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Thank you for purchasing an SPA SFI 17.1 system

Thank you for purchasing a SPA SFI 17.1 system. It is important that you read the following instructions carefully before attempting to install your fire suppression system.

The performance of this system could be affected if it is in anyway modified or tampered with may make void its homologation. Please ensure that should any parts need to be replaced; only genuine SPA components are used.

Should you require any assistance, please do not hesitate in contacting SPA Design on 01543 434 580or SPA Technique on 317-271-7941.

IMPORTANT NOTE

The purpose of this along with any other vehicle fire suppression 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.

AUTOMATIC

Table of Contents

AUTOMATIC

5lb AM (auto manual block)

2 x Mounts	Standard or Billet
2 x Nozzles	02-SP 098 for Extreme (3M™Novec™ 1230) or 02-SPAfs N WL for FireSense (FireAde or 4fire)
1 x 02-SPAsfi 012	bulkhead fitting
10 x 02-SPAsfi 020	5/16 inch aluminum tubing per foot
Or	
12.5 x 02-SPAsfi 021 or 022	5/16inch steel or ez-bend steel tubing per foot
1 x 02-SP 017	E sticker (4") (for placing near or at the activation point for anyone to be able to locate)

5lb AMU (auto manual universal block, mechanical, electrical or pneumatic activation can be added or any combination of 2)

2 x Mounts	Standard or Billet
1 x 02-SP 018	6 foot pull cable
2 x Nozzles	02-SP 098 for Extreme (3M™Novec 1230) or 02-SPAfs N WL for FireSense (FireAde or 4fire)
1 x 02-SPAsfi 011	T fitting
1 x 02-SPAsfi 012	bulkhead fitting
10 x 02-SPAsfi 020	5/16 inch aluminum tubing per foot foot
Or	
12.5 x 02-SPAsfi 021 or 022	5/16inch steel or ez-bend steel tubing per foot
1 x 02-SP 017	E sticker (4") (for placing near or at the activation point for anyone to be able to locate)

5lb U (universal head, mechanical, electrical or pneumatic activation can be added or any combination of 2)

2 x Mounts	Standard or Billet
2 x Nozzles	02-SP 098 for Extreme (3M™Novec 1230) or 02-SPAfs N WL for FireSense (FireAde or 4fire)
1 x 02-SPAsfi 011	T fitting
1 x 02-SPAsfi 012	bulkhead fitting
10 x 02-SPAsfi 020	5/16 inch aluminum tubing per foot foot
Or	
12.5 x 02-SPAsfi 021 or 022	5/16inch steel or ez-bend steel tubing per foot
1 x 02-SPAsfi 029	1/4bsp discharge port plug (for if only one line/discharge port is used)
1 x 02-SP 017	E sticker (4") (for placing near or at the activation point for anyone to be able to locate)

AUTOMATIC

10lb AM (auto manual block)

2 x Mounts	Standard or Billet
4 x Nozzles for FireSense	02-SP 098 for Extreme (3M™Novec 1230) or 02-SPAfs N WL (FireAde or 4fire)
2 x 02-SPAsfi 025	T fitting
1 x 02-SPAsfi 012	bulkhead fitting
10 x 02-SPAsfi 020	5/16 inch aluminum tubing per foot
Or	
12.5 x 02-SPAsfi 021 or 022	5/16inch steel or ez-bend steel tubing per foot
1 x 02-SP 017	E sticker (4") (for placing near or at the activation point for anyone to be able to locate)

10lb AMU (auto manual universal block, mechanical, electrical or pneumatic activation can be added or any combination of 2)

2 x Mounts	Standard or Billet
4 x Nozzles for FireSense	02-SP 098 for Extreme (3M™Novec 1230) or 02-SPAfs N WL (FireAde or 4fire)
2 x 02-SPAsfi 011	T fitting
1 x 02-SPAsfi 012	bulkhead fitting
10 x 02-SPAsfi 020	5/16 inch aluminum tubing per foot foot
Or	
12.5 x 02-SPAsfi 021 or 022	5/16inch steel or ez-bend steel tubing per foot
1 x 02-SP 017	E sticker (4") (for placing near or at the activation point for anyone to be able to locate)

