



FEDERATION INTERNATIONALE  
DE L'AUTOMOBILE

Homologation  
N°:

EX.003.98

**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 SPA Design Limited

102 Adresse  
Address The Boat House, Lichfield Street  
Fazeley, Tamworth, Staffs B78 3QN

103 Nom du système  
System name Multiflow 104 Dénomination commerciale  
Commercial name Fire Fighter System

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 all groups

SYSTEMS DESIGNED FOR ALL GROUPS

106 Photo du système complet  
Photo of the complete system



**2. DESCRIPTION DU SYSTEME / SYSTEM DESCRIPTION**

- 201 Agent extincteur  
Extinguishant AFFF
- 202 Capacité totale du système  
Complete Capacity of the system 4  
litres/Kg
- 203 Norme à partir de laquelle a été approuvé l'agent d'extincteur  
Standard from which the extinguishant has been approved EN3
- 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 12 Bar
- 206 Pression minimale  
Min Pressure 8 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 except system 3) which is pressurised by a gas generator.
- 208 Taille de la bonbonne      Diamètre      Hauteur  
Size of the bottle 160      Diameter      mm      Height 305      mm
- 209 Poids de la bonbonne  
Weight of the bottle 1kg (unfilled)
- 210 Système de déclenchement  
Activation system
- |   |   |   |
|---|---|---|
| Manuel / Manual<br><input type="checkbox"/> | Electrique / Electric<br><input type="checkbox"/> | Automatique / Automatic<br><input type="checkbox"/> |
|---|---|---|
- Cocher la mention utile  
Tick off as applicable*
- 211 Gamme de température d'utilisation  
Operating temperature range -5 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

- 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'ensembles 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
7.12.98	M.P. BENNETT  DIRECTOR.	

### ANNEXES / APPENDICES

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

**AMENDMENT TO HOMOLOGATION**

**NO: EX003.98**

<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: GG075CF</b>
<b>CYLINDER CONSTRUCTION</b>	<b>CARBON FIBRE CASTINGS X 2</b> <b>GAS-GENERATOR FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.30KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>3.375</b>
<b>CYLINDER DIAMETER - MM</b>	<b>175</b>
<b>CYLINDER LENGTH - MM</b>	<b>275</b>
<b>CYLINDER COLOUR</b>	<b>BLACK (CARBON FIBRE)</b>



**SIGNED:**  
**For and on behalf of SPA Design Ltd**

**M.P. Bennett**  
**DATE: 16/10/01**

**SIGNED:**  
**For and on behalf of the Motor Sports Association.**

**DATE: 15.3.02**

**MOTOR SPORTS ASSOCIATION**  
**UNITED KINGDOM**


**AMENDMENT TO HOMOLOGATION**


**NO: EX003.98**


<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: GGR75A</b>
<b>CYLINDER CONSTRUCTION</b>	<b>WELDED ALUMINIUM SPINNINGS X 2 GAS-GENERATOR FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.65KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>3.375</b>
<b>CYLINDER DIAMETER - MM</b>	<b>156</b>
<b>CYLINDER LENGTH - MM</b>	<b>303</b>
<b>CYLINDER COLOUR</b>	<b>RED</b>



**SIGNED:**  
For and on behalf of SPA Design Ltd

M.P. Bennett   
**DATE:** 16/10/01

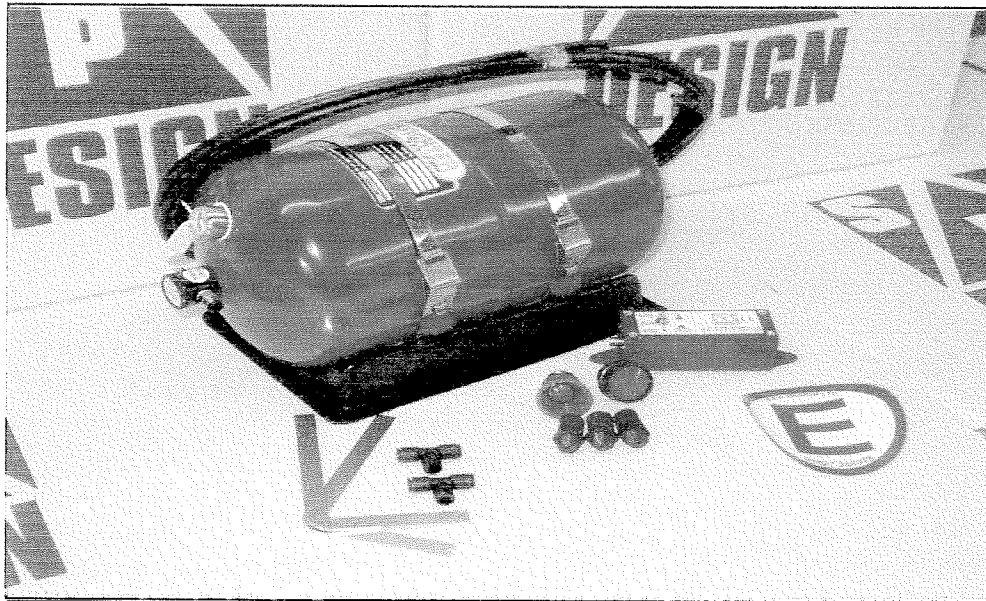
**SIGNED:**   
For and on behalf of the Motor Sports Association.

