FIRETRACE® LTD

AUTOMATIC FIRE SUPPRESSION SYSTEMS

Issue 5 Nov 2017

Firetrace® "**Direct**" Fixed Trace Tube Automatic Fire Suppression Systems

Please read instructions carefully prior to starting installation

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Stops fires where they start

Contents

System Overview.

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

The extinguishant is then deployed via this diffuser directly into the heart of the fire.
The Firetrace® 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 system can be fitted with a volt free pressure switch (FT0124) or volt free twin pressure switch (FT0124/T75) which when connected to the cylinder not only provides constant monitoring of the system but can also be give a signal to indicate a discharge via a (FT0178) Self-contained Alarm Sounder or similar.

The Firetrace® system requires no commissioning as the Firetrace® detection tubing comes pre-pressurised and ready to fit.

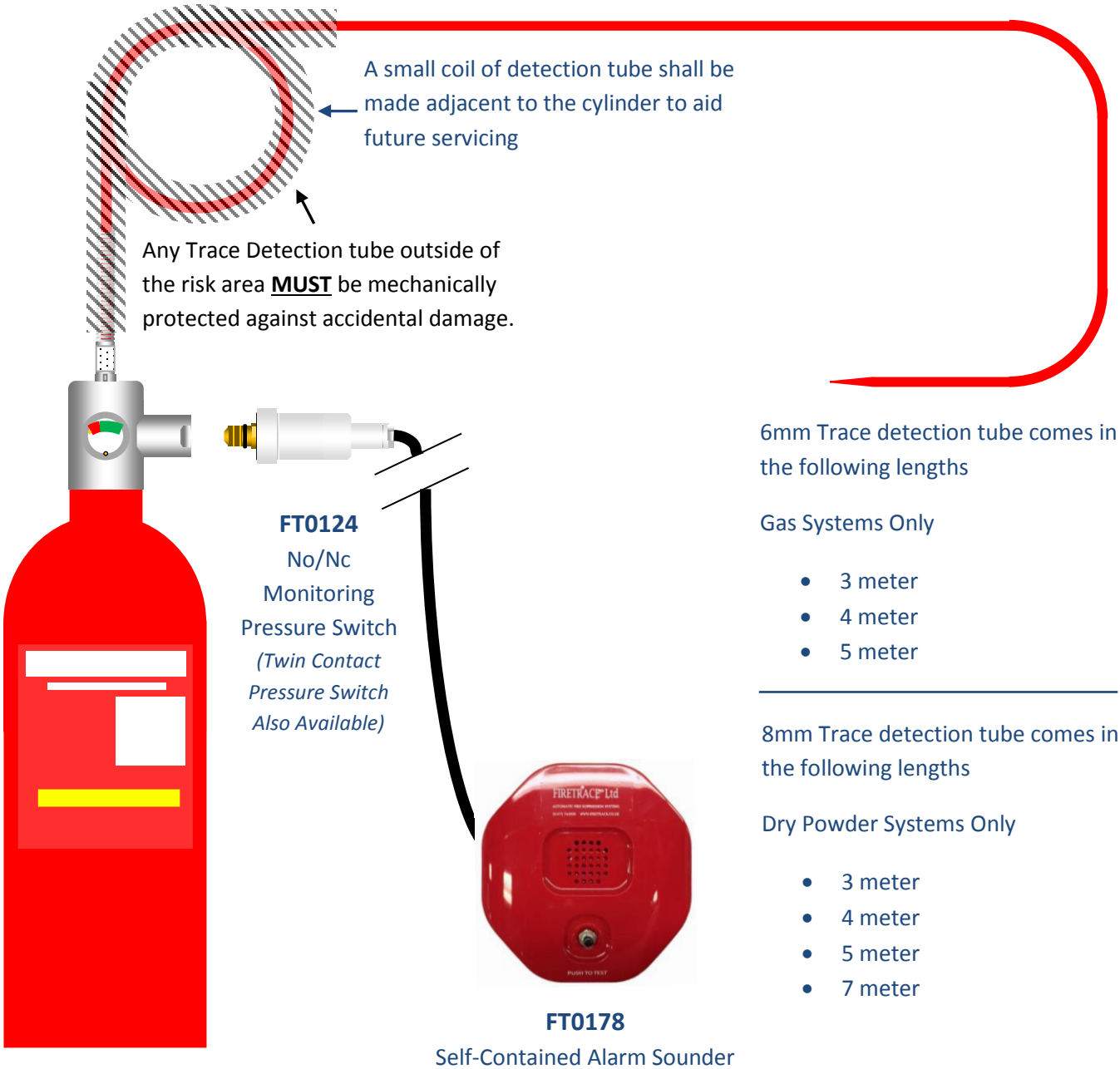
It is important that both the cylinder & Firetrace® tubing are correctly installed and that the system is subjected to a regular maintenance regime in line with BS5306-3.

