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EXPANDED

THE MAGAZINE OF BITZER AUSTRALIA

THE ROAD AHEAD:

NATURAL REFRIGERANTS, TRANSPARENT RATING METHODS AND FUTURE TRENDS

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THE HEART OF FRESHNESS

Buffalo Trident
BY BITZER GROUP

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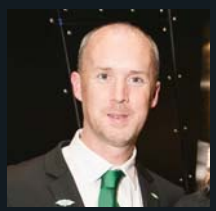

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IN THIS ISSUE

Get EXPANDED quarterly magazine directly in your inbox! Simply scan the QR code with your smart phone's barcode scanner app, or email marketing@bitzer.com.au (you can email us to share feedback on our launch issue too!).

A NEW LEAF

MD'S MESSAGE

Welcome to the first edition of BITZER Australia's new magazine! With the arrival of the New Year still fresh in our minds, it is wonderful to be able to release a publication that we hope you will agree is a thoughtful, professional and informative addition to the industry.

Briefly; for those that don't know me: having been part of the furniture at BITZER since the nineties, chiefly managing various South East Asian arms of the business, I am honoured to temporarily take the reins at BITZER Australia. I have been warmly welcomed back into the fold, immediately getting down to business and ensuring BITZER Australia's momentum remains steady and positive heading into 2017.

Having spent decades in the industry, managing subsidiaries abroad but never far from Aussie shores, I have seen BITZER Australia go from strength to strength. The company has matured into one of the region's (and indeed one of the world's) most respected and trusted brands, not just for compressors, but for our Australian designed compressor systems and BUFFALO TRIDENT heat exchange products as well. The BITZER name continues to shine through, bolstered by the strength of not just our products, but our people.

Our industry is set for continued growth, with the global market for industrial refrigeration systems alone expected to reach $US23.22 billion by 2022. This reflects growth for this sector at a rate of 5.24 per cent between 2016 and 2022[1]. The overall refrigeration market holds even greater potential, and we at BITZER are committed to remaining at the forefront of refrigeration technology worldwide. We hope that you, our loyal customers, will join us on this journey.

For now, please enjoy the first edition of EXPANDED magazine!

Warm regards
Rob de Bruyn, Managing Director

References

[1] Climate Control News, 9th November 2016, www.climatecontrolnews.com.au/news/latest/industrial-refrigeration-to-top-us23-billion-by-2022

THE ROAD AHEAD

COULD A CONFLUENCE OF MARKET FORCES BE THE CATALYST FOR MORE TRANSPARENT PERFORMANCE RATINGS?

BITZER AUSTRALIA'S MARKETING AND BUSINESS DEVELOPMENT MANAGER, RENÉ LE MIERE, LOOKS AT WHERE THE INDUSTRY COULD BE HEADING IN THE NEAR FUTURE.

All the stars appear to be aligning for natural refrigerants, with global policy makers, governments, industry advocates, manufacturers and equipment suppliers all trending towards solutions that are powered by natural refrigerants (natrefs). At the same time, end users are becoming more savvy and demanding ever-increasing performance from refrigeration equipment.

The tipping point

At Chillventa 2016, it was reported that the number of companies showcasing products designed for natural refrigerants had boomed since the previous event. shecco's Guide to Chillventa stated that nearly 190 companies showcased products or services using carbon dioxide, ammonia, hydrocarbons or water as refrigerants, representing a 50% increase compared to the last Chillventa[1].

Then, just days after Chillventa closed its doors in Nürnburg, history was being made on the other side of the world. In Rwanda, representatives from almost 200 countries forged a landmark agreement to phase down HFCs, preventing an estimated 70 million tonnes of carbon dioxide equivalent emissions by 2050. The pact is said to be enough to prevent 0.5 degrees of global warming. The global HFC phase-down agreement, known as the Kigali Amendment, will be further discussed in Montreal this year.

Most developed countries will begin to phase down HFCs by 2019 while developing countries will follow with a freeze of HFC consumption from 2024 and begin reducing usage from 2029. Other countries will adopt a slightly different schedule; however the end game is the same: as the year 2050 draws near, all countries should be consuming no more than 15-20 percent of their respective baselines[2].

An overwhelming number of options

Natural refrigerants are clearly where the future of our industry lies. However, no single refrigerant offers an ideal solution across the entire range of cooling applications. Safety, efficiency and suitability for retrofit applications are all considerations that muddy the waters and prevent a single, catch-all solution.

> "SAFETY, EFFICIENCY AND SUITABILITY FOR RETROFIT APPLICATIONS ARE ALL CONSIDERATIONS THAT MUDDY THE WATERS AND PREVENT A SINGLE, CATCH-ALL SOLUTION."

The number of companies particularly in the commercial and supermarket sectors adopting CO2 solutions is steadily growing as companies that were previously on the fence are beginning to see the success that others are having with CO2 systems. Organisations such as shecco are helping to shed light on these successes with their

global media reach. The Atmosphere conference series and home grown industry associations such as AIRAH are getting behind new technologies and natural refrigerants, with such topics centre stage at AIRAH's upcoming Refrigeration 2017 conference[3]. The conference addresses the current state of the industry, how it may respond to the future challenges initiated by COP21 – the UN's conference on climate change – and the global HFC phase-down, and how this will impact upon all the relevant parties. Then there are associations such as AREMA that act as an interface between manufacturers and government, providing a voice on policy formulation and industry standards regulation.