**DATE:** 15.3.02 


**AMENDMENT TO HOMOLOGATION**


**NO: EX003.98**


<i>Manufacturer</i> <b>SPA DESIGN LTD</b>	<i>Date</i> <b>16-10-2001</b>
	<b>Extinguisher Part No. Relating to Cylinder: MFE75A</b>
<b>CYLINDER CONSTRUCTION</b>	WELDED ALUMINIUM SPINNINGS X 2 ELECTRICAL FIRING HEAD
<b>WEIGHT - WHEN FILLED</b>	4.60KG
<b>CYLINDER CAPACITY-LITRES</b>	3.375
<b>CYLINDER DIAMETER - MM</b>	156
<b>CYLINDER LENGTH - MM</b>	303
<b>CYLINDER COLOUR</b>	RED



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<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFE75ASL</b>
<b>CYLINDER CONSTRUCTION</b>	<b>ALUMINIUM SPINNINGS X 2 (WELDED)</b> <b>ELECTRICAL FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.6KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>3.375</b>
<b>CYLINDER DIAMETER - MM</b>	<b>132</b>
<b>CYLINDER LENGTH - MM</b>	<b>390</b>
<b>CYLINDER COLOUR</b>	<b>RED</b>

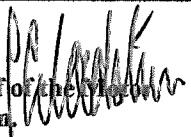


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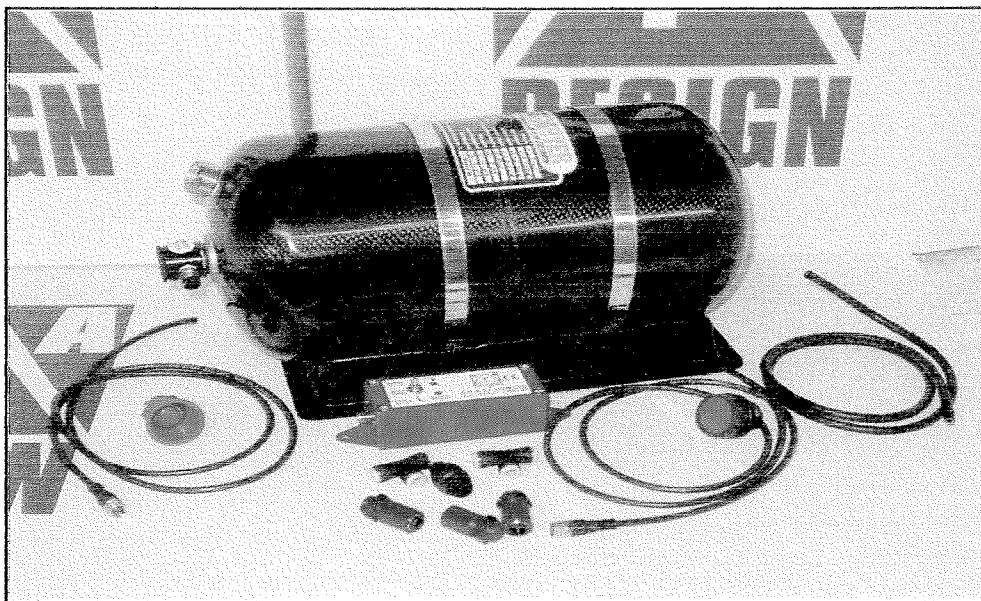





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<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFE75CF</b>
<b>CYLINDER CONSTRUCTION</b>	<b>CARBON FIBRE CASTS X 2</b> <b>ELECTRICAL FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.15KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>3.375</b>
<b>CYLINDER DIAMETER - MM</b>	<b>132</b>
<b>CYLINDER LENGTH - MM</b>	<b>390</b>
<b>CYLINDER COLOUR</b>	<b>BLACK (CARBON FIBRE)</b>




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<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFE75RCF</b>
<b>CYLINDER CONSTRUCTION</b>	<b>RED CARBON FIBRE CASTS X 2 ELECTRICAL FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.15KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>3.375</b>
<b>CYLINDER DIAMETER - MM</b>	<b>132</b>
<b>CYLINDER LENGTH - MM</b>	<b>390</b>
<b>CYLINDER COLOUR</b>	<b>RED (CARBON FIBRE)</b>



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<i>Manufacturer</i> <b>SPA DESIGN LTD</b>	<i>Date</i> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFM75ASL</b>
<b>CYLINDER CONSTRUCTION</b>	<b>ALUMINIUM SPINNINGS X 2 (WELDED)</b> <b>MECHANICAL FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>5.20KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>3.375</b>
<b>CYLINDER DIAMETER - MM</b>	<b>132</b>
<b>CYLINDER LENGTH - MM</b>	<b>390</b>
<b>CYLINDER COLOUR</b>	<b>RED</b>




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M.P. Bennett   
DATE: 16/10/01