10lb U (universal head, mechanical, electrical or pneumatic activation can be added or any combination of 2)

2 x Mounts	Standard or Billet
4 x Nozzles for FireSense	02-SP 098 for Extreme (3M™Novec 1230) or 02-SPAfs N WL (FireAde or 4fire)
1 x 02-SPAsfi 010	5/16 tube to 1/4bsp adapter (for if 3rd line/discharge port is used)
3 x 02-SPAsfi 011	T fitting
1 x 02-SPAsfi 012	bulkhead fitting
10 x 02-SPAsfi 020	5/16 inch aluminum tubing per foot foot
Or	
12.5 x 02-SPAsfi 021 or 022	5/16inch steel or ez-bend steel tubing per foot
1 x 02-SPAsfi 029	1/4bsp discharge port plug (for if only one line/discharge port is used)
1 x 02-SP 017	E sticker (4") (for placing near or at the activation point for anyone to be able to locate)

AUTOMATIC

Optional parts

02-SPAsfi 013	90 degree elbow, 5/16 tube to 5/16 tube
02-SPAsfi 015	Swivel 90 degree elbow 1/4bsp to 5/16 tube (can be used nozzles)
02-SPAsfi 016	Swivel T fitting 1/4bsp to 5/16 tube, 5/16 tube (can be used on LV & LW activation type)
02-SPAsfi 017	5/16 tube to tube coupler
02-SPAsfi 020	5/16 inch aluminum tubing
02-SPAsfi 021	5/16 inch steel tubing (this tubing is required by LODLMS, NASCAR, NHRA and some other racing series please check your rule book)
02-SPAsfi 022	5/16 inch ez-bend steel tubing (this tubing is required by LODLMS, NASCAR, NHRA and some other racing series please check your rule book)
02-SPAsfi 027	QD (quick disconnect) female/release half for AM, AMU and Auto nozzle (suggest to be used on half connecting to the bottle/cylinder)
02-SPAsfi 027	QD (quick disconnect) male half for AM, AMU and Auto nozzle (suggest to be used on half connecting to activation)
02-SP 018	6 foot pull cable
02-SP 019	12 foot pull cable
02-SP 129	E sticker (1") (for placing near or at the activation point for anyone to be able to locate)
02-SPAT 86	+ or – 3.5"dia Cylinder Strap Mount
02-SPAT 94	+ or – 4.0"dia Cylinder Strap Mount
02-SPAT 99	+ or – 4.375"dia Cylinder Strap Mount
02-SPAT 112	+ or – 5.25"dia Cylinder Strap Mount
02-SPAT B3.5	Billet Mount for Aluminum Cylinder 3.5"dia (DOT39 5lb) 1 ¾" chassis tube standard
02-SPAT B4.0	Billet Mount for Aluminum Cylinder 4"dia (DOT39 5lb) 1 ¾" chassis tube standard
02-SPAT B4.375	Billet Mount for Aluminum Cylinder 4.375"dia (DOT3AL 5lb) 1 ¾" chassis tube standard.
02-SPAT B5.25	Billet Mount for Aluminum Cylinder 5.25"dia (DOT3AL 10lb) 1 ¾" chassis tube standard.
02-SPAT B1.75-1.25	Billet Mount Adapter to 1 ¼" chassis tube
02-SPAT B1.75-1.5	Billet Mount Adapter to 1 ½" chassis tube
02-SPAT B1.75-1.625	Billet Mount Adapter to 1 5/8" chassis tube

AUTOMATIC

FITTING INSTRUCTIONS

Unpack all parts and check components against kit list.
Decide the best position for the extinguisher.
It is highly recommended that the cylinder/bottle be mounted inside the main crash structure of the vehicle, to not be ripped off or damaged in a crash
It is also recommended that the bottle not be mounted with the head in the downward position in the vehicle.
The extinguisher label detailing contents, etc and also the pressure gauge should be visible. Mount securely to the vehicle.

