

microTUBE-50 AFA[®] Fiber Screw-Cap (PN 520166)

Intended Use

The microTUBE-50 AFA Fiber Screw-Cap is a singular vessel designed to hold a 55 µL sample volume that has been optimized for use with AFA-energetics[®]. Each tube contains an AFA fiber that improves reproducibility, reduces fragmentation times, and allows small sample volumes to be processed.

The microTUBE-50s have an easy-to-pierce, cross-shaped, pre-cut slit in the septum of the Screw-Cap to minimize transfer time for the sample from the storage container to the shearing vessel. They are compatible with the M220, ME220, S220, and E-Series and require the use of an instrument specific Rack or Holder. Refer to the Covaris-certified Consumable Guide for further information (covaris.com/wp-content/uploads/M020065.pdf). DNA shearing protocols with the microTUBE-50 are also instrument specific. It is not recommended to store sheared samples in the microTUBES.

The microTUBE-50 is a one-time use consumable that has a 2D barcode to be used for sample traceability. Recommended instructions are subject to change without notice.

For current protocols, quick guides, technical notes, or application notes: <https://www.covaris.com/protocols>. **For specific help with applications involving shearing, contact** applicationsupport@covaris.com. **Recommended instructions are subject to change without notice.**



NOTE: The consistency of shearing in this consumable can be negatively impacted by incorrect water levels. It is crucial that the water level is high enough that it is in contact with the microTUBE-50.

Additional Protocols

- Quick Guide: DNA Shearing with M220 (https://covaris.com/wp-content/uploads/pn_010252.pdf)
- Quick Guide: DNA Shearing with ME220 (https://covaris.com/wp-content/uploads/pn_010349.pdf)
- Quick Guide: DNA Shearing with S220 (https://covaris.com/wp-content/uploads/pn_010368.pdf)
- Quick Guide: DNA Shearing with E220 and E220*evolution* (https://covaris.com/wp-content/uploads/pn_010308.pdf)

Operating Limits and Conditions

Temperature (Water Bath)	4 °C minimum; 25 °C maximum
Recommended Sample Volume	55 ± 2.5 µL
Storage	Room temperature (15–30 °C)



CAUTION: All Covaris microTUBEs must operate within energy constraints. The power maximum levels are guides and should not be exceeded. Each instrument has been tested with the microTUBE-50 for 2x the energy of the 150 bp DNA shearing protocol. Operating outside of these limits or limits published in Covaris protocols may compromise the integrity of the microTUBE-50.

Relevant Accessories and Plate Definitions

Please refer to the Quick Guide for specific parameters for NGS applications.

M220

Peak Incident Power & Duty Factor	Please refer to instrument Shearing Quick Guide for specific combinations
Holder & Insert	M220 Holder XTU (PN 500414) & M220 Holder XTU Insert microTUBE 50 µL (PN 500488)
Water Level	16 mL

ME220

Peak Incident Power & Duty Factor	Please refer to instrument Shearing Quick Guide for specific combinations
Rack	ME220 Rack 4-Place microTUBE Screw-Cap (PN 500522)
Waveguide	ME220 Waveguide 4 Place (PN 500534)
Plate Definition	"4 microTUBE-50 Screw-Cap PN 520166.2"

S220

Peak Incident Power & Duty Factor	Please refer to instrument Shearing Quick Guide for specific combinations
Holder	S-Series Holder microTUBE-50 Screw-Cap (PN 500492)
Water Level (RUN)	10

E220

Peak Incident Power & Duty Factor	Please refer to instrument Shearing Quick Guide for specific combinations
Rack	Rack 24 Place microTUBE Screw-Cap (PN 500308)
Plate Definition	"E220_500308 Rack 24 Place microTUBE-50 screw-cap+6.5mm offset"
Water Level (RUN)	6
Intensifier	Yes

E220evolution

Peak Incident Power & Duty Factor	Please refer to instrument Shearing Quick Guide for specific combinations
Rack	Rack E220e 4 Place microTUBE Screw Cap (PN 500432)
Plate Definition	"500432 E220e 4 microTUBE-50 Screw Cap -8.32mm offset"
Water Level (RUN)	6
Intensifier	Yes

NOTE: If the plate definition is not present on the system, contact Covaris Technical Support (techsupport@covaris.com) with the system serial number.

Instructions for Use

1. The microTUBE-50 has a cross slit septum for sample loading.
2. Add the sample through the septum. If the Screw-Cap is removed, be careful to keep the AFA Fiber in the microTUBE-50.
3. Ensure the Screw-cap is in the locked position.
4. Load the microTUBE-50 into the appropriate rack or holder and process the sample.
5. Once finished, remove the sample from the microTUBE-50. Do not store the sample in the microTUBE-50.

Ordering Information

Product Name	Product Number	Part Description
microTUBE-50 AFA Fiber Screw-Cap	520166	55 µL sample volume glass tube with AFA Fiber
microTUBE-50 AFA Fiber Screw-Cap Case	520167	55 µL sample volume glass tube with AFA Fiber (case of 250)

Appendix A: Removing or Installing the Intensifier (Covaris PN 500141) from a Covaris E System

The 500141 Intensifier is a small, inverted stainless-steel cone centered over the E-Series transducer by four stainless-steel wires. The wires are held in place by a black plastic ring pressed into the transducer well.

If an AFA protocol requires “no Intensifier”, please remove the Intensifier, using the following steps:

1. Empty the water bath. Start the instrument and start the SonoLab software.
2. Wait for the homing sequence to complete (the transducer will be lowered with the rack holder at the home position, allowing easy access to the Intensifier).
3. Grasp opposite sides of plastic ring and gently pull the entire assembly out of the transducer well. Do not pull on the steel cone or the wires. The ring is a friction fit in the well – no hardware is used to hold it in place.



The 500141 Intensifier (left) shown installed in the E-Series transducer well and (right) removed. Note the “UP” marking at the center of the Intensifier.

If a protocol requires the Intensifier to be present, simply reverse this process:

4. Align the black plastic ring with the perimeter of the transducer well. Note that the flat side of the center cone (marked UP) should be facing up (away from the transducer).
5. Gently press each section of the ring into the well until the ring is seated uniformly in contact with the transducer, with approximately 2 mm of the ring evenly exposed above the transducer assembly. Do not press on the cone or wires. The rotation of the ring relative to the transducer assembly is not important.
6. Refill the water tank. Degas and chill the water before proceeding.