

Technical Bulletin 079 –

SFI 17.1 On/Off Automatically Activated Systems – Installation Guide

Rev2 23/01/2024

The Lifeline Zero 360 10lbs Automatic systems are certified to meet SFI specification 17.1. A plumbed-in fire extinguisher system is mainly designed to delay the development of the fire and consequently give the driver more time to exit the car. This system is not designed to put out the fire and prevent the car from burning.

The information below provides a guide to installing your chosen system. Unfortunately, due to the variety of vehicles being raced the exact location of the components of the systems cannot be defined by Lifeline; this document provides “best practise” advice suitable for most vehicles. Always consult with your series and class safety regulations to ensure that your installation complies with their regulations. If you feel that your installation cannot follow these guidelines, please contact Lifeline Technical for further guidance.

Fully read and understand the instructions below before starting installation. Plan your installation carefully referring to the tables below and the system drawings.

Other References	
TB001	System Care, maintenance and Service
TB003	FK 5-1-12 MSDS
TB049	Zero 360 SFI – Kit Content and Spares

Section 1 - Using the System

When you receive the system, it will be supplied pressurised, but disarmed. Install the system and connect all tubes/hoses and nozzles to the extinguisher before arming.

Do not arm the system before connecting the complete hose/tube network.

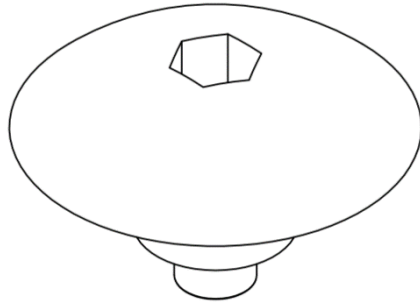
A screw cap is supplied with the system for arming. **Once all the hoses or tubing is connected**, remove any plastic transport cap from the top of the extinguisher. Using a 5mm hex key, screw the cap down until it is flush with the top of the extinguisher. Do not over-tighten. This will pressurise the distribution network. The system is ready to be automatically activated by the thermostat nozzles.

When not in operation it is suggested to disarm the system by removing the cap, to prevent total loss of suppressant if a nozzle is accidentally activated. If the system is disarmed there will be some suppressant still in the lines/tubing.

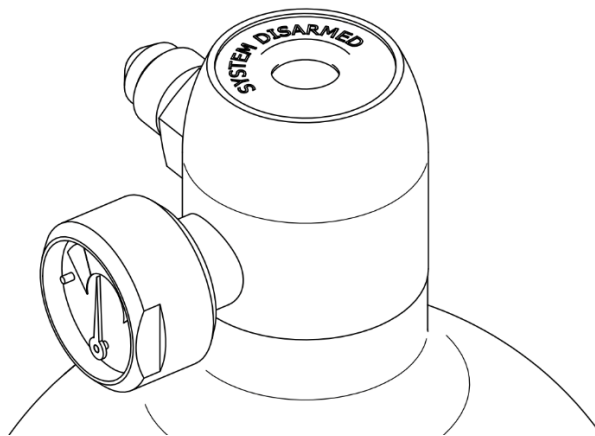
Always arm the system before driving on track. If the cap is not in place the system will not operate.

