



## CASE STUDY

# SYNCHRO YOUR COOLING SYSTEM WITH YOUR MOULD AND SAVE MONEY!

Leave your system as it is now. Frigel will improve it by only changing your approach to cooling.



## THE COMPANY

**Bisio Progetti** is a company based near to Alessandria, Italy. Their business is based on research, development and production of thermoplastic items for food, pharmaceutical, medical and cosmetic industries.

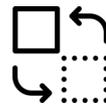
## PROJECT OVERVIEW

As the market leader in mould cooling innovation, Frigel was called in by Bisio Progetti to increase their productivity and maximize profitability of their installed injection molding machines.



## THE GOAL

The goal was to reduce production cost and significantly increase productivity of the injection molding machine.



## A GAME CHANGER

Every new challenge starts with a “paradigm shift”.

Frigel has been in the market leader in precision cooling since '60. In 1994 Frigel changed the approach to mould cooling with “Microgel Technology”, which brings the cooling machine next to the mould. By doing that, customers have been able to achieve the best cooling in relation to temperature, flow rate and pressure. 20 years later we're raising the bar again: Synchro cooling with injection molding phases.



## RESULTS AND ACHIEVEMENT

The experience was completed in cooperation with a Bisio project injection moulding machine expert and the Frigel Syncro field team.

The previous cooling system was a standard TCU the same cooling temperature to the 2 halves of the mould (stationary and moving).

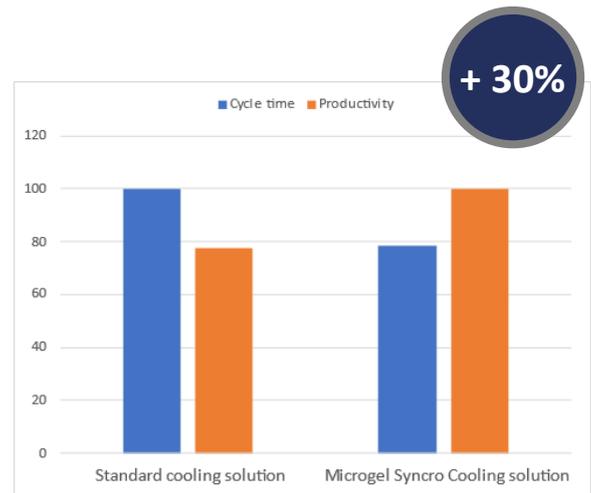
To test the improvement of the cooling system, we selected new model RSY 80 equipped with:

- Flow meter, for perfect cooling control
- Communication with the injection moulding machine
- Syncro logic software



Following a schematic and simple procedure, the customer found the best setup for Microgel Syncro and injection molding machine, achieving remarkable results:

- Production increased +28,5%
- Cycle time decreased -27,5%



**3 HOURS**

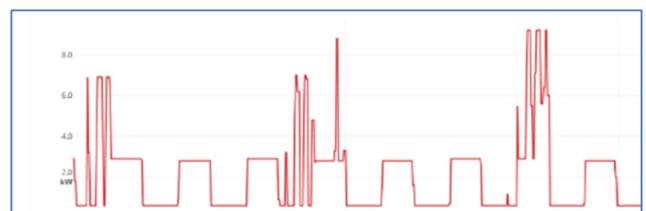
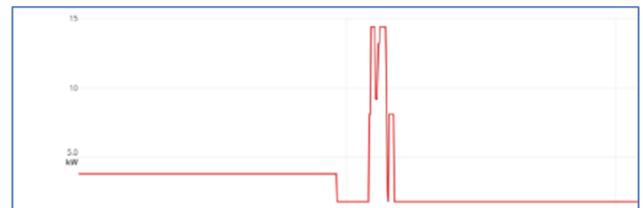
How much time did it require? Just few hours!

What else? It is the return of time invested in the start-up: it happened in the same day!

## LESS TIME, LESS ENERGY

Another incredible result was the reduction of power consumption in Syncro mode compared to the standard cooling mode.

In one working hour, the consumed power was reduced by 18% compared to standard working mode.





## CONCLUSIONS

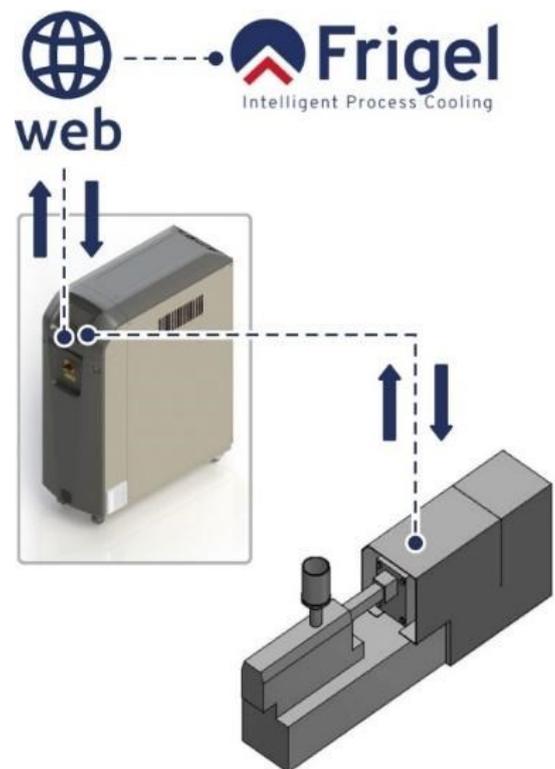
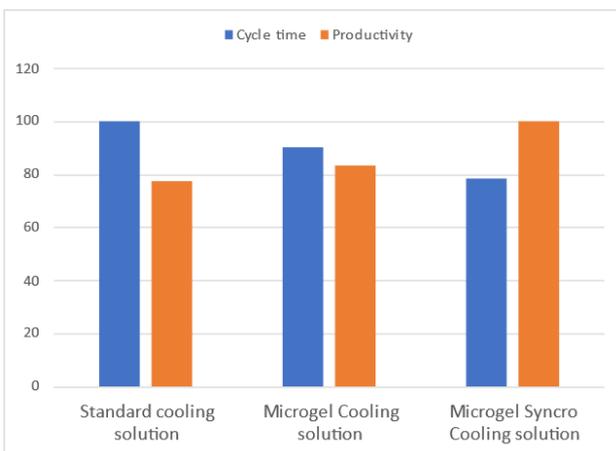
The use of this technology clearly established these benefits:

- Cycle time was reduced, generating a 30% increase: of productivity
- Start-up time was similar to the original unit: 3 hours
- Easiness to synchronize the unit to the process
- Power consumption was reduced by 18%, resulting in a decrease of kWh/kg of resin.

## I WANT TO SEE THE TRUTH

Even though the test had achieved excellent results, Bisio Progetti decided to make an additional test: bringing back the cooling to the original technology and using the new injection moulding machine setup to reduce the cycle time.

Even with the new injection setup, the cycle time was not possible to be reduced compared to the original time obtained with the original cooling unit.



### ABOUT FRIGEL

Established in 1960, today Frigel is much more than a manufacturer of cooling and temperature control systems. We are technical consultants with the ability to identify the best solutions.