1.1 Before commencing with the mounting of the Control Unit inside the vehicle, read ALL the notices contained on pages 2, 3, 4 and 5. Also, consideration must be given to the following points:

- No flammable items should be allowed to cover or be left close to the Control Unit.
- Consideration must be given to the exit path of the smoke when choosing a suitable mounting position.
- Remember, the Control Unit internals get very hot during operation. Do NOT attempt to remove the cover for access inside the unit.

1.2 When mounting the unit choose the position with care. Do NOT drill any holes in the vehicle body which break through the outside of the vehicle. Deburr all holes and paint the bare edge of the metal using suitable paint BEFORE securing the unit in place.

1.3 Once a suitable location has been decided upon mount the unit in position. Ensure clearance BEFORE drilling any holes in the vehicle and protect the surrounding area and/or equipment from damage.

1.4 Once drilled, deburr all holes and paint the bare edge of the metal using suitable paint.

1.5 Secure the unit in place.
VGS MK.III Smoke Screen

Safety Considerations, continued

Fig.1

⚠️ CAUTION

This unit is designed to be installed in an open, vented space, e.g. under the passenger seat. Consideration must be given to the exit path of the smoke when choosing a suitable mounting position.

⚠️ WARNING

This area MUST be kept clear of obstructions at all times. No flammable material must be allowed/kept in this area.

⚠️ CAUTION

Read ALL notices in Fig.3 BEFORE commencing with the electrical connections. Ensure that you use the correctly rated cable for ALL wiring with the correct crimps/connectors. Do NOT use Scotch Lock type connectors for ANY connections in this system. Use the correct crimping pliers for all crimp connectors.

Make all electrical connections referring to Fig.3 and 'Installing the Unit' on page 6. Ensure all cables are secured using tyraps and that adequate protection is fitted to the cables where they pass close or over sharp edges, moving parts such as heater controls, etc. to prevent chaffing.

Referring to Fig.2, make the smoke pipe connection between the smoke canister and the unit. Ensure the pipe is pushed fully onto each connection.

Secure the smoke pipe using tyraps and fit protection where required to protect from chaffing.

1.5

1.6

1.7

(Cont’d)
CAUTION

This fuse MUST be connected, electrically, as close as possible to the take-off point. Do NOT exceed the stated fuse rating.

CAUTION

Ensure that the rubber insulating boot is correctly positioned, i.e., fully covering the terminal and connecting stud. Also ensure that NO bare metal parts are exposed. We recommend using two small drops of suitable adhesive such as Loctite 406 to retain the boot in position.

CAUTION

The end of this nylon pipe, with the fluted end, has been preformed to ease connection into the unit. THE LENGTH OF THE PIPE MUST NOT BE REDUCED.

CAUTION

The Smoke Fluid Canister MUST NOT be mounted with a tilt angle greater than 45 degrees from the vertical. Fit the 'o' ring to secure the Canister.
**VGS MK.III Smoke Screen**

*Electrical Connections*

**Fig.3**

- **Contactor**
- **Vehicle Battery**
- **Smoke Canister**
- **Solenoid Valve**
- **Control Unit**
- **L.E.D.**
- **Ignition positive**

**CAUTION**

- This fuse MUST be connected electrically, as close as possible to the battery '+ve' terminal. Do NOT exceed the stated fuse rating.
- This fuse MUST be connected, electrically, as close as possible to the take-off point. Do NOT exceed the stated fuse rating.
- This fuse MUST be connected, electrically, as close as possible to the take-off point. Do NOT exceed the stated fuse rating.

**WARNING**

- All electrical feeds MUST NOT connect to vehicle safety circuits such as A.B.S., Traction Control, etc.

**Note:**

- If a valet switch is not required, pin 9 MUST be connected to the permanent +12V supply via a 3A fuse.

**Independent trigger input**

- **Arm/Disarm,** this can be level triggered, i.e. ARM when connected to ground or pulse triggered.

**Independent trigger input**

- This signal input draws milliamps. If tapping off a vehicle supply fit a fuse @ 1Amp.
VGS MK.III Smoke Screen

Set-up Procedure

Note:-
Refer to all of the Safety notices on pages 2,3,4 and 5 before commencing this Set-up procedure.

Siting The Unit

2.1 Find a suitable position to mount the Smoke Unit where it can be aimed directly into the space to be protected.

2.2 Locate the aerosol in a safe position, away from likely physical disturbances. Ensure that the fluid pipe (provided in the kit) is long enough to connect to the main unit.

Installing the Unit

3.1 Power cable with a rating of at least 60 Amps must be used. This cable is not included in the kit since the length cannot be determined until installation.

Note: If the cable run is greater than 2 meters then power cable with a rating greater than 80 Amps must be used.

3.2 Follow the diagrams when wiring up the system. 60 amp cable connections should be securely crimped using the correct tools. Solder all other connections for best results. Any un-connected wire ends must be left insulated.

