



Thank you for purchasing one of our latest range of Homologated systems . This manual covers the following systems SPAeX-2-APS and SPAeX-2-APS-CF.

It is important that you read the following instructions carefully before attempting to install your fire suppression systems.

The performance of these systems could be affected if they are in any way modified or tampered with and will void its homologation. Please ensure you only use genuine SPA parts should any part need replacing. Should you require assistance with this please call +44(0)1543 434580

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Manufacturers manual

## CONTENTS

SPAeX-2-APS

SYSTEM CONTENTS LIST

1 X SP278 BOTTLE PLINTH

2 X SP279 BOLTED STRAPS

1 X SP 007H POWER PACK HIRSCHMAN

2 X SP 005H PLUG AND LEAD

1 X SP 011 INTERNAL FIRE BUTTON

1 X SP 012 EXTERNAL FIRE BUTTON

1 X SP 017 E LOCATION STICKER LARGE

1 X SP 0129 E LOCATION STICKER SMALL

4.5 X SP 015 6MM DECABON HOSE PER METER

2.5 X SP 032 8MM DECABON HOSE PER METER

1 X SP 072 10MM DECABON HOSE PER METER

0.5 X SP 181 12MM DECABON HOSE PER METER

1 X SP 184 8MM-6MM Y PIECE

1 X SP 183 10MM-8MM Y PIECE

1 X SP 182 12MM-10MM Y PIECE

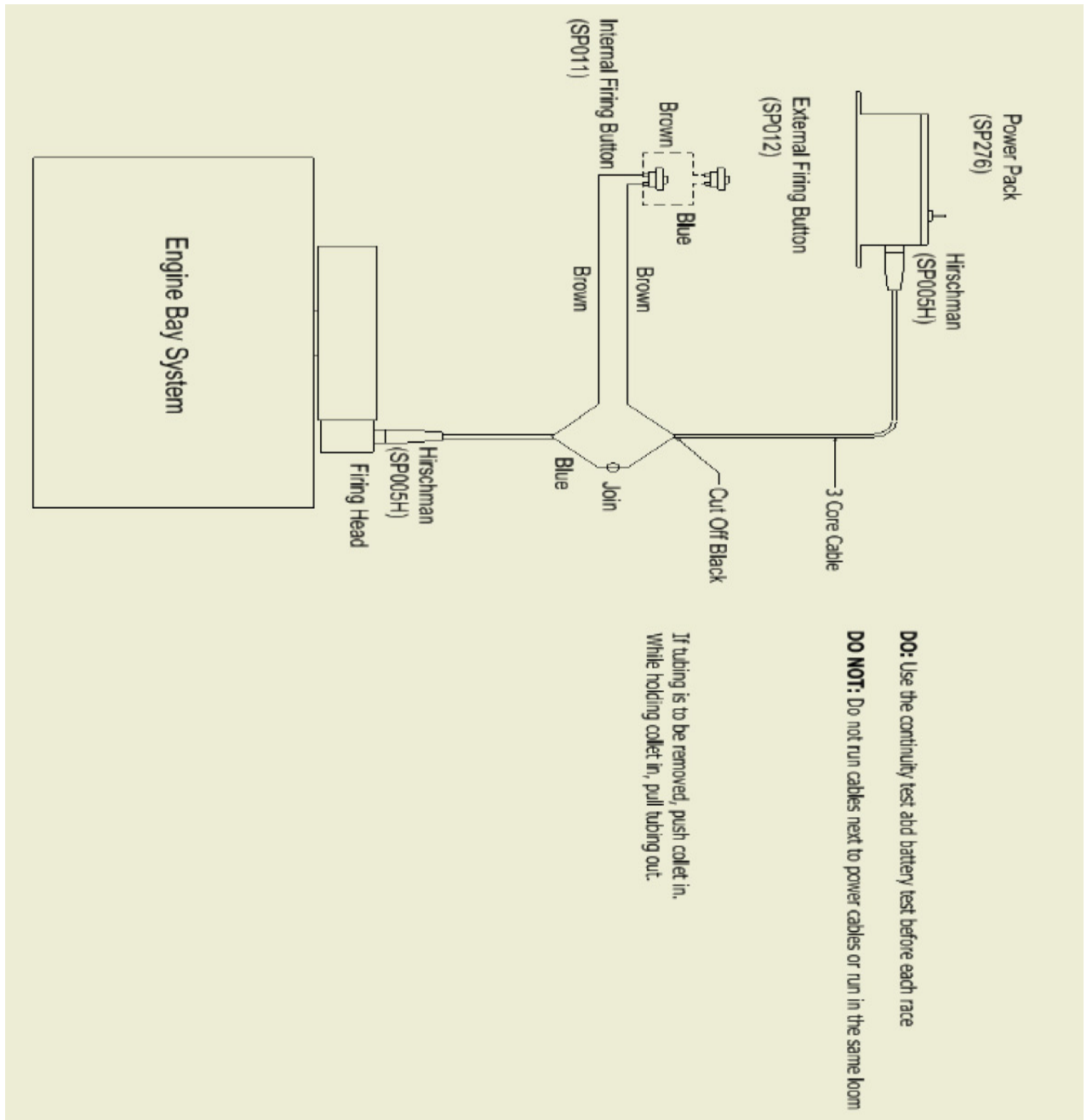
1 X SP185 10MM BULKHEAD FITTING

1 X SP 186 10MM-8MM REDUCER

2 X SP 187 ENGINE BAY NOZZLES

2 X SP 188 COCKPIT NOZZLES

# SPA EXTREME ELECTRICAL SYSTEM WIRING SCHEMATIC SINGLE CHAMBER



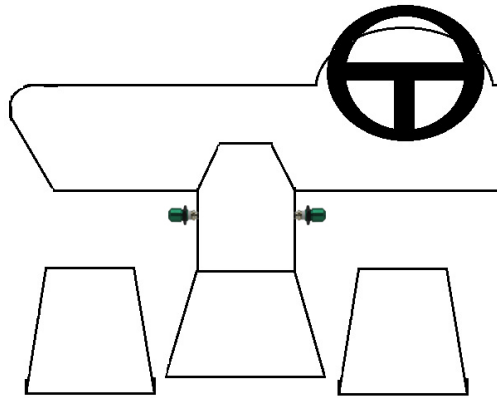
To test the battery, push and hold lever in the battery check position until yellow light flashes. To test continuity, push switch to system inactive, press internal and external buttons, the red light should indicate on power pack.

**RECOMMENDED:** Use the continuity test and battery test before each race.

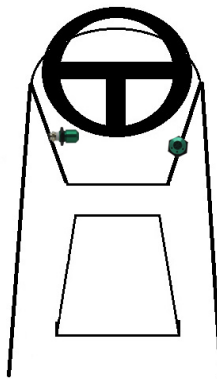
## COCKPIT NOZZLE LOCATION FOR SALOON CARS & SINGLE SEATERS

Two nozzles should be mounted in the cockpit area of a saloon car, we recommend that these are mounted under the dashboard spraying horizontally across the drivers foot-well and co-drivers compartment.

