

CLIO CUP USER MANUAL

2013 USER MANUAL



B. PRESENTATION

B PRESENTATION

CONTENTS

B PRESENTATION	2
B.1 IDENTIFICATION	4
B.1.1 ROLL CAGE	4
B.1.2 CHASSIS NUMBER	4
B.1.3 HOLOGRAMS	5
B.1.4 MARKINGS	5
B.2 DIMENSIONS	6
B.3 CAPACITIES	7
B.4 GENERAL CHARACTERISTICS	8
B.5 HANDLING	9
B.5.1 LIFTING	9
B.5.2 TOWING	9
B.6 USING THE CAR	10
B.6.1 FACIA SWITCH PANEL : XAP_SWT98	10
B.6.2 STEERING WHEEL SWITCH PANEL : XAP_STER98	11
B.6.3 DASHBOARD: COSWORTH ICD 01D-032954-RST	12
B.6.3.1 PAGES	12
B.6.3.1.1 DRIVER PAGE 1 : RACE PAGE	12
B.6.3.1.2 DRIVER PAGE 2 : QUALIFICATION PAGE	13
B.6.3.1.3 DRIVER PAGE 3 : CIRCUIT MAP PAGE	14
B.6.3.1.4 DIAGNOTIC PAGE 1 : ENGINE DIAGNOSTIC	14
B.6.3.1.5 DIAGNOSTIC PAGE 2 : GEARBOX DIAGNOSTIC	16
B.6.3.1.6 DIAGNOSTIC PAGE 3 : BRAKE / CHASSIS DIAGNOSTIC	17
B.6.3.1.7 DIAGNOSTIC PAGE 4 : CBNT DIAGNOSTIC (PAGE 1/2 : STATUS)	17
B.6.3.1.8 DIAGNOSTIC PAGE 5 : CBNT DIAGNOSTIC (PAGE 1/2 : STATES)	18
B.6.3.2 CHANGING PAGES	19
B.6.3.3 LEDS / SHIFTLIGHTS	19
B.6.3.4 ALARMS DISPLAYED ON THE DASHBOARD	20
B.6.3.4.1 MAIN ALARMS (CATEGORY A)	20
B.6.3.4.2 SECONDARY ALARMS (CATEGORY B)	21
B.6.3.4.3 ALARMS AND THRESHOLD	21
B.6.4 BASIC PROCEDURES	22
B.6.4.1 POWER-UP	22
B.6.4.2 STARTING	22
B.6.4.3 TURNING OFF THE ENGINE	23
B.6.4.4 SWITCHING OFF THE POWER SUPPLY	23
B.6.4.5 CHANGING GEARS	23
B.6.4.6 PIT LIMITER	23
B.6.4.7 CONTROLLING THE RAIN LIGHT	24
B.6.4.8 RESETTING THE CHASSIS SENSORS	25

B.6.5	ADJUSTING THE DRIVING POSITION	26
B.6.5.1	ADJUSTING THE STEERING WHEEL	26
B.6.5.2	ADJUSTING THE SEAT	26
B.6.6	VENTILATION	27
B.7	SAFETY EQUIPMENT	28
B.7.1	FIRE EXTINGUISHER	28
B.7.2	CIRCUIT BREAKER	31
B.7.3	OTHER SAFETY EQUIPMENT	31
B.7.4	PASSENGER SEAT	32
B.8	BALLAST	32
B.9	APPENDIX	33
B.9.1	LIST OF MARKED PARTS	33
B.9.2	REPLACEMENT OF MECHANICAL COMPONENTS	35

B.1 IDENTIFICATION

B.1.1 ROLL CAGE

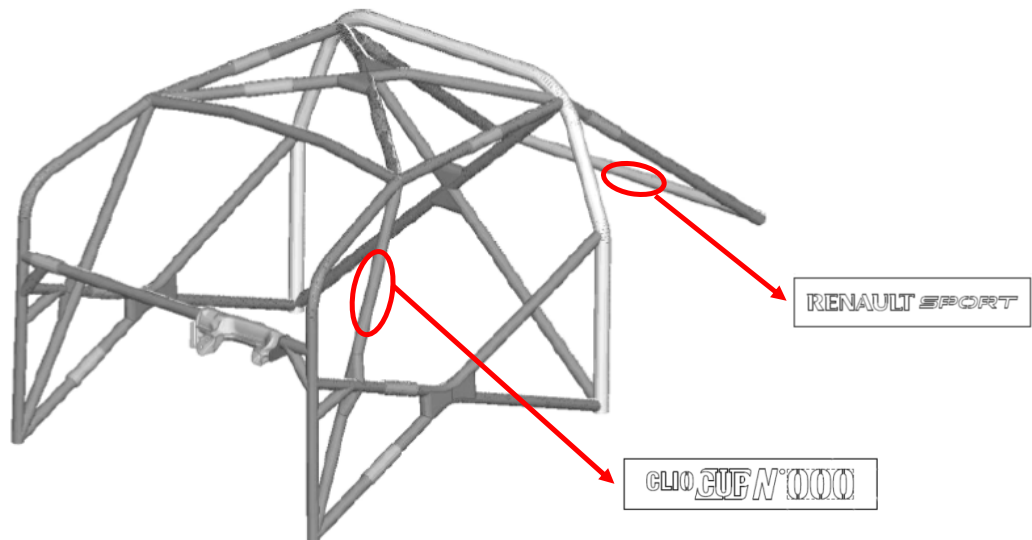
The roll cage is directly welded to the chassis

The roll cage plate is located on the left windscreen reinforcement tube
It features the following information:

- _ Model : CLIO CUP
- _ Serial number : xxx

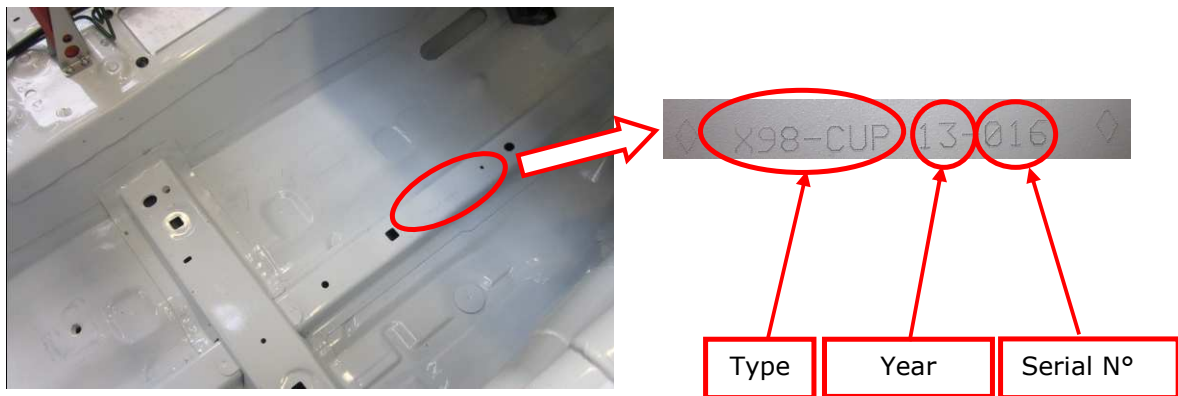
The manufacturer plate "RENAULT SPORT" is located on the rear transversal tube

The roll cage is homologated by the Automobile Sport French Federation :
FFSA (*Federation Française du Sport Automobile*)



B.1.2 CHASSIS NUMBER

The chassis number is engraved on the passenger side of the centre crossmember.



NOTE : The chassis number must correspond to the roll cage number. These 2 parts are indissociable. It is strictly forbidden to change them separately.

→ The non respect of this rule is a technical non conformity

B.1.3 HOLOGRAMS

The bodywork parts and certain mechanical components are identified using embossed hologram disks (see Appendix/List of marked parts).

The wording "**NO PAINT**" indicates you must not paint over the hologram under any circumstances.

The presence of the holograms is mandatory. The absence of hologram(s) may be regarded as technical non-compliance and event organizers may require that the part(s) in question be replaced.



B.1.4 MARKINGS

Certain mechanical components are identified using an engraving (see Appendix/List of marked parts).

An engraving is proof that the part is genuine, but does not confirm that it complies with regulations.

The absence of engraving(s) may be regarded as technical non-compliance and event organizers may require that the part(s) in question be replaced.

