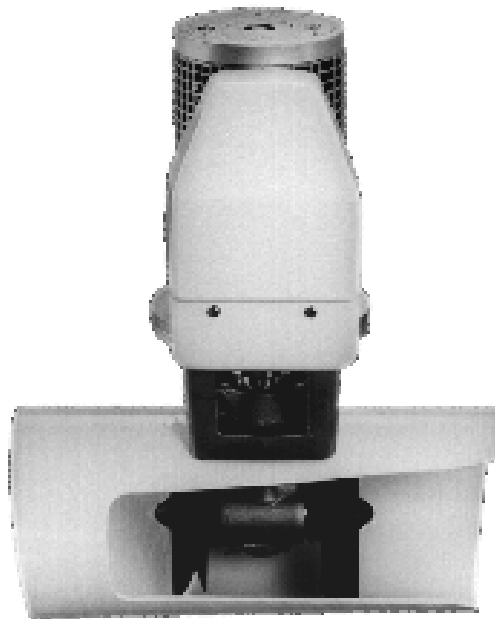


®

**SIDE-  
POWER**

**7 Hp Twin**

**INSTALLATION  
&  
USERS MANUAL**



MANUFACTURED IN NORWAY BY:



**SLEIPNER MOTOR A/S**

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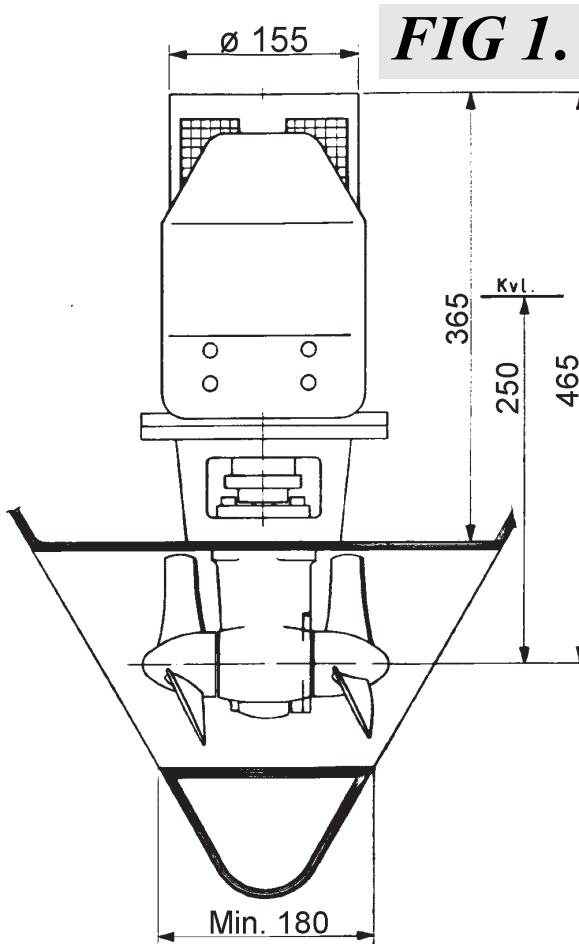
# INSTALLATION.

Prior to installation we recommend that You **read this guide**. This to ensure necessary acquaintance with this product.

Start by deciding the best place for the SIDEPOWER® tunnel. Ref. fig 1 and 2 for required minimum clearances.

The tunnel should be placed as far forward and deep in the hull as possible. If the room for the SIDEPOWER® is small, it should be ventilated because of heat from the motor.

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



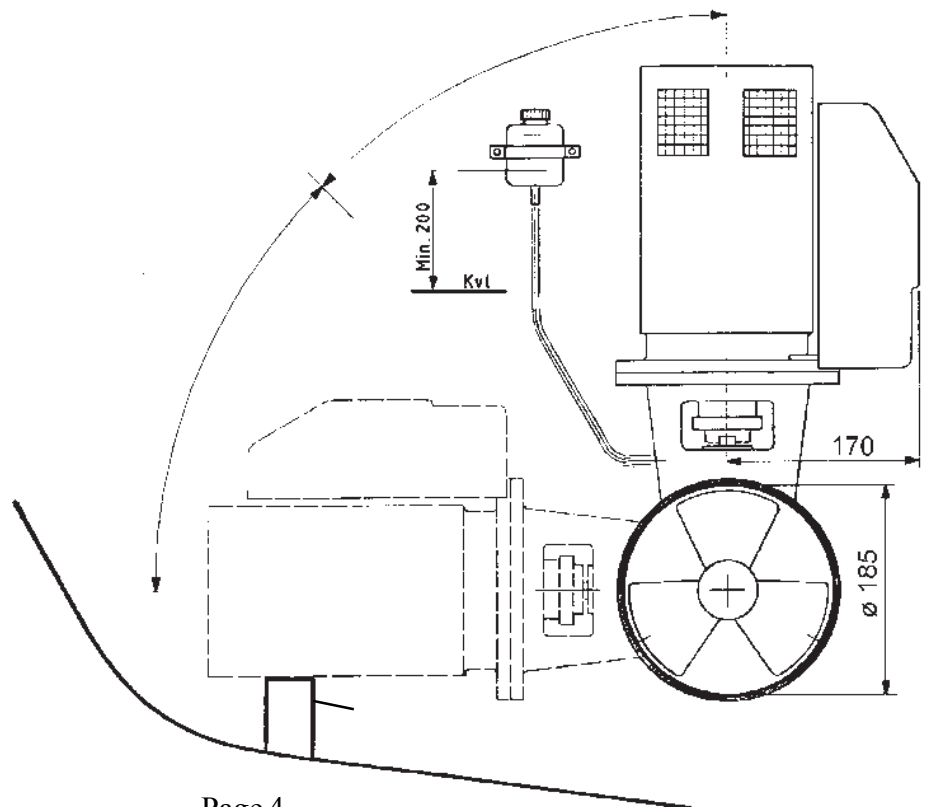
Power for the SIDEPOWER® can be taken from the main engine(s) start battery, or there can be installed a separate battery.

