



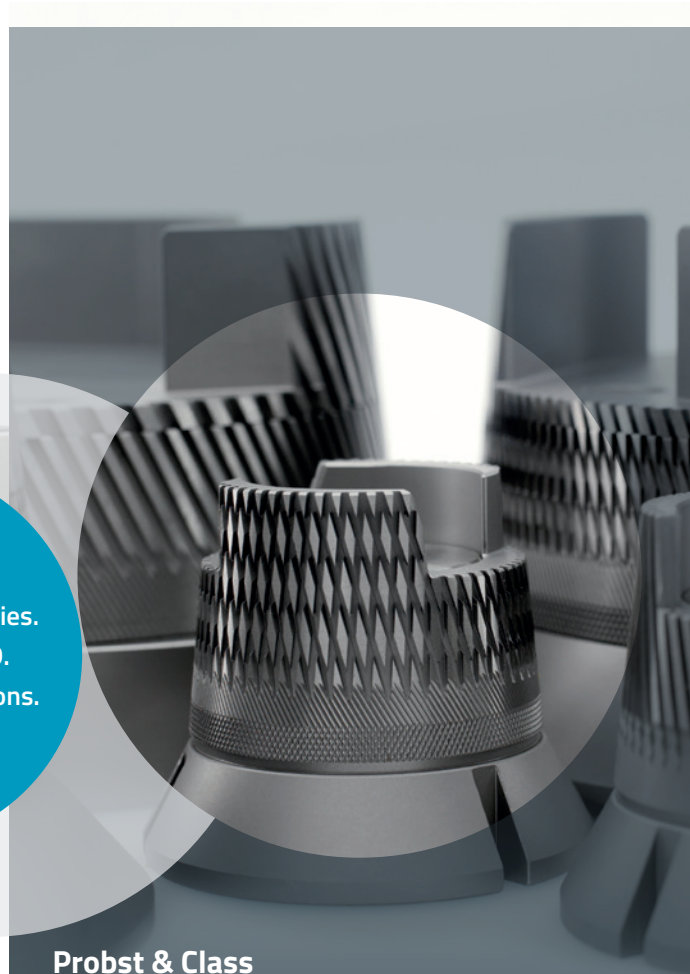
Probst & Class

invented and built to last

Colloid mill PUC 60



Small production series.
> Pre-production, R&D.
Laboratory applications.



Probst & Class

Special machines for
industrial process technology
Since 1926



MADE IN
GERMANY

Probst & Class

Colloid mills

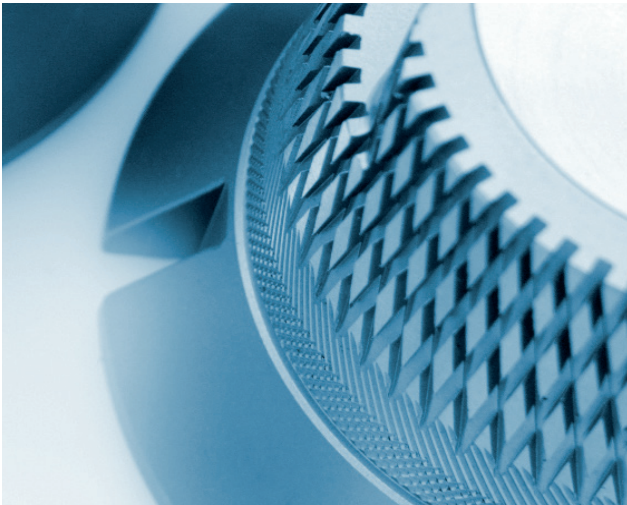
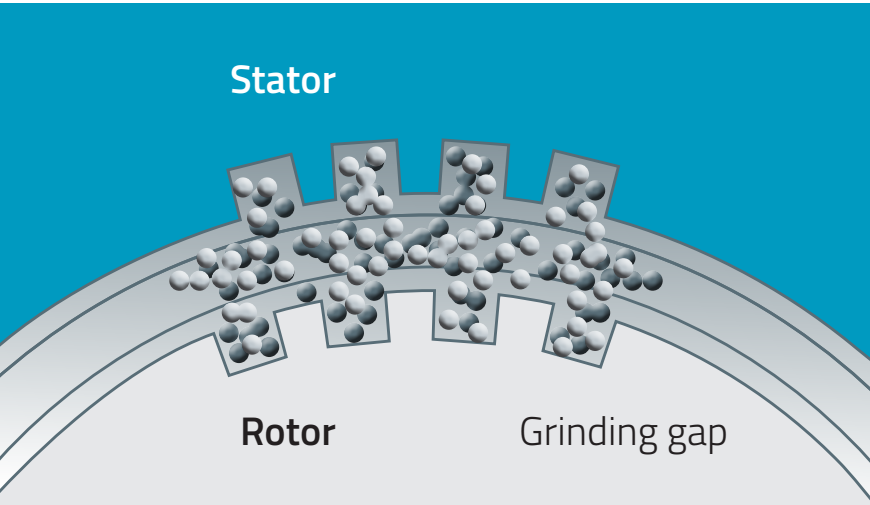
Invented and built to last: PUC – synonymous with colloid mills for more than 90 years

