

FITTING INSTRUCTIONS

ENG

Thank you for purchasing an FIA approved SPARCO s.p.a. fire system. It is important that you read these instructions carefully before attempting to install you extinguisher system.

The system should in no way be modified as by doing so, you could seriously affect its performance. If you need to replace parts, only genuine SPARCO s.p.a. components should be used.

Should you experience any difficulties installing your system, please do not hesitate to contact SPARCO s.p.a..

Important note: *the purpose of any vehicle fire protection system is to provide a time envelope in which to control the fire in order to accomplish evacuation of the occupants and allow outside assistance to be given. Ideally, the fire will be totally extinguished, but this cannot be guaranteed.*

FITTING INSTRUCTION

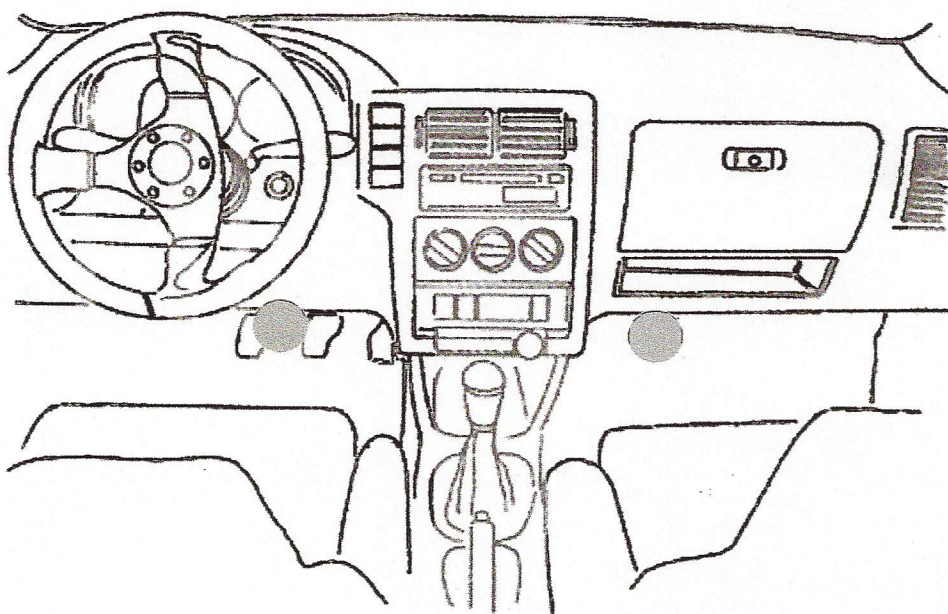
1. unpack the kit carefully and check that all components are complete,
2. lay out the components to identify al components easily,
3. remove the extinguisher from its mounting bracket by undoing the over centre clips,
4. decide the best position for the extinguisher to be mounted bearing in mind that the extinguisher label, showing its contents and pressure gauge should be clearly visible,
5. mount the extinguisher bracket to the vehicle's floor and fix the bottle with 2 metal straps. After this operation, please insert the plastic seals into the end lock holes of the steel bands.

