

## Firetrace<sup>®</sup> “Direct” Automatic Fixed Fire Suppression Systems For Vehicle Applications



Please read instructions carefully  
prior to starting installation



### Contents

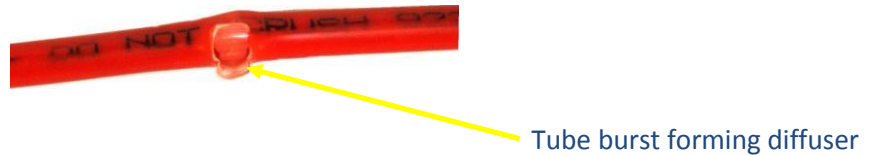
- System Overview
- System Layout
- Cylinder Installation Information
- Cylinder Information for Rear Engine Vehicles
- Cylinder Information for Front Engine Vehicles
- Trace Detection Tube information
- Trace Detection Tube Installation
- Trace Detection Tube bend radius
- Service and Maintenance



### System Overview

The Fixed Firetrace<sup>®</sup> system is a simple self-actuating device that is designed to suppress fires within an identified risk area. **The cylinder is not intended for portable use.**

The system works by using Firetrace<sup>®</sup> pressurised linear detection tubing that is installed throughout the risk area. This tubing is heat sensitive and when subjected to a temperature above 120 Degrees centigrade, or when touched by flame, the Firetrace<sup>®</sup> tubing will rupture and form a diffuser.



The Dry Powder extinguishant is then deployed via this diffuser directly into the heart of the fire.

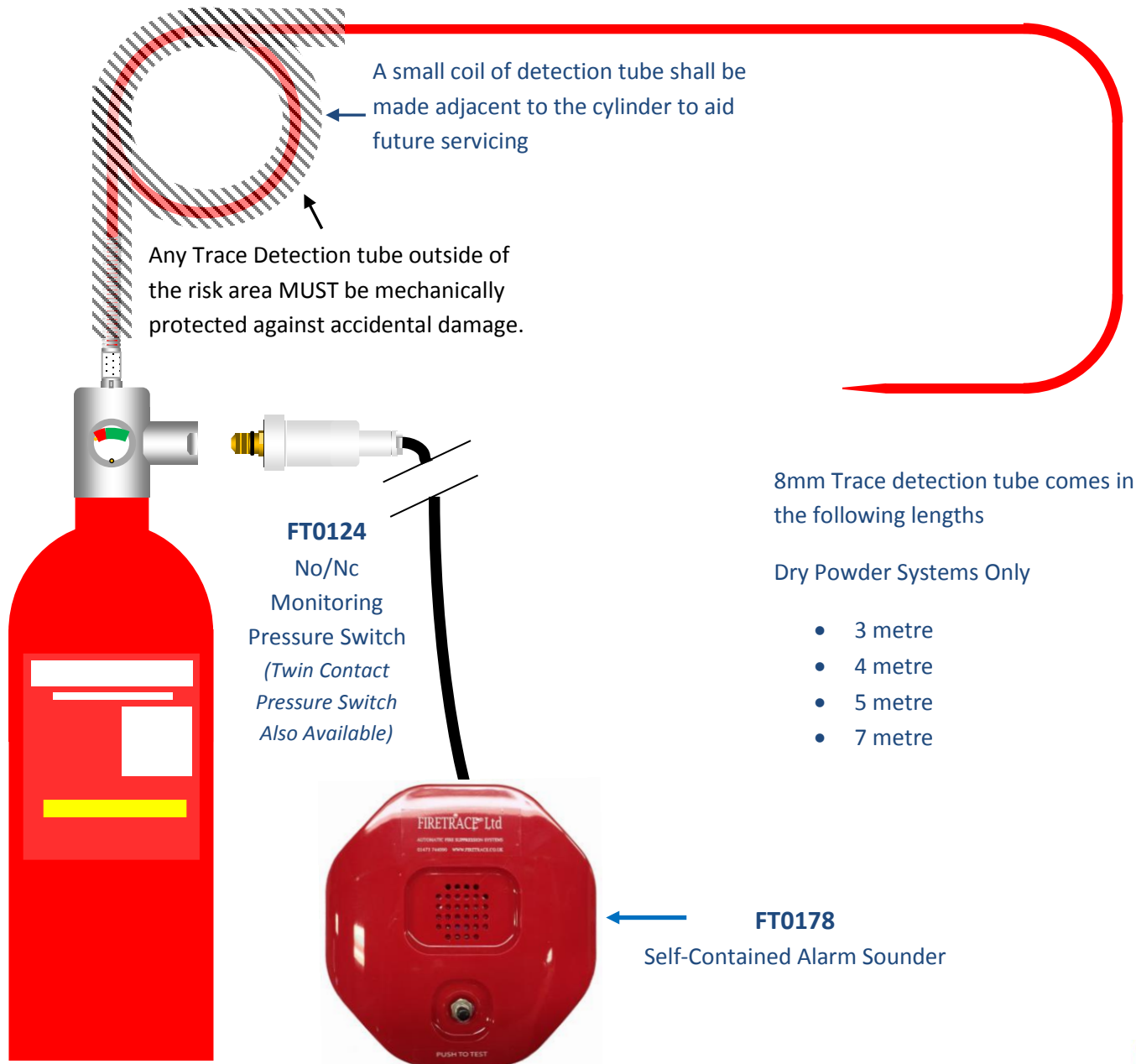
The Firetrace<sup>®</sup> system requires no external power source or separate detectors and owing to its simple design ensures that all of the extinguishant is always deployed in the Fire area. The Firetrace<sup>®</sup> system requires no commissioning as the Firetrace<sup>®</sup> detection tubing comes pre-pressurised and the system ready to fit.

