



Remote Tester for Point Smoke Detectors & Aspirating Smoke Detection (ASD) Systems

User Manual



*Note: The ASD pipe and brackets shown in the illustration above and within this manual are not part of the Scorpion ASD product line.



scorpion®

User Manual

This manual provides information for the correct use of **scorpion®** Remote Detector Test System

System Components:



Scorpion Point Head Unit Kit
SCORP 1001
(including Door Detectors)



Scorpion ASD Head Unit Kit
SCORP 2001



Scorpion Wall Mounted Controller
SCORP 8000
(for multiple heads)



Scorpion Portable Controller
SCORP 7000 (for single heads) -
Includes Control Cable (SCORP 1054)
and Battery Cable (SCORP 60)



Scorpion Access Point
SCORP 25
(for single heads)



Scorpion Power Pack
SCORP 50



Scorpion Control Cable
SPARE 1054
(for connecting Portable Controller, SCORP 7000 to Access Point, SCORP 25)



Solo Universal Fast Battery Charger
SOLO 726



Scorpion Battery Cable
SCORP 60
(for connecting Solo 760 Battery Baton to Scorpion Control Panel)



Solo Battery Baton
(optional)
SOLO 760

For any additional information or technical support, please visit the Scorpion web site at: www.scorpion-tester.com

Meanings of Symbols and Terms

The following symbols are used throughout this User Manual.

	<p>This symbol on the product and literature indicates that there is a safety hazard. You must read the appropriate sections of the User Manual to understand the nature and severity of all the potential hazards present and the action you must take.</p>
	<p>This symbol on the product indicates that you should read and understand this User Manual before using this product.</p>
	<p>This symbol on the product indicates that this part of the device is susceptible to static damage.</p>
	<p>The crossed-out refuse container symbol on this product or literature indicates that it should not be disposed with other business waste at the end of its working life. To help ensure that valuable resources are reused and recycled, and to prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from any other types of waste.</p>

Safety

General Safety Information

	<p>WARNING</p> <p>This product may be used at height.</p> <p>Exercise great care and always wear appropriate PPE (personal protective equipment) when operating above head height in order to avoid the risk of injury.</p>
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Important Information

- **Read this User Manual completely before using your Scorpion System.**
- **Save this User Manual** - Save all safety and operational instructions for future reference.
- **Take note of the Cautions and Warnings** - Read carefully and follow all warning labels on the product and those described in this User Manual.
- **Installation of the Scorpion system must not obstruct or impair the operation of the fire system.**



CAUTION

Environment - This product is designed for indoor use only and should not be subject to, or used in, a wet, high humidity or dusty environment. Installation in these environments may reduce the life and/or performance of the system. Scorpion is not designed for use in hazardous areas (those containing explosive vapour or dust). Do not install where insects are likely to interfere with the detector as it is also possible they will interfere with Scorpion in the same way.

- **Location** - Whenever possible, the Scorpion Head Unit should be positioned where there is no movement of air. In situations where there is a draft, position the head unit smoke nozzle 'upwind' of the direction of air flow. In turbulent air the smoke generated may not reach the Point detector or ASD pipe inlet.



Direction of ambient air flow



Direction of ambient air flow

- **Servicing**

- There are no user serviceable parts in the Scorpion Head Unit.
- Any attempt to open or tamper with the Head Unit or Controller, other than shown in this manual will invalidate any warranty or claim against No Climb Products Ltd.
- The Scorpion Controllers contain a safety fuse which can be replaced if necessary.

- **General Advice**

- Always allow the equipment to reach ambient temperature before use (e.g. after removing from packaging) to prevent condensation damage.



CAUTION

Stop using Scorpion immediately if you notice any unusual odours; liquids or noise coming from it. Switch off immediately and consult technical support.

Do not paint the Head Unit

- If your Scorpion unit becomes damaged do not use it. Switch off immediately and consult technical support.
- Scorpion is not designed for use in hazardous areas (those containing explosive vapour or dust).

**WARNING**

Scorpion is not designed for use in hazardous areas (those containing explosive vapour or dust).

- Use only approved accessories that are recommended by the manufacturer.
- The Scorpion Battery Pack or Solo Battery Baton should be removed when Scorpion is not in use. This will prevent gradual discharge of the battery and prevent possible accidental or malicious operation of the head unit.
- Always use a fully charged battery when commissioning the system.

**CAUTION**

Do not use your Scorpion if it is not operating properly. Consult the Troubleshooting section of this manual, and if required, seek technical advice

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I. General Instructions

I.1 Warranty

In addition to any other express warranty given in writing by the Company in relation to the Goods, the Company warrants that the Goods supplied under the terms and conditions will be in accordance with the specification (if any) contained in the Purchase Order, and will be free from defects in workmanship and material for a period of 18 months from the date of delivery to the Buyer or for a period of 12 months after the date of sale by the Buyer to the final customer whichever period is the shorter. Warranty is limited to the replacement of Scorpion system only.

Keep a record of the serial numbers of the components, particularly the Head Units, as these will be needed to verify the warranty status. Make a note of these before installation as they will be inaccessible once the Head Unit is fitted to the mounting bracket. The serial number is printed on the Head Unit label and on the packaging label. Make a note of the model, serial number, and date of purchase.

I.2 Acknowledgement

Scorpion® is a registered mark of **No Climb Products Ltd.** All other brand names mentioned are trademarks or registered marks of their respective holders, and are hereby acknowledged. © 2012 No Climb Products Ltd. All Rights Reserved.

I.3 Recycling

The packaging can be easily separated into the following materials:

- Cardboard (outer box)
- Cardboard (inner buffers, boxes)
- Polyethylene (bags)
- Plastic / metal (any items or accessories that are not required for a specific installation)

Please dispose in line with local environmental requirements.



CE Declaration

This product and its associated components are designed and manufactured to be fully compliant with the requirements of the following EU Directives for CE marking:

- EMC Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility.
- Low Voltage Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.
- RoHS Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

WEEE (Waste Electrical & Electronic Equipment) Regulations 2006

Scorpion components are suitably marked to be recycled in accordance with your local environmental requirements. When supplied as B2B EEE, the provider invokes regulation 9.2 and passes all WEE obligations to the end user.

2. Introduction

Thank you for purchasing the Scorpion Remote Test System.

Scorpion is a unique, functional remote smoke detector test system that assists compliance with codes and standards for testing fire detection systems, while delivering radical time, cost and disruption savings and considerable enhancements to safety.

Scorpion can be used on Aspirating Systems (ASD) as well as Point smoke detectors, on new or retrofit installations. Point and ASD heads can be connected to the same Control Panel and can be located up to 100m away from the panel, depending on the cable type used.

Each Head Unit will provide in excess of 240 tests of 15 seconds each.

Scorpion for Point Smoke Detectors

The **Scorpion Point Head** is a smoke generator which is permanently installed adjacent to a standard point smoke detector but which uses its own cabling and remains discrete from the fire detection system.

A Clearing function is available that blows air through the detector which helps remove smoke from the detector to enable it to reset more quickly, and reduces repeat alarms.

Scorpion for ASD systems

Traditional post commissioning ASD testing is generally performed by trying to introduce a test smoke (often of inappropriate suitability or even questionable quality) into individual sampling points. Not only can this be highly impractical but it can also contaminate an ASD system. Scorpion offers an approved, benign and effectively non contaminating test particulate delivered in a controlled and repeatable manner.

With a **Scorpion ASD Head Unit** permanently positioned at the end of a pipe run, a repeatable and consistent test is achieved throughout the system's lifetime. By recording the moment of Scorpion activation and the moment of alarm signal, the transport time is measured. Comparing this against the retained commissioning data, previous tests and the acceptable tolerances enables judgments to be made regarding the integrity of the aspirating system.

If you require additional information or assistance in the use of **Scorpion**, please visit the support area of our web site, or contact our technical support department as detailed on the Support page of this User Manual.

3. Applications

3.1 Installation Examples

- Scorpion is designed for use on optical (photoelectric) and ionization smoke detectors.
- Certain combination point detectors (combinations of smoke, heat, or CO) cannot be activated by the introduction of a single stimulus. In these cases, Scorpion will not work and a Multi-Stimulus Detector Tester should be used (see: www.testifire.com).
- The head unit can be up to 100m away (cable length) from the Access Point / Wall Mounted Controller depending on the cable type used.
- One Access Point is required for each head unit or the Wall Mounted Controller can be used for up to 8 head units.
- Scorpion is activated by connecting the portable battery (either the Scorpion Battery Pack or a SOLO 760 Battery Baton) to the relevant Scorpion Controller.

The Portable Controller is connected to an Access Point (and Scorpion Head Unit adjacent to the relevant detector) and is used to run a test.