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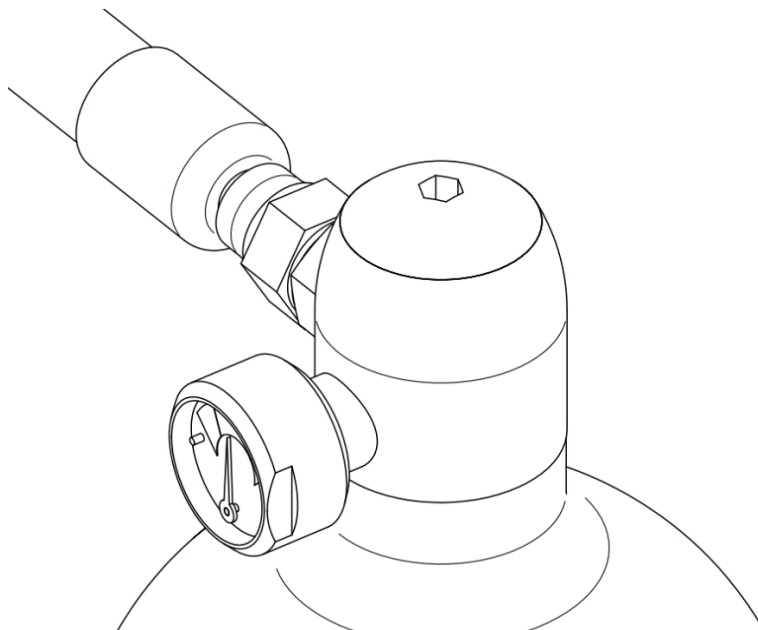
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Arming Screw Cap

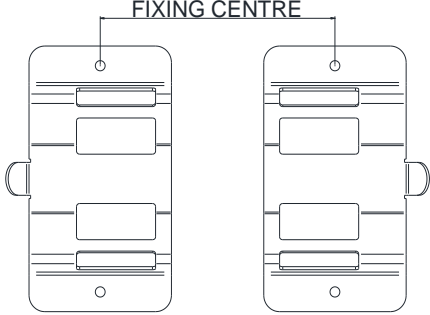


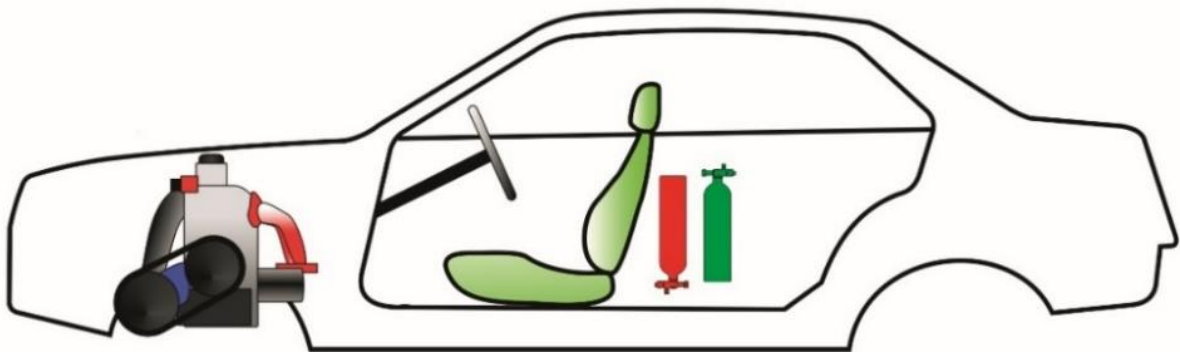
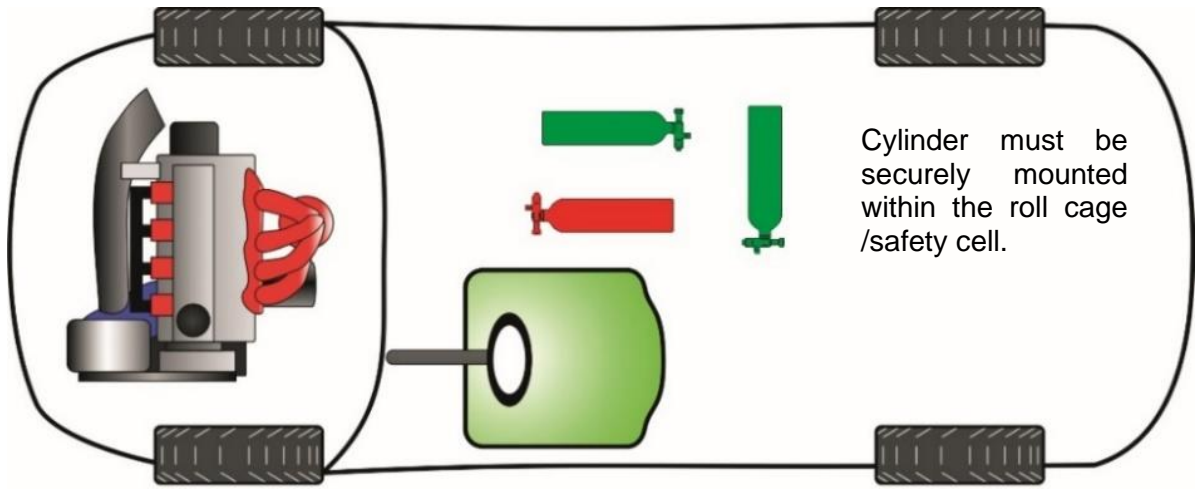
Head of extinguisher when disarmed



