Milk Cooling Systems

DARI-KOOL®

Milk cooling systems

fabdec

Milk Cooling Systems

Milk cooling accounts for about 30% of the total energy costs of operating a dairy. Fabdec provides a range of energy efficient milk cooling systems for today's dairy farm that can significantly reduce these operating costs.

Fabdec's range of Milk Cooling systems offer the dairy farmer the ultimate in technology at every stage of the milk cooling process.

With installations throughout the world Fabdec have earned a reputation for high quality and outstanding reliability.

Manufactured in Shropshire, England using the latest manufacturing techniques and rigid quality control procedures our milk cooling systems will provide trouble free operation over many years.

All our systems are installed by trained refrigeration and electrical engineers who provide unrivalled customer support and nationwide after sales service.

Operating a Quality Management System, Fabdec complies with all international quality standards, and has BS EN ISO 9001:2000 accreditation.

DX-FF Tanks

Fabdec's DX-FF range of bulk milk tanks are designed to offer extreme efficiency and outstanding reliability.

Using state-of-the-art technology they provide advanced cooling and washing performance every time, ensuring that the quality of the milk is maintained.

Every Fabdec tank is manufactured from high quality stainless steel and comes with a 25 year guarantee for complete peace of mind*.

The standard DX-FF tank is designed for indoor use. However for outdoor applications the DX-FF 'KOOL-STOR' model has a fully weatherproof control unit making it suitable for external use.

A DX-FF 'Low Profile' model is available for installation in dairies where height or space restrictions apply. All models are available in capacities ranging from 1,000 to 34,000 litres to suit the individual requirements of any farm.

