

M70 High Precision Resin Instruction

1. The Product Description

M70 is a high-precision rigid resin with nano-inorganic fillers added. The prints have a clay texture, sharp and clear details, and the surface is delicate and wear-resistant. The matte surface is easy to observe model details and defects, and the prints shrink and deform little for a long time.

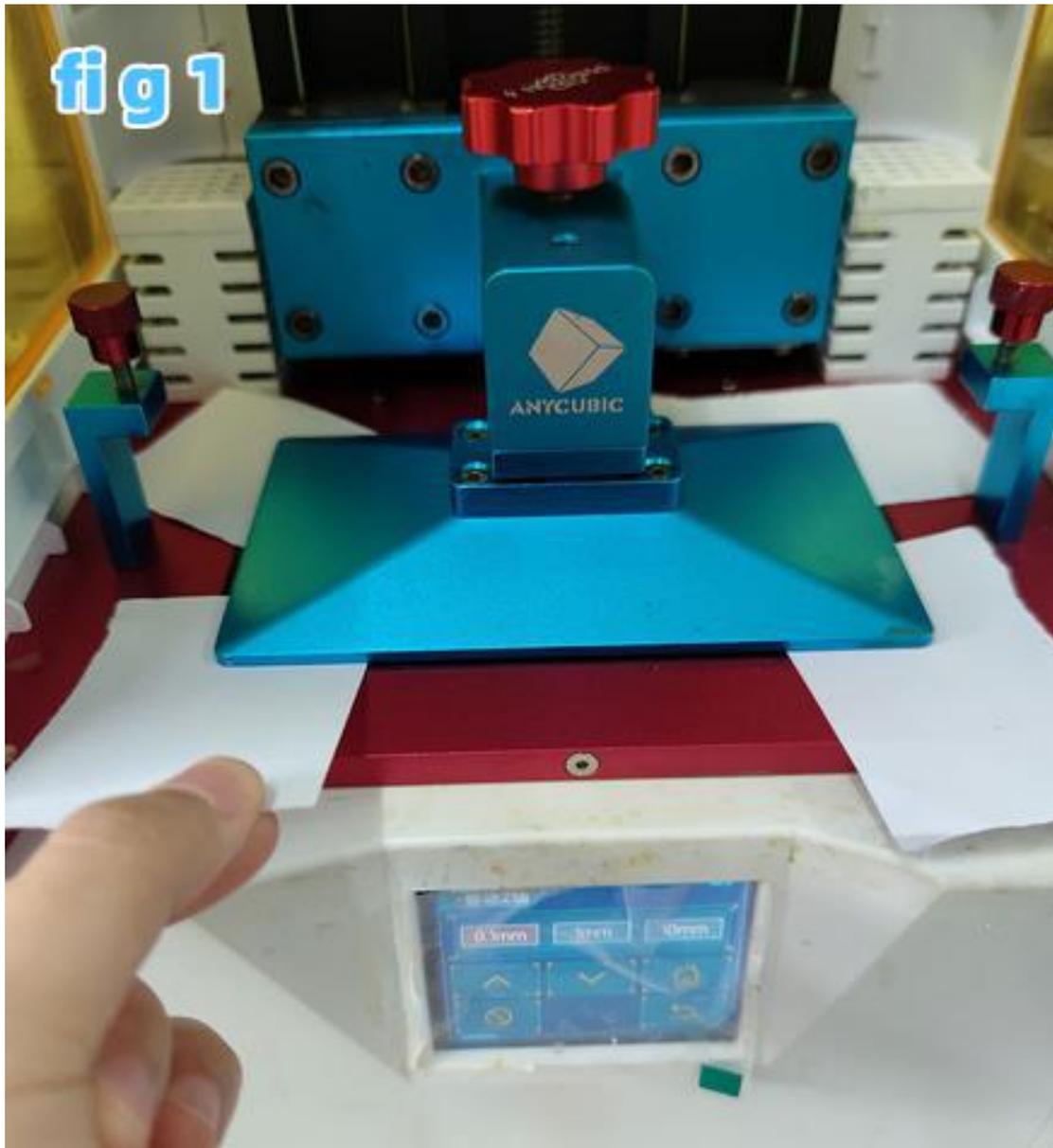
2. Material Properties Data

| | METHOD | DATA |
|-----------------------------|---------------|----------|
| Viscosity (25°C) | ASTM:D4212-10 | 590mpa.s |
| Shore Hardness | ASTM:D2240-05 | 89D |
| Heat Distortion Temperature | ASTM:D648 | 68°C |
| Tensile Strength | ASTM: D638-14 | 32MPa |
| Flexural Strength | ASTM: D790-10 | 51MPa |
| Notched IZOD | ASTM:D256-10 | 6.5J/m |
| Elongation at Break | ASTM: D638-14 | 9% |