If the height in the room You are installing the SIDEPOWER® in is limited, the SIDEPOWER® can be installed horizontal. If so, You will have to make a **support** for the engine, as shown on fig.2.

It is also important that the electric motor is mounted so that it will **keep dry at all times**.

**No part of the propeller or propellerhouse must be outside the tunnel.**

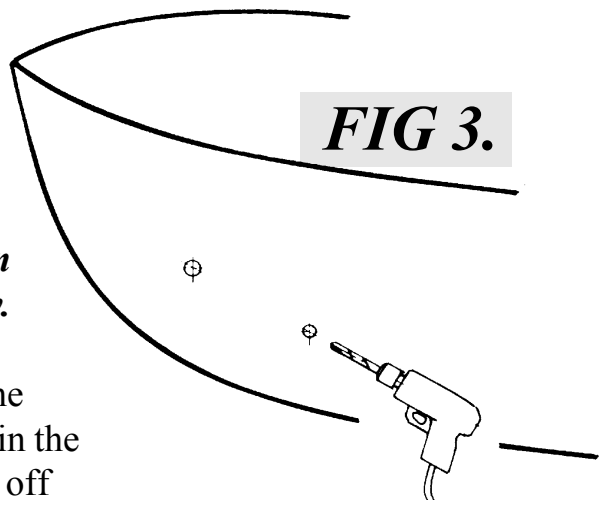
**FIG 2.**



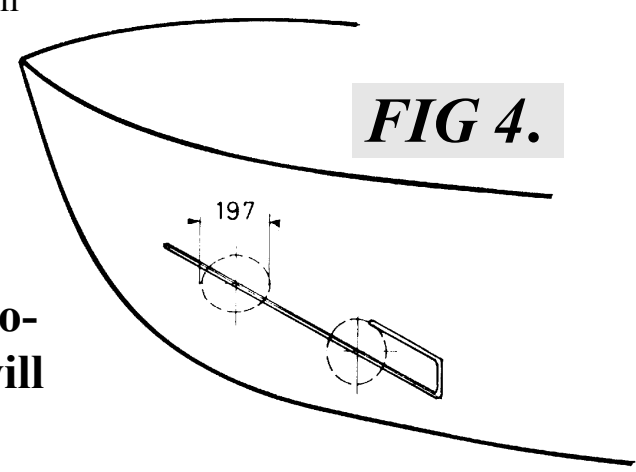
**No part of the propeller or propellerhouse must be outside the tunnel.**  
 When position is decided, and all measures are checked, mark the centre of the tunnel on both sides. Drill a 6mm hole in these marks (see fig. 3).

*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.).