Dari-Kool Advanced management system

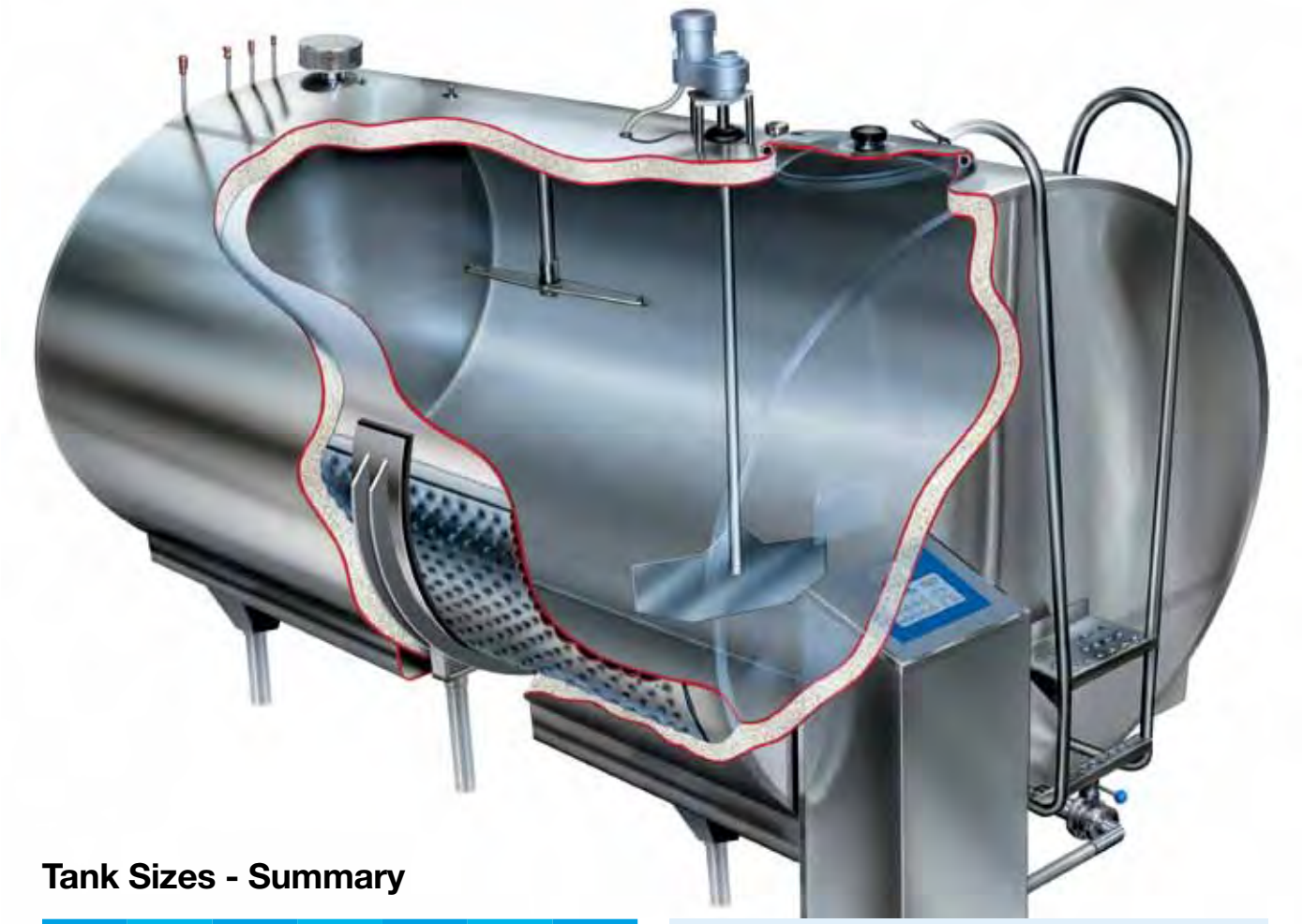
Unique rotating spray head

Robust flow control valve

*Subject to terms and conditions.

DARI-KOOL® DX-FF

Fabdec's 'top of the range' DARI-KOOL DX-FF.



Tank Sizes - Summary

Tank Size (Litres)	Tank Code	Length (Tank)	Length (Tank & Console)	Height (With Agitator)	Height (No Agitator)	Width
1000	01	1665	2085	1480	1180	1150
1200	02	1975	2395	1480	1180	1150
1600	04	2075	2495	1595	1295	1300
2000	05	2130	2550	1680	1380	1420
2500	06	2125	2545	1835	1535	1573
3000	07	2535	2955	1855	1555	1573
3500	08	2940	3360	1860	1560	1573
4000	09	2278	2698	2145	1845	1840
4500	10	3200	3620	1945	1645	1840
5000	11	2815	3235	2150	1850	1840
6000	15	3000	3420	2145	1845	2035
7000	21	2630	3050	2350	2050	2435
8000	27	3000	3420	2360	2060	2435
10000	36	3004	3424	2705	2405	2435
12000	53	3634	4054	2720	2420	2435
13000	55	3934	4354	2720	2420	2435
14000	56	4182	4602	2735	2435	2435
16000	58	4814	5234	2760	2460	2435
18000	61	4892	5312	2930	2630	2565
20000	62	5984	6404	2790	2490	2435
22000	66	5953	6373	2960	2660	2565
25000	85	6300	6720	2880	2580	2840
29000	77	6000	6420	3230	2930	2840
32000	93	6620	7040	3230	2930	2840
34000	89	6620	7040	3230	2930	2840

1. High Durability
Every DX-FF tank is manufactured from high quality stainless steel resulting in a superior hygienic finish.

2. Energy Saving
Polyurethane foam (CFC Free) is injected between the inner and outer tanks creating high rigidity and excellent insulation, thereby reducing running costs.

3. Outstanding Washing
High pressure water jetting action from the rotating spray head and a fully programmable wash sequence with automatic dosage of chemicals ensures tank cleaning of the highest standards.

4. Excellent Milk Quality
The quality of the milk and the level of butterfat is maintained by the gentle motion of the paddle enabling the milk to be blended at all times.

5. Efficient Cooling
The large surface area of Fabdec's unique dimple plate technology allow the milk to be cooled efficiently via direct contact with the plates, even at low milk volumes.

DX-FF Tanks

Energy efficient solutions for bulk milk storage.

Traditional top manway

Space saving end manway

Control and wash systems

Milk Manager

GALA-KOOL

Outdoor Solutions

Kool-Stor - Direct expansion tanks

Where space is limited, outdoor bulk milk tanks provide milk storage without the need for additional buildings, saving interior space and reducing cost.

The Kool-Stor range of DX (direct expansion) tanks are fitted with lockable weatherproof housings to keep agitators, controls and electrical equipment waterproof.

A built-in heater keeps the temperature in the cabinet above freezing and a bulk-head manway allows for a safe and easy access and sampling.

