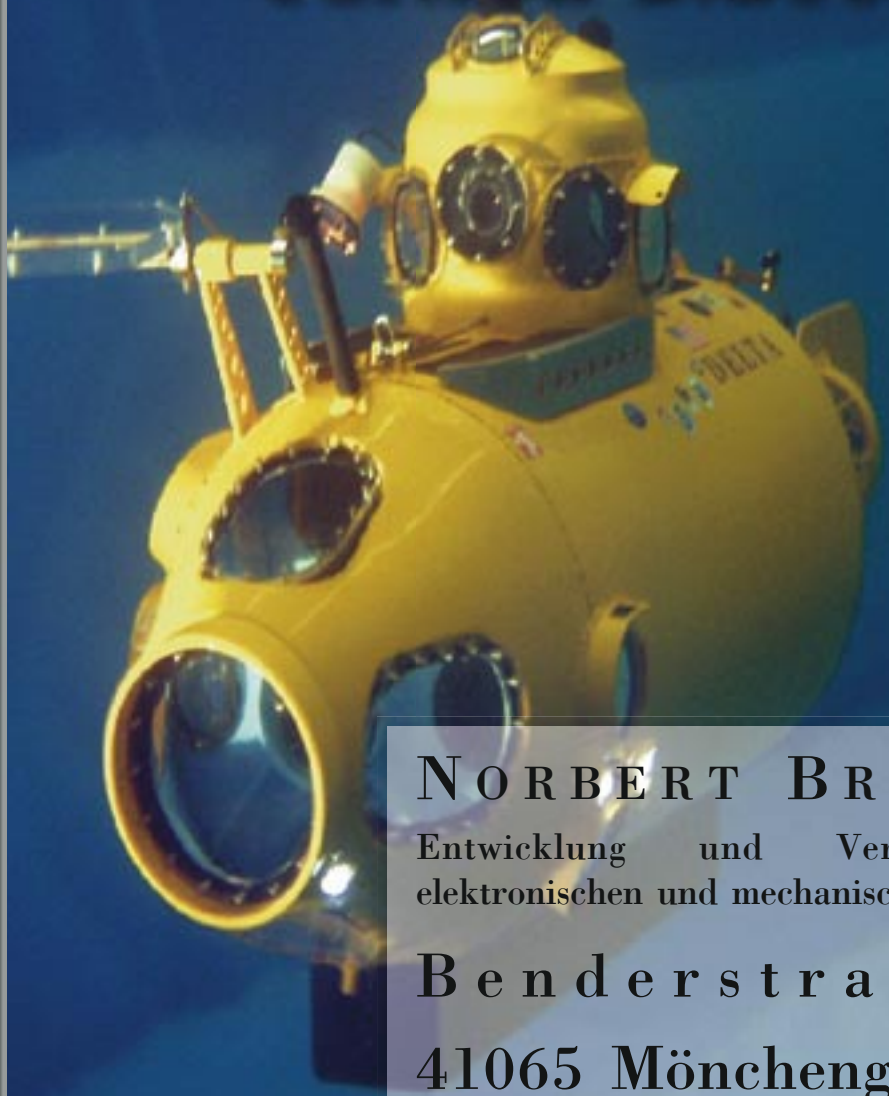
Modell UBOOT Spezialitäten

instructions

submersible

DELTA

edition 2.2005



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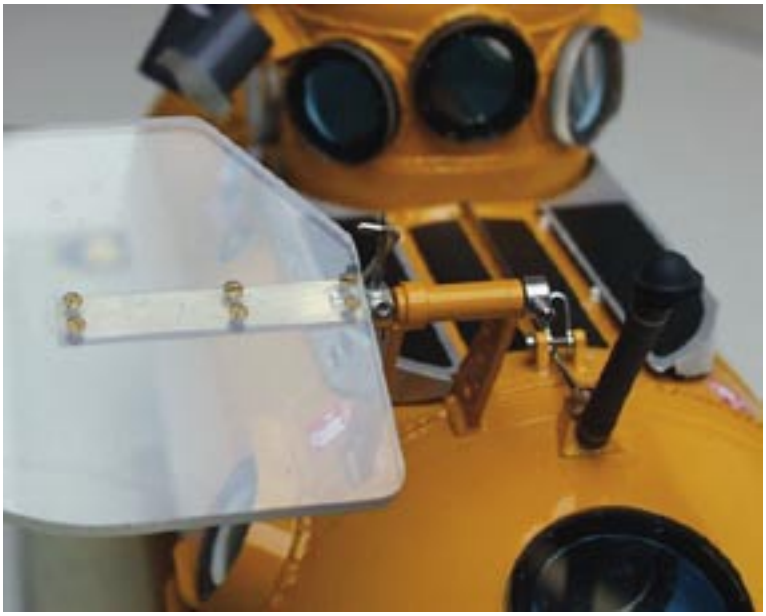
instructions DELTA

some tips:

gluing:

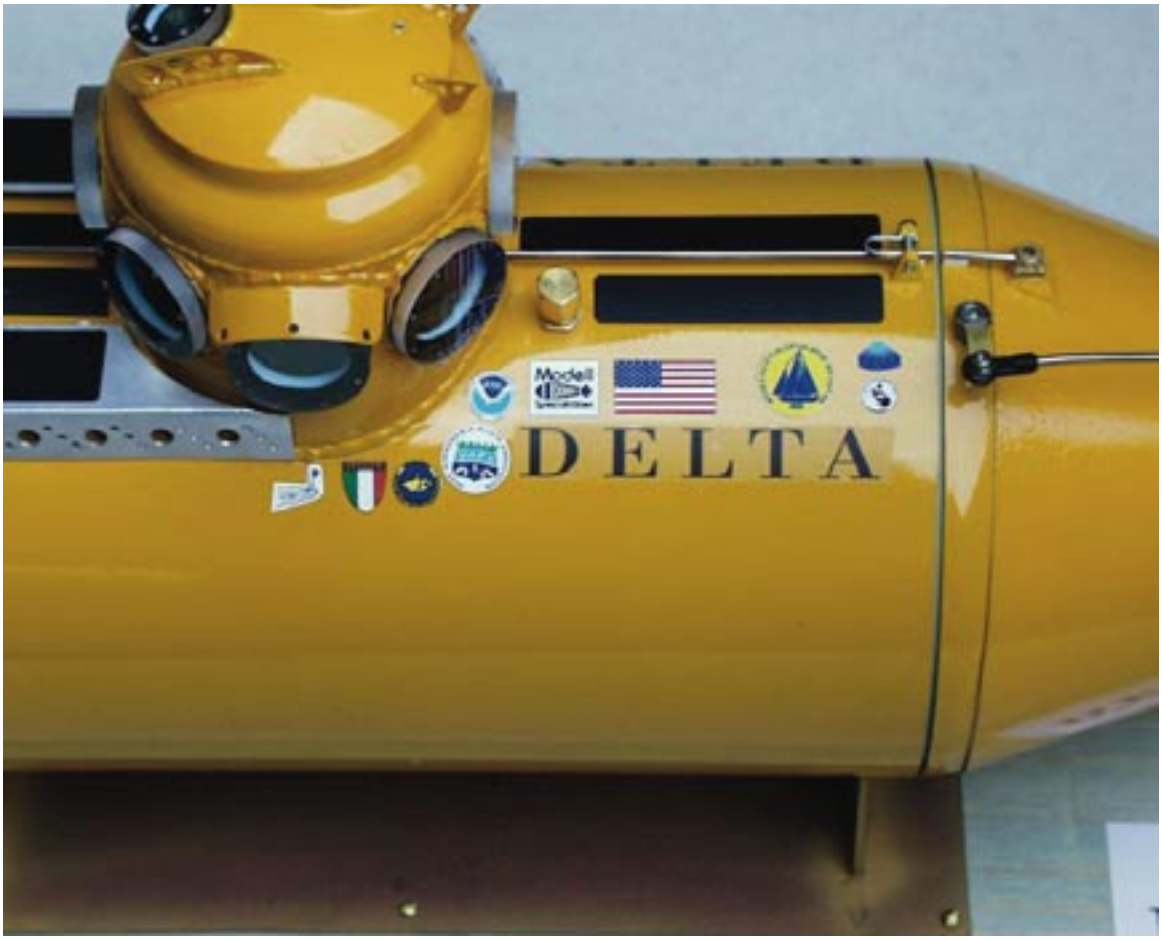
For gluing the plastic parts we recomend Loctite 406. This Cyanoacrylat is optimised for plastic and has best strength. In conjunction with "Kicker" Activator-spray it can even fill gaps.

