SUCCESS STORY

OWN RECIPE SOVEREIGNTY

FIBER DYNAMICS, USA

KraussMaffei

Pioneering Plastics

ECONOMICAL DIRECT COMPOUNDING
DCIM SCORES WITH FAST CYCLE TIMES

OVERVIEW

CUSTOMER: Fiber Dynamics
COUNTRY OR REGION: USA
INDUSTRY: Aviation

APPLICATION: Rotor blades
- Cavities: 1
- Shot weight: 200 g – 2,500 g
- Materials: Own recipe

MACHINE DETAILS:
GX 1100-4300 DCIM
- Clamping force: 11,000 kN
- Screw diameter: 100 mm

CUSTOMER PROFILE:
Fiber Dynamics is a leading specialist for OEMs and customer-specific composite materials.
www.fiberdynamics.net

REQUIREMENTS:
- Own recipe production
- Compounding and injection molding in one process
- Opening up new markets through cost- and time-efficient production of LCTS

INDIVIDUAL SOLUTION:
- In-house compounding of material combinations including additives and reinforcement
- Use as DCIM or standard thermoplastic machine
- Reducing energy consumption and the CO_2 footprint

ADVANTAGES:
- Less polymer degradation and energy consumption
- Own control over recipe and material quality
- Material savings of up to 50 % per kg
- Economically attractive for components from 50 to 2,000 g

By investing in a GX 1100-4300 DCIM from KraussMaffei, composites specialist Fiber Dynamics is moving into thermoplastic injection molding and direct compounding at the same time. The company sees the main advantages in its own recipe control and the resulting flexibility, faster cycle times and high cost-efficiency.

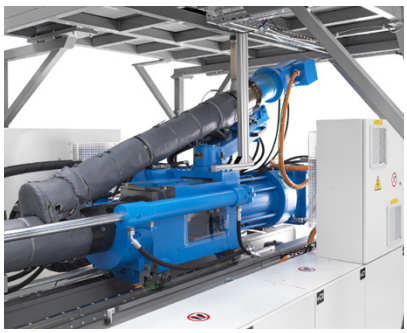
The decision to use DCIM (Direct Compounding Injection Molding) technology was made shortly after the initial contact with KraussMaffei. At that time, Fiber Dynamics needed to expand production and was facing a particular challenge with the production of rotor blades for the advanced air mobility market.

The existing Lost Core Tooling System (LCTS) solution took too long, had formulation limitations and was too costly with traditional methods. Injection molding was an obvious solution, but producing the proprietary and highly customized formulations was an additional challenge. These requirements were perfectly solved with the DCIM technology.

In addition to the up to eight times faster cycle times compared to the previous LCTS technology, Fiber Dynamics sees the main advantage of DCIM technology in its own recipe sovereignty.

"KraussMaffei quickly understood our problem and implemented a unique solution with its DCIM technology."

(Darrin Teeter, CEO Fiber Dynamics)



The compounded melt is fed directly from the single-screw extruder into the plasticizing unit of the injection molding machine

Shorter cycle times thanks to DCIM: the newly developed rotor blades from Fiber Dynamics

A strong team for a strong project:
The project partners from Fiber Dynamics, KraussMaffei Corporation and NIAR at the KraussMaffei Technical Center in Parsdorf