



## Ninja Kart Specification 2020

1. **Definition:**
2. To provide children aged from 6 to 11 years of age (they must retire from the formula on the date of their 11<sup>th</sup> birthday) an entry into short circuit motor racing.
3. It is primarily a MSA go kart chassis based formula, but purpose built Ninja Kart chassis are allowed, Providing the chassis is constructed in accordance with MSA yearbook.
4. **Construction:**
5. It is required that the chassis is constructed from magnetic steel tubing, cross section free. The method of Welding/brazing is free but for all main chassis joints welding/brazing is obligatory - i.e. no clamping, sliding twisting members or torsional adjustments of any kind including bolt-in torsion bars are allowed. The use of any type of hydraulic or similar damping device for any purpose is specifically prohibited. Purpose built Ninja Kart's must be **constructed using 28 mm or 32mm O/D tube with min wall thickness of 2mm**, with symmetrical pivot/steering pick up points steelwork/components with no KPI adjustments. It is not permitted to run any off-set front or back.
6. The wheel lift when the car is placed on full lock will be allowed **a maximum tolerance of 5mm difference between each side.**
7. The floor pan **must be complete** in the driver's compartment, made out of alloy with min thickness 1.5 and max 2mm; a 50mm hole must be cut in the floor pan underneath the centre of the seat.
8. The Drivers lower body must be covered by the body panels (no open sides). The Left side v opening which is allowed for entry must be a minimum of 14" from the bottom of the chassis to the top of the Opening and must be covered the bar across must be 25mm o/d tube. All Body panels must be made of alloy with a min thickness of 1mm
9. The driver's seat must be a full containment **type** and must be positioned centrally in the car with strict attention being paid to its correct fitment, as set out by the manufacturer. No part of the driver's seat must be below the bottom of the chassis
10. **Axles.** Axle carriers must be symmetrical both sides no off set, Axles have to be 30mm hollow or solid type, The maximum overall track of the rear axle must be no greater than 1320mm (52") measured from outside of tyre to outside of tyre. The rear axle alignment will be measured from the inner edge of the rear wheel rim to the edge of the chassis rail which must be equal on each side. Front Stub axles must be a Minimum of 10mm back from the outside of the wheel rim not the tyre, Hollow stub axles are not allowed, scrutineers are advised to reject any car that has them fitted.
11. Front bumper must be flat vertical surface type and cover front wheels to stop wheel contact. The rear wheels must be protected from rear impact by a single hoop attached to the main chassis rail and roll cage and must cover the rear wheels.
12. The driver's feet (when pedals are depressed) MUST be a minimum of 12" (300mm) back from the front of the bumper.
13. **The Engine.** must be positioned centrally in the car behind the drive axle plus or minus 50mm, the engine Clamping tubes must be no higher than 64mm above the main frame, measured from the underside of the Main frame to the top side of the clamping tube, you must use the standard Honda GX160 type mounting clamps and frame.
14. **The roll cage.** must be constructed in such a manner that the driver is protected from side and head impact, minimum size tubing in the roll cage is 25mm/o/d x 3.0mm and must consist of four posts two hoops joined together with 5 cross bars, with both the front braces running from the front upright bars of the roll cage down to the outer front part of the main chassis. The minimum height of the roll-cage must be 813mm (32") from the bottom of the chassis to the lowest point of the top of the roll cage, whilst maintaining a minimum of a 100mm (4") clearance between the top of the child's crash helmet and the top and/or any part of the roll-cage. The halo will no longer be factored into this measurement; the rollcage must be welded to the main chassis. The Cross bars joining the roll cage are to be 25mm o/d x 3.0mm and fitted: **one just above the rear pod, one at rear of roof. One at front of roof, one at steering column height, one at front bumper height.**  
**"Note"all welds must be complete,**

**A diagonal safety bar 25mm o/d x 2.0mm must be fitted (off side) on side of roll cage  
Running from the steering support cross bar to terminate in front of the drivers  
Seat, the diagonal bar must be welded at both ends, as per roll cage rules.**

**If the Rollcage has no left side V opening as per Rule No 8 which is for entry another diagonal  
Bar will have to be fitted the same as the right side.**

