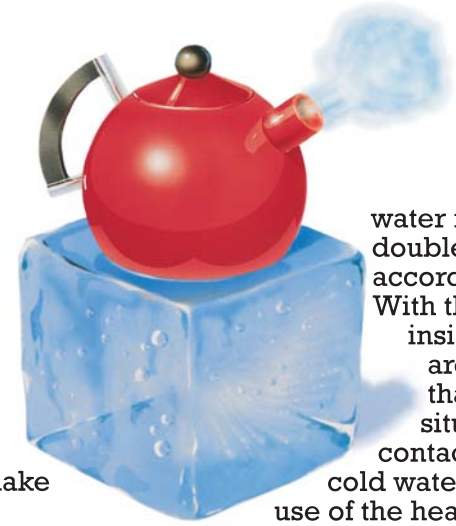
Cheap-Trick

Turning Cold to Heat



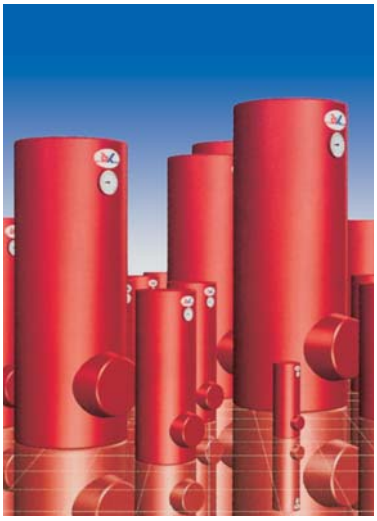
Naturally, when choosing a heat recovery system for a refrigeration plant, you will want the best available. As Europe's No. 1 for Heat Recovery systems, DK can offer you just that : superb manufacturing quality and a high safety standard coupled with DK's experience in energy systems make DK's Heat Recovery facilities the obvious choice. See for yourself:

DK HEAT RECOVERY WITH INTEGRAL HEAT EXCHANGERS

This type of installation is ideal for sites where waste heat of separate refrigeration plants is to be made use of, for example in restaurants, bakeries and butcher shops.

The storage tanks of the DK Heat Recovery system have a two-layer enamel coating with anode protection, enabling problem free installation with any conduct material as well as use with all combinations of drinking water.

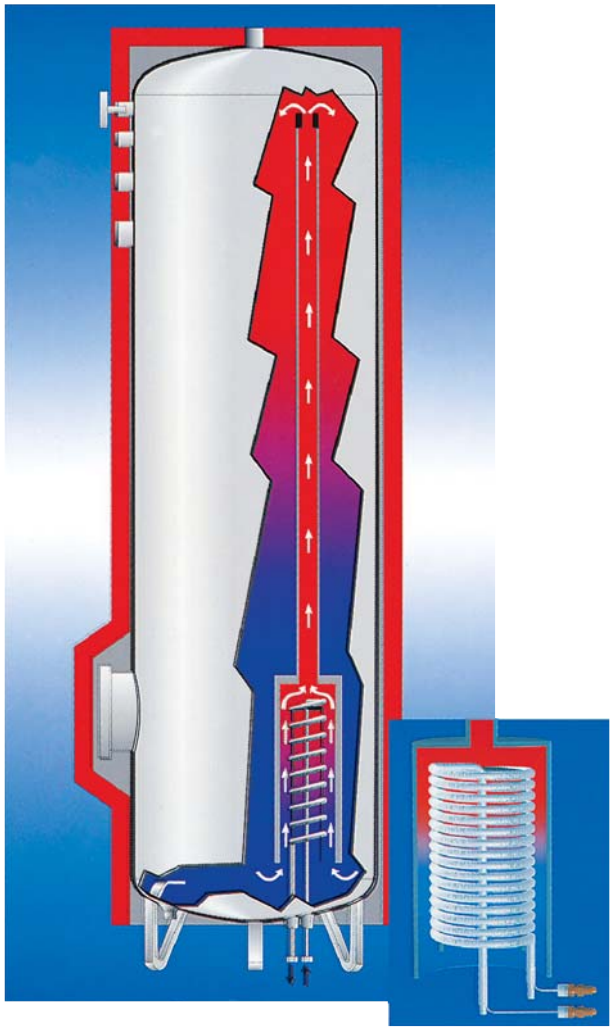
A comprehensive standard range of tanks from 120 - 1000 ltr offers the right size for every need. Special large volume storage tanks are available up to 10,000 ltr. The standard range of tanks can also be supplied with a high-quality PUR half shell insulation, combining optimum insulation with an easy-to-handle approach and appealing design.



