

2023 BAHRAIN GRAND PRIX

03 - 05 March 2023

From	The FIA Formula One Technical Delegate	Document	44
To	The Stewards	Date	05 March 2023
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Technical Delegate's Report

Before the race:

The following parts have been replaced today after 15:56 and before the start of the race:

Ferrari:

Car 16: CE (new)
Parameter changes associated with the CE replacement

The front wing of car numbers 16 and 22 was digitally scanned and the scanned data were compared with the team declared CAD drawings. Further the team declared CAD drawings were also compared with previously submitted versions and checked for conformance with the 2023 Formula One Technical Regulations.

A symmetric and asymmetric front wing deflection test was carried out on car numbers 01, 63 and 14.

A front wing flap deflection test was carried out on car numbers 01, 63 and 14.

Clutch paddle linearity checks have been carried out on car 63.

A fuel sample was taken from car numbers 81, 24 and 18 and analysed during the race.

An engine oil sample was taken from car numbers 81 and 24.

On the grid it was checked that all cars had fitted their tyres when the "5-Minutes" signal was given.

On the grid the temperature of the LHS and RHS front and rear tyre was checked on car numbers 01, 11, 16, 15, 63, 44, 14, 77, 27, 21 and 02.

On the grid the minimum tyre starting pressure of the LHS and RHS front and rear tyre was checked on all cars.

After the race:

The following cars were weighed:

Number	Car	Driver
01	Red Bull Racing RBPT	Max Verstappen
11	Red Bull Racing RBPT	Sergio Perez
55	Ferrari	Carlos Sainz
63	Mercedes	George Russell
44	Mercedes	Lewis Hamilton
10	Alpine Renault	Pierre Gasly
04	McLaren Mercedes	Lando Norris
77	Alfa Romeo Racing Ferrari	Valtteri Bottas
24	Alfa Romeo Racing Ferrari	Zhou Guanyu
18	Aston Martin Mercedes	Lance Stroll
14	Aston Martin Mercedes	Fernando Alonso
20	Haas Ferrari	Kevin Magnussen
27	Haas Ferrari	Nico Hülkenberg
21	AlphaTauri RBPT	Nyck de Vries
22	AlphaTauri RBPT	Yuki Tsunoda
23	Williams Mercedes	Alexander Albon
02	Williams Mercedes	Logan Sargeant

The steering wheel of all classified cars has been checked.

The following aerodynamic component or bodywork areas were checked on car numbers 55, 10, 77 and 23:

- Floor Body - TR Article 3.5.1
- Floor Fences - TR Article 3.5.2
- Floor Edge Wing - TR Article 3.5.3
- Nose - TR Article 3.6.1
- Forward Chassis - TR Article 3.6.2
- Mid Chassis - TR Article 3.6.3

- Sidepod - TR Article 3.7.1
- Coke Panel - TR Article 3.7.2
- Engine Cover - TR Article 3.7.3
- Tail - TR Article 3.8.1
- Exhaust Pipe - TR Article 3.8.2
- Front Wing Profiles - TR Article 3.9.1
- Front Wing Endplate body - TR Article 3.9.2
- Front Wing Tip - TR Article 3.9.3
- Front Wing Diveplane - TR Article 3.9.4
- Front Wing Endplate - TR Article 3.9.5
- Rear Wing Profiles - TR Article 3.10.1
- Pylons - TR Article 3.10.2
- Rear Wing Beam - TR Article 3.10.3
- Rear Wing Endplate Body - TR Article 3.10.4
- Rear Wing Tip - TR Article 3.10.5
- Rear Wing Endplate - TR Article 3.10.7

The engine high rev limit bands were checked on all cars.

The oil consumption was checked on car numbers 01, 11, 55, 63, 44, 10, 77, 18, 14 and 23.

The plenum temperature was checked on all cars.

The IVT temperatures were checked on all cars.

The ES state of charge on-track limits were checked on all cars.

The lap energy release and recovery limits were checked on all cars.

The MGU-K power limits were checked on all cars.

The maximum MGU-K speed was checked on all cars.

The maximum MGU-K torque was checked on all cars.

The maximum MGU-H speed was checked on all cars.

The session type has been confirmed for all cars.

Chassis FIA checksum was checked on all cars taking part in the race.

Torque sensor software version checks have been carried out on car number and .

Torque sensor calibration checks have been carried out on car numbers and .

The torque coordinator demands were checked on car numbers 01, 11, 55, 63, 44, 10, 77, 18, 14 and 23.

The torque control was checked on car numbers 01, 11, 55, 63, 44, 10, 77, 18, 14 and 23.

The rear brakes pressure control was checked on all cars.

The brake temperature warnings were checked on all cars.

The race start data of all cars have been checked.

Single clutch paddle use for the race start has been checked on all cars.

Clutch paddle linearity checks have been carried out on car 63.

The MGU-K use at the race start was checked on all cars.

It was checked on all cars that the ES was not charged while the car was stationary in the pits.

It was checked that no car exceeded 80 km/h when leaving the formation grid prior to the start of the race.

It was verified on all cars that the PCU dash display configuration was not changed during Parc Fermé.

The tyre starting pressures of all cars during the race were checked.

The tyres used by all drivers during the race today have been checked.

The fuel pressure of all cars during the race was checked.

The logged pressure within the engine cooling system during the race was checked on all cars.

Fuel flow meter calibration checksums were checked on all cars.

The instantaneous fuel mass flow of all cars was checked.

The fuel temperature of all cars was checked.

A fuel sample was taken from car number 63.

The fuel samples have been checked for density and analysed by gas chromatography.

The results of all the fuel analyses show that the fuels were the same as ones, which had been approved for use by the relevant competitors prior to the Competition.

Further the density change of the fuel samples taken today was within the permitted limits.

An engine oil sample was taken from car number 63.

The engine oil samples have been analysed by FTIR spectroscopy and viscometry.

The results of the FTIR analyses show that the sampled oils were consistent with reference engine oil samples which had been approved for use by the relevant competitors prior to the Competition.

All car weights and the items checked were found to be in conformity with the 2023 FIA Formula One Technical Regulations.

Jo Bauer

The FIA Formula One Technical Delegate