



Energy optimization

Solution 5



The hidden impact of valve leakage in cold waters

Prevent undercooling of engine & AUX systems in cold waters

Is cold seawater lowering your engine or auxiliary system temperatures during port stay?

When systems are shut down, internal leakage in cooling control valves (typically 2-3% or higher) allows cooling water to pass through the freshwater cooler, leading to unwanted engine cooling, condensation, prolonged engine warm up time.

Benefits using our valves

- Maintains stable system temperatures during port stay
- Prevents condensation, component stress, and fuel waste
- Compact and retrofit-friendly design.
Fits in place of existing valves
- No pipework required. Delivered with custom spacers
- Can be installed by crew onboard.



Typical Issues Seen in Cold Waters

Workboats

- System temperature drops below limits during port stay leading to condensation risk and engine component stress.
- Pre-heaters struggle to maintain temperature leading to longer warm-up time, higher fuel burn, black smoke.

Ferries

Pre-heaters run continuously leading to wasted energy and time lost to warm-up before departure.

4-Stroke Engines

Rapid temperature swings cause thermal stress to liners, seals, and casings.

Maintaining stable idle temperature protects against wear and thermal shock.

Why it happens

During port stay or anchorage, cooling isn't needed — but standard 3-way valves leak 2–3%.

In cold climates (<5°C / 41°F), this leakage is enough to cool the entire system unintentionally, driving up fuel use and maintenance costs.



The Solution

Ultra-Low Leakage valve

Clorius' Ultra-Low Leakage 3-way valve reduces leakage to <0.01% (ANSI Class IV), eliminating unwanted cooling and keeping your system ready to start efficiently and your maintenance cost down.

Proven results from cold-water operations

Clorius valves are already helping shipowners operate more efficiently in northern waters, reducing warm-up time, fuel use, and maintenance needs.



Vexve Oy
Pajakatu 11
38200 Sastamala
Finland

Clorius
Skovvej 30
DK-5610 Assens
Denmark

Tel. +45 77 32 31 30
clorius@vexve.com

