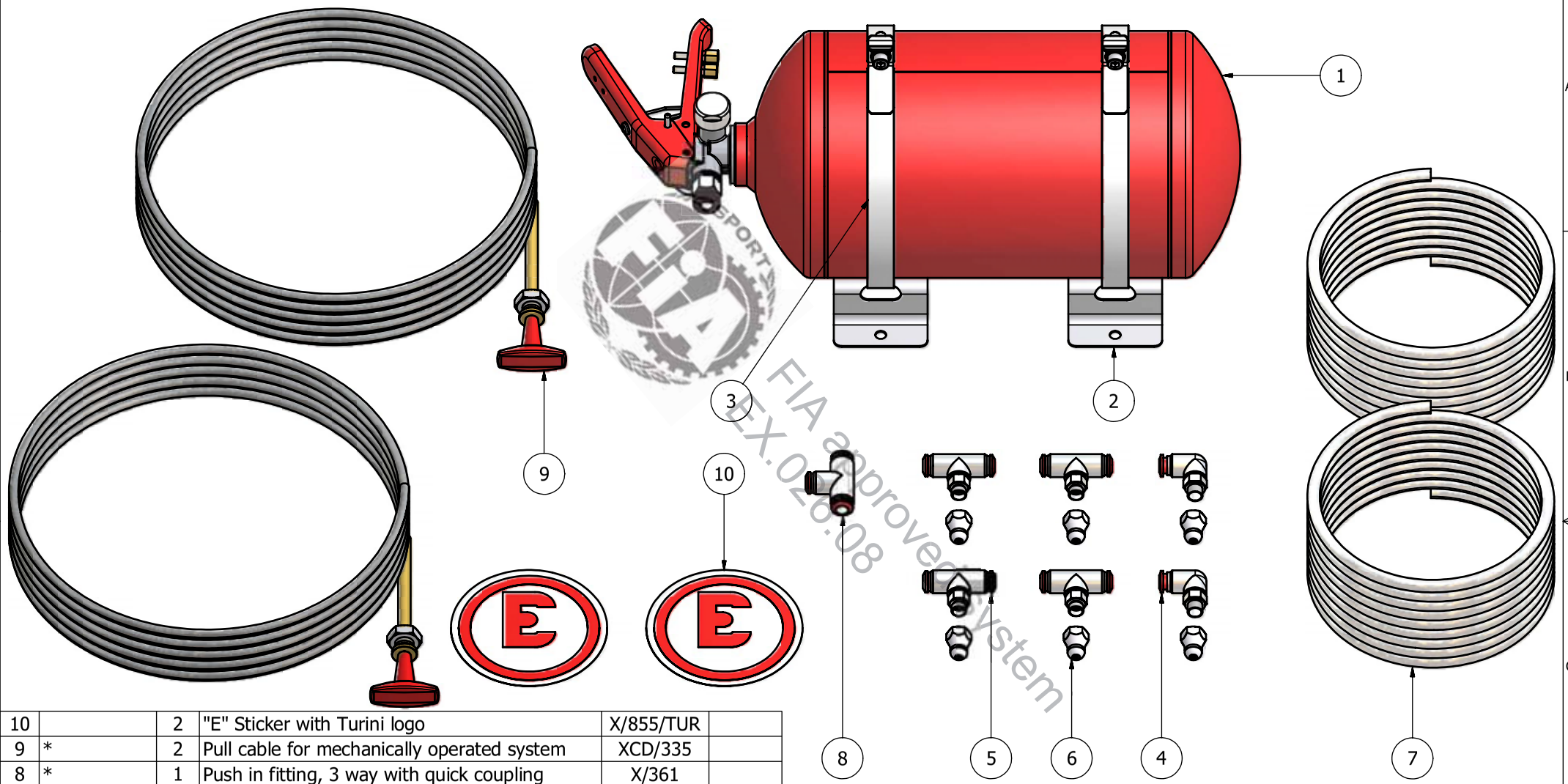



| Pos | N° disegno | Qtà | Descrizione | Cod. | Note |
|---|---|---|---|---|---|
| 10 | | 2 | "E" Sticker with Turini logo | X/855/TUR | |
| 9 | * | 2 | Pull cable for mechanically operated system | XCD/335 | |
| 8 | * | 1 | Push in fitting, 3 way with quick coupling | X/361 | |
| 7 | * | 2 | Alloy tubing 6x8 mm lenght 4 m | CD/323/A | |
| 6 | 749C | 6 | Atomiser nozzle | CD/393 | |
| 5 | * | 4 | Push in fitting, "T" with quick coupling - 1/8 GAS | X/333 | |
| 4 | * | 2 | 90° push in fitting, with quick coupling - 1/8 GAS | X/334 | |
| 3 | * | 2 | Screw clamp for bottle ext. Ø 160 mm | CD/348 | |
| 2 | 101IE | 2 | Mounting Bracket for bottle ext. Ø 160 mm | CD/311/S | |
| 1 | 164IEI00 | 1 | Steel bottle 4,25 l | CA/303/B | |

Elenco parti

*= standard after-market products

FIA approved system
EX.026.08

PROGETTO / project: Impianto d'estinzione
DISEGNATO DA / drawing of:
DATA / date: 23/11/2007
SCALA / scale: 1:2.5
DESCRIZIONE / description: *Impianto d'estinzione*
Impianto meccanico acciaio 4,25l
FILE / file: IE165CI00 CA-303-TUR.idw
DIS. N° / drawing n°: 165IEI00
CODICE / code: CA/303/TUR
MATERIALE / material:
TOLLERANZA± / tollerance ±:
TRATTAMENTO / treatment:
PESO (g) / weigth:

**Note sul disegno:** questo disegno è di proprietà esclusiva E' vietato a norma di legge l'utilizzo e/o la riproduzione senza specifica autorizzazione
**Notes about the drawing:** this drawing is an absolute ownership According to law is prohibited the