

# HP Jet Fusion 5200 Series 3D Printing Solutions



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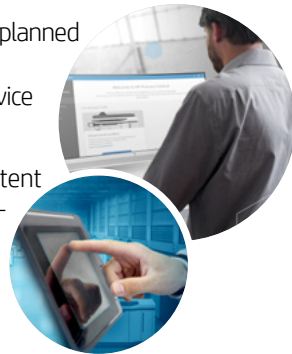
Drive new growth and expand into volume production with HP's robust, manufacturing-ready 3D printing solution

Ideal for mid-volume production environments



## Enhanced manufacturing predictability

- Get quality—from fine detail and sharp edges to textures—and optimal yield at industrial-level OEE.
- Produce functional parts with best-in-class isotropy with the latest generation of HP Multi Jet Fusion systems.
- Reduce errors, failed jobs, and unplanned downtime with HP 3D Proactive Remote Service that includes service alerts.
- Uniquely predictable and consistent print time for any type of part—no support structures needed.



## Breakthrough productivity with integrated software, materials mixing, and unpacking automation

- Best-in-class economics and productivity (over 160,000 cm<sup>3</sup> per day) for production environments.
- Streamlined workflow, improved process development, optimized job efficiency, and enhanced production efficiency with a consolidated dashboard that integrates data across industrial management systems.<sup>1</sup>
- Consistent unpacking results through an automatic process with an industrial-grade solution.
- Streamlined workflow and HP's most economical continuous 3D printing with automated materials mixing, enclosed processing station, and natural cooling unit.



## Expand into new applications and markets

- Address more final part applications with new levels of repeatable accuracy and best-in-class economics.
- Deliver a breadth of applications for various markets with PP, PA 11, PA 12, PA 12 GB, and TPU materials today, and more in the future.
- Address sustainability, with lower carbon footprint parts,<sup>2</sup> and HP 3D materials offering industry-leading reusability.<sup>3</sup>



Data courtesy of HP - BASF

## Integration with industry-leading software partners



## HP 3D hardware, software, and services designed to help you scale into volume production



## HP 3D Software Solutions

3D API <sup>1</sup>	HP 3D Center <sup>4</sup>	HP SmartStream 3D Build Manager	HP 3D Process Control <sup>5</sup>	HP Universal Build Manager powered by Dyndrite <sup>6</sup>
Streamlined data access and automation across industrial management systems	Dashboard view into production data and remote monitoring for greater efficiency and agility, for production insights and visibility into manufacturing processes	Quickly and easily prepare your jobs for printing with all the elements you need	Dimensional accuracy and repeatability, faster; flexibility and agility—without time- and labor-intensive injection molding fine-tuning steps	Efficient, automated build preparation across your entire 3D printing fleet

## New materials and applications— new growth opportunities

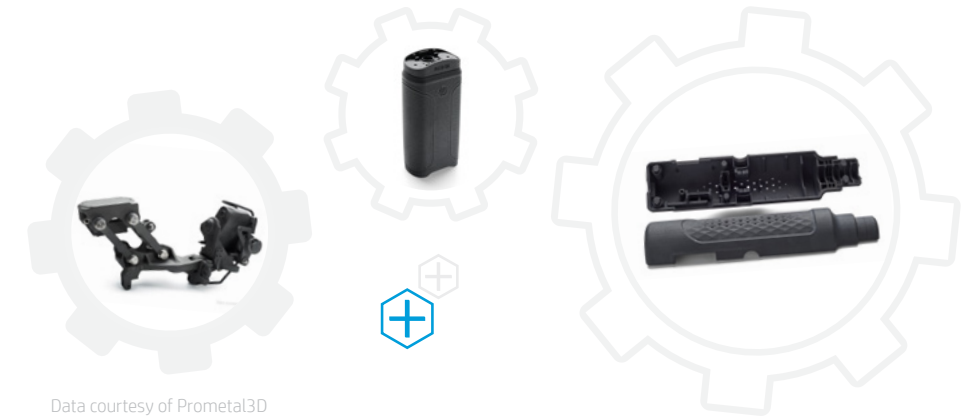
Expand into new applications and markets with a growing portfolio of HP 3D materials that enable you to produce a variety of low-cost, quality parts—and address sustainability objectives with industry-leading reusability.<sup>3</sup>



### HP 3D High Reusability PA 12 Glass Beads—stiff, dimensionally stable, quality parts

Produce stiff, functional parts—while achieving up to 70% surplus powder reusability<sup>12</sup>—with this glass bead filled thermoplastic material ideal for applications requiring high stiffness and dimensional stability like enclosures and housings, fixtures and tooling.

