

Diff Update Spring 2019

For over three years now we have all been involved with the conversations and debates around the diffs we use. A huge amount has been achieved behind the scenes in attempt to create a level playing field in the sport. It is now time to finally sort this out. The attached sets out the current rules and regulations around diffs and how the process will work regarding testing diffs for this season. All drivers competing in the MSUK and BTRDA championships will need to be able to demonstrate that their cars align with these rules.

A series of different test dates and locations have been arranged for over the Summer break:-

Sat 11 May	Cornwall (Alan Murton's) Day before Four turnings.
Sat 6 and or Sun 7 July	Yorkshire (Martin Grimwood's)
Sat 13 July	Crawley (Tulleys Farm)
Sat 20 and Sun 21 July	Ross on Wye (Peter Fensom's)
Sat 10 and or Sun 11 Aug	Penrith (Andrew Woodhead's) NPTCC Practice day weekend

Or any time by appointment at York YO42 (Richard Sharp's)

There has been a great deal of debate on what is the right breakaway figure for the future; I think almost all drivers recognise that to make the right decision we need a wider amount of data.

The summer tests will be used to guide us towards an acceptable breakaway figure for the 2020 season. We will go into the second half of this year in the firm knowledge that everyone competing has been tested to be within the parameters currently set for 2019.

Richard Sharp has time and again gone above and beyond in an attempt to create a test and a testing system that will work. On behalf of the committee I'd like to say a huge thank you to Richard and the rest of the trialling community everyone for getting to grips with the issues.

Stuart Beare

Diff Testing

The threshold for 2019 is 18Kg @ 44.25" or 197.7Nm (146.02 lbs/ft)

Provisionally the threshold for 2020 is to be 15Kg @ 44.25" 165.4Nm (122.0 lbs/ft) however the final figure will be announced after the summer break when all the cars have been tested.

All cars competing in the championship will need a suitable test result from the Sharp diff tester before 1/9/19 to be eligible to score points beyond this date.

It is proposed that a number of test days will take place at various locations during the summer break.

To compete in the BTRDA championship 2020 (including the Gold star held in Jan 2020) all entered cars will need to have a sealed differential as detailed below. This does not apply to the Irish visitors.

However, the BTRDA committee reserve the right to test **any** car on the day.

Method

Differentials will be tested using the following system:-

The Sharp Dynamic Test

Tests will only be carried out on cars in a "as driven on the hills" state no parts are to be disconnected or removed.

The driver and passenger may sit in the car while the test is conducted.

It is acceptable to force the brake pads back in the callipers to decrease any drag on the discs.

It is recommended that the car and differential oil is at normal working temperature before being presented for testing.

The car will be fitted with wheels that are able to carry the "drive spiders" to aid connection to the machine, the driver may supply their own wheels for this purpose or use the "pool" wheels.

The test will be carried out with the tyres inflated to 2 Bar so as to reduce drag.

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

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

Various loads will be applied to either or both of the rear wheels for a time not exceeding 2 minutes.

The loads generated by both wheels will be recorded at 1 second intervals by a load cell at the end of an arm 44.25" long and stored on computer.

To obtain a pass result the maximum permitted out-of-balance across the axle (differential) must not exceed 18Kg (Provisionally 15Kg for 2020) at any time either under "breakout" or "drag" conditions.

Breakout: - When both wheels are turning, the amount of in-balance required to make one-wheel stop turning.

Drag: - The amount of in-balance generated when one wheel is spinning and one wheel is stationary.

18Kg represents 146 ft/lbs (197.9 Nm)

15Kg represents 122 ft/lbs (165.4 Nm)

A maximum of 3 attempts to pass can be made consecutively and then the car can be taken away and adjusted before making 3 more attempts to pass, all on the same day. If a car fails to produce a suitable test result having had the maximum 6 attempts in total it will be deemed a "fail".

A car only has to produce 1 result under the required threshold to be deemed a "pass".

Sealing

Upon achieving a result from the "Sharp" diff tester of less than 15Kg(2019) the differential will be sealed into the car using a red numbered wire tagged seal and drilled nuts. Various sizes and types of nuts will be made available to assist with this.

Cars yielding test results over 15Kg but under 18Kg will continue to be eligible to score points until 01/01/2020 but will not have a seal fitted.

Cars yielding test results over 18Kg will be unable to score points until suitably adjusted or repaired.

The ultimate responsibility for being able to suitably seal the differential in the car rests entirely with driver as once the car has left the test site without a seal being fitted rule "d" below will apply.

Note: -

Hewland Mk9 trans-axles and trans-axles of a similar design whereby the differential can be fitted from either side will need to have a seal fitted to BOTH sides.

Integrity of the seal(s)

Due to the nature of the sport it is quite feasible that the seal may become damaged it is the drivers 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 the cars log book signed/stamped or punched stating the seal has been inspected on a particular date.
- b. Being able to produce a date and time stamped photograph taken by I-Phone or similar clearly showing the seal number and its integrity.

Re-testing

The BTRDA committee can request a car be tested or re-tested at any time

- c. If a previously tested and sealed car is presented for re-testing, or found, with a broken damaged or missing seal then, subject to approval by the BTRDA committee, the driver will lose all points scored back to the last known and proven date the seal was intact. See points a & b above.
- d. If a seal needs to be broken/removed for maintenance purposes this is acceptable but point "c" will apply.
- e. On request by the driver a blue (or similar) numbered wire tagged seal will be fitted without a test taking place this seal will be classed as temporary and all points scored will be classed as provisional until passing a re-test where a red numbered seal will be re-fitted. It should be noted that under these circumstances the car must pass under the required threshold within the first six attempts, as detailed above, or all points scored while running on a blue seal will be lost.
- f. If a car is presented for testing with a seal that is intact but subsequently "fails" the Sharp diff test the driver shall retain all points scored to that date(except a car fitted with a temporary seal under "d" above) but will be unable to score again until the car is repaired and re-tested as per point "d" above.

It is acceptable for a driver to request the BTRDA re test another drivers car however in this instance it must be noted that **Both** parties must present their cars for retesting at the **same time** by mutual agreement."

Note: - NO TESTING WILL TAKE PLACE BETWEEN 01/12/19 AND 05/01/20