EUREKA®

Since 1967

Cooling Industry Award 2005

Eureka - Heat Recovery

Energy gain without energy expenditure

use up to 100% of waste heat from refrigeration and air conditioning systems for heating water

+ Heat water for free
+ Save heating costs
+ Help the environment
+ Machinery room heat removal
+ Reduce machine running times

For example, the optimal solution for
+ Hotels, hospitals and nursing homes,
+ Abattoir, butchers and bakeries,
+ Supermarkets, food processing industry

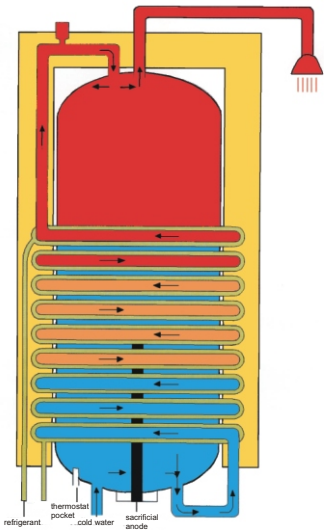
Eureka heat recovery systems have been producing warm water from the waste heat of cold-storage plants for more than 35 years. The hot water temperature is up to 7° C above the condensation temperature, without requiring more energy for the cooling process. Eureka heat recovery systems are extremely economical, very reliable, easy to install and virtually maintenance free. Equipped with a safety circuit, leak detector and a descaling device, they are unique among heat recovery systems. The safety heat exchangers are TÜV certified as well as registered and monitored by the DVGW (German Institute for Gas and Water). They are built in accordance with the Pressure Equipment Directive and are designed for operating pressures up to 35 bar.

Permanent-Transfer-System® (PTS)

The **Permanent-Transfer-System®** is used when more than **50% of the waste heat** from a refrigeration plant is needed for heating water. For heat exchanger capacities up to 24 kW.

+ Approximately 100% waste heat utilization
+ 50° C to 60° C hot water in just a few minutes up to 7° C above the condensing temperature
+ Up to a 500 l integrated water tank
+ Safety circuit, no drinking water contamination. DVGW certified
+ Thermodynamics: Zero energy expenditure, no pumps
+ Minimal limescale formation due to external heat exchanger
+ Flushing device: efficient, easy and fast
+ Leak detector: optical warning for leaks
+ Corrosion protection: TÜV tested push-button control
+ Heat exchanger for connecting a solar collector system or a heat pump

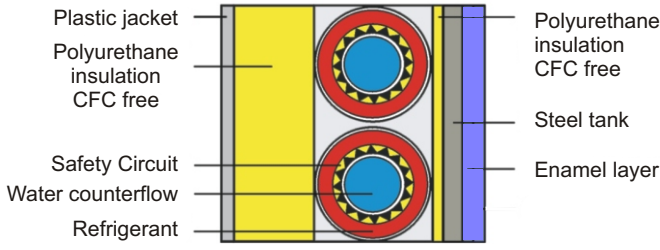
"We know of no heat recovery system that saves more energy than the Eureka heat recovery system with Permanent Transfer System®"



Flow diagram of the Permanent Transfer System®

PTS 500

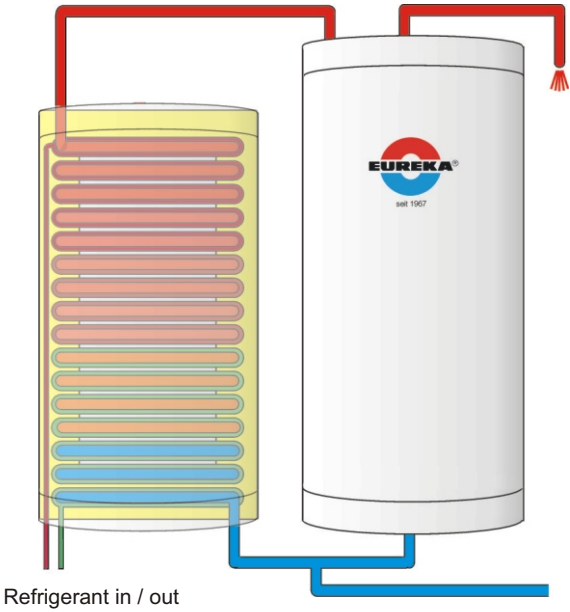
Safety circuit in the insulating jacket



Permanent-Transfer-Einheit® (PTE)

The “**Permanent-Transfer-Einheit**” is used when more than **50% of the waste heat** from a refrigeration plant is needed for heating water and condenser capacity of more than 24 kW is available. The heat recovery unit operates on the principle of the Permanent Transfer System®. There is no integrated water tank. Heat exchanger capacities of over 400 kW are achieved by parallel installation of multiple PTE's. Water tanks of up to 20,000 l are simply connected in parallel with the PTE's.

+ Maximum yield, approx. 100% heat recovery.
+ Heat exchanger with safety circuit. DVGW certified.
+ Heat exchanger capacities of over 400 kW.
+ 50° C to 60° C hot water in just minutes.
+ Integrated leak detector.
+ Push button control. This is to check the corrosion protection of the water tank.
+ Descaling and flushing device.
+ Heat exchanger for connecting a solar collector system or a heat pump



Flow diagram of a PTE with a large heat exchanger connected in parallel with a water storage tank