The windows are mounted and sealed with Sikaflex. For the model type 221 is sufficient. Terostat MS939 is more handy and has even better performance. The material should be applied very carefully using a syringe (instead of the 300ml cartouche). Any excess material must not be wiped of. This will smear terribly. Better let it harden and cut it away.

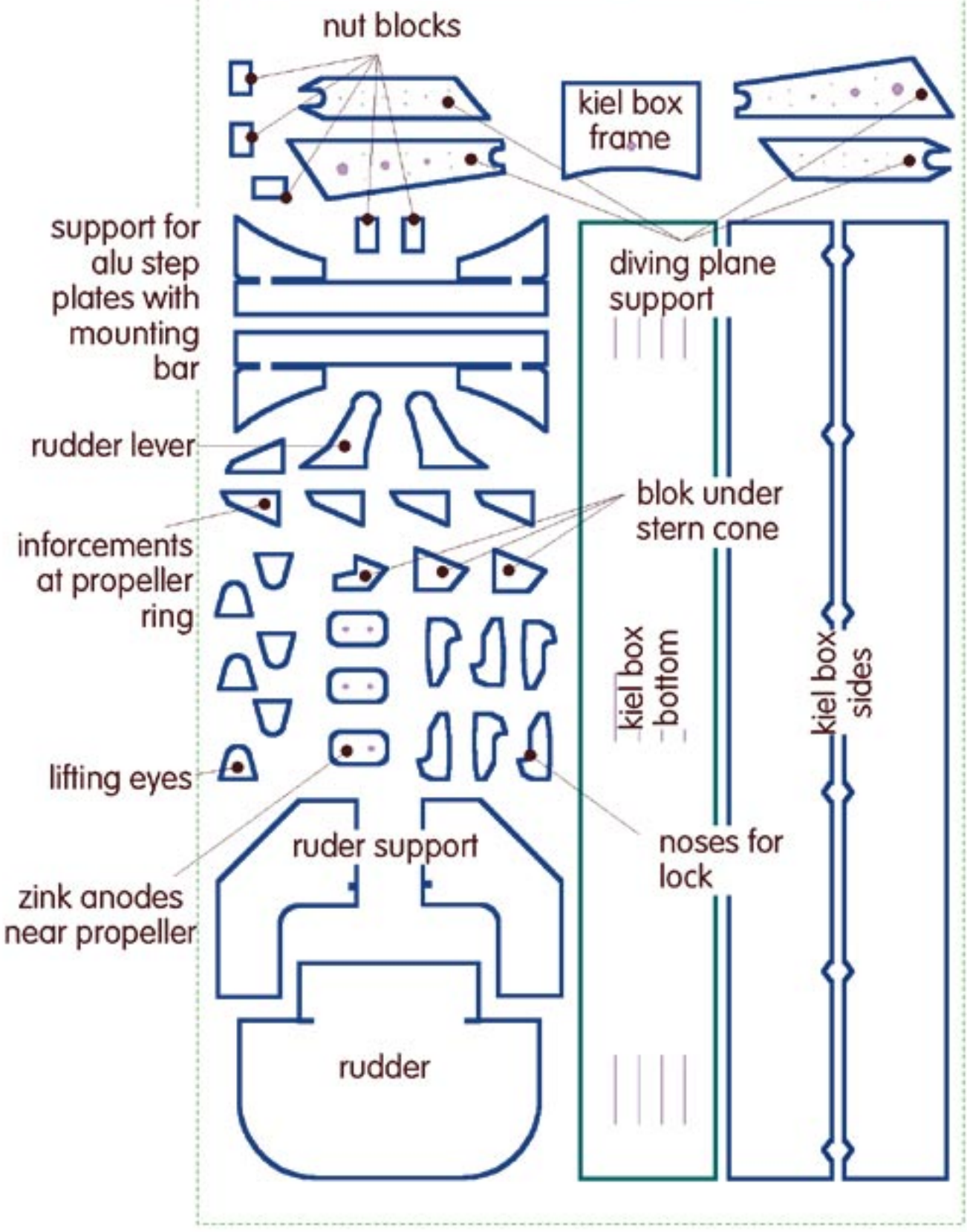


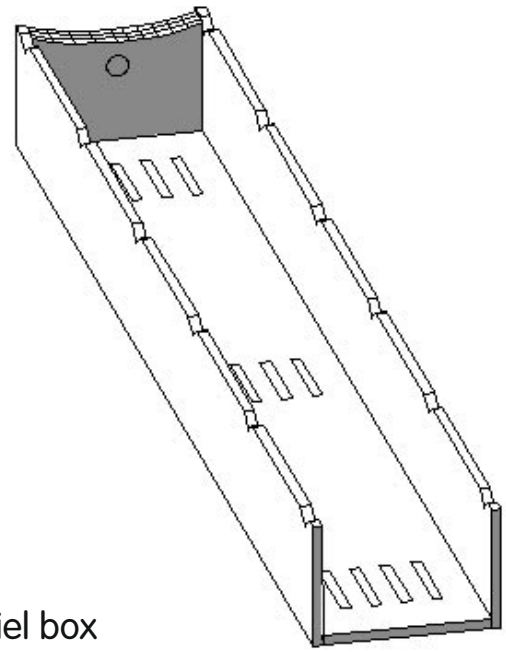
welds:

Some of the joints are welds on the big sub. They can be modeled with the syringe with Sikafelex (or equivalent). Even better suited is cyano glue GEL for example Loctite 454. Imitating the welds with this material will add the right strength to the joints, especially at the dive plane support and the window protectors. To avoid the white vapor depositions of the CA, spray “Kicker” (CA hardening agent) on the finished weld.