### **SALOON CAR NOZZLE POSITION**

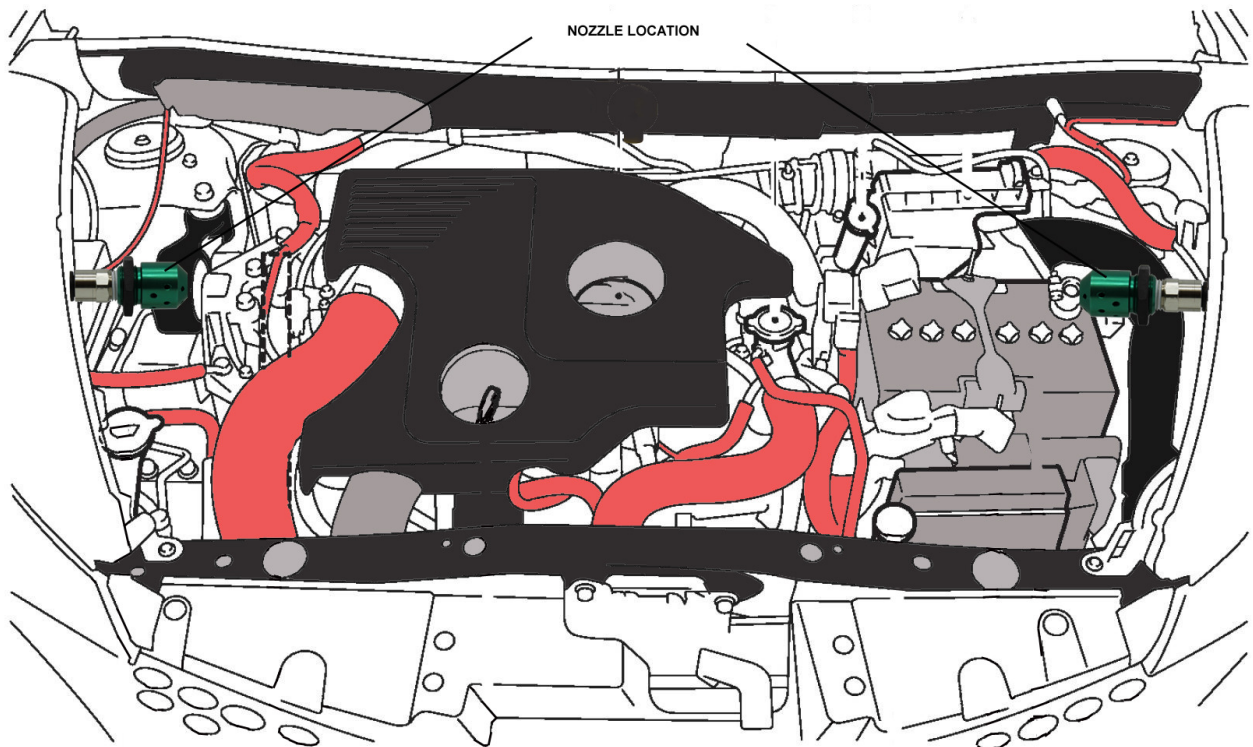


### **SINGLE SEATER NOZZLE POSITION**



## ENGINE BAY NOZZLE LOCATION

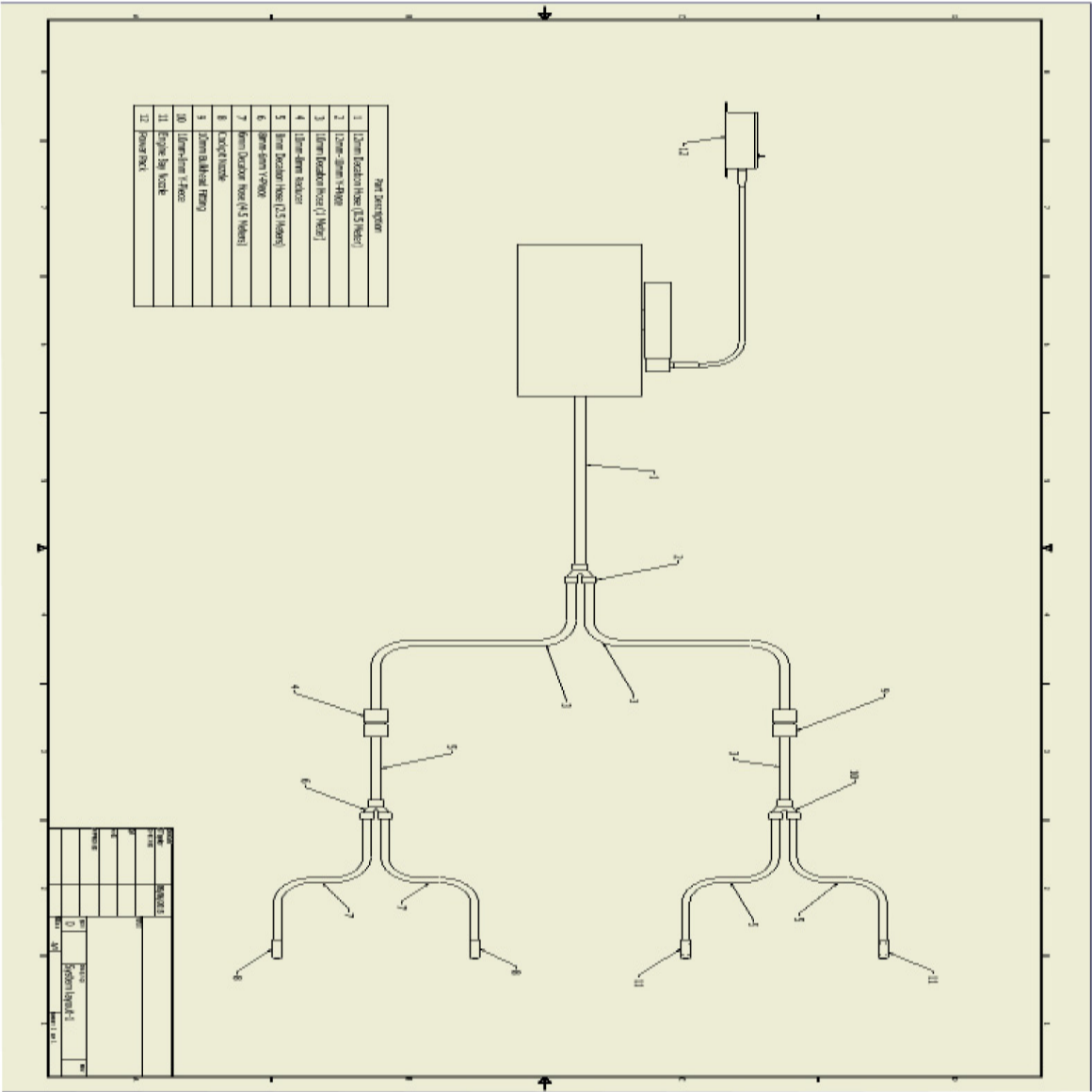
Two nozzles should be mounted in Engine compartment  
fig 1



## TUBING

Each SPA Extreme system is supplied with Decabon tubing which is a coated aluminium tube which can be molded and flexed to suit this application. The SPA Extreme system has been designed using this type of tube. DO NOT substitute this tube for any other type.

# System Layout



## ELECTRICAL FITTING INSTRUCTIONS

Unpack all parts and check components against kit list.  
Kit list is on page 1

Decide the best position for the extinguisher - IT IS RECOMMENDED THAT THE BOTTLE BE MOUNTED IN THE FORE AND AFT DIRECTION IN THE VEHICLE.

The extinguishing label, detailing contents etc. should be visible.  
Mount the bottle plinth securely to the vehicle and put the bottle into place.

Mount the power pack in a clearly visible position.

Switch with red plastic shroud to be fitted in the cockpit so that it is in easy reach of both driver and co/driver when sitting in the normal driving position and wearing fully fastened seatbelt.

The second switch with flexible red membrane (waterproof) is to be fitted to the outside of the vehicle, close to the exterior master switch (for activation by the marshals).

Once the system has been wired as per wiring diagrams the following tests should be carried out to check the system is fitted correctly and will operate when required.

## SPA DESIGN ELECTRICAL SYSTEM DETAILS

The SPA Extreme system uses actuators to operate a pressurized canister to evacuate the extinguishant.

This is triggered remotely using the battery powered pack supplied. In order to guarantee reliable operation the connectors used are IP7 and the actuators are of a military specification with the system/battery test electronics integrated into the power pack supplied.

