



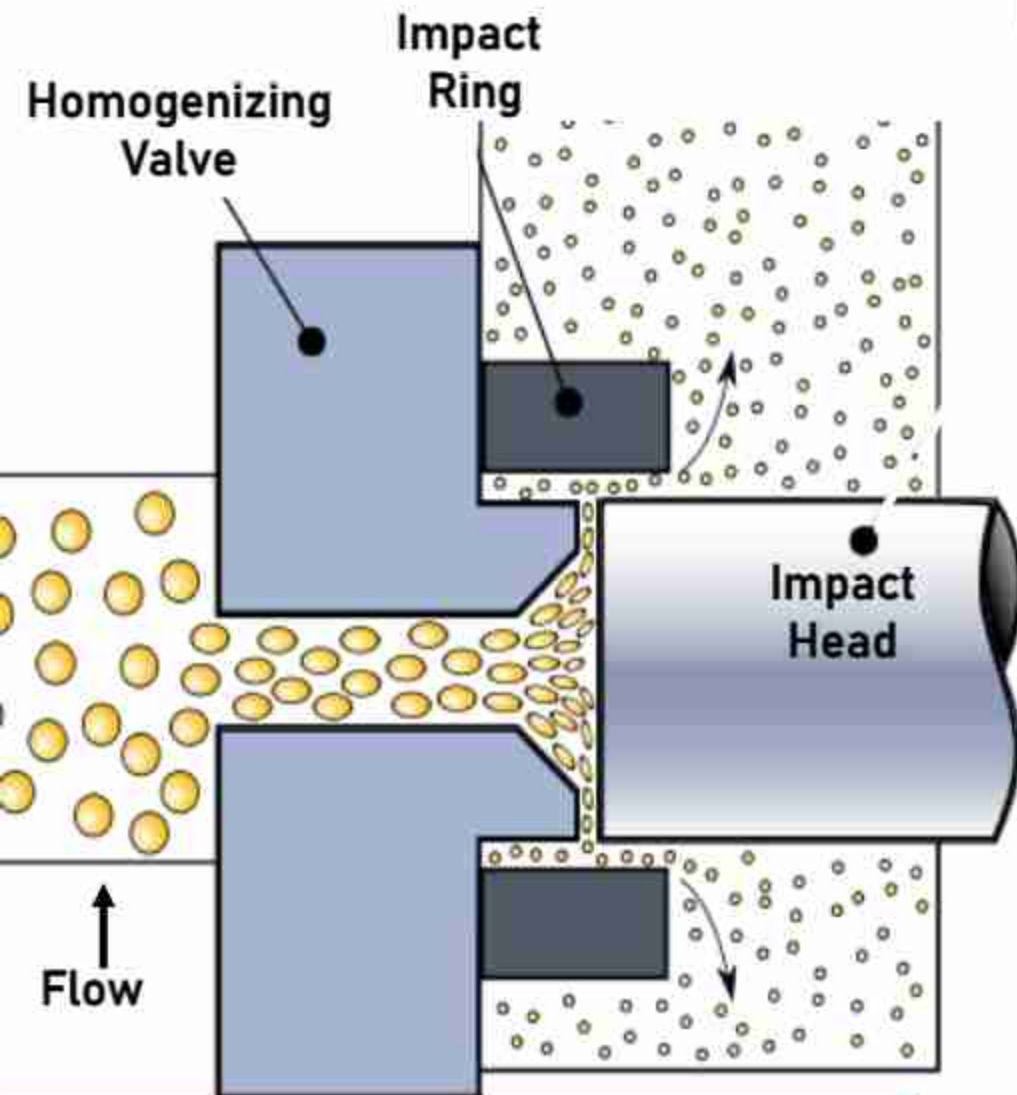
A BRAND OF



■ The Homogenization



Homogenization principle



The homogenizer is used to create:

Stable Emulsion $\Rightarrow$ fat in water

Fine Dispersion $\Rightarrow$ solid in water

Flow dynamic condition at high velocity between Impact Head and Passage Head generates micronization of particles by:

