



For fast accurate fitting of kart seats at the circuit.
 Drops quickly into place without lifting the chassis.
 Adapts to cope with obstructions like battery boxes and fuel pipes.
 Converts to suit 28, 30 and 32mm chassis diameters.
 Can be flipped upside down to suit engines on the left.

FITTING A KART RACING SEAT USING THE T BOARD TRACK

Fitting a new kart seat is without doubt one of the most time consuming jobs for a karting mechanic. It is also one of the most important jobs to get right. A seat set just 5mm out of position will increase your lap times. Accurately positioning a kart seat is made even more difficult when you consider the many varying shapes, sizes and driver seating preferences. The driver is around half the weight of the vehicle, so the position needs to be understood fully and correct every time.

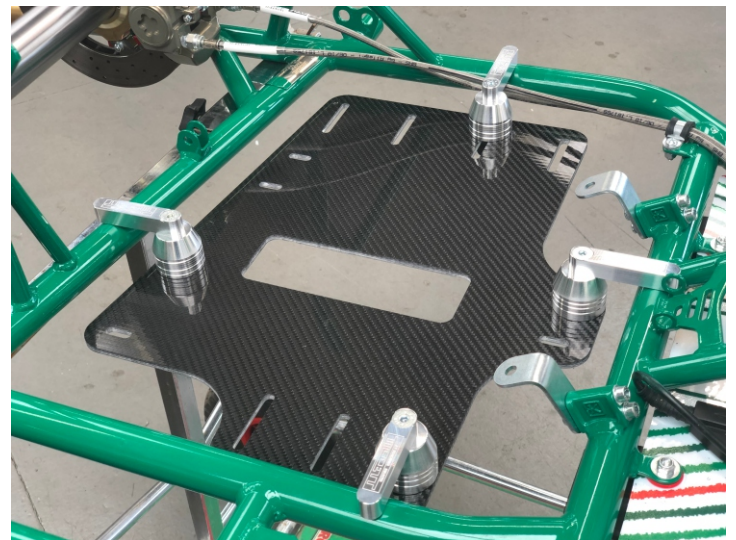
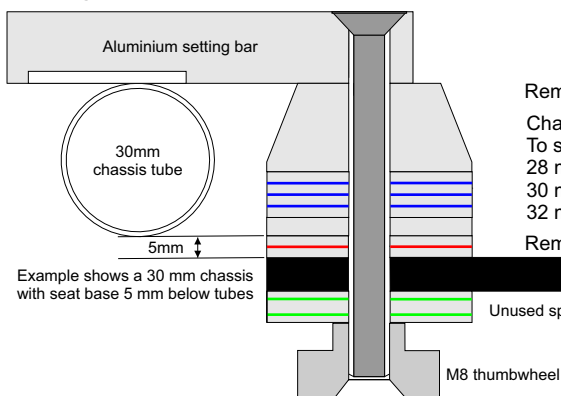
The new T Board Track seat fitting jig has been designed to speed up this task while at the circuit. The lightweight but rigid carbon plate is setup with three or four height setting bar assemblies. The board can then be easily dropped into position in seconds. Re setting the board is only necessary if you change chassis type or seat height.

Because most kart seats now have a flat base, the angle protractor of the original T Board has been replaced with a magnetic slide rule, which helps you quickly understand where your seat is positioned in relation to the rear axle. This is important when at the circuit, where efficient fitting of a seat can be vital in making the next heat.

Using the T Board Track

The carbon fibre plate is shaped to fit in the space between the chassis tubes of the most popular kart types used today. It can also be flipped over to allow use on chassis types where the engine is sited on the left side of the driver. You are provided with numerous slots in the plate so that you can position the aluminium height setting bars to avoid various obstructions and always find a point to easily lay the jig on top of the tubes. The bars can be raised and lowered using the supplied aluminium spacers. This will not only allow you to set the seat in the two most common positions, e.g. level with the bottom of the tubes or 5mm below, but also to raise the seat for a short driver or lower it further below the tubes on an historic kart.

Height setting bars



A small Bambino chassis will be too small for the board to lift within the tubes. Therefore, to lift the seat use a few sprockets or piece of wood on the plate to act as a spacer. For most current full sized chassis and an adult height driver, the most often used position is with the seat set with its lowest point approximately 5mm below the tubes. By changing the aluminium spacers, it is possible to adjust this position. The spacers are sized to enable adjustment for 28mm, 30mm and 32mm chassis. A very short driver may have their seat set higher than the lowest point of the tubes. In this circumstance remove the spacers and keep them under the board.

When attaching the board, you should avoid placing the setting bars on brake pipes, welds and cable ties, otherwise the accuracy will be compromised. To fit a new seat it is possible to use only three setting bars spaced evenly around the frame. However, if an already fitted seat is being repositioned with the lead still bolted to it, use all four height setting guides to take the extra weight without flexing. One bar on each of the four sides is ideal, picking up on the top of the chassis tubes wherever possible. In a situation where the side tubes are obstructed by a battery box one side and an engine/air box the other, the height setting bars can be positioned to the front and rear of the board. (See picture below)

Once the board is settled in place you can begin to position the seat.



- Remove the coned 18mm thick diameter spacer to lift seat above the lower level of tubes
- Change the spacers to set heights for 28mm, 30mm and 32mm chassis
- To set the seat 5mm below the tubes use the following spacer combinations
- 28 mm chassis use 4mm 5mm 6mm and 18mm spacer
- 30 mm chassis use 4mm 5mm 8mm and 18mm spacer (As in diagram example)
- 32 mm chassis use 6mm 5mm 8mm and 18mm spacer
- Remove 5mm (1 groove) thick diameter spacer to set seat level with the bottom of the tubes.