Polystyrene cut plate 1: kiel, rudder, small parts





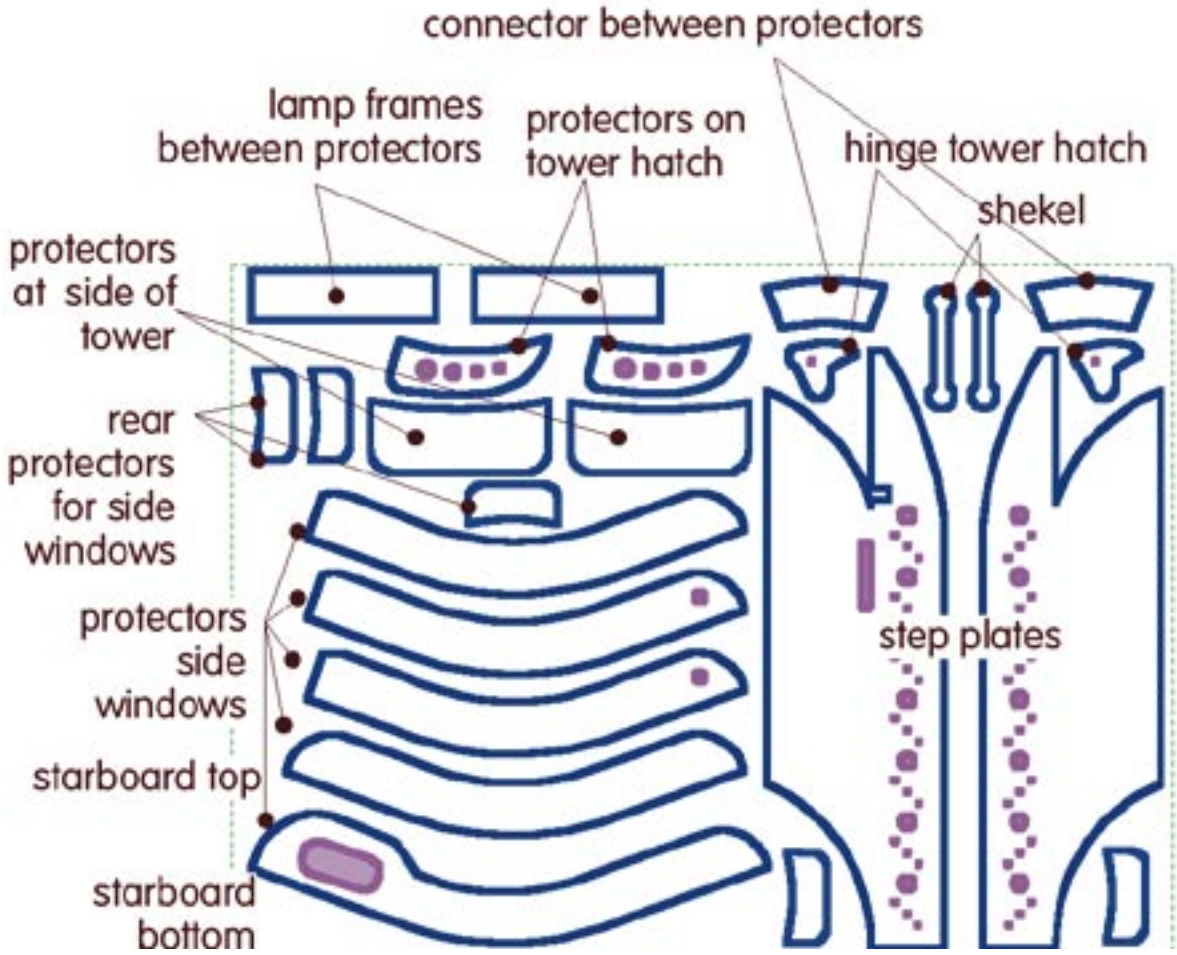
kiel box

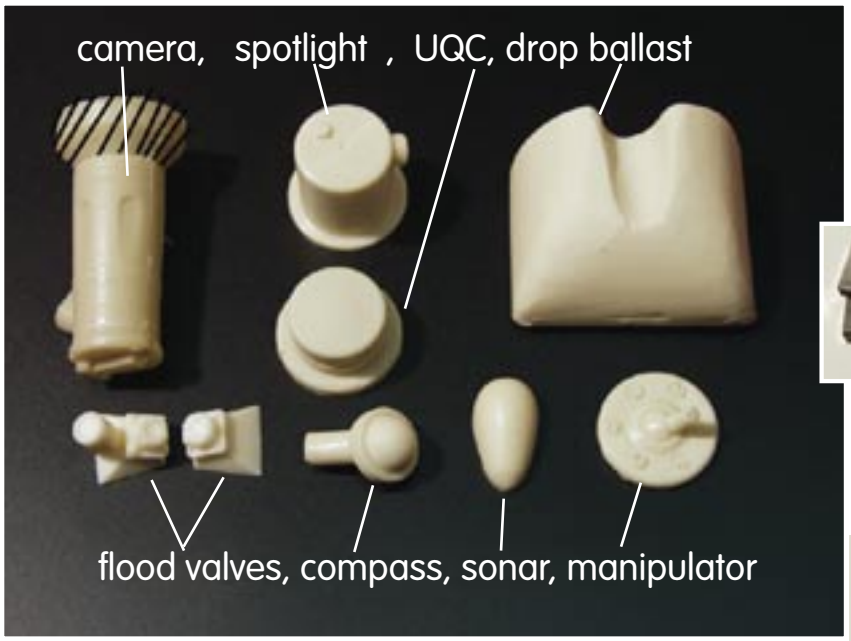
free flood rooms / dive tanks

The conical hull parts at bow and stern are the big sub's dive tanks. On the model they are free flood rooms. That means they are open on top and bottom.

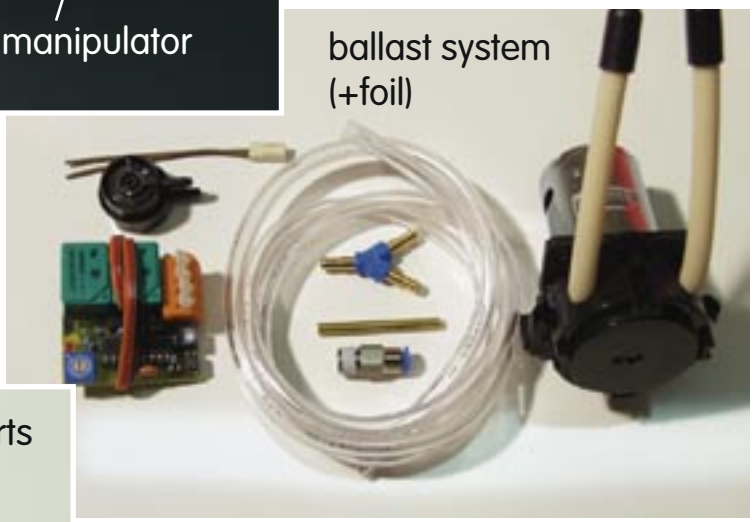
On the top the opening is the "flood valve" fitting. It has to be bored with aprox. ø2.5mm. At the bottom a ø5mm hole is sufficient. The original has a short pipe there.

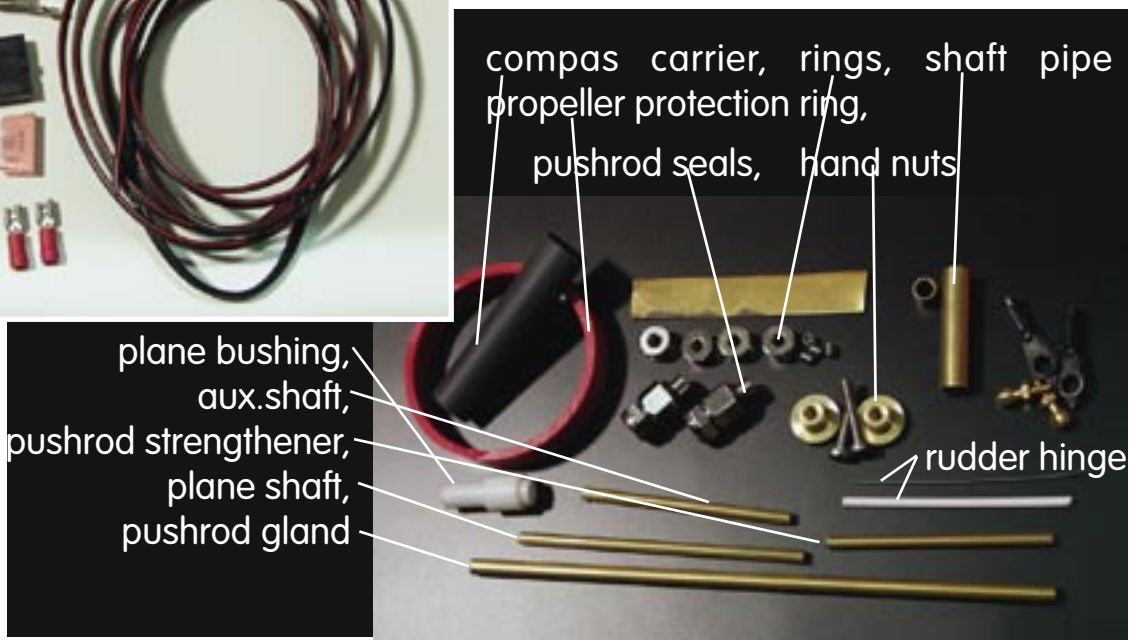
Alu 0,5mm cut plate: window protectors, step plates