Supplier engraving examples :



Renault Sport engraving :

RENAULT SPORT



B.2 DIMENSIONS

Overall length (mm)	4090
Overall height on roof hatch (mm)	1429
Overall width (mm) (Rearview mirror - front and rear mudguard)	1945 - 1732 - 1726
Wheel base (mm)	2576
Front track (at axle) – middle of the tyre (mm)	1550
Rear track (at axle) – middle of the tyre (mm)	1520
Total weight (without fuel) (kg)	1065
Front/rear split [%]	63/37

B.3 CAPACITIES**REGULATIONS / RECOMMENDATIONS**

	Capacity	Characteristics		Comments
Fuel tank	42L	<ul style="list-style-type: none"> Free practice or private testing: SP 98 grade unleaded Events: see technical regulations 		Tolerance: -0L/+1.5L
Engine lubricant	4.0L : engine (4.2L with the oil filter)	<u>Elf EXCELLIUM NF</u>	<u>5W40</u>	See technical regulations
Gearbox lubricant	Casing : 1.3L (1.5L with the cooling circuit)	<u>ELF HTX 755</u> or <u>Motul Gear Competition</u> (SADEV preconisation)	80 W 140 75W140	See technical regulations
Coolant	6.5L	Glacéol RX Type D		free
Front/rear brake fluid	<800mL	<u>CASTROL SRF</u>		See technical regulations

The use of :

- Elf Excellium 5W40 engine oil
- CASTROL SRF brake fluid

are mandatory (refer to technical regulations).

You are free to use alternatives for all other fluids, but they must comply with the characteristics specified above.

 All brand new cars are delivered with

TOTAL SP98 grade unleaded : 10L
Elf Excellium NF 5w40 engine oil
CASTROL SRF brake fluid
ELF HTX 755 gearbox oil

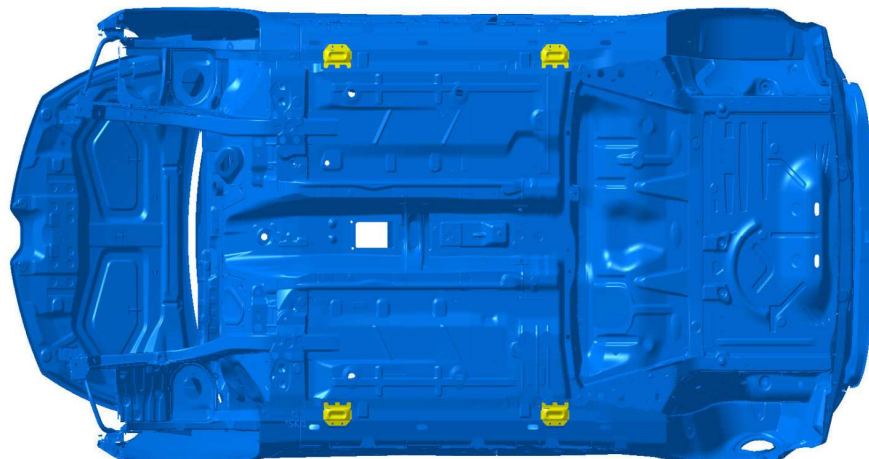
B.4 GENERAL CHARACTERISTICS

Description	Dimensions
SCx	0.869
Front SCz	0.024
Rear SCz	-0.08
Total SCz	0.016
Recommended dry setup :	See Chapter E- CHASSIS
Front ground clearance at standstill (MICHELIN tyre)	120mm
Rear ground clearance at standstill (MICHELIN tyre)	220mm
Front camber at standstill (deg . min)	-3°30'
Rear camber at standstill (deg . min)	-2°0'
Tyre radius under load (400kg) MICHELIN S9D : 200kph / 0°camber / inflate press 1.9b DUNLOP A46D : 200kph / 1° camber/ inflate press 2.1b	291mm 305mm
Vertical stiffness of front/rear tyre MICHELIN S9D DUNLOP A46D	320 N/mm 290 N/mm
Front/rear tyre dimension MICHELIN S9D DUNLOP A46D	20/61-17 21/62-17
Front/rear wheel dimensions	8" x 17"
Front unsprung mass per ¼ of vehicle	53kg
Rear unsprung mass per ¼ of vehicle	40.5kg
Front sprung mass per ¼ of vehicle (1160kg : total race weight)	370kg
Rear sprung mass per ¼ of vehicle (1160kg : total race weight)	210kg
Engine power	162kW (220bhp) [6,000rpm]
Max. engine speed	6,500rpm
Max. engine torque	270N.m (27.5m.kg) [2,500 to 5,500rpm]
Front camber variation	See section E-CHASSIS
Variation in front roll centre	
Front wheel alignment variation at compression	
Front wheel alignment variation at rebound	
Front shock absorber / wheel installation kinematics ratio	1.03
Rear camber variation	See section E-CHASSIS
Variation in rear roll centre	
Rear wheel alignment variation at compression	
Rear wheel alignment variation at rebound	
Rear shock absorber / wheel installation kinematics ratio	1.04

B.5 HANDLING

B.5.1 LIFTING

The vehicle has to be raised at the front and rear using a jack.
The jack must be positioned beneath the pad provided (in Yellow on the following picture)



B.5.2 TOWING

The vehicle may be towed from the front or the rear using the strap provided :

REAR



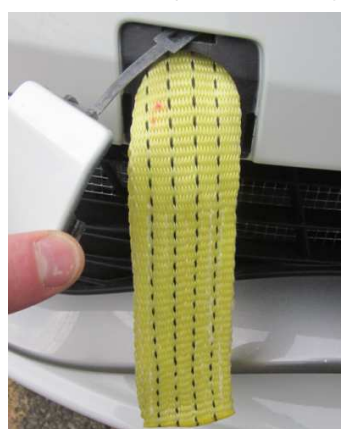
When not used, the strap is tucked in the bumper
CAUTION : minimum 1cm must be outside to pull it



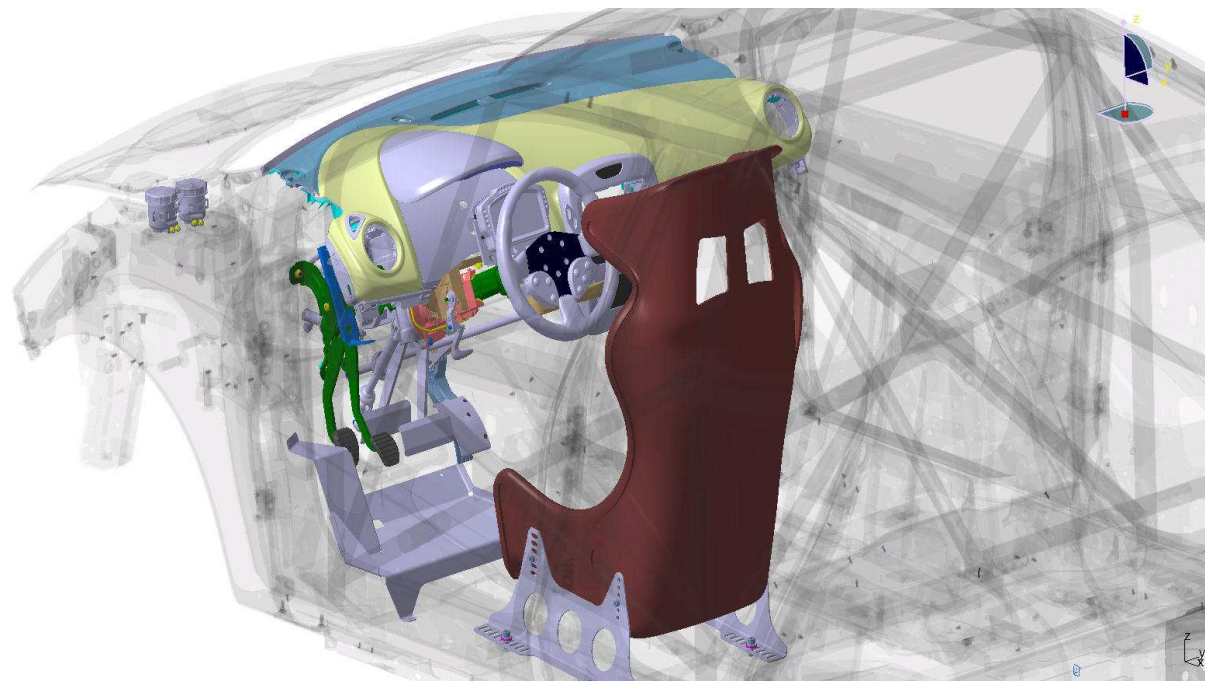
FRONT



When not used, the strap is completely tucked in the front bumper behind the genuine cover.