TUBING

Each SPA SFI System kit is supplied with 5/16 aluminum tubing or steel tubing. The SPA SFI system has been designed and meets or exceeds SFI 17.1 specifications using this type of tube. After cutting tubing, deburr inside and outside for best flow and easier connection to fittings.

TUBE CONNECTIONS

All fittings for tube to nozzles and bottle 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 collett back towards the fitting and then pull the tube from the fitting

ACTIVATION POINT

Activation should be mounted within easy reach of the driver. An E sticker should be placed at this spot to make finding it easier for the driver or anyone else to activate the system if needed. With a pull cable, after fitting but not connected to activate. Make sure it moves freely, as to tight of bend(s) or too many bends may cause it to bind up.

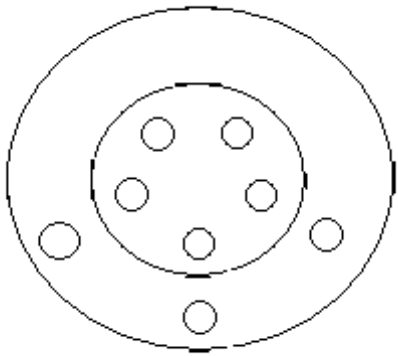
AUTOMATIC

Be sure to have the nozzle spray the body of the driver. **Don't have it spray directly at helmet / face of the driver, as this may keep from seeing to exit the vehicle.**

Correct nozzle orientation for Extreme (Novec 1230)

Make sure nozzle is mounted in this orientation to work correctly - With the holes on the body of the nozzle facing down.

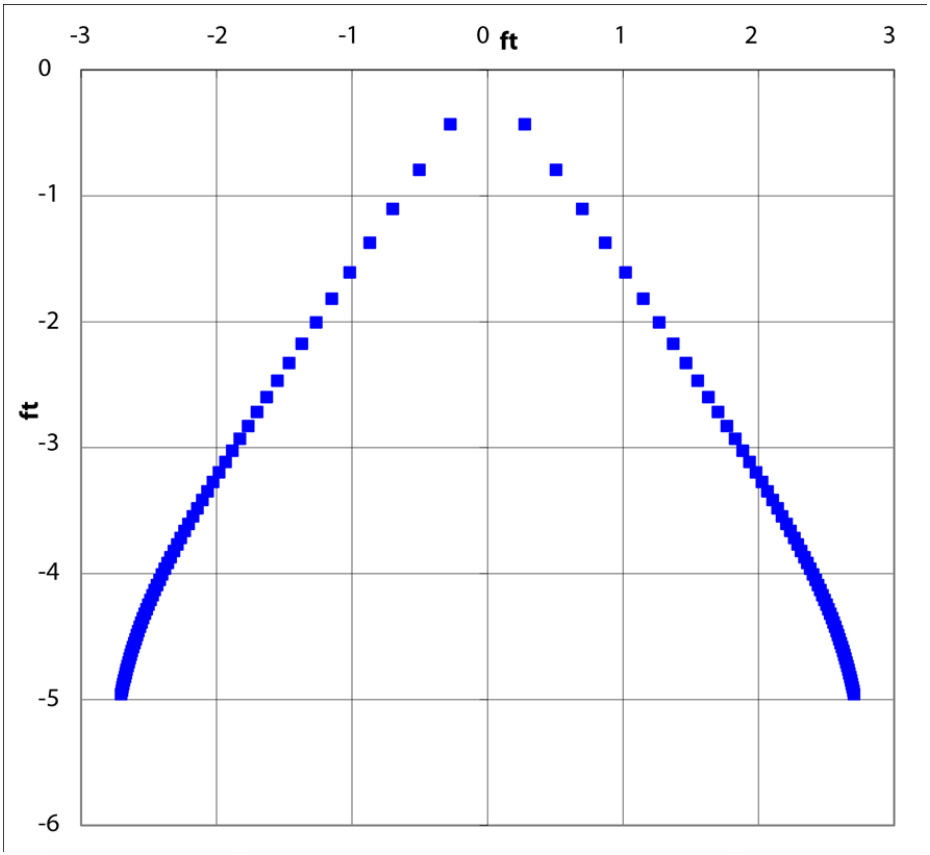
Top



Bottom

AUTOMATIC

Approximate nozzle spray pattern for FireSense (FireAde & 4fire)



AUTOMATIC

MAINTENANCE

To ensure maximum possible performance from your SPA 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 pipe work and fittings.
- Your SPA system **must** be serviced every 2 years by SFI17.1 rules.