15. You must use the go kart plastic side pods and front bumper, in addition a roof wing and rear engine pod must be used in the construction of your Ninja Kart.  
The only holes allowed in rear pod are for exhaust and pull cord, it's the scrutineer's discretion if the holes are a suitable size or too big there word is final.
16. **The roof wing.** must be of similar design to a Sprint Car, and must be fitted directly above the drivers head, it must be hinged at the rear of the roof with a **quick release closure mechanism fitted at the front, it must also have a secondary fixing for safety**, it must measure a minimum 28" x 35 max "body, with side plates of 8.5" x 32maximum and 16" x 32"maximum. The side plates of the wing **MUST** not be below the roll cage at any point. The scrutineer will pass a rod through the roll cage, from front to rear and this must not touch any part of the wing. Full access to the roll cage tubing must be achieved. The rear of the wing/**side plate** must be level with the centre of the rear axle
17. Minimum weight of ready to race Ninja Kart must be 105 kg (without driver). Car must make the 105 kg weight without refuelling after a race. (Regular weight checks will be carried out). Ballasting of **any type** is not permitted. Achieving the weight rule is the parent's responsibility.
18. Do not attempt the above construction if you have concerns as to your welding and construction ability, your child's safety will depend on your skills.  
Due to the scrutineer not being able to determine if a chassis has been repaired using a slip tube Technique or a deliberate attempt to provide the chassis with flex, such type of repairs is not Allowed, should the chassis be damaged to the extent it needs that type of repair then the chassis has come to the end of its use and needs replacing
19. **Safety Equipment.**
20. You must use a 5 point Ninja Kart type safety harness. Close attention to the manufactures Fitting and maintenance instructions must be observed at all times.
21. Neck Brace, round type only allowed, no u shaped brace are allowed, Fire retardant gloves, overalls and a balaclava must be worn, a head/ neck restraint System is highly recommended.
22. A high back full containment **type** seat must be fitted. The top headrest of the seat must be fully supported by a steel loop or bars to prevent any rearward collapse of the upper part of the seat– this may be adjustable using the minimum of 8mm bolts but must be secure at all times.
23. A Window net must be fitted to the right-hand (fence) side.
24. A Chain Guard must be fitted.
25. The use of quick release steering wheel hub is recommended.
26. A cut out switch must be fitted and clearly marked ON/OFF and be within easy reach by the driver.
27. **Helmets** Crash Helmets; the following standard of helmets are permitted: FIA8860-2010, FIA 8859 -2015, Snell EA2016, Snell CMR2007,Snell CMS2007, Snell CMR2016, Snell CMS2016, Snell SA2010, Snell SA2015 , SFI Foundation 24.1.The ECE R2205, in Fibreglass, Carbon or Ti-Composite form only. It is important that the helmet fits the driver correctly. Shatterproof goggles/visors must be worn; your helmet must display the current ORCi sticker.
28. Drivers must wear flame retardant racing overalls and these must be maintained in a clean and tidy condition and be clearly marked fire proof. N.B. If wet weather clothing is used this must be worn **IN ADDITION TO AND NOT INSTEAD OF** the regulation overall type clothing as described above.
29. A screen mesh with a max 2" square must be fitted, this may be cable tied in.
30. Mirrors are not allowed to be fitted
31. **Tyres**
32. Only the Duro Highline HF-242 BI and B2 slick- tyre can be used, these must remain as manufactured and may not be altered in any form, tyre softener, substances or additives are **NOT** permitted. When the race is declared a "wet race" by officials, then and only may wet tyres be used. The only wet Tyres permitted are the MojoW2 rain tyre set with **yellow green or White barcode UK spec.**

Due to the tyres changing pressure and size during racing when the tyre circumference is measured after racing the maximum tolerance allowed between the rear left tyre and rear right tyre is 10mm.

You may clean the tyres but you must **NOT** raise the kart of the ground and use the engine to drive the wheels in the pits at race meetings to clean the tyres as this has a potential to cause harm.

Rear wheels must be a minimum of 175mm deep, with both wheels being the same depth.