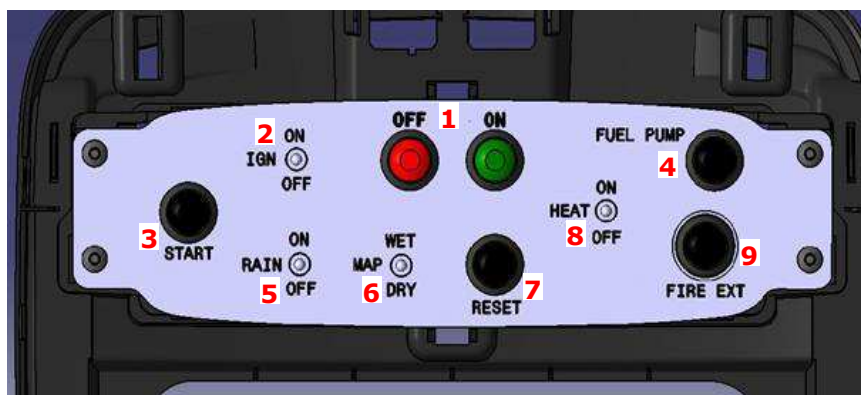


B.6 USING THE CAR



B.6.1 FACIA SWITCH PANEL : XAP_SWT98

- 1 – Power supply
2 push buttons ON/OFF
- 2 – Ignition
1 switch ON/OFF
- 3 – Starter excitation
1 push button
- 4 – Fuel pump override
1 push button
- 5 – Rear Rain light
1 switch ON/OFF
- 6 – Engine Map
1 switch DRY/WET
- 7 – Reset :
1 push button
- 8 – Heating :
1 switch ON/OFF
- 9 – Fire extinguisher
1 push button



B.6.2 STEERING WHEEL SWITCH PANEL : XAP_STER98

Button	Action	Short press	Long press
LIGHT	Light management (Front headlight and rear)	Head light flasher	1st Long press : light goes ON 2nd long press : light goes OFF
WIPER	Wiper management	1 go/back wiper, return to "0" position	1st Long press : permanent wiper on only one constant speed (maximum speed) 2nd long press : wiper stops and returns at "0" position
CLEAN	Windscreen cleaning (wiper + pump)	While this push button is pressed, wiper and windscreen washer work together. When released, wiper return to "0" position	
PAGE	Access to the dashboard pages	Change page	Switch between "diagnostic pages" (3) and "driver pages" (5)
PIT	Pit limiter management	1st short press : enable (60kph) 2nd short press : Disable	/
GEAR	Gearbox barrel unlocking (safety)	Unlock the gearbox barrel (see chapter D "Transmission-sifting")	/
GREEN BUTTON	Free button	Management accessible using the free connector on chassis loom (See chapter F "wiring looms")	/

B.6.3 DASHBOARD: COSWORTH ICD 01D-032954-RST

B.6.3.1 Pages

The display contains 8 pages classified in 2 different families :

- Family 1 : 3 "driver" pages
- Family 2 : 5 "diagnostic" pages

B.6.3.1.1 DRIVER PAGE 1 : RACE PAGE



Area "LAP" :

Time : Current lap time (stay displayed 10s after having being cut)
 Lap # : number of lap completed during the RUN

Area "Speed" :

Current speed displayed (depends on tyre diameter, configurable in Toolset (see chapter G - Softwares)

Area "Default" :



When 1 or several defaults appear, they are scrolling on this area when the default is still present.

NOTE : Even if the defaults disappears (Oil_P min, or GB_pot_def for example) :

- A letter in the area "Event" is recorded depending on the kind of default.
- A alarm LED appears on top right or top left position (engine or Gearbox alarm)

Area "Event":



Each letter means that during the last or current RUN, an alarm was recorded (even if it disappeared after) to encourage team to check the default.

- W** : Water temp alarm recorded (min or max)
- O** : Oil pressure recorded (min or max)
- B** : Battery voltage recorded (min or max)
- E** : engine alarm recorded (other engine sensor than W, O, B)
- G** : gearbox alarm recorded

Area "MAP"

"DRY" or "WET" depending on the engine MAP selected on the Facia switch panel

Area "GEAR"

Corresponds to Gearbox ratio engaged (R, N, 1, 2, 3, 4, 5, 6)

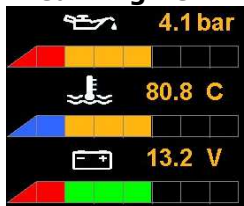
Area "RPM"

Current engine speed in RPM ("xxxx RPM")

Area "RAIN LIGHT"

"OFF" (grey background) or "ON" (green background) depending on the Facia switch panel interrupter position.

Area "Engine"



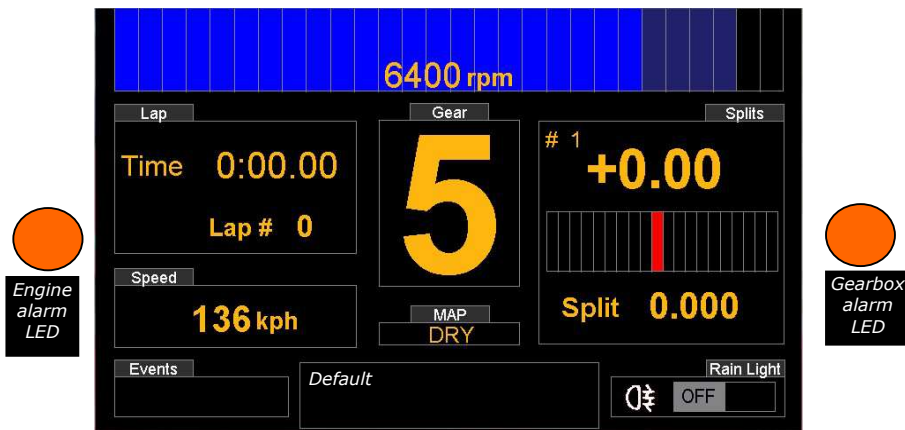
Engine oil pressure (bars)

Engine water temperature (°C)

Battery voltage (V)

NOTE : these 3 Values corresponds to the Category A alarms

B.6.3.1.2 DRIVER PAGE 2 : QUALIFICATION PAGE



Area "LAP", "Speed", "MAP", "Events", "Default", "rain light", "RPM", "GEAR" and "alarms LED" remains the same as the RACE PAGE. Only the "Splits" replace the "engine" area

Area "Splits"



This Area represents the Qualifying mode (QM) configuration

- **Time difference** : current split compared to split recorded from the best lap
- **Bargraph** : 1 bar = 1 tenth (+/- 1 sec)
- **Split** : Current split time : reference

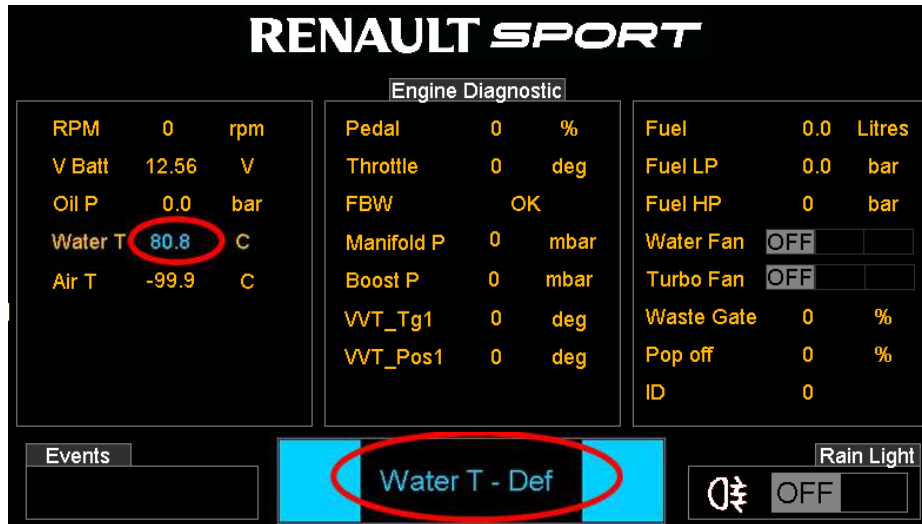
NOTE : Refer to chapter *G-Softwares* for the full Qualifying mode configuration

B.6.3.1.3 DRIVER PAGE 3 : CIRCUIT MAP PAGE



Refer to chapter *G-Softwares* to upload a circuit map (.bmp)
NOTE: This map is just for information and is not dynamic

B.6.3.1.4 DIAGNOSTIC PAGE 1 : ENGINE DIAGNOSTIC



Areas "Events", "Default" and "rain light", remains the same as DRIVERS PAGE.

NOTE:

When an alarm appears in the area "default", the corresponding value by default is displayed in blue, red or orange.

