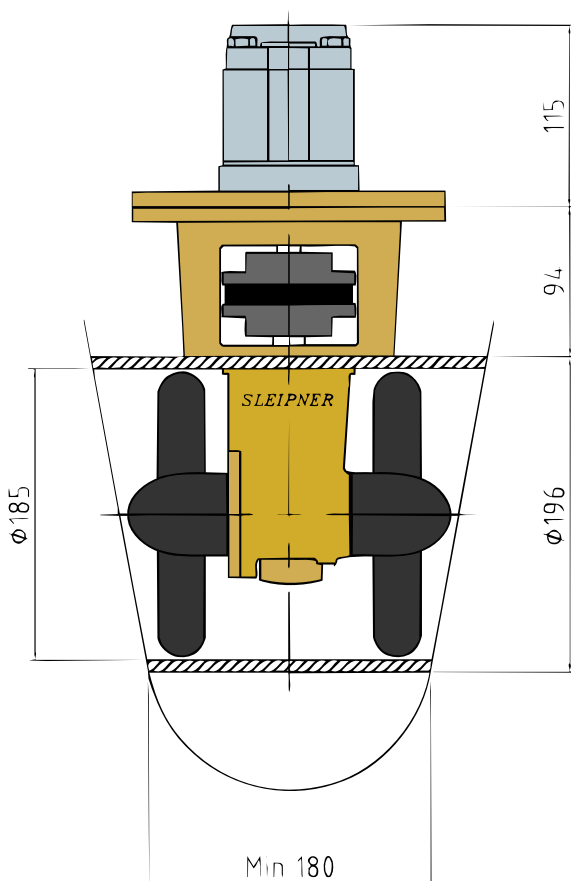
This will prevent that the system is dammaged if the propellers are blocked by any reason.

It is also required that a device is installed to ensure that the drive direction can not be suddenly changed, as this can seriously dammage the gearhouse. This can be done by adding an electronic time lapse / delay safety on the electric control system or by using a valve that has this type of protection built in.

To fit the tunnel and the thruster.

Start by deciding the best place for the SIDEPOWER® tunnel. See drawing for required minimum clearances.

The tunnel should be placed as far forward and deep in the hull as possible to obtain maximum performance and leverage for the thruster.



PS ! All measurements in this guide are given in millimetres , unless otherwise is indicated.

If the height in the room You are installing the SIDEPOWER® in is limited, the SIDEPOWER® can be installed horizontal.

No part of the propeller or gearhouse must be outside the tunnel.

When position is decided, and all measures are checked, mark the centre of the tunnel on both sides. Drill a 6mm hole in these marks (see fig. 3).

We recomend that a professional does the moulding of the tunnel. These moulding instructions are only general, and does not explain in any way the details of the moulding. Problems caused by wrong moulding/installation of the tunnel, are the installers full responsibility.

Bend a \varnothing 5mm steel bar and mark the circle for the tunnel opening (see fig.4). Don't cut any "steps" in the hull if it can be avoided. Cut the hole, and grind off the top-coat and polyester so that You are down in the "real fibreglass" in an area of 12cm around the hole to cast the tunnel to the hull. Then cast the tunnel to the inside of the hull, use at least 8 layers of 300 g. Glass fibre (see fig. 7.).