employment or/and the copy without explicit authorisation
**Note sul materiale:** tutti i materiali devono essere rigorosamente rispettati; in caso di non reperibilità, qualsiasi variazione dovrà essere concordata prima con l'ufficio tecnico
**Notes about the material:** all materials have to be strictly respected; in the case of non-availability, any change should be agree in advance with the technical office.
**Note sulle modifiche:** questo disegno è modificabile solo al CAD. Qualsiasi discostamento tra il medesimo ed il pezzo finito dovrà essere concordata prima con l'ufficio tecnico
**Notes about changes:** this drawing can be changed only by the CAD. Any discrepancy between this one and the finished product have to be agree in advance with the technical office.

A3

English

Thank you for choosing TURINI for your fire extinguishing system homologated according to the FIA STANDARD.
This instructions manual refers to the following fire extinguishing systems:

| Part. N. | Description | Cars |
|---|---|---|
| CA/303 | Complete system MECHANICALLY operated with single 4.250 L bottle in STEEL * | Saloon, Sports, Single-seater |
| CA/369 | Complete system ELECTRICALLY operated with single 4.250 L bottle in STEEL * | Saloon, Sports, Single-seater |
| CB/367 | Complete system ELECTRICALLY operated with single 4.250 L bottle in ALUMINIUM ** | Saloon, Sports, Single-seater |
| | | |
| | | |
| | | |

*valve located on the end of the cylinder body **valve located on the cylinder body

