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EXPANDED



THE MAGAZINE OF BITZER AUSTRALIA



INTELLIGENT COMPONENTS & NATURAL ALTERNATIVES: ALL THE NEWS FROM OUR ROADSHOW

ALSO IN THIS ISSUE

THE ORIGINAL AND THE BEST: Why original spare parts and genuine BITZER oils are so important

MODULAR MARVEL: The FMC Condenser

BECOMING A NATURAL REFRIGERANTS CHAMPION:
How to help end users make the switch

AMMONIA & HYDROCARBONS: What can BITZER supply?



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Responsible in terms of press law
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THE BEST INVESTMENT

MD'S MESSAGE

Firstly, I would like to thank everyone who attended our roadshows in July, it was great for me to meet many of our valuable customers and understand the many challenges our industry is facing.

Along with the changes in refrigerant, another common theme that continually came up in discussions was aftermarket support; whether it be additional services that OEM's can provide, or purely spare parts, including questions of why they should choose genuine ones over replacement parts from other sources.

When you add a new piece of equipment to your fleet it is equipped with BITZER parts and lubricants. These parts may be made by BITZER itself, or a rigorously approved supplier with optimised product offering making them unique to BITZER. Therefore, buying BITZER parts and lubricants means that you are getting the same part that originally came with your unit – and there are some huge benefits to that.

1. QUALITY

BITZER parts and components are created and tested according to the manufacturers' specifications and high-standards, BITZER items are guaranteed to be high-quality. They are also guaranteed to be compatible with your equipment and to perform according to factory specs.

2. SUPPORT

BITZER parts automatically facilitate access to a wide variety of global support. BITZER stocks over \$12M in inventory across Australia and New Zealand - and we have emergency parts available 24 hours a day, 7 days a week, with same day shipping available. BITZER and our PARTNERS are your one stop shop for parts, and our knowledgeable staff will be pleased to help you with all your parts needs.

3. LONGEVITY

These products are specifically designed to ensure optimal performance and proper conditioning of your equipment. BITZER parts are sure to last longer than some aftermarket parts due to the high-quality material and standardised testing.

4. WARRANTY

Perhaps one of the most important benefits of BITZER parts is that each part comes with a manufacturer's warranty. In future BITZER will be introducing the opportunity to extend warranty under certain conditions and parameters.

5. INVESTMENT

There is no better investment. Since the BITZER part or component is designed to fit and perform to factory specifications, it increases the life of your equipment. This will save you money and reduce any down time in the long run.

Best regards,
Simon Wood

ROADSHOW REPORT

BITZER'S TECHNICAL ROADSHOW WAS HELD IN THE FIRST WEEK OF JULY - THANKS TO EVERYONE THAT HELPED MAKE IT A SUCCESS! COULDN'T ATTEND? HERE'S THE LOW DOWN FROM THE SEMINAR....



EFFICIENCY IS KING

Rainer Grosse-Kracht discussed BITZER compressor technology and the pathway to new developments. The main challenges to overcome including the lack of trained engineers and technicians, regulations on minimum efficiency standards (Europe's Ecodesign regulations prevent inefficient products from even reaching the market). The urgency to be compliant is real: with the tier 1 phase down arriving January 2018, many current products could become obsolete: for example, 60% of chillers available on the market today cannot be sold. Manufacturers are scrambling to become compliant.

BITZER has been focussed on efficiency for a number of years, and the most recent developments from the R&D teams put energy efficiency at the heart of the product.

EFFICIENCY ALL-STARS

Line start permanent magnet motors (LSPM) are able to run without inverters for increased efficiency. The Ecoline+ compressor is a shining example of efficiency savings in the real world - it's SEPR performance is higher across the board with a LSPM compared to asynchronous motor (using European calculations).

Sometimes, mechanical unloading such as CR11 is sufficient (and this technology is now available for CO2). CR11 increases part-load efficiency by facilitating much less pronounced pressure fluctuations.

LSPM motors combine efficiency and robustness and the synchronous speed is not dependent on torque requirement. Many years of field testing has shown great results, and with the BEST software, you can analyse performance and identify the root cause of problems that would otherwise have been hard to identify.

"EFFICIENCY IS AT THE HEART OF OUR PRODUCTS."

USER-FRIENDLY

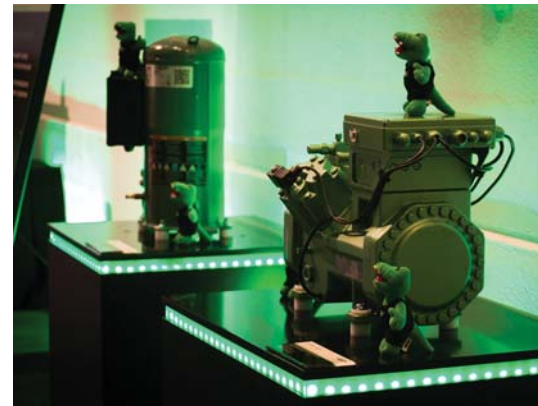
Simple operation is at the heart of the latest compressor developments, and the IQ module is a great example of this. This module enables interchangeable capacity control via a flexible modular design. The IQ module operates all parts of the compressor, including the CR11, Varipack or a combination of these. User-friendliness extends to BITZER's BEST software as well, which is thoughtfully programmed, using familiar refrigeration language and clear compressor names.

