



BMCRC 2027

THUNDERBIKE 500

2027 TECHNICAL REGULATIONS

Championship regulations | 2027 edition

HONDA CB500.
50 SAE HP MAXIMUM.



BMCRC THUNDERBIKE 500

2027 Technical Regulations

Rider weight is a major factor in the performance of low-powered naked racing motorcycles. BMCRC uses rider-weight classes to help balance performance.

CHAMPIONSHIP CLASSES

Class	Rider weight
Newcomers / Rookie	All rider weights eligible
Class 1 - Lightweight	Under 90kg
Class 2 - Middleweight	Under 105kg
Class 3 - Heavyweight	105kg and above

Classes are based on rider weight fully kitted after the race. Weights will be checked regularly. Riders must select their intended class when entering online; this will be checked after racing.

KEY REQUIREMENTS

Eligible machine	Honda CB500, 1993-2003, drum- and disc-brake models. CBF models are not eligible.
Maximum power	50 SAE hp at the rear wheel on the Bemsee Club control dyno.
Control tyres	Dunlop Sportsmart TT. Dunlop KR189/KR389 wet-weather tyres permitted when a race is declared wet.
Quickshifters	Not permitted.

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.



CONTENTS

Championship classes and key requirements	2
1. Eligible Machines	4
2. Fuel	4
3. Bodywork and Screen	4
4. Steering Damper	4
5. Frame/Swingarm	4
6. Suspension	5
7. Tyres	5
8. Silencers and Exhaust Systems	5
9. Spark Plugs	6
10. Oils and Fluids	6
11. Safety Wiring	6
12. Starter / Generators	6
13. Airfilters	6
14. Carburettors	6
15. Oil Pipes	6
16. Brakes	6
17. Throttle	7
18. Breathers	7
19. Number Plates	7
20. Kill Switch	7
21. Footrests / Foot Controls	7
22. Wiring Harness	7
23. Cooling System	7
24. Engine	8
25. Final Drive	8
26. Dynamometer / Speed Trap	8
27. Speedo/Rev Counter	9
28. Handlebars	9
29. Chain Protector	9
30. Wheels	9
31. Items That Must Be removed	10
32. Class and Series Sponsors	10
33. Presentation	10
34. Aftermarket Components	10
35. Parc Ferme /Disputes/Challenges	10
36. General	10
Rider representatives and copyright notice	11

MACHINES BODYWORK AND FRAME

1. ELIGIBLE MACHINES

Honda CB500 1993-2003 Drum & Disc brake Models (CBF model not eligible)

2. FUEL

2.1 Only unleaded fuel, available from a roadside service station to current ACU regulations. E85 bio-fuel is also acceptable from roadside outlets.

2.2 Octane boosters and/or fuel additives are not permitted.

3. BODYWORK AND SCREEN

3.1 The appearance and dimensions must be as homologated.

3.2 Single seat units or seat covers may be fitted to facilitate the use of race numbers, but must retain the original silhouette of the bike. Seat units specifically designed for racing are strongly recommended and are available from bodywork suppliers (see cb500racing.co.uk for more details).

3.3 Any fairing is forbidden.

3.4 The seat may be altered or replaced but any replacement seat must retain the original seat profile.

3.5 Engine protector pads may be fitted, but must be secured with lock wire or bolts (adhesive alone is not acceptable).

3.6 A front number plate/board must be fitted (Maximum W260mm H230mm) and no aerodynamic advantage should be gained. Front number boards designed specifically for racing are strongly recommended and are available from bodywork suppliers.

3.7 The top of the front number plate/board must be mounted so that the top of the plate/board is no higher than the top of the front master cylinder.

3.8 Radiator cowls/side panels must remain 'securely' fitted to the machine.

4. STEERING DAMPER

4.1 A steering damper may not be added.

5. FRAME/SWINGARM

5.1 No alterations to the chassis/frame are allowed unless specified in these regulations.

5.2 Frame braising or strengthening is forbidden.

5.3 Additional frame bracing is forbidden.

5.4 The side stand lug may be removed for safety reasons (ground clearance).

5.5 The standard swingarm must be used and remain unaltered.

5.6 Unused lugs may be removed from the frame & swing arm, but the subframe must otherwise remain complete. (If damaged beyond repair a non performance modification may be allowed with a weight penalty applied only if arranged directly with the Chief Technical Official)

SUSPENSION TYRES AND EXHAUST

6. SUSPENSION

6.1 Front Forks must remain as homologated by the manufacturer.

6.2 Front Fork springs may be changed for aftermarket items available from Hyperpro or Hagon, No other modifications to the fork internals are permitted other than the spacers and or washers as fitted to any of the 3 original fork types.

6.3 Front Forks may be positioned in the yokes at any height.

6.4 Any quantity or type of fork oil may be used.

6.5 Rear Suspension Units must remain as homologated (Standard Showa) or direct replacement aftermarket items from Hagon of the correct extended length. The adjustable damping version of the standard, Hagon, shock is also permitted.

