Imagine.

Roland®

DVE
Digital Value Engineering

monoFab

ARM-10
3D PRINTER

SRM-20
MILLING MACHINE

Imagine. Roland

Turning your ideas into reality since 1986

3D PRINTER **ARM-10**

MILLING MACHINE **SRM-20**

Individuals created the world around us by giving form to their dreams and ideas. We believe imagination and ideas are our most powerful force, opening up limitless possibilities. Our goal is to provide everyone the ability to turn his or her creativity into tangible items. The Japanese concept of monozukuri - the enjoyment of making things - is key. The monoFab desktop tools are based on the 3D modelling technology that Roland DG pioneered and has continually enhanced since 1986. Incorporating both additive and subtractive 3D technologies, you can now realize your creativity like never before - right from your own desk.

monoFab


Imagine


Model


Test


Experience

PROTOTYPING WORKFLOW

Design

3D Modelling

Open 3D CAD/CG data in the included Roland software and optimize it for either 3D printing or milling.

3D Printing

ARM-10

By using the ARM-10 3D printer, you can produce designs that would challenge standard milling, such as undercuts and complex shapes. Your ideas are transformed into tangible 3D objects quickly and easily, allowing you to validate your designs.

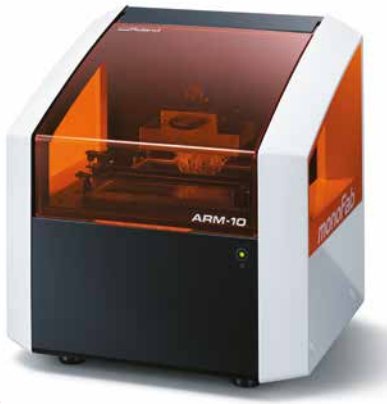
SRM-20

The SRM-20 milling machine produces beautiful finishes, including smooth, curved surfaces and accurate, fine details. It is ideally suited for creating prototypes that require mechanical checks and confirmation of fit. Due to its ability to cut a wide range of materials, models will look and feel closer to the final production runs and are ready for final validation.

3D Milling

3D PRINTER

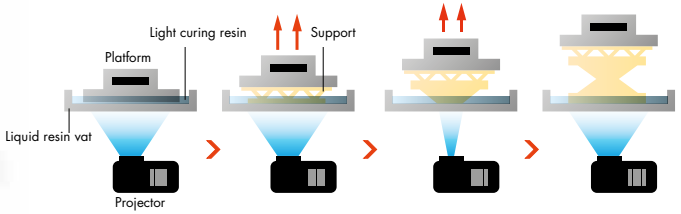
This 3D desktop printer brings your ideas to life



monoFab ARM-10

Projector-type 3D printer that fits on your desk

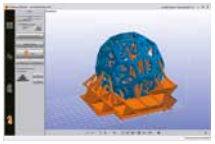
The ARM-10 desktop 3D printer brings together Roland DG's 3D modelling technologies. It features a proprietary projector lens and Roland's ImageCure resin to create 3D models using UV light. The acrylic resin becomes semi-transparent when cured.
Post-processing, such as support removal,polishing, and adding colour are simple to do.



The UV lamp instantly cures acrylic resin to build 3D shapes. The projection system allows simultaneous production of multiple objects within the same work area, enabling efficient 3D printing.

Roland software supports 3D printing

monoFab Player AM enables data correction, with a healing function to fill in any gaps in 3D data and simplification of meshes, layout editing and automatic support generation. The user-friendly interface is easy to use, making it ideal even for beginners.



monoFab Player AM

Create complex shapes

With 3D printing, you can quickly and easily build parts, which previously required multi-axis milling, such as complex objects with undercuts.

Includes support tray and containers to remove excess uncured resin, a spatula and tweezers for support removal.

A CREATOR'S VIEW

"Allowing the user to experience both design and engineering"

Check

Finish

You can create a real prototype at an early stage of the design process. This prototype enables you to carefully inspect aesthetics, structure, movement, fit, etc. Modifications to the design can then be made at the most effective time, without additional costs.

Product designer

Hiroshi Yasutomi

— The actual 3D sample production process

I produced an active speaker prototype using the monoFab machines. I used the ARM-10 3D printer to produce the external parts, since these shapes are complex. I used the SRM-20 milling machine to model the cabinet where milling precision as well as selecting the suitable material was required. In this way, I made the most of the respective strengths of the 3D printer and the milling machine. By using 3D printers and milling machines together, work can quickly progress. It also frees up time to try out additional ideas, and mistakes can be detected early in the prototype stage.

— How can monoFab be leveraged in the design process?