**FIG 3.**

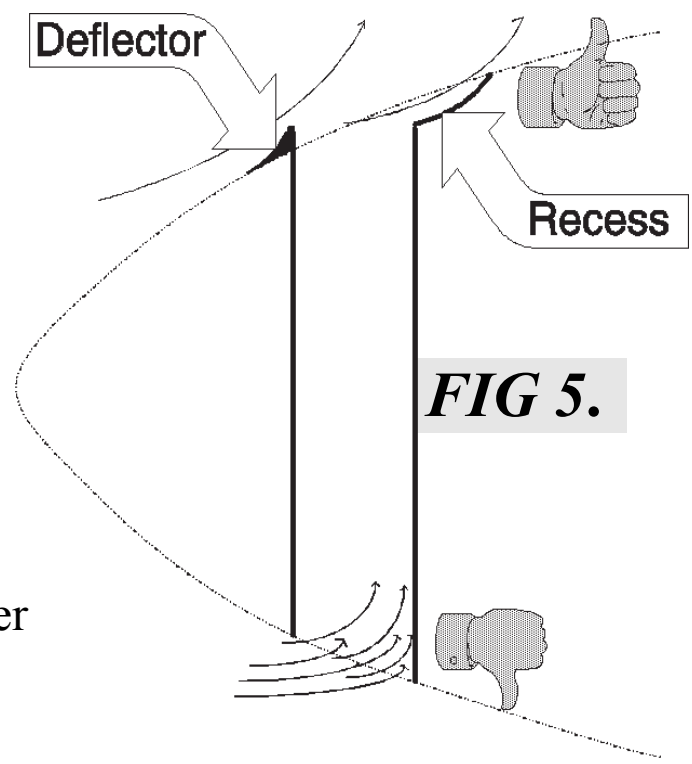


**FIG 4.**

**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 !

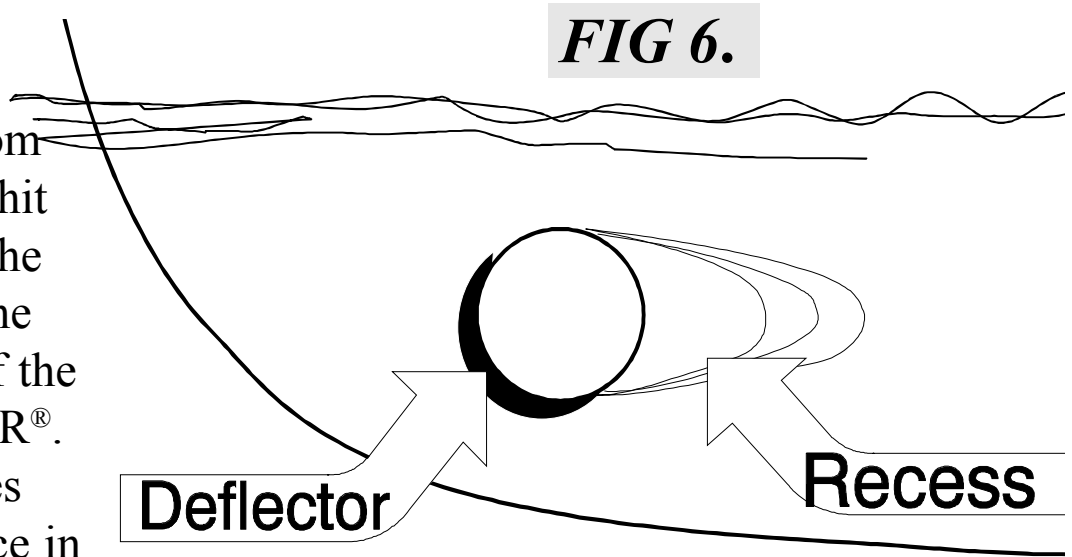


**FIG 5.**

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, therefore

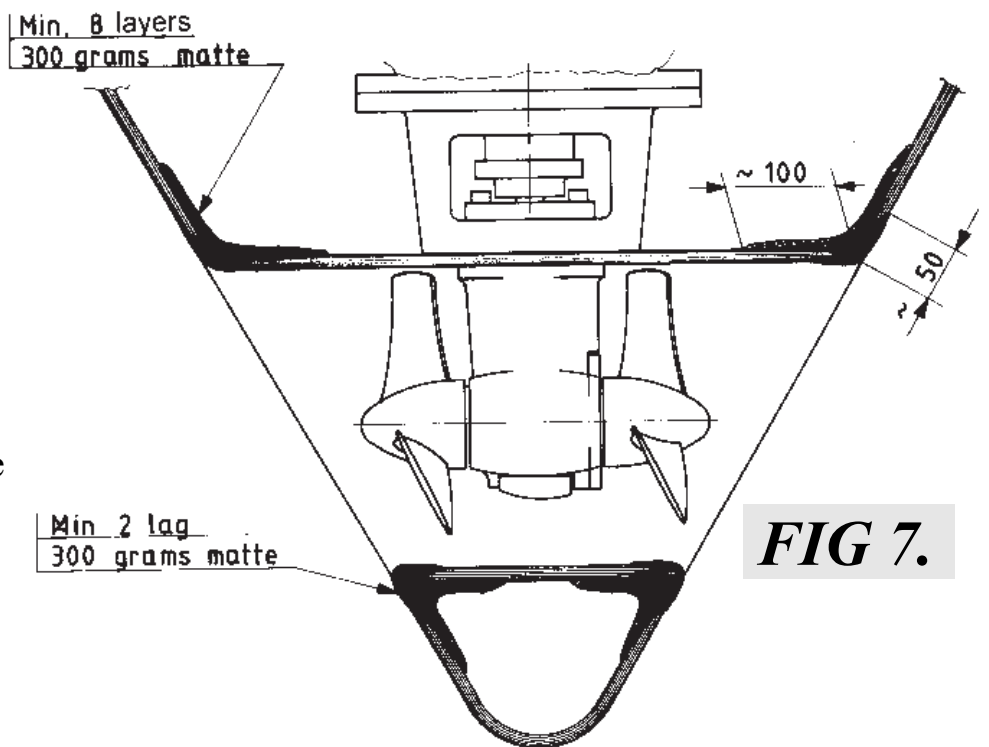
we also recommend that sailboats do this. For boatbuilders using Bow thrusters as standard equipment, the perfect installation would be to also have a recess in the hull behind the tunnel, this can be made in the mould. ( Fig 5 and 6 )



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 around the hole and apply gel-coat.



## 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.

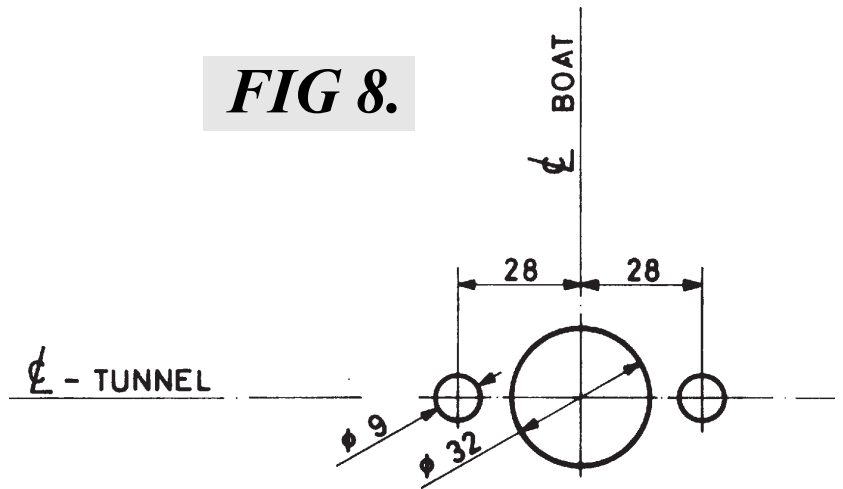
5. Mount the lower-unit and the bracket, use the 1mm thick gasket inside the tunnel, and make sure that the propeller is in the middle of the tunnel, if not adjust this by using the other gasket (2mm thick) or both. But **always use atleast one gasket**. If the tunnel is not plain, use silicone or other 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.

