Customer service

To us, customer service means more than just repairs. We support you in every way, before and after your purchase, with application know-how, user trainings, instrument service, workshops, seminars, and more – on the phone, online, or on-site directly in your lab or at your production line.

Decades of experience in various characterization and measuring technologies have made us experts, not only in our instrument solutions but also in meeting your challenges. You can benefit from this expertise:

Application support
- Application-oriented portfolio presentations on-site
- Application consulting on the phone or via email
- Application-specific instrument setups and settings
- Access to a wide range of application reports
- Application-related trainings at one of our Anton Paar Technical Centers or in your country (on request)

Access to Anton Paar knowledge base
- Workshops, seminars, and hands-on demos at Anton Paar Technical Centers
- Local seminars and talks on the basics as well as special topics (e.g., certain applications, technologies)
- Cooperation seminars with local experts and organizations
- Access to eLearnings, webinars, and technical literature
- Custom-tailored user trainings and user conferences, organized locally
- On-site trainings and seminars
Anton Paar has the know-how for:

### Particle characterization

The better you know your particles, the better you can predict their material properties during manufacture. The LaserLight and PSA series of particle size analysers, along with density analyzers UltraPyc and AutoPyc, the gas adsorption analysers NOVAtouch and autosorb series, gives you access to a great variety of results. All in all, Anton Paar offers the broadest particle characterization portfolio available from one single provider worldwide.

**Parameters:**
- Particle size distribution (measured dry or wet) | Raw size | Raw distribution | Zeta potential | Molecular mass | Surface area | Density | And more

### Powder rheology

Advanced true powder rheology, based on the renowned MCR rheometers, brings the full array of traditional and rheological methods, and decades of experience into the field of granular media. The versatile and powerful MCR powder rheometer offers high reproducibility, fully automated measurement modes, and multiple measurement modes for quality control as well as scientific purposes.

**Parameters:**
- Powder flow | Cohesion strength | Fluidity | Compressibility | Bulk density | Permeability | Deformation limit | Pressure drop | Wall friction angle

### Surface characterization

Anton Paar offers measuring solutions for indentation testing, scratch testing, tribological tests, surface charge analysis, and atomic force microscopy. This safely allows the measurement of a wide range of properties. All instruments deliver highly accurate tests, surface charge analysis, and atomic force microscopy. This variety allows the user to access to a great variety of results. All in all, Anton Paar offers the broadest particle characterization portfolio available from one single provider worldwide.

**Parameters:**
- Hardness | Elastic modulus | Deformation | Pore size | Roughness | Surface topography | Surface charge | And more

## Analytical methods for additive manufacturing

### Solution

The granulate agglomerates and blocks the supply line of the printer.

The granulate shows different melting properties from batch to batch.

The melted polymer polycarbonate is too viscous/fluid which has a negative influence on the final component – its surface is uneven.

The flowability of the powder is not good enough and the product is inhomogeneous.

The sintered product is too fragile or porous.

The metal powder flow through the sinter nozzle is very inconsistent.

The powder flowability through the sinter nozzle is very inconsistent.

The size distribution gives insights into the homogeneity of the surfaces of the powders. It depends on the final product which size distribution is needed – with PSA you can ensure that your powder always has the grade of homogeneity you need.

The performance and homogeneity of a product depends on the packing density of the particles. The broader the size distribution, the better the packing of the particles and the more stable the sintered product.

With the results of your measurements you are able to predict the melting behavior of the granulate depending on the temperature so you can adjust the settings of your sinter accordingly.

### Challenge

A nozzle is very inconsistent.

You want to reuse the excess metal powder from past productions and want to know if it is still usable.

You want to know how a component behaves when in contact with other surfaces – without conducting extensive tests.

The pin-on-disc method is a fast and accurate method that will give you results in a very short time – ideal for efficient quality control of final products.

### Benefits

At just the touch of a button, you can investigate your sample – non-destructive and suitable for a variety of sample geometries. According to the results, you can then take measures to improve the material properties and avoid clogging of the lines in the future.

Simple and fast analysis of density, specific surface area, and pore volume provides ideal parameters for quality control and materials optimization with respect to process parameters.

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The performance and homogeneity of a product depends on the packing density of the particles. The broader the size distribution, the better the packing of the particles and the more stable the sintered product.

Knowing the flowability, you can calculate how much new powder you have to add to make the powder usable for further processing.

Compliance with ISO 30502 and ASTM C 1624 ensures that your product always satisfies your customers.

**Parameters:**
- Force
- Deformation
- Hardness
- Elastic modulus
- Deformation
- Pore size
- Roughness
- Adhesion
- Scratch resistance
- Friction
- Wear
- Roughness
- Surface topography
- Surface charge

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