3D SYSTEMS

ProJet® MJP 2500 Plus and VisiJet® M2P-CST Crystal Jewelry Solution

Expand design freedom with 3D printed resin casting patterns that make possible ultra-fine features, thin walls, and lighter weight jewelry

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Multiple 3D Printing technologies can be used for cost-effective jewelry production. The ProJet MJP 2500 Plus and VisiJet M2P-CST Crystal excel at producing resin casting patterns that possess intricate details, thin walls, and larger jewelry pieces that are lighter weight. This solution is ideal for high volume production that compliments wax pattern printers where ultimate design flexibility is required, and the resolution and durability of fine features are critical considerations. Melt-away wax support structures maximize geometric freedom and aid in batch post-processing.

HIGHER RESOLUTION, FINE FEATURES, AND THIN WALLS

The ProJet MJP 2500 Plus 3D printer now offers a high resolution XHD printing mode (1600x900x1600 DPI), developed specifically for high precision applications with VisiJet Crystal. Its durability enables geometries that were previously impossible to reliably produce with wax alternatives. The added durability makes it possible to print extremely thin walls and preserve even the finest, small-scale details, down to 0.1 mm, throughout the manufacturing process.

CASTING QUALITY

Achieve higher quality casting patterns with an optimized printer and material combination that delivers higher resolution, retention of fine details even on small prints, and clean burnout. Even the most delicate patterns with fine features and thin walls are possible with a more durable yet flexible acrylate material. VisiJet Crystal performs well for patterns that require stone-setting. Improve your casting success rate for the most delicate patterns with the durability of 3D printed VisiJet Crystal material.

HIGH VOLUME PRODUCTION

Fast printing speed, large build volume, advanced software, and batch post-processing maximize your jewelry casting pattern production workflow. 3D print high quality patterns faster for rings, broches, bracelets, necklaces, and many other intricate jewelry pieces. Produce more while eliminating time, cost, and geometric constraints often associated with tooling in traditional jewelry manufacturing processes.

SIMPLICITY

3D Sprint is a locally installed advanced software used for file preparation, editing, printing and management from a single, intuitive interface. It receives regular updates and significantly decreases the total cost of ownership by reducing the need for costly software seats or subscriptions offered through third party vendors. Features include automated part placement, support generation, and tools to modify pattern geometry without the need to go back to a CAD program. The ProJet Finisher oven offers a batch post-processing turnkey and hands-free support removal solution.

APPLICATIONS

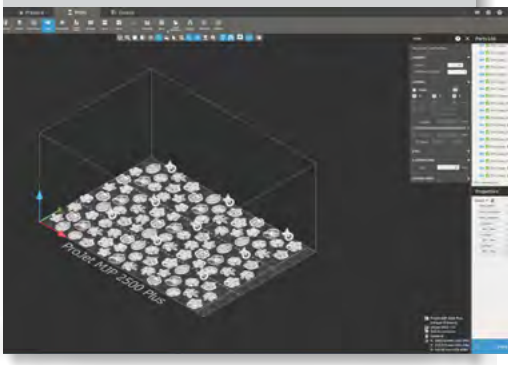
- Castable patterns production for high-volume and mass custom jewelry manufacturing
- Intended for fragile, fine-featured patterns that may not survive post-processing and handing when produced in wax
- Rings, broches, bracelets, mesh features, and more that have highly-detailed, complex geometries, and thin walls
- Consumer goods with delicate components
- Prototyping and modeling

BENEFITS

- Enables high volume production of patterns for direct casting; no tooling required
- Builds complex geometries and thin walls not feasible with wax patterns
- Print patterns for more ornate, lighter-weight jewelry
- Performs well for stone-setting
- Outstanding feature detail preservation, even on the smallest parts
- Larger build area than projector-based printers

FEATURES

- Virtually hands-free support removal process
- Easy to handle casting patterns
- Clean pattern burnout
- Prints can be painted
- Biocompatible