Features

- External milk storage without additional buildings
- Tank sizes from 1,000 to 34,000 litres
- Lockable, weatherproof housing
- Bulk head manway for easy access and sampling
- Dual sample tap with auto wash
- Tanker driver hose assembly wash facility
- Optional piggyback condensers

Outdoor Solutions

Silos - External milk storage

Fabdec's range of Dari-Kool milk silos provide an additional range of 'on farm' milk storage solutions.

Milk temperature control is maintained using either ice water from an ice builder or from direct expansion (DX) cooling plates.

The range of storage capacities and flexible design options allow the silos to be tailored to suit the needs of each individual farm.

Features

- 10,000 – 45,000 Litre sizes
- Chilled water or DX cooling
- Side wall and cone evaporator plates
- Side mounted top agitation
- Stainless steel or Plastisol outer cladding option
- Dual sampling facility

Easy access manway for cleaning and maintenance

Pre-Cooling

Plate Coolers - Plate heat exchanger for cooling milk

Plate coolers are an efficient way of taking heat out of milk and play an important part in ensuring milk is cooled quickly for storage, reducing the demand for electrical energy. They are extremely cost effective if a source of naturally cool water is freely available.

The system should be designed based on the peak flow rate of milk expected from the milk pump. An even flow of milk from the milk pump will help make the plate cooler system easier to size and make more efficient use of the cooling water.

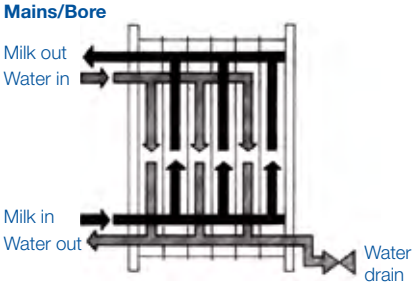
Most plate coolers use water that is sourced from the coldest water available on the farm. Although some fluctuation in source temperature can be expected over the year, this is an inexpensive way to initially reduce the temperature of the milk from around 35°C to 18 – 20°C, reducing the load on the refrigeration system significantly.

Fabdec plate coolers are manufactured from high quality stainless steel with food grade rubber gaskets, easy to dismantle for inspection and maintenance.

Features

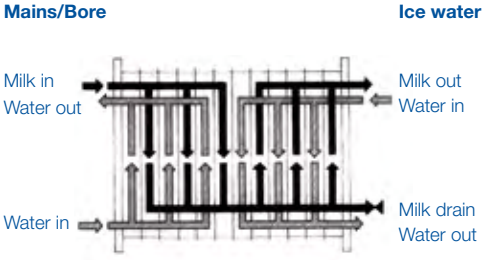
- Highly efficient cost effective milk cooling
- High quality stainless steel construction
- Reduces load on refrigeration system
- Food grade rubber gaskets
- Easy to dismantle for inspection and maintenance

Single Stage - Flow Layout



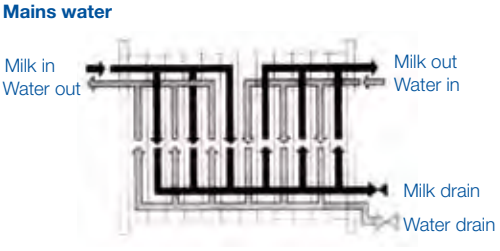
Type ‘M’

Double Stage - Flow Layout



Type ‘MM’

Complex - Flow Layout



Double pass system for poor/low water supply.

Type ‘MP’

Pre-Cooling

Ice Builders - Milk cooling using ice

Ice builders provide the dairy farmer with an economical method of milk cooling. They work by building ice using cheap night rate electricity to cool milk in the day when electricity is much more expensive. They are highly energy efficient and reliable and can potentially cut cooling costs by a third. Also by reducing the temperature rapidly it maintains a low T.B.C. (Total Bacteria Count).

The milk flow first passes through a double stage plate cooler which uses bore hole or mains water in the first stage. The second stage will use ice water generated by an ice builder which will drop the milk temperature almost instantly before it reaches the bulk milk tanks.

The ice generated by the ice builder is mainly generated using 'off peak' night electricity at a reduced tariff. Fabdec's range of ice builders are available for all applications, with tank sizes from 20kW to 300kW.

