SRO Data Logger (DL) or
SRO Official Data Logger (ODL) or
SRO Scrutineering Data Logger (SDL) or
SRO Real Time Scrutineering Logger (RTSL)

all referred below as "Logger"

CONTENT of this document:

Sole authorized supplier and technical service on site:
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INSTALLATION & INSPECTION QUALITY CONTROL REPORT

SERIES	RACING #	TEAM	MAKE	MODEL	CHASSIS-#

DATE					
S/N: Logger					
S/N Pressure I					
S/N Pressure II					
S/N Pressure III					
S/N CAM 1					
S/N CAM 2					
NOTE					
Sign emotag					

INTRODUCTION / GENERAL REQUIREMENTS

Each car must be equipped with an operational and functional logger including sensors in accordance with the specification of this document and the series specific orderform. Please consider a regular production (made to order) and delivery time of 4-5 weeks, which can be reduced by selecting optional “express option I” down to 2 weeks and, upon prior confirmation, by selecting optional “express option II” down to 2 days.
The competitor shall bear the cost of the logger, sensors, installation and maintenance. All mandatory ECU - channels as defined during the BOP-process and the qty of required official sensors as defined below must be received by the logger during all sessions of an event at the specified transmission rate. The chief scrutineer or an authorized person may check the compliance at any time during the Event. Only the Scrutineers or an authorized person is permitted to download any data or read data cards (SD) from the logger. Do confuse data- with video-cards.

YOUR RESPONSIBILITY: CHECK THE SYSTEM WORKS!

The competitor is responsible to ensure the system works during all sessions of the event as following:

- all required components are installed **according** this manual
- serial numbers of Logger and Pressure sensors match approved initial installation (The kit for this chassis!)
- all connectors are solid plugged together
- all required sensors as listed above are installed
- the following LED´s on the system are in condition as described below latest 45min before the session
- immediately report any failure via the series app and/or by WA to the phone number +49-177-8187-226 which is printed also on top of each logger. An authorized data specialist of emotag will inspect and fix the system asap.

4 LEDS of DL1PRO3 and DL1PRO4, mainly used in GT4 and some national GT3 series

I) Power LED TOP LEFT front of the logger must be ON solidly to indicate power to the unit.
II) Logging LED TOP RIGHT front of the logger must be OFF while car is stationary with engine off and on while car is driving faster than 15km/h OR engine rev > 2000 RPM
III) GPS lock LED BOTTOM LEFT on the front of the logger must be on no later than 2 minutes after powering up the unit in open air conditions. May take up to 5min in pits
IV) Status LED BOTTOM RIGHT on the front of the logger must be on solidly indicating proper SD-card is fully inserted.
V) LAMBDA Controller(s): LED needs to be solid green latest 2min after PWR on

NOTE: For checks I-IV the color of the logger LED does not matter, for V) Lambda the color is important.

2 LED of RTSL, mainly used in GT2 and GT3 series

I) Status LED LEFT front of the logger must be solid green latest 2min after pwr on.
II) Check LED RIGHT (red) must be OFF latest 2min after pwr on.

If V) LED Lambda is either solid or blinking red or if advised by authorized emotag data specialist the competitor needs to perform a re-calibration of the Lambda Probe as follows:

A) Power off Logger
B) Disconnect Lambda probe only (not Lambda Controller)
C) Power on Logger for 60 sec – 120 sec, than Power off
D) Unscrew Lambda probe from exhaust, clean with compressed air, reconnect, lay on heat resistant underground in FRESH AIR
E) Power on Logger about 60-180 sec until LED on Lambda Controller becomes solid green
F) Power off system, disconnect Lambda Probe, screw in exhaust header and RECONNECT
G) DONE

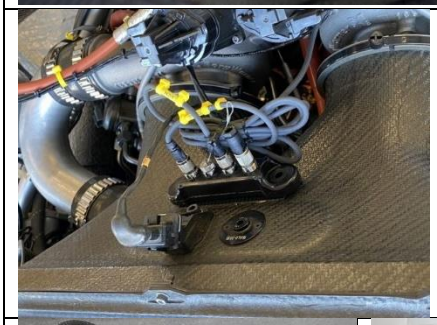
QUICK INSTALLATION GUIDE

(to be completed and approved before first outing of your car)