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DATE: 15.3.02

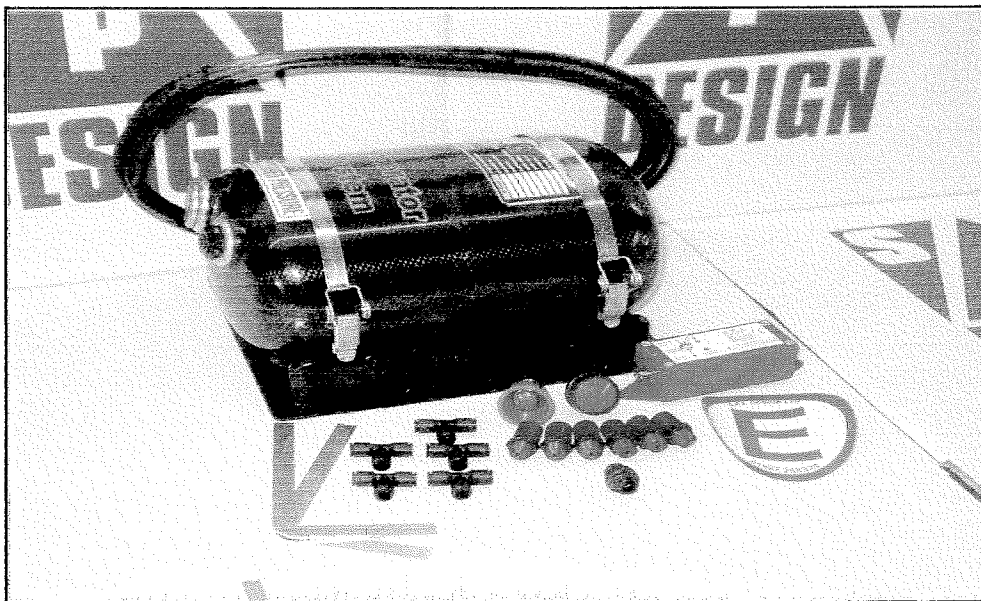


**MOTOR SPORTS ASSOCIATION**  
UNITED KINGDOM


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<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: GGO400CF</b>
<b>CYLINDER CONSTRUCTION</b>	<b>CARBON FIBRE CASTINGS X 2</b> <b>GAS-GENERATOR FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.50KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>4.0</b>
<b>CYLINDER DIAMETER - MM</b>	<b>175</b>
<b>CYLINDER LENGTH - MM</b>	<b>275</b>
<b>CYLINDER COLOUR</b>	<b>BLACK CARBON FIBRE</b>




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<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: GGR400A</b>
<b>CYLINDER CONSTRUCTION</b>	<b>WELDED ALUMINIUM SPINNINGS X 2</b> <b>GAS-GENERATOR FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.90KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>4.0</b>
<b>CYLINDER DIAMETER - MM</b>	<b>156</b>
<b>CYLINDER LENGTH - MM</b>	<b>303</b>
<b>CYLINDER COLOUR</b>	<b>RED</b>



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	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFE400A</b>
<b>CYLINDER CONSTRUCTION</b>	<b>WELDED ALUMINIUM SPINNINGS X 2</b> <b>ELECTRICAL FIRING HEAD</b>
<b>WEIGHT - WHEN FILLED</b>	<b>4.95KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>4.0</b>
<b>CYLINDER DIAMETER - MM</b>	<b>156</b>
<b>CYLINDER LENGTH - MM</b>	<b>303</b>
<b>CYLINDER COLOUR</b>	<b>RED</b>



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**M.P. Bennett**  
**DATE: 16/10/01**

**SIGNED:**  
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**Sports Association**

**DATE: 15.3.02**


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<i>Manufacturer</i> <b>SPA DESIGN LTD</b>	<i>Date</i> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFM400A</b>
<b>CYLINDER CONSTRUCTION</b>	WELDED ALUMINIUM SPINNINGS X 2 MECHANICAL FIRING HEAD
<b>WEIGHT - WHEN FILLED</b>	<b>5.20KG</b>
<b>CYLINDER CAPACITY-LITRES</b>	<b>4.0</b>
<b>CYLINDER DIAMETER - MM</b>	<b>156</b>
<b>CYLINDER LENGTH - MM</b>	<b>303</b>
<b>CYLINDER COLOUR</b>	<b>RED</b>




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**M.P. Bennett**  
**DATE: 16/10/01**

**SIGNED:**  
For and on behalf of the Motor Sports Association.



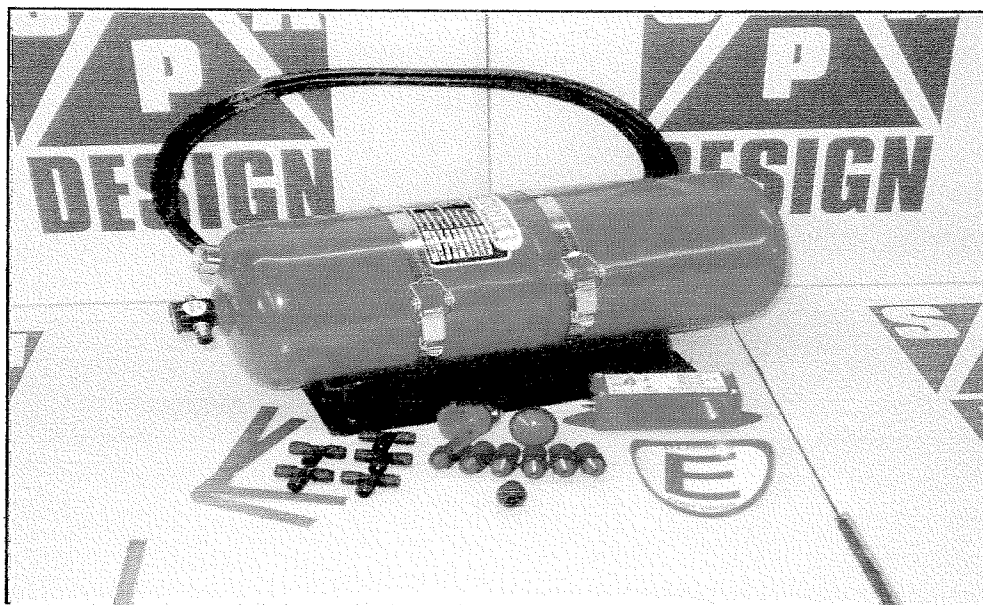
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**NO: EX003.98**

<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFE400ASL</b>
<b>CYLINDER CONSTRUCTION</b>	WELDED ALUMINIUM SPINNINGS X 2 ELECTRICAL FIRING HEAD
<b>WEIGHT - WHEN FILLED</b>	4.95KG
<b>CYLINDER CAPACITY-LITRES</b>	4.0
<b>CYLINDER DIAMETER - MM</b>	132
<b>CYLINDER LENGTH - MM</b>	390
<b>CYLINDER COLOUR</b>	RED