Statements:<sup>9</sup> REACH, RoHS (for EU, Bosnia-Herzegovina, China, India, Japan, Jordan, Korea, Serbia, Singapore, Turkey, Ukraine, Vietnam), PAHs, UL 94 and UL 746A



Data courtesy of Prometal3D

### HP 3D High Reusability PA 11—ductile,<sup>7</sup> quality parts

Produce functional parts with impact resistance and ductility.<sup>7</sup> This thermoplastic material, made from renewable sources,<sup>8</sup> provides optimal mechanical properties and consistent performance at industry-leading surplus powder reusability.<sup>3</sup>

Statements:<sup>9</sup> Biocompatibility, REACH, RoHS (for EU, Bosnia-Herzegovina, China, India, Japan, Jordan, Korea, Serbia, Singapore, Turkey, Ukraine, Vietnam), PAHs, Statement of Composition for Toy Applications, UL 94 and UL 746A



### HP 3D High Reusability PP enabled by BASF—chemical resistant,<sup>13</sup> weldable, low moisture absorption, functional parts

Produce genuine, functional PP parts with excellent chemical resistance,<sup>13</sup> low moisture absorption, outstanding welding capabilities, and biocompatibility<sup>9</sup> ideal for a wide range of automotive, industrial, consumer goods, and medical applications.

Statements:<sup>9</sup> Biocompatibility, REACH, RoHS (for EU, Bosnia-Herzegovina, China, India, Japan, Jordan, Korea, Serbia, Singapore, Turkey, Ukraine, Vietnam), PAHs, Statement of Composition for Toy Applications

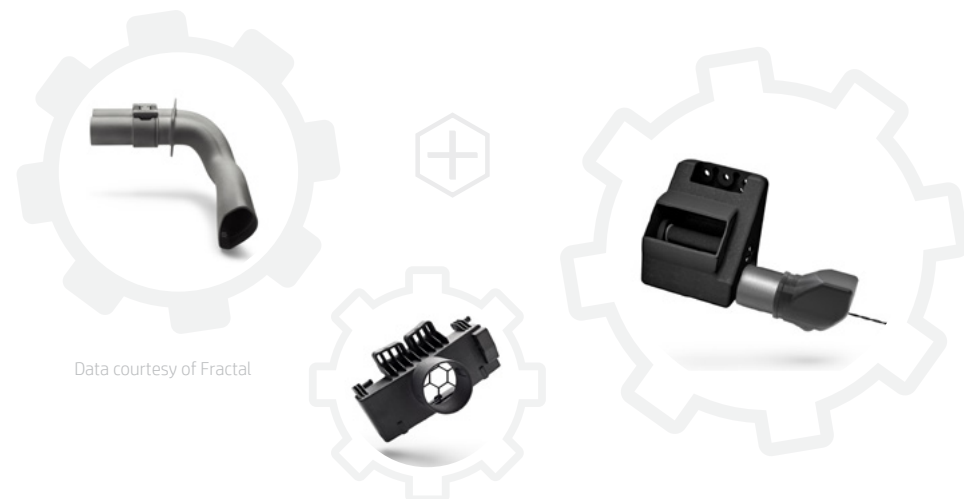


Printed with HP 3D High Reusability PP enabled by BASF

### HP 3D High Reusability PA 12—strong, low-cost,<sup>10</sup> quality parts

Reduce total cost of ownership<sup>11</sup> and produce strong, functional, detailed complex parts with HP 3D High Reusability PA 12, a robust thermoplastic that enables industry-leading surplus powder reusability.<sup>3</sup>

Statements:<sup>9</sup> Biocompatibility, REACH, RoHS (for EU, Bosnia-Herzegovina, China, India, Japan, Jordan, Korea, Serbia, Singapore, Turkey, Ukraine, Vietnam), PAHs, Statement of Composition for Toy Applications, UL 94 and UL 746A