Step	To be done	Done
1	Install each required (see page 5) sensor on defined position (see Homologation or manufacturer advise or end of this document for selected models) Note: GT3 Pressure Sensors are marked by 1 or 2 or 3 tie-wraps for identification of required position	
2	Install GPS outside on roof, Ground disc inside and connect with 3 supplied screws	
3	Route wiring towards logger in passenger foot compartment, use yellow tie-wraps!	
4	Connect logger "supply" with manufacturer supplied car harness, Master Switch off!	
5	Install logger with frame rigid in passenger foot compartment in leveled position, connectors pointing forward. Easy accessibility is required for taking data after each session!	
6	Clip all connectors in use on top of logger (All unused connectors are closed with a CAP and attached to inside of frame by Velcro=	
7	Attach Lamba Controllers with LED visible outside on right side of frame with tie-wraps (Don't stack them)	
8	Connect each sensor cable with logger, wind up each remaining sensor cable length individual and fasten with cable ties.	
9	If any component of the supplied kit (beside some tie-wraps) is left over, something went wrong!	
10	Switch master & ignition on and check the system works (as described above)	
11	Make 4 photos: I) GPS Outside, II) GPS-Inside, III) Logger Installation Site, IV) Sensor-HUB Make photos of every sensor installed (will be 3-8) email to emotag @mathol.de with a headline: # racingnumber, Team, Car, Chassisnumber !!! Select small picture size below 1MB per picture!!!	
12	authorized emotag data specialist will approve installation (see form last page)	
13	Ready to race	

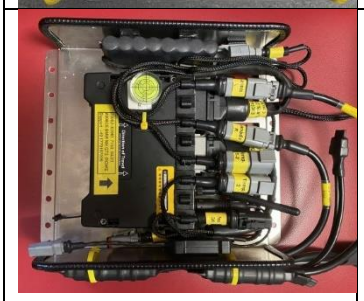
Finally it shall look like the following samples



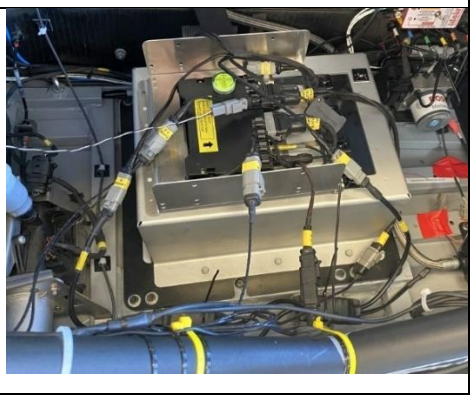










It MUST NOT look like the following sample:



SENSOR REQUIREMENTS & INSTALLATION DETAILS

Sensor	Position*	GT2 & GT3 NA	GT2 & GT3 Turbo	GT4 NA	GT4 Turbo
Speed & Position by GPS/GNNS	Outside on roof	1	1	1	1
Pressure I (1 tie-wrap)	Intake manifold post throttle	Manifold L	Manifold L	1	1
Pressure II (2 tie-wrap) (only if 2nd manifold)	Intake manifold post throttle	Manifold R	Manifold R	0	0
Pressure II BOOST	Intake manifold pre throttle	0	0	0	1
Pressure III (3 tie-wrap) Intake	Intake / Upstream Airfilter	1	1	0	0
Temperature I	Intake manifold post throttle	Manifold L	Manifold L	0	0
Temperature II (only if 2nd manifold)	Intake manifold post throttle	Manifold R	Manifold R	0	0
Temperature III Intake	Intake / Upstream Airfilter	1	1	0	0
Lambda L	Exhaust	1	1	1	1
Lambda R (only if 2nd exh. header)	Exhaust	1	1	0	0
FIA-RPM	Flywheel	0	0	0	0

a) GPS/GNNS Antenna MINIMUM 15 cm away each direction from any other Antenna!
b) Pickup points and details of installation for Pressure, Temperature and Lambda (direct, adaptors, hoses) as presented and documented during BOP, see binding Appendix DL-S. If your car is not listed yet in Appendix DL-S, than pls refer to c)
c) If your car is not yet listed in Appendix DL-S, than installation shall be as described in Homologation of your car. If not possible or not described in your Homologation, than pls refer to d)
d) If c) is not available or possible due to technical limitations, than installation shall only be as advised and agreed in written by SRO Technical Director
e) If Technical Director is not available, than installation is temporarily (for single event only) allowed as advised in written by representative of emotag data specialists. If technical possible, no hoses or adaptors are preferred by SRO Technical department.

