



Dairy Cooling Solutions

A Division of Eurotec Limited

EUROTEC People • Technology • Solutions
HVAC • Refrigeration • Electrical • Measurement



Milk Cooling Tanks



Ice Builders



Tubular Coolers

Packo

European Technology, Quality and Design

Our Mission: Through the Knowledge and Ability of our People and the Technology of our Products we deliver the best possible Solutions to our Customers.

Since its establishment in 1985 Eurotec has been building an enviable reputation not only as an importer and marketer of a wide range of superior quality Controls, Instrumentation, Gas Detection, Humidification and Ice-making equipment for the HVAC, Refrigeration, Industrial Process, Electrical and Food industries, but also as a company whose people are committed to providing their clients with total quality service.

This commitment sees the Eurotec Team working closely with clients as well as designers and specifiers, ensuring that the advice offered in terms of products and applications are in the best interests of our clients.

Eurotec has been building and supplying Control Panel Solutions to the Refrigeration industry since 2008. Since then we have become a leading manufacturer and supplier of Refrigerated Milk Vat control panels to the dairy sector controlling the refrigeration system(s), pumps and CIP functions as well as Condensing Unit control panels for OEM's, custom control panels for Refrigeration Racks, Chillers and a variety of commercial refrigeration applications.

In 2012 the Control Panel Solutions division (CPS) was established to reflect the growing control panels business and we now supply standard custom and OEM Control Panel Solutions to the Refrigeration, HVAC and Electrical markets.



Dairy Cooling Solutions, a division of Eurotec was established to supply solutions to meet the Dairy Sectors milk cooling technology challenges, improving efficiency and milk quality on the farm.

Eurotec are proud to be appointed the New Zealand distributor for Packo Inox, a leading European manufacturer of Dairy Cooling products. Packo is considered a pioneer in the field of milk cooling and is the oldest milk cooling tank manufacturer in the world.

For over 20 years, Packo's presence in Australia has resulted in over 1500 new Packo milk cooling tanks installed on farms - and now available to NZ farmers through Dairy Cooling Solutions.

Packo is an innovative manufacturer of stainless steel components and installation for hygiene sensitive applications and processes. You can count on more than 50 years' experience in the food and dairy industry and the pharmaceutical sector.

Producing clean hygienic milk is only part of the equation for successful milk production. Once produced, milk must be chilled rapidly and stored correctly. The Packo range of cooling equipment delivers the vital fast, efficient temperature drop required and keeps the milk at optimum storage conditions ready for collection. Once cooled, technology is available to allow monitoring of the whole process and provide the traceability required by many of today's milk buyers.

Tanks available use either the direct expansion or ice water method of cooling - the most effective method. Chillers, heat exchange units, pasteurisers and cheese vessels complete the range of energy efficient equipment designed by the factory at Zedelgem, Belgium and manufactured both there and at factories in Ireland and China.

Milk Cooling Technology

Ice Bank Cooling System RM/IB

Ice Bank Cooling System: 40 years of know-how at your service. The ice water system of the RM/IB cooling tank features a built-in ice bank, ensuring intensive milk cooling without any risk of freezing.

The ice bank system sprays ice water across the external surface of the inner tank. This accelerates cooling by 50 % compared to a standard direct expansion system.

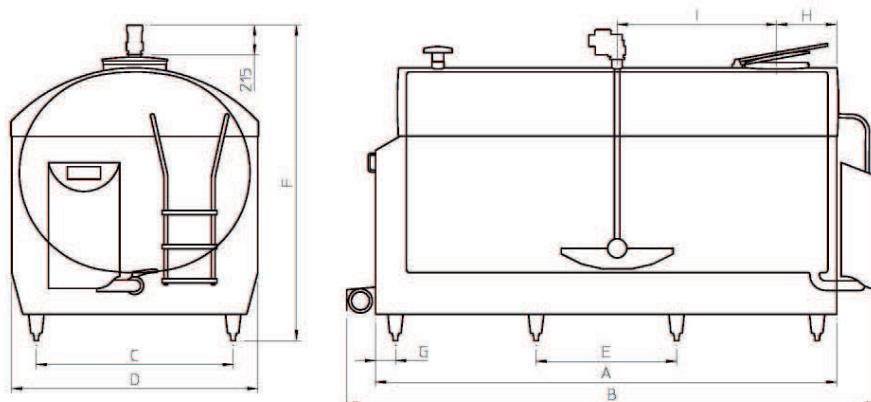
Thanks to Packo's high-quality Ice Bank technology (IB), the cooling time is reduced by half, with no risk of freezing the milk. Cooling with ice water is particularly effective when used with AMS milking.