Engine diagnostic parameters : (see also chapter *C-Engine*)

Engine parameters	Signification	Values expected when engine is OFF	Values expected when Engine is running
RPM	Engine revs	0	- Idle > 1200rpm - WaterT<50°C : RPM limiter = 4500rpm - 50°C<Water T<100°C, RPM limiter = 6500rpm - WaterT > 100°C, rpm limiter decrease progressively to reach 3500rpm at 120°C
VBatt (V)	Battery voltage	11.5V to 12.5V	> 13.5V
OilP (b)	Oil pressure	0	>1.5b when engine RPM>3000
WaterT (°C)	Water temp	#ambient temp when the car is cold	Water temp progressively increase to 87°C (Water fan goes ON at low speed)
AirT (°C)	Air intake temp	#ambient temp when the car is cold	Air temp progressively increase when the car is in static position
Pedal (%)	Gas Pedal potentiometer position	0 > 100% depending on Gas pedal position	0 > 100% depending on Gas pedal position
Throttle (°)	Throttle potentiometer position	<9° (depends on water temp)	0 > 100° depending on Gas pedal position
FBW	Fly by wire status	OK	OK
Manifold P	Manifold air pressure	Atmospheric pressure	- Idle : Manifold P< 350mb - When Water T >55°C Manifold P follows strictly the BoostP (at 100% throttle)
Boost P	Boost pressure	Atmospheric pressure	- Boost P < 1.1b when Water T <30°C - When 30°C < Water T < 50°C => BoostP increase progressively - when water T > 50°C => BoostP can go to its maximum value (2.1b)
VVT1_tg (°)	VVT1 target = instruction sent by ECU to the dephaser	0	If WaterT < 55°, VVT1_tg =0 As soon as WaterT>55°, VVT1_tg=100
VVT1_pos (°)	Intake camshaft pos : depends on VVT1_tg	0	- After starting : automatic calibration (10sec) - Then VVT1_pos = 100° - when water T>55°, VVT1_pos must strictly follows VVT1_tg
Fuel (L)	Fuel level	Fuel Level	Fuel level
Fuel LP (b)	Fuel press (measured at the exit of the fuel cell)	0b / 5b maxi when "fuel pump" button is pressed	4.7<fuel LP<5.0b
Fuel HP (b)	Fuel press (HP rail)	<10b	- 18b < fuel HP <180b -If fuel HP < 15b during starter excitation, the engine will not start, it's necessary to bleed the air inside of the rail (see procedure in chapter <i>C-Engine</i>)
Water Fan	Water fan speed	OFF (depends on water temp)	LOW (Low speed) when Water T >87°C OFF when Water T <86°C HIGH (High speed) when Water T >90°C LOW when WaterT <88°C See chapter <i>C-Engine</i>
Turbo Fan	Turbo fan	OFF (depends on Air temp)	ON if Air temp is > 50°C OFF when Air temp is <48°C
Waste Gate (%)	Waste gate duty	0	Depends on Boost pressure target Must always be under 70%
Pop off (%)	Pop off valve pos	0 (close)	- 100% (open) after an complete closure of the throttle and Boost P > 1400 mbar (to reduce the pressure upstream to the closed throttle) - 100% if WaterT <50°C
ID	Not used		



For reliability reasons and to avoid alarms risings, it's strongly recommended to let the engine warm up to a water temp > 60°C before any practising. If this condition is not respected, the full engine power won't be available.

B.6.3.1.5 DIAGNOSTIC PAGE 2 : GEARBOX DIAGNOSTIC

(see also chapter D-Transmissions)



Areas "Events", "Default" and "rain light", remains the same as DRIVERS PAGE.

Gearbox parameters	Signification	Values expected when engine is OFF	Values expected when Engine is running
RPM	Engine revs	0	- Idle > 1200rpm - WaterT<50°C : RPM limiter = 4500rpm - 50°C<Water T<100°C, RPM limiter = 6500rpm - WaterT > 100°C, <rpm limiter = 3500rpm
VBatt (V)	Battery voltage	11.5V to 12.5V	> 13.5V
Barrel (V)	Gearbox barrel potentiometer voltage	1 st gear : 1.60 V+/-10mv	+0.5v / gear in upshift phase -0.5V / gear in downshift phase
Gear	Gear ratio engaged	R N 1 2 3 4 5 6	R N 1 2 3 4 5 6
Up SW	UPshift paddle	ON : paddle pressed OFF : rest	ON : paddle pressed OFF : rest
Down SW	DOWNshift paddle	ON : paddle pressed OFF : rest	ON : paddle pressed OFF : rest
Gear SW	Gearbox barrel unlocking solenoid.	ON : "GEAR" button pressed OFF : rest	ON : "GEAR" button pressed OFF : rest
Up Cont	Upshift contactor	OFF : during downshift and at rest ON : during upshift	OFF : during downshift and at rest ON : during upshift
FL WSP (kph)	Front left wheel speed	0	>0 when a gear is engaged
FR WSP (kph)	Front right wheel speed	0	>0 when a gear is engaged

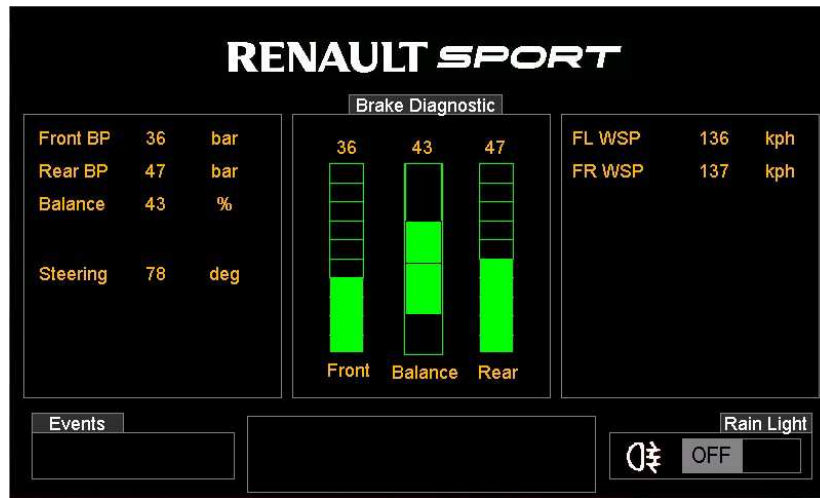
NOTE 1:

The complete gearbox strategies (manual mode or semi-auto mode) is described in Chapter D-transmission/shifting

NOTE 2 :

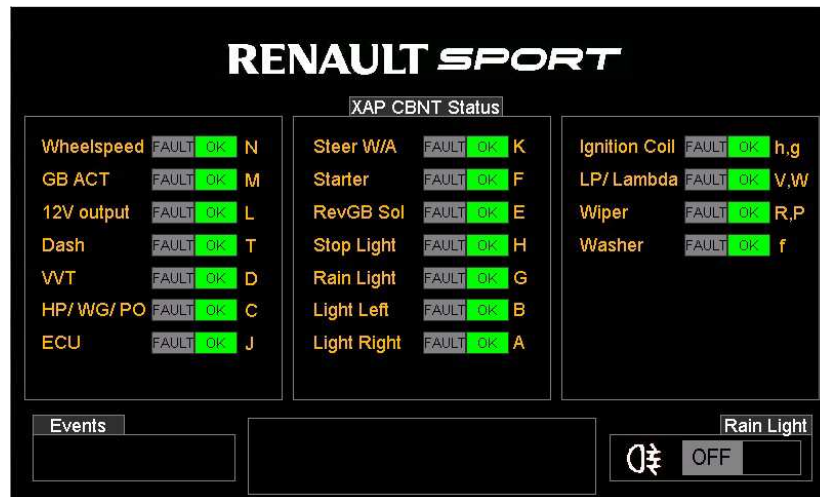
When an alarm appears in the area "default", the corresponding value by default is displayed in blue, red or orange.