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 or Approved Vendor

- If your system has been discharged, you must return it to SPA or dealers for servicing and refilling.

NOTES

Please ensure that you monitor the following, as you **MAY NOT** pass scrutineering/tech **IF**:

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

Before going on track

- Make sure any and all safety pins are out.
- Make sure if system has a valve that it is in the open position and recommend safety wiring it in the open position.
- Have driver practice reaching to activate system without being able to see belted in.

AUTOMATIC

EXTREME® (3M™Novec™1230) DATA SHEET

COMPOSITION Dodecafluoro-2-methylpentan-3-one, (CF3CF2C (O) CF (CF3)2)
O D P (Ozone Depletion Potential) NONE
OPERATING TEMPERATURE - 40 - + 80 °C
FREEZING POINT - 108 °C
CRITICAL TEMPERATURE 168.7 °C
PHYSIOLOGICAL PROPERTIES No Observed Adverse Effect Level and Lowest Observed Adverse Effect Level for cardiac sensitization (halocarbons) and oxygen depletion (Inert gas).

A copy of the 3M™ Novec™ 1230 Fire Protection Fluid material safety data sheet can be obtained from SPA Design, SPA Technique or 3M upon request.

FireSense (FireAde®) DATA SHEET

COMPOSITION Proprietary blend, information will be provided to a physician as needed
O D P (Ozone Depletion Potential) NONE
OPERATING TEMPERATURE -40 - 124°C
FREEZING POINT - 40 °C
PHYSIOLOGICAL PROPERTIES No observed adverse effect level and lowest observed adverse effect level. This product is ph neutral and contains no toxic components

A copy of the FireAde®2000 Climate Controlled Pre-Mix material safety data sheet can be obtained from SPA Design, SPA Technique or Fire Service Plus/FireAde upon request.

FireSense + (4Fire Universal®) DATA SHEET

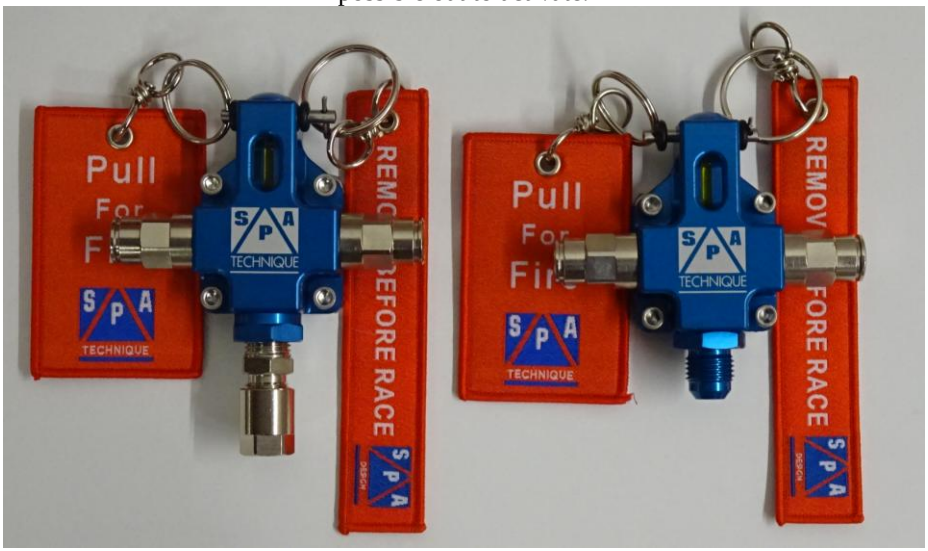
COMPOSITION Proprietary blend, information will be provided to a physician as needed
O D P (Ozone Depletion Potential) NONE
OPERATING TEMPERATURE -30 - 120°C
FREEZING POINT - 30 °C
PHYSIOLOGICAL PROPERTIES No observed adverse effect level and lowest observed adverse effect level. This product is ph neutral and contains no toxic components

A copy of the 4fire material safety data sheet can
be obtained from SPA Design, SPA Technique or 4fire International upon request.