Meanwhile, the recent Future:gas seminar series brought to light the challenges faced by operators in the auto AC industry and proposed solutions for changeover to R1234yf and R744 for automotive applications[4]. For mechanics, these new gases will present significant changes to the tools, working practices, component standards and workplace safety considerations relating to repair, service and refrigerant recovery.

This learning curve however is not unique to the auto industry; many operators in the refrigeration sector are seeking education and advice to properly manage natural refrigerants, HFOs and blends; given their unique properties.

The other must-have

Squeezing the most efficiency out of every component and every system joins natural refrigerants at the top of everyone's wish list, and in parallel with this booming growth in natural solutions is a drift towards tightening up of testing methods and standardising certification for HVAC and refrigeration products, meaning that for end users, efficiency and energy savings can be verified.

Global organisations at the forefront of compliance testing such as ASERCOM and Eurovent are helping to level the playing field for both manufacturers and consumers. Efficiency ratings and testing standards are somewhat self-governed by manufacturers however a handful of certification organisations are likely to play an even bigger role in the future as manufacturers gain more global reach.

ASERCOM advocates for improved environmental outcomes through certifying products that provide better performance and higher standards. Its certification process for compressors was established 15 years ago in order to assist manufacturers of commercial refrigeration and air conditioning systems by delivering comparable data at common rating conditions

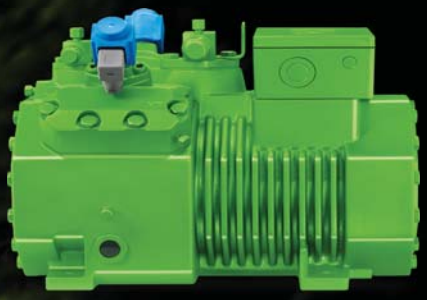
"IN PARALLEL WITH THIS BOOMING GROWTH IN NATURAL SOLUTIONS IS A DRIFT TOWARDS TIGHTENING UP OF TESTING METHODS..."

for all manufacturers. Using common test methods, products certified by ASERCOM provide reliable performance data which is presented in a comparable manner to optimise product comparison and selection. In 2010, this certification process was extended to also include condensing units.

Akin to ASERCOM is Eurovent, the long established organisation headquartered in Belgium with a sub-unit in Paris that tests and certifies 21 different categories of products in the HVAC&R industry. By publishing and closely controlling testing methods & procedures, Eurovent produces data that can be fairly compared between different manufacturers, again giving a fair result at all levels from manufacturer through to end user.

The domestic end of the market has been well served by the Australian & New Zealand government's well recognised energy star ratings for many years, however the commercial sector's communication to consumers on the topic remains fragmented and somewhat self-regulated with no over-arching user friendly way to decipher energy efficiency and overall performance.

With the market groundswell towards natural refrigerants in tandem with energy efficiency, will may soon see the dovetailing of these two 'must haves' result in more standardised and transparent testing.



BITZER is ahead of the curve

BITZER is showing strong leadership globally with twelve reciprocating compressors from the popular ECOLINE series certified by ASERCOM – including compressors developed for use with the new low-GWP refrigerants R448A and R449A (plus BITZER was the first compressor manufacturer to completely test, document and integrate both refrigerants in the BITZER software). Additionally, 15 condensing units can now carry the ASERCOM seal of approval for use with R134a.

For more information on certified BITZER products or to obtain technical data, please visit our website or contact your local sales team.

References

[1] http://www.r744.com/articles/7221/guide_chillventa_online

[2] https://un.org.au/2016/10/17/countries-agree-to-curb-powerful-greenhouse-gases-in-largest-climate-breakthrough-since-paris/2/

[3] https://goo.gl/hpB7HL

[4] https://futuregas.ac/seminar-program/

EVOLVING WITH THE TIMES

THE NEW EVOLUTION 7&8 SERIES OFFERS HIGH CAPACITY COUPLED WITH FLEXIBLE OPTIONS.

BITZER has continued its development of the well-known Evolution series of outdoor air cooled condensing units with the addition of the 7 and 8 series joining the existing smaller 1-6 Series units.

BITZER's global philosophy of continuous improvement meant the Evolution was scrutinized and tweaked, producing a stand-out product that addresses customer needs.

BITZER Compressor Systems Engineering Manager, Ian Suffield, headed up the project.

"For some time now BITZER has adopted the 'Kaizen' principles of continuous improvement and in extending the Evolution range, we've strengthened the integrity of the product with design improvements including improved exterior panel sets, EC condenser fans as standard, compressor spring mounts to minimise vibration and sound-dampening components that keep the Evolution quiet in comparison to the size and capacity of cooling it offers," explains Ian.

National Sales Manager Shannon Egan further adds that the product development was based on market demand.

"We identified a gap in the market for a product offering a higher capacity compared to the existing Evolution range, so we got to work adapting the concept for customers with higher capacity needs."

The Evolution 7/8 is a cost effective solution that offers 8 different compressor sizes and is available in three variants: basic, advanced and premium units.

The advanced units offer the addition of Carel pRack and CRII infinite capacity control; whilst the premium units incorporate BITZER's new advanced Varipack frequency inverter which includes an integral controller for regulating compressor and condenser fan speeds.

"The Varipack was developed in conjunction with compressor experts in Germany with a focus on matching the inverter to the compressor motor profiles whilst maintaining user-friendly operation and intuitive commissioning. We have adopted the Varipack into the new Evolution models as it proved robust and effective during our product testing phase – even operating inside our test facility with temperature pushed up to over 46 degrees," explains Ian.

