



## Fire Extinguisher System Manual for FIA Standard 8865

### 2 Engine Nozzles, 1 cockpit nozzle.

#### FX G-TEC 2400R3SV Advanced Discharge System

Please read all parts of this manual carefully before you proceed to install your new purchase. The system has been carefully developed to meet the new standard 8865 2015 which is part of the FIA's new program in making Motorsport a much safer sport for all who take part.

The new standard has been designed to meet much tougher criteria, testing with much larger and hotter fires with greater quantities of fuels together with plastics and masking elements to extinguish. In this new standard, electrical components are now IP rated and other parts have been vigorously tested to meet certain BSI standards.

To comply with new FIA regulations with effect from January 2018, this system has been fitted with a pressure release valve which is covered with a red circular label. The pressure release valve is designed that if in very high temperatures (above 80°C – which is the maximum homologated temperature for the system to operate at – it has a safety margin above 80°C) and the internal pressure becomes too great, the pressure will be released through the valve and therefore empty the extinguisher. This will be indicated by the red circular label being damaged. If this occurs, the extinguisher cannot be used and must be returned to the manufacturer for refill. It will not be accepted by Scrutineers.

#### **FIA**

It must be emphasized that any plumbed in fire extinguisher system is mainly designed to delay the development of the fire and consequently give the driver and co-driver time to exit the car; the system is not designed to put out the fire and prevent the car from burning.

Please do not tamper with, make changes or use non FEV parts on your new fire extinguisher system as this will invalidate the Homologation and affect the performance of the product. If any new parts are needed please call FEV on 0044 (0) 1243 55 55 66

You will have to purchase a 9 volt PP3 battery for the control box.

If any changes have been made to this product from the specification, it could in effect stop you racing.

Fire Extinguisher Valve Co Ltd

Unit B3 Ford Airfield Industrial Estate, Ford, Nr Arundel, West Sussex, BN18 0HY

Tel: +44 (0) 1243 55 55 66 Fax: +44 (0) 1243 555 660

VAT Reg No: 737 3307 34 Company Reg No: 4643893



## Contents

2 x Plumbing schematic drawings	
1 x Installation Instructions	
1 x Cylinder	FE-CYL-2400R - cylinder 114mm x287mm
1 x Cradle & 2 xstraps	
1 x Hard-line hose	FE-H-HOS
1 x 33-gram remote charge	FE-REM-33-CHAR
1 x Remote clamp	FE-REM-C-3300
2 x Remote clamp bolts	FE-REM-C-B-3300
4.0 mtr of 10mm Aluminium tubing	FE-ALI-10
1.2 mtr of 6mm Aluminium tubing	FE-ALI-6
10 x pipe clips	FE-P-CLIPS
1 x Cockpit nozzle	FE-16-JET BAR-NOZ G
2 x Engine tri nozzles	FE-TRI-NOZ-BU
1 x Y connector 8mm metal	FE-Y-CON-8-M cylinder installed in the rear
1 x T connector 8mm metal	FE-T-CON-8-8-M cylinder installed in the front
1 x T connector 8mm metal	FE-T-CON-8-8-M standard engine connector
1 X 10mm – 6mm reducer	
1 x Straight connector 8mm	FE-ST-CON-8 optional
1 x 90° 8mm stem	FE-90-8-ST optional
1 x Internal firing button	FE-INT-FB
1 x Internal Fire button metal shroud	FE-INT-FB-S-M
1 x External fire button	FE-EXT-FB
1 x Control box 8865	FE-CB-8865 - battery not included.
1 x Control box loom	FE-CB-L-8865



## **Installation of cylinder and other components.**

### **Cylinder**

Find a suitable place either behind the drivers or co-driver's seat or in the co driver's footwell to fix the fire extinguisher cylinder, the cylinder assembly can be fixed either in a transverse or longitude position. There is no need to take the cylinder out of the cradle bracket and straps as the cylinder comes already installed into the cradle bracket. The newly designed cradle bracket has access to the four fixing holes and only needs marking through onto the car floor where you want to fix the assembly. Once the markings have been made put the assembly to one side then carefully drill holes for 4 off fixing bolts – we recommend M6 bolts with shake-proof washers and Nyloc nuts, bolt the cylinder assembly to the floor.