Being the world leader in ice bank systems, Packo has been developing and improving this technology for over 40 years. This system, which was previously considered as a simple variation on the "bain-marie" system, is, nowadays, increasingly applied in the world's leading dairy industries. Its strength goes beyond just maintaining milk quality.

The ice bank milk cooling tank will store a reserve of ice, which means that the cooling units don't need to be switched on during milking. There is less risk of milk temperature increase due to this ice reserve, even in the event of power fluctuations. The other advantage is that you don't need to invest in large cooling units, which saves you space and cuts down installation costs. Another added bonus is the fact that you can avail of cheaper night-rate electricity to build up your reserve of ice, thereby reducing running costs substantially.



- Capacity: 1,600 to 7,150 Litres
- 2, 4 & 6 Milkings and AMS milking



REM/IB Dimensions

Model	Max. cap. Milkings	A litres	B* <th>C</th> <th>D</th> <th>E</th> <th>F**</th> <th>G</th> <th>H</th> <th>I</th> <th>Legs</th> <th>Weight</th>	C	D	E	F**	G	H	I	Legs	Weight	
		mm	mm	mm	mm	mm	mm	mm	mm	mm	number	kg	
1600	1678	2	2185	2766	952	1302	1895	1825 - 1945	547	445	572	4	464
2200	2237	2	2818	3399	952	1302	1264	1825 - 1945	547	445	888,5	4	584
2800	2813	2	2009	2590	1440	1800	860	2179 - 2299	604	445	492,5	6	682
3300	3367	2	2350	2931	1440	1800	1030	2179 - 2299	604	450	654,5	6	750
3800	3881	2	2665	3246	1440	1800	1188	2179 - 2299	604	450	812	6	830
4400	4484	2	3035	3616	1440	1800	1373	2179 - 2299	604	450	997	6	980
5000	5039	2	3374	3955	1440	1800	1029	2179 - 2299	604	450	1167	8	1076
6000	6148	2	4000	4581	1440	1800	1236,5	2173 - 2293	604	450	687,5	8	1240



Milk Tank with Ice Water Cooling REM/DIB LEM/DIB

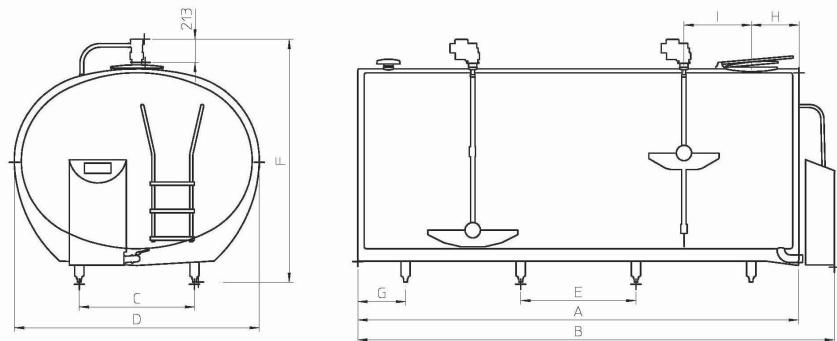
This unique cooling system is developed by Packo and is the best cooling system to maintain the milk quality. Ice water is used to cool down the milk in the insulated horizontal storage tank.

This accelerates cooling by 50 % compared to a standard direct expansion system, without any risk of freezing the milk. Thanks to an ice water temperature of 0.5-1°C, there is no risk of freezing the milk and thanks to the storage of energy during several hours, small refrigeration units can be installed.



The ice water, coming from a separate ice builder, flows through this heat exchanger ensuring rapid milk cooling. Ice water cooling has been used for many years in dairy farms and collection centres because it can cool large amounts of milk in a very short time. Ice water, used in combination with the tubular or plate heat exchanger, brings the milk under the critical temperature of 10 °C before it even reaches the tank. What's more, combining the heat exchanger with well or mains water supply can lead to an energy saving of up to 50%.