For more information on the new Evolution series, contact your local sales team or search 'Evolution' on the BITZER website.

EVOLUTION 7/8 AT A GLANCE

Capacity Range: 26 KW – 77 KW
(R134a -5 degC SST / + 35 degC Ambient)

	BASIC	ADVANCED	PREMIUM
Centrifugal Oil Separator	•	•	•
45L Liquid Receiver	•	•	•
Demountable Liquid Line Drier and Sight Glass	•	•	•
Oil Level Control	•	•	•
EC Fans	•	•	•
CBG Fan Speed Control	•		
HP/LP Control	•	•	•
Fully pre-wired	•	•	•
pRack for CRII infinite capacity control + compressor & condenser fan operation		•	
Unloader heads (Optional 3rd stage unloading for 6-cylinders)		•	
BITZER VARIPACK Inverter c/w Expansion Module for HP/LP control selected for LT & MT operation			•

MERCURY RISING

SUMMER, SEER & SUPERMARKETS: BITZER AUSTRALIA'S NATIONAL SALES MANAGER, SHANNON EGAN, DISCUSSES EFFICIENCY RATINGS.

Commercial refrigeration applications span a wide range of processes in the food chain. It is estimated that 4% of emissions from Australia's total energy sector and 6% of emissions in New Zealand come from such processes. These substantial figures have inspired reduction strategies from a wide range of industry bodies, government agencies and manufacturers, both locally and abroad.

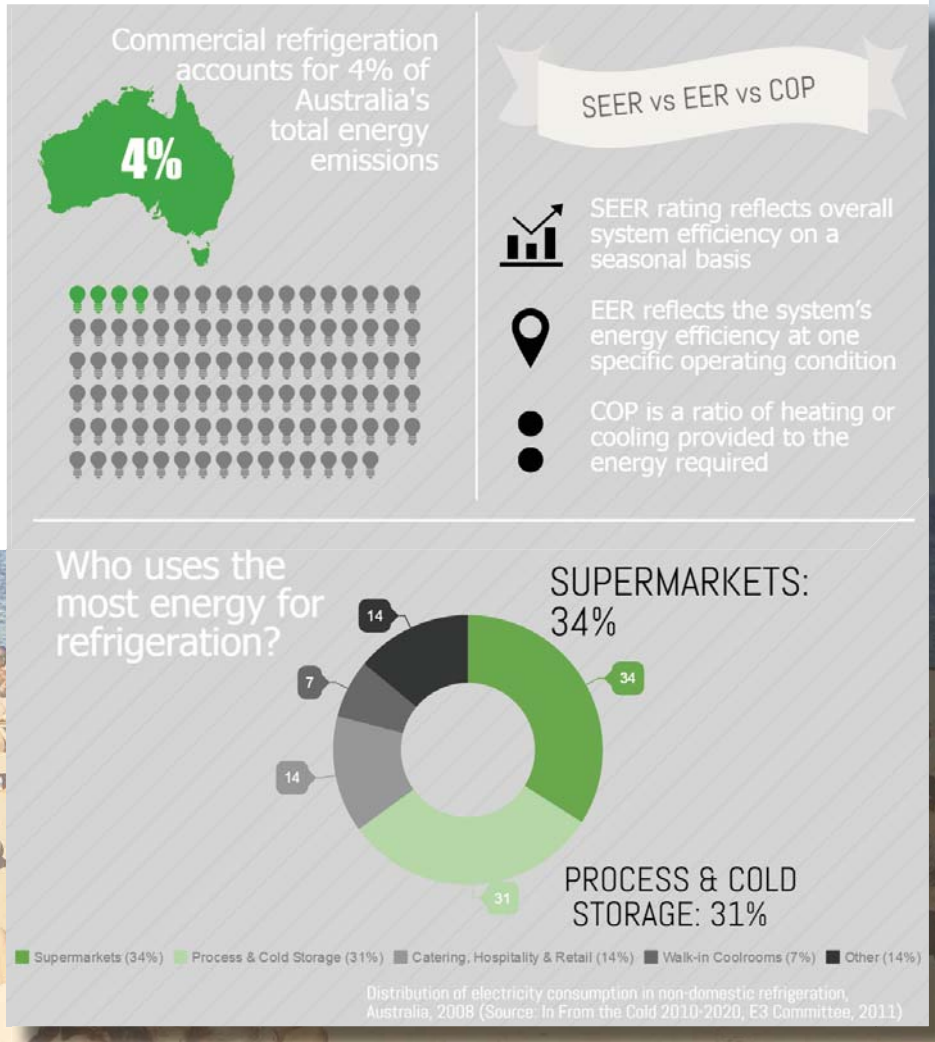
One of these strategies is to work towards a favourable Seasonal Energy Efficiency Ratio (SEER). This begins in the product development stages, ensuring that products are engineered to minimize power consumption as much as possible, lessen environmental impact, and most importantly for end users, reduce energy bills.

A SEER rating measures refrigeration and HVAC cooling efficiency, which is calculated by the cooling output for a typical cooling season, divided by the total energy input during the same time frame. A higher SEER rating equals greater energy efficiency.

The more cooling (or heating) a system puts out for each unit of energy it consumes, the higher rating it will receive. The higher the efficiency rating of your system, the less energy it will consume, thereby lowering utility bills. Not surprisingly, supermarkets are some of the highest Australian users of energy for refrigeration. For many years, BITZER has worked alongside engineers and facilities managers to optimise the performance of compressor systems, condensers and evaporators to help supermarkets manage their hefty energy loads.