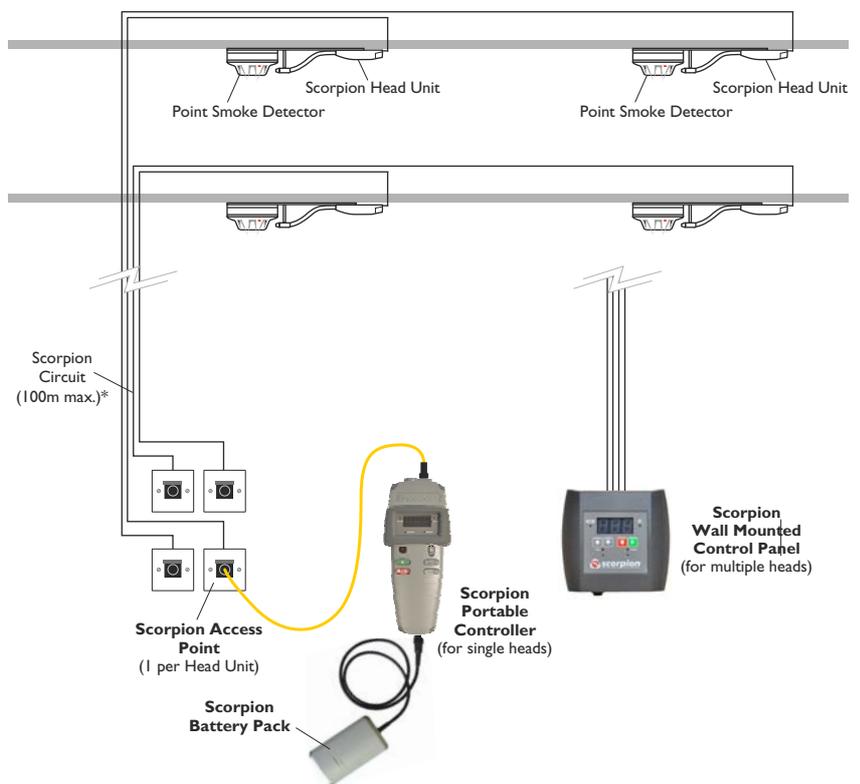
The Wall Mounted Control Panel only needs a battery connected to provide the power to run a test.

NOTE: The default smoke generation time is set to 15 seconds. The majority of point and ASD system detectors should activate within this time period. If the detector does not activate refer to section 7.3 of this manual to adjust the timer.

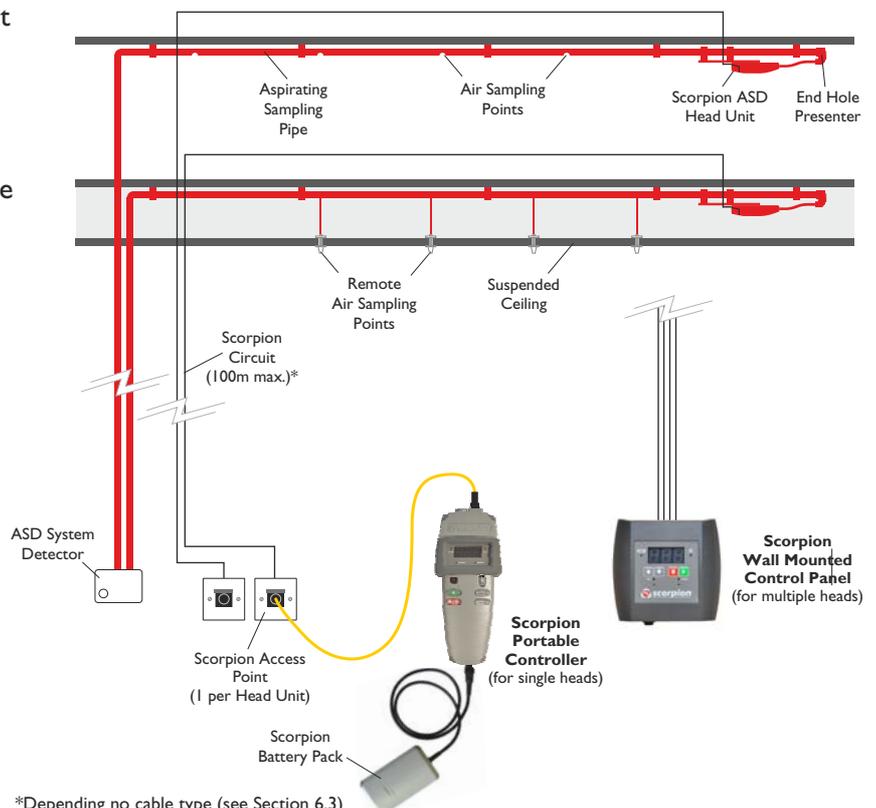
If the detector does not activate after a long period or repeated tests it may be faulty and need replacing.

Always use the shortest time required to activate the detector.

Installation Example (Point)



Installation Example (ASD)



*Depending on cable type (see Section 6.3)

4. Parts Identification



Scorpion Point Head Unit Kit
SCORP 1001
(including Door Detectors)



Scorpion ASD Head Unit Kit
SCORP 2001



Scorpion Wall Mounted Control Panel
SCORP 8000
(for multiple heads)



Scorpion Portable Controller
SCORP 7000 (for single heads) -
Includes Control Cable (SCORP 1054)
and Battery Cable (SCORP 60)



Scorpion Access Point
SCORP 25
(for single heads)



Scorpion Power Pack
SCORP 50



Scorpion Control Cable
SPARE 1054
(for connecting Portable Controller, SCORP 7000 to Access Point, SCORP 25)



Solo Universal Fast Battery Charger
SOLO 726



Scorpion Battery Cable
SCORP 60
(for connecting Solo 760 Battery Baton to Scorpion Control Panel)

