



FEDERATION INTERNATIONALE
DE L'AUTOMOBILE

Homologation
N°:

EX.009.00

Certificat d'homologation pour les systèmes d'extinction plombés dans les voitures de course

Homologation certificate for motor sport fire extinguisher systems

1. GENERALITIES / GENERAL

- 101 Constructeur
Manufacturer OMP Racing s.r.l.
- 102 Adresse
Address Via E. Bazzano 5
16019 Ronco Scrivia (GE), Italy
- 103 Nom du système
System name Ecolife 104 Dénomination commerciale
Commercial name Ecolife
- 105 Véhicules pouvant être équipés de ce système (Le cas échéant, indiquez si ce système est valide pour tous les groupes)
Vehicle for which the system may be used (indicate if the system is valid for all groups):
Designed for single seaters
- 106 Photo du système complet
Photo of the complete system

Ecolife System 4



1. GENERALITIES / GENERAL (CONTINUED)

Ecolife System 5



2. DESCRIPTION DU SYSTEME / SYSTEM DESCRIPTION

- 201 Agent extincteur
Extinguishant Ecolife (AFFF Family)
- 202 Capacité totale du système
Complete Capacity of the system 2.8 litre
- 203 Norme à partir de laquelle a été approuvé l'agent d'extincteur
Standard from which the extinguishant has been approved ISO 7203
- 204 Couleur de l'étiquette indiquant le type d'extincteur utilisé
Colour of the label showing the type of extinguishant used Red letters on white background
- 205 Pression d'utilisation
Fill pressure 14 Bar
- 206 Pression minimale
Min Pressure 12 Bar
- 207 Si le système est normalement non pressurisé, définir le type de pressurisation
If system is normally unpressurised define type of pressurisation:
All systems stored pressure

- 208 Taille de la bonbonne
Size of the bottle
- | | | | |
|----------------------|---------------|-------------------|---------------|
| Diamètre
Diameter | <u>130 mm</u> | Hauteur
Height | <u>305 mm</u> |
|----------------------|---------------|-------------------|---------------|
- 209 Poids de la bonbonne
Weight of the aluminium bottle 0.940 kg (unfilled)
Weight of the steel bottle 1.970 kg (unfilled)
- 210 Système de déclenchement
Activation system
- | | | |
|--|--|---|
| Manuel / Manual
<input checked="" type="checkbox"/> | Electrique / Electric
<input checked="" type="checkbox"/> | Automatique / Automatic
<input type="checkbox"/> |
|--|--|---|
- Cocher la mention utile
Tick off as applicable*
- 211 Gamme de température d'utilisation
Operating temperature range -20 to +60 °C
- 212 Nombre d'ajutage minimum dans le compartiment moteur
Minimum number of nozzles in the engine compartment 3

2. DESCRIPTION DU SYSTEME / SYSTEM DESCRIPTION (CONTINUED)

- 213 Photo d'une bonbonne montrant l'étiquette indiquant l'agent d'extincteur utilisé
 Photo of one bottle showing the label of the extinguishant used



- 214 Photo d'un ajutage
 Photo of a nozzle




3 ENGAGEMENT DU FABRICANT / MANUFACTURER'S RECOGNITION

Je déclare que le système décrit ci-dessus:

- est conform à la norme FIA sur les systèmes d'extinction plombés dans les voitures de courses
- a passé, sous ma supervision, avec succès l'ensemble des tests décrit dans la norme FIA

I declare that the system described above:

- is in conformity with the FIA standard for motor sport fire extinguisher systems
- has passed, under my supervision, all the tests described in the standard.

Date	Nom et signature Name and signature	Visa d'approbation Endorsement stamp
23 DIC. 1999	PIERGIORGIO PERCIVALE 	O.M.P. RACING S.r.l. Via E. Bazzano, 5 16019 RONCO SCRIVIA (GE) Part. IVA 02264760105

ANNEXES / APPENDICES

- Rapport de test / Test report
- Instruction d'installation / Installation instructions
- Instruction de maintenance / Maintenance instructions



E

Manual extinguishing system

MOD.
3/5/99REV.
12

CONTENTS

1. Warnings and important indications
2. Contents
3. Fitting of the system (bottles, piping and valves)
4. Fitting of the mechanical control device (tension rods)
5. Fitting of the electric control device (control box type 1 and type 2 and push buttons)
6. Technical information
7. Maintenance
8. System activation

This manual refers to the following 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/304	Complete system electrically operated with single 4.250 L bottle in steel	Saloon,Sporst,Single-seater
CB/363	Complete system electrically operated with single 4.250 L bottle in aluminium	Saloon,Sporst,Single-seater
CA/305	Complete system mechanically operated with single 2.800 L bottle in steel	Single-seater
CB/364	Complete system electrically operated with single 2.800 L bottle in aluminium	Single-seater

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 OMP: this would automatically impeach the homologation.

Plumbing 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,

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.