B.6.3.1.6 DIAGNOSTIC PAGE 3 : BRAKE / CHASSIS DIAGNOSTIC

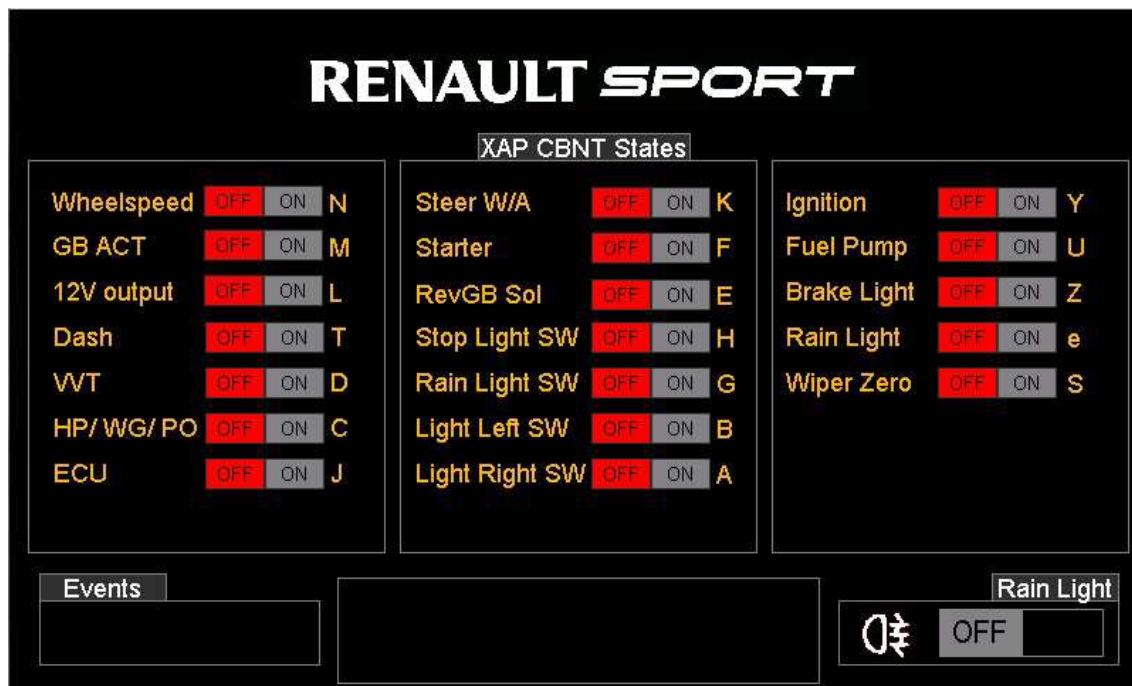


Brake/ chassis parameters	Signification	Values expected when engine is OFF	Values expected when Engine is running
Front BP	Front brake pressure	From 0 to more than 100b	
Rear BP	Rear Brake pressure	From 0 to 40b (depends on rear brake pressure limiter setup)	
Balance	% of brake pressure on front axle	From 40% to 70% (depends on balance bar rod setup)	
Steering	Steering angle sensor	-360° to + 360°	
FL WSP (kph)	Front left wheel speed	0	>0 when a gear is engaged
FR WSP (kph)	Front right wheel speed	0	>0 when a gear is engaged

B.6.3.1.7 DIAGNOSTIC PAGE 4 : CBNT DIAGNOSTIC (PAGE 1/2 : STATUS)



Every indication corresponds to the XAP CBNT pinout and shows the **status** (OK / FAULT) of each Pin (one Letter = A, B, h, g...etc = 1 Pin). All values must be "OK" (green). When "FAULT" appears, the Pin is not correctly supplied. Please refer to chapter *F- wiring* for more details.

B.6.3.1.8 DIAGNOSTIC PAGE 5 : CBNT DIAGNOSTIC (PAGE 1/2 : STATES)

Every indication corresponds to the XAP CBNT pinout and shows the **state** (ON/OFF) of each Pin. Please refer to chapter *F- wiring* for more details.

When XAP Master relay is ON :

- All values from the first column must be "ON" (green)
- On the second column, Steer W/A, starter and revGB Sol must be "ON" green, for the other Pins, please find the action/result below :

Sensors /actuators	Signification	Action	result
stop light SW	Brake Pedal contactor switch	Brake pedal pressed	OFF > ON
rain light SW	Rain light switch on facia switch panel	"Rain " switch ON	OFF > ON
light left SW	Left side lights switch on steering wheel	"light" button pressed	OFF > ON
light right SW	Right side lights switch on steering wheel	"light" button pressed	OFF > ON
ignition	Ignition coils switch on facia switch panel	"ignition" switch ON	OFF > ON
fuel pump	Fuel tower pump (facia switch panel manual mode or automatic mode) state	"fuel pump" button pressed and/or automatic fuel pump management	OFF > ON
brake light	Lateral rear brake light state	Brake pedal pressed	OFF > ON
rain light**	Rear central rain light state	Brake pedal pressed And/or « Rain » switch ON And/or pit limiter ON And/or Reverse gear ratio engaged	OFF > ON
wiper zero	"Wiper" position state	When "wiper" leave its rest position	ON > OFF

** Please refer to Central rear rain light activation strategies in this chapter

B.6.3.2 Changing pages

The pages of the display may be changed by pressing on the push button 'PAGE' of the steering wheel

- Pressing briefly on this button (one second) moves the display in the 3 driver pages
- Pressing this button for longer (more than 2 seconds) moves the display from driver pages to diagnostic pages
- Pressing briefly on the button moves the display in the 5 diagnostic pages

You can return to the driver pages by pressing the button for a longer period (more than 2 seconds). The display returns to the first driver page

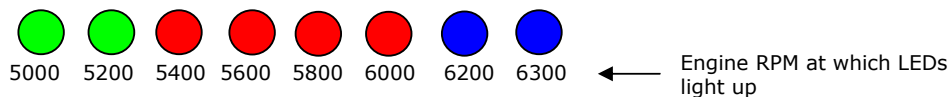
B.6.3.3 Leds / shiftlights



Shiftlights (8):

Shiftlight thresholds are fully configurable using the "Toolset" software, see chapter *G-Softwares*

The LEDs light up in all gear ratios. By default, the setup is the following one:



LEDs Alarm (2):

On the left side, 1 LED lights up when an engine alarm rises up
 On the right side, 1 LED lights up when a Gearbox alarm rises up

These LEDs are associated with the message displayed in the area "Default" and with the letter recorded in the area "events"

B.6.3.4 Alarms displayed on the dashboard

Alarms are generated by the ICD depending on engine / gearbox sensors values sent by the ECU for display.

The alarm/default message disappears only when the problem is solved. Even if the problem is solved, till the power supply is ON :

- The top left and/or right LEDs alarms remain ON
- The letter in the area "event" is displayed

We distinguish 2 categories of alarms : A and B

B.6.3.4.1 MAIN ALARMS (CATEGORY A)

The following alarms are displayed to the driver, meaning that **he must immediately stop the car and cut the engine.**

- o Water T max
- o Oil P min
- o Vbatt min

See List on next page with the corresponding thresholds.

A message is displayed on the full screen on the dashboard + in the Area 'Default' to force the driver to stop

In addition with the message displayed, all the following LEDs become RED:

- 3 on the Right column (above gearbox diagnostic LED)
- 3 on the Left column (above engine diagnostic LED)
- + 1 engine alarm LED in RED



B.6.3.4.2 SECONDARY ALARMS (CATEGORY B)

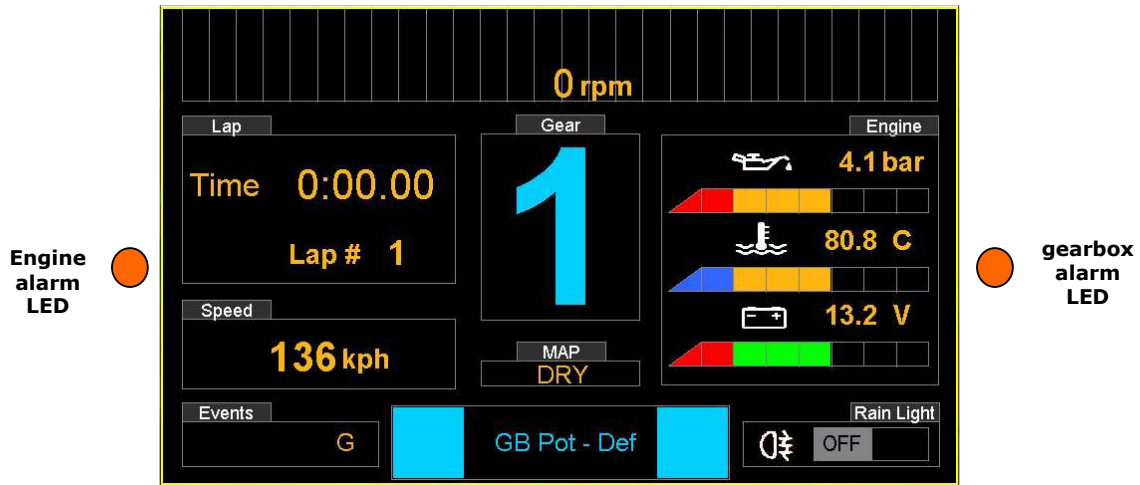
All non Cat A alarms are classified in the category B. They are clearly displayed to the driver, but he is still able to drive normally (the dashboard information remains normally readable).