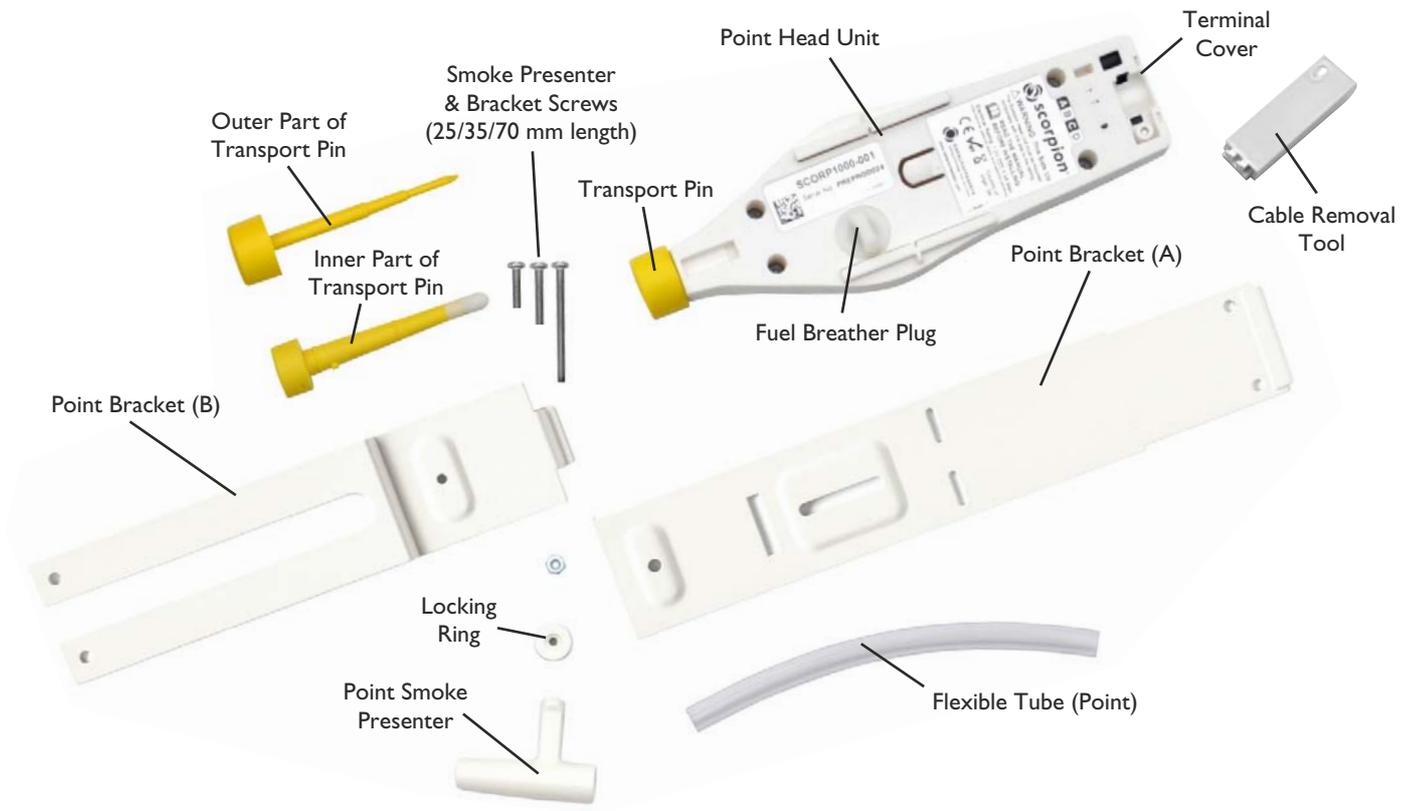


Solo Battery Baton
(optional)
SOLO 760

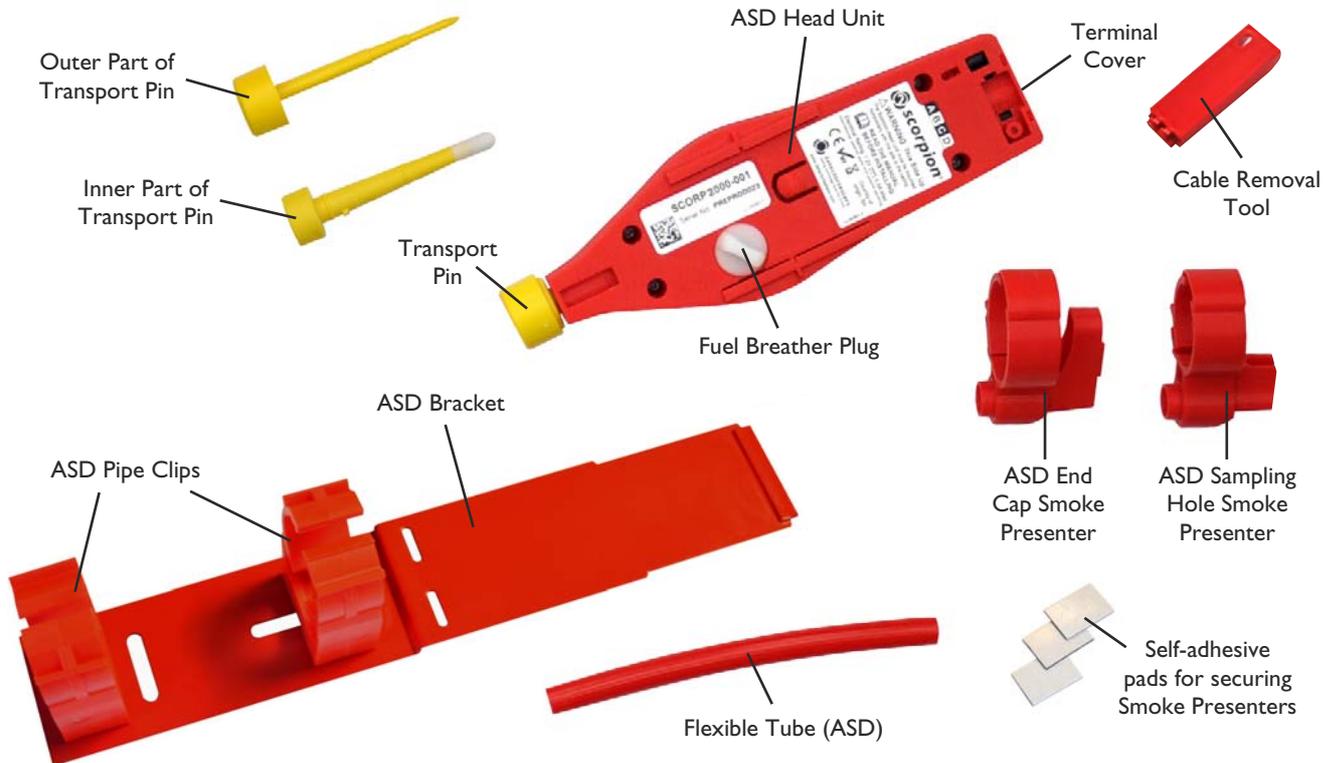
For any additional information or technical support, please visit the Scorpion web site at: www.scorpion-tester.com

5. Scorpion Components

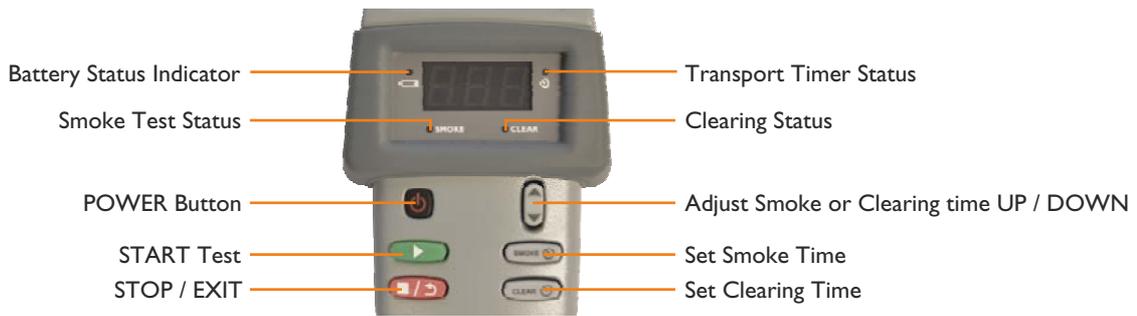
5.1 Point Head Unit



5.2 ASD Head Unit



5.3 Portable Controller Interface



	<p>Display Indicates:</p> <ul style="list-style-type: none"> - Firmware version on power-up - Countdown timer (5 sec.) during warm-up when in Point Detector mode - Countdown timer (5 sec.) during warm-up followed by Transport Time when in ASD mode (i.e. Transport Timer is active) - "C" implies incorrect or no cable connection
	<p>Display</p> <ul style="list-style-type: none"> - Three flashing dots indicate the internal fuse has blown (see Section 8)
	<p>Power Button</p> <ul style="list-style-type: none"> - Press and hold to switch the Controller ON and OFF - The Controller will automatically switch OFF after 10 minutes without use
	<p>RUN TEST Button</p> <ul style="list-style-type: none"> - Used to start a test (smoke generation followed by clearing)
	<p>STOP / EXIT Button</p> <ul style="list-style-type: none"> - Used to stop test (stop smoke generation and start clearing, or to stop clearing, or to stop the timer) - When in Smoke Time or Clear Time function, this exit button takes the user out of the function without saving changes - Press for 3 seconds to activate or deactivate the transport timer
	<p>SMOKE TIME</p> <ul style="list-style-type: none"> - Used to change the smoke duration saved in the controller - Press once to enter the change smoke time function, and again to save the time and exit
	<p>CLEAR TIME</p> <ul style="list-style-type: none"> - Used to change the clearing duration saved in the controller - Press once to enter the change clear time function, and again to save the time and exit
	<p>UP / DOWN Button</p> <ul style="list-style-type: none"> - When the SET SMOKE or SET CLEAR button is pressed: <ul style="list-style-type: none"> - the UP button increases the time - the DOWN button decreases the time
	<p>Battery Status Indicator</p> <ul style="list-style-type: none"> - Glows red up when battery power is low. Glows Green when battery level is ok
	<p>TIMER Indicator</p> <ul style="list-style-type: none"> - Lights up when timer is active - The display then indicates the time since smoke generation started
	<p>SMOKE Indicator</p> <ul style="list-style-type: none"> - Test cycle in progress (smoke being generated)
	<p>CLEAR Indicator</p> <ul style="list-style-type: none"> - Clearing (detector purging) in progress

5.4 Wall Mounted Control Panel Interface



	<p>Display Indicates:</p> <ul style="list-style-type: none"> - Head Unit number (1 - 8) - Timer (counting up in seconds when the 'time indicator' LED is on)
	<p>Display Three flashing points indicate a fault has caused the fuse to blow (see Section 9)</p>
	<p>UP Button</p> <ul style="list-style-type: none"> - Used to select Scorpion Head Unit or adjust timer - When TEST or CLEAR recessed button is pressed, the UP button increases the time
	<p>DOWN Button</p> <ul style="list-style-type: none"> - Used to select Scorpion Head Unit or adjust timer - When TEST or CLEAR recessed button is pressed, the DOWN button decreases the time
	<p>RUN Button</p> <ul style="list-style-type: none"> - Used to start test (smoke generation and/or clearing)
	<p>STOP Button</p> <ul style="list-style-type: none"> - Used to stop test (smoke generation and start clearing, or to stop clearing, or to stop timer) - Press for 3 seconds to activate or deactivate timer
	<p>Timer Indicator</p> <ul style="list-style-type: none"> - Lights up when timer is active - The display then indicates the time since smoke generation and/or clearing cycle started
	<p>TEST Indicator</p> <ul style="list-style-type: none"> - Test cycle in progress (smoke generated and /or clearing functions) - Recessed Button: Press and hold with small pointed tool to change smoke duration
	<p>CLEAR Indicator</p> <ul style="list-style-type: none"> - Clearing (detector purging) in progress. - Recessed Button: Press and hold with small pointed tool to change clearing time
	<p>Battery Status Indicator</p> <ul style="list-style-type: none"> - Glows red up when battery power is low. Glows Green when battery level is ok

6. Installation

6.1 Scorpion Head Units



CAUTION

The Head Unit contains a liquid fuel, and is suitably sealed during transportation. Care must be taken during installation to prevent the fuel from leaking (the fuel is not harmful) - see the Safety Data Sheet (SDS) on www.scorpion-tester.com for more information.