More recently, CO2 transcritical systems have been implemented in a number of Australian supermarkets; with supermarkets gradually developing a business culture in which energy efficiency is viewed as paramount and treated as a tool for delivering savings to improve company profits. SEER is now part and parcel of delivering the right product for supermarket applications, and BITZER is globally active in engineering products that are more and more efficient and return real value to end users.

Editor's note: Read more on how to assess energy consumption as part of your overall equipment cost in our article exploring total cost of ownership (page 12).



MODERN & MODULAR

BUFFALO TRIDENT'S ENGINEERING MANAGER, ED TUTTY, GIVES AN OVERVIEW OF THE NEW BDC CONDENSER.

Australia's HVAC&R industry is driven by a relentless search for improvement: better efficiency, more refined system control, better integration within systems, and of course, lower CO2 footprint and environmental protection.

Some larger customers, including Australia's supermarket giants, are demanding better performance, more rigorous testing - and better life cycle cost.

The BUFFALO TRIDENT engineering team has dived into the challenge of refining its new BDC Series condenser to exceed market expectations. The team has engineered a product that neatly addresses the specifications of some of the country's biggest supermarket players, and its modular format allows for endless adaptation to different environments and capacity requirements.

Working with 3D Solidworks design tools and advanced performance simulation processes, the BUFFALO TRIDENT team have developed a unit that is set to lead the market.

The new BDC has been put through its paces, with each component scrutinised both individually and as a whole unit so that the maximum possible efficiency can be achieved. Contact us for performance data including the Eurovent Certification.

Recent improvements in production techniques mean the engineering team have taken advantage of smaller tube designs and tube with refined internal geometries, meaning a smaller coil can offer the same performance at a lower footprint. Features such as quiet and efficient 910mm EC fans, increased coil surface area and reduced tube sizes provide a reduction in refrigerant charge and reduce sound levels; keeping end users happy.

With a wide range of models from single fan to 10-fan units, the modular configuration makes the BDC a flexible choice for a host of different applications.

BDC CONDENSER AT A GLANCE

	STANDARD	OPTIONAL
Choice of configuration: 1 fan up to 10 fans	•	
Choice of horizontal or vertical airflow	•	
Single refrigerant circuits	•	
ZA Plus EC fans with owlett fan blades	•	
Motors wired to common junction box	•	
Positive air seal between each fan	•	
Epoxy fin	•	
Dual module on bumper rail	•	
Multiple circuits		•
Factory fit Chillboost kits		•

THE BDC IS SET TO BE RELEASED IN MARCH - CONTACT YOUR LOCAL SALES TEAM FOR MORE DETAILS OR TO REQUEST A TECHNICAL BROCHURE.

LESS NOISE. MORE PERFORMANCE.

DESIGNED FOR AUSTRALIAN CONDITIONS.

Using 3D design tools and detailed computer simulation processes, the BDC Series is a modular condenser with significantly higher performance than the existing module at low fan speed. Perfect for supermarket and commercial installations, the BDC Series condenser meets the new supermarket specifications which require high kW performance coupled with very low noise levels.

Contact your local BITZER sales team for more information or go to **www.bitzer.com.au**

Buffalo Trident
BY BITZER GROUP

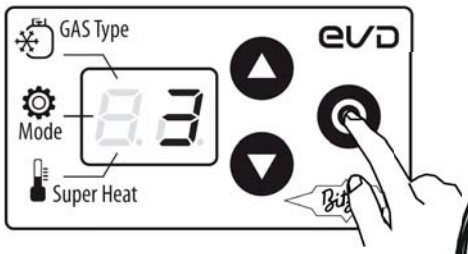
PLUG & PLAY WITH EVD-ICE

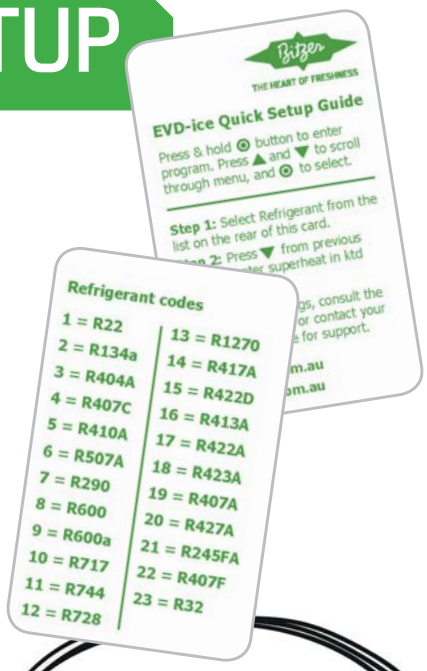
THE PS SERIES EVAPORATOR WITH EVD-ICE

EVD-ICE SETUP

Follow the Operating Instructions for correct installation procedure, then set up the EVD-ice as follows. Thanks to the user friendly interface, the installer can easily set refrigerant type and superheat.

Press & hold the 'target' button to enter program. Press the up and down arrows to scroll through the menu, and the target button to select.





PRO TIP:
EVERY EVD-ICE INSTALLED INTO A BUFFALO TRIDENT EVAPORATOR COMES COMPLETE WITH A QUICK REFERENCE SETUP CARD

1. Refrigerant type
Compatible with most widely used HFC, HC refrigerants (up to 22 options including CO2).

2. Superheat (ktd)
Exact setpoint entered, avoiding (re) calibration or adjustment, improving commissioning and operation.