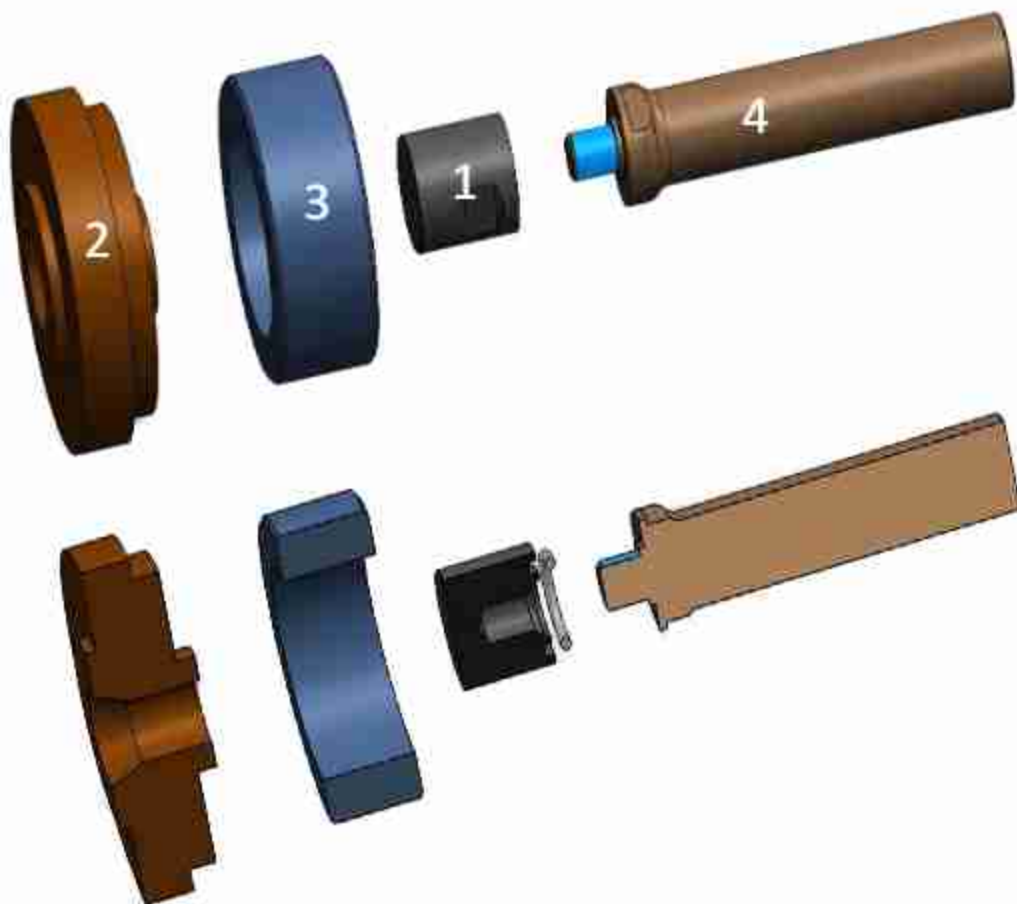
TURBULENCE

CAVITATION

SHEAR STRESS

IMPACT

Homogenization System



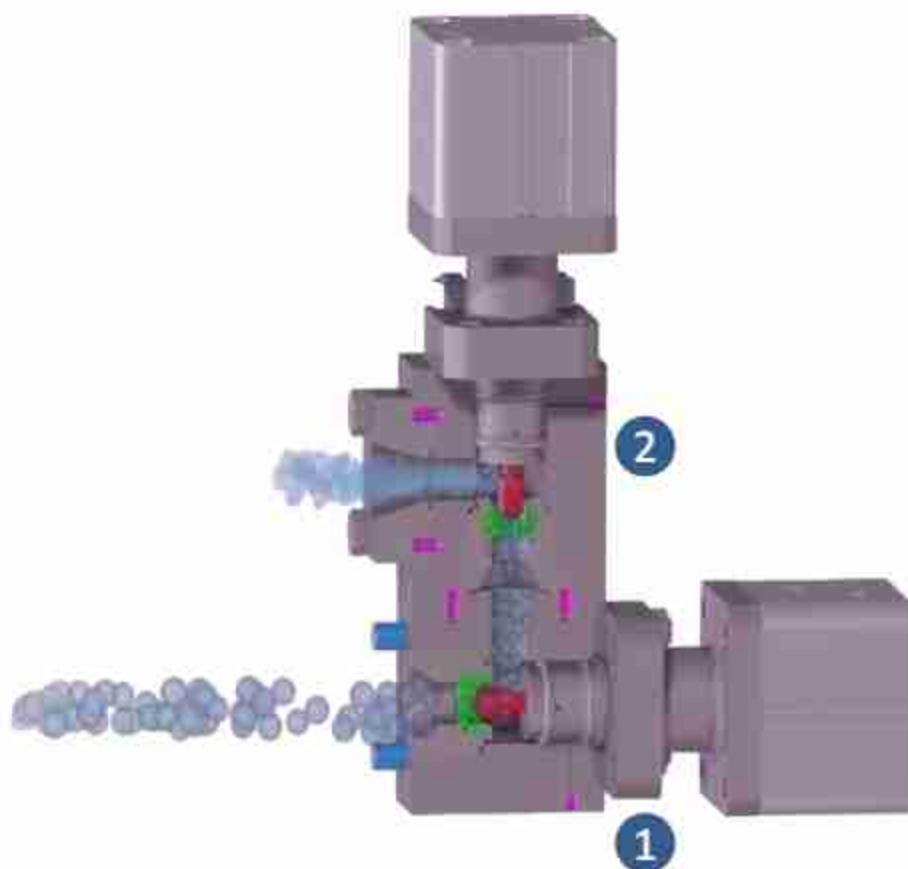
Homogenizing group in 3 pcs

- 1) Impact head
- 2) Homogenizing Valve
- 3) Impact ring
- 4) Impact head shaft

Available material according to the application

- ☐ Stellite 20
- ☐ Tungsten carbide
- ☐ Zirconia oxide ceramics
- ☐ Silicon Nitride

Homogenizing Valve System



Homogenizing group with hydro-pneumatic actuation for a great flexibility and stability of homogenization pressure

- 1 The First Stage is used to micronize particles
- 2 The Second Stage is used to prevent clusters stabilizing the emulsion, usually working at 20% of the 1^o stage

Homogenizing Valve Type



Flat type

Sharp Edge type



The rupture valve, named sharp edge valve, has a shorter travel and a smaller gap between the impact head and the homogenizing valve.

In the chemical, pharma, cell rupture, nano-emulsion, and for all the applications over 600 bar, we install the homogenizing valve made of Zirconia oxide ceramics in order to have an higher resistance at the highest pressure.

