



LET'S MAKE ROOM

TO DRIVE A KART, OR RATHER, TO BE ABLE TO STAY IN A KART, THE SEAT IS AN ESSENTIAL ELEMENT. AND, LIKE IN MANY OTHER CASES WHEN DEALING WITH COMPONENTS FOR KARTING, THE SEAT TOO MUST BE ACCURATELY STUDIED AND NOT JUST FROM A DRIVING POINT.

REPORT MAURIZIO VOLTINI PHOTOS ARMANDO CINTRI

The earl of Lapalisse would undoubtedly have a deep satisfaction the moment we said that if you want to stay on a kart you must have a seat on which to sit. It's so obvious... And it's just as obvious that to be able to drive a kart with this power and the stress that it has to bear, this seat must be suitably shaped, a shape that does not let the driver end up in the escape route at the first corner. On the contrary it helps you to keep full control, first on the steering wheel, even under the worst centrifugal force. Therefore, it seems obvious that the enveloping shape of the seat that we are used to seeing isn't just something nice to see, but really an essential necessity to be able to drive a vehicle with the characteristics of a kart properly. Above all, considering the fact that there isn't a safety belt, which on racing vehicles are not only important in case of accidents, but also for holding the driver properly in his driving position.

These are the basic common and evident characteristics, but as those who have been reading our column for some time know, in a simple (apparently) vehicle such as a kart there are very few things that can be touched without having effects on other elements. This also applies to the seat. So, let's take a look at one thing at a time to see,

which the analytical description and the things to look out for when we choose, mount and use a kart seat. So, we'll see, for example, how a well-affirmed company, like Tillet, has about sixty different types (without mentioning size) of this component that is quite a common one.

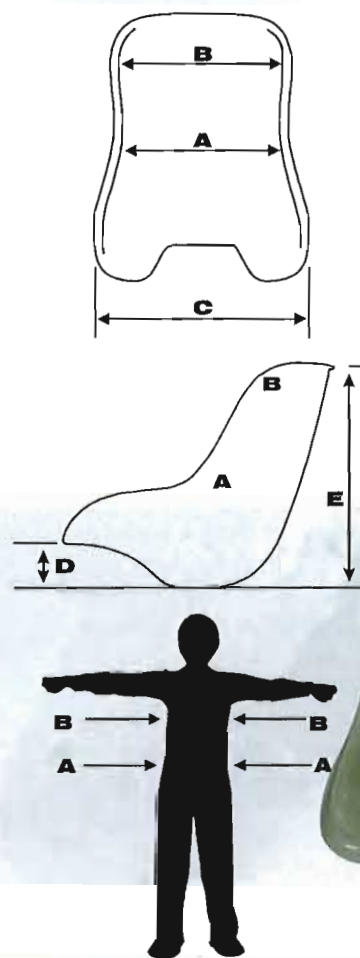
CHOOSE THE RIGHT SIZE

The first thing to do really doesn't need mentioning: whether you are getting a new seat – perhaps with a brand new kart too – or a second hand seat, check it for size, make sure it is the right one for you or your first try at karting might turn out to be devastating. Size must be perfect: there must be no chance of "bumping about" in it because it is too wide and, neither should it be too tight that there's no breathing space. If it were too tight we'd end up with bruised sides, especially where there are sharp turns along the track; in the second case, if you don't breath properly, compression on the ribs would bring about terrible pain for days after. If any of this has happened to you after having driven a kart, well, it can't be blamed just on the kart or habit or lack of practice.

So, when you choose a seat, check the different sizes for fit, you can also find the intermediate sizes, don't stop at the first one you try and think that it might do. When you

LET'S SIT PROPERLY

To get the best advantage from the right seat size and shape, though, it is also important to sit properly. That is, well back without having to lift any part of the body in any driving situation. Otherwise all forces stress and bumps will continue to "bang" the same part of the body. Results: more pain. To drive correctly and relaxed, you have to adjust controls, especially steering wheel and pedals. If the accelerator is too far, for example, almost certainly to press gas pedal fully down you will push your hips further forward, and as a consequence your back will be resting just on the upper corner of the seat. If this is the case, don't complain if at the end of the race you find yourself with an extra "tattoo"... In any case, avoid trying to find the most comfortable position by moving the seat about. Seat position is "sacred" form another point too: set up. It is, in fact, logical that the position of the seat also determines the position or the heavier element on a kart (we're talking about the driver) and consequently it conditions the entire weight distribution of the kart. So, to position the seat you must comply with specific measurements, measurements usually given by chassis manufacturer and, perhaps only changed according to your experience on the track after loads of testing. In this test, remember that if you mount harder tyres it may help if you move the seat a bit further back to get more traction and rear carriage hold, while doing the opposite helps with extra soft tyres, to "free" the kart. That is, there's more hold on axis towards which the seat is moved. Instead, if you lift the seat (and barycentre) we will "load" the external tyres more round corners, something that can help you when, for example, you're driving along a wet track.