The power pack electronics can test the continuity of the wiring and also provide a high current pulse test to ensure system integrity before use. Unlike other systems, the battery test will not destroy or put an excessive drain on the battery during this critical test.

These tests are performed using a three way switch on the power pack box and should be performed before each usage of the system, since the system is only as good as the battery that powers it and the integrity of the wiring and its connectors.

To check the condition of the battery, push up and hold the switch on the power pack box.

EVERY TWO SECONDS YOU WILL SEE A YELLOW light flash.  
If the light flashes very dimly the battery must be replaced.  
IF IN DOUBT REPLACE THE BATTERY - with a PP3 Alkaline.



## SYSTEM CONTINUITY CHECK

To check the continuity of the wiring, ensure that the switch on the power pack box is in the SYSTEM INACTIVE position this will prevent the extinguisher from being activated.

Press the internal fire button to check that the red light comes on, press the external fire button also and check that this also makes the red light come on.

The external button must be positioned close to the exterior master switch.

DO ensure that the wiring does not run next to looms especially if they contain ignition or battery cables.

DO ensure that any exposed connections that are likely to get water spray are protected.

DO NOT allow cables to run through sharp edged apertures without protection.

DO NOT fix cables to any surface that is likely to see excessive temperatures.

## MULTI-DIRECTIONAL NOZZLES

Please note that nozzle shown in Fig.A must only be used in engine bay.  
Nozzle shown in Fig.B must only be used in cockpit.

fig A

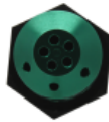


fig B

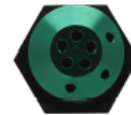


It is important that the correct nozzles supplied with the system are used, the nozzles produce a multi directional spray pattern and must be positioned as shown in Fig A.

fig A



Yes



No

## TUBING

Each SPA Extreme system kit is supplied with Decabon tubing which is a plastic coated aluminium tube which can be molded and flexed to suit this application. The SPA Extreme system has been designed and homologated using this type of tube. DO NOT substitute this tube for any other type.

## TUBE CONNECTIONS

All fittings for tube to nozzles and bottles are of the push-in type. Insert the tube into the fitting, push firmly until it clicks. Once in you should not be able to pull it out. To remove the tubing, push the tube into the fitting and at the same time push the black collet back towards the fitting and then pull the tube from the fitting.

## MAINTENANCE

To ensure maximum possible performance from your SPA Extreme system, the following checks and maintenance procedures should be carried out.

Regularly check Nozzles for debris or any obstructions externally or internally.

Regularly check the integrity of the pipe work and fitting.

Regularly check the cylinder for damage or corrosion.

Regularly check the mounting bracket and retaining straps are secure.

Regularly check your power pack control box and condition of the internal alkaline battery, the battery should be changed preferably every 6 months or if the system has been fired off.

Regularly check your wiring and electrical connectors for any damage.

Your SPA fire suppression system must be serviced every 2 years, a service due date is written on the contents label located on your cylinder. It is up to you to ensure the services are carried out at the correct intervals.

If your system has been discharged or requires a 2 year service you must return it to SPA or an agent approved by SPA fire suppression systems.

## NOTES

Please ensure that you monitor the following **as you may not pass scrutineering if**

The bottle contents label is worn, damaged or unreadable.

The system is not within service date.

The system is in poor condition.

## EXTREME DATA SHEET

Application	Autosport industry - including saloon,race cars & single seaters,.
Composition	Dodecafluoro-2-methylpentan-3-one, (CF <sub>3</sub> CF <sub>2</sub> C(O)CF(CF <sub>3</sub> ) <sub>2</sub> )
Ozone depletion potential	None
Operating temperature	-40 to + 80°C
Freezing point	-108°C
Critical temperature	168.7°C
Physiological properties	No observed adverse effect level and lowest observed adverse effect level for cardiac sensitization (halocarbon) and oxygen depletion (Inert gas).

A copy of the 3M™Novec™ 1230 fire protection fluid material safety data sheet can be obtained from SPA Design or SPA Technique upon request.