

USER GUIDE

2008
Rally4

VERSION

Version	Date	Author	Comments
2025_A	05/05/2025	C.Michel	Global update

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FOREWORD

Dear customers,

The entire Stellantis Motorsport and Racing Shop team thanks you for your recent purchase. The trust you place in us is a daily commitment.

Our user guide aims to make getting the use with your car as easy as possible. Here you will find detailed information on the mechanical and electronic components of your car, as well as information on its operation.

If you would like more information, our technical and sales support teams are at your disposal.

We wish you maximum enjoyment, performance, and success.




1. GENERAL INFORMATION

1.1. CONTACTS

1.1.1. Technical support department

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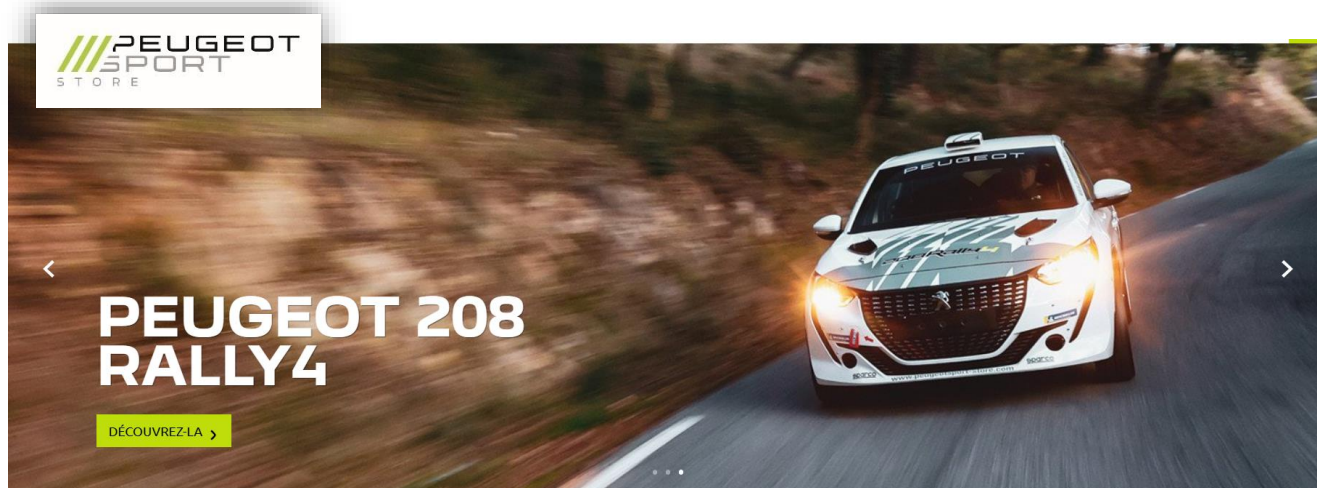
STELLANTIS MOTORSPORT Racing Shop









2 rue Gay Lussac - 95500
GONESSE - FRANCE

1.2. TECHNICAL INFORMATION

1.2.1. Retail parts

Find all the spare parts that make up the 208 Rally4 on the Peugeot Sport Store website:
<https://www.peugeot-sport-store.com/fr/>

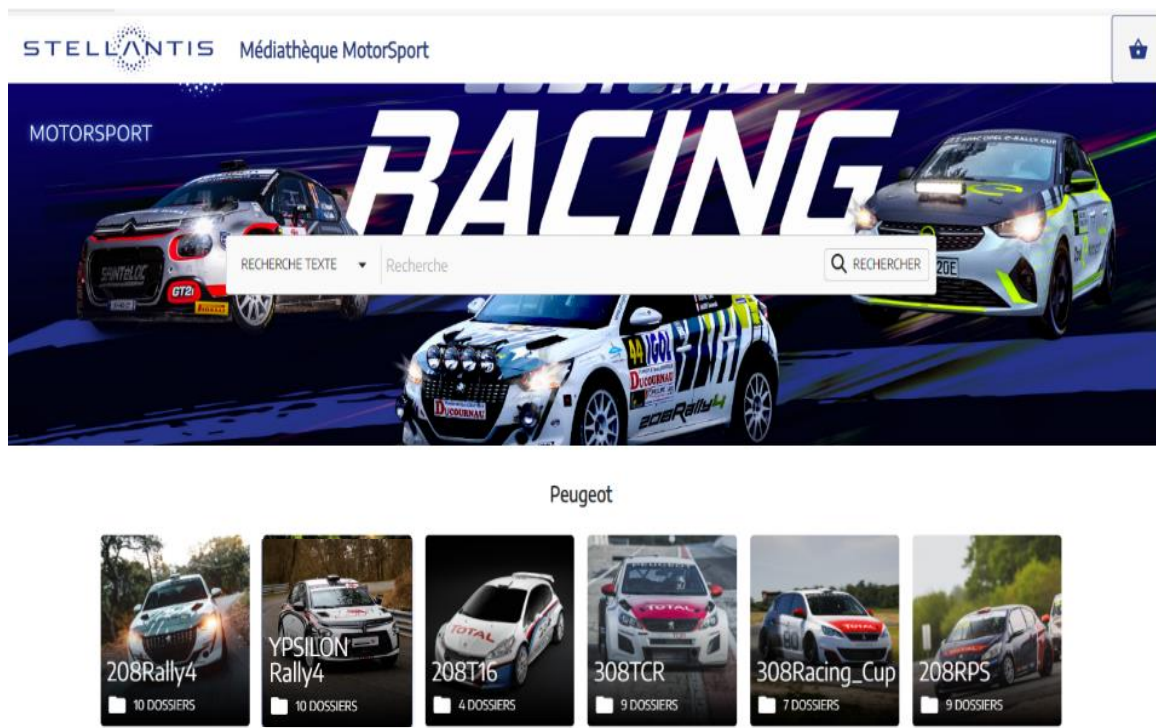


PACK  A10 MOTEUR ASSEMBLE P2184-A100.WEB.01 Indisponible 12 134,35 € TTC	PACK  A11 CARTER CYLINDRES P2184-A110.WEB.01 Indisponible 260,13 € TTC	PACK  A12 ATTELAGE MOBILE P2184-A120.WEB.01 Indisponible 1 124,36 € TTC	PACK  A13 CULASSE P2184-A130.WEB.01 En stock 1 759,39 € TTC
PACK  A15 GRAISSAGE P2184-A150.WEB.01 Indisponible 3 080,37 € TTC	PACK  A16 POMPE A EAU P2184-A160.WEB.01 Indisponible 353,74 € TTC	PACK  A21 REPARTITEUR ADMISSION P2184-A210.WEB.01 En stock	PACK  A23 INJECTION P2184-A230.WEB.01 En stock 1 176,92 € TTC

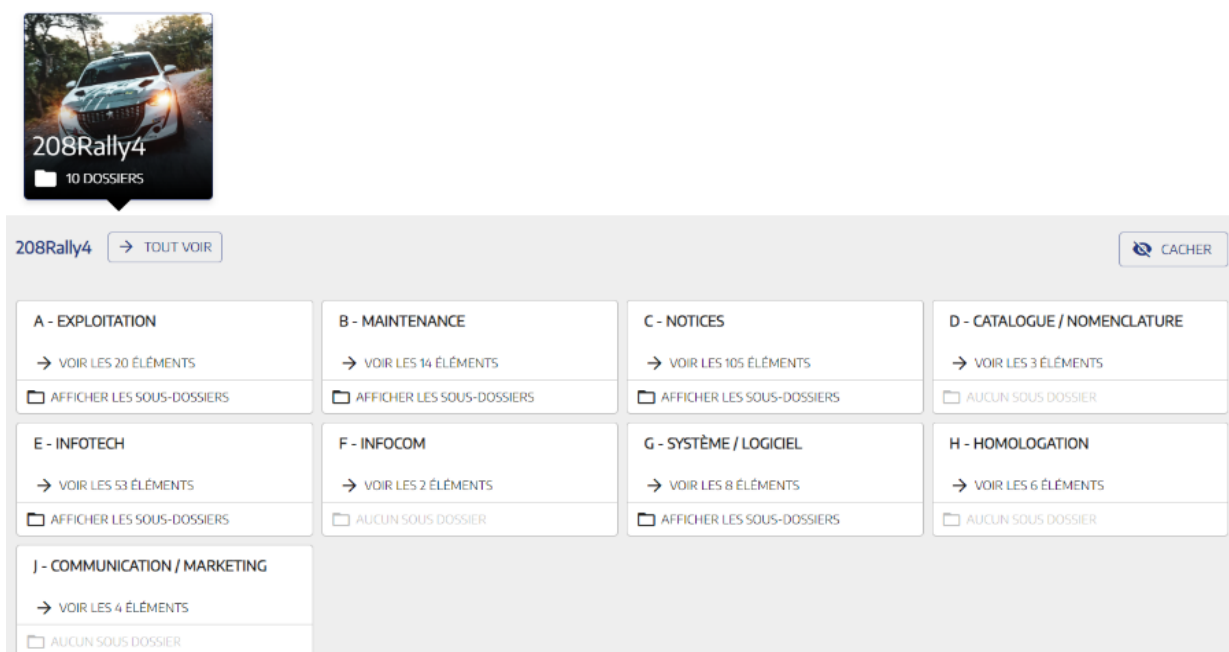
1.2.2. Documentation

All technical documentation related to the operation is available on our Stellantis Motorsport online media library at the following address:

<https://docs.stellantis-motorsport.com/>



After creating your account and validating it, it will be possible to access all the documentation of the selected vehicles.




For any changes to the list of desired vehicles, complete the account creation procedure again.

1.2.3. Technical Bulletins (Info-tech)

The technical department frequently communicates various information related to the operation of the vehicle to these customers through technical bulletins.

To make sure you don't miss anything, subscribe to the mailing list corresponding to your car via the link below: <https://form.jotform.com/pcrs/infotech-inscription>

 English (US)

INFOTECH

Subscription to the list

Stay up to date with the latest evolutions of your cars

Stellantis Motorsport Racing Shop technical support frequently publishes new content about its customer competition racing cars.

Subscribe to the list for the cars you own or manage.

Preferred language of contact *

☐ FR
☐ EN
☐ ES
☐ IT

Which Citroën Racing vehicle(s) do you own ?

☐ Citroën C3 RALLY2
☐ Citroën DS3 R5
☐ Citroën DS3 R3 Max
☐ Citroën DS3 R3

Which Peugeot Sport vehicle(s) do you own ?

☐ Peugeot 208 T16 R5
☐ Peugeot 208 RALLY4
☐ Peugeot 208 RACING
☐ Peugeot 208 R2
☐ Peugeot 308 TCR
☐ Peugeot 308 RC
☐ Peugeot 208 RC

Which Opel Motorsport vehicle(s) do you own ?

☐ Opel Corsa RALLY4

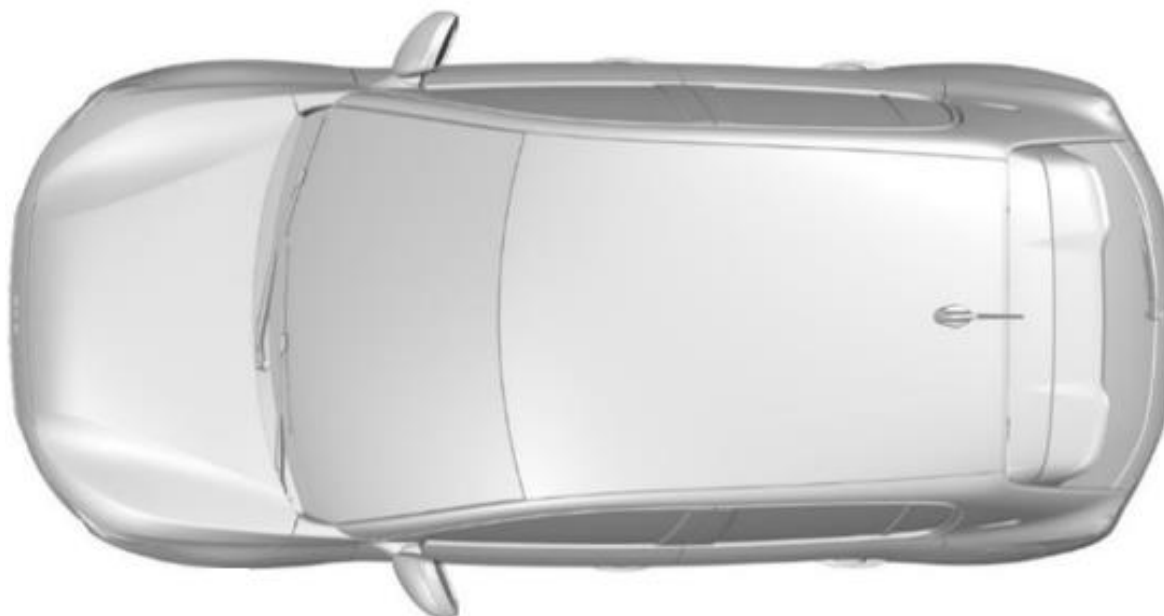
Which Lancia Corse HF vehicle(s) do you own ?

☐ Lancia Ypsilon RALLY4 HF

I subscribe

2. **PRESENTATION**

2.1. GENERAL DIMENSIONS

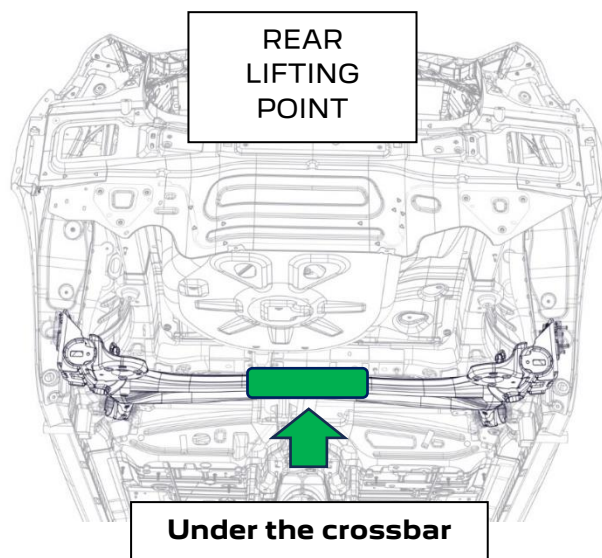
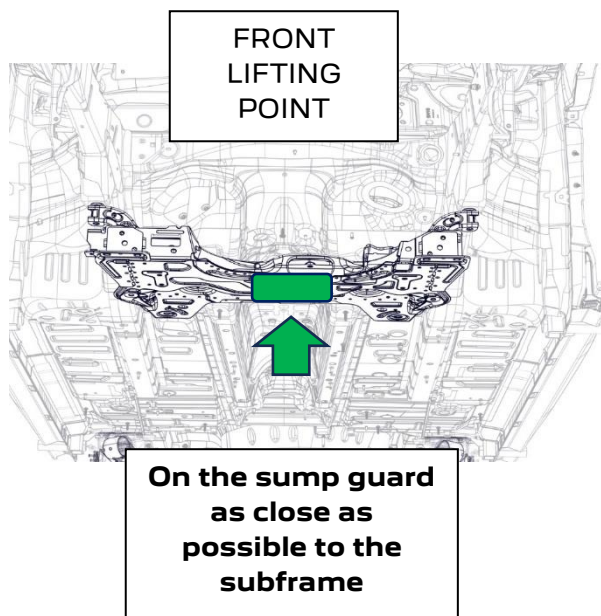


General dimensions (in accordance with approval sheet A-5780)	
Overall length :	4052 mm
Overall width :	1742 mm (hors rétroviseurs)
Wheelbase :	2553 mm
Front overhang :	821 mm
Rear overhang :	678 mm
Minimum FIA weight :	1080 kg
Weight distribution FR / RR:	61% / 39%
Fuel tank capacity :	63 L
Theorical track width FR / RR : *	1770 mm / 1720 mm

* Measured between the lower point of the tyre, with a camber of 2.5° at the front and 1.6° at the rear.

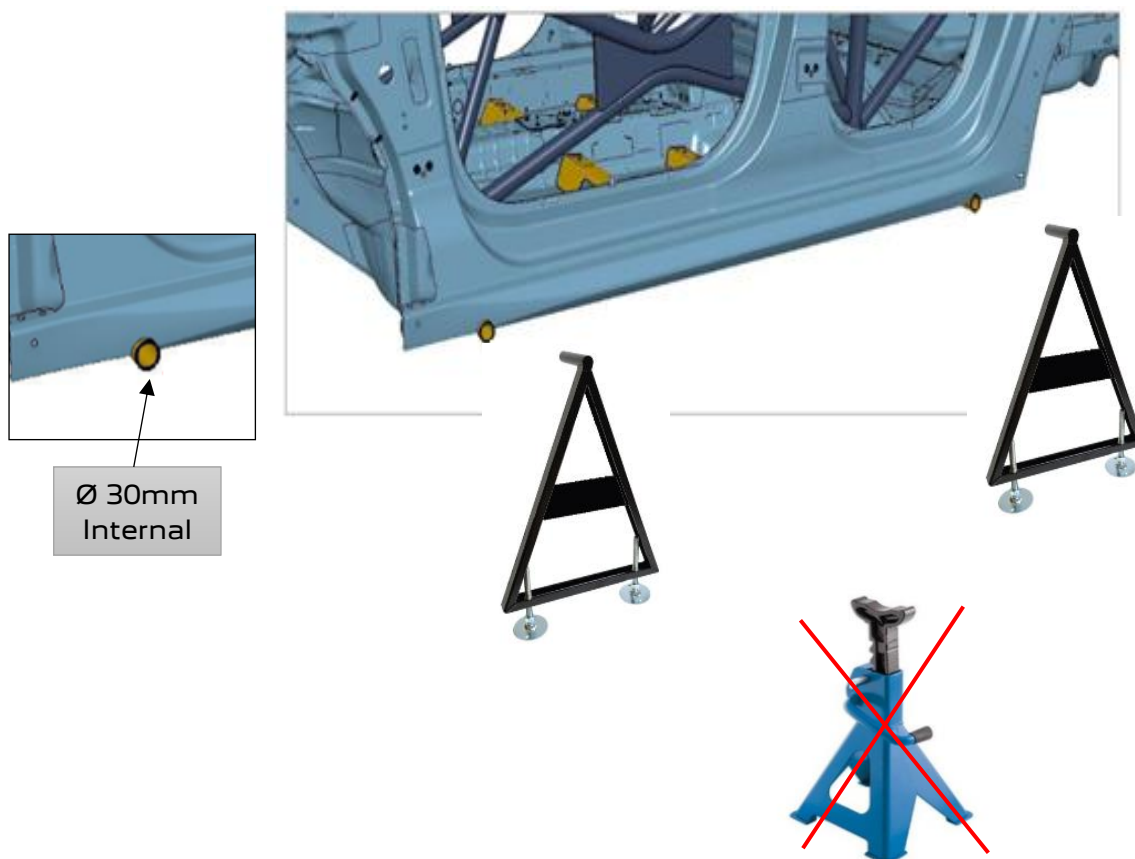
2.1.1. Lifting points

Respect the lifting point instructions so as not to cause deformation to the lower sump guard



2.1.2. Wedging points

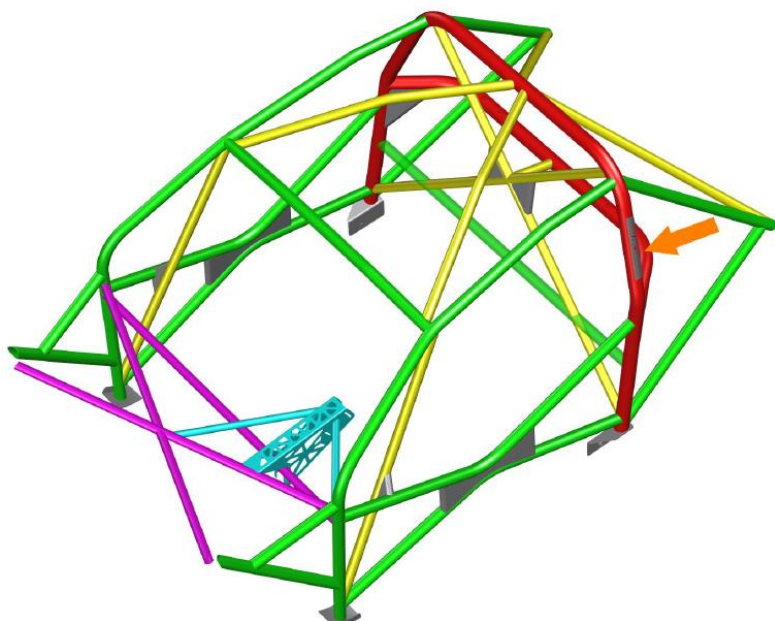
The chassis has 4x welded mounting points that can accommodate jack stands. For your safety, it is recommended to use a suitable model.



2.2. IDENTIFICATION

2.2.1. Roll cage

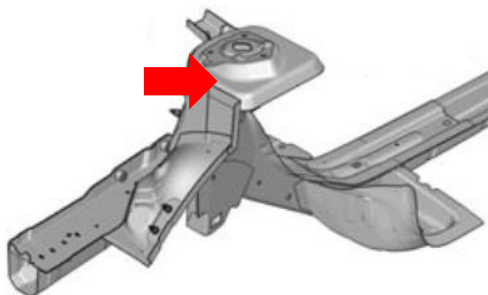
Each roll bar is identified by the serial number (208-R XXXX) present on a plate welded to the left main tube of the roll bar behind the door leg.



2.2.2. Bodyshell

Each bodyshell is identified with a VIN serial number, which is present at two distinct points:

- ☐ A plate welded to the right front shock turret.
- ☐ A sticker stuck on the center pillar on the driver's side.

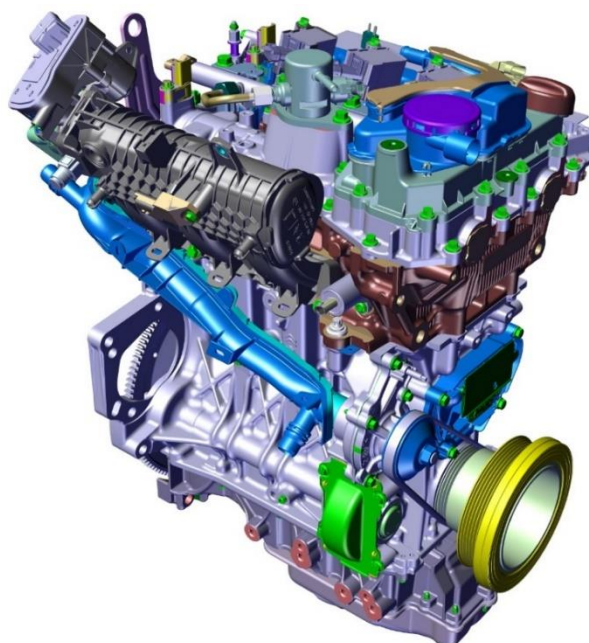


3. ENGINE

3.1. GENERAL INFORMATION

3.1.1. Technical characteristics

Technical data	
Type	3 in-line cylinders, DOHC, 12s
Cylinder capacity	1199 cm ³
Bore x Stroke	75 mm x 90,5 mm
Maximum power	208ch @ 5450rpm
Maximum torque	290 N.m @ 3000rpm
Cooling system	Water, with thermostat
Fuel	SP 98
Turbo	Borgwarner – 30mm flange *
Electronic management	Magneti Marelli SRG 141



* Since January 1, 2021, all cars in the Rally4 category must be equipped with a 30mm turbo flange.

3.1.2. Identification

Each engine is identified by a serial number visible on the identification plate attached to the cylinder head cover.



3.1.3. Seals

Every engine sold by the Peugeot Citroën Racing Shop has four seals.

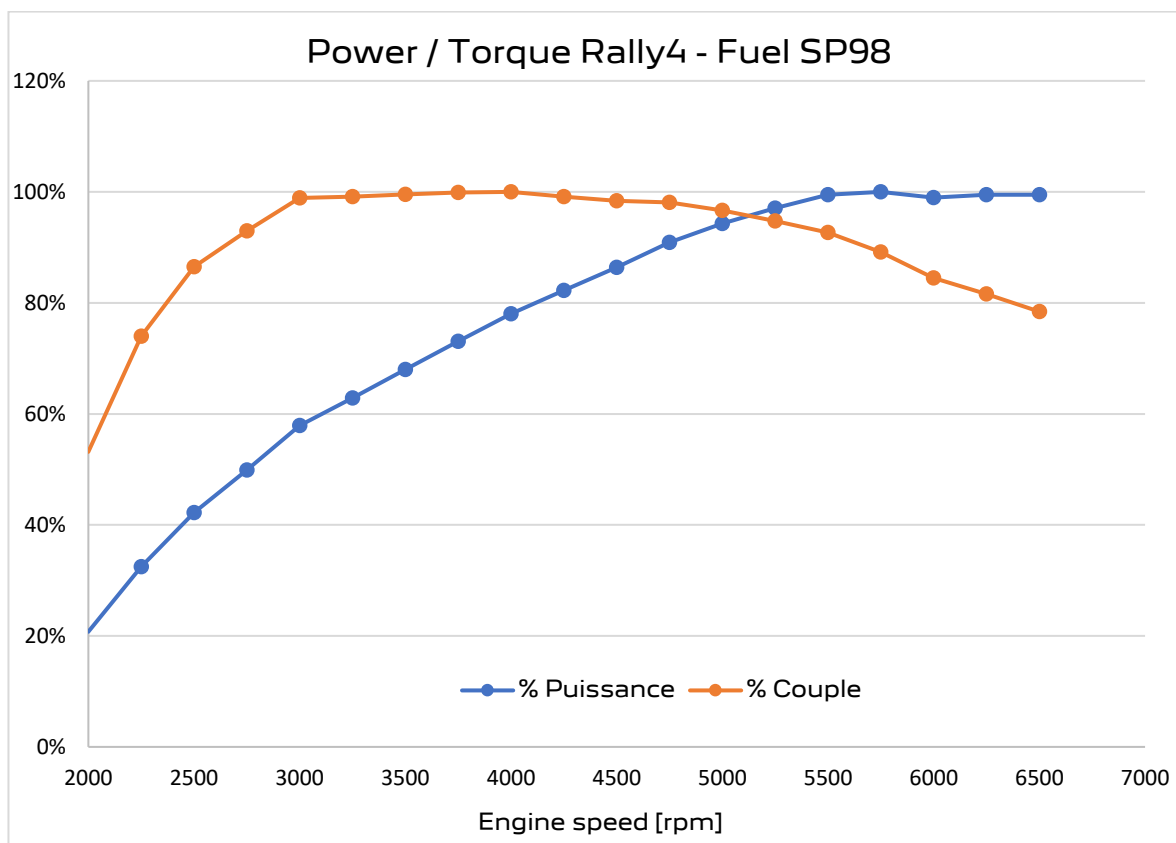
- Cylinder head cover
- Oil pan.
- Turbo casing
- Intake flange



These seals are not recognized for FIA rallies. Additional seals by an FIA technical commissioner are then necessary.

3.1.4. Power/torque curve

Below is an overview of the trends in the power and torque curve with commercial SP98 petrol.

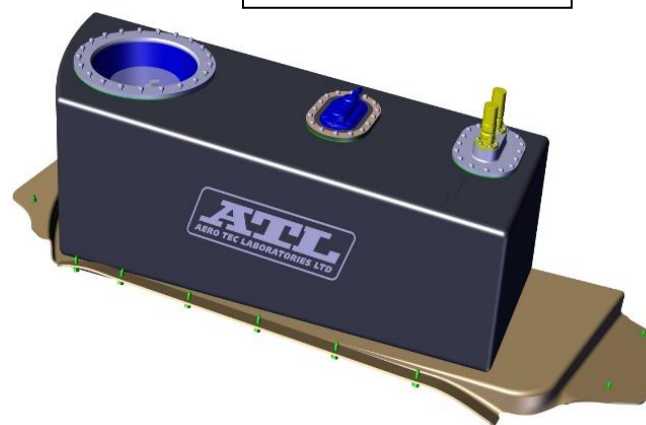


3.1.5. Fuel System

Compliant with the Rally4 regulations, it is equipped with:

- ❑ From an FIA FT3-1999 tank
- ❑ A standard low-pressure submersible fuel pump including gauge. (Pump gauge)
- ❑ An HP (high pressure) fuel pump on the engine.

Removable Volume
63L (+/- 2,5L)



As the volume may vary over time, we invite you to measure the capacity of your tank every 6 months by following the procedure in the [Appendix](#)



If the capacity is greater than 65.5L, it is imperative to reduce the volume of petrol with "tank volume balls".

3.1.6. Fuel consumption

The theoretical fuel consumption is based on the following values:

Road : 13L/100km

Stage – Tarmac : 56L/100km

Stage – Gravel : 60L/100km



These values are observed averages, variations are possible depending on the driving style, the profile of the roads as well as the average speed of the rally, so you will have to calculate your own consumption afterwards.



Keep a safety volume of 10L in the tank to avoid any risk of lifting.

3.1.7. Fluids

Location	Type	Reference	Quantity	Comments
Engine oil :	0 W 30 *	PS97727A10	3,5 L	+1,5 L radiator
Gearbox oil :	75 W 140	904895438A	1 L	+ 0,1 radiator
Power steering Fluid :	LDS	1615099680	2 L	
Cooling liquid :	PSA -35°C	1637756480	6,5 L	



* **10W50** in the case of the use of renewable fuel (e.g: P1WRC ou ECO15).

→ See recommendations in the: [Maintenance Schedule](#)



3.1.8. Levels

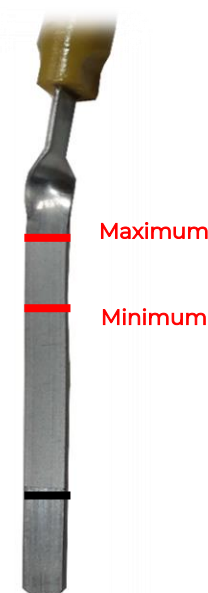
□ [Engine oil :](#)

The oil level should always be between 3/4 and the maximum of the dipstick, but not above it.



Perform an oil pressure rise (crank) before checking the oil level.

See :



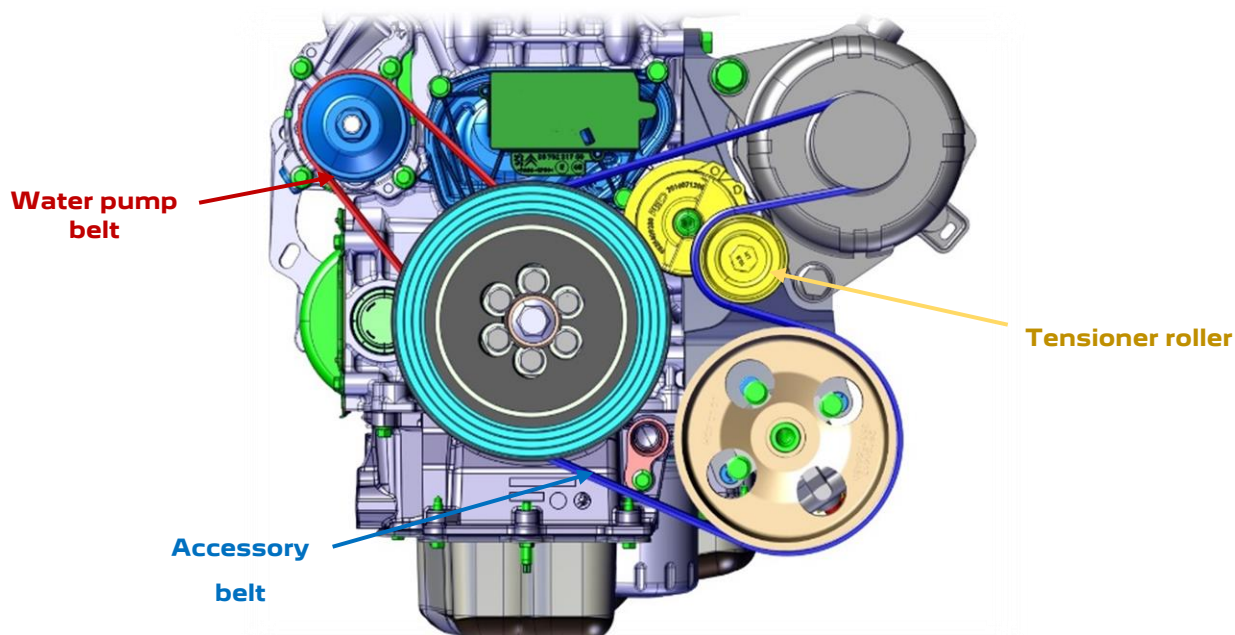
❑ Cooling liquid :

When cold, the level should be at maximum, as indicated by the red mark:



3.1.9. Accessory drives

The motor is equipped with two accessory drive belts:



- ❑ A belt for the alternator and power steering pump:
Tensioning is done using a dynamic tensioner roller (counterclockwise to relax the belt).

- ❑ A belt for the water pump:

The "Stretchy" type of belt is tensioned automatically by elasticity.

