



## Choosing your new kart seat

There are many factors to consider when selecting a new kart seat. If you have had a seat in the past. Do you know the size and shape? Does it still fit? If not, where are the gaps or pressure points? Will the rigidity suit your new kart/engine combination? If you are in a team, will they be happy if you choose a different shape?

### Choosing a shape

Shape does not make as much difference as some teams would have you believe, but they will be nervous of miss positioning the seat and may want you to use the shape they are regularly fitting. This is fine until the seat is not the right fit for you. An ill-fitting seat can cause a driver to damage their body, or hold themselves in the kart by using the steering wheel, neither of which are good for ultimate performance. Different shapes are fine if the compared seats are made of the same materials and they are put in the chassis with the drivers back in exactly the same place, then they will handle the same. That said a significant back angle change will alter the handling, especially for larger driver and this scenario should be viewed differently.

#### **T11**

The most popular shape used is the much copied 58° T11. The T11 has a huge range of 22 sizes. Drivers from a 12-year-old up to a 130 kg man, are all catered for. Many of the T11 sizes solve age old problems. Wide top (WT) sizes have been made for drivers with a slim hip and an athletic torso, (or maybe a thick rib protector). Also, available are a series of wide hip (WH) sizes for drivers that end up with severe bruising on the pelvis bone.

If you are 12 years old or above and over 1.5 m, the T11 is the seat you will most likely use.

#### **T5**

The 63° T5 is ideal for the 8 to 12 year old drivers. The more upright seating position helps them keep good control by helping to put power into the steering, and it also helps a shorter driver to see over the steering wheel. This shape is only available in child sizes up to the XScd.

#### **T14**

Just as in the T5 the T14 range is tailored towards the younger drivers. The sizes start with one tailored for the 6 to 7 year old Bambino class called a Mini. The T14 has a back angle which is suited to aiding the vision and strength for children and has extra leg support. This additional leg support helps small drivers who perhaps have changed to a faster class, or who just need extra help in holding their body in the kart.

#### **T9.5**


The reclined 48° T9.5 is for very tall drivers over 1.9 m. This seat can then be used to good effect as it lowers the centre of gravity for drivers whose height makes the kart unstable on fast corners.

## Choosing a size

This is important, as a good fit is essential for the protection of the driver and the handling of the kart. If a driver is loose in a seat they will pull down to steer with the inner hand, pulling themselves out of the kart and making it bounce at the slightest provocation.

To assess whether the size of a seat that you have in your possession is correct, sit the driver in the seat and feel the gaps over the femur leg bone, pelvis hip bone and down the length of the ribs, from top to bottom. This must be done with their rib protection in place, but the race suit is not so important, unless it has integral padding. The rib protector when worn tight, should not move inwards as the driver sits back in the seat. Once sat back in the seat, it should be difficult to squeeze your fingers between the seat, ribs, hip and leg bones. It's important that all the points are evenly pressured and no one element is either loose or pinching. If one area feels loose, some firm foam placed between driver and seat is acceptable. If it is pinching anywhere, you need a bigger size.

To assess the size without having a seat in your vicinity, we find that denim jeans waist size, weight and height are good indicators. Coupled with information about the chest circumference and rib protector type. An overly thick rib protector can make two sizes difference and leave you with very loose hips, so this is to be avoided (i.e. buy a thin P1) or account for it with a WT wide top T11 seat.

 <b>Tillett Kart Racing Seats size advice</b>						
<b>Shapes and sizes shown are the more popular sizes used. Others are available</b> <b>This guide should be treated as a starting point but it is not guaranteed to work every time</b>						
Shape	Size	Typical age range	Average weight	Average height	Typical P1 rib size	Notes on size
T14	Mini	6-8	25 kg	1 m	Mini	This seat is the smallest race seat made for Bambino's or very small drivers
T14	Ccd (Cadet cut down)	7-9	30 kg	1.2 m	C	This seat is equal to the T5 Ccd and has leg support
T14	CL (Cadet Large)	8-10	35 kg	1.3 m	C	This seat is exactly half way between the Ccd and the XScd T5 with leg support
T14	XScd (Extra small cut down)	11-12	40 kg	1.4 m	XS	First size for drivers normally coming out of Minikart or Cadets with leg support
T5	Ccd (Cadet cut down)	7-9	30 kg	1.2 m	C	This seat is the most popular Cadet Minikart seat
T5	CL (Cadet Large)	8-10	35 kg	1.3 m	C	This seat is exactly half way between the Ccd and the XScd T5
T5	XScd (Extra small cut down)	11-12	40 kg	1.4 m	XS	First size for drivers normally coming out of Minikart or Cadets
T11	C	11-12	35 kg	1.4 m	C	These seats are taller in the back than the T5 Ccd for tall but very thin drivers
T11	XS (Extra Small)	11-13	45 kg	1.5 m	XS	These seats are taller in the back than the T5 XScd
T11	XS WT (Extra Small Wide Top)	12-13	45 kg	1.5 m	XS	Wider version often used because of the extra thickness in rib protection
T11	Scd	13-14	55 kg	1.5 m	XS	Low back small for shorter heavy juniors
		Waist size	The waist size from jeans is used when sizing teenagers and adults			
T11	S	28	55 kg	1.6 m	XS	Popular Junior size. Also seems to be the seat used by many lady drivers
T11	S TB	28	60 kg	1.7 m	S	Tall back S for adult height very thin drivers
T11	S WH (Wide Hip)	30	62 kg	1.7 m	S	Tall back S for adult height very thin drivers with wide hip bones
T11	S WT (Wide Top)	28	62 kg	1.7 m	S	Wide top S with the seat widened to the Manetti size at the ribs
T11	Harvey	28	65 kg	1.8 m	S	A size 5 mm bigger than S adult height
T11	Manetti	30	68 kg	1.85 m	S	Very popular size for the adult professional driver. Often known as size 2
T11	Manetti WH (Wide Hip)	32	70 kg	1.85 m	M	A size to help drivers with wide hips that get bruised
T11	Manetti WT (Wide Top)	30	75 kg	1.85 m	M	Manetti with an MS size across the ribs
T9.5	Manetti	30	70 kg	1.9 m	M	Reclined seat for tall drivers
T11	MS	32	78 kg	1.85 m	M	7 mm bigger than the Manetti
T11	MS WT (Wide Top)	32	80 kg	1.85 m	M	MS with a ML top
T9.5	MS	32	78 kg	1.9 m	M	Reclined seat for tall drivers
T11	ML	34	80 kg	1.85 m	M	one cm bigger than the MS
T9.5	ML	34	78 kg	1.9 m	M	Reclined seat for tall drivers
T11	ML WH (Wide Hip)	36	85 kg	1.85 m	M	A size to help drivers with wide hips that get bruised
T11	ML WT (Wide Top)	34	85 kg	1.85 m	L	ML with an L top
T11	L	36	90 kg	1.85 m	L	1.5 cm bigger than the T11 ML
T9.5	L	36	90 kg	1.85 m	L	Reclined seat for tall drivers
T11	XL	38	100 kg	1.85 m	L	1.5 cm bigger than the T11 L
T9.5	XL	38	100 KG	1.85 m	XL	Reclined seat for tall drivers
T11	XXL	42	120 kg	1.85 m	XL	Bigger sizes are available in the old covered T7 but this covers most of the very largest drivers