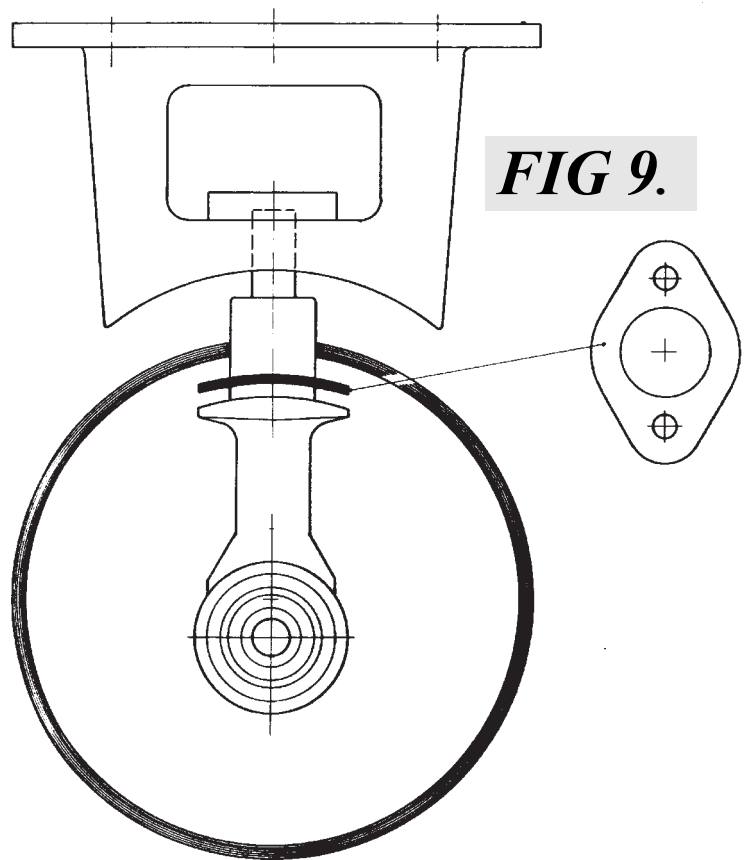
You must also apply a little oil on the O.rings in the motorbracket before putting the gearhouse and bracket together, this is important so that you do not damage these O-rings.

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.**



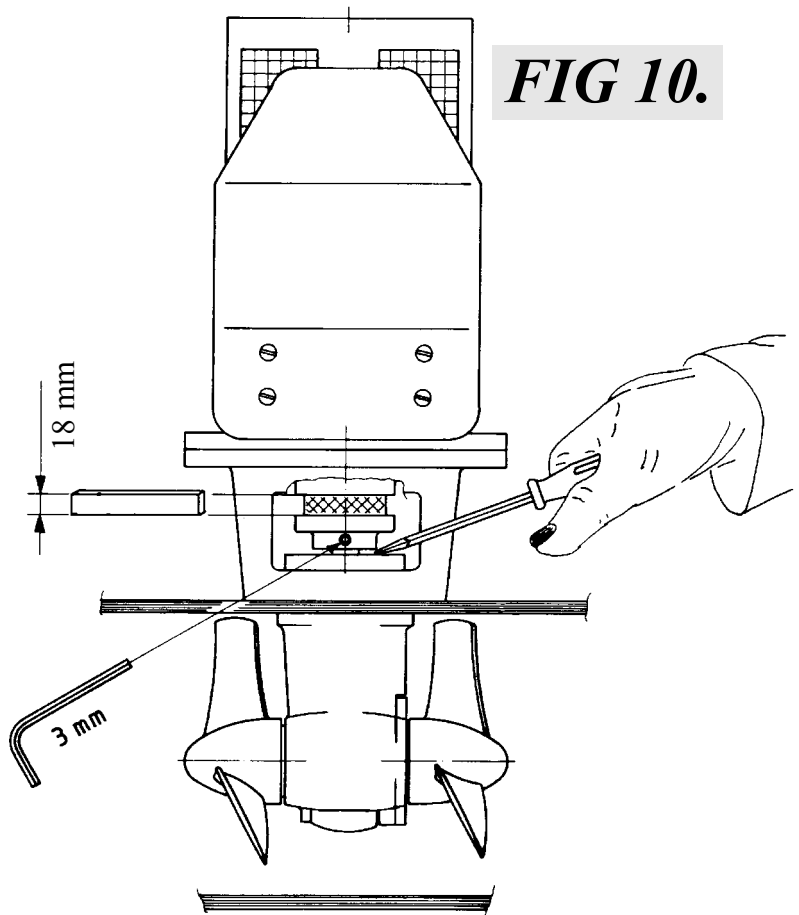
**FIG 9.**



7. Then place the motor gently on to the motor bracket. Be careful, the motor is heavy ! Fasten the motor to the bracket with the provided screws and tighten them with appr. 48 Nm.(35 lb/ft).

PS! If you are installing the unit in an angle that is more than 30 degrees from upright (vertical) position, You must support it to protect the tunnel from beeing damaged by the weight of the motor in harse conditions.

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.