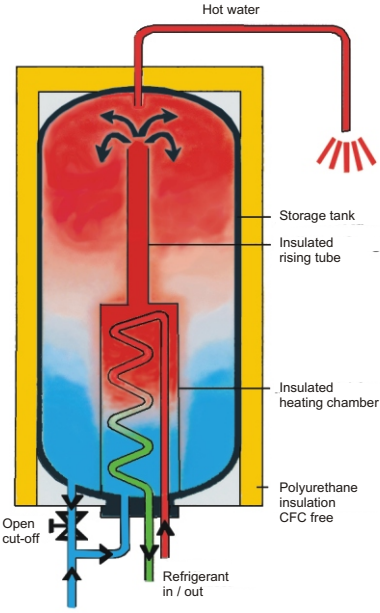
“The Permanent Transfer System® can save valuable energy. And it's extremely safe and very durable!“

Thermo-Stream-System (TSS)

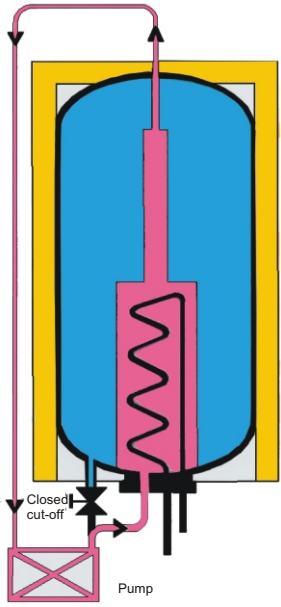
The **Thermo-Stream-System** is used when less than **50% of the waste heat** from a refrigeration plant is sufficient for heating water or when a low price is the primary criterion for the investment. Heat exchangers with capacities from 3 to 128 kW can be installed.

+ Approx. 70 % waste heat utilization.
+ Water tanks up to 5000 l.
+ Safety circuit, no drinking water contamination. DVGW certified.
+ Thermodynamics: Zero energy expenditure, no pumps.
+ Descaling device: efficient, fast, easy and therefore cost effective. The cleaning is targeted to the heat exchangers. No disconnecting sanitary or refrigerant pipes. No draining of domestic water. Patented!
+ Leak detector: optical warning for leaks.
+ Corrosion protection: TÜV tested push-button control.
+ Heat exchanger for connecting a solar collector system or a heat pump.

"Only the Eureka Permanent Transfer System® achieves a higher efficiency"



Flow-chart of the thermal flow system



Easy and affordable fast decalcification through patented connection

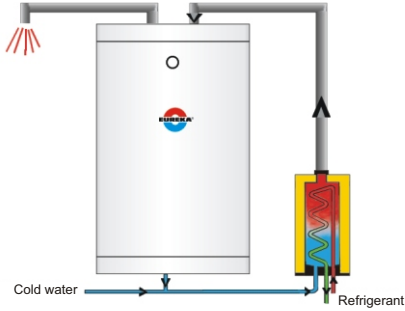
German Patent 3137146
European Patent 75 157

External heat exchanger (EX)

The **EX exchanger** operates without the use of pumps on the principle of the Eureka Thermstreamsystem. With safety circuit heat exchanger, leak detector, anodic protection and push button control, it has the same advantages as the TSS. No integrated water tank. It is selected from the Eureka water tank program or connected on site. Approx. 70% waste heat utilization. EX exchangers are used when:

+waste heat from refrigeration systems is to be profitably used even if only a small amount of hot water is needed during the day.
+ an additional refrigeration system is to be connected to an existin heat recovery system.
+ a sufficiently large water storage tank is available and a heat recovery system is to be retrofitted.
+ a heat exchanger is to be replaced and the existing heat recovery system must continue to operate.
+ even with very aggressive or hard water, a reliable system is needed with sustained high performance and simple decalcification.

EX exchanger



Heat Winner (AG)

The Eureka **heat winner** for low temperature heaters is used where there is no additional need to heat domestic water and yet waste heat is available from refrigeration systems. On economical grounds the Eureka heat winner system is preferred for low grade water for space heating systems as the heating season amounts to only about 50% of the year. Heat winners are usually operated in a circuit that includes a storage tank (except for underfloor heating) and a circulation pump.

Capacities from 1 to 300 kW

Efficiency = 100%

Effective waste heat recovery = 50%

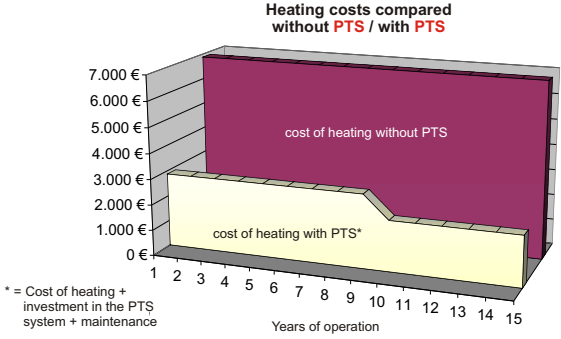
Fig.: AG for connection to five refrigeration plants

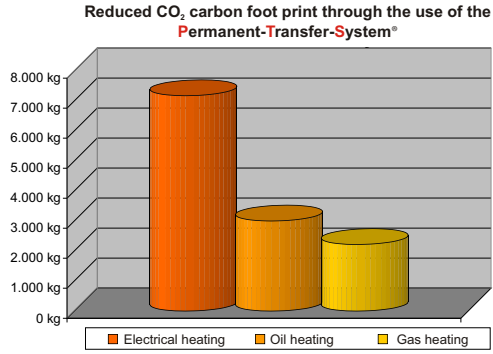
How much hot water can be produced a day at no cost?
How much heat energy can be saved each year?

Example: 10 kW condenser capacity, on average 10 hours daily use, 330 days a year

	Hot water / day	heating energy / year
PTS + PTE:	1900 l / approx. 55° C	33,000 kWh
TSS + EX:	1600 l / approx. 48° C	23,000 kWh

Based on your specific information, we would be happy to make you an offer for your optimal system, including preparing a graphical profitability analysis.





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