

CASE STUDY

A propylene plant in Norway needed better control of a boil-off compressor.

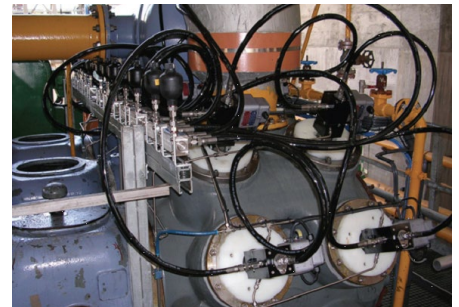
Increased efficiency and reliability through upgrade with HydroCOM

Compressor manufacturer: LINDE

Type	6LX220-2P	Gas	Propylene
Power	1700 kW (2311 hp)	Suction pressure	0.05 bar (0.73 psi)
Speed	585 rpm	Discharge pressure	10 bar (145 psi)
Lubrication	no		



One of the two propylene compressors



Polyamide discs protect actuators at -45°C



Actuators covered in ice during operation

Facts in Brief

- Propylene vapor boiling off from storage tanks is recompressed and re-liquefied by two 6-cylinder compressors
- Vapor flow is intermittent and enters the compressors at a temperature of -45°C .
- The existing pneumatic capacity control system resulted in excessive energy consumption
- Poor balancing at partial load reduced compressor reliability

Customer requirements

- Improve control to reduce energy consumption and increase reliability

Solution applied

- Calculated possible saving with HydroCOM continuous reverse-flow control compared to existing step control
- Retrofitted actuators with polyamide discs to protect against low suction temperatures
- Redesigned the valves
- Integrated the HydroCOM system into the main plant DCS
- Supplied and installed all new wear parts
- Commissioned HydroCOM
- Installed compressor monitoring system
- Project management and documentation

Results

- Lower energy costs
- Longer run times between maintenance shutdowns