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Gas Shut-Off Valve System Installation and Service Manual

1.0 System Overview

The Gas Shut-Off Valve System allows the supply of gas in domestic or commercial premises to be controlled in a safe manner. A diagram of the Gas Shut-Off Valve System is given in Figure 1 (at the end of this document). The Gas Controller allows the gas supply, controlled by the valve, to be either permanently disabled, via a key switch, or left in an enabled state. When the system is enabled, if a build up of gas is detected, then the following actions occur: -

1. The Gas Controller switches off the gas supply using the gas shut-off valve
2. The Gas Controller operates the ROM and therefore raises a call to the Control Centre via the Social Alarm System

The Control Centre can then arrange for the management of the situation. The gas supply can be re-enabled by means of the key switch on the Gas Controller.

Full user instructions are supplied with the Gas Controller and these should be referred to for additional information.

2.0 Installation Instructions

2.1. Pre-Installation Survey

Before an installation is priced and agreed it is important that the property is surveyed to evaluate the scope of the work required. The initial questions should be: -

What are the customer requirements?

Does the customer understand the implications of their requirements?

Who is responsible for the gas and electrical installation work?

The implications of the first and second point are important because the shut-off valve can be installed in the gas supply to a specific appliance e.g. gas cooker or to the entire property. In the latter case, if the shut-off valve switches off the gas supply, then the supply to all gas appliances will be lost. This will mean that when the gas supply is re-enabled, pilot lights on boilers etc. will need to be re-lit.

It should be noted that if the mains supply to the Gas Shut-Off Valve System is interrupted e.g. by a power-cut, then the gas supply will be switched off. When the mains supply is restored, then the gas supply will be switched on again.

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It must be pointed out to the customer the potential consequences of the gas supply being turned off AND that it is THEIR RESPONSIBILITY to provide an appropriate response to the resident, if their gas supply is shut off. Tunstall Service is unable to offer a response service for this circumstance.

Whoever is responsible for arranging the gas and electrical installation work then the following supplementary questions should be covered?

What size of gas pipe is fitted and therefore which Gas Valve is required and where should it be fitted?

How many Gas Detectors are required and where should they be located?

Is the existing electrical installation suitable for the addition of the Gas Shut-Off Valve System?

What are the electrical cabling requirements?

2.2. System Components

A Gas Shut-Off Valve System comprises of the following system components: -

GS189 Non-Switched Fused Spur (3A fuse to be fitted)
GS783 Natural Gas Detector (up to three may be fitted to give coverage)
67005/35 869 ROM
GS807 Gas Controller

plus an appropriate sized valve to suit the installed gas pipe

GS808 ½ inch valve
GS809 ¾ inch valve
GS810 1 inch valve

For convenience this equipment is packaged as three kits: -

GS803 Gas Shut Off System (1/2" valve)
GS804 Gas Shut Off System (3/4" valve)
GS805 Gas Shut Off System (1" valve)

The Social Alarm system must be compatible with the 869 ROM e.g. LL400, LL4000+ and Communicall Telecare Overlay

Figure 1 shows the interconnection between the various system components and the required cabling.

2.3. Installation Process

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The following important requirements **MUST** be adhered to: -

All gas work MUST be performed by a CORGI registered gas fitter.

All electrical work MUST be carried out by suitably qualified personnel working to the applicable regulatory standards.

As the gas shut-off valve is powered ON, it must be fitted at the same time as the rest of the system.

2.3.1. Gas Controller Installation

The Gas Controller unit must be situated in a clean and dry area, in a position convenient for accessing the keyswitch. The Gas Controller should not be situated in hazard zones 0-2 as defined in the IEE wiring regulations 16th Edition + 2000 Amendments. The Gas Controller must be wall mounted and secured using fixing holes within the rear of the case.

All cables must enter via the compression glands provided and the cable types as indicated in Figure 1. Note that the electrical connections are clearly shown on the PCB when the case lid is removed.

After gas connections have been made to the gas shut off valve and deemed safe, then the wiring to this device can be installed. The maximum permitted cable length between the Gas Controller and the valve is 5m.