Homogenization Benefits



- ✓ Reduced Fat droplet size
- ✓ Stable emulsion
- ✓ Taste Improve
- ✓ Increasing available surface area
- ✓ Reduced particle size to increase viscosity
- ✓ Smoothness, body and colour
- ✓ Better mixing of all the ingredients
- ✓ Whiteness increase
- ✓ Less product more water
- ✓ Avoid sedimentation and separation
- ✓ Particles uniformly dispersed throughout the product

Fields of Applications



Industries



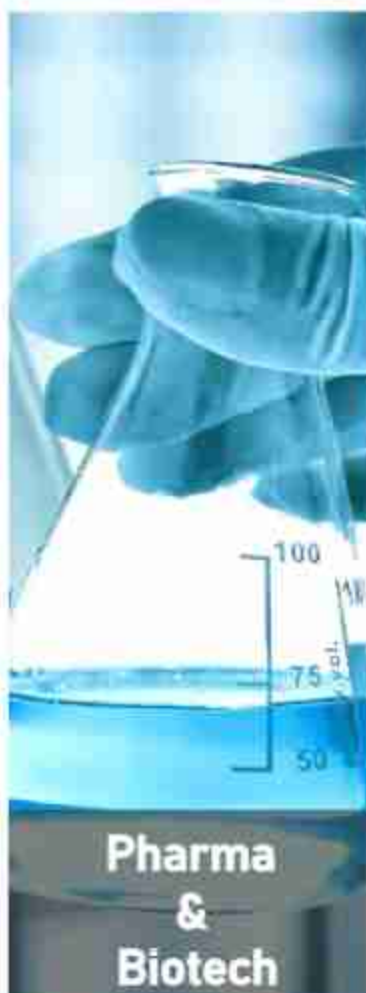
**Food
&
Beverage**



Dairy



**Chemical
&
Nano Dispersion**



**Pharma
&
Biotech**



Cosmetic

Applications



- ✓ UHT milk
- ✓ Pasteurized milk
- ✓ Reconstituted milk
- ✓ Desserts
- ✓ Fresh cheese
- ✓ Whipping cream
- ✓ Yogurt
- ✓ Fresh cheese
- ✓ Fruit juices
- ✓ Ketchup
- ✓ Baby-food
- ✓ Eggs
- ✓ Dressing
- ✓ Syrups
- ✓ Vegetables
- ✓ Puree
- ✓ Cell disruption
- ✓ Vaccines
- ✓ Antibiotics
- ✓ Starch
- ✓ Fat emulsions
- ✓ Eye-drops
- ✓ Wax emulsions
- ✓ Carbon Nano-Tubes
- ✓ Nano Cellulose
- ✓ Silicone