**SIGNED:**  
For and on behalf of SPA Design Ltd

M.P. Bennett  
DATE: 16/10/01

**SIGNED:**  
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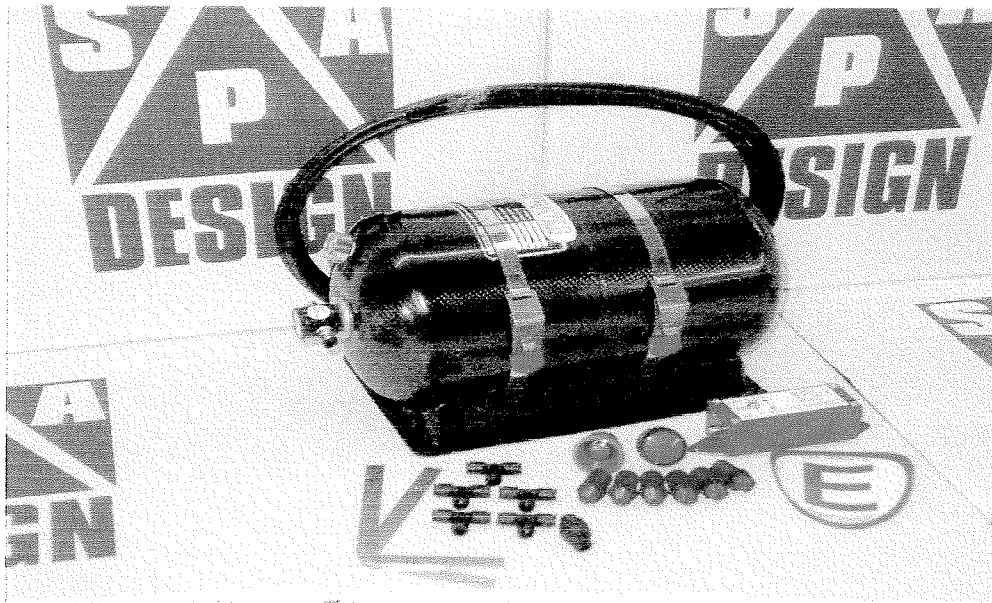
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<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>16-10-2001</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder: MFE400CF</b>
<b>CYLINDER CONSTRUCTION</b>	CARBON FIBRE CASTS X 2 ELECTRICAL FIRING HEAD
<b>WEIGHT - WHEN FILLED</b>	4.50KG
<b>CYLINDER CAPACITY-LITRES</b>	4.0
<b>CYLINDER DIAMETER - MM</b>	156
<b>CYLINDER LENGTH - MM</b>	303
<b>CYLINDER COLOUR</b>	BLACK (CARBON FIBRE)



**SIGNED:**  
For and on behalf of SPA Design Ltd

M.P. Bennett  
DATE: 16/10/01

**SIGNED:**  
For and on behalf of the Motor  
Sports Association

DATE: 15.3.02

**MOTOR SPORTS ASSOCIATION**  
UNITED KINGDOM

**AMENDMENT TO HOMOLOGATION**

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<i>Manufacturer</i> <b>SPA DESIGN LTD</b>	<i>Date</i> <b>13-3-2003</b>
	<b>Extinguisher Part No. Relating to Cylinder: MFM75S</b>
<b>CYLINDER CONSTRUCTION</b>	Steel
<b>WEIGHT - WHEN FILLED</b>	5.70 Kg
<b>CYLINDER CAPACITY-LITRES</b>	3.375 L
<b>CYLINDER DIAMETER - MM</b>	150 mm
<b>CYLINDER LENGTH - MM</b>	329 mm
<b>CYLINDER COLOUR</b>	RED



**SIGNED:**  
For and on behalf of SPA Design Ltd

*[Signature]*

**M.P. Bennett**  
**DATE: 20/03/03**

**MOTOR SPORTS ASSOCIATION  
UNITED KINGDOM**

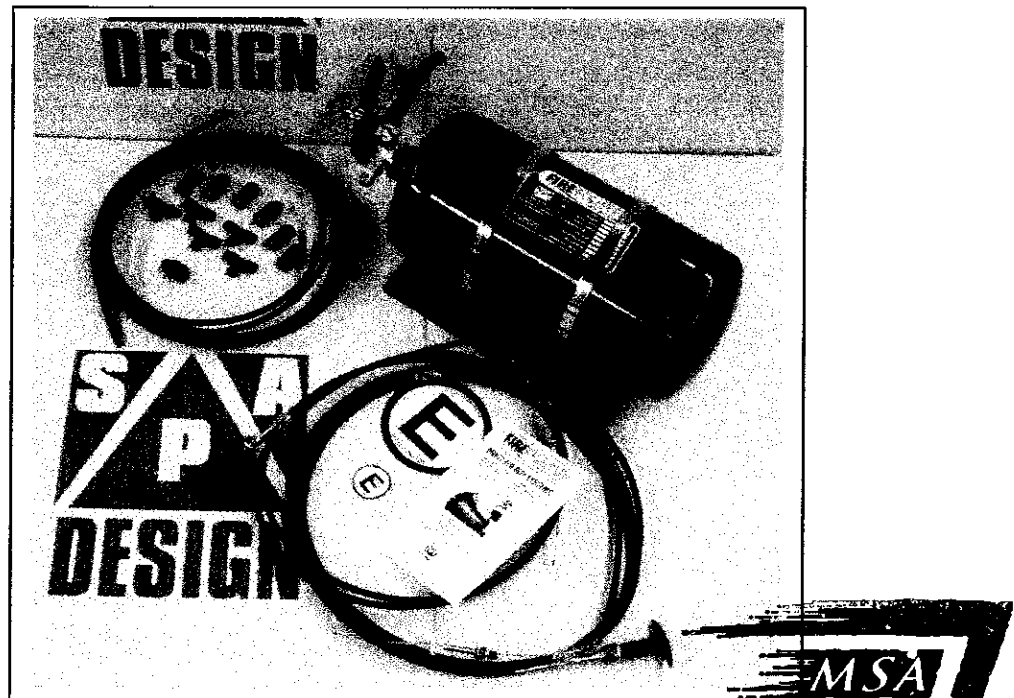
**SIGNED:**  
For and on behalf of the Motor  
Sports Association.

