

## High Pressure Laboratory Microfluidizer Processor for High-Shear Fluid Processing

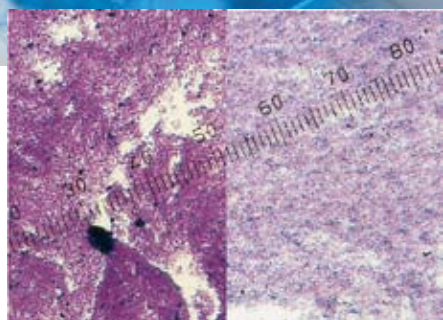
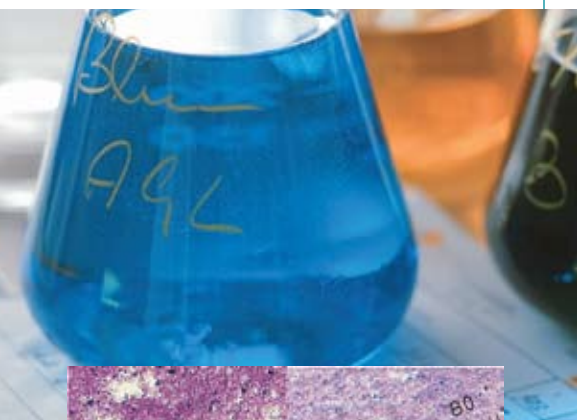
### M-110Y Microfluidizer Processor

#### Recommended for:

- Cell disruption
- Nanoemulsions
- Nanodispersions
- Submicron liposomes
- Submicron encapsulation
- Microcapsules

The M-110Y Microfluidizer processor is a lab machine that provides the highest shear rates of any competitive processing equipment on the market today, maximizing the energy-per-unit fluid volume to produce uniform submicron particle and droplet sizes.

Process pressures range from 206–1586 bar (3,000–23,000 psi), enabling the processing of a wide variety of products ranging from simple oil-in-water emulsions to high-weight-percent solids in liquid suspensions, as well as low to high concentration cell disruption. The system is easy to operate and is designed for clean-in-place without disassembly.



Before Processing

After Processing

*Patented  
Microfluidizer  
processor  
produces uniform  
dispersions with  
submicron size  
particles*



Model shown is subject to change depending on options selected

### The M-110Y Microfluidizer processor for micro-mixing in the laboratory

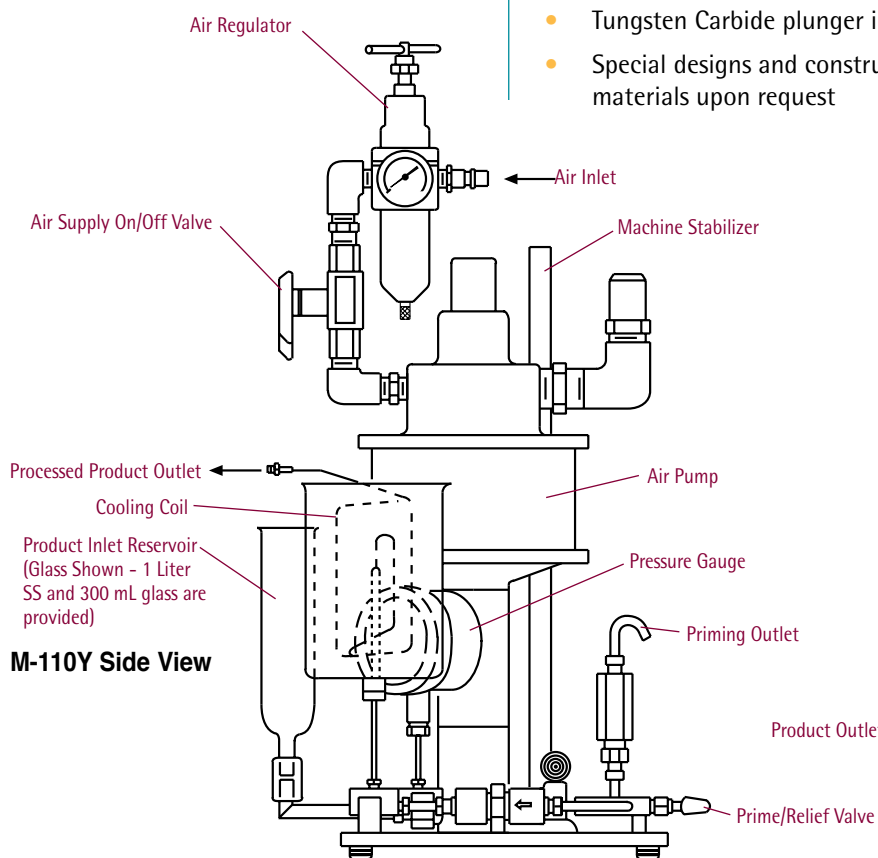
- Unique wear-resistant ceramic or diamond (optional) fixed-geometry interaction chamber
- Guaranteed scaleup to production scale machines
- All wetted metal parts – 300 series stainless steel, 17-4PH stainless steel, or Nitronic 60. Plunger is chrome-plated.
- Pressure range: 206–1586 bar (3,000–23,000 psi)
- Open jacket cooling coil
- Easy clean-in-place and simple maintenance
- Air powered and explosion-proof
- Portable, benchtop unit
- Sanitary fittings
- Product path is immersible in cooling or heating bath
- CE compliant
- Sample size: 60 ml to continuous