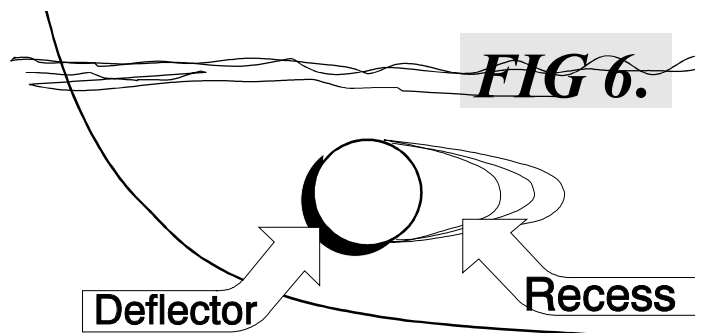
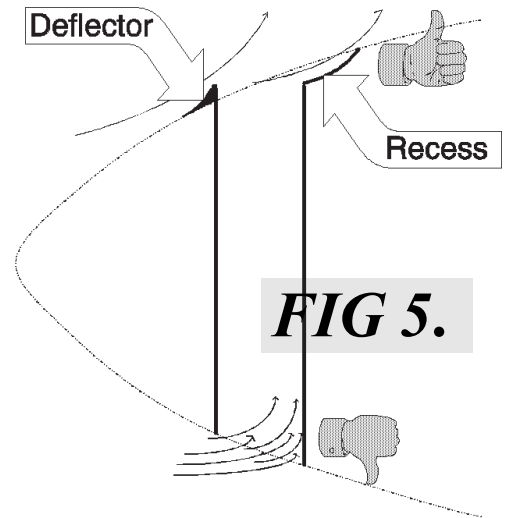
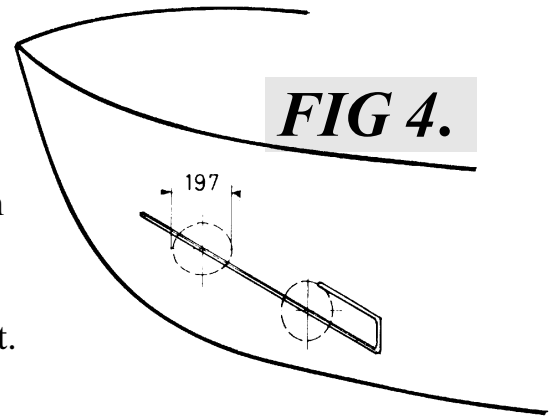
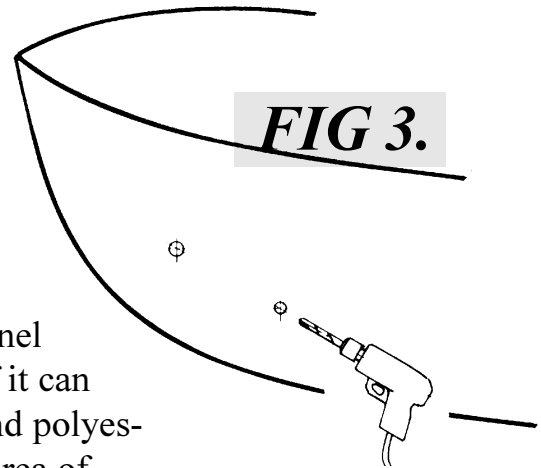
When the polyester is hard, the part of the tunnel that is outside the hull can be cut off. Grind off the gel-coat in an area of 6 to 8 cm around the tunnel and soften the edges. Cast then the tunnel to the outside of the hull and let it get hard. Grind then the edges making a soft rounding between the tunnel and hull and apply gel-coat.

PS ! Avoid any casting where the motor-bracket is to be placed, as this will cause misfit of the lower unit.

On fast boats you *must* make a deflector in front of and under the tunnel. This is very easy to make, you just leave some of the tunnel outside the hull, and then you make a soft curve from the hull and to the end of the tunnel. (Fig. 5 and 6). The deflector should only be in front of and under the tunell, never let the tunnel go outside the hull over and behind the tunnel ! This is necessary to avoid the pressures from the water to hit the back of the tunnel and the lower unit of the SIDEPOWER®.

It also makes less resistance in the water, therefor we also recommend that sailboats do this.