AUTOMATIC

Standard AM block configuration

Note, Safety pin/R-clip is removed. Mount so driver can pull lanyard/pin as straight as possible out to activate.



Optional compression fitting (left) for steel tubing from bottle/cylinder to block
Optional -6 fitting (right) for steel braided line

AUTOMATIC

Optional AM block with in pull cable configuration

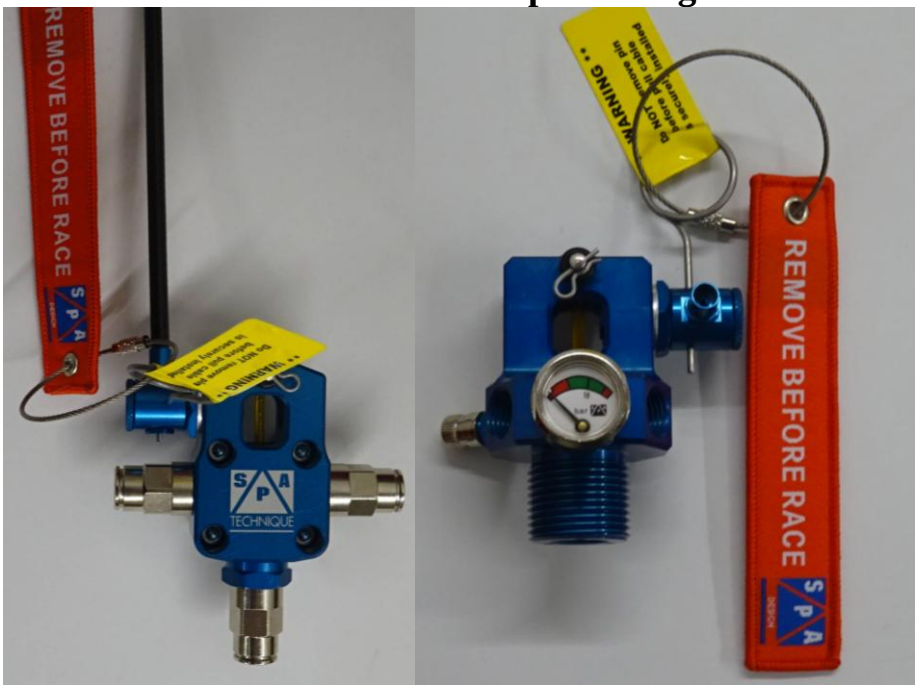
Note, Bracket will need to be made to hold pull cable housing (outer sheath). Also far enough away to allow the cable pull the pin out. Also as straight/in line with the pin as possible Otherwise the pull cable will not work. Also it could be done like in the previous configuration or for a second pull cable.

AMU & Universal Activation in pull pin configuration

Note, remember to remove R-clip/safety pin from opposite side of pin from “Pull for Fire” lanyard for system to activate if pulled.

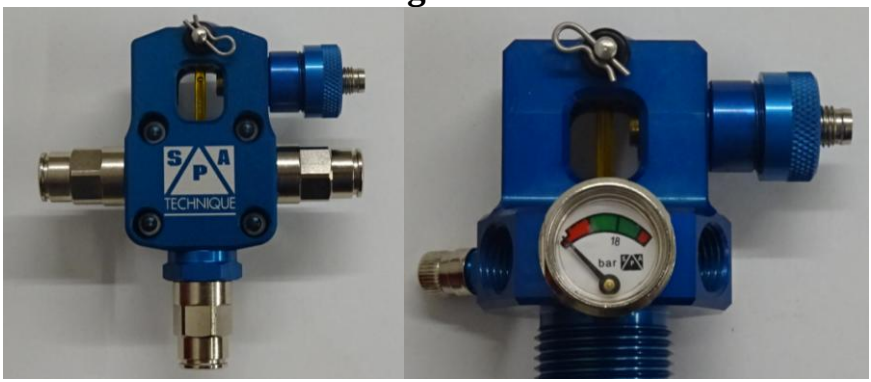
AUTOMATIC

AMU & Universal Activation in pull configuration cable



Note, mechanical activation piece can be threaded into either side of the activation head and/or a second mechanical, or another activation type, can be utilized, as well. Also do not remove safety pin until pull cable is in place as shown on the left/AMU block. In the left picture you can see the cable needs to just come out. If you need to cut the cable down you will need to silver solder it or zap the end with a tig welder to keep it from fraying.

