



SIDECAR REGULATIONS 2022

INTERNATIONAL ISLE OF MAN TOURIST TROPHY RACES

ISLE OF MAN TT RACES

REGULATIONS

SIDECAR TT TECHNICAL REGULATIONS 2022

Sidecars TT machines must comply with the following requirements.

1. ENGINE TYPES

- Only serial production engines are permitted for this class and can be of the following type:
 - Maximum 600cc, 4 stroke, 4-cylinder, production based.
 - Maximum 675cc, 4 stroke, 3-cylinder, production based.
 - Maximum 900cc, 4 stroke, parallel twin cylinder, production based.
- V-Twin engines are not permitted.
- Rotary engines are not permitted.
- Turbo charging and Super charging is not permitted.
- Over-boring is not permitted. Standard bore size for the chosen production-based engine must remain unchanged.
- Crankshaft stroke must be as found on the chosen production-based engine must remain unchanged.

ALLOWED INDUCTION SYSTEMS

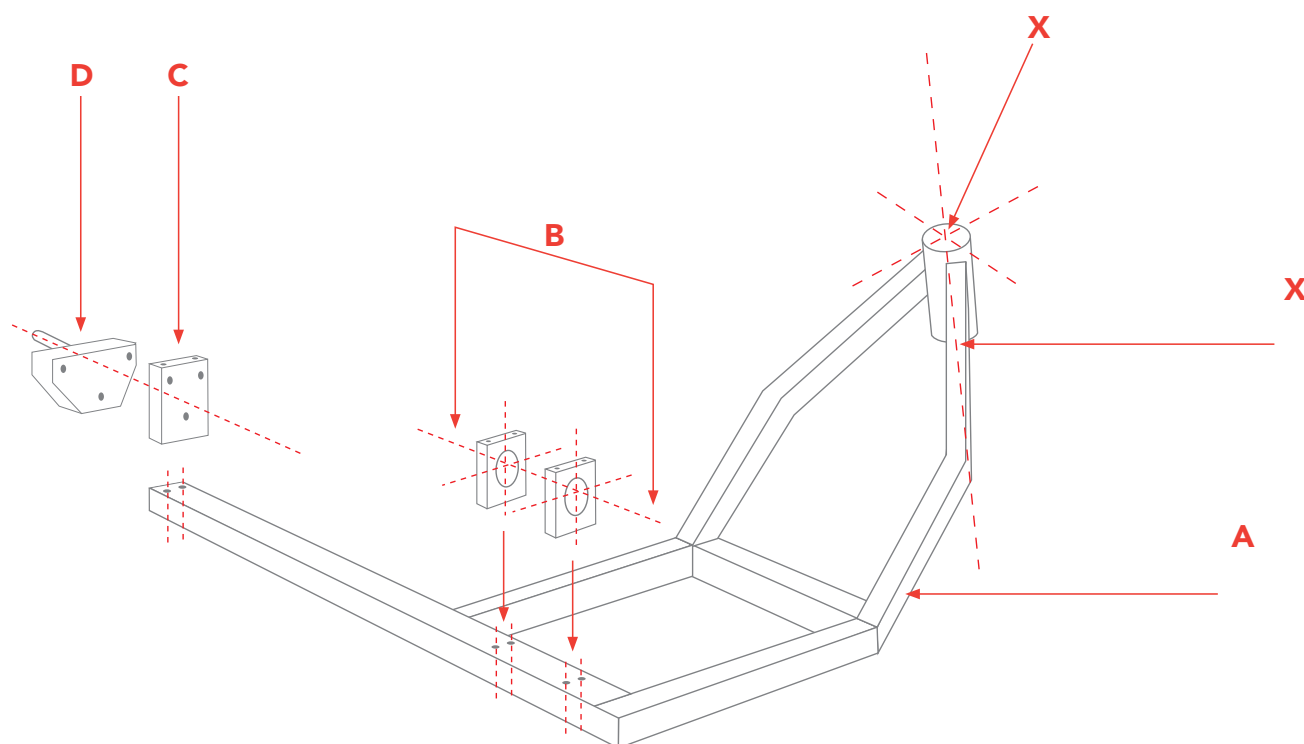
- Carburettor engines are not permitted.
- Fuel injection engines: Fuel injection systems are permitted using only the throttle-bodies for the engine brand and type utilized.
- Primary Butterfly cannot be changed or modified. Where fitted a secondary butterfly or slide may be locked in the fully open position or removed.
- Any fuel pump may be used.
- Any fuel pressure regulator may be used but the fuel pressure must remain as homologated for the engine make and type used.
- The Engine Control Unit (ECU) and wiring loom is free.
- Gearbox and gear change mechanism is free. This includes gear ratios and number of gears fitted.
- Primary gear ratio is free.
- Crankshaft is free but the stroke must remain as found on the homologated machine.
- The Clutch is free. This includes the use of a slipper clutch. Clutch may be wet or dry type.
- Where practical, all external oil gallery plugs, pressure / temperature sensors containing positive oil pressure must be correctly torqued and secured with lock wire or some other form of security devise. As an absolute minimum all external plugs must be installed with the use of a high strength thread locking agent and paint marked to verify that this is the case.

