

Sanitary Standard, Lightweight, Versatile, Easy-To-Use Homogenizers

HC-2000

HC-5000

HC-8000

Sanitary Homogenizers Recommended for:

- Emulsions
- Dispersions
- Cosmetics
- Pharmaceuticals
- Liposomes
- Food and Beverage Products

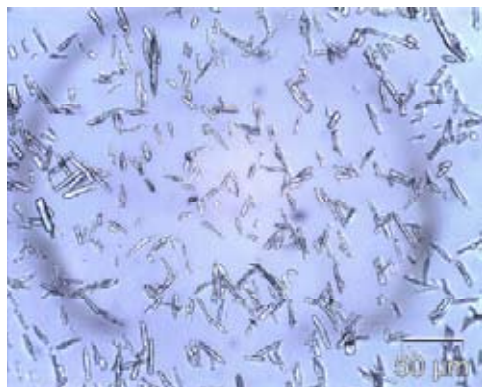


HC-2000 / HC-5000

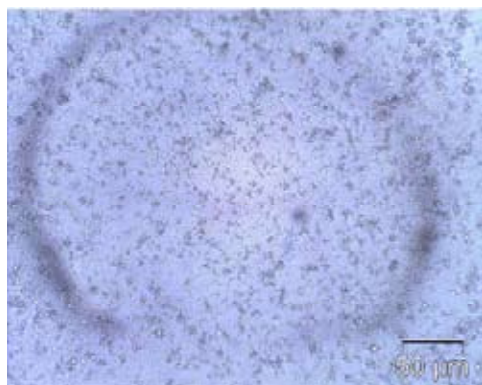


HC-8000

Before Processing



After Processing



*Patented
Microfluidizer®
processor
creates superior
homogenization
and stability for
a wide variety of
products*

 **Microfluidics**

A WHOLLY OWNED
SUBSIDIARY OF
MFIC
CORPORATION

Operating Principle

Microfluidics' homogenizers contain air-powered intensifier pumps designed to supply the desired pressure at a constant rate to the product stream. As the pump travels through its pressure stroke, it drives the product at high pressure through precisely defined fixed-geometry microchannels within the homogenizer chamber.

As a result, the product stream accelerates to high velocities creating shear rates within the product stream that are orders of magnitude greater than any other conventional means. All of the product experiences identical processing conditions, producing the desired results, including: uniform particle and droplet size reduction (often submicron), deagglomeration and high yield cell disruption.

Microfluidics produces patented homogenizers that combine high flow with high-pressure, fixed-geometry homogenizer modules that impart high shear rates to product formulations. The HC-Series Homogenizers produce up to 8,000 psi with standard lab air, for premium results at an affordable cost.

Microfluidizer homogenizers combine superior results with easy handling and small footprint

- Unique, wear-resistant homogenizer module – no moving parts
- Pressures to 2,000 psi (HC-2000), 5,000 psi (HC-5000), 8,000 psi (HC-8000)
- Sample sizes of 100 ml (HC-2000/HC-5000) or 250 ml (HC-8000) to continuous processing up to 120 l/hr
- In-line cleaning of high pressure tubing
- Durable plunger seal – offers wide compatibility range and extended seal life
- Air-powered and explosion-proof
- Portable, benchtop
- Process stream temperature maximum of 165°F (75°C)
- Materials of construction for wetted surfaces include: 315 SS, Hastelloy C®, Kynar®, PEEK, UHMWPE, Teflon®, Ceramic, and Viton®.

Typical results achieved using Microfluidizer homogenizers

Product Stream	Pressure	Passes	Results
Liposomes with dye marker	4,000 psi	4 passes	300 to 400 nm-size liposomes in 1 pass. Subsequent passes tightened the distribution.
Drug Suspension	6,000 psi	1 pass	Met particle size target for nasal spray (3 microns)
Dairy filling	3,000 psi	1 pass	Superior emulsion. Replaced hand homogenizer.
Soy milk	4,000 psi	1 pass	Particle size reduced from .76 to .4 microns.
Vaccine adjuvants Water in oil	1,500 psi	1 pass	More uniform emulsions than competitive homogenizing equipment at comparable pressures.
Cell rupture E. coli	5,000 psi	3 passes	90% rupture rate.
Mammalian cells	2,000 psi	1 pass	Effective rupture with easy separation of parasites from host cells.

Standard features included with all HC Series Homogenizers

- In-line cleaning high pressure tubing
- Pressure gauge (non-sanitary type)
- Small footprint for bench use, or under hood



HC-2000 Specifications

Pressure Range	250 - 2,000 psi (17 to 135 bar)
Nominal Flow Rate	to 2000 ml/min
Feed Temperature Range	Maximum 165°F (75°C)
Air Compressor Requirements	28 scfm @ 80 psi (dew point -0°F) 7.5 hp (5.6 kw)
Sample Size	100 ml to continuous
Dimensions	17"L x 17"W x 20"H (44 x 44 x 51 cm)
Weight	37 lbs. (16.8 kg)

HC-2000 Available Options

- Cooling coil
- Sanitary flush diaphragm pressure transducer with microprocessor-based, digital-display indicator
- Autoclavable air motor
- 400ml manual pressure feed reservoir
- Pressurized feed tank
- Selection of homogenizer modules for normal or high viscosity processing

HC-5000 Specifications

Pressure Range	500 - 5,000 psi (34 to 345 bar)
Nominal Flow Rate	to 950 ml/min
Feed Temperature Range	maximum to 165°F (to 75°C)
Air Compressor Requirements	28 scfm @ 91 psi (dew point -0°F) 7.5 hp (5.5 kw)
Sample Size	100 ml to continuous
Dimensions	17"L x 17"W x 20"H (44 x 44 x 51 cm)
Weight	37 lbs. (16.8 kg)

