MHZ

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TSUNAMI

The Tsunami is a race boat by heart. With this example, we would like to give you some clues as to how the setup can be done. Building model boats is a creative process. Be creative and build your boat.
We wish you a lot of fun.

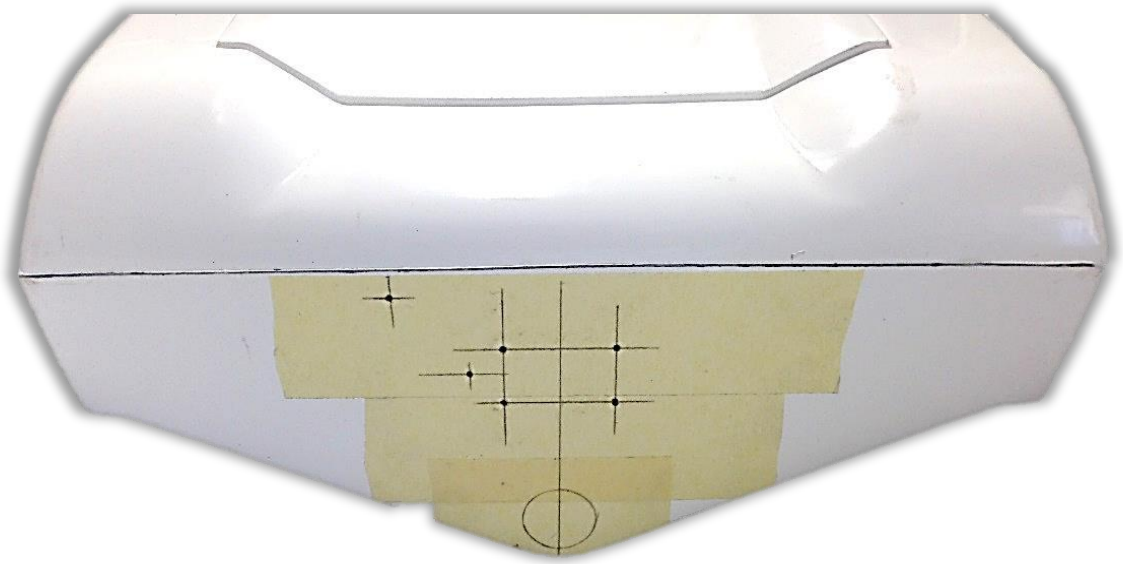
Fitting tools and parts

- various screwdrivers
- Adhesives, super glue, Loctite, polymer glue….
- Screws, nuts
- Hand drill with different attachments
- Step drill
- Files, abrasives
- Protractors, rulers
- Measuring stick
- Tsunami hull
- Brass | PTFE tube #1002
- Flex shaft 4.75mm # 1090
- Silicone hose #1552
- Clip #1556
- Linkage # 1833
- Rudder Strut Set #1070
- Water Inlet # 1791
- Water outlet # 1795
- Front Engine Support # 2414-M
- Collet Coupling #1036
- Hull passage # 1070-1
- Stern Tube Bracket #1012
- Flex Shaft Retainer #2254
- Extension kit (incl. motor mount, servo mount...) #1633
- ESC Bracket #1631

Preparation
It is best to choose a place for assembly where the model can stand for a few days, for example to let the glue harden. Arrange the space in such a way that there is space for the model itself as well as for the required tools and the parts to be installed.

Center of gravity
Make sure that the center of gravity of the boat is correct during the entire assembly. In the case of the Tsunami, this is around 26-30% seen from the transom. That sounds more complicated than it is. With a length of 825mm, this is calculated as follows: 825/100*26(27,28,29,30). So it's between 214.5mm – 247,5mm from the rear. Mark this area. To determine the optimal position of the built-in parts, place them in the fuselage as you wish. Lift the model with one finger each on the left and right of the center of gravity. Check if the Lizard is balanced. If this is not the case, move the components (controller, receiver and especially batteries) in the fuselage until the center of gravity is correct. The correct center of gravity contributes significantly to the subsequent handling and performance of the boat.

Preparation of the hull
Wipe the inside of the hull with degreasing cleaning agents (e.g. brake cleaner) to achieve the best possible adhesive bond. Before gluing the parts, the contact surfaces in the fuselage should also be lightly sanded. Then start drawing a center line both on the transom and inside the fuselage. From this, all dimensions are then deducted. At the rear, this axis is then used as a mirror axis to be able to place holes symmetrically on the transom. Also, find the mid-height of the transom as a reference point. This is also necessary as a reference point. General note: We recommend masking all holes with masking tape before drilling. In this way you prevent the paint from chipping and/or the drill holes from fraying (unclean). In addition, the required points can be marked on the masking tape. For larger holes, always start with a smaller hole and then expand it.



Hull passage

So that the drive can be optimally adjusted later, we recommend using the fuselage bushing (#107-1). Draw a line to the left and right of the center line parallel to the lower edge of the transom at a distance of 10.5mm upwards. The intersection shows the midpoint the hole for the hull passage. Drill a hole here and then widen this to 19mm. Adjust the hull grommet so that it is flush with the transom and lies straight in the hull. We recommend gluing the hull penetration with polymer glue.

Fit out set

We recommend using the Universal Mono Boat Extension Kit (#1633). As with all universal parts, you may have to adjust the length slightly in order to achieve the optimum center of gravity. Then assemble the extension kit outside of the fuselage. Depending on the height of the servo used, the height of the servo mounting plate may also have to be adjusted here. Pay attention to the exact alignment of the individual panels to each other so that all reference surfaces are perpendicular to each other - the use of masking tape is again helpful for this.
When all parts are optimally aligned, fix them with polymer glue.