**Please note the system must be installed in accordance with the championship technical regulation.**

### **Plumbing connectors**

Please note that if the cylinder is going to be installed in the front foot well or in the back of the car behind the driver or co driver's seat, 1 of the different connectors must be used for front or back installation. See contents list.

### **Cylinder Installed in Front**

See assembly drawing in the user manual.

### **Cylinder Installed in Rear**

See assembly drawing in the user manual.

### **Optional connector**

One inline straight connector and a 90 degree stem elbow can be used to aid installation if needed

### **Cockpit nozzle**

The one cockpit 16 jet bar nozzle is designed to be fitted between the drivers and co driver's seat with the 10 jets facing forward and the 6 jets pointing upwards and just behind the two seats towards the roof. The nozzle should be fixed either on a preformed bracket, or by fixing a pipe clip supplied around the metal tubing close to the push in connector attached to the nozzle and fixed through the metal tab on the other end of the nozzle.



## **Engine nozzles**

The two engine nozzles must be fitted through the cockpit/engine bulkhead approximately 30 centimeters' each side of Centre and as near to the top as possible (unless obstructed) in a horizontal position again unless obstructed.

## **Aluminium tubing**

The pipework for the system is aluminum. Route the pipework neatly around the car to the different locations. When making bends in the piping try and make a minimum radius of 50mm, and when cutting the pipes make sure the ends are square or use a pipe cutter if possible and de-burr the ends, push all ends of the pipes into the various fittings, they should push in 18mm.

See separate plumbing instructions for the complete plumbing schematics.

## **Control box**

Mount the control box in a suitable position where it can be reached by the driver and co-driver, making sure that the LED lights are visible to the driver and co-driver. Please ensure that the wiring loom for the control box is fixed suitably so that it cannot be damaged or become a hazard.

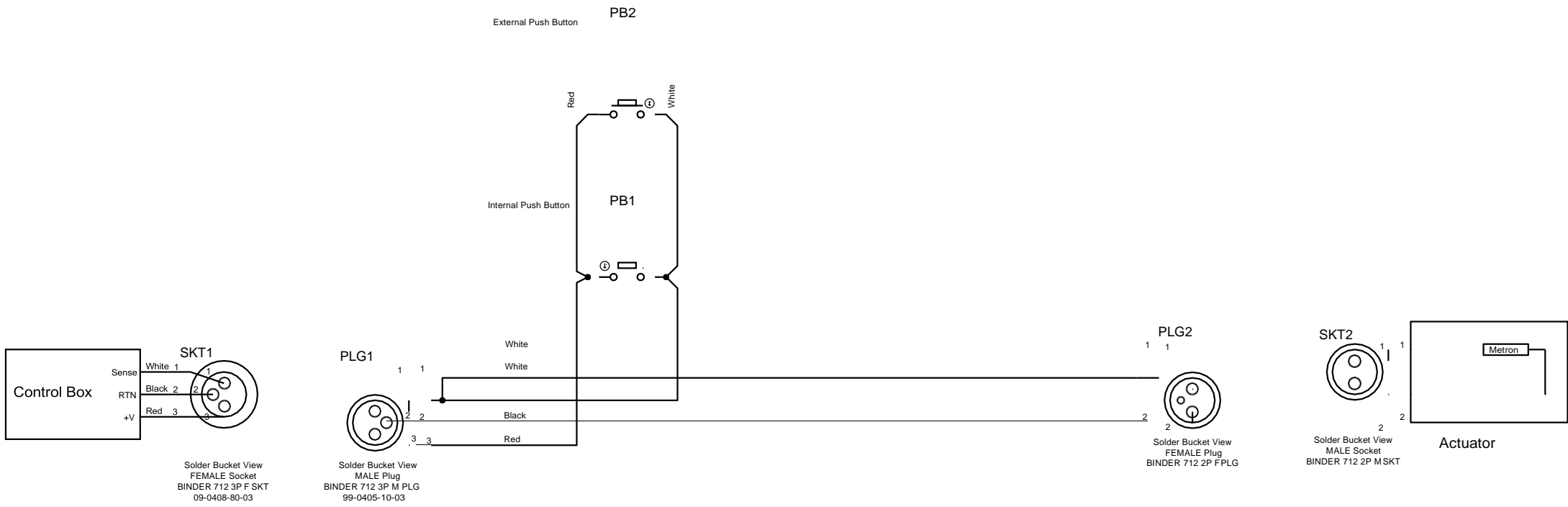
## **Wiring loom**

The wiring loom has two screw connectors; the connector on the longest length of cable is a two pin connector and connects to the plug on the remote charge which is attached to the fire extinguisher **connect this lead last and make sure the control box is in the test position.**

