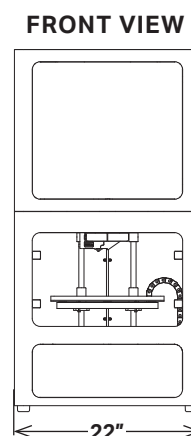
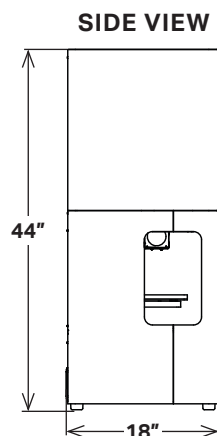


PRINTER SPECIFICATIONS

# METAL X

The Metal X is the world's first Atomic Diffusion Additive Manufacturing (ADAM) machine. It's up to 10x less expensive than alternative metal additive manufacturing technologies — and up to a 100x less than traditional fabrication technologies like machining or casting. Affordable, reliable, and easy to use, the Metal X print system gives you everything you need to go from design to fully functional metal parts faster than ever before.

<b>PRINTER PROPERTIES</b>	<b>Process</b>	Atomic Diffusion Additive Manufacturing (ADAM)
	<b>Build Volume</b>	300 x 220 x 180 mm (11.8 x 8.7 x 7.1 in)
	<b>Machine Size</b>	575 x 467 x 1120 mm (22.7 x 18.4 x 44.1 in), 75 kg (160 lbs)
	<b>Print Chamber</b>	Heated
	<b>Print Bed</b>	Heated, Vacuum Sealed Print Sheet, Auto Bed Leveling
	<b>Print System</b>	2 Nozzles — Metal Material and Support Release
	<b>Power Requirements</b>	100-240VAC, 2400W (20A peak), IEC60320 Type C20
<b>PART PROPERTIES</b>	<b>Max Part Size</b>	250 x 183 x 150 mm (9.8 x 7.2 x 5.9 in), 10kg
	<b>Supports</b>	Same Material with Ceramic Release Layer
	<b>Resolution</b>	50 micron - 200 micron
<b>SOFTWARE</b>	<b>Supplied Software</b>	Cloud Storage, Local Storage, or On-Premise (\$5,000 added fee)
	<b>Security</b>	Two Factor Auth, Org Admin Access, Single Sign On
<b>MATERIALS</b>	<b>Launch Material</b>	17-4 PH Stainless Steel
	<b>Beta Materials</b>	Tool Steel (H13, A2, D2) Titanium Ti6Al4V, Inconel (IN) 625, Copper, Aluminum (6061, 7075)
	<b>Media (Spools)</b>	Filament Fed, Bound Powder
<b>MACHINE COST</b>	<b>\$99,500 SRP</b>	



All specifications approximate and subject to change without notice.

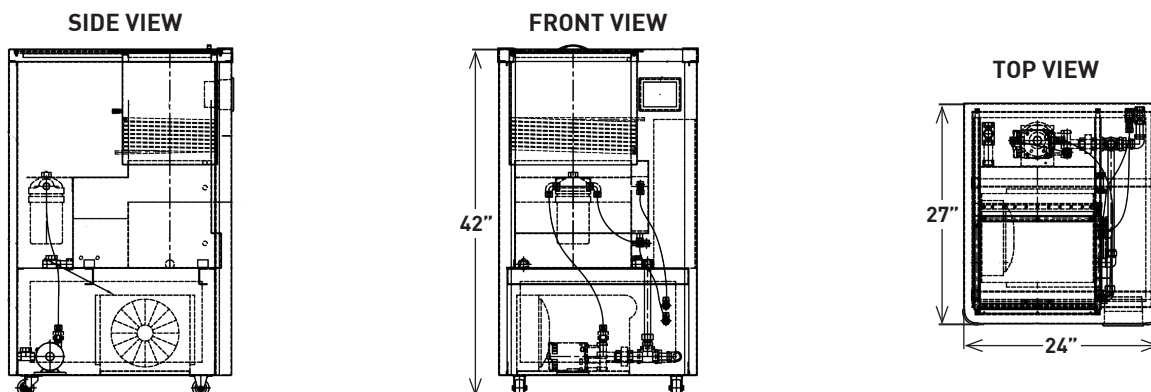
# WASH-1 DEBINDER SPECIFICATIONS

The first step in transforming a printed “green” part into fully dense metal is debinding. The Wash-1 immerses the green part in a specialized fluid which removes the primary binding material, leaving the part semi-porous so the remaining binder can easily burn off during sintering. This debinding step purifies the final metal part and helps keep your sintering furnace clean.