Prop shaft | flex shaft

There are various methods for securely mounting the shaft end piece on the flex shaft. Loctite 603, joining hub shaft, UHU Endfest 300 or brazing all work if done properly. It is important to grind and degrease the flex shaft before gluing it in . with brake cleaner). Then put some of the chosen glue in the propeller shaft and on the flex shaft. Now insert the flex shaft into the propeller shaft and let it dry vertically for at least 24 hours.

Inner assembly

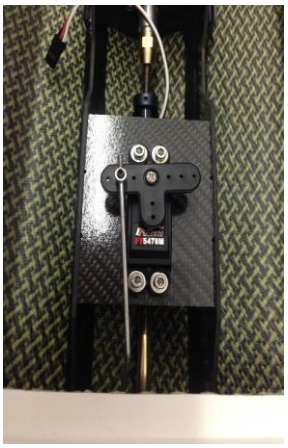
Feed the brass PTFE tube (#1002) through the hull bushing. Align the stern tube and motor/collet coupling exactly with each other. Use the later installed flex shaft for this. The parts must be aligned in such a way that the shaft slides into the coupling without much resistance. Flex shafts should always be installed with a slight, homogeneous curve to prevent the shaft from swinging up during operation. The stern tube holder (#1012) can be installed and aligned to secure the installation position of the shaft. If everything is properly positioned, the components can be glued with polymer glue.

Drive

We recommend using the rudder strut set (#1070). This is adjustable in both height and inclination. Mount this in such a way that the shaft runs straight out of the hull into the drive in the middle position. The transom is built stable as standard, but you can optionally make an additional anchor plate made of GFK or carbon and glue it to the transom from the inside.

Steering

It is articulated by push/pull linkage using a steering servo of your choice. When using digital servos with brushless motors, make sure that they find a stable zero point and do not start to oscillate around this zero point. This is noticeable by the humming of the servo. To prevent the servo from burning out, the cables, tension and trim/sub-trim must be set precisely. The setting is correct when the servo no longer hums.



Water cooling

The water cooling is the most important helper so that the expensive electronic components do not go up in smoke due to the high load of operation on water. It is therefore essential that the electronics are always kept at acceptable temperatures by water cooling. The cooling water intake (1790) should be placed in the running surface of the boat in such a way that it feeds water into the cooling circuit in the majority of all driving situations. We recommend installing on the tread 12mm from the transom and as far inboard as possible in the V of the hull. For this you have to make a 14 x 6 mm cut-out in the hull. Glue the water inlet there and grind it on the running surface so that it is absolutely flat.

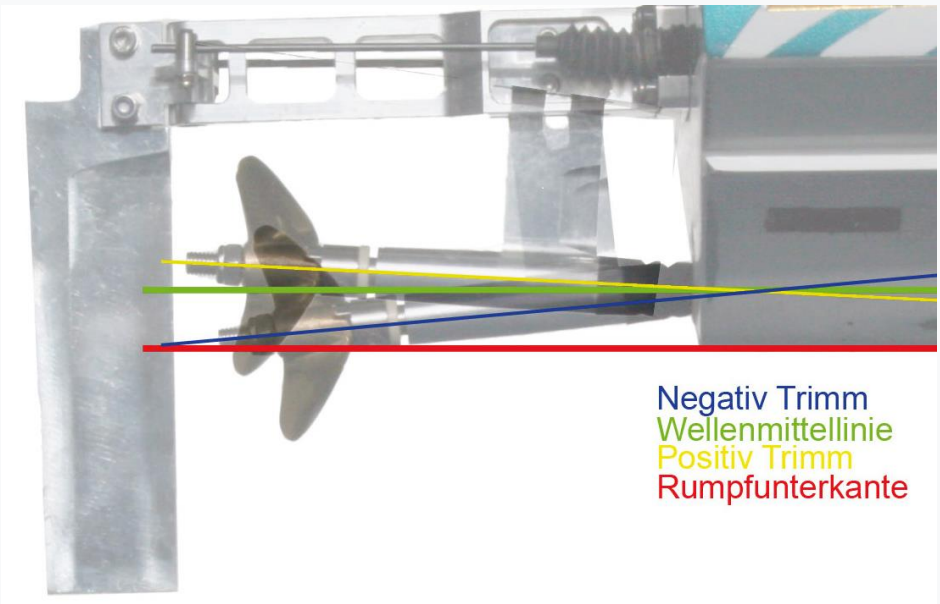
Silicon hose and cooling water outlet

The silicone hose (1552) should be routed in the boat so that the cooling water first cools the controller and then the motor. It is also important that when cooling the engine the water is at its deepest point into the engine cooling jacket to prevent air bubbles from forming.
The hose should be secured with the hose clips (#1556) on the respective connection nipples (ESC, motor).

The cooling water outlet (1795) should be positioned so that the warm water can be flushed out of the boat in any driving situation. For boats that usually make right turns, it is advisable to install the outlet on the left (port) side of the boat so that you can see and check from the jetty whether cooling water is coming out of the boat while driving.

Fine setup

Like all high-performance boats, the Tsunami reacts sensitively to different settings on the drive and the right center of gravity. As mentioned above, the center of gravity should be somewhere around 2630%. If the center of gravity is too far forward, the model will certainly drive straight, but will turn when cornering and tend to tip over. In addition, the electronics get very hot due to the increased friction. A center of gravity that is too far back results in a bouncy and unpredictable handling. Equally important is the position of the wave in relation to the water surface. If the propellers are tilted upwards, the boat will come out of the water and glide faster. If you turn it on too hard, it may cause the boat to run too easily, which tends to blow over, i.e. backwards.



Find the perfect setup for you, because every driving style is different ☺