## 1 – Important warnings and indications

These fire extinguishing systems are suitable for saloon, sports and single-seater cars with front or rear engine.
We recommend you to strictly follow the indications to be found in this handbook so to ensure a correct fitting and working. None of the components must be changed in any way or replaced through parts, though similar, if these are not manufactured by TURINI: this would automatically impeach the homologation.
***Antitampering seal and manometer pointer remaining in green area guarantee the compliance of the system.***
***In ideal conditions, the system is perfectly able to extinguish the fire of a car. Nevertheless the aim cannot be reached in all cases because of the often unavoidable events due, for example, to an accident.***
To avoid electrolytic corrosion phenomena from occurring inside the bottle, the vehicle's electrical system must be tested to ensure that there is no electrical leakage. We strongly suggest testing the vehicle body with an insulation resistance ohm meter. TURINI does not accept any liability for cases in which the bottle has been damaged by corrosion as a result of electrolytic phenomena or other external causes
As regards the extinguishing liquid, we recommend you to avoid the contact with eyes and a long-lasting and repeated contact with skin. If this happens, please wash **THE AFFECTED BODY PART** immediately with abundant water; if irritation persists please consult a doctor. In case of **INHALATION**, take the person into open air, if symptoms persist consult a doctor.
In case of **INGESTION**, do not provoke vomit but drink two glasses of water and consult a doctor.

## 2 – Contents

According to the type of purchased system, the kit will be made up of the following parts:

| CA/303 Complete system mechanically operated with single 4.250 L bottle in steel | Quantity |
|---|---|
| Bottle in steel, 4.25 L capacity, with mechanical valve with lever retainer and related support brackets | 1 |
| Cables and sheaths for activation of the valve | 2 |
| Terminals for blocking cables on the valve | 2 |
| Tube rolls in flexible aluminium ø 8, 4 mt length each | 2 |
| Flashing valves | 6 |
| 3-way pipe fitting | 1 |
| T-shaped manifold | 4 |
| L-shaped manifold | 2 |
| "E" sticker | 2 |

| CA/369 Complete system electrically operated with single 4.250 L bottle in steel | Quantity |
|---|---|
| Bottle in steel, 4.25 L capacity, with electric valve and related support brackets | 1 |
| Electric control and testing box | 1 |
| Waterproof button for the outside | 1 |
| Bipolar electric cable roll with self-extinguishing sheath | 2 |
| Rolls of flexible aluminium tube ø 8 4 mt length each | 2 |
| Flashing valves | 6 |
| 3-way pipe fitting | 1 |
| T-shaped manifold | 4 |
| L-shaped manifold | 2 |
| "E" sticker | 2 |

| CB/367 Complete system electrically operated with single 4.250 L bottle in aluminium | Quantity |
|---|---|
| Bottle in aluminium, 4.25 L capacity, with electric valve and related support brackets | 1 |
| Electric control and testing box | 1 |
| Waterproof button for the outside | 1 |
| Bipolar electric cable roll with self-extinguishing sheath | 2 |
| Rolls of flexible aluminium tube ø 8 4 mt length each | 2 |
| Flashing valves | 6 |
| 3-way pipe fitting | 1 |
| T-shaped manifold | 4 |
| L-shaped manifold | 2 |
| "E" sticker | 2 |

## 3 – Fitting of the system (bottle, tubes and valves)

**WIRING:** the wiring of the tubes with the fittings is shown on the drawing aside (drawing 3-1 / 3-1.1).

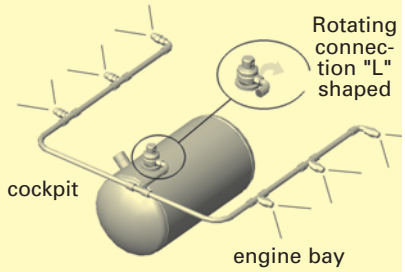
**BOTTLE**: Positioning of the bottle can be made in any part of the car floor but in such a way not to build an obstacle for a quick getting out of the vehicle in case of emergency. The axis of the bottle must remain in horizontal position anyway.
It is important to firmly fix the supports together with the car floor by using 4 cl 8.8 ø 6 minimum screws, passing with nuts and washers. The pressure gauge on the valve and the sticking label on the bottle must be easily readable.