NOZZLES

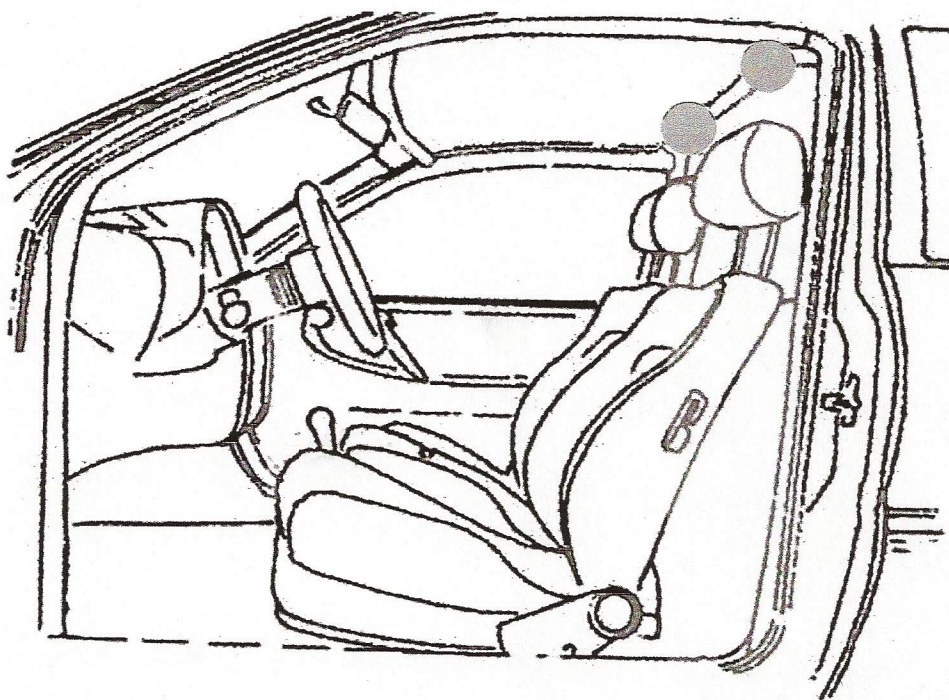
It is important that the correct nozzles, supplied with the system, are used. The nozzles will produce an atomized foam spray. This foam spray, with its controlled particle size, has excellent fire extinction property. It covers the area foreseen to protect with a milky foam substance which has a cooling effect and does also control re-ignition. The foam is easily to clean with water. The nozzles produce a 90° full cone spray pattern with an effective discharge range of approximately 1 meter. This is to consider when locating the nozzles.

Cockpit nozzle location for closed cars: two nozzles are to be mounted in the cockpit. It is recommended to mount the nozzles under the dashboard, pointing in direction of the footwell area of both the driver and co-driver compartment, or - if there is no co-driver - one nozzle under the driver's side dashboard and one nozzle to the top of the main roll bar (main hoop - door pillar) respectively to the roof, pointing inwards and downwards towards the footwell area of the driver.

Cockpit nozzle location for single seater open car: two nozzles are to be mounted in the cockpit. It is recommended to mount the nozzles under the dashboard, aiming at the driver's midriff. Special care should be taken to ensure that the nozzles will not spray into the driver's face.



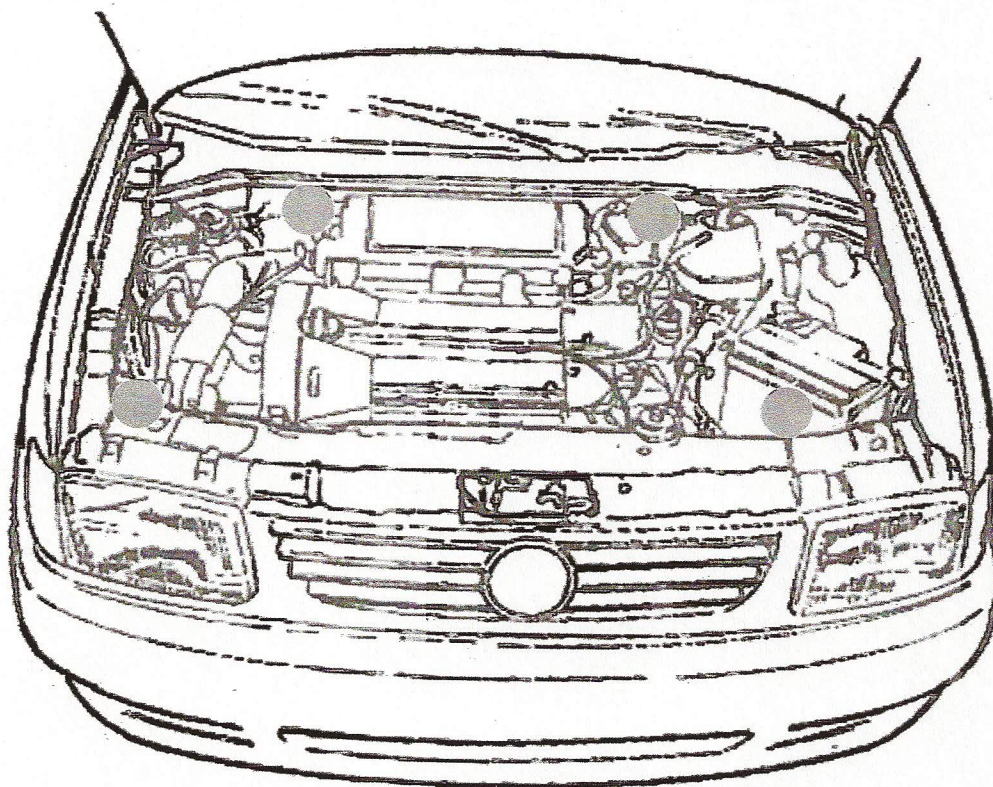
NOZZLE LOCATION IN COCKPIT (FRONT ENGINE CARS)