**DATE:** *[Signature]*  
**J. SYMES**  
**21-03-03**

**AMENDMENT TO HOMOLOGATION**

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<b>Manufacturer</b> <b>SPA DESIGN LTD</b>	<b>Date</b> <b>13-3-2003</b>
	<b>Extinguisher Part No.</b> <b>Relating to Cylinder:</b> <b>MFM400S</b>
<b>CYLINDER CONSTRUCTION</b>	Steel
<b>WEIGHT - WHEN FILLED</b>	6.35 Kg
<b>CYLINDER CAPACITY-LITRES</b>	4.0 L
<b>CYLINDER DIAMETER - MM</b>	150 mm
<b>CYLINDER LENGTH - MM</b>	329 mm
<b>CYLINDER COLOUR</b>	RED



**SIGNED:**  
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**M.P. Bennett**  
**DATE: 13/03/03**

**MOTOR SPORTS ASSOCIATION**  
**UNITED KINGDOM**

**SIGNED:**  
**For and on behalf of the Motor**  
**Sports Association.**

**DATE:** *J. SYMES*  
*21-03-03*



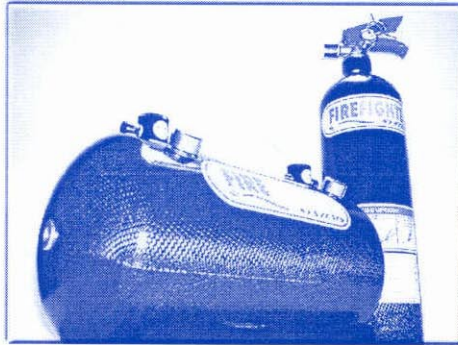
## MULTI-FLO AFF SYSTEMS

**MFE 400 - 4 Ltr Single Chamber Electrical**

**MFM 400 - 4 Ltr Single Chamber Mechanical**

**LWE 75 SR3 - 3.12 Ltr Dual Chamber Electrical**

FIA HOMOLOGATION NUMBER: - EX003.98



### Installation Instructions

**PLEASE READ CAREFULLY BEFORE  
ATTEMPTING TO INSTALL YOUR SYSTEM.**



The Boat House, Lichfield Street, Fazeley, Tamworth, Staffs B78 3QN. UK

Tel: 01827 288328 Fax: 01827 260528

E-mail: [spa\\_uk@compuserve.com](mailto:spa_uk@compuserve.com) Web Site: [www.spa-uk.co.uk](http://www.spa-uk.co.uk)



The Boat House, Lichfield Street, Fazeley,  
Tamworth, Staffs B78 3QN. UK  
Tel: 01827 288328 Fax: 01827 260528  
E-mail: spa\_uk@compuserve.com  
Web Site: www.spa-uk.co.uk

Thank you for purchasing a Firefighter AFFF Multi-flo System (which has been FIA approved).

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

The performance of this system could be effected if it is in anyway modified or tampered with. Please ensure that should any parts need to be replaced, only genuine SPA Firefighter components are used.

Should you require any assistance, please do not hesitate in contacting SPA Design on 01827 288328.

**IMPORTANT NOTE**

The purpose of this along with any other vehicle fire protection system is to provide sufficient time in which to control the fire to enable the occupants to leave the vehicle. In ideal conditions, the fire will be extinguished completely but this can not be guaranteed. The main purpose is to curb the intensity of either an engine or cockpit fire to provide the means for the occupants to leave the vehicle or for outside assistance to be given.

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# CONTENTS

Fitting Instructions – Electrical System

Fitting Instructions – Mechanical System

Nozzles

Tubing

Kit Lists

Technical Specification

System Maintenance

**Table of Figures: -**

Figure 1: Wiring Diagram for Single Chamber

Figure 2: Wiring Diagram for Dual Chamber

Figure 3: Mounting Diagram for 'L' Plate Brackets

Figure 4: System Layout for 4 Ltr Single Chamber  
Electrical/Mechanical

Figure 5: System Layout for 3.12 Ltr Dual  
Chamber Electrical

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## ***ELECTRICAL SYSTEM***

The SPA Firefighter system is an electrically triggered AFFF foam spray system. The system uses actuators to operate valves located on the pressurised containers that contain the extinguishing liquid. These are triggered remotely using a battery-powered power pack.

In order to guarantee reliable operation, the actuators used are of military specification and system/battery test electronics are integrated into the remote power pack. The connectors on the firing heads are also of military grade and use two contacts per lead in order to guarantee the best quality connections.

The actuators are designed to either operate individually, or to be connected in series if two firing heads are used.

The power pack electronics can test the continuity of the electrical wiring, and also provides a high current pulse test on the battery to ensure system integrity before use. Unlike other systems, the battery test electronics do not destroy or excessively drain the battery during this test.

These tests are performed using a three-way switch on the power pack 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 it's connections. (*See Figure 1 / 2.*)

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## ***FITTING INSTRUCTIONS***

Unpack all parts and check components against 'kit list'.

- Remove the extinguisher from its plinth by undoing the over-centre clips. Decide the best position for the extinguisher – **IT IS RECOMMENDED THAT THE BOTTLE SHOULD BE MOUNTED IN THE FORE AND AFT DIRECTION IN THE VEHICLE.** The extinguisher label, detailing contents, etc and also the pressure gauge should be visible. Mount the plinth securely to the vehicle and put the bottle back into place. (*Refer to Figure 3.*)
- 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 the driver and/or co-driver when sitting in the normal driving position and wearing fully fastened seatbelts.
- The other switch with flexible red membrane (waterproof) is to be fitted to the outside of the vehicle (for activation by the Marshals).