The use of the serial tool referenced opposite is strongly recommended for its implementation:

Reference :
1607274880



3.2. OPERATION

3.2.1. Actuators Learning

The following actuators must be learned at the first start:

- ☐ Throttle pedal.
- ☐ Throttle body
- ☐ Turbo E-Waste-Gate
- ☐ VVT solenoid valves

This learning must also be carried out after the replacement of one of the parts below:

- ☐ Engine
- ☐ ECU
- ☐ Turbo and/or E-Waste-Gate
- ☐ Throttle body
- ☐ Throttle pedal.
- ☐ VVT solenoid valves



To proceed the actuators learning, see :



**SPECIAL
PROCEDURES**



3.2.2. Starting

A- « ELECTRONIC » START :

A strategy present in the control unit ensures the protection of the engine during the start-up phases. Starting is only done if the oil pressure threshold is reached:

0°C	50°C	75°C	100°C	150°C
3.50 bar	3.0 bar	2.70 bar	2.40 bar	1.80 bar

Procedure :

1. Make sure the transmission is in the neutral position (N)

2. Main switch ON



+ Power ON circuit breaker



3. Short press (pulse) on START



Note: The starter motor will run for a maximum of 5 seconds

B- MANUAL START :

In case you want to do the oil pressure monitoring and starting manually, follow the [special procedure](#) of: "**Oil pressure rise _ cranking**"



C- FORCE START :

If for special reasons you want to start quickly without monitoring the oil pressure, follow the [special procedure](#) of "**Force start** »



Only in case of emergency

3.2.3. Warm-up

Engine and transmission

- ❑ Allow the engine to heat up at idle until a **water temperature of 70°C** and an **oil temperature of 60°C is reached**.
- ❑ Go to the "**page 4 – Check page**" and check the coherency temperature, pressure, and voltage values.
- ❑ Engage first gear, accelerate gradually until you reach a speed above 3000 rpm and then go up and down all gears several times.
- ❑ Continue to warm up the car until the fan is triggered
(**Twater** = 92°C)

3.2.4. Engine bed-in

The Rally4 engines are operated and bedded-in to the engine dyno before delivery, so there are no bed-in instructions.

3.2.5. Engine stop

Short press the Power button



then



Do not turn off the engine using the Main button



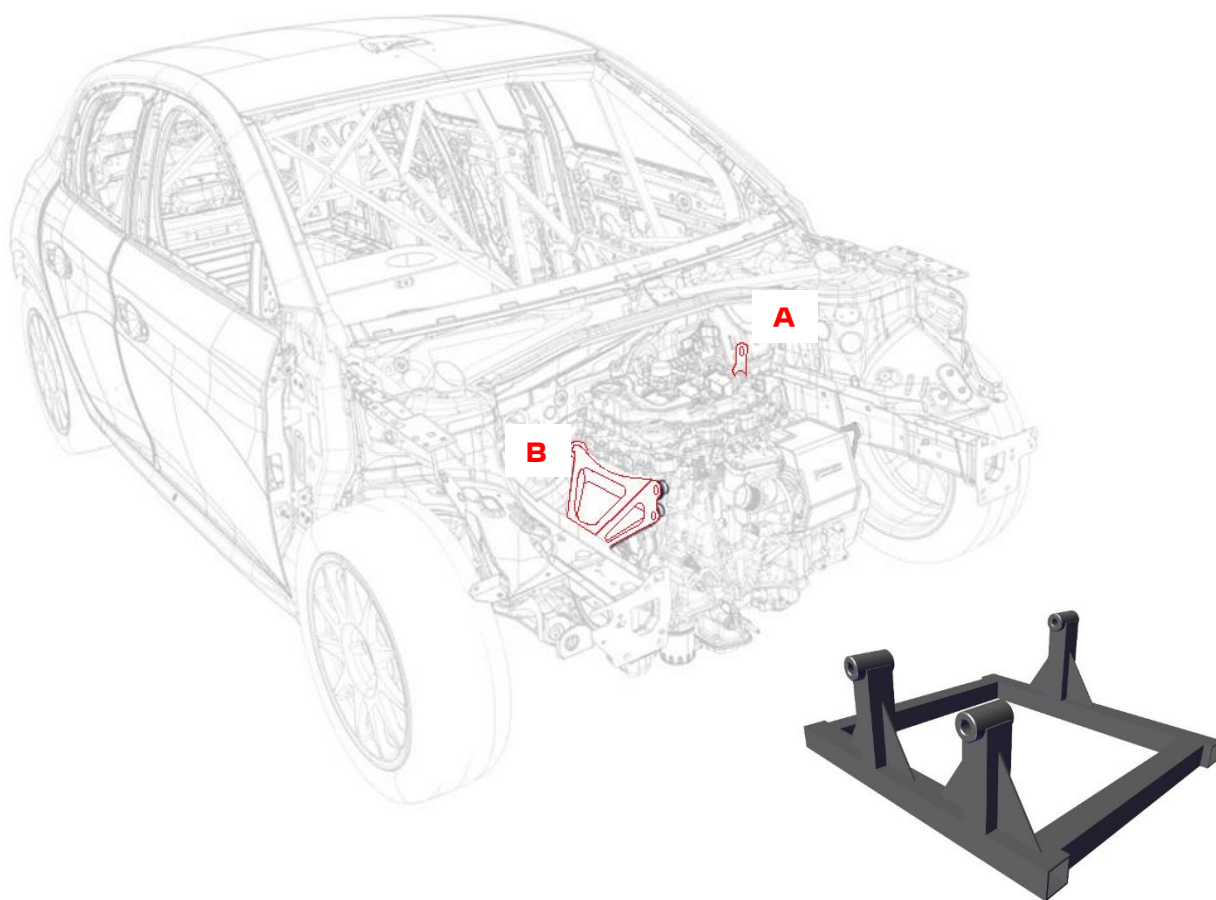
3.2.6. Maintenance

See recommendations in the [Maintenance Schedule](#)



3.2.7. Handling

To remove the engine, use the original hook A and the right-side mount B

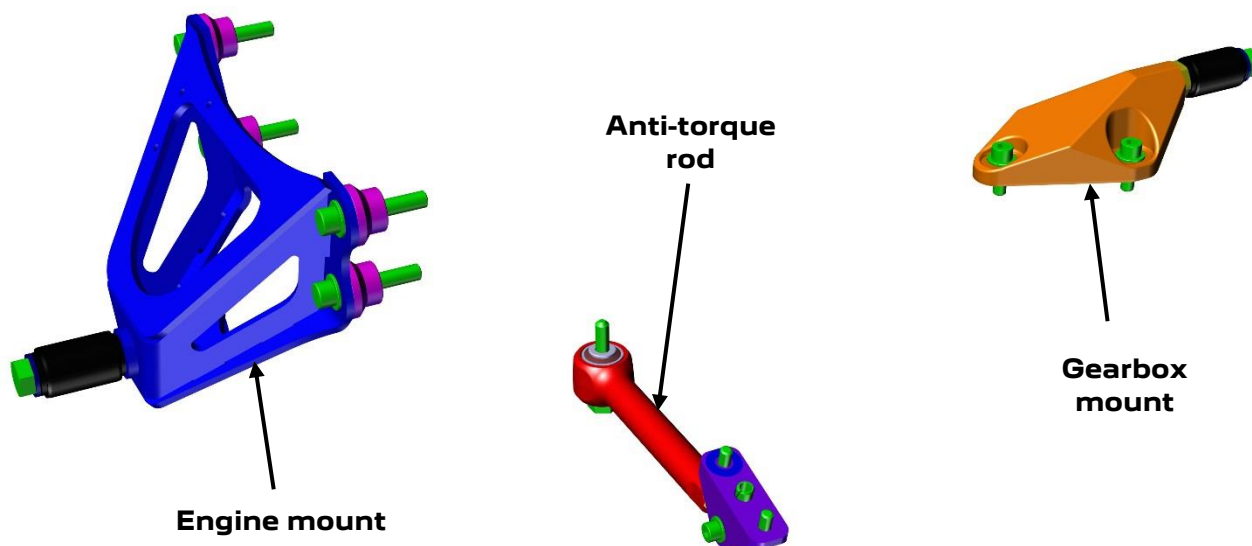


A workshop engine mount is available for sale, it allows an ideal maintenance of the engine assembled with its gearbox once the whole thing is out of the car.

Reference	Designation	Quantity
904647071A	Workshop engine mount	1
6925P9	Flange screw M10 x 60	2
6925W9	Flange screw M8 x 30	1

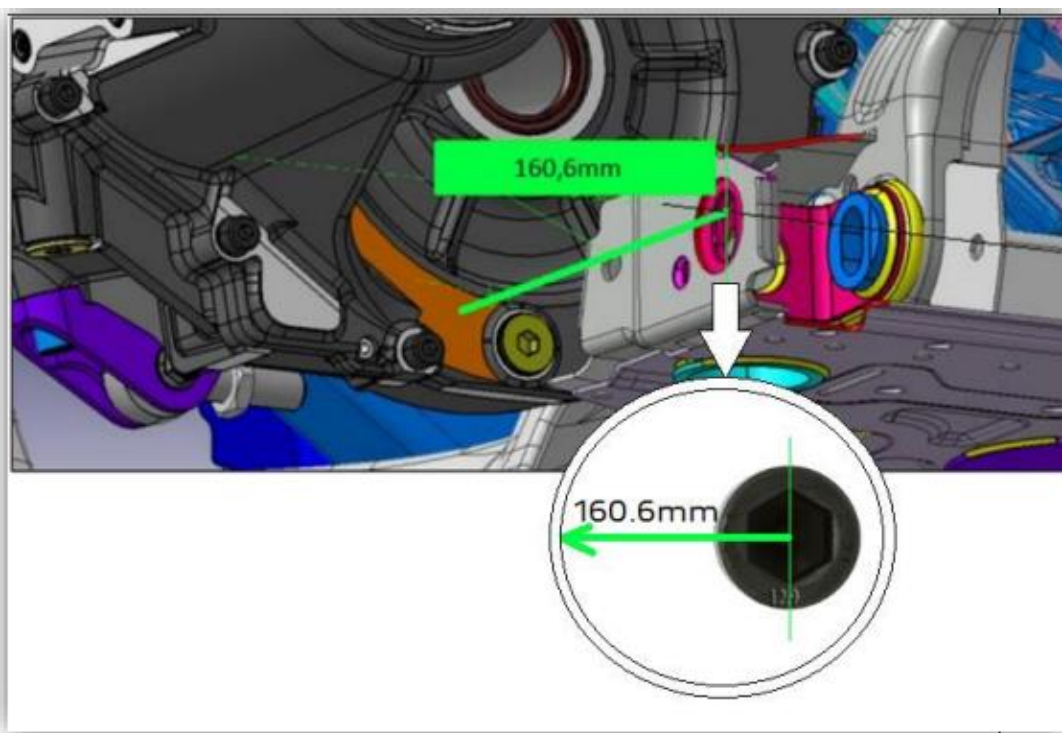
3.2.8. Powertrain centering

This car has three powertrain mounts: the engine mount, the gearbox mount and the anti-torque link. Remember to check the tightening torque of the screws regularly and use markings to detect any loosening quickly.



The engine/gearbox assembly needs to be centered according to a dimension measured from the machined face of the gearbox housing to the center of the camber arm fixing screw (E1 point) → See Powertrain centering method in the:

MAIN TIGHTENING TORQUE GUIDE



3.3. COOLING

3.3.1. Water cooling circuit

The coolant is circulated by an independent belt-driven mechanical water pump. Temperature regulation is provided by:

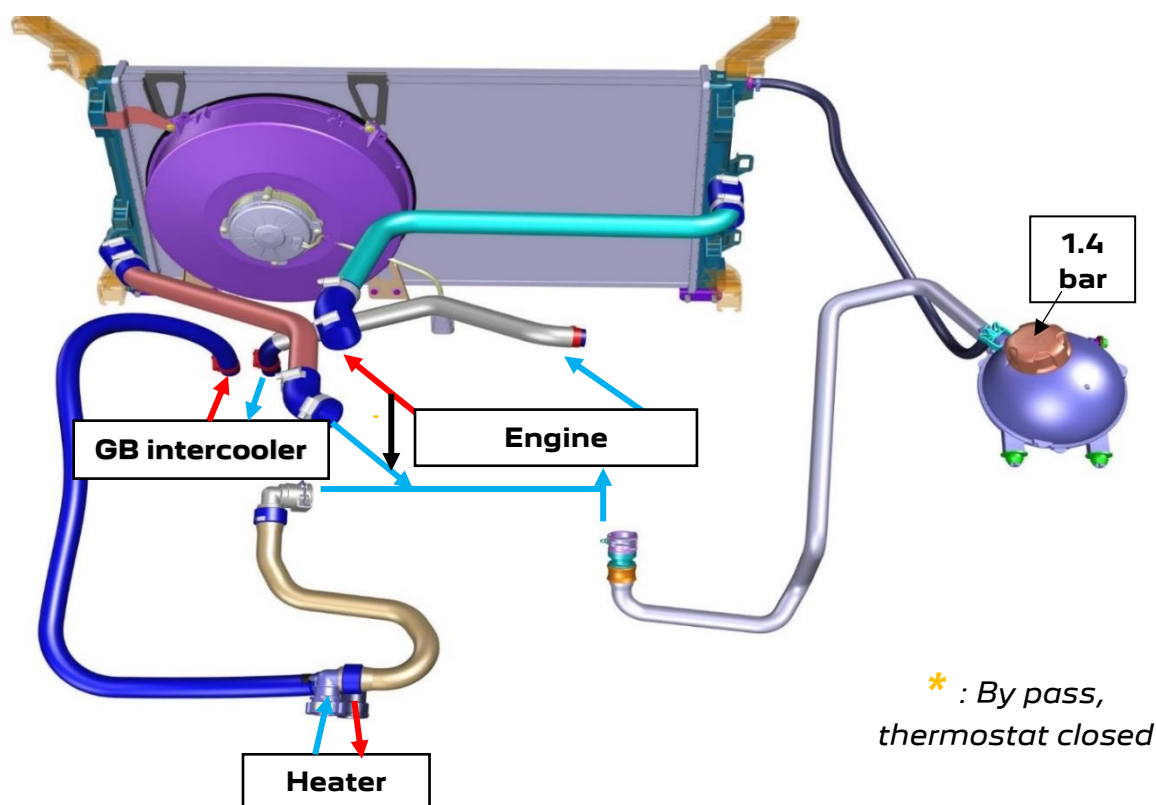
- ❑ A thermostat that opens fully at **87°C**
 - (there is no need to hide the front panel in case of low temperatures)
- ❑ A fan on the radiator that starts at **92°C** and stops at **90°C**
- ❑ An expansion jar cap set to **1.4 bar**.



It is recommended not to exceed 50% accelerator pedal below 70 °C in order to avoid damage or premature wear of the engine.



The radiator is approved, any modification or drilling is prohibited.



In the case of very high to extreme temperatures, it is possible to install a second optional fan that starts at 105°C and stops at 103°C.

NB: Performance degradation start from 110°C.

❑ Cooling system bleeding:

1. Fill the entire cooling circuit (about 6.5L)
2. Open the bleeder screws at the heating hose to release the air from the circuit.
3. Close once the liquid comes out without air bubbles.
Nb: Keep the liquid level above the maximum during the bleeding procedure, add more fluid at any time if necessary.
4. Heat up the car without putting the cap on the degassing jar at first.
5. Open the bleeder screw at the heating hoses regularly to release air from the circuit.
6. Close the jar of the expansion tank once it reaches 50-60°C of Twater
7. Continue the procedure until the fan is activated (92°C).
8. Adjust the level once the engine cools down.

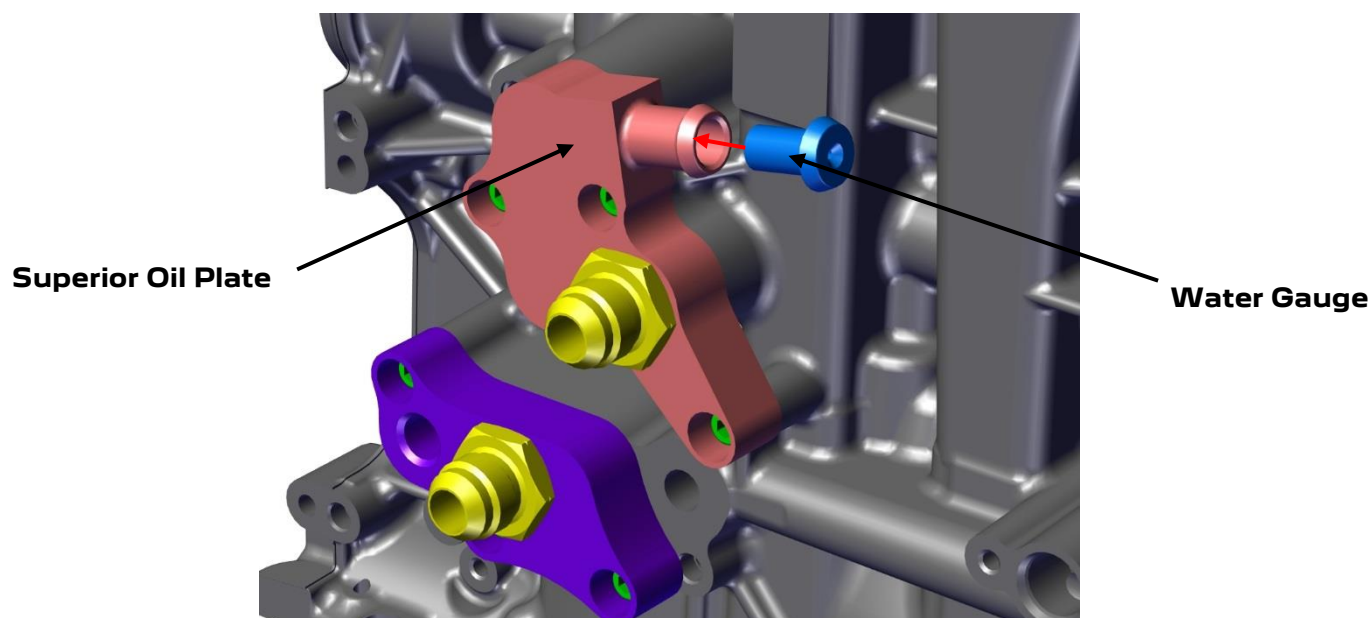


Always keep the fluid level above the maximum during the purging procedure, add more fluid at any time if necessary.



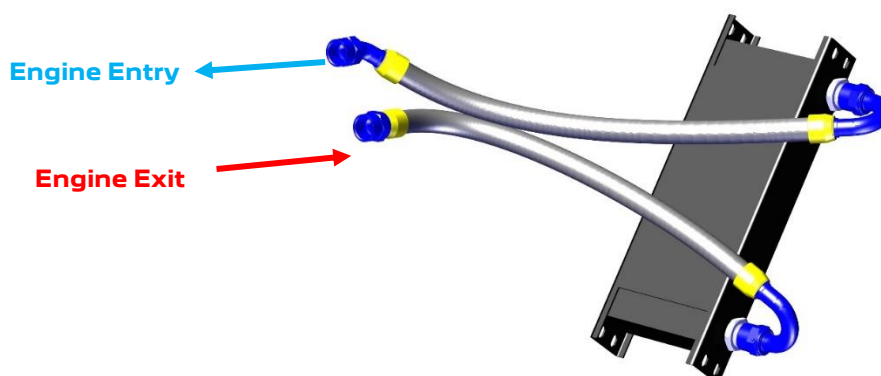
If you have to work on the water hose from the engine → to the gearbox exchanger, make sure that the **water gauge** remains in place on the plate.

It is possible that the gauge gets stuck in the hose during disassembly. It is imperative to put the gauge back into the upper oil plate before reassembling the hose.



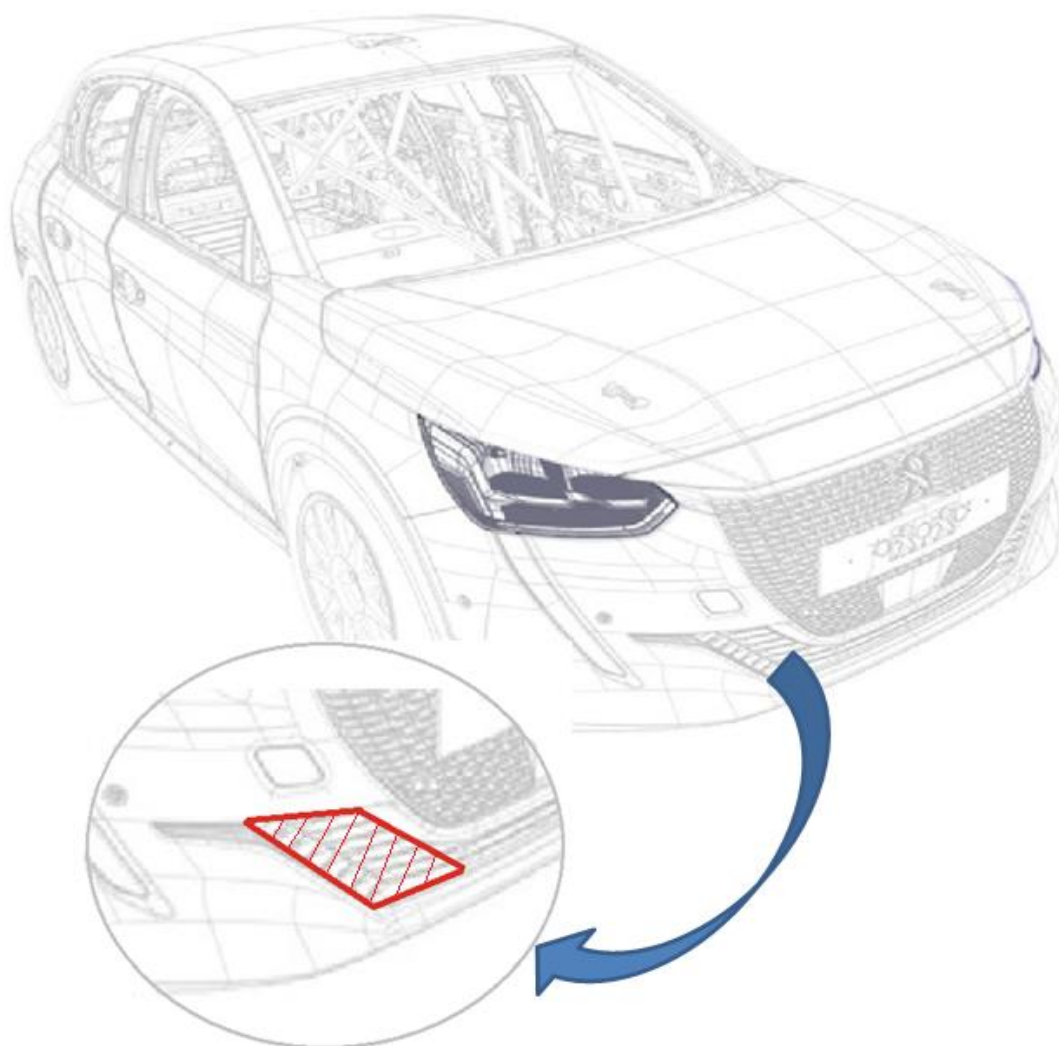
3.3.2. Oil Circuit

Engine oil is cooled by an air-to-air radiator installed at the front right. For optimal operation, the engine oil temperature should be between **95°C** and **125°C**



It is recommended not to drive below 80 °C to avoid damage or premature wear of the engine.

If the oil temperature **does not rise above 80 °C** due to very low temperature conditions, on special stages, or during road sections, it is necessary to **partially mask** the front bumper air entry in front of the oil cooler using a rigid cover or tape in the area identified in red below:



3.4. SUPERCHARGING

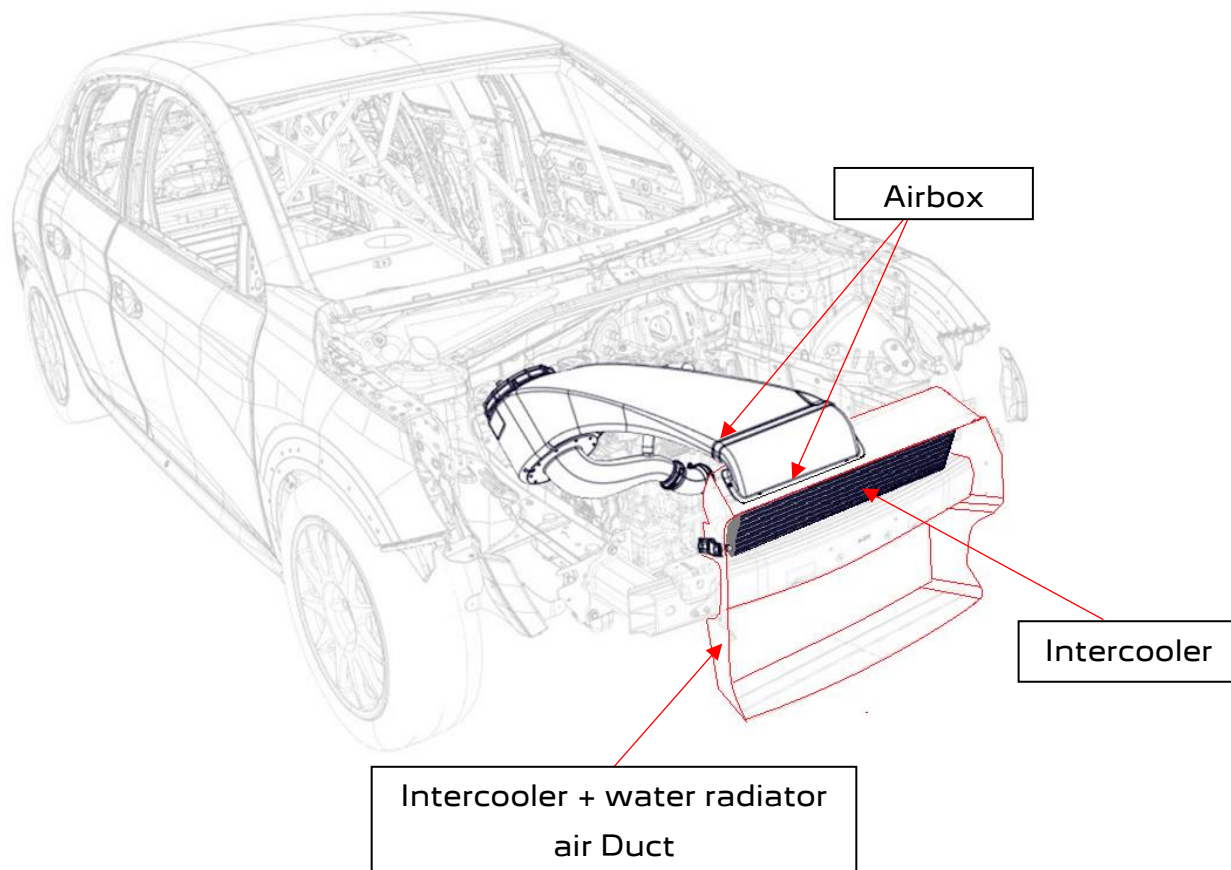
3.4.1. Presentation

The performance of the supercharging system is provided by an original Borg Warner turbo combined with an electronically controlled waste-gate.

3.4.2. Cooling

Cooling of the intake air is provided by an air-to-air exchanger located on the front panel above the water radiator. In order to ensure optimal cooling and engine performance, it is important to regularly ensure:

- ❑ The correct condition of the intercooler
- ❑ The correct fit and tightness of the air ducts.
- ❑ The correct adjustment of the airbox.



At the end of the stage, it is normal for the alarm to be Turbo Temperature to be displayed on the Dashboard:

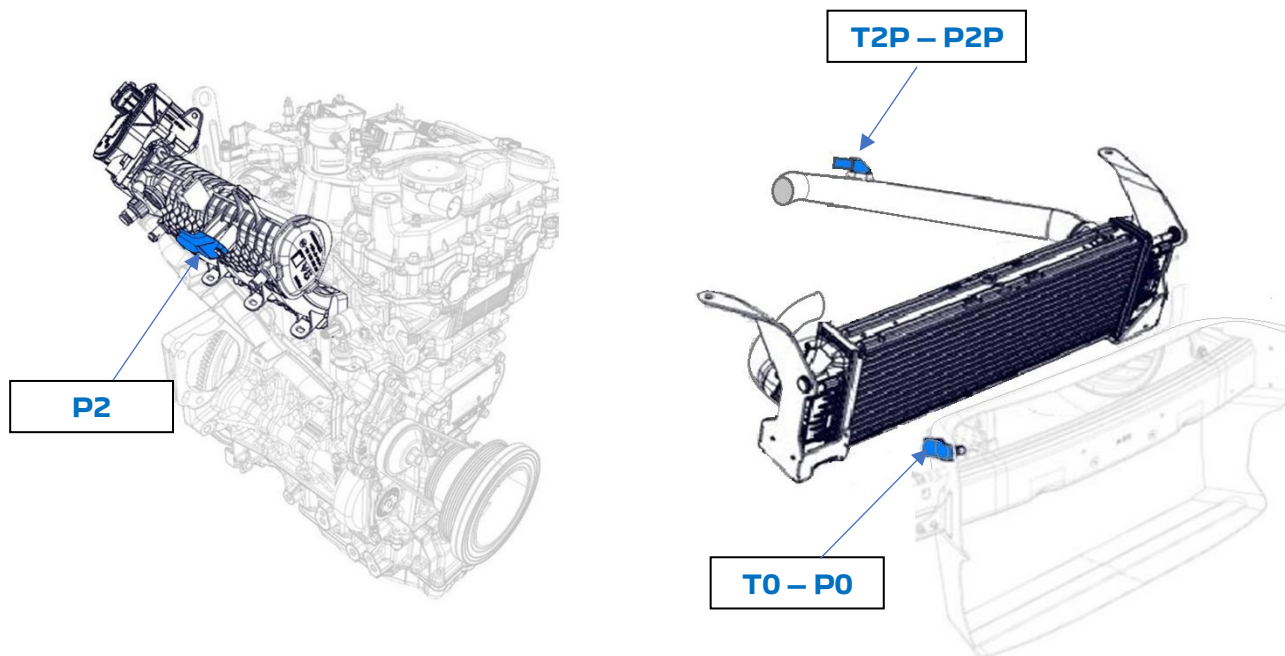
! Turbo Temp !



Wait for engine cool down and the message disappear before turning it off. If the engine has been stopped → , restart immediately.

3.4.3. Electronic Monitoring

The temperature and boost pressure are controlled using three sensors located at different points in the circuit before it is admitted into the engine. They are distributed as shown:



T0 – P0 = Ambient Temperature / Atmospheric Pressure

❑ Default values if sensor out of order :

- T0 = 44,4°C
- P0 = 999mbars

T2P – P2P = Temperature / Boost Pressure (After Turbo and before Throttle body)

❑ Default values if sensor out of order :

- T2P = 66,6°C = Power Loss
- P2P = 1200mbars = Power Loss

P2 = Manifold pressure (After throttle body)

❑ Default values if sensor out of order :

- P2 = 1000 mbars = Power Loss



These sensors transmit the values to the engine control unit (ECU) in order to adjust real-time performance.

NB: Degradation of engine performance start from 45°C of T2
(Temperature allowed in the engine).

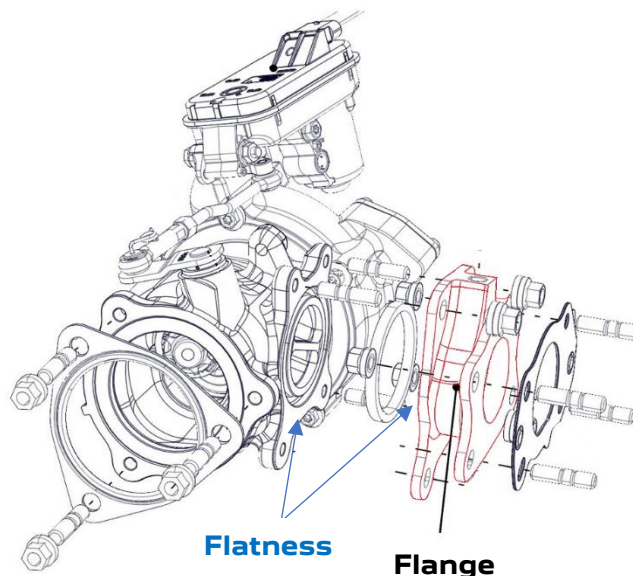


It is important to ensure that the sensors and their electrical harness are in good condition.

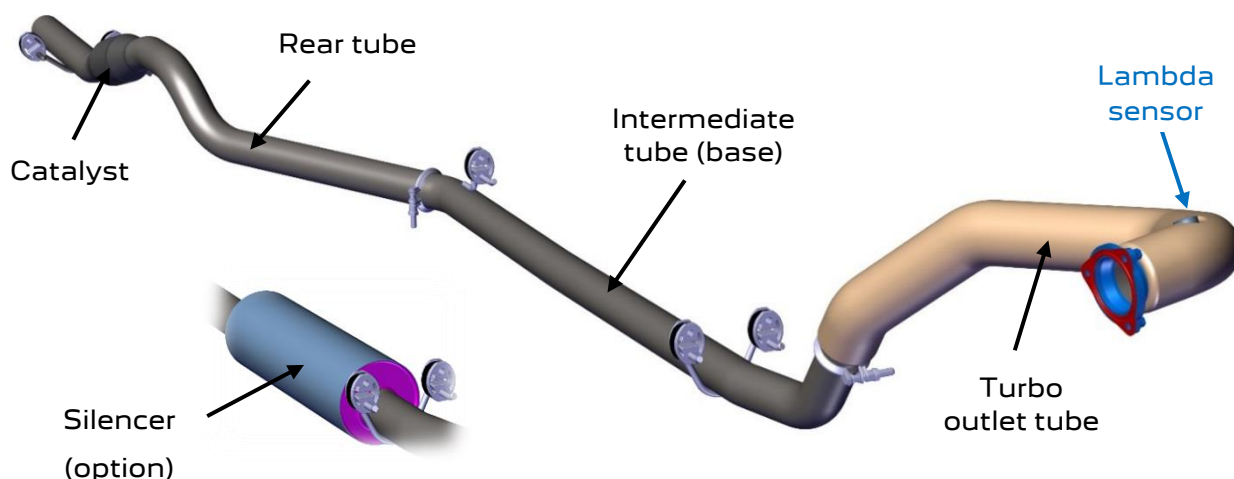
3.5. EXHAUST CIRCUIT

3.5.1. Presentation

The engine has no visible exhaust manifold since it is integrated into the cylinder head, so the turbo is mounted directly on the engine via a flange.