PUC colloid mills have a wide range of applications. They can always be used when it is necessary to grind substances precisely and with reproducible results at the same time as mixing them. The milling gear of a colloid mill exerts hydraulic and mechanical cutting, impact, squeezing, friction and shear forces.

The product is ground and mixed with high precision in an annular gap between the rotor and stator which can be adjusted infinitely by changing the axial position of the stator. Particles are ground extremely finely. Most raw materials, aggregates and agglomerates can be processed in one pass through the mill. The rotor-stator unit is precisely tailored to the products handled.

PUC colloid mills are used in many industrial processes for processing organic and inorganic substances. Probst & Class offers suitable designs for many different processes, locations, materials and degrees of fineness.

Construction Principle



The principle of the PUC colloid mill is based on a rotor/stator system. A special toothed rotor rotates with up to 3000 rpm inside the stator. As a result of the different conicity of the toothed tapered surfaces of the rotor and the stator, a ring gap which becomes more and more narrow is produced in the direction of flow towards the outlet.

Colloid mill PUC 60

The colloid mill can be operated vertically (type O) and horizontally (type E). If you wish to use an existing motor, we offer a version with a separate installation position for the motor (type OL). The product can be fed to the mill via various funnels adapted to the process (open operation) and via a pipe flanged directly to the mill (in-line operation). The PUC 60 colloid mill is suitable for use in the laboratory and in production. It is designed for minimum maintenance, easy cleaning and trouble-free installation.

Processes

deagglomeration
dispersing
emulsifying
micro-comminution
homogenizing
suspending



PUC 60, type O with
closed housing.

Motor/Drive

PUC 60 colloid mills are powered by special three-phase motors. The motors are surface-cooled, have moisture guard insulation (IP55) and PTC thermistor. The motors are suitable for operation with frequency converters. Motors for all the usual voltages and frequencies are available. Both IE 3 standard and explosionproof motors (2.2 kW EExde II CT4) are available. Customers can connect their own motors to type OL mills.

Seals

All units are available with various single and double-acting mechanical seals and with lip seals (PTFE) in accordance with FDA requirements. The seal is integrated in a cartridge which is identical for all types and sizes of colloid mills. This facilitates the installation of the seal and later replacement with a different seal system, if necessary.

Type	Design features	Pressure range (bar, g)
RD	Shaft seal with lip seal	Up to 3
RDV	Shaft seal with lip seal, also suitable for vacuum operation	- 0,8 to 3
GLEN	Mechanical seal, single-acting, with product cooling	Up to 5
GLDN-F	Mechanical seal, double-acting (seal pressure system required)	Up to 5

Materials

The parts which come into contact with the product are made from high quality stainless steel.