Features

- Economical milk cooling system
- Highly energy efficient
- Uses off peak night rate electricity
- Reduces the load on bulk milk tank
- Sizes range from 20kW to 300kW

Internal view - cooling pipes

Product data

Tank size (kW.h)	Max ice weight (Kg)	Max water volume (Kg)	No. of Evaporator packages	Dimensions			Weight	
				L (mm)	B (mm)	H (mm)	Net (Kg)	Gross (Kg)
20	215	660	2	1467	992	1130	300	960
40	430	910	4	1467	992	1650	350	1260
70	750	1487	4	2150	992	1650	425	1915
100	1075	2180	4	2976	992	1720	540	2720
150	1610	3700	6	2976	1422	1750	700	4400
200	2150	4360	8	2976	1968	1720	1080	5440
300	3220	7400	12	3667	2844	1750	1400	8800

Heat Recovery

SMART-HEAT - Heat recovery system

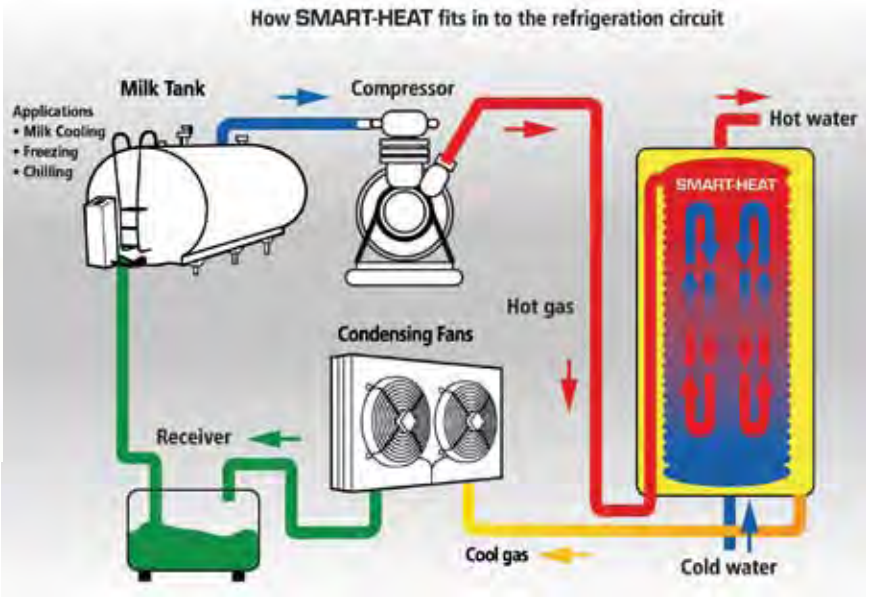
The SMART-HEAT heat recovery system is the environmentally friendly answer to soaring energy prices. Every refrigerant system generates heat. Normally this energy is wasted by venting it off to the atmosphere.

SMART-HEAT collects this heat and uses it to generate hot water. This will not only save you money but also conserves valuable natural resources.

How does SMART-HEAT work?
The refrigerant leaves the compressor as a hot gas. It flows into the Thermoplate lining of the SMART-HEAT where the energy is transferred to the water in the inner vessel thereby producing hot water. The gas/condensate leaves the SMARTHEAT to complete the condensation process in the condenser. Since the refrigerant entering the condenser has partially cooled down there is an improvement in condensing efficiency which results in energy savings and the working life of the compressor is extended.

Features

- Hot water for your daily needs and more
- Standard vessel sizes 220 to 2000 litres
- Accomodates up to 6 refrigeration units
- Simple and efficient system
- Maintenance free
- Reduces energy bills
- Easy to fit into existing systems
- No moving parts



Water Heating

UNI-HEAT - Agricultural water heater

The UNI-HEAT agricultural water heater provides hot water on demand for tank washing and similar uses around the dairy farm.

Constructed from duplex stainless steel with butt-welded joints for the inner tank, the UNI-HEAT offers superior corrosion resistance.

A long life expectancy is assured as there is no sacrificial anode to replace and few serviceable parts along with a scratch resistant outer cladding.

