IPCM P plus
Integrated Process Chain Management for EOS Polymer Systems
Integrated Process Chain Management for EOS Polymer Systems: IPCM P plus

IPCM P plus makes easy and efficient Additive Manufacturing a reality, enabling large volumes of polymer material to be handled quickly and safely. Based upon an innovative modular approach, IPCM P plus consists of three elements.

**Mixing & Qualification Station (MQS)**

For gravimetric dosing, homogenization and conditioning of virgin and used powder. Creation of traceable ready-to-use batches with in-situ sample taking for quality control.

- Processes over 700 l of powder material in less than 3 hours
- Can serve three building jobs on an EOSINT P 7, nine jobs on an EOS P 3, or 32 jobs on a FORMIGA P 1

**Multibox**

For sealed storage, transport and collection of refreshed and used powder.

- Capacity 230 l
- Sufficient for a full EOSINT P 7 building job

**Docking Station**

Provides powder material supply to laser sintering systems via a pneumatic conveying system.

- One Docking Station serves one EOSINT P 7 system, one EOS P 3 system, or two FORMIGA P 1 systems

### Functionalities provided by IPCM P plus

- Dosing, refreshing, homogenization, and conditioning (humidification) of powder material
- Enables traceability of powder batches
- Transport to and conveying into the laser sintering system
- Sealed, contamination-free storage of the refreshed powder

### Benefits of Material Management using IPCM P plus

- **e-Manufacturing:** IPCM P plus ensures constant and repeatable powder quality throughout the entire production process
- **Reduced cost per part:** Precise dosing and in-situ powder qualification make material savings possible
- **Improved quality assurance:** Powder batches can be traced, thus meeting the requirements of quality-focused industries
- **Environmentally friendly:** Humidification of powder in Mixing & Qualification Station through in-line control; no energy-intensive and costly external solutions needed
- **Easy installation and minimum risk of powder contamination:** Powder remains in protected environment at all time
- **Modular approach provides highest capacity and expandability:** Each additional system requires only one extra Docking Station (and one Multibox to maintain ease of handling)
Mixing and Qualification Station (MQS) mixes, homogenizes and humidifies used and virgin powder. Mixing is performed by fluidization using a low-speed stirrer.

In a sensor-controlled process, the MQS is discharged into a Multibox via a bottom valve.

The Multibox is transported to a laser sintering system and connected to the system via a Docking Station.

An adaptor is used for systems with two dosing reservoirs (EOS P 3 and EOSINT P 7 systems).

The job is built on an AM system. Via the Docking Station, the Multibox remains connected to the system during the building process.

Once the job is completed, the exchangeable frame is unpacked in the Unpacking Station* and the built parts are removed.

In the Sieving Station*, remaining material is sieved into a Multibox.

The Multibox is moved back to the MQS and connected via a Docking Station for the next batch of refreshed powder.

For efficient storage, a forklift truck* can stack multiple Multiboxes.

* Not part of IPCM P plus
Think the impossible. You can get it.