Regularly check the flatness of the flange by the absence of leakage between the turbo and it.



The catalytic converter at the end of the exhaust line is the following model:

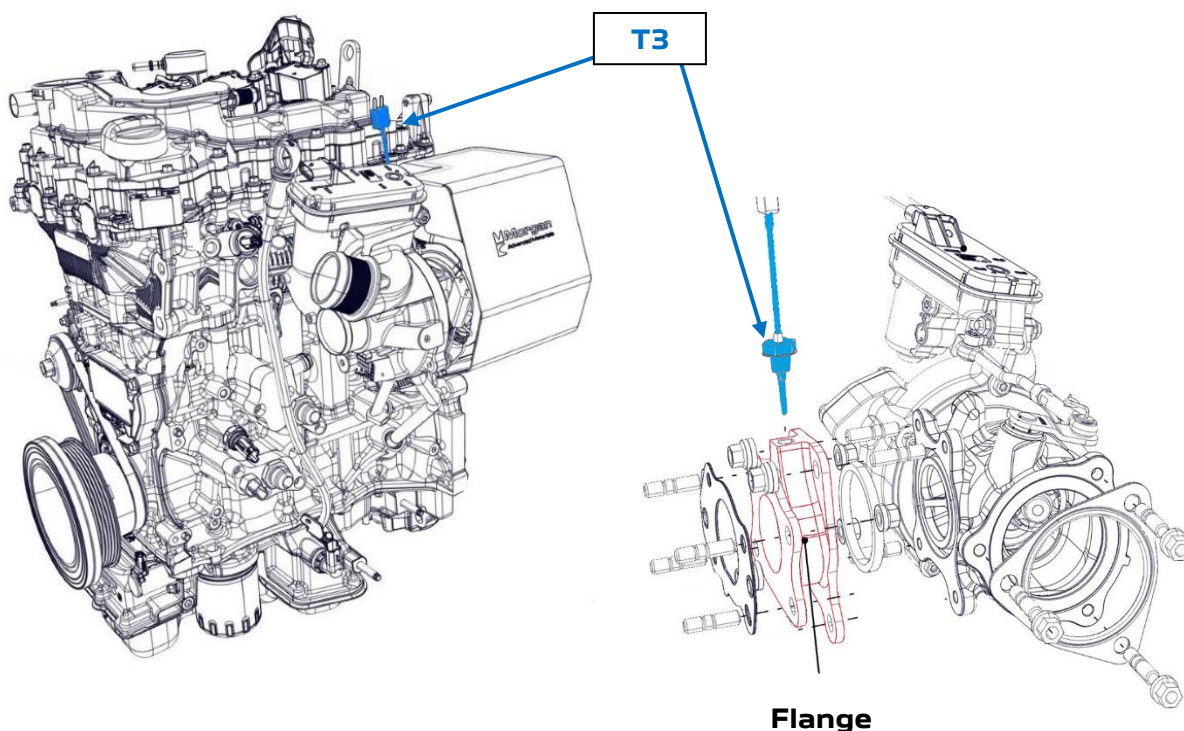
ROSI 95032 100 2N - It is homologated by the FIA on technical list #8 and registered to the FFSA under the reference : FFSA-005-50321/95032 of July 2001.



The homologation sheet for the catalytic converter is available to your local federation

3.5.2. Electronic Monitoring

The exhaust gas temperature is measured using a sensor called **T3** located on the turbo flange. The normal operating temperature range in special is about 900 to 1000°C.



From 1050 °C temperature → degradation of engine performance (loss of ALS)



At the end of the stage, it is normal for the alarm to be Turbo Temperature to be displayed on the Dashboard:

! Turbo Temp !



Wait for engine cool down and the message disappear before turning it off.

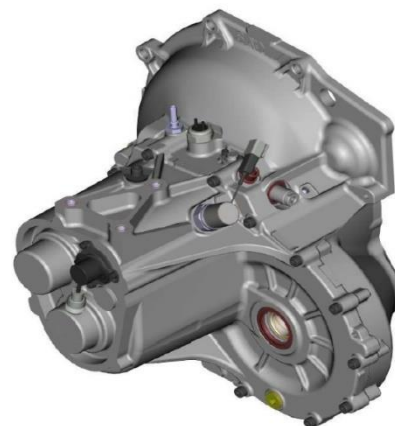
If the engine has been stopped → , restart immediately.

4. TRANSMISSION

4.1. GEARBOX

4.1.1. Presentation

The gearbox is a Sadev ST82LW composed of 5 gears + reverse. Detailed technical documentation is available on the media library.



4.1.2. Gearbox Ratios / Final drive

Only one set of gearbox ratios is homologated:

	1st	Ref : D829063N01915F5F	2nd	Ref : D829063N01915F5F	3rd	Ref : C8214N1725915F	4th	Ref : C8214N2226915F	5th	Ref : C8214N2120915F
Primary shaft	12		17		17		22		21	
Secondary shaft	29		31		25		26		20	

RAPPORTS DE BOITE EVO 2025 - Homologué depuis le 01/03/2024

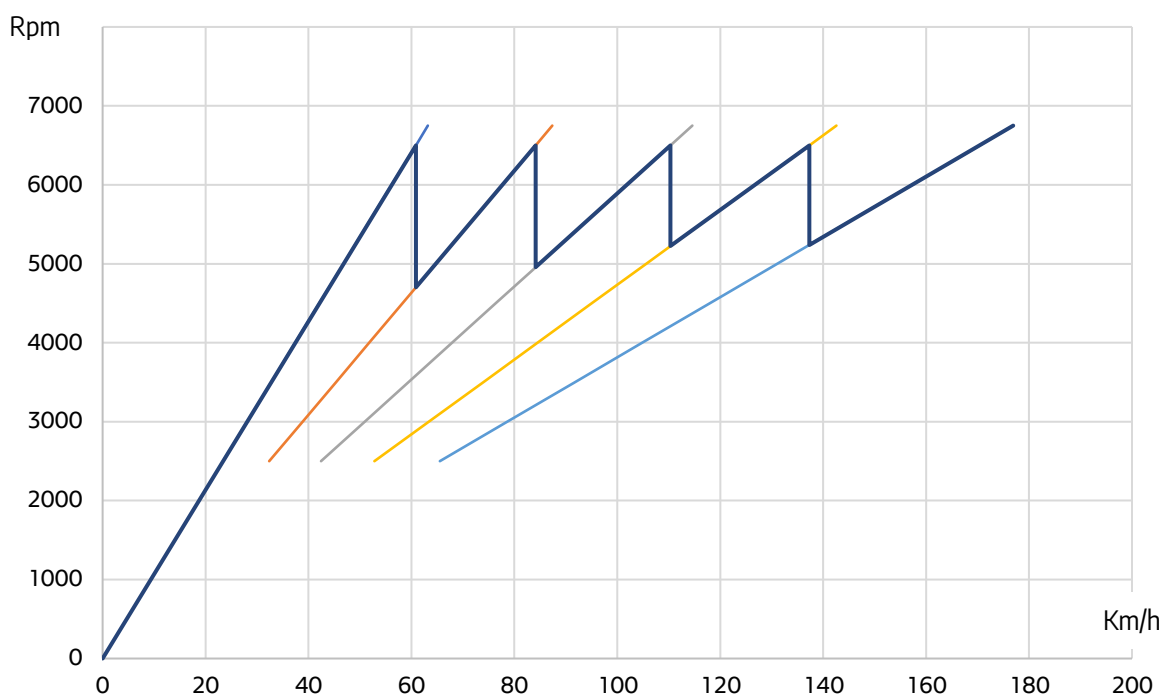
	1st	Ref : D829063N01915F5F	2nd	Ref : D829063N01915F5F	3rd	Ref : C8214N1725915F	4th	Ref : C8214N2226915F	5th	Ref : C8214N2120915F
Primary shaft	12		17		17		22		21	
Secondary shaft	29		31		25		26		20	

Two sets of final drives are homologated:

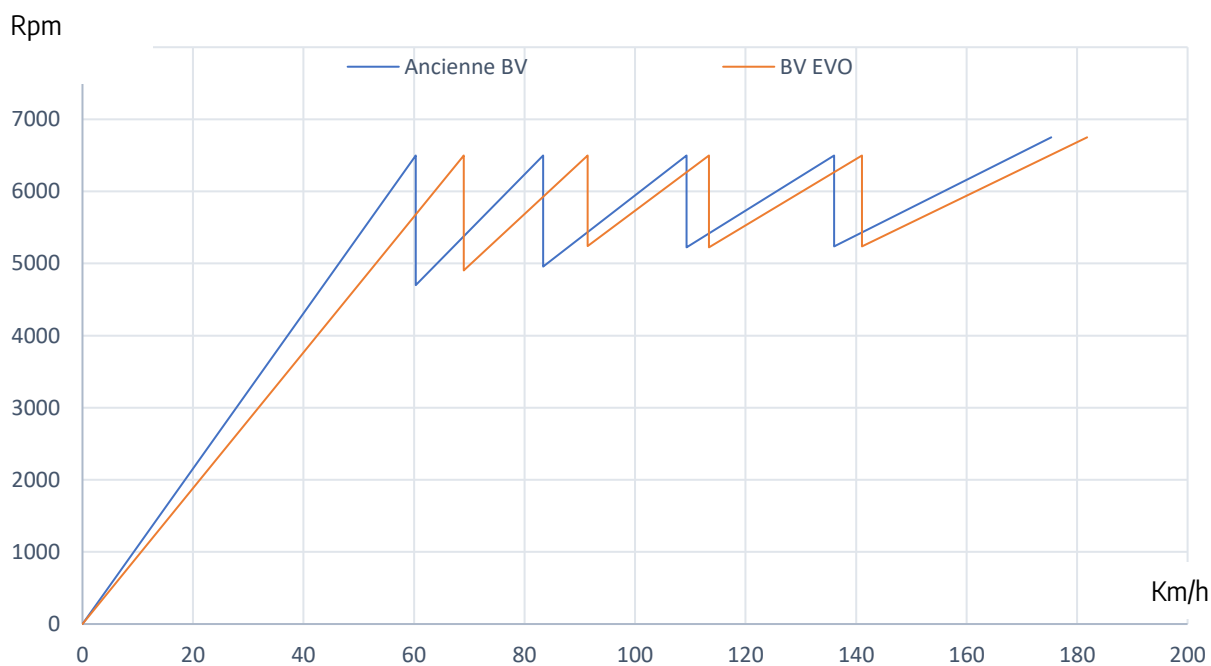
FINAL DRIVE	NUMBER OF TEETH	RATIO
N° 1	12 x 56	4.667
N° 2 - COUPLE EVO 2025 Homologué depuis le 01/03/24	12 x 54	4.500

4.1.3. Gearbox ratio

Here is the abacus of the gearbox ratios:



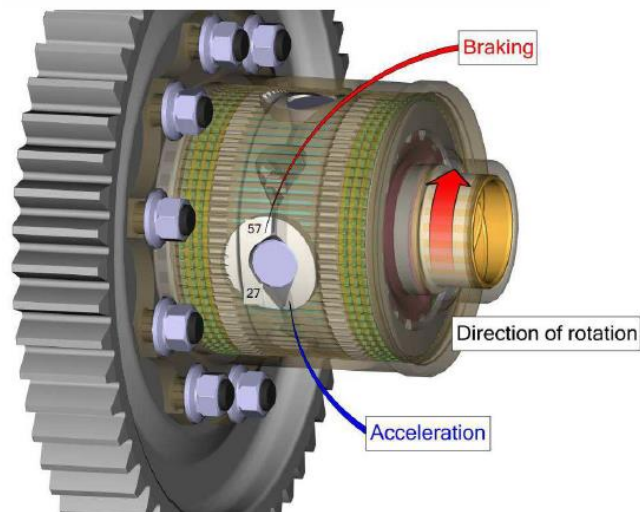
The EVO gear ratio, consisting of the two longer first gears, improves traction out of tight corners by reducing front wheel spin. It is associated with a final torque that is also longer which allows a gain in maximum speed of about 5km/h.



4.1.4. Self-Locking Differential

The gearbox is equipped with a limited-slip self-locking differential, two sets of ramps are homologated:

	Tarmac	Gravel
Acceleration	27°	42°
Braking	57°	63°



To switch to the **GRAVEL** configuration, change the differential ramp angles.

The differential preload is adjustable by replacing the Belleville washers* located on either side of the disc stacks.

Recommended preload is: **130 N.m** cold

It is also possible to adjust the number of friction faces (FF) in order to vary the progressiveness of the self-locking according to the grip by reversing a smooth disc and a friction disc.

The recommended number of friction faces is **12FF (6+6)**



* List of washers available on the Sadev manual

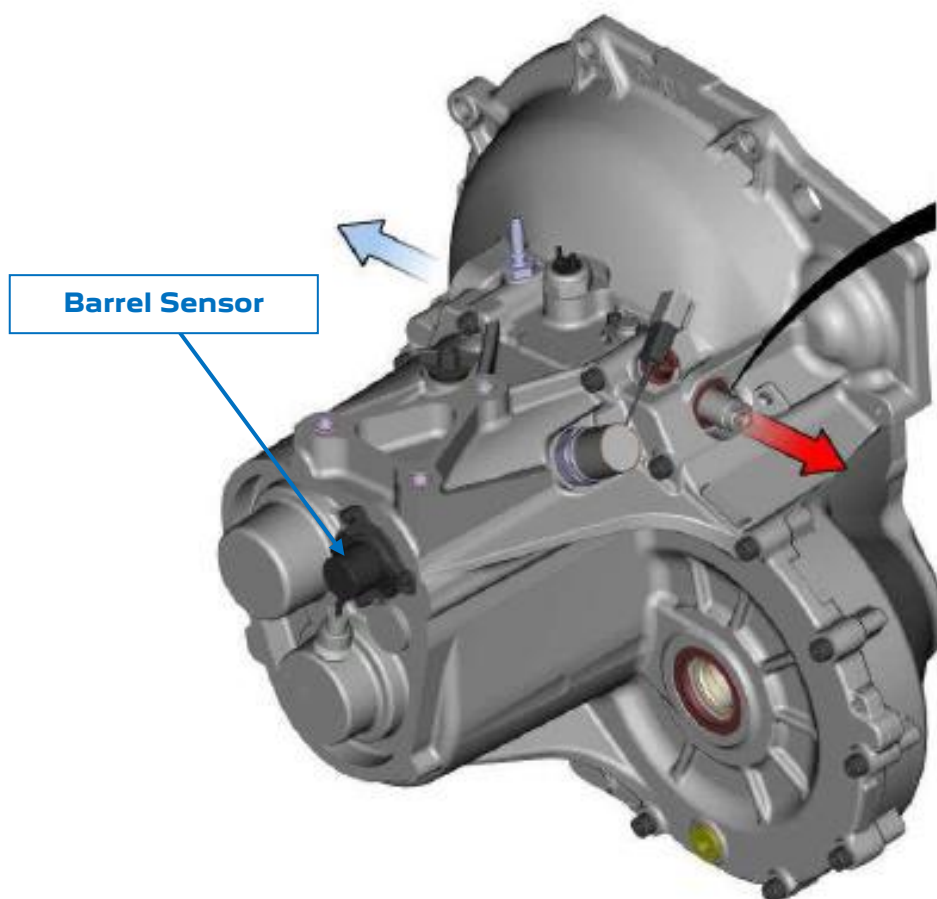


Do not go below 8 FF (4+4).

4.1.5. Gear Shifting

The gearbox is equipped with a barrel sensor that sends a signal to the engine control unit for gear changes and the display of gear positions.

This sensor sends a voltage to the computer according to the angle of the barrel and therefore the gear engaged, **its initial adjustment at rest is imperative.**



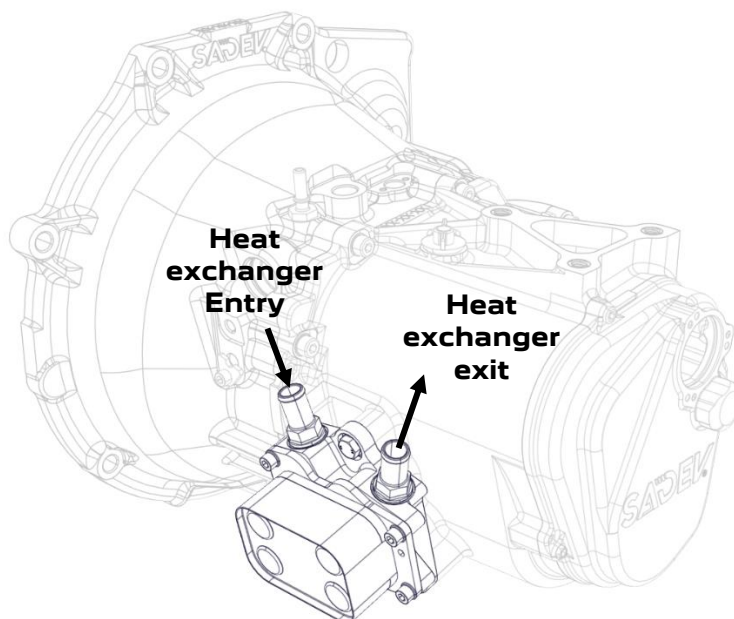
To adjust the voltage of the sensor at rest:

- ☐ Engaged the second gear
- ☐ Looked at the voltage value on the Dashboard and set the sensor to a value of **2.50 V**

Gears	R	N	1	2	3	4	5
Barrel voltage (V)	0,59	1,23	1,87	2,50	3,14	3,78	4,42

4.1.6. Cooling

The gearbox is cooled by a water/oil exchanger attached to the front of the gearbox



The temperature of the gearbox oil in normal operation during the special stages is between 80 and 120°C.

4.1.7. Maintenance

Maintenance recommendations are available in the following documents:

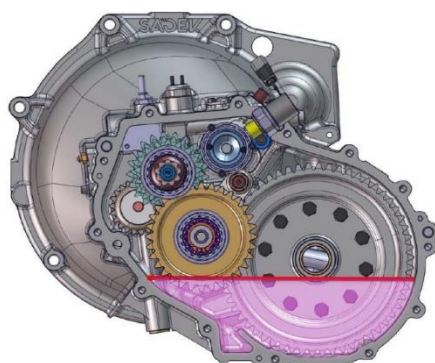
- ☐ The [Maintenance Schedule](#)
- ☐ SADEV technical documentation



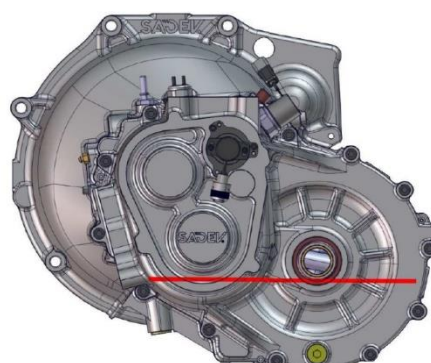
Recommended oil: ELF HTX750 **75W140**

Capacity : Gearbox + cooling system (new) = **1,1L**

Gearbox only (oil change) = **1,0L**



Level
With
1,0L



Clean the magnetic plug and strainer at each oil change

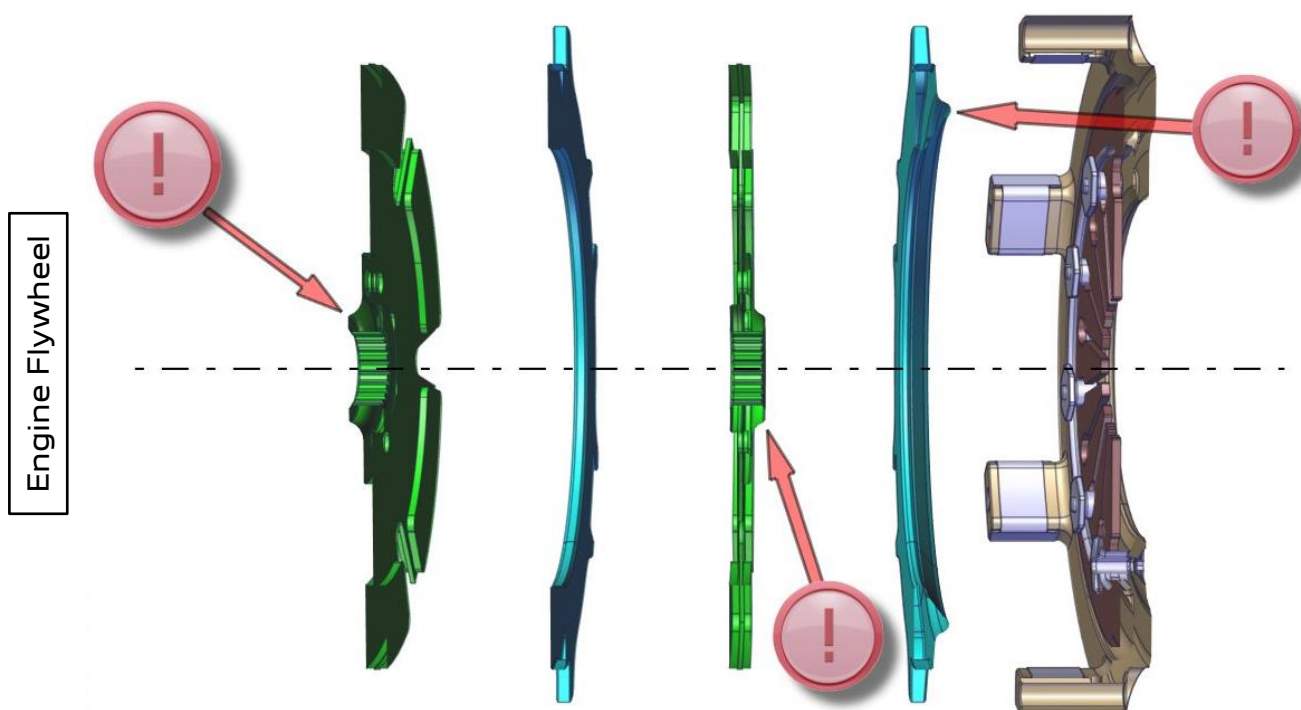
4.2. CLUTCH

4.2.1. Presentation

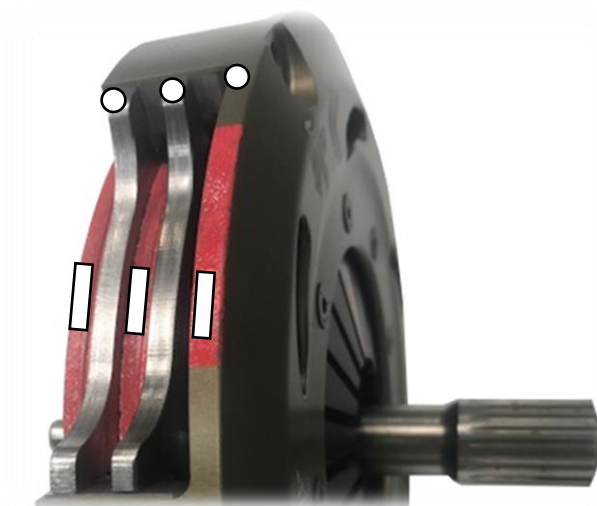
The transmission is provided by a twin-plate clutch composed of:

- ❑ Two discs with 6 ceramic pads
- ❑ A pressure plate
- ❑ An intermediate plate

It is imperative to respect the order and direction of assembly as described below:

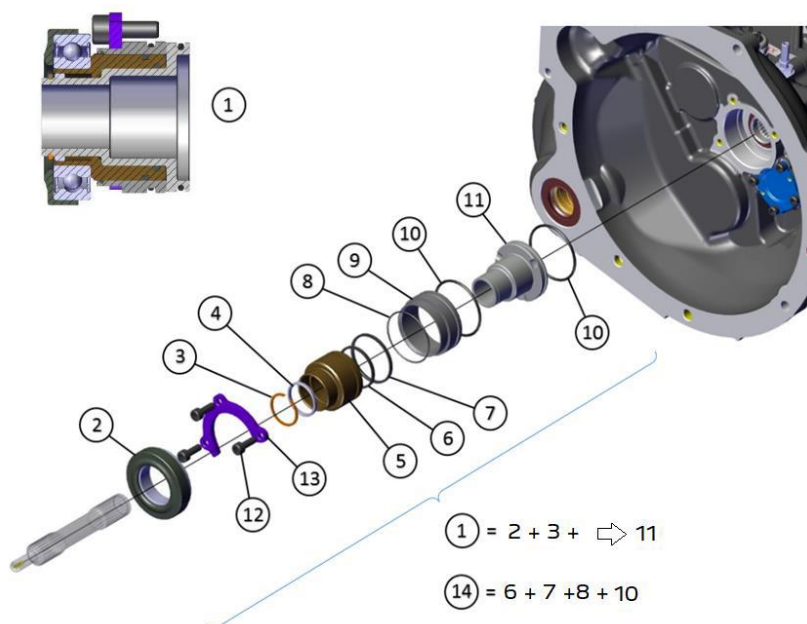


Before any assembly/disassembly, we advise you to mark the discs, the plates and the clutch mechanism in order to maintain the same angular position:



4.2.2. Command

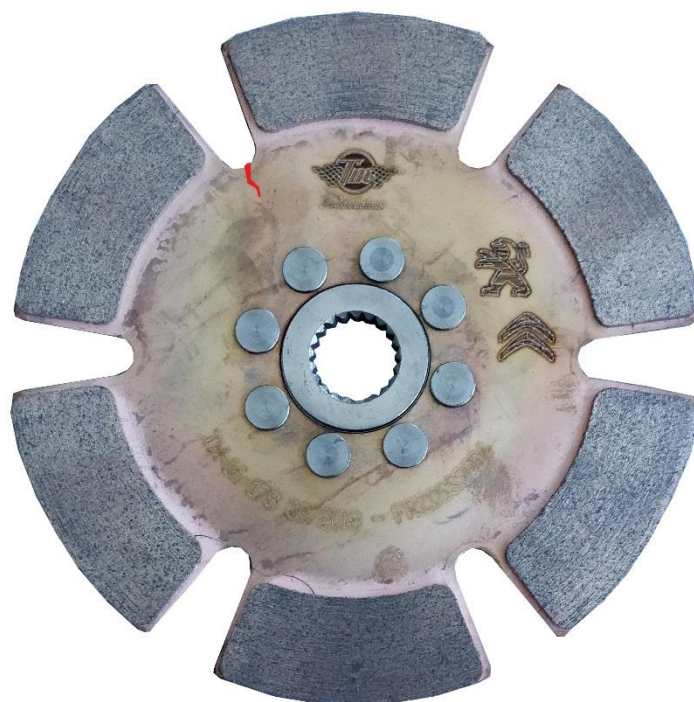
The clutch control is hydraulic, the transmitter and bleeder are accessible from the outside, the slave cylinder is integrated into the gearbox



4.2.3. Maintenance

The minimum thickness of the clutch disc pads is: 5.8mm (6.3mm new). Below this value, we recommend replacing the disk.

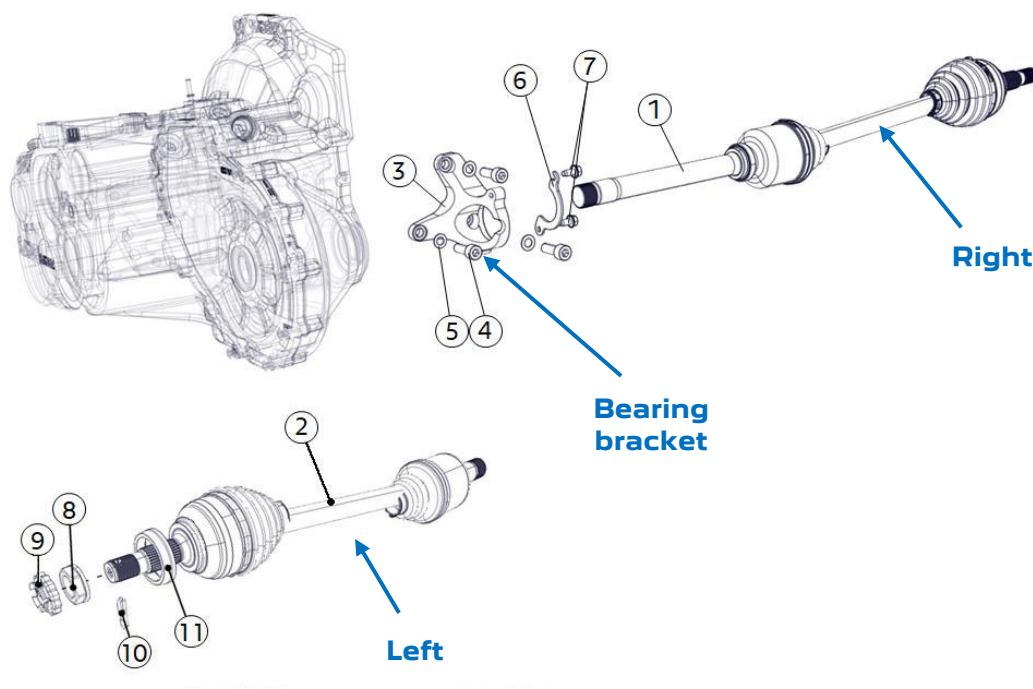
The disc should also be replaced if cracks appear at the base of the pads, as shown in the principle image below:



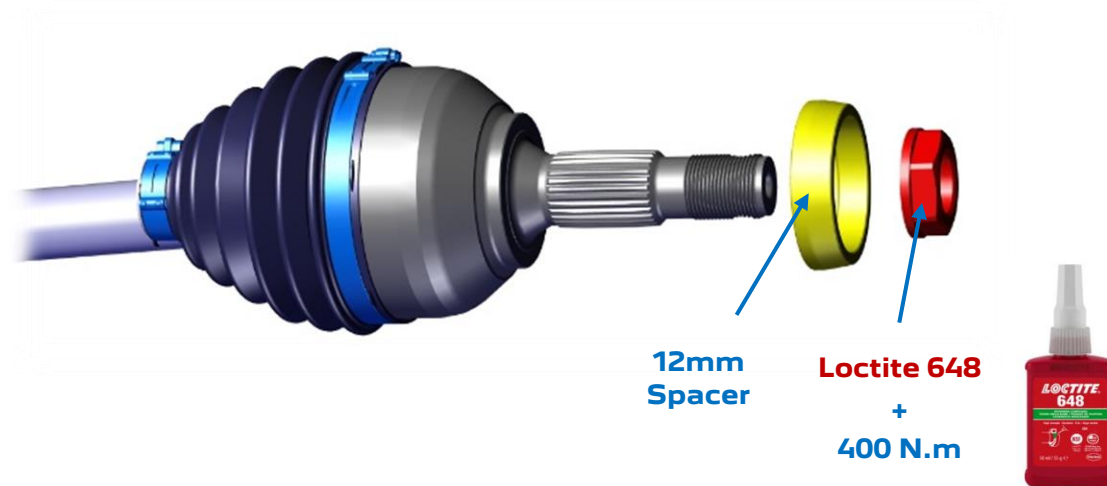
Replace the 6 screws fixing the mechanism at each disassembly

4.3. LATERAL DRIVESHAFTS

We advise you to inspect the transmissions and more specifically the boots after each rally



4.3.1. TARMAC Assembly



In Tarmac configuration, the transmissions cannot be fitted with nut and pin brakes, so the nuts are fitted using **Loctite 648** and **tightened at 400N.m**

We recommend checking the tightening torque of the nut after the first drive as well as at all assistances, avoiding as much as possible to tighten the nut while hot. Clean the thread and replace new **Loctite 648** if the clamping mark has moved more than 1/6th of a turn approximately.



