

DYNAMICO

DS|DY FOR INJECTION MOLDING

The New “Mold Profit Booster”



Dynamic Mold Temperature Control Technology
A Paradigm Shift in Advanced Molding

>Mold Profit Booster for Injection Molding

New Generation of Mold Temperature Control Units specifically designed for cycle time reduction.

Dynamico and its innovative software represent a unique tool that allows to search and store the best mold temperature control parameters that highly reduce the Mold Cooling Time, optimizing part quality.

The advantages are easily understood, increased productivity and profitability of a single production cell, with an average payback time of few months.

The New **“Dynamic Mold Temperature Control Technology”** allows cycle time optimization by reducing the cooling time, based on:

- **DEDICATED MOLD CONTROL** – The unit guarantees precise temperature control and dedicated high flow rate, per IMM and per mold.
- **DYNAMIC TEMPERATURE CONTROL** – The unit automatically changes the temperature set point.
- **DYNAMIC FLOW CONTROL, SYNCRO MODE** (available only VFD pumps) – By synchronizing the inverter driven pump with the molding cycle, the unit performs “DEEP COOLING” only during the cooling phase of the cycle, further reducing molding cooling time.

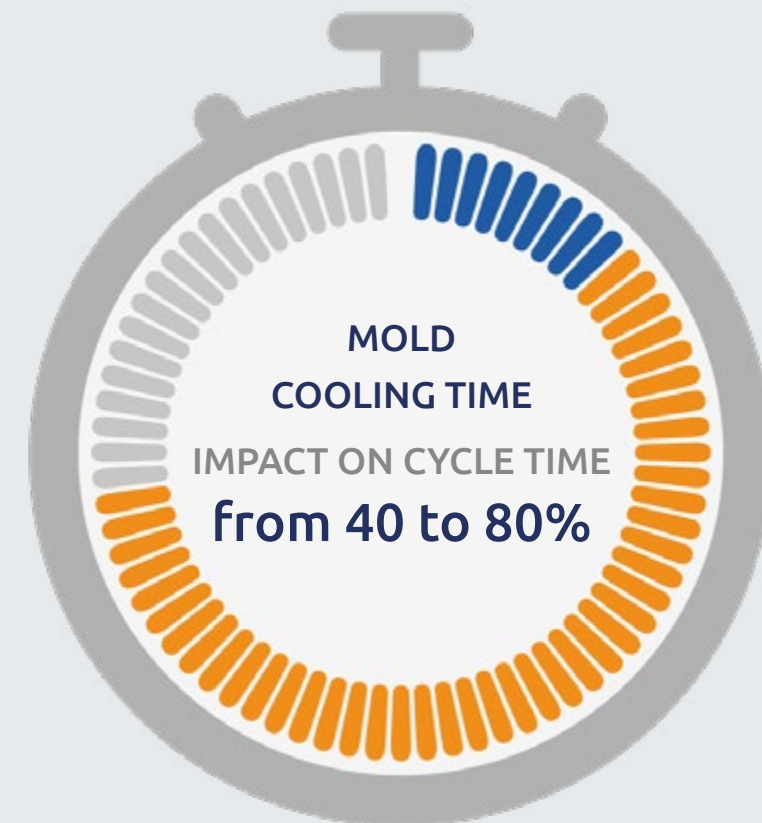
Dynamico
“The
Paradigm
shift”



“ This innovative Mold Temperature Control Unit has been specifically designed for cycle cooling time reduction.

Eleonora Braga | Product Manager

Impact of Mold Cooling Time in Your Business



COOLING TIME highly Impacts:

Molding Productivity (parts/h)
Molding Efficiency (kWh/part).



SHORTER COOLING TIME:

Reduces Part cost (€/part),
Increases Productivity (parts/h).



SHORTER COOLING TIME:

Increased Gross Margin (€),
INCREASED PROFITABILITY.

> Benefits for your Business

A unique **Dynamic Mold Temperature Control Unit**,
tailored for any application in INJECTION MOLDING business.