It is important that both the cylinder & Firetrace<sup>®</sup> tubing are correctly installed and that the system is subjected to a regular maintenance regime in line with BS5306-3.



### System Layout

The Trace detection tube comes attached to the cylinder and is under pressure.  
Do not attempt to remove the trace detection tube from the cylinder



### Firetrace Installation Instructions.

#### Cylinder

When installing the Firetrace<sup>®</sup> system it is important that a suitable cylinder location is selected and that the cylinder is orientated correctly.

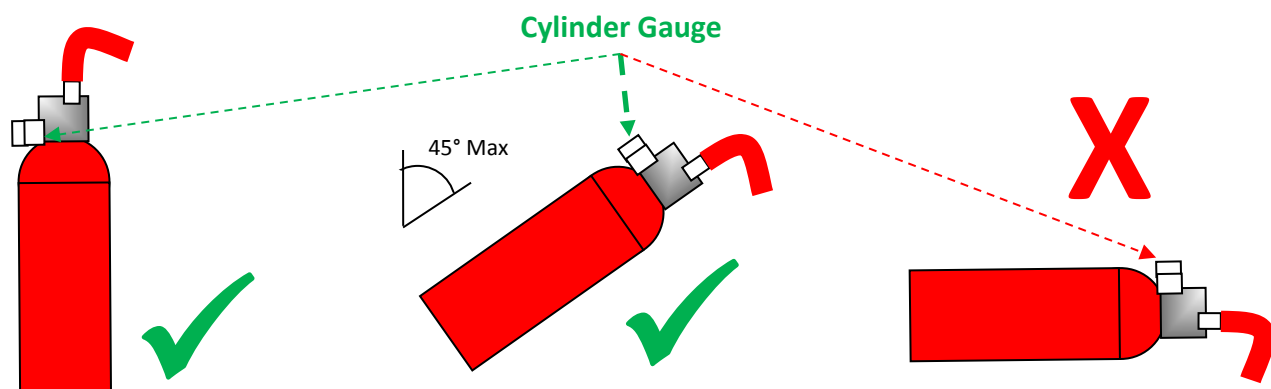
The cylinder location shall be in a clean area away from the direct heat of the engine.