Advanced commissioning is available in a second level menu (MOP, LOP etc).

ABOUT THE PS SERIES WITH EVD-ICE

The BUFFALO TRIDENT PS Series Evaporator is supplied factory-fitted with EVD-ice superheat control, providing contractors with a plug and play package.

Easy and cost efficient
Factory fitting the EEV driver, Ultracap and pre-wiring to all components including fans, removes on site costs for parts & labour.

Plus, in many installations, a liquid line solenoid is no longer required as the EVD-ice will regulate the EEV with an on/off signal from the room temperature control. In the event of a power failure the Ultracap will discharge power to the EEV coil and drive the valve closed, preventing floodback to the refrigeration plant.

Benefits
Commissioning costs are reduced with the factory programmed control (adjustment can be made on site), and the proven accuracy and performance of the EVD-ice provides a reduction in pull down time for room temperature and product, resulting in energy savings for the end user.

FOR MORE INFO, SCAN THE BARCODE WITH YOUR PHONE'S CODE READER APP

PS SERIES FACTORY FITTED WITH EVD-ICE

PUMP IT!

BITZER PUMPING STATION PACKAGES

CUSTOMISING YOUR PUMPING STATION

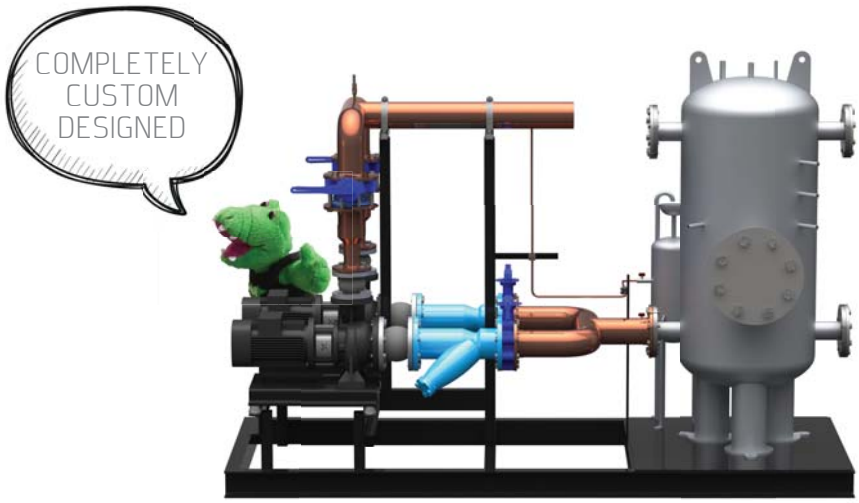
BITZER's purpose built pumping skids can be modified to suit individual customer requirements. They can be supplied as simple pumping skids with or without tanks; packages specifically for chilled water or chilled glycol; and with a choice of electrical controls as per customer requirements. All control valving and safety devices are supplied depending on application requirements.

For more information on the best product for your application, please get in touch - to assist us in delivering the best proposed solution, we'll need a few details including the desired inlet and outlet temperatures of the cooling medium, as well as capacity, flow rates and details of the fluid. Having these specs available for each component will expedite the engineering process.

By providing details for each component including the sub cooler, cascade, economiser, chiller and heat reclaim, our engineering team will have the best head start in designing a custom pumping station for your requirements.

If you need assistance, the BITZER technical sales team is here to help!

PUMPING STATION



PUMPING SKID WITH TANK

MAXI-RACK & PUMPING STATION COMBO

APPLES & ORANGES

WEIGHING UP THE TOTAL COST OF A REFRIGERATION OVERHAUL

The initial outlay for new refrigeration plant is often an expensive exercise. Facilities management and engineering teams are increasingly expected to justify all aspects of expenditure to management, down to the smallest detail. So how do you create an accurate picture of the true cost of a new system? One way of achieving this is by assessing the total cost of ownership, or TCO.

TCO is a financial estimate intended to help buyers and system owners determine the direct and indirect costs of a product or system, in contrast to a simplistic price comparison between two pieces of equipment. One supplier may seem cheaper than another at the outset, but costs over the whole life cycle of the product may be more favourable on a product with a more expensive price tag - especially if that product can provide serious energy efficiency gains in the long term.

TCO is a holistic way to look at investment into new plant or capital equipment that includes the overall costs incurred over the total life cycle of the product, not just the pure equipment cost at the time of purchase. A TCO analysis includes total cost of acquisition and operating costs as well costs related to replacement or upgrades at the end of the life cycle. This information is then used to help gauge the viability of an investing in new equipment.

In our industry, this can include things like costs incurred when transitioning from old to new systems, commissioning time and costs, costs due to downtime or equipment failure, costs related to training operators or end users, service costs and periodic maintenance, oil and consumables, likely costs of future upgrades or scalability expenses, decommissioning, and in particular, knock-on effects such as energy consumption and overall efficiency.

In the case of upgrades to natural refrigerant systems, TCO can be expanded to include other intangible concepts such as environmental benefits from lower HFC output, and increased ethical standards for the organisation owing to the switch to natural refrigerants.

Other indirect benefits can also be taken into account, such as faster information access, improved operational capability, easier monitoring, improved competitiveness, or improved product quality.