The shorter length of cable with the three-pin plug attached connects to the control box. The branch in the loom goes to the internal fire button, make a suitable connection. Using the separate (supplied) cable already attached to the external fire button fit the button externally then route the cable inside the car to attach to the connections of the internal fire button.

## **Activation buttons**

There are two activation buttons, one internal and one external. Mount the internal button in a position within easy reach for the driver and co-driver where applicable (19mm diameter hole), mount the external button (22mm) next to the electrical cut off switch. Apply the E decal label next to the external firing switch.



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## **F.E.V. CONTROL BOX – FIA 8865**

### **INSTRUCTIONS**

The control box is supplied with a separate wiring loom with a connector on each end; the longest length of wire has a male 2-pin IP67 rated plug for connection to the female 2 pin IP67 socket in the Remote Charge Cartridge, when connected they are screwed together to make a seal. The other end of the loom is fitted with a male 3 pin IP67 rated waterproof plug, this plug connects to the female 3 pin IP67 socket in the bottom of the control box and when connected they are screwed together to make a seal. The branch in the loom goes to the internal fire button, make a suitable connection. Using the separate (supplied) cable already attached to the external fire button fit the button externally then route the cable inside the car to attach to the connections of the internal fire button.

#### **Setting up The System**

The control box has a 2 position on-on toggle switch to select the function.

The up position is ARM with a red LED and down position TEST with an orange LED.

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The control box has a 2 position on-on toggle switch to select the function.

The up position is ARM with a red LED and down position TEST with an orange LED.

Always lift the switch before moving from TEST to ARM, or ARM to TEST.

#### **Test position LED orange**

After all wiring connections have been made, test the system – lift and move the switch into the ARM position (do not press any of the firing buttons). Then lift and move the switch in to TEST position, press either of the external or internal firing buttons. If the test is successful, the orange LED will be on for 10 seconds. If the test is unsuccessful the orange LED will flash for 10 seconds or more, indicating a fault in one of the following items – low battery, electrical discontinuity, button to trigger the system, plug on the remote charge or firing actuator in the remote charge.

#### **Armed Position red LED**

Lift the switch and move the switch from the TEST position to the ARM position- whenever the switch is moved from the test to the armed position, the control box will run an automatic test to ascertain that there is no anomaly, only after those checks will the LED start to flash continually indicating the control box is operational. **Only press the fire button if needed, this will activate the system.**

#### **Recommend after use.**

Whenever the control box is not in use, always make sure the switch is in TEST mode – all the lights are off. In TEST mode, after 30 minutes the control box will go to sleep – giving an approximate 1 year battery life.

#### **Preparation for race**

Check all wiring connections and run through the test position procedure before each race to test for any anomaly.

#### **Battery fitment**

This control box is IP67 rated. This is why the box has to be removed from fitment and the four screws removed from the back of the box to replace the battery - battery type 9 volt PP3 alkaline