The cylinder must not be placed in a location where the ambient temperature is above 80 Degrees centigrade.

The cylinder shall be readily accessible to allow future servicing / inspections and as close as practicable to the risk area.

The cylinder shall be adequately fixed to a suitable load bearing surface.

Wherever possible the cylinder shall be **mounted vertically** and in no circumstances must the cylinder be positioned at an angle of more than 45 Degrees from vertical.



It is recommended wherever possible that Firetrace<sup>®</sup> cylinders be mounted vertically. Where vertical locating is not possible the systems can be mounted within 45° of vertical.

As indicated in the above drawing when cylinders are fitted at an angle the gauge must face uppermost.

**MOST FIRETRACE<sup>®</sup> SYSTEMS ARE NOT SUITABLE FOR HORIZONTAL MOUNTING.**



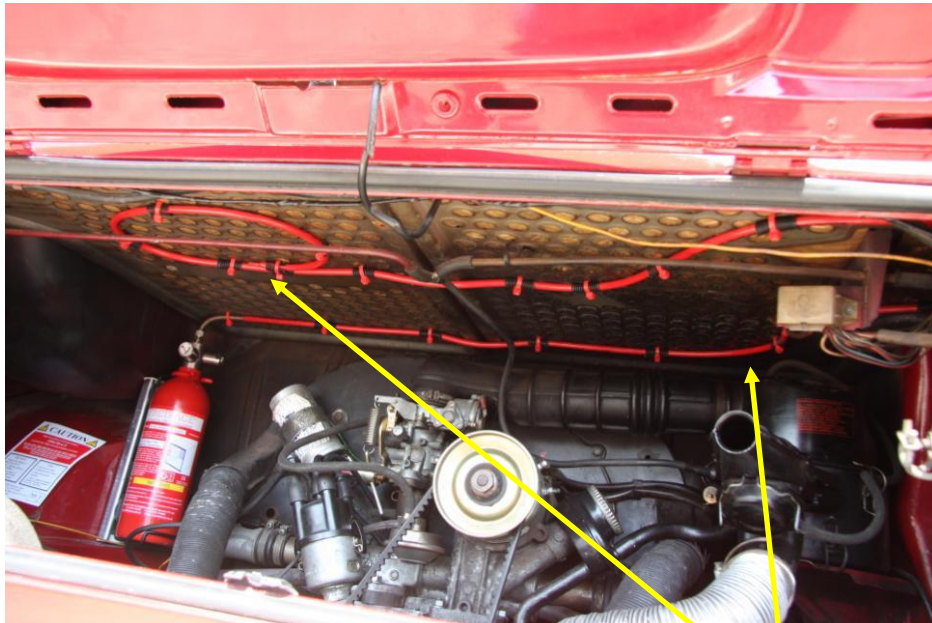


### Rear Engine Vehicles

Where this is necessary the cylinder shall be mounted in an area with good air flow and care should be taken to avoid the hottest areas (directly above the engine or turbo).

Suitable fixings shall be utilised to avoid excessive vibration and cylinders must not be fitted to the floating engine frame.

Below a typical Firetrace<sup>®</sup> system Installation on a rear engine vehicle.



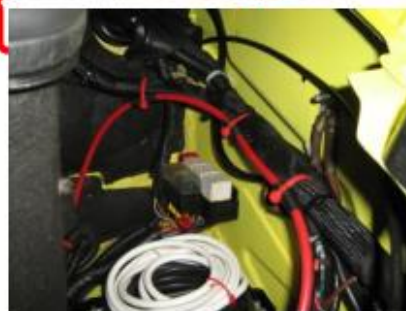
Trace detection tube  
circumnavigate the engine bay as  
close to the risk as possible



Cylinder mounted to some uni-strut  
channel for extra support



Below a typical Firetrace<sup>®</sup> system Installation on a front engine vehicle.