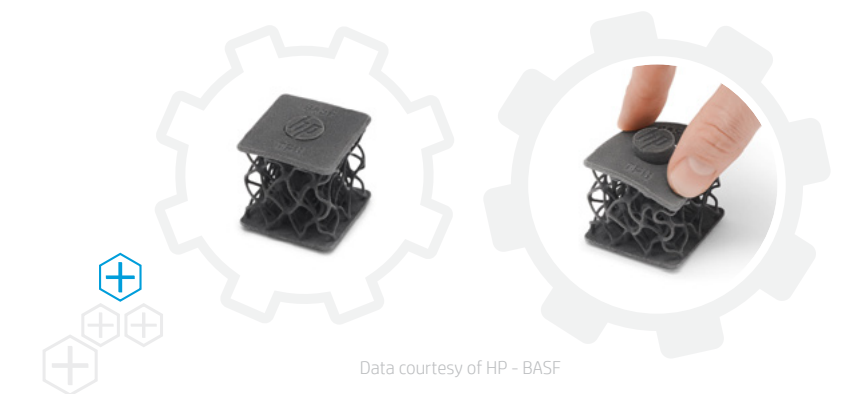
Data courtesy of Fractal

### BASF Ultrasint® TPU01—flexible, functional parts

Produce flexible TPU parts, with a high throughput, excellent quality and level of detail, and suitable for a wide range of applications. Ideal for parts requiring shock absorption, energy return, and flexibility.



Tested and approved solely for compatibility with HP Jet Fusion 3D printers<sup>14</sup>



Data courtesy of HP - BASF

## HP 3D Printing materials portfolio selection guide<sup>15</sup>

	HP 3D HR PA 11	HP 3D HR PA 12	HP 3D HR PA 12 GB	HP 3D HR PP enabled by BASF	BASF Ultrasint® TPU01
Stiffness	●	●	★	■	▲
Impact resistance	●	■	▲	■	★
Elongation	●	■	▲	■	★
Dimensional capability	●	★	●	■	■
Level of detail	★	●	●	■	■
Flat part	■	●	★	▲	■
Temperature resistance	▲	■	●	■	▲
Chemical resistance <sup>13</sup>	●	●	n/a	★	■
Low moisture absorption	▲	▲	▲	★	■
Lightweight	●	●	■	★	▲

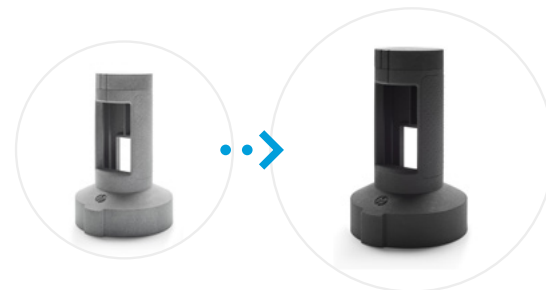
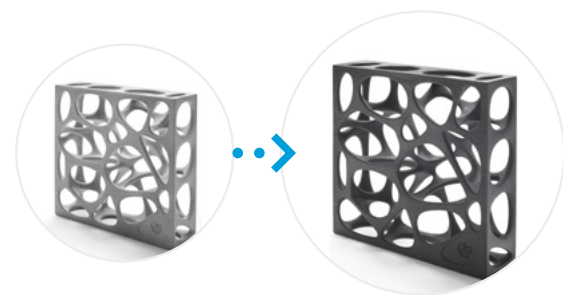
For more information, visit: [hp.com/go/3Dmaterials](http://hp.com/go/3Dmaterials)

★ Best
● Good
■ Fair
▲ Not recommended

## HP recommended post-processing solutions

### Girbau DY130 Dyeing Solution<sup>16</sup>

With 50 years of experience designing industrial equipment and in the dyeing equipment industry, Girbau offers a post-processing solution for dye finishing made for HP Jet Fusion 5200 Series 3D Printing Solutions.<sup>16</sup>



For more information, visit: [coloringsystem.girbau.com](http://coloringsystem.girbau.com)

## Working together through your digital manufacturing journey—HP 3D Solution Services

Whether you're just starting out or you're in full production, we're here to help you successfully navigate your 3D printing adoption journey with a world-class service experience dedicated to making digital manufacturing—and new growth—a reality for your business.

### HP 3D Printing Prepare Services

From preparing your site to installing and calibrating your equipment and printing your first parts to helping you explore the full potential of HP 3D Printing, we'll help get you started on the right track with **HP 3D Printing Prepare Services**.

### HP 3D Printing Care Services

Your uptime is our top priority. From preventive maintenance to proactive, big-data driven analytics, we're looking for every opportunity to help you improve the return on your investment through **HP 3D Printing Care Services**.

