Newsletter for the Refrigeration and Air Conditioning Industry

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COOLCHANGE

In this issue

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RAC apprentices shine at WorldSkills Australia

The best refrigeration and air conditioning apprentices in the country were recognised at the 2018 WorldSkills Australia national championships awards ceremony in Sydney on the 5th June 2018.

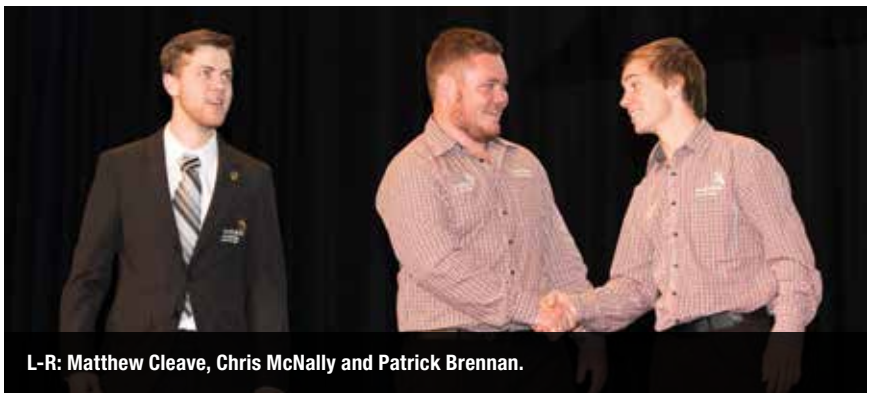
Patrick Brennan, representing South West Queensland, took the gold medal, Chris McNally, representing Brisbane, won silver and Matthew Cleave from West Sydney won bronze.

The WorldSkills Australia national competition is the largest vocational, educational and excellence competition in Australia. Each year trainees and apprentices travel from across Australia to put their skills to the test in a variety of different trade and skills areas.

The refrigeration and air conditioning skill challenge was held over three days at the Air Conditioning Refrigeration and Building Services (ARBS) Exhibition 2018 at the Sydney International Convention Centre in May.

Competitors had 18 hours to demonstrate their skills and knowledge by completing four tasks: installing a refrigeration system, commissioning an air conditioning system, refrigeration fault finding and electrical fault finding.

Patrick, Chris and Matthew will be vying for a chance to represent Australia as a Skillaroo at the 45th International WorldSkills competition in Kazan, Russia in August 2019. For more information about the WorldSkills Australia competition visit **www.worldskills.org.au**.



L-R: Matthew Cleave, Chris McNally and Patrick Brennan.

R32 – reclaim cylinders and safety

R32 is not an ozone depleting refrigerant and has a lower global warming impact than R410a. It is rated as an A2L lower flammability refrigerant under AS/NZS ISO 817:2016. In Australia, various manufacturers use R32 in domestic split-system air conditioning equipment.

R32 refrigerant is a controlled substance under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*. As a result, technicians and businesses working with R32 will require an appropriate refrigerant handling licence.

A refrigerant trading authorisation is also required to acquire, possess or dispose R32 refrigerant.

Cylinders

While R32 is a derivative of R410a, it requires a different refrigerant cylinder design pressure, so existing R410a cylinders are not suitable.

Some equipment suppliers are selling dedicated R32 reclaim cylinders which are designed for 6.2MPa.

Health and Safety

R32 is classified as a dangerous goods class 2.1 flammable refrigerant which requires additional handling and storage safeguards compared to the class 2.2 non-flammable refrigerants.

The 2013 Flammable Refrigerants Safety Guide developed by The Australian Institute of Refrigeration, Air conditioning and Heating (AIRAH) outlines the occupational health and safety risks associated with refrigeration and air conditioning equipment and systems that use flammable refrigerants. Chapters 11 & 12 cover cylinder handling, storage and transport. To read the guide visit **www.airah.org.au/technicalresources**.

For further information on the safe handling of R32 contact the relevant equipment manufacturer, importer or supplier.

Licence scheme database upgrade – improved data security and ease of use

What does this mean for industry?

Data security (IRAP accredited)

The new database represents better value for technicians and businesses. Importantly, it uses the latest technology in data security and is fully 'Information Security Registered Assessors Program' (IRAP) compliant. IRAP assessments are conducted on systems which store or process government information, to ensure important data security measures are in place.

Easier online use

The online application facility has been updated so it is even more user-friendly, improving your ability to apply, renew and change your details as quickly as possible.