'DK Heat Recovery with fitted heat exchangers'.

It goes without saying that customized designs with horizontal or vertical storage tanks are also available.
The heat exchanger fitted to heat service water is as a rule supplied in double wall safety design according to DIN 1988.
With the help of a water channel inside the tank, water layers are thermally developed so that the heat exchanger situated at the bottom is in contact as long as possible with cold water, thus ensuring a steady use of the heat caused by refrigerant desuperheating and condensing.

These heat exchangers are available in 1500/3000/6000/9000/12000/18000 watts and can be used according to the refrigeration plant size and respective storage tanks.



All in one : DK's internal heat exchanger

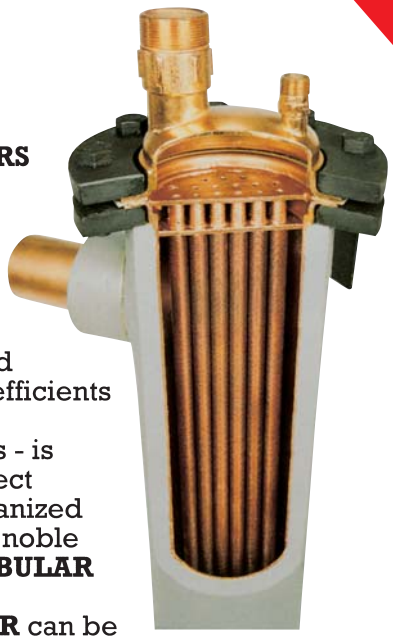
DK HEAT RECOVERY WITH EXTERNAL TUBULAR CONDENSER/DESUPER-HEATER
This type of plant is most appropriate if either a part (superheating) or the entire waste heat of a larger cooling plant is to be utilized.

Out and about : DK's external heat exchangers

Typical areas of application include supermarkets with combined low and medium temperature plants as well as the food processing industry.

The **DK TUBULAR CONDENSER/ DESUPERHEATER** for heating service water is, as a rule supplied in a double-walled safety design according to DIN 1988 incorporating leak detection.

7 basic types as well as a grading of 0.1 mtr guarantee the precise selection related to the capacity required and the space available.



DK TUBULAR CONDENSERS/ DESUPERHEATERS are manufactured completely from SF-copper (even the pipe), so that stress corrosion cracking - induced by the various coefficients of expansion of different materials - is excluded. To protect downstream, galvanized water pipes (Less noble metal) the **DK TUBULAR CONDENSER/ DESUPERHEATER** can be nickel-plated on the water side.

FOR AMMONIA REFRIGERATION plants, tubular condensers / desuperheaters made of steel / stainless steel are available.

