APPLICATIONS NOTICE

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Form NS 006

TO: AUTHORISED DEALERS/DISTRIBUTORS
N.Z. APPROVED INSTALLERS
H.O., REG'L & AUST. MANAGERS
APPLIC. NOTICE GENERAL LIST

ISSUE NO. : 03/04

DATE : 1 December 2004
FROM : T King/K Edwards

SUBJECT: R410A INTRODUCTION

UNITS: PRODUCT RANGE

Over the next couple of years temperzone intends to gradually change its range of products from R22 (HCFC) to R410A (chlorine free HFC).

As you can imagine with such a large range of products it is a daunting task. Our approach will be to concentrate on one family group of units at a time and this will depend to some extent on compressor availability. Various units have been on test for some time and the first family group being upgraded is the 15 kW to 26.5 kW Split System range. This is expected to be followed by the Split System range up to 15 kW.

temperzone do not believe it is their responsibility to train Approved Installers and Authorized Dealers/Distributors, we believe that all Contractors have a responsibility to search out training on R410A for themselves. We suggest an approach to IHRACE or RACCA in Auckland or AIRAH or TAFE in Melbourne to find details of what training courses may be available and when. We believe Manukau Technical Institute are to run courses throughout the country in 2005.

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Refrigerant R410A (also known as AZ20) is a "much" higher pressure refrigerant that has a zero ozone depletion factor (though it still has some greenhouse gas effect) and has particular peculiarities that it is important to be aware of.

temperzone is training its own staff in the idiosyncrasies of R410A. There are specific processing requirements and safety issues that must be adhered to and temperzone expects contractors to follow these same practices when installing and servicing in the field. To this end we have drawn up a list of requirements or expectations and this is attached.

It will be seen that there will be a requirement for Approved Installers to carry some extra essential equipment for R410A and this will apply to all new Contractors wanting to gain approval as well as those already approved.

The next review of existing Approved Installers will be at the end of 2005 and to maintain ongoing approval the following additional equipment will be required at that time. A new Approved Installer Requirements Application Notice 01/04 has been issued.

R410A PROCESSING REQUIREMENTS

It is important at all times to be aware that the cylinder and system pressures are, or can be, 50 to 70% higher than those of R22.

The oil used in R410A Refrigerant Systems is Polyolester (Ester Oil) and is highly hydroscopic which means it will absorb moisture easily and rapidly.
Moisture/Water is a compressor's worst enemy.
Ester oils should be stored in (sealed) metal or glass containers, preferably not plastic.
Ester oils can be irritating on the skin.
It is recommended to use a pump to transfer Ester Oils, even when decanting from one container to another container.

Final connection joints to units to be brazed after all other joints have been brazed, ensure the caps are left intact until the last moment thus keeping units sealed.

All brazed joints to be made with Nitrogen flowing through tubes.

Keep all pipework sealed as much as practical to reduce moisture infiltration especially in humid or wet weather conditions.

Flare joints should be made using clutch type flaring tools.
Thin walled flare nuts **must not** be used on R410A.
Flare joints not allowed on pipes greater than 16mm OD.

Units will have Liquid Line Filter Driers fitted as standard.

Charging should always be of liquid refrigerant.
Refrigerant charging should be by weighing in.
Charging Cylinders are not to be used as they allow fractionation to occur (separation of the two constituents that make up the refrigerant).
Units that have lost charge to have the refrigerant recovered, be evacuated and recharged with fresh refrigerant (if refrigerant is lost the remaining refrigerant constituents balance is questionable).

Refrigerant Cylinders for R410A must have a SWP (Safe Working Pressure) of 4.8 Mpa (700 psig) or greater.

Refrigerant R410A does have a temperature glide when evaporating or condensing but as it is so insignificant it can be ignored.

Gauge Manifold sets must have gauges and manifold suitable for the higher pressures of R410A (higher pressure scales).

Gauge hoses must have a burst pressure of 27500 kPa and SWP of 5500 kPa and be of HNBR rubber with a nylon internal coating.
Hose and test point connections to be ½" UNF (5/16" Flare).

Leak Testing must be with leak detectors designed for HFC R410A such as the "D-TEK" type or the "CPS LS790B Leak Seeker".