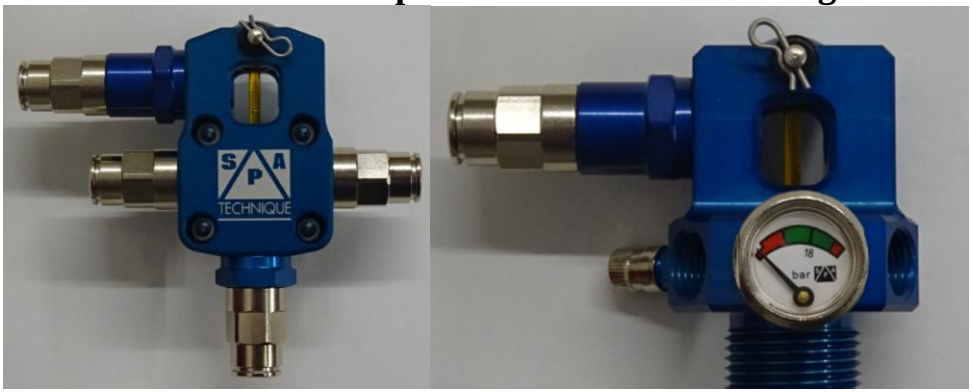
AMU & Universal Activation in electrical activation configuration



Note, electrical activation piece can be threaded into either side of the activation head and/or another activation type can be utilized, in addition.

AUTOMATIC

Universal Activation in pneumatic activation configuration



Note, pneumatic activation piece can be threaded into either side of the activation head and/or another activation type can be utilized, in addition.

Universal Activation discharge ports

Note, a total of 3 discharge ports can be used for plumbing the system. There is one port on each side of the gauge and one on the back. Any ports not being used must be plugged off.

AUTOMATIC

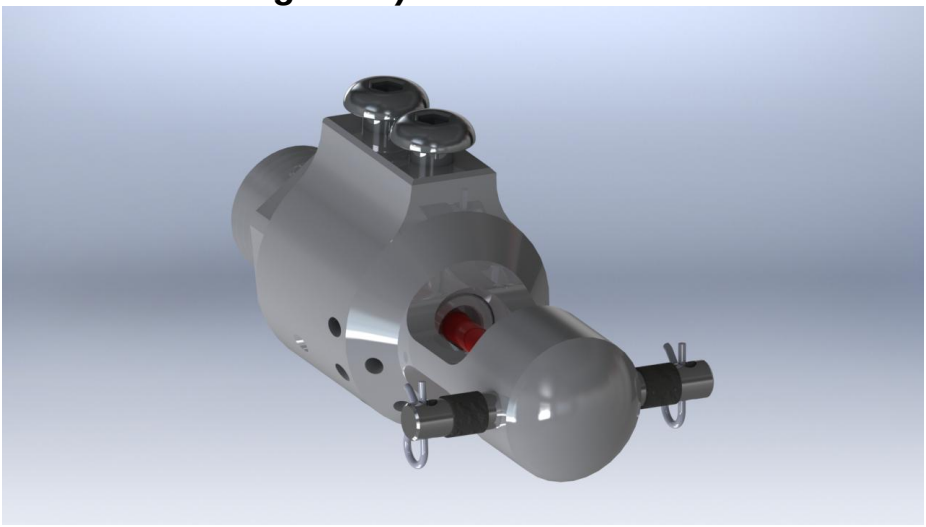
AM & AMU Valve and Optional QD

Valve on the left is in the off/closed position. Valve on the right is in the on/open position. **For the system to work the valve Must be in the On/Open position!** We recommend safety wiring in the on position when racing/on track, there is a hole in the handle to do this. Note, on the left is the optional -6 fitting for steel braided line.

