

THE GAUGE ISSUE 11

The latest industry news and
product information in HVAC-R

ACTROL™

DC-3

SMART REFRIGERATION

The results are in!

DC-3 Field Trial -
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WHY DC-3?



On November 1 we said hello to our brand-new DC-3 Smart Refrigeration systems in stores around the country.

This game changer is going to redefine the industry with a plug and play solution for walk in/reach in cool rooms.

We understand this new technology can be a little daunting for you and your customer, and like any good relationship, both parties should benefit and get the most out of each other.

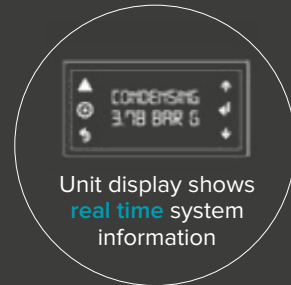
The DC-3 Smart Refrigeration system has several features and benefits for both you the contractor and the end user.

Features and Benefits for the contractor:

- Easy to select, install and commission saving you time to spend on your next job
- System arrives in a two-box kit, ensuring you won't need a return trip to the wholesaler
- Condensing unit display shows real time information, so you know exactly what is happening as it is happening
- Smart Refrigeration technology ensures higher heat exchange efficiency, adequate oil return, and safety controls to ensure the compressor operates within its design envelope
- Easy maintenance with vital signs shown on easy to understand condensing unit display

Features and Benefits for the cold room user:

- Less energy consumption for quicker return on investment
- Smooth line temperature control resulting in extended shelf life of perishable foods
- Quieter system with low noise outside thanks to the modulating fans and compressor
- Flexible capacity range means you have room to move with your cool room layout in the future
- Safety mode ensures continuous cooling if communication between components is lost



Still can't get your customer over the line?
Take a look at the energy savings...

DC-3 FIELD TRIAL

“The Cellars” Bangalow NSW Case Study – Winter Results

A DC-3 Smart Refrigeration system was installed in “The Cellars” in Bangalow NSW in August 2018 replacing some aging equipment servicing a bottle shop with reach-in display and a customer walk-in self-serve cold room.

The Cellars cold room has 15 glass doors facing a non-air-conditioned retail area. The cold room cools ambient temperature packaged beer and wine which is loaded using a sliding door of 2m x 2.2m high.

Room Details

8.5m x 6.5m x 2.7m high
75mm sandwich panel
15 x heated glass door inserts (not included in energy consumption data)
Stock rotation: 2100kg in 24 hr period
Stock entering at ambient temperature
Room set point 2°C

Old Equipment

Condensing unit with Copeland D3DA75X213-1 Discus semi-hermetic compressor with two KCR82 twin fan evaporators. This provided about 21 kW of refrigeration at about 7.2 KTD.

New Equipment

DC-3 Cold Room Kit 21.4kW: (APDC21.4M3-1 General Purpose kit which includes one CH4E3/35DC3-1 three fan evaporator).

The cold room energy consumption was logged before and after install for a five-day period to show a snap shot of energy consumption.

- The average daily electricity consumption in August was 57kWh with the old refrigeration equipment.
- The average daily electricity consumption in August was 20.5kWh with the new DC-3 system.
- This points to significant energy savings.

The DC-3 energy savings are due to many factors including:

- **BLDC (brushless direct current) compressor**
- **EC condenser fans**
- **Electronic expansion valves**
- **Advanced control algorithms**
- **New clean evaporator and condenser**
- **Cooler night time temperatures during winter**

August is the second coldest month in Bangalow, so the savings measured are some of the best that can be expected on this site.

The annual savings are expected to be approximately 30% for this cold room as night time temperatures will rise during the summer months.

Bangalow has a temperate climate being just a few kilometers inland from Byron Bay.

	JANUARY	FEBRUARY	MARCH	APRIL	MAY
Mean Maximum Temperature (C°)	28.3	28.1	27.1	25	22.5
Mean Maximum Temperature (C°)	19.7	19.6	18.4	15.4	12.1

The DC-3 smart refrigeration system takes advantage of lower ambient temperatures by floating the condensing pressure down significantly compared to other systems.

Any ambient below 30°C will see savings compared to a conventionally controlled on/off refrigeration system.



JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
20.3	20	21.3	23.6	24.9	26.2	27.5
10	8.6	8.7	11.5	14.1	16.6	18.3

THE HOME OF COMPRESSORS

At Actrol, we have a comprehensive range of compressors for new and replacement applications. Hermetic, semi hermetic, scroll, screws and rotatry, you name it - we've got it! And we only source world renowned companies such as Tecumseh, Emerson (Copeland), Bitzer, Danfoss (Maneurop), SCl, and others.



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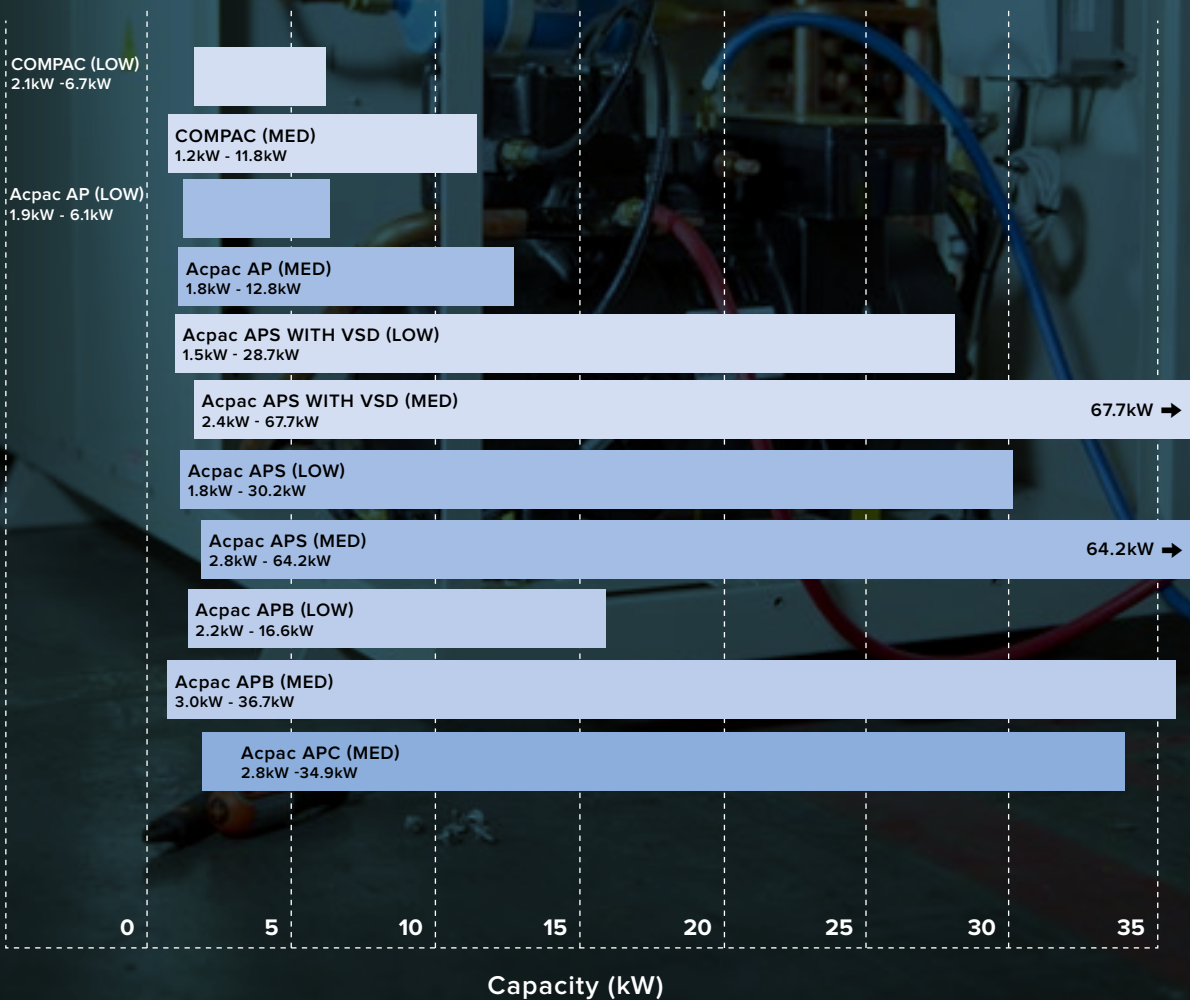
INDOOR VERSUS OUTDOOR

ROUND TWO OUTDOOR CONDENSING UNITS

Bing Bing, it's round two, and this edition is all about our outdoor condensing unit range. With protection from the elements and with the ease of being fully fitted these units are becoming more and more popular, but are they the right option for you?