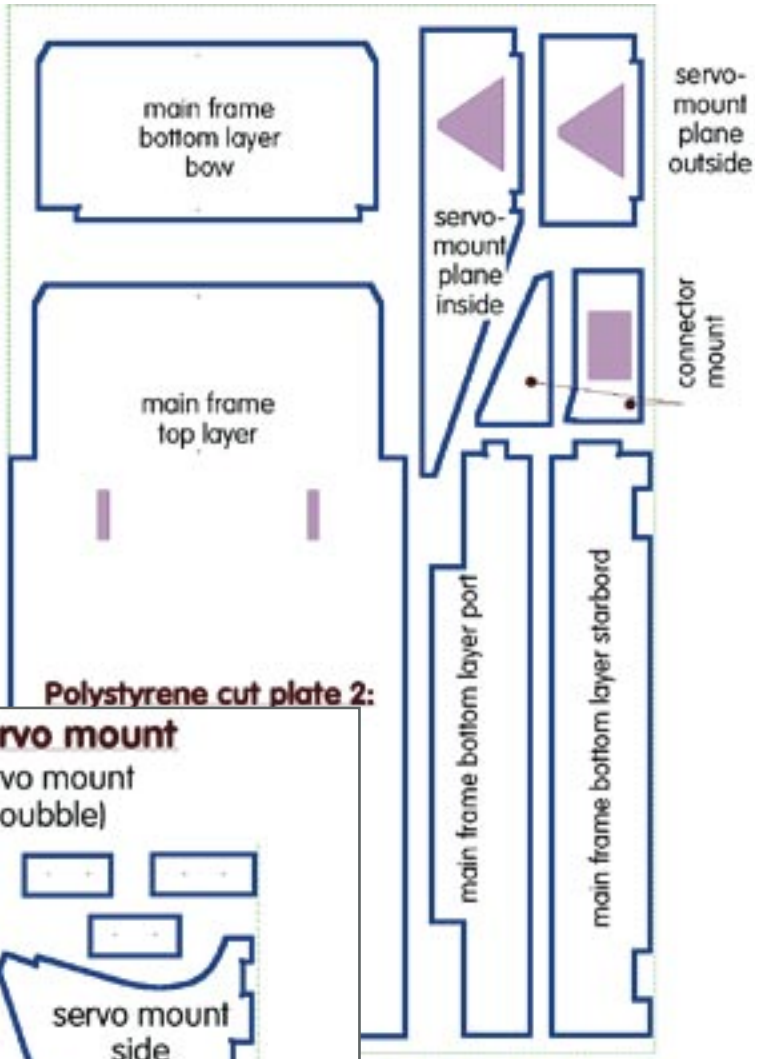


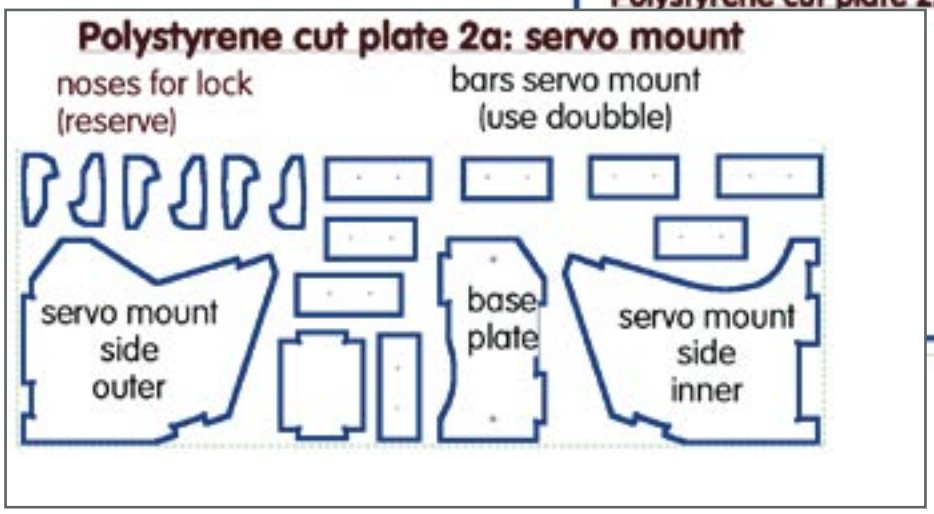


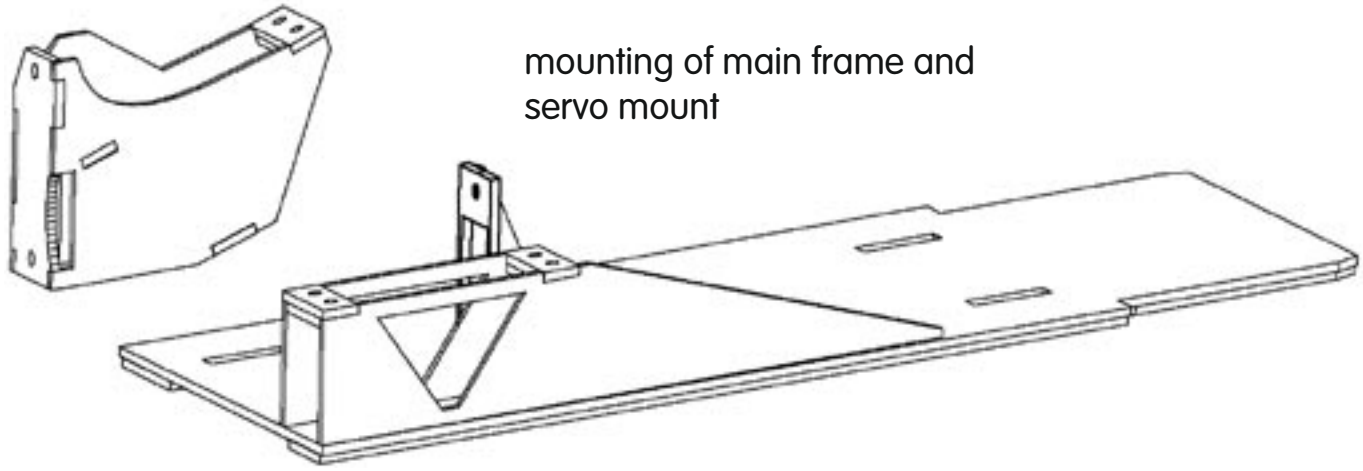
bag PU resin parts











mounting of main frame and
servo mount

step by step mounting and painting

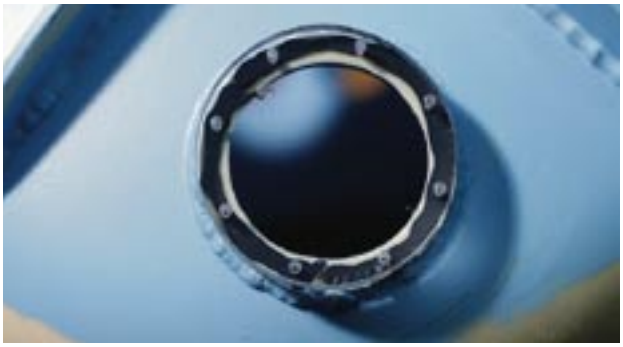
As some parts are painted before mounting and others stay unpainted the following procedure seems a good choice:

- ❏ make the holes for the windows. A conical bore (ø25mm) or a Dremel are good tools for this. Folow the marks on the resin parts.

