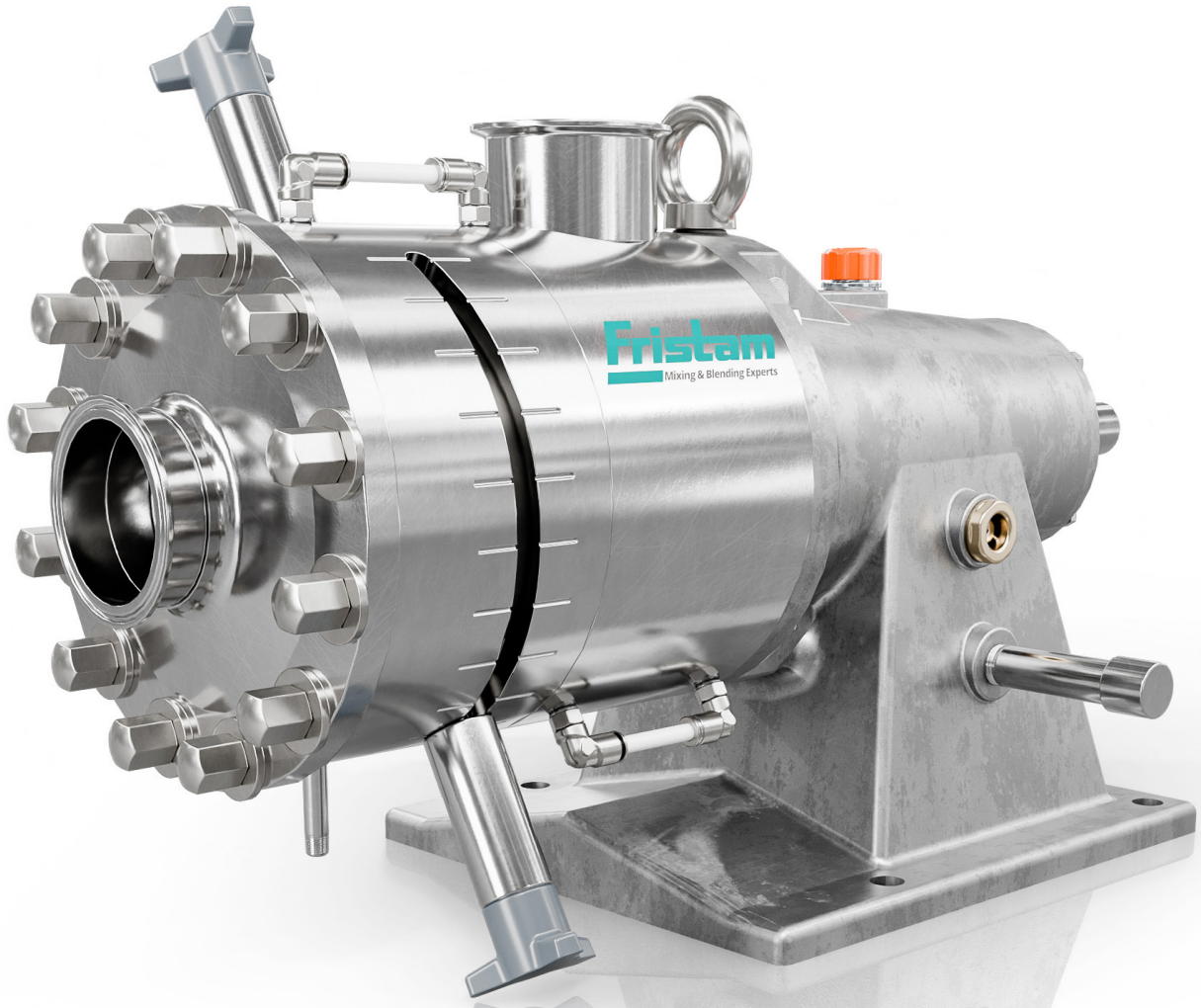
Fristam FCM Colloid Mill



Scan here with your device to see the FCM in 3D, and in your own space.

Fristam
Mixing & Blending Experts

Fristam FCM Colloid Mill

An economical, time-saving alternative to homogenizers. The Fristam Colloid Mill is an ultra-high performance rotor-stator design mill & mixer. It is designed to reduce particles to sub-micron size and create shelf-stable solutions even with oil and water combinations.