3.3 In order to facilitate service and maintenance work being carried out on the vehicle subsequent to the fitting of the Smoke Screen VGS Mk.III, a valet switch may be fitted. This will require a 5 amp switch fitted into the permanent 12V supply. Note: If a valet switch is not required pin 9 MUST be connected to the permanent +12V supply via a 3A fuse. Refer to 'Electrical Connections' (Fig.3) in this guide.

A range of accessories is available for use with the Smoke Screen VGS Mk.III. Details are available from at the address on the last page of this Installation Guide.

Priming The Unit/ Replacing The Aerosol

4.1 After installation of Smoke Screen in the vehicle and before smoke can be generated, the smoke unit must be primed. Once primed the system should never need repriming provided that a used aerosol is always replaced by a new/full aerosol. Refer to Section 6.1—IMPORTANT NOTE.

4.2 Procedure to be followed when fitting or replacing an aerosol:

Ensure that the canister is in an upright position or leaning at an angle of no more than 45 degrees. This is to avoid the escape of propellant gas.

Screw the aerosol onto the valve, ensuring that it is firmly in place. If some liquid escapes, then continue to turn until it stops.

4.3 Ensure that power has been applied to the unit for more than 15 seconds.

4.4 With the Ignition off, disarm the Smoke Unit (system LED off). (Refer to ‘Selecting Arm/Disarm Mode’).

4.5 Press the button (on the back of the unit) 4 times within 7 seconds. Each press will be followed by a short flash of the system LED and then there will be a long flash.

4.6 Only carry out the next step if the system requires priming.

Holding a cloth to the smoke outlet (at the front of the unit) press and hold button (on the rear of the unit) during this long flash, until fluid exits the pipe. It is important to release the button the instant that fluid begins to exit the end of the pipe. Any excess fluid must be cleaned away.
Configuring The Unit

**5.1 Select Arm/Disarm Mode:**
Level mode: The Smoke unit is set to active (arm) mode when a negative is applied to the arm/disarm input (wire 10) and reverts to non-active (disarm) mode when the negative is removed.

Toggle Mode: Unit toggles between arm and disarm mode each time that a negative pulse is applied to the arm/disarm input. (wire 10). (Refer to Wiring Diagram).

Note that the factory setting is level mode. To change mode disconnect the positive supply reconnecting a few seconds later. Wait 3 seconds and then press the button the required number of times (the LED will flash after each press).

- 2 presses for LEVEL TRIGGER.
- 3 presses for TOGGLE TRIGGER.

These should be completed within 7 seconds. A long flash after completing the procedure confirms the setting.

After the long flash there is a 7 second period in which to reselect arm/disarm mode or to set the trigger time.

**5.2 Setting the Trigger Time:**

i) Note that the factory setting is 23 seconds. This allows for 3 seconds ‘heat up’ time and 20 seconds smoke production. Remember when resetting length of trigger, especially in commercial vehicles, that some of the space being catered for will be occupied by tools, goods, etc.

ii) To set the length of time that the Smoke Unit creates smoke for, press the button 5 times within 7 seconds, either 3 seconds after applying the positive supply to the unit or immediately after selecting arm/disarm mode.

iii) The unit will confirm being ready to accept a new setting by showing a long L.E.D. flash. During this flash press and hold button whilst the unit creates smoke. Only let go of the button when you are satisfied with the density of the smoke in the protected space. Releasing the button permanently resets the trigger time.

Operating The Unit

**6.1 The smoke unit records the usage of the aerosol. If the system LED flashes slowly while armed then this indicates that there is about two minutes of smoke generation time before the aerosol is exhausted. This two minute warning period is a safety margin to ensure that the unit can operate when necessary, and also to ensure that the smoke fluid is not exhausted during smoke generation.**

**Note:** If the aerosol is exhausted during smoke generation then the LED will remain on constant while in the armed state until the aerosol replacement procedure has been carried out as stated in section 4.

**WARNING:**

If the aerosol is allowed to exhaust at any time during smoke generation, the smoke unit could overheat sufficiently to cause the internal safety fuse to blow. If this happens the unit will have to be returned to the factory for resetting. Always replace the aerosol as soon as the warning LED flashes slowly and always ensure that the replacement aerosol is full. Always ensure that the canister mounting angle is correct.

**UNDER NO CIRCUMSTANCES RUN THE UNIT WITHOUT AN AEROSOL FITTED OR WITH AN AEROSOL THAT IS ALMOST DEPLETED.**

With the ignition off, arm the system using the mode selected in section 5.1. This is indicated by the LED flashing.

**Note:** To prevent false triggering, there is a delay period of 15 seconds before the unit is armed. After the 15 seconds the unit is armed, indicated by the flashing LED.