VisiJet Crystal in support material

VisiJet Crystal metal casting pattern, no support material

Final gold casted jewelry piece

PRINTER PROPERTIES

Dimensions (WxDxH)	
3D Printer Crated	1397 x 927 x 1314 mm (55 x 36.5 x 51.7 in)
3D Printer Uncrated	1120 x 740 x 1070 mm (44.1 x 29.1 x 42.1 in)
Weight	
3D Printer Crated	325 kg (716 lb)
3D Printer Uncrated	211 kg (465 lb)
Electrical Requirements	200-240 VAC, 50/60 Hz, single-phase
Internal Hard Drive	500 Gb minimum
Operating Temperature Range	25 °C (77 °F)
Operating Humidity	30-70 % relative humidity
Noise	< 65 dBa estimated (at medium fan setting)
Certifications	CE

PRINTING SPECIFICATIONS

Printing Mode	XHD - Extreme High Definition
Max Build Volume (xyz)[1]	294 x 211 x 144 mm (11.6 x 8.3 x 5.6 in)
Resolution	1600 x 900 x 1600 DPI; 16 µm layers 1600 x 900 x 1600 DPI; 16 µ layers unencapsulated
Accuracy (typical)[2]	±0.0508 mm/25.4 mm (±0.002 in/in) of part dimension typical for any single printer ±0.1016 mm/25.4 mm (±0.004 in/in) of part dimension across printer population

MATERIALS

Build Material	VisiJet M2P-CST Crystal
Support Material	VisiJet M2 SUP
Material Packaging	
Build Material	1.5 kg bottles
Support Material	1.4 kg bottles
Auto Switching Bottle Capacity	2 of each (build/support)

SOFTWARE AND NETWORK

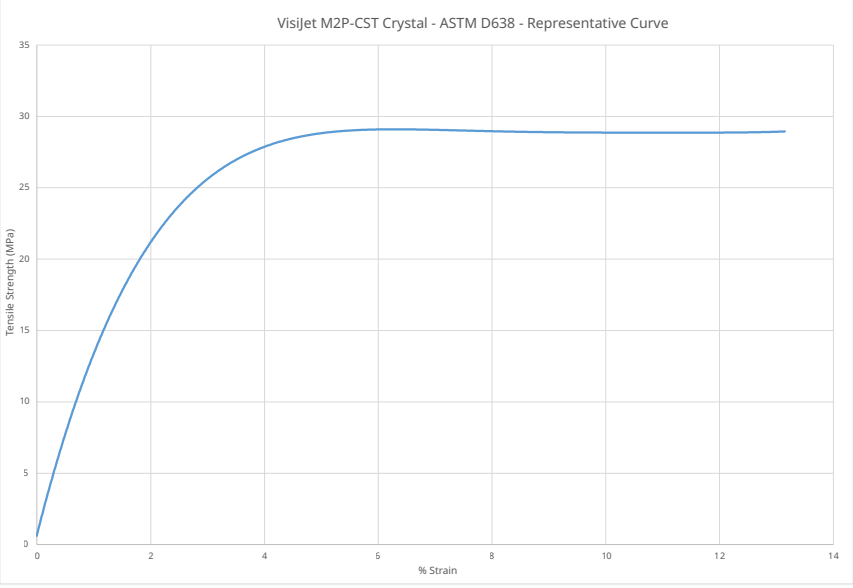
3D Sprint® Software	Easy build job set-up, submission and job queue management; Automatic part placement and build optimization tools; Part stacking and nesting capability; Extensive part editing tools; Automatic support generation; Job statistics reporting tools
Client Hardware Minimum Specifications	• Intel® or AMD® processor with a minimum of 2.0GHz and 4GB RAM • OpenGL 2.1 and GLSL 1.20 enabled graphics car; screen resolution 1280x960 • Dedicated Graphics Card: Nvidia GeForce GTX 285, Quadro 1000, AMD Radeon HD 6450, or newer • 10GB of available hard-disk space; additional space may be red for cache. Temporary file cache requires about 3GB free disk space for every 100 million points. • Internet Explorer 9 or newer • Other: 3 button mouse with scroll, keyboard, Microsoft .NET Framework 4.8 installed with application
3D Connect™ Capable	3D Connect Service provides a secure cloud-based connection to 3D Systems service teams for support.
Connectivity	Network ready with 10/100/1000 base ethernet interface; USB port
E-mail Notice Capability	Yes
Client Operating System	Windows 8.1 ~ Windows 11 (64-bit)
Input Data File Formats Supported	STL, CTL, OBJ, PLY, ZPR, ZBD, AMF, WRL, 3DS, FBX, IGES, IGS, STEP, STP, MJPDDD