ADJUST SHEAR WITHOUT PAUSING PRODUCTION

Unlike other Colloid Mills, the FCM can alter the level of shear intensity mid-production run. An innovative external gap adjustment lever can increase or decrease the gap between the rotor and stator to change the shear, without pausing operation or moving the inlet or outlet ports.

For CIP – adjust the lever to reach the maximum gap, so the cleaning fluid can be blasted through at the highest flow rate. This enables a thorough clean without stripping down the mill.

With shear rates being so easily adjusted and cleaning so simple, the FCM can be used for multiple applications. This reduces capital outlay, running and maintenance costs.

ECONOMICAL ALTERNATIVE TO HOMOGENIZERS

The FCM can provide a high shear that is so intense, it can be considered a viable alternative homogenizer technology - at a fraction of the cost. It precisely reduces the droplet particles to as minimal as 'sub-micron' size.

RETRO FITTED UPGRADES

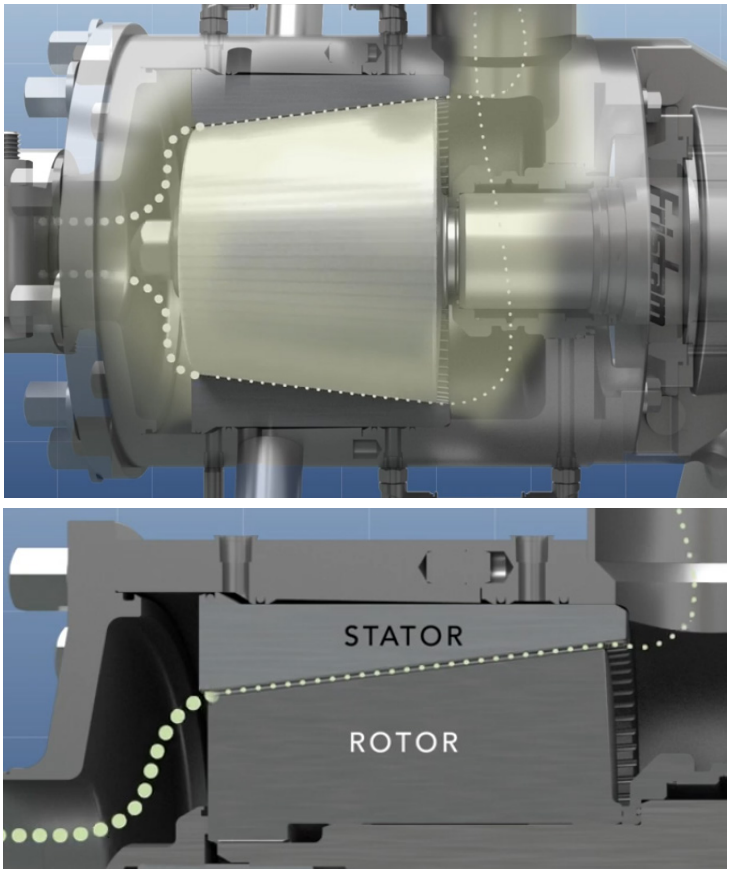
An FCM keeps the cost of modifications minimal. It can be retro-fitted downstream from an existing mixer or shear blender to give the product a final pass mix. It can also be installed upstream of a homogenizer to decrease particle size before the homogenizer phase.

TECHNICAL SPECIFICATIONS:

- Max shear rate: 143,000 s^{-1} - sub-micron particle size.
- Max inlet pressure: 17 bar / 250 psi
- Direction of flow: Bi-directional
- Max flow rate: 27 m^3/h / 120 gpm
- Connection size: 76mm / 3"

CORE BENEFITS OF THE FCM

- Creates shelf-stable emulsions that resist separation
- Consistent product quality - maintains uniformity batch to batch by creating precise particle sizes & textures
- Economical & space saving alternative to homogenizers
- Adjustable mid-production
- Fully CIP and SIP capable



The Colloid Mixer reducing droplet size.