DEMYSTIFYING NEW REFRIGERANTS

John McCormack gave an overview of new refrigerants that are being used now in the field. Uptake can be immediate - not 5 years down the track. Opteon XP40 for example has been proven with a range of different systems including cascade and direct expansion systems, garnering up to 9% energy savings. Whilst some of the new refrigerants are classified as flammable, John explained why A2L and B2L categories were developed, which relates to burn velocity. Burn velocity can be thought of as how long you have to walk away before combustion - and with these new A2L and B2L refrigerants you can literally out-walk them!

This puts into perspective how the label 'flammable' can be misconstrued. HFO1234yf burns at just 2cm per second - a danger you can easily walk away from. John reiterated that there is nothing inherently wrong with any new alternative refrigerants - it's simply that systems need to be designed around them. All the risks, including flammability, can be managed with proper design and engineering.

As always, users should be properly trained and use commonsense safety precautions.



**“ALL THE RISKS
THAT COME
WITH NEW
REFRIGERANTS
- INCLUDING
FLAMMABILITY -
CAN BE MANAGED
WITH PROPER
DESIGN &
ENGINEERING.”**

- JOHN MCCORMACK



FUTURE-PROOF: THE ECOSTAR

The ECOSTAR condensing unit is beautifully designed and manufactured in Germany. It is a quiet, efficient unit that is easy to open, clean and maintain. Integration with BITZER's IQ module means the unit is set up for intelligent compressor monitoring, and is compatible with the Varipack frequency inverter.

It features EC fans as standard, and the compressor is housed in a separate compartment, with a sound level of less than 45dBA in 'eco' or night mode. Installation and maintenance costs have been minimised using intelligent design processes. As with other BITZER products, the BEST software provides a perfect system overview that can be accessed wirelessly.

"THE VARIPACK HAS ONLY TWO SETUP PARAMETERS - SOME COMPETITOR PRODUCTS HAVE UP TO 30!"

- IAN SUFFIELD



ED TUTTY

SMALL COILS

Engineering Manager Heat Exchange, Ed Tutty, reiterated that it's important for Australia to continue assisting developing countries in securing a healthier future. This can be done in part by focussing on lower energy consumption in our own backyard.

In the heat exchange arena, this equates to smaller units that require a lower refrigerant charge and less materials to produce. Controls will play a part too, including the uptake of fuzzy controls and concepts such as waste heat capture.

Coil geometries have improved in tandem with improvements in tooling methods, resulting in 4 and 5mm OD ovalar tubes and other shapes that result in better efficiency.

BIG CONDENSERS

Ed also touched on the road to Eurovent certification with BUFFALO TRIDENT's BDC condenser; a stamp of approval giving users guaranteed performance data. Customers can compare like for like via the impartial Eurovent website, where detailed and up to date performance data is maintained. The BDC is the first Australian assembled product to achieve Eurovent certification.

The BDC is a BIG condenser: but why go big? The advantages come in the form of reduced crane, transport and installation costs - the modular bumper rail assembly makes it easy to install, and the unit fits on a single truck, all of which reduces on-site costs when compared to using 30 small condensers. There's also the advantage of a simplified plant layout and less potential leakage points.



IAN SUFFIELD

Engineering Manager Compressor Systems, Ian Suffield, offered an overview of BITZER's ammonia compressors and packages, the advantages of the Varipack, and a peek into the new Gen 8 Series currently under development.

THE USER FRIENDLY VARIPACK

The Varipack frequency inverter has only two parameters to set up, whilst other competitor products can have up to 30! There is no mains contactor required, and it's easy to select and design using BITZER's BEST software. The unit has an IP21 rating with improvements in the works. Installation, commissioning and service have been designed with the contractor in mind and are as easy as possible to operate.

AMMONIA PACKAGES

The OSA95 ammonia compressor offers larger displacements - double the previous OSA series! - from 500 to 1000m³/h displacement. The compressor has been redesigned from the ground up with the IQ module once again playing a starring role. The compressor automatically adapts to conditions with built in auto Vi adaptation. Plus there's no electrician required; all CMSW inputs and outputs are pre-wired to the compressor, right out of the box.

BITZER Australia also offers the ACP - ammonia compressor package - developed by the BITZER global

engineering group. Thirty units are operating successfully in the field already. It comes fitted with up to three OSA95 or 85 Series compressors, and a complete electrical and PLC system on board. An extremely efficient OAHC oil separator rounds out the package.

The unit has options for oil cooling, and features simple operation, maintenance and fault finding. It has unrivalled system redundancy, part load efficiency and a short commissioning time.

FOCUS ON ELECTRICAL

Building on from the success of many recent custom electrical builds, BITZER is expanding its offering with made to order boards. Complete rack and control panels are available, and BITZER has been approved as a switchboard supplier to both Coles and Woolworths. Many control options are available, not just for compressors but also evaporators and other system elements. For more details, contact our sales team.

SNEAK PREVIEW

Building on the success of the Gen 6 and 7 series racks, the new Gen 8 that is currently under development will feature improvements to the frame design, options for hot water reclaim, a bigger receiver capacity and electrical panel tweaks. All these elements will combine with the aim of making the unit as user-friendly as possible when it comes to installing and commissioning the package on site.

NEW BITZER OAHC 3-STAGE
COMBINED OIL SEPARATORS



Learn more about
the OAHC oil
separator on our
YouTube channel



MICHAEL BENNETT

**"THE AUSTRALIAN
INDUSTRY HAS
HELPED PREVENT
THE DESTRUCTION
OF 10 MILLION
TONNES OF
OZONE."**

- MICHAEL BENNETT

SALT WATER FROM OLD GASES

Refrigerant Reclaim Australia (RRA) has been taking back and destroying ozone depleting refrigerants since 1993. During the period 1990 until now there has been a 85% reduction in global warming emissions of CFCs, HCFCs and HFCs. By 2036 that reduction will be 99%. So what happens to the recovered contaminated refrigerants?

