

## Milk Cooling and Storage Solutions – With a difference!

This is Australia... Our dairy farms are growing & our environment is harsh.... so why accept poor performing equipment designed for European or American conditions?

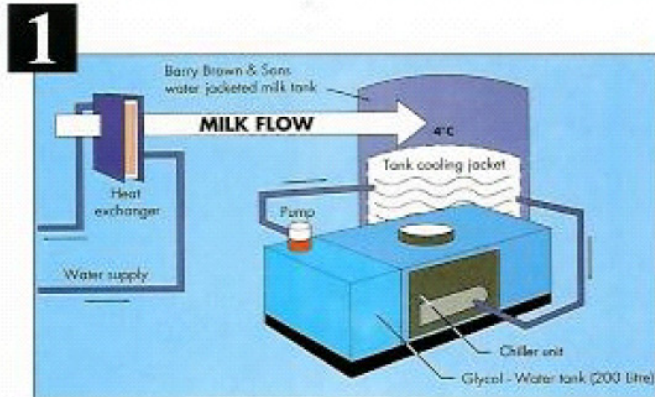


## What you really want is now a reality

- Horizontal and Vertical Milk tanks to 40, 000L
- Milk is Cold on Delivery to the Vat, via the glycol / water plate cooler
- New Integrated Controller with Advanced Wash System
- Efficient use of Power
- Remote Access to Stored Data over the Web
- Alarms to your Mobile Phone
- Long life with NO High Pressure Refrigerant Stress to Tanks
- Chiller Solutions that Operate on either 3 Phase or 480V Single Phase Power
- Fully Installed and Guaranteed

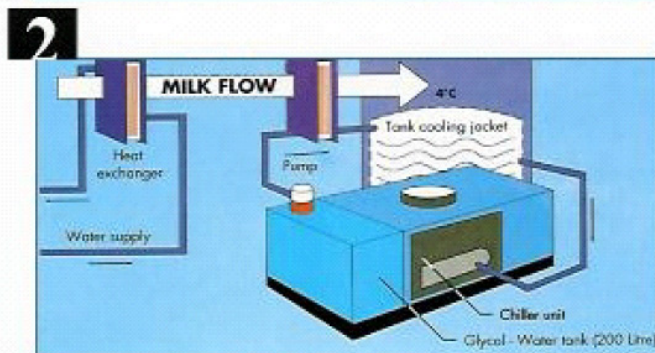
**Surpasses ALL Dairy Company Commissioning Requirements & Tests**

# Milk cooling options



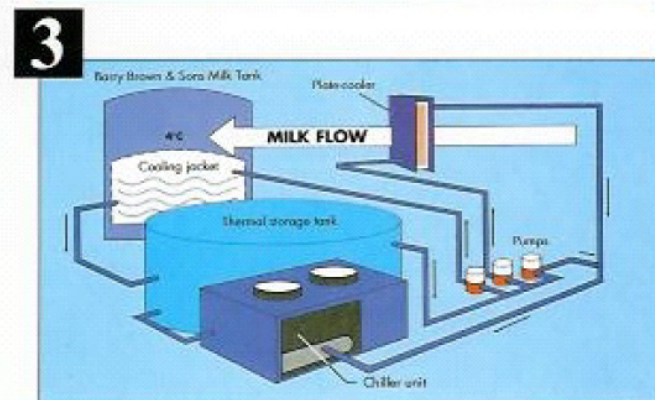
## **DIRECT COOLING: All cooling through vat jacket.**

EXAMPLE: MILK COMING OFF YOUR PLATE COOLER AT 25°C THEN COOLED FROM 25°C TO 4°C IN VAT.



## **With 2nd plate cooler.**

EXAMPLE: MILK COMING OFF YOUR PLATE COOLER AT 25°C THEN FROM 25°C TO 7°C APPROX. OFF 2ND PLATE COOLER THEN FROM 7°C TO 4°C IN THE VAT.



## **OFF PEAK COOLING: To your requirements.**

EXAMPLE: COOLING LARGE INSULATED TANK TO LOW TEMPERATURE OVERNIGHT. CREATING 70-100% OFF-PEAK.

# The Barry Brown Cooling Difference

## The Barry Brown System versus Direct Expansion (DX) Vats

**DX** - Using R22 refrigerant gas, vat jackets are subject to very high pressure (200psi) cycling at extremely low temperatures. Under these conditions, stainless steel will fatigue over time and the tank possibly leak, as a result of significant expansion and contraction. This is due to continual high gas pressures and extensive temperature differentials.

**Barry Brown** - Water with a percentage of glycol is circulated through the tank jacket at only 15PSI. Glycol temperature is not less than -2 degrees C. Fatigue caused by stress to the tankjacket is now eliminated.