<u>The competitor is responsible for tight and proper installation during all sessions of the event.</u>

CARRY OVER FROM 2022 SRO DL1PRO GEN3

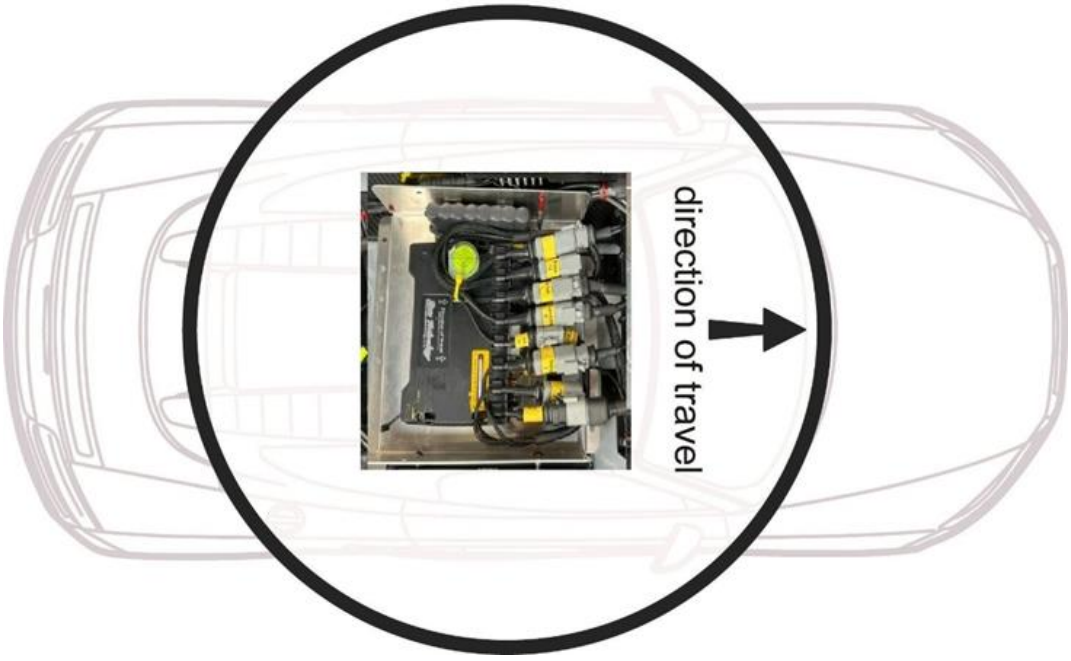
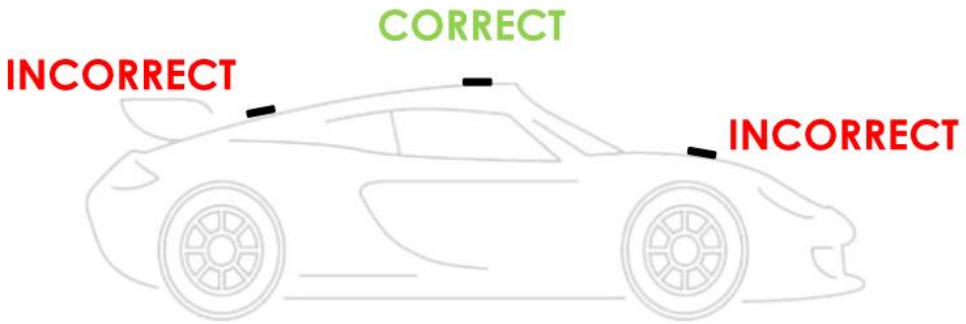
2023 is a transition phase allowing the carry over from previous years (2018-2022) logger SRO DL1PRO GEN3 and the corresponding sensors
IF the serial number of the loggerkit is higher than 22300 and
IF the logger has been used during 2022 in the same car (make, model, chassis).
The specs of the components differ, but all other requirements of this document are also binding for these SRO DL1PRO GEN3 where applicable.