In the case of comparing TCO of existing versus proposed solutions, consideration should be put toward costs required to maintain your existing solution that may not necessarily be required for a proposed solution: for example, new equipment may provide automatic feedback and reports, thereby cancelling out personnel costs for what may currently be a manual process.

So how do you assess total cost of ownership? Your finance department will be the first point of call to help you understand the range of indirect costs particular to your business, however as a starting point you could consider the following:

- Define the realistic lifespan of the equipment and base your cost estimates on this time frame
- Assess both the current scenario and the proposed new scenario
- Separate estimated costs into acquisition, operating and changeover costs
- Allow for intangible benefits such as noise levels and environmental impact

"ONE SUPPLIER MAY SEEM CHEAPER THAN ANOTHER AT THE OUTSET, BUT COSTS OVER THE WHOLE LIFE CYCLE OF THE PRODUCT MAY BE MORE FAVOURABLE ON A PRODUCT WITH A MORE EXPENSIVE PRICE TAG - IF THAT PRODUCT CAN PROVIDE ENERGY EFFICIENCY GAINS IN THE LONG TERM."

What does your TCO analysis reveal?

TCO analysis can uncover hidden costs of ownership such as the cost of personnel to service an outdated system, whereas a new system may require much less maintenance.

It can also identify potential cost problems ahead of time by isolating which area costs will fall into, thereby assisting with budget management.

Remember: Traditionally TCO analysis from an accounting perspective pays no attention to many kinds of

business benefits that result from new refrigeration projects, such as reduced noise levels, reduced environmental impact, improved operational capability, improved competitiveness, improved product quality, and increased sales revenues.

However taking into account these 'soft' concepts should not be overlooked as these form an equally crucial part of the analysis process.

For further assistance, your local BITZER technical sales team can offer advice and recommendations on the best equipment for your individual needs, including examples of how other customers have benefited from installing more efficient equipment.

"TCO ANALYSIS CAN UNCOVER THE HIDDEN COSTS OF YOUR EXISTING EQUIPMENT."

ANALYSING TOTAL COST OF OWNERSHIP

Use the table below as a guide to help gauge the actual cost of your current equipment. Then use another blank table to assess the proposed new equipment. The new equipment cost, less the 'business as usual' cost, will give you a rough idea of how viable the proposed new installation will be. Note that the cost areas below have been included as a starting point; you will most likely need to add in additional headings for costs that are unique to your business.

	Acquisition	Operating	Changeover	**Total $**	**% of Total**
Equipment cost					
Commissioning					
Downtime during changeover					
Consumables					
Maintenance and service					
Energy consumption					
Personnel / reporting					
Management / monitoring module					
Environmental costs					
Noise levels					
Decommissioning					
Total costs					

ECOLINE+

THE NEXT GENERATION OF CO2 COMPRESSORS, UNVEILED AT CHILLVENTA

BITZER showcased its new ECOLINE+ reciprocating compressors for the next generation of CO2 systems for the first time at Chillventa.

With the new six-cylinder ECOLINE+ reciprocating compressors for transcritical CO2 applications, BITZER is setting a new benchmark in the use of CO2 as a future-compliant refrigerant at Chillventa 2016.

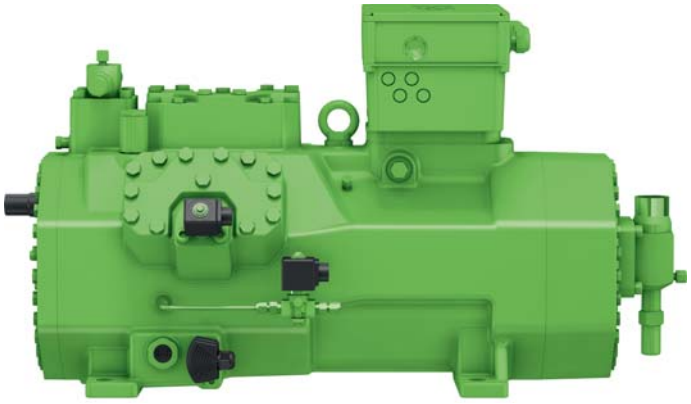
The BITZER ECOLINE+ series boasts three key developments: a new motor technology has been developed for series production to achieve new levels of energy efficiency. Along with the mechanical capacity control, which is also new for transcritical CO2 applications, system efficiency has increased considerably in full and part-load operation.

The new operating concept with the IQ modules was developed to take full advantage of the potential of the new technologies in terms of energy efficiency and straightforward integration into refrigeration systems, whilst ensuring simple service. These are also used in conjunction with the ECOLINE+ compressors.

"We would like to make efficient CO2 technology simpler and easier to understand again, and thus significantly expand the range of applications with the forward-looking refrigerant. The ability to provide refrigeration solutions that are reliable over the long term will require expanding access to CO2 technology", explains Rainer Große-Kracht, Chief Technology Officer of BITZER.

Specifically, further development begins with a line-start permanent-magnet motor (LSPM), which can be operated directly in networks with 50 or 60 Hertz. Incorporating permanent magnets has made it possible to significantly increase motor efficiency in full and part-load operation. This technology has been undergoing testing at BITZER and in selected systems out in the field for more than five years. With Chillventa, the LSPMs will be incorporated into the series production set for CO2 applications. These motors can be operated both directly in the network and in the familiar speed range with frequency inverters.