<b>DEBINDER PROPERTIES</b>	<b>Materials Supported</b>	All Metals
	<b>Fluid</b>	Opteon Sion
	<b>Controller</b>	Integrated Control System
	<b>Workholding</b>	Stainless Steel Basket
	<b>Washing Size</b>	356 mm x 254 mm x 203 mm (14" x 10" x 8")
	<b>Washing Volume</b>	18,356 cubic cm (1120 cubic in)
<b>SAFETY &amp; INSTALLATION</b>	<b>Environmental Req.</b>	External Exhaust
	<b>Safety Control</b>	Low Fluid Shutoff Control High Vapor Pressure Shutoff Control
	<b>Regulatory</b>	Refer to MSDS
	<b>Emissions</b>	Low Emission Design to Conserve Solvent
	<b>Power</b>	120/240 VAC Single Phase
	<b>PHYSICAL DIMENSIONS</b>	<b>External Dimensions</b>
<b>Weight</b>		136 kg (300 lbs)

**MACHINE COST**

**\$9,990**



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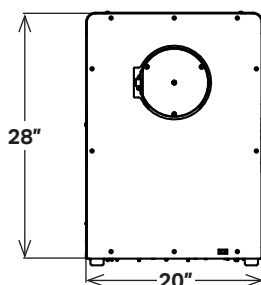
FURNACE SPECIFICATIONS

# SINTER-1

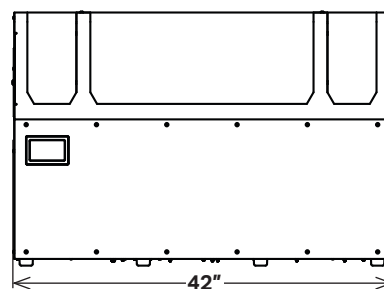
The Markforged Sinter-1 is a high performing, high value furnace - it's affordable, sizable, and reliable. Featuring 4760 cubic cm of working volume, The Sinter-1 effortlessly converts washed parts into their dense final metallic form. Built on 30 years of Metal Injection Molding (MIM) technology, it is ideal for sintering medium sized parts and small batch production.

<b>FURNACE PROPERTIES</b>	<b>Materials Supported</b>	All Commercial Grade Metals Including: Stainless Steel, Tool Steel, Inconel, Aluminum, & Titanium
	<b>Heating Element</b>	Kanthal
	<b>Controller</b>	Pre-Programmed Automatic Cycling
	<b>Peak Temperature</b>	1300° C
	<b>Sintering Capacity</b>	Cylindrical - 141 mm ID x 305 mm L (5.55" ID x 12" L)
	<b>Sintering Volume</b>	4760 cubic cm (290 cubic in)
	<b>Gas Types</b>	Nitrogen, Argon, and Forming Gases
	<b>Retort</b>	High Purity Refractory Retort (Carbon Free)
	<b>Sintering Surface</b>	Ceramic
<b>SAFETY &amp; INSTALLATION</b>	<b>Environmental Req.</b>	External Exhaust (100 CFM)
	<b>Power</b>	208 1-Phase 36A, Recommend Wiring 50A
	<b>Over Temperature</b>	Protection System Included
<b>PHYSICAL DIMENSIONS</b>	<b>External Dimensions</b>	1067 x 505 x 720 mm (42 x 20 x 28 in)
	<b>Weight</b>	136 kg (300 lbs)
<b>MACHINE COST</b>	<b>\$14,990 SRP</b>	

SIDE VIEW



FRONT VIEW



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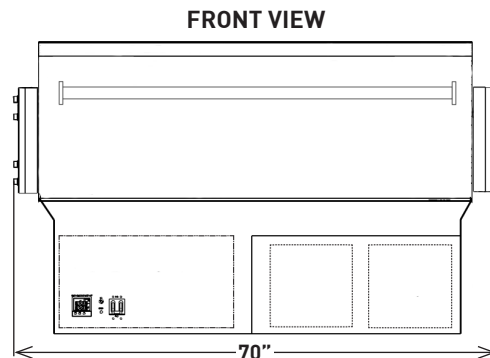
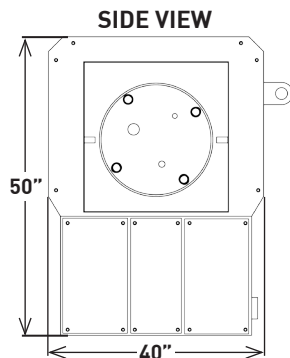
# SINTER-2 FURNACE SPECIFICATIONS

With a huge active hot-zone (22,283 cubic cm), the Sinter-2 accommodates the full build volume of the Metal X. It's the perfect solution for larger parts or batch production. This workhorse furnace sinters the full range of commercial grade metals from their washed state into dense metal parts.

<b>FURNACE PROPERTIES</b>	<b>Materials Supported</b>	All Commercial Grade Metals Including: Stainless Steel, Tool Steel, Inconel, Aluminum, & Titanium
	<b>Heating Element</b>	Kanthal
	<b>Controller</b>	Pre-Programmed Automatic Cycling
	<b>Peak Temperature</b>	1300° C
	<b>Sintering Capacity</b>	Cylindrical - 305 mm ID x 305 mm L (12" ID x 12" L)
	<b>Sintering Volume</b>	22,283 cubic cm (1,360 cubic in)
	<b>Gas Types</b>	Nitrogen, Argon, and Forming Gases
	<b>Retort</b>	High Purity Refractory Retort (Carbon Free)
	<b>Sintering Surface</b>	Ceramic
	<b>SAFETY &amp; INSTALLATION</b>	<b>Environmental Req.</b>
<b>Power</b>		208 3-Phase, 100A Recommended
<b>Over Temperature</b>		Protection System Included
<b>PHYSICAL DIMENSIONS</b>	<b>External Dimensions</b>	1778 mm x 1016 mm x 1270 mm (70" x 40" x 50")
	<b>Weight</b>	654 kg (1500 lbs)

**MACHINE COST**

**\$49,990**



All specifications approximate and subject to change without notice.