**TUBES**: During the fitting of the tube in flexible aluminium, please avoid curving in order not to decrease the part useful for the passage of the extinguishing fluid. In order to connect the T and L shaped pipe fittings, it is necessary to cut the tube in pieces , whose length must be calculated by keeping in mind that, in order to guarantee a perfect seal, the part of the tube which must be inserted in the pipe fittings themselves is for the T shaped equivalent to ~ 21 mm, for the L shaped and for the valve connection ~ 17 mm.
It is advisable to mark the tube at the distance indicated and, after having connected it to the pipe fittings, check the alignment between the mark and the pipe fitting themselves (tol. ±0.5mm)
The cuts must be carried out perpendicularly to the tube axis by taking care of keeping the section circular and chipless. In order to slightly smooth the cut, rubbing paper can be used, but any residual dust must be eliminated through pressurized air blown also from the other tube end.

**VALVES**:The supplied valves are identical and must be screwed together with the T and L fittings without the use of any lubricant which might obstruct the valve hole or the internal part of the turbine.
Besides fixing the tubes, it is necessary to fix the fittings to the car as well so to permanently and safely fix the inclination.

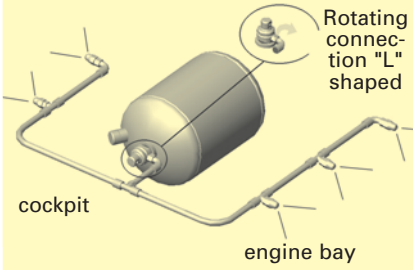
**Drawing 3-1**

SYSTEM FOR SALOON, SPORTS AND SINGLE SEATER CARS




**Drawing 3-1.1**

SYSTEM FOR SINGLE SEATER CARS




**Cockpit (for cars with front engine):**

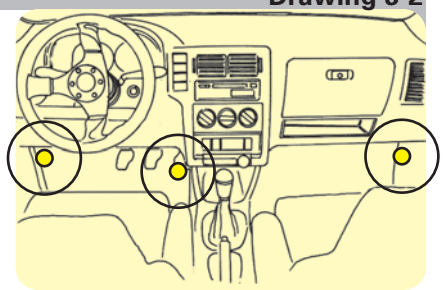
| Material | Quantity |
|---|---|
| Valves | 3 |
| T shaped fitting | 2 |
| L shaped fitting | 1 |

All valves must be positioned under the dashboard towards the driver's and co-driver's feet.

In case of single-seater cars the left valve (co-driver side) is absent.

Anyway we recommend you to position the valves by respecting the scheme of drawing 3-2 maintaining 25-30 cm between the valve and the other parts of the car.

**Drawing 3-2**



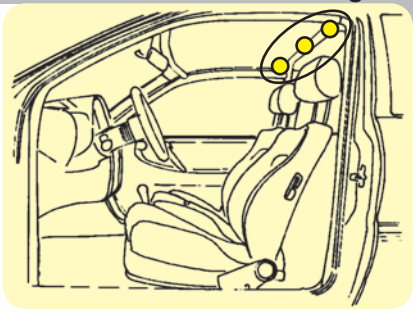
**Cockpit (for cars with rear engine):**

| Material | Quantity |
|---|---|
| Valves | 3 |
| T shaped fitting | 2 |
| L shaped fitting | 1 |

The valves must be positioned on the main hoop of the roll-bar as illustrated in the drawing.
In comparison with the driving direction the right valve must be directed towards the driver's feet while the one on the left towards the co-driver's feet (left hand driving).
The third valve must be fitted on the front hoop of the roll-bar and directed towards the dash board (Drawing 3-3).

We anyway recommend you to position the valves respecting the scheme below, maintaining 25-30 cm between the valve and the other parts of the car.

**Drawing 3-3**

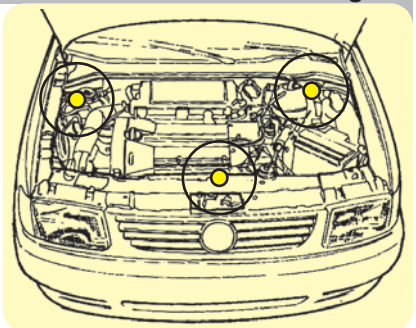


| Material | Quantity |
|---|---|
| Valves | 3 |
| T shaped fitting | 2 |
| L shaped fitting | 1 |

In general the valves must be directed towards the parts more subject to the risk of catching fire, such as exhaust manifold, centrifugal blower, feeding etc (Drawing 3-4).