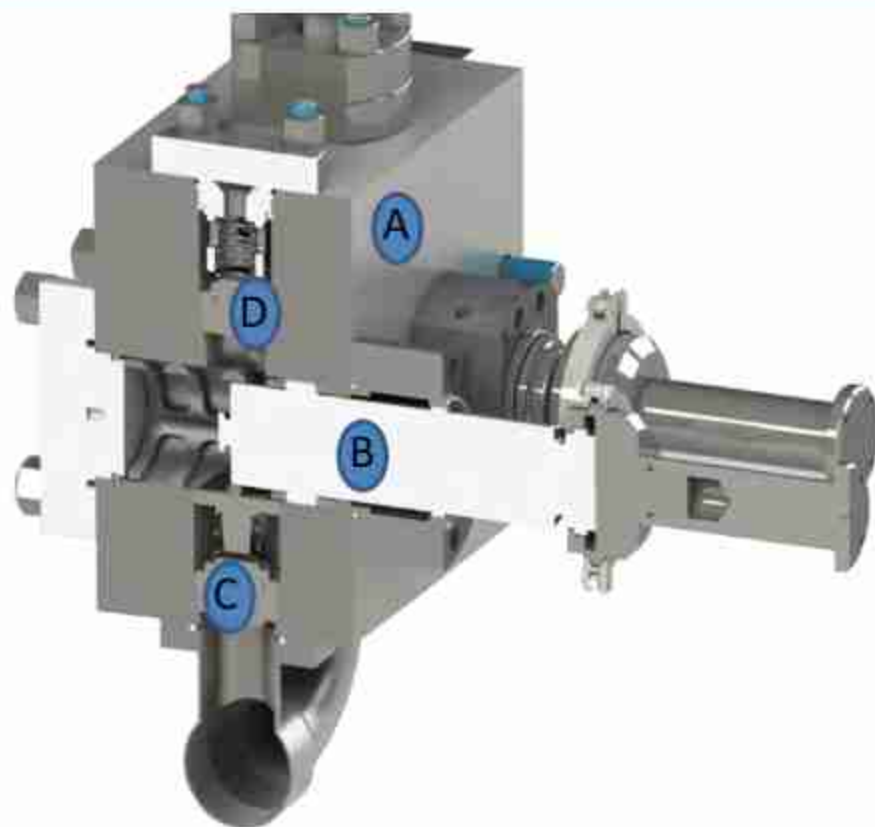
...and more!

■ Bertoli Products



■ High Plunger Pumps

- Volumetric pump based on transmission from the crankshaft to piston rod and pumping piston.
- Composed by:
 - Compression head A
 - Plunger's chamber B
 - Inlet pumping valves C
 - Outlet pumping valves D