After the hose/tube is connected, screw down the cap to arm the system

Section 2 – Cylinder, Bracket and Straps

Item	Fixing Type and No.	Location and Fitting Guide						
Cylinder and Bracket	<p>4xM6 nut, bolt and washers. Vibration washers and/or Nylocs are highly recommended. The use of self-tapping screws is not permitted.</p> <p>Anti-Vibration Mounts on all 4 fixing points are highly recommended.</p> <p>It is permitted to replace the bracket and straps with your own design provided it conforms to your series' regulations.</p>	<p>It is recommended to mount transversally in the car and must be within the safety cell/roll cage. The cylinder may also be mounted longitudinally or vertically but <u>must not be mounted with the head pointed downwards or towards the front of the car as the system may not function correctly.</u></p> <p>Servicing label, SFI label and pressure gauge must be visible for inspection. Avoid positions where cylinder is likely to be damaged, abraded or be exposed to excessive heat.</p>						
								
<table border="1"> <thead> <tr> <th>Model</th> <th>Fixing Centre</th> </tr> </thead> <tbody> <tr> <td>5lbs</td> <td>9-5/16" – 9-7/16" (227 – 231mm)</td> </tr> <tr> <td>10lbs</td> <td>8-15/16" – 9-1/8" (227 – 231mm)</td> </tr> </tbody> </table>			Model	Fixing Centre	5lbs	9-5/16" – 9-7/16" (227 – 231mm)	10lbs	8-15/16" – 9-1/8" (227 – 231mm)
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Straps	2x T-Bolt straps/cylinder	Thread through provided slots in brackets and around the cylinder. Tighten T-bolts taking care not to over tighten and damage the cylinder.						

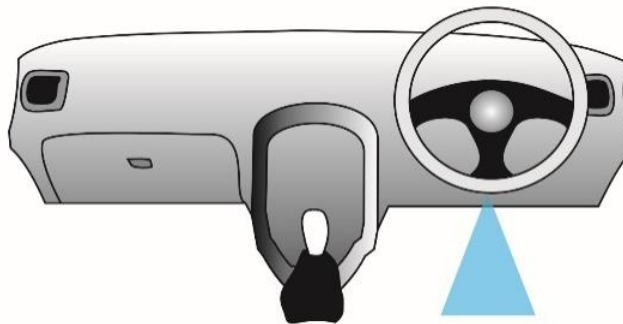


Recommended cylinder orientation in car (**Green**). Do not mount with the extinguisher head pointing down or forward (**Red**).

Section 3 – Nozzle Layout

Consult your series regulations for number and location of nozzles. If placed in the engine compartment, carefully consider the position of the nozzle to cover the most likely source of ignition; induction, exhaust, fuel pump, injector rail, carburetors, oil lines etc. Do not position the nozzle too close to hot components to prevent accidental discharge. If placed over the fuel cell, position the nozzle to cover areas of potential fuel leaks such as outlets, inlets, filler pipe etc.

If placed in the cockpit, the nozzle should be placed under the dashboard pointed downwards into the footwell. Do not point at the driver's head.



Section 4 – Braided Hose

If your system was supplied with braided hose, route the hose to the required location taking care not to create a kink which could restrict flow. Minimum bend radius of the hose is shown below; Lifeline recommend doubling this figure, where possible, to avoid kinking. Use as few bends as possible for smooth flow of suppressant and best performance.