FT0178 Self-Contained Alarm Sounder

FT0178/SS Self-Contained Alarm Strobe Sounder

Typical Direct Low Pressure Fixed Trace Tube 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



6mm Trace detection tube comes in the following lengths

Gas Systems Only

- 3 meter
- 4 meter
- 5 meter

8mm Trace detection tube comes in the following lengths

Dry Powder Systems Only

- 3 meter
- 4 meter
- 5 meter
- 7 meter

Firetrace® Installation Guidance

Cylinder

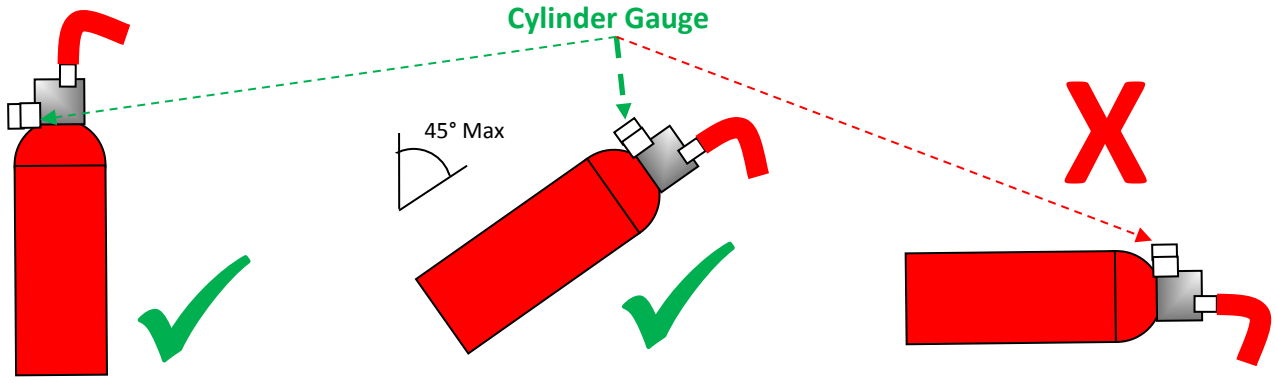
When installing the Fixed Firetrace® system it is important that a suitable cylinder location is selected and that the cylinder is orientated correctly.

The cylinder location shall be in a clean area away from direct heat. 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.
The cylinder gauge must face uppermost to aid inspection.



It is recommended wherever possible that Firetrace® 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® SYSTEMS ARE NOT SUITABLE FOR HORIZONTAL MOUNTING.

A free training course at our Ipswich facility is available to have a better understanding of Firetrace® installation and products. Please contact us for more details.

Firetrace® Automatic Detection Tubing

The Firetrace® 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 Extinguishant.

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.

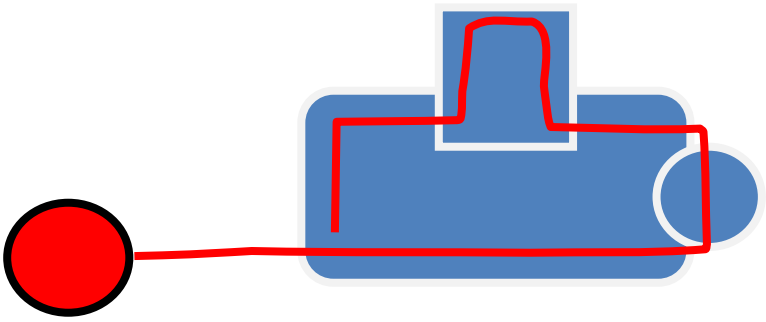
As heat rises, the Firetrace® tubing is most efficient when mounted directly above the risk.

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 in an engine bay, 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® detection tube is flexible the exact tube route can vary from application to application. The basis of the system design is to circumnavigate the risk area.



Tube Fixings

The Firetrace® Automatic Detection tubing is the key part of the system and acts not only as the detector but in some cases as the delivery method for the extinguishant.

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.

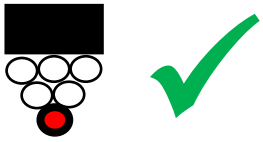
The tubing is a soft polymer and is susceptible to wear / chaffing when repeatedly rubbed against a hard or sharp surface. The tubing shall be protected using nylon Kopex at all fixing points and where it passes through holes.

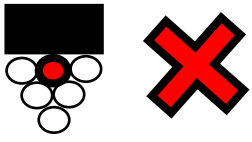
The following photographs show both “Tyrap” and “P clip” fixings all of which are acceptable.

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.