The smoke unit can now be triggered by connecting to either trigger inputs, (wire 11 to +ve) or (wire 12 to ground) (for example via a door contact or alarm output). During the trigger period smoke is generated and the LED remains on. After the trigger period smoke generation stops but the LED remains on constant for a further 90 Seconds preventing further re-triggers while the vehicle is full of smoke.

**Optional Accessory Connector. (Wire 1):** After triggering, the accessory output will operate for 3 minutes. This output may be used to operate approved accessories, Eg. Pager, Siren and Voice Module.
VGS MK.III Smoke Screen

Final Steps Before Testing

7.1 Inspect ALL electrical and smoke pipe connections.

7.2 Ensure the correct electrical connections have been made using the correctly rated wire, following the electrical connections in Fig.3, and that they are secure and insulated to prevent possible short circuits.

7.3 Ensure that the correctly rated fuses are fitted where required. Do NOT exceed the stated fuse ratings.

7.4 Ensure that the smoke pipes are pushed FULLY onto their respective connection points.

7.5 Ensure that the smoke fluid aerosol is fitted tightly to the aerosol valve, and in an upright position and fitted securely in position.

7.6 Ensure that the Smoke Unit is positioned correctly and is free of obstructions as discussed in ‘Safety Considerations’ on pages 2 and 3.

7.7 Ensure all trigger inputs are made correctly in accordance with the requirements of the vehicle security system.

Testing The Unit

8.1 Apply power to the Smoke Unit (by fitting fuses).

Arm the unit by following the steps set out in section 5.1.

Note: To prevent false triggering, there is a delay period of 15 seconds before the unit is armed. After the 15 seconds the unit is armed, indicated by the flashing LED.

The system LED should flash (short flashes).

Trigger the Smoke Unit by connecting either of the trigger inputs (wire 11 to + ve) or (wire 12 to ground) (for example via a door contact or an alarm output). The system LED should glow constant.

After the 3 second warm up period, the Smoke Unit should generate smoke, and continue to do so for the time previously set in section 5.2.

After the trigger period, the system LED should continue to glow constant for a further 90 seconds, after which it will revert to short flashes, indicating that the system is re-armed.

(Cont’d)

(Notes that if both trigger inputs are being used (eg. Via door contacts, alarm, ultrasonics etc.), the test should be repeated using the other trigger input. However to reduce aerosol usage, the 2nd test can be cancelled after triggering (once the generation of smoke has been verified) by disarming the system.

Testing Ignition Input

Disarm the Smoke Unit and wait for at least 1 minute. Re-arm the Smoke Unit (LED should be flashing). With the LED flashing, switch the ignition on. The LED should go out, indicating that the Smoke Unit is disabled when the ignition is on (for safety).

Trouble Shooting

9.1 If, after installation of the Smoke Screen VGS Mk.3 into the vehicle, it fails to operate, the following checks should be made.

Check that the aerosol is firmly screwed into the valve and that there is an uninterrupted flow of fluid with no kinks or sharp bends in the pipe.

9.2 Check the battery. The unit will not fire if the battery output voltage is less than 10 volts.

9.3 Check the trigger connections.

9.4 If after all these steps the unit still fails to operate contact MAW Security ltd., at the address shown on the last page of this Installation Guide.

9.5 Note: The unit can only be triggered 3 times within a 15 minute period. If this limit is reached the unit will take longer to rearm.
VGS MK.III Smoke Screen

Warranty

11.1 This product is guaranteed against failure due to manufacturing faults. This guarantee does not cover problems encountered due to:-
Incorrect installation or connection. This guide sets out these requirements.
Accidental or negligent use, i.e. use not in accordance with the details set down in this guide. Misuse or abnormal use, i.e. use not in accordance with the details set down in this guide.

11.2 Unauthorised attempts to repair or alter any part of the VGS MK.III Smoke Screen.

11.3 NOTE: The VGS MK.III Smoke Unit is sealed using anti-tamper screws and an adhesive paper seal. This warranty is invalidated if the lid is removed.

11.4 This warranty does not affect your statutory rights.

Warranty and Kit of Parts

Contents of Kit, CS36000, (12v)

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<th>DESCRIPTION</th>
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<th>QTY.</th>
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### PIN ASSIGNMENTS

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<td>Accessory output</td>
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<tr>
<td>2</td>
<td>Red</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Orange</td>
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</tr>
<tr>
<td>4</td>
<td>Yellow</td>
<td>+ve to contactor</td>
</tr>
<tr>
<td>7</td>
<td>Green</td>
<td>Ignition on - smoke inhibit</td>
</tr>
<tr>
<td>8</td>
<td>Blue</td>
<td>Fluid solenoid pin 1</td>
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<tr>
<td>9</td>
<td>Grey</td>
<td>Permanent 12v</td>
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<td>Black</td>
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<td>11</td>
<td>White</td>
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<td>12</td>
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<tr>
<td>Blk/red</td>
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Plugs viewed from the back (wire end)