

209 Speedway Karters

Junior Cage Tillotson 225RS Kart Rules

AGE REQUIREMENT: Minimum age of 10 to 15. Age is subject to the Race Director's approval.

RULES & INTENT:

- A. The intent of this engine package is to provide a low-cost power source to attract new or budget minded karters.
- B. Birth Certificates are required for all minor drivers.

1.0 ENGINE RULES:

1.1 APPROVED ENGINES:

- A. *Tillotson TPP-225RS Gen 1 ONLY with untampered original factory seal.* See section 1.7 for rules

1.5 FUEL TANK:

- A. Non-Tech. It is recommended that for safety reasons a remote/floor mounted tank may be used.
- B. Tank must be securely fastened.

1.6 FUEL:

- A. 87 - 91 Octane ONLY.
- B. No methanol, No E-85, No fuel enhancers, or additives of any type.
- C. Fuel must pass any or all of the following test: -Visual; -Continuity meter; -Gravity test, - Gas, Alcohol and Water Mix.

- Maximum allowance is 10+ or - on the meter.

D. Fuel meter will be calibrated to Fuel: 87 - 91 Octane ONLY.

1.7 TILLOTSON TPP-225RS Gen 1 ENGINE RULES:

Section A: Engine

1. Tillotson TPP-225RS Engine:

- 1.1 The engine must remain as original from factory.
- 1.2 No after-market parts are permitted unless stated in TPP-225RS engine fiche document.
- 1.3 No machining or other modification of interior engine surfaces is permitted. Deburring, honing, grinding, polishing, sanding, media blasting or heat treatment is not allowed.
- 1.4 All parts are subject to visual comparison and must remain in substantially unaltered form when compared to an original part.
- 1.5 Engine and all components must comply with engine fiche document.

2. Sealing:

- 2.1 TPP-225RS engines must be fitted with the original engine ID Seal correlating with the engine ID number as supplied from the Tillotson factory. If an alternative seal number is identified the engine is not valid for competition.
- 2.2 Tillotson are the only sealing agent permitted to open the engines and re-seal as necessary unless there is an appointed sealing agent in the designated country.
- 2.3 Sealing agent must notify Tillotson immediately after changes are made to any engine seal numbers.
- 2.4 Two seal types which are currently in use:

2021 Production

2020 Production



2.5 Starting from Engine Serial Number 20110001 only the 2021 Production Engine seal is permitted. Any engine from this Serial Number using the previous model engine seal will not be allowed in competition.

3. Material Permitted to Manipulate:

The following areas of adjustment and cleaning are permitted within reason. Any effect that alters the integrity of the components or which in the sole opinion of the scrutineer extends beyond reasonable cleaning is prohibited.

3.1 Valve clearances may be adjusted, and valves may be cleaned; however, valves must remain with the factory specification of 45-degree angle only. Valve seats of additional angles and/or angles not comparable to the factory stock of 30-45-60 degrees are not permitted.

3.2 Spark plugs may be cleaned to remove carbon.

3.3 The piston and combustion chamber may be cleaned to remove carbon.

3.4 Damaged thread repair: It is permitted to use Heli-coil, or a similar thread repair insert as long as the part, after repair, is within the dimension, weight or measurements set on the engine fiche document.

4. Engine Components:

4.1 Engine ignition switch and wires must remain in original location. It is not permitted to alter the wiring.

4.2 It is mandatory to use the original Air filter, P/N: T-AIRFILTER-01. No modification to the filter element is permitted.

4.3 A breathable rain sock or protective shield may be attached for wet-weather competition. It is not permitted for the protective shield to create any ram-air effect.

4.4 Oil breather valve cover: It is recommended to connect the oil breather pipe to a catch container. The container must be vented to the atmosphere.

4.5 Pulse signal from the engine must be taken from the inlet manifold to the fuel pump connection. The length of the pulse hose is recommended not to exceed 28cm.

4.6 Only original Fuel Pump is permitted. P/N: FP-10A

4.7 It is recommended to use the latest clutch guard as supplied (T-CLU-GRD-01). It is permitted to modify the chain guard if necessary due to chassis design. A minimum of 2 bolts must be used to mount the supplied chain guard. The use of an alternative chain guard is also permitted.

4.8 A maximum of one in-line fuel filter is recommended to ensure that dirt and contamination within the fuel system does not affect engine performance. A fuel filter is not mandatory.

4.9 Blower housing / starter assembly must be original and properly installed. No taping, covering, or restricting of air of any part of this assembly is permitted.

4.10 Exhaust gasket must be original, and one and only one piece must be used. Use of silicone is permitted.

4.11 It is not grounds for disqualification if the exhaust nuts loosen during a race so long as the exhaust remains attached to the head with at least two nuts.

4.12 Use of an O2, EGT or CO2 sensor is permitted.

4.13 Exhaust protection is recommended. The exhaust should be completely wrapped with a non-asbestos insulation material or sleeve.