Compliance tips before summer hits

Summer is the busiest time of the year for the refrigeration and air conditioning sector. That's why now is the best time for refrigerant trading authorisation holders to make sure all your RTA-related business is in order.

There are a number of important processes and actions RTA holders can take to ensure you are complying with the conditions of your RTA. Remember, any outstanding compliance issues or an expired RTA can affect a business's ability to acquire and possess refrigerant. The compliance checklist below provides a useful reference for businesses and individuals in the lead up to the busy summer period.

RTA COMPLIANCE CHECKLIST

☐ EQUIPMENT LIST

Keep quarterly records of inspection and maintenance testing of your leak detectors, vacuum pumps and refrigerant recovery units, ensuring they are working correctly.

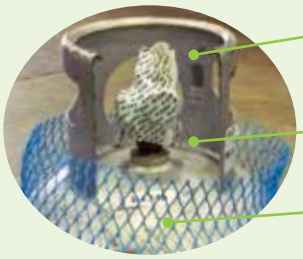
Electronic leak detector

Vacuum pump

Refrigerant recovery unit

☐ REFRIGERANT GAS CYLINDERS

You are required to keep a list of all refrigerant containers (cylinders) in your possession (and ownership) during each quarter throughout the year, including their test dates. In addition, maintain quarterly records that show you have checked your cylinders for leaks at least once during the quarter.



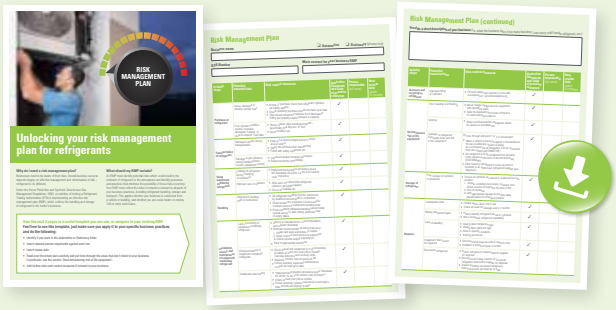
Cylinder serial number (generally stamped into the handle/collar of the cylinder)

Cylinder test date (generally stamped into the handle/collar of the cylinder)

Refrigerant type

☐ RISK MANAGEMENT PLAN

The Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 require RTA holders to implement a risk management plan (RMP) specific to your business for the handling and storage of refrigerant. The RMP will help you identify potential risks of emitting refrigerant and measures to minimise those risks. You can download an RMP template on the ARC website at **www.arctick.org/RMP**



☐ REFRIGERANT RECORDS

You are required to keep up to date records showing amounts of refrigerant purchased, recovered, sold or disposed of (bulk amounts) during each quarter.

Images used as examples only.

☐ LICENSED STAFF LISTS

You will be required to keep a list of all employees at your organisation who hold a refrigerant handling licence. This list needs to include the name and licence number of these employees.

Watch the RTA permit condition check video on the ARC website for further information to help you meet your permit obligations. Visit www.arctick.org and type in 'permit condition check' into the search bar.

Licensed technicians servicing the facility management sector

ARC recently conducted an education campaign targeting facility and building managers. The campaign encouraged facility and building managers to look for an appropriately licensed tradesperson to install, service, repair or decommission refrigeration and air conditioning (RAC) systems that contain HFC, HCFC or CFC refrigerant.

Facility and building managers play an important role in hiring licensed RAC technicians to install, service, repair and decommission heating and cooling equipment in commercial buildings.

The campaign included advertising in industry magazines and online, and promoted the many benefits of using RAC-licensed technicians, including to:

- reduce emissions of HFC, HCFC and CFC refrigerants into the atmosphere to protect the climate system and the ozone layer
- minimise system downtime
- extend the running life of these vital systems
- save money by reducing the risk of substandard repairs and maintenance.

Got a question? Try the ARC website

The ARC website is a valuable resource for permit holders. It is a one-stop-shop for everything related to your permit. On the website you will find a variety of fact sheets and detailed responses to frequently asked questions (FAQ) on a range of topics.

Take advantage of the information on the ARC website and save yourself a phone call to the ARC. If you have any suggestions for how we can better help you, please contact us at enquire@.arctick.org.

Fact Sheets www.arctick.org/information/fact-sheets/
FAQ www.arctick.org/information/faqs/

High quality dry nitrogen

The use of dry nitrogen is an integral part of producing a quality HVAC-R system. Dry nitrogen is used to absorb moisture and remove oxygen from pipework while it is being brazed.