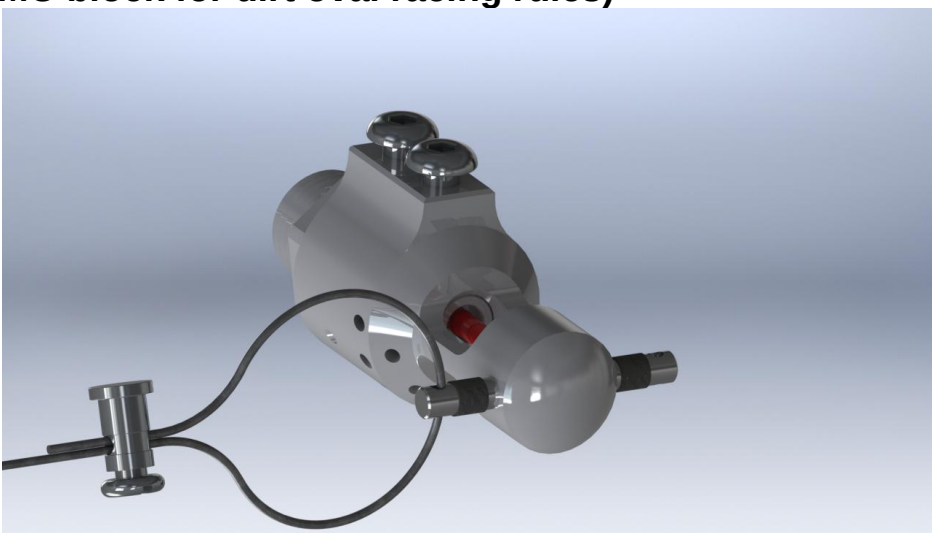
Top is QD (quick disconnect) apart/disconnected. Bottom is together/connected Because of the pressure it will take some effort to push them together to connect. So keep that in mind when deciding where to place it and or line length. When reconnecting you will get a small amount of leakage.

AUTOMATIC

Configuration of automatic nozzle system (for NASCAR trunk/fuel cell) (We recommend the AM or AMU block for dirt oval racing rules)



Attachment of pull cable for automatic nozzle system (for NASCAR trunk/fuel cell) (We recommend the AM or AMU block for dirt oval racing rules)

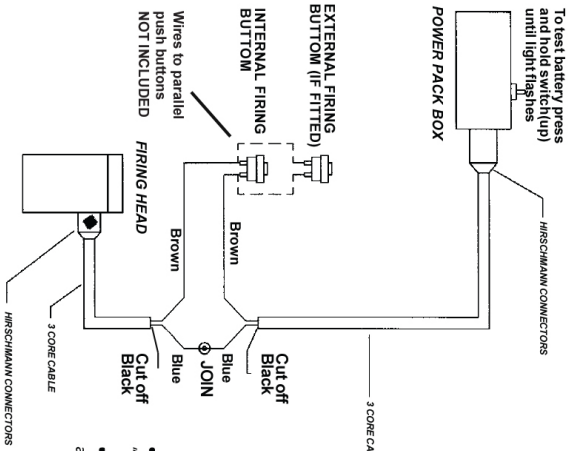


Bracket will need to be made to hold pull cable housing (outer sheath). Otherwise the pull cable will not work. Pull as straight as possible/in line with the pin. Or cable can be looped around just the thermal bulb. Make sure there is enough room between cable loop to cable housing to pull pin out or break bulb when pulled.

AUTOMATIC

Electrical activation wiring diagram

SPA FIRESENSE RESPONSE ELECTRICAL SYSTEM
WIRING SCHEMATIC



DO: Use the continuity test and battery test before each race

DO NOT: Do not run cables next to power cables or run in the same loom

• To test the battery, push and hold lever switch upwards in the "Battery Check" position until green light flashes.

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

• To test the battery, push and hold lever switch upwards in the "Battery Check" position until green light flashes.

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

RECOMMENDED: Use the continuity test and battery test before each race.

DO NOT: Run the cables next to power cables, or in the same loom.

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