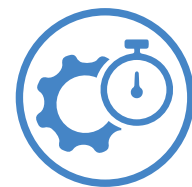


PERFORMANCE



INCREASED PRODUCTIVITY

up to 50%

Each mold runs with shortest cooling time, consistently producing high quality parts at the highest throughput.



REDUCED OPERATING COSTS

-40%

Energy savings (**up to 30%**), water savings (**up to 95%**) and maintenance costs Savings (**up to 90%**).



TOTAL MODULARITY

100%

Plug & Play Concept. Easily expandable at any time. Total reliability.

SUSTAINABILITY



REDUCED "CARBON FOOTPRINT"

-40%

Unbeatable overall efficiency: intelligent use of energy and free-cooling opportunities.



MINIMIZED WATER FOOTPRINT

-95%

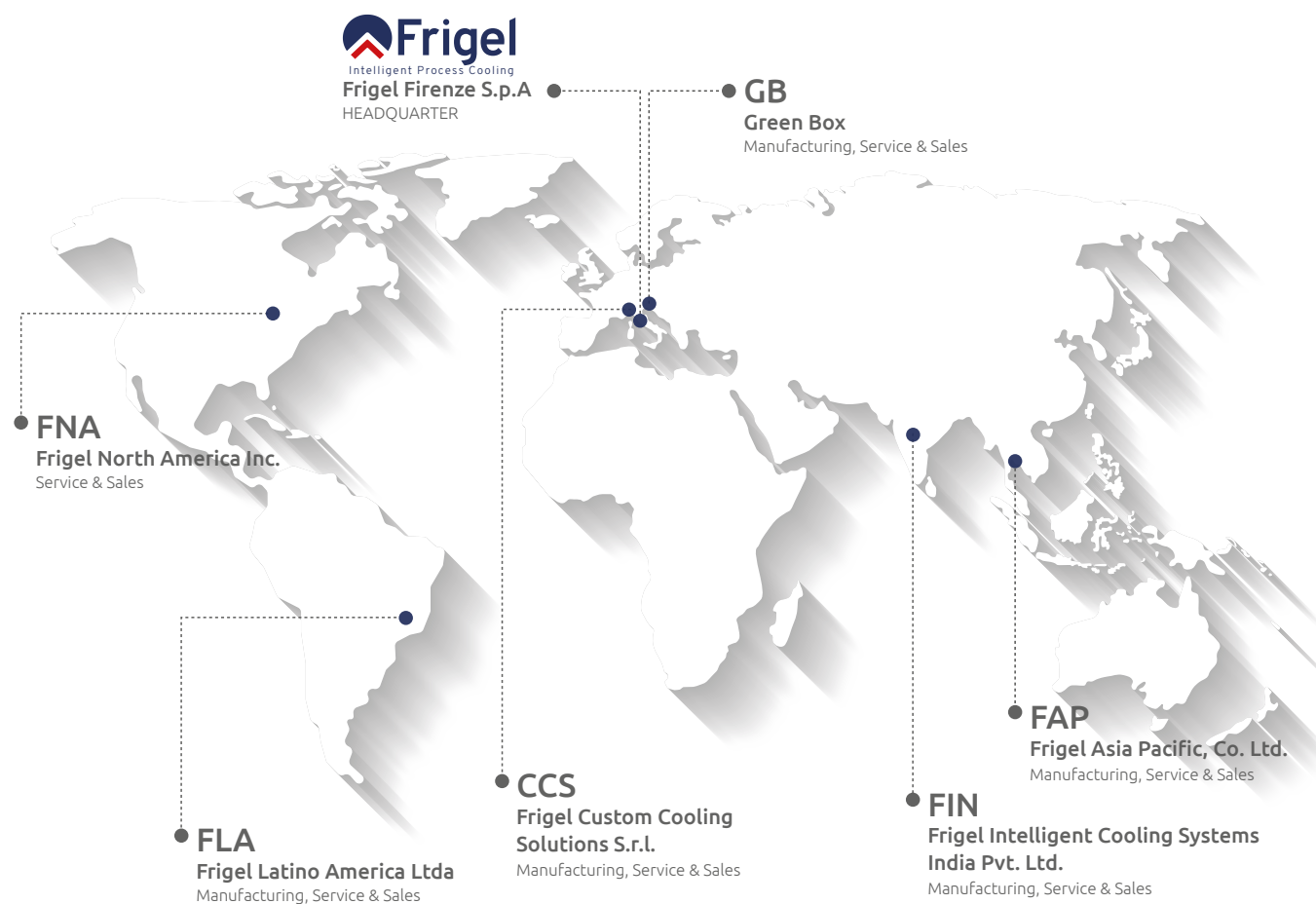
Adiabatic, closed circuit heat rejection technology with no process water evaporation or bleed-off.