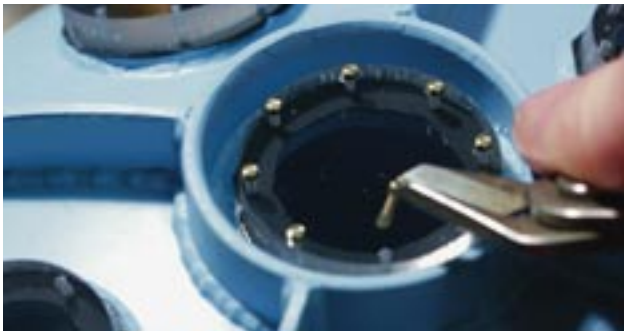
- ❏ cut the hole for the tower at the position shown on the plan. (alternatively the tower may be simply glued on) Cut the lower edge of the tower 5mm below the step.

- ❏ plan grid the pipe end if nessesary. round the edge.

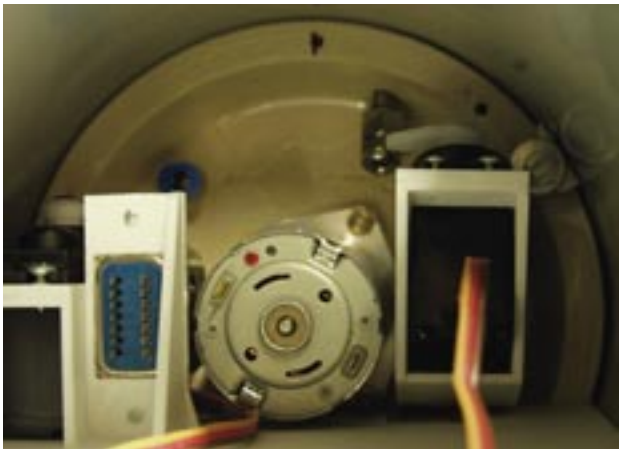
- ❏ Paint tower and both bow parts light blue on the inner side. The elliptical head is also blue outside.
  protect the glue areas of the windows with the precut masking film.



- ❏ Mount the 5 round windows in the bow section. Carefully apply the Sikaflex with a syringe (see tips at the beginning). glue the screw bolts into place.



❏ Mount the bajonet lock in the stern before closing the hull.



❏ Premount the bajonet teeth from two plastic parts each.

❏ Drill M3 holes into the flat stern

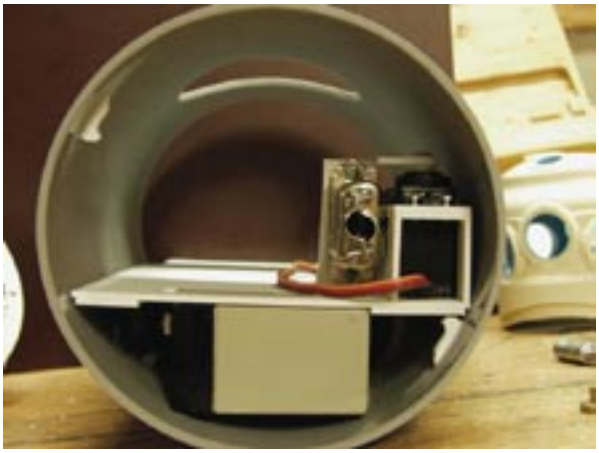
plate (7 holes). Use the exact positions shown on the plan.

❏ Insert the teeth from the bow opening and fix them carefully with 1/4 drop cyano. Remove plate and let a drop flow around each tooth.

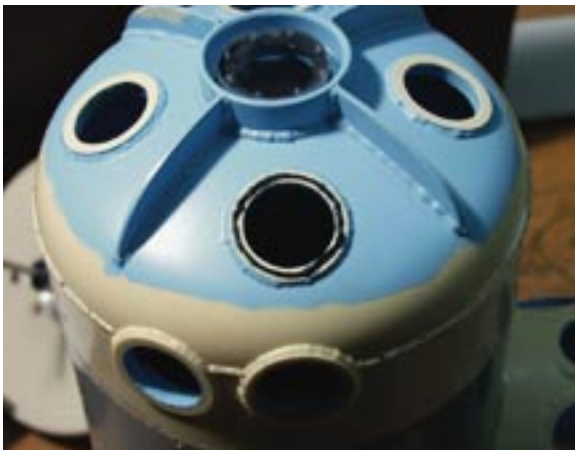
❏ Screw 2 thumb nuts with 2 long screws into the plate.

❏ The bajonet lock will close turning left. This can be unhandy but is not avoidable due to the servo positions.

❏ place the stern plate into the hull pipe. (try with main frame and servo mount). Grind the gluing areas. Fix the plate with adhesive tape.



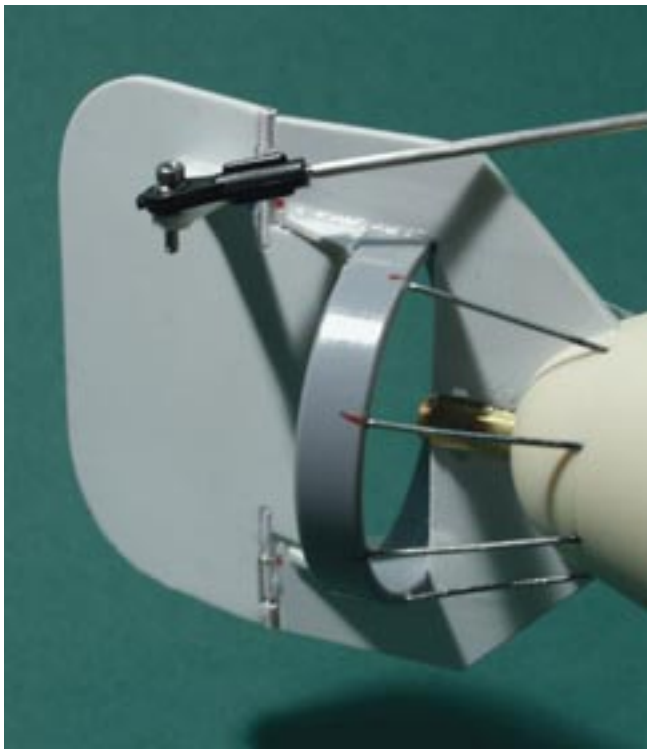
- ❏ Glue the bow bulkhead to the hull pipe. Be shure to grind the inner surface of the resin part thourghly to remove the release agent. The reinforcement ring should be centered over the joint.



- ❏ Mount the conical bow. The outer 4 windows inside the bow have to be filed quite a lot to make the cone fit.
- ❏ Mount the tower. Take care alighning it to the hull.
- ❏ Bend the window protectors to shape

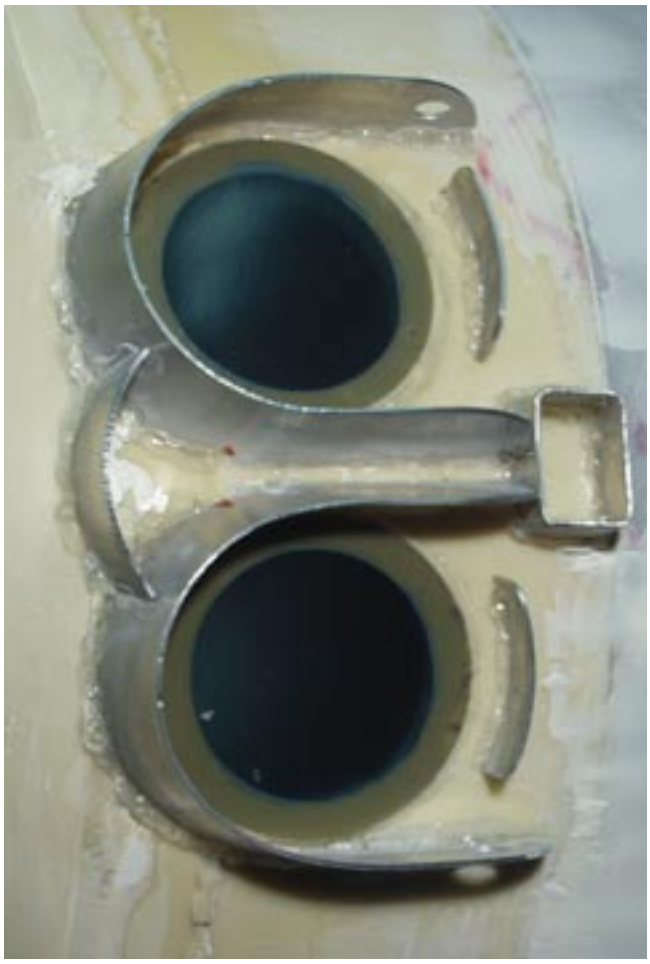
and glue them into place.