NOZZLE LOCATION IN COCKPIT (REAR ENGINE CARS)

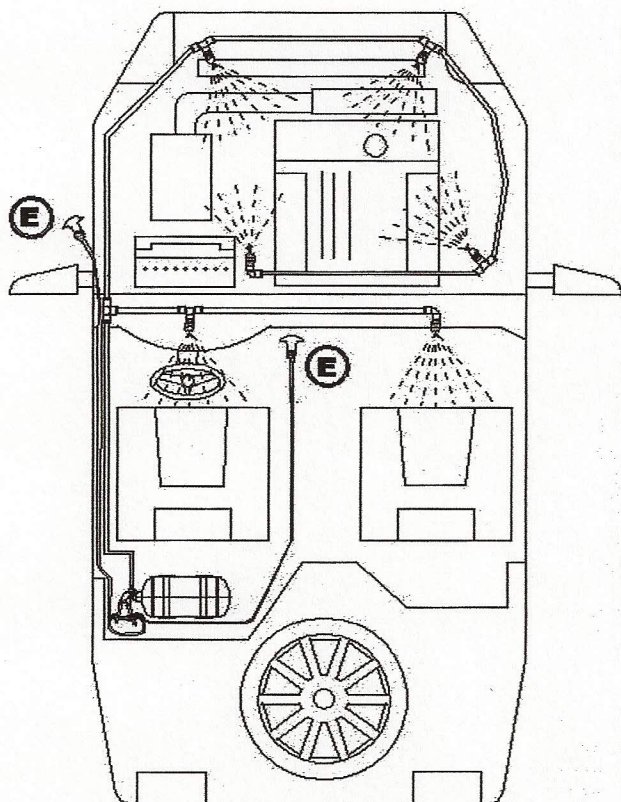
Engine nozzle location for closed cars: four nozzles are to be mounted in the engine compartment, two positioned on each side of the engine. It is recommended that the nozzles are mounted diagonally apart and approximately 200 mm below the bonnet shut line.

Engine nozzle location for single seater open cars: four nozzles are to be mounted in the engine compartment, one positioned on each side of the engine.

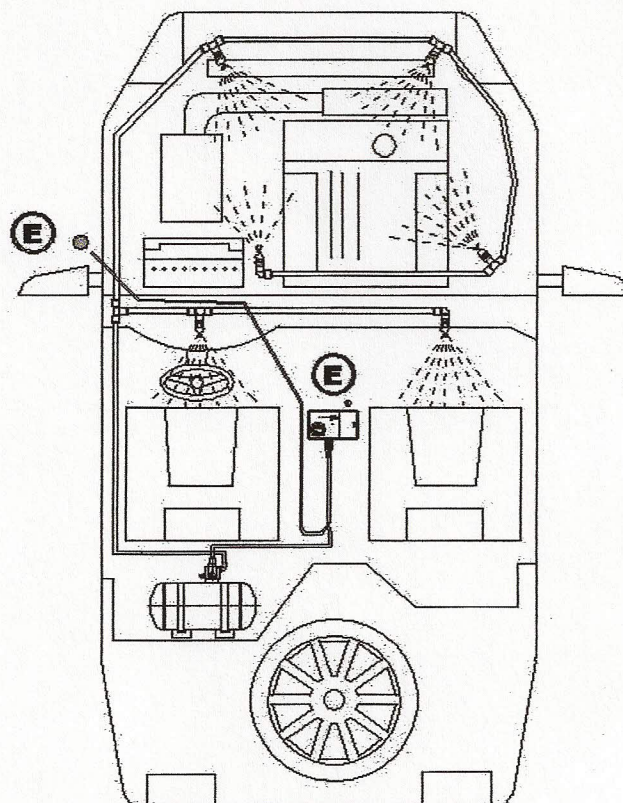


NOZZLES LOCATION IN ENGINE BAY

Sparco nozzles are designed so that they can be mounted through a bulkhead or to a specially made bracket. Nozzles should be mechanically secured in their position and not be simply supported by their own pipe work.