For boatbuilders using Bow thrusters as standard equipment, the perfect installation would be to also have a recess in the hull behind the tunnel, this can be made in the mould. (Fig 5 and 6)



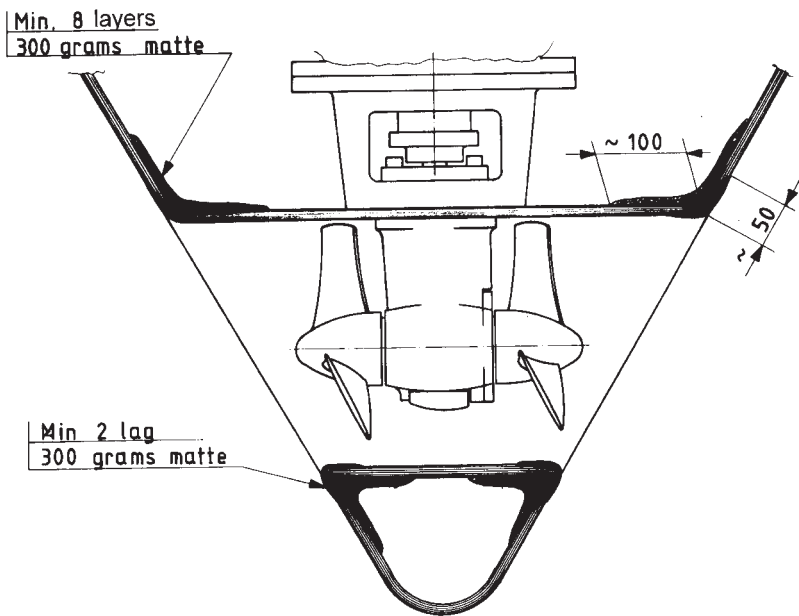


FIG 7.

Mounting of lower-unit, bracket, motor etc.

1. Begin with marking the centre line of the tunnel, check that the propeller and the lower-unit is completely inside the tunnel.
2. Use the 2mm thick gasket to mark where to drill the holes (fig. 8).
3. Drill the centre-hole \varnothing 32mm and then the two screw-holes \varnothing 9mm.
4. Try the motor-bracket, and make sure that it fits steady on the tunnel, if the tunnel is not plane, make it plane by grinding it.
5. Mount the lower-unit and the bracket, use the 1mm thick gasket inside the tunnel, and make sure that the propeller is in the middle of the tunnel, if not adjust this by using the other gasket (2mm thick) or both. But **always use at least one gasket**. If the tunnel is not plain, use silicone or other similar substances to make sure that no leakages can occur.(fig 9.)

PS ! make sure that nothing gets in to the oil-holes in the gearhouse.

You must also apply a little oil on the O.rings in the motorbracket before putting the gearhouse and bracket together, this is important so that you do not damage these O-rings.

6. Screw the lower unit and the motor-bracket together, with the two bolts provided. The bolts should be tightened with approx. **27 Nm. (19,5 lb/ft)**

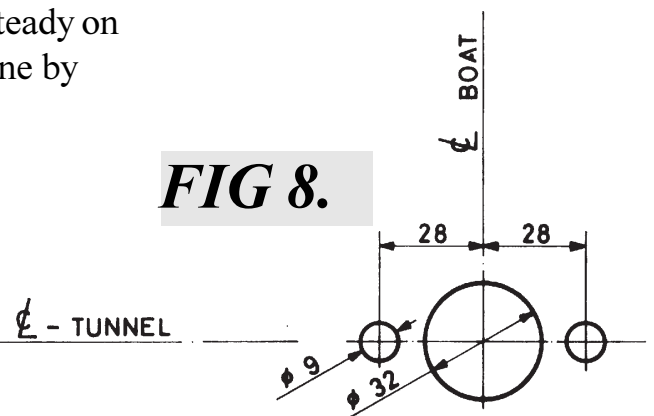


FIG 8.

