Sonic Dismembrators

Cell Disruptors / Homogenizers
Fisher Scientific offers a full line of Sonic Dismembrators with a variety of features and accessories to handle virtually any liquid processing application.

APPLICATIONS INCLUDE:
» Cell disruption
» Homogenization
» ChIP/DNA shearing
» Nanoparticle dispersion
» Protein extraction
» Sonochemistry
» Soil extraction
» Mixing

OVERVIEW
The Sonic Dismembrator is a device that creates ultrasonic energy and transmits this energy through a titanium probe into a liquid sample. This process creates cavitation (the implosion of micro-bubbles with high shear forces) which has the ability to process samples in many scientific applications.

Sonic Dismembrators feature a wide range of accessories which enable the user to process micro liter to one liter sample volumes. Small volumes require microtip probes and lower power output. Larger volumes require larger probes and higher amounts of energy to be delivered to the sample.

The application and sample volume indicate which unit, features and probe size is necessary. For example, cell disruption of samples smaller than 50 ml can be accomplished with any of the four models. If the application will benefit from pulsing the ultrasonic energy to reduce heat gain, a programmable unit will be required. For samples larger than 100 ml, a 500 or 700 watt unit is needed. High throughput, extended programming times and the ability to monitor sample temperature will require the 700 watt model.

DIRECT AND INDIRECT SONICATION
Both direct and indirect sonication tools are available depending on the application. Direct sonication involves the immersion of a probe into a sample vessel and processes most samples quickly and effectively. Indirect sonication eliminates the need for a probe to come in contact with the actual sample and allows the end user to process sealed tubes or vials. The Cup Horn accessory offers indirect sample processing.

Fisher Scientific Model 50 Sonic Dismembrator
Economical, small volume cell disruptor

» Processes 0.2 – 50 ml
» 50 watts
» Continuous or Remote operation (footswitch optional)
» Lightweight converter for hand-held operation

INCLUDES: Generator, converter, 1/8” probe, cables, wrench set, manual, 2-year warranty

TECHNICAL SPECIFICATIONS:
Dimensions (generator): 8” W x 8” L x 5” H
Power rating: 50 watts
Operating frequency: 20 kHz

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FB50110</td>
<td>117V, 50/60Hz</td>
</tr>
<tr>
<td>FB50220</td>
<td>230V, 50/60Hz</td>
</tr>
</tbody>
</table>

ACCESSORIES
Probe options for direct sonication of samples up to 50 ml

<table>
<thead>
<tr>
<th>Tip Diameter</th>
<th>Processing Volume*</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/64”</td>
<td>0.2 - 5 ml</td>
<td>FB4423</td>
</tr>
<tr>
<td>1/8”</td>
<td>0.5 - 15 ml</td>
<td>FB4422</td>
</tr>
</tbody>
</table>

*(Processing volume of any probe will increase with the use of a stir bar)

Footswitch for hands-free operation.
Catalog No. FB4004

Stand with 1/2” diameter pole and converter clamp.
Catalog No. FB4400

Sound Enclosure with converter clamp (20” x 10” x 10” external dimension).
Catalog No. FB432A

Compact, portable and extremely simple to operate. Weighing less than 4 pounds, this model is the smallest unit on the market and is highly effective for cell disruption, sample preparation and many other small volume applications.
Fisher Scientific Model 120 Sonic Dismembrator

- Processes 0.2 – 100 ml
- 120 watts
- Programmable from 1 second to 10 hours
- Overload protection
- Pulse mode (1 second to 59 seconds)
- Energy display (watts and Joules)
- Lightweight converter for hand-held operation

INCLUDES: Generator, converter, 1/8” probe, cables, wrench set, manual, 2-year warranty

ACCESSORIES

- Tip Horn for processing 8 samples at one time. 1/8” tip diameter. Catalog No. FB4602
- Cup Horn for indirect processing of individual sealed tubes or vials. 1.5” cup diameter. Catalog No. FB4608
- Sound Enclosure with converter clamp (20” x 10” x 10” external dimension). Catalog No. FB4523A

TECHNICAL SPECIFICATIONS:

Dimensions (generator): 8” W x 13” L x 6” H
Power rating: 120 watts
Operating frequency: 20 kHz

Catalog No. Voltage
# FB120110 117V, 50/60Hz
# FB120220 230V, 50/60Hz

Model 120 Sonic Dismembrator

This model is ideal for small sample sizes and offers both manual and programmable operation. A variety of accessories are available including probes for individual samples, 8-tip Horn for increased sample throughput and a Cup Horn for indirect sonication.

Fisher Scientific Model 505 Sonic Dismembrator

- Processes 0.5 – 500 ml
- 500 watts
- Programmable from 1 second to 10 hours
- Overload protection
- Pulse mode (1 second to 59 seconds)
- Energy display (watts and Joules)

INCLUDES: Generator, converter, 1/2” probe, cables, wrench set, manual, 2-year warranty

ACCESSORIES

- Microtip probe options for direct sonication of samples up to 50 ml.
- Cup Horn for indirect processing of up to 8 (2 ml) sealed tubes or vials. 2.5” cup diameter.
- Probe options for direct sonication of samples up to 500 ml.
- Jack Stand – easily raises and lowers samples from 2.5”– 10” as shown on next page.