In tarmac configuration, the use of the 12mm spacer is mandatory

4.3.2. GRAVEL Assembly



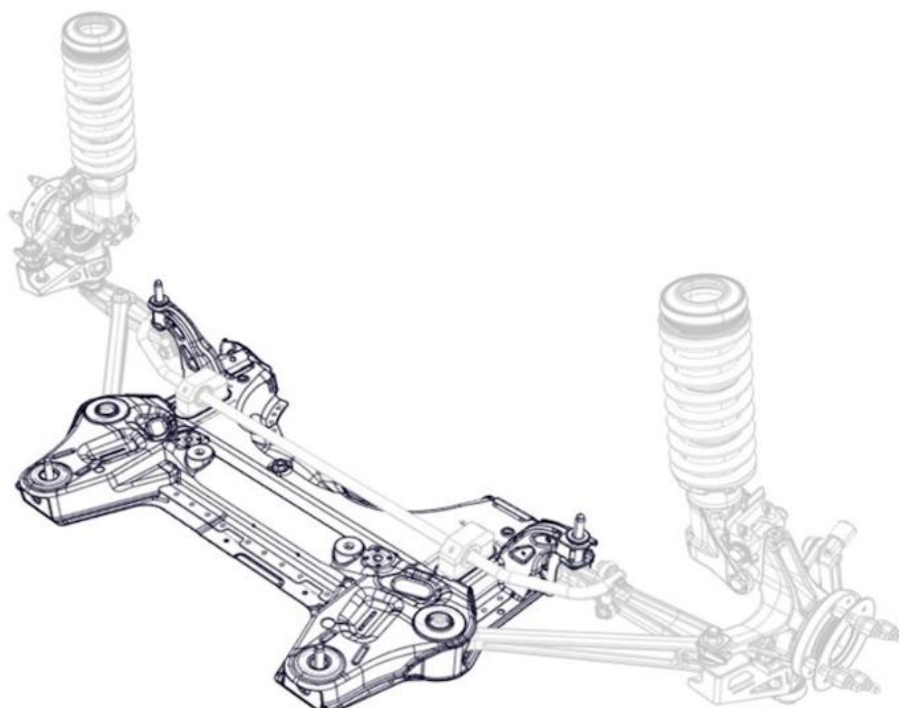
In gravel configuration, the transmissions are mounted **without the 12mm spacer**, which allows the nut to be mounted with its brake safety pin.

5. CHASSIS_VEHICLE UNDERCARRIAGE

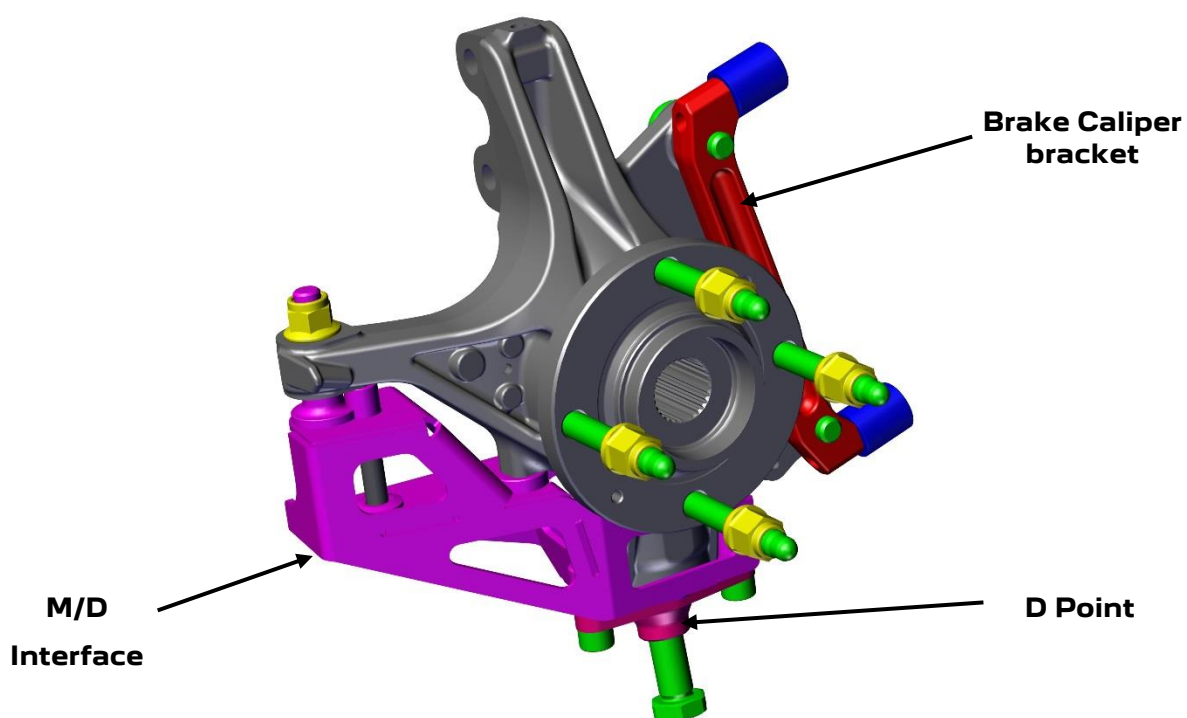
5.1. FRONT AXLE

5.1.1. Presentation

The front axle is of the McPherson type, using specific reinforced parts developed by Stellantis Motorsport such as the front subframe, the upright and uniball wishbones.



5.1.2. Upright

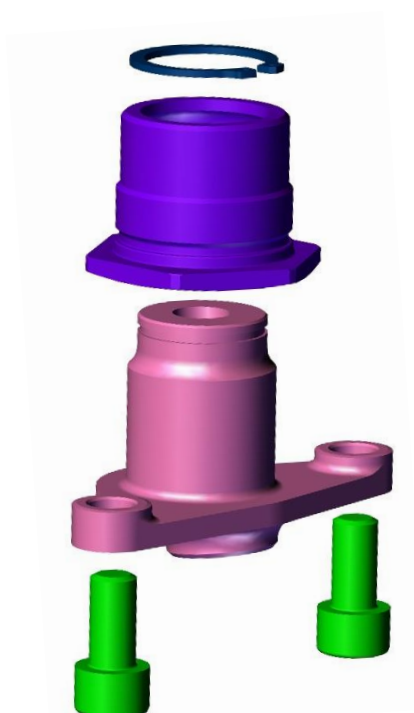


There is a point D for each surface (TARMAC and GRAVEL)

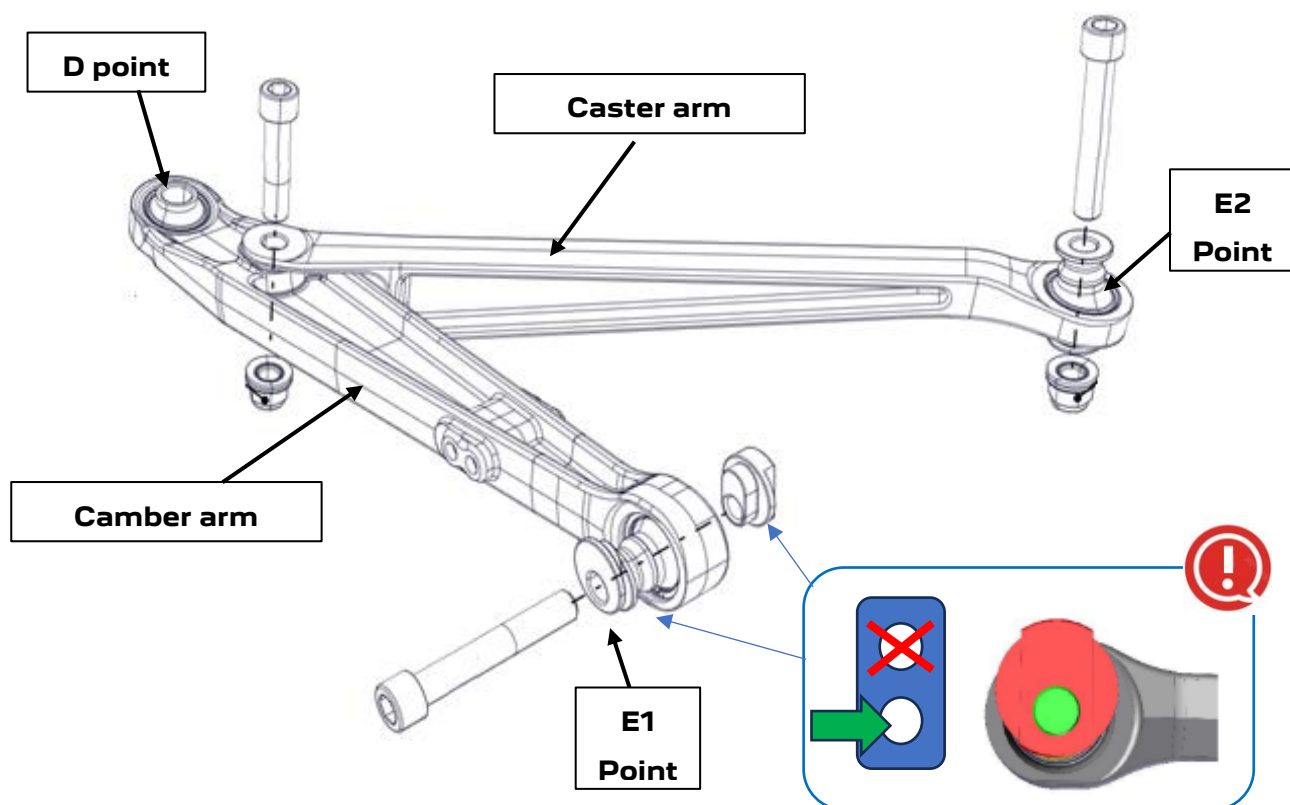
TARMAC D-point assembly



GRAVEL D-point assembly



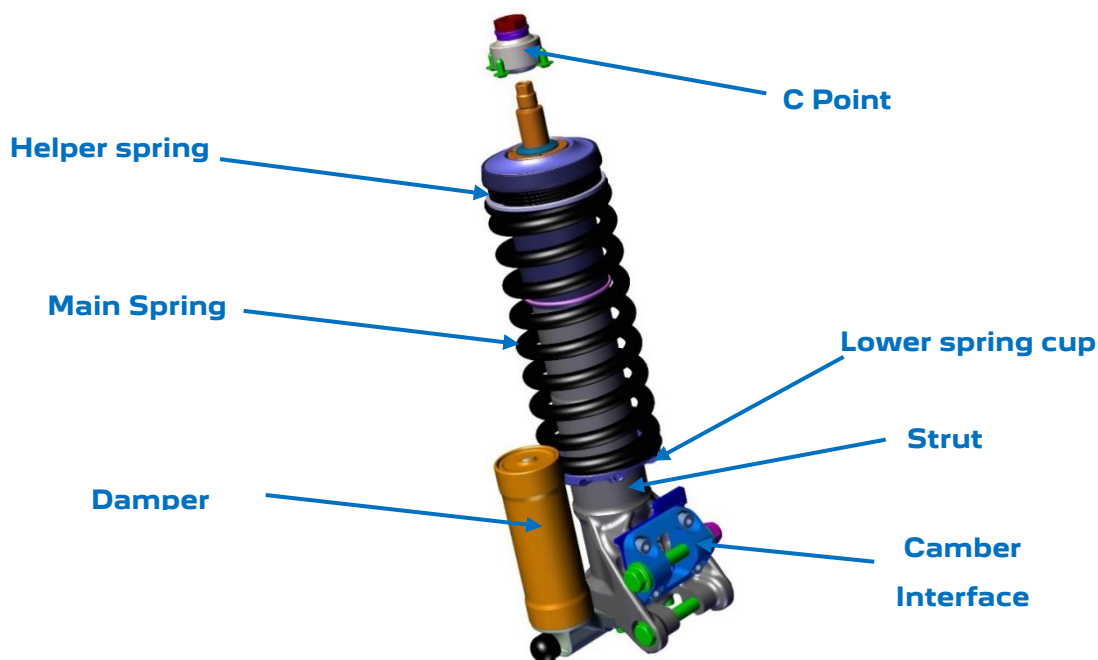
5.1.3. Wishbone



E1 point Bottom : **MANDATORY**

5.1.4. Suspension

The suspension is composed of a combined spring/shock absorber assembly. The shocks are adjustable to 3x way + PDS* and a range of springs is available in order to adjust the stiffness to the grip conditions.



* PDS = Progressive Damping System

More information can be found in the Öhlins technical documentation.

□ **SPRINGS**

Three stiffness rates are available depending on the surface

□ **Tarmac:**

FRONT		
Reference	Identification	Stiffness
1E1420807A	904208078A	46 N/mm
1E1420806A	904208068A	51 N/mm*
1E1420805A	904208058A	56,5 N/mm

* Base fitment for new car on **Tarmac spec**

□ **Gravel:**

FRONT		
Reference	Identification	Stiffness
904659378A	904659378A	31 N/mm
1E1420810A	904208108A	35,5 N/mm
1E1420809A	904208098A	40 N/mm*

* Base fitment for new car on **Gravel spec**



All springs are black, the identification code as well as the stiffness of the springs to identify them are printed on the wire.



The front and rear springs are different

□ **RIDE HEIGHT – RH**

The ride height is adjustable via the lower spring cups. Turn clockwise to increase the RH:

6 revs = 10 mm of RH

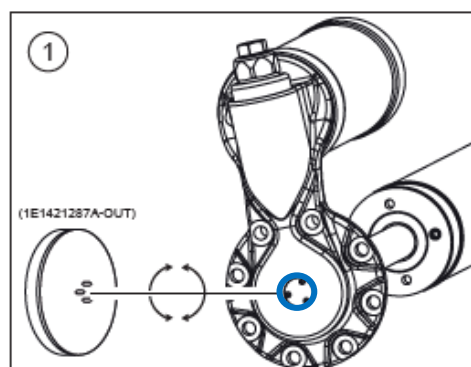
For more information, refer to the setup sheets available on the media library

❑ **SHOCK ABSORBERS**

REBOUND

The rebound can be adjusted using the specific tool reference: 1E1421287A-OUT

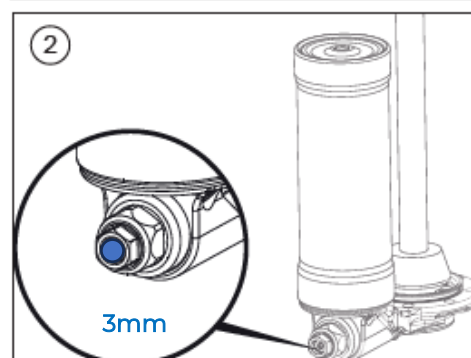
The useful adjustment range is from 5 to 50 clicks for a total of 60



COMPRESSION_LOW SPEED

The low speed adjusts using a 3mm Allen wrench in the center of the nut.

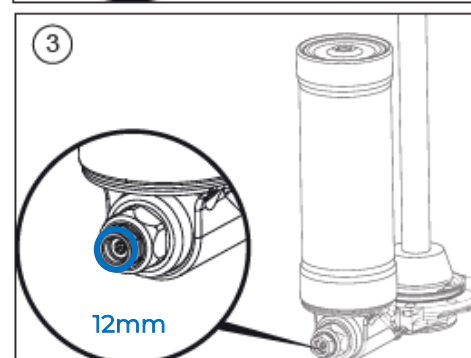
The adjustment range is 40 clicks and the entire range can be used.



COMPRESSION_HIGH SPEED

The high speed adjusts using a 12mm open-end wrench.

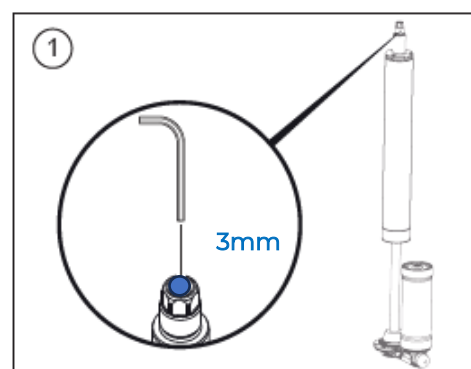
The adjustment range is 50 clicks and the entire range can be used.



PDS_Progressive Damping System

PDS adjusts with a 3mm Allen wrench. The adjustment is done in numbers of revolutions.

The adjustment range is 1 to 6 turns.
→ Set in 1/2 turn steps



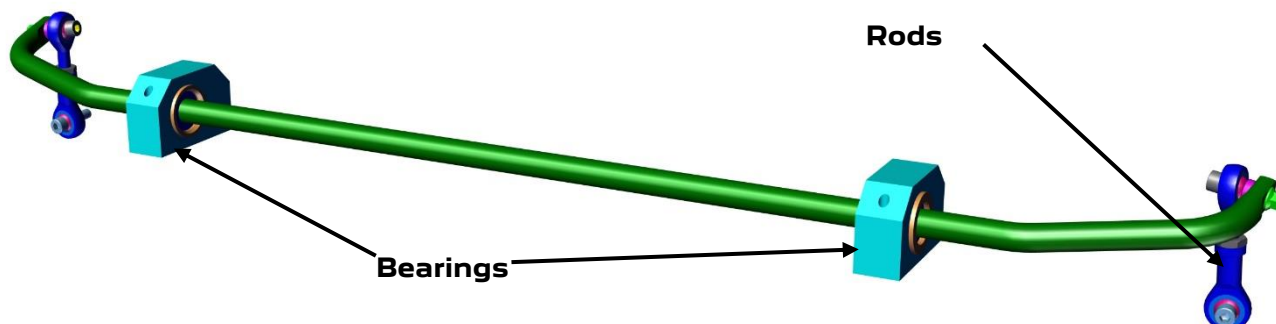
PDS : With hard settings, check that you are using the entire stroke of the shock. Otherwise, there is a risk that the PDS will become inoperative.



Never close the screw completely = risk of damage to the shock absorber

5.1.5. Anti-roll

The front anti-roll bar mounted on a Teflon bearing is available in 3x different diameters:

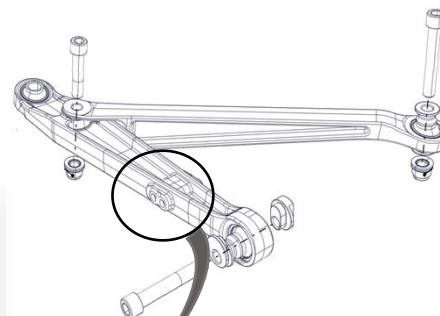
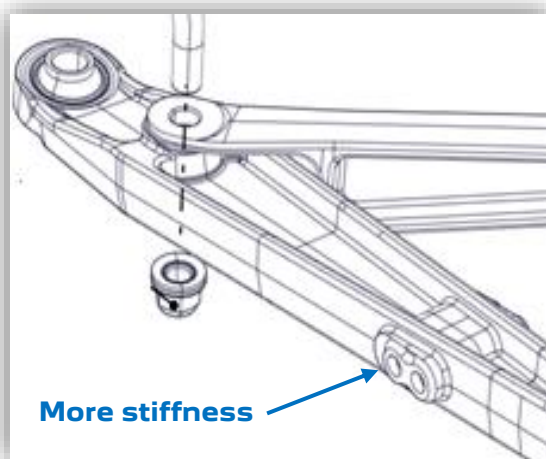


904639358A	1	Front Anti-roll bar $\varnothing 15$	Base fitment for new car in Gravel spec
904639428A	1	Front Anti-roll bar $\varnothing 22$	Base fitment for new car in Tarmac spec
904639388A	1	Front Anti-roll bar $\varnothing 18$	



The diameters are approved

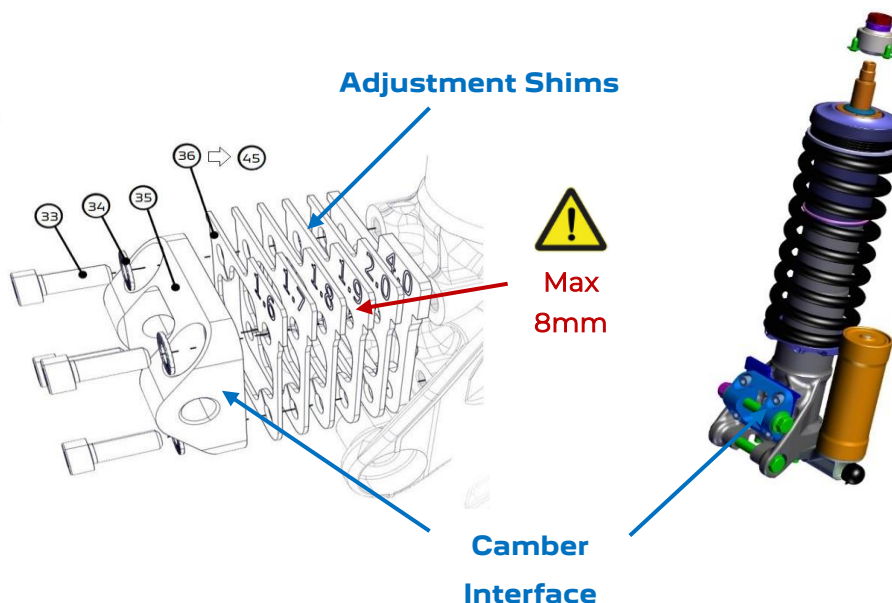
An additional adjustment is available on the wishbone, the inner position is slightly softer than the external one.



ARB Diameter	Position	Anti roll Stiffness (N.m/rad)
15 mm	Inside	8 200
	Outside	10 200
18 mm	Inside	17 200
	Outside	21 200
22 mm	Inside	39 000
	Outside	47 000

5.1.6. Geometry

The camber is adjustable using shims positioned between the strut and the camber interface. The recommended values according to the surface are available on the setup sheets.



Recommended method:

Make a geometry survey without any camber or toe to obtain your initial values. Due to the machining tolerances of the parts, these values may vary from car to car.

VARIATION

- ❑ Front Camber : 0.3mm Shim Varies Camber by 15'
- ❑ Front Toe : 1/2 Turn Tie Rod → 0.75mm Length Tie Rod → 1.8mm Wheel's toe
- ❑ Incidence camber / Toe : -30' variation of wheel's camber → + 2mm Wheel's toe

List of available shims:

1E1420231C	4	Front camber shim 1.0mm
1E1420226C	4	Front camber shim 1.5mm
1E1420225C	2	Front Camber Shim 1.6mm
1E1420224C	2	Front camber shim 1.7mm
1E1420223C	2	Front Camber Shim 1.8mm
1E1420222C	2	Front Camber Shim 1.9mm
1E1420221C	4	Front camber shim 2.0mm
904664288A	2	Front camber shim 4.0mm
904669978A	2	Front camber shim 5.0mm
904669988A	2	Front camber shim 6.0mm

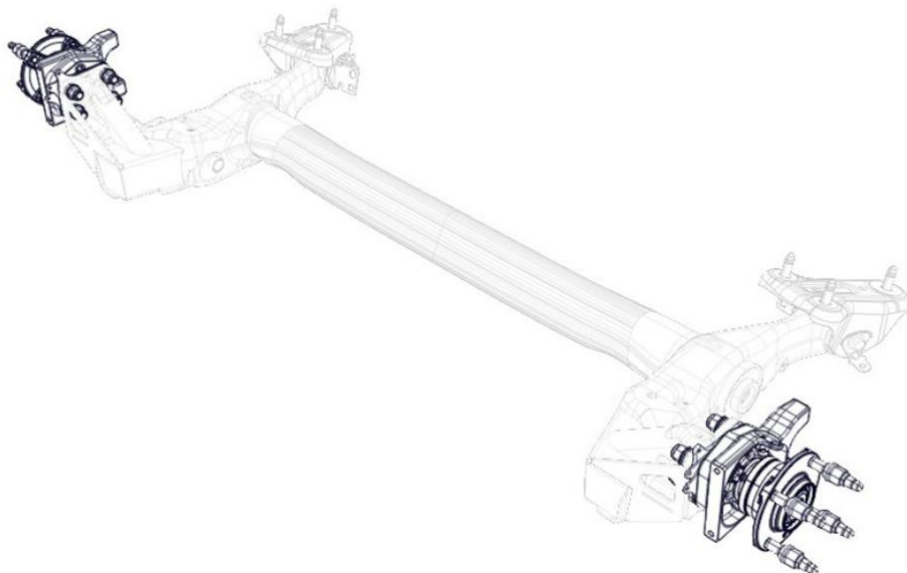


Never exceed 8mm shims

5.2. REAR AXLE

5.2.1. Presentation

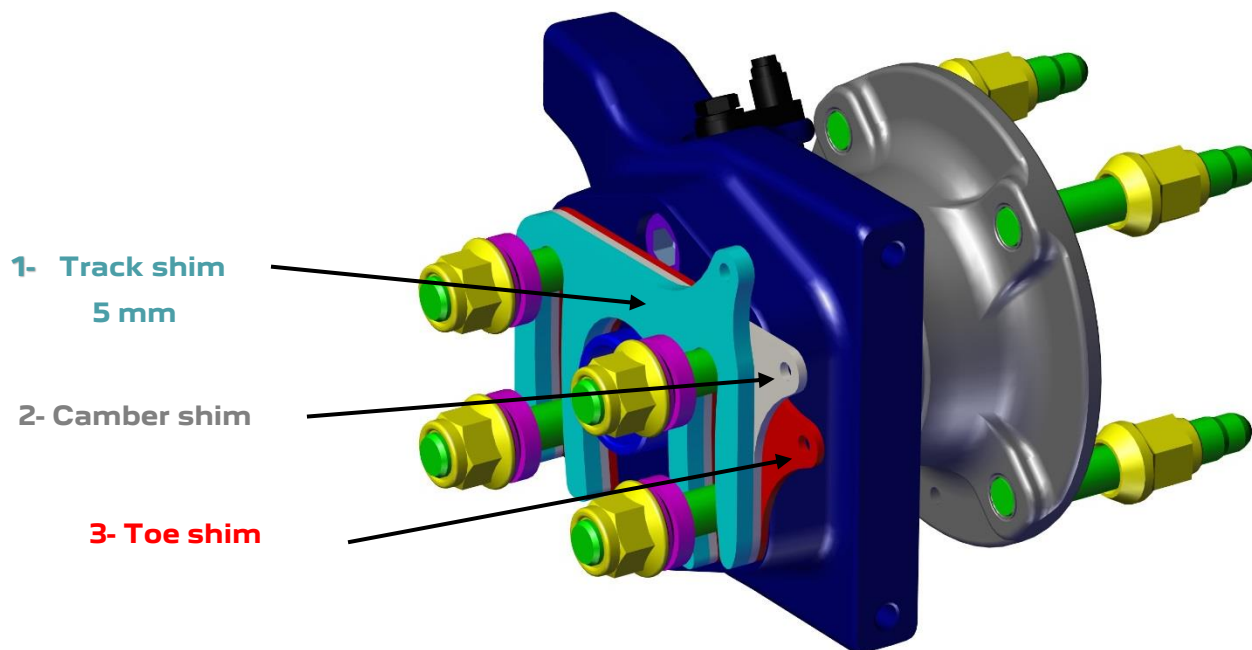
The rear axle is composed of a reinforced H-beam with adjustable integrated anti-roll bar.



5.2.2. Hub carrier

The assembly of the hub carrier to the rear crossmember always consists of 3x shims:

→ Track / Camber / Toe



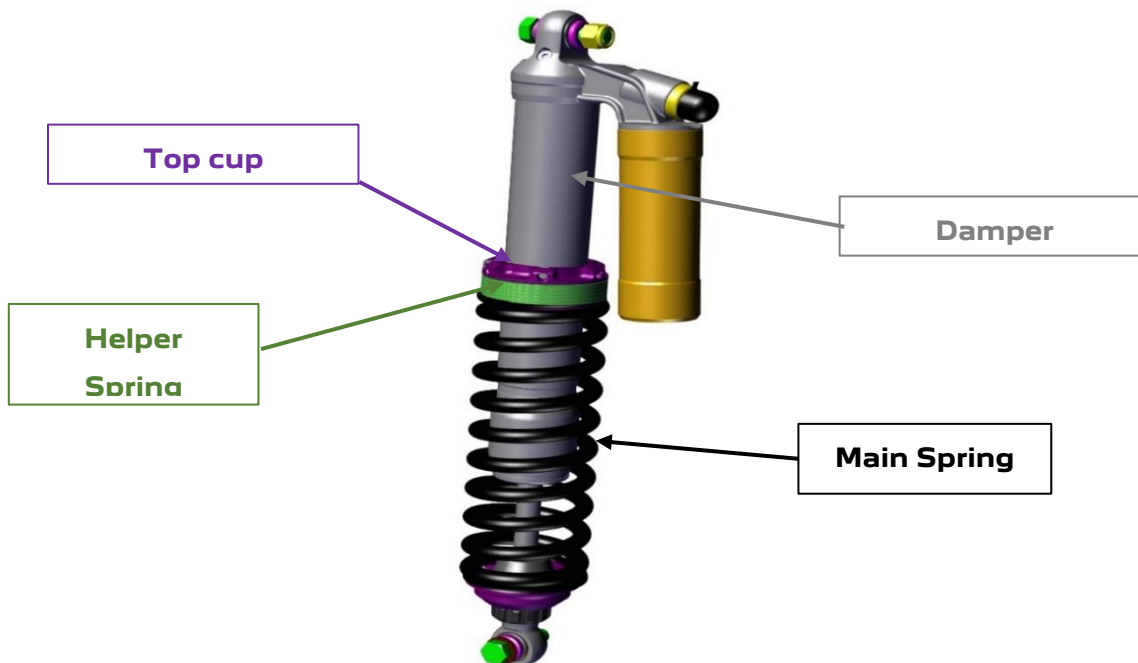
Respect the order of the chocks: 1: track, 2: camber, 3: toe.



It is not possible to remove or add an additional track shim.

5.2.3. Suspension

The suspension is composed of a combined spring/shock absorber assembly. The shock absorbers are adjustable to 3x ways + PDS* and a range of springs are available to adjust the stiffness to the grip conditions.



* PDS = Progressive Damping System

More information can be found in the Öhlins technical documentation.

□ **SPRINGS**

Three stiffness rates are available depending on the surface

□ **Tarmac :**

REAR		
Reference	Identification	Stiffness
1E2521280A	904212808A	40,5 N/mm
1E2521278A	904212788A	47 N/mm*
1E2521277A	904212778A	52 N/mm

* Base fitment for new car in **Tarmac spec**

❑ **Gravel:**

REAR		
Reference	Identification	Stiffness
904659388A	904659388A	28 N/mm
1E2521282A	904212828A	32 N/mm
1E2521281A	904212818A	36 N/mm*

* Base fitment for new car in **Gravel spec**



All springs are black, the identification code as well as the stiffness of the springs to identify them are printed on the wire.



The front and rear springs are different

❑ **RIDE HEIGHT – RH**

The ride height is adjustable via the upper spring cups. Turn clockwise to increase RH:

5 revolutions = 10 mm of RH

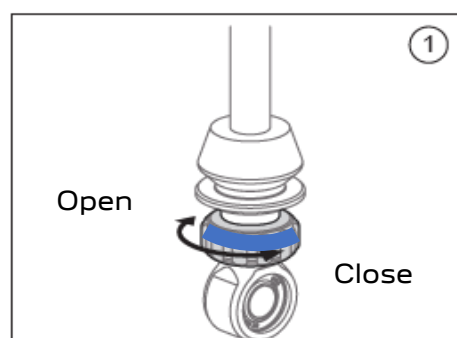
For more information, refer to the setup sheets available on the media library

❑ **SHOCK ABSORBERS**

REBOUND

The rebound is adjusted using the notched knob located in the lower position of the shock.

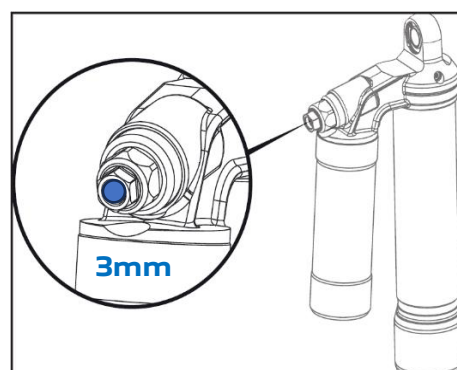
The adjustment range is 50 clicks and the entire range can be used.



COMPRESSION_LOW SPEED

The low speed adjusts using a 3mm Allen wrench in the center of the nut.

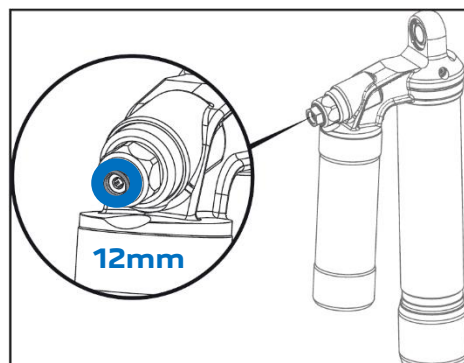
The adjustment range is 40 clicks and the entire range can be used.



COMPRESSION_HIGH SPEED

The high speed adjusts using a 12mm open-end wrench.

The adjustment range is 50 clicks and the entire range can be used.

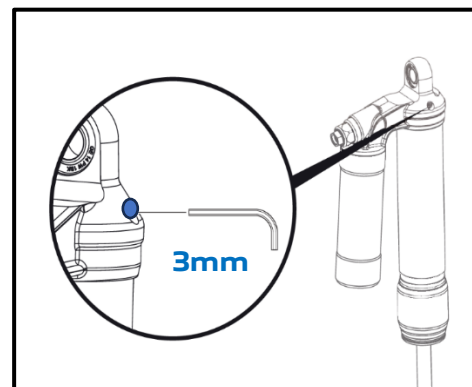


PDS_Progressive Damping System

Hydraulic stop adjusts with a 3mm Allen wrench. The adjustment is done in numbers of revolutions.

The adjustment range is 1 to 6 turns.

→ Set in 1/2 turn steps



Not to be confused with the bleeder screw (torx drive).