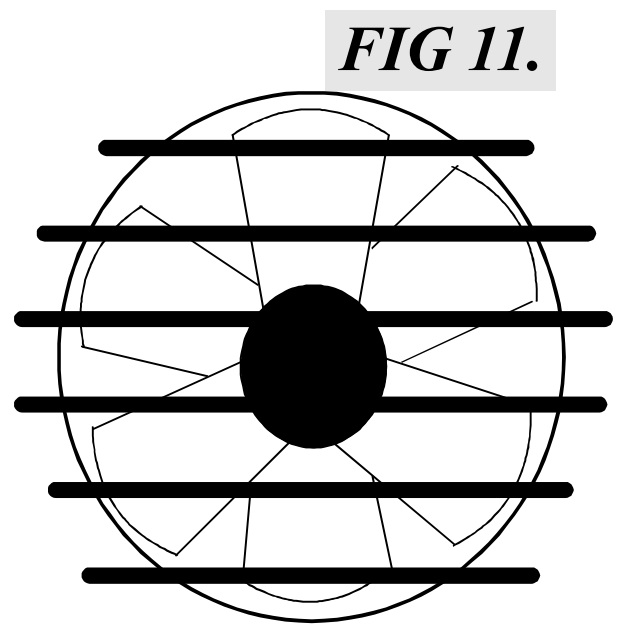
**FIG 10.**

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 !*

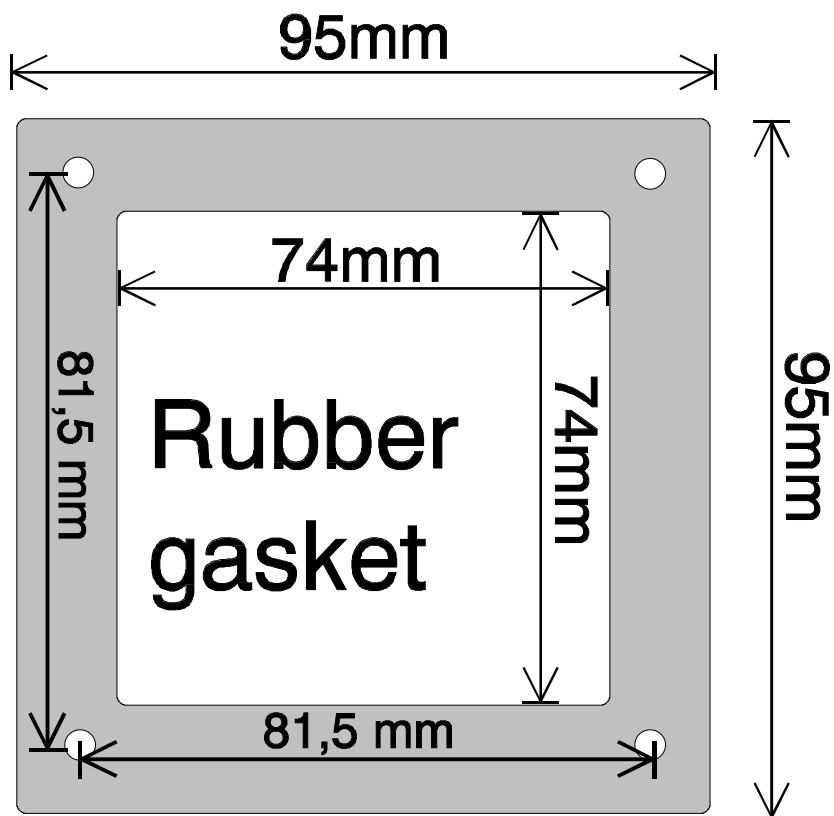


**FIG 11.**

12. Install the electrical wiring as shown on the next two pages. Always check the sign on the engine to make sure that it is the right voltage for Your boat. You will find the dimensions for the cables on page 9. Battery capacity should be min 150 Ah - 24 V.

13. The control-panel should be placed out of the way of any throttles. Because these are often used together with the SIDEPOWER®. Use the rubber gasket (fig.12) to mark the holes. Drill and cut the holes, and fasten the panel. Connect the contacts as on the diagram on page 8.

**FIG 12.**



If the SIDEPOWER® should run the opposite way of what it should, switch the red and the grey wires in the solenoid box on the motor. (See connection diagram on page 8).

**We recommend that you paint the lower unit against growth.**

**PS ! Do not paint the zincanode.**

## **Extra checklist !**

1. The propellers are fastened to the shaft !
2. The battery connection is correct ( +,-) !
3. 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.

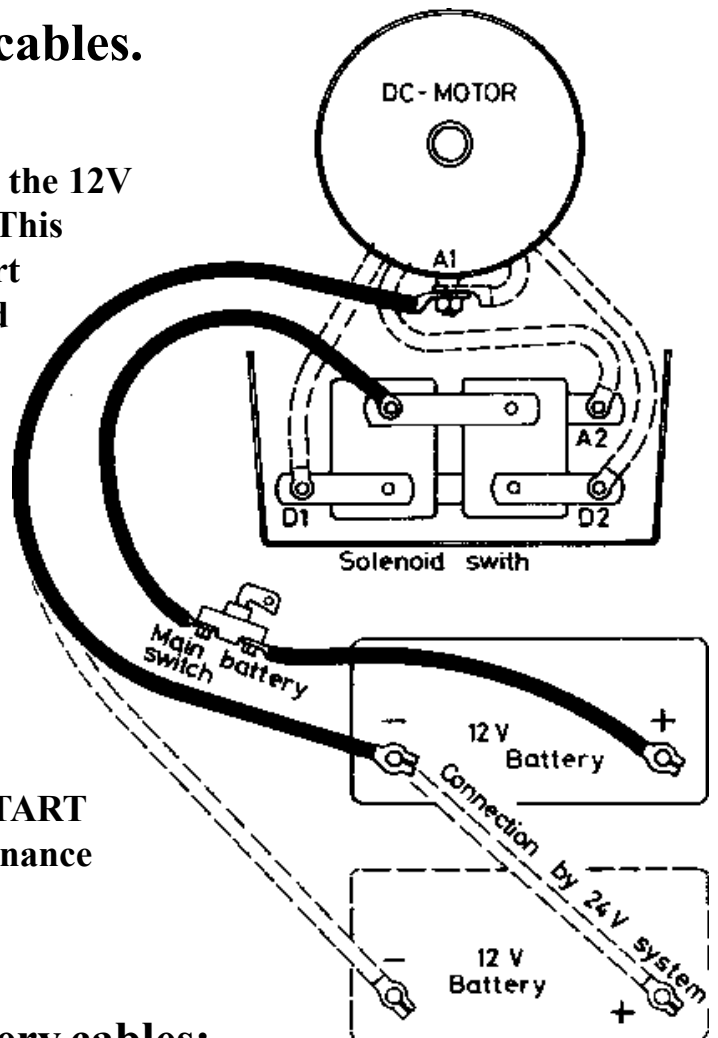
4. Lock screws are tightened in both parts of the flexible coupling .