- Capacity: 3,800 to 32,000 Litres
- 2, 4 & 6 Milkings and AMS milking



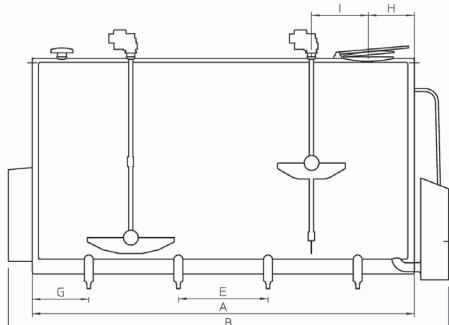
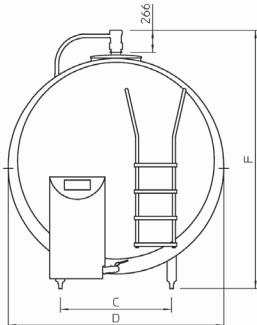
REM/DIB Dimensions

Model	Max. cap. litres	A mm	B* mm	C mm	D mm	E mm	F** mm	G mm	H mm	I mm	Legs number	Weight kg
3800	3944	2503	2854	934	1800	1690	1840-1960	402	431,5	820	4	590
4400	4562	2873	3224	934	1800	1050	1840-1960	382	431,5	1005	6	667
5000	5128	3213	3564	934	1800	1210	1840-1960	392	431,5	1175	6	730
RS 5000	5102	2380	2731	1050	2100	1580	2058-2178	400	426,5	758	4	750
6150	6321	2893	3244	1050	2100	1050	2058-2178	392	431,5	1015	6	854
7200	7369	3354	3705	1050	2100	1210	2058-2178	462	431,5	1245	6	901
RS 8000	8159	3140	3491	1050	2233	870	2208-2328	259	431,5	1138	8	1065
8200	8406	3809	4160	1050	2100	1050	2058-2178	324	431,5	555,5	8	1090
9000	9566	3681	4032	1050	2233	1050	2208-2328	260	431,5	531	8	1160
10000	10482	4011	4362	1050	2233	1050	2208-2328	425	431,5	616	8	1229
12000	12602	4810	5161	1050	2233	1050	2208-2328	305	431,5	812	10	1450
15000	15762	5986	6337	1050	2233	1050	2208-2328	368	431,5	1113	12	1800



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LEM/DIB Dimensions

Model	Max. cap.	A	B*	C	D	E	F**	G	H	I	Agitators	Legs	Weight
	litres	mm	mm	mm	mm	mm	mm	mm	mm	mm	number	numbers	Kg
18000	18578	6324	6870	1050	2133	845	2603-2723	627	432	1193	2	14	1975
22000	22522	7619	8183	1050	2133	845	2603-2723	430	432	892,5	3	18	2245
25500	26450	9179	9743	1050	2133	845	2603-2723	787	432	1193	3	20	2550
31600	32220	11084	11648	1050	2133	845	2603-2723	472	432	1473	3	26	3200

*With ECO-WASH: B + 190 mm.

**With tank guard Oculus: F + 25 mm.

F = min. and max. height of leg screw when tank is installed completely horizontal

Available in 2, 4 & 6 Milkings and AMS milking.

Each agitator incorporates 2 ROTOJET spray balls.



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Ice Builder (PIB)

The Packo Ice Builder is the result of many years of experience in cooling liquids for the dairy- and food industry. The PIB is the heart of the DIB system, it builds up an ice reserve with which it can make a large amount of ice water at zero degrees.

The PIB is constructed of thick stainless steel plates (AISI 304) for a long lifetime. Environmental friendly PU-foam is injected between the interior and exterior housing for insulation. The insulation has a thickness of 50 mm to ensure a completely vapour-tight construction. This prevents thermal losses and improves low energy consumption.

The standard PIB is supplied with a powerful pump that transports the ice water through the heat exchanger in the DIB tank. A rapid cooling, without the risk of freezing, of your valuable milk is ensured. Bacteria don't stand a chance! Possible options include an extra ice water pump for instant cooling and a time clock for the use of cheaper night-rate electricity.

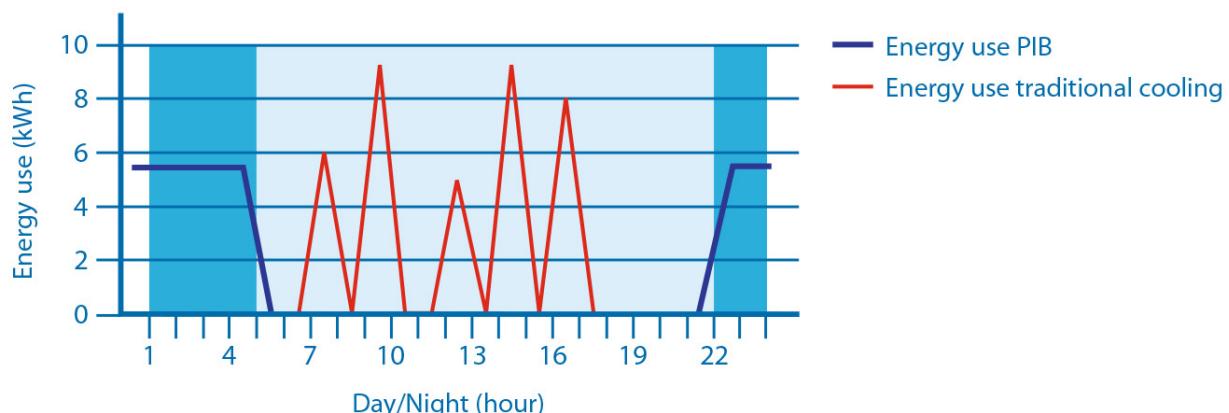
The unit can be easily integrated into an existing cooling system, or can be offered as part of a completely new system.