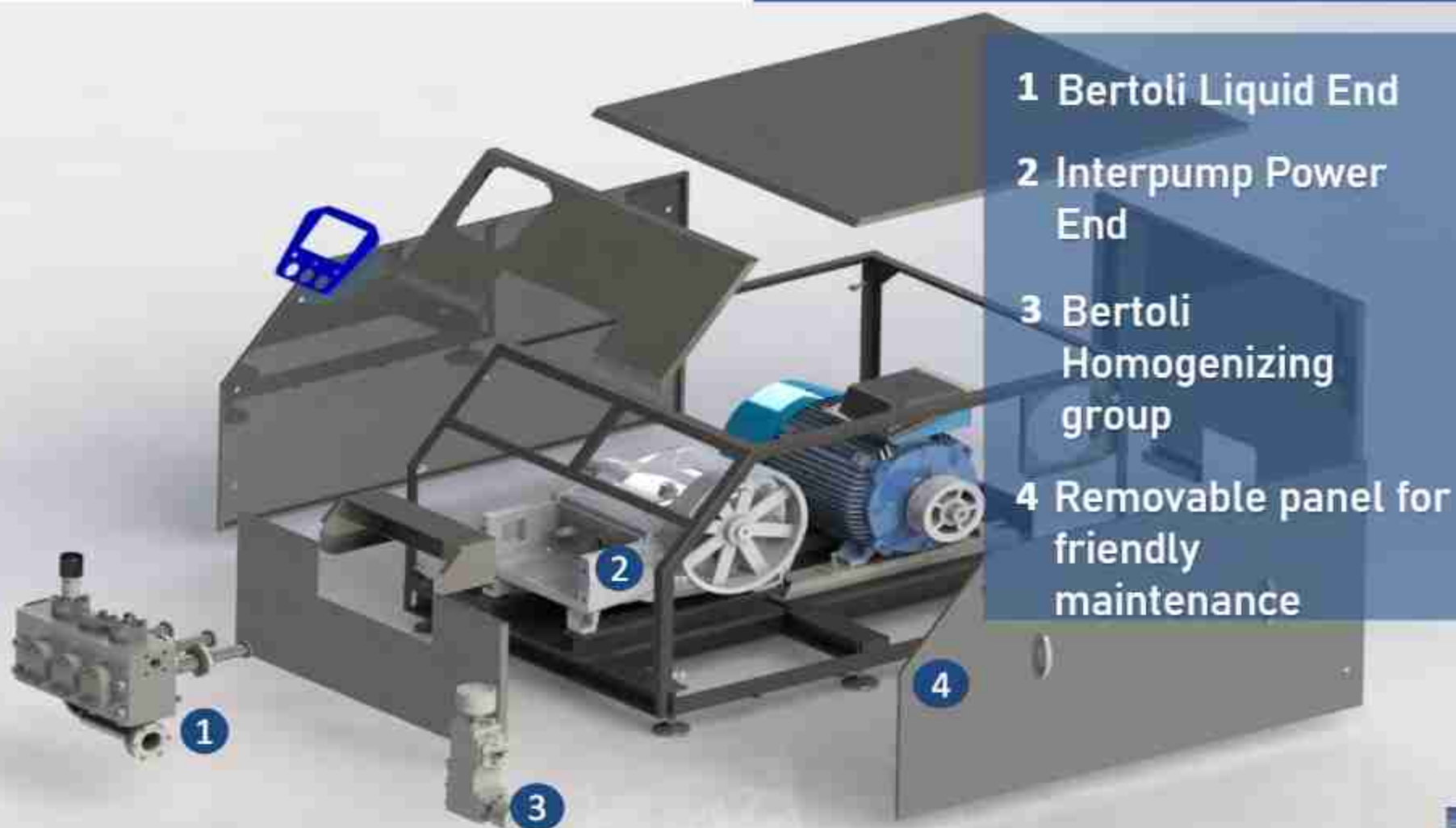


PA / Pumps

■ EVolution Series



Bertoli Machine



■ Drive Unit up to 90 kW



- ❑ The Interpump Splash lubrication system doesn't need oil/water cooling
- ❑ No external gearbox weight on the crankshaft
- ❑ No additional electrical motor for lubricating unit = less energy consumption
- ❑ No additional oil pump, less maintenance cost
- ❑ Nitrurized Crankshaft on all the models

Sustainable Technology

Bertoli Series Benchmark	Mechanical Efficiency (%)
Evo Bertoli Series	93



- ❑ Water saving, No gear reducer cooling, Less water for plunger seal cooling
- ❑ Splash lubrication power saving, No additional motor needed for lub oil cooling.
- ❑ Reduced Carbon Footprint, Less power dispersion and less heat generation → reduced carbon footprint

* Italian Ministry of Energy. Thermal power station produces 531 g of CO2 to deliver 1 kWh

■ Compression Head



Standard DUPLEX Monoblock made of SAF 2205

- ❑ Pressure up to 600 bar
- ❑ Easy maintenance

Standard Ultra-High Pressure made of Super Duplex SAF 2507

- ❑ Pressure higher than 600 bar
- ❑ Low internal volume

Services



Customer Care

- After sales assistance
- Spare Parts



Support

- Technical support
- On- site Intervention



Analysis

- Homogenization Test
- Particle Size Distribution Analysis

Certification



Dairy

DANONE

SOBREMATEC
GRUPPO FERRERO

PINAR

Kraft

Arla

Valle

SANTA
CLARA

Amul

GRANAROLO

Unilever

Pascual

Nestlé

parmalat

LACTALIS
INTERNATIONAL

서울F&B

CAPSA FOOD

Plasmon

FrieslandCampina

서울우유



Food & Beverage



KAGOME



Tomato Reference



Eggs



Pharma



Paper



GE Healthcare



A close-up photograph of a person's chest and shoulders. They are wearing a dark-colored polo shirt. On the left side of the chest, there is a light blue logo that reads "BERTOLI" in a large, bold, sans-serif font, with "HOMOGENIZERS" in a smaller, similar font directly below it. The person's hand is partially visible at the bottom left of the frame.

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