- ❏ Mount the dive plane support.
- ❏ Mount the rudder support and the shaft tube
- ❏ The rudder hinge is made from the 2mm dia. plastic pipe and a stainless steel wire. Glueing the inge to the plastic edge with 406 is strong



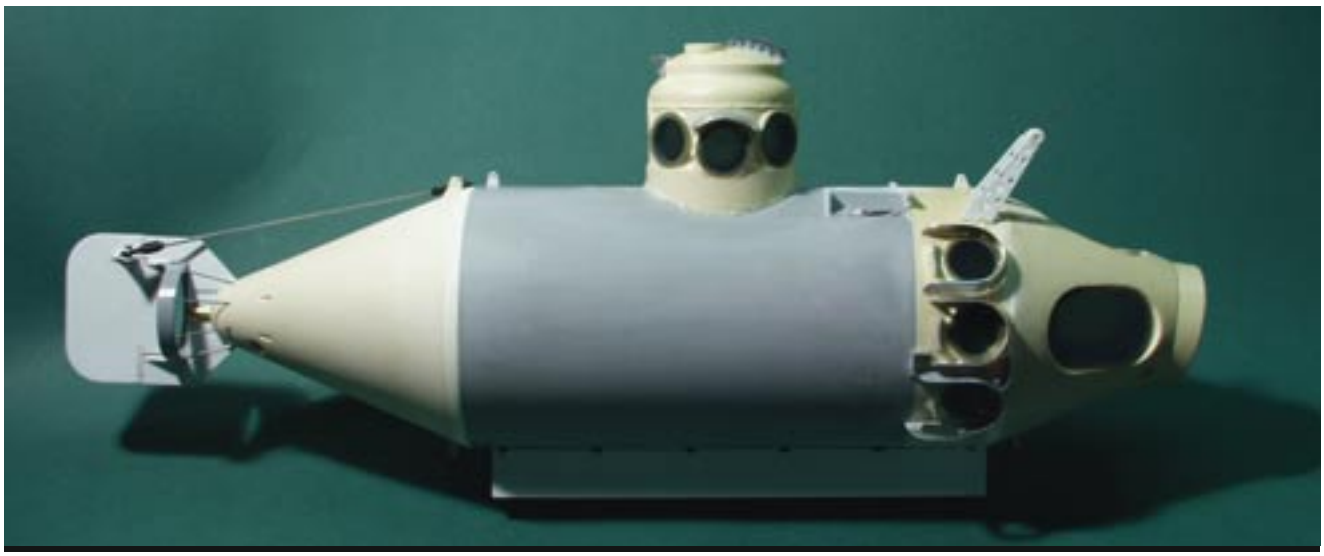
enough

- ❏ Cut the propeller protection ring into halves and glue it into place together with the triangles. The protector wires do not belong into the holes at the stern cone.
- ❏ Small parts on the deck: lifting eyes, step support, valves, screw blocks



- ❏ Make the weld lines (see tipps at beginning)
- ❏ Place the masking film circles on the window areas.

- ❏ Paint (or better spray) the sub yellow (RAL 1007 chromgelb).

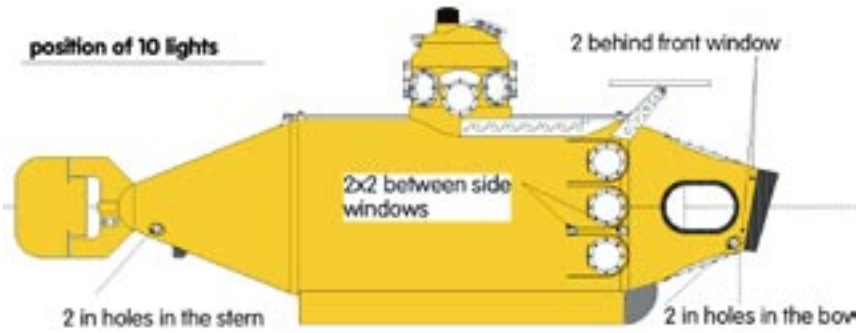


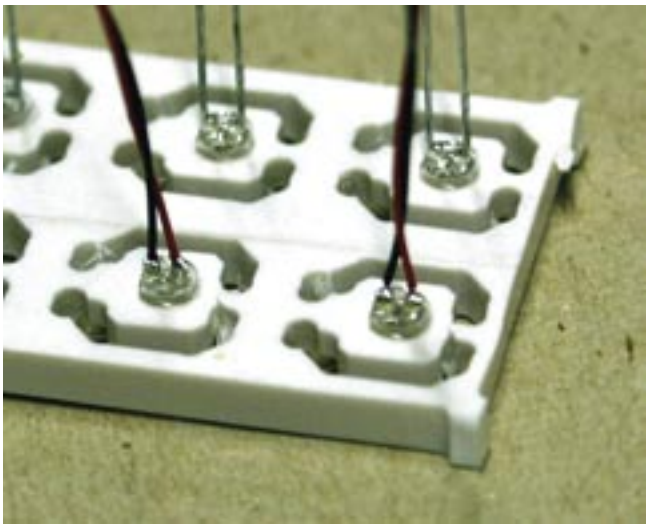
- Mount the windows as shown before.
- 3 levers are soldered from brass parts and rings. Cut M2 into the bores..

just under the alumine plates.

- The dive plane shaft is made from a tube that is pressed flat where the plane is screwed to it.
- Wires are soldered to the LEDs as short as possible. The solder points are isolated to the water with

- Mount the dive plane pushrod. The pipe penetrates the hull at the midpoint between starboard of the tower and the dive plane support in a very flat angle. It will be





Sikaflex or other glue.

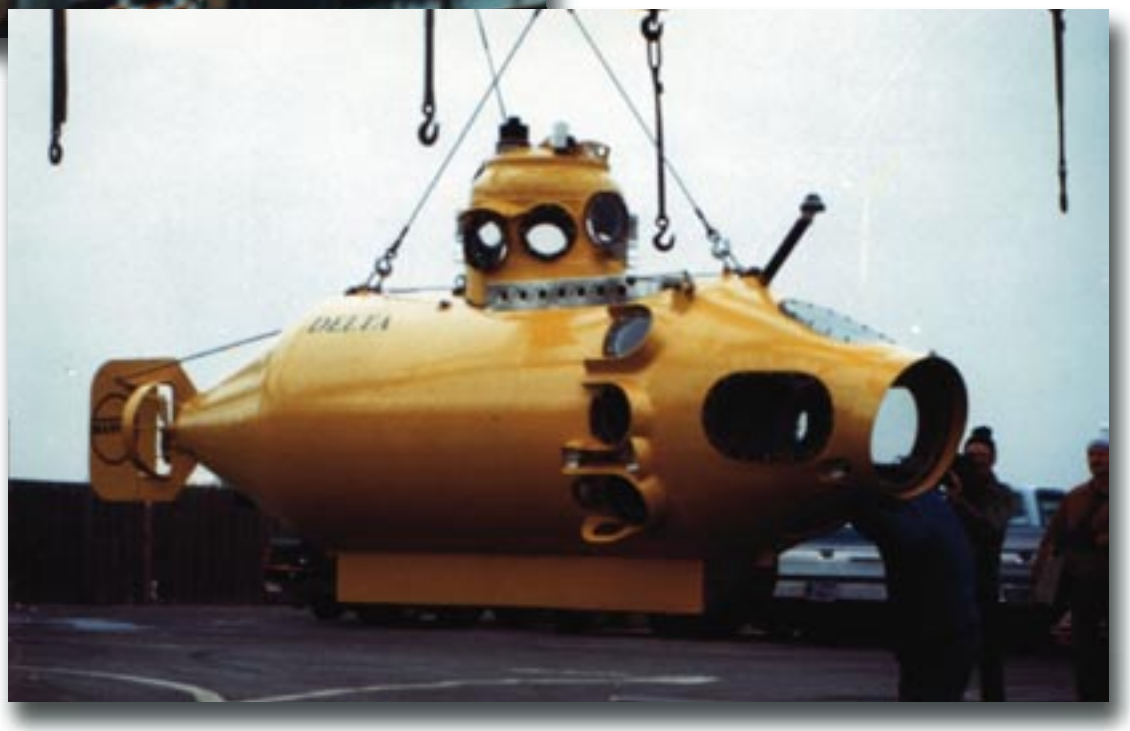
- The hull penetrations for these wires are bored 1.2mm and later sealed with Loctite
- Fix the two parts of the lighting kit PCB at the hull and solder the wires following the schematic.
- The compass sits on a rubberhose (shrink tube shrinked to a 5mm