- Cooling capacity: 8 – 372 kWh

Your benefits:

- This solution is perfect for farms where access to water for pre-cooling is a problem. i.e. it is possible to cool all the milk without any bore water.
- Large instant cooling capacity: Ice melted down at the moment of use
- Maximum cooling speed without risk of product freezing
- Energy Saving: Reduces peak demand and shifts energy consumption



- Closed circuit cooling
- When installing cooling units with heat recovery option, an important part of the extracted heat can be used for hot water preparation.
- **Solid industrial design for almost maintenance free operation**
- **Easy installation with “plug and play” ICU version**



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PIB Specifications:

Model	Storage capacity		Ice	Ice water	Weight	Length RCU/WCU	Length ICU	Width	Height
	kCal	kWh	kg	liter	kg	mm	mm	mm	mm
PIB-8	7 600	8	95	400	140	1 162	1 162	923	1 330
PIB-13	11 500	13	145	400	140	1 162	1 162	923	1 330
PIB-25	22 200	26	280	1 150	320	1 350	2 100	1 360	1 950
PIB-40	35 500	41	440	1 150	370	1 350	2 100	1 360	1 950
PIB-60	53 200	62	650	1 700	440	1 790	2 810	1 360	1 950
PIB-80	70 900	83	900	2 200	530	2 230	3 250	1 360	1 950
PIB-120	106 000	124	1 300	3 300	690	3 110	4 130	1 360	1 950
PIB-160	142 000	165	1 800	4 400	840	3 990	5 010	1 360	1 950
PIB-230	205 000	240	2 500	5 200	1 050	3 930	5 050	2 185	1 980
PIB-370	322 000	375	4 000	7 900	1 420	4 660	6 900	2 185	1 980

Tubular Cooler (TC)

The Packo tubular cooler is the best solution for pre-cooling the milk! The milk is pre-cooled very rapidly with well water to a temperature of about 20 °C. This can lead to an energy saving of up to 50 % when cooling further down to 4 °C.

Your advantages:

- Free (!) heating of water from milk
- Considerable savings when using well or mains water as pre-cooling
- Easy cleaning, together with the milking machine
- Instant milk cooling slows bacterial growth
- Low blend temperature during subsequent milkings, less chance of bacterial growth
- No seals, the milk is only in contact with stainless steel, avoiding pollution or contamination
- Seamless stainless steel tube-in-tube system, no contamination possible



- Perfect for use where there are lower volumes of milk such as via milking robots
- Possible subventions for environment friendly solution
- Smaller cooling unit possible, meaning a smaller investment
- Short return on investment (only a few years)
- Suitable for well water
- Very long life expectancy
- No maintenance costs



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Standard Solution for existing Vertical DX Milk Tanks (without Pre-Cooler)