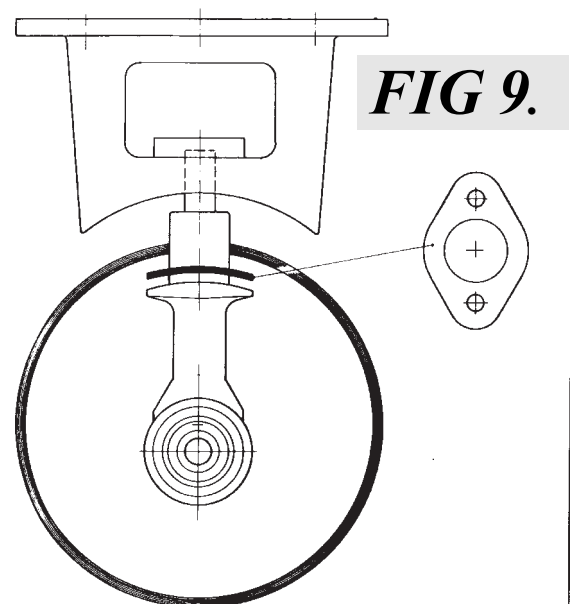
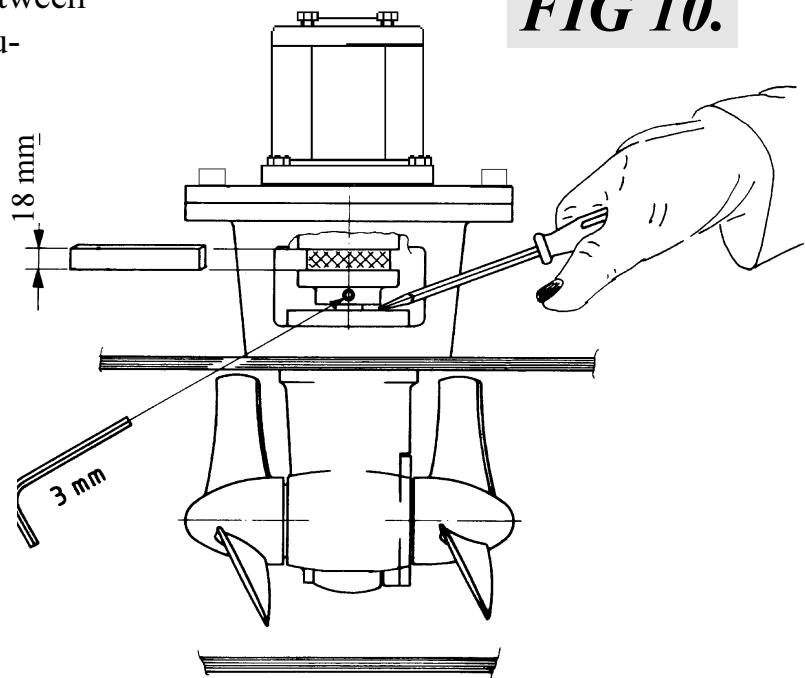


FIG 9.

7. Then place the hydraulic motor that is prefitted on a adaptor plate gently on to the motor bracket. Fasten the adaptor plate to the bracket with the provided screws and tighten them with appr. 48 Nm.(35 lb/ft).

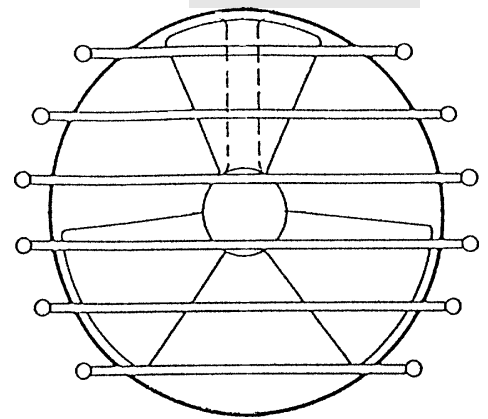
8. Now you put the rubber sleeve in between the two half pices of the flexible coupling, lift the lower part of the coupling so that the distance between the two parts are 18mm and fasten the lower part of the flexible coupling to the shaft with the provided allen key. Remeber there are two allen screws that must be fastened. Also check that the allen screws on the upper part of the flexible coupling is thoroughly fastened to the motor shaft.



