

# Fiber™ FAQs

## Printer

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### [Questions]

#### 01 How does it work?

Fiber™ is the world's first desktop 3D printer to fabricate high resolution parts with industrial grade continuous fiber composite tape materials used in Automated Fiber Placement (AFP) processes. Based on a new process called Micro AFP ( $\mu$ AFP), users can now print parts with a superior level of strength and stiffness and in a broad range of materials that traditionally required million dollar AFP systems.

During the  $\mu$ AFP process, one Fiber™ printhead deposits a continuous fiber tape along critical load paths to build dense reinforced sections while a second printhead extrudes chopped fiber filament to build a high-resolution exterior shell. The materials used to make the resulting parts are two times stronger than steel at one-fifth the weight (up to 2,500 MPa tensile strength and <1.5 g/cc).

#### 02 What is continuous fiber composite tape?

Continuous fiber composite tapes used in AFP technology, typically found in the highest end carbon fiber production processes, are considered by many to be the gold standard for high performance continuous fiber composite parts. These tapes are used in many applications that require a combination of process automation and high-performance, lightweight materials because they can deliver parts with high fiber loading and low porosity. Examples include the portions of the fuselage and wings of the Boeing 787 Dreamliner and the Airbus A350. Fiber's  $\mu$ AFP tapes are designed to give you all the benefits of large format AFP continuous fiber composite tapes in an accessible, desktop form factor.  $\mu$ AFP tapes feature 12K tows, up to 60% fiber volume fraction, and multi-direction reinforcement, all of which together result in material that is significantly stronger than many continuous fiber composite filaments.

#### 03 What is the difference between chopped and continuous fiber?

Chopped fibers are used during the Fused Filament Fabrication (FFF) printing process to provide enhanced mechanical and thermal properties while improving dimensional stability; they are discontinuous fibers (typically less than 6 mm in length) added to the thermoplastic filament at relatively low volume fractions.

Continuous fibers take advantage of the high specific stiffness of carbon or fiberglass by carrying loads across their full length. When bundled together, continuous fiber create tows with high fiber volume fractions (up to 60%).

Fiber™ is the first desktop continuous fiber printer to miniaturize AFP technology, typically found in the highest end carbon fiber production processes, and combine it with chopped fibers used in FFF processes, the most widely-used 3D printing technology. The materials used to make the resulting parts are two times stronger than steel at one-fifth the weight.

#### 04 Where can I purchase materials? Are third-party materials allowed?

You can purchase materials from Desktop Metal on our website or from your local Desktop Metal Authorized Reseller. Materials will be available for purchase once we begin shipping Fiber™ printers.

In order to ensure part quality, only materials purchased from Desktop Metal or Authorized Resellers are compatible with Fiber printers. Any use of third party materials violates the Fiber™ Subscription Agreement and may void your subscription.