Existing Plant



Existing DX Milk
Tank and
Refrigeration Unit



DCS Supplied Plant

Packo Ice Builder with additional
Refrigeration Unit



Hot Milk In

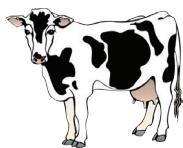
Ice Water Return

Snap Chilling PHE**

Ice Water Out

Cold Milk Out
to Tank

**DCS or Dairy Plumbing Contractor supplied.



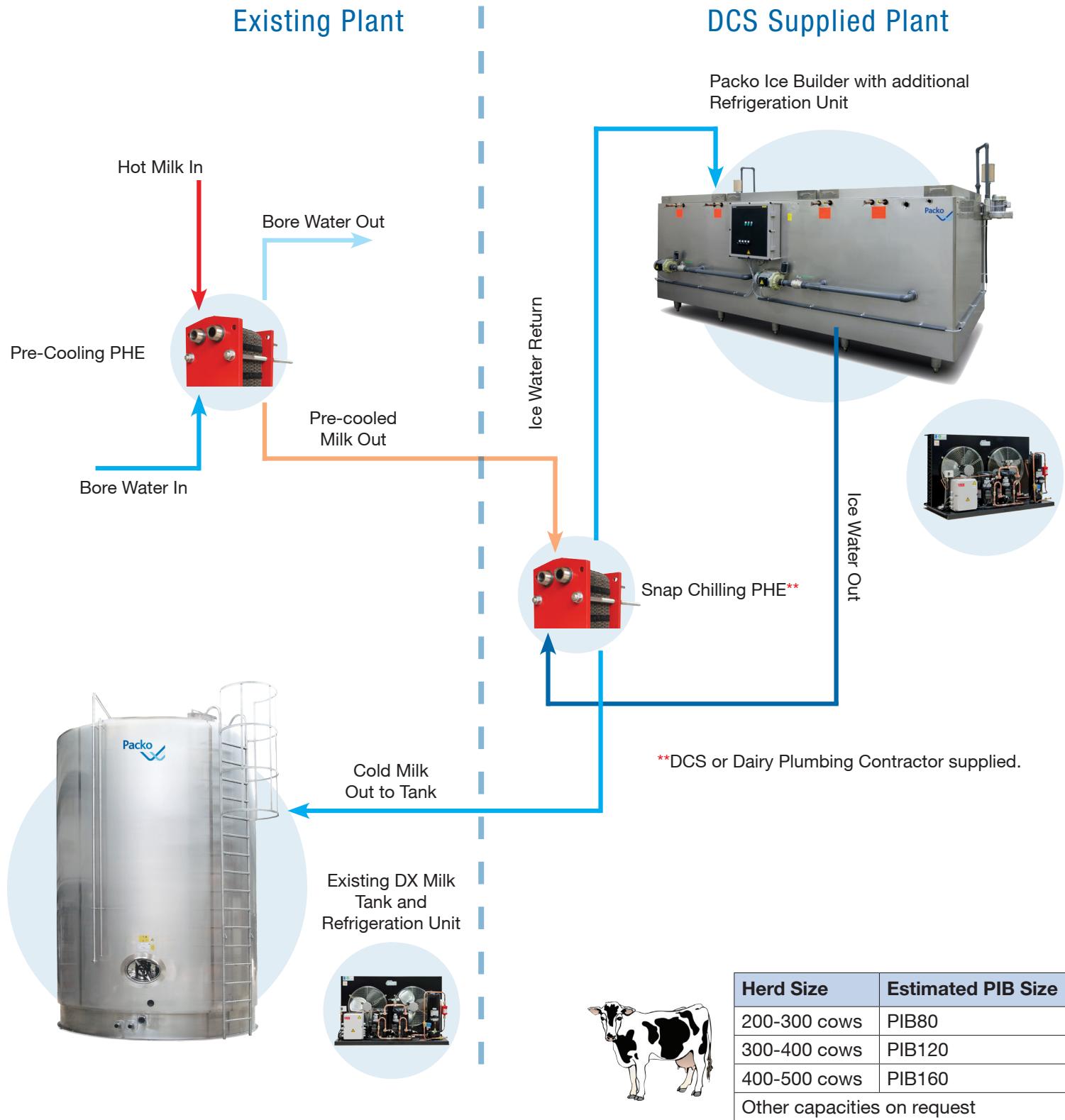
Herd Size	Estimated PIB Size
200-300 cows	PIB120
300-400 cows	PIB160
400-500 cows	PIB230
Other capacities on request	