Features

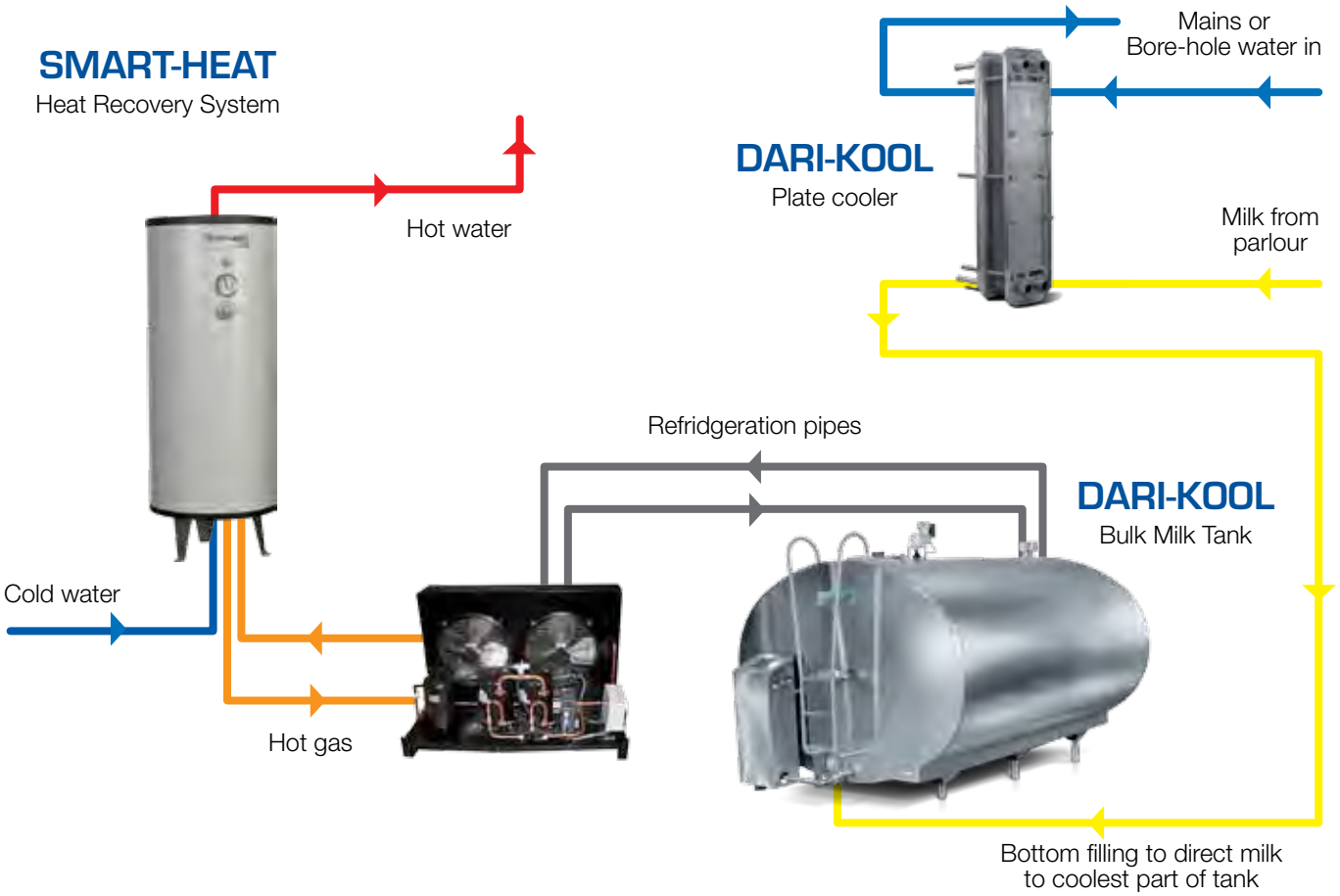
- For effective washing with economical performance
- For high performance tank washing
- Duplex stainless steel construction
- Superior corrosion resistance
- Long life expectancy
- Unbeatable value

Product data

Model Capacity	A	B	C	(mm) D	E	F	G	Empty weight	Full weight
150 litre	574	1056	737	640	230	188	55	32Kg	182Kg
175 litre	574	1213	884	786	230	188	55	35Kg	210Kg
215 litre	574	1455	1108	1011	230	188	55	42Kg	257Kg
255 litre	574	1722	1356	1259	230	188	55	49Kg	304Kg
305 litre	574	199	1612	1516	230	188	55	56Kg	361Kg

Efficiency Range

Uniting energy-efficiency with milk quality.



System Summary

An energy efficient and quality preserving milk cooling system from Fabdec.

Milk coming from the receiver passes through a single stage DARI-KOOL Plate Cooler which uses mains or bore-hole water to reduce the milk temperature before it reaches the bulk milk tank.