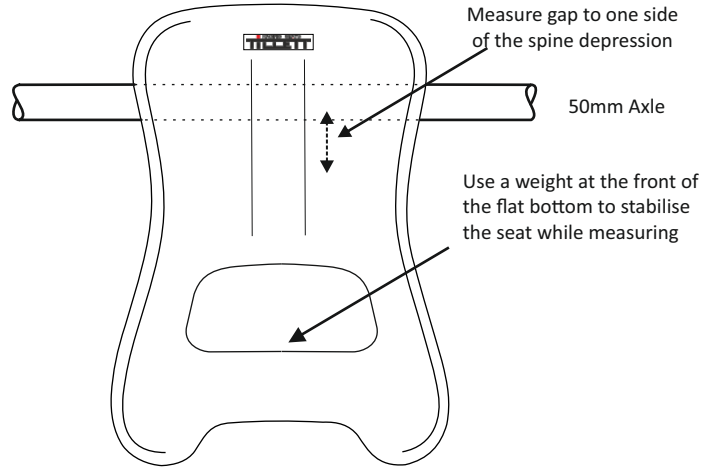


Safety Warning. The T Board Track is not designed to take the weight of a driver. Do not sit in the seat until the seat is bolted into the chassis. If the kart is still on the trolley, the stand could break or the T board could fall out of the frame.



Setting the position with the slide rule measuring device

The magnetic carbon fibre slide rule will set the seat back at an easy to replicate distance from the axle. As most seats have a flat on the bottom, use the flat as designed to set the back angle. To get the right distance from the axle extend the carbon rule from the axle to the closest point of the seat. You can see this demonstrated in the diagram below. Measure to one side of the spine depression. The spine cavity of all seats vary in depth and you will find that using the centre line you could end up with the driver's back out of position by as much as 1cm. The carbon slide rule will sit on the axle with its magnets, so you can move the seat, bend the stays around and quickly re set the position. The current average seating position and a good place to start with a 70kg 1.80 metre tall driver is 15.5cm, whereas with a KZ chassis the dimension would be closer to 13.5cm. A shorter junior would use around 18cm.



With the seat in position, check that all seat stays are parallel to the composite. If the flat metal tabs are set at a different angle, bend them with a large adjustable spanner until they exactly match the angle of the composite. They do not have to be bent to be close to the composite and the gap can be filled with nylon or aluminium spacers without a performance penalty. But do not use rubber, as not only will this break the edges but the bolt will act like a saw, moving in and out and cutting a slot in the seat.

With the seat in position place a blob of paint on the end of a long bolt and pass it through the four main stays, spotting all four holes without moving the seat. If there is a gap between the seat and the stay, make sure that you pass the bolt through at 90° to the seat stay flat. Drill all four holes accurately and when fitting the bolts use the correct number of spacers so that the composite is not twisted out of position, put all four bolts in loose before fully tightening the seat.

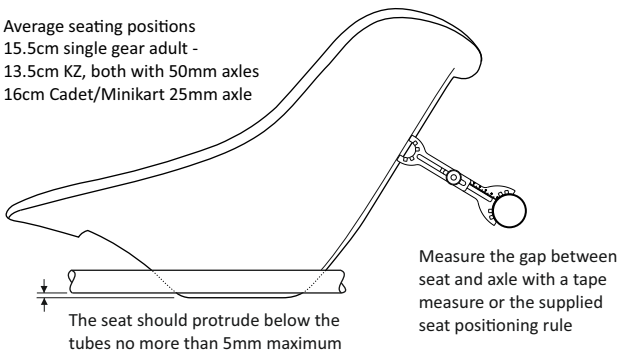
You can then remove the fitting board by loosening one of the setting bars. Re tighten it afterwards so it does not get lost in transit. The seat is then in place and you can then fit any extra seat stays and lead weight required. Weight bolted on the sides and under the front between the legs should be slightly spaced away from the seat with nylon washers. This helps the seat flex around the rigid lead and stops breakages. Also bend the lead in an arc under the front, this is done so as not to pull the composite out of its naturally moulded shape. If water pipes and data cables are to be fitted, make sure that holes drilled for cable ties are more than 5mm away from the edge. Holes drilled too close to the edge can cause a crack.

Keep the head of the extra seat stay bolts away from the top edge of the seat. Fasteners that are fitted too near the upper edge will bruise the ribs. Try and use a low profile washer up around the rib area if possible. This will not only help the ribs but also stop any hard rib protectors from damaging the race suit. The countersunk washer from any lead bolts should also be kept away from the contact point where the hip and leg bones touch the seat.

When you are fully satisfied with the performance of the kart, record the position of your correctly fitted seat. Keep the "seat to axle surface" gap and the low point dimension. For a specific driver setup, it also helps to keep a measurement from the centre of the Tillett badge to the top of the steering wheel and one from the front toes of the seat to the pedals. Finally, make a note of the size, shape and rigidity that was used. To prepare the seat for wet weather, drill two holes for water drainage at the lowest point of the seat.

Your seat is then ready for use on the track.

Average seating positions
 15.5cm single gear adult -
 13.5cm KZ, both with 50mm axles
 16cm Cadet/Minikart 25mm axle



Using the height of the flat bottom in relation to the chassis tubes and the "axle to drivers back" dimension, 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. Be aware that Historic karts always had the seat set further away from the axle. Pre-2005 chassis with a 40mm diameter axle used around 21.5cm and karts aged from 2005 to 2009 with a 50mm axle approximately 18cm. If the kart has a 30 or 40mm axle you will need to compensate for this by changing the gap dimension accordingly. If a 25mm diameter axle is to be used on a Cadet/Minikart, you can flip the carbon measuring device around and it will also measure from the surface of a 25mm axle. Cadet - Minikart seats tend to measure from 15 to 16cm from the 25mm axle. 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.