MECHANICAL activation



ELECTRICAL activation

PIPES

Each extinguisher kit is supplied with an aluminium pipe. The system has been designed and homologated to use this type of tube. Under no circumstances should the tubing be changed for another type.

- Pipes installation

To enable a simple installation, the extinguisher and nozzles use push-in fittings for the tube. To attach the tube to the fitting, ensure that the end of the tube is cut square. After bending the outside diameter must have a circular shape. Insert the tube into the fitting, pushing firmly until it clicks. You should then be unable to pull the tubing back out of the fitting. Please check this important point.

To remove the pipes, push the tube into the fitting and pull the black collar on the fitting in the same direction. Once this is done, pull the tube from the fitting.

ELECTRICAL SYSTEM

- Components' list

- 1 bottle with electrical activation (aluminium or steel)
- 2 complete brackets
- 2 aluminium pipes, length: 4m
- 1 control box
- 1 signal cable
- 1 jack cable
- 1 external switch cable
- 1 external cable
- 1 fireproof red shield (length: 2 meter)
- 6 nozzles
- 2 "L" fittings
- 1 "3 ways" fitting
- 4 "T" fittings
- 2 "E" stickers
- Instruction manual

Mount the control unit (activation box) with the integrated red button and 9 volt battery in the cockpit so that it is easily to reach from the driver/co-driver when sitting in the normal driving position and wearing fully fastened seat belts. The flexible pushbutton is for the outside of vehicle as it is waterproof. It should be fitted at the lower left part of the windscreen. Don't forget to indicate the pushbutton with the supplied circular sticker according ISC annex J, article 253.7.2.3.

- Wiring of system

The Sparco control unit has an own electric power supply to provide the current needed to operate the system. The control unit is to be wired independently from the vehicle's electrical on-board-system. Make the electrical connections as shown in the enclosed drawing.