4.14 No aftermarket kill switch may be allowed and the OEM kill switch must be as supplied by manufacture.

5. Exhaust:

5.1 Exhaust Model TILL4625 (T-EXH-001) as supplied with the engine is mandatory for all competitions unless of special exemptions as requested by the organizing Club, Series or Track.

5.2 There are two versions permitted:

- 2020 Version: Silencer Welded to Header Pipe (RLV P/N:TILL4625)
- 2021 Version: Silencer (RLV P/N:EXF4125) mounted to Header Pipe (RLV P/N:EXF5200) by T-Bolt Clamp (RLV P/N:FAS6580).

5.3 If the track, club or organizing series wish to use an alternative exhaust option for reduced noise limits the following exhaust option is recommended:

- RLV P/N:EXF4110 (using Header Pipe RLV P/N:EXF5200 and Mounting Kit RLV P/N:MNT5910)

6. Clutch:

6.1 The original clutch is recommended. P/N: T-NORAM-CLU-21T

6.2 The use of one of the following alternative clutches is permitted.

- Noram GE Heavy
- Noram GE Light
- Noram GE Ultimate Heavy
- Noram Ultimate GE Light
- Max-Torque S-S
- Inferno by Hilliard Flame
- Inferno by Hilliard Fury
- Max-Torque Draggin Skin
- Premier Magnum Heavy
- Premier Magnum Light
- Premier Stinger
- Inferno by Hilliard Fire
- Inferno by Hilliard Blaze

6.3 All clutches must be original as supplied by the manufacturer and no tuning, modification or manipulating of material is permitted. The use of either 35 or 219 pitch is allowed for both clutch options.

6.4 It is recommended that the clutch is mounted inboard. It is permitted to mount the clutch outboard if necessary due to chassis design but doing so can put extra stress on the crankshaft.

7. Spark Plugs:

7.1 The original spark plug supplied with the engine is recommended. The following spark plugs are permitted for use:

- Autolite AR3910X
- E3-106

7.2 Sealing washer must be in place and remain original on the stock spark plug used. Temperature thermocouple is permitted once the sealing washer is not modified.

During technical inspections, a new stock part can be used as reference to compare a competitor's part for legality.

Section B: Carburetor

1. Tillotson FM22-1A Carburetor:

- 1.1 The carburetor must remain as original from the factory.
- 1.2 No after-market parts are permitted.
- 1.3 No machining or other modification of the surface finish is permitted.
- 1.4 Only the Tillotson supplied jets and slides are permitted for use.
- 1.5 All parts are subject to visual comparison and must remain in substantially unaltered form when compared with an original part.
- 1.6 Carburetor and all components must comply with carburetor fiche document.

Section C: Oil

1. Recommended volume of oil to be filled is 500ml. A minimum of 450ml of oil must be present in each engine after the race or will result in disqualification from the session, heat or final just competed in.
2. Any additives or substances mixed with the oil are strictly prohibited.
3. Failure of the DYE test will result in penalties decided by event organizers.

Section D: General Rules

1. Only Tillotson authorized personnel are permitted to make changes to the rules package, fiche documentation or technical specification.
2. Tillotson distributors and their dealers are not authorized to alter any technical specifications or competition rules relating to the engine.
3. Any alterations, corrections and/or addendums will be submitted to sanctioning bodies and posted at www.tillotson.ie and will become effective on the date specified in the posting.
4. Previous mid-season updates are to be considered void upon publication of an annual update.
5. Technical inspection tools are available for the convenience of checking components against the measures set on the fiche document. The tools are available from Tillotson.

Refusal to adhere to any of the rules set out will be investigated by the race officials and may result in disqualification from the race results.

PROTESTING:

- A. Any competitor that started the main event may protest any other competitor in the same class for legality within 15 minutes of completion of the main event.
- B. Protest must be made in writing to the assigned tech steward for that race, accompanied by a \$150 cash protest fee.
- C. If kart in question is deemed legal, \$100 will be awarded to the driver receiving the protest, if the kart in question is deemed illegal, \$100 will be returned to the protesting driver.
- D. See General Rules section 2.1 for more details.

2.0 GENERAL KART AND BODYWORK SPECIFICATIONS:

2.1 FRAME:

- A. Frames must be of kart configuration. Not to exceed 90" in overall length. **NO EXCEPTIONS.**

2.2 WHEELS & TIRES:

- A. Maximum 6" diameter kart type wheel.
- B. Tread tires only.
- C. No Chemical "preps" are allowed on the tire at any time, tire may be washed at the track with water only.
- D. Tires must be dry before coming to the grid.
- E. No grinding, sipping or grooving allowed.
- F. Right rear tire minimum durometer reading 48 @ 400 lbs., Right rear tire durometer open @ 425 lbs.

