Office of Energy

Office of ENERGY WA

Gas FOCUS

Gas Appliance Conversions

The Office of Energy and gas suppliers have been receiving many queries concerning the conversion of gas appliances. There also appears to be some confusion over who is permitted to carry out conversion work.

Being a gas fitter and the holder of a Certificate of Competency or Permit does not automatically allow a person to convert a gas appliance on a consumer's gas installation.

The conversion of gas appliances is covered in the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*. Item 502 of Schedule 6 of the regulations defines the requirements if a modification of a gas appliance is to be carried out to enable it to use gas of a different type.

Some manufacturers are generally not in favour of their gas appliances being converted due to the complexity and the availability of some of the componentry. However, Item 502 (2) of the regulations makes provisions for an authorised and competent gas fitter to carry out such modifications. Item 502 (2) states:

> An appliance installed in a consumer's gas installation must not be modified after manufacture for the purpose of enabling it to use gas of a different type unless it is modified —
>
> (a) in accordance with the manufacturer's instructions using a conversion kit specifically approved for that purpose; or
>
> (b) with the written approval of an inspector.

Many gas appliances are not convertible, due to age and unavailability of componentry. Some appliances were only manufactured and approved to burn one type of gas eg. Aqua-Max G40LP storage water heater, Vulcan Sienna CT23LPG flueless radiant convection heater. Attempting to convert these types of gas appliances without the authority or expertise could result in a highly dangerous situation and may lead to an investigation by a gas inspector.

Some gas suppliers are also unwilling to accept converted gas appliances onto their systems unless the conversions have been carried out by recognised, experienced, competent persons who have specialised in this area and have access to the specialist test equipment.

In general, the conversions of gas appliances should only be undertaken where:

- The gas conversion is unavoidable
- The gas appliance is approved for conversion to that intended gas type
- A manufacturers' approved kit and procedure is available
- The conversion is acceptable to the gas supplier's inspector
- The conversion is in accordance with a conversion procedure acceptable to the regulatory authority.

The following is an example of why only competent persons should perform such conversion work and why only approved kits should be used:

If an injector with a diameter of 0.5mm was enlarged to 0.6mm, the increase in diameter would only be 0.1mm (a 20% increase). However a 20% increase in diameter will result in a 44% increase in area. This increase would in effect increase the gas rate by 44% or nearly half as much again. This example illustrates that what some may consider to be a minor modification, becomes a potentially hazardous situation.

Mouse Starts a Fire

Two recent incidents of a fire in a gas cooker could have an effect on the servicing of gas cookers. In both incidents, there was a link in the chain of events leading up to the explosion/fires that occurred.

The link was a mouse.

Mouse droppings were found in the vicinity of the aluminium tube from the oven thermostat to the oven burner. This tube is usually located behind the side panel of a gas cooker, between the oven insulation and the outer panel. This is a warm spot and the mice droppings provided a clue to the possible gas leak.

On one of the fires, the gas inspector concluded "the corrosion found on the aluminium tube in the area of the gas leak appears to be caused by the reaction of mouse urine on the aluminium".

In both cases the cookers had been in service for many years.

Anecdotal evidence shows that gas fitters in the field have been aware of this problem for a number of years. Regulation 42 of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999* requires that incidents such as these be reported.

As a gas fitter, if you are called to investigate a smell of gas in a gas cooker and a pressure test does not reveal the source of the reported gas leak, try lighting the oven and use a gas detector to check this aluminium tube. If the tell tale signs are there, you may have discovered the leak.

As an immediate fix, replace the aluminium tube with copper tube. Then advise the Office of Energy of the occurrence on telephone 9422 5297.

The Office of Energy has notified the Australian Gas Association of these incidents and is waiting for a response.

Unused Appliances Still Need to be Serviced

An Office of Energy gas inspector was called to a northern wheatbelt town to investigate the cause of a fire that had completely destroyed a house.

The inspector found a 9kg LP Gas cylinder had been placed on a stand to connect to a pigtail on the regulator attached to the house. The house was used infrequently and the 45kg cylinder had been stolen.

When interviewed, the owner reported an explosion in the oven he was using at the time. The fire caught nearby combustible material and quickly spread to the remainder of the house. Fortunately, there were no serious injuries sustained as the two occupants escaped from the house.

The owner was heard to say "the oven had not been used for a long time and had been running for about two hours before the fire was noticed". The gas cooker was 25 to 30 years old and may not have been serviced in this time. This is a major concern as gas appliances do deteriorate if not serviced. Any small gas leak may remain undetected over a short period of use. However, with the extended time for which an oven could be in use, a leak of unburnt gas could be ignited by the burner in the oven.