9. Then you control the system by turning the propeller, it will be a little hard to turn (because of the gear reduction and the motor), but you should be able to turn it with two fingers.

10. Install the oiltank **minimum 200mm above the waterline** connect it with the motor-bracket, and fill it with oil type EP 90. **The screw in the bottom of the gear house must be opened to ensure that the oil is going in to the gear house.**

In some cases (shallow installation) we recommend to protect the propeller by mounting a grid, etc. in the tunnel opening. (Fig 11)
Avoid this if not absolutely necessary !



We recommend that you paint the lower unit against growth. but make sure that you do not paint the end faces or propeller shafts as this will make it very difficult to fit the propellers.

PS ! Do not paint the zincanode, the end faces of the gearhouse or the propeller shafts

PS ! The thruster must not be run without being in the water.

Extra checklist !

1. The propellers are fastened correctly to the shaft !
2. The lower-unit is filled with oil (gear oil EP 90).

This must be checked by opening the oil-drain screw in the bottom of the gearhouse.

3. Lock screws are tightened in both parts of the flexible coupling .

TECHNICAL INFO, 7 Hp Twin hydraulic:

Motor:

Type: Gear type hydraulic motor, choices of 6,0 or 8,0 or 10,6 cm³

Gear house:

Gears: Hardened precision gears
 Lubrication: Oil bath from tank (gear oil EP 90)
 Bearings: Ball bearings / Bronze bearing at drive-shaft.
 Material: Bronze, protected with zinc anode

Propellers:

Type: 2 pcs. kaplan type 7" x 8" 3 bladed symmetrical, tandem system
 Material: Glass reinforced composite
 Nominal thrust: Max 90 Kg light duty, Max 75 Kg heavy duty/workboat.

Controlpanel:

Not supplied as standard. Sidepower standard options include

- Touchpanel with built in delay safety.
- Joystick-panel with separate delaybox or other two way switching device.
- Time lapse device for prevention of sudden directional changes **must** be used.

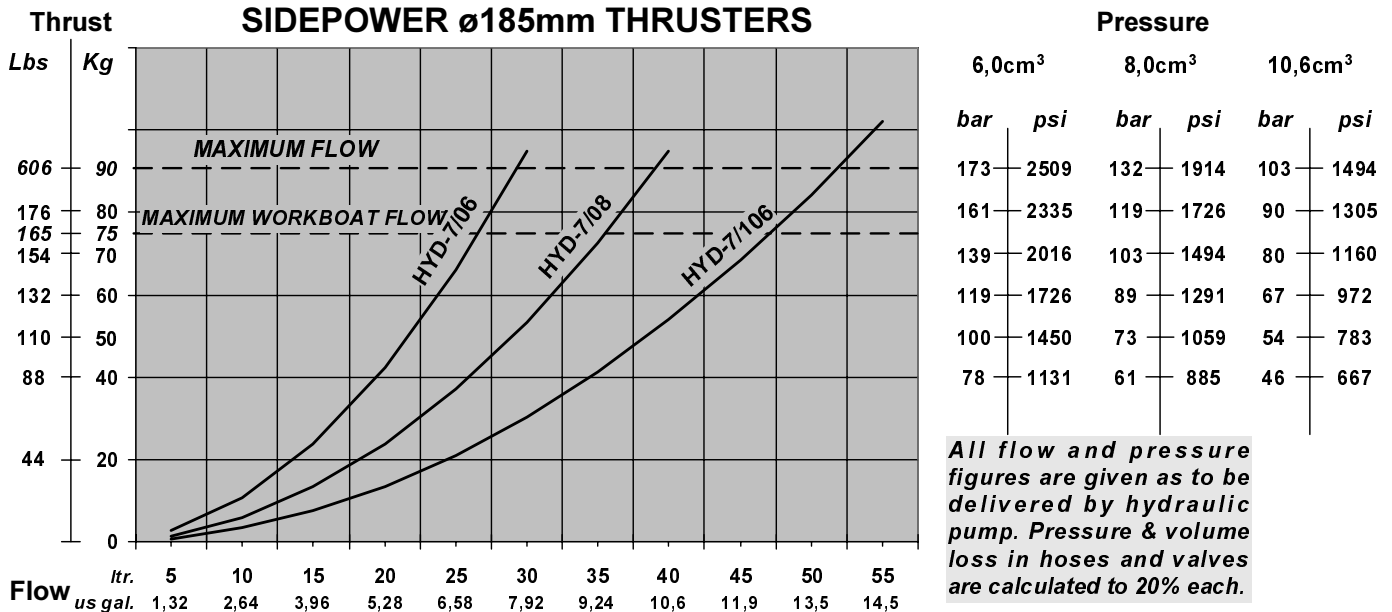
Minimum rest time between drive directions is 1 second.

