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SAMAPI GROUP

FSC
Paper Satimat Green

ENERPROJECT
GAS COMPRESSION SOLUTIONS

COMPRESS, NOW.

REFRIGERATION SOLUTIONS

OVERVIEW

Our customers are now aware of the many important advantages of improving the efficiency of refrigeration systems. While energy costs decrease, increase in reliability leads to a reduction of service and downtime costs throughout the plant's lifetime.

We apply our 20 years' experience of gas boosters and associated gas recovery to develop innovative cooling solutions to meet our customers' requirements. Our skills enabled us to design highly efficient separation systems based on screw compressor technology.

Thanks to our process design team, we provide our customers with turnkey systems to meet most cooling requirements and standards.

We are ISO9001 certified.

We provide logistics, commissioning, training and maintenance.

We guarantee spare parts availability for the lifetime of our packages.

We offer tailor-made solutions.

We implement ways to reduce the environmental impact of our products.

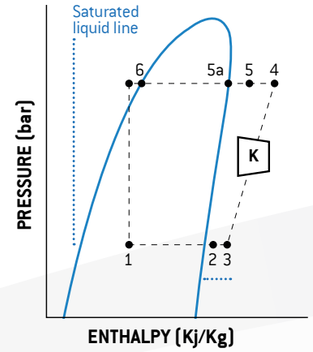
We are committed to health and safety.

We believe in our competence and invest in our people with ongoing education and training.

We constantly invest in research and development.

REFRIGERATION PROCESS

A refrigerant system transfers heat from a substance to be cooled to another area. Most refrigerant systems use the vapour compression cycle. As the refrigerant evaporates, heat is absorbed through a heat exchanger; as the refrigerant condenses, heat is released through another heat exchanger.

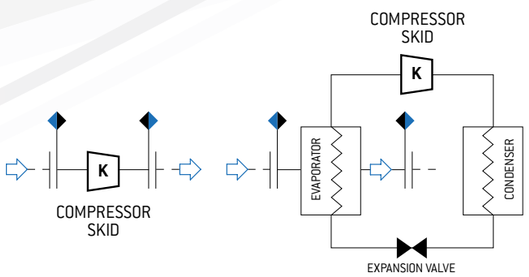


THE THERMODYNAMICS

1–2	The low pressure liquid refrigerant (1) in the evaporator absorbs heat energy from the process medium. The cooling medium changes from liquid to vapour phase.
2–3	The refrigerant picks up more heat energy from ambient air (from the pipework) on its way to the compressor.
3–4	The refrigerant enters the compressor, where its pressure is increased. An important increase in temperature also takes place, as some of the compression energy is transferred into the refrigerant.
4–5	On its way to the condenser, the high pressure gas loses some of its heat to the ambient air in the pipework.
5–6	The high pressure vapour flows into the condenser, where the initial part of the cooling process (5=>5a) cools down the vapour, turning it back to liquid (5a=>6).
6–7	A further reduction in temperature may occur during the passage between the condenser and the expansion valve.
7–1	The liquid refrigerant passes through the expansion device, which reduces its pressure.

PROCESS COOLING

Benefits to our customers range from improved system efficiency and high reliability, lower the power demand and reduce maintenance costs. Typical applications of our process cooling compressors include natural gas liquefaction plants as well as petrochemical and fertilizer industries. Our compressor units can be integrated directly in the cooling process (A) or set aside to independently produce the required amount of cooling energy (B).



PROJECT EXAMPLES

MAXIMUM EFFICIENCY FOR MAXIMUM PRODUCT QUALITY.

- Ammonia liquefaction
- Ammonia tank boil-off recovery
- Refrigeration units for chlorine liquefaction
- Propylene compression
- Propane refrigeration
- Propylene recovery

TYPICAL PRODUCT RANGE
(NH3 AT 35° C CONDENSATION TEMPERATURE)