- All external engine oil drain plugs must be correctly torqued and be security lock wired.
- Any external oil lines containing positive oil pressure must be of a suitable material and construction. All oil line fasteners should be lock wired or at the very least be secured with a high strength locking agent and paint marked to verify that this is the case.
- External oil filters (including those fitted with a drilled HEX) must be secured using a suitable hose clamp (Jubilee type) and secured with lock wire in such a way as to prevent it from undoing.

2. GENERAL CONSTRUCTION

- The Sidecar may be placed either side of the motorcycle. Hinged sidecars and steerable sidecar wheels are forbidden. Neither the competitor nor passenger may be attached to the machine. Remote steering linkages and the use of articulated joints in the steering mechanism are not allowed. By definition an articulated joint is one allowing movement in more than one plane.
- The three road wheels may be disposed as to give two or three tracks.
- If three tracks are made then the centres of the tracks of the motorcycle shall not be more than 75mm apart.
- A passenger must be carried and must always be protected from the road wheels and both primary and final drives either by mudguard or some other means.
- The main frame (See Figure 1A) must consist of a minimum, of a steering head, a frame to accommodate the engine, and a main spar to the sidecar wheel, which will be made from good quality steel tube.
- The tubing used for the construction of the frame may be of a circular or non-circular section. If circular, the outside diameter shall not exceed 101.6mm. If non-circular, the maximum cross section shall not exceed 101.6mm, measured at right angles to any flat face.
- These three components must be permanently fixed by welding or brazing.
- The rear swinging arm outer pivot housings (See Figure 1B) may be detachable from the main frame, the pivot housings must be made from either steel or a suitable solid aluminium alloy billet. The finished article if made from aluminium alloy must be hard anodised. The use of castings for the outer pivot housings is forbidden.
- The sidecar wheel upright or flange plate (See Figure 1C) at the end of the main sidecar wheel spar may be detachable. The upright flange plate must be made from either steel or a suitable solid aluminium alloy billet. The finished article if made from aluminium alloy must be hard anodised, while any supporting tie rods to the upright or flange plate must be made of steel. The use of castings for the sidecar wheel upright or flange plate is forbidden.
- The sidecar wheel stub axle housing (See Figure 1D) may be detachable from the sidecar wheel upright/flange plate; the housing must be made from either steel or a suitable solid aluminium alloy billet. The finished article if made from aluminium alloy must be hard anodised. The use of castings for the sidecar wheel stub axle housing is forbidden.
- Reinforcement of the steering head is allowed. The steering head may be fully boxed in to a maximum of 305mm, measured from any point between the top and the bottom of the steering head spindle centre line (See Figure 1 X.X). Should any lightening or inspection holes be added to the "Fully Boxed In" section, they will be deemed as still "Fully Boxed In" and not open.
- The front forks are to be either a leading / trailing fork, or links with the wheel equally supported on each side. The construction of the front forks and yokes must be made of good quality steel and must be either welded or brazed during construction. The lower loop must be made of good quality steel.