Let's take a look at our next contender - Outdoor packaged condensing units

Capacity range - outdoor condensing Units





COMPAC CONDENSING UNIT

Medium Temperature Application
Range: 1.2kW --- 11.8kW
Low Temperature Application
Range: 2.1kW --- 6.7kW

The Compac is a new range of fully fitted packaged units with world leading Tecumseh hermetically sealed reciprocating compressors. Designed with space constraints in mind, the horizontal discharge condenser configuration suits unit placement in carparks, roofs, on the side of buildings and mounted above one another without restricting air flow. Installation is quick and easy, as every Compac is optioned straight out of the box.

Features:

- Fitted with Tecumseh Hermetic compressors. A world renowned compressor manufacturer
- Compactness. Housing is designed to optimize spacing and functionality
- Horizontal discharge condenser configuration
- Easily serviceable as the mechanical and electrical components are in the same compartment
- Complete factory wiring: compressor contactor/overload, HP/LP and control circuit breakers
- Oil Separator fitted to all models, Suction accumulator fitted to low temperature models
- Liquid line assembly including drier and sight glass fitted for quick installation



Acpac AP SERIES CONDENSING UNIT

Medium Temperature Application
Range: 1.8kW --- 12.8kW
Low Temperature Application
Range: 1.9kW --- 6.1kW

The AP series of Acpac condensing units are designed in Australia to provide a robust energy efficient, fully fitted packaged range with world leading hermetically sealed reciprocating compressors. The AP series is designed with the service technician in mind with easy to access components with separate compressor and fan compartments for safe and easy maintenance.

Features:

- Fitted with Tecumseh Hermetic compressors. A world renowned compressor manufacturer
- Extra Large condenser to suit Australia's extreme climate
- Complete factory wiring: compressor contactor/overload, HP/LP and control circuit breakers
- Oil Separator fitted to all models, Suction accumulator fitted to low temperature models
- Condenser fan HP cycling maintains the condensing temperature in all ambient conditions



Acpac APS WITH VSD SERIES CONDENSING UNIT

Medium Temperature Application
Range: 2.4kW --- 67.6kW
Low Temperature Application
Range: 1.5kW --- 28.7kW

The variable speed drive (VSD) models of the APS semi hermetic Acpac range include a fully programmed VSD to adjust the compressor speed to maintain the desired evaporating pressure. In extreme ambient temperatures the VSD models will take action to ensure the compressor pressures are maintained within the design operating envelope, this is called HLPs. The APS VSD models are quick and easy to install and commission and are suitable for R134a, R404A and many other refrigerants.

Features:

- Fitted with Tecumseh Semi-Hermetic compressors. A world renowned compressor manufacturer
- Variable Speed Drive (VSD) is specifically tailored for the HVAC-R Industry
- Controls the refrigeration system to match the system load at all times, resulting in energy and cost savings
- Pre-programmed to enable fast commissioning and trouble free operation
- The High Limit Pressure Safety feature will keep the compressor inside its operating envelope even at high ambient conditions
- The VSD monitors and maintains the compressor within its maximum operating current
- Oil management speed up feature will ensure oil return is always maintained





Acpac APS SERIES CONDENSING UNIT

Medium Temperature Application

Range: 2.8kW --- 64.2kW

Low Temperature Application

Range: 1.8kW --- 30.2kW

This range of Acpac Tecumseh semi-hermetic condensing units are fully fitted and wired to make installation fast and efficient. Acpac Tecumseh Semi has been designed to operate efficiently in both the hot and cold extremes of the Australian environment. The range is designed for R134a, R404A and many other refrigerants and can be applied in both low and medium temperature applications.