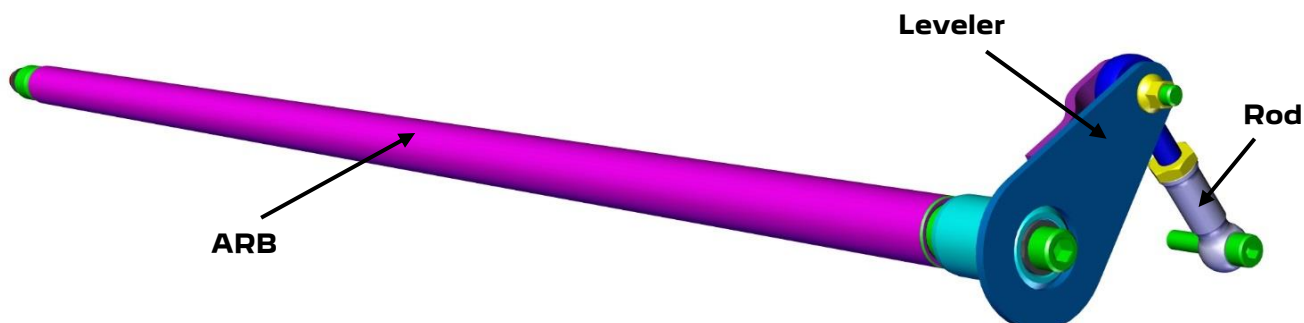
PDS : With hard settings, check that you are using the entire stroke of the shock. Otherwise, there is a risk that the PDS will become inoperative.



Never close the screw completely = risk of damage to the shock absorber

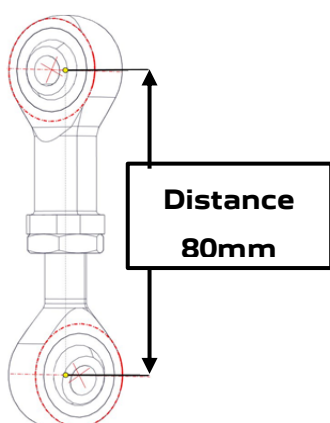
5.2.4. Rear Anti-roll

The rear anti-roll bar is mounted through the crossmember, available in 3x different diameters.



1E2664119C	1	Rear Anti-roll bar Ø19	
1E2664122C	1	Rear Anti-roll bar Ø22	<i>Base fitment for new car in Tarmac & Gravel</i>
1E2664124C	1	Rear Anti-roll bar Ø24	

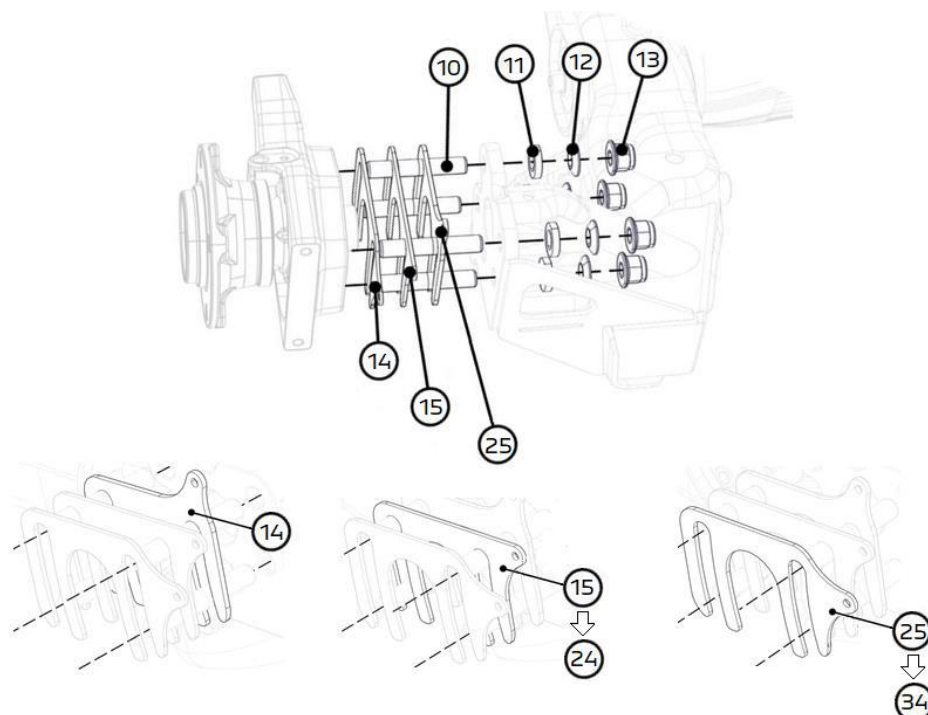
ARB Diameters	Anti-roll stiffness (N.m/rad)
H-beam only	30 600
+ 19 mm	42 000
+ 22 mm	52 000
+ 24 mm	61 000



Rod pre-setting: 80mm

5.2.5. Geometry

The camber is adjustable using shims positioned between the crossmember, the force wedge and the rear caliper support. The recommended values according to the surface are available on the setup sheets.



Camber Shims Value :

11	904636808A	0°40'
10	904636798A	0°32'
9	904636788A	0°25'
8	904636778A	0°17'
7	904636768A	0°10'
6	904636758A	0°02'
5	904636748A	-0°05'
4	904636738A	-0°13'
3	904636728A	-0°20'
2	904636718A	-0°28'
1	904636708A	-0°36'
<u>N°</u>	<u>Reference</u>	<u>Angle</u>

Value of Toe shims:

(-) = IN / (+) = OUT

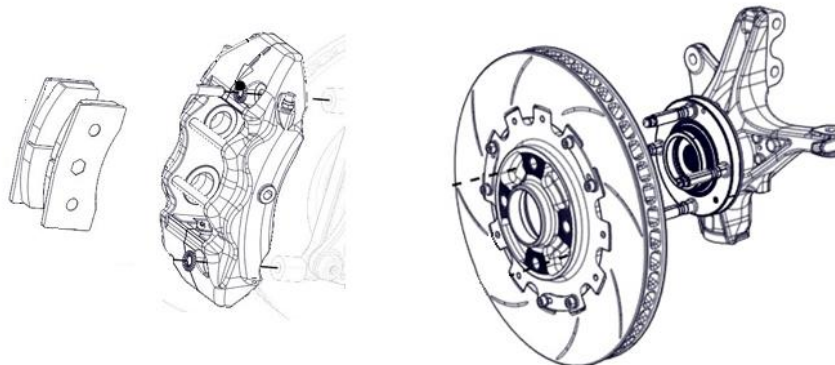
I	904636388A	0°33'	4,1	3,7
H	904636378A	0°25'	3,1	2,8
G	904636368A	0°17'	2,1	1,9
F	904636358A	0°09'	1,1	1,0
E	904636348A	0°01'	0,1	0,1
D	904636338A	-0°07'	-0,9	-0,8
C	904636328A	-0°15'	-1,9	-1,7
B	904636318A	-0°23'	-2,9	-2,5
A	904636308A	-0°31'	-3,9	-3,4
AA	904672398A	-0°39'	-4,9	-4,3
<u>N°</u>	<u>Reference</u>	<u>Angle</u>	<u>Mm</u> <u>(17")</u>	<u>Mm</u> <u>(15")</u>

Negative = Toe IN / Positive = Toe OUT

5.3. BRAKING

5.3.1. Presentation

The braking system is composed of TM Performance calipers at the front (4x pots) and rear (2x pots), floating disc on aluminum hub at the front and solid at the rear.



FRONT	REAR
Calipers 4 Pots : Ø 36 & 41 mm	Calipers 2 Pots : Ø 28,6 mm

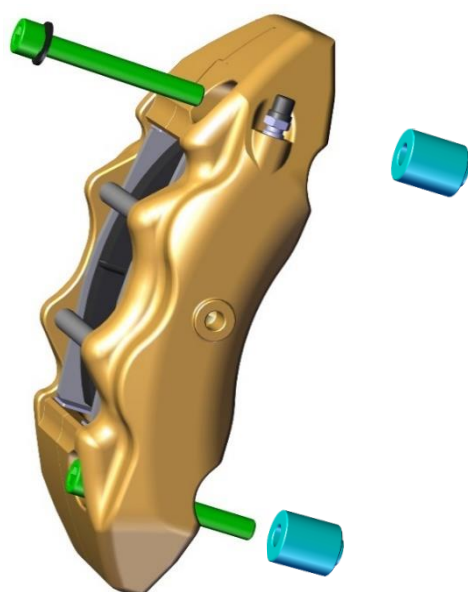
5.3.2. Conversion

Brake calipers are identical regardless of the surface; however brake discs are of a different diameter.

To position the caliper correctly, specific parts are available:

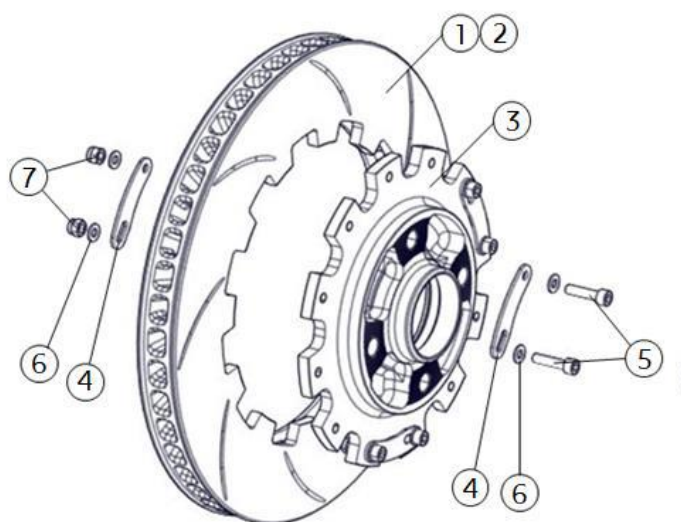
- ❑ High spacers **for asphalt** and **short for gravel**
- ❑ Long screws for asphalt **and short screws for dirt**

Tarmac front caliper mounting



Gravel front caliper mounting

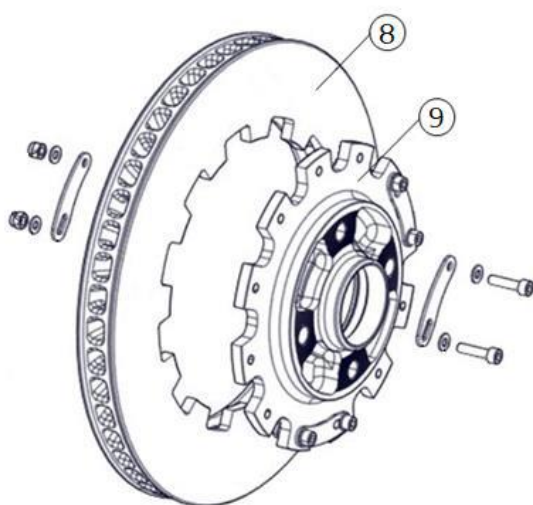




TARMAC Front mounting

Ventilated discs:
330x30

Pads :
MINTEX F4R SMRC



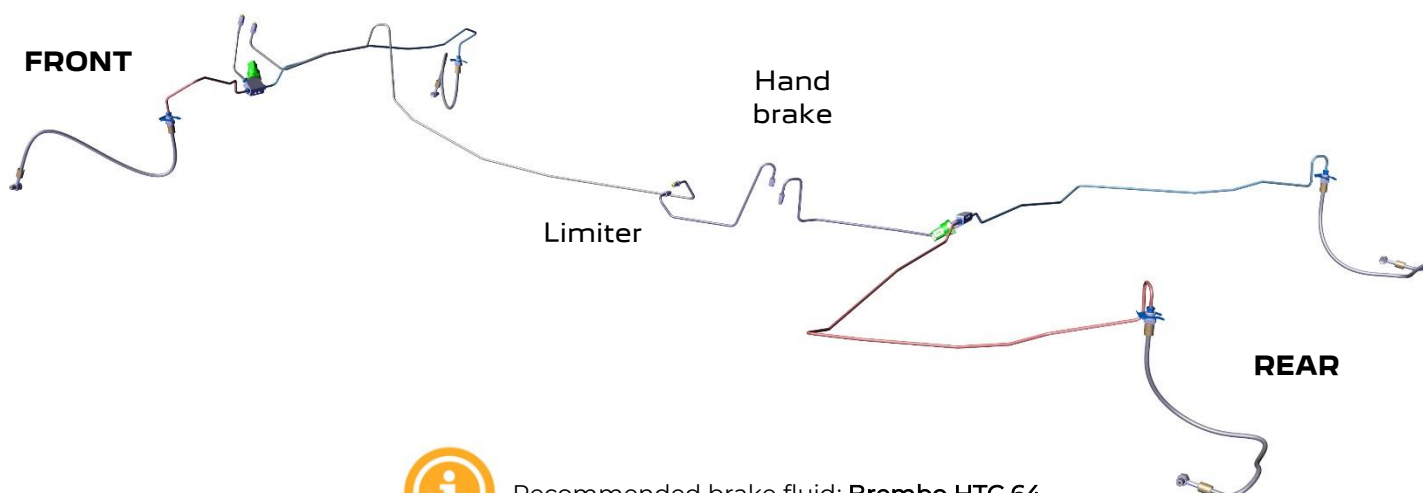
GRAVEL Front mounting

Ventilated discs
330x30

Pads :
TM Mix 1

5.3.3. Hydraulic Circuit

Master Cylinder:
Ø 22.2mm



Recommended brake fluid: **Brembo HTC 64**

5.3.4. Adjustment

Equipped with a single master cylinder, the brake distribution is carried out using a proportional rear brake pressure limiter that adjusts the maximum pressure on the rear axle according to the level of the front pressure.

The recommended distribution is 30 / 16, i.e. a rear limitation of 16 bar for 30 bar of pressure at the front.

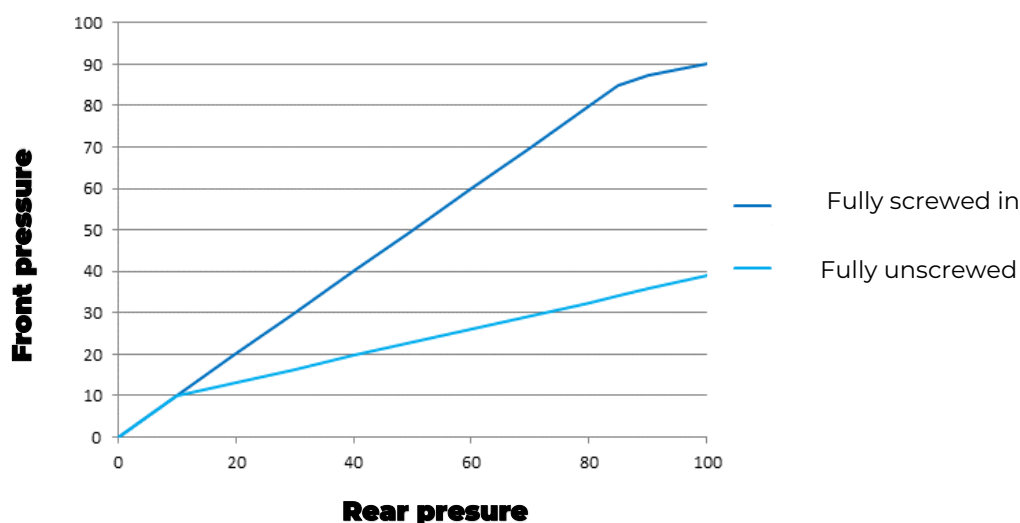


□ Visualization / Adjustment:

- Select the "brake test" page on the Dashboard
- Brake until you get 30 bar at the front
- Reading the pressure value at the rear
- Adjust the pressure if necessary:

Note: It is necessary to release the brake pressure to the pedal to touch the dial.

- To **increase** the back pressure, **screw on** the knob.
Fully screwed in = no limitation: $P_{rear} = P_{front}$
- To **reduce** the rear pressure, **unscrew** the knob.
Fully unscrewed = strong limitation: $P_{rear} < P_{front}$

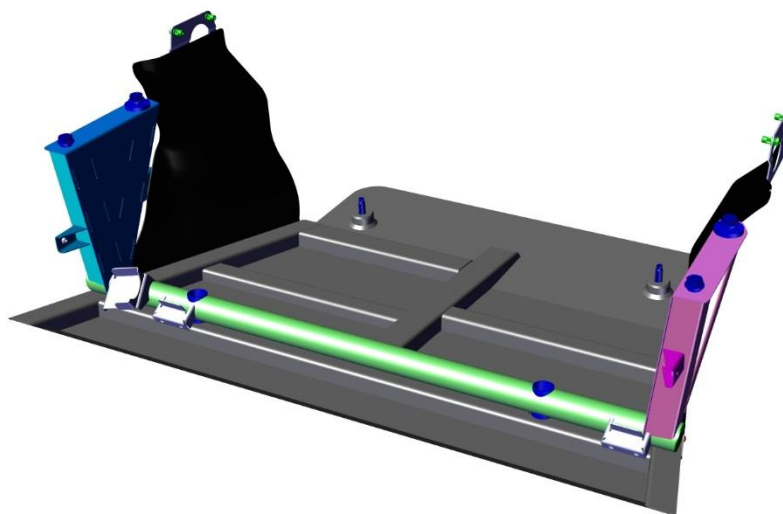


The adjustment is made in the last turn of loosening.

6. EXTERNAL EQUIPEMENTS

6.1. UNDERBODY PROTECTIONS

The front underbody protection is provided by a metal sump guard.



Four wheel arches are fitted to the car on any surface to limit splashes.

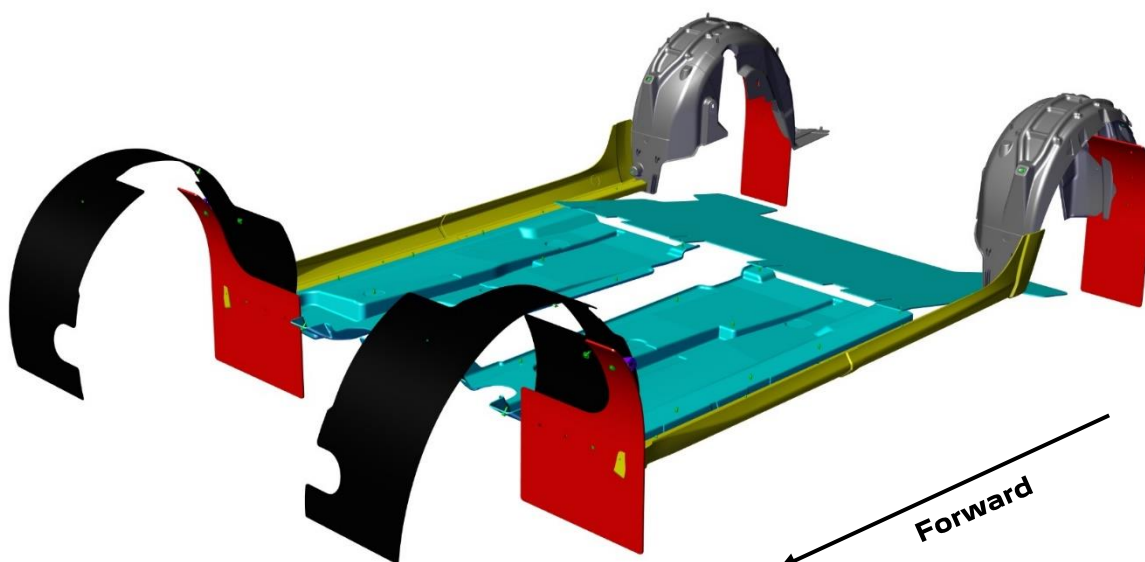


6.2. GRAVEL PROTECTIONS

The gravel protection is composed of:

- ❑ Underbody protections (blue)
- ❑ Side skirts (yellow)
- ❑ And front flaps (red).

Rear mud flaps (red) are available as an option for FIA rallies.



FIA regulations: **10cm maximum** between the ground and the lower edge of the front mud flaps.



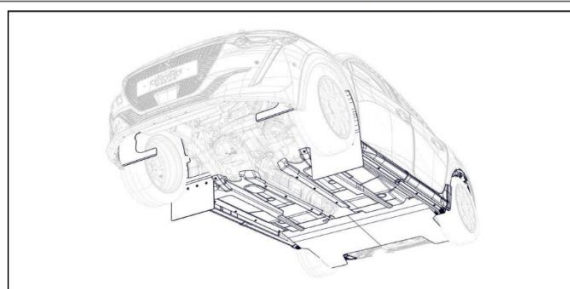
Shock absorber and rear caliper protectors are also possible and recommended

They are to be made either in an R900 material plate as described in the manual :

R6C – External Protections



R6C
PROTECTION EXTERIEURE
EXTERNAL PROTECTION
PROTECCION EXTERNA



7. INTERNAL EQUIPEMENTS

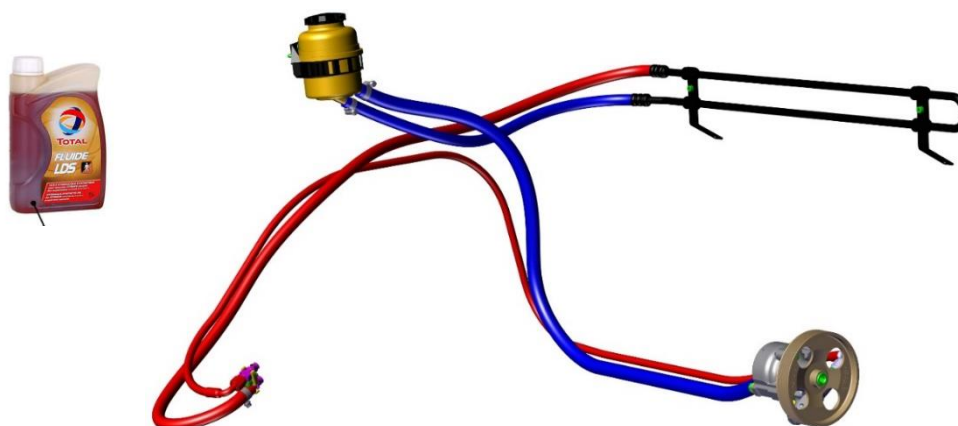
7.1. STEERING

7.1.1. Presentation

The steering is composed of a 320mm diameter steering wheel connected to a mechanical drive shaft connected to a hydraulically assisted rack generated by a high-pressure pump driven by the accessory belt.

7.1.2. Hydraulic control system

□ Pump and circuit

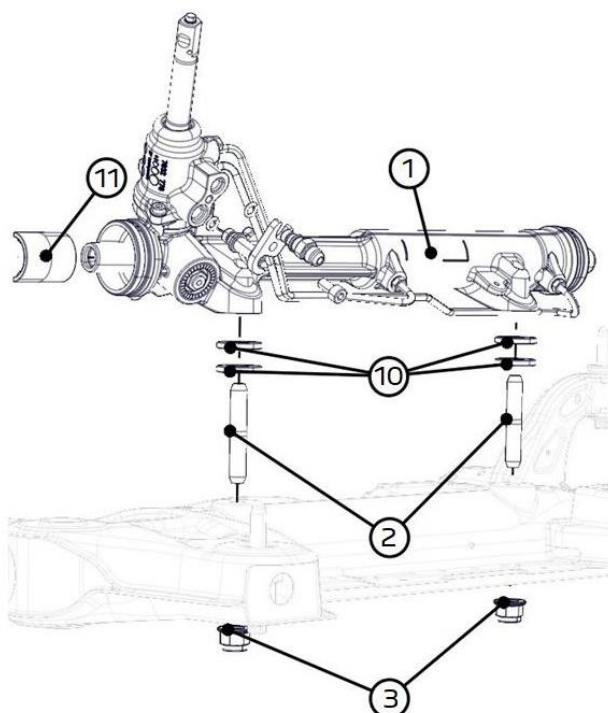


The power steering pump is calibrated to be used for both surfaces (gravel or tarmac) The diameter of the valve directly affecting the flow rate is specific: 4mm



Recommended steering fluid: **TOTAL LDS**

□ Steering Rack



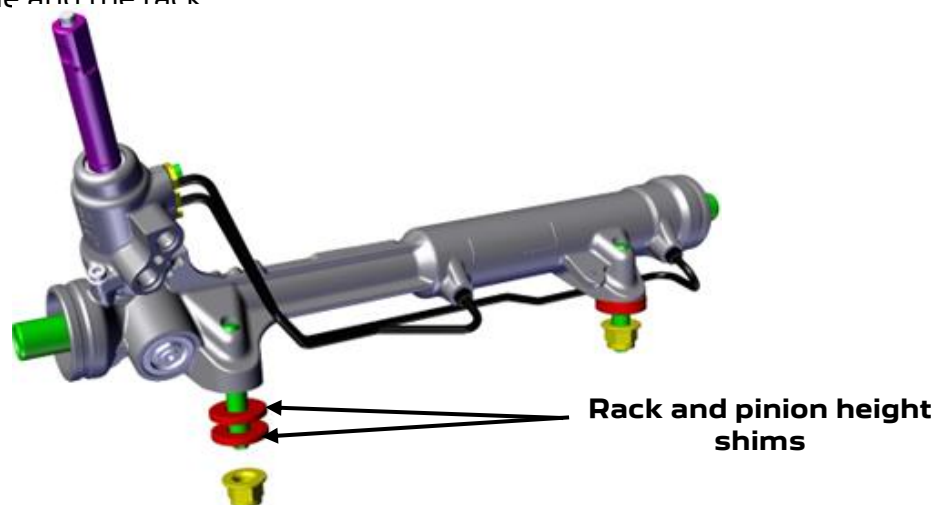
7.1.3. Geometry

The steering geometry of the front axle involves 3x parameters:

- The height of the rack
- The height of the tie rod
- Toe alignment

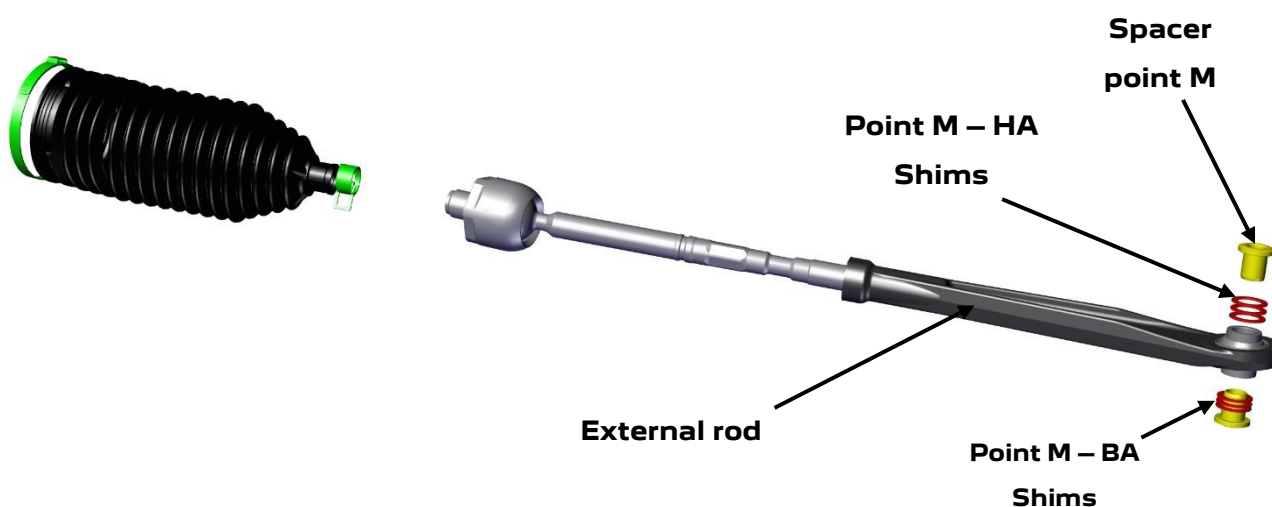
□ Rack height adjustment

To achieve the behavior recommended by Stellantis Motorsport, it is imperative to adjust the rack height according to the surface. The height is adjustable using washer(s) to be installed between the subframe and the rack.



Recommended setup: **Tarmac: 2 x 5mm** - **Gravel : 0 mm**

□ Tie rod height adjustment



Recommended setup: **Tarmac : 5 HA – 1 BA** - **Gravel : 1 HA – 5 BA**



The height of the rack and the position of the steering rod have an impact on the toe variations (induced steering) during the suspension travel phases.

❑ Alignment adjustment

Before proceeding with the alignment adjustment, we advise you to install the straight-line wedge on the rack to ensure that it is perfectly centered.



Recommended setup: **Tarmac : 0mm** - **Gravel : 0mm**

7.1.4. Maintenance

❑ Circuit bleeding:

1. Fill in the LDS fluid tank with ref 1615099680 to the maximum, keep the cap open during operation.
2. **Before starting the engine**, turn the flywheel from left to right until the stops several times and monitor the LDS level. (Top up if necessary)
→ Repeat the action until the LDS level is stable
3. Perform the oil pressure increase procedure * by turning the steering wheel from left to right until you reach the stops.
→ Repeat the action until the LDS level is stable.
4. Start the car and repeat the operation 3.
5. Finish with quick steering wheel movement to evacuate the last air bubbles.
6. Testing the proper functioning car on the ground

* See :



7.2. PEDALBOARD

The pedalboard is composed of:

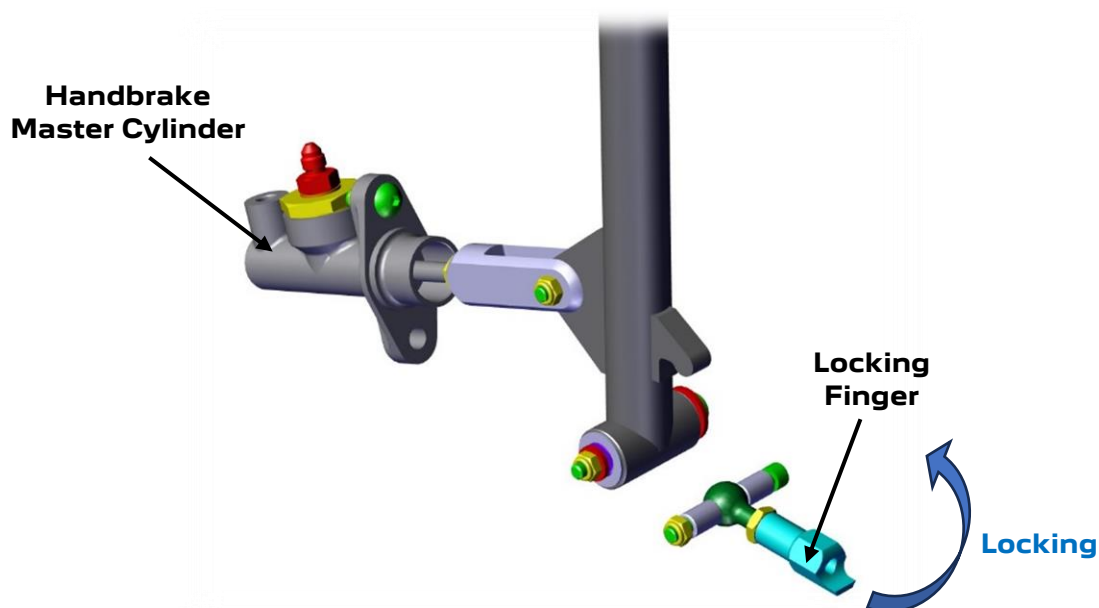
- ❑ A standard clutch pedal
- ❑ An electrically operated accelerator pedal as standard
- ❑ A specific reinforced brake pedal.



The pedal and the clutch master cylinder are standard, the slave cylinder is located in the clutch bell of the gearbox.

7.3. HANDBRAKE

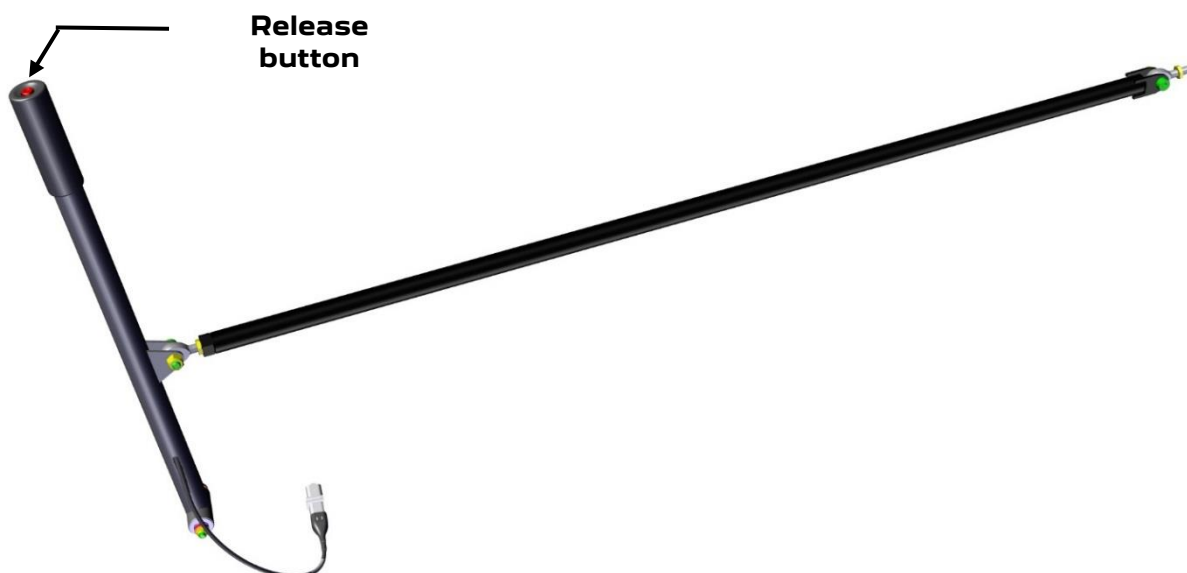
The handbrake is hydraulically operated and is equipped with a park locking system.