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2020

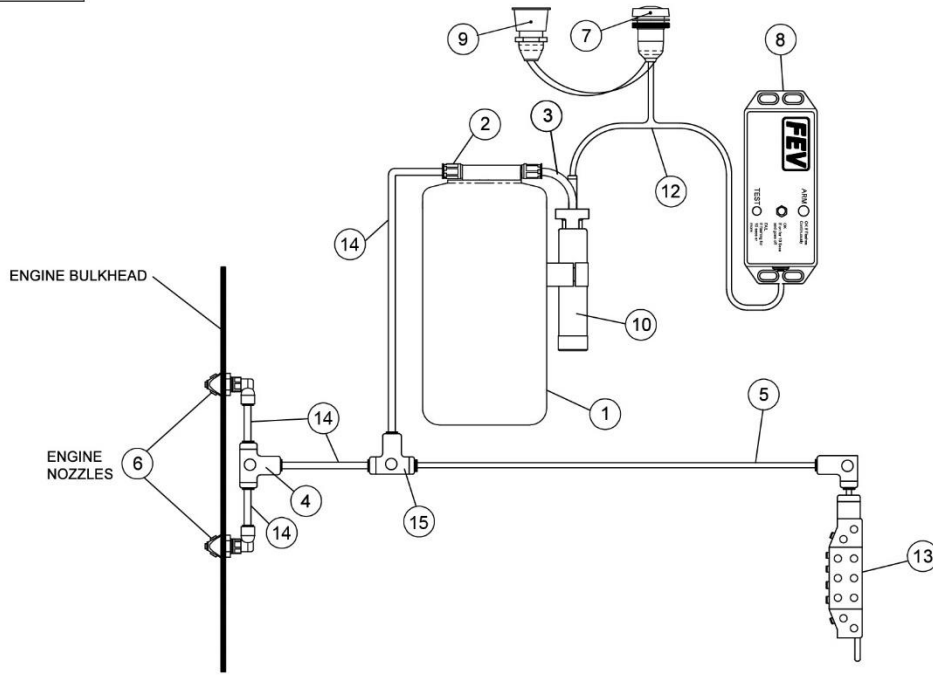
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CAD DRAWING: MANUAL CHANGES NOT ALLOWED

THIRD ANGLE PROJECTION

DO NOT SCALE

IF IN DOUBT ASK



ITEM NO	PART NUMBER
1	CYL 2400R
2	10 x 1/8 (M)
3	FEB = HOSE
4	10mm T (M)
5	FE-6mm ALI PIPE
6	FE TRI ENGINE NOZ
7	FE-EXT FB
8	FE FIA BOX
9	FE INT FB
10	FES REM 33 CHAR
12	FE-FIA HARNESS
13	FE SPRAY BAR 16 JET
14	FE-10mm ALI PIPE
15	10-6 T CONNECTOR (M)



ISSUE	CHANGED	DATE

CYLINDER  
INSTALLED  
IN FRONT

FIRE EXTINGUISHER VALVE Co  
UNIT 10  
FORD LANE BUSINESS PARK  
FORD, Nr ARUNDEL  
WEST SUSSEX  
TEL: 01243 555566 FAX: 01243  
555660  
www.f-e-v.co.uk

TITLE  
**ASSEMBLY  
SYSTEM REMOTE**

DRAWING  
NO. FX G-TEC2400R3SV

SHEET 1 OF 1

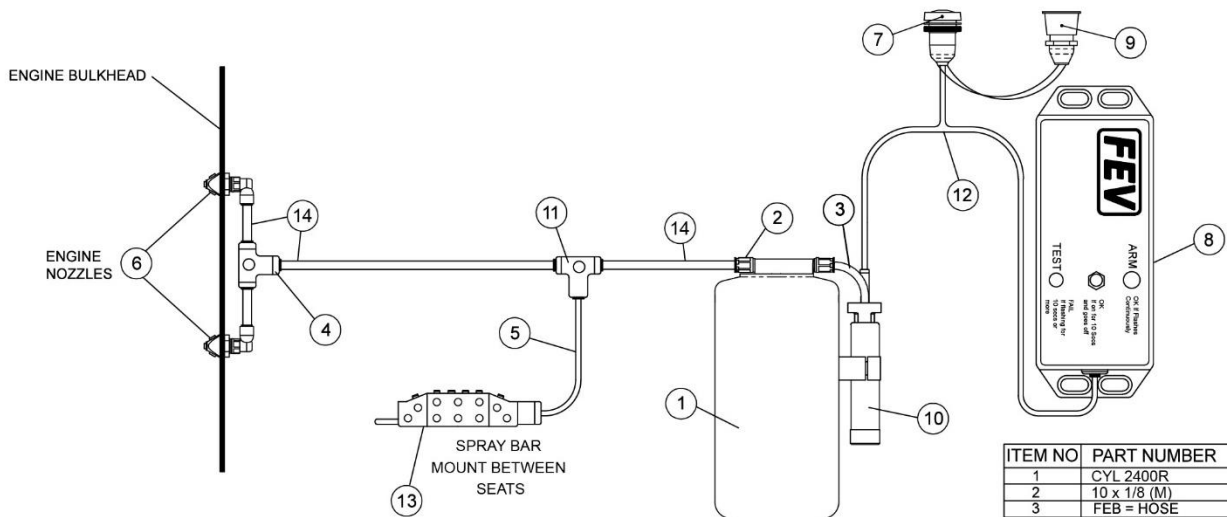
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CAD DRAWING: MANUAL CHANGES NOT ALLOWED