Features:

- High ambient temperature capability designed for Australia's extreme climate
- Oil Separator, Suction accumulator and liquid line assembly fitted to all models to make the installation process quick and easy
- Pressure relief valve fitted to all APS series units
- Carel fan speed controller fitted to EBM fans for complete condensing pressure control
- EC fans fitted to the extra-large capacity models
- Fully Wired including circuit breakers, contactor, electronic overload and spare DIN rail in an enclosure
- Fitted with Tecumseh Semi-Hermetic compressors. A world-renowned compressor manufacturer



Acpac APB SERIES CONDENSING UNIT

Medium Temperature Application

Range: 3.0kW --- 36.7kW

Low Temperature Application

Range: 2.2kW --- 16.6kW

This range of Acpac Bitzer semi-hermetic condensing units are fully fitted and wired to make installation fast and efficient. Acpac Bitzer Semi has been designed to operate efficiently in both the hot and cold extremes of the Australian environment. The range is designed for R134a, R404A and many other refrigerants and can be applied in both low and medium temperature applications.

Features:

- High ambient temperature capability designed for Australia's extreme climate
- Oil Separator, Suction accumulator and liquid line assembly fitted to all models to make the installation process quick and easy
- Carel fan speed controller fitted to EBM fans for complete condensing pressure control
- Fully Wired including circuit breakers, contactor, electronic overload and spare DIN rail in an enclosure
- Fitted with Bitzer Semi-Hermetic compressors. A world-renowned compressor manufacturer



Acpac APC SERIES CONDENSING UNIT

Medium Temperature Application

Range: 2.8kW --- 34.9kW

This range of Acpac Copeland scroll condensing units are fully fitted and wired to make installation fast and efficient. Acpac Copeland scroll has been designed to operate efficiently in both the hot and cold extremes of the Australian environment.

The range is designed for R134a, R404A, R407F and R507 and can be applied in medium temperature applications.

Features:

- High ambient temperature capability designed for Australia's extreme climate
- Oil Separator, Suction accumulator and liquid line assembly fitted to all models to make the installation process quick and easy
- Carel fan speed controller fitted to EBM fans for complete condensing pressure control
- Fully Wired including circuit breakers, contactor, electronic overload and spare DIN rail in an enclosure
- Fitted with Copeland Scroll compressors. A world-renowned compressor manufacturer

OUTDOOR CONDENSING UNITS COMPARING THE RANGE

OUTDOOR COMBO KITS

Now we've introduced you to our outdoor unit range, let's take a look at our Compac range and find which evaporator combo is going to suit your needs best. Using the simple selection table below, you can now take some of the guess work out of sizing up your next cool room or freezer.

OUTDOOR FITTED COMBO KITS

Compac and Cabero Pro

	Kit code	Nominal Capacity (Watts)	Condensing Unit	Evaporator	To suit room dimensions (external)			
					Width (m)	Length (m)	Height (m)	Room Volume (m³)
Cool Room R404A	3535037	2480	PACS4517Z	CH4C1/35-1 w/Evd Ice	3.0	3.0	2.4	21.6
	3535038	3297	PACS4519Z	CH4D1/35-1 w/Evd Ice	3.0	4.0	2.4	28.8
	3535039	3887	PACS4524Z	CH4C2/30-1 w/Evd Ice	4.0	4.0	2.4	38.4
	3535040	5292	PACS4531Z	CH4C2/35-1 w/Evd Ice	5.0	5.0	2.4	60.0
	3535041	6344	PACS4540Z	CH4D2/35-1 w/Evd Ice	6.0	6.0	2.4	86.4
Freezer Room R404A	3535042	2166	PACS2480Z	CH4C1/35E-1 w/Evd Ice	2.0	2.0	2.4	9.6
	3535043	2931	PACS2511Z	CH4E1/35E-1 w/Evd Ice	2.0	3.0	2.4	14.4