Although the installation is shown here on an ambulance, the principle is the same. The trace detection tube shall be routed around the engine bay as close as practicably possible without the trace tube being too close to hot surfaces



### Firetrace Automatic Detection Tubing

The Firetrace<sup>®</sup> Automatic Detection tubing is the key part of the system and acts not only as the detector but also as the delivery method for the Dry Powder.

The correct installation of the tubing is important to achieve optimum performance from the system.

The tubing must be mechanically protected outside the identified risk area and shall remain accessible to allow future servicing.

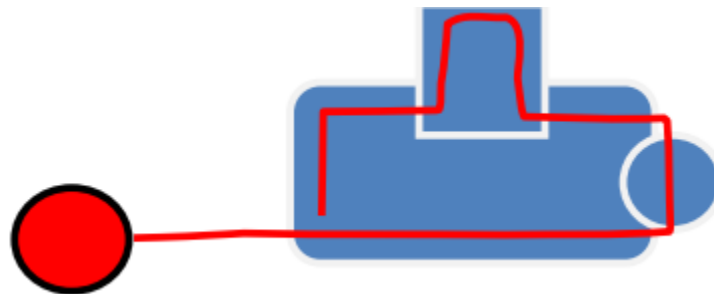
As heat rises, the Firetrace<sup>®</sup> tubing is most efficient when mounted directly above the risk.

The tubing will activate at approximately 120 Degrees Centigrade and care must be taken to avoid attaching the tubing in very close proximity to the turbo or exhaust system where temperatures above this are achieved during normal operation.

It is recommended that the tube is a minimum of 150mm away from exceptionally hot surfaces or fitted with additional sleeving to avoid false activation.

### Tube Routing

As the Firetrace<sup>®</sup> detection tube is flexible the exact tube route can vary from vehicle to vehicle. The basis of the system design is to circumnavigate the engine bay ensuring that the cylinder head, alternator and any other potential risks are covered.





### Tube Fixings

The Firetrace<sup>®</sup> Automatic Detection tubing is the key part of the system and acts not only as the detector but as the delivery method for the extinguishant as well.

The correct installation of the tubing is important to achieve optimum performance from the system.

**The tubing must be physically protected outside the identified risk area using Kopex or another flexible conduit and shall remain accessible to allow future servicing.**

The detection tubing must be adequately fixed to retain its position and withstand the vibration.

The tubing is a soft polymer and is susceptible to wear / chaffing when repeatedly rubbed against a hard or sharp surface. The tubing shall be protected using nylon Kopex at all fixing points and where it passes through holes.

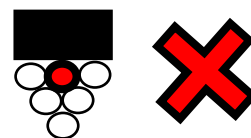
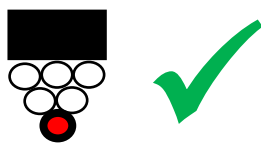
The following photographs show both “Tyrap” and “P clip” fixings all of which are acceptable.



The Detection tubing shall be supported at maximum intervals of 150mm.

Always leave a small loop of tubing adjacent to the cylinder. Whilst this shall also be secured it must be releasable to allow future servicing of the cylinder.

Where the tubing is installed with a group of other cables/pipes it must be positioned on the underside of the loom and must never be located within the center of the loom.