<p><b>05</b>    How much do materials cost?</p>	<p>Materials will be available for purchase at the following MSRPs:</p> <p>Chopped Fiber Filament</p> <ul style="list-style-type: none"> <li>• \$149: 1 FFF Filament Spool, PA6 Chopped Carbon Fiber (1 kg)</li> <li>• \$149: 1 FFF Filament Spool, PA6 Chopped Fiberglass (1 kg)</li> <li>• \$849: 1 FFF Filament Spool, PEEK Chopped Carbon Fiber (1 kg)</li> <li>• \$849: 1 FFF Filament Spool, PEKK Chopped Carbon Fiber (1 kg)</li> </ul> <p>Continuous Fiber Tape</p> <ul style="list-style-type: none"> <li>• \$149: 1 uAFP Tape Spool, PA6 Continuous Carbon Fiber (50 cc)</li> <li>• \$99: 1 uAFP Tape Spool, PA6 Continuous Fiberglass (50 cc)</li> <li>• \$449: 1 uAFP Tape Spool, PEEK Continuous Carbon Fiber (50 cc)</li> <li>• \$449: 1 uAFP Tape Spool, PEKK Continuous Carbon Fiber (50 cc)</li> </ul> <p>*MSRPs do not include taxes or shipping &amp; handling fees. Prices valid for US shipment only.</p>
<p><b>06</b>    Do I need different heads for each material?</p>	<p>Fiber™ printers utilize a dual-deposition print process involving a μAFP printhead that deposits continuous fiber tape paired with a FFF printhead that extrudes chopped fiber filled thermoplastic filament. To switch between the printheads, the Fiber™ printer uses a robotic tool changer architecture, which enables future expandability and is capable of storing up to four tools, including additional FFF heads for different materials or future enhancements such as automated in-process inspection.</p> <p>Only one μAFP head is necessary to print the full range of available continuous fiber tapes. Separate FFF printheads are needed to process PA6 material versus PEEK or PEKK high temperature materials. Each Fiber™ HT subscription includes two FFF printheads enabling you to print PA6, PEEK, and PEKK, while a Fiber™ LT subscription includes one FFF printhead for printing PA6.</p>
<p><b>07</b>    Can parts be printed with only chopped fiber filament?</p>	<p>You can use Fiber™ to print high-resolution parts purely from chopped fiber filament since not all parts or applications require the high-performance properties provided by our continuous fiber materials.</p>
<p><b>08</b>    Can parts be printed with only continuous fiber tape?</p>	<p>You can use Fiber™ to print parts exclusively with our continuous fiber μAFP tapes, though obtaining complex, 3D features for these parts may require post-machining. Fiber™ is a great platform for building near-net shape composite pre-forms for post-machining.</p>
<p><b>09</b>    What software do I use to operate the printer?</p>	<p>Each Fiber™ subscription includes access to our state-of-the-art Fabricate™ software for use with your printer. You will also receive access to new releases and software updates for Fabricate™ as they become available.</p>
<p><b>10</b>    Can I have multiple Fabricate™ accounts on one Fiber™ subscription</p>	<p>You can have multiple Fabricate™ accounts per each Fiber subscription. Similarly, if you have multiple Fiberprinters, you can access them all from one Fabricate™ account.</p>

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**[Subject]****Subscription**

Enjoy the latest technology at a single, accessible cost. Receive immediate, automatic access to software updates. Never get stuck with obsolete hardware.

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**[Questions]**

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<b>01</b>	<b>How much does a Fiber™ subscription cost?</b>	Introductory pricing for Fiber™ subscriptions start at \$3,495 per year for the Fiber™ LT or \$5,495 per year for the Fiber™ HT, each with a minimum 3-year term (billed annually).
<b>02</b>	<b>How does a Fiber™ subscription work?</b>	<p>Fiber™ is available via an all-inclusive hardware-as-a-service subscription so you can enjoy the latest technology at an affordable price, without risking technology obsolescence. Each subscription requires a minimum 3-year term and is billed annually. Subscriptions auto-renew at the end of the minimum term on an annual basis.</p> <p>A Fiber™ subscription include access to:</p> <ul style="list-style-type: none"><li>• Fiber™ printer - LT or HT model</li><li>• Printer upgrades - ability to upgrade your printer at anytime to a higher or newer model</li><li>• Starter material - spools of carbon fiber filament and tape</li><li>• Filament dry box - box for drying filament prior to printing to maximize success</li><li>• Fabricate Software - our state-of-the-art, cloud-based software for print preparation</li><li>• Software updates - access to new releases and software updates</li><li>• Online resources - guides for installation, operation, and troubleshooting</li><li>• Remote support - email, phone, and chat support for troubleshooting or diagnostics</li><li>• Hardware swap - replacement printer or components as required</li></ul>
<b>03</b>	<b>Can I purchase a printer outright?</b>	Fiber™ printers are only available via a hardware-as-a-service subscription. There is no option to purchase the printer at the end of your subscription term. Contact <a href="mailto:fibersales@desktopmetal.com">fibersales@desktopmetal.com</a> if you have further questions.
<b>04</b>	<b>Can I pay for all 3 years up front?</b>	We currently only accept orders online with payments towards your first year subscription fee. If you are a government or education customer and are interested in paying for all three years up front contact <a href="mailto:fibersales@desktopmetal.com">fibersales@desktopmetal.com</a> .
<b>05</b>	<b>Do I have to sign a long term contract?</b>	Each Fiber™ subscription requires a minimum 3-year term, during which you are billed annually.
<b>06</b>	<b>Will my subscription be renewed automatically?</b>	After your minimum 3-year term is complete, your subscription will auto-renew on an annual basis. We will email you as a reminder at least 30 days prior to each auto-renewal so you can opt out and cancel your subscription if desired. Otherwise, your subscription will renew, and we will charge the applicable annual subscription fee to your payment method on file.
<b>07</b>	<b>Can I cancel my subscription?</b>	You can cancel your subscription at any time. Early cancellation during your minimum 3-year term will incur a one-time \$1,000 charge on your payment method on file. After your minimum 3-year term is complete, you can opt out of auto-renew at any time to cancel your subscription at no additional cost. We do not offer refunds for any prepaid subscription fees.