### HP 3D Printing Grow Services

Accelerate your transformation with **HP 3D Printing Grow Services**, designed to help you grow, move into new materials, applications, and use cases, and further optimize your manufacturing processes.



Learn more at [hp.com/go/3DSupport](http://hp.com/go/3DSupport)

## HP 3D Professional Services—accelerate your transformation to additive manufacturing (AM)

Learn more at: [hp.com/go/3DProfessionalServices](http://hp.com/go/3DProfessionalServices)

Learn more at: [hp.com/go/3DFactoryServices](http://hp.com/go/3DFactoryServices)

HP 3D Professional Services help organizations identify viable strategic opportunities, optimize design for breakthrough applications, and streamline manufacturing processes to enable mass customization and scale production.



### Adopt

Identify new opportunities and advanced design techniques enabled with HP Multi Jet Fusion technology.



### Develop

Look to improve your product positioning and market differentiation through innovation and new application development.



### Manufacture

Set up customized, repeatable, and scalable manufacturing processes with HP 3D Factory Services.

## Accelerate your move to HP 3D Printing with HP Integrated Financial Solutions

Leverage the latest technology to help accelerate your growth, profitability, and competitiveness. Partner with HP Integrated Financial Solutions to help accelerate your time to value. Enjoy the flexibility to meet both your technology and financial plans while allocating your cash to other priorities.

Financing and service offerings available through Hewlett-Packard Financial Services Company and its subsidiaries and affiliates (collectively HPFSC) in certain countries and is subject to credit approval and execution of standard HPFSC documentation. Rates and terms are based on customer's credit rating, offering types, services and/or equipment type and options. Not all customers may qualify. Not all services or offers are available in all countries. Other restrictions may apply. HPFSC reserves the right to change or cancel this program at any time without notice.

Financing options include a low per-month payment for HP Jet Fusion 5200 Series 3D Printing Solutions, enabling the flexibility to:

- Avoid a large up-front payment
- Align payments with revenue by using deferred or step payment options
- Simplify your administration: bundle hardware and services into a single agreement
- Change as your requirements evolve, refresh every 3–5 years

## HP 3D as a Service (HP 3DaaS)<sup>17</sup>— Gain new levels of cost predictability with the flexibility to scale your business as you grow

In this business climate, there are many advantages to a “pay-as-you-go” business model when the focus is on outcomes. Capital expenses are transformed into operating expenses, spread over time. Paying on a usage basis puts the focus on your business results rather than equipment or transactions.

HP Jet Fusion 3D Printing Solutions are reinventing design and manufacturing. From accelerating design cycles, to printing full-color functional parts,<sup>18</sup> to running efficient volume production with repeatable part quality.

Speed up your digital manufacturing transformation with HP 3DaaS:

- **Predictable:** usage-based price per successful build<sup>19</sup> gives you certainty around your variable costs
- **Convenient:** gain new operational efficiencies by simplifying supplies ordering and inventory management
- **Affordable:** avoid up-front investment—and help align your costs directly with your revenue by paying monthly<sup>20</sup>

HP 3DaaS Base includes:

- Automatic replenishment of HP 3D supplies
- HP 3D Printing Care Services, including remote and onsite support
- Online dashboard for easy, convenient tracking of billing and usage

Learn more at  
[hp.com/go/3DIntegratedFinancialSolutions](https://hp.com/go/3DIntegratedFinancialSolutions)

Contact your local HP sales representative for more information or learn more at  
[hp.com/go/3DaaS](https://hp.com/go/3DaaS)



