

Industrial Automation

Robotics

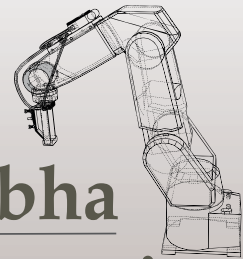
3d printing

Metal Injection

We innovate innovations



Prabha
Enterprises



We innovate innovations

A collage of 12 hexagonal images showcasing various 3D printed objects. The objects include a turbine, a Hulk figure, a guitar, a high-heeled shoe, a helmet, a mask, a building model, a hand holding a lattice structure, and a yellow lattice ring. The background is a dark brown color with a large, faint, stylized 'P' and 'a' visible.

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3d Printing

Plastic

Metal

Composite

3d printing -Plastic -Metal- Composite

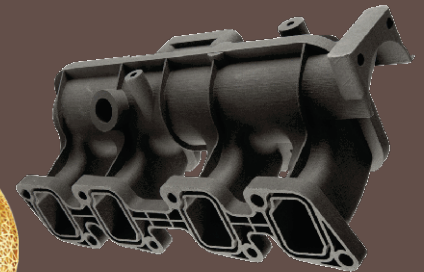
Prabha enterprise is Distributor & Representative of Adroitec Information Services Ltd. which has pan India presence with 100 plus work force , 25 Years of Global Consultancy In field of CAD/CAM/CAE and are into best 3d printers sales and services.

With our in depth knowledge and expertise we give complete solution from Design to End product made by 3d printing. Our prime focus is to convert the Parts to be made by 3d printing in volumes which are currently being manufacture which are not cost effective and takes long time to deliver with very low returns and fully dependent on human resources.

With our clear vision and experience we are focus to those companies and product Developer who are innovative and Searching industrial solutions via technology .

During the next 10 to 15 years, socioeconomic forces, advanced design and production innovation, and highly automated printing processes will intersect to create a massive transformation of manufacturing as we know it today. There has been a lot of talk about innovative part designs, designs that could not be fabricated by any of the historical analog processes. This begins now. Unique geometric designs can be made and printed even today. Improvements in function and aesthetics can be realized and in a much shorter development time than was ever possible. Eventually, design tools and printers will evolve to enable voxel-by-voxel differentiation, providing even more product competitiveness.

We have best of quality printers right from Industrial grade to education Printers. This covers vast range of materials, Technology, Different industries ,Applications.



3D Metal Printing

Metal 3D Printing holds a unique position in modern-day product development. It allows for the direct manufacturing of complex end-use parts and facilitates tooling for conventional manufacturing technologies, reducing costs and lead times.

ADAM Technology – A brief guide

Markforged Atomic Diffusion Additive manufacturing Metal X is the world's first (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.

Unsurprisingly, this geometry cannot be manufactured with a traditional subtractive methods or even with direct metal laser sintering process (DMLS). This means that the Metal X will allow you and other engineers to find new ways to change the world.

Ideal applications for Metal 3D Printing

- ☐ Fully functional prototypes
- ☐ Production tools
- ☐ Tooling such as molds and inserts
- ☐ Rigid housings
- ☐ Ductwork
- ☐ Spare parts
- ☐ Heat exchangers and heatsinks

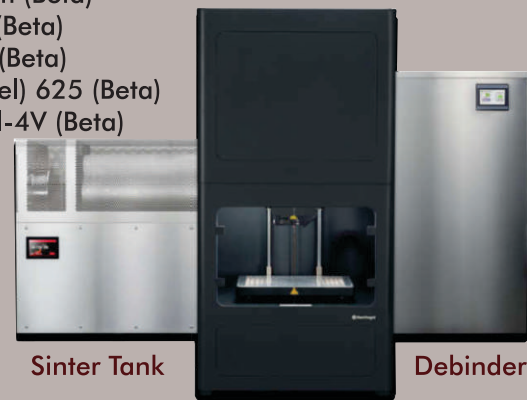
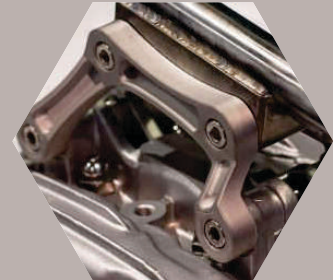
TECHNICAL SPECIFICATIONS

BUILD VOLUME

300 mm x 220 mm x 180 mm

MATERIALS

17-4 Stainless Steel
316L Stainless Steel
6061 Aluminum (Beta)
7075 Aluminum (Beta)
A-2 Tool Steel (Beta)
D-2 Tool Steel (Beta)
IN Alloy (Inconel) 625 (Beta)
Titanium Ti-6Al-4V (Beta)



Sinter Tank

Debinder

Metal Printer

“Innovation starts by intimately observing your customer”



Composite 3D Printing

Continuous fibers (CFF)

While chopped carbon fibers are remarkable in their ability to augment thermoplastics, continuous fibers can add far more strength to parts. Markforged uses a combination of FFF printing and Continuous Fiber Fabrication (CFF) to lay down long strand fibers in conventionally printed thermoplastic parts. This technology is also extrusion based and prints via a secondary nozzle, but instead of melting the whole filament, it uses the heat of its nozzle to “iron” down fibers into a thermoplastic layer. Fibers do not melt—instead, they're captured by the thermoplastic matrix in a similar way that thermoset adhesives like epoxy capture fibers in traditional fiber fabrication methods.