It is good practice when servicing a gas appliance to conduct a pressure test and run the appliance to confirm correct operation. Check the appliance operating pressure and, in the case of an LP Gas installation, check the pressure at the regulator. Regulator manufacturers recommend replacing the LP Gas regulator at least every 15 years.

Like a motor vehicle, gas appliances require servicing on a regular basis to maintain their serviceability and safety. Just because an appliance is not used for a while, it should not be neglected.

Preliminary Notices and Notices of Completion

Prior to the introduction of the new Preliminary Notices and Notices of Completion, there was a multitude of different types of notices which caused some confusion. In turn, there was a high percentage of mistakes when gas fitters completed the forms.

In June 1997, the Director of Energy Safety issued a directive, advising the gas industry that the newly designed Office of Energy Preliminary Notices and Notices of Completion were the only valid forms that may be used to notify gas fitting work in Western Australia.

The new notices have been widely distributed through the Office of Energy and gas supplier networks. Active gas fitters are now almost exclusively using the new notices for all the work being submitted to the Office of Energy. Importantly, the number of notices that are being incorrectly completed has dropped from about 10% to approximately 1.5%.

This is a good result. It generally reflects the efforts being made by gas fitters to do the right thing. Properly completed paperwork is particularly important. For example, LP Gas cylinders cannot be supplied and/or gas cannot be connected to an installation, unless the gas supplier or an agent of the supplier has received a correctly completed Notice of Completion.

Another Explosion in a Plumber's Van

A plumber left a gas torch connected to a small LP Gas cylinder in his toolbox in his van. The next morning, as he was unlocking the door of his van, the van exploded, killing the plumber and destroying the vehicle. Experts advised the Coroner that the most likely source of ignition was the central locking system of the vehicle.

Key lessons

- LP Gas in small quantities can give rise to a devastating explosion in confined spaces such as vehicles.
- LP Gas cylinders that are to be carried in a vehicle should be disconnected from equipment, plugged and stowed securely.
- Never leave LP Gas cylinders in closed vehicles for long periods.
- Only use LP Gas in approved systems eg. automotive fuel systems installed to AS 1425 1999.

Recommendations

Plumbers, gas fitters and other persons using LP Gas (eg. recreational users) should be aware that LP Gas is a high energy fuel and must be treated with respect, particularly in confined spaces where sources of ignition may be present.

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"Inspection Day" for Autogas Owners

The Office of Energy's Gas Inspection Branch has for some time planned an "Inspection Day" for owners of LP Gas fuelled vehicles.

The first "Inspection Day" was held at Transport's Licensing Centre, Fremantle on Sunday 24 October 1999. The event was a huge success and exceeded everyone's expectations.

The first customer arrived shortly after 6.45 AM and from 8.00 AM it was full on for the rest of the day. During the day, 389 Autogas installations were inspected, which included an array of different types of vehicles. Although only local owners were being sought, there were people from a few country areas including one from as far away as Bunbury.

Transport and RAC personnel supported the campaign and have indicated their support for inspection days planned for March/April next year. Also, many Autogas installer companies provided personnel to assist in many of the inspection functions. The installer companies have received calls from Autogas owners for remedial work to be carried out.

Information submitted on the inspection check sheets and customer survey forms has provided useful information for future inspection strategies and other changes that may be implemented.

Feedback received on the day indicates that the public thought very highly of the safety service being provided and were complimentary in the way that a number of agencies were able to combine their resources.

Vehicles that were checked during the inspection day are easily identifiable by the "I've been checked and I'm green" bumper sticker.

PROSECUTIONS FOR BREACHES OF THE GAS STANDARDS ACT (1972)
1 July 1999 to 31 October 1999

Breach	*Name (and Suburb/Town of Residence at Time of Offence)*	*Licence No.*	*Fine $*	*Costs $*
Carried out gasfitting work without certificate of competency, permit or authorisation Section 13A GSA	*K Campbell (Gidgegannup)*	*NLH*	*200.00*	*200.00*

NLH No Licence Held

Defective Gas Installations

Discussions between AlintaGas and the Office of Energy's Gas Inspection Branch have resulted in a major policy change by AlintaGas. This policy change relates to defects that are identified on any gas installation where AlintaGas is the gas supplier.

AlintaGas has advised that, from the beginning of 2000, Attention Tags will no longer be issued where an inspector finds faults on a gas installation. In accordance with Regulation 29 of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*, a Notice of Defects will be issued to the gas fitter who fails to comply with the Regulations.

The Office of Energy fully supports this change which will formally identify those gas fitters who frequently disregard the Regulations. The Office of Energy has a prosecution process as well as a disciplinary process in place to deal with such gas fitters who fail to comply with the minimum standards expected by the gas industry.