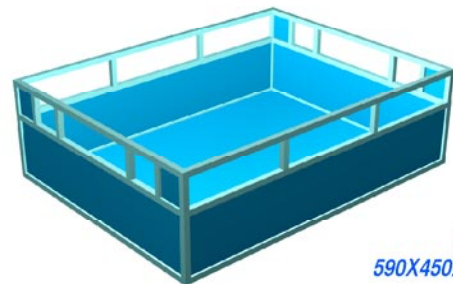
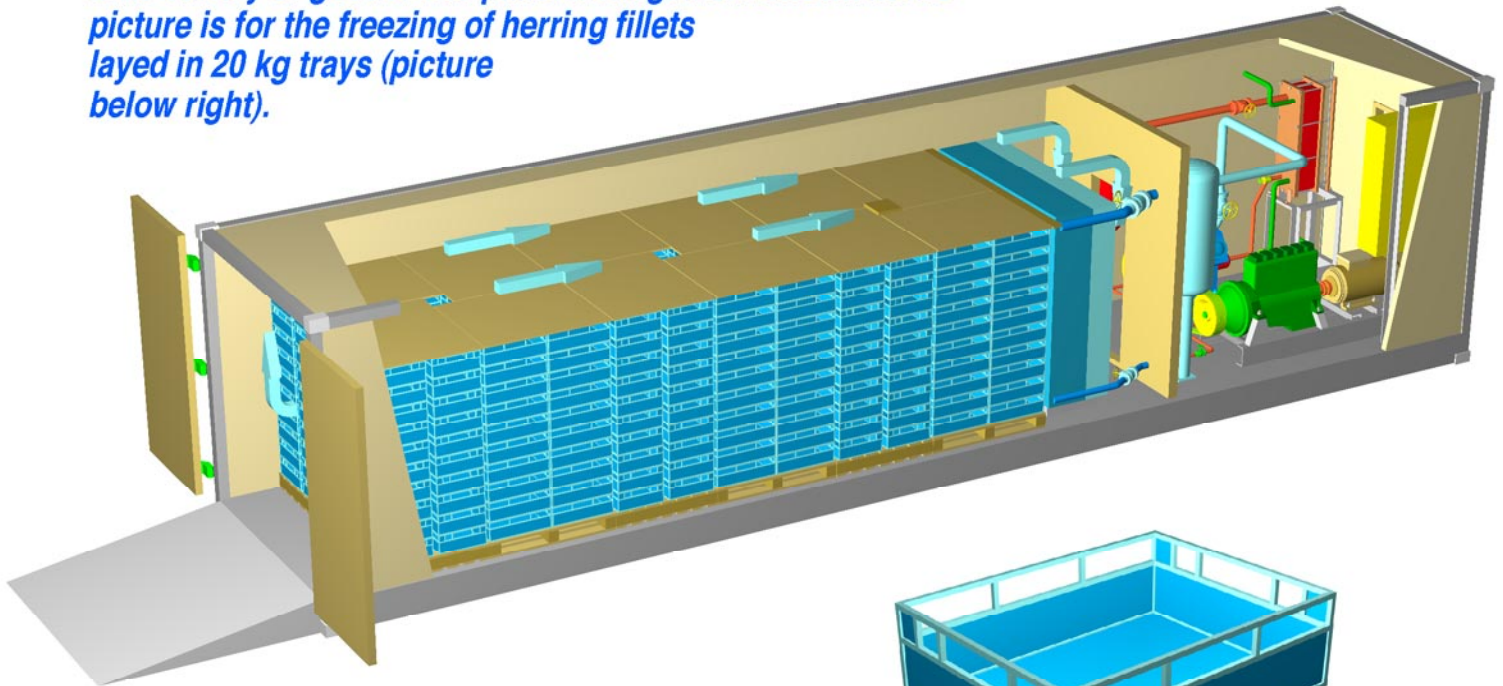


**NEW
UNIQUE**

Packaged Blast Freezer

'Containerised' and Self-Sufficient

The freezer is **self-contained** (completely packaged within a 40 foot hi-cube insulated ISO container) and **self-sufficient** (equipped with a diesel prime mover, thus independent of other sources of energy than diesel fuel). It will freeze a wide variety of goods. The pallet arrangement shown in the picture is for the freezing of herring fillets layed in 20 kg trays (picture below right).



The Tray
590X450X180 mm
Holding Capacity: 20 kg



The Pallet - 1200X800 mm
Holding Capacity: 40 Trays or 800 kg
The trays are self-stacking; a plastic sheet is 'clipped' on top, forming a continuous 'false ceiling' to guide the return air