In product design, it's not really possible to share personal experience through sketches or words alone. 3D printers or milling machines are needed to create something that can be touched by hand and truly experienced, which can then be used to check user-friendliness. It's even possible to grasp structural inconsistencies at early stages that could not be seen in sketches. monoFab provided me a powerful tool to create personal experiences through prototyping, not only in design but also in engineering.

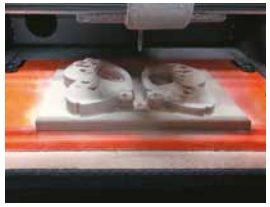
MILLING MACHINE

Desktop milling machine for precision 3D modelling

monoFab SRM-20

The next evolution in compact milling machines

The SRM-20 is Roland's latest generation desktop milling machine for the office, studio and educational environment. Since pioneering desktop milling in 1986, Roland has continued to perfect its expertise in delivering accuracy and efficiency in a compact format. The SRM-20 incorporates innovative features, including a new spindle, collet, circuit boards and control software. The result is a leap forward in milling precision, speed and ease of use.The SRM-20 can mill a variety of non-proprietary materials typically used for prototyping, including chemical wood, acrylic and modelling wax. Optional collets are also available to extend the mill's capability with a wide range of end mill shapes and sizes, ideal for creating beautiful finishes and intricate details.



Designed for clean and secure use in your office or classroom

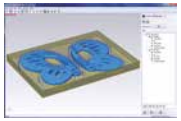
The SRM-20 includes an interlocked full cover and a dust-collection tray to keep your environment clean and clear of waste material. For increased safety, opening the cover automatically stops the machine.

Simple operation for optimum results

The SRM-20 supports Roland's unique "VPanel," an on-screen operation panel for the computer. By using the speed-controlled 4-way cursor movement, you can set the origin point quickly and accurately. You can also alter spindle rotation speed and milling speed during milling, giving you full control over the results and milling time.

Three types of software included

MODELA Player 4 is a CAM software that automatically calculates and displays the cutting tool path from 3D data created in commercial 3D CAD software or downloaded from the Internet. iModela Creator is a 2D milling software for processing 2D data such as text and graphics. ClickMILL provides the user with direct control of the machine without the need to access CAD or CAM software when drilling holes or cutting pockets and other finishing processes.



MODELA Player 4

iModela Creator

ClickMILL

Roland OnSupport ensures convenience and peace of mind

Software updates are available through Roland OnSupport. In addition, notifications of completed production and job reports are sent directly to your cell phone or computer so you can be confident in knowing the progress of your models, even when you are away from your desk.

*Use of Roland OnSupport requires an Internet connection.

1. Download software updates and drivers.
2. An e-mail will keep you informed of the job status.
3. Support information for your model is accessible with just one mouse click.
4. Improve your skills with useful information available exclusively through OnSupport.

Unmatched service and support

Roland DG Creative Center: Our collection of real-world applications is a great source of information and inspiration. Explore our application gallery for new ideas you can apply to your own business.

Roland DG Academy: Take advantage of our extensive training resources to get the most from your product. The Roland DG Academy teaches everything from product basics to advanced production techniques, applications and more.

Roland DG Care: You get complete support for the life of your product. Roland DG offers you a full range of customer services.

Roland DG products that feature this environmental label meet the company's criteria for environmental consciousness, a set of standards based on ISO 14021 self-declaration type II. For more information, please visit www.rolanddg.com.

monoFab ARM-10

Specifications ARM-10		
Build technology		Layer projection system
Build size		130 (W) x 70 (D) x 70 (H) mm (Job volume of resin is up to 300 g)
Build speed		10 mm/h (Layer pitch = 0.15 mm)
Light source		UV-LED (ultraviolet light emitting diode)
XY resolution		0.2 mm
Z axis resolution		0,01 mm
Power requirements		Machine:DC 24 V, 0.6 A, Dedicated AC adapter: AC 100 V to 240 V±10%, 50/60 Hz
Power consumption		15 W
Acoustic noise level		During operation: 55 dB (A) or less, During standby: 49 dB (A) or less
Dimensions / Weight		430 (W) x 365 (D) x 450 (H) mm / 17 kg
Interface		USB
Environment	During operation	Temperature of 20 to 30°C, 35 to 80% relative humidity (non-condensing)
	Not operating	Temperature of 5 to 40°C, 20 to 80% relative humidity (non-condensing)
Included items		AC adapter, Power code, USB cable, Liquid material vat, Printing and washing tools (Metallic spatula, Plastic spatula, Tweezers, Washing container x 2, Hexagonal wrench, Spanner, Rubber gloves, Work tray, etc.), Start-up information card