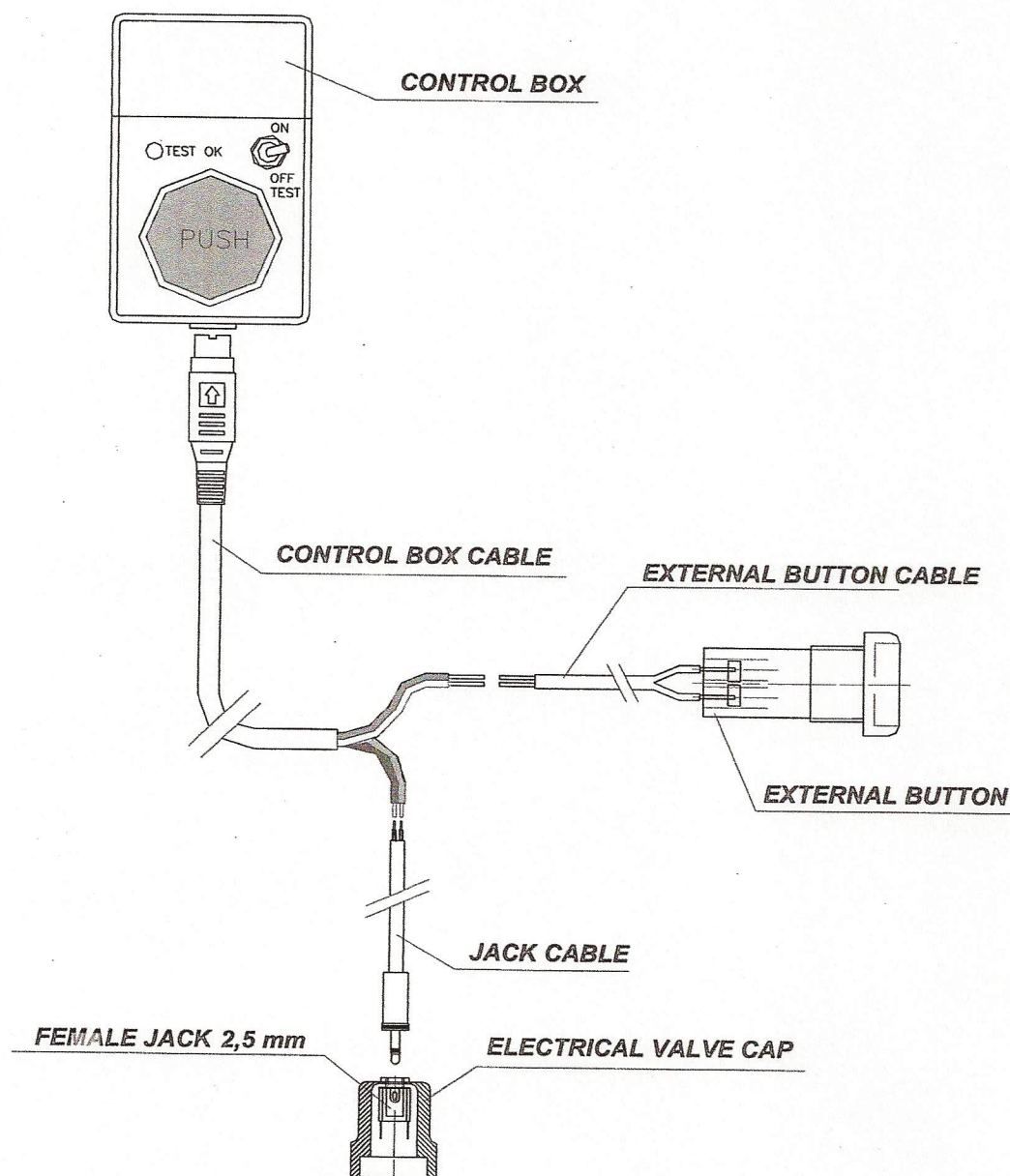
- System check

"Jack cable" (see drawing) **not connected** with the valve onto the bottle:

1. Switch on the control unit (ON position). Pushing the red button there should be a voltage of not less than 7 Volt at the end of the jack cable,
2. when the switch is in the OFF-CHECK position and the red button is pushed, the measured current at the plug must not exceeded 1mA.

Once the system has been wired a final test check should be carried out if everything is in order. Before you start this check procedure, ensure that the bottle and the control unit **are connected** and the operating switch at the control unit is into the **TEST** position. Pressing the red button (first the inside, later the outside one) will show the following functions:

1. the red button gives a signal,
2. continuity of connections between the control unit and the extinguisher; the red lamp in the control unit will light up if there are no breaks,
3. battery efficiency: the red lamp will light up if the charging status of the battery is sufficient to guarantee extinguisher operation.



IMPORTANT: You are advised to limit duration and frequency of controls, because the check by pressing the pushbutton costs battery lifetime. Use of a 9 Volt transistor-type alkaline-manganese battery (IEC 6LF22). Don't modify the cable junctions, don't insert the plug of the "signal cable" into the control unit in a wrong way (plug is to insert with flat side on top).

When the operating switch at the control unit is switched into the ON position, the system is ready to be used. By pressing either the outside or inside pushbutton the extinguisher will be activated and the whole extinguishing will come out. When it is not necessary to use the system (paddock, transfer journeys, servicing and closed parks for rallies) you are advised to turn off the operating switch into **TEST** position to avoid accidentally activation.

For an added safety screw the jack plug into the socket on top of the valve cap.

 MARKETING & TECNOLOGY	ISTRUZIONI DI MONTAGGIO IMPIANTI DI ESTINZIONE <i>MOUNTING INSTRUCTIONS FIRE EXTINGUISHING SYSTEMS</i>	Pagina 16 di 18 Data 20/01/11
		N° 24 4002 05 Code: various
Sparco S.p.A. – Via Leini, 524, Volpiano – tel. 0112240911 – Fax. 0112240900		

MECHANICAL SYSTEM

These systems are operated using pull cables. Each kit is supplied with two cables, one being 2 meters in length.