AUTOMOTIVE



MEDICAL



TECH. PARTS



HOUSEHOLD



GARDENING



COSMETICS



PRODUCTIVITY
INCREASE

20% to 40%

As an immediate replacement of standard TCUs, these new units have **proven productivity increase of at least 20% in most existing molds running with all kinds of resins** (PP, PA, ABS, PC, etc.) and up to 40% in some cases.



SHORTER
START UP TIMES

20%

Mold pre-heating up to 20% faster than with a conventional temperature control unit. Faster and easier mold change (automatic mold draining). **Particularly advantageous for production runs that require frequent mold changes.**



LOWER
OPERATING COST
(kW/part)

-12%

Cycle time reduction improves the efficiency (kWh/part) of the entire production cell, obtaining a substantial cost savings per part produced.



CHILLED WATER
ENERGY SAVING

95%

Automatic Free-Cooling: When the temperature required by the process is higher than the one given by the external cooling unit Adiabatic Cooler (Ecodyr), the onboard chillers stop the compressor and open the free-cooling valve. The process load is directly dissipated by the Cooler, consuming up to 95% less energy.



RETURN ON
INVESTMENT

SHORT TIME

Financial sustainability as a replacement of traditional TCU. **Increased productivity together with lower energy costs**, have proven an unbeatable return of investment.



FLOOR PRODUCTION
CAPACITY

+20%

The replacement of existing TCUs represents an **excellent way to increase production capacity of the shop floor** with the lowest CAPEX demand.

>Dynamico DS/DY for any Molding Application up to 90 °C

The **unprecedented performance** of these units guarantees a significant reduction of the cycle time by increasing the heat transfer efficiency between recirculating water flow and mold cavities, thus drastically reducing the cooling time, keeping consistent the molded part quality.



IMM SYNCHRONIZATION

Synchronization with the IMM via microswitch or signal from IMM. Management of 3 variables: temperature, flow, cycle time.



CYCLE TIME AS A NEW SETPOINT

Focus on the productivity and let Dynamico take care of Temperature and flow settings.



EMBEDDED WIZARD

Automatically delivers "MOLD BOOSTER performance conditions" to obtain a "New reduced mold cooling time"



IoT CONNECTIVITY

The unit is ready for MiND remote connection.



Dynamico DS

MOLD TEMPERATURE CONTROL UNIT WITHOUT CHILLER

Minimum Temp. Set Point: +2 °C above Central Cooling System.

Maximum Temp. Set Point: 90 °C.

Dynamico DY

MOLD TEMPERATURE CONTROL UNIT WITH INTEGRATED CHILLER

Minimum Temp. Set Point: independent from Central Cooling System (down to 10 °C without glycol).

Maximum Temp. Set Point: 90 °C.



The new Dynamico Technology based on 4 pillars

“Dynamico offers to all molders a unique device to research and store the best mold temperature control parameters that highly improve productivity keeping high quality of molded parts.

Daniel Garcia | Marketing Director

> How it works: Dynamico Wizard

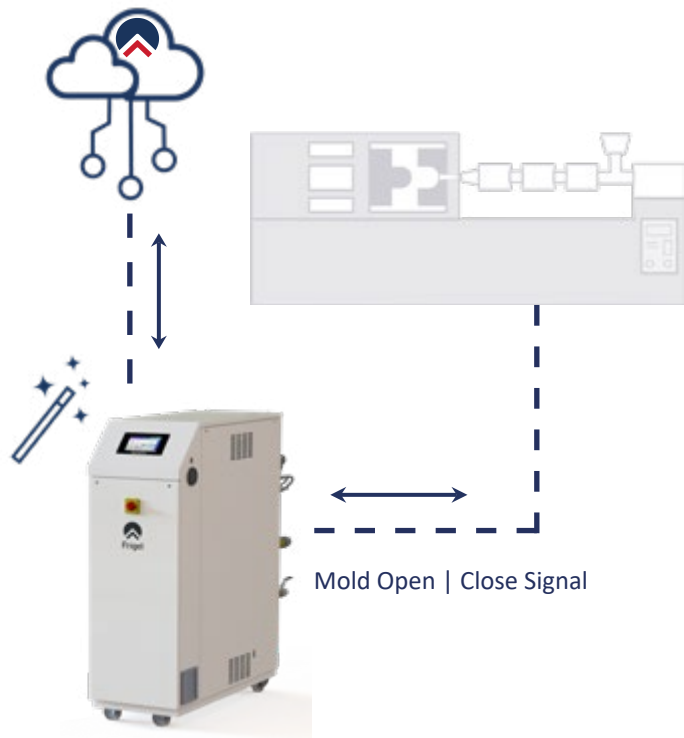
An intuitive HMI feature that **guides the user in real-time through an adaptive process** to optimize the working mode for mold cooling time optimization.

