‘MiniTwins’ Championship Regulations 2024

Final Version - 27/02/24

All items not mentioned in the following articles must remain as originally produced by the manufacturer for the homologated machine. Everything that is not authorised and prescribed in these rules is strictly forbidden.

Each club may appoint Eligibility Officers for the class. They will refer to the organisers of the series for the definitive interpretation of these regulations. This decision will be final.

a. Any four-stroke twin cylinder motorcycle originally sold for road use with a water-cooled engine of up to 650cc, or an air cooled engine of up to 820cc, may be used provided it adheres to the 72 SAE hp power limit for the series.

b. Older models may be updated with genuine parts found on a newer version of the same model and newer models may use parts from older machines. All parts must be used as intended for the homologated machine and in accordance with the manufacturer’s recommendations.

c. All machines must comply with the machine preparation regulations as set out in the 2023 ACU handbook for road race meetings.

d. In order to control costs, machine damage may be repaired in a manner agreed with the series Eligibility Officer and the Chief Technical Steward of the club. No advantage may be gained from such modifications.

e. All machines must function on normal unleaded fuel available from public service stations with a maximum 102 octane in adherence with ACU standards. E85 Bio-Fuel from public outlets is permitted.

1 Frame and Swing Arm

1.1 Frame and swing arm must remain as originally produced by the manufacturer for the homologated machine. Nothing may be added or removed from the frame body.

1.2 Rear sub frame may be replaced or modified. The sub frame may only be altered if it was originally designed to be unbolted from the frame body.

1.3 Refinishing of frame or swing arm to a suitable standard is acceptable.

2 Suspension

2.1 Forks must remain as originally produced by the manufacturer for the homologated machine with the exception of the following:

- 2.1.1 Original internal parts of the fork may be modified or replaced. After market damper kits or valves may by installed. Fork springs may be replaced.

- ~~2.1.2 Fork caps may be modified or replaced to provide external adjustment for preload and/or compression only.~~

- **2.1.2 The choice of fork caps is free.**

- 2.1.3 Fork stanchions must retain the original finish. No additional surface treatments are allowed.

- 2.1.4 Refinishing of the outer fork tubes to a suitable standard is acceptable.

2.2 Steering damper may be added although it cannot act as a steering lock device.

2.3 Rear suspension unit can be changed or modified. The original attachment to the frame and swing arm must be as homologated.

2.4 The rear suspension linkage must remain as originally produced by the manufacturer for the homologated machine.

3 Wheels

3.1 Wheels must remain as originally produced by the manufacturer at the time of sale into the dealer/distributor network for the homologated machine except for the following:

- 3.1.1 Wheel bearings and spacers may be modified or changed where required.

- 3.1.2 The speedometer drive may be removed and replaced with a spacer.

- 3.1.3 Refinishing of wheel rims to a suitable standard is acceptable.

3.2 Front and rear wheel axles must remain as originally produced by the manufacturer for the homologated machine. Modifications can be made in order to accept safety retention devices.

4 Brakes

4.1 Front and rear brake discs may be changed but must fit the original calliper and mounting. The outside diameter must remain as fitted to the homologated machine. Only ferrous materials are allowed for brake discs.

4.2 Front and rear brake callipers, including mount, carrier and hanger, must remain as originally produced by the manufacturer for the homologated machine.

4.3 Front and rear master cylinders must remain as originally produced by the manufacturer for the homologated machine. Front and rear brake fluid reservoirs may be changed with aftermarket products.

4.4 Front and rear hydraulic brake lines may be changed. The split of the front brake lines for both front brake callipers must be made above the lower fork bridge (bottom yoke).

4.5 Front and rear brake pads may be changed.

5 Tyres

5.1 All tyres must be road legal unless the race is declared wet where full wet tyres may be used. Slicks and intermediates are not permitted.

6 Controls

6.1 Footrest and foot controls may be replaced or relocated but brackets must be mounted to the frame at the original mounting points.