HC-5000 Available Options

- Cooling coil
- Sanitary flush diaphragm pressure transducer with microprocessor-based, digital display indicator
- Autoclavable air motor
- 400ml manual pressure feed reservoir
- Pressurized feed tank
- Selection of homogenizer modules for normal or high viscosity processing

HC-8000 Specifications

Pressure Range	1,000 - 8,000 psi (70 to 550 bar)
Nominal Flow Rate	to 1,000 ml/min
Feed Temperature Range	Maximum 165°F (75°C)
Air Compressor Requirements	56 scfm @ 84 psi (dew point -0°F) 15 hp (11 kw)
Sample Size	250 ml to continuous
Dimensions	23"L x 15"W x 23"H (58 x 38 x 58 cm)
Weight	59 lbs. (26.7 kg)

HC-8000 Available Options

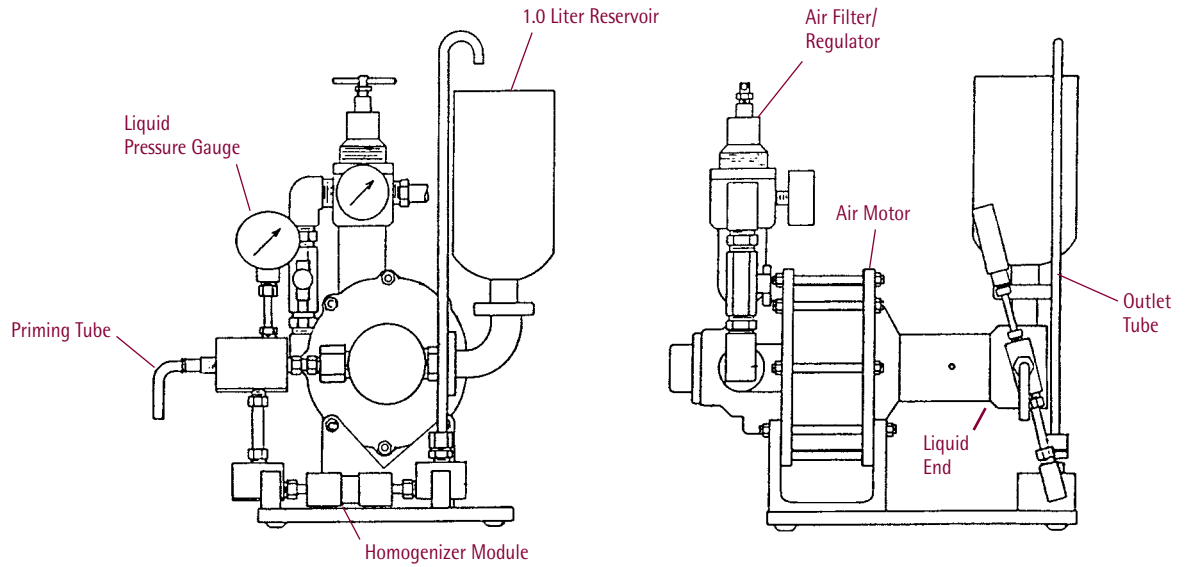
- Cooling coil
- Sanitary flush diaphragm pressure transducer with microprocessor-based, digital display indicator
- Autoclavable air motor
- 400 ml manual pressure feed reservoir
- Pressurized feed tank
- Selection of homogenizing modules for normal or high viscosity processing



HC-2000 / HC-5000

Front View

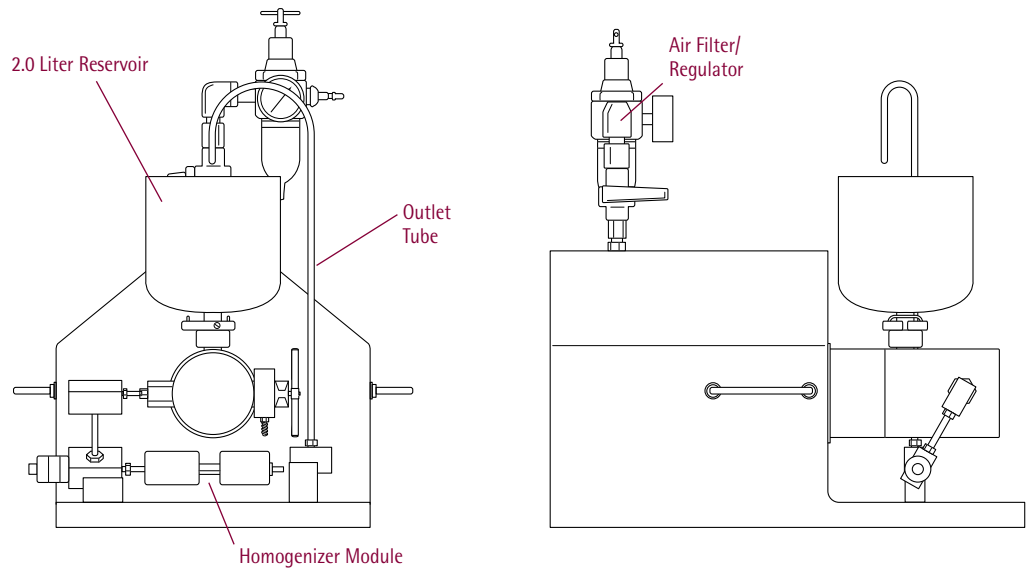
Side View



HC-8000

Front

Side View



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