RECIPES

Dynamico's advanced algorithms suggest the dynamic temperature control and synchronized flow settings to fine-tune the best performance, according to the molding data input.

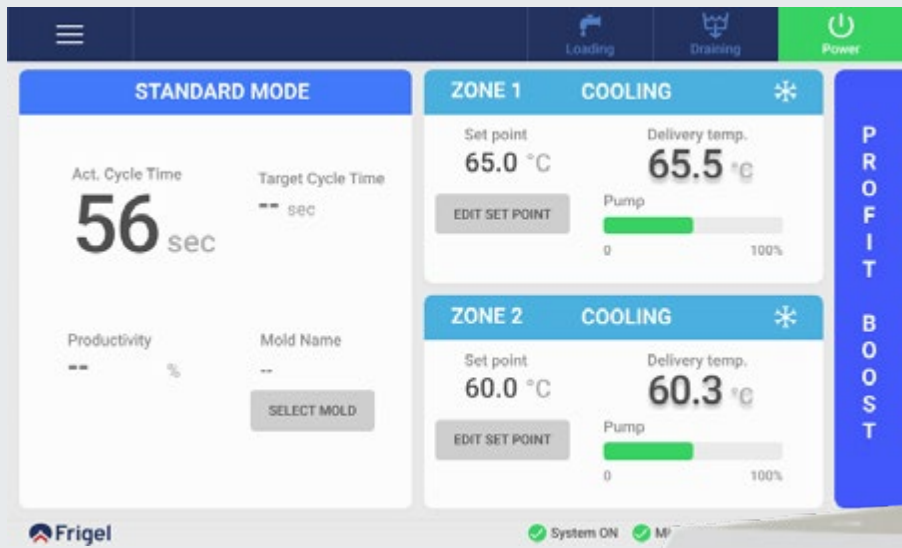
INTERACTIVE MOLD DATABASE

Recall existing machine operating modes (saved recipes) through a user-friendly database, enabling quick and efficient setup.