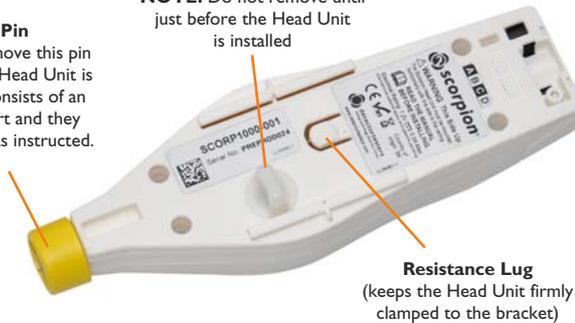
Ensure that the Head unit is kept level (+/- 15° from horizontal) and the correct way up at all times (labels facing upwards). Failure to do this could result in the fuel leaking out. Only remove the Fuel Breather Plug and Transport Pin (two parts) at the correct point during installation.

Note: Scorpion Head Units and Mounting Brackets are differentiated by their colour; white for Point Detectors and Red for ASD Systems (one part). Both Head Units have a similar specification but their mounting brackets are different. Please ensure you have the correct Head Unit and fittings for the application.

Fig. 1

Transport Pin
NOTE: Do not remove this pin until just before the Head Unit is installed. The pin consists of an outer and inner part and they should be removed as instructed.

Fuel Breather Plug
NOTE: Do not remove until just before the Head Unit is installed



Resistance Lug
(keeps the Head Unit firmly clamped to the bracket)

IMPORTANT

There are alternative ways of installing the Scorpion Head Units depending on the individual site situation.

NOTE: It is very important that whichever way you adopt to install Scorpion, the head unit must be maintained horizontal and with the label facing upwards once the transport pins and fuel breather plug have been removed. This will prevent any accidental leakage of the liquid fuel.

6.2 Head Unit Wiring

The wiring procedure is the same for both Scorpion Point and Scorpion ASD Head Units (Point Head Unit illustrated).

1. Remove the terminal cover by squeezing and gently pulling (Fig. 2). Loosen the cable clip and rotate 90° (Fig. 3).
2. To connect the cable, strip the sleeve back by approximately 10mm then push the conductor into the same lettered terminal as used on the Control Panel (see Section 6.9), or follow the numbers for the Access Point (6.8).
3. Rotate the cable clip back over the cable and under the retaining pin. Re-tighten the screw. A suitable cable tie can also be used to secure the cable to the Head Unit.
4. If necessary, enlarge the cable entry cut-out to suit the cable diameter and re-fit the terminal cover.
5. To remove the cable, latch the two prongs of the cable removal tool under the connector. Push the tool upwards and pull the cable out (Fig. 14).

Fig. 2

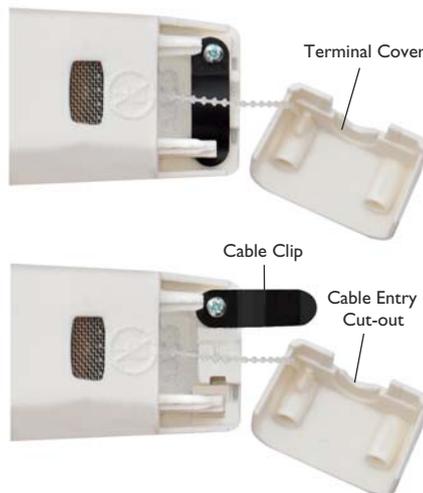


Fig. 3

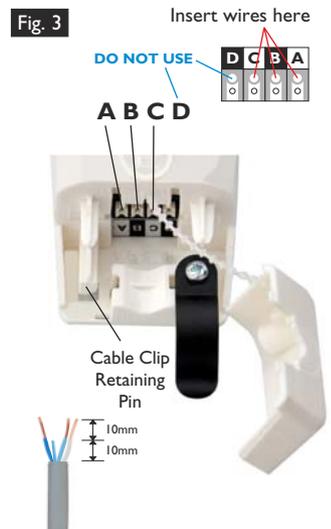
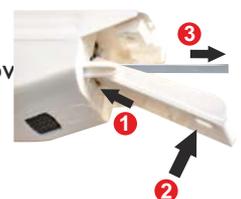


Fig. 4



6.3 Cabling

1. Scorpion can be connected using the following cables to give up to 100m distance between the Control Panel and each Head Unit:

a. Fire resistant cables such as FP200 1.5mm², Lapp J-Y(ST)Y 0.5mm², or equivalent recommended

b. Maximum conductor size is 1.5mm², minimum is 0.5mm²

c. 4-core cable required

d. Screened cable is not required.

Cable Cross Section (mm ²)	Smoke Time	Maximum Cable Length
1.5	15 seconds	100m
1.0	15 seconds	100m
0.5	30 seconds	75m

Note: Smoke time is a guide only. Always use the shortest smoke time needed to activate the fire system

2. The connector used in the Head Unit is intended for solid-core conductors for ease of installation in difficult areas. Stranded cable may be used but would need to be tinned (soldered) or terminated with a suitable terminal (ferrule) with an external diameter no greater than 1.5mm.

3. Each Head Unit requires three (3) conductors (A, B & C). 4-core cable is recommended with the fourth core cut and not connected both ends.

4. Cabling must be installed in accordance with local wiring regulations. Scorpion uses battery power (nominal 7.2V, 2.2Ah).



WARNING

This product may be used at height.

Exercise great care and always wear appropriate PPE (personal protective equipment) when operating above head height in order to avoid the risk of injury.

6.4 Point Head Unit Installation

- The Scorpion Point Head Unit is located beside a point detector with the 'forked' end of the mounting bracket inserted above the detector (or its base) and flush with the ceiling. For installation on sloping ceilings, the mounting bracket will need to be bent to keep the Scorpion Head Unit horizontal to prevent the leakage of fuel (see Section 6.3).
- Where the air is relatively still (e.g. away from air conditioning, doors, etc) then the Head Unit can be positioned on any convenient side of the detector.
- In drafty locations, the head unit must be positioned 'upwind' of the detector so any air flow will blow the Scorpion smoke towards the detector (see Section 6.3). If there is too much air flowing across the Scorpion nozzle, then it is possible that the smoke will not reach the detector and the detector may not activate.
- The smoke presenter can be adjusted by sliding the bracket horizontally towards or away from the detector to which it is fixed, and vertically by unplugging the flexible tube from the nozzle and rotating the nozzle until it aligns with the detector opening (see Fig 5).

NOTE: The flexible tube must be re-fitted after adjustment.

1. Loosen the detector mounting screws enough to allow the forked end of the bracket to be inserted between the detector base and the ceiling (Fig 5 A).

2. Join the two sections of the point mounting bracket by inserting the lug into the slot (Fig. 5 B).

3. Using the smoke presenter as a guide, select the screw (25mm, 35mm, or 70mm) that allows the presenter to line up with the detector chamber opening (Fig. 6 & 8).

4. Secure the two sections of the bracket with the screw and nut, then attach the smoke presenter and its locking nut (Fig. 6).

5. Adjust the smoke presenter nozzle so that it aligns with the detector air openings (Fig. 5 C & D) and is approx. 5-10 mm from the detector (E). Re-tighten the detector screws, ensuring the complete assembly is secure.