RRA General Manager Michael Bennett gave the audience an overview of the different types of refrigerants that can be destroyed and the different ways this is achieved - one of which is by plasma arc destruction in a special unit designed by the CSIRO.

The argon plasma-arc unit uses extreme temperatures to separate fluorocarbon molecules, then quenches & neutralises the gases to form salts and water. This saline solution is sent to water treatment where it is diluted and ultimately used for irrigation of market gardens.

By disposing of refrigerants in such a fashion, the Australian industry has prevented the destruction of 10 million tonnes of ozone.

Ultra-low and zero global warming potential gases may be legally

vented but their flammable and toxic characteristics can create hazardous zones that are a threat to life. Heavier than air gases may accumulate in pits, depressions, and confined spaces presenting explosion and asphyxiation risks. Ammonia, which is lighter than air, will dissipate upwards but its toxicity demands superior ventilation and caution.

Contaminated systems present a conundrum: the most common mixtures encountered in Australia are hydrocarbons and fluorocarbons. HFCs must not be knowingly released, they must be recovered. Hydrocarbons are A3 refrigerants that may be released BUT this is technically illegal when HFCs are present, so they must be recovered. BUT, the A3 rated recovery units in Australia are high on non-existent so the only option is likely to be safe release.

It is important to note that any release of flammable refrigerants must be done safely and at least three metres from any ignition source.

RRA can assist with further advice regarding destruction and venting of gases.



"SMALLER COILS REQUIRE A LOWER REFRIGERANT CHARGE & LESS RAW MATERIALS, MAKING THEM INHERENTLY MORE EFFICIENT."

THE HEART OF FRESHNESS

- ED TUTTY



EXPERT PANEL SESSION & AUDIENCE INTERACTION

A new inclusion into BITZER's traditional presentation format was the Q&A panel session featuring guest appearances from 5 experts on stage.

Michael Bennett of Refrigerant Reclaim Australia (and his counterpart in Auckland, John Bowen, Director of Refrigerant Recovery NZ) joined John McCormack from Sythree (formerly head of from Chemours Fluoroproducts in Australia), and the BITZER engineering team and their global Chief Technology Officer Rainer Grosse-Kracht rounded out the panel.

The audience were able to ask the speakers questions, either in person or via the audience interaction app 'Sli.do' that was used throughout the event. This sparked some lively discussion surrounding training and education, the effects of the Paris Agreement on global equipment manufacturers, why efficient part-load operation is important and more.

What do you think Australia being part of the Montreal Protocol and Kigali Amendments will?

37

Benefit the Australian Refrigeration industry

81 %

Hinder the Australia Refrigeration industry

5 %

Make it easier for imported products

5 %

Nothing just cause the cost of refrigerant to go up

5 %

Don't care

3 %

What type of refrigerant would you prefer to work with in the future?

19

Flammable

11 %

Toxic

11 %

Pressure limiting

16 %

Environmentally friendly

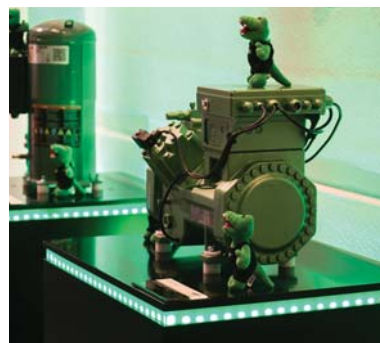
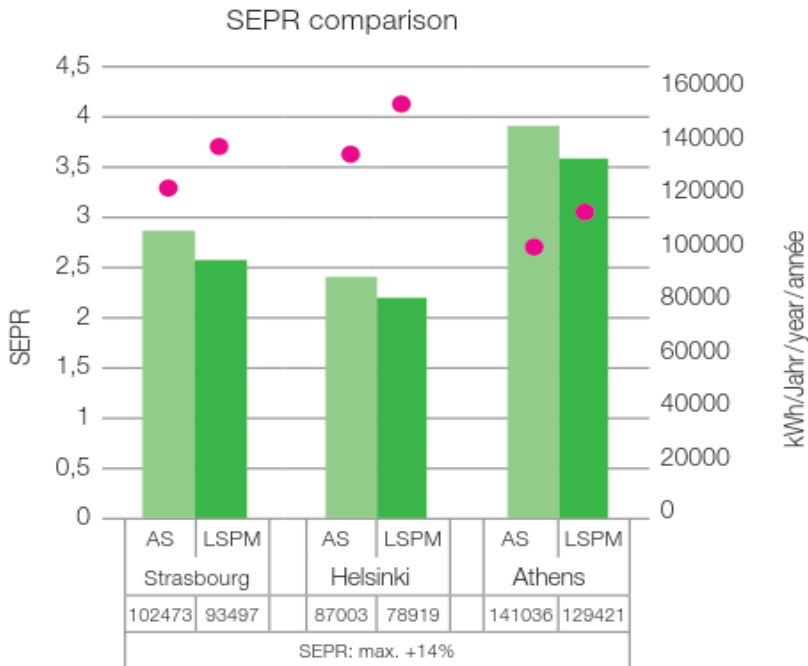
63 %



ON SHOW: THE ECOLINE+

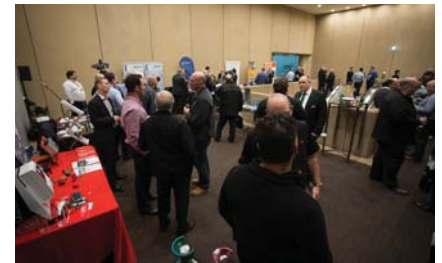
The popular ECOLINE series has been a crowd pleaser for many years now. So what's new in the latest version?