PS ! All Sidepower electronic controls with delay function use minus / negative electric power for control and can thereby only be connected to hydraulic valves that can be controlled this way.

Thrust-tunnel:

GRP, Steel or Aluminum, inside diameter 185mm minimum wall thickness 5mm, max wall thickness 10mm.(for use of standard steel or aluminum tunnels, inside dia of 190mm is acceptable but will reduce thrust slightly.

HYDRAULIC SPECIFICATIONS SIDEPOWER ø185mm THRUSTERS

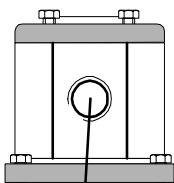


IMPORTANT HYDRAULIC CONSIDERATIONS

We strongly advise that you install your Sidepower thruster following these recommendations.

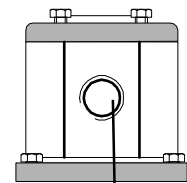
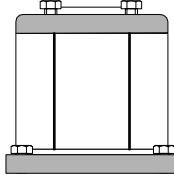
- Install an oil filter to keep the oil clean.
- Install a valve with settings for max pressure / max. flow within the limit of the thruster you are installing.
- Install a shock valve to prevent damages to your hydraulic system / thruster in case the propellers are accidentally blocked
- Fit an oil cooler or use an oiltank so that the maximum oil temperature is 43 - 50 degrees Celcius.
- A safety device for prevention of sudden thrust direction change are MUST BE USED.

HYDRAULIC HOSE CONNECTIONS TO MOTOR:



Port A:
1/2" BSP

Drain port:
1/4" BSP



Port B:
1/2" BSP

TO USE THE BOWTHRUSTER:

- 1 Turn main power switch for the bowthruster on / make sure that the hydraulic pump is running.
- 2 Turn the controlpanel on by: - pushing both "ON" buttons on the Side-Power touchpanel simultaneously -or- engaging the On/Off switch for the bowthruster on the boats main panel or close to the bowthruster control if another type of control is installed.
- 3 Turn the bow in the desired direction by pushing: -the red/port button for port movement of the bow -or- -the green/starboard button for starboard movement of the bow -or- if you have a joystick control, move it in the direction you wish the bow to move. Always test drive the direction in open water, never run the thruster on land.
- 4 Depending on the sideways speed of the bow, you must disengage the control device shortly before the bow is in the desired direction, as the boat will continue to move after stopping the bowthruster.
- 5 Please take some time to exercise this in open water to avoid damages to your boat.

ALWAYS USE WITH CARE AND NEVER WHEN THERE ARE ANY DANGER OF PEOPLE BEING IN THE VICINITY OF THE THRUSTER.