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## **SYSTEM WIRING DETAILS**

Once the system has been wired as per wiring diagrams (*refer to Figure 1 / 2*), the following tests should be carried out to check the system is fitted correctly and will operate when required.

To check the condition of the battery, press and hold up the switch on the power pack box. Every 2 seconds you will see a yellow light flash. If the light only flashes very dimly the battery should be replaced. **IF IN DOUBT, CHANGE THE BATTERY.**

To check the continuity of the wiring, ensure that the switch on the power pack box is switched to SYSTEM INACTIVE to safeguard that the extinguisher is not fired. Press the internal firing button and check that the RED light comes on. Press the external firing button and check that this also makes the RED light come on.

**DO** ensure that the wiring cables do not run next to power cables, or in the same loom as power cables especially if they are ignition, or battery power cables. Ideally run all cables next to the chassis (earth).

**DO** ensure that any exposed plugs that are likely to get water spray are protected with rubber boots.

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

**DO NOT** fix the cables next to or onto any surfaces likely to exceed 200 degrees centigrade.

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## **MECHANICAL SYSTEM**

This SPA Firefighter system is a mechanically operated AFFF foam system. The system uses two T-handle pull cables, one 6ft long and one 12 ft long.

### **FITTING INSTRUCTIONS**

Unpack all parts and check components against 'kit list'.

- Remove the extinguisher from its plinth by undoing the over-centre clips. Decide the best position for the extinguisher – **IT IS RECOMMENDED THAT THE BOTTLE SHOULD BE MOUNTED IN THE FORE AND AFT DIRECTION IN THE VEHICLE.** The extinguisher label, detailing contents, etc and also the pressure gauge should be visible. Mount the plinth securely to the vehicle and put the bottle back into place. (*refer to Figure 3*).
- Insert the end of the decarbon tube into the push-in fitting on the lever-valve and lay the length of the tube from the cylinder to the chosen location; plug the nozzle onto the free end of tube and orientate this to point the nozzles onto anticipated fire sources.
- Mount the 6-ft cable in the cockpit within reach of the driver and / or co-driver when sitting in the normal driving position wearing seat-belts. The other end of the cable is to be threaded

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through one of the adjusting screws on the handle of the lever-valve (on the cylinder). Then threaded through one of the holes in the other handle and the clamp screw made secure on cable against the underside in such a way that movement of the red pull handle will close the handles of the lever-valve, BUT allowing 6mm of free-play. CAUTION: do not allow this testing to actually move the handles or the valve may open and release the extinguishant (keep the safety pin in place).

- Mount the 12-ft cable on the outside of the vehicle (on the front scuttle of a saloon car or by the roll hoop on a single seater). Lay the cable inside the vehicle and connect to the lever-valve as above.
- Pull cables should be fitted in such a way that no kinks or 'S' bends are formed, which could cause malfunction.
- Removing the safety pin from the lever-valve leaves the system ready for use.

## **NOZZLES**

The nozzles provided in the kit supplied should be used to produce the correct foam spray. It will cover the area protected with a white foam substance, which has a cooling effect and controls re-ignition. You should bear in mind when locating the nozzles, that there is a 90° full cone spray pattern with a 1-metre reach. The nozzles are designed for mounting through a bulkhead if desired.

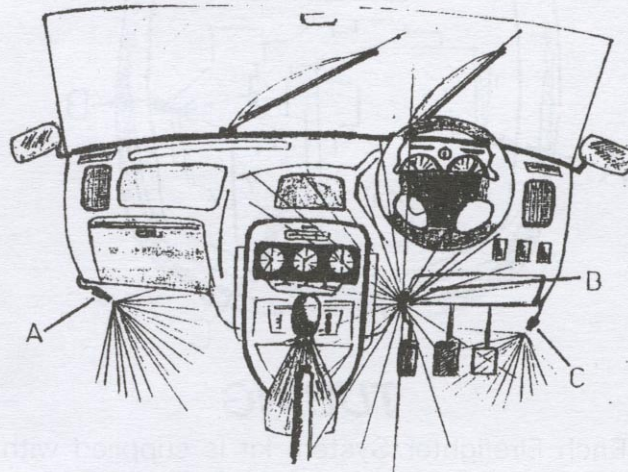
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Please refer to Figure 4/5 system layout and below for nozzle location.

### COCKPIT NOZZLE LOCATION FOR SALOON CARS

Three nozzles should be mounted in the cockpit area. We recommend that two of the nozzles are mounted under the dashboard, spraying down into the foot well of both the driver and co-driver compartment. The other nozzle is to be mounted aimed at the driver's mid-riff.



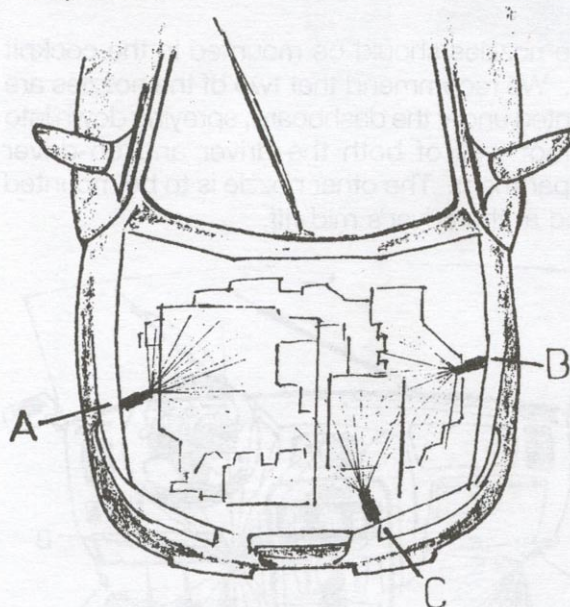
### COCKPIT NOZZLE LOCATION FOR SINGLE SEATER CARS

One nozzle to be mounted aimed at the driver's mid-riff. Ensure that the extinguishant will not be spraying into the driver's face.