- LSPM - Line start permanent magnet motor - tests show a higher seasonal energy performance ratio across the board when compared to a traditional asynchronous motor
- Optimised efficiency for full and part load operation
- CRII compressor operation module - a world first for CO2, allowing easy, flexible and stepless control
- IQ module for intelligent operating of integrated functions
- Highest eco-efficiency
- VFD operation possible



Annual Energy Consumption [kWh]
 ■ AS: asynchronous motor
 ■ LSPM: LSPM motor
 ● SEPR (Seasonal Energy Performance Ratio)

4DTC-25K with AS motor vs. 4DTC-25LK with a LSPM



"WE RECYCLE FLUOROCARBONS INTO A 30% SALINE SOLUTION WHICH IS TREATED & USED ON MARKET GARDENS IN MELBOURNE."

- MICHAEL BENNETT

5 REASONS WHY YOU SHOULD USE ORIGINAL SPARE PARTS

1

YOUR ORIGINAL WARRANTY REMAINS INTACT

Using BITZER original parts and oil is part of our warranty conditions - we will always do our best to assist with issues that might arise in the future, but we cannot guarantee your warranty will be valid if you use non genuine parts or other brands of oil.

2

YOUR OIL IS PURE, FIT FOR PURPOSE & UNCONTAMINATED

Counterfeit oil is a big deal - not only is it low quality, it can be blended to a different formulation and can severely impact the life of your compressor. Only use BITZER oils in your BITZER compressors.

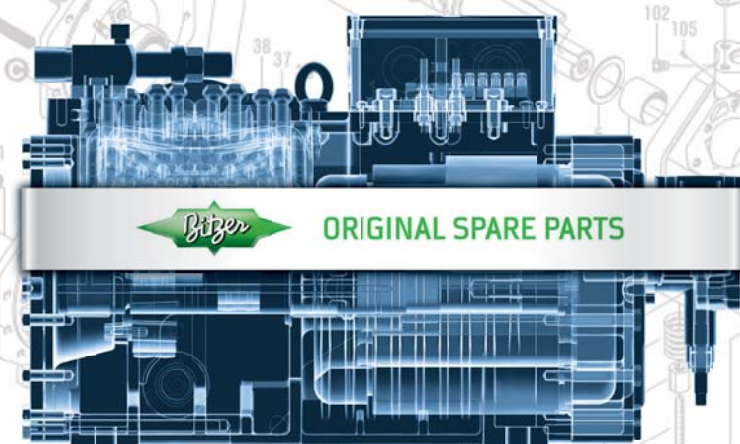
3

YOU'VE GOT ACCESS TO AFTER SALES SUPPORT IF YOU NEED IT

Our EPARTS software is a great tool for easily identifying the precise part you need, and our sales team can help you out with a wide range of the most common parts in stock in our Sydney warehouse.

IS IT GENUINE?

HOW DO YOU KNOW IF YOU HAVE A BITZER ORIGINAL SPARE PART? GENUINE SPARE PARTS ARE ALL THE BOX. THE PACKAGING IS PROFESSIONALLY SEALED AND BEARS THE BITZER LOGO & 'ORIGINAL SPARE PARTS'. ASK YOUR BITZER SALES TEAM IF YOU ARE UNSURE.



4

YOUR PARTS ARE SEALED ENSURING THEY STAY DUST & DEBRIS FREE

BITZER original spare parts are sealed in airtight packaging making them impervious to deterioration over their normal shelf life. Inferior metal parts from other brands can easily develop rust and cheap rubber parts such as gaskets can begin to dry out and become brittle.

5

YOUR PRECISION ENGINEERED PARTS FIT PERFECTLY, EVERY TIME

German engineered quality means you can rest assured that your parts are precision engineered to fit our compressors. Attention to detail from our German factory is second to none!

WHAT PART DO I NEED?

BITZER's EPARTS Spare Parts Software can easily help you locate the exact part that you need - the software is up to date with all parts for our compressors - or if you'd prefer, simply contact our helpful sales team for assistance.



THE FINAL COUNTDOWN

IN JANUARY 2018 THE AUSTRALIAN PHASE-DOWN COMES INTO PLAY. BITZER'S CTO, RAINER GROSSE-KRACHT, GAVE SOME INSIGHT INTO AUSTRALIA'S LOW GWP FUTURE AT BITZER'S TECHNICAL ROADSHOW.



The Australian government has introduced legislation to phase down HFCs starting in 2018.

The legislation allows Australia to begin phasing down HFC imports starting in 2018, ultimately reaching 85% reduction by 2036. This enables Australia to exceed its commitment to the Kigali agreement to start a global phase-down of these potent gases under the Montreal Protocol.

MANAGING THE CHANGE

A 'baby steps' approach over the next 18 years (as indicated in these charts) could be adopted to better manage the drastic drops slated in the Kigali Amendment.

Currently, the local HFC phase-down will only apply to bulk imports of gas (there are no HFCs manufactured in Australia). It would not apply to HFCs imported in equipment. However, many global manufacturers including BITZER are looking ahead and working towards alternatives that make sense for consumers, today and into the future.