- ❑ **To lock it:**
Pull the handbrake lever and tilt the hand-locking tab backwards.
- ❑ **To unlock it:**
Simply pull the handbrake lever, the lug will return to the initial position.

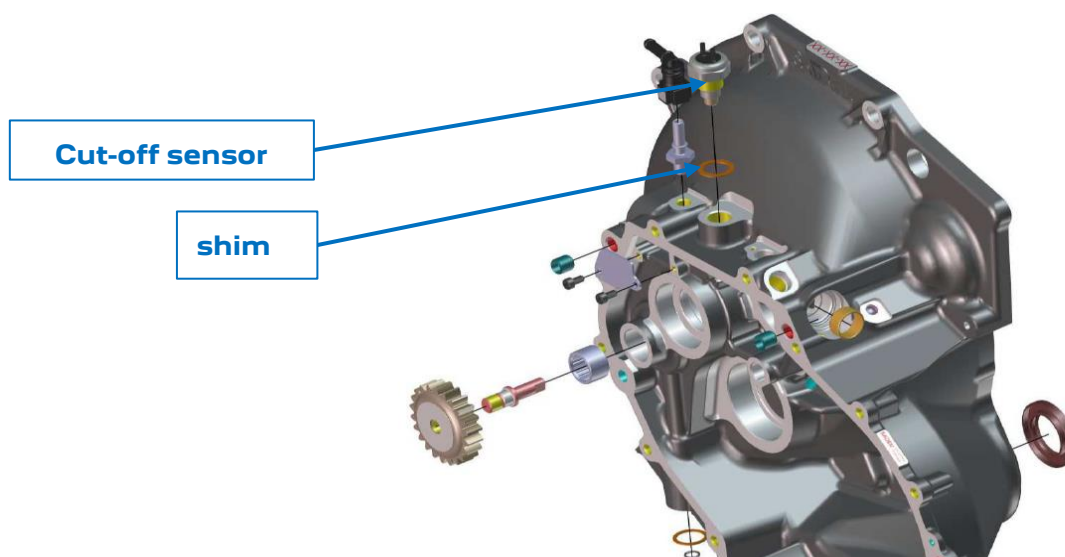
7.4. GEAR LEVER

Pull the lever to upshift and push the lever to downshift. To shift into reverse gear or to downshift in neutral, it is necessary to activate the release via the button on the knob. **Useless for upshifts.**



A cut-off sensor on the gearbox is activated each time the driver pulls on the gear lever.

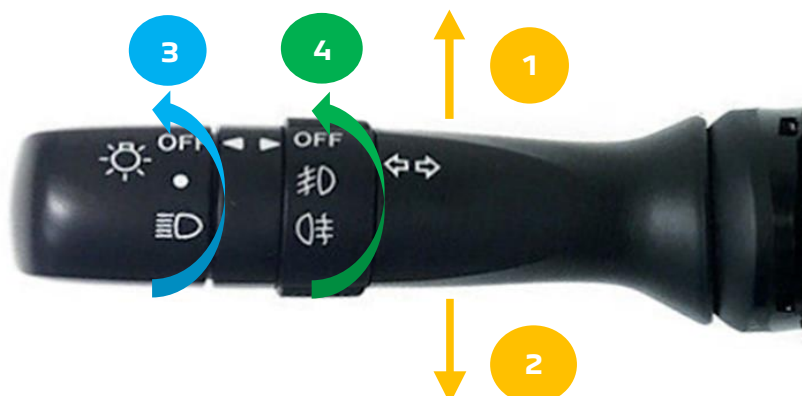
The sensitivity of its triggering is adjustable using shims of different thicknesses positioned under the sensor.



- ❑ **Increasing** the thickness of the shim **delays** the cut,
- ❑ **Reducing** the thickness of the shim **brings forward** the cut.

7.5. COMMODOS

7.5.1. Left Commodo : HEADLIGHT COMMAND / TURN SIGNAL



- 1 - Right Turn Signal
- 2 - Left Turn Signal
- 3 - Activating the Lights in POWER ON
1st notch: Night lights (rear); **2nd notch:** low beam
Push: Spotlight
- 4 - Activation of the headlight and corner lights (only in full headlight)
1st notch: Corner lights;
2nd notch: Headlight bar

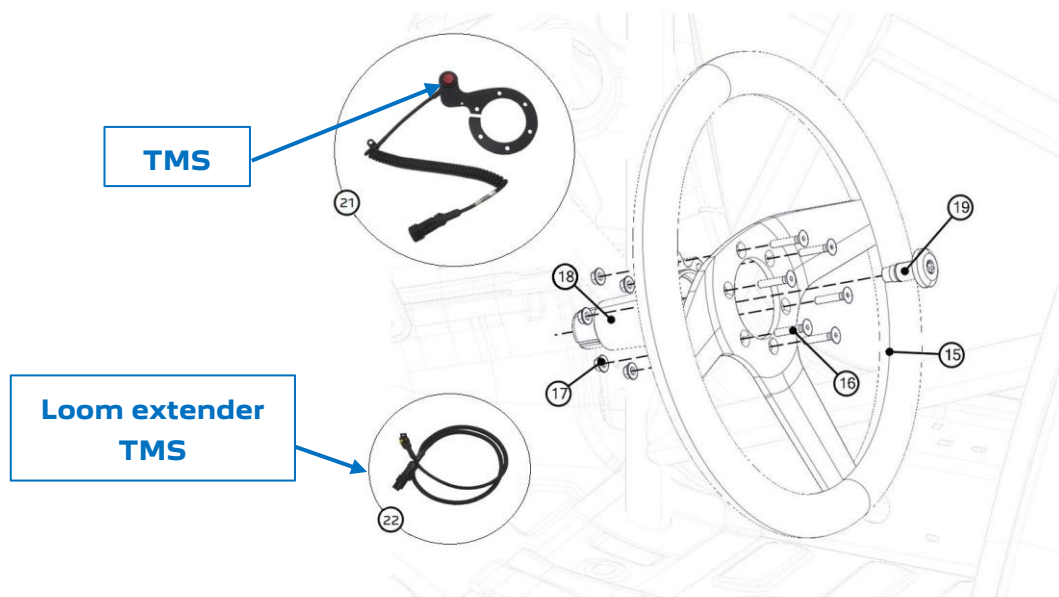
7.5.2. Right Commodo : WIPERS



- 1 - **1st notch:** Intermittent Wipers
2nd notch: Low Speed Wipers
3rd notch: High Speed Wipers
- 2 - **Pull** the commodo: Windshield washer + wiper High speed

7.5.3. TMS Command

A red button on the steering wheel allows you to select a torque management strategy (Torque Management System)



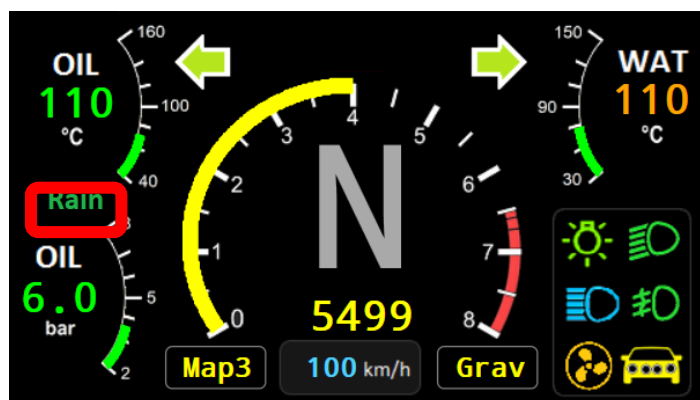
By a short press of the additional TMS button, the driver can choose between 4x modes:



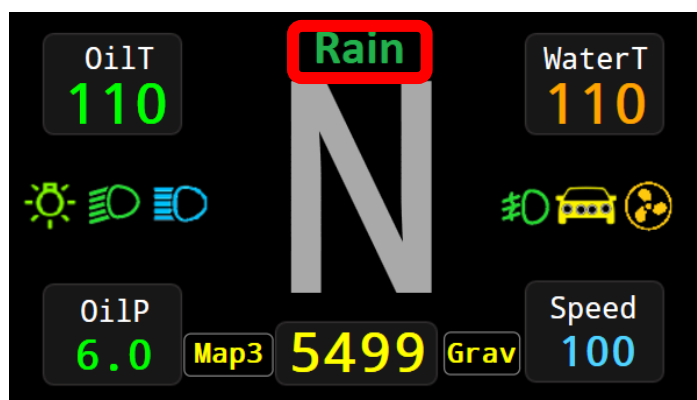
Each time you start, the car will return to Off mode automatically.

Display:

The selected mode is displayed on the Road and Stage pages, here an example:



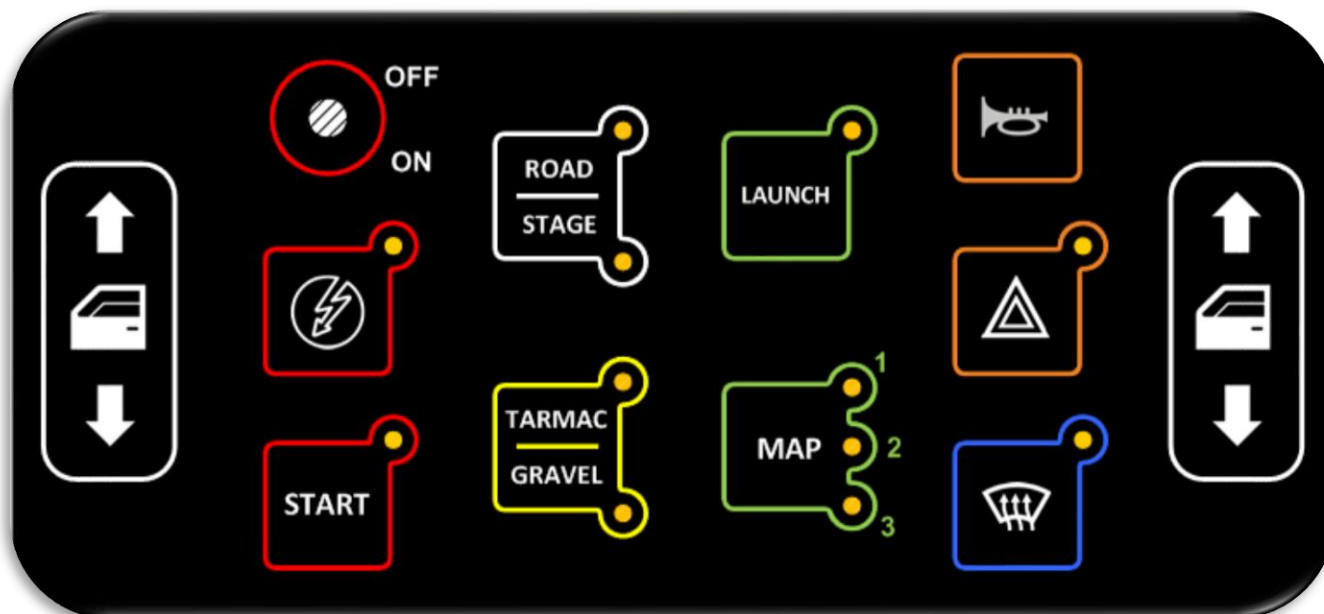
Road



Stage

7.6. COMMANDS

7.6.1. Main functions:



ECU Power Supply, Power Box, Dashboard, Console



Power after contact, power supply for actuators, lights and power steering. Yellow Led = ON.



Start button

7.6.2. Strategy functions:



ROAD: Road Dashboard Page and other selectable pages

STAGE: Forced Page Dashboard "Rallye Page"

Stage : *triggers the odometer on the "Stage Dist" stage*



TARMAC / GRAVEL :

Surface selection (active when LED Yellow ON)

Selecting the Tire Diameter for Vehicle Speed

Torque limitation during the "LAUNCH" starting strategy



Step 1 of Launch strategy activation

Details of the procedure see:

SPECIAL PROCEDURES



Engine Mapping – Active selection when LED Yellow ON

Description of the Engine Maps:

	ROAD	STAGE					
		TARMAC			GRAVEL		
		MAP 1: High grip	MAP 2: Low Grip	MAP 3: Ice / Snow	MAP 1: High grip	MAP 2: Low Grip	MAP 3: Low grip
PEDAL SENSIBILITY	Linear	Linear			Linear		
ALS	Off	High	Mid	Mid	High	Mid	Low
LAUNCH	Off	Maximum	Mid	Torque limitation	Mid	Torque limitation 1	Torque limitation 2
TORQUE LIMITATION	Off	Limitation : 1st	Limitation : 1st 2nd 3rd	Limitation : 1st 2nd 3rd 4th	Limitation : 1st 2nd 3rd	Limitation : 1st 2nd 3rd 4th	
GEAR CUT	Low	High	Low	High	High	High	Low



MAP : Following the selected mapping, an initial engine torque management strategy is applied. This management limits torque over a defined number of gears to facilitate driving on surfaces offering a low level of grip such as:

- ☐ Wet Tarmac
- ☐ Snow / Ice
- ☐ Gravel



LAUNCH : Depending on the selected mapping, engine torque management is also applied during the initial launch phases.



ALS : Depending on the selected mapping, the turbo anti-lag management is reviewed to facilitate traction.

Note: The ALS is deactivated in mapping on the NEUTRAL and REVERSE in the event of special maneuvers to relieve the gearbox.

→ Valid since Software Update: 14.2.2.32

7.6.3. Accessory functions:



Driver / Co-driver Window lifting system - Active POWER ON

Learning Window Positions:

Operate the glass until it is in the top stop position and hold it for a few seconds.



Horn - Active POWER ON and OFF



Hazard lights - LED inactive when in operation

Forcing function:

POWER OFF – Button press



Defogging : Windscreen fan - Active POWER ON – Yellow LED ON

Fan forcing function:

POWER OFF – Long press of the button

7.6.4. Additional functions

A keyboard in addition to the center console groups together certain special controls:



1

Fuel consumption counter reset – Long press

2

Forced start-up of fuel pumps for tank emptying

**SPECIAL
PROCEDURES**



+ **Short Press :**

Changing the display brightness

3

Reset Steering Wheel Angle sensor

**SPECIAL
PROCEDURES**



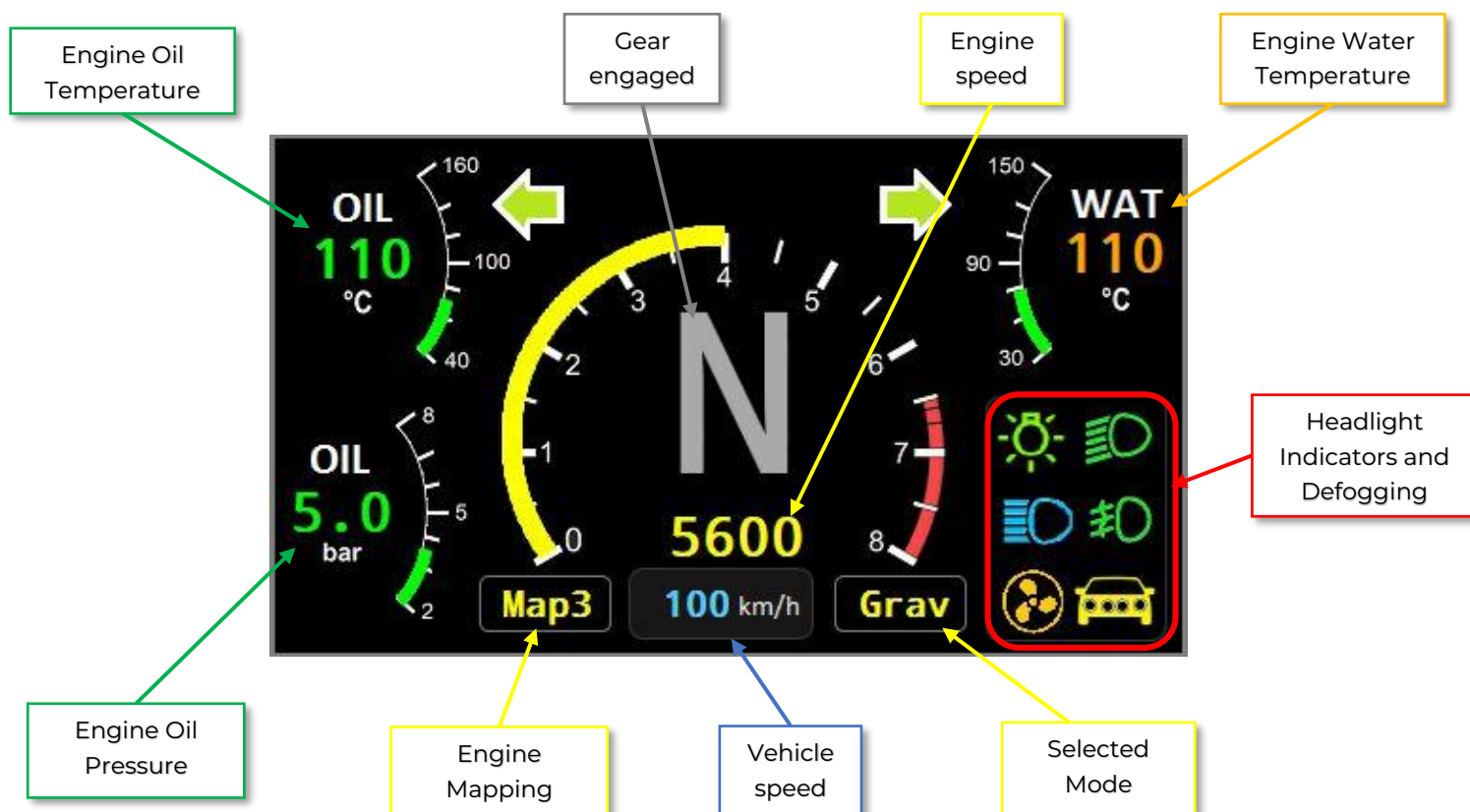
4

Scrolling the different viewer pages

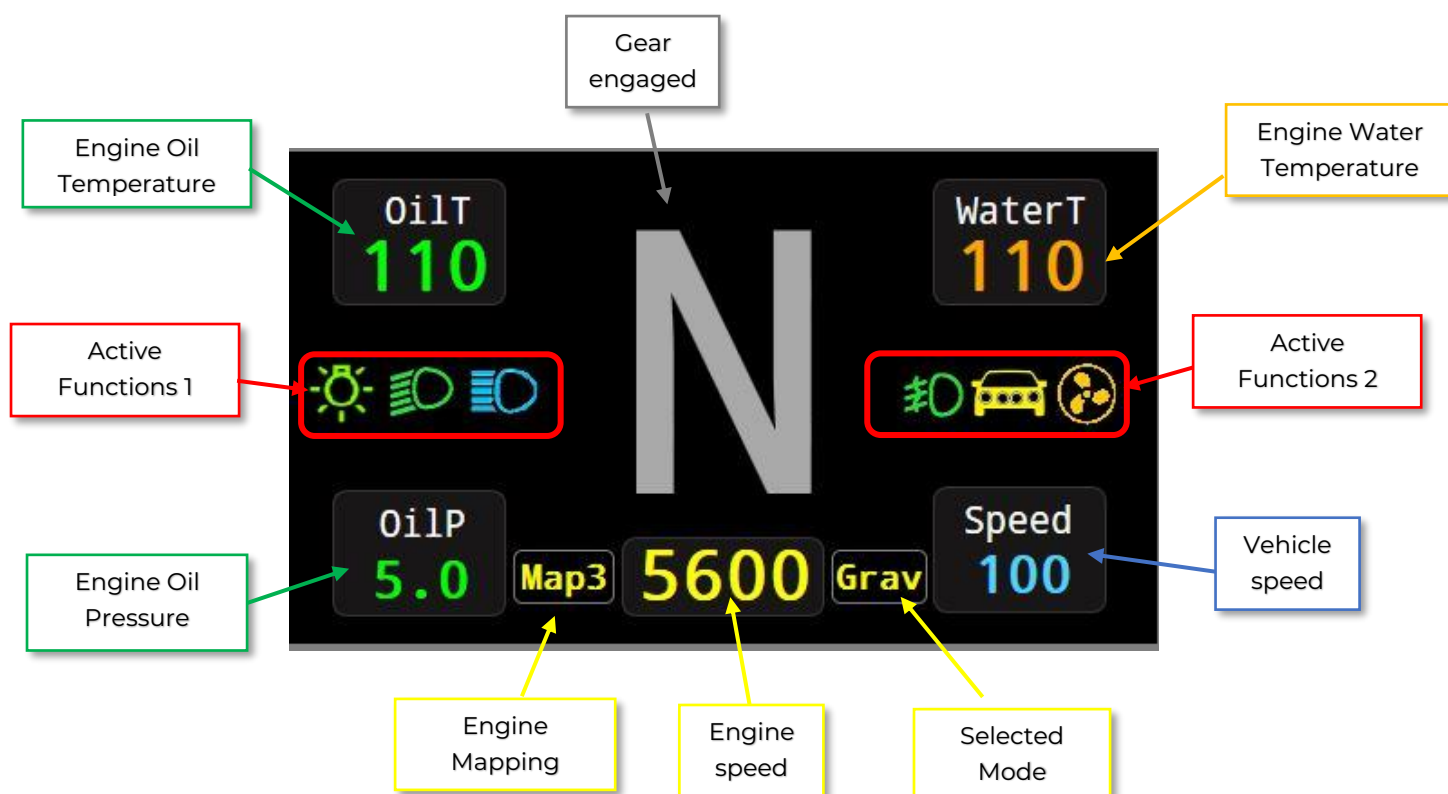
7.7. DISPLAY – DASHBOARD

7.7.1. Pages

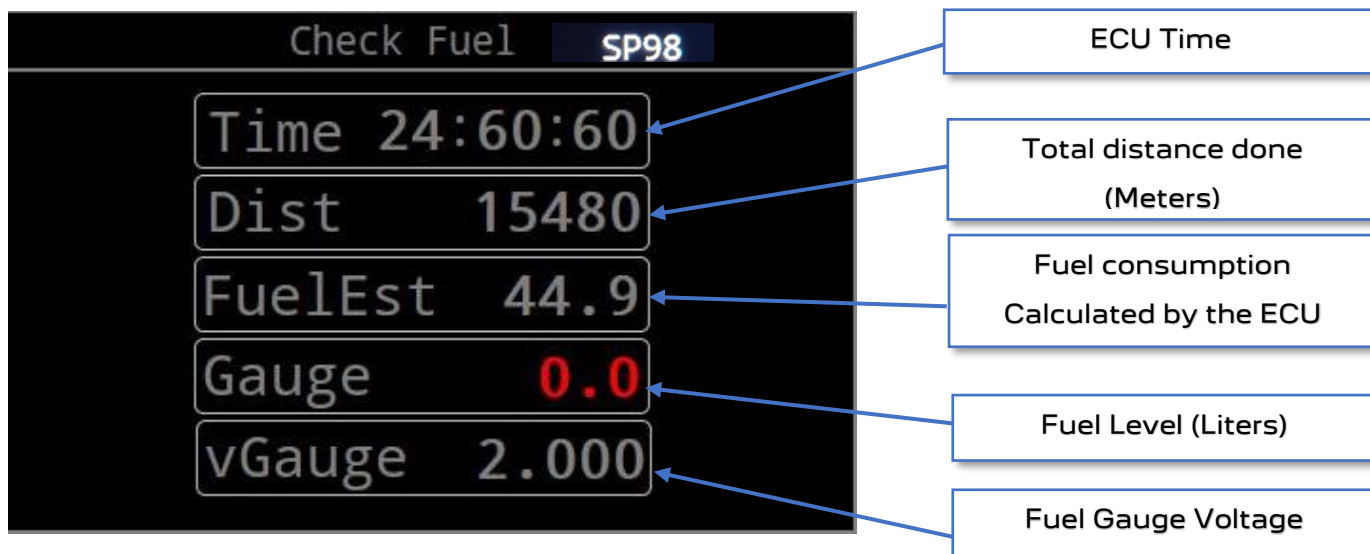
Page 1 : Road



Page 2 : Stage



Page 3 : Check Fuel (Fuel Consumption)



Page 4 : Check page

Check Page					
RPM	0	rPedal	0	Speed	0
pOil	1.0	aThrottle	16	pBrakeF	1
tOil	18	ewG	5	pBrakeR	24
tWater	18	p0	1.00	t0	17
pFuelHP	101	p2p	1.01	t2p	20
pFuelTgt	154	p2	1.02	Steer	-4
tExhaust	9	Gear	N	vTank	1.3
Lambda	0.00	vBarrel	1.205	vBatt	12.9

RPM	5600
pOil	5.0
tOil	110
tWater	110
pFuelHP	1
pFuelTgt	150
tExhaust	400
Lambda	0.93

- : Engine speed (rpm)
- : Oil pressure (bar)
- : Oil Temperature (°C)
- : Water temperature (°C)
- : High Pressure HP Fuel Pressure (bar)
- : HP High Pressure Target (bar)
- : Exhaust Temperature (°C)
- : Air/fuel mixture value (Lambda)

rPedal	100
aThrottle	59
ewG	92
pBoost	1.2
pInlet	0.0
tInlet	21
Gear	N
vBarrel	1.538

- : Accelerator pedal position (%)
- : Throttle body opening (°)
- : Waste-gate position (%)
- : Turbo outlet boost pressure (bar)
- : Inlet Pressure (bar)
- : Inlet Air temperature (°C)
- : Gear engaged
- : Barrel sensor voltage (Volts)



: Vehicle speed (km/h):

: Front brake pressure (bar) :

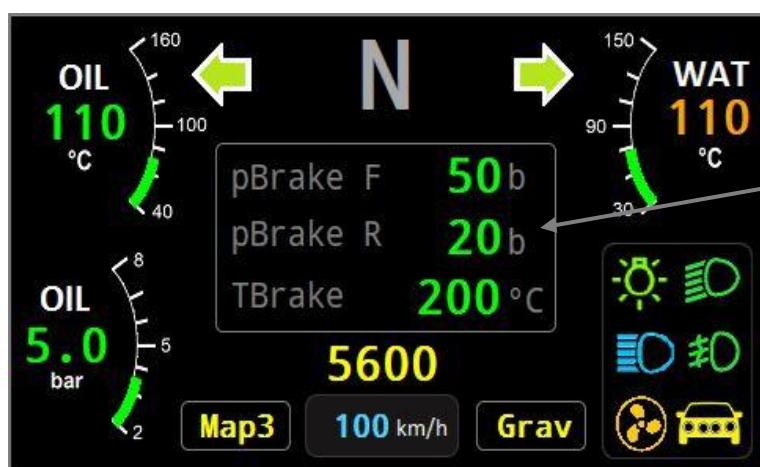
: Rear brake pressure (bar) :

: Steering wheel angle (°):

: Injectors supply voltage from ECU (Volts):

: Battery voltage (Volts):

Page 5 : Brakes bed-in page

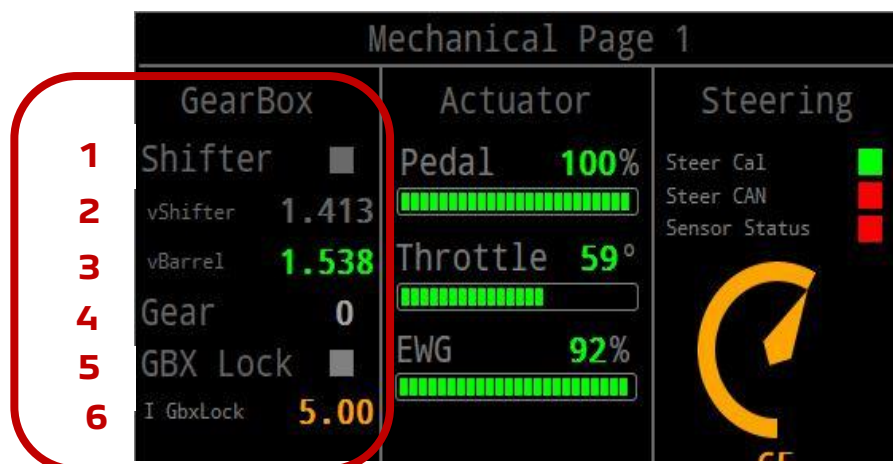


Front brake pressure (bar)

Rear Brake pressure (bar)

Front brake temperature (°C - option)

Page 6 : Mechanical Page 1

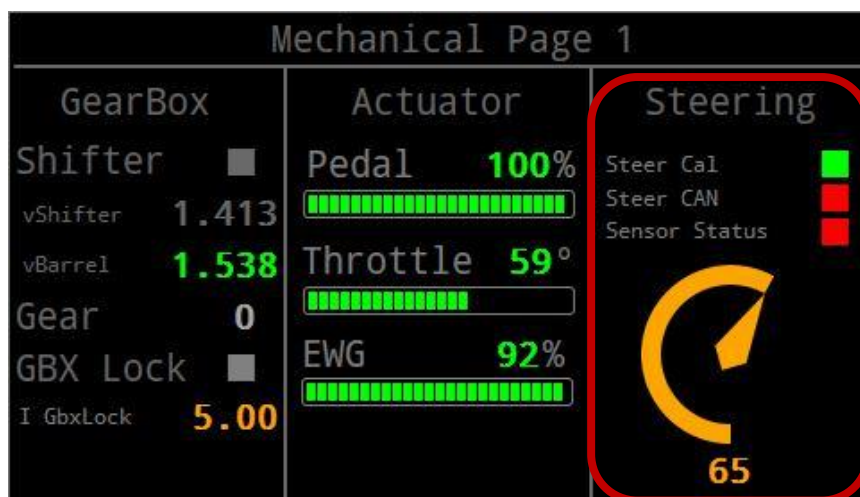


Gearbox Information

1. Cut-off sensor → Active = green
2. Cut-off sensor voltage (Volts)
3. Barrel Sensor Voltage (Volts) *
4. Gearbox gear engaged
5. Reverse Unlocking → Active = Green
6. Intensity consumed by unlocking : (2A when active)

* Reminder: Barrel sensor to be set to 2.5 Volts on 2nd gear

Gear	R	N	1	2	3	4	5
Barrel voltage (V)	0,59	1,23	1,87	2,50	3,14	3,78	4,42



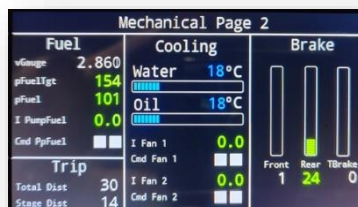
Steering Wheel Angle Information

1. Zero steering wheel learning – Green = OK
2. CAN Communication - Vert = OK
3. Sensor Operation - Green = OK
4. Steering wheel position (°)
Zero = Steering Wheel Centered

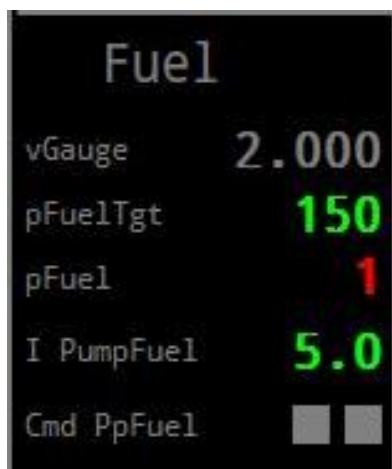


Steering wheel angle information is just informative for data analysis. This sensor does not influence the behavior of the car

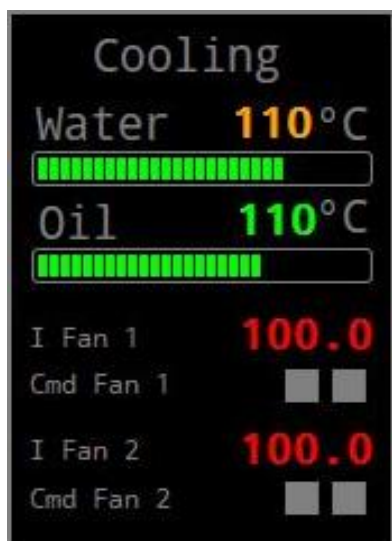
Page 7 : Mechanical Page 2



Fuel Circuit Information



- : Gauge voltage (Volts)
- : High Fuel Pressure Target
- : High Fuel Pressure value
- : Current consumed by the low-pressure pump → Between 6 and 7 Amps in operation
- : Pump Command Status
 - Left: Order status (active = green)
 - Right: Electrical output (electrical fault = red)



Engine cooling information:

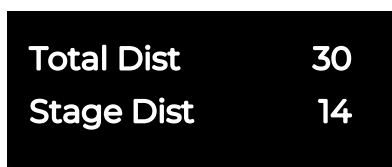
- : Engine Water Temperature (°C)
- : Engine Oil Temperature (°C)
- : Radiator fan current consumed 1
- : Radiator fan control 1
 - Left: Order status (active = green)
 - Right: Electrical output (electrical fault = red)

FAN 2 (Optional Fan)



Brake Information

- : Front brake pressure
- : Rear brake pressure
- : Front brake pad temperature (option):
- : Handbrake status: Green = engaged



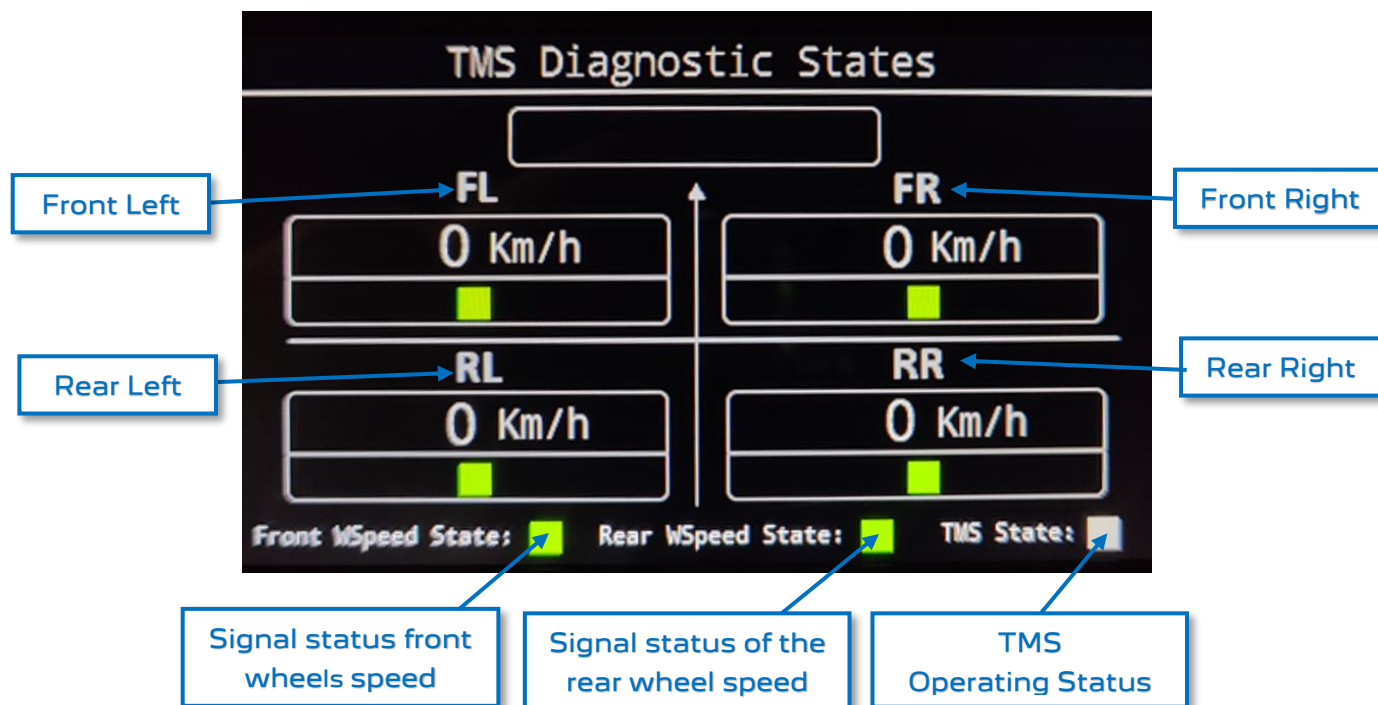
Distance Information

- : Total distance covered
- : Distance covered in stage mode only

Page 8: Status of wheel speed sensors (TMS)

This page shows the status of the front and rear wheel speed measurement:

- ❑ **Green Indicator** = OK Operation
- ❑ **Red Indicator**: Short Circuit



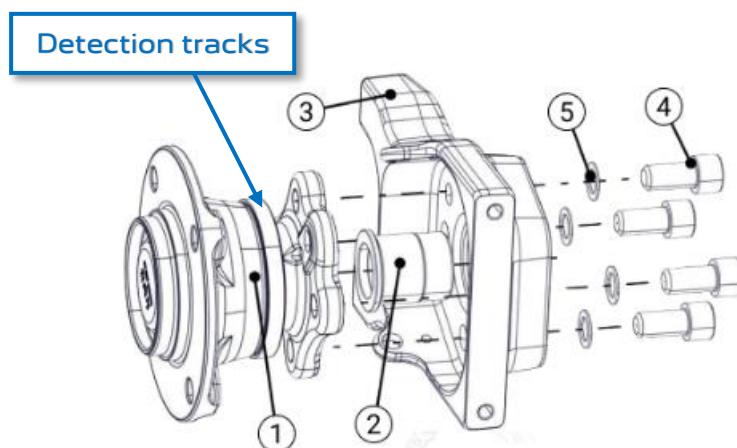
If both rear wheel speed signals are KO = TMS Out of service



Carry out a **regular check during road section** in a rally with dirty or gravelly stages AND especially in the case of a gravel rally.