- Minimum suspension travel to be 20mm.
- The rear swinging arm must be made of good quality steel or aluminium, single sided swinging arms are allowed, and must have minimum of 20mm of travel in a single plane. The rear swinging arm pivot spindle must be 90 degrees to the fore and aft centre line of the rear wheel. The swinging arm must either be welded or brazed during construction; the dimensions for the swinging arm are free. Wishbone type swinging arms fitted to monocoque chassis are forbidden.
- The use of composite construction is forbidden with the exception of the sidecar platform, i.e. aluminium or carbon fibre skinned honeycomb.
- The use of titanium in the construction of the frame, front forks, handle bars, swinging arm and wheel spindles is forbidden.
- For wheel spindles, the use of light alloys is also forbidden.
- Under trays must be detachable.
- Monocoque construction is forbidden.

FIGURE 1: GENERAL CONSTRUCTION


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|---|--|
| A Main frame | D Sidecar wheel stub axle housing |
| B Rear swinging arm outer pivot housings | X Steering head spindle centre line |
| C Sidecar wheel upright or flange plate | |

3. ENGINE POSITION

- The engine must be positioned in such a way that the centre line of the engine (by definition a position midway between centre lines of outermost cylinders) shall not exceed 160mm beyond the centre line of the rear wheel of the motorcycle.
- The engine must be positioned behind the steering head and in front of the driver.
- The drive must be transmitted to the road through the rear wheel of the motorcycle. An engine positioned behind the competitor and in front of the rear wheel is forbidden.

4. DIMENSIONS

- Weight (Minimum) 136.5kg. without fuel The addition of ballast to reach this weight is forbidden.
- Width (Overall Maximum) 1875mm.
- Wheelbase (Maximum) 1651mm.
- Track 800mm minimum, 1105mm maximum. The distance is measured from the centre of the track left by the rear wheel to the centre of the track left by the sidecar wheel.
- Height (Overall Maximum) 800mm.
- The ground clearance measured over the entire length and width of the vehicle race ready, fully loaded with competitor, passenger and fuel must be not less than 65mm with the handlebars on in a straight position with a tolerance of 3mm. No device is permitted to reduce the 65mm ground clearance during the course of the event.

5. STREAMLINING AND BODYWORK

- The streamlining must be easily detachable for Technical Inspection. Aerofoils or spoilers are not permitted on streamlining.
- Whatever the position of the handlebars, there must be a space of at least 20mm between the streamlining and the ends of the handlebars or any other parts of the steering mechanism or front wheel.
- A solid and effective protection must be fitted between the competitor and the engine, this protection must prevent direct contact between the competitor's body or clothing and escaping flames or leaking fuel or oil.
- The fairing must be mounted in such a way as to ensure the integrity of the whole installation in the event of failure of any individual mounting.

6. PASSENGER PLATFORM

- Minimum dimensions 800mm by 300mm measured 150mm above the platform.
- The orientation is free.
- DRIVER: The competitor in the normal riding position must be completely visible, with the exception of the arms, legs, and feet from above.
- PASSENGER: The passenger must be able to lean out to either side of the sidecar, for this purpose the vehicle must be fitted with suitable handholds for the passenger to hold on to when leaning out. The hand-holds must be of the closed loop type, a single projection hand-hold is not permitted.

7. AIR INTAKES

- Cooling air intakes must be so constructed that there is NO forward projection/protrusion to catch or foul in the event of accident.