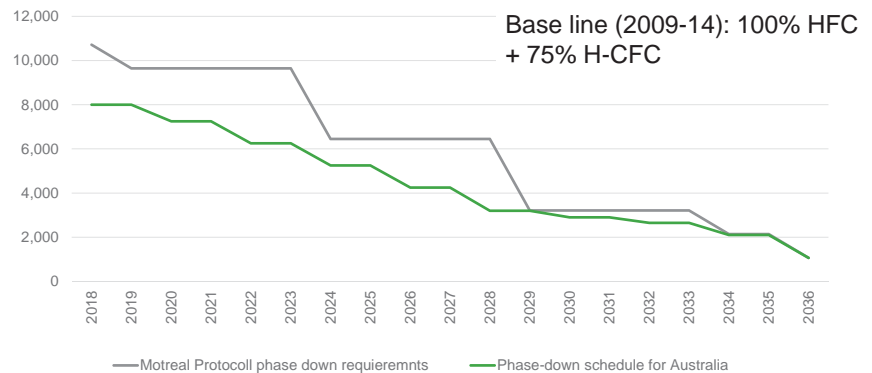
NO MAGIC BULLET

Whilst there is no one size fits all solution, natural refrigerants are clearly the way of the future. Many of these gases have a GWP (global warming potential) in the single digits - a far cry from the damaging thousand-fold GWPs of traditional HFC refrigerants. However - as GWP goes down, flammability tends to go up. Hence, there is no single replacement refrigerant that will suit all situations.

LOW GWP & NZ's ETS

In July a series of improvements to New Zealand's Emissions Trading Scheme were tabled, shaping how the scheme could operate into 2020 and beyond. These including auctioning of units to align the NZ ETS to climate change targets; limiting the use of international units when the NZ ETS reopens to international carbon markets; and developing a different price ceiling.

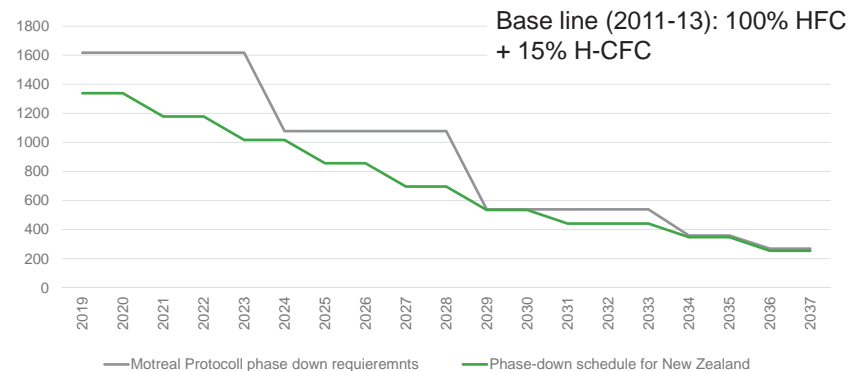
Aligning Australia's HFC phase-down with the Montreal Protocol



BITZER // Rainer Große-Kracht // Montreal Protocol and Kigali Amendments // AVP Professionals Conference 2017 // Page 22



Aligning New Zealand's HFC phase-down with the Montreal Protocol



BITZER // Rainer Große-Kracht // Montreal Protocol and Kigali Amendments // AVP Professionals Conference 2017 // Page 23



Whilst these recent announcements will not change how participants interact with the scheme in the short term, it is positive to see the New Zealand authorities bringing new ideas to the table to make the ETS more workable for all.

WHAT BITZER IS DOING

BITZER continues to take a rational, calculated approach to product developments in light of the coming low-GWP future.

Many current products will be supported well into the future, whilst at the same time BITZER is working hard to provide new solutions that bridge the gap between the global environmental regulations of the future, and the

customer needs of today. BITZER compressors are already approved for the new major HFOs and refrigerant blends. A keen focus on efficiency across the global BITZER group equates to R&D teams producing and refining designs into more streamlined, more productive, more cost effective compressors and refrigeration systems.

BITZER is working in response to legislation being developed not just in Europe, but in Japan, China, the US, Australia, New Zealand and further afield - and with the company represented in over 90 countries, it has a unique global view rather than being Euro-centric. Locally, BITZER Australia is increasingly creating simpler, more user-friendly products, and continuing to support customers with detailed engineering knowledge and advice.

HOW TO BE A NATURAL REFRIGERANT CHAMPION

TALKING TO END USERS ABOUT MAKING THE SWITCH

Have you been struggling to convey the benefits of natural refrigerants to your customers? Try these tips to help the people at the coalface understand some of the long-lasting and environmentally conscious reasons for making the switch to equipment powered by natural refrigerants.

'IF IT AIN'T BROKE...'

A system may be working 'adequately' at the moment however the longer an older system is left in place, the more energy savings your customer could be missing out on.

Generally a system working on natural refrigerants can be more efficient, meaning that although the initial installation and capital expenditure costs needs to be managed, the knock on effect can be a noticeable reduction in electricity costs within a fairly short time frame.

With the price of power creeping up at an alarming rate, can your customer afford to maintain an 'if it ain't broke, why fix it' attitude? The reality is, if it's costing more than it needs to, then it is 'broke'!

An assessment of energy use on the existing system vs. a proposed new system could offer good insight into the

cost savings that could be achieved. BITZER can help with this as well as ways to help your customer manage initial capital expenditure - contact us to find out how.

'BUT MY SYSTEM IS TRIED AND TESTED'

Today's natural refrigeration systems already offer a superior and immediate opportunity for sustainability that far exceeds anything one could ever achieve with HFC-based systems.