# Wiring diagram, main power cables.

We advice to install a seperate battery near the 12V **SIDEPower** to avoid a big voltage drop. This battery should also be connected to the start battery bank with thick cables (as described in the list) so that you get backup power from these. This will always give the best installation and performance from the bowthruster (also for the 24V version). Consult your dealer if necessary for further information.

Make sure to make good, firm and clean battery connections.

You must use batteries that are made for **START** purpose, batteries that are made as maintenance batteries are not suitable.



## Minimum battery capacity & Battery cables:

Total cable lengths (+ and -)		up to 7m @		7 - 14m @		14 - 21m @		21 - 28m @		28 - 35m @	
Type	Voltage	Cable size	Start Battery start capacity	Cable size	Start Battery start capacity*	Cable size	Start Battery start capacity*	Cable size	Start Battery start capacity*	Cable size	Start Battery start capacity*
<b>SIDEPower 7 Hp</b>	12 V	70 mm <sup>2</sup>	600 A* / 12V	120 mm <sup>2</sup>	600 A* / 12V	140 mm <sup>2</sup>	700 A* / 12V	Extra bat.		Extra bat.	
Bow battery 350 A* 12V start capacity		N / A		50 mm <sup>2</sup>	250 A* / 12V	70 mm <sup>2</sup>	250 A* / 12V	70 mm <sup>2</sup>	300 A* / 12V	90 mm <sup>2</sup>	350 A* / 12V
	24 V	50 mm <sup>2</sup>	300 A* / 12V	70 mm <sup>2</sup>	300 A* / 24V	70 mm <sup>2</sup>	350 A* / 24V	90 mm <sup>2</sup>	350 A* / 24V	90 mm <sup>2</sup>	400 A* / 24V

\* = Stated amperage capacity is not the battery size in Ah. It is the batteries cold-start capacity according to the DIN norm.

@ = Cable lengths is the total of the positive(+)lead and the negative(-)lead

We advice to always use the boats start battery (ies) for the bowthruster. This because these are always fully loaded, and they will therefor give less voltage drop. Further some boats have in the auxiliary battery bank special batteries for this purpose that are not suited for heavy loads.

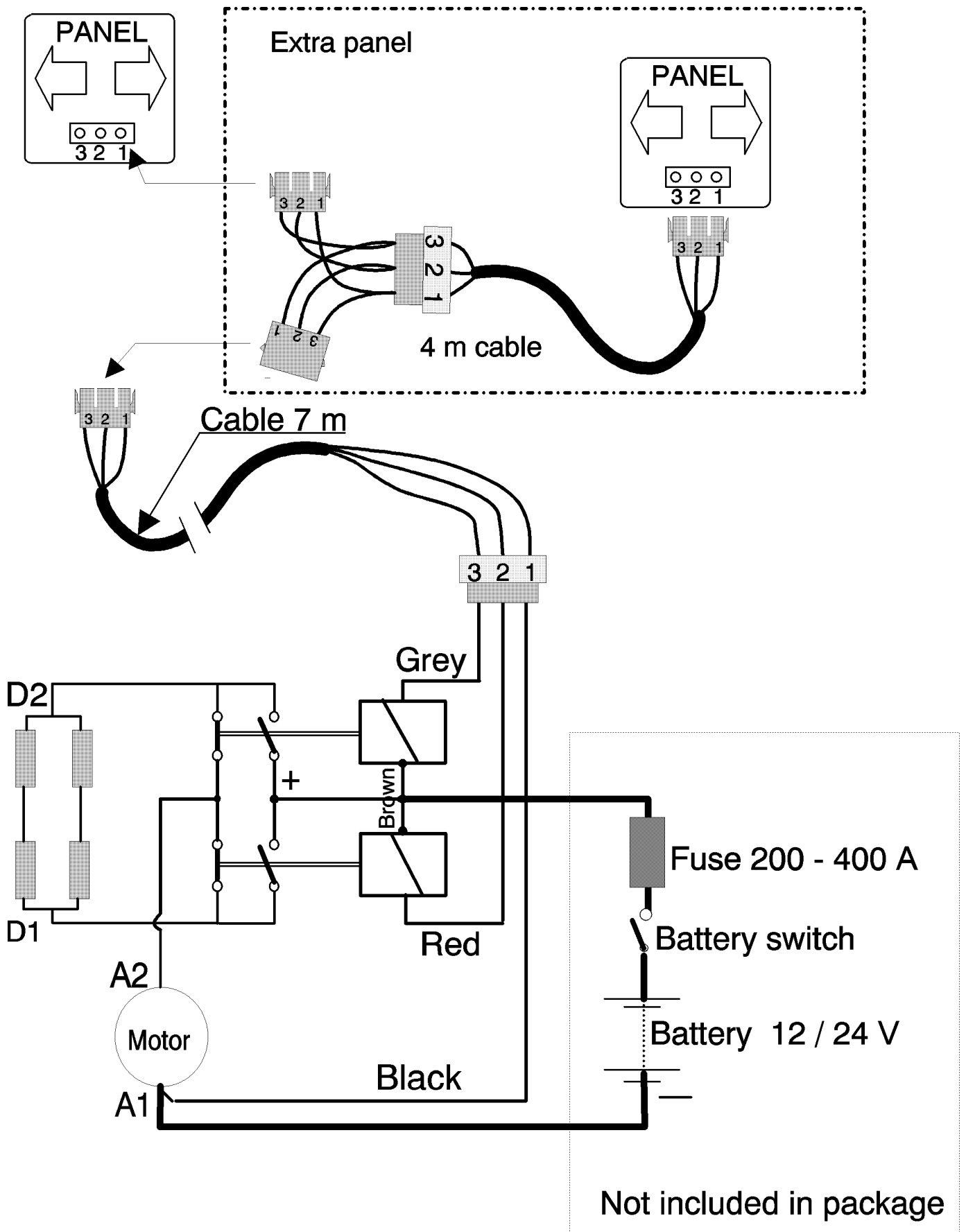
This will ensure the best lifetime for all batteries onboard, and give the best performance for the bowthruster.