A message is displayed in the Area "Default"

In addition with the message displayed, the corresponding alarm LED becomes ORANGE:

- 1 Right HS column (gearbox diagnostic)
- 1 Left HS column (engine diagnostic)

If 1 or more alarms are present, the messages are scrolling in the "default" area



B.6.3.4.3 ALARMS AND THRESHOLD

Category	Message	Alarm LED	Meaning	Threshold
A	"V BAT MIN" + value in Red	4 LEFT + 3 RIGHT	Min. battery voltage	V batt < 11V and revs > 4000 rpm
B	"V BAT MAX" + value in Orange	1 Left	Max. battery voltage	V batt > 15V
B	"OILP max" + value in Orange	1 Left	Max. oil pressure	Oil P > 6 bar
A	"OILP min" + value in Red	4 LEFT + 3 RIGHT	Min. oil pressure	Oil P < 1.5 bar and revs > 3000rpm
A	"Water T Max" + value in Red	4 LEFT + 3 RIGHT	Max. water temperature	> 105°C and revs > 1000 rpm
B	"Water T Min" + value in Orange	1 Left	Min. water temperature	<40°C and revs > 4000rpm
B	"AIR T MAX" + value in Orange	1 Left	Max. air temperature	Air T > 90°C revs > 1000 rpm
B	"HP fuel min" + value in Orange	1 Left	Min HP fuel pump (rail pressure)	< 300 mbars and revs > 1500 rpm
B	"LP fuel min" + value in Red	1 Left	Min LP fuel pump	< 3 bars and revs<1000rpm
B	"Throttle - def" + value in Blue	1 Left	Electrical fault on electrical throttle pot.	-
B	"Pedal - def" + value in Blue	1 Left	Electrical fault on pedal pot	-
B	"Boost P/ air T - def" + value in Blue	1 Left	Electrical fault on boost pressure / air Temp sensor	-

B	"Manifold P - def" + value in Blue	1 Left	Electrical fault on manifold sensor	-
B	"Oil P - def" + value in Blue	1 Left	Electrical fault on oil pressure sensor	-
B	"Water T - def" + value in Blue	1 Left	Electrical fault on water temperature sensor	-
B	"Throt FBW * def" + value in blue	1 Left	Electrical fault on motorised throttle	-
B	"High press def" + value in Blue	1 Left	High pressure sensor default	-
B	"Low press def" + value in Blue	1 Left	Low pressure sensor default	-
B	"V.V.T.1 - def" + value in Blue	1 Left	Intake V.V.T. servo control default	difference > 10° between VVT1_tg and VVT1_pos during more than 5s
B	"GB actuator - def" + value in Blue	1 Right	Gearbox actuator default (only if connected)	-
B	"GB Pot - def" + value in Blue	1 Right	Electrical default on barrel position sensor	-
B	"up contact - def" + value in Blue	1 Right	Electrical default on upshift contactor	-
B	"Solenoid R" + value in Blue	1 Right	Electrical default on reverse solenoid (barrel unlocking)	-
B	"CBNT - Can Def"	-	CAN CBNT fault	-
B	"Steering - def"	-	Major/minor fault on power steering module	-
	"Gear"	-	Gear button pressed, message displayed in the middle of the screen without alarm	-
	"Pit Limiter"	-	Speed limiter enabled, message displayed on the top of the screen without alarm	-

B.6.4 BASIC PROCEDURES

B.6.4.1 Power-up

Press the "ON" button of the facia switch panel (**See B.6.1**) to power supply the vehicle
The "COSWORTH" home page appears when the dashboard display first comes on, and
then moves to the first driver page (RACE Page)

B.6.4.2 Starting

Once the vehicle's electrics are on, flick the vehicle's "IGNITION" switch to the up (ON)
position.

Check that no gear is engaged (the letter "N" is displayed on one of the display screen's
driver pages).

Press on the "START" button **without touching the Gas Pedal**



The vehicle will only start if the following electronic equipments are connected
and are working properly:

- ECU
- CBNT
- Master relay

It is possible to start without plugging the dashboard

NOTE : For the first engine start after engine refitting, it's necessary to bleed the fuel
rail. To make it properly, please follow carefully the procedure indicated in *chapter C-
Engine*

B.6.4.3 Turning off the engine

Flick the "IGNITION" switch to the down (OFF) position

NOTE : The vehicle's electrics remain switched on



Except in the event of an emergency stop, it's strictly not advised to turn off the engine using the power supply switch (OFF button). It is also recommended to wait 30seconds between switching off the engine and switching off the power supply. Respecting these two recommendations will guarantee optimum operation of the power steering.

B.6.4.4 Switching off the power supply

Press the "OFF" button of the facia switch panel and hold there for at least half a second. The dashboard display is switched off.

NOTE: Switching off the power supply also switches off the engine.

B.6.4.5 Changing gears

2 modes are possible and are completely independent. It's possible to make randomly upshift and downshift manually (using the lever) or in semi-auto using paddle shift kit.

Please refer to *Chapter D-Transmission/shifting* for a complete description of the shifting modes.

B.6.4.6 Pit limiter

The purpose of this function is to limit the vehicle's speed to **60kph**. It is enabled and disabled by the driver.

Principle:

By pressing the button "PIT" of the steering wheel, Engine revs are thus limited (by the ECU) to those corresponding to a speed of 60kph and the message "PIT LIMITER" is displayed on the dashboard in the RPM Area :



If the pit limiter is activated while the current speed is > 60kph, all the Shiftlights flashes together till the vehicle reach 60kph (at this particular moment, all shiftlights remains ON but without flashing)



NOTE: The speed limiter does not control the brakes. Consequently, the vehicle speed will only slow rapidly to 60kph if the driver applies the brakes.

To disable the pit limiter mode, the driver has to press the button "PIT" of the steering wheel : the message "*Pit Limiter*" disappears on the display.

Specific conditions:

The driver may only enable and disable the speed limiter when the vehicle is in on a forward gear (1 to 4)

B.6.4.7 Controlling the rain light

The rain light is switched on by flicking the "rain" switch to the up position (ON).

→ The central rear rain light is ON continuously when enabled.

However, it is lightning automatically with flashing phases (flashes at 0.5Hz) in the following specific situations:

- When the Pit limiter is enabled
- For a period of 20 seconds after the engine stalls
- When Reverse Gear ratio is shifted

B.6.4.8 Resetting the chassis sensors

This procedure allows to reset the following sensors:

- Front Brake pressure sensor
- Rear brake pressure sensor
- Steering angle sensor

It is necessary to make a reset if one of the following sensor has been changed or if the brake circuit has been bled.

CONDITIONS :

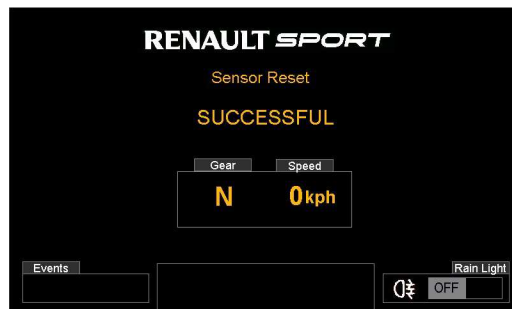
The car must be in the following configuration to allow the procedure:

- Engine stalled
 - Gearbox in Neutral
 - Speed = 0 kph
 - Brake pedal released
 - Steering wheel straight
 - Car on a flat surface
- Press the "ON" button to power supply the car
 - Display the "brake diagnostic" page
 - Press the "RESET" button, the following message appears :



This page only reminds the conditions to perform the RESET procedure

- press again the "RESET" button gain to start the procedure or "PAGE" button (steering wheel) to cancel it