Legacy technologies may have the unfair advantage of decades of engineering

optimisation, but despite being 'tried & tested', the technology itself is moving at a rapid rate and what was once considered an efficient system a few years ago might now be verging on inefficient. In the case of a system that's been operating in the field for 20 years, there is most certainly room for improvement that will offer both energy savings and a more positive environmental result.

'I'VE GOT YEARS LEFT BEFORE I HAVE TO DO ANYTHING'

The course for the future is already set: with Australia's HFC phase down coming into force in January 2018, older systems WILL need to be replaced. Perhaps this doesn't need to happen tomorrow - but the days are certainly numbered for HFC gases.

BEST IN CLASS

MONITORING MADE EASY WITH BITZER'S INTELLIGENT SOFTWARE

BITZER's BEST software provides users with a complete overview of the operating status of BITZER compressors and condensing units, showing their configuration and permitting troubleshooting.

BEST makes service engineers' work much easier, as they can use it to quickly and reliably set device parameters, analyse errors, view data logs and update firmware, for example.

BITZER'S BEST tool is used to commission, monitor and service compressors and their electronic components. Recent updates allow the compressor's current operation as well as historical data logs to be shown graphically. In addition to this, the units

can now be switched to the American and imperial system of measurements in addition to metric. With Chinese and Finnish, the number of available languages has now been extended to eight.

The software has a large selection of refrigerants pre installed, including recent additions R450A, R513A, R1234yf and R1234ze in connection with CS compact screw compressors and with the protection device SE-i1 or R513A and R1234yf for the configuration of frequency-controlled CSV compact screw compressors.

If an earlier version of the BEST software has already been installed on your PC, then it is quite easy to update it via the

software's automatic update function. If a new version is available, this will be shown in the lower right corner of the open software.

Otherwise, the update can be downloaded directly from the BITZER home page, where there is also a video explaining features of the BEST software.

WATCH IT ON YouTube



SCAN THE CODE OR
GOOGLE 'BITZER BEST
INTELLIGENT VIDEO'



FMC: THE MODULAR MARVEL

ED TUTTY EXPLAINS HOW BUFFALO TRIDENT'S MODULAR FMC CONDENSER PROVIDES A FLEXIBLE SOLUTION

The BUFFALO TRIDENT Flexi-Mod Condenser (FMC) Series is a truly flexible product. The modular design lends itself to a diverse range of applications and footprints.

The FMC allows all-round modular flexibility allowing units to be paired on a bumper rail of 1 to 3 modules. This unique modularity means any performance requirement can be met, but it is also great for installation. The FMC is also perfect for transport such as sea shipping and ground transport, as the condenser width fits inside a standard container.

The concept is simple: units are built with joined refrigerant inlet & outlet points, ultimately resulting in less work on-site. The bumper rail also offers great manoeuvrability. Other features such as epoxy coated fins, rifle bore copper tubes, common fan junction box, and high performing fans make for a perfect package.

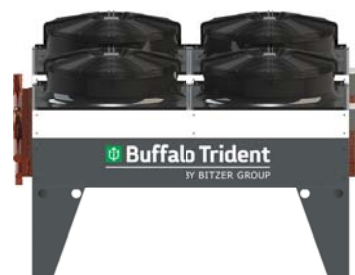
It's also powerful: a single 2F module can provide almost 100kW, so 3 modules together on a bumper rail can offer serious grunt! Put modular units side by side for high kW with a very flexible footprint.

Plus, the system allows for future expansion - should you have an increased cooling need in the future, the FMC Series can easily accommodate this with the addition of more units to suit the new load.

This works best in conjunction with a compressor system that is designed for future expansion too: BITZER can design a rack with extra space to add more compressors down the track if your situation changes. By using modular products, you have the freedom to increase the cooling capacity when you need it rather than having to plan & pay ahead for an oversized system that doesn't suit today's needs.

STANDARD FEATURES

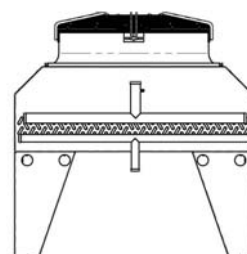
- Motors wired to common junction box (High Speed)
- Sickle blade fan technology
- Statically & dynamically balanced fan motors
- 12.7mm diameter copper tube expanded into ripple epoxy coated aluminium coil blocks (472 Fins/m)
- Positive air seal between all fans
- Dual speed motors standard on 3 Phase:
 - 1320/1010 RPM (FMC 4P Series)
 - 880/660 RPM (FMC Q Series)
 - 1100 RPM (EC Series)



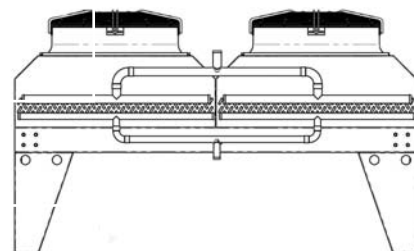
OPTIONAL EXTRAS

- Single phase fan motors
- Copper fins for harsh environments
- Multiple circuits
- Stainless steel case
- Fan speed controllers

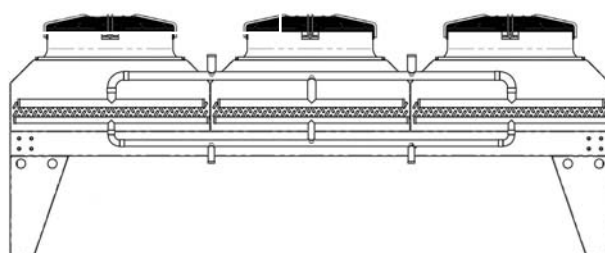
1 MODULE 3, 4 OR 5 ROWS



2 MODULES 3, 4 OR 5 ROWS



3 MODULES 3, 4 OR 5 ROWS



IN THE FIELD:

A series of BUFFALO TRIDENT FMC condensers with EC fans were installed at a customers' premises in Brisbane. These were mounted remotely on a specially engineered condenser platform on the warehouse roof and designed to ensure optimal condensing temperatures could be easily maintained, regardless of ambient temperature.