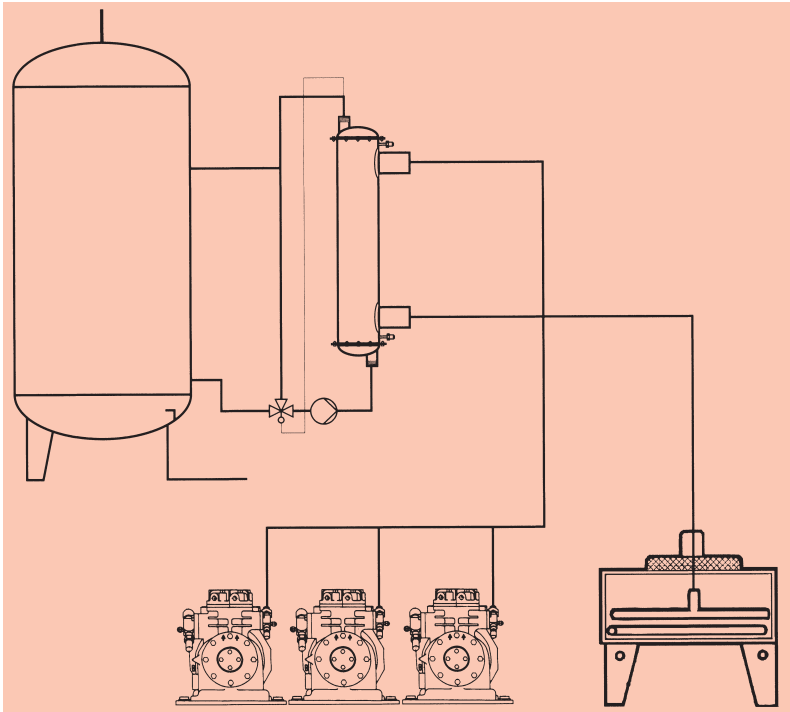
The **DK TUBULAR CONDENSERS/DESUPER-HEATERS** have a vented double wall and designed for full refrigerant mass flow rate, attached and plumbed to the DK storage tank with pump and temperature-controlled water valve

So whatever the system, DK has the Heat Recovery package to suit your needs - a package with a two-in-one effect:
not only do your energy costs benefit, but the environment does, too!

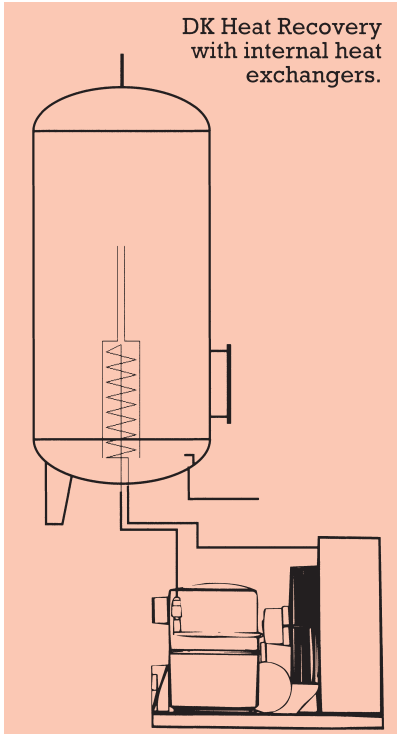
This goes to prove that investing in a DK Heat Recovery system really is value for money!!

So what are you waiting for?

Evaluation of the economic efficiency of a DK HEAT RECOVERY system for service water used in e.g. supermarkets.
The same applies to hotels, canteens, kitchens, abattoires and butchers.



DK Heat Recovery with external heat exchangers.



DK Heat Recovery with internal heat exchangers.

Using superheat of 2 freezing plant (DWM 3 PS) for heating service water
Type 300/4 with 2 heat exchangers
Type 22/16 mm
Water consumption : 65,000 ltr on 101 days of consumption (Sundays & public holidays excl.) =
643 ltr/day
Desired water temperature : +60°C
Heating up with heat recovery and after heating with electric energy
Consumption /after heating : 164 kWh

65,000 (ltr) x 50 (heating up)
= 3,250,000 kcal = 3,780 kWh
- after heating 164 kWh
Economy 3,616 kWh

$$\frac{3{,}616\ \text{kWh}}{101\ \text{days}} = 35{,}8\ \text{kWh/day}$$

35,8 kWh/day x kW/Hr Unit Cost
= Electrical Cost/Day

Daily cost x 300 consumption day/year
= Total saving in energy/year

The DK HEAT RECOVERY
a WIN/WIN solution for all commercial and industrial refrigeraton systems.