

# INSTRUCTIONS TO HELP WITH ACCURATE SEAT FITTING

Kart seat positioning is a difficult but very important job. The driver is half the weight of the vehicle so if their weight is out of position the kart will be unbalanced and difficult to set up. Many manufacturers will give you a set of dimensions which can confuse you unless you are using the exact shape and size of the seat that they used to get the information in the first place. Therefore to get the correct balance in the chassis it is important to understand where the drivers back is in relation to the rear axle. These instructions are to help with attaining the most common position for the average 70 kg driver. Sometimes a compromise position will have to be used for smaller or larger drivers.

To accurately fit a kart seat place a flat sheet of plywood, or something similar, on your kart stand, then space the chassis tubes from the wood to give you the correct ground clearance. If you do not have this information, set your kart up on a flat piece of ground with the correct tyre pressures. Take a note of the distance the seat protrudes below the chassis tubes when you have around 15 mm clearance between the floor and the seat base. We have found that on chassis less than 5 years old the tubes are much lower therefore it is not wise to let the seat base protrude below the chassis tubes more than 5 mm. You now have one of the two most important dimensions to record.

Next place the seat on the wooden board, like this it is stable and easy to hold in the ideal position. (Tip: A weight placed inside the seat will help keep it stable and upright.) If the seat has a flat bottom it is usually best to use the set angle provided.

To get the second vital dimension, which is the actual position of the drivers back, take a 90° line (approx.) from one side of the spine recess, which runs down the middle of the back of the seat, and measure the shortest distance to the axle surface. With a 70 kg driver this dimension is currently an average of 16 cm.

(See picture showing "Dimension 2") (Pre 2005 karts 21.5 cm) (Karts aged between 2005 to 2009 use 18 cm)

You must not use the spine recess to measure this, as it varies in depth too much between each type of seat. Please note that bolting a substantial amount of lead weight to the back of the seat can make a difference to the seat position. It forces you to position the seat further forward to achieve the same balance.

Before marking the holes, bend the flat metal tabs of the seat stays so that the flat parts are parallel to the surfaces of the seat. You can use a large adjustable spanner to do this.

Mark the holes, a good tip is to put a blob of paint on the end of an M8 bolt and pass the bolt through the stay, spotting the seat in all the four main mounting points. Then all four mounting points can be drilled.

Once drilled, use something like Tillet nylon seat washers or aluminium mounting plates between the composite and the seat stays. Additional spacers may be used to fill any gaps between the stays and the seat but they must be rigid spacers, not rubber. There usually will be a gap between the seat and the front stays.

Now tighten the bolts until very tight. Get the amount of spacers correct to keep the composite from being pulled out of its natural shape and to keep the seat in the desired position. Extra seat stays can now be fitted if used.

Keep the head of the bolt away from the top edge of the seat. Fasteners that are fitted too near the top edge of the seat will bruise the ribs.

When you are fully satisfied with the performance of the kart, record the position of your correctly fitted seat, the size and the shape. Other measurements to keep a record of are; from the furthest forward edge of the seat, to the main chassis rail where your heel would normally rest and from the axle surface up to the top edge of the seat. (See picture "Dimension 1") Also keep the dimension that the seat shows below the chassis tubes. However, remember that these two dimensions are only applicable to that specific seat size and chassis model.

To prepare the seat for wet weather, drill two holes for water drainage at the lowest point of the seat. Your seat is now ready for use. Please remember to consider that your rain tyre may be of a different diameter to the dry; therefore check that when they are fitted there is sufficient ground clearance.

VERY IMPORTANT when bolting through and foam or covering, re-tighten the seat bolts after the first few laps. Initial testing results will be affected if the bolts have not fully compressed the material and foam.



## T BOARD



### T BOARD SEAT FITTING JIG

Seat fitting is without doubt one of the most time consuming jobs on the kart this is where a tool like the T board seat fitting jig can help. Accurately positioning a seat (which if 5 mm out, will be detectable in the lap times) is difficult when you take into account the varying shapes, sizes and driver seating preferences. The T Board gives an accurate way of understanding where your seat is positioned in relation to the rear axle. The measurement point used on the rear of the seat allows different seating angles to be used, while keeping the centre of gravity in a similar position. Deliberately measuring to one side of the spine recess, takes into account differing spine depths in the many varied types of seats. The seat position can be set, the three necessary dimensions recorded and then transferred into any other chassis as a starting point. Using the T Board, it is now possible to understand the optimum seat position of each type of kart, whilst also enabling you to easily mark and drill the seat fixing holes with greater accuracy.

#### FITTING USING THE "T" BOARD

Determine how much of your seat hangs under the chassis tubes. 8 mm is about the maximum on modern karts 5 mm is safe. Use the 4 and 2 mm spacers to give the correct distance. Put the clamps into the T Board slots. Adjust the clamps and fix to the chassis. The seat is now held in position by the board and it cannot be accidentally set too low.

#### USING THE MEASURING DEVICE

Fix the measuring device into one of the back slots, while allowing the lower sliding rule to find its natural height between the T Board and the Axle. Tighten the knob that sets the lower rule. Set the measuring device at 90 degrees to the axle. Extend the upper rule forward and upward to get the correct dimension to the back of the seat. The average of all modern karts and a good place to start is 16 cm. Then set the angle using the protractor. Three dimensions should now be taken. The distance showing below the chassis tubes, the angle of the seat and the axle to seat dimension. With these three dimensions you can put any seat in any kart and the driver will always be exactly in the same position in relation to the rear axle.