THERE MUST BE NO CHANCES OF "BUMPING ABOUT" IN A SEAT THAT'S TOO WIDE, BUT NEITHER MUST WE HAVE DIFFICULTY IN BREATHING BECAUSE THE SEAT IS TOO NARROW.

find the right balance between a firm hold and a little allowance, that's fine. Don't forget, however, that it would be a good idea to try the seat wearing the appropriate racing clothes and, above all with a rib protector on too! And remember that the different shapes available can give you the right comfort for your torso at hips and legs. Being able to rest your body sideways, round a turn, along all the part of the seat is really a good thing. If, instead, we only rest on a small part or worse still on a corner, the pain is inevitable and it serves us right, seeing that it depends on our lack of consideration when choosing the seat for our kart. If you are getting a second hand kart, if either for economical reasons or practical one we don't want to change the seat, you can just pad it adequately with some foam rubber. That is, unless it is too narrow, which is something that can't be put right, you must get another one.

RONDELLE MUST BE LOOKED AFTER TOO

Obviously, mounting a seat means having clamps that "lock it" to the chassis: screws. Naturally they must be the right length to lock it (use self-locking nuts), but it doesn't end here. You should also have some inserts between the chassis support and the same both to make sure that the seat doesn't have to undergo any pointless parasite stress (that cause breakages and change kart behaviour) and at the same time is positioned well (as previously mentioned), and to reduce the chances the seat breaking in case of an accident or hard crash (immediately after there's the driver's torso...). This last thing is logically avoided, as there are large aluminium washers, which are at least 5cm thick; in any case, the bigger they are the better. Also the washers that go inside the seat must not be underestimated: these are important not only to fix the seat firmly and also for making the difference between a enjoyable driving experience and assort of Vergin of Nuremberg test. A screw sticking out of the seat, in fact, is a pointed object that is bound to torture the driver's body. Talking about this, we suggest not to use plastic washers: not only because they

jut out more respect to the seat, however they also tend to break more if more force is used to pull out the bolts. Better to use washers made from a sheet of aluminium, safer and more comfortable, or perhaps normal steel washers that are a bit flared inside, so as to adapt to the conical head of the screws: a cheap efficient solution. The same applies to the ballast that is usually placed behind the seat. Regulations simply state two screws whose diameter measures at least 6 mm, but we suggest using 8 mm screws and the same for the washers for the seat: there was a period when you easily lost the lead ingots, in fact, they didn't stay firm due to the "plastic" washers.

THE SEAT ALSO WORKS

Some may think that the things to say about the seat have already been said. Well, there's more. There's another parameter to consider: flexibility. Like many other components on a kart, the seat too is affected by chassis flexion caused by the different forces that develop as you drive along the track. A seat that is too "hard" may stop the kart body from bending appropriately. Well, a nice stiff (and expensive) seat made of carbon might make the kart look lovely, but it could also make driving more difficult... the on the other hand, a chassis that gives could be an unexpected reward. Well, the thing is that you must keep an eye on and bear seriously in mind the way the seat bends. That's why Tillet makes seats of different thickness and material, up to 8 for each model, so that you can have the required flex. So, you have seats made of fibre glass of different thickness and also those made of kevlar, which is a registered brand) and is much more elastic than carbon. Well, there is a vast range to choose from, from a functional point to the design you like best. And don't forget that the British company also makes padding and protection, complete and in parts. They too wish to make sure that karters suffer as little as possible when practicing their favourite sport: it's not very nice to make your customers suffer, is it?

IMPORTANT SIZES

The seat has different really basic sizes, whether for the driver's correct sitting position, or the correct position of the seat on the kart, seeing that it has a direct influence on the position of the barycentre. A specialised company like Tillet gives us an example of which sizes to bear in mind more and for confirming how important it is to have the seat in the right position, we also get a rather sophisticated instrument to help mount the seat in the right position.

MOUNTING THE SEAT FROM A TO ZED

LET'S LOOK AT HOW TO MOUNT A SEAT ONTO THE KART STEP BY STEP WITHOUT MAKING MISTAKES



1 As we said in the main column, it is important to choose the right size. However, a different sized seat doesn't mean that they will match accurately with the coupling on the chassis that can't be, which cannot be "ordinary"; for this reason, one often has to work rather "violently", bending the support tubes with the appropriate lever or even with a hammer (as long as it had a "soft" head made of resin or wood).



2 Secondly, it is important to position the seat correctly, because the pilot's position is very important for weight distribution and therefore of the entire set up. Manufacturing companies usually supply all the measurements that your chassis must conform to: the most important is distance from the front cross member of the frame and height respect to axle, but also front height is important, the distance from the steering wheel and so on.





3 Among the accortezze accorgimenti for working precisely, there may be a few "tricks" suggested by experience. For example, to prevent the seat from moving forward while you make a hole in it for the lock bolts to pass through, once it has been positioned in the right place, mark the points for the bore with a felt tip pen. Doing so there's no need to keep on finding the right position again if there's even the slightest movement.



4 The lower joints have an extra complication: to get the right height, the seat must be positioned at a certain distance, so shims must be inserted. You can use more washers on top of each other, perhaps the same can be joined with a strip of adhesive tape so that you don't have to do anything strange to stop them from slipping about while you are working and making the bores.



5 They seem to be of little importance, but in fact, their role is very important for the driver's safety. We're talking about the "big washers" inserted between the seat and the points, which are among other things compulsory according to regulations. They must be at least 5 cm in diameter and are used for avoiding that, in case of an accident, the seat can be forced by its supports. They are also useful because they made the seat last longer too.



6 To conclude, the operations seen so far are also done with the supplementary arms, the last to be locked in place also because, only when the seat is in the right place you can choose which is the best length to have. At this point you have finished fixing it into place. Don't forget to choose washers, for the inside of the seat, that jut out as little as possible, so that they don't poke into your body.