Minimum Bend Radius

4" (100mm)

Secure the tube using P-clips. Where fittings are required, this system using JIC-4 fittings.

Where required, drill a \varnothing 13/16" (20mm) hole to fit the automatic thermostat and hose through a bulkhead. It is recommended to use a rubber grommet to protect the hose where it passes through a bulkhead.

Section 5 – Tubing

If your system was supplied with steel or aluminium tubing, cut tube to pre-measured length using a dedicated tube cutter, ensuring that there are no sharp edges and that the tube remains circular. Do not use a hack saw or similar tool; this will leave a jagged edge which will damage seals in the connectors.

Form the tube using a pipe bender taking care not to create a kink which could restrict flow. Minimum bend radius of the tube is shown in the table; Lifeline recommend doubling this figure, where possible, to avoid kinking.

Use as few bends as possible for smooth flow of suppressant and best performance. Secure the tube using P'clips.

Tube	Minimum Bend Radius
Aluminium or Steel 5/16"	1" (25mm) when using pipe bending tool

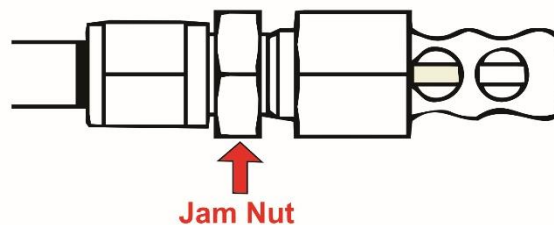
Systems supplied with tubing use compression fittings. To use the compression fittings correctly push the tubing through the compression nut and olive. Hold the fitting using a spanner whilst tightening the nut using a 17mm spanner.



Section 6 – Automatic Thermostat Nozzles Installation

The automatic thermostat nozzles fitted to your system are optimised to flood fill the protected compartment with suppressant when the activation temperature is reached. Always consult your series/class regulations to confirm that your nozzle layout will comply with their rules.

Use the jam nut on the bulkhead fitting behind the thermostat to rigidly mount the nozzle to a bulkhead or bracket. **The nozzle must not be supported by the hose or tube alone.**



Only adjust the jam nut as indicated. Do not loosen any other fitting or nut on the system after the valve on the extinguisher has been opened.

Section 7 – Removing the Extinguisher for Service

When removing the extinguisher for its 2 yearly service please **ensure the system is disarmed.**

Remove the screw cap - this will stop the system discharging when removing the tubing/hoses.

After the cap is removed the tubing or hosing will also need to be removed from the bottle. These lines will still be pressurised with a small amount of suppressant still in the lines. Slowly crack off the compression nut to the bottle and allow the pressure to bleed. During this a small amount of suppressant may come out and evaporate naturally. The bottle is now ready to be sent back to your local service agent.

When the extinguisher has been fired, please follow the instructions as above. However, with a refill you will also need to remove the nozzles which have been fired. The nozzles will need to be re-built or replaced, as advised by the Lifeline service agent.

Section 9 – System Checking and Maintenance

Item	Procedure
Pressure Gauge	Check that the pressure gauge is in the green zone, pressure in cylinders can vary with temperature due to the expansion and contraction of the suppressant; this is normal.
Automatic Thermostat Nozzle	Check that the nozzle is clean from dirt and debris and that the frangible bulb still contains fluid. If there is no coloured fluid in the bulb the system will not function.
Servicing	In accordance with SFI specification 17.1, every system must be returned to a Lifeline service agent be serviced every two years. The date of next due service will be indicated on the cylinder label. As per SFI 17.1, every system has a maximum life of 6 years and can be refilled and serviced a maximum of 6 times during this life.

System Part Number	
System Serial Number	
Date of Manufacture	
Service 1 Date	
Service 2 Date	
Service 3 Date	
Service 4 Date	
Service 5 Date	
Service 6 Date	

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