Data courtesy of Materialise

# Technical specifications

## HP Jet Fusion 5200 Series 3D Printers

Printer performance	Technology	HP Multi Jet Fusion technology
	Effective building volume	380 x 284 x 380 mm (15 x 11.2 x 15 in)
	Building speed <sup>21</sup>	Up to 5058 cm <sup>3</sup> /hr (309 in <sup>3</sup> /hr)
	Layer thickness	0.08 mm (0.003 in)
	Job processing resolution (x, y)	1200 dpi
Dimensions (w x d x h)	Printer	2210 x 1268 x 1804 mm (87 x 50 x 71 in)
	Shipping	2300 x 1325 x 2027 mm (91 x 52 x 80 in)
	Operating area	3700 x 3700 x 2500 mm (146 x 146 x 99 in)
Weight	Printer	880 kg (1940 lb)
	Build unit	140.5 kg (309.7 lb)
	Shipping	1037.5 kg (2287 lb)
Network <sup>22</sup>	Gigabit Ethernet (10/100/1000Base-T), supporting the following standards: TCP/IP, DHCP (IPv4 only), TLS/SSL	
Processor and memory	Processor	Intel® Core™ i7 7770 (3.6 GHz, up to 4.2 GHz)
	Memory	32 GB DDR4
Hard disk	1TB HDD SED (AES-256 encrypted)	
	1TB SDD SED (AES-256 encrypted), TGC-OPAL 2.01 compliant	
Software	HP SmartStream 3D Build Manager, HP SmartStream 3D Command Center	
	Compatible software	HP 3D API, <sup>1</sup> HP 3D Center, <sup>4</sup> HP 3D Process Control, <sup>5</sup> HP Universal Build Manager powered by Dyndrite <sup>6</sup>
	Supported file formats	3MF, STL, OBJ, and VRML (v2.0)
	Certified third-party software	Autodesk® Netfabb® with HP Workspace, Materialise Build Processor for HP Multi Jet Fusion technology, Siemens NX AM for HP Multi Jet Fusion technology
Power	Consumption	12 kw <sup>23</sup>
	Requirements	380-415 V (line-to-line), 50 A max, 50/60 Hz 200-240 V (line-to-line), 80 A max, 50/60 Hz
Certifications and statement	Safety	IEC 60950-1+A1+A2 compliant; United States and Canada (UL listed); EU (LVD and MD compliant, EN 60950-1, EN 12100-1, EN 60204-1, and EN 1010)
	Electromagnetic	Compliant with Class A requirements, including: USA (FCC rules), Canada (ICES), EU (EMC Directive), Australia (ACMA), New Zealand (RSM), Korea (KCC)
	Environmental statement	REACH
Warranty & service coverage included	One-year limited hardware warranty	

## HP Jet Fusion 5200 Series 3D Processing Stations

Features	Automated mixing and loading with ultrasonic sieving and accessible sieve mesh; semi-manual unpacking; high-temperature unpacking; automated external storage tank; optional trained self-service deep-cleaning; optional cooling unit		
	Dimensions (w x d x h)	Processing station	2990 x 934 x 2400 mm (117.7 x 36.8 x 94.5 in)
		Shipping	2389 x 1176 x 2182 mm (94 x 46.3 x 85.9 in)
Weight	Operating area	3190 x 2434 x 2500 mm (125.6 x 95.8 x 99 in)	
	Processing station	485 kg (1069 lb)	
	Loaded	724 kg (1596 lb)	
Power	Shipping	620 kg (1366 lb)	
	Consumption	2.6 kW (typical)	
	Requirements	Input voltage single phase 200-240 V (line-to-line) 19 A max, 50/60 Hz (line-to-neutral) 14 A max, 50 Hz	
Certifications and statement	Safety	UL 2011, UL508A, NFPA 70/NFPA 79, C22.2 NO. 14-13 compliant; United States and Canada (UL listed); EU (MD compliant, EN 60204-1, EN 12100-1, EN 1127-1, EN-ISO 11201 and EN 1010)	
	Electromagnetic	Compliant with Class A requirements, including: USA (FCC rules), Canada (ICES), EU (EMC Directive), Australia (ACMA), New Zealand (RSM), Korea (KCC)	
	Environmental statement	REACH	
Warranty & service coverage included	One-year limited hardware warranty		