8. OIL AND COOLANT CONTAINMENT

- In the area directly below the engine, the oil containment tray must be constructed to hold, in case of an engine break down, at least half of the total oil and engine coolant capacity used in the engine (minimum 5 litres).
- The surrounding edges of the tray must be at least 50mm above the bottom of the tray, measured vertically from the tray oil containment material must be fixed to this tray and the sides.
- The frontal edge of the oil tray wall must be extended upwards to arrive just below (within 20mm) of the exhaust ports of the engine.
- The rear face of the tray should be to the height of the swinging arm and the minimum width should be equal to the width of the rear tyre.
- The gear lever must exit via a rubber boot or two rubber curtains.
- The chain slot must have a rubber/brush curtain fitted.
- Holes for the engine mounts (hangers) must be sealed.
- From a vertical view, the engine must be located completely inside the oil tray platform.
- The rear wheel must be protected from any possible oil spray. To make this protection, the engine and rear wheel compartment must be separated. This separation must be created by installing a solid divider (wall) running from the top of the inside of the bodywork to the bottom of the oil tray. This divider (wall) must overlap the rear edge of the oil tray down to the bottom.
- All machines must use this tray.
- All sidecars shall attach oil absorbent materials of no less a quality than 3M Product number T156 or CEP Sorbents product number CEP-EP100.
- This material shall be securely fixed to the following areas of the sidecar:
 - The entire oil-tray, both the bottom and the inside walls of the same. The volume of material used in this area, according to the manufacturers specifications, shall absorb not less than 3 litres of oil.
 - Any bodywork directly covering the engine.
 - In the event that oil is absorbed by the material, it must be replaced before the next track session.
- The material must be attached in such a way that it should be easily replaced, yet must not become dislodged whilst on the track, and its effectiveness is not inhibited, i.e. if an adhesive is used it must not clog the material, causing it to lose its absorbent properties.
- All absorbent material shall be non-flammable by design.
- Oil-lines containing positive pressure, if replaced, must be of metal reinforced construction with swaged or threaded connectors and where practical be lock wired for security.

- Oil coolers must not be mounted on or above the bodywork of the sidecar.
- The location of the oil tank and the oil cooler should be placed in a location where it is least likely to be damaged in an accident.
- Ignition pick-up cover inspection plugs must be lock wired or have a suitable security device fitted to prevent leakage/loss.
- Clutch cover inspection plugs must be lock wired or have a suitable security device fitted to prevent leakage/loss.
- All external engine oil drain plugs must be correctly torqued and be security lock wired.
- Where practical, all external oil gallery plugs, pressure / temperature sensors containing positive oil pressure must be correctly torqued and secured with lock wire or some other form of security device. As an absolute minimum all external plugs must be installed with the use of a high strength thread locking agent and paint marked to verify that this is the case.
- Any external oil lines containing positive oil pressure must be of a suitable material and construction. All oil line fasteners should be lock wired or at the very least be secured with a high strength locking agent and paint marked to verify that this is the case.
- External oil filters (including those fitted with a drilled HEX) must be secured using a suitable hose clamp (Jubilee type) and secured with lock wire in such a way as to prevent it from undoing.

9. AIRBOX

- An airbox must be used with all engines.
- The airbox intake sizes are restricted as follows:
 - If 1 intake is used a maximum of 103mm internal Diameter is permitted.
 - If 2 intakes are used a maximum of 73mm Internal Diameter per intake is permitted or equivalent area if none circular section(s) are used measured within 50mm of the point of entry into the airbox.
- The airbox must completely close around the induction bell-mouths.
- The carburettors or throttle-bodies may be entirely within the airbox.
- The engine must have a closed breather system.
- The engine breather must be connected and discharge in the airbox.
- The airbox must cover and collect fluids discharged from the bell-mouths.
- The airbox must be constructed in such a way as to prevent any oil discharged in the airbox from spilling on the track.
- This oil containment must hold a minimum of 1000 cc of oil.
- The airbox must be sealed to prevent spillage of oil or fuel.

10. OIL CATCH TANKS

- Motorcycles must have a closed breather system. The oil breather line must be connected and discharge into the airbox.

11. WHEELS

- The minimum diameter of an inflated tyre must be 400mm. All wheels must be of metal construction, any modification to the rim or the spokes of the original cast composite wheel as supplied by the manufacturer is prohibited.

12. STEERING

- Steering of the front wheel must be accomplished by non-adjustable handlebars securely fixed to the forks or yokes of the motorcycle. They must be secured to steering members turning the front wheel and its supports directly with no intermediate push or pull rods. Handlebars and all steering bearings must be located on the sprung portion of the front suspension.
- Any form of remote steering is forbidden.
- Handlebar width 450mm minimum.
- Steering lock angle each side of straight ahead position to be 20 degrees minimum, measured at the headstock.
- Whatever the position of the handlebars the front wheel must never touch the streamlining.
- Handlebar clamps must be carefully radiused and engineered so as to avoid fracture points in the bar.

