

BTRDA Sporting Trials Championship

Appendix 1.

Differential Eligibility – Test Procedures and Sealing.

For 2021 the Breakout Torque limit is set at 15kg. Differentials, when tested, must achieve a breakout torque figure no greater than 15kg as measured by the Sharp Dynamic Test. At any time during the course of the championship retesting and/or random testing will be undertaken by the Lever Arm Test. Differentials will be tested and sealed according to the following procedures.

Definitions

The Sharp Dynamic Test.

The Sharp Dynamic Test measures the resistance of the subject vehicle's differential by applying variable load across the driven axle via an electro-mechanical process and electrically recording the torque at the wheel hub to a computer.

The Lever Arm Test.

The Lever Arm test involves two rollers, a calibrated lever and a pre-determined weight which is allowed to fall signifying a breakaway of less than 15kg, if the lever fails to fall the test has failed signifying a breakout resistance greater than 15kg.

Drag.

The load difference across the axle when one wheel is revolving and one stationary.

Breakout.

When both wheels are turning the load difference or resistance across the axle that causes one wheel to stop revolving.

Breakout Torque Limit

The torque resistance measured across the rear wheels must not exceed 15kg @ 44.25"(165.4nm 122.0lbs/ft under breakout or drag conditions.

1. The Sharp Dynamic Test

1.1. Test Procedure

Tests can only take place on cars that are presented "as driven on the hills".

No parts may be disconnected or removed without the consent of the tester.

Note : brake pads are sometimes levered back or removed at the discretion of the tester.

1.2. Method.

Trials cars will be presented for testing as they would compete on the hills at normal operating temperature with two bar pressure in the rear tyres.

The car will be fitted with wheels that are able to carry the "drive spiders"

These can be "pool" wheels or the owner may supply their own set.

The test will be carried out with the tyres inflated to two bar pressure so as to reduce drag.

The rear wheels of the car will be placed on free running rollers and the drive spiders will be connected to the equipment.

The driver will be asked to start the rear wheels turning using an engine speed and gear of their choice.

Various loads will be applied either or both of the rear wheels for a time not exceeding two minutes.

The loads generated will be recorded and stored on computer.

A car that produces a pass result at the first attempt will be considered to have passed the test.

A car that does not produce a pass result at the first attempt will have to produce two consecutive pass results to be deemed to have passed.

Any car not achieving a pass result as outlined above within six tests in total will be deemed a "fail" and will be unable to score championship points until a suitable test result is achieved.

Only the current test results are considered for testing purposes, a competitor may NOT refer back to a test result recorded at an earlier time.

1.3. Sealing.

Upon achieving a pass result from the Sharp Dynamic Test, the differential will be sealed into the car using one or more approved RED numbered seals. The seal MUST be fitted BEFORE the car leaves the test site, failure for this to happen will result in the car having to be re tested.

Note: - The ultimate responsibility for being able to suitably fit the seal at the time of the test rests entirely with the owner of the car.

"One or more seals"

Certain designs of transaxles allow the differential to be fitted from either side as the tester is unable to determine which side the diff has been fitted from then both sides will be sealed (eg Hewland MK9).

2.0. Integrity of the seals.

Due to the nature of the sport it is quite feasible that the seal may become damaged or broken it is the owners responsibility to keep an up to date record of the seals integrity by either:-

a) Having the cars seal inspected by the event scrutineer and having the cars log book signed, stamped or punched stating that the cars seal was inspected on that date.

or

b) Being able to produce a date and time stamped photograph taken by I-Phone or similar device clearly showing the integrity of the seal and the number on it.

3.0. Re Testing.

a) If a previously sealed car is presented for re testing or is found at any time with a broken, damaged or missing seal then the driver or drivers of said car will loose all points scored back to the last known and proved date the seal was intact. See Integrity of Seals above.

b) If a seal needs to be broken/remove for maintenance purposes this is acceptable but a) will apply.

c) On request by the owner a Blue numbered seal may be fitted without a test taking place.

However, it must be noted that: - A blue seal is considered "temporary" and can only be used to score a maximum of 15 championship points, in any class, before a test by the Sharp Dynamic Test becomes mandatory.

All points scored while the blue seal is fitted will be deemed provisional until a re-test by the Sharp Dynamic Test is successfully completed.

A car when re tested MUST pass the test within the first six attempts or all points scored while running on a blue seal will be lost.

If a car is presented for re testing and the Red seal is intact but is unable to produce a pass result as outlined above, all points scored up to the time of the re test will be retained but the car will no longer be eligible to score points until a suitable test result is achieved.

4.0. The Lever Arm Test

Random testing will take place at events throughout the year by means of The Lever Arm Test. (40Kg @ 44.25" with a breakaway no greater than 15Kg @ 44.25") This test will be carried out with the car stood on its wheels on free rollers NOT JACKED UP

It should be noted that: -

a) A red seal CANNOT be obtained from a Lever Arm Test result.

b) Cars that fail the lever test will have the red seal removed and a blue seal fitted and c) above will apply.