

# Homogenized Mixer by Using PM Powder Mixer New Developed Skid

## A Few Highlights of the Case Study

*A leading lubricant manufacturer wanted to develop a new product that required dispersing ultrafine graphite powder into high-viscosity base oil. It wasn't an easy task, and certainly not a common one. The challenge? There was no established method for this type of mixing in their segment. Traditional systems didn't work, and the product was too valuable to risk on trial-and-error.*

*That's when they turned to Fristam. After living trials and hands-on testing at our facility, the client implemented the Fristam Powder Mixture (PM 03) – a combination of FSP 3532 (15 kW) and FZ 22 (11 kW). The result was a successful, consistent dispersion process, helping them get closer to launching their new product.*

## Where the Problems Began?

The customer needed to mix 480 kg of ultrafine graphite into 1,340 kg of 460 cst base oil at temperatures up to 55°C. But they were facing three big issues:

- **The powder wouldn't mix evenly.** Graphite is tricky - it clumps, floats, and settles if not dispersed correctly.
- **There was no roadmap.** This wasn't just a new product; it was a new kind of mixing requirement for their industry.
- **High risk.** A bad mix meant a bad product- wasted material, lost time, and a delayed launch.

They needed a partner who could offer not just equipment, but a **proven approach** to solving this new challenge.

## What We Discovered Together

The client found Fristam through online research. Once they reached out, we invited them to visit our facility and test their materials with our systems. The live trials made all the difference.

Here's what we learned through the process:

- **Real-time testing works.** Seeing their own graphite and base oil blend successfully in our facility gave the client immediate confidence.
- **Our equipment was up to the task.** Despite this being a non-hygienic, heavy-duty application, the PM 03 handled the job with ease.
- **They valued performance over promises.** The client wasn't interested in specs alone - they wanted results they could see and touch.

## The Solution We Delivered

We proposed and supplied the **Fristam Powder Mixer PM 03**, custom-configured for this application. It included:

- The **FSP 3532 (15 kW)** for handling the viscous base oil and mixing ultrafine graphite
- The **FZ 22 (11 kW)** for effective suction
- A compact, industrial-grade skid suitable for non-hygienic environments
- Capability to operate at 55°C without compromising performance

### Why it worked:

- ✓ Built to handle tough, abrasive materials
- ✓ Delivered a homogenized uniform and stable mixture
- ✓ Easy to operate and integrate into existing production
- ✓ Designed for future scalability as the product line grows

## How We Implemented It

Once the trials were successful, the project moved forward quickly.

1. **System configuration:** We tailored the PM 03 setup to the specific material ratios and viscosity.
2. **Delivery and installation:** The system was delivered to the India plant and installed with minimal downtime.
3. **Training and support:** Our team supported the client with training to make sure they got the most out of the system within said time.

### Challenges along the way:

- **It was a first.** This was Fristam's first application in the lubricant space, but our experience in other sectors helped us adapt.
- **Powder behaviour.** Graphite is abrasive and unpredictable, but the PM 03 handled it with zero performance loss.

## The Results

Thanks to this partnership, the client is now preparing to launch a brand-new product in the lubricants market.

Before	After PM 03
No reliable mixing process	Smooth, homogenous dispersion
Risk of product failure	Consistent, repeatable results
Delayed product launch	Ready for market rollout
Limited application knowledge	New capabilities unlocked

## Key Takeaways

- **We helped the client solve a new problem.** There was no playbook for this, but our approach and technology delivered.
- **Hands-on testing-built trust.** Letting the client see and test the results made all the difference.
- **New industry, new opportunity.** This project opened the door for Fristam in the lubricant manufacturing space.

## The Way Forward

With the India plant seeing positive results, the client is now considering extending this solution to their **Carl Bechem Germany** facility. It's the start of a strong, long-term partnership, and a clear example of how Fristam can step into new territories and deliver real results.

This case proves that even in unfamiliar industries, with the right technology and teamwork, great things can happen.