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**TECHNICAL REGULATIONS**  
**Thundersport 500**  
**2019 Spec.**

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# **THUNDERSPORT 500 - TECHNICAL REGULATIONS 2019**

Class mission statement: To provide fair, affordable, and competitive racing for enthusiastic and like minded racers.

To provide a friendly, close knit environment for racers, where inclusion is the norm and family and friends can enjoy their hobby in a safe and well organised environment.

To promote racing on a level playing field where genuine talent is recognised and encouraged.

To promote enjoyable, close racing to a wider audience and encourage participation from further a field.

**PLEASE NOTE:** The Thundersport 500 regulations have been written to provide a level playing field for all competitors, regardless of their engineering ability, deviation from these regulations will not be tolerated. The Thundersport 500 class is not an engineering class, it is a simple formula with inbuilt cost controls. We have created various championships to give as many people as possible the opportunity to compete for silverware throughout the season and would urge riders to respect the sporting ethos of the class and their fellow competitors and compete in a manner that will see the class maintain its excellent reputation and continue to grow from strength to strength.

Thank you for your cooperation.

## **Technical Regulations 2019**

### **MACHINE PRESENTATION (see 33.0):-**

**Although Thundersport 500 is a budget class, it is not a class where poor machine presentation will be accepted. Any machine which does not reflect a good standard of presentation will be rejected at Technical Control.**

**“Racing repairs” are acceptable after an incident at the meeting concerned, as long as they meet the safety requirements, but are not acceptable at the next event.**

**THERE WILL BE NO TOLERANCE ON THIS POINT IN 2019.**

Everything that is not authorised and prescribed in these specifications must remain in standard form, excluding paintwork.

#### **1.0 Eligible Machines**

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

Suzuki GS500 1989-2004

Kawasaki ER500 1997-2006

#### **2.0 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.

#### **3.0 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](http://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.

#### **4.0 Steering Damper**

4.1 A steering damper may not be added.

#### **5.0 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.

#### **6.0 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 Hypapro 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.

#### **7.0 Tyres**

7.1 Tyres are Dunlop Alpha 13 SP tyres for all Championship races. (Available for £179 per set from the specified supplier – Holbeach Motorcycle Tyres)

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 wet weather tyres may be used. (Available for £179 per set from the specified supplier – Holbeach Motorcycle Tyres and also available from the other Thundersport GB official suppliers POA)

#### **8.0 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. The noise output must be within the 105db limit at all times, including post race controls.

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

## **9.0 Spark Plugs**

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

## **10.0 Oils and Fluids**

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

## **11.0 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.

## **12.0 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.

## **13.0 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.

## **14.0 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.

## **15.0 Oil Pipes**

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

## **16.0 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.

16.3 Brake hoses may be changed.

16.4 Original equipment master cylinders must be used.

(From March 2019 Suzuki & Kawasaki models may use a Master Cylinder from any official model in their respective manufacturers range – OE on an official road model)

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

16.6 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).

16.7 Dust seals may be removed.

## **17.0 Throttle**

17.1 Throttle control must be self-closing.

17.2 Quick action throttles, both complete systems and modifications to the original assembly are not permitted.

## **18.0 Breathers**

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

## **19.0 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.

#### **20.0 Kill Switch**

2.1 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.

#### **21.0 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 Quickshifters of any type are not permitted.

#### **22.0 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 a way it causes no restriction to machine function (i.e. fork/yoke movement and steering).

#### **23.0 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 (no anti-freeze is permitted as per ACU handbook).

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

#### **24.0 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 power output for all eligible models is nominally 52bhp at the back wheel, should organisers wish this to be measured the engine will be sealed and tested within 48 hours. ***Any form of tuning to reach this limit by means other than specified is strictly forbidden.***

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.

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

#### **25.0 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

Suzuki GS = 520

Kawasaki ER = 520

25.3 The front sprocket on all machines must remain as standard.

Honda CB = 15

Suzuki GS = 15, 16 or 17

Kawasaki ER = 16, 17 or 18

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

Suzuki GS = 39/40/41

Kawasaki ER = 42/43/44

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

### **26.0 Dynamometer – Speed Trap controls**

26.1 Checks on a 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.

Speed Trap results are available to the Clerk of the Course at every event. These will be published at 3 random events each season as 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.

### **27.0 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.

### **28.0 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.

### **29.0 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.

### **30.0 Wheels**

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

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

### **31.0 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)

### **32.0 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.

### **33.0 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.

### **34.0 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.

### **35.0 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.

### **36.0 General**

36.1 All riders taking part must acknowledge in writing that they have read and fully understood the regulations prior to competing (by completing and returning the last page of this document).

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

### **37.0 Spirit of the class Rule**

Anything that is not mentioned above but is deemed by the organisers to not be within the class ethos will be reported to the Clerk of the Course (CEO) and his decision (after consultation with the riders representatives) will be final.

### **Rider Representatives:**

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