TECHNICAL SPECIFICATIONS:

Dimensions (generator): 8” W x 15” L x 9” H
Power rating: 500 watts
Operating frequency: 20 kHz

Catalog No. Voltage
# FB505110 117V, 50/60Hz
# FB505220 230V, 50/60Hz

Model 505 Sonic Dismembrator

The model 505 offers the same programmable features as the model 120 but delivers substantially more power. This model can process both small and large sample volumes. A variety of accessories are available including probes for individual samples and a Cup Horn for indirect sonication.
Fisher Scientific Model 705 Sonic Dismembrator

Ultra high power with advanced programming for DNA shearing/ChIP and all liquid processing applications

- Processes 0.2 – 1,000 ml
- 700 watts
- Touch screen display
- Programmable from 1 second to 99 hours
- Save up to 10 different programs
- Overload protection
- Pulse mode (1 second to 24 hours)
- Energy display (real-time watts and cumulative Joules)
- Temperature monitoring (requires optional temperature probe)
- Full amplitude control from 1-100%

Includes: Generator, converter, 1/2” probe, cables, wrench set, manual, 2-year warranty

**TECHNICAL SPECIFICATIONS:**
- Dimensions (generator): 8” W x 15” L x 9” H
- Power rating: 700 watts
- Operating frequency: 20 kHz

**ACCESSORIES**

<table>
<thead>
<tr>
<th>Tip Diameter</th>
<th>Processing Volume</th>
<th>Type of Probe</th>
<th>Cat. No.</th>
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</thead>
<tbody>
<tr>
<td>1/16”</td>
<td>0.2 - 5 ml</td>
<td>replaceable tip</td>
<td>FB4417</td>
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<tr>
<td>1/8”</td>
<td>0.5 - 15 ml</td>
<td>replaceable tip</td>
<td>FB4418</td>
</tr>
<tr>
<td>1/4”</td>
<td>5 - 50 ml</td>
<td>FB4420</td>
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</table>

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<th>Type of Probe</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2”</td>
<td>10 - 250 ml</td>
<td>replaceable tip</td>
<td>FB4220</td>
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<tr>
<td>1/2”</td>
<td>10 - 250 ml</td>
<td>solid tip*</td>
<td>FB4219</td>
</tr>
<tr>
<td>3/4”</td>
<td>25 - 500 ml</td>
<td>replaceable tip</td>
<td>FB4207</td>
</tr>
<tr>
<td>3/4”</td>
<td>25 - 500 ml</td>
<td>solid tip*</td>
<td>FB4208</td>
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<tr>
<td>1”</td>
<td>50 - 1,000 ml</td>
<td>replaceable tip</td>
<td>FB4210</td>
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<tr>
<td>1”</td>
<td>50 - 1,000 ml</td>
<td>solid tip*</td>
<td>FB4209</td>
</tr>
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</table>

<table>
<thead>
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<th>Tip Diameter</th>
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<tbody>
<tr>
<td>1/2”</td>
<td>FB4406</td>
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<tr>
<td>3/4”</td>
<td>FB4407</td>
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<tr>
<td>1”</td>
<td>FB4408</td>
</tr>
</tbody>
</table>

* Solid Tip probes are required when working with organic solvents.

**Safety Notice:** Sonic Dismembrators generate extremely high noise levels (over 100db). OSHA safety standards state that workers must employ hearing protection at this decibel level. A Sound Enclosure will reduce the decibel level and eliminate the need for everyone in the laboratory to wear sound dampening headphones or earplugs.

**Model 705 Sonic Dismembrator**

Model 705 is a full-featured, programmable ultrasonic processor with easy to use touch screen controls. The additional power and variety of accessories accommodates the widest range of sample volumes and applications. 96-tip Horn and Cup Horn accessories offer time-saving, high-throughput solutions to repetitive, individual sample processing.

**INCLUDES:** Generator, converter, 1/2” probe, cables, wrench set, manual, 2-year warranty

**TECHNICAL SPECIFICATIONS:**
- Dimensions (generator): 8” W x 15” L x 9” H
- Power rating: 700 watts
- Operating frequency: 20 kHz

**ACCESSORIES**

- Generator, converter, 1/2” probe, cables, wrench set, manual, 2-year warranty

**4-Tip Horn** for direct processing of 4 samples at one time. Tip diameter is 1/8” and space between tips is 0.72.”

**96-Tip Horn** for direct processing of 96 well plates. Each tip is 0.69” long and can be used with both standard and deep well microplates. FB4438 support stand and FB432B sound enclosure are recommended for use with this accessory.

**Jack Stand** – easily raises and lowers samples from 2.5” – 10”.

**Stand with ½” diameter support rod and converter clamp.**

**Sound Enclosure** (23” x 14.5” x 12” external dimension).

**4-Tip Horn** for direct processing of 4 samples at one time. Tip diameter is 1/8” and space between tips is 0.72.”

**96-Tip Horn** for direct processing of 96 well plates. Each tip is 0.69” long and can be used with both standard and deep well microplates. FB4438 support stand and FB432B sound enclosure are recommended for use with this accessory.

**Jack Stand** – easily raises and lowers samples from 2.5” – 10”.

**Stand with ½” diameter support rod and converter clamp.**

**Sound Enclosure** (23” x 14.5” x 12” external dimension).
Sonic Dismembrators

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