WIRING DIAGRAM

Each part is labeled with the appropriate name on it and every connector is unique.

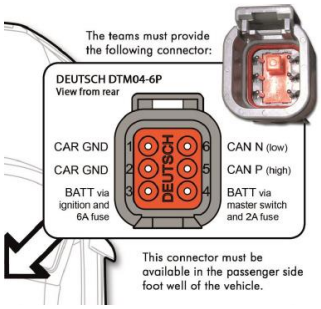
Logger Connector	Mainloom	Sensorloom	Final Device	NOTE
CONN-B	**ML.DL1PRO4 GT4 Conn B**			**GT4 only**
	Supply	-	PWR & CAN from car	GT4 only
	Press 1-2	SL1P NA SL2P Turbo	NA: P12.GT4 Turbo: 2 * P35.GT4	GT4 only
	Lambda R	-	L-Kit.GT234	GT4 only
CONN-B	**ML.RTSL.GT234 Conn B**	**-**	**-**	**GT2 &3 only**
	Supply	-	PWR & CAN from car	
	Press 1-2	CAP	-	Not in use
	Temp 1-2	Single mani: SL1T Dual mani:SL2T	T-M6.GT23	1: Manifold L 2: Manifold R
	Lambda L	-	L-Kit.GT234	
	Lambda R	-	L-Kit.GT234	Only if dual header
	RPM-VRS	CAP		Not in use 2023
	Battery	-	Supplied battery pack	Backup Power for Logger
	PWR CAM	EXP.CAM.GT234 or CAP	CAN-HUB4 for Incident CAMS	Only if emotag cameras are used
CONN-A	**ML.RTSL.GT234 Conn B**			**GT2 &3 only**
	Press 3	CAP		Not in use
	Press CAN	SL3P.CAN.GT234	P12.CAN.UHP.GT234 P30.CAN.UHP.GT234	P30 for Turbos 1: Manifold L 2: Manifold R 3: Intake/ Upstream
	Temp3	SL1T	T-M6.GT23	Intake/ Upstream
GPS	-	attached	ANT.GPS.GNSS.IR GT234	**ALL**
DIAG	-	-	EXP.TIMING.GT23	Only if MYLAPS X2Pro is in use
LTE-1	-	-	ANT.LTE.GT234	**GT2 &3 only** after may 23
LTE-2	-	-	ANT.LTE.GT234	**GT2 &3 only** after may 23

DO´s and DONT´s

DO	Use supplied yellow tie wraps to enable easy identification of logger wiring
	 install logger with frame always leveled and in correct direction
	 install GPS Antenna only on proper places, minimum 15 cm away from any other Antenna
	 Make shure SD card is always proper inserted
	Text or Whatsapp +49-177-8187-226 or email emotag@mathol.de for help regarding question, problems or required parts sales.

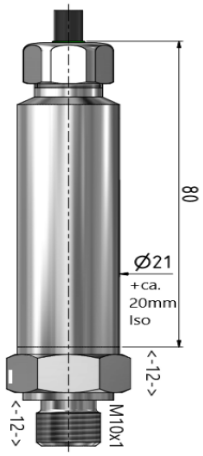
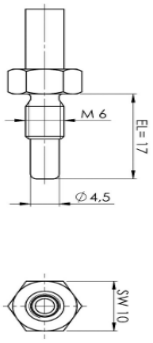
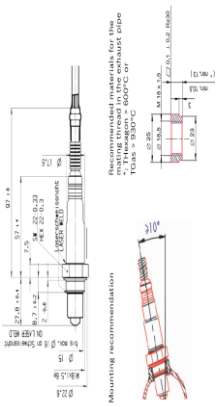
NEVER DO	
	Remove the frame from the logger
	Modify any part or harness delivered
	Leave any part delivered uninstalled
	Mix Sensors from other sets with your set for this car. All components are calibrated to the maximum accuracy, Serial Numbers are noted
	Cover GPS Antenna with Tape or similar
	Bend GPS cable sharp or route in parallel to Video cables
	fasten tie-wraps closer than 50mm to any connector on both sides. This allow dis- and reconnect for testing purposes without cutting tie-wraps
	 leave car out for session with SD card not fully inserted