*Based on 4°C milk into tank



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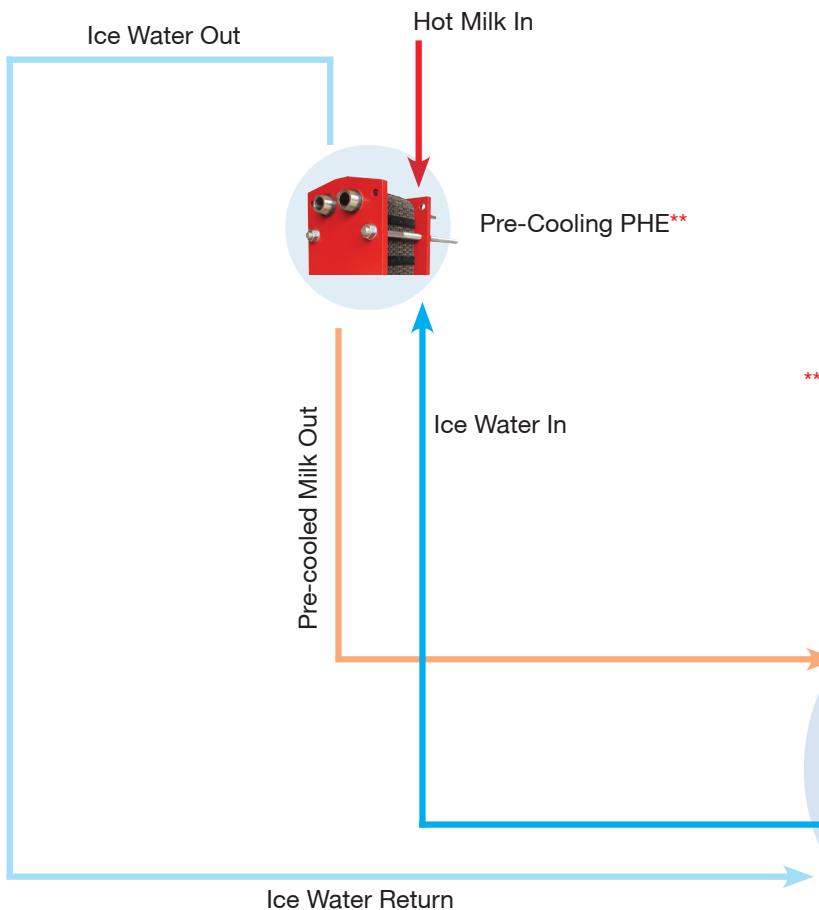
Standard Solution for existing Vertical DX Milk Tanks (with Pre-Cooler)



*Based on 4°C milk into tank

Premium Solution using PACKO RM/IB Horizontal Ice Water Tank (with Pre-Cooler)

DCS Supplied Solution



**DCS or Dairy Plumbing Contractor supplied.



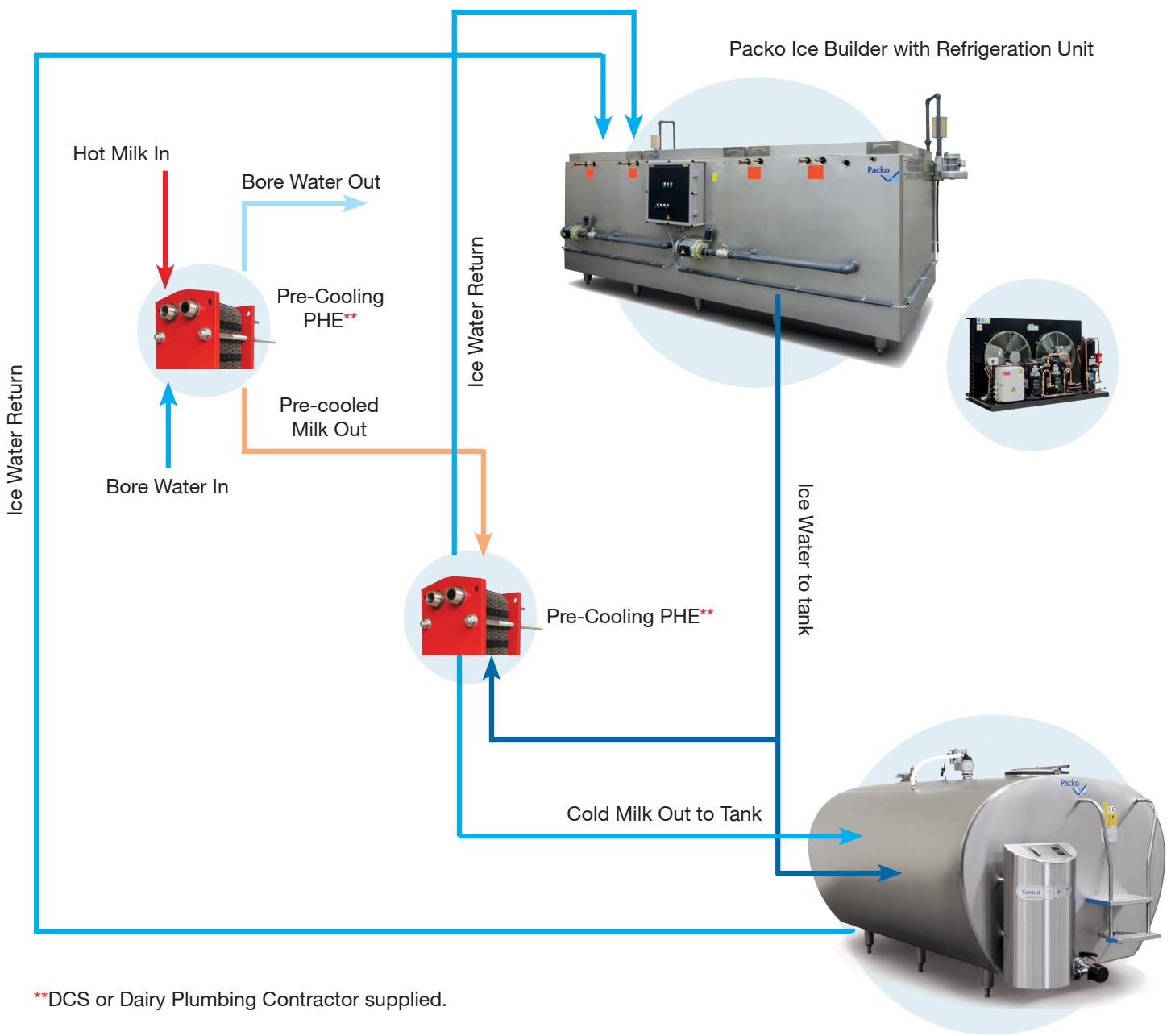
Packo RM/IB (Ice Bank) with
Refrigeration Unit.