THIRD ANGLE PROJECTION

DO NOT SCALE

IF IN DOUBT ASK



ITEM NO	PART NUMBER
1	CYL 2400R
2	10 x 1/8 (M)
3	FEB = HOSE
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6	FE TRI ENGINE NOZ
7	FE-EXT FB
8	FE FIA BOX
9	FE INT FB
10	FES REM 33 CHAR
11	10-6 T CONNECTOR (M)
12	FE-FIA HARNESS
13	FE SPRAY BAR 16 JET
14	FE-10mm ALI PIPE



ISSUE	CHANGED	DATE

CYLINDER  
INSTALLED  
IN REAR

FIRE EXTINGUISHER VALVE Co  
UNIT 10  
FORD LANE BUSINESS PARK  
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FX G-TEC2400R3SV - 2020

**101. INSTALLATION DANS L'HABITACLE / COCKPIT INSTALLATION WITH CYLINDER AT FRONT**

- a) Emplacement et orientation du corps  
*Location and orientation of body*
- b) Emplacement et orientation des buses  
*Location and orientation of nozzles*
- c) Précaution à prendre lors de l'installation du système  
*Special care to take with the installation of the system*

**Mount horizontally in front of the passengers Seat, transversely or longitudinally.**

**Located between passenger and drivers seats**

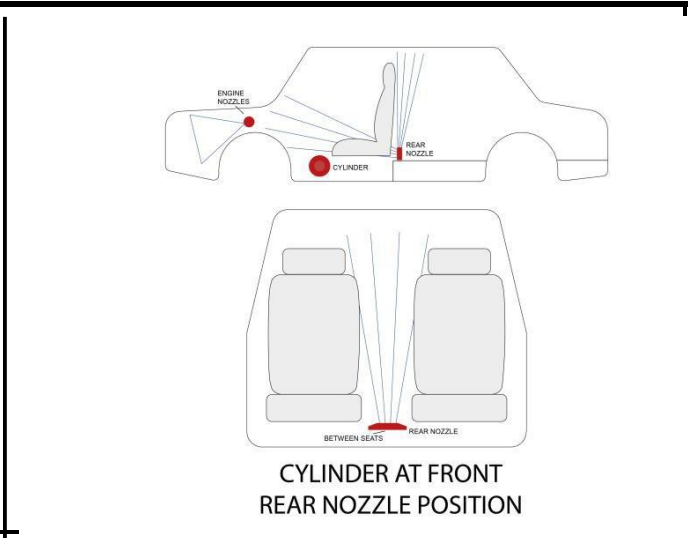
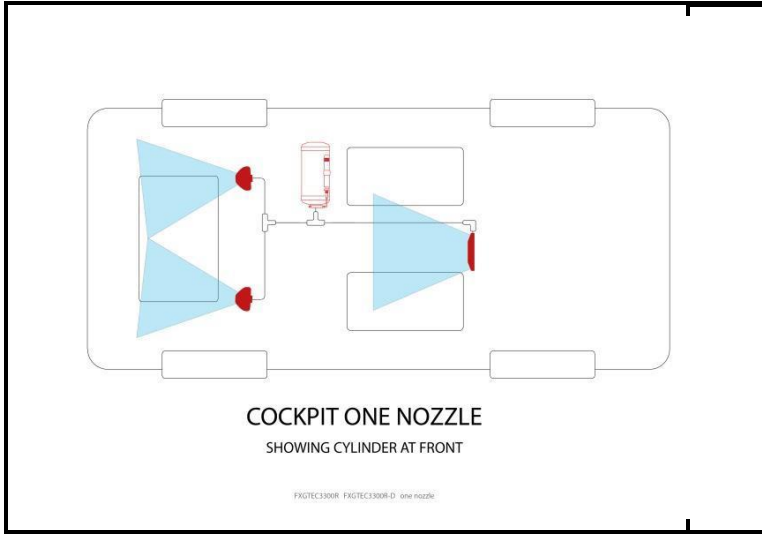
**Make sure the nozzle is installed onto the floor with 10 jets facing forward and 6 jets pointing towards the roof just behind back of seats**