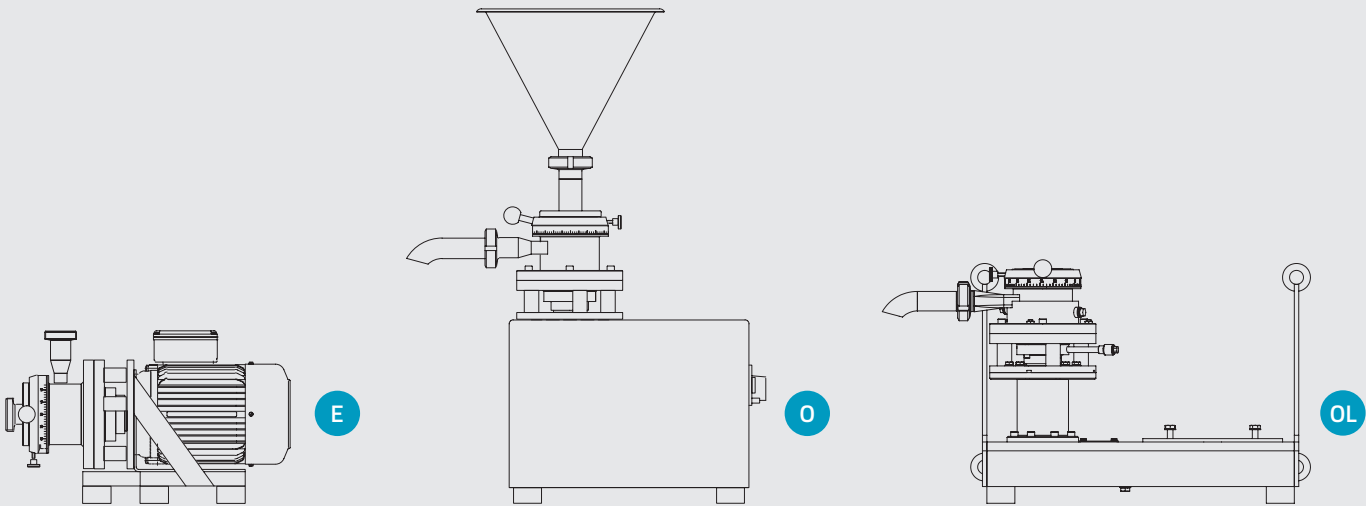
> DIN 1.4404. 316L

A hardened chromium steel which may also be surface-treated is used for processing abrasive substances and for parts subject to particular stress (stator/rotor).

Types PUC 60

The PUC 60 colloid mill is available in different versions:

Type	Dimensions			Rating	Flow-rate				
	in mm			in kW	in l/h ^[1] at viscosity in cP ^[2]				
	Length	Width	Height		~100	~1,000	~5,000	~50,000	~80,000
E	509	243	300	2.0 - 2.2	400	300	250	200	150
O	643/863 ^[3]	260	884/1004 ^[3]	2.0 - 2.2	400	300	250	200	150
OL	766	370	437	N/A	depending on the drive used				



1. With medium milling gap and impeller. The values given above are purely indicative; the actual values depend on the milling gap and the material processed. Our technical department will design the optimum mill for your application.
2. Explanation of viscosity in cP: ~100 = Low-viscosity / ~1,000 = Slightly viscous / ~5,000 = Viscous / ~50,000 = Slightly pasty / ~80,000 = Pasty
3. With optional recirculation system