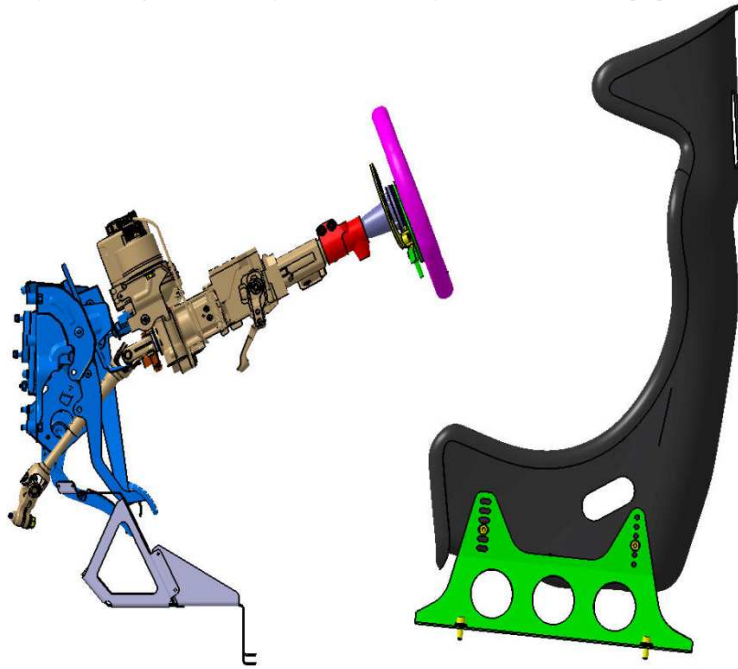


- Check in the "brake diagnostic" page that the value of :
 Front BP = 0 bar
 Rear BP = 0 bar
 Steering angle = 0 °

B.6.5 ADJUSTING THE DRIVING POSITION

B.6.5.1 Adjusting the steering wheel

To optimize the driving position, the height and deepness of the steering wheel may be adjusted by unlocking the steering column lever (1)



NOTE :

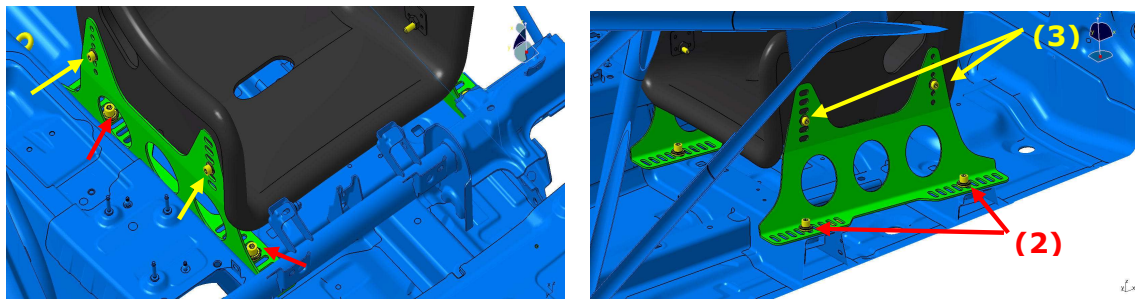
After having set the steering column position, the adjustment lever must be removed (1 screw to remove). It is strictly forbidden to run with it (FIA regulation)



B.6.5.2 Adjusting the seat

To move the seat forwards or backwards, place the seat in the required position and then re-screw the brackets in the appropriate holes (2).

The height and angle of the seat may be adjusted the same way by altering its attachment points on the brackets (3).



B.6.6 VENTILATION

The vehicle has 4 air vents:

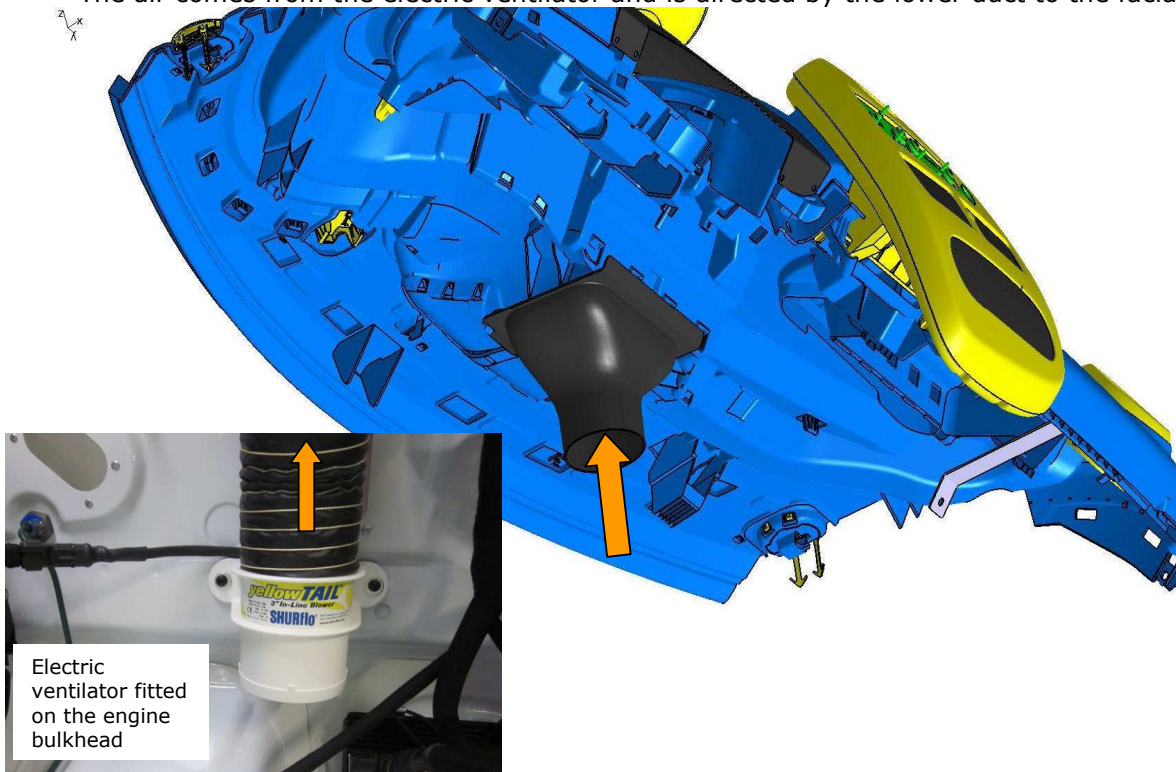
- 1 in the middle of the facia : activated by the "heat" switch on facia switch panel
- 2 on the roof: air coming though the roof hatch

Ventilation on the facia upper surface:



View from below:

The air comes from the electric ventilator and is directed by the lower duct to the facia



Electric ventilator fitted on the engine bulkhead

Roof ventilation:

Roof hatch



Inside aerator

B.7 SAFETY EQUIPMENT**B.7.1 FIRE EXTINGUISHER**Control unit
(3 positions)

Each vehicle is equipped with an extinguishing system targeting the driver compartment and the engine compartment. The fire extinguisher is located behind the driver's seat.

2 mandatory
screwed clamps

The fire extinguisher is fitted on its support using 2 metallic straps which are mandatorily screwed (automatic clamping forbidden).

The fire extinguisher support is fitted on the chassis using 4 M6 screws (+2 spacers) + 4 nuts screwed under the chassis through plates (welded to the chassis)

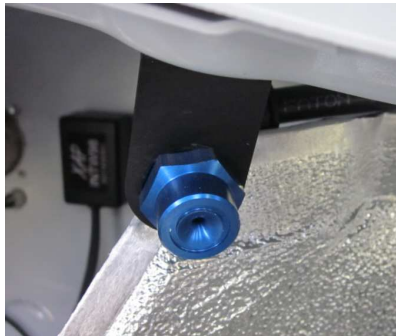
The system consists of 3 jets:

- In the driver compartment right hand side of the steering wheel



- 2 in the engine compartment

1 pointing on the Turbo :



1 pointing on the air intake :



Use:

The extinguishing system can be triggered in 2 different ways:

- The driver presses on the button "Fire Ext" situated on the Facia control panel (9)



- From Outside: by pressing the button (E) located on the outside of the vehicle at the base of the windshield pillar, and which must be indicated by a red letter E.



You must fit the wiring of the white connector directly on the plastic windscreen lower grid using a tyrap® as indicated below:



The fire extinguisher is controlled by a deported control unit fitted on the central tunnel. A specific fire extinguisher loom allows to link this control unit + fire extinguisher to the chassis loom.



deported control unit

Position 1: system isolated

This position is to test the extinguisher loom. Everything must be correctly connected to the loom. When you push the fire button (Facia switch panel or from outside deported button), **the green light must go ON but the extinguisher will not deploy.**

NOTE : if the green light is ON without testing the system, there is a default on the loom. In this case, you must be careful because the extinguisher is directly connected to the command box. As a consequence, if you switch to position 3, you will immediately deploy the extinguisher.

Position 2: battery check

If the orange light goes ON, the battery is ok.

Position 3: system armed

“System armed” means that if you push the fire button (Facia switch panel or from outside deported button), you will immediately deploy the extinguisher. The green light goes ON only when the extinguisher is deployed.