// CRII CAPACITY CONTROL FOR CO2
// LINE-START PERMANENT-MAGNET MOTOR
// INTEGRATED INTELLIGENCE WITH NEW OPERATING CONCEPT IN THE CM-RC-01 IQ MODULE



To further simplify the system, the new ECOLINE+ compressors can also be equipped with a specially adapted version of the well known CRII (mechanical) capacity control, which is a world first achievement by BITZER. The mechanical capacity control can modulate compressor capacity from 33% to 100% of the compressor capacity. Whilst only initially available in 6-cylinder TC compressors, the development Engineers in Germany will work towards introducing this feature to all CO2 compressors.

The intelligent operating concept of the CM-RC-01 IQ module, which comes as standard, also ensures optimal efficiency for the oil supply, the oil heater and the new CRII capacity control, which is specially developed for CO2 applications. The interplay between CRII and CM-RC-01 allows the capacity to be adjusted virtually infinitely between 10 and 100 per cent. The CM-RC-01 IQ module makes it very easy and inexpensive to integrate the ECOLINE+ reciprocating compressor into a whole host of system configurations.

The IQ module not only improves protective measures and options for monitoring compressors, but also expands their range of applications and thus offers users greater flexibility. This in turn makes it easier, for instance, to compensate for differences between summer and winter operation. The new capacity control has increased overall efficiency, as the CRII enables a more stable and higher suction pressure.

Thanks to the intuitive BITZER Electronics Service Tool (BEST) software as well as the monitoring sensors and actuators, which are pre-wired and preconfigured in the BITZER factory, the compressors are also very easy to configure and service.

Prepared for the future

'Our focus at Chillventa was environmentally friendly refrigerants, energy efficiency and user-friendliness – and these coincide perfectly with the strengths of ECOLINE+," says Große-Kracht. "CO2 is one of the refrigerants of the future – we at BITZER believe that wholeheartedly. That's because this refrigerant boasts a global warming potential (GWP) of 1, making it virtually climate-neutral."

As a long-standing company, BITZER has extensive experience with innovative refrigeration technology, and has been promoting innovations in the industry for 80 years. In fact, BITZER has also been developing and manufacturing refrigeration compressors for subcritical and transcritical CO2 applications for more than 20 years.

"WE WOULD LIKE TO MAKE EFFICIENT CO2 TECHNOLOGY SIMPLER AND EASIER TO UNDERSTAND"

"The ECOLINE+ increases system efficiency and reduces the complexity of modern CO2 systems. At the same time, users gain long-term planning security in terms of legal requirements such as the F-gas Regulation and Ecodesign Directive," emphasizes Große-Kracht at BITZER.

"Thanks to the ECOLINE+, the refrigeration and air conditioning industry has taken a major step in the right direction in the area of CO2 applications. In short, the ECOLINE+ represents maximum energy efficiency, flexibility, simplicity and convenient operation."

CHILLVENTA BY THE NUMBERS

THE FAIR MAY BE A FEW MONTHS IN THE PAST NOW, BUT THESE NUMBERS ARE WORTH NOTING!

982 EXHIBITORS

11TH - 13TH OCTOBER 2016
NUREMBERG CONVENTION CENTRE, GERMANY

3 DAYS

STAND 330 **HALL 7** THE BITZER STAND

56% OF VISITORS
WERE FROM OUTSIDE OF GERMANY

16TH - 18TH OCTOBER 2018
MARK YOUR DIARY FOR CHILLVENTA 18!

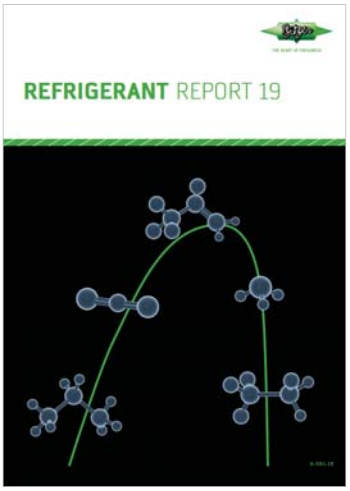
32,206 VISITORS

5% MORE VISITORS THAN 2014

120 SEMINARS

THE BITZER STAND:
688M² (AN INCREASE OF NEARLY 100 M²)

NEW REFRIGERANT REPORT



BITZER has recently released the 19th edition of its highly respected study on refrigerants. The 44 page publication provides in-depth information on current refrigerants, the alternatives and most of the upcoming development blends. Importantly, it provides a relatively independent and unbiased compressor manufacturer's view of the feasibility of many of the proposed alternatives, as well as information about their potential applications.

BITZER aims to set a good example in the refrigeration and air conditioning industry, particularly when it comes to using alternative refrigerants.

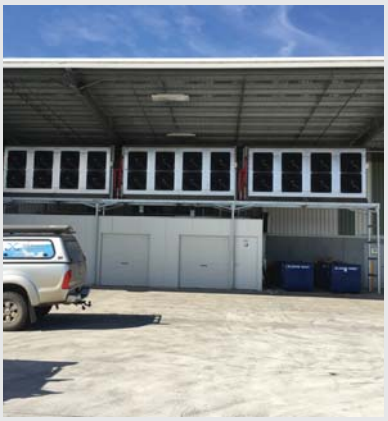
You can download the report from the BITZER website under News > Media > Downloads.

OLD SCHOOL

Circa 1980's... Previous owner of the St Marys manufacturing plant, Bill Evans, points out the features of early BITZER 'over & under' racks.

BITZER's ELV21 Series compressors are under field test and will be in serial production in 2018. The larger ELV51 Series is currently under development.