13. THROTTLE CONTROLS

- Throttle controls must be self-closing when not held by the hand.

14. CONTROL LEVERS

- All handlebar levers (clutch, brake etc.) must be ball ended. The ball diameter must be as least 19mm permanently fixed and forming an integral part of the lever.

15. BRAKES

- All three wheels must be braked.
- The brake system must consist of:
 - One main system with at least two circuits operating separately, one of the circuits must operate on at least two of the three wheels.
 - If one circuit fails the other must work efficiently.
 - An emergency system operated by a handlebar lever with a simple circuit operating on either the front or rear wheel of the motorcycle.
- Only ferrous discs allowed.

16. TYRES

- For all meetings the use of slick tyres is permitted. The wheel rim shall be at least 254mm in diameter and 64mm in width. The diameter of the tyre must be as least 400mm and the width 100mm, maximum front tyre width 220mm.
- The surface of a slick tyre must contain two or more hollows at 180 degree intervals or less, indicating the limit of wear on the centre and shoulder areas of the tyre. When at least two of these indicator hollows become worn on different parts of the periphery, the tyre must no longer be used.

17. MUDGUARDS AND WHEEL PROTECTION

- The rear driving wheel must be covered down to the level of the sidecar platform on the nearest side to the sidecar wheel.
- The sidecar wheel must be enclosed from the sidecar platform.

18. EXHAUST PIPES

- Exhaust fumes must be discharged in a manner so as to not raise dust, foul the tyres or brakes or inconvenience a passenger or any other driver. The furthest extremity of the exhaust pipe must not exceed a vertical line drawn at a tangent to the rear edge of the sidecar platform. The exhaust exit pipe must be no less than 45 degrees to the vertical.
- On the side opposite a sidecar the exhaust pipes must not extend beyond the streamlining. On the other side the exhaust pipes must not extend beyond the width of the sidecar.
- Exhaust pipes must be fitted/positioned so that it is impossible for them to become entangled with another machine.

19. FUEL TANK

- Fuel tanks must be sufficiently independently protected from the ground. A non-return valve must be fitted to the petrol tank breather pipe. This pipe must discharge into a suitable catch tank, minimum capacity 500ml.
- The fuel filler cap must be fitted in such a way that it does not protrude from the fairing and cannot be torn off in an accident.

20. BATTERY

- The battery must be covered in such a way that neither the driver nor the passenger can come into contact with the battery or its contents.

21. CUT-OUT DEVICE

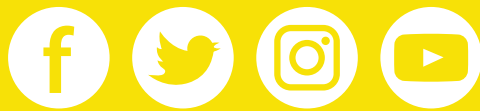
- An ignition cut-out must be fitted to operate when the driver leaves the machine. This cut-out system must interrupt the primary circuit and must be wired for both the supply and return current. The cut-out must be placed as near to the centre of the handlebar as is practical and must be operated by a non-elastic string of adequate length and thickness and strapped to the driver's body. A spiral cable (similar to that of a telephone wire) of maximum 1m extended length is permitted.
- Any electric fuel feed pump must be wired in such a way as to cut out if the engine cut-out device is operated.

22. RED SAFETY LIGHT

- Sidecars must be equipped for the duration of the event with a functional rear-facing red anti-fog lamp, measuring a minimum of 30 sq.cm and producing a minimum of 1500 MCD continuous light. Pulsating lights are not permitted.
- The light must be installed at least 100mm off the ground, located in the area between the back wheel and the sidecar platform. The light must be mounted on a part of the suspended body, (not on any unsuspended parts) and ensure no obstruction from the fairing and/or the passenger.
- The red safety light must be switched on at all times during every practice/race session.

23. REAR VIEW MIRROR

- External rear view mirrors having suitable dimensions and mountings are optional.



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