**E****Manual extinguishing system**MOD.
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12**1 - CONTENTS**

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

	Quantity
CA/303: Complete system mechanically operated with single 4.250 L bottle in steel	
Bottle in steel, 4.25 L capacity with mechanical valve with lever retainer and relative 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 Ø8, 4 mt length each	2
Flashing valves	6
3-way pipe fitting	1
T-shaped manifold	4
L-shaped manifold	2
"E" sticker	2

	Quantity
CA/304: Complete system electrically operated with single 4.250 L bottle in steel	
Bottle in steel, 4.25 L capacity with electric valve and relative 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 Ø8 4 mt length each	2
Flashing valves	6
3-way pipe fitting	1
T-shaped manifold	4
L-shaped manifold	2
"E" sticker	2

	Quantity
CA/363: Complete system electrically operated with single 4.250 L bottle in aluminium	
Bottle in aluminium, 4.25 L capacity with electric valve and relative 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 Ø8 4 mt length each	2
Flashing valves	6
3-way pipe fitting	1
T-shaped manifold	4
L-shaped manifold	2
"E" sticker	2

	Quantity
CA/305 Complete system mechanically operated with single 2.800 L bottle in steel	
Bottle in steel, 2.8 L capacity with mechanic valve and relative support brackets	1
Cables and sheaths for activation of the valve	2
Terminals for blocking cables on the valve	2
Rolls of flexible aluminium tube Ø8 4 mt length each	2
Flashing valves	5
3-way pipe fitting	1
T-shaped manifold	3
L-shaped manifold	2
"E" sticker	2

	Quantity
CB/364 Complete system electrically operated with single 2.800 L bottle in aluminium	
Bottle in aluminium, 2.8 L capacity with electric valve and relative 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 Ø8 4 mt length each	2
Flashing valves	5
3-way pipe fitting	1
T-shaped manifold	3
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).
The valve in the circle will not appear in the system for single-seater.

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 Ø6 minimum, 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 ~21mm for the L shaped and for the valve connection ~17mm. 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, then eliminate any residual dust through pressurized air blown also from the other tube end.

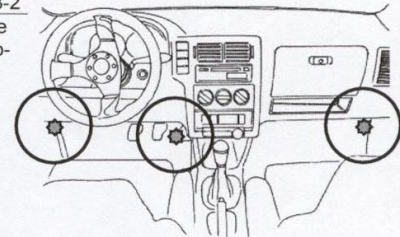
VALVES: The supplied valves are identical and must be screwed together with the T and L fittings without the use of any lubricant which might obstruct the valve hole or the internal part of the turbine. Besides fixing the tubes, it is necessary to fix the fittings to the car as well so to permanently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

Cockpit (for cars with front engine):

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

FIG.3-2
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 2-3 maintaining 25-30 cm between the valve and the other parts of the car.

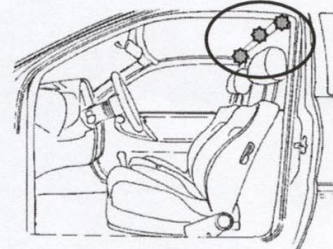


Cockpit (for cars with rear engine):

Material	Quantità
Valves	3
T shaped fitting	2
L shaped fitting	1

FIG.3-3
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.



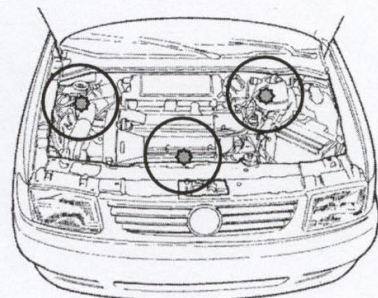
Engine bay:

Material	Quantity
Valves	3
T shaped fittings	2
L shaped fittings	1

FIG.3-4

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.



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).

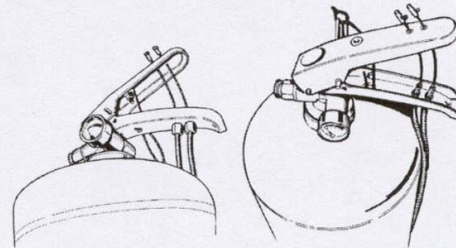


Fig. 4-1

Fig. 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 stuck near the external and the internal activators. Disconnect the safety pin before all competitions.

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 relative 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 stuck 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.

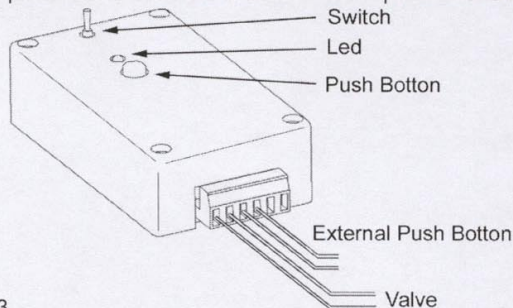


FIG. 5-3

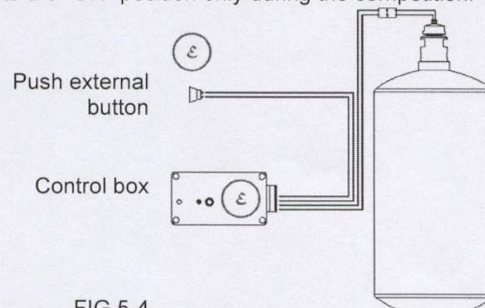
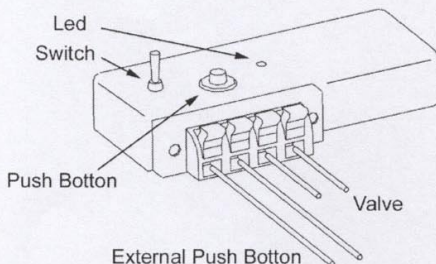


FIG. 5-4

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 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.

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10**6 – TECHNICAL DETAILS**

System	
Pressure for use 4.25 L bottle	14 Bar
Pressure for use 4.25 L bottle	16 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/dm ³
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 (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 (par. 5)
- Pls let the overhaul be carried out every two (2) years (FIA rules) by OMP (or any other Companies authorized by OMP) 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 OMP (or any other Companies authorized by OMP).
- In case of activation of the system with fire it is necessary to let the system be refilled by OMP (or any other Companies authorized by OMP) 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.

The activation is guaranteed by pushing the button positioned on the control box or on the external part of the car.

Opening of the valve can be carried out through drilling of a membrane through a pyrotechnic igniter activated through electric impulse. The retainer system is included in the opening device.

Two different types of seals approved by OMP