3. Printing

Before printing: make sure that the build plate is fully leveled. Because M70 is a high-precision resin, the transmission depth is lower than other resins, so it is easy to have the prints not stick to the build plate. The build plate needs to be leveled so that each position is exactly one piece of A4 paper away from the LCD screen.

(Please use 4 sheets of A4 paper for leveling in strict accordance with the method in the picture below)

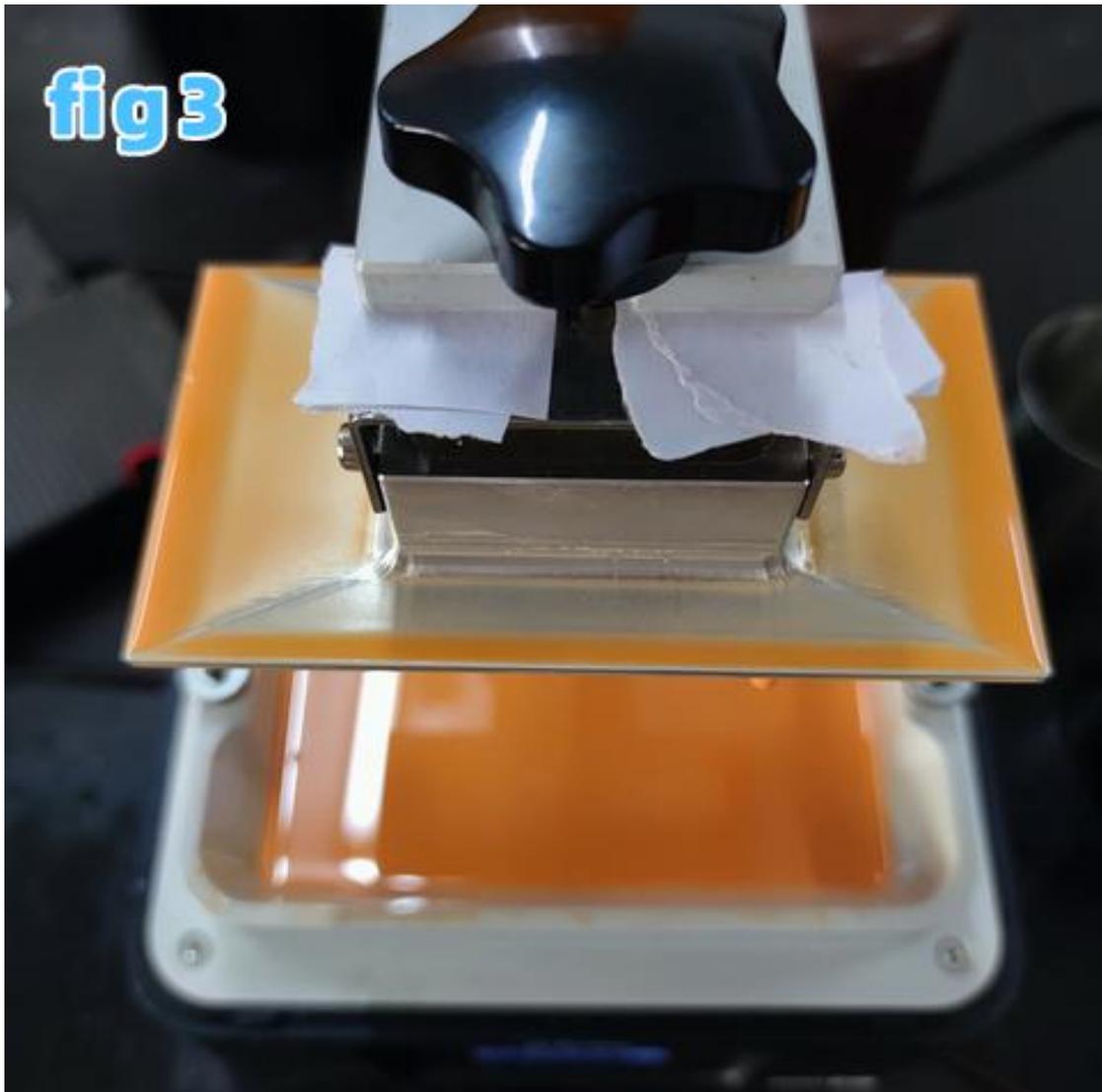


Listed below are some cases where prints are dropped due to issues with the build plate, and solutions:

- a. There is a depression in the middle of the build plate, which needs to be polished according to the method shown in the figure below.
(This situation generally occurs on printers with a print size of not less than 8.9 inches, many of their build surfaces are uneven)



- b. Use a magnetic build plate. The magnetic plate is too smooth to stick to the prints and needs to be removed or use 800 grit sandpaper to roughen the magnetic platform before use
- c. Due to inertial positioning after the knobs or screws of the build plate are locked, as shown in Fig3. Correction with spacers when mounting the build plate



After eliminating the above problems, you can start setting parameters and slicing.

Supports Settings: Sets the medium supports. Note that M70 resin is difficult to stick to the build plate, you can set a thick bottom raft or increase the number of bottom layers to ensure that the bottom layer of the prints can stick to the plate.

Printing Settings:

Click the link to download the settings file: <https://www.resione.com/pages/settings>

Alternatively, you can also manually set the parameters as shown in the table: Use the standard resin settings of the printer brand you successfully printed as the "Standard Settings" (25-30 °C), otherwise, use the default standard resin settings of the printer (or slicer) as the "Standard Settings". Then follow the following method to set the settings of RESIONE resin according to the "Standard Settings".

| | Standard Settings | M70 Settings | M70 Settings |
|----------------------------|-------------------|--------------|--------------|
| Layer Height(mm) | 50 | 50 | 25 |
| Bottom Exposure Time(s) | A | 2.5*A | 2.5*A |
| Exposure Time(s) | B | 1.3*B | 0.9*B |
| Light-off Delay (s) | D | D+(1~3) | D+(1~3) |
| Bottom Lift Distance(mm) | E | E+(2~4) | E+(2~4) |
| Lifting Distance(mm) | F | F+(1~2) | F+(1~2) |
| Bottom Lift Speed (mm/min) | G | 60-120 | 60-120 |
| Lifting Speed (mm/min) | H | H | H |
| Retract Speed (mm/min) | I | I | I |

Note:

a. When the room temperature during printing is **18°C-24°C**, change the settings as follows:

Bottom exposure time: (M70 settings) +15%

Normal exposure time: (M70 settings) +15%

Light-off Delay time: (M70 settings) +1s

It is recommended to heat the resin if the printing is still not successful.(The heating temperature is 60-80°C, heating time is 10mins). This resin is not recommended for printing at room temperature lower than 18°C

b. The lifting of some printers can be divided into two stages. All the above settings for lifting only for to the first stage. The lifting speed of the first stage is generally very slow, no need to change

*The calculation of the above printing parameters is based on the experimental results of the RESIONE laboratory and is for reference only

4. Cleaning and Post-curing

Cleaning: You can use ethanol(concentration \geq 95%), or IPA to clean for less than 10min. It is recommended to use a toothbrush to scrub the prints. After cleaning, blow dry the print with compressed air.

(Why does M70 resin need to be cleaned with a toothbrush? Because some printers have an anti-aliasing effect, it is easy to produce a layer of incompletely cured resin on the surface of the print, which makes it difficult to clean. The use of ultrasonic cleaning can easily lead to defects on the surface of the print. However, the cleaning effect of the special cleaning machine for 3D printing is weak, which can easily cause the surface of the M70 print to become white.)

Post-curing: If you use a post-curing box with a power of 40W, our recommended post-curing time is about 10mins (Adjust the post-curing time according to the power of the post-curing box, the greater the power, the shorter the time).



Attentions:

- a. Too long post-curing time will make the resin prints easy to warping, hard and brittle.
- b. The resin prints will be fragile after post-curing. It is not recommended to apply force to the prints immediately. Just need to wait for a while until the internal stress of the prints is completely released.