## Choosing a rigidity

Tillett Racing Seats were the first to discover that seat stiffness affected lap times.

Changing the seat rigidity alters the amount of weight transferred to the outside front tyre, it is also partly responsible for the amount the inside rear wheel can lift through the corners. This gives you the ability to balance a chassis that may not be perfectly adjusted for the track surface, driving style or weather conditions.

Standard OEM seats supplied with many karts are made to a price and are often inconsistent in rigidity and strength. To make sure that the seat you buy this year will be the same size and rigidity as one you buy next, Tillett Racing Seats are made to set specifications. They are also unique in that they can be bought in four different rigidities. The common rigidities which are available in each shape are shown on the size / rigidity guide.

Size Guide	T11	T11 Hand laminated	T9.5	T5	T14
<p>This guide shows the available size and rigidity range of each shape</p> <p>Seats sizes highlighted in red are made in our special production process for accuracy and quality</p> <p>Black = Hand Laminated composite</p> <p>WT = Wide top version available WH = Wide hip version TB = Tall back version cd = Cut down low back version</p>	C	S TB	MS	Ccd	Mini
	XS	Manetti WH	MS	Ccd	Mini
	XS WT	ML WH	ML	CL	Ccd
	Scd		L	XScd	CL
	S		XL		XScd
	S WH		XL		XScd
	S WT				
	Harvey				
	Manetti				
	Manetti WT				
	MS				
	MS WT				
	ML				
	ML WT				
	L				
	XL				
	XXL				
Rigidities available in each shape					
	T11	T11 Hand laminated	T9.5	T5	T14
Ultra Flexible	T11VTi	T11VTi	T9.5VTi	T5VTi	T5VTi
Flexible	T11VG	T11VG	T9.5VG	T5VG	T5VG
Interim rigidity	T11t	T11t	T9.5t	T5t	T5t
Standard rigidity	T11	T11		T5	

**T11, T9.5, T5, and T14 shapes** - These are all made with our highly accurate mechanised process.

This system can manufacture lightweight, strong seats weighing within 5g of each other and the rigidity can be tuned finely to the requirements of current chassis designs. There are currently four rigidities for T11 and T5 and all four are relevant to the rigidities commonly used by the kart chassis in use today. The T9.5 and T14 can be ordered in three rigidities. These models are rarely required to be in the old standard rigidity, as more flexible seats suit current chassis design. All seats are also cut by robot to increase the accuracy of the product.

**Flexible VTi, and VG** - The flexible VG seats are used in many different classes and are a favourite with drivers of kart classes where limited torque from the engine mean that inner wheel drag can sap power. "V" seats, as they are called, are made of non-standard composite materials; They are lightweight, and we find that the VG rigidity is one of our most popular specifications for competitive drivers.

Using a similar construction, there is also the ultra-flexible VTi, and this is ordered by customers determined to get the most flexible seat possible. The two stroke Bambino/ Cadet / Minikart classes prefer this specification, but it is not widely used in adult sized karts.

**The “t”** – The “t” interim rigidity is currently the most popular stiffness with OK Junior, OK Senior, X30 and KZ and sits in between the Standard and VG rigidities. The small “t” will come after the shape code, For example T5t.

The T11t spec was used to win the 2022 KZ World Championship with Viktor Gustafsson at the wheel.

**Standard Rigidity** - This was standard stiffness for many years but has become the most rigid seat in the Tillett kart seat range. The extra hard R and XR are no longer offered as modern karts require the seat to flex. The standard rigidity model of each shape only has the letter T plus its number, for example the T11. The more rigid “Standard” seats are still used in four stroke classes where the engine provides ample torque and kart types where rigidity is not a factor.