Options

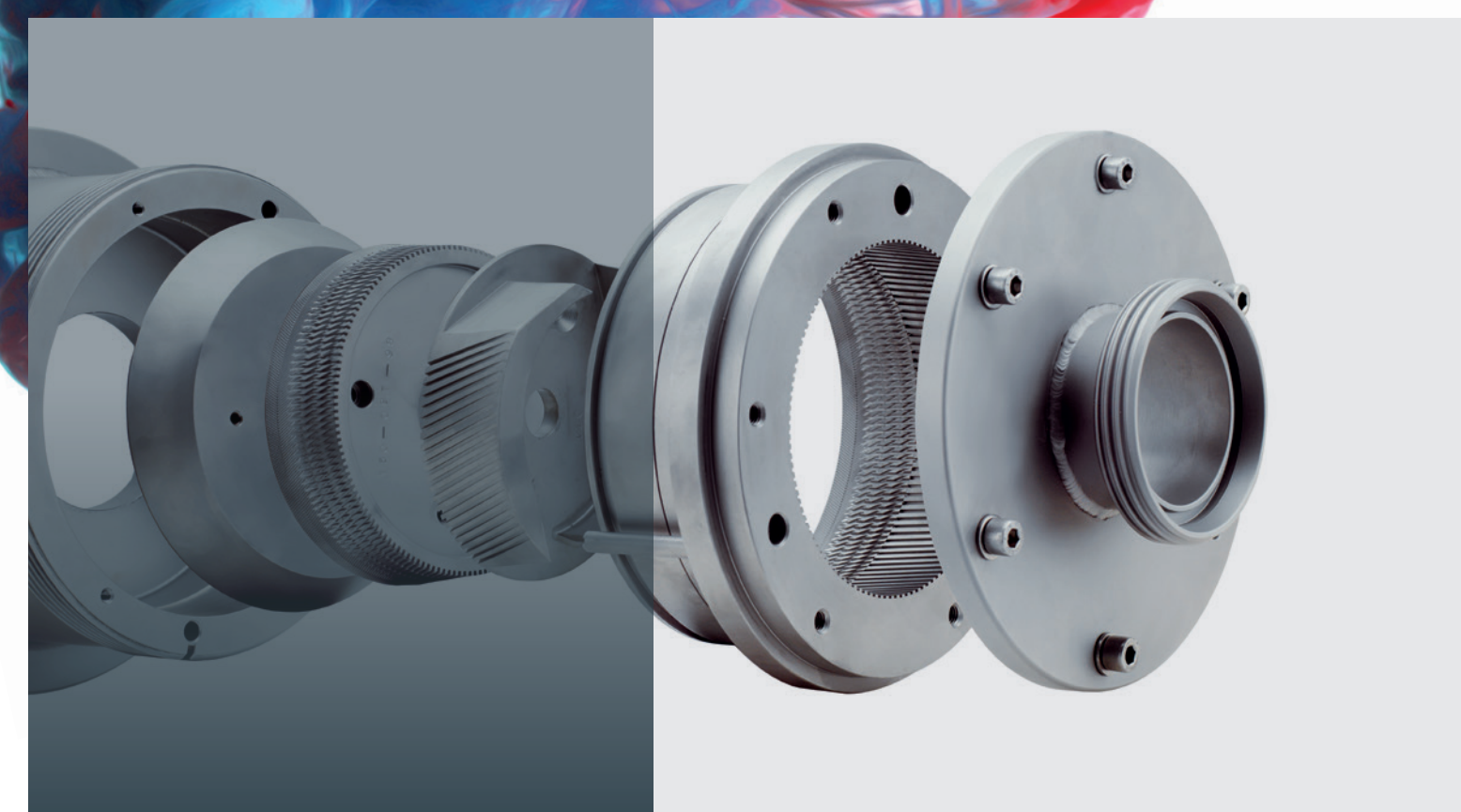
For PUC mills, a variety of accessories and options are available to allow flexible adaptation to special fields of application and installation locations.

- Optional milling gears
- Recirculation system for recirculating material through the colloid mill
- Heated/cooled housing
- Pharmaceutical version
- ATEX (explosionproof) version
- Funnel (6 l + 22 l)
- Milling gap indication via scale ring
- Version suitable for autoclaving
- Skid
- Mobile version
- Frequency converter
- IE3 standard motors for various voltages and frequencies
- Heated/cooled funnel

Advantages

Probst & Class Colloid Mill

- Extremely sturdy and durable
- Spare parts available for decades
- Particle or drip size and particle size distribution results reproducible at any time
- Minimal maintenance, easy assembly and cleaning
- Infinitely variable adjustment possible during operation
- Milling gear can be changed over to other tooth types



Services

After-sales-service

Our service technicians provide remote and local service in all matters related to machinery and plant from Probst & Class. The continuous availability of your machines is just as important to us as it is to you – PUC has stood for quality you can rely on since 1926.