6.2 Handlebars, hand controls and cables may be altered or replaced (does not include brake master cylinder) from those fitted to the homologated motorcycle.

6.3 Engine starter switch and electric stop switch must be located on the handlebars and must be operational at post race technical inspection.

7 Fairing and Seat Unit

7.1 Fairing, mudguards and seat unit may be altered or replaced and need not conform to the homologated shape as originally produced by the manufacturer.

7.2 Windscreen, if fitted, may be replaced with transparent material only.

7.3 The original instruments and fairing brackets may be removed or replaced.

7.4 The petrol tank must remain as originally produced by the manufacturer for the homologated machine although it may be refinished if required. The position of the tank mounting points on the frame must remain as standard.

7.5 Race numbers must be black on a yellow background and displayed on the front of the bike and on both sides of the seat unit. Background and number sizes as per the ACU handbook.

8 Wiring Harness and Battery

8.1 The wiring harness may be altered or replaced. Additional wiring may be added where required.

8.2 No wiring or electronic equipment may be added or modified to alter the ignition or engine timing characteristics from those of the homologated machine with the exception of the following:

- 8.2.1 The use of flash memory (flash RAM) for fuel injection mapping is allowed where the capability exists within the homologated motorcycle. An additional control unit to change the fuel mixture may be installed and must be fitted to the original connectors. The unit must not be able to perform any other function.

- 8.2.2 The side stand switch, and related wiring, may be disabled or removed.

- 8.2.3 Any electrical switchgear located on the handlebars or front sub frame may be unplugged or removed as required. Engine starter switch and electric stop switch must be fitted.

8.3 All original electrical equipment not directly related to road use must be fully incorporated in to any modified wiring loom, including generator, CDI, regulator and starter motor.

8.4 All original connections to the CDI must be retained and maintain their normal use.

8.5 The size and type of battery may be changed and / or relocated.

9 Radiator and Oil Cooler

9.1 The original radiator and oil cooler, if fitted, must remain as homologated. Pattern radiators may be substituted but must be the equivalent weight, size and overall specification, including retaining the same mounting points and position as the homologated equipment.

9.2 Radiator hoses may be replaced with those of a similar internal diameter.

9.3 Oil lines may be modified or replaced. Oil lines containing positive pressure, if replaced, must be of metal reinforced construction with swaged or threaded connectors.

9.4 Protective meshes may be added in front of the oil and/or water radiator(s).

10 Air Box / Carburation / Fuel Injection

10.1 The air box may not be altered or replaced from that fitted to the homologated motorcycle.

10.2 The air filter element must be fitted but may be replaced with an aftermarket item.

10.3 The air box inlet rubbers may not be removed or altered.

10.4 Carburettors must be the standard units as on the homologated model. Throttle bodies for fuel-injected machines must be as on the homologated model.

10.5 Carburettor jets and needles may be replaced. Resizing of the air metering holes in CV carburettors slide control is permitted. No other alterations are permitted to the air intake or carburation system.

10.6 Bell mouths may not be added, altered or replaced from those fitted to the homologated motorcycle.

10.7 The fuel injection management system may not be altered or replaced other than the remapping of internally stored fuelling maps.

11 Engine

11.1 Cylinder head, camshafts, cam sprockets, crankshaft, rods, pistons, valves, cylinders and all other engine components must be as homologated. No internal engine, gearbox and clutch parts may be altered or replaced with the exception of the gearshift detent spring, the clutch friction and drive plates and the clutch springs.

11.2 Polishing and lightening of engine parts is not permitted. Balancing or gas flow modifications normally associated with individual tuning are not permitted.

11.3 Compression ratio of the engine must remain as homologated.

11.4 Camshaft timing must remain as homologated.

11.5 No other engine tuning or alteration from the homologated standard is permitted.

11.6 The crankcase/gearbox casing, clutch and generator covers may be protected by additional means, e.g. protective covers made of stainless steel or carbon/Kevlar composites.