6.6 The slim line Hagon shock designed for the CB500/4 is not permitted.

6.7 The YSS of Taiwan shock detailed here is also permitted.

Shock type, Emulsion (Nitrogen and Oil)

Shock length, 350mm as std CB500

Damper rod shaft, 12mm

Piston Diameter, 30mm

Adjustment, Threaded body Pre load only

Spring, Progressive 46-17-25-220 additional heavier spring is available 46-20-30-220 (46mm= ID, 17= spring rate, 25= spring rate, 220= length)

Part number, RE302-350T-20

Standard shocks that are modified outside of the above parameters are STRICTLY forbidden.

7. TYRES

7.1 Tyres are SPORTSMART TT Dunlop control tyres for all Championship races. (Available from BMCRC Paddock Suppliers)

7.2 The cutting of extra tread grooves is forbidden.

7.3 Tyres will be examined at random. Anyone not using the correct tyres will be excluded from the championship points and awards.

7.4 Wheel balance weights may be discarded or added.

7.5 If declared a 'WET' race, Dunlop KR189/KR389 wet weather tyres may be used. (Available from BMCRC Paddock Suppliers)

8. SILENCERS AND EXHAUST SYSTEMS

8.1 The silencers may be changed.

8.2 The exhaust may exit on either side of the machine, or under the seat unit.

8.3 The bore of the header pipes must not be greater than 38mm & must remain a constant diameter.

ANCILLARIES INTAKE AND BRAKES

9. SPARK PLUGS

9.1 Any make and type of spark plug may be used.

10. OILS AND FLUIDS

10.1 Any type of lubrication, brake or suspension fluid may be used.

11. SAFETY WIRING

11.1 All drain plugs, external oil filters and bolts that enter any oil cavity must be safety wired. Engine protection covers must be safety wired.

12. STARTER / GENERATORS

12.1 Must remain entirely as homologated. Starting devices and electrical generators must operate normally, i.e. the mechanical and electrical connections must be maintained. The generator must charge the battery as normal during the race and at post race control with respect to current and voltage. The engine starting must operate normally at pre and post race scrutineering.

13. AIRFILTERS

13.1 The entire air intake system must be as homologated & fully assembled in the correct manor, including air filter element.

13.2 Pattern air filters maybe used provided they are a direct replacement for the original item and offer no technical advantage. No cutting, shaping or other alterations to filters is permitted.

13.3 Performance air filters such as K & N Filters are not permitted.

14. CARBURETTORS

14.1 Must be the standard units as on the homologated model. A 5% tolerance will be allowed on the main jet size only from those stated.

14.2 Carburettor needles must remain as homologated only position may be modified.

15. OIL PIPES

15.1 Oil lines containing positive pressure must be replaced with items of metal reinforced construction with swaged or threaded connectors.

16. BRAKES

16.1 The choice of brake pads is free

16.2 Brake callipers must remain standard.

16.3 On the Honda CB500 any combination of original equipment calliper and master cylinder may be used provided they are original Brembo or Nissin parts.

16.4 Brake hoses may be changed.

16.5 Original equipment master cylinders must be used.

16.6 Aftermarket master cylinders are not permitted (e.g. Brembo, AP etc)

16.7 Original disks, solid replacement items & floating type aftermarket discs, to the homologated sizes, may be used (this includes Wave type discs in the standard size).

16.8 Dust seals may be removed.

16.9 In order to reduce the transfer of heat to the hydraulic fluid, it is permitted to add metallic shims between the brake pads and the calipers and/or to replace pistons.

CONTROLS WIRING AND COOLING

17. THROTTLE

17.1 Throttle control must be self-closing.

17.2 Quick action throttles permissible.

18. BREATHERS

18.1 All motorcycles must have a closed breather system. No direct atmospheric emission is permitted.

19. NUMBER PLATES

19.1 Must conform to ACU regulations.

19.2 Number plates must be fitted to the front and both sides of the machine. (See section 3.0 Bodywork)

19.3 All number plates will have a Yellow background with Black numbers.

20. KILL SWITCH

20.1 Motorcycles must be equipped with a functional ignition kill switch or button mounted on either the right or left hand side of the handlebars (within reach of the hand while on the hand grips) that is capable of killing the ignition to fully stop a running engine.

21. FOOTRESTS / FOOT CONTROLS

21.1 Original Honda footrests are allowed with riser plates to aid ground clearance.

21.2 On original footrests the rear pillion brackets must be removed.

21.3 On all makes and models race style rear sets may be fitted.

21.4 Standard or race shift linkages may be utilised.

21.5 Quick-shifters of any type are not permitted.

22. WIRING HARNESS

22.1 Original equipment wiring harness may be modified or replaced.

22.2 No data acquisition or non-standard functions may be included in the replacement harness.

22.3 For neatness & safety redundant & excess wiring should be secured in such away it causes no restriction to machine function (i.e. fork/yoke movement and steering).

23. COOLING SYSTEM

23.1 Must remain as homologated except the thermostat may be removed.

23.2 Only water is to be used in the cooling system

23.3 The cooling fan may be removed complete with electrical connections.



ENGINE DRIVE AND TECHNICAL CONTROL

24. ENGINE

24.1 This must be as original. Any additional removal of material is forbidden. Any engine modification is forbidden. Except for drilling to enable lock wiring.