The reasons for buying machines from Probst & Class not only include their durability but also the ability of our specialists to focus precisely on your needs.

Both these factors continue to apply long after you have invested in the machine. Even after the machine has been delivered, our team is available to solve your problems at any time.

After-sales services that you can count on:

- Modification for other processes
- Updating and retrofitting
- Spare parts deliveries and repairs
- Warranty processing

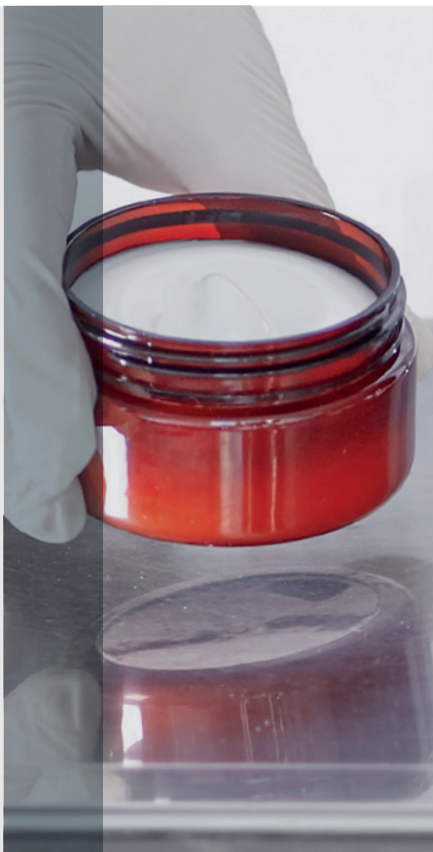
Engineering centre

From the laboratory to production.

You know what your product should look like. But do you know what the machine you use to produce it will look like? Why not obtain our support?

At our engineering centre, we can identify the perfect solution for your process – irrespective of the scale of production. Contact us to discuss your requirements. We will be pleased to carry out initial tests with the raw materials provided by you.

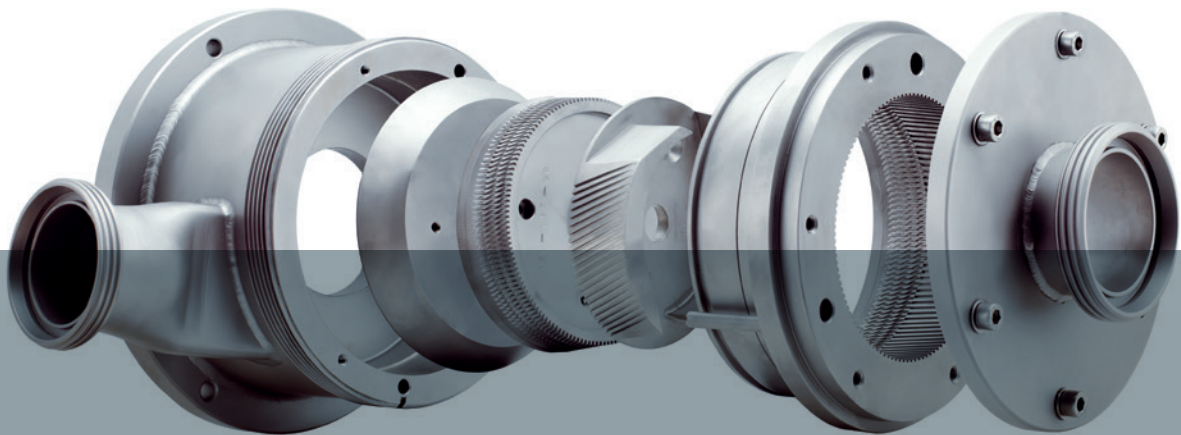
And, thanks to 90 years of experience, our first attempt often comes very close to your quality targets.





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Special machines for industrial process technology
Since 1926

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