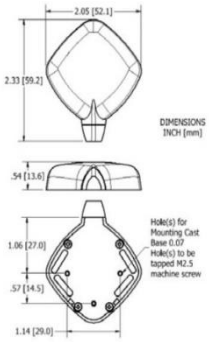
DETAILED COMPONENTS GUIDE

Name	PICTURE	Description	QTY GT4	QTY GT3	Size	grams	Installation notes
FIA. CON. +		Main Connector Car to logger. To be supplied by manufacturer. NO own harnesses or modifications allowed	1	1	DTM04-6P	n.a.	
Frame.GT 234		Frame to install and protect logger	1	1	L 276 W 228 H 82	376	To be installed **leveled** with in passenger compartment of car. Screws or Dual Lock Velcro is suitable
Frame.GT 4		Frame to install and protect logger	1	1	L 196 W 173 H 82	231	To be installed **leveled** with in passenger compartment of car. Screws or Dual Lock Velcro is suitable
DL1 PRO4		Core Logger GT4	1	0	L 130 W 164 H 34	554	To be installed **leveled** with supplied Velcro inside Frame . Connector pointing forward

RTSL Gen2		Core Logger GT3	0	1	L 130 W 164 H 34	554	To be installed **leveled** with supplied Velcro inside Frame . Connector pointing forward
ML RTSL GT4		Main Loom GT4	1	0	n.a.	130	connecting the Logger with Sublooms for Sensors and Car Supply. All channels are labeled and all connectors are unique
ML RTSL GT234		Main Loom GT3	0	1	n.a.	378	connecting the Logger with Sublooms for Sensors and Car Supply. All channels are labeled and all connectors are unique
SL3P CAN GT234		CAN Signal Distribution Hub für Can Pressure Sensors	0	1	n.a.	190	to be mounted by Velcro in secure and easy accessible space in engine compartment

SL1P.GT4		Sub Loom to Connect 1 analog Pressure Sensor with the Mainloom	0-1	0	n.a.	79	GT4only
SL2P.GT4		Sub Loom to Connect 2 analog Pressure Sensor with the Mainloom	0-1	0	n.a.	155	GT4only Pressure 1 = Manifold post Throttle Pressure 2 = pre Throttle
SL1T.GT23		Sub Loom to Connect 1 analog Temperature Sensor with the Mainloom	0	1-2	n.a.	80	Connect to MainLoom "Temperature 1-2" for Temperature single Manifold and Connect to MainLoom "Temperature 3" for Temperature Upstream / Intake
SL2T.GT23		Sub Loom to Connect 2 analog Temperature Sensor with the Mainloom	0	0-1	n.a.	150	Connect to MainLoom "Temperature 1-2". Manifold Temperature 1=Left 2=Right

P12GT4 P35GT4		Analogue Pressure Sensor with either Range 1200mbar for NA or 3500mbar for Turbo max. Error P12: < 5mbar P35< 10mbar	1-2	0	M10x1mm thread	104	Hoses / Adapters only allowed when presented in BOP, homologated or required & approved by SRO Technical director or emotag data specialist
P12 CAN UHP GT234 SRO.P30. CAN.UHP GT234		CAN Ultra High Precision Pressure Sensor with either Range 1200mbar for NA or 3000mbar for Turbo max. Error P12 < 0,5 mbar P30 < 1 mbar	0	2-3		173	Hoses / Adapters only allowed when presented in BOP, homologated or required & approved by SRO Technical director or emotag data specialist ID1:Manifold L ID2:Manifold R ID3: Upstream ID shown by yellow tie M10x1mm
T- M6.GT23		Temperature Sensor NTC max error < 2°C	0	2-3		14	M6x1mm
L-Kit. GT234		Lambda Controller and Probes	1	1-2		515	Pls allow free view of LED of controller PLs secure black 8pin connector after installation with supplied heat shrink M18x1mm