This installation shows how easy it is to select the modular FMC Series condensers in a configuration that precisely matches your cooling requirements.



AMMONIA & HYDROCARBONS

WHAT CAN BITZER SUPPLY FOR AMMONIA AND HYDROCARBON APPLICATIONS?

R717

Ammonia has been used for more than a century in industrial and larger refrigeration plants. It has no ozone depletion potential and no direct global warming potential. Its efficiency is at least as good as R22, however it has negative aspects that impact its wider use in commercial applications. It has a corrosive action on copper materials and therefore piping and motor windings need to be carefully considered; normally piping is carbon or stainless steel whilst motors are usually external to the compressor. It also has toxic and flammable properties which require special attention to safety when constructing ammonia systems.

Special considerations aside, NH_3 is a relatively inexpensive, environmentally positive choice, providing the system is thoughtfully designed to manage its unique properties.

For more information refer to A-501-19 (BITZER Refrigerant Report 19).

ACP - AMMONIA COMPRESSOR PACKAGE

The ACP (ammonia compressor package) was developed by the BITZER global engineering group. The package comes fitted with up to three OSA95 or 85 Series compressors, and a complete electrical and PLC system on board. An extremely efficient OAHG oil separator rounds out the package.

The unit has options for oil cooling, and features simple operation, maintenance and fault finding. The unit has unrivalled system redundancy, part load efficiency and a short commissioning time.

Contact our sales team for more information about the ACP.



OSA95 AMMONIA COMPRESSOR

The OS.A95103 compressor marks the beginning of the new OS.95 series. The strengths of this new development include large volume flows up to 1,015 m³/h at 2,900 revolutions per minute, integrated control electronics, an optimised slider concept for seamlessly adjustable capacity control and Vi adjustment for maximum efficiency at every operating point.



W..A SERIES

In addition BITZER offers a series of open-drive reciprocating compressors specially optimised for use with ammonia (NH₃) refrigerant.



R290

Traditionally, because of their flammability and the resulting safety concerns, hydrocarbons were only used in special systems. However, with the increasing demand for the use of refrigerants with a low global warming potential, hydrocarbon systems have recently returned to the fore. They have no ozone depletion potential (ODP), negligible global warming potential (GWP as high as 3) and at the same time have superior thermodynamic properties compared to any synthetic refrigerant. Additionally, there is good compatibility with the usual materials and oils, and their use with specially designed hermetic and semi-hermetic compressors is also possible. Because of this, hydrocarbons are in direct competition with chlorine free HFC refrigerants; although HFCs have no ODP.

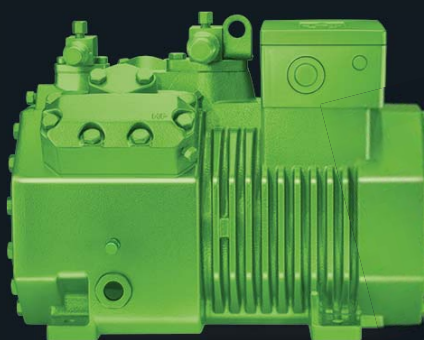
In comparison to most HFCs, the flammability of hydrocarbons is indeed a disadvantage. It demands attention to special safety regulations for planning, construction and operation of such systems and therefore limits more 'general' applications.

BITZER offer a range of reciprocating and screw compressors especially designed and optimised for operation in systems containing Hydrocarbon refrigerants. Due to some of the unique operation characteristics of the refrigerant, special modifications have been made to these compressors to ensure reliable operation. For more information, please consult KT-660-3.

For more information refer to KT-660-3 (Application of Propane).



ECOLINE P SERIES COMPRESSOR



The ECOLINE range is the creative advancement of the proven, robust and powerful semi-hermetic reciprocating compressors from BITZER. It combines high efficiency, smooth running, a wide range of applications, flexibility in refrigerant selection, solid design and high reliability. The ECOLINE P Series is specially adapted for operation with R290 propane and R1270.

IN THE FIELD

TRUCKLOADS OF BITZER EQUIPMENT AN ESSENTIAL INGREDIENT IN REVAMPING MELBOURNE'S ICONIC MARKETS

A MASSIVE PROJECT

Melbourne's new market project at Epping was a Government initiative to revamp the old markets at Footscray. The warehousing is equivalent in length to 1.2 kilometres or 5 Melbourne city blocks, making it the largest warehousing precinct of any central market in Australia.

More than 4,000 businesses use the market as a base, buying and selling fresh produce in the early hours of the morning for distribution across Victoria and Australia. In addition, over 1,800 individual fruit and vegetable buyers, representing independent greengrocers, supermarkets, restaurants and food processors, source their produce direct from the market, with many more receiving daily deliveries and consignments.

This project was a collaboration with the private sector that saw an initial

build of around 72,000 square metres of warehousing constructed to meet the growing needs of more than 100 wholesalers, growers and retailers. This new market will better position Victoria's \$2 - \$3.5 billion fresh produce industry to secure a greater share of the national market and further develop export markets.

BITZER'S ROLE

The scope of this project demanded that the refrigeration equipment installed

throughout the market be reliable and of extremely high quality.