- Components' list

- 1 bottle with mechanical activation (aluminium or steel)
- 2 complete brackets
- 2 aluminium pipes, length: 4m
- 2 pull cables
- 6 nozzles
- 2 "L" fittings
- 1 "3 ways" fitting
- 4 "T" fittings
- 2 "E" stickers
- Instruction manual

- Installation

Decide the best position for the pull cables to be mounted, bearing in mind that the cable mounted in the cockpit should be accessible to driver and co-driver when sitting in the normal driving position and wearing fully fastened seat belts. The external cable is normally mounted at the lower part of the windscreen. When installing the pull cable on a saloon car, ensure that you leave sufficient clearance for the bonnet to fully open.

The pull cables should be routed so that there are no sharp bends or S-shapes in the cable, this will ensure easy operation for the cables. The end of the cable should be passed through the levers of the extinguisher head and secured using the cable clamps attached to the end of the cables. It is advisable to leave a small amount of slack in the cable to prevent accidental firing of extinguisher. It is recommended that the cables are periodically lubricated and checked to prevent seizure.

TECHNICAL SPECIFICATION OF EXTINGUISHING PRODUCT (AFFF)

USAGE	Racing cars, including saloon, single seaters and other cars
CONTENTS	Foam solutions, 15% with de-ionised water
DISCHARGE AREAS	Engine compartment and drivers' compartment
DISCHARGE TYPE	The product is stored in a container, and discharged through atomising nozzles as a very fine mist. Upon settling, it turns to milky white liquid
COMPOSITION	Multi purpose synthetic foam based solution, based on salts of alkyl ether sulphates, together with solvents and foam stabilisers
APPEARANCE	Clear amber liquid in solution
ODP (ozone depletion potential)	None
PH	6-8
CLOUD POINT	None
FREEZING POINT	-20°C
FLASH POINT	>100°C
MAX STORAGE TEMP	+49°C
SUSPENDED SEDIMENT	Less than 0.2%
PHYSIOLOGICAL PROPERTIES	Harmless, non-toxic liquid in solution

MAINTENANCE

To ensure that you get the best possible performance from your fire system, the following checks and maintenance procedures should be carried out.

- ✓ Regularly check pressure gauge is in the green sector
- ✓ Regularly check of the nozzles for obstructions
- ✓ Regularly check the integrity of the pipe work and the fittings
- ✓ Regularly inspect the cylinder for damage and loose fixation

Your system should be serviced every two years. A service date is written on extinguisher label. It is up to you to ensure that the service is carried out at the correct intervals. Servicing of the extinguisher must only be carried out by SPARCO s.p.a. or one of its official agents. You will need to send the cylinder, along with nozzles to be serviced

If your system is discharged, it must be returned only to SPARCO s.p.a. or one of its agents for refilling

Your SPARCO s.p.a. fire system will be rejected from scrutineering if:

- ✓ The gauge is in the red sector
- ✓ The tamper-proof label is not intact
- ✓ Non-genuine SPARCO s.p.a. parts have been used
- ✓ The contents are below the specified weight
- ✓ The extinguisher label is worn or damaged
- ✓ The extinguisher is not within service date
- ✓ The system is in poor conditions
- ✓ The nozzles are not in a reasonable positions

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BEHAVIOUR TO OBSERVE IN CASE OF CONTACT WITH EXTINGUISHER

- ✓ Contact with the skin: Take off immediately the contaminated clothing. Wash immediately the areas of the body that have come into contact with the brothers using generous running water and eventually soap.
- ✓ Contact with eyes: Wash immediately and abundantly with running water with opened eyelids at least for 10 minutes, then protect your eyes with sterile gauze or clean handkerchief, dry. Medical visit would be suggested.
- ✓ Ingestion: Not induce vomit. Resort immediately to medical visit showing information on following ingredients. It is possible to drink water. Ingredients:
- ✓ Alkyl sulfate sodium (Xi) R38-41 Butildiglicole (Xi) R36, Surfactants fluorants (not dangerous), inorganic salts (non-dangerous), Water
- ✓ Inhalation: clear the air of the ambient. Remove quickly the subject from the contaminated atmosphere and keep him in ventilated atmosphere. In case of malaise, consult a doctor.