Historically, the type of dry nitrogen used during installation was branded as 'industrial dry nitrogen'. This labelling has (generally) now been replaced with dry, pure, high purity (HP) or ultra-high purity (UHP) nitrogen.

To use anything other than a dry, inert gas such as pure, HP or UHP nitrogen, increases the risk of introducing unacceptable levels of moisture and oxygen into the HVAC-R system. The moisture level of industrial grade nitrogen is not low enough for effective use in refrigeration and air conditioning equipment.

When using dry nitrogen during installation, pressure testing and leak testing the relevant clauses outlined in the Australian and New Zealand refrigerant handling code of practice 2007, part 2 must be followed, including clauses:

- 5.25 After pipework has been fixed in position, dry nitrogen must be passed through the system to remove oxygen prior to brazing or silver soldering joints.
- 5.26 Dry nitrogen must be bled continuously through the system during the brazing operation to eliminate oxidation (scaling), a common cause of choked dryers, blocked expansion valve strainers, dirty oil and compressor failure.
- 5.27 The dry nitrogen must be at minimal gauge pressure during the brazing operation to eliminate the possibility of pin hole leaks.

RAC industry experts needed for training package review

The Australian Industry and Skills Committee has commissioned a review of the UEE Electrotechnology Training Package to enable a range of issues to be addressed. This review is to be completed by June 2019.

To help facilitate this review, Australian Industry Standards is calling for expressions of interest from subject matter experts to participate on relevant Technical Advisory Committees.

The Refrigeration and Air Conditioning (RAC) Technical Advisory Committee will be looking at qualifications – Certificate II in Split Air-conditioning and Heat Pump Systems and Certificate III in Air-conditioning and Refrigeration.

Included in this review is the development of two units of competency:

- handling A2 flammable refrigerants, including R32
- recovering refrigerant from stationary, self-contained, end-of-life, decommissioned equipment.

Visit the Australian Industry Standards website to read more about how to nominate yourself to participate in the Technical Advisory Committees and get more detailed information about the UEE training package review.

www.australianindustrystandards.org.au/projects/uee-electrotechnology-training-package-project/

World Ozone Day

September 16 is known internationally as World Ozone Day.

Why the ozone layer is so important

The ozone layer protects life on Earth by absorbing ultra-violet (UV) radiation from the sun. UV radiation causes many problems from skin cancer and cataracts, to damaged farm crops.

The Australian Government's refrigeration and air conditioning permit scheme helps protect the ozone layer and the climate system by reducing emissions of CFCs, HCFCs, and HFCs to the atmosphere. Efforts by refrigeration and air conditioning technicians to minimise refrigerant leaks and recover and return waste refrigerant for safe disposal have contributed to the reduction of emissions of these substances to the atmosphere and ozone layer recovery.

R22 gas and equipment

R22, or HCFC-22, is an ozone depleting substance. Production and import of bulk ozone depleting substances in Australia has been gradually reduced from the early 1990s. Bans on production and import of equipment containing ozone depleting substances have been gradually introduced over time. Production and import of most ozone depleting substances and equipment containing those substances is already phased out.

What's happening with R22 bulk gas?

- From 2016 to 2029, Australia may only import 2.5 ozone depleting tonnes of hydrochlorofluorocarbons (HCFCs) annually, equivalent to about 45 tonnes of R22.
- From 1 January 2020, R22 imported into Australia can only be used for servicing existing refrigeration and air conditioning equipment.
- From 1 January 2030, R22 imports will be banned entirely. From then, the servicing of remaining R22-based systems will rely solely on recycled or reclaimed refrigerant.
- Some used R22 is already being recovered for re-use. If using recovered R22, ensure it has been returned to the manufacturer's specification so you can be assured of its quality and suitability. Contact your refrigerant supplier for further information.
- The price of R22 may rise depending on demand and availability.

What's happening with R22 equipment?

New R22 refrigeration and air conditioning equipment can no longer be manufactured or imported into Australia, apart from some spare parts and in some special circumstances.

- Existing R22 equipment already in Australia will not be banned and does not need to be decommissioned or retrofitted.
- Existing units using R22 can continue to be serviced with R22. Regular servicing can benefit owners through reduced electricity costs and reduced gas replacement costs for leaked gas.
- There is no need to transition to an alternative refrigerant or system if your R22 system is in good working order. However, new equipment is generally more energy efficient and may have smaller refrigerant charges and lower leakage rates, and therefore can be cheaper to run.
- Spare parts might become harder to source as R22 equipment becomes more out of date.

Australian Refrigeration Council
www.arctick.org ARC Hotline: 1300 88 44 83