24.2 Ignition systems may be removed at any time by the officials and replaced with standard units or ones from other machines.

24.3 The maximum horsepower limit for the series is 50 hp SAE measured at the rear wheel. This figure is only applicable to the Bemsee Club control dyno, Figures may vary on other dyno's. Any machine found to exceed this figure may be excluded from the results. (Free compliance runs are always available throughout the weekend at any meeting)

24.4 An oil containment tray to ACU regulations must be securely fitted under the engine. Items designed for racing are strongly recommended and are available from several bodywork suppliers.

24.5 Ignition timing must remain as standard.

24.6 Standard or aftermarket cylinder head gaskets may be used. The head gasket as supplied may not be modified in any way.

24.7 In an effort to keep costs as low as possible the use of standard Manufacture oversize piston sizes are permissible (0.25mm/0.50mm)

24.8 Only in the case of necessity will a surface matching of the cylinder head be permitted. This shall be limited to a skim of up to 0.125mm off of the cylinder head OR engine block (not both). Technical officials will use a clearance tool to monitor compliance. Any machine which for whatever reason fails the compliance test must be stripped by the competitor concerned to verify compliance. ONLY the Technical Officials will be present at the measuring process (the rider will only have the opportunity to view a negative test).

25. FINAL DRIVE

25.1 Sprockets may be changed from standard to aftermarket replacements.

25.2 The pitch of the chain and must remain as standard. Honda CB = 525

25.3 The front sprocket on all machines must remain as standard. Honda CB = 15

25.4 The rear sprocket on each machine may be changed to a maximum of 2 teeth more than original. Permitted rear sprockets: Honda CB = 40/41/42

25.5 'O' ring and non 'O' ring chains are permitted.

26. DYNAMOMETER / SPEED TRAP

26.1 Checks on the BMCRC dynamometer may be carried out at any time during the meeting at the entire discretion of the organisers. The information obtained by the Chief Technical Officer must only be conveyed to the Clerk of the Course. In the case of any infraction, this must be done without delay.

26.2 Speed Trap results are available to the Clerk of the Course at every event, these are seen as the ultimate arbiter of performance of each machine. In the case of any machine exceeding the next fastest machine by 3mph or more a full technical inspection/strip of said machine will be ordered.

INSTRUMENTS AND CYCLE PARTS

27. SPEEDO/REV COUNTER

27.1 The original speedo and rev counter assembly can be removed, retained or modified.

27.2 The use of aftermarket rev counters and shift lights is permitted.

27.3 The fitment of a rev counter is recommended to aid with noise testing at circuits. Having no rev counter fitted may result in riders being turned away from noise testing and refused permission to take part in practice and/or racing.

28. HANDLEBARS

28.1 Both standard and suitable aftermarket handlebars may be used (e.g. Renthal).

28.2 Bar ends must be fitted to the handlebars.

28.3 The handlebar ends must not drop lower than the centre line of the handlebar mounting points.

28.4 Flat handlebars with no lift are permitted.

29. CHAIN PROTECTOR

29.1 A shark fin type chain guard must be fitted as per the ACU regulations to the underside of the swingarm on the drive chain side of the machine.

30. WHEELS

30.1 Wheels must remain as standard and with original rim sizes and bearing sizes.

30.2 Either drum or disc brake rear wheels from the original models may be used.

30.3 Provided the original wheel bearing sizes are retained, captive spacers may be utilised to assist wheel changes. Changes requiring alternate bearing sizes are not permitted.

30.4 Spindle (ends only) may be modified to prevent damage, retaining original materials.

PREPARATION AND ADMINISTRATION

31. ITEMS THAT MUST BE REMOVED

Side and centre stands
Rear view mirrors
Traffic indicators
Front Lights
Rear Lights
Light fittings and left hand switch gear
Horn
Registration plate support
Pillion support bars
Stand handles
Internal gear of the mileage indicator (where applicable)

32. CLASS AND SERIES SPONSORS

32.1 Class and series title sponsors' decals/stickers must be prominently displayed on machines where applicable & checked at technical inspection.

33. PRESENTATION

33.1 The organisers reserve the right to refuse any machine admission to the start if, on arrival at the technical inspection it is not in a presentable condition.
33.2 Machines should be maintained to a high standard and checked regularly before, during and after meetings by competitors to ensure continued compliance.

34. AFTERMARKET COMPONENTS

34.1 Aftermarket parts may be used provided they offer no performance advantage over the original parts, and no technical advantage is gained.

35. PARC FERME /DISPUTES/CHALLENGES

This is covered in the ACU handbook and minor queries should be directed through the riders' representatives. Check ACU Handbook for correct procedures.

36. GENERAL

36.1 If there are any queries relating to these regulations contact one of your rider representatives for clarification before competition commences.



CONTACTS AND COPYRIGHT

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HONDA CB500 | 50 SAE HP MAXIMUM

BRITISH MOTORCYCLE RACING CLUB