# Ordering information

Printer	3FW25A	HP Jet Fusion 5200 3D Printer
Accessories	3FW27A	HP Jet Fusion 5200 3D Processing Station
	3FW29A	HP Jet Fusion 5200 3D Build Unit
	2W883A	HP Jet Fusion 5200 Series 3D Automatic Unpacking Station
	2M7W6A	HP Jet Fusion 5200 Series 3D Automatic External Tank
	4QG11A	HP Jet Fusion 5200 3D Automatic External Tank Starter Kit
	M0P54B	HP Jet Fusion 5200/4200 Series 3D External Tank 5-units Bundle
	5ZR21A	HP Jet Fusion 5200 3D Semaphore
	4QG10A	HP Jet Fusion 5200 3D Natural Cooling Unit
	5ZR22A	HP Jet Fusion 5200 3D Natural Cooling Unit Starter Kit
	5ZR19A	HP Jet Fusion 5210 3D Printer Installation Kit
5ZR23A	HP Jet Fusion 5210 Pro 3D Printer Installation Kit	
5ZR20A	HP Jet Fusion 5210 3D Processing Station Installation Kit	
5ZR24A	HP Jet Fusion 5210 Pro 3D Processing Station Installation Kit	
3WL35A	HP Jet Fusion 5200/4200 Series 3D Material Unloading Kit <sup>24</sup>	
3FW24A	HP Jet Fusion 5200/4200 Series 3D Material Loading 3-units Bundle <sup>24</sup>	
UB8N4E	HP 3D Long Term Consumable Cleaning Kit Service for HP Jet Fusion 5200 Series 3D Processing Station/Build Unit	
HP OfficeJet Pro 7740 Wide Format All-in-One Printer	For more information on availability in your region, please check with your local HP Amplify 3D Printing Specialist	
Recommended third-party accessories	Hovmand Forklift 5200	Please consult with your local HP Amplify 3D Printing Specialist
	Girbau DY130 Dyeing Solution <sup>16</sup>	Please consult with your local HP Amplify 3D Printing Specialist
Original HP printheads	F9K08A	HP 3D600 Printhead
HP 3D long-term consumables	8VJ68A	HP Jet Fusion 5200/4200 Series 3D Vacuum Pump Filter
	2X0E1A	HP Jet Fusion 5200 Series 3D Automatic Unpacking Station E-cabinet Fan Filter
	2X0E2A	HP Jet Fusion 5200 Series 3D Automatic Unpacking Station Pneumatic Filter
	2X0E3A	HP Jet Fusion 5200 Series 3D Automatic Unpacking Station Top Lid Filter

Original HP agents	V1Q63A	HP 3D700 5L Fusing Agent
	V1Q64A	HP 3D700 5L Detailing Agent
Other supplies	V1Q66A	HP 3D600 Cleaning Roll
Original HP 3D high reusability materials <sup>25</sup>	V1R10A	HP 3D High Reusability PA 12 30L (13 kg)
	V1R16A	HP 3D High Reusability PA 12 300L (130 kg)
	V1R34A	HP 3D High Reusability PA 12 Production Material 300L (130 kg) <sup>26</sup>
	V1R20A	HP 3D High Reusability PA 12 1400L (600 kg) <sup>24,27,28</sup>
	V1R12A	HP 3D High Reusability PA 11 30L (14 kg)
	V1R18A	HP 3D High Reusability PA 11 300L (140 kg)
	V1R36A	HP 3D High Reusability PA 11 Production Material 300L (140 kg) <sup>26</sup>
	V1R24A	HP 3D High Reusability PA 11 1700L (750 kg) <sup>24,27,28</sup>
	V1R11A	HP 3D High Reusability PA 12 Glass Beads 30L (15 kg)
	V1R22A	HP 3D High Reusability PA 12 Glass Beads 300L (150 kg)
	V1R35A	HP 3D High Reusability PA 12 Glass Beads Production Material 300L (150 kg) <sup>26</sup>
	V1R23A	HP 3D High Reusability PA 12 Glass Beads 1400L (700 kg) <sup>24,27,28</sup>
	V1R28A	HP 3D High Reusability PP enabled by BASF 300L (100 kg)
	V1R37A	HP 3D High Reusability PP enabled by BASF Production Material 300L (100 kg) <sup>26</sup>
	Materials Certified for HP Jet Fusion 3D Printing <sup>14</sup>	300070
300071		BASF Ultrasint® TPU01 300L (150 kg)
300072		BASF Ultrasint® TPU01 1000L (500 kg) <sup>27</sup>
HP Jet Fusion 3D Solution Services	UB4P2E	HP Digital Manufacturing Site Readiness Assessment Tier 1 Service for HP Jet Fusion 5200/4200 Series 3D Printing Solutions
	UB6Y0E	HP 3D Ready-to-Print Service for HP Jet Fusion 5200 Series 3D Printing Solutions
	UB4P0E	HP Digital Manufacturing Tech Transition Service for HP Jet Fusion 5200/4200 Series 3D Printing Solutions
	UB9V8E	HP 3 Year NBD* Onsite HW Support with DMR** Production Care for HP Jet Fusion 5200/4200 Series 3D Printer
	UB9X6E	HP 3 Year NBD* Onsite HW Support Production Care for HP Jet Fusion 5200/4200 Series 3D Build Unit
* Next Business Day	UB7R3E	HP 3 Year NBD* Onsite HW Support Foundation and Production Care for HP Jet Fusion 5200/4200 Series 3D Processing Station
**Defective Media Retention	UB7H6E	HP Customer Self-Repair Uptime Kit Service for HP Jet Fusion 5200 Series 3D Printers