This pre-cooling reduces the load on the refrigeration system and decreases power demands on the bulk milk tank compressors.

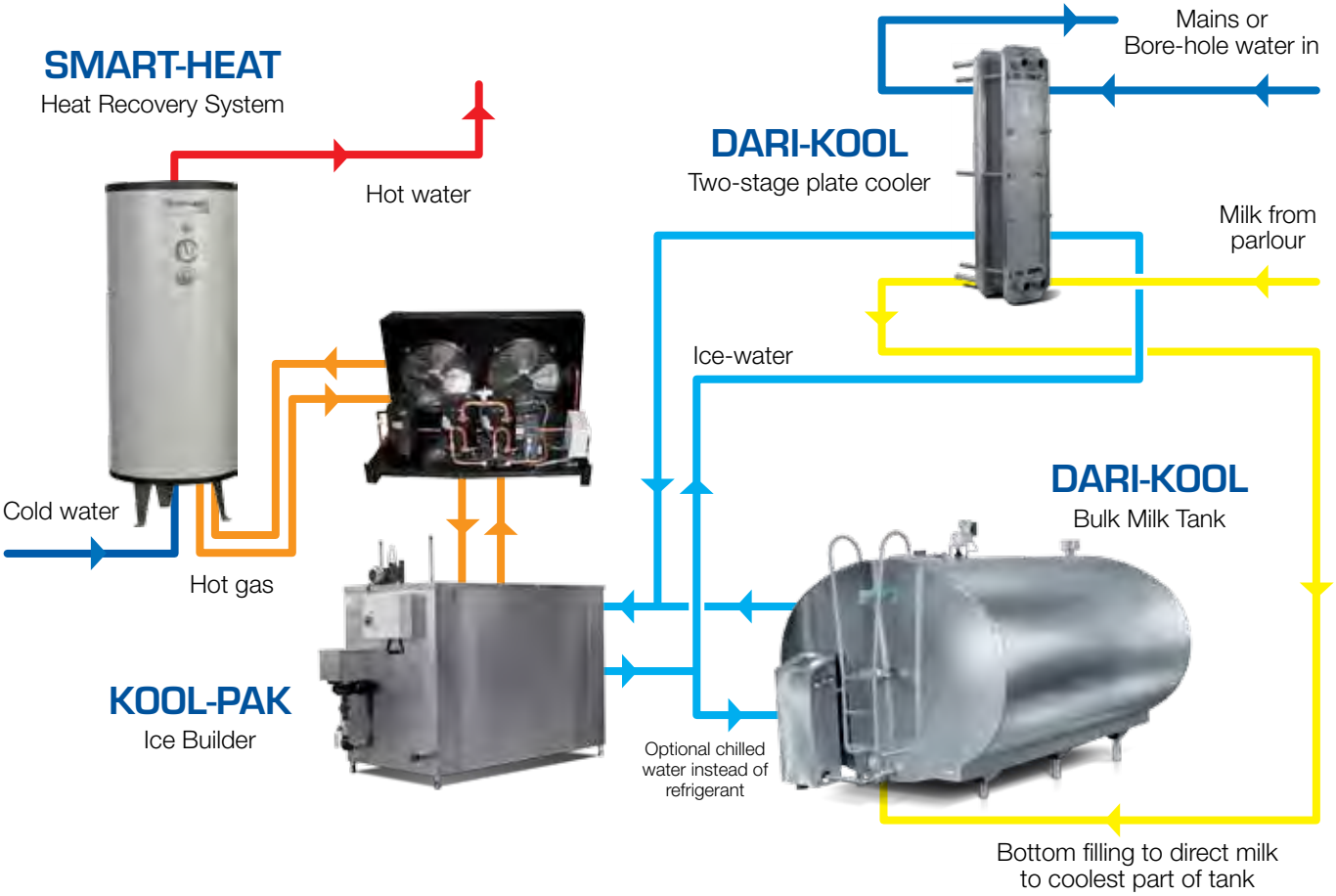
Heat generated by the condenser unit will be used to produce hot water by the SMART-HEAT heat recovery system.

Features

- **Excellent Milk Quality**
  Milk temperature drops quickly.
- **Low Running Costs**
  Heat recovery system utilised.
- **Longer Working Life of System**
  Less stress on pumps, fans, heaters, etc.
- **Longer System Working Life**
  Less stress on pumps & heaters.