**DX** - Majority of milk cooling is done **INSIDE** the vat and consequently often takes hours to cool after milking is complete. Slow cooling of milk limits availability for collection and results in substantial additional transport costs for the dairy processor - which normally is ultimately borne by the dairy farmer.

**Barry Brown** - In most cases a large double bank heat exchanger is used outside the tank. Cold glycol is circulated on separate circuits through both the heat exchanger and the tank jacket. The hot milk also passes through the heat exchanger. The milk temperature is already at or very close to 4 degrees at the time it enters the tank. Therefore cooling is instant and ready for milk company collection. The tank jacket is only required to take small amount of heat from the milk. Even in the instance where a heat exchanger is not requested, the tank jacket will still provide reasonably efficient and stress free cooling.

**DX** - Dimple plates must be covered with agitated milk or they can freeze and become damaged. At low milk production levels (ie seasonal, when cows are coming in or drying off), it is quite possible that milk cannot be cooled. Some dairy companies now require the vat to cool effectively at only 5% of total tank volume - on an average 20,000L tank this is 1000L - and this IS a problem for DX tank suppliers.

**Barry Brown** - ANY volume of milk is cooled - no problem!

**DX** - Due to it's technical inferiority, DX is NOT the accepted or the usual method for cooling milk or any other product at a food processor.

**Barry Brown** - Glycol / Water based systems are proven and are used in all dairy companies, food processors, wineries and general industry exclusively.

**DX** - Systems were originally designed for lower volume, slower milking installations – larger tanks have evolved as farms sizes have increased over the years, but the bigger they get, the more contraction and expansion becomes a long term reliability issue, particularly as most have a poor leg support structure. A good question is why have many DX tank companies gone?

**Barry Brown and Sons** have been in the milk vat business since 1970 and since the early 90's have been the industry trail-blazers, installing only glycol based milk cooling systems. As an independent Australian company, not dictated to by overseas owners, we are committed to offering the Australian dairy farmer the very best milk cooling and storage solutions.

## The Milk Tank Controller

All Barry Brown Systems are now fitted with the Milk Minder 2000 control system. On its own, the MM2000 provides integrated microprocessor based control of both the refrigeration chiller and the washand rinse cycles.

In addition, all Australian models are now being fitted with a GPRS modem, which allows remote access to the Milk Minder's program via the mobile phone network and internet, all at a very reasonable cost. This is great from a service point of view - as wash sequence changes, temperature program and offsets, as well as live and historic temperature data etc, fault and other events are all accessible to an authorised service person. Very soon we will be adding a milk volume reading to the available information.

But there is more to this than just remote access for service. Farmers can login to a new web site and see a real time datalog of their vats performance. SMS alarms can also be set to advise a farmer of a problem – for example low wash temperature, or unusually slow cooling.



## Refrigeration Chillers

Obviously the refrigeration chiller is the heart of the cooling system. We stock a comprehensive range of water chillers, sized to suit your milk cooling application. These chillers have been chosen for their quality manufacture, efficient operation and use of recognised components, such as Danfoss compressors and Siemens switchgear. They represent excellent value for money.



### The Wash System

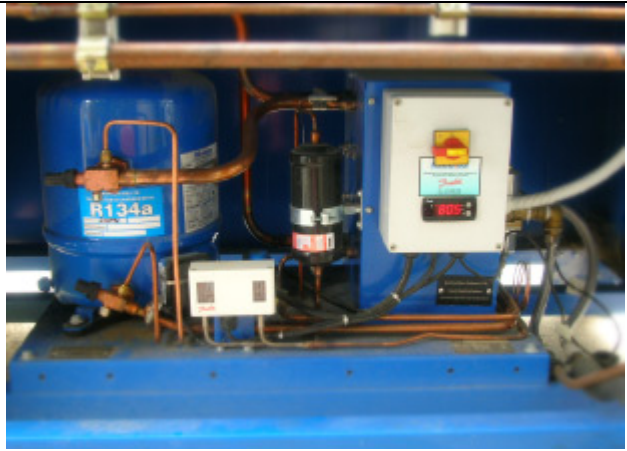
The wash system controls are integrated into the MM2000 control system that also controls the cooling system. Operation is extremely simple - with no confusion for tanker drivers!

The system offers great flexibility and can easily be fine tuned if required for optimal results. A stand alone system based on the same controller is also available for wash only installations.



### Hot Water from Hot Air

We now offer a revolutionary system for heating water. In many cases, it has reduced power usage for hot water heating by over 60%! How does it work? Designed specifically for the dairy industry, the Water Heat Reclaimer, is installed next to the refrigeration unit. It collects waste heat from the condensing unit, concentrates it and uses it to convert cold water into hot water at 85 degrees C, heating water when it's needed and at the same time reducing the load on the refrigeration plant.



### Installations:



**Glycol Storage Tank and Circulation Pumps**



**18,000L Horizontal Tank Installation.**

*'All that we have done and all that we do is dedicated to the memory of Craig Brown'*