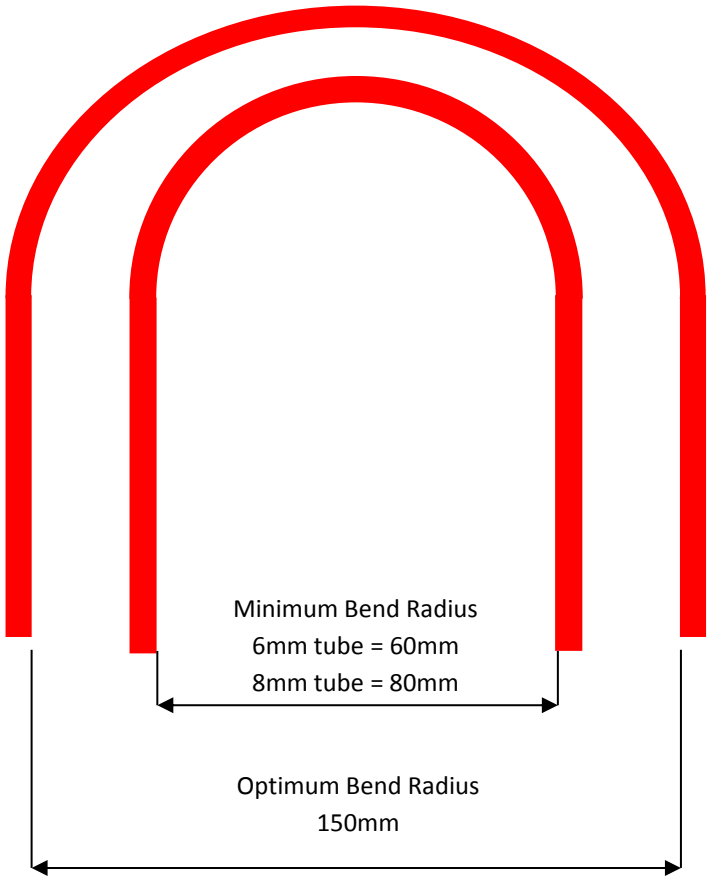
Tube bending radius

The Firetrace® 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® system must be replaced:

FT0115 Firetrace® tubing 6mm: **Minimum bending radius 60mm**

FT0180 Firetrace® tubing 8mm **Minimum bending radius 80mm**



Firetrace® Pressure switch (FT0124 & FT0124/T75) Optional

The optional Firetrace® pressure switch is used to monitor the system pressure and will activate in the event of a pressure drop.

The switch can be introduced and removed from the cylinder whilst it is under pressure. This allows its operation to be proven both during commissioning and future servicing.

The Pressure switch is fitted with a black rubber "o ring" which provides the air tight seal. This "o ring" must be lubricated with silicone grease and free of any dirt or debris. Failure to ensure the "o ring" is clean can lead to a leak which will require the entire system to be replaced.

The switch shall be screwed into the cylinder hand tight ONLY.

The switch contains both normally open & normally closed contacts.

When connecting the pressure switch to the (**FT0178**) Firetrace® Self-Contained Alarm Sounder the **BROWN** **&** GREY wires are used. The unused wires must be sleeved / insulated.

Always leave a small loop of spare cable adjacent to the pressure switch to allow future removal.

FT0124 Monitoring Switch

Set at 5 bar falling.

Common	Brown
Normally open	Blue / Grey
Normally closed	Black
Earth	Green/yellow

FT0124/T75 Twin Monitoring Switch.

Switch 1 Set at 5 bar falling.

Switch 2 Set at 7 bar falling.

Common	Brown
Normally open	Blue / Grey
Normally closed	Black
Earth	Green/yellow

Service & maintenance

The Fixed Firetrace® systems often 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 recommends a visual inspection of a Firetrace® system at least every three months.

The following checks shall be carried out on this inspection.

- Check the pressure gauge is reading mid-green.
- Carry out a visual check of the trace detection tube.
- Check all detection tube fittings for soundness.
- Ensure physical changes of protected areas haven't affected cylinder suitability.
- Check external surface of the cylinder for evidence of rust or corrosion.
- Report any potential problems immediately.

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

The following checks should be carried out on this inspection.

- ✓ Inspect the risk area 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. *(5 years for dry powder, 10 years for gaseous systems)*
- ✓ 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.
- ✓ **Powder Systems Only** - 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).
- ✓ Remove pressure switch (if applicable) to check for correct operation. Lubricate pressure switch O ring and refit switch.
- ✓ Remove cylinder gauge and ensure correct operation. Lubricate O ring and refit gauge.
- ✓ Record details and date of service on cylinder label. Replace cylinder into bracket and ensure it is secured by clamp / Tyrap.

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