

## STAR TURNS UP THE HEAT AT NORWEGIAN MILITARY BASE

Location:	Ramsund Naval Base, Troms
Equipment:	<b>Neatpump</b>
Refrigerant:	Ammonia
Capacity	600kW
Temperature	+60 to +68°C Water

UK firm Star Refrigeration has designed a groundbreaking renewable energy heat pump system to serve a military base in Norway.

The Glasgow-based cooling and heating specialist, with Norwegian refrigeration partner Norsk Kulde, has just installed the **Neatpump** system at the Ramsund Naval Base. Located in the northern county of Troms, the coastal facility is used for Norwegian Army and Royal Norwegian Navy vessel repairs and is also a Special Forces base.

Star's **Neatpump** is an innovative ammonia heat pump plant that extracts heat from seawater in Ramsund's harbour. A glycol loop submerged in the harbour helps provide hot water and heating to all buildings on the base.

**Neatpump** has replaced an ageing heat pump system at the Ramsund base. The previous plant, which operated on synthetic refrigerant R134a, suffered a system failure following less than 10 yrs

service. The Norwegian Army was looking to replace the existing plant with an environmentally conscious, energy saving heat pump system, with a robust, low maintenance design.

Unlike many first generation heat pump systems, Star's **Neatpump** does not require any synthetic global warming gases (HFCs). It operates using a low charge of ammonia, a naturally occurring refrigerant that has zero ozone depletion potential.



Ramsund's **Neatpump** was built at Star's Glasgow manufacturing facility and was shipped as a complete packaged unit, ready for installation in an existing plant room at the military base. The plant has a 600kW capacity and a COP (Coefficient of Performance) of 2.7, heating water to temperatures between 60 and 68 degrees Celsius.

Commenting on the Ramsund project, Kenneth Hoffmann, Star's Sales Manager – Heating, says: "Energy efficiency and build quality were key to securing this contract. **Neatpump's** advanced compressor technology and ultra low maintenance

design ensures over 20 years of environmentally conscious service.”

Kenneth Hoffmann adds: “This is our second **Neatpump** installation in Norway, working in partnership with Norsk Kulde. Our 15MW district heating system on the Drammen Fjord near Oslo is providing hot water and heating to over 60,000 homes and businesses.”

Star’s **Neatpump** is a renewable energy heat pump that extracts heat from seawater, air or any industrial waste stream, such as air conditioning or large scale cooling processes. This waste heat is captured, compressed, boosted and recycled to provide hot water at up to 90°C.

The Vilter single screw compressor is at the heart of **Neatpump**. The unique compressor design has balanced pressure across the central rotor, ensuring long life, high reliability and low maintenance. **Neatpump** is designed to provide over 20 years service without the costly maintenance work associated with other compressor types.

The high efficiency **Neatpump** is available with capacities ranging from 300kW to 8000kW. The system can be designed to cool both water and

secondary fluids including glycol, making it suitable for a variety of applications including process cooling and heating, AC with heating, steam raising and district cooling, heating and desalination.

Ideal for both new projects and retrofits, Star’s **Neatpump** can be commissioned and charged prior to delivery, reducing site installation and commissioning time.

A world leader in cooling system innovation, Star has developed a range of heat pump solutions to meet the needs of end users in the building services and industrial sectors. As an environmentally conscious supplier, Star’s heat pump solutions typically use natural refrigerants, such as ammonia and carbon dioxide for high efficiency heat generation.

When it comes to designing energy efficient cooling and heating systems, Star is a natural innovator. Star works with strategic partners across the globe to deliver low carbon, cost saving solutions.

**For more information, phone Star Refrigeration on 0141 638 7916, email [star@star-ref.co.uk](mailto:star@star-ref.co.uk) or visit [www.star-ref.co.uk](http://www.star-ref.co.uk)**

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