Although a centralized chiller plant was installed to service the tenants with a common glycol system, BITZER Australia provided equipment for this project through several contractors working in the marketplace, including some major equipment supply facilitated by Cool Dynamics.

BITZER supplied a total of 75 individual pieces of equipment to Cool Dynamics including:



High humidity cool rooms for optimum fresh produce storage



BITZER's custom designed rack systems



An aerial view reveals the true size of the market

6 x BITZER rack systems;
8 x LCS condensing units;
8 x Evolution Standard and Premium packages coupled with;
30 x BUFFALO TRIDENT BBM evaporators, both standard and Glycol, and;
8 x BUFFALO TRIDENT LDH-D condensers.

CUSTOM ADDITIONS

In addition to the BUFFALO TRIDENT BBM coils, many of the cool rooms were chilled by Cool Dynamics' own brand 'Humicool' high humidity boxes which were fitted with 15 x BUFFALO TRIDENT custom designed coils and run off the BITZER rack systems.

COMPLETE CONTROL

Cool Dynamics connected variable speed drives to run the evaporator fans and used EC condenser motors, giving them complete control of the temperature and humidity requirements of each room. The setup also provided a low noise environment.

The product range in the cool rooms includes sensitive produce such as bananas, mangoes, grapes, oranges, avocados and pomegranates.

You can download a printable PDF version of this project review from our website.



Evolution units were the condensing unit of choice



Condensers mounted above rack plant room



LCS outdoor condensing units

// PARTNERING WITH BITZER

BITZER ECOSTAR - INTELLIGENT SOLUTIONS FOR EFFICIENT APPLICATIONS



BITZER has just released a new video showing how easy it is to integrate the super efficient ECOSTAR into your application.

WATCH IT ON YouTube

SCAN THE CODE OR GOOGLE 'BITZER ECOSTAR VIDEO'



OLD SCHOOL

1985: The introduction of the .2 Generation BITZER Reciprocating compressor is a quantum leap in efficiency.



BITZER AVP PROFESSIONALS CONFERENCE IN VIETNAM

In May, BITZER held its annual professionals conference in Vietnam. This was a chance for our international sales and engineering teams to work together and learn from each other to ultimately help serve our customers better. Pictured is our Chief Sales & Marketing Officer, Gianni Parlanti, with BITZER China's Karl-Heinz Meister, and Aussies John Craig and Shannon Egan from our engineering and sales teams.

OUR TRUSTED DISTRIBUTION PARTNERS

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WOW - IT'S NEARLY CHRISTMAS!

DECEMBER IS JUST AROUND THE CORNER!

As this will be the final issue of EXPANDED for 2017, we'd like to take this opportunity - even if it is a little early! - to wish all our customers and their families a very enjoyable and relaxing festive season.

2017 has been a big year for BITZER with a lot of positive change. We look forward to you joining us on the journey once again in 2018!



SOCIAL LIFE

CONNECT WITH US!

Over 20,000 fans on Facebook; over 349,000 views on YouTube; nearly 4,500 followers on our global LinkedIn page... have you followed BITZER on social media yet?



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IN THE NEXT ISSUE...

// IT'S HERE: THE PHASE-DOWN BEGINS JANUARY 2018

// WHEN THE DUST SETTLES: MAINTENANCE, MONITORING AND SERVICE, WELL INTO THE FUTURE

// ARBS IN FOCUS: AUSTRALIA'S BIGGEST INDUSTRY GATHERING IS BACK!

// ...PLUS MUCH MORE!

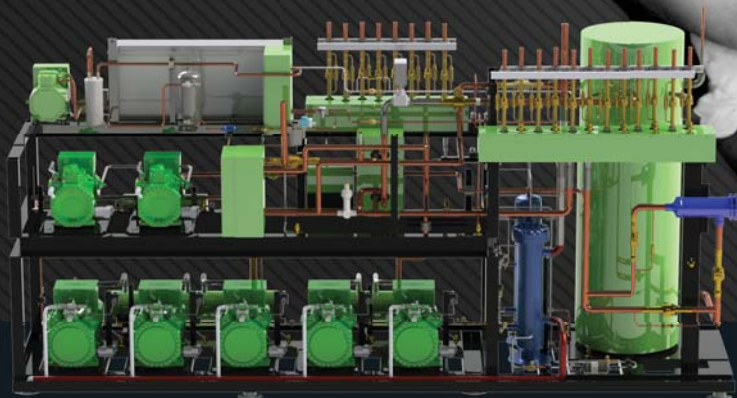
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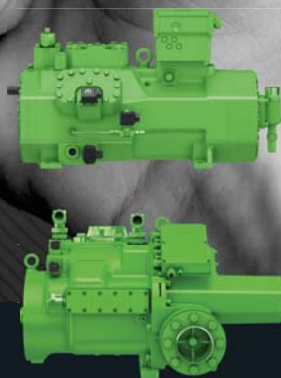
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IF YOUR CUSTOMERS
DEMAND FRESHNESS
**TRUST BITZER'S NATURAL
REFRIGERANT SOLUTIONS**



TRANSCRITICAL CO₂ REFRIGERATION PLANTS -
DESIGNED FOR YOU FROM THE GROUND UP



COMPRESSORS FOR
NATURAL REFRIGERANTS



ADVICE & SUPPORT
FOR CO₂, NH₃ & MORE

With over 80 years experience in refrigeration, BITZER has a wealth of knowledge and experience to offer. From advice on transitioning to natural refrigerants through to dependable precision-engineered systems that maintain the highest product quality, BITZER is the technology leader with a range of products for your unique needs.

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