- Capacity: 1,600 to 7,150 Litres
- 2, 4 & 6 Milkings and AMS milking

Premium Solution using PACKO PIB & Horizontal Tank (with Pre-Cooler)

DCS Supplied Solution



**DCS or Dairy Plumbing Contractor supplied.

Packo DIB (Direct Ice Bank)
Cooling Tank

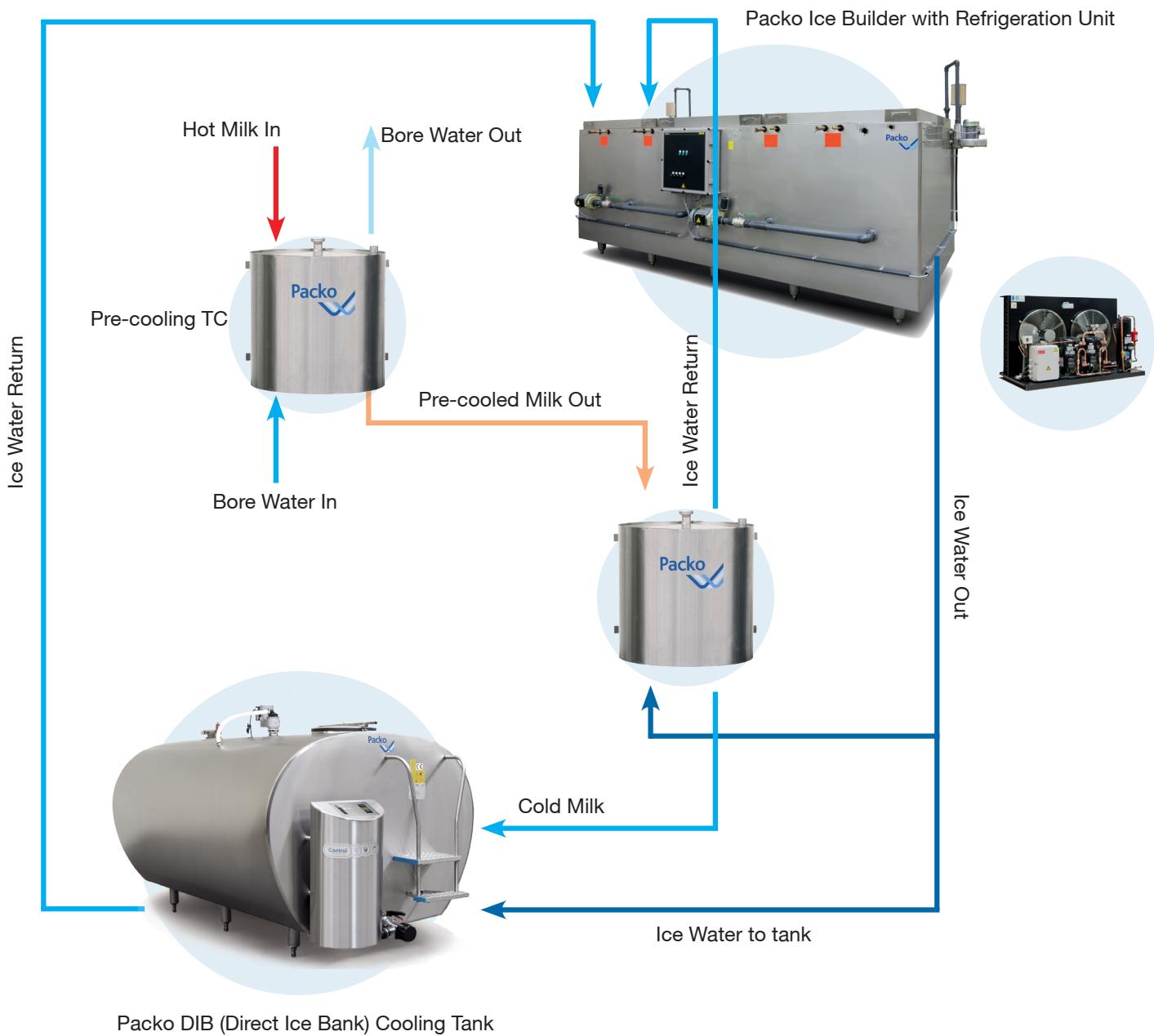
- Capacity: 3,800 to 32,000 Litres
- 2, 4 & 6 Milkings and AMS milking