In case of smaller battery capacity than adviced and/or use of smaller cables than adviced will result in less power from your **SIDEPower**®.

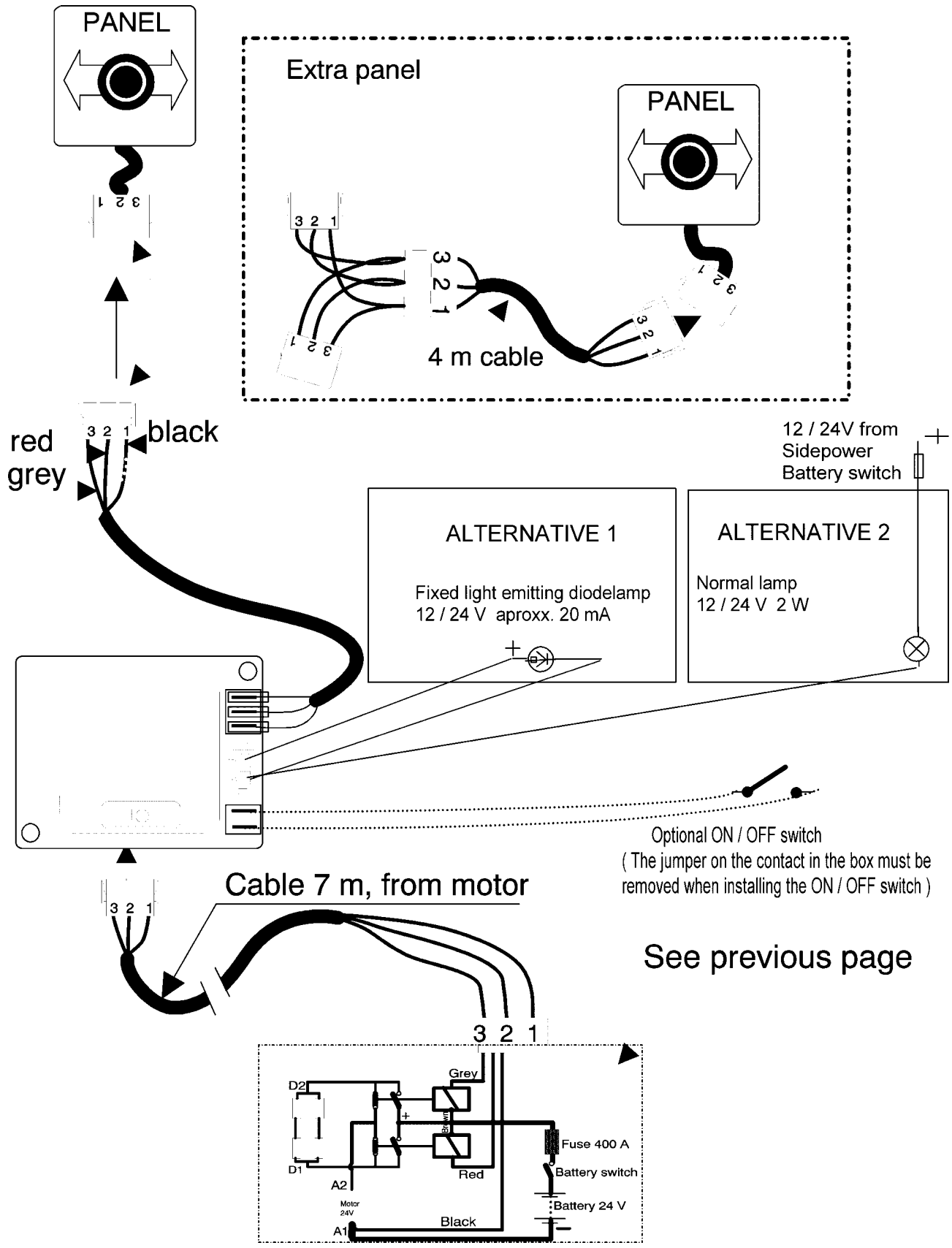
Old and/or bad batteries will also give less power than batteries in top condition, as the voltage drop will be higher.

**In general, you will get more power the larger the batteries are and the thicker the cables are.**

# Connection diagram, touch panel(s).



# Connection diagram. joystick panel(s), and delay box.



See previous page

## TECHNICAL INFO, 7 Hp Twin:

### Motor:

Type: 12 / 24V Reversible DC-motor  
Amp usage: 500 A at 12V / 250 A at 24V  
Propeller effect: 5,3 kW ( 7 Hp)  
Max. continues usage (S2) : 3 min.

### 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: 7" x 8" 3 bladed symmetrical  
Material: Reinforced special plastic  
Nominal thrust: 75 Kg

### Controlpanel:

"Touchpanel" with built in delay.  
Alternatively; "Joystick-panel" with separate delaybox.

### Control cable:

1,5 mm<sup>2</sup>, 7m length (extendable with cables with ready contacts)

### Battery cables:

12 V = min. 70mm<sup>2</sup> when max. 4m length (sum: + and - cable)  
SE TABLE ON PAGE 9 FOR LENGTHS ABOVE THIS  
24 V = min. 50mm<sup>2</sup> when max. 4m length.  
SE TABLE ON PAGE 9 FOR LENGTHS ABOVE THIS

### Battery capacity:

min. 200Ah 12V / 100Ah 24V start batteries. (min. cold start capacity 600A / 300A)  
WHEN DISTANCE IS LONG, SEE TABLE ON PAGE 9.