ANT. GPS. GNSS IR GT 2 34		GPS/GNNS High Precision Antenna MINIMUM 15cm away from any other Antenna!	1	1		273	Place Metal disc under Roof, drill 3-4 holes Pls put nut and washer on screw, inset screw by hand through disc in antenna full and tighten nut carefully to pull antenna to roof. Route GPS cable to logger NOT parallel to any video cables.
RTSL-BAT. GT234		Backup Battery for RTSL to enable reliable data transfer even after Master OFF	0	1	L 115 W 52 H 15	253	Velcro left of logger to inside of frame and connect to Conn-B Battery
EXP TIME GT23		Interface to Lumirank with Mylaps X2 PRO	0-1	1		35	connect Black round binder to Logger DIAG and Deutsch DTM to Lumirank Loom

DOWNLOADING DATA (USA / EUROPE)

EUROPE & ASIA:
All cars are in Parc Ferme condition after each session, at least after Q & R.
authorized emotag data specialist will come to the car, remove SD, download the session data and reinsert SD.

USA:
At certain events where logistics permit, all cars will be required to roll through a lineup immediately upon exiting the racing circuit. Data will be downloaded by SRO officials and/or authorized emotag data specialist before the cars are released to their paddock spot.
When this is not possible, handling will be as in Europe (see above)
Cars passing through tech do not need to roll through download lane as data is taken in tech lane.

No other person beside SRO officials and/or authorized emotag data specialist is allowed to remove SD card and / or download data.

MAINTENANCE (Sensor calibration on site, annual checkup and calibration

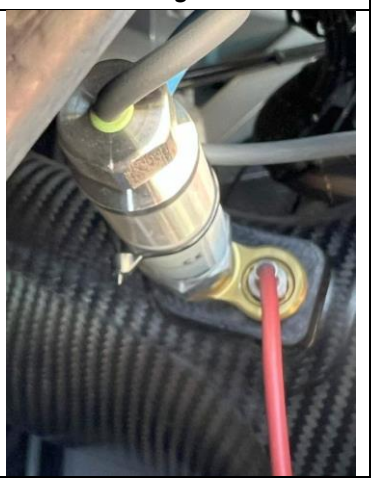
An annual system checkup, update and calibration is required before the first event of any new season.
For logistical reason and on special agreement the deadline for this checkup might be extended until the 2nd event of the new season. The competitor shall bear the cost of this checkup and replacement of any damaged part identified during the checkup or throughout any event.

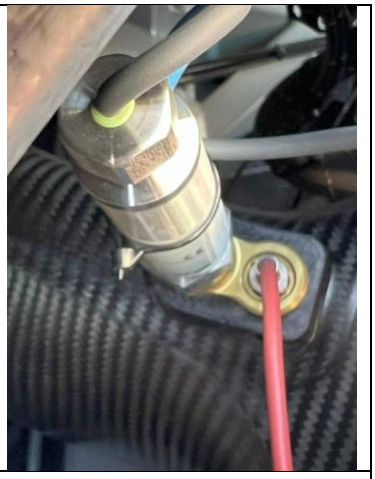
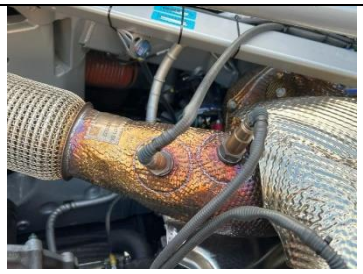
If required, Sensor needs to be calibrated

APPENDIX DL-S (Manufacturer specific sensor installation instructions)

The following pictures has been taken during BOP Test and are a binding guideline how to install the sensors for this specific vehicle.