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Robotic Farm Solution using PACKO PIB, Tubular Coolers & Horizontal Tank

DCS Supplied Solution



**Intermediate Milk Buffer Tank also available

Dairy Control and EVD panels from Control Panel Solutions (CPS)

Electrical Control Panels for Refrigerated Milk Vats



Features:

- IP65 Lockable Main Enclosure. Metal Tagged lock supplied
- Pre-wired back to terminal block
- Electrical controls mounted in internal enclosure
- Multifunction switch > PUMP - IPC - OFF - REF1 - REF2
- IPC timer adjustable from 0 secs - 10hrs, set to 10 minutes.
- IPC Start push button
- Agitator 10A 230Vac relay included
- Carel IR33 Series Controller
- 6 meter special vat probe included
- Dual Controller option available (p/n IRDAIRYPANEL2C)
- Wiring Diagram Included
- Application Sheet & Parameters Guide included
- External Viewing Window
- Milk Document Clip



MilkCella: The new control solution for milk vats with future proof logging capability.

MilkCella is the latest control panel solution for refrigerated milk vats developed by Eurotec in response to the proposed changes to NZCP1.

At the heart of this milk vat controller is the latest Ultracella programmable platform control from Carel Industries.

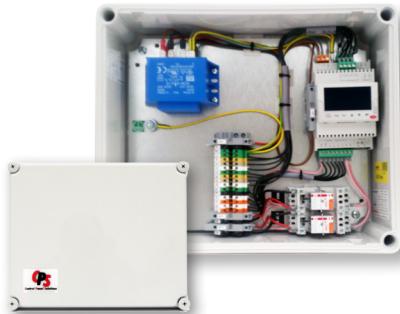
Control Panels for Electronic Expansion Valves

- Maximises Refrigeration Plant Capacity and Efficiency
- Reduces Plant Operating Costs



HOW?

Replacement of the traditional (and old technology) Thermostatic Expansion Valves (TEV's) with Carel Electronic Expansion Valves (EEV's) provides outstanding superheat control of your refrigeration plant. This in turn maximises the cooling efficiency of the refrigeration system and the milk vat.



TEV systems can be easily upgraded to EEV versions. In addition to their proven Milk Vat Control Panels, Eurotec now offer for retrofit a range of Prewired Electronic Valve Driver (EVD) Panels complete with Valve Drivers installed, with all temperature and pressure sensors and cables included.

Tip: By also installing Carel FCP Condenser Fan Speed Controls you can further maximise the plant potential.

Notes



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🌐 www.DairyCoolingSolutions.nz

👍 <https://www.facebook.com/DairyCoolingSolutions>



🌐 www.PackoCooling.com

EUROTEC LIMITED

Web : www.eurotec.co.nz

Email : sales@eurotec.co.nz

Head Office

Unit C

750 Great South Road

Penrose, Auckland 1061

PO Box 14543

Penrose, Auckland 1741

New Zealand

Phone : +64 9 579 1990

Fax : +64 9 525 3334

Wellington Office

Unit 9, 2 Tyers Road

Ngauranga

Wellington 6035

PO Box 13347

Johnsonville

Wellington 6440

Phone : +64 4 499 3591

Fax : +64 4 499 3696

Christchurch Office

2/5 Wordsworth Street

Sydenham

Christchurch 8023

PO Box 7108

Sydenham

Christchurch 8240

Phone : +64 3 366 0017

Fax : +64 3 365 6357