The resultant parts are an order of magnitude stronger, stiffer, and more durable than plastic (filled or not) and maintain the heat resistance, chemical resistance, and print quality of their thermoplastic matrix material. With Markforged, you can print chopped carbon fiber reinforced nylon (Onyx) with continuous fiber reinforcement.

20x

LOWER COST

Compared to machining or casting, Markforged is up to 20x lower cost

23x

STRONGER

Markforged printed parts are up to 23x stronger than standard 3d printed parts

50x

FASTER

3D printing with Markforged is up to 50x faster than traditional manufacturing methods

Composite Material

Carbon Fiber

Carbon fiber material is strong enough to replace aluminum at half the weight; use it when you want superior stiffness and minimal deflection.

Glass fiber

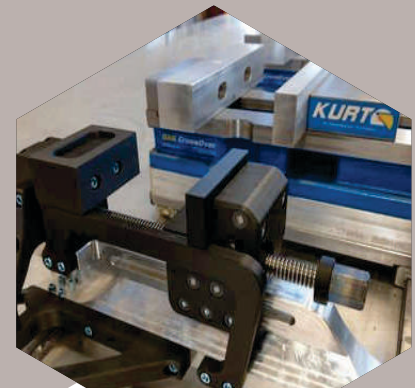
Inexpensive and 11 times stiffer than ABS, fiberglass is the perfect entry-level fiber for 3D printing.

HSHT Fiber Glass

HSHT fiberglass material delivers the highest impact resistance and heat deflection temperature of our continuous fibers.

Kevlar

Kevlar® is tough, lightweight material, and can bend further than any other fiber, making it ideal for 3D printing.



Dealing in world class Affordable 3D Printers & scanners:



Hewlett-Packard

- ❑ Best of its class
 - ❑ Market leader
 - ❑ Can achieve details like never before
 - ❑ Very high production rate
- Industrial printer 1 million colour



Mark Forged

- ❑ Unique in sense can print 4 different Composite fiber materials
- ❑ Best of low cost solution for metal printing via Metal X printer
- ❑ Best solution to print industrial products



Hyrel

- ❑ Best for Education and R&D institute
- ❑ Can print 44 nos of different Plastic materials



WASP

- ❑ Reliable low cost solution FDM printer with superior technology
- ❑ Can Print Plastic and Clay
- ❑ Currently world leader in larger size Construction 3d printer.



- ❑ All types of scanners
- ❑ Handy scanner with best result , easy to use
- ❑ Best suitable for complex and Nano details scanning.
- ❑ Suitable for 3d printing the parts based on scanning



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"When the winds of change blow, some people build walls and others build windmills."



Metal Injection

"MIM (METAL INJECTION MOULDING) is a part of powder metallurgy manufacturing process where the metal powder is compacted or brought to required shape likewise plastic injection molding which is followed by pre-sinter process in which secondary binder is removed. Thus giving a final product after sintering process. Thus one can say it a unique combination of plastic injection molding and powder metallurgy. This combination is industrially beneficial technology for allowing engineers to create complex shaped tiny metal parts which are complicated in design.

The metal injection moulding (MIM) process offers the following advantages:

- ❑ Cost-effective manufacture of high volume complex parts
- ❑ Reduced production time compared with investment casting
- ❑ Net-shape manufacture with minimal material waste (runners, sprues recyclable in-house): more significant as materials costs rise
- ❑ Mechanical properties superior to castings and other PM parts reflecting fine particle size and high sintered density
- ❑ Properties equivalent to wrought alloys
- ❑ Wide range of pre-alloys and master alloys available
- ❑ Minimum of finishing operations

MIM METALS

Stainless Steels

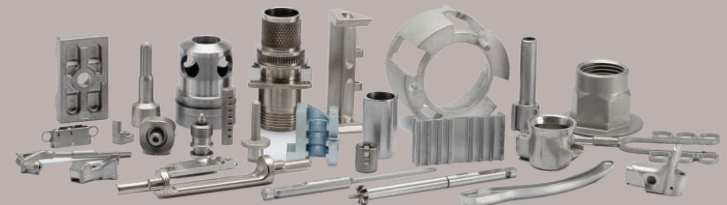
- ❑ 17-4PH – Best combination of strength and corrosion resistance
- ❑ 316 – Excellent corrosion resistance
- ❑ 420 – High hardness

Low Alloy Steels

- ❑ 2200 – Similar to PM FN-0200, good magnetic and toughness properties
- ❑ 4605 – High treatable, high-strength steel, up to HRC 52
- ❑ 4140 – Heat treatable, high-strength steel, up to HRC 60

Controlled Expansion Alloys

- ❑ Fe-Ni – The alloy composition (ie, Invar, Alloy 42, etc) can be tailored for the application's thermal expansion requirement
- ❑ F15 – AKA Kovar®, the alloy is engineered for hermetic glass-metal seals



Rajkot

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Hyderabad

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