Only the best mixers for the best products: ideal solutions for even the most challenging applications

Around the globe, Fristam Shear Blenders, Powder Mixers and Colloid Mills are used by leading companies in food, beverage, pharmaceutical and chemical industries. The exceptional quality of construction and manufacturing makes our rotational homogenizers ideal for blending and dispersing in any industrial process.

PRODUCT GROUPS

- Alcoholic beverages: liqueurs, wine, champagne, distiller's wash, spirits, alcoholic solutions
- Biotechnology: cell suspensions, nutritive solutions, enzymes
- Brewing: mash, yeast, beer, hot and cold wort, waste beer
- Chemicals: inks, dyes, detergents, cleaning agents, photographic emulsions, wastewater
- Dairy products: butter, yogurt, cream, skimmed milk, milk concentrate, set milk, flavoured milk, whey, whey concentrate, raw milk, cream cheese
- Foods: sauces, soups, flavorings, broth, vinegar, fruit and vegetable juices and purees, mayonnaise, oils and fats, whole egg, brine, dough
- Non-alcoholic beverages: syrup, concentrates, fruit juices, mineral water, sodas and mixed drinks containing CO2, concentrates with fruit pulp
- Paper and cellulose: glues, starch, resin and kaolin solutions
- Pharmaceuticals: infusion solutions, lotions, ointments, plant extracts, perfumes, suspensions, toothpaste, ethanol, enzymes, culture mediums, toxic and alcoholic solutions, special pastes
- Sugar and confectionery: chocolate, liquid sugar, molasses as well as starch solutions



Examples of Fristam Mixing & Blending in action, across a range of different industries

Fristam mixing and blending solutions enable manufacturers to achieve consistently homogenized products of superior quality in a single processing step. They can also be integrated downstream to refine products from earlier production stages, delivering precise consistency and a high quality finished product.

DAIRY INDUSTRY

- Dissolving and homogenizing stabilizers such as gelatin, pectin, carrageen, xanthan gum, guar flour, carob gum etc. in fermented milk products
- Dissolving sugar, milk-, whey-, yogurt-, cream- or protein powder
- Recombining milk with skim-milk powder, water, butterfat or vegetable oil
- Producing shakes with whey, soy milk or milk, ice cream, etc.
- Dissolving concentrated milk protein, oil or fat in milk, in order to raise protein or fat levels in the production of cheese

FOOD INDUSTRY

- Dissolving yeast extract for health products
- Dissolving protein powder, thickeners and stabilizers
- Dissolving starch, salt, sugar, etc. (in the production of additives, eg. for tomato ketchup and sauces)
- Dissolving aspartame and other sugar substitutes
- Producing toffee cream from sugar, glucose, carrageen and fat
- Dissolving aromas and citric acid
- Dissolving spray-dried protein powder in the production of baked goods
- Dissolving wheat and rye flour or shred in the production of sourdough, breakfast cereals or baking mixes
- Dissolving pectin, carboxymethyl cellulose (CMC), Carbopol, arabic gum and other thickeners such as carob gum, guar flour, and xanthan gum

BEVERAGE INDUSTRY

- Dissolving sugar, minerals, pectin, xanthan, aromas, citric acid, bentonite etc.
- Dissolving dry yeast in the production of beer
- Dissolving sugar in alcohol

CHEMICAL INDUSTRY

- Dissolving powders in liquids such as Polytetrafluoroethylene (PTFE), and additives in lubricants
- Dissolving minerals such as calcium carbonate, carboxymethyl cellulose
- (CMC), bentonite, layered silicate when producing drilling emulsions
- Dissolving micro-capsule powders and fillers such as zeolite and aluminum hydroxide in the production of polyurethane sheets

PHARMACEUTICAL AND BEAUTY CARE INDUSTRIES

- Dissolving saline eg. for isotonic solutions suitable for injection
- Dissolving phosphate and iodine powder in the production of disinfectant ointments
- Dissolving emulsifiers and additives in the production of creams and lotions
- Dispersing carbopol in the production of hand sanitizer



Fristam Pumpen KG (GmbH & Co.)
Kurt-A.-Körber-Chaussee 55
21033, Hamburg, Germany

Tel. +49 (0)40 725 560
Email info@fristam.de

www.fristam-mixing-blending.com

For international contact information,
please visit https://www.fristam.de

Fristam
Mixing & Blending Experts