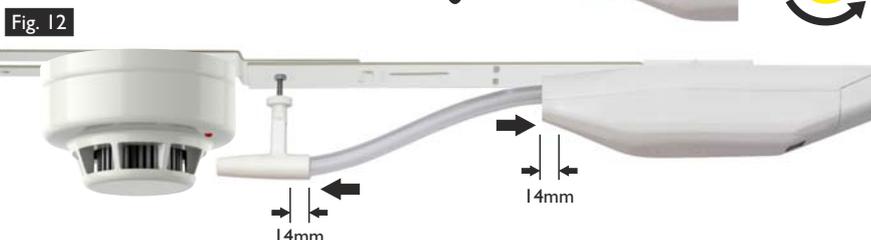
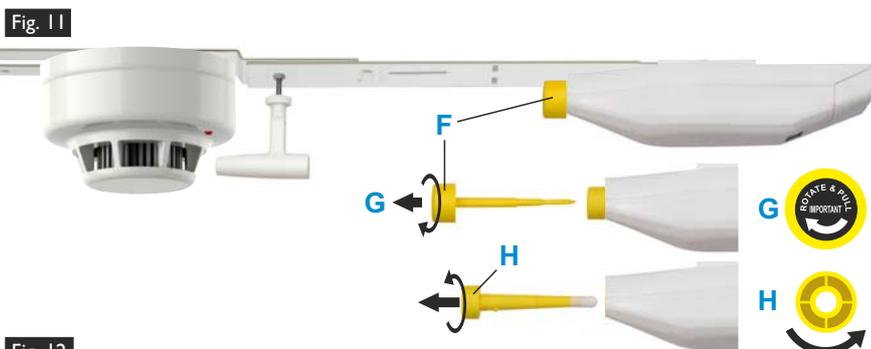
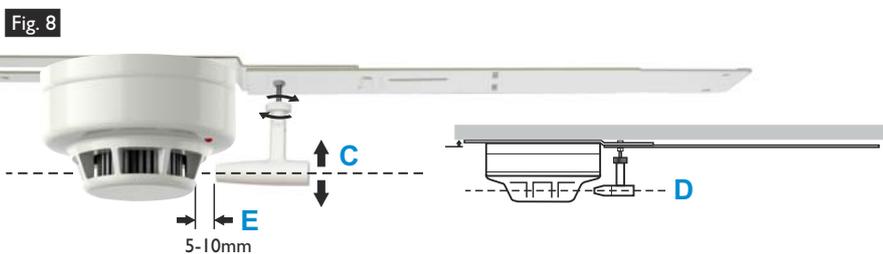
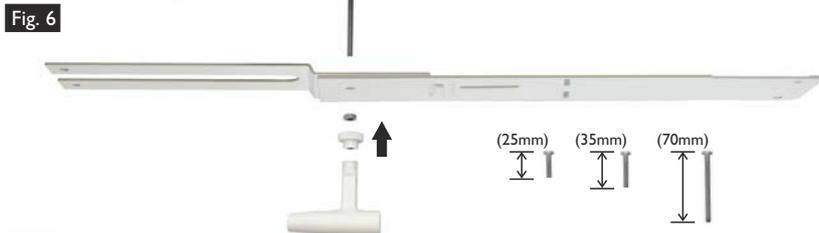
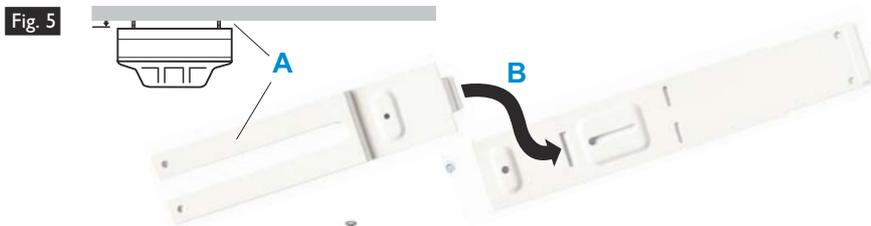
NOTE: It is advisable to connect the cables to the Head Unit before proceeding (see Section 6.6).

6. Unscrew and remove the Fuel Breather Plug from the head unit.
⚠ IMPORTANT: the head unit should now be kept horizontal with the label side facing upwards to prevent any fuel leakage (Fig. 9).

7. Slide the head unit onto the bracket as far as it will go (Fig. 10).

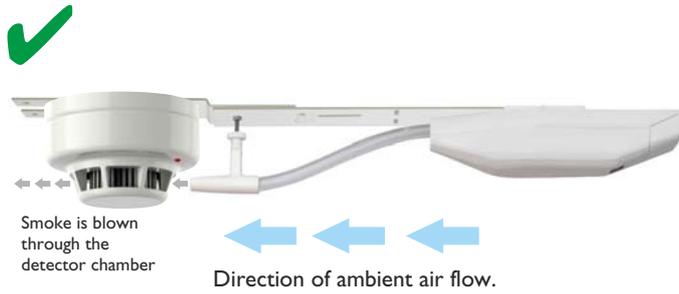
8. Remove the Transport Pin (Fig. 11).
Note: there are two parts to this pin. Turn part F firmly in a clockwise direction while pulling outwards. After removing part G, turn part H anti-clockwise and pull out.
Note: Part F is designed to be tight and requires some effort to remove.

9. Finally, attach the flexible tube by pushing it firmly into the head unit and the smoke presenter (Fig. 12). It may be necessary to trim the tube to ensure a tight fit.



6.5 Do's and Don'ts for Point Head Unit Installation

Please read: 'Important Information' (page iii) as well as these guidelines before installation.



NOTE: The above applies to all makes and sizes of Point detector. Adjustments should be made to ensure smoke enters the detector chamber correctly.

6.6 Scorpion ASD Head Unit Installation

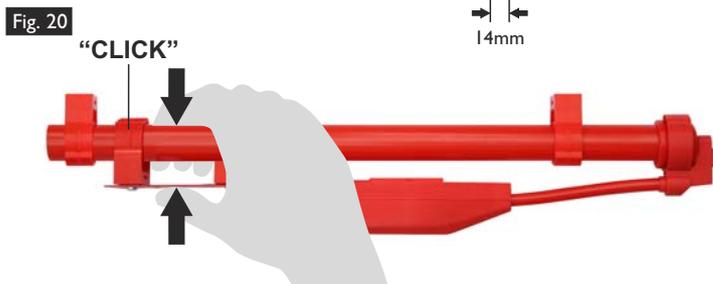
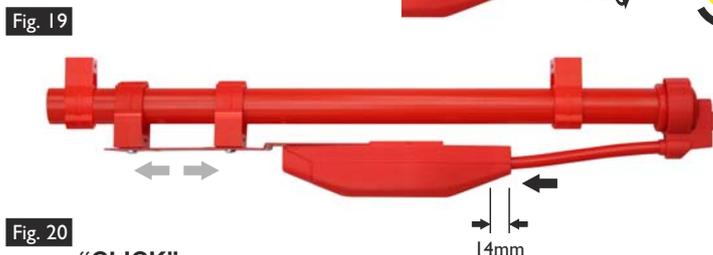
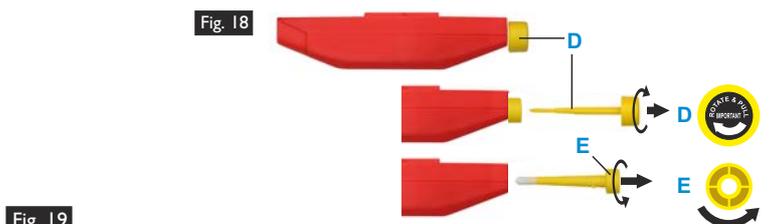
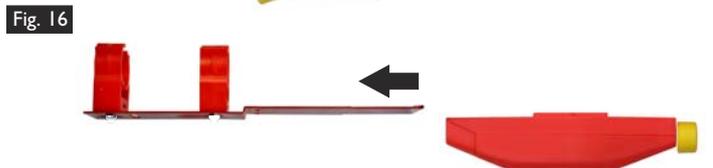
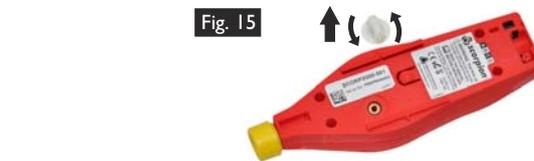
Please read: 'Important Information' (page ii) as well as these guidelines before installation.

- The Scorpion Head Unit is usually fitted to the end of a standard ASD pipe (not supplied) using the clips and smoke presenter provided (Fig. 13 A).
- The Scorpion Head Unit can also be located adjacent to an air sampling hole along the length of an ASD pipe using the sampling hole presenter (B).
- Ensure that the Scorpion smoke presenter is a tight fit on the pipe or pipe end cap and the presenter does not obstruct the air sampling hole.

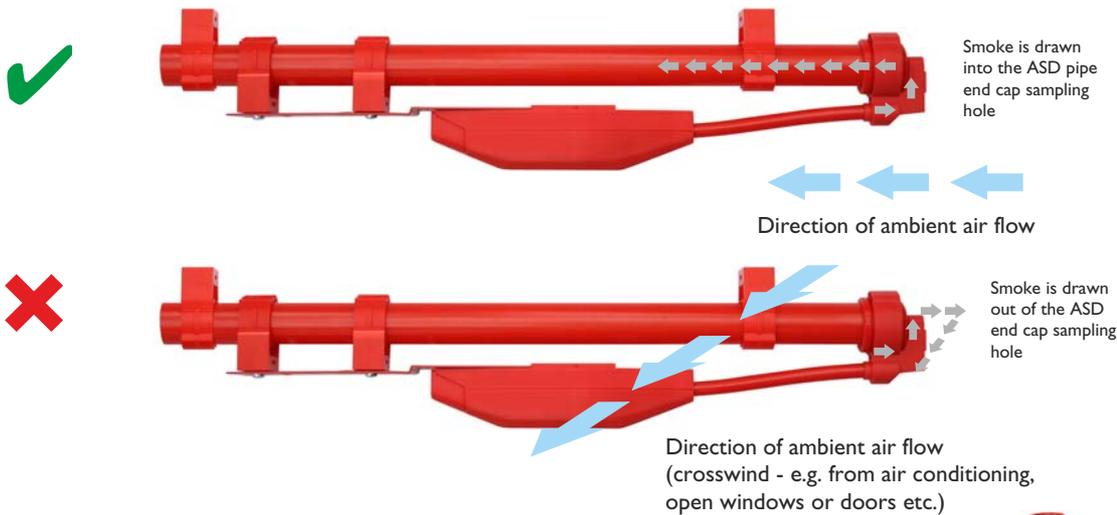
1. Attach either the end cap presenter (Fig. 13 A) or the sampling hole presenter (B) to the ASD pipe as applicable. Use the double sided self-adhesive pads provided © or a suitable glue, to secure the presenter to the end cap or pipe.
2. Attach the flexible tube by pushing it firmly into the smoke presenter (Fig. 14).