E1-1) Installation dans l'habitacle (emplacement et orientation du corps)

E1-2) Installation dans l'habitacle (emplacement et orientation des buses)

*Cockpit installation (location and orientation of body)*

*Cockpit installation (location and orientation of nozzles)*



**102. INSTALLATION DANS LE MOTEUR / ENGINE INSTALLATION**

- a) Emplacement et orientation du corps  
*Location and orientation of body*
- b) Emplacement et orientation des buses  
*Location and orientation of nozzles*
- c) Précaution à prendre lors de l'installation du système  
*Special care to take with the installation of the system*

**N/A**

**Mount through bulkhead or on pre-formed brackets approximately 300mm each side of centre only move if obstructed.**

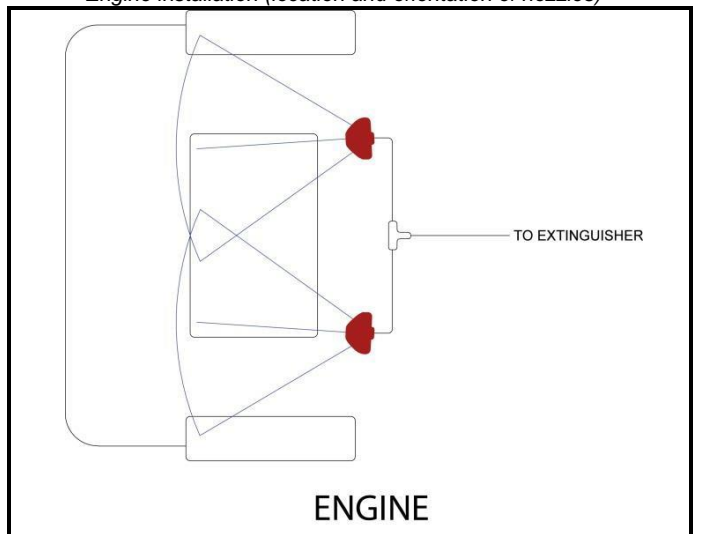
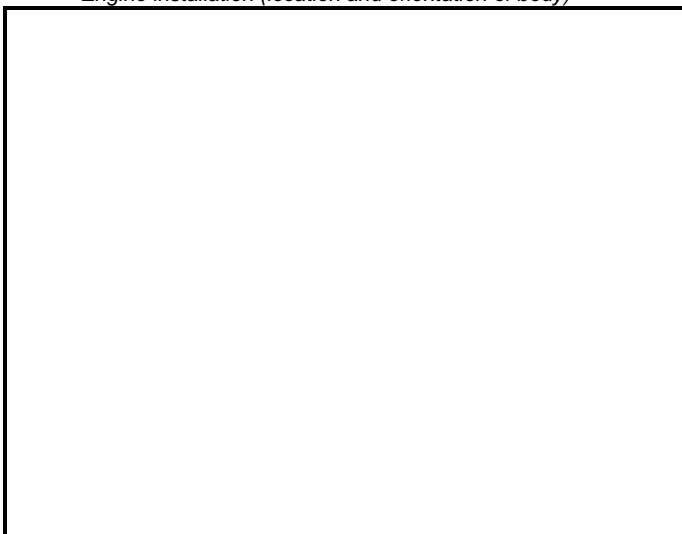
**Check all connections are secure.**

E2-1) Installation dans le moteur (emplacement et orientation du corps)

E2-2) Installation dans le moteur (emplacement et orientation des buses)