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<b>08</b> What happens if I cancel or do not auto-renew my subscription term?	Upon cancellation or termination of your subscription term, we will revoke your access to Fabricate Software and your ability to use your Fiber™ printer. You must also return your Fiber™ printer to Desktop Metal in good working condition (reasonable wear and tear expected) using packaging and shipping labels we will provide. You are responsible for any outstanding fees as well as the full cost of repair or replacement of your Fiber™ printer up to \$10,000 if you do not return the printer to Desktop Metal in good working condition within 10 business days following receipt of packaging and shipping labels.
<b>09</b> Can I upgrade my subscription?	With a Fiber™ subscription, you are protected from technology obsolescence. You can upgrade from a Fiber™ LT to a Fiber™ HT subscription at any time for no additional fee. Your billing cycle refreshes when you upgrade, starting a new minimum 3-year term at the Fiber™ HT subscription price, and we'll subtract any amount you already paid for the remaining days in your prior Fiber™ LT annual billing cycle.  You can also upgrade your Fiber™ subscription to include newer printers and other options as they become available at any time for no additional fee. Your billing cycle refreshes when you upgrade, starting a new minimum 3-year term at the new subscription fee.
<b>10</b> Can I subscribe for multiple units?	Yes, you can order a subscription with multiple Fiber™ units by adjusting the quantity during the checkout process. We do not currently offer any volume-based discounts. 6 pack and 10 pack print farm configurations are available exclusively through Desktop Metal Authorized Resellers.
<b>11</b> What payment methods do you accept?	We currently accept payments online via Visa, MasterCard, Discover, and American Express credit cards. If you have questions about other payment methods contact <a href="mailto:fibersales@desktopmetal.com">fibersales@desktopmetal.com</a> . Order now to lock in Fiber™ subscription at a limited time introductory price.
<b>12</b> When will my Fiber™ subscription start?	The first Fiber™ printers are scheduled to ship in Spring 2020 in the US and internationally soon after. Order now to lock in your Fiber™ subscription at a limited time introductory price and join the queue. We'll send you an email with additional details 14 days prior to shipping your printer, including information on any applicable taxes or shipping & handling fees. Your subscription term will commence when Desktop Metal ships your printer.
<b>13</b> Do you charge for sales tax or shipping?	Prices and subscription fees shown on our website do not include taxes or shipping & handling fees. You are responsible for all taxes and duties when purchasing a Fiber subscription, including any sales, value added, royalty, or withholding tax imposed by any US or other government entity. Desktop Metal reserves the right to assess applicable taxes as required by local law and will charge your payment method on file for taxes when required to do so. If you provide Desktop Metal with a valid tax exemption certificate, we will not collect taxes covered by that certificate.  You also may be charged a shipping & handling fee associated with delivering the printer and associated hardware as part of your Fiber™ subscription. Your company address is used to determine both your correct tax rate, if applicable, and shipping & handling fees.

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