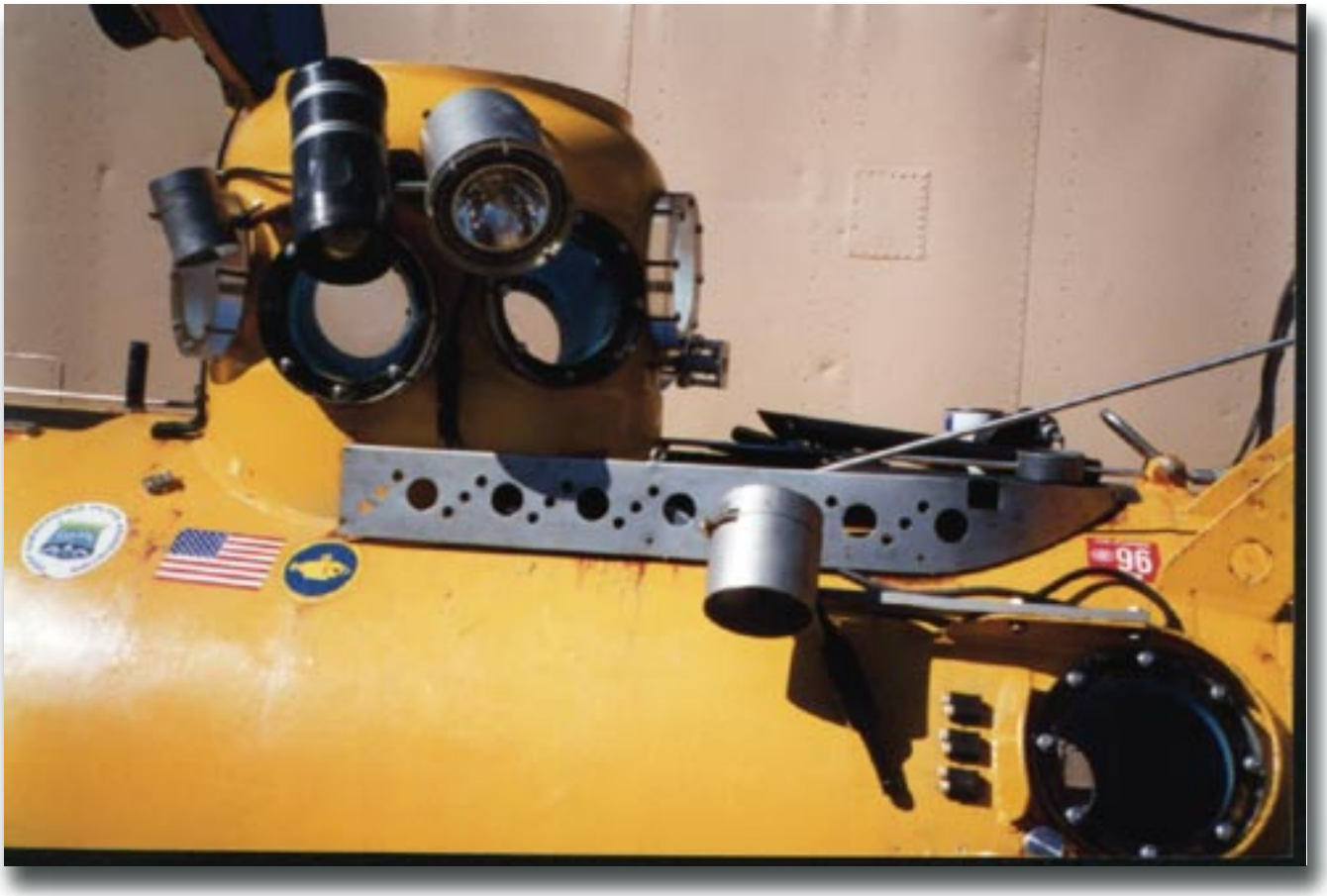
shaft) on the bow flood valve.

- ❏ Finish the details following the fotos.
- ❏ Add your own mission equipment, like they do on the big sub.

Modell by Helge Schling

some original fotos

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equipment

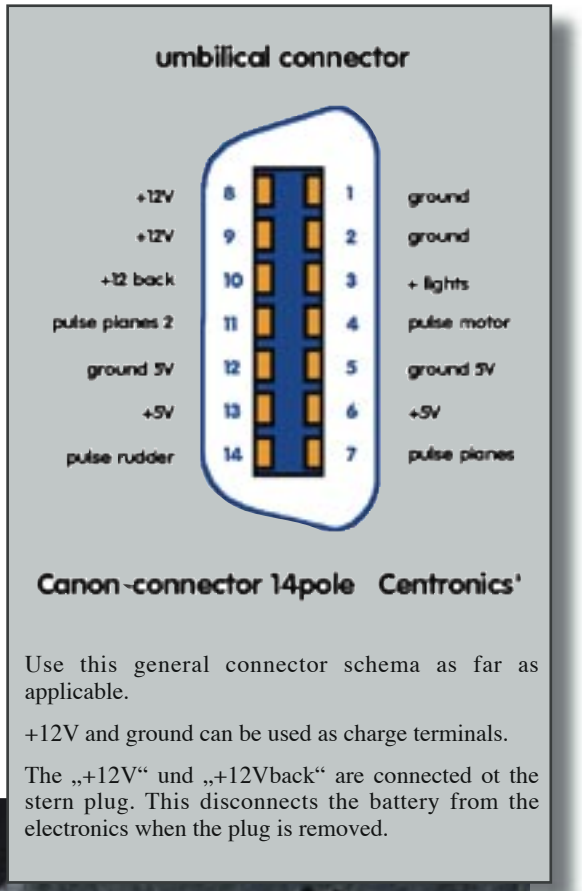
The RC-installation is relatively simple. Only 4 servo channels are required for basic operation.

The main power source is a lead gel battery of 12 V and 2 AmpHr. This will turn the main motor for 2 hrs. The over all endurance with optional camera and lights will be over 1 hrs.

Charging a lead battery is simple. Connect it to a “lead battery permanent charger” (=13.8 V regulated voltage) and forget it. The self discharge rate is so low that the sub will still work after half a year on the shelf.