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## ENGINE NOZZLE LOCATION FOR ALL CARS

Three nozzles should be mounted in the engine compartment.



## **TUBING**

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

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## **TUBE CONNECTIONS**

All fittings for tube to nozzles and extinguisher 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.

## **KIT LISTS**

### **4 LTR MULTI-FLO SINGLE CHAMBER ELECTRICAL (PART No: MFE 400 A)**

Electrical Extinguisher comes fitted with firing head.

- 1 x Base
- 2 x Straps
- 4 x 'L' Plates – Mounting Brackets
- 1 x SP007 – Power Pack (Hirschmann as standard)
- 2 x SP005 – Plug & Lead
- 1 x SP011 – Internal Fire Button
- 1 x SP012 – External Fire Button
- 5 x SP016 - Decabon Tubing (Mtr)
- 6 x SP030 – 6mm Nozzle
- 5 x SP015 – 6mm Tee
- 1 x SP020 – Bulkhead Fitting
- 1 x SP017 – 'E' location sticker

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**4 LTR MULTI-FLO SINGLE CHAMBER  
MECHANICAL (PART No: MFM 400 A)**

Mechanical Extinguisher comes fitted with Lever Valve

- 1 x Base
- 2 x Straps
- 4 x 'L' Plates – Mounting Brackets
- 1 x SP018 - 6ft Pull Cable
- 1 x SP019 – 12ft Pull Cable
- 6 x SP030 – 6mm Nozzle
- 5 x SP015 – 6mm Tee Piece
- 1 x SP020 – Bulkhead Fitting
- 5 x SP016 – 6mm Decarbon Tubing (Mtr)
- 1 x SP017 – 'E' Location Sticker

**3.12 LTR MULTI-FLO DUAL CHAMBER  
ELECTRICAL (PART No: LWE 75 SR3)**

Electrical Extinguisher comes fitted with firing heads.

- 1 x Base
- 2 x Straps
- 4 x 'L' Plates – mounting brackets
- 1 x SP007 – Power Pack
- 3 x SP005 – Plug and Lead
- 4 x SP030 – 6mm Nozzle
- 2 x SP015 – 6mm Tee Piece
- 1 x SP020 – Bulkhead Fitting
- 1 x SP011 – Internal Fire Button
- 1 x SP012 – External Fire Button
- 5 x SP016 – 6mm Decarbon (Mtr)
- 1 x SP017 – 'E' location Sticker

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**SAFETY DATA SHEET FOR AFFF**  
**(Aqueous Film Forming Foam)**

APPLICATION	Autosport industry – including saloon, single seaters and other racing cars.
CONTENTS	Light Water, Meg and Water
COMPOSITION	Water, Diethylene Glycol, Fluordalkyl, Synthetic Detergents and Fluorochemicals.
APPEARANCE	Clear liquid with an amber colour
pH	Approx. 8.50
BOILING POINT	100°C (initial)
VAPOUR PRESSURE	Approx. 17.6 mm Hg Calc @ 20°C
WATER SOLUBILITY	Miscible
FREEZING POINT	- 10°C
PHYSIOLOGICAL PROPERTIES	Non-harmful.



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## **MAINTENANCE**

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

- Regularly check pressure gauge to ensure they are in the green sector.
- Regularly check nozzles for debris or any obstructions.
- Regularly check the integrity of the pipework and fittings.
- Regularly check the cylinder for damage.
- Your SPA Firefighter system should be serviced every 2 years. A service date is written on the content label on the extinguisher. It is up to you to ensure that the servicing is carried out at the correct intervals. Servicing of the system must be carried out by SPA Design.
- If your system has been discharged, you must return it to SPA for refilling.

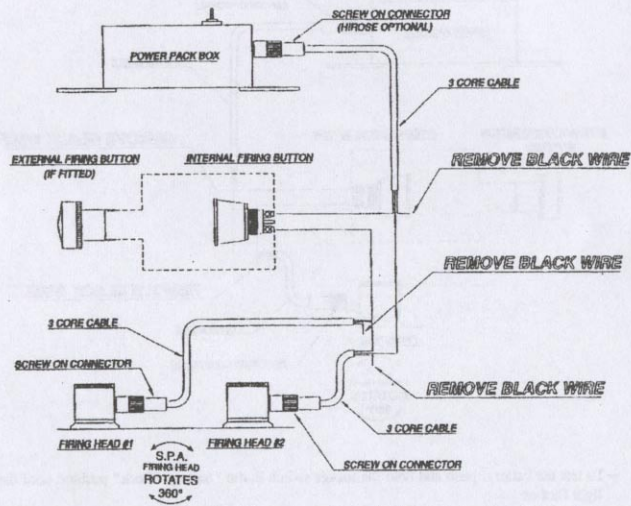
## **NOTES**

Please ensure that you monitor the following, as you **WILL NOT** get to scrutineering if: -

- The needle of the gauge is in the red.
- The extinguisher label is worn, damaged or unreadable.
- The extinguisher is not within the service date.
- The system is in poor condition.

Fig 2

S.P.A. FIRE-FIGHTER SYSTEM SCHEMATIC WIRING SYSTEM



-To test the battery, push and hold the rocker switch in the "Battery Check" position until the light flashes.