[1] Maximum part size is dependent on geometry, among other factors.
[2] Accuracy may vary depending on build parameters, part geometry and size, part orientation, and post-processing.

VisiJet® M2P-CST Crystal

LIQUID MATERIAL			
METRIC	**METHOD**	**METRIC**	**US**
Viscosity (@25C)	Brookfield viscometer	16 cPs	39 lb/ft·h
Color		Yellow (Translucent)	
Liquid Density (@25C)	Kruss K11 Force Tensiometer	1.03 g/cm³	0.036 lb/in³
Default print layer thickness	Internal	16 µm	0.001 in
Speed - XHD	Internal	6.2 mm/hr	0.24 in/hr

SOLID MATERIAL						
METRIC	**ASTM METHOD**	**METRIC**	**ENGLISH**	**ISO METHOD**	**METRIC**	**ENGLISH**
	PHYSICAL				**PHYSICAL**	
Solid Density	ASTM D792	1.19 g/cm³	0.043 lb/in³	ISO 1183	1.19 g/cm³	0.043 lb/in³
24 Hour Water Absorption	ASTM D570	0.64 %	0.64 %	ISO 62	0.64 %	0.64 %
	MECHANICAL				**MECHANICAL**	
Tensile Strength Ultimate	ASTM D638 Type IV	28 MPa	4100 psi	ISO 527 -1/2	22 MPa	3100 psi
Tensile Strength at Yield	ASTM D638 Type IV	29 MPa	4000 psi	ISO 527 -1/2	20 MPa	2800 psi
Tensile Modulus	ASTM D638 Type IV	1300 MPa	190 ksi	ISO 527 -1/2	1000 MPa	150 ksi
Elongation at Break	ASTM D638 Type IV	12.9 %	12.9 %	ISO 527 -1/2	10.7 %	10.7 %
Elongation at Yield	ASTM D638 Type IV	7.7 %	7.7 %	ISO 527 -1/2	6.9 %	6.9 %
Flex Strength	ASTM D790	31 MPa	4500 psi	ISO 178	36 MPa	5200 psi
Flex Modulus	ASTM D790	900 MPa	130 ksi	ISO 178	1300 MPa	188 ksi
Izod Notched Impact	ASTM D256	19 J/m	0.3 ft-lb/in	ISO 180-A	2 J/m²	0.001 ft-lb/in²
Izod Unnotched Impact	ASTM D4812	250 J/m	5 ft-lb/in	ISO 180-U	20 J/m²	0.0087 ft-lb/in²
Shore Hardness	ASTM D2240	75 D	75 D	ISO 7619	75 D	75 D
	THERMAL				**THERMAL**	
Tg (DMA E")	ASTM E1640 (E"Peak)	22 ° C	72 ° F	ISO 6721-1/11 (E" Peak)	22 ° C	72 ° F
HDT 0.455MPa/66PSI	ASTM D648	49 ° C	121 ° F	ISO 75- 1/2 B	49 ° C	121 ° F
HDT 1.82MPa/264 PSI	ASTM D648	42 ° C	108 ° F	ISO 75-1/2 A	42 ° C	108 ° F
CTE -20 TO 50C	ASTM E831	105 ppm/ ° C	58 ppm/ ° F	ISO 11359-2	105 ppm/ ° C	58 ppm/ ° F
CTE 75 TO 180C	ASTM E831	175 ppm/ ° C	97 ppm/ ° F	ISO 11359-2	175 ppm/ ° C	97 ppm/ ° F
Ash Content	ASTM D5630	0.026%	0.026%	ISO 11359-2	0.026%	0.026%



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