2.3.2. Gas Shut Off Valve Installation

This must be performed by a CORGI registered Gas Fitter. Note that the Gas Shut Off Valve becomes hot in use and should be sited accordingly

2.3.3. Natural Gas Detector Installation

Site the natural gas detector in accordance with the Installation instruction supplied. If required, the mains supply lead can be extended using a suitable joint box and cable. If more than one Natural Gas Detector is to be fitted, then the supply can be wired in parallel to each detector or on separate cables to suit the installation. The detector outputs however must be wired in series as these are normally closed. Cable lengths should not exceed 10m

2.3.4. ROM Installation

Fix the ROM in accordance with the instructions supplied with this item and connect as shown to the Gas Controller using the integral 1.8m cable, which should not be extended. The NO and C terminals of the Gas Controller should be used.

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2.3.5. Social Alarm Programming Details

Program the ROM into the Social Alarm in the standard manner. Note which ROM number, the ROM registers as i.e. ROM#1 – ROM#4.

2.3.6. PNC Location Code Configuration

Arrange for the staff at the PNC Control Centre to edit the TT92 Location Codes for the dwelling as follows: -

If ROM #1 change TT92 Location Code 25 to read “Gas Shut-Off Activated” and change TT92 Location Code 29 to read “Gas Shut-Off ROM ALB”

If ROM #2 change TT92 Location Code 35 to read “Gas Shut-Off Activated” and change TT92 Location Code 39 to read “Gas Shut-Off ROM ALB”

If ROM #3 change TT92 Location Code 45 to read “Gas Shut-Off Activated” and change TT92 Location Code 49 to read “Gas Shut-Off ROM ALB”

If ROM #4 change TT92 Location Code 55 to read “Gas Shut-Off Activated” and change TT92 Location Code 59 to read “Gas Shut-Off ROM ALB”

If they are unsure of how to perform this procedure, then the Tunstall Helpdesk can be contacted for advice

It is also recommended that additional text must accompany this on the resident notes in order to provide the best level of response for a carer to arrange a visit to check the premises and if appropriate reset the Gas Controller using the keyswitch.

3.0 System Test Process

1. Check all the connections are correctly terminated. The keyswitch on the Gas Controller should be in the Gas OFF/Reset position. Apply power to the fused spur. The power lights on the Gas Controller and Gas Detector should illuminate. Note that the red alarm light on the Gas Detector will flash at power up - this is normal.
2. Turn the keyswitch to the Gas On position and check the Gas On LED illuminates and also the Gas Shut-Off Valve operates correctly - the solenoid will be heard to operate on the valve.
3. To check the Gas Shut-Off Valve System is working correctly, then activate the Gas Detector by injecting gas, using either a canister of natural gas or an (unlit)

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butane lighter. When the Gas Detector first activates, the red Alarm LED will start to flash. Continue to inject further gas until the alarm sounds on the Gas Detector and the relay on the Gas Detector operates. This should cause the Alarm light to illuminate on the Gas Controller and the gas supply should be switched off by the gas shut off valve- the solenoid will be heard to operate on the valve.

4. A call will be raised on the Social Alarm system. Check with the PNC Control Centre that the correct alarm information has been received
5. When the Gas Detector goes out of the alarm condition, check that the Gas Shut-Off Valve System can be reset by turning the keyswitch to the Gas OFF/Reset position and then back to the Gas ON position. This should cause the Gas Shut-Off Valve to restore the gas supply - the solenoid will be heard to operate on the valve. The Alarm light on the Gas Controller will extinguish.

4.0 Service Considerations

Once installed, the Gas Shut-Off Valve System should prove highly reliable with a useful minimum service life of 5 years.

Due to safety implications associated with this system, then Service involvement is limited to: -

- Replacing a faulty ROM
- Replacing a faulty Gas Detector
- Replacing a faulty Gas Controller
- Replacing a blown fuse in the fused spur

Note that there are no user serviceable parts in the Gas Detector or Gas Controller and these should be swapped out

The following procedures MUST be adhered to: -

- Before attending site, Service should check with the responsible authority that it is safe to enter the premises i.e. no gas leak present
- As mains voltage are involved, then the equipment should be isolated at the fused spur before work commences
- After the fault has been fixed, then the installation should be tested
- The gas supply to the end user should not be left reinstated unless the responsible authority are on site at the time

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Figure 1. Gas Shut-Off Valve System Component and Wiring Diagram