2.3 WEIGHT:

- A. Kart and driver 320 lbs. with a minimum durometer of 48 on RR tire.
- B. Specified karts and drivers must go to scales after A main event or they will be DISQUALIFIED and will forfeit any money or points for that event.
- C. All weights added to the kart must be securely fastened to the kart with a minimum 5/16-inch diameter bolt that is double nutted, or safety wired.
 - If weight is attached to the seat area a large “fender” washer must be used.
- D. Kart Weight must be displayed on the engine shroud or top plate to aid track officials at the scales.
- E. Any kart that loses a weight will be disqualified from that session and lose points/position from that session.

2.4 BODYWORK:

- A. All bodywork components must be constructed of high strength plastic, fiberglass, or advanced composites. NO Wood.
- B. No metallic materials to be used for tail pieces or nosecones.
- C. Bodywork must not obstruct the driver’s forward or peripheral view.
- D. Side panels may be constructed of aluminum, high strength plastic, fiberglass, or advanced composites.
- E. Side panels are recommended to be no more than 400 square inches.
- F. If a side panel is used on the motor side of the kart that side panel shall require NO tools to remove panel.
- G. No sharp edges or protruding parts.

2.5 BUMPERS AND NERF BARS:

- A. All karts must have front bumpers that adequately protect the driver’s feet.

- B. Karts must have nerf bars that adequately protect the kart from side impact and will prevent karts from “hooking” wheels.
- C. No side bars may extend past the outermost edge of the tires.

2.6 CAGE: NO Wings

- A. Cages are mandatory and must be for the purpose of protecting the driver, not just for appearance or wing mounting.
- B. Minimum metal pipe standards for all roll cages are; $\frac{3}{4}$ ” x .083” wall chromoly, 1” x .065” wall chromoly, or 1” x .083” wall steel.
- C. Cage must be securely fastened to the frame in 4 spots with grade 5 or better fastening hardware.
- D. No side bars, other than the regular nerf bar, may extended past the outer edge of the tire.
- E. The drivers body must be completely inside of the roll cage.
- F. Roll cage must have a 2” minimum clearance above the drivers head.
- G. Standard lay down seat or aluminum high back seats may be used . Aluminum high back seats must reach the center of the drivers head and not have excessive holes. The seat must be securely fastened to the frame. Any suspended seat must have a safety cable attached to the frame.
- H. Fuel lines must have a minimum 2” clearance from exhaust systems and shall not be above the exhaust. If a fuel line must be installed closer than 2” from the exhaust it shall be adequately insulated.
- I. Fire Retardant 1 piece or 2-piece race suits is MANDATORY on cage karts.

2.7 RESTRAINTS:

- A. All karts must be equipped with a minimum of a SFI 16.1 (or FIA equivalent) approved seat belt and shoulder harness restraint system.
- B. Shoulder harness must be mounted to limit forward body motion independent of the seat.

- C. Lap belt may be mounted to the frame or directly to the seat and routed securely through the seat. Cut or frayed restraints will not be allowed.
- D. Arm restraints are mandatory.

2.8 BRAKES:

- A. Hydraulic brakes are mandatory.
- B. Brake rotor must have a guard “wolf plate” to protect the seat from contacting the brake rotor in the event of a seat mounting failure.

3.0 TECH:

3.1 PROCEDURES:

- A. After the main event the top 5 karts will proceed to the designated tech area, at this point the kart will be considered “impounded”.
- B. Karts will be inspected in their finish order.
- C. Drivers/Crew will be required to assist with removal of parts, drain their oil, and to help facilitate the technical inspection on their kart.
- D. See General Rules section 5 for more details.

3.2 TECH ITEMS:

- A. Post Tech items will include but are not limited to ALL sections of the rules.
- B. Tire Durometer:
 - Right Rear tire must read a minimum of “48” on the house durometer after given adequate time to cool. The Right Rear durometer reading may be taken on the hot grid prior to leaving for the track.
- A. Carburetor air leak and Fuel.

4.1 RACE PROCEDURE & SAFE DRIVING:

- A. Competition is expected to proceed without you endangering yourself or others.
- B. If in the judgment of the race official, a driver bumps, crowds, or pushes another driver, the offending driver may be disqualified.
- C. A one-way radio receiving device (i.e., Raceceiver) is mandatory for all classes (1 race grace period only).
 - Drivers must have their unit on and working at all times while on hot grid and the track.
 - Failure to observe this rule shall result in your kart not being scored and/or additional penalties.
 - No 2-way radio communication between the driver and crew.

4.2 PENALTIES:

- A. Any kart found in blatant tech or protest violation may lose all points, prizes and recognized finishing position for the event, as well as earned points towards the championship up to that point in time.
- B. Certain nonperformance rule infractions may be handled with a written warning and correct by next race waiver per the governing bodies/tech steward's discretion.
- C. Although the rules are comprehensive, they may not address every situation.
- D. If the rules do not specify you can do something, assume that you cannot until clarified.
- E. The Race Director's decision is final.