We anyway recommend you to position the valves respecting the scheme aside, maintaining 25-30 cm between the valve and the other parts of the car.

**Drawing 3-4**



## 4 – Fitting of the mechanical device (stay rods)

The mechanical valve is operated through two cables with sheath: one for the cockpit and one for the external part of the car.
In order to guarantee an easier and quicker activation of the valve, please try and maintain a straight positioning of the cables, avoiding marked necking.
The fitting is similar in both cases and has to be carried out as follows:

**COCKPIT ACTIVATOR**:
• Fix the sheath in correspondence with the red stay rod so firmly to withstand a violent pull in case of activation of the system; tighten the sheath in order not to prevent the free passage of the cable inside it. The stay rod must be positioned so that it is within reach of the driver also with fastened belt.

• The other end of the sheath must be inserted through the fixed valve lever (Drawing 4-1).

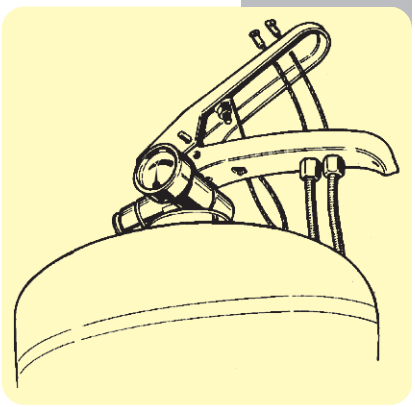
• The cable must be drawn through the special terminal for the activation of the valve (Drawing 4-2).

**EXTERNAL ACTIVATOR**:
• Fitting must be carried out at the bottom of the windscreen (driving side) by drilling the car plate.

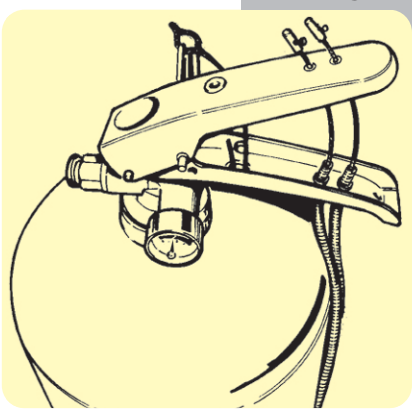
• Please make sure that the cables are basically free to run along the sheath before connecting both cables to the activator.

Ⓔ • The issued indication labels must be sticked near the external and the internal activators. Disconnect the safety pin before all competitions.

**Drawing 4-1**



**Drawing 4-2**



## 5 – Fitting of the electrical device (control box and push)

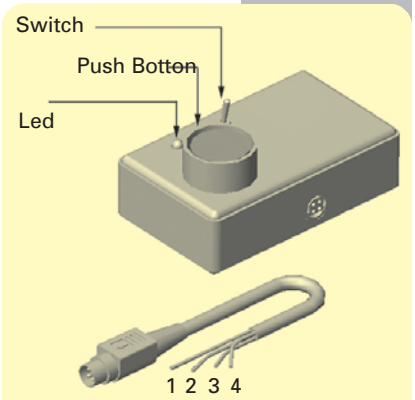
The control box is provided with a red push button for the activation of the system and for the test switch with related green pilot light.
Position the control box so that this is within reach of the driver and co-driver also with fastened belt. The external push button must be positioned at the bottom of the windscreen driving side.
The wiring of the electrical system is shown on drawing 5-4 while the connection to the plug on drawing 5-3.

Ⓔ The issued indication labels must be sticked near the external and the internal activators.
After operating one of the two push buttons with the switch in “ON" position, the release of the liquid is immediate and there is no possibility of blocking.
It is indispensable to leave the switch in "OFF" position and move it to the "ON" position only during the competition.