Efficiency Plus Range

Uniting energy-efficiency with milk quality.



System Summary

The ultimate in energy efficient and quality preserving milk cooling from Fabdec.

Milk coming from the receiver passes through a two stage DARI-KOOL Plate Cooler which uses mains or bore-hole water in the first stage.

The second stage uses ice water generated by a KOOL-PAK ice builder. This has the effect of dropping the milk temperature almost instantly before it reaches the bulk milk tank.

This instant cooling will yield a considerable gain in milk quality when compared to other types of pre-cooling.

The ice generated by the KOOL-PAK will, to a large extent, be produced using over night, off peak electricity. The ice water is also used to circulate through the double jacket of the bulk milk tank to cool the milk even further and without the risk of the milk freezing in the tank.

By using the KOOL-PAK ice builder smaller condensing units are required which lowers the peak power demand. Heat generated by the condenser unit will be used to produce hot water by the SMART-HEAT heat recovery system.

Features

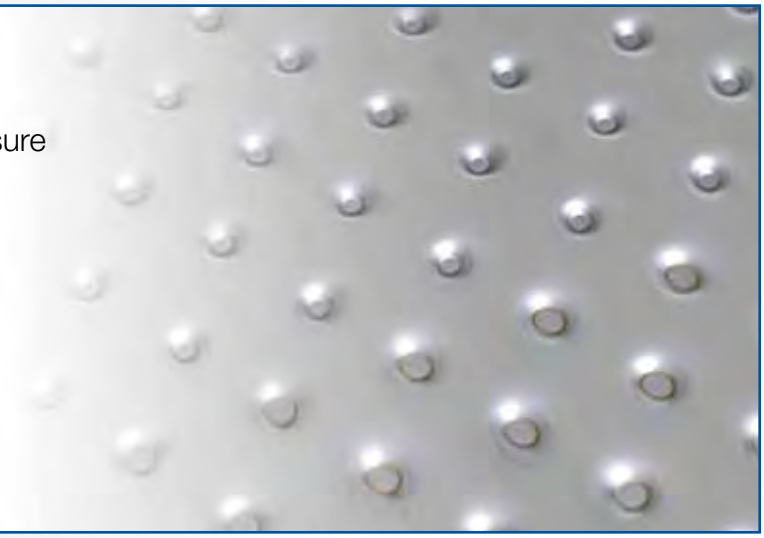
- **The Best Milk Quality**
  Milk temperature drops instantly.
- **Low Running Costs**
  Off peak electricity utilised, lower energy consumption and integrated heat recovery.
- **Smaller Condensing Unit**
  Lower peak power demand.
- **No Ice Build Up In Milk Tank**
- **Longer System Working Life**
  Less stress on pumps, fans, heaters, etc.
- **Consistent Bulk Milk Tank temperature**
  Consistently lower temperature with no blend.

Technology for innovation

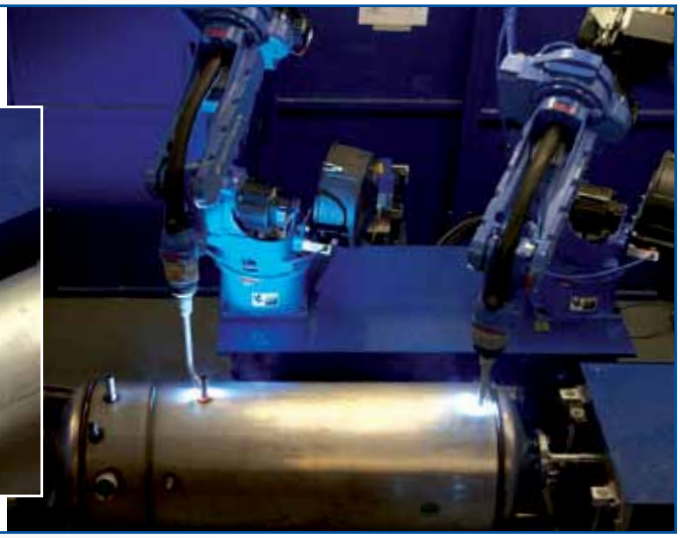
Bespoke Design - the choice is yours

Product Technology

Evaporator plate, tested to high pressure for strength and durability.



Robotic Welding Technology



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