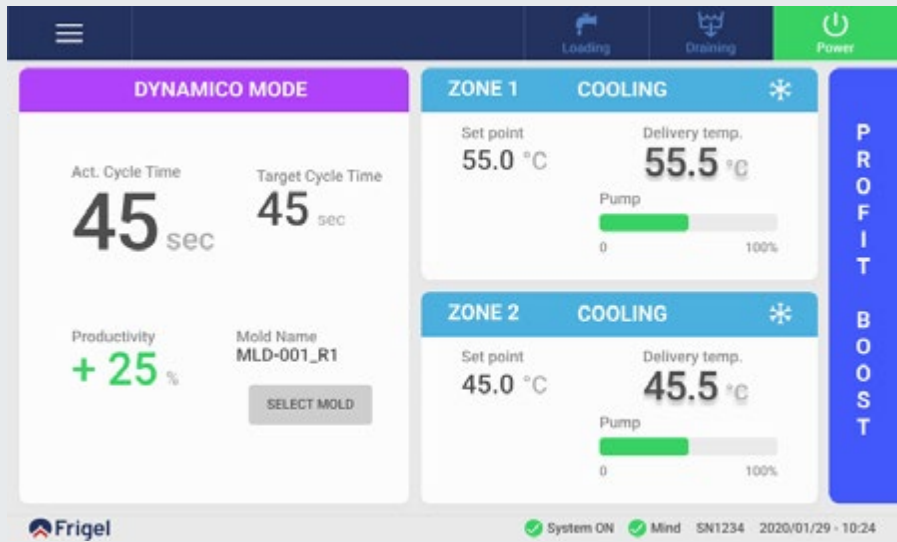


Finding the shortest cooling time

1 PHASE	SET UP PROCESS	Installation of Dynamico in place of the current TCU. The user inputs manual data required. Dynamico synchronizes with the molding process.
2 PHASE	AUTOMATIC PROCESS	The Wizard: > Analyzes process data > Changes cooling parameters (flow rate, temperature) > Delivers a new cycle time.
3 PHASE	MANUAL PROCESS	Quality Check. After a series of produced samples, the operator validates/ accepts the quality of the products.
4 PHASE	MANUAL PROCESS	Validation. The operator can: > Continue the cycle time optimization (back phase 2) > Validate and save the new recipe.



STANDARD MODE: The Unit starts with the traditional set up.



DYNAMICO MODE: The Unit runs production according to saved recipe with reduced cycle time.

> Technical Highlights



MAIN FEATURES

- Direct Cooling: mold temperature up to + 90 °C
- Dynamico DS: minimum Set Point of +2° C above Central Cooling System
- Dynamico DY: minimum Set Point down to +10 °C (no glycol)
- Production rates from 30 kg/h up to 400 kg/h
- Single or Double-zone
- Booster pumps up to 50 m3/h - 5,5 bar
- Heating capacity up to 48kW
- High cooling capacity with motorized modulating valves
- Automatic mold draining

HIGH-CAPACITY CENTRIFUGAL PUMPS

- High-capacity centrifugal pumps, engineered to provide substantially increased flow rates. Up to 5 times more than a traditional TCUs.
- Maximize heat exchange performance with mold cavities drastically reducing both mold pre-heating time and cooling cycle time.
- VFD available on HP pumps - VFD and high-pressure pump options, for optimized mold application matching and increase flexibility and adaptability, with fully integrated control strategy.

CONNECTIVITY

- Modem with side antenna and SIM card for remote support and MiND connection
- Mold switch (Mold Close Signal) as standard feature on all ranges for synchronization with the injection molding machine
- Ethernet port on the back of unit
- USB port on the side for SW update

DYNAMICO DS HIGH-CAPACITY COOLING PERFORMANCE

- High cooling capacity oversized motorized modulating valves.
- Dynamico DS minimal temperature approach with cooling source, allows operating temperature SET POINT of 2 °C above the central cooling system set point.
- Consequently, much lower operating mold temperature can be reached and better main cooling system overall efficiency, when compared to traditional TCUs.

INTERFACES AND COMMUNICATIONS

- OPC-UA Interface: machine comes standard with OPC-UA interface for Euromap 82.1 communication protocol.
- MiND native connection available for remote control
- Available as accessories for other communication Interfaces:
 - Current Loop
 - RS485 with Modbus RTU protocol
 - Canbus



ADVANCED DIGITAL CONTROL WITH WIZARD

The Unit Control Panel is equipped with:

- 7" touch screen with a dedicated user interface
- Advanced logic control board, designed for optimal user experience and operational efficiency
- Complete onboard digital sensors set for full unit performance diagnostic and boundary conditions monitoring

ACCESSORIES (optional)

- VISUAL ALARM: Alarm light provides greater visibility in the event of an alarm condition.
- MOLD DRAIN KITS: Integrated mold drain kits for fast mold changes.
- MIRROR HMI: 7" secondary touchscreen for remote control.
- M2M Interfaces: Current Loop, RS485 with Modbus RTU protocol, Canbus.
- BSP - NPT ADAPTERS.
- FLOWMETER: Improved flow rate monitoring with dedicated vortex flowmeters for individual zone control.

DYNAMICO DY ON BOARD CHILLER

- Independent from Central Cooling System (down to 10 °C without glycol).
- Consequently, no limitation to low operating mold temperature when compared to traditional TCUs.
- To be connected to adiabatic cooling systems
- Independent temperature set point