In case of **abnormal activation of the TMS**, check the surface condition of the detection tracks or replace the sensors.



Page 9: Equipment Status – **HIGH CURRENT**

❑ Power supply of **High Consumers**

High Cur Status									
	CMD	OC	SC	OFF		CMD	OC	SC	OFF
ECU 1					LowBeam				
ECU 2					HiBeam				
WatFan1					Fog				
WatFan2					Spot				
AUX 1					Corner				
Window					Intercom				
AuxECU					Blower				
FuelPump					WindScrn				
Coil					WipSlow				
Starter					WipFast				

	CMD	OC	SC	OFF
ECU 1				
ECU 2				
WatFan1				
WatFan2				
AUX 1				
Window				
AuxECU				
FuelPump				
Coil				
Starter				

: Power Supply ECU 1

: Power Supply ECU 2

: Engine radiator fan

: 2nd Engine radiator fan (Optional)

: Accessory power supply (12v -10A) - "Auxiliary 1" connector

: Window lift Motor

: Auxiliary ECU

: Low-pressure fuel pump

: Ignition coils

: Starter

	CMD	OC	SC	OFF
LowBeam				
HiBeam				
Fog				
Spot				
Corner				
Intercom				
Blower				
WindScrn				
WipSlow				
WipFast				

: Low beam

: Spotlight

: Headlight Railing – 2x Outdoor Lights

: Headlight Boom – 2x Mid Lights

: Cornering lights

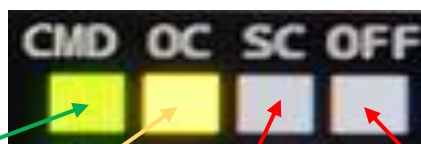
: Radio intercom

: Windshield Ventilation / Heating

: Accessory power supply (12v - 20A) - "Desembuage" connector

: Wiper Motor - Slow Speed

: Wiper Motor – Fast Speed



Green
=
Function Active

Open Circuit
=
Connector not plugged in or Cutted Wire

Short-circuited current line

Faulty power line
=
Power supply cut off by the Powerbox (after 3x trials)
=
Safety mode

Page 10 : Equipement status – **LOW CURRENT**

❑ **Power supply of Small Consumers**

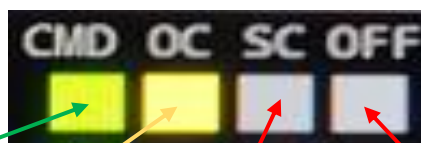
Low Cur Status									
	CMD	OC	SC	OFF		CMD	OC	SC	OFF
RWind					RrLight				
Control					FLIndic				
VVT					FRIndic				
Oilpump					RLIndic				
Washer					RRIndic				
LbdHeat					Horn				
PosLight					Trip				
PosLight					GBxLock				
FogR					Reader				
Stop					RWind				

	CMD	OC	SC	OFF
RWind				
Control				
VVT				
Oilpump				
Washer				
LbdHeat				
PosLight				
PosLight				
FogR				
Stop				

: Non utilisé
: Non utilisé
: Electrovanes VVT
: Pompe à huile moteur
: Pompe lave-glace
: Chauffage sonde Lambda
: Feux de position AV
: Feux de position AR
: Antibrouillard AR
: Feux stop

	CMD	OC	SC	OFF
RrLight				
FLIndic				
FRIndic				
RLIndic				
RRIndic				
Horn				
Trip				
GBxLock				
Reader				
RWind				

: Feux AR
: Clignotant AVG
: Clignotant AVD
: Clignotant ARG
: Clignotant ARD
: Klaxon
: Tripmaster
: Déverrouillage BV
: Lecteur de carte
: Non utilisé



Green
=
Function Active

Open Circuit
=
Connector not plugged in or Cutted Wire

Short-circuited current line

Faulty power line
=
Power supply cut off by the Powerbox (after 3x trials)
=
Safety mode

Page 11: Diagnostics page

❑ Status of Sensors and Actuators

This page shows the working status of all sensors and actuators:

- ❑ **Red Indicator:** Short Circuit
- ❑ **Orange Indicator:** Open Circuit (unplugged or cutted wire)

Diagnostic Status

Sensor			Actuator	
THR_CO 0	pRail_OC 0	tInl_OC 0	Coil_OC	Coil Ok
THR_SC 0	pRail_SC 0	tInl_SC 0	Coil_SC	Coil Ok
PED_OC 0	pBst_OC 0	tOil_OC 0	HB_OC	Thr&ewG Fail
PED_SC 0	pBst_SC 0	tOil_SC 0	HB_SC	Ok
pAir_OC 0	FuelG_OC 0	tAir_OC 0	DiagInj1	Ok
pAir_SC 0	FuelG_SC 0	tAir_SC 0	DiagInj2	Ok
pIN_OC 0	pBrkF_OC 0	tExht_OC 0	DiagInj3	Ok
pIN_SC 0	pBrkF_SC 0	tExht_SC 0	DiagHpp	Ok
pOil_OC 0	pBrkR_OC 0			
pOil_SC 0	pBrkR_SC 0			
BAR_OC 0	tWat_OC 0			
BAR_SC 0	tWat_SC 0			

USB Sts: Unplugged LINSts: Disconnected TMS Activation:

SOFTWARE VERSION: 14.2.2.32

Example:
Intake butterfly and Ewaste-gate fail

LIN loom Connexion Status

Version of ECU software

TMS Mapping
Green = Active in ECU

USB Sts: Connexion Status USB Data Acquisition Drive

Green indicator: connected and functional key

Red indicator: Disconnected or writing problem (formatting required)

Sensors:

THR = Intake Throttle
PED = Throttle Pedal
pAir = Atmospheric pressure (P0)
pIN = Manifold Boost Pressure (P2)
pOil = Oil pressure
BAR = Barrel Sensor
pRail = HP Fuel Pressure
pBst = Boost Pressure before throttle body (P2P)
FuelG = Low pressure fuel pump
pBRKF = Front brake pressure
pBRKR = Front Brake Pressure
TWat = Water temperature
tInl = Intake Air Temperature (T2P)
tOil = Engine oil temperature
tAir = Ambient temperature (T0)
TExh = Exhaust temperature (T3)

Actuators

Coil = Coil
HB = Throttle body and wastegate
DiagInj1 = Injector cylinder 1
DiagInj2 = Injector cylinder 2
DiagInj3 = Injector cylinder 3
DiagHpp = HP Fuel pump

7.7.2. LEDs

□ Engine RPM LEDs

Shifting is ideal when all LEDs are lit fixed red.



Gear engaged	RPM	LEDs lightening
1 & 2	5200 ==> 6000	Gradually in yellow
	6100 ==> 6150	Fixed Reds
	> 6150	Blinking reds
3	5300 ==> 6000	Gradually in yellow
	6100 ==> 6150	Fixed Reds
	> 6150	Blinking reds
4	5500 ==> 6000	Gradually in yellow
	6100 ==> 6150	Fixed Reds
	> 6150	Blinking reds
5	6200 ==> 6600	Gradually in yellow
	6600 ==> 6750	Fixed Reds
	> 6750	Blinking reds

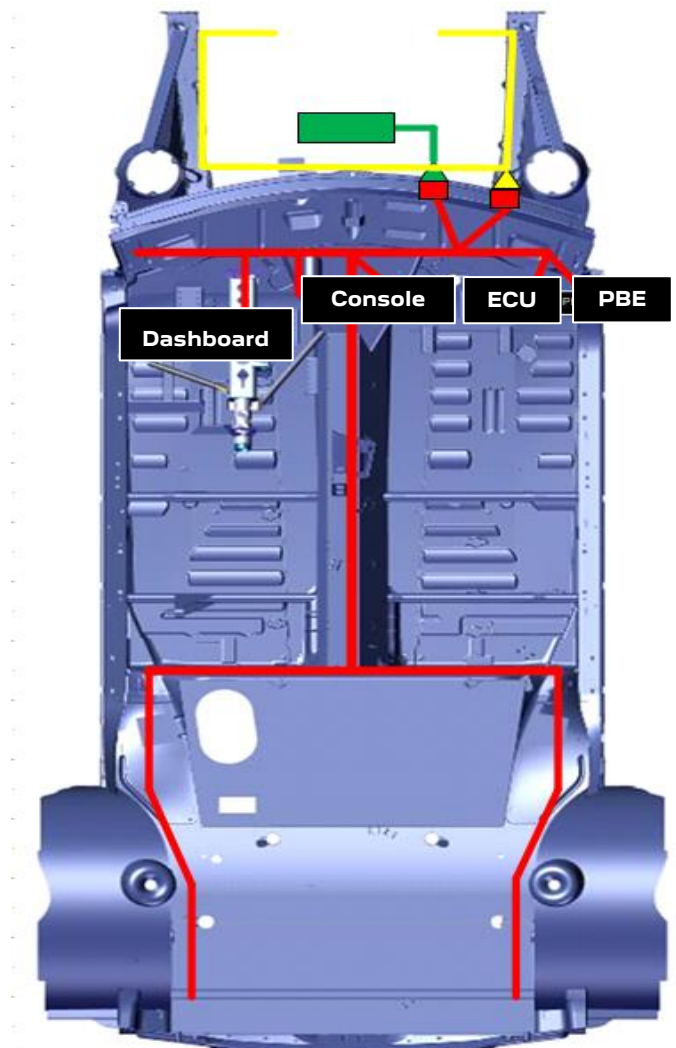
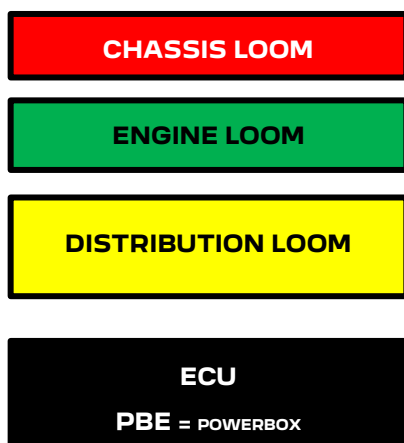
□ Alarm LEDs



Parameters	Conditions	Message	LEDs
Engine Oil Pressure	POil < 2.5 Bar Engine speed > 900 rpm	ENGINE OIL PRESS	Blinking Blue
Engine Water Temperature	TWater > 115 °C Engine speed >= 500 rpm	T WATER + <i>Valeur</i>	Blinking Blue
Battery voltage	Vbatt < 11V during more than 2s	Vbatt + <i>Valeur</i>	Blinking Blue
Exhaust Temperature KO	T3 > 1240°C Engine speed >= 500 rpm	! Texhaust HS !	Blinking Blue
Fuel injection Rail pressure	Engine speed > 1000 rpm PRailTgt - Prail > 30 bar during more than 2 s	! Pfuel	Blinking Blue
Turbo Temperature	T3 > 600°C Engine speed < 2000 rpm Vcar < 5 km/h Gear engaged = 0	! Turbo Temp !	Blinking Blue
Injectors Driving Voltage	Vtank < 63 Volts Power ON Engine speed > 200	! Vtank HS !	Blinking Blue
Supercharging pressure too low	(P2 + P2P) > 0,8 bar Engine speed > 3500 rpm Throttle > 80% Stage mode	! Boost Pressure !	Blinking Blue
Shifter sensor KO	vShifter < 4,8V Engine speed > 500 rpm	! SHIFTER HS !	Blinking Blue
Engine speed sensor KO	Engine speed > 500 rpm	! NO CRANK !	Blinking Blue
Intake camshaft speed sensor KO	Engine speed > 500 rpm	! NO INT CAM !	Blinking Blue
Exhaust camshaft speed sensor KO	Engine speed > 500 rpm	! NO EXH CAM !	Blinking Blue
Engine speed signal lost	Engine speed > 500 rpm	! CRANK LOST !	Blinking Blue
Intake camshaft speed lost	Engine speed > 500 rpm	! INT CAM LOST !	Blinking Blue
Exhaust camshaft speed lost	Engine speed > 500 rpm	! EXH CAM LOST !	Blinking Blue
Engine crankshaft speed synchronization problem	Engine speed > 500 rpm	! CRANK NOT PHASED !	Blinking Blue
Intake camshaft speed synchronization problem	Engine speed > 500 rpm	! INT CAM NOT PHASED !	Blinking Blue
Exhaust camshaft speed synchronization problem	Engine speed > 500 rpm	! EXH CAM NOT PHASED !	Blinking Blue

7.8. ELECTRICITY

7.8.1. Synoptic



7.8.2. Battery

☐ Charge status

The value displayed on the dashboard indicates the approximate percentage of battery charge:

Voltage	%age of charge
12,84 V & more	100%
12,50 V	75%
12,18 V	50%
11,88 V	25%

☐ Winter storage

The battery naturally discharges itself 1-2% per month, it is recommended to maintain the charge level by using a floating charger.



Before any welding operation you may carry out on the car, it is recommended to disconnect the battery.

7.8.3. Main electrical diagrams

+ 12volts = **MAIN ON / Power OFF**

12v power supply
for accessory
Max Intensity:
10A

ALIM AUX1



Balise IR



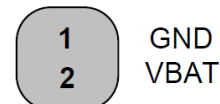
Infrared
beacon

LECA



Co-pilot
lighting
Card reader
Max Intensity:
8A

Intercom



Driving crew
communicati
on system
Max
Intensity:
8A

RADIO



Additional on-
board radio
OR
Additional
Accessory
Max Intensity:
8A

DESEMBUAGE



12v auxiliary
power supply
Max Amperage
Option: 20A

LEXICON

VBAT = Power Supply + 12 Volt

GND = Ground

SIGNAL = Signal Information

VARD = RR Wheel Speed Signal

RAZ = Reset

AGND_1 = **!/** ECU Ground

+ 12volts = **MAIN ON / Power ON**

Tripmaster

Use Monit loom

TRIP



RAZ TRIP

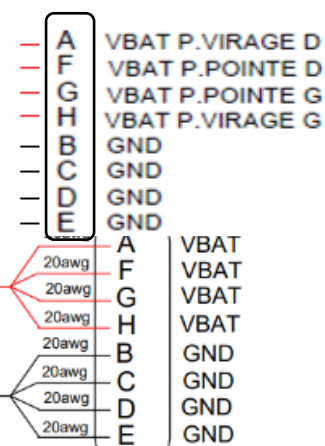


Headlight bar

Multi lights or single bar
Total max Intensity :
40A

Multi lights
E.g :
Xenons x4

Single light
E.g :
LED bar



Corner lights

Total max Intensity : 20A

AB_G

VBAT
GND



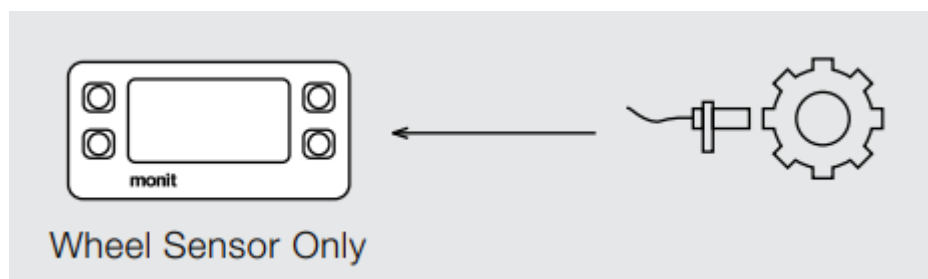
AB_D

VBAT
GND



7.8.4. Odometer TRIPMASTER

A precision distance meter from the brand MONIT, model T100, is available as an option, this version uses the speed signal of the right rear wheel to perform the counting. The GPS version is not allowed in some championships.



In order to make a safe connection, it is imperative to use the adapter harness:

Reference	Designation objet	Qty
904616878A	MONIT adaptation loom	1

In this version using a wheel speed signal, it is necessary to calibrate the device by entering the number of pulses/km travelled.



The value to be entered is as follows:



If you share the device on several cars where the wheel size is different, it is necessary to change this value.

7.8.5. Onboard Camera

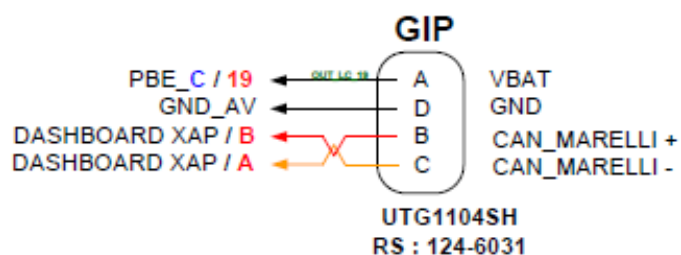
It is possible to use an on-board camera and get driving information such as engine speed, acceleration, braking, distance and speed of the vehicle, in order to display it on the live video as illustrated below:



This information flows over the **CAN DBC** frame transmitted by the ECU. This framework is available on our Stellantis Motorsport online media library at the following address:

<https://docs.stellantis-motorsport.com/>

The camera is connected via the **"GIP" connector** on the car's central tunnel:



The connector to use is SOURIAU type, model UTG1104SH :



Eaton UTG1104SH

Female free hanging receptacle, IP65;
UTG1104SH

General specifications

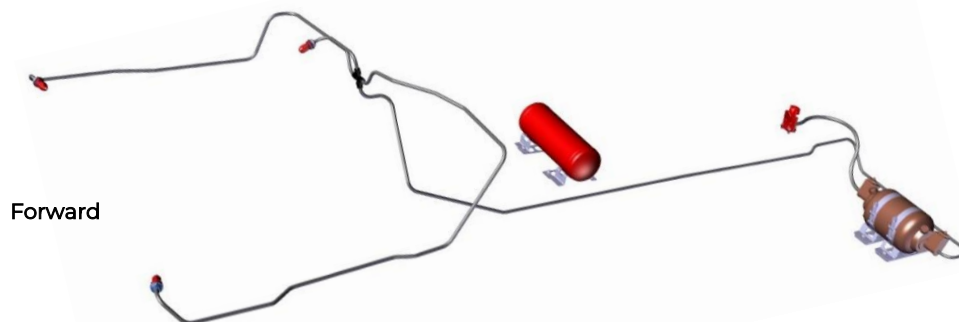
PRODUCT NAME	Eaton Souriau UTG series metal and plastic connector for heavy use
CATALOG NUMBER	UTG1104SH

7.9. SAFETY ON BOARD

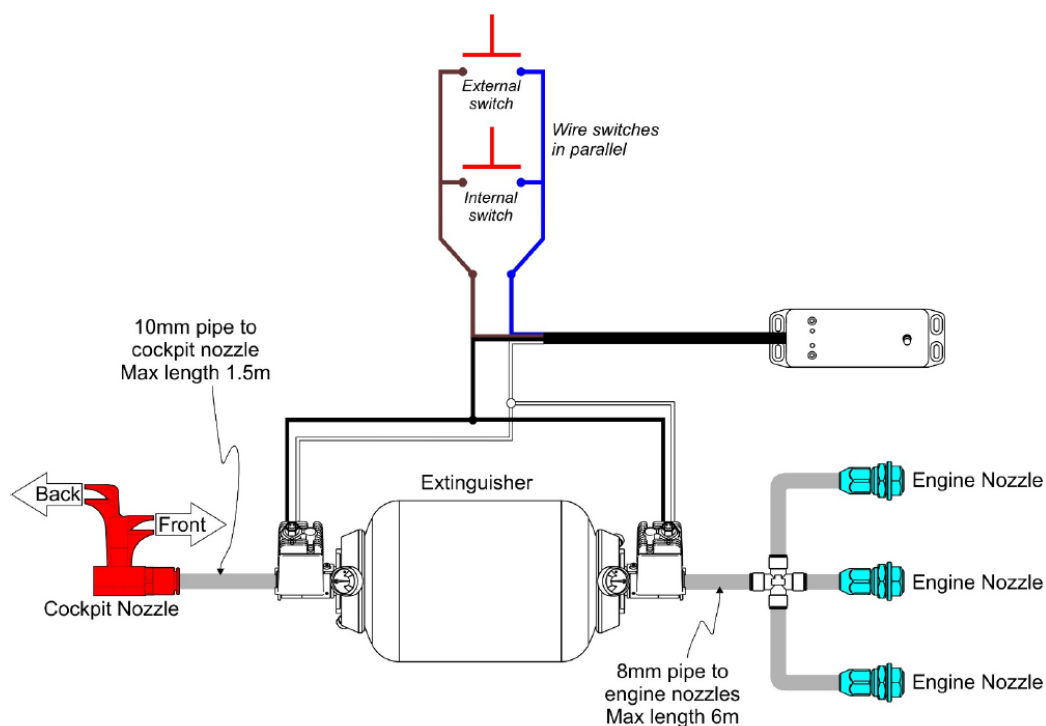
The on-board extinguishing system is composed of a Lifeline Zero 275 automatic fire extinguisher complying with the FIA 8865-2015 standard and a 2kg manual powder fire extinguisher.

7.9.1. Automatic fire extinguisher

It consists of two independent circuits, one for the passenger compartment with a 360° nozzle and one reserved for the engine compartment with three standard nozzles.



Schematic diagram:



WIRING COLOURS

- 1 - **BROWN** = SWITCH
- 2 - **BLUE** = SWITCH
- 3 - **BLACK** = EXTINGUISHER
- 4 - **WHITE** = EXTINGUISHER

For more information, refer to the fire extinguisher manual, available on the Stellantis Motorsport media library

□ Electrical command checking

1. Place the 9V (PP3) battery in the slot provided inside the control box.
2. Make sure the switch/rocker (**red arrow**) is in the **TEST position** and then plug in the harness.
3. Then press each fire extinguisher control buttons **1** and **2** (**green arrow**)

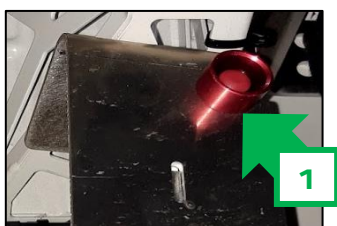
OK = The orange LED  lights up steadily for about 5 seconds.

NOK = If the orange LED  –  –  flashes, → identify the problem by reading the fault code:

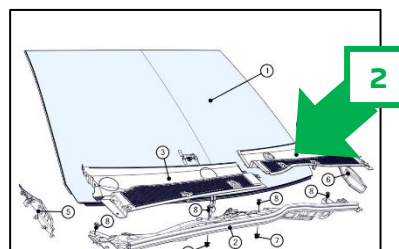
Fault codes:

2x Flashes = Battery Fault → Replace and **try again**.

3x Flashes = Electrical loom fault → Check the connections and **try again**.



Cockpit Command



Windscreen bay command



In the "ARM" position, → the **red LED** should flash 1x every 3 seconds.

For more information, please refer to the fire extinguisher manual, available on the Stellantis Motorsport media library.

7.9.2. Manual fire extinguisher

Complying with the FIA 8865-2015 standard and type ABC, it is compatible with all fires, including those of electrical origin.

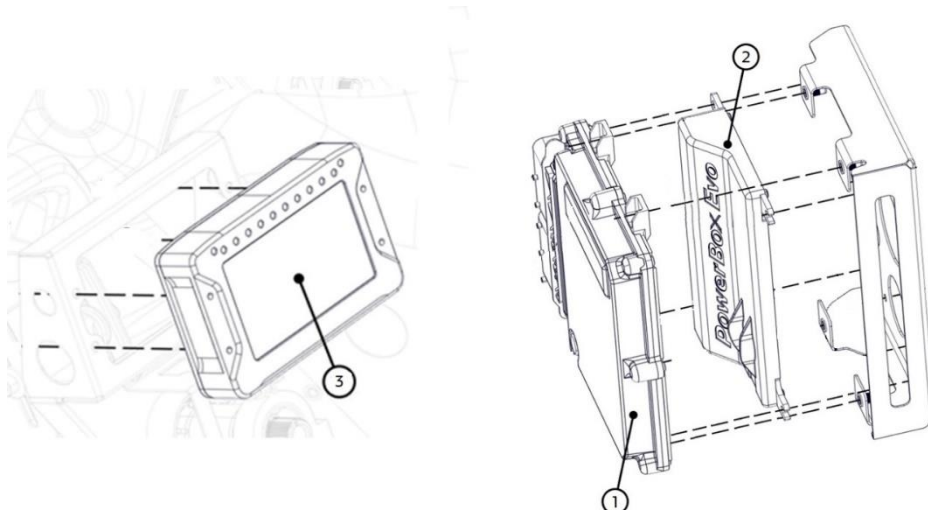


In the context of an FIA rally entry, the addition of a second fire extinguisher compatible with electric lights is mandatory.



8. SYSTEM / ELECTRONICS

The on-board electronics include a Magneti Marelli Motorsport engine control unit, an electronic powerbox for the on-board power supply and an XAP dashboard.



8.1. MAPPING

Only one SP98 engine mapping available, the use of any other fuel is not recommended.



In case of different type of SP98 use than the standard one, oil level monitoring is recommended.

→ **Some fuels can create an high dilution**

8.1.1. TMS

The TMS for "Torque Management System" is a map for managing the engine torque delivered to the front wheels. This device, which limits the front wheels spin in order to improve traction, can be configured according to three types of grip configuration:

- ❑ Tarmac = Dry tarmac → High grip level
- ❑ Rain = Wet tarmac → Low grip level
- ❑ Gravel = Dirt or snow → Very low grip level

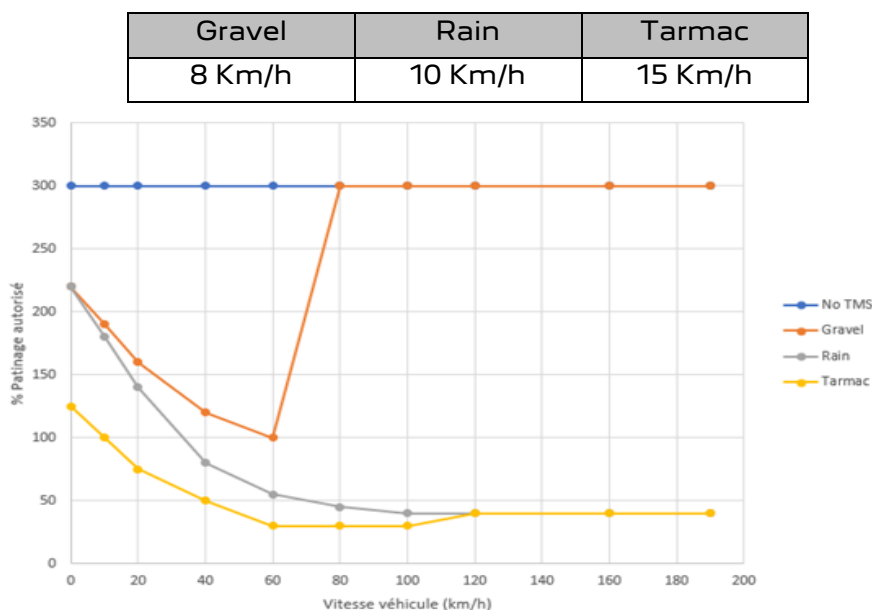


This device still allows the management of the rear axle drifting and the management of pedal grip by the driver.

Below is a summary table of how the limitation is enabled based on the percentage of front axle spinning:

Dash	Mode	0	10	20	40	60	80	100	120	160	190	Vehicle speed (km/h)
Gravel Rain Tarmac	1	Disabled										Front axle spinning (%) Calculated speed <i>Not the real value read</i>
	2	220	180	160	120	100	300	300	300	300	300	
	3	220	170	140	70	55	47	45	45	45	45	
	4	125	100	75	50	35	35	35	45	45	45	

The TMS is active above its speeds:



8.1.2. LIN Option

The LIN is a strategy for managing the alternator load ([rep. 1](#)) according to the power demand. This device allows the engine power to be increased during the acceleration phases by deactivating the alternator.

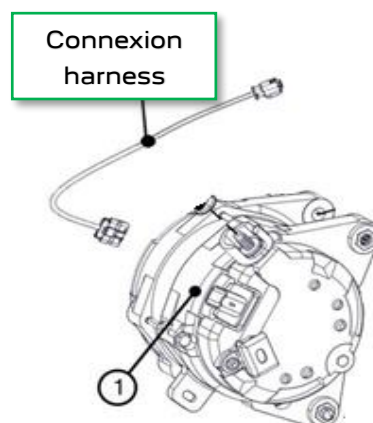
During braking phases, the maximum activation of the load adds engine braking.

- ❑ Full load phases = Target 13 Volts
- ❑ Braking phases = Target 14,5 Volts



Not active in the following cases:

- ❑ Battery voltage < 12.2 volts
- ❑ Headlight Ramp ON
- ❑ Unplugged connector
- ❑ Road mod



8.1.3. EVO Gearbox Options

Depending on the gearbox gear ratio used, a programming of the ECU is necessary in order to:

- ❑ Get a correct speed displayed on the Dashboard.
- ❑ Not to disrupt the TMS functioning.