*Engine installation (location and orientation of body)*

*Engine installation (location and orientation of nozzles)*





**101. INSTALLATION DANS L'HABITACLE / COCKPIT INSTALLATION WITH CYLINDER AT REAR**

- a) Emplacement et orientation du corps  
*Location and orientation of body*
- b) Emplacement et orientation des buses  
*Location and orientation of nozzles*
- c) Précaution à prendre lors de l'installation du système  
*Special care to take with the installation of the system*

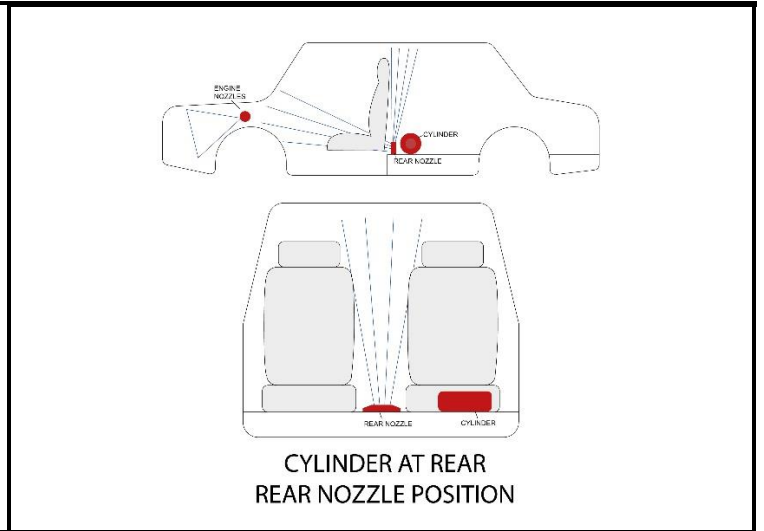
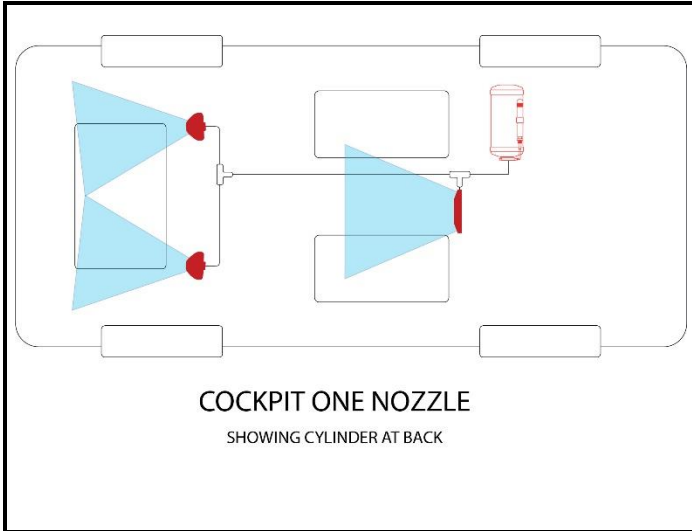
**Mount horizontally in the rear of the vehicle behind either the driver or passenger seat, transversely or longitudinally.**

**Located between passenger and drivers seats**

**Make sure the nozzle is installed onto the floor with 10 jets facing forward and 6 jets pointing towards the roof just behind back of seats**

E1-1) Installation dans l'habitacle (emplacement et orientation du corps)  
*Cockpit installation (location and orientation of body)*

E1-2) Installation dans l'habitacle (emplacement et orientation des buses)  
*Cockpit installation (location and orientation of nozzles)*



**102. INSTALLATION DANS LE MOTEUR / ENGINE INSTALLATION**

- a) Emplacement et orientation du corps  
*Location and orientation of body*
- b) Emplacement et orientation des buses  
*Location and orientation of nozzles*
- c) Précaution à prendre lors de l'installation du système  
*Special care to take with the installation of the system*

**N/A**

**Mount through bulkhead or on pre-formed brackets approximately 300mm each side of centre only move if obstructed.**

**Check all connections are secure.**

E2-1) Installation dans le moteur (emplacement et orientation du corps)

E2-2) Installation dans le moteur (emplacement et orientation des buses)

*Engine installation (location and orientation of body)*

*Engine installation (location and orientation of nozzles)*