IN THE FIELD



MASSIVE MELBOURNE MARKET COOLED WITH THE HELP OF BITZER

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.

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 supply of 75 individual pieces of equipment including rack systems, condensing units and evaporators.

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

For further details on this project, request a copy of the 'Melbourne Market user report' from your local sales team.

Do you have a BITZER success story to share? Contact the editor with your project details (new or old) and you could have your story published in EXPANDED!

BITZER WESTERN AUSTRALIA GETS KUDOS FROM AUSTAL SHIPS

BITZER Australia was recently contracted by prominent Australian maritime manufacturer Austal Ships to supply BITZER HSK Screw Compressors, German Lloyds Certified Sea Water-Cooled Condensers and Australian manufactured Pressure Vessels for the Hull 390 High Speed Support Vessel, destined for the Royal Navy of Oman.

BITZER was pleased to be able to offer a solution for this specialist application, where strict space and weight restrictions had to be taken into account.

BITZER AUSTRALIA'S NEW WEBSITE NOW INCORPORATES BUFFALO TRIDENT

BITZER Australia is pleased to announce that our website has had a major makeover and now reflects the level of detail and professionalism that our customers expect from BITZER Australia.

If you have previously visited the international BITZER site then it will look familiar, as our Australian products have now been incorporated into BITZER's global site, meaning you can find all the details you need on German made BITZER compressors as well as Australian AVP (added value products such as condensing units and compressor racks) and BUFFALO TRIDENT heat exchange - all in the one place!

www.bitzer.com.au is now the home of BITZER Australia & BUFFALO TRIDENT!

SUPPORTING THE INDUSTRY THAT SUPPORTS US

Refrigeration 2017 Conference

AIRAH'S ANNUAL REFRIGERATION 2017 CONFERENCE

Staged in Melbourne on March 27-28th, AIRAH's annual conference will look at the current state of the industry, how it may respond to the future challenges initiated by COP 21 and the global HFC phase-down, and how this will impact upon educators, legislators, regulators, end users, engineers, consultants and technicians. The conference will also include sessions reviewing the latest technologies on offer.

BITZER Australia is a Supporting Sponsor of the conference, in addition to providing year-round local support via regional AIRAH Trade Nights.

For more information go to airah.org.au.

ATMOSPHERE AUSTRALIA 2017

The ATMOsphere series of events are a great opportunity for the refrigeration community to learn more from the leading lights of the industry, with an excellent line-up of end user and supplier panels, policy, market trends & technology case study sessions as well as education and training discussions. BITZER Australia has cemented its commitment to natural refrigerant knowledge sharing in the form of platinum sponsorship of ATMOsphere's Sydney event on May 2nd.

For more information visit www.atmo.org.

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All products from BITZER Australia and BUFFALO TRIDENT are available through our trusted wholesale partners:

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www.actrol.com.au

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WHAT'S HAPPENING AT BITZER?

TECHNICAL TRAINING: CUSTOMISED TO YOUR NEEDS

BITZER Australia runs customised small group training for contractors, consultants, end users and facilities management personnel. Sessions can be arranged on request and vary from a few hours to a full day.

The BITZER engineering teams can offer training on both BITZER and BUFFALO TRIDENT products, covering everything from operation to installation and maintenance.

Courses can be structured around applications of CO2, ammonia and other low GWP alternatives - in fact all sessions can be customised based on specific customer objectives.

Contact your local technical sales team to discuss how to craft a training session that's relevant to your needs.

IN THE NEXT ISSUE...

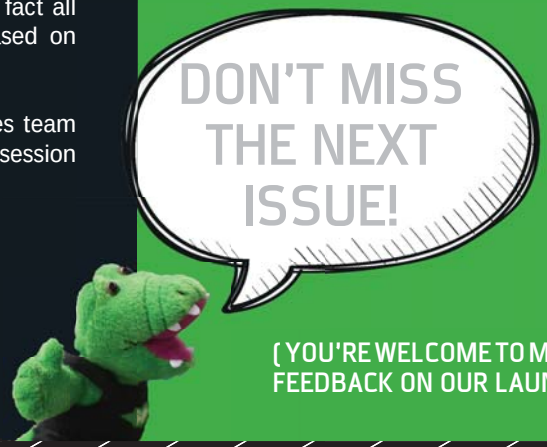
THE BITZER TECHNICAL ROADSHOW: WHAT YOU CAN LOOK FORWARD TO IN 2017

COMPRESSOR TECH TALK: VARISPEED, VARIPACK AND CM-RC CAPACITY CONTROL

TRANSCRITICAL CO2 DEVELOPMENTS

ATMOSPHERE & AIRAH CONFERENCE WRAP-UP

...PLUS MUCH MORE!



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(YOU'RE WELCOME TO MESSAGE US WITH FEEDBACK ON OUR LAUNCH ISSUE TOO!)

Sydney R&D Room and Training Centre

EVOLUTION 7 & 8 SERIES:
BIG BROTHER HAS LANDED.

RANGE EXTENSION FOR HIGHER CAPACITIES

The latest addition to BITZER Australia's EVOLUTION family: a condensing unit that incorporates the latest compressor developments including BITZER ECOLINE compressors, optional CRII capacity control or VARIPACK frequency inverters, in combination with outstanding BUFFALO TRIDENT heat exchange components and world class EC fan technology.

Contact your local BITZER team to request a brochure or pricing.

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THE HEART OF FRESHNESS