REDUCED "RISKS OF EMISSIONS"

-95%

Uses small quantities of innocuous low GWP refrigerant. No disposal of any water treatment chemicals.



www.frigel.com



THE INNOVATION ECODRY SYSTEM 4.0 PROCESS-SYNCHRONIZED COOLING



A PARADIGM SHIFT IN THE PLASTICS INDUSTRY

TECHNICAL MOLDING



THE NEW COOLING SOLUTION FOR TECHNICAL MOLDING ECODRY SYSTEM 4.0®

The new approach covers all the variety of applications in technical molding with unbeatable performance improvements: real cooling cycle time reduction and running costs savings together with outstanding reduction of environmental impact.

1 ECDRY

Adiabatic Cooling System

Ecodry is a central closed-circuit Adiabatic Cooling System, designed as a replacement of old cooling tower technology. Ecodry is installed outdoors in order to reject to ambient the heat extracted from processes. This system provides direct cooling to all water consuming devices, such as hydraulic heat exchangers, extruder barrels, resin dryers, as well as water cooled air compressors and chillers, etc.

Main Features

- ⊗ Maximum cooling water temperature: 30/35°C (85/95°F)
- ⊗ Cooling capacity: 50 - 10000 kW (15 - 3000 tons)
- ⊗ Process flow range: 10 - 2000 m³/h (50 - 9000 gpm)
- ⊗ High Efficiency Adiabatic Chamber for air pre-cooling (internationally patented)
- ⊗ Antifreezing self-draining configuration
- ⊗ Large surface heat exchangers, with copper coils and aluminum fins with hydrophilic protection
- ⊗ Axial fans with built in brushless EC inverter driven motors individually wired
- ⊗ Modular design with preassembled stainless steel manifolds for interconnection
- ⊗ Stainless steel structural frame and aluminum access panels
- ⊗ Web-monitoring interface

Highlights

- ⊗ Guaranteed operation, with minimum water consumption and maintenance also in extreme weather conditions, up to 50°C (120°F) ambient temperature
- ⊗ Safe winter operation without glycol down to -40°C (-40°F) ambient temperature
- ⊗ High energy savings of fans during partial load operation
- ⊗ Compact design with minimum footprint required between units
- ⊗ High reliability with electrical redundancy and 100% rust free materials

2 MICROGEL for Injection Molding

Temperature Control Unit with Chiller & Booster Pumps

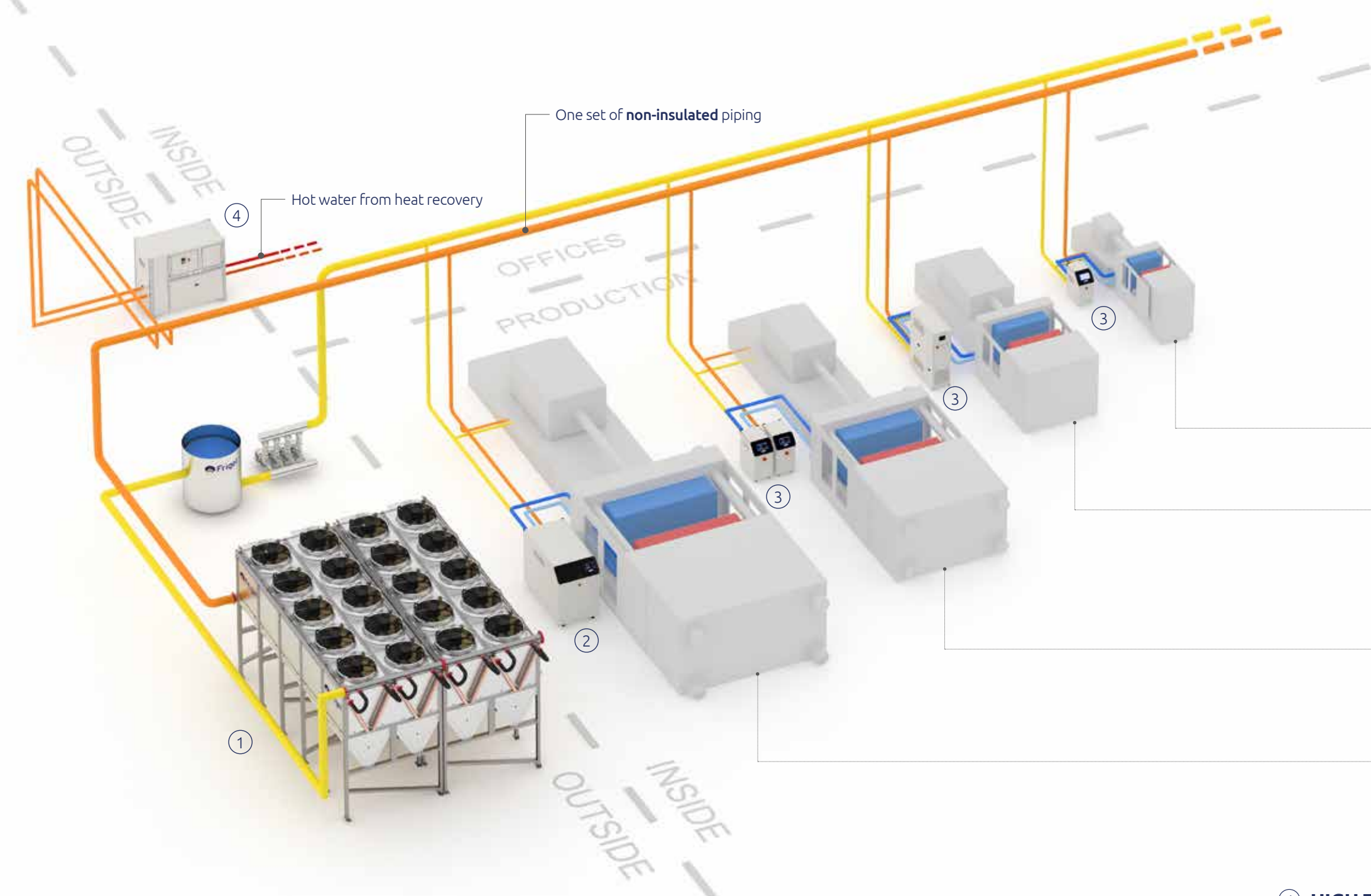
Microgel is a super-compact mold cooling unit specifically designed for "cycle cooling time reduction". Combines a water cooled chiller with one or two high flow booster pump temperature controllers with heating elements and a free-cooling valve. Digitally-synchronized with the molding machine, allows for researching and recording the best setting of flow rate and temperature for each zone, optimizing product quality with the minimum cycle cooling time.