## Eco Highlights

- Cleaner, more comfortable experience—enclosed printing system, and automatic powder management<sup>29</sup>
- Minimizes waste due to industry-leading reusability of powder<sup>3</sup>
- Take-back program for eligible supplies available in select countries<sup>30</sup>

Please recycle printing hardware and eligible printing supplies.  
Find out how at our website: [hp.com/ecosolutions](http://hp.com/ecosolutions)

Dynamic security enabled printer. Only intended to be used with cartridges using an HP original chip. Cartridges using a non-HP chip may not work, and those that work today may not work in the future. More at: [hp.com/go/learnaboutsolutions](http://hp.com/go/learnaboutsolutions).

Learn more about HP Multi Jet Fusion technology at:  
[hp.com/go/3DPrint](http://hp.com/go/3DPrint)

Connect with an HP 3D Printing expert or sign up for the latest news about HP Jet Fusion 3D Printing:  
[hp.com/go/3DContactus](http://hp.com/go/3DContactus)



Financed Project by Minetur -SETSI TSI-100802-2014-1



For more information, please visit:  
[hp.com/go/3DPrinter5200](http://hp.com/go/3DPrinter5200)

1. Supported industrial management systems: AMFG, LINK3D, Siemens NX AM, Siemens Opcenter. Access to additional data modules available only for the HP Jet Fusion 5200 Series 3D Printing Solution. Additional purchases required.
2. Low carbon footprint per printed HP Multi Jet Fusion part for runs of 1500 or less when compared to injection molded parts. Data comes from an ISO 14040/44 compliant and peer reviewed LCA study, January 2018.
3. Industry-leading surplus powder reusability based on using HP 3D High Reusability PA 11 and PA 12 at recommended packing densities and compared to selective laser sintering (SLS) technology, offers excellent reusability without sacrificing mechanical performance. Tested according to ASTM D638, ASTM D256, ASTM D790, and ASTM D648 and using a 3D scanner. Testing monitored using statistical process controls.
4. Compatible software. Additional purchase required.
5. This software is sold as an HP 3D Solution Service. For more information visit <https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA7-7931EEW>.
6. Supported additive processes: HP Multi Jet Fusion (polymers), binder jetting (polymers, metals, ceramics), powder bed fusion DMLS/SLS/SHS (metals), EBM (metals), SLS (polymers), FDM (polymers), SLA/DLP (polymers), LOM (composites, ceramics, glass), CBAM (composites, glass, ceramics). Compatible software. Additional purchase required.
7. Testing according to ASTM D638, ASTM D256, and ASTM D648 using HDT at different loads with a 3D scanner for dimensional accuracy. Testing monitored using statistical process controls.
8. HP 3D High Reusability PA 11 powder is made with 100% renewable carbon content derived from castor plants grown without GMOs in arid areas that do not compete with food crops. HP 3D High Reusability PA 11 is made using renewable sources, and may be made together with certain non-renewable sources. A renewable resource is a natural organic resource that can be renewed at the same speed in which it is consumed. Renewable stands for the number of carbon atoms in the chain coming from renewable sources (in this case, castor seeds) according to ASTM D6866.
9. For more information, see [hp.com/go/statementsPA11](http://hp.com/go/statementsPA11), [hp.com/go/statementsPA12](http://hp.com/go/statementsPA12), [hp.com/go/statementsPA12GB](http://hp.com/go/statementsPA12GB), and [hp.com/go/statementsPP](http://hp.com/go/statementsPP).
10. Based on internal testing and public data for solutions on market as of April, 2016. Cost analysis based on: standard solution configuration price, supplies price, and maintenance costs recommended by manufacturer. Cost criteria: printing 1.4 full build chambers of parts per day/5 days per week over 1 year of 30 cm<sup>3</sup> parts at 10% packing density on Fast print mode using HP 3D High Reusability PA 12 material, and the powder reusability ratio recommended by manufacturer, and printing under certain build conditions and part geometries.
11. Compared to selective laser sintering (SLS) and fused deposition modeling (FDM) technologies, HP Multi Jet Fusion technology can reduce the overall energy requirements needed to attain full fusing and reduce the system requirements for large, vacuum-sealed ovens. In addition, HP Multi Jet Fusion technology uses less heating power than SLS systems for better material properties and material reuse rates, minimizing waste.
12. HP Jet Fusion 3D Printing Solutions using HP 3D High Reusability PA 12 Glass Beads provide up to 70% powder reusability ratio, producing functional parts batch after batch. For testing, material is aged in real printing conditions and powder is tracked by generations (worst case for reusability). Parts are then made from each generation and tested for mechanical properties and accuracy.