NOTE: It is advisable to connect the cables to the Head Unit before proceeding (see Section 6.6).

3. Slide the head unit on to the bracket as far as it will go (Fig. 16).
4. Attach the head unit and bracket assembly to the pipe but do not lock the pipe clips at this stage to allow for adjustment (Fig. 17).
5. Unscrew and remove the Fuel Breather Plug from the head unit (Fig. 18).
 ⚠ **IMPORTANT:** the head unit should now be kept horizontal with the label side facing upwards to prevent any fuel leakage.
6. Remove the Transport Pin (Fig. 18).
Note: there are two parts to this pin. Turn part **D** firmly in a clockwise direction while pulling outwards. After removing part **D**, turn part **E** anti-clockwise and pull out. **Note:** Part **D** is designed to be tight and requires some effort to remove.
7. Attach the flexible tube by pushing it firmly into the head unit and the smoke presenter (Fig. 19).
8. Finally, lock the pipe clips to secure the Scorpion bracket to the ASD pipe by squeezing the pipe and bracket as shown (Fig. 20).

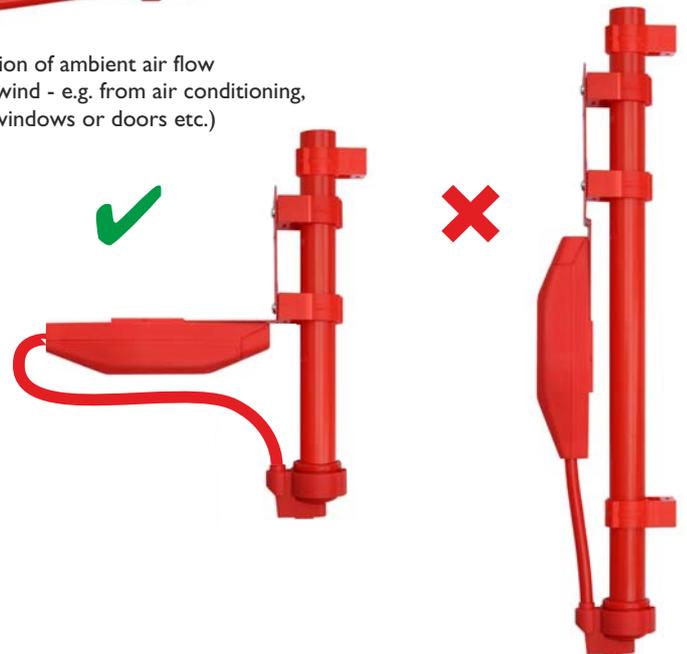


6.7 Do's and Don'ts for ASD Head Unit Installation



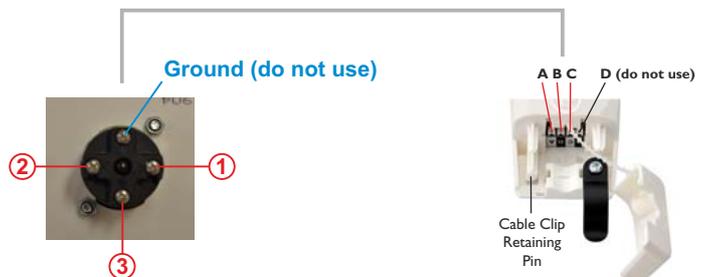
With a vertical ASD pipe, the mounting bracket should be bent so that the Head Unit remains horizontal. Some "improvisation" may be required in these situations. A longer smoke pipe may be required or the Head Unit may need to be attached to an adjacent structure. Please contact our support department for guidance in these circumstances.

NOTE: The above also applies to a sampling hole application. Scorpion should ideally be mounted adjacent to the furthest hole from the ASD detector.



6.8 Access Point Installation

1. Fix the pattress box provided in a suitable location.
2. Cabling for the Access Point can either be run inside a cavity wall or can be run in conduit on the outside of the wall.
3. Feed the cables through the break-outs in the pattress box.
4. Connect the cables to the screw terminals on the connector, noting the wire colours used. The opposite end of the cable is connected to the head unit as shown. (**Note:** Applies to both ASD and Point Head Units).



Scorpion Access Point (SCORP25-001)	Scorpion Head Unit (SCORP1001-001) or (SCORP2001-001)
Terminal 1	Terminal A
Terminal 2	Terminal B
Terminal 3	Terminal C

Note: The fourth wire (G), (D) should be cut and not connected at either end.

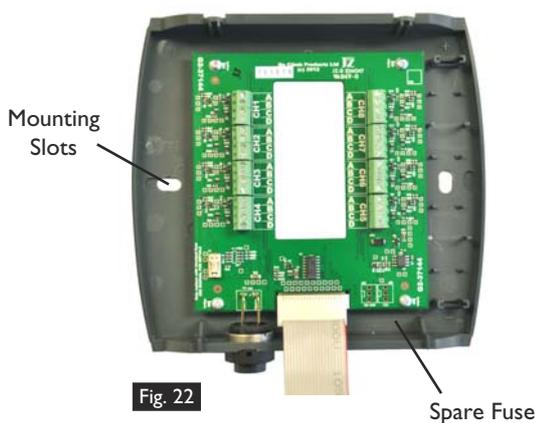
Note: Incorrect wiring may lead to damage to either the Controller or the Head Unit. See Section 8 for Troubleshooting.

6.9 Wall Mounted Control Panel Installation

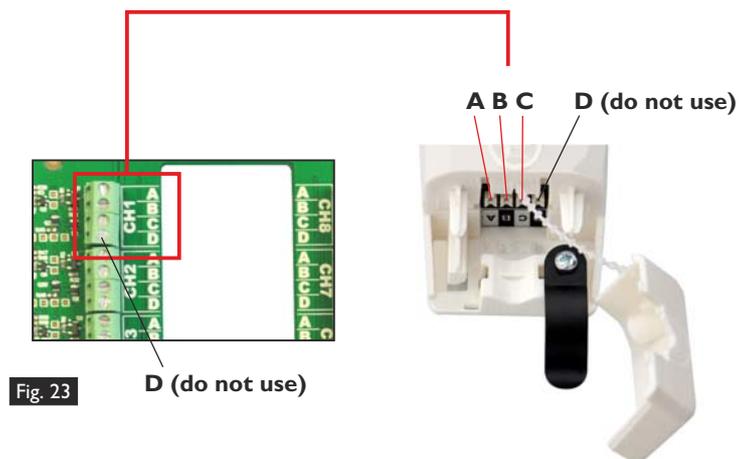
1. The Control Panel is fixed using the two M5 slots in the rear of the box.
2. Cabling for the Control Panel can either be run inside a cavity wall with an exit hole directly behind the Control Panel, or can be run in conduit on the outside of the wall. If using conduit, the optional spacer box must be used to allow cable access to the sides of the panel (Fig. 21).
3. Undo the two small screws at the top of the panel and carefully remove the front face, taking care not to pull the cable between the two parts (Fig. 22).
4. Connect the cable for each Head Unit to the appropriate screw terminals (marked CH1 to CH8) on either side of the rear entry slot. Note which colour wires have been used for each terminal (marked A, B, C, and D). These will connect to the corresponding terminals in the Head Unit. If using 3-core cable, connect to terminals A, B, and C only (Fig. 23). If using 4-core cable, trim the 4th cable and do not use terminal D.

Note: Incorrect wiring may lead to damage to either the Control Panel or the Head Unit. See Section 8 for Troubleshooting.

5. Tighten the screws on the terminals.



NEW PHOTO



7. Using Scorpion

7.1 Charging the Scorpion Battery Pack or Solo Battery Baton

	<p>WARNING</p> <p>Do not attempt to use or charge the battery if either the unit or the battery connection point are damaged.</p> <p>Never connect AC and DC power at the same time.</p>
	<p>CAUTION</p> <p>Store charger in a dry place (indoor use only when connected to AC mains). Danger of fire and electric shock! Do not fast-charge a hot battery, allow the Battery Baton, or Scorpion Battery Pack, to cool down naturally before starting a charge cycle. Allow the charger to cool down for at least 15 minutes after one fast charge. Stop charging if the Battery Baton, or Scorpion Battery Pack, becomes too hot during charging (>55-60°C). Do not leave unattended whilst charging. Only clean with a dry cloth. Do not attempt to open the charger. Repair permitted only by authorised dealer.</p> <p>Battery Batons, or Scorpion Battery Pack, must be stored and charged in accordance with stated environmental conditions.</p> <p>Environment: Operating temperatures: 5°C to 45°C / 40°F to 115°F Storage temperature: -10°C to 50°C / 15°F to 120°F Humidity: 0-90% RH non-condensing</p> <p>Only the Solo 726 charger should be used for charging Scorpion Battery Packs or Solo Battery Batons (Fig. 24). Do not connect other types of batteries. Danger of explosion.</p>

- The Scorpion Battery Pack (SCORP 50) or Solo Battery Batons (SOLO 760) are used to power the Scorpion System, and must be charged before using Scorpion.