Main features

- ⊗ More than 50 models, MONO or DUO (one or two temperature zones)
- ⊗ Wide temperature range: -5 to 90°C ± 0.2°C (23 to 194°F ± 0.5°F)
- ⊗ Chiller capacity: from 5 to 200 kW (1.5 to 60 tons)
- ⊗ Heating Capacity: from 6 to 96 kW
- ⊗ Booster pump per zone: from 1 to 50 m³/h (5 to 220 gpm) - inverter (VFD) optional
- ⊗ Temperature, flow and pressure digital readings (IN/OUT)

Highlights

- ⊗ Process-Synchronized Mold Temperature Control
- ⊗ Cycle time reduction up to 50%
- ⊗ Intelligent use of energy consumption
- ⊗ High energy savings with automatic free-cooling
- ⊗ Automatic mold draining
- ⊗ Web-monitoring interface



3 THERMOGEL & TURBOGEL

Pressurized Temperature Control Unit

These pressurized water temperature controllers are designed for general plastics molding applications. Included are high flow booster pumps and available alternating heating and cooling functions (Heat and Cool). Digitally-synchronized with the molding machine, allows for researching and recording the best setting of flow rate and temperature for each zone, thus optimizes product quality with the minimum cycle cooling time.

Main features

- ⊗ More than 50 models, MONO or DUO (one or two temperature zones)
- ⊗ Temperature range up to 180°C (356°F)
- ⊗ Integral heating elements: from 6 to 96 kW
- ⊗ Booster pump per zone: from 1 to 250 m³/h (5 to 1100 gpm) - inverter (VFD) optional
- ⊗ Automatic water filling system
- ⊗ Direct or indirect cooling
- ⊗ Temperature and pressure digital readings (IN/OUT)
- ⊗ Web-monitoring interface



Highlights

- ⊗ Process-Synchronized Mold Temperature Control
- ⊗ Cycle time reduction up to 50%
- ⊗ High resistance to corrosion, components in non-ferrous material
- ⊗ High quality molded parts
- ⊗ High accessibility for easy maintenance

4 HIGH TEMPERATURE HEAT PUMP

The water-to-water heat pump is connected to the Ecodry System to recover the heat extracted from water cooled equipment and produces hot water for sanitary services, room heating or industrial processes in general. The heat pump has been specifically designed to reach hot water temperatures up to 75 °C (167°F). The efficiency of the system is unbeatable compared to traditional gas-powered systems.

Main features

- ⊗ Unit complete with dissipation side pump
- ⊗ Uses compressors (single or dual) that are particularly suitable for this application

Highlights

- ⊗ Significant savings compared to the cost of natural gas (40%)
- ⊗ Completely modular system
- ⊗ Easy installation