Checks

- Extinguisher cylinder compliance check:

The following information must be clearly visible on the cylinder:

- Serial number.
- Capacity and weight or volume of extinguisher product.
- Activation date or date of last system check.
- Date of next service.
- Homologation number.



Take care not to exceed the extinguisher's next scheduled service date.



- Pressure check

The pressure of the cylinder may be checked using a manometer placed on the cylinder. The needle must be situated in the green area on the manometer dial.



B.7.2 CIRCUIT BREAKER



There is an emergency circuit breaker control at the base of the windshield pillar. It must be indicated by a sticker with a red lightning symbol on a blue background. This button may be used to switch off the vehicle's electrics from the outside.

B.7.3 OTHER SAFETY EQUIPMENT

- The presence of the window safety net (ref. **77 11 160 041**) on the driver side of the roll cage is mandatory.
- It is mandatory for foam (ref **77 11 160 040**) to be placed on all parts of the roll cage with which the driver's helmet may come into contact.
- The seats (original part ref: **77 11 167 158** and XL version part ref: **77 11 167 160**) and the harness (ref **77 111 167 161**) are compatible with FHR system.



The use of « FHR » system must be in compliance with the installation standard of FIA.

B.7.4 PASSENGER SEAT

A passenger seat may be installed on Clio Cup using the supports with part ref **8201380465** and **8201380466**

The seats references remain the same as for driver side.

Fasteners:

Seat supports on the chassis:

Screws CHC10-25	x 4	77 11 156 901
Contact washer Ø10X22	x 4	77 11 156 926
Flat washer Ø10,25X26 ép:3 cl:10.9	x 4	77 03 053 341

Seat on the support :

Screws M8-35 cl.12,9	x 4	77 11 154 904
Contact washer Ø8X18	x 4	77 11 156 945

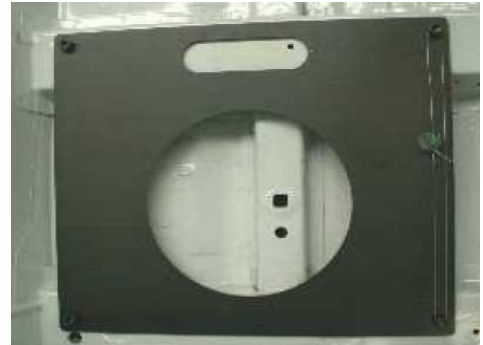
B.8 BALLAST

To respect the **minimum weight** and the **race weight** (refer to technical regulation and Nomenclature), some ballast may be fitted.

Only the following ballast must be used:

- 1kg: ref **77 11 160 299**
- 2kg: ref **77 11 160 300**
- 5kg: ref **77 11 160 301**

These plates must be mounted using two drilled head bolts with part ref **77 11 160 302** (sold in sets of 2).



In all cases, these ballast plates will be fitted at the passenger seat rail sites, (refer to the current Technical Regulations and Nomenclature).

B.9 APPENDIX

B.9.1 LIST OF MARKED PARTS

All parts that are specific to Clio Cup are engraved.

The following genuine Renault parts are identified either by a "Renault Sport" laser engraving or by a hologram (its presence is compulsory with NO PAINT)

PART NAME	REFERENCE	"RENAULT SPORT"	HOLOGRAM
Engine bulkhead heat shield	67900 6317 R		X
Front shock absorber	98CUP00040		X
Rear Wing	8201380868		X
Battery	7711127895		X
Rear spoiler	96030 5963 R		X
Airbox	8201378943		X
Steering column	8201372112		X
Air intake duct	8201409155		X
Left lower air Guide	21469 1078 R		X
Left air guide	21559 0558 R		X
Right air guide	21558 9177 R		X
Roof inside aerator	77 11 160 315		X
Battery cover	77 11 162 704		X
Dashboard Cosworth ICD	82 01 372 416		X
ECU Cosworth SQ7	82 01 381 101		X
Front left door inside cover	82 01 382 021		X
Front right door inside cover	82 01 382 023		X
Facia air duct	82 01 389 867		X
Fire extinguisher	82 01 396 046		X
Water Fan	214819617R		X
Rear spoiler lower cover	960303776R		X
Turbo air exchanger	98CUP00006		X
Complete fuel tank	98CUP00008		X
Water cooler	98CUP00009		X
Front Right headlight	98CUP00015		X
Front Left headlight	98CUP00017		X
Rear Right light on rear cover	98CUP00022		X
Rear Left light on rear cover	98CUP00024		X
FR door window	98CUP00058		X
FL door window	98CUP00059		X
RR door window	98CUP00061		X
RL door window	98CUP00062		X
RR quarter window	98CUP00063		X
RL quarter window	98CUP00064		X
Rear bumper skin	98CUP00065		X
Rear window	98CUP00068		X
Right rearview mirror	98CUP00070		X
Left rearview mirror	98CUP00071		X
Left rearview mirror cover	98CUP00072		X
Right rearview mirror cover	98CUP00073		X
Windscreen	98CUP00084		X
Roof hatch	82 01 383 889		X
Front crossbeam	752107246R		X
rear air diffuser	960302211R		X
FR mudguard	98CUP00074		X

FL Mudguard	98CUP00075		X
FR door	98CUP00076		X
FL dooe	98CUP00077		X
Front cover	98CUP00080		X
Rear cover	98CUP00081		X
Fuel pump / gauge	98CUP00093		X
RR door	98CUP00078		X
RL door	98CUP00079		X
Gearbox command rod 809mm	8201418758	X	
Gearbox command rod 784mm	8201418759	X	
Rear camber/alignment shim 10'	8201369770	X	
Rear camber/alignment shim 20'	8201369771	X	
Rear camber/alignment shim 30'	8201369772	X	
Rear camber/alignment shim 1°	8201369773	X	
Anti-roll bar	54611 9898 R	X	
Anti-roll bar rod	8201079463	X	
Front master cylinder 19,1mm	77 11 158 019	X	
Rear master cylinder 20.6mm	77 11 158 025	X	
Gearbox manual lever	77 11 160 560	X	
Clutch mechanism	77 11 160 633	X	
FR calliper	77 11 160 362	X	
FL Calliper	77 11 160 363	X	
FL upright	77 11 160 481	X	
FR upright	77 11 160 480	X	
Turbo upstream pipe	82 01 370 056	X	
Flywheel	82 01 350 850	X	
AP clutch disc	82 01 370 335	X	
Front brake disc AP 320x28	82 01 395 136	X	
Front calliper support	82 01 403 772	X	
Front hub	432000010R	X	
Subframe crossbeam	82 00 537 434	X	
RR central hub	98CUP00035	X	
RL central hub	98CUP00036	X	
FR wishbone	82 01 361 749	X	
FL wishbone	82 01 361 750	X	
Front brake pad RC6ER	8201442791	X	
Rear brake pads RC6	77 11 162 956	X	
Rear brake pads RC5+	77 11 162 954	X	

B.9.2 REPLACEMENT OF MECHANICAL COMPONENTS

The mileage of the below parts must be monitored by the user throughout the vehicle's lifetime.

The mileage stated in the table below is the maximum expected mileage before replacement, notwithstanding any incidents or accidents.

Should any component become faulty or its condition deteriorate before reaching the stated mileage, please contact Renault Sport Technologies.

NOTE : This list may not under any circumstances be considered to be part of the manufacturer's warranty.

Parts	Recommended milage
Front axle	
Point E and Point F ball joint	5000 km
Wishbone ball joints	3000 km
Wheel bearing	5000 km
Shock absorbers + Bump stop	5000 km
Support strut	10000 km
Anti-roll ball joint	7000 km
Wheel stud and nut	5000 km
Rear Axle	
Point F ball joint	7000 km
Point E ball joint	7000 km
Point A ball joint	7000 km
Wheel bearing	5000 km
Shock absorbers + Bump stop	5000 km
Wheel stud and nut	5000 km
Steering	
Power steering module	15000 km
Steering rack	7500 km
Steering rod ball joint (point H)	7000 km
Rack ball joint	7000 km
Transmission	
Gearbox	7500 km
Clutch friction	4500 km
Clutch mecanism	4500 km
Slave cylinder bearing	5000 km
Driveshafts	5000 km
Engine	
Engine / Turbo / HP pump / WG / pop off	10000 km
Starter / alternator	10000 km
Engine + Gearbox mountings	10000 km
Motorised Throttle	6000 km
Gas Pedal potentiometer	10000 km
Brakes	
Front brake disc	1500 km
Front brake caliper	6000 km
Rear brake disc	8000 km
Rear brake calliper	8000 km

NOTE: Particular attention must be paid to the state of the fasteners after any work has been carried out.