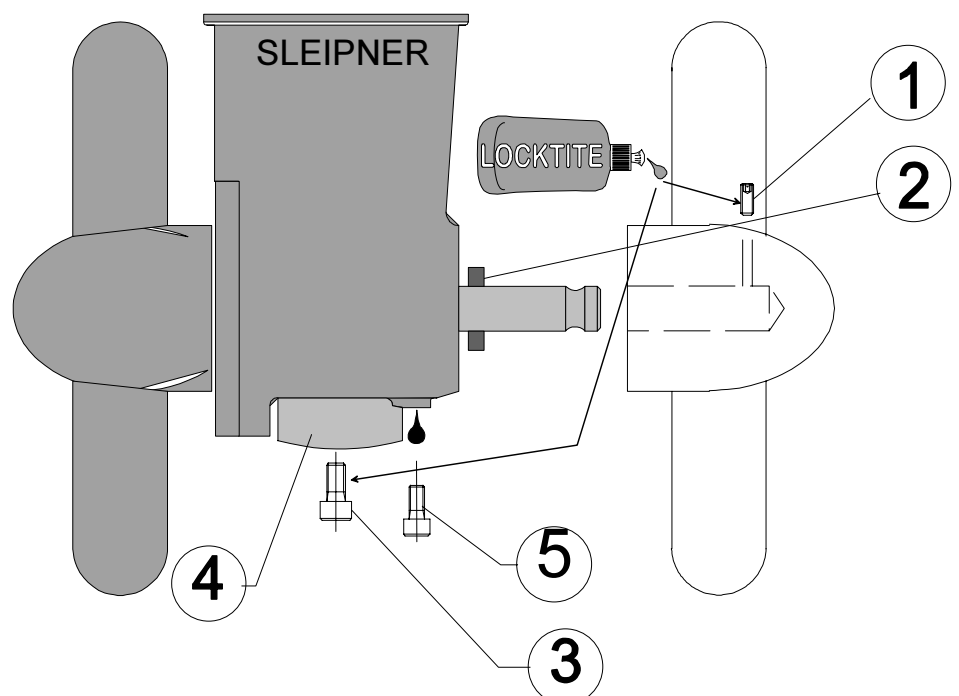
MAKE SURE THAT THE POWER SOURCE FOR THE HYDRAULIC PUMP ARE TURNED COMPLETELY OFF BEFORE TOUCHING ANY PART OF THE THRUSTER.

MAINTENANCE

- There should always be oil in the oil reservoir. Refill if necessary with gear oil EP90.
- Change the gear oil a minimum of every second year. Check the gearoil in the gearhouse every time the boat is out of the water.
- Keep the propellers and gearhouse clean from growth by painting with antifouling before every season.
PS ! THE ZINC ANODE, GEARHOUSE FACE TOWARDS PROPELLERS AND PROPELLERS SHAFTS MUST ABSOLUTELY NOT BE PAINTED PROTECT THESE AREAS IF YOU ARE SPRAY PAINTING AS THESE MUST BE KEPT CLEAN BECAUSE OF THE PERFECT FIT.
- Change the zinc anode before every season, or when the about half the anode is gone. Always use a sealant on the screw holding the zincanode to ensure that it does not fall off. Please observe that in some waterconditions it can be necessary to install an extra zincanode to ensure that it lasts for the whole period between regular service lifts of the boat. Consult your dealer for information on how to do this.
- As a part of the seasonal service of your boat, and before every season, always check that:
 - The propellers are securely fastened
 - The bolts holding the gearhouse and the motorbracket together are tightened correctly.
 - The bolts holding the hydraulic, adaptor plate and motorbracket are fastened correctly.
 - All hydraulic connections are tight and the hoses / tubes are fastened securely especially in areas close to sharp objects.
 - The hydraulic oil is clean and free of water.
 - The electrical control wires are securely fastened and all contacts are clean and sits well together.

Description of drawing:

- 1 Set screw for propellers
- 2 Drivepin(s) for propellers
- 3 Fastening screw for zincanode
- 4 Zincanode
- 5 Oil draining screw



Sparepart list 7 Hp Twin hydraulic

Pos	Pcs	Description	Part #
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**NOT READY
COMING SOON**

PARTS DRAWING 7 HP TWIN