**CHECKING OF THE WORKING CONDITIONS OF THE CONTROL BOX**:
Carry out the electrical connection by following the scheme of drawing 5-3 and 5-4, but before connecting the extinguisher make sure that:
When the switch is in "OFF" position and one of the two push buttons is activated (external or internal), the current intensity at the ends of the plugs must be about 0 Ampere, **the pilot led light must be on thus indicating correct connection of the circuit**.
When the switch is in "ON" position and one of the two buttons is operated, there must be a voltage of about 9 volts.

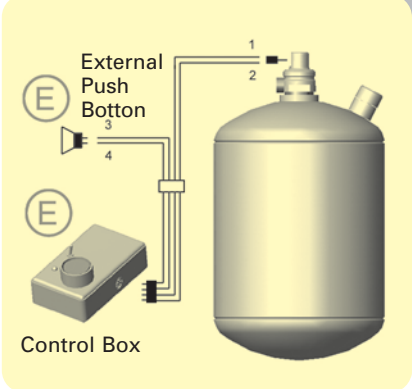
**WARNING:**
We recommend you to replace the batteries (high alkaline capacity) before every competition.

**Drawing 5-3**




| | |
|---|---|
| 1 - black<br>2 - red | Valve |
| 3 -blue or green<br>4 - white | External<br>Push Botton |

**Drawing 5-4**



## 6 – Technical details

| System | |
|---|---|
| Pressure for usage of the bottles | 14 Bar |
| Battery feed | 1 battery 9V alkaline |
| Ignition for the electric valve | 9V not polarized |

| Extinguishing liquid | |
|---|---|
| Type | AFFF Family |
| Temperature of use | - 20°C / + 60°C |
| Appearance | Light red liquid |
| Density | 1.10 ±0.03 Kg/dm3 |
| PH | 7 ±1 |
| Flash point | > 100°C |
| Boiling point | ~ 100°C |
| Biodegradability | > 90% (OECD) |
| O.D.P. | 0 |
| Chemical composition | Alchil sulphates, alchil ether sulphates, fluoridized surface active substances, antifreeze, corrosion inhibitors, and conserver. |
| Acute oral toxicity | DL50 (mouse) > 200 mg/Kg |
| Eco-toxicity | LC50 (Luuciscus) = 1000 mg/l |

## 7 – Maintenance

Maintenance operations are the following:

- Regularly check manometer pointer (it must remain in the green area).
- Regularly clean the system according to the following rules:
  1) Disconnect the valves from the fittings and the fittings from the tube.
  2) Blow pressurized air into the tube, the fittings and the valves.
- Check integrity of the tubes (their being cylindrical) and the coupling of the connections to avoid any possible leak.
- Carry out the control box test at regular intervals (par. 5)
- Regularly check the working of the tie rods by temporarily unloosing the cable from the mechanical valve.
- Please let the overhaul be carried out every two (2) years (FIA rules) by TURINI (or any other Companies authorized by TURINI) starting from the date printed on the sticker of the bottle.
- In case of accident without neither fire nor activation of the system, it is anyway advisable to carry out the above mentioned tests.
- In case of activation of the system without fire, it is advisable to carry out the above mentioned tests and to let the system be refilled directly by TURINI (or any other Companies authorized by TURINI).
- In case of activation of the system with fire it is necessary to let the system be refilled by TURINI (or any other Companies authorized by TURINI) replacing the fittings, the valves and, if necessary, the tubes.

## 8 – System activation

**MECHANICAL:**
Before all competitions it is necessary to disconnect the safety plug.
The activation is guaranteed through the intervention in drawing direction of one of the two red stay rods.
Once activated, the mechanical valve remains in the opening position through the system of spring retainer.

**ELECTRICAL:**
The activation is guaranteed through the switch of the control box in "ON" position at the beginning of every competition and the intervention on the push positioned either on the control box or outside the car.
Once activated the valve remains opened.