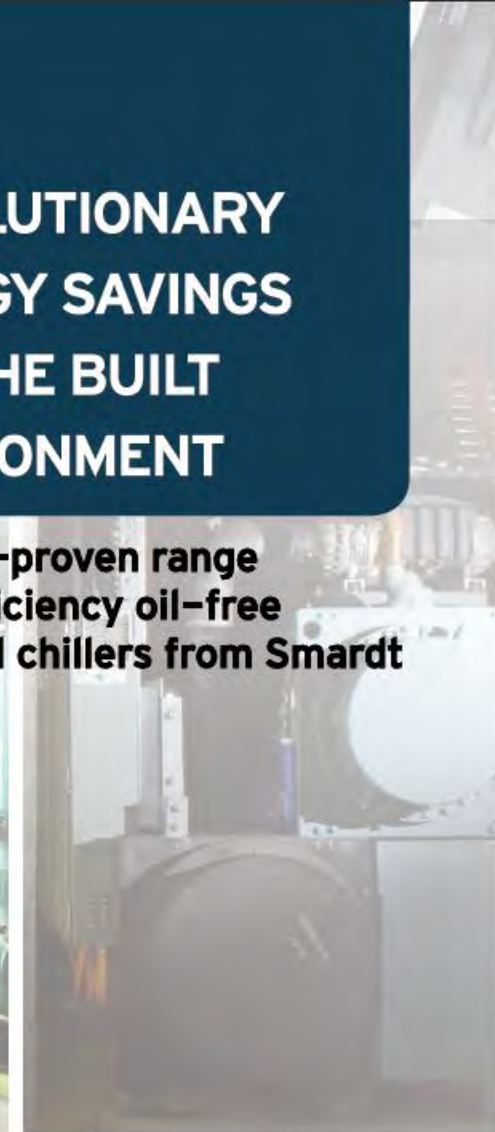


REVOLUTIONARY ENERGY SAVINGS FOR THE BUILT ENVIRONMENT

The world-proven range
of high efficiency oil-free
centrifugal chillers from Smardt



SMARTD

SMARTD Solutions Product Range



Chiller Advancements

Oil-free design optimizes heat transfer

The well-known ASHRAE study (research project 361) concluded that typical lubricated chillers show reductions in design heat transfer efficiency of 15 - 25%, as lubricant accumulates on heat transfer surfaces, denatures, and blocks normal thermodynamic transfer processes. Logically, no oil in your chiller means no oil contamination over time, so design efficiency is maintained effortlessly.

Extraordinary soft-start efficiency

The compressor's power electronics, further enhanced by Smardt's chiller controller, require only 2 amps for start-up, compared with 500-600 amps in conventional capacity machines. This provides further savings for owners, who can reduce maximum power loads and reduce backup generator size, cost and capacity, and maintain customer power tariff profiles.



Rugged and built-in defence against power failure

Each compressor has a bank of capacitors used for energy storage and filtering DC voltage fluctuations. In the case of a power failure, the capacitors continue to provide power to the bearings to keep the shaft levitated, allowing the motor to turn into a generator and to power itself down to a stop. Extended real world testing has confirmed the system's remarkable durability.



Oil-Free Technology

All Smardt chillers, are designed to optimize the performance of the oil-free centrifugal compressors from Danfoss TurboCor Inc. These compressors use oil-free magnetic bearings and variable-speed drives to deliver superior efficiencies than conventional oil-lubricated centrifugal, reciprocating, scroll and screw compressors. Delivering high speed impeller performance - up to 45,000 rpm, whilst also being extremely compact, very quiet, rugged and reliable.



Proprietary magnetic bearings replace conventional oil-lubricated bearings, eliminating high friction losses, mechanical wear and high-maintenance oil management systems. This contributes to the delivery of chiller energy savings of 35 percent and more over conventional chillers whilst ensuring long-term reliability.

The compressor's one main moving part (rotor shaft and impellers) is levitated during rotation by a digitally-controlled magnetic bearing system. Position sensors at each magnetic bearing provide real-time feedback to the bearing control system, at the incredible rate of 100,000 times every second, ensuring constantly centered rotation.