OUTDOOR STANDARD COMBO KITS

Compac and Cabero

	Kit code	Nominal Capacity (Watts)	Condensing Unit	Evaporator	To suit room dimensions (external)			
					Width (m)	Length (m)	Height (m)	Room Volume (m³)
Cool Room R404A	3535000	2480	PACS4517Z	CH4C1/35-1	3.0	3.0	2.4	21.6
	3535001	3297	PACS4519Z	CH4D1/35-1	3.0	4.0	2.4	28.8
	3535002	3887	PACS4524Z	CH4C2/30-1	4.0	4.0	2.4	38.4
	3535003	5292	PACS4531Z	CH4C2/35-1	5.0	5.0	2.4	60.0
	3535004	6344	PACS4540Z	CH4D2/35-1	6.0	6.0	2.4	86.4
Freezer Room R404A	3535005	2166	PACS2480Z	CH4C1/35E-1	2.0	2.0	2.4	9.6
	3535006	2931	PACS2511Z	CH4E1/35E-1	2.0	3.0	2.4	14.4



*Internally equalised expansion valve required.
Nominal compressor capacity based on:
Cool Room @ -4°C SST, 38°C Ambient
Freezer Room @ -24°C SST, 38°C Ambient

Cool Room heat load based on: Product load of 350kg, entering per day at 12°C, heavy usage, product specific heat: 3.4 kJ/kg K, 75mm cool room panel, 16hr run time, 24 hour pull down time.
Freezer Room heat load based on: Product load of 350KG per day entering at -10°C with Heavy Usage, 150mm cool room panel, 18hr run time (storage only – no product freezing), 24 hour pull down time. We recommend that the above the information be used as a guide only, and that each particular application be referred to Actrol for selection advice.

WHAT'S NEW IN STORE WITH EMERSON?



Emerson TI Series Thermo Expansion Valves

Emerson TI series of Thermo-Expansion Valves with interchangeable orifices are designed for refrigeration applications such as display cases in supermarkets, walk-in/reach-in coolers, freezers, soft ice cream/ice maker machines, milk tank coolers, transport refrigeration as well as for air conditioning and heat pump systems.

TI provides flexibility in selection of capacity and is ideal for those applications requiring compact size with stable and accurate control over wide load and evaporating range.

- Accurate adjustment on-site with low superheat temperature change per full turn
- Double O-ring seal to prevent leakages
- Removable cap by hand
- 45mm diaphragm for low and stable superheat
- Robust copper capillary tube and bulb
- 45 bar maximum working pressure suitable for R410A, HFO and HFO Blends
- Interchangeable cages capable of changing valve capacity in the field



EMERSON PRESSURE CONTROLS

Introducing the new adjustable pressure controls series PS1/PS2 from Emerson.

PS1 Single Pressure Controls and PS2 Dual Pressure Controls are designed for use on high and low pressure applications in refrigeration, air conditioning and heat pump systems, providing single-device control of the compressor or other electrical device. These new controls have a wider differential and adjustment range, ensuring a large coverage of your needs.

- Wider kPa differential and adjustment range
- Cable terminals designed for ease of connection
- Independent testing of HP/LP via front toggles
- Separate alarm terminals for HP and LP to speed up trouble shooting



>B< MaxiPro > Join the press revolution... With a MaxiPro starter kit <



The >B< MaxiPro fitting system has revolutionised the installation of copper tube for air conditioning and refrigeration by offering super-fast installation and highly secure, leak proof joints. If you haven't made the switch to >B< MaxiPro yet, we're making it easier than ever with the introduction of the MaxiPro starter kits.

Available from 1st November
while stocks last

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ZONING

MYzone3

The importance of zoning an air conditioning system

Zoning a home air conditioning system has so many great benefits as it allows for a more efficient use of a ducted air conditioning system. A correctly design zoned air conditioning system will provide you with:

- **Increased energy efficiency**
- **Savings on running cost**
- **Ability to control your comfort level in each zoned air**

In a zone ducted air conditioning system, areas in the home are selected to be zoned. These areas could be either a Day/Night zone or separate zoned areas. The air-conditioned areas can then be selectively regulated via zone dampers so that only the areas in use have airflow.

By heating or cooling the areas in use, your ducted system will work more efficiently as a great volume of air is going into a smaller area meaning that the required temperature is reached more quickly, saving on running costs.

With energy costs continuing to rise, when installing your next ducted air conditioner start thinking about what zoning options you can offer your customers and the benefits it will have on their wallet and longevity of the unit. There are several different zoning options from the very basic to the more complex.