Stops fires where they start



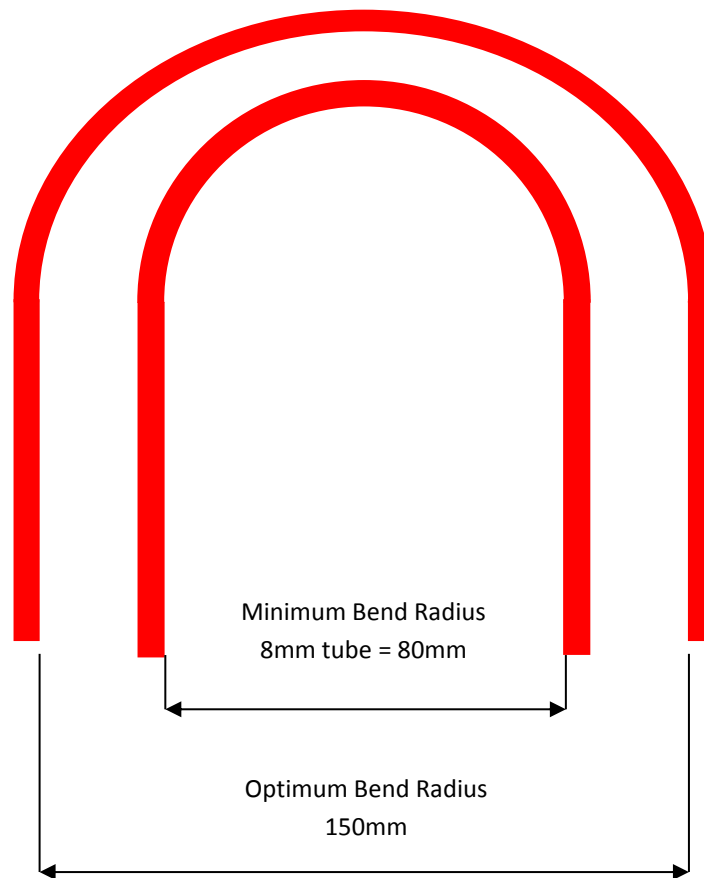
### Tube bending radius

The Firetrace<sup>®</sup> tubing acts as the detector and provides the delivery of the extinguishant. It is imperative that the tubing is not kinked or crushed and the following minimum bending radius must be adhered to.

If the tubing is kinked or damaged in anyway then the complete Fixed Firetrace<sup>®</sup> system must be replaced:

**FT0180 Firetrace<sup>®</sup> tubing 8mm**

**Minimum bending radius 80mm**



### Service & maintenance

The Firetrace<sup>®</sup> systems fitted to vehicles operate in a harsh environment and are subjected to high temperatures and extreme vibration. It is essential that the systems are regularly serviced to ensure their correct operation.

In order to comply with British Standard BS 5306 (section three) the following maintenance tasks shall be carried out periodically.

The British standard recommends that each system is visually inspected every 3 months and then fully serviced at maximum intervals of 12 Months.

All powder systems require discharge testing at maximum 5 Year intervals

### **Firetrace Limited recommend that all systems are fully serviced every 12 Months by a competent engineer**

- ✓ Inspect engine compartment and ensure Firetrace detection tubing is correctly installed. Check for signs of wear/damage and tighten or replace fixings as necessary.
- ✓ Locate cylinder and record size, type and serial number. Check date of manufacture and record when discharge test is required.
- ✓ Check external condition of cylinder. Replace if there is any sign of damage or wear.
- ✓ Check gauge is facing upwards and that cylinder is installed as upright as possible. Where necessary reposition cylinder or highlight any required modifications for return visit.
- ✓ Remove cylinder from bracket and agitate powder contents. (Cylinder must be inverted to achieve this. A noticeable movement of the contents shall be apparent. A rubber mallet can be utilised to aid this). **Dry Powder Systems ONLY**
- ✓ Remove cylinder gauge and ensure correct operation. Clean and lubricate O ring with silicone grease and refit gauge.
- ✓ Record details and date of service on cylinder label. Replace cylinder into bracket and ensure it is secured by clamp / Tyrap.



# FIRETRACE<sup>®</sup> LTD

## AUTOMATIC FIRE SUPPRESSION SYSTEMS



Address:

Unit 22, Knightsdale Road,  
Ipswich,  
Suffolk.  
IP1 4JJ

Telephone:

01473 744090

Facsimile:

01473 744901

Email:

[info@firetrace.co.uk](mailto:info@firetrace.co.uk)

Website:

[www.firetrace.co.uk](http://www.firetrace.co.uk)

Twitter:

[@firetrace\\_uk](https://twitter.com/firetrace_uk)



Stops fires where they start