Front wheels must be a minimum of 120mm with both wheels being the same depth.

**Measurement of the width of rims is taken from bead to bead.**

No stagger is permitted under any circumstances, the o/d of the left and right must be the same.

33. Grades & Points, All promotions run a national monthly grading system, (white, yellow, blue, red & Champions). All drivers must display their current grade; this must be with a 50mm wide x500mm long stripe running along the front edge of their roof wing, champions may fit flashing Lights.
34. The highest grade achieved no matter what promotion you are registered with you have to start at highest grade all over.
35. Brakes. A single brake is required on the rear axle
36. **ENGINES.** The only engine eligible for use is the Honda GX160 supplied in sealed form by RPM whose Contact details are: **RPM Racing Engines, Lancaster Park, Newborough road, Needwood, Burton upon Trent, Burton-On –Trent, DE13 9PD. 01283575566. 07977430680**
37. You may change the oil and must use the correct amount of oil, **replace the STD as manufactured spark plug with the correct type and make NGK BPR6ES**, replace the paper airfilter/foam with a standard Honda paper air filter/foam. (Honda GX160 pattern filters/foam may be used). Any maintenance that requires removal of the seal, the engine must be returned to RPM so the seal can be removed for the maintenance to be carried out, upon completion of the works the engine will be resealed and fresh documents and seal details will be supplied to the record holder by RPM, it is your responsibility to ensure your scrutineer is aware of the changes, as in the event of an engine check, the scrutineer is advised to reject any engine that bears the incorrect seal number to that assigned to that engine or driver, it is a condition of your entry, you agree to allow the Promoter to swap your engine to that of another competitor for the duration of the meeting.
38. **Max number of engines is two** which the engine numbers and seal numbers must be logged in the driver's licence/logbook. Scrutineers are advised to note the seal number in the drivers log book at all meetings when scrutineering.
39. After scrutineering at all meetings; before changing/removal of the engine you must notify the scrutineer who will take the seal numbers of the engine removed and the new engine fitted in case of any further checks are necessary.
40. **Engine Claimer Rules**, it is a condition of your entry you agree to sell your engine to a fellow competitor upon a request being made to the scrutineer, the driver will then pay in cash to the scrutineer the full replacement cost of the engine from RPM. **To include VAT and admin fee of £10 to cover the cost of arranging the transaction. (The transaction can be arranged any time during the meeting and removal of the engine can only be done after the last race of the meeting)**
41. Axle and Drive Sprocket. Only a 70 tooth 219 pitch rear sprocket and 20 tooth 219 pitch clutch sprocket may be used using a 219 pitch Chain.
42. **Clutch.** Two clutches are allowed to be used: **NoramBE, & Maxtorque SS. both 6 shoe with stainless steel spring. This comes into effect on January 1<sup>st</sup> 2018**  
Clutch must engage at 2200 rpm when checked by the scrutineers.  
**Clutch must remain standard as manufactured.**
43. **Fuel.** No additives of any kind may be used; petrol purchased at the roadside pump may only be used. You may not alter the fuel tank in any way.  
**You must only use the large Honda type chrome fuel cap which is supplied with the engine with two breather holes, the breather holes must not be drilled out or enlarged.**  
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You must use the approved Ninja kart petrol tank cover which is available only from Miller Motorsport and Speedworth Fabrications, no other type is permitted
44. The main jet and Emulsion tube fitted in the engine by RPM.  
**Emulsion tube: PN 16166-24M-922**  
**Main jet: 0.695**
45. **The measurement for the fitting of the transponder is: Min of 28" from the centre of the front stub bolt (top) to the centre of the transponder bracket.**

The transponder can be fitted on the inside or outside of the Kart.

The use of race receivers and transponders are compulsory from January 2020 at all Tracks.

- 46 **IE. Unless these rules state you can do it, you CANNOT DO IT.**
47. **As from 1<sup>ST</sup> January 2020 all new built Ninja Karts have to be sanctioned by Spedeworth.**
48. **Contacts: Alan Rouse: 07775668211. Chief Scrutineer (Spedeworth)**