monoFab SRM-20

Specifications SRM-20	
Cuttable material	Resins such as chemical wood and modelling wax (metal not supported), substrates for machining
X, Y, and Z operation strokes	203.2 (X) x 152.4 (Y) x 60.5 (Z) mm
Distance from collet tip to table	Maximum 130.75mm
Table size	232.2 (X) x 156.6 (Y) mm
Loadable workpiece weight	2 kg
X-, Y-, and Z-axis drive system	Stepping motor
Operating speed	6 - 1800mm/min
Software resolution	0.01 mm/step (RML-1), 0.001mm/step (NC code)
Mechanical resolution	0.000998594 mm/step
Spindle motor	DC motor Type 380
Maximum spindle rotation	7,000 rpm
Cutting tool chuck	Collet method
Interface	USB
Control command sets	RML-1, NC code
Power requirements	Machine: DC24V, 2.5A, Dedicated AC adapter: AC 100V±10%, 50/60Hz
Power consumption	Approx. 55W
Acoustic noise level	During operation: 65 dB (A) or less (when not cutting), during standby: 45 dB (A) or less
Dimensions / Weight	451.0 (W) x 426.6 (D) x 426.2 (H) mm / 19.6 kg
Environment	Temperature of 5 to 40°C, 35 to 80% relative humidity (non-condensing)
Included items	AC adapter, Power cord, USB cable, Cutting tool, Collet, Set screw, Spanners (7,10 mm), Hexagonal wrench (size 2,3 mm), Positioning pins, Double-sided tape, Start-up information card

Optionally available items ARM-10		
Item	Model	Description
Resin	PRH35-ST	350 g bottle
Liquid material vat	LMV-10	For replacement

Optionally available items SRM-20		
Item	Model	Description
End-mills		
Square end-mills	ZHS-100	High speed steel dia. 1 3(l)×6(d)×50(L)×2NT
	ZHS-200	High speed steel dia. 2 6(l)×6(d)×50(L)×2NT
	ZHS-300	High speed steel dia. 3 10(l)×6(d)×50(L)×2NT
	ZHS-400	High speed steel dia. 4 12(l)×6(d)×50(L)×2NT
	ZHS-500	High speed steel dia. 5 15(l)×6(d)×55(L)×2NT
	ZHS-600	High speed steel dia. 6 15(l)×6(d)×55(L)×2NT
	ZHS-3015	High speed steel dia. 3 15(l)×6(d)×50(L)×2NT; 2piece
Ball end-mills	ZCB-150	Cemented Carbide R1.5 25(l)×2.4(Lc)×65(L)×6(d)×2NT
	ZCB-200	Cemented Carbide R2 25(l)×3.2(Lc)×70(L)×6(d)×2NT
	ZCB-300	Cemented Carbide R3 30(l)×4.8(Lc)×80(L)×6(d)×2NT
Engraving cutters		
Engraving cutters (for plastic)	ZEC-100	Cemented Carbide dia. 6×50 (L)×0.225 (W)
Collets		
Collets (for end-mills)	ZC-20-30	dia. 3 mm
	ZC-20-32	dia. 3,175 mm
	ZC-20-40	dia. 4 mm
	ZC-20-60	dia. 6 mm
Others		
Spindle motor	SM-20	For replacement
Spindle unit	SS-20	For replacement

Unit: mm, dia. = flute diameter, R = flute radius, Lc = cutting length, l = flute length, d = shank diameter, L = overall length, NT = number of flutes

System Requirements ARM-10/SRM-20	
Operating system	Windows® 7/8/8.1 (32-bit/64-bit edition)*
CPU	Intel® CoreTM 2 Duo or more (CoreTM i5 or more recommended)
RAM	1GB (2 GB or more recommended)
Video card and monitor	A resolution of 1,280x1,024 or more recommended
Free hard-disk space	100 MB or more recommended
Other requirements	Internet connection and web browser, Internet Explorer® version 10 or more recommended

*Roland OnSupport and included software for SRM-20 are 32-bit application, which run on 64-bit Windows® with WoW64 (Windows 32-bit on Windows 64-bit).

Resin safety precautions before and after curing:

The main intended purpose of PRH35-ST resin is design verification and prototyping applications.
Refer to published safety data sheets and the included user's manual for the handling of uncured resin.
Although completely cured resin* is harmless when used for its main intended purpose, no biocompatibility assessment has been conducted. This resin is not suitable for applications where direct contact with food will occur or applications where extended contact with skin or human body will occur.

* Completely cured resin: Refers to the state where curing reaction has occurred to the point that uncured reactive components have been eliminated.

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