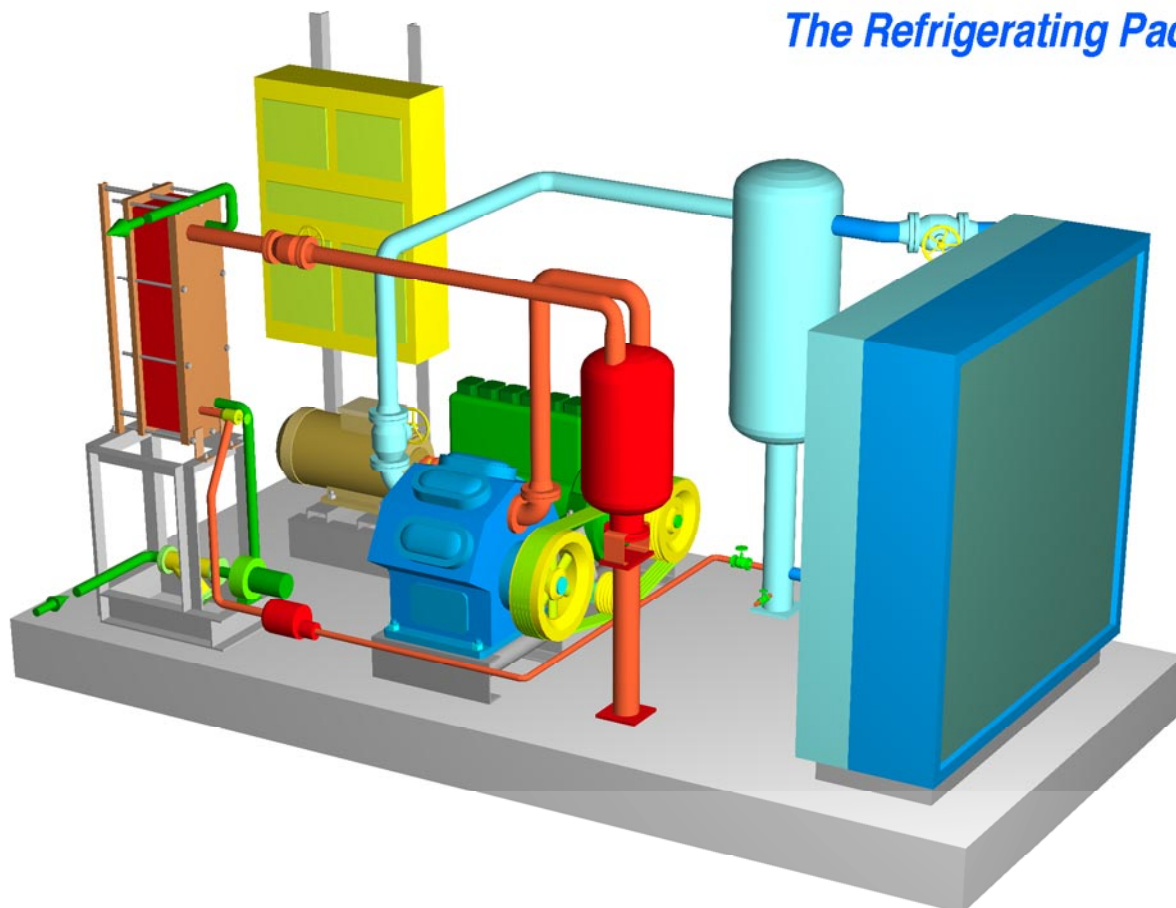
The trays are self-stacking, with 'windows' along the upper edges (picture). They are filled with goods, to the rim of the solid wall. The windows allow refrigerated air to flow over the top of the goods in the tray and along the bottom of the tray stacked on top of it, thus ensuring adequate heat transfer.

To facilitate uniform freezing, refrigerated air is alternately 'forced' and 'induced' through the stack. This is achieved by reversing the direction of rotation of the fans on the air cooler at regular and adjustable intervals. Blue arrows in the picture (above) indicate the direction of the air flow while it is being 'forced' through the cooler and the goods.

While in the 'forced' mode, the return air is diverted back to the cooler on top of the stack (blue arrows; in the 'induced' mode it travels the other way, namely, back to the goods). To ease loading and unloading of the pallets, a plastic sheet is 'clipped' on top of the pallets (picture left). The sheets form a continuous 'false ceiling' on top of the stack, thus guiding the return air. Square holes forming between the plastic sheets in every group of four pallets are plugged.

In this particular arrangement, the freezer will accommodate 12 pallets, each carrying 800 kg of the goods (picture left), or a total of **9.600 kg**. The charge will freeze in **16 to 18 hours**.

The Refrigerating Package



How The Refrigeration Works

The plant operates on Refrigerant R717 (ammonia). A two stage reciprocating compressor is belt driven off the flywheel end of a diesel engine over a manual disengaging clutch. An alternator, generating electricity for all auxilliary motors in the plant (pumps, fans etc) and for lighting, is driven off the front end of the engine over a flexible coupling. These three components—the compressor, the diesel engine and the alternator—make up the RPE Unit, which makes the freezer self-sufficient and fully independent of other sources of energy than diesel fuel (separate leaflet).

Refrigerant expands over the high pressure float valve (red) to the vertical liquid separator (light blue) and is recirculated by gravity through the forced ...

... draft air cooler (light and dark blue). Following a two stage compression (intermediate cooling not shown), it passes through an oil separator (red) before it condenses in the plate heat exchanger (red/brown). The partition between the two compartments is not shown. Space is limited and the liquid separator is made big enough to serve as a refrigerant receiver. Hence, the plant operates on a 'critical charge' of the refrigerant. Heat is rejected through water (green arrows) from a cooling tower (not shown), which can be delivered on request. A combined switch board and control panel (yellow) serves all electric consumers in the plant.

You name it, we cool it!

Ishróngl

icebits

Ishroengl ehf - IceBits ehf
Glosalir 7, Suite 704
IS-201 Kopavogur - Iceland

Desk: 00354 5622524 - Pocket: 00354 8961892 - Fax: 00354 5621592
eMail: ingvar@ingvar.is - The Web: www.ingvar.is