\*total equipment holdup volume with cooling coil is 42 ml

## Operating Principle

The M-110Y has an air powered intensifier pump designed to supply the desired operating pressure at a constant rate through fixed-geometry microchannels within the interaction 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.



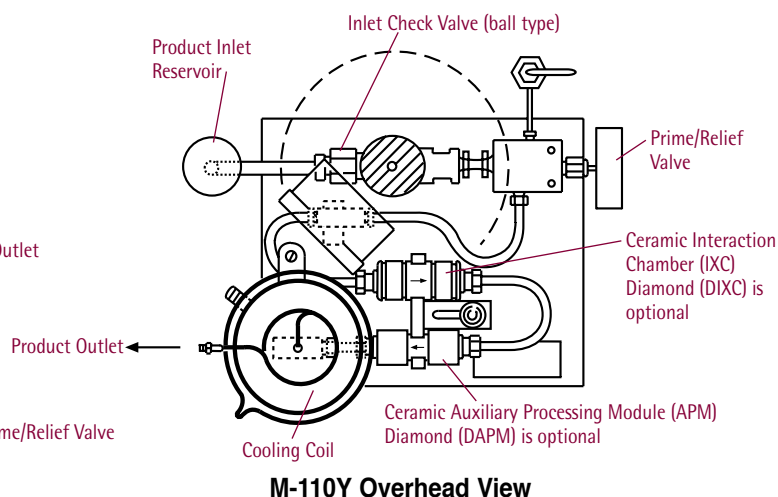
**M-110Y Side View**

## Specifications

Pressure Range	206-1586 bar (3,000 - 23,000 psi)
Flow Rate Range	100-500 ml/min
Feed Temperature Range	-25°C to 75°C (-15°F to 165°F)
Processor Air Requirements For Maximum Operating Pressure	26 l/sec @ 5.0 bar (56 scfm @ 100 psi) 11 kw (15 hp) compressor required
Sample Size	60 ml to continuous
Dimensions LxWxH	28 x 41 x 76 cm (11" x 16" x 30")
Weight	25 kg (55 lbs)

## M-110Y Available Options

- 400 ml stainless steel manual pressure feed reservoir
- 2 liter stainless steel reservoir
- 7.6 liter (2 gallon) pressurized feed tank
- 2 liter stainless steel pressurized reservoir
- Tungsten Carbide plunger in pump
- Special designs and construction materials upon request
- Autoclavable (sterilizable to 121°C) air motor
- Air tank regulator
- Sanitary pressure transducer with digital readout
- Dual feed assembly
- Diamond interaction chamber
- Product temperature sensors and indicators
- IQ/OQ documentation
- Kalrez/Chemraz o-rings
- Factory acceptance test (FAT)
- Site acceptance test (SAT)
- Start-up training



**M-110Y Overhead View**



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*Microfluidics reserves the right to change specifications without notice.*