Like with other kinds of bateries you have to take care of some points. Otherwise you risc gasing and a hydrogen explosion:

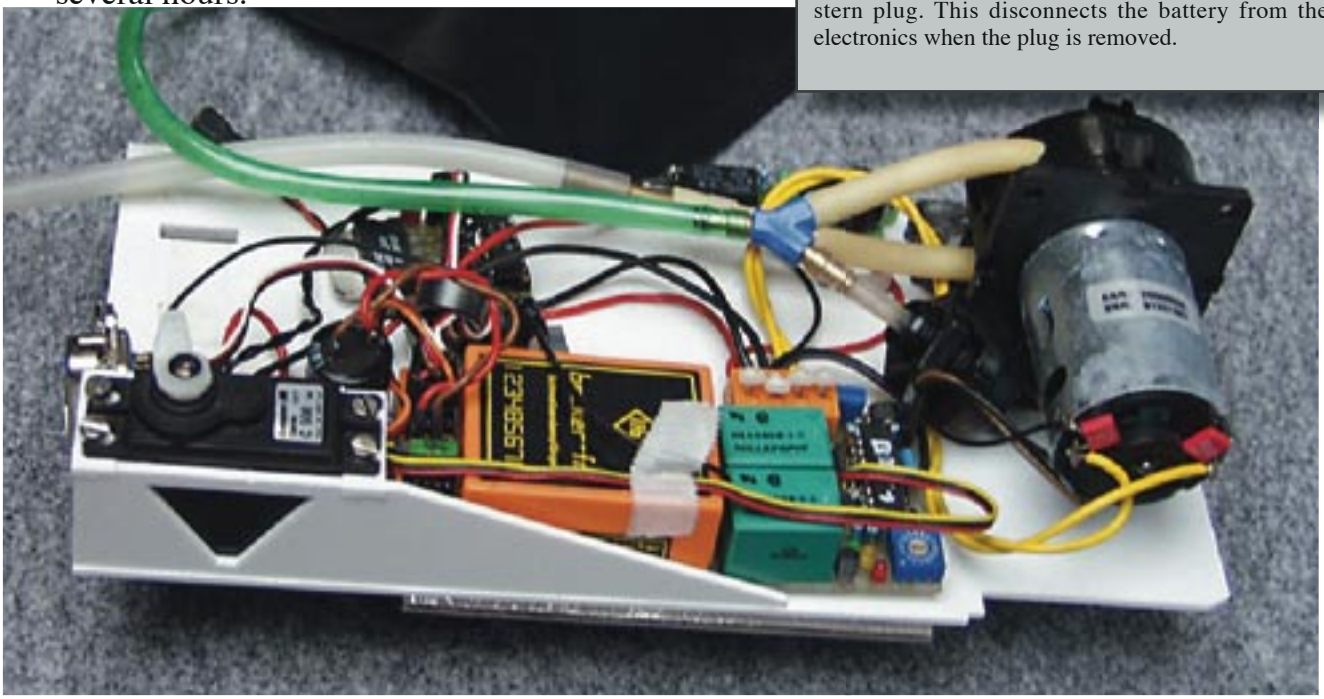
- Use only a suited charger. Do not change polarity. Double check parameter setup at adjustable chargers.
- Do not charge battery in sealed containers. That means always open the sub for charging and leave open for several hours.
- Exchange a damaged or worn out battery (i.e. chrrge LED permanently on, B. does not reach nominal voltage, Empty after short usage)

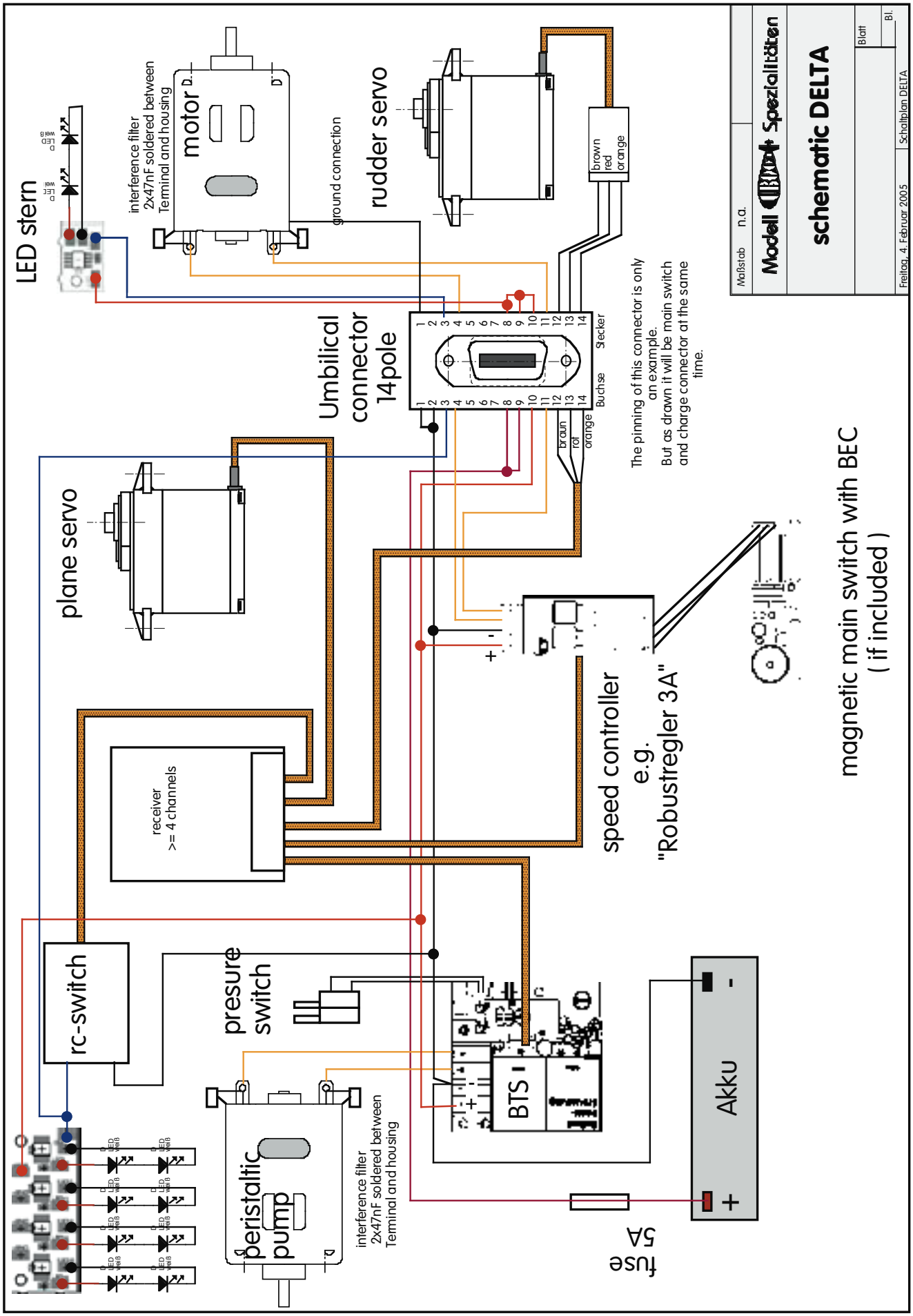


Use this general connector schema as far as applicable.

+12V and ground can be used as charge terminals.

The „+12V“ und „+12Vback“ are connected ot the stern plug. This disconnects the battery from the electronics when the plug is removed.




schematic DELTA
Modell Spezialitäten
Maßstab n.a.
Freitag, 4. Februar 2005
Schaltplan DELTA
Blatt
Bl.
LED stern
interference filter
2x47nF soldered between
Terminal and housing
motor
ground connection
rudder servo
brown
red
orange
Umbilical
connector
14pole
Buchse
Stecker
braun
rot
orange
The pinning of this connector is only
an example.
But as drawn it will be main switch
and charge connector at the same
time.
plane servo
receiver
>= 4 channels
speed controller
e.g.
"Robustregler 3A"
magnetic main switch with BEC
(if included)
rc-switch
presure
switch
BTS
Akku
peristaltic
pump
interference filter
2x47nF soldered between
Terminal and housing
fuse
5A


DELTA