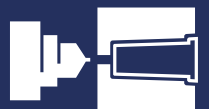


THE INNOVATION  
**ECODRY SYSTEM 4.0**  
PROCESS-SYNCHRONIZED COOLING



**TECHNICAL  
MOLDING**



## 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%**).

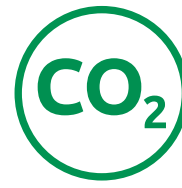


### TOTAL MODULARITY

**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.



# THE NEW COOLING SOLUTION FOR TECHNICAL MOLDING

## ECODRY SYSTEM 4.0

This new approach covers all varieties 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 ECODRY

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 m<sup>3</sup>/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 even 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 fan energy savings during partial load operation
- ⊗ Compact design with minimum footprint required between units
- ⊗ High reliability with electrical redundancy and 100% rust free materials

### ② MICROGEL Syncro

Process synchronized TCU with onboard chiller

Microgel SYNCRO is new Frigel technology that revolutionizes the temperature control method of injection molding technical parts. The Microgel Syncro technology allows for a significant reduction in cycle time (up to 40%), guaranteeing very high product quality. Digitally synchronized with the molding process, Microgel Syncro provides cold water only during the cooling phase, reducing drastically the cooling time, while keeping the mold cavities hot during the injection phase.

#### Main features

- ⊗ More than 10 models, dual temperature control zones
- ⊗ Wide temperature range: -5°C to 90°C (23°F to 194°F)
- ⊗ Chiller capacity: from 15 to 57 kW (4 to 16 tons)
- ⊗ Heating capacity with SSR control: from 6 kW to 24 kW
- ⊗ Booster pump with VFD per zone: from 1 to 24 m<sup>3</sup>/h (6 to 105 gpm)
- ⊗ Mold temperature control parameter management (recipes)

#### Highlights

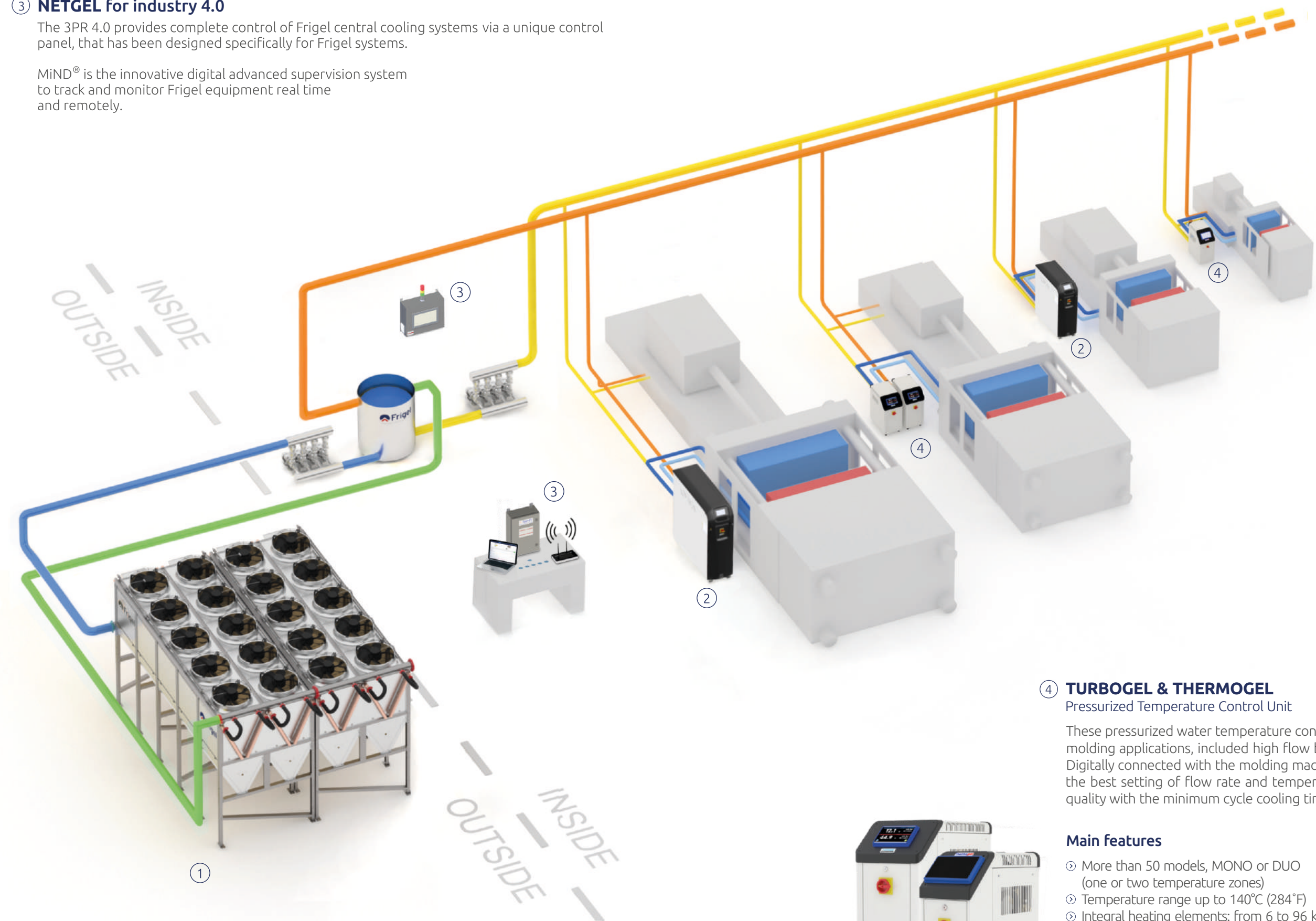
- ⊗ Cycle time reduction up to 40%
- ⊗ Simple synchronization control strategy
- ⊗ Independent and autonomous solution, quick startup and use procedures
- ⊗ Remote connectivity with web interface
- ⊗ Weekly performance reporting focused on productivity and uptime
- ⊗ Improved overall energy efficiency of the IMM cell



### ③ NETGEL for industry 4.0

The 3PR 4.0 provides complete control of Frigel central cooling systems via a unique control panel, that has been designed specifically for Frigel systems.

MiND<sup>®</sup> is the innovative digital advanced supervision system to track and monitor Frigel equipment real time and remotely.



### ④ TURBOGEL & THERMOGEL

Pressurized Temperature Control Unit

These pressurized water temperature controllers are designed for general plastics molding applications, included high flow booster pumps. Digitally connected 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 140°C (284°F)
- ⊗ Integral heating elements: from 6 to 96 kW
- ⊗ Booster pump per zone: from 1 to 250 m<sup>3</sup>/h (5 to 1100 gpm) - inverter (VFD) optional
- ⊗ Automatic water filling system
- ⊗ Direct or indirect cooling
- ⊗ Temperature and pressure digital readings (per zone, to and from mold)
- ⊗ Web-monitoring interface

#### Highlights

- ⊗ Cycle time reduction up to 20%
- ⊗ High resistance to corrosion, components in non-ferrous materials
- ⊗ High quality molded parts
- ⊗ High accessibility for easy maintenance





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