- Connect the Solo 726 charger to a mains power outlet (100/240V – 50/60Hz) or 12 volt vehicle accessory socket.

- Connect the Scorpion Battery Pack or Solo Battery Baton to the charger via the seven pin polarised connector and turn the locking ring (Fig. 25-26).

- The LED will flash from red to green for around 5 minutes whilst the battery status is checked. The LED will then turn to red to indicate fast charging, unless the battery is fully charged, in which case it may go directly to green (ready for use) (Fig. 27).



- After fast charging is complete (90 minutes for a fully discharged battery), the charge is automatically converted to a trickle charge and the LED turns to green (ready for use).
- A red flashing LED indicates a faulty battery. Disconnect the battery from the charger and replace with a new battery.
- The battery charger and battery can remain connected under a trickle charge for several hours without damage to the battery. This maintains the battery in a fully charged state, ready for use.

Note: If the battery is not to be used for some time (i.e. within the next day), it is advisable to unplug the charger from the power supply.

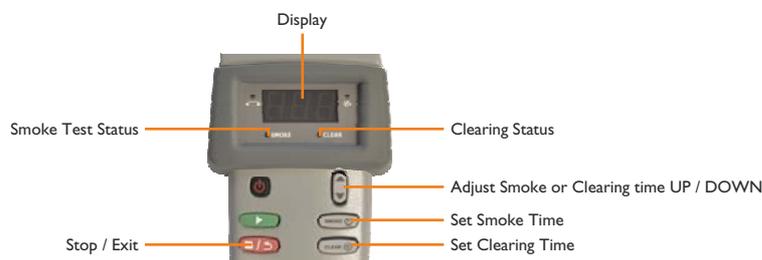
- To stop charging, disconnect the power plug before removing the battery from the charger.
- To obtain the maximum battery life, the Scorpion Battery Pack or Solo Battery Baton should be fully discharged before recharging when possible.

7.2 Connecting the Battery

- With a Scorpion Battery Pack (SCORP 50), insert the connector at the end of the Battery Pack to the socket at the bottom of the Scorpion Portable Controller or the Wall Mounted Controller. The connectors need to be aligned before they can push together. Once inserted, twist the collar on the battery socket clockwise to lock the battery into place.
- To remove the battery, twist the collar anti-clockwise to unlock, then pull gently to disengage.
- When using a Solo Battery Baton (SOLO 760), a Scorpion Battery Cable (SCORP 60) is required to connect the battery baton to the Scorpion Portable Controller or Wall Mounted Controller.

7.3 Setting SMOKE and CLEAR Times on the Scorpion Portable Controller

- Connect the battery
- Switch the Controller **ON**
 - Press and hold the **ON** button
 - The display shows the firmware version, then goes blank.



- Setting Smoke and Clear times (If required)
 - The time that is required for **SMOKE** (the time for which smoke is generated) and **CLEAR** (ambient air is blown through the detector chamber) can be changed depending on the system activation time.
 - SMOKE** (default time is 15 seconds) **CLEAR** (default time is 15 seconds)
 - To change the default times, press the relevant **SMOKE TIME** or **CLEAR TIME** button. The display will show the previously set (or default time) and the Smoke or Clear status light will flash.
 - Press the **UP** and **DOWN** buttons until the time required is shown. Press the **SMOKE TIME** or **CLEAR TIME** button again to save the time and exit.
 - SMOKE** - time range is 5 to 90 seconds **CLEAR** - time range is 10 to 60 seconds
 - The time is now set and is saved in the Controller for future use.
 - To exit without saving the times, press the Stop / Exit button.

NOTE: the **CLEAR** function is used to purge smoke from the detector to enable it to reset more quickly. It cannot be used to clean the internal components of the detector. Always use the least amount of smoke required to activate the detector.

7.4 Setting TEST and CLEAR Times on the Wall Mounted Control Panel

- The time that is required for **TEST** (the time for which smoke is generated) and **CLEAR** (ambient air is blown through the detector chamber) can be changed depending on the system activation time.

TEST (default time is 15 seconds)

CLEAR (default time is 15 seconds)

- Press and hold the relevant **TEST** or **CLEAR** recessed button with a small blunt tool.
- The corresponding LED will start to flash.
- Press the **UP** button to increase the time or the **DOWN** button to decrease the time. The time is shown on the display.

TEST - time range is 5 to 90 seconds

CLEAR - time range is 10 to 60 seconds

- When the required time is shown, release the **TEST** or **CLEAR** recessed button. The time is now set and is saved in the Control Panel for future use. This time is used for all the Head Units connected to that panel.

NOTE: the **CLEAR** function is used to purge smoke from the detector to enable it to reset more quickly. It cannot be used to clean the internal components of the detector.



7.5.1 Enabling the Transport Timer

- The Transport Time is used in ASD systems, and is the time taken between the start of smoke generation and the event appearing on the ASD panel.
- The Timer is activated / deactivated by pressing and holding the **STOP** button for 3 seconds (both Controllers).
- The Timer Indicator LED flashes fast 3 times to show the timer has been activated, and flashes slowly for 3 times when deactivated.
- During a test cycle, the Timer Indicator LED is illuminated and the display shows the time since the start of smoke generation (counting up).

7.5.2 Test Procedure using the Portable Controller

- Connect the Portable Controller to a Scorpion Access Point wired to the Head Unit (Detector) under test using the Scorpion Control Cable (SPARE I054).
- Switch the Controller **ON**.
- “C” on the display implies that either the Control Cable is not connected properly, or that an incorrect cable is being used.
- Press the **START** button to begin the test.
- The test will run based on the default times set for **SMOKE** and **CLEAR** unless changed (see Section 5). The LED indicators on the front panel illuminate to show the stage of the test i.e. **SMOKE** or **CLEAR**. Once the test has been completed, the system will stop automatically.
- If a manual stop is needed, then press the **STOP** button. Depending on the stage of the test, the **STOP** button will have the effect shown in the table below.

		TEST STAGE				
	Button	WARM UP	SMOKING	CLEARING	DISPLAY	
POINT	START	Head Unit warms up. Display counts down from 5 to 0 sec.	Smoke ON, Smoke LED = ON, Display = "0"	Clearing ON, Clear LED = ON, Display = "0"	Test Ends. Display goes blank.	
	STOP	Head Unit warms up. Display counts down from 5 to 0 sec.	Stops SMOKE and starts Clearing, Display = "0"	Clearing ON, Clear LED = ON, Display = "0"	Test Ends. Display goes blank.	
	STOP	Head Unit warms up. Display counts down from 5 to 0 sec.		Stops Clearing, Display = "0"	Test Ends. Display goes blank.	
	STOP	Stops warming up			Test Ends. Timer continues to count up until STOP	
ASD	START	Head Unit warms up. Display counts down from 5 to 0 sec.	Smoke ON, Smoke LED = ON, Transport Timer LED = ON, Display = Time counting up	Clearing ON, Clear LED = ON, Transport Timer LED = ON, Display = Time counting up	Test Ends. Timer continues to count up until STOP	
	STOP	Head Unit warms up. Display counts down from 5 to 0 sec.	Stops smoke, Display = Transport Timer	Clearing ON, Clear LED = ON, Transport Timer LED = ON, Display = Transport Time	Test Ends	
	STOP	Head Unit warms up. Display counts down from 5 to 0 sec.		Stops Clearing, Display = Transport Time	Test Ends	
	STOP	Stops warming up			Test Ends. Display goes blank.	