13. For HP 3D High Reusability PP enabled by BASF, based on internal HP testing, May 2020, with tests for mechanical property retention, dimensional stability, and weight change after 7- and 30-day immersion with acids, bases, organic solvents, and aqueous solutions. For HP 3D High Reusability PA 11 and PA 12, based on internal HP testing, June 2017. Tested with diluted alkalies, concentrated alkalies, chlorine salts, alcohol, ester, ethers, ketones, aliphatic hydrocarbons, unleaded petrol, motor oil, aromatic hydrocarbons, toluene, and DOT 3 brake fluid. For BASF Ultrasint® TPU01, based on testing by BASF, April 2020, according to ASTM D471 for select IRM oils and Fuel A.
14. Nothing herein should be construed as constituting an additional HP warranty. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services and/or in a written agreement between you and HP for such HP products and services. HP believes that the information herein is correct based on the current state of scientific knowledge and as the date of its publication, however, to the maximum extent permitted by law HP EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF HP IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION PROVIDED. Except to the extent that exclusion is prevented by law, HP shall not be liable for technical or editorial errors or omissions contained herein and the information herein is subject to change without notice. HP shall not be liable for damages or losses of any kind or nature that result from the use of or reliance upon this information. The HP Jet Fusion 3D Materials have not been designed, manufactured or tested by HP for compliance with legal requirements for 3D printed parts and their uses and recipients are responsible for making their own determination as to the suitability of HP Jet Fusion 3D Materials for their purposes and uses, ensure compliance with applicable laws and regulations, and be aware that other safety or performance considerations may arise when using, handling or storing the product.
15. Based on internal HP testing, March 2020. For testing methodology and results, see [hp.com/go/3Dprintingmaterialswhitepapers](http://hp.com/go/3Dprintingmaterialswhitepapers). Please consult your local HP sales representative for more information.
16. This product is only available in Europe and in the Americas. HP does not design, manufacture or sell the Girbau product or provide any warranty for the Girbau products. HP believes that the information herein is correct based on the current state of scientific knowledge and as the date of its publication, however, to the maximum extent permitted by law HP EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF HP IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION PROVIDED. Except to the extent that exclusion is prevented by law, HP shall not be liable for technical or editorial errors or omissions, and damages or losses of any kind or nature that result from the use of or reliance upon this information, which is subject to change without notice. Recipients of the Girbau product are responsible for determining the suitability of Girbau products with HP Jet Fusion 3D products, ensuring compliance with applicable laws and regulations, and being aware that other safety or performance considerations may arise when using, handling or storing the product.
17. HP 3DaaS Base is currently available in the US, Canada, Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and UK. Includes support and maintenance services, supplies and long-term consumables.
18. Full-color parts applicable only with HP Jet Fusion color 3D printers.
19. A successful build is a printed job that ends with the exit code "job\_completed\_successfully."
20. HP 3DaaS Base defined usage-based price applies for a one-year term.
21. Based on using HP 3D High Reusability PA 12, 0.11-mm (0.0043-in) layer thickness and 8.45 sec/layer.
22. The HP Jet Fusion 3D Printing Solution should be connected to the HP Cloud in order to enable the correct functioning of the printer and to offer better support.
23. Average power for HP 3D High Reusability PA 11 and PA 12 in Balanced print mode.
24. This product number is sold directly by HP.
25. Liters refers to the materials container size and not the actual materials volume. Materials are measured in kilograms.
26. Only compatible with the HP Jet Fusion 5210 Pro/5210 3D Printing Solutions.
27. Only compatible with the HP Jet Fusion 5210 Pro 3D Printing Solution.
28. Additional material management equipment is required.
29. Compared to manual print retrieval process used by other powder-based technologies. The term "cleaner" does not refer to any indoor air quality requirements and/or consider related air quality regulations or testing that may be applicable.
30. Printing supplies eligible for recycling vary by supply and printer. Visit [hp.com/recycle](http://hp.com/recycle) to see how to participate and for HP Planet Partners program availability; program may not be available in your area. Where this program is not available, and for other consumables not included in the program, consult your local waste authorities on appropriate disposal.

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