One of the premium products we offer is the Myzone 3 tablet. Myzone 3 is a climate control system that gives the home owner the ability to have precise control of the temperature in each room individually. Compatible with the leading air conditioner brands in the industry and the ability to zone up to 14 zones Myzone 3 offers the complete solution for zoning matched with a 10-year warranty. Myzone also offers an easy to use App which enables the home owner to control your air conditioning system via your smart phone or tablet.

Features

- **One device to control temperature and zones**
- **Wifi Enabled**
- **Ease of installs**
- **Compatible with most major brands**

For more information on the Myzone 3 brand visit <https://www.metalflex.com.au/products/myzone/>

HOW YOU CAN ADD
VALUE TO YOUR
CUSTOMERS



The Reece Grant awards \$5,000 to Port City Air's Daine Smith

the
reece
grant

The Reece Grant has awarded \$5,000 to its first HVAC-R project, aiding the installation of air conditioning and ventilation in a specialised mental health facility for individuals recovering from eating disorders (ED).

Since its inception in 2016, the Reece Grant has supported more than 15 projects in communities abroad, 6 local initiatives and is currently supporting 8 up and coming young people studying a trade. With a commitment to creating a better future for the next generation, the Reece Grant funds initiatives that improve health and sanitation, community wellbeing and education.

While many of the projects to date have been focused on plumbing initiatives, this is the first successful HVAC-R recipient, with a view to continue to expand the reach of these valuable skills in aid of people in need. The deserving recipient, Daine Smith, was put in touch with the organisation, endED, through his Sunshine Coast branch.

EndED is an organisation dedicated to support and healing for ED patients. Co-founders Mark and Gayle Forbes are eagerly anticipating the completion of its dedicated premises on the Sunshine Coast, the first of its kind in Australia. With the National Eating Disorders Collaboration (NEDC) in Australia estimates that at least 16% of

Australians suffer from eating disorders (ED) and disordered eating, facilities such as these represent the opportunity to support and help rehabilitate a little over four million Australians grappling with a sickness that causes a whole host of societal and psychological problems.

"I hope to send in five to six guys on site, and our part of the work should take three to five weeks," says Daine. "Everyone's really excited to be part of this and to see the completed facility. It's brilliant to know we'll have contributed to a great end result and I'd love to see how we can continue helping in the future."

It's important for Daine and his team to be involved in projects that make a difference. "Knowing that ED patients often find themselves in mental health facilities where the environment really isn't conducive to healing specific to their unique situations really saddens me," says Daine. "I'm looking forward to seeing the change a dedicated space makes in their lives."

Learn more about current Reece Grant recipients and how their projects are making a difference at reecegrant.com.au

NEWS

BRANCH UPDATES

As your work is picking up in the warmer months, so is ours! Showing no signs of slowing down as the year winds up, we will have four new Actrol stores under our belt this side of Christmas.

If you get a spare second this summer and you're close by, pop into one of the branches below and check them out!



TRANSFER FROM REECE HVAC

Actrol Morayfield

Branch Manager: Alan Parsons
Address: 250 Morayfield Road
Morayfield, QLD, 4506
Phone: (07) 5431 1670

Actrol Noosa

Branch Manager: Jay Schulz
Address: Unit 1, 100 Rene Street,
Noosaville, QLD 4566
Phone: (07) 5377 2310

NEW STORES

Actrol Thomastown

Branch Manager: Scott McMillian
Address: 13-17 Brand Drive,
Thomastown, VIC 3074
Phone: (03) 8415 2840

RELOCATIONS

Actrol Moorabbin

Branch Manager: Harley Ambrose
Address: Unit 29, 105 - 115 Cochrane Road,
Moorabbin, Vic, 3189
Phone: (03) 9553 0422

CHRISTMAS CLOSURES

DATE	OPENING HOURS
Monday 24 December 2018	Open until 12pm
Tuesday 25 December 2018	All Branches Closed
Wednesday 26 December 2018	All Branches Closed
Thursday 27 December 2018	Normal Hours
Friday 28 December 2018	Normal Hours
Saturday 29 December 2018	Normal Saturday Hours
Sunday 30 December 2018	All Branches Closed
Monday 31 December 2018	Open until 12pm
Tuesday 1 January 2019	All Branches Closed
Wednesday 2 January 2019	Normal Hours
Thursday 3 January 2019	Normal Hours
Friday 4 January 2019	Normal Hours





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