See Info Tech 25-03_EVO Gearbox Mapping

8.2. CALIBRATION_MEASUREMENTS

With the help of the **Sysma** software developed by Magneti Marelli, available on the Stellantis Motorsport media library, you are able to be autonomous on several parameters of the ECU.



This way, you will be able to:

- ❑ Update the engine map in the event of changes*
* *Except TMS or LIN update*
- ❑ Changing the calibration of the wheel circumferences:
 [Tyre_Circumferences_14.2.2.32.clx](#)
- ❑ Update the acquisition table in the event of changes
- ❑ Connect to the car to view the live sensors values, parameters.
- ❑ Setting ECU's time for better accuracy in the use of data acquisitions



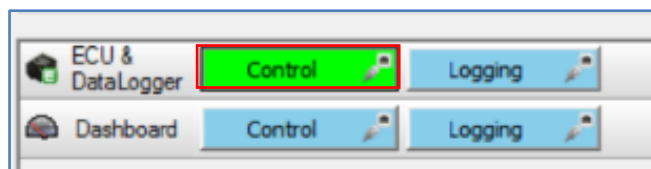
The software is free, no license is required, the cable to connect is the same as for Wintax.

8.2.1. Engine Mapping Update

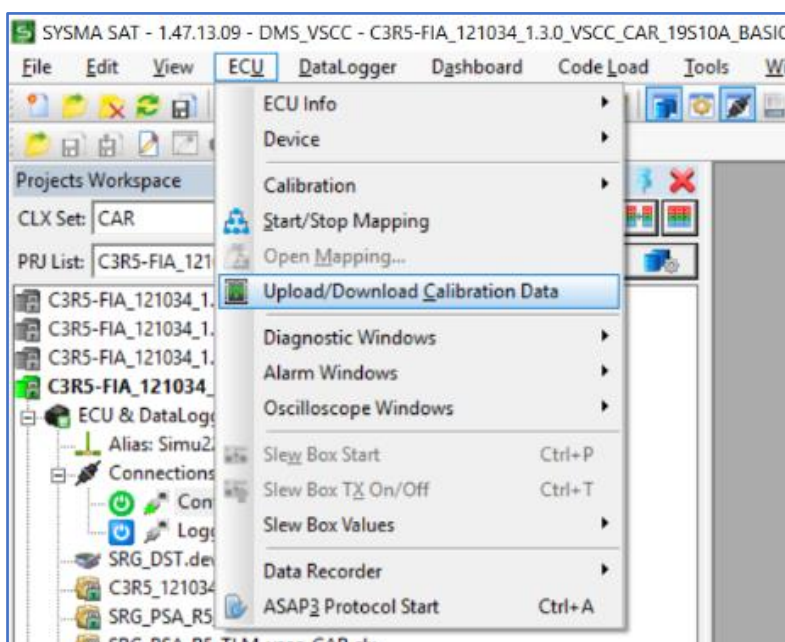
Here is the procedure to update your engine mapping. First of all, connect your computer to the car, Main ON, with the IP address of Wintax :

125 . 125 . 100 . 110
255 . 255 . 000 . 000

1. Open Sysma and load the latest available project on the media library:
E.g : « PSA_R4_14.2.2.32_MC250319A_BASIC_Basic »
2. Press Ctrl + F8 to access the connection statuses.
3. Click on **Control**, to the right of **ECU & Data logger**. It will turn green once the ECU is selected.



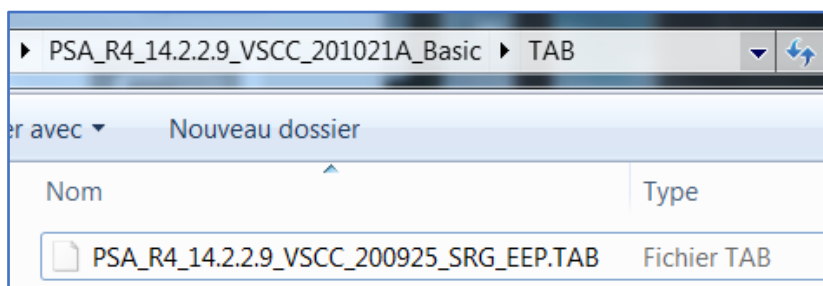
4. On the ECU tab, click on **Upload calibration data**.



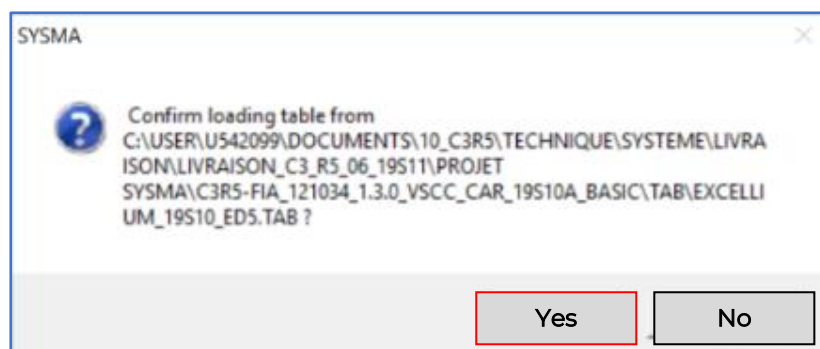
5. Click on the **TAB → E2** logo to send the map into the ECU.



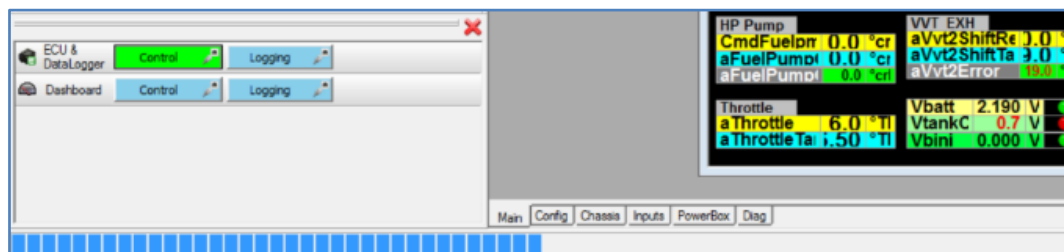
6. Go to the **"TAB"** folder and choose the .TAB map.



7. Click **Yes**.



8. Wait for the download bar progression expiration



9. Once done, tap **Exit**.

10. Press **Control**, to disconnect the communication.

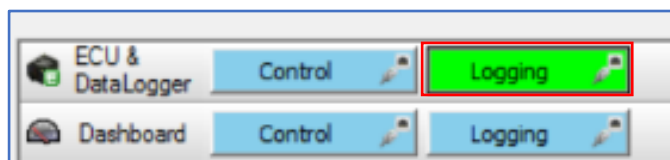
Once disconnected, turn the Main switch to OFF.

11. Do **the pedal /throttle / wastegate learning** after each map change:

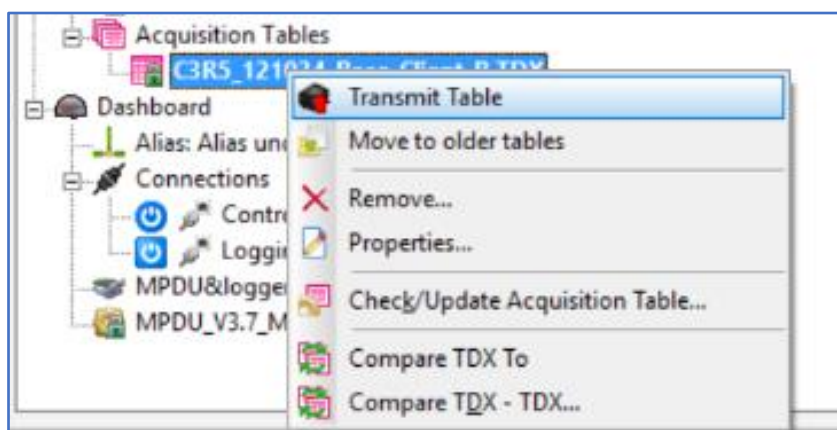


8.2.2. Acquisition Table update

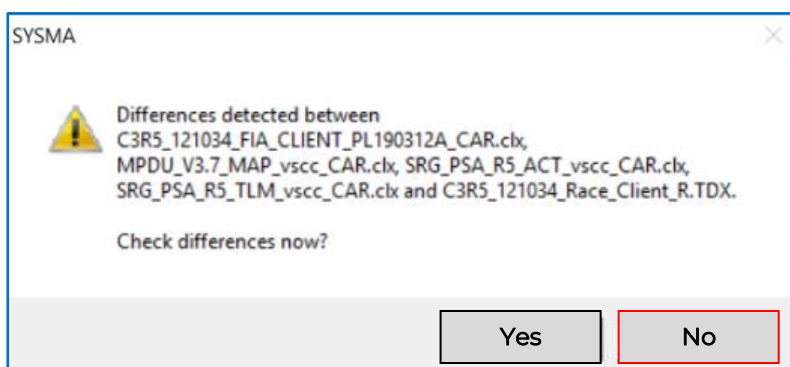
1. Open Sysma and load the latest available project on the media library:
E.g: « PSA_R4_14.2.2.32_MC250319A_BASIC_Basic »
2. Click on **Logging**, to the right of **ECU & Data logger** in order to activate the communication
It will turn green once the ECU is selected.



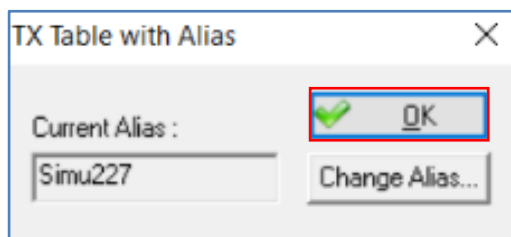
3. In the project tree, right-click on the acquisition table **PSA_R4_14.2.2.X_Client_XXSXX.TDX** and click on **Transmit table**.



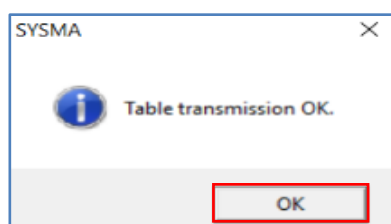
4. Click **No**



5. Check that the alias is correct and press **OK**, otherwise click change **Alias...** and enter the desired alias.



6. When finished, a "**Transmit OK table**" message appears. Validate by **clicking OK**.



7. Finally, disconnect the car and turn the Main switch to OFF.

8.2.3. Tyre circumference change

The base values entered in the map are given for Michelin models with the following dimensions:

- ❑ **19/63-17** in Tarmac
- ❑ **17/65-15** in Gravel

If you are using a different size or brand of tire, proceed as follows to have a correct speed and distance.

1. Open Sysma and load the latest available project on the media library:
E.g. « PSA_R4_14.2.2.32_MC250319A_BASIC_Basic »

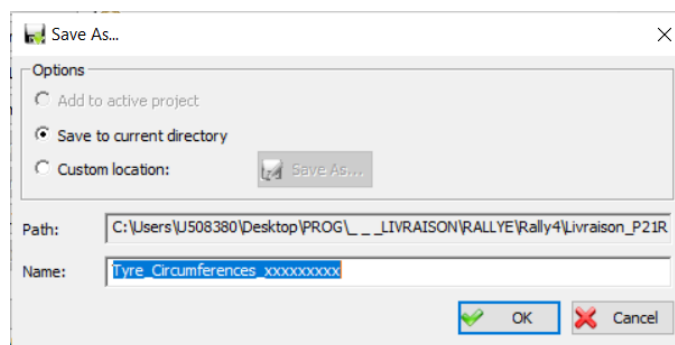
2. By a **right click** on the **CLX map project tree**, open the CLX Management and go to:



3. Do a **right click** on the **Tyre Circumference. clx** then Save As CLX ...

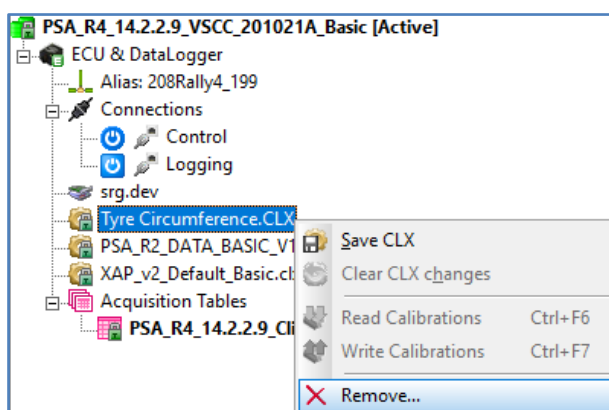


4. **Rename as desired** (e.g: *Tyre Circumference_Pirelli.CLX*), then click **OK**

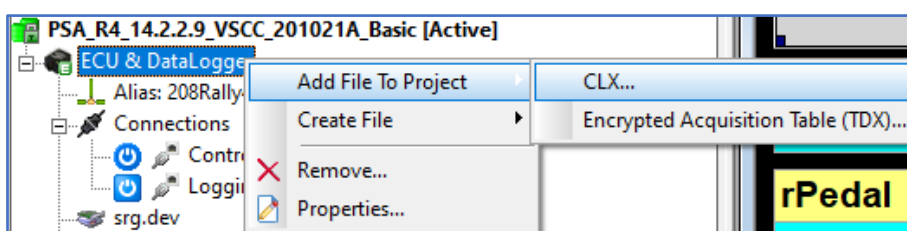


5. Open the project in Sysma, right-click on the **Tyre Circumference.CLX** file, click on **Remove** and finally on **OK**.

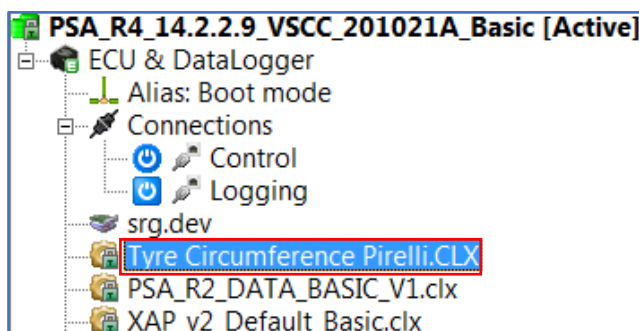
Note : ne pas cocher « Delete also the files from the disk ».



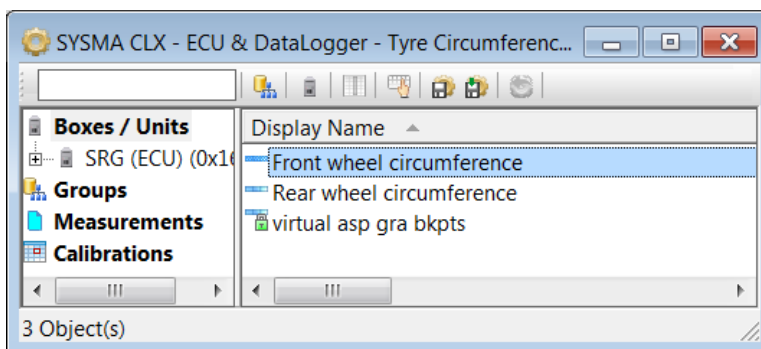
6. In the project, right click on **ECU & Data Logger**, go to **Add File To Project** then **CLX...** and select the renamed CLX file (e.g. *Tyre Circumference Pirelli.CLX*), then Validate.



7. Double click on the renamed CLX file, now present in the project.



8. In the new window opened, double-click on the **Front wheel circumference** line.



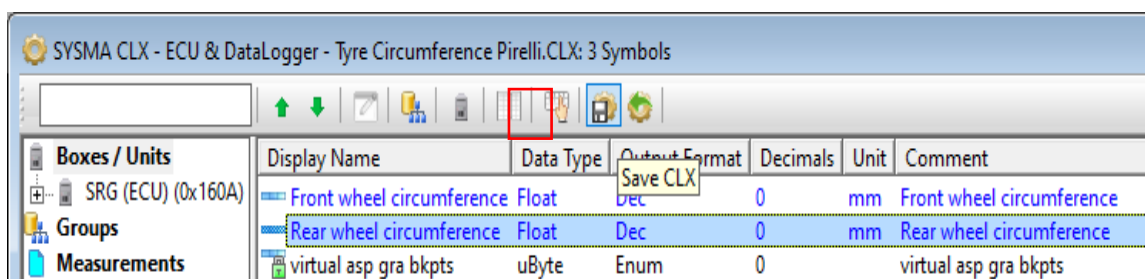
9. Fill-in the new tire circumference values in the **Asphalt – 1** and **Gravel – 1** boxes; in place of 1916 and 1934 and press **Enter** for each value.

Once edited, the values will appear in blue. Then close the window.

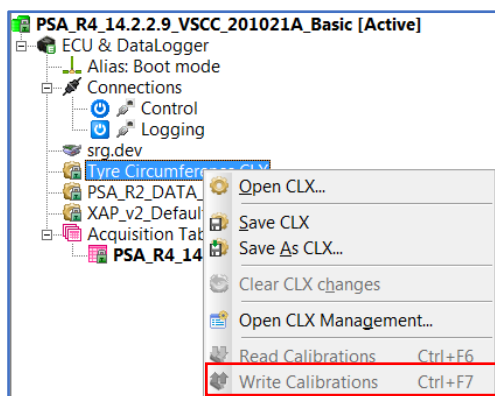
Table [Front wheel circumference]			
Display Name:	Front wheel circumference	Size X,Y,Z:	[2,1,1]
Reference Name:	APP_Front_wheel_circumference	Unit:	mm
Box-Unit:	SRG->EEP	Data Type:	FLOAT3
Comment:	Front wheel circumference		
1,2,1	Asphalt	Gravel	
1	▼ 1000	▼ 1000	

10. Do the same with the **Rear wheel circumference** line.

11. To save the changes, click **Save CLX**.



12. Connect the computer to the car, once **Control** has turned green: right-click on your new map and select **Write Calibration**.



13. Do a reset of the ECU, Main circuit breaker on OFF then ON



8.3. DATA ACQUISITION

A data acquisition system is located in the ECU. This device records the various signals emitted by the engine or chassis, so it is possible to download and analyze them using a specific software: **WINTAX 4**

8.3.1. Hardware

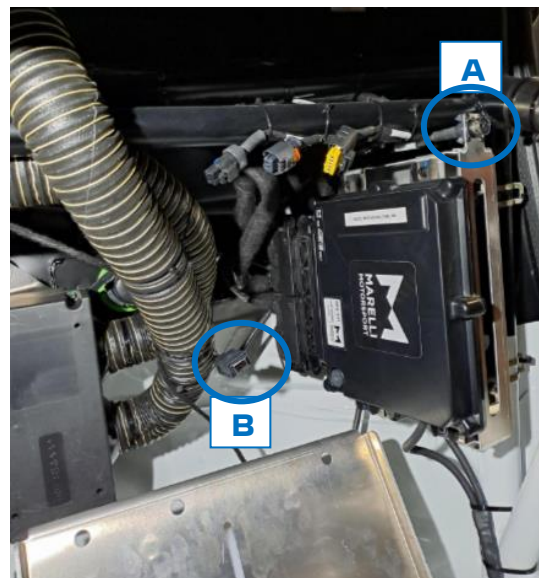
To download the data recorded in the ECU, you will need:

- ❑ A Wintax 4.80.06 Licence
- ❑ An ethernet cable to plug-in to the connector (**item. A**)



OR

- ❑ A USB* key to plug-in on the connector (**item. B**)



 **Only for for data acquisition use**
O NOT USE FOR GSM CHARGING

* Three USB flash drive models have been validated and are **only recommended**:



SANDISK S47
32gb



LEXAR JUMPDRIVE S47
32gb



LEXAR JUMPDRIVE M45
32gb



Format the key at each assistance and control on Wintax the RfdDiskState and Tlm_Cpu_Free channels.



If there is no data on the key or RfdDiskState in error, replace the key.

8.3.2. Installation

To install this software, follow the instructions outlined in the [Wintax Installation Manual](#).



Available on the Stellantis Motorsport media library



8.3.2. How to Use it

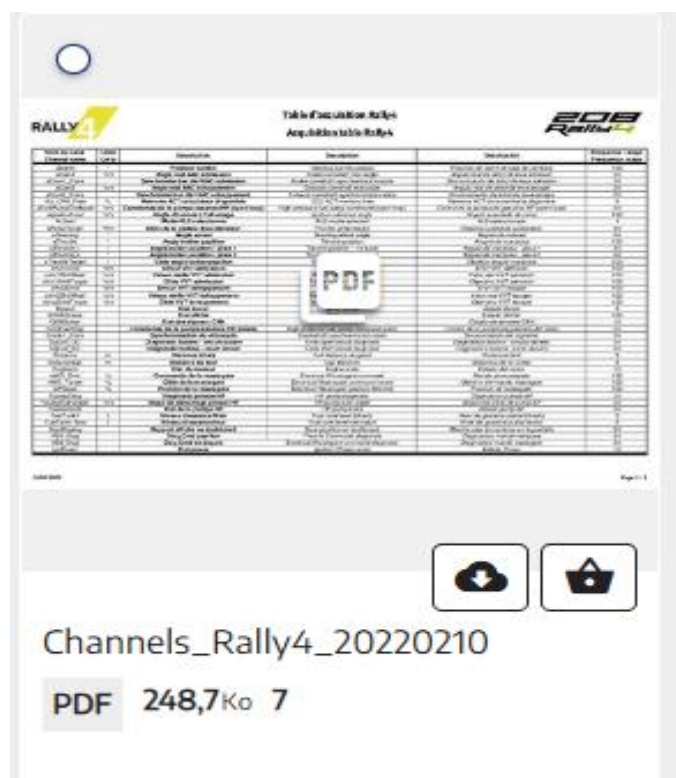
In order to make data analysis more accessible, a standard configuration called "User" is available on the media library.

This configuration includes different tabs for mechanical parameters monitoring or driving analysis.

A video import function is also available, which allows you to analyze the data in comparison with the images for more accuracy and ease of understanding.



The explanations of the different channels are grouped together in a table available on the media library:



A specific user manual for the User **RALLY4_Basic_2025A** groups together the explanations related to the different tabs in order to facilitate operation and understanding



Work in progress – available soon

9. APPENDICES

9.1. SPECIAL PROCEDURES

SPECIAL PROCEDURES



9.1.1. Oil Pressure Rising _ Cranking

Oil pressure monitoring is carried out manually.

1. Make sure the transmission is in the neutral position (N)

2. Circuit breaker ON



3. Short press



horn then Start



→ Repeat until you reach 3 bar minimum.

4. Power ON



+ Short press (pulse) on START



Nb: The starter motor will run for a maximum of 5 seconds

9.1.2. Forced start

Forced Manual Start = Engine starts regardless of conditions



This method is only to be used if a special restart is needed following a stall or an HS oil pressure sensor.

1. Main ON



+ power ON



2. Long press (> 1s) on the START button



9.1.3. Actuators Learning

❑ **STEP 1:**

Throttle Body / Accelerator Pedal / E-Waste-Gate learning

1. Main Kill Switch OFF



2. Pressing the accelerator pedal full down

3. Hold down the pedal in its position and turn the main kill switch to ON

➤ *The learning of Pedal / Throttle / Ewaste-gate begins*



4. When the message below appears → **take your foot off the pedal.**

LIFT OFF

➤ *Learning ends*

5. When the message below is displayed, the learning has been achieved and done properly

**Learning
OK – Do a Reset**

6. Do a full reset of the ECU, Main circuit breaker OFF



then ON



7. The engine is ready to run properly



If you see a different message, it means that the learning procedure did not go

→ **Retry the procedure**



If the learning is still not carried out correctly, check the electrical connections and the perfect condition of the harnesses of the elements concerned:

→ Throttle pedal / Throttle body / E Waste-Gate turbo



This learning must be done after the replacement of one of the parts below:

- Engine / ECU / Turbo and/or E-Waste-Gate Turbo
- Throttle Body / Accelerator Pedal / VVT Solenoid Valves

❑ **STEP 2: VVT Solenoid Valves learning**

1. Perform step 1 to point 5 and **do not reset the ECU**

2. Perform **two oil pressure rinsing (Cranking)**

Reminder:

Short press horn button



then Start



3. Reset the ECU, main circuit breaker OFF



puis ON



4. The engine is ready to operate in an optimized way

9.1.4. LAUNCH strategy

On the starting line, **stationary**, engine running

1. Activate the "STAGE" mode
2. Press the "LAUNCH" button → Led Yellow ON
3. Press and hold the clutch pedal down
4. Engage the 1st gear
5. Pull the handbrake (> to 5 bar)

When the last 5s official starting sequence begin:

1. Press the throttle pedal fully
2. Find the biting point of the clutch just before the start without letting it slip too much

At the **GREEN LIGHT** = STARTING ALLOWED

1. Release the handbrake quickly
2. Release the clutch pedal quickly without releasing the throttle pedal

9.1.5. Steering wheel Angle sensor Reset

Align the wheels in a straight line and center the steering wheel (use the straight-line chock) then:

1. Main Kill switch on ON



Power OFF

2. Select page 6 "**Mechanical Page 1**" on the Dashboard

3. **Long press** the **Red button** on the console's additional keyboard.



This procedure has to be carried out after the replacement of the steering wheel angle sensor, intervention on the rack or steering in general. Also after the ECU has been replaced.

9.1.6. Fuel Tank draining

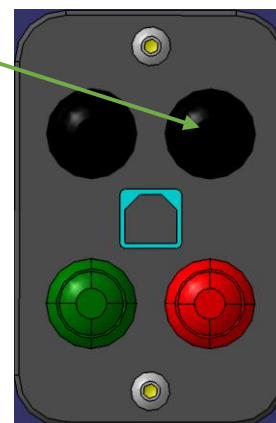
Connect the optional drain hose to the Staübli connector on the left of the fuel tank.



- ❑ Main ON, Power OFF, Long press the button at the top right until the pump is triggered.
- ❑ To stop the pump proceed to a short press on the same button.

Caution:

the battery voltage drops quickly when emptying a tank.



9.1.7. OFFICIAL FIA Fuel tank volume measurement

Here is the method of measuring the volume of your tank, practiced by the FIA. We invite you to carry out this procedure every 6 months. **Any other measure is considered inadmissible.**

Method for verifying the total capacity of the WRC fuel tank
(Section 401d of the WRC Extension)

- 1) The competitor will provide the necessary equipment, tools and fire extinguishers.
- 2) The fuel tank must be fitted with its proofing box (see item 255A) on the WRC car.
- 3) The WRC car to be checked will be placed on a flat surface.
- 4) The fuel supply output of the engine will be disconnected, and a proofed cap will be installed on the fuel tank.
- 5) The return of fuel to the tank will be disconnected and a proofed cap will be installed on the fuel tank.
- 6) The breather in accordance with section 253 of Schedule J will be disconnected and a proofed cap will be installed on the fuel tank.
- 7) The fuel gauges will remain attached to the fuel tank.
- 8) The fuel tank must be filled completely (using the two quick couplings for refueling as specified in the homologation regulations for the WRC kit variant).
- 9) By the use of the FIA sampling connector, all on-board and available fuel will be removed, measured and accounted for.
- 10) After complete removal of fuel by the methods indicated above, if fuel is still in low-pressure pumps, internal fuel lines, etc. and the nooks and crannies of the tank, it will be taken by dismantling it and stored. It will be counted. All these actions, sampling and transfers, will be carried out by the competitor's mechanics under the orders of the technical delegate.
- 11) The quantities of the different fuel quantities taken by this method will be added together to obtain the total capacity of the fuel tank. The maximum tolerance will be 0.50 per 1000 on the amount of fuel taken and there will be no corrections for temperature and/or density.
- 12) After the final measurement of the amount taken, the competitor, present during these checks, will acknowledge that all the fuel has been removed by signing the measurement sheet.
- 13) In the event of a dispute or appeal, if it is decided to repeat the measurement at once, the replacement of all the removed parts must be carried out by the competitor.

10. MISCELLANEOUS

10.1. LIST OF FLUIDS AND GREASE

Location	Type	Reference	Quantity	Comments
Engine Oil	0 W 30	PS97727A10	3,5 L	+1,5 L Radiator
Gearbox Oil	ELF HTX750 75W140	1C2340626A	1 L	+ 0,1 L Radiator
Steering Fluid	LDS	1615099680	2 L	
Cooling liquid	PSA -35°C	1637756480	6,5 L	
Braking liquid	BREMBO THC64	PS97633A10	1,5 L	
Driveshaft grease	N321186 – 50G	Z0A0030929	160g / 130g	Wheel side / GB side

10.2. TIGHTENING TORQUES

Available on the Stellantis Motorsport media library see:

- [« Tightening torques chart »](#)
- [« Main Tightening torques guide »](#)

10.3. MILEAGE RECOMMENDATIONS

Available on the Stellantis Motorsport media library see:

- ["Maintenance schedule"](#)

10.4. BASE SETUPS

Available on the Stellantis Motorsport media library see:

- ["Setups"](#)

10.5. SPECIFIC TOOLS

Here is the list of specific tools available, the tools needed to revise the BV are listed in the Sadev manual.

□ Engine:

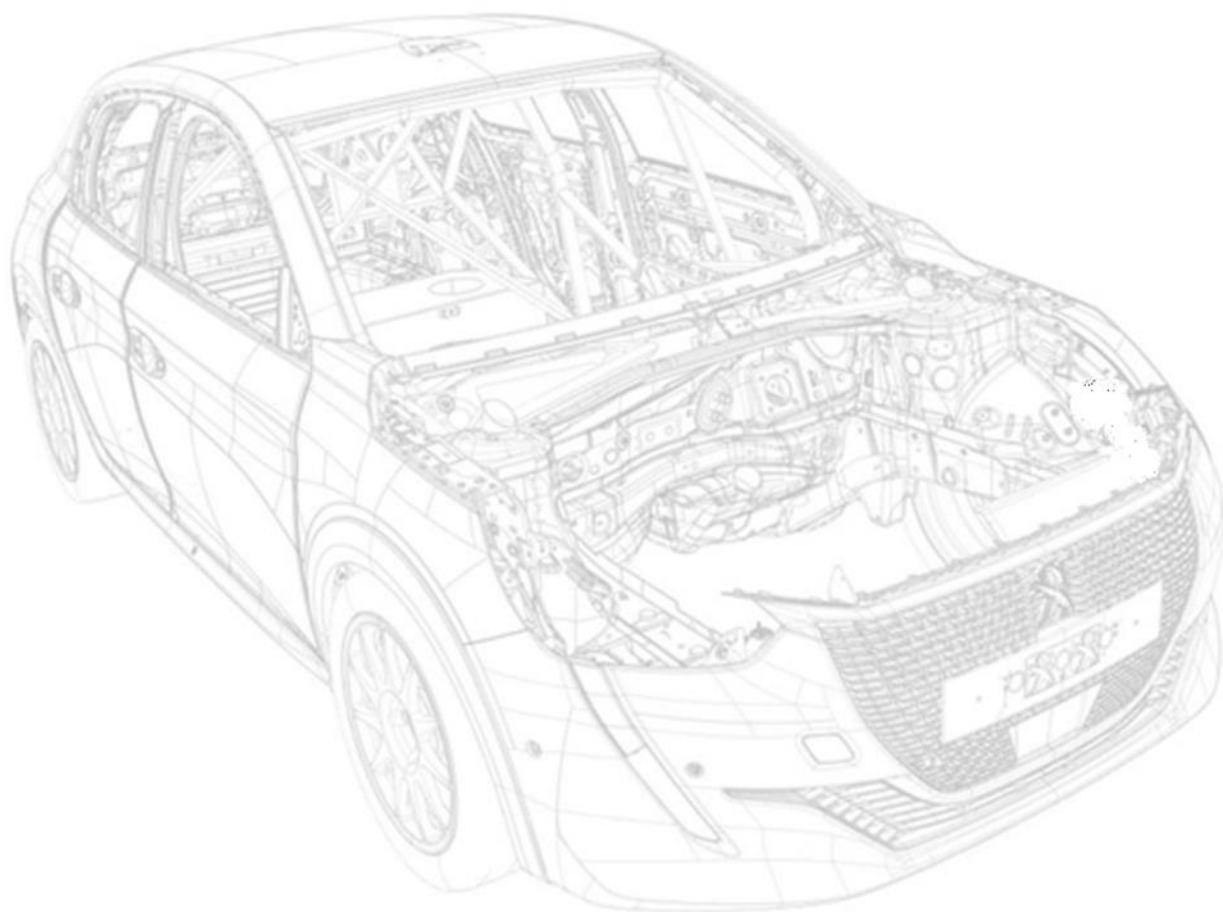
Reference	Designation	Quantity
1607274880	Water pump stretchy belt installation box	1
904673108A	Thin-walled spark plug socket	1
1607169280	Leak rates measuring tool	1
904647071A	EB2 Workshop Engine Mount	1

□ Others :

Reference	Designation	Quantity
1E1421287A-OUT	Ohlins front damper rebound adjustment tool	1
1F2164131B-OUT	Caliper bleeding Tool (Wrench)	1
1E1363779B-OUT	Differential Pre-Load Control Tool (Wheel)	1
9780AF	Gauge/Pump nut Module Tool Set	1
1608323980		1
904678451A	Socket for D-point nut	1
904661158A	Straight line wedge	1
904672751A	Inner tie rod tool	1
0D1121391A	Tool set for assembly/disassembly of the powertrain Silent Block	1
0D1121393A		1
0D1121395A		1
0D1121396B-OUT		1
6933-16		3
1E3164611E-OUT	D18 lug nut wrench	1

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