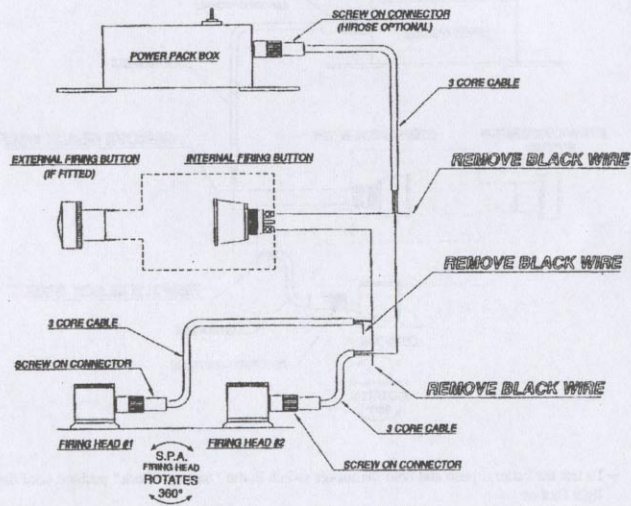
-If the extinguisher tubing is to be removed, push the black collet in and pull the tubing out at the same time.

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

**Do Not:**  
Run the cables next to power cables, or in the same loom.

Fig 2

S.P.A. FIRE-FIGHTER SYSTEM SCHEMATIC WIRING SYSTEM



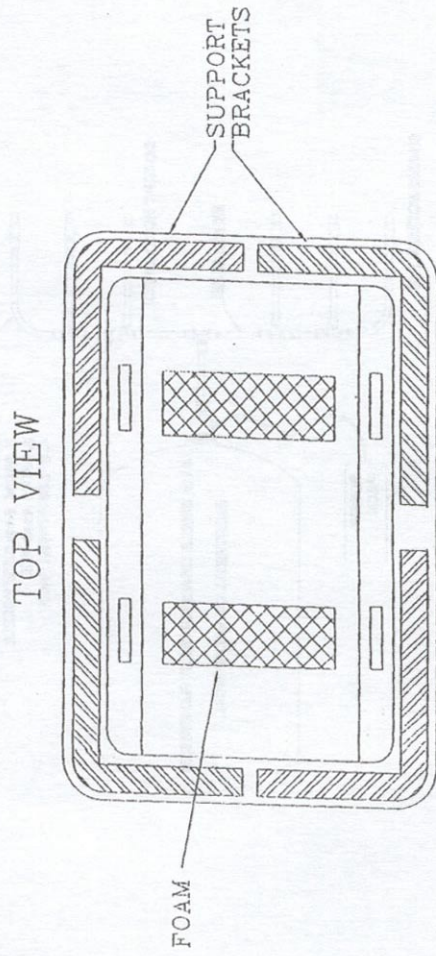
-To test the battery, push and hold the rocker switch in the "Battery Check" position until the light flashes.

-If the extinguisher tubing is to be removed, push the black collet in and pull the tubing out at the same time.

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

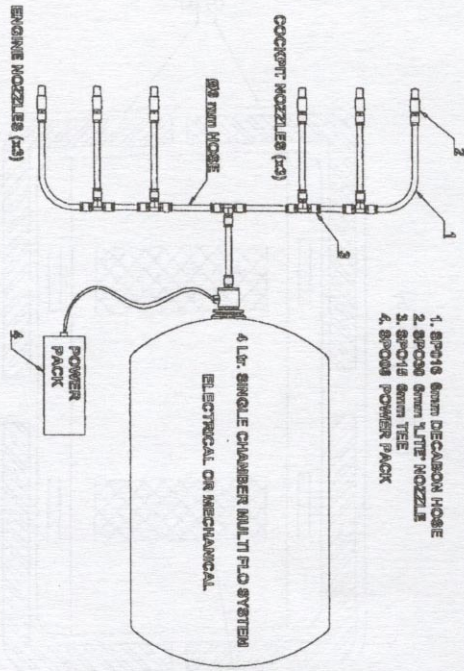
**Do Not:**  
Run the cables next to power cables, or in the same loom.

**Fig 3**



"L" SHAPED STRENGTHENING  
SUPPORT BRACKETS

Fig 4



- 1. 8FO18 8mm DECADESON HOSE
- 2. 8PO28 8mm 1/2\"/>

is drawn to dimensions in imperial and the project is to be made by manufacturing to drawing dimensions unless noted. This drawing is the property of the manufacturer and is not to be reproduced or copied in any form without the written permission of the manufacturer.

DATE 22/10/88  
 DRAWN BY J.P.O.  
 APPROVED BY

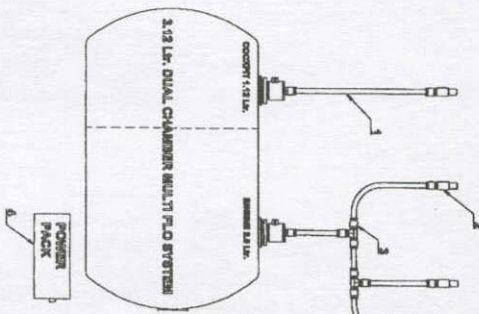
CONSTRUCTION IN MATERIALS  
 SCALE 1:1  
 DRAWING NO. J.P.O.

Date	Changes	Signs
M/F 400 A / M/F 450 A		
M/F 450 C / M/F 450 C		

Part no  
**S.P.A. DESIGN**

# Fig 5

- 1. SPO-18 6mm DISCHARGE HOSE
- 2. SPO-28 6mm LITER NOZZLE
- 3. SPO-18 6mm TIE
- 4. SPO-28 POWER PACK



DATE 23/10/88  
DRAFTING BY J.P.D.  
APPROVED BY

3mm HOSE PRODUCTION  
DIMENSIONS IN MILLIMETRS  
SCALE 1 : 1  
DRAWN BY J.P.D.  
APPROVED BY

DATE  
Checked  
DATE

TITLE: LWC 73 SPO A  
LWC 73 SPO CF

PAUL MORGAN  
MORGAN ENGINEERING LTD  
100, WINDYBUSH ROAD, WINDYBUSH, DURHAM, ENGLAND

SYMBOL