### Thrust-tunnel:

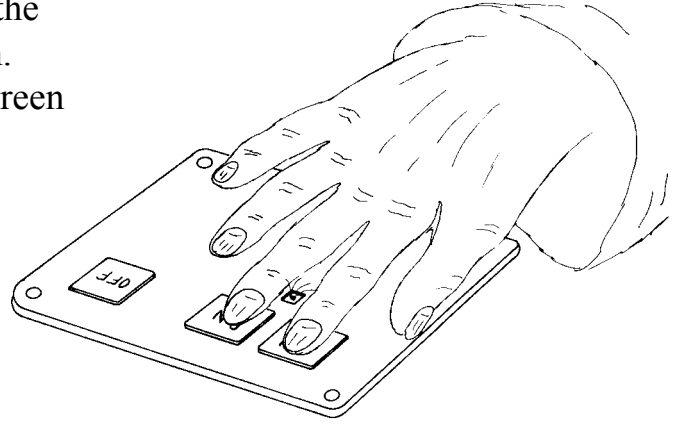
GRP with 60% glass  
Outside dia. 198 mm, Wall thickness 6mm.  
Lengths from 1 to 2,5 m  
Steel and aluminium tunnels on request

### Weight:

35 kg, without tunnel

# USER GUIDE.

1. Turn the battery main switch on.
2. Turn on control power. With joystick control there should be a switch marked for this purpose, then use the joystick to turn the boat in the desired direction. If you have the touch button panel, push both green buttons marked "ON", the control light will come on and the SIDEPOWER® is ready for use, push red or green arrow for desired direction.



The panel has a built in delay for 2 seconds when changing direction, to protect the unit against sudden change of direction.

**PS !** Maximum continuous use are 3 minutes per 10 minutes of rest. This means that if You use the SIDEPOWER® continuously for 3 minutes, it must get 10 minutes to cool off before used for 3 min. again.

## Maintenance.

The SIDEPOWER® usually requires only a minimal maintenance. But there are a few things that should be done.

1. The oil tank must be checked, and refilled if necessary.
2. Change the oil after one years use.
3. Check the oil in the lower unit when You have Your boat on land, and change it if needed.
4. Change the zinc anode when necessary. **ATLEAST ONCE A YEAR !**  
**PS !** Remember to use a sealant on the screw holding the zinc anode.
5. Clean the lower-unit and the propeller from growth if needed.
6. Make sure that the batteries are in good condition.

# Sparepart list 7 Hp Twin

Pos	Pcs	Description	Part #
1	4	Screw, M.10x25 DIN 912	7 1360
2	1	Motorbracket	7 1070
3	1	Flexible coupling	7 1450
4	1	Key, 5 x 5 x 16	6 1440
5	1	Oil tank, with fastening bracket	4 1030
6	2	hose clips for oil hose	7 1032
7	1	Oil hose	6 1040
8	1	Hose fitting in motor bracket	6 1060
9	2	O-ring in motor bracket Ø 32 x 2,5	7 1340
10	2	Skrew, M.8 x 55 DIN 912	7 1080
11	1	Drive shaft	7 1110
12	1	Gear housing	7 1100
13	1	Lower slide bearing	7 1120
14	2	Propeller	7 1250
15	2	Ballbearing for propellershaft	6 1230
16	2	Screw in propeller M.5 x 12 DIN 912	6 1260
17	1	Sealing ring on driveshaft 24/16-7	7 1350
18	1	Gearhouse lid	7 1280
19	2	Screw, M6 x 16 DIN 7991	6 1170
20	1	O-ring in gearhouse lid	6 1290
21	1	Pinion gear on propellershaft	7 1199
22	1	Skrew, M.6x8 DIN 912	6 1220
23	1	Coppergasket Ø6/10	6 1210
24	1	Propellershaft	7 1198
25	2	Sealingring 22/14-7	6 1350
26	2	Drivepin for propeller Ø5 x 27	6 1241
27	1	Lockring A 11	7 1140
28	1	Pinion gear on driveshaft	7 1130
29a	1	Gasket between gearhouse and tunnel, 1mm	7 1311
29b	1	Gasket between gearhouse and tunnel, 2mm	7 1312
30	1	Ballbearing 21/12 5	7 1322
31	1	Solenoids with internal connections 12 V	7 1370
31	1	Solenoids with internal connections 24 V	7 1373
32	1	DC-Motor 12 V	7 1012
32	1	DC-Motor 24 V	7 1024
33	1	Bracket for solenoid w/bolts	10 1375
34	1	Zincanode	7 1180
35	1	Screw for sink M.6x12 DIN 912	7 1222
36	1	Solenoidcover	7 1020
37	1	Controlcable, Length, 7 m	6 1263
38	1	Touch control-panel 12 V	7 1262
38	1	Touch control-panel 24 V	10 1262
38	1	Joystick Control panel with centre lock	8840
38	1	Joystick Control panel without centre lock	8845
39	2	Shims, 12/18 -05	6 1330 05
39	2	Shims, 12/18 -01	6 1330 01
40	2	Shims, 22/32 -02	6 1430 02
40	2	Shims, 22/32 -01	6 1430 01
42	1	Key, 5x5x14	7 1441
43	1	Rubber sleeve for flexible coupling.	7 1451
	1	Controlcable, length, 4 m	6 1261
	1	Controilcalbe, length, 7 m	6 1263
41	1	Support for motor	10 1029

# PARTS DRAWING 7 HP TWIN