MAKE / MODEL: Ferrari 296 GT3 FIA GT3-056

	1	2	3
P			

T			
L			

MAKE / MODEL: Porsche 911 GT3 R (992) FIA GT3 -055

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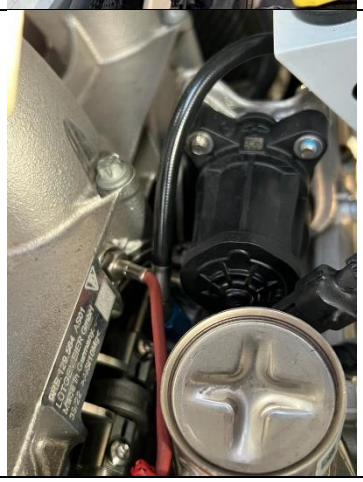
P			
T			
L			

MAKE / MODEL: Lamborghini Huracan GT3 EVO2 FIA GT3-054

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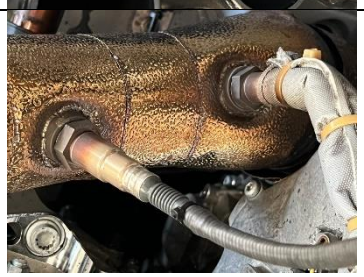
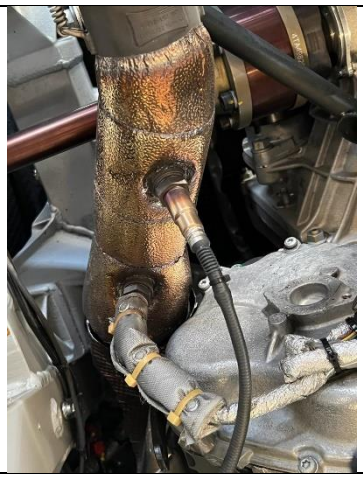
L			-

MAKE / MODEL: McLaren 7S0S GT3 - McLaren 720S GT3 EVO FIA GT3-052

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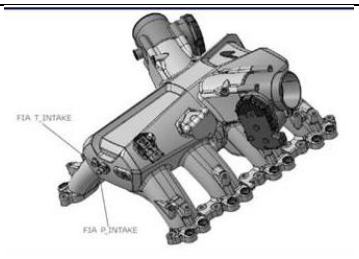
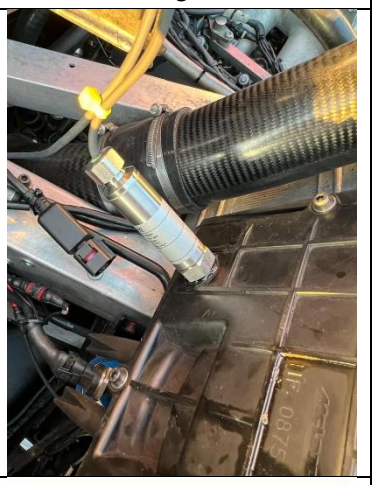
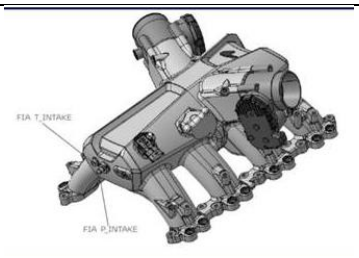
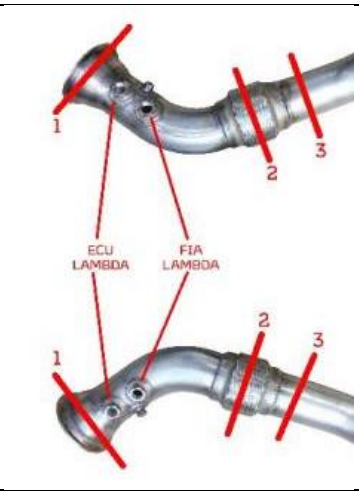
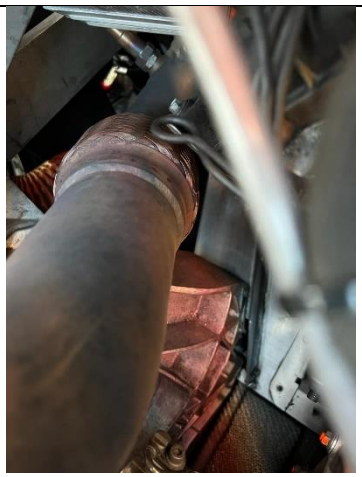
P	 M14x1,5 90° to M10x1	n.a.	
T		n.a.	 T. en amont du système d'admission *T. upstream of the intake system*
L			n.a.

MAKE / MODEL:

	1	2	3
P			
T			
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