11.7 The thermostat may be removed from the housing to aid cooling, if required.

11.8 The maximum horsepower limit for the series is 72 hp SAE measured at the rear wheel. Any machine found to exceed this figure on a dyno selected by the club may be excluded from the results.

11.9 The exhaust air bleed system may be removed. If so, any external fittings on the cam cover(s) must be blocked off or may be replaced by plates.

12 Transmission

12.1 Additions to gearbox or selector mechanism, such as quick shift systems, are not allowed.

12.2 Clutch springs, friction and drive plates may be replaced.

12.3 Clutch baskets must remain as homologated. The use of slipper clutches is prohibited unless fitted as standard.

12.4 Gear shift detent spring may be replaced with a heavy duty item.

12.5 Front and rear external drive sprockets, chain pitch and chain length can be changed.

13 Ignition and Engine Control System

13.1 Ignition and engine control system (CDI) may not be modified or changed. All units must remain fully interchangeable with available control units.

13.2 No modifications or alterations, whether electronic or mechanical, may be made to the motorcycle to alter the engine ignition timing.

13.3 The engine control system (ECU) must be either:

i) The original system as homologated, with no change of software.
ii) The original system (with the production ECU and no change of software) with an approved external control unit to alter the fuel mixture only. The unit must not be able to perform any other function.
iii) The original system as homologated, with updates to the flash memory only, where the capability exists within the homologated motorcycle, to adjust the trim for the standard fuel injection mapping.

13.4 No changes are permitted to the original ECU software, including updating or modifying the standard fuel injection mapping, or any other reflashing or modification of standard internal functions.

14 Generator

14.1 The generator, starting system, starter crank gear and starter shaft may not be altered, replaced or removed from those fitted to the homologated motorcycle.

15 Exhaust System

15.1 Exhaust pipe and silencers may be altered or replaced from those fitted to the homologated

motorcycle. This must adhere to the maximum noise regulations as set out in the ACU handbook.

15.2 The number of final exit(s) to the exhaust may be altered from that of the homologated machine.

15.3 Wrapping of exhaust systems is not allowed except in the area of the rider's foot or an area in contact with the fairing for protection from heat.

16 Fasteners

16.1 Standard fasteners may be replaced with fasteners of any material and design. The strength and design must be equal to or exceed the strength of the standard fastener it is replacing for structural applications.

16.2 The use of titanium in the swing arm spindles and the wheels spindles is forbidden. For wheel spindles the use of light alloys is also forbidden. The use of titanium alloy nuts and bolts is allowed.

16.3 Aluminium fasteners may only be used in non-structural locations.

17 Miscellaneous

17.1 The following items MAY BE removed:

- 17.1.1 Instruments, instrument bracket and associated cables, horn, license plate brackets, tool kit, tachometer, speedometer and wheel spacers, radiator fan and wiring, passenger foot rests, passenger grab rails and upper chain guard.

- 17.1.2 Emission control items (anti-pollution) in or around the air box and engine (O2 sensors, air injection devices). Please note that any valves or other devices bolted directly to the engine must either be blocked off or removed and replaced with blanking plates

17.2 The following items MUST BE adhered to:

- 17.2.1 Motorcycle must be equipped with a functional ignition kill switch or button mounted on the handlebar that is capable of stopping a running engine. The button or switch must be red.

- 17.2.2 Side stand must be removed.

- 17.2.3 All drain plugs must be safety wired. External oil filter screws and bolts that enter the oil or water cavities must be safety wired.

- 17.2.4 Headlamp, rear lamp and turn indicators must be removed. A suitable material must cover the openings. Mirrors must also be removed.

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

- 17.2.6 All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the air box.

- 17.2.7 Where breather or overflow pipes are fitted they must discharge via existing outlets. The original closed system must be retained; no direct atmospheric emission is permitted.