7.5.3 Test Procedure Using The Wall Mounted Controller

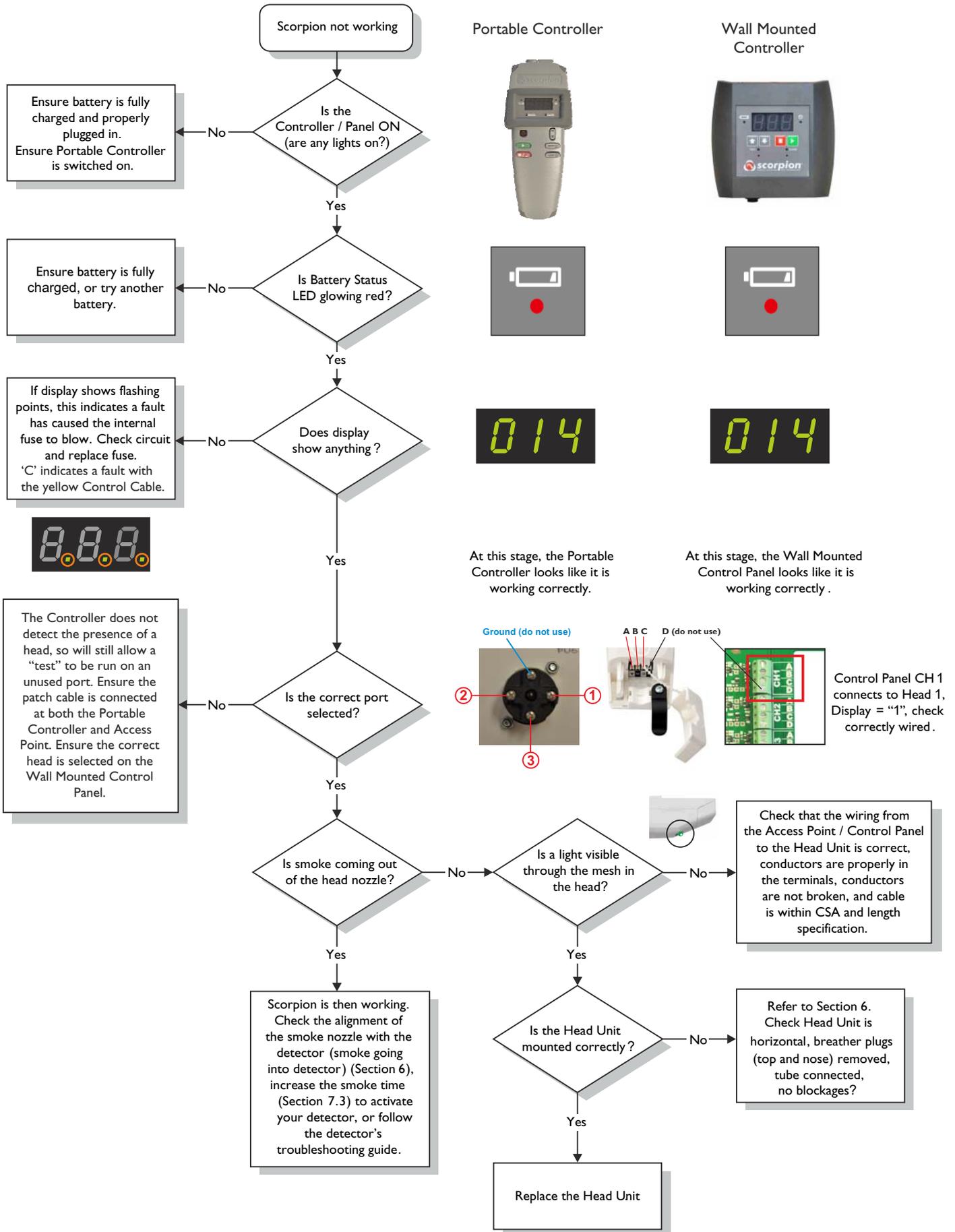
- Select the head to be tested using the **UP** and **DOWN** buttons (head number is shown on the display). The Control Panel will allow selection of up to 8 heads, even if no head is connected to that port.
- Press the **START** button to begin the test.
- The test will run based on the times set for **TEST** and **CLEAR** (using the recessed buttons). The LED indicators on the front panel illuminate to show the stage of the test i.e. **SMOKE** or **CLEAR**. Once the test has been completed, the system will stop automatically.
- If a manual stop is needed, then press the **STOP** button. Depending on the stage of the test, the **STOP** button will have the effect shown in the table below.

		TEST STAGE				
	Button	SMOKING	CLEARING	DISPLAY		
POINT/ DOOR DETECTOR	START	Smoke ON	Clearing ON	Test Ends	Shows Head Number	
	STOP	Stops Smoke and starts Clearing	Clearing ON	Test Ends	Shows Head Number	
	STOP		Clearing OFF	Test Ends	Shows Head Number	
ASD SYSTEM	START	Smoke ON and Timer starts	Clearing ON	Test Ends	Shows time counting up	
	STOP	Stops Smoke and Clock - starts Clearing	Clearing ON	Test Ends	Shows stopped time	
	STOP		Stops Clock Stops Clearing	Test Ends	Shows stopped time	
	UP or DOWN	Once test has stopped (either run its course or stopped manually), any button will clear the time from the display and allow the next head to be selected				Shows Head Number

7.6 Warnings and Errors

- **Battery Status Indicator** - Glows red when battery level is low. Glows green when the level is ok. Tests cannot be made when the LED glows red and the battery will need to be recharged.
- **Error** - Three flashing points on the display indicate that a fault has occurred and the Control Panel fuse has blown (see Section 9).
- Scorpion has a clearing function that blows air through the detector to clear the smoke more quickly. This is part of the standard test profile (unless stopped manually). If the alarm keeps sounding, the clearing time may not be long enough and can be increased.
- For future tests, try reducing the smoke time to lessen the amount of smoke in the detector chamber.

8. Troubleshooting



9. Service and Maintenance

9.1 Scorpion Head Units

- There are no user serviceable parts in the Scorpion Head Unit which is permanently sealed.
- Any attempt to open or tamper with the Scorpion Head Unit will invalidate any warranty or liability with No Climb Products Ltd.

NOTE: The Head Unit is designed to be permanently installed providing in excess of 240 tests of 15 seconds each.

9.2 Scorpion Portable Controller and Wall Mounted Control Panel

- The Portable Controller contains a 500mA fuse (5 x 20mm cartridge type) which can be replaced if necessary.
- The Control Cable (yellow) can be replaced using Part No. SPARE I054-001.
- The Wall Mounted Control Panel contains a 500mA fuse (Littlefuse Omni-Block 500mA Farnell Part No. 9943625, or equivalent) which can be replaced if necessary. One spare fuse supplied with each Control Panel.
- There are no other user serviceable components in the Portable Controller or the Wall Mounted Control Panel.

9.3 Batteries and Battery Charger

- There are no user-serviceable parts in the Scorpion Battery Pack (SCORP 50-001) or the Solo Battery Baton (Solo 760-001), or in the Solo Charger (Solo 726).
- Any attempt to open or tamper with the batteries, charger, or any other approved Scorpion (or Solo) component will invalidate any warranty or liability with No Climb Products Ltd.

Disposal of old product

See WEEE statement (page 5).

10. Technical Specification

● Environment

	Scorpion Battery Pack	Scorpion Head Unit	Scorpion Controllers
Transport / Storage Temperature	-20°C to +35°C (-4°F to +95°F)	-10°C to 50°C (14°F to 122°F)	-10°C to 50°C (14°F to 122°F)
Storage Humidity	0-90% RH (non-condensing)	0-90% RH (non-condensing)	0-90% RH (non-condensing)
Operating Temperature	+5°C to +45°C (41°F to 113°F)	0°C to 60°C (32°F to 140°F)	+5°C to 45°C (41°F to 113°F)
Operating Humidity	0-85% RH (non-condensing)	0-95% RH (non-condensing)	0-85% RH (non-condensing)
Ingress Protection	IP40	IP20	IP40
Weights & Dimensions	523g 139mm (W) x 81mm (L) x 48mm (H)	<200g 155mm (W) x 54mm (L) x 34mm (H) (excluding nozzle)	<500g 100mm (W) x 225mm (L) x 40mm (H) [Portable Controller] 155mm (W) x 150mm (L) x 37mm (H) [Wall Mounted Controller]

Note: The Scorpion system is designed for specific applications within the above parameters. For additional information regarding location and installation procedures, please refer to the Scorpion User Manual and Quick Start Guide at: www.scorpion-tester.com

● Safety features

- Scorpions energized only at time of test
- Isolation between Scorpion circuit and detection system
- Internal over-current protection on Scorpion circuit
- Battery over-current cut-out

● Power source and charge data

- Scorpion Battery Pack (SCORP 50) - NiMH rechargeable nominal 7.2v 2.2Ah
- Solo Battery Baton (Solo 760) - NiMH rechargeable nominal 7.2v 2.2Ah
- Charging time 75 - 90 minutes (when completely discharged) using Solo-726 charger
- Solo Battery Charger (Solo 726) - Input: 100-240V AC / 50/60 Hz / 0.44A
: 13.8V DC 1.8A
- Output: 8.4V DC 2A FAST
: 8.4V DC 100mA TRICKLE

● Servicing intervals

- None required
- Scorpion Head Unit sealed for life (no serviceable or field replaceable parts)
- Scorpion Portable and Wall Mounted Controllers contains a fuse

● Cabling

- Maximum conductor size is 1.5mm², minimum is 0.5mm²
- Scorpion circuit wiring: FP200 1.5mm², Lapp J-Y(ST) Y0.5 mm², or equivalent
- Maximum cable length per Scorpion Control Panel - 100 metres⁽¹⁾
- Maximum Scorpions per Access Point - 1 / per Wall Mounted Control Panel - 8

● Testing Capacity

- In excess of 240 tests of 15 seconds each per Scorpion Head Unit

⁽¹⁾ Depends on cable used (see Section 6.7).

11. Technical Support

For support, service and further information, please contact:

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Email: support@scorpion-tester.com

Online help available at www.scorpion-tester.com/support

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