

ZHUHAI CTC ELECTRONIC CO., LTD

CTC DIY Printer Installation and Use Manual

A mature brand that has been tested
by 10-years' time

focus on high-end science and technology, focus on 3D
printing

Thank you for purchasing the DIY 3D printer manufactured by Zhuhai CTC
Electronic Co., Ltd.

Please carefully read this installation and use manual before installation and use.
Website: www.cteprint.com

Contents

Introduction.....	1
1. Safety Issues.....	1
2. Materials and Parts.....	1
3. Notes.....	3
Installation of Motherboard.....	4
1. A1 Assembly.....	4
2. A2 Assembly.....	4
3. A3 Assembly.....	5
Motherboard Structure Installation and Connection of Power Cable Ports.....	6
Commissioning and Notes.....	15
Finished Product Display.....	20
Use Instructions.....	23
1. Proposed Environment.....	23
2. Printer Parameters.....	23
3. Chinese/English Operations.....	23
4. Use Instructions.....	25
4.1 Offline Printing.....	25
4.2 Online Printing.....	33
5. Installing Series Ports Driver.....	40
6. Online Printing.....	42
Maintenance.....	46
1. Cleaning Nozzle.....	46
2. Tightening Belt.....	46
3. Shaft and Threaded Rod Maintenance.....	46
4. Fault Shooting.....	46
5. Common Problems and Solutions.....	47
6. Warranty Statement and Permit Agreement.....	48
Appendix 1: Bill of Materials for DIY Printer.....	50

Introduction

Because the voltage under which this printer is used varies from one region to another, please first confirm the voltage of your region before using this printer (110V or 220V).

Printer maintenance conducted by customer is required after this printer is used for sometime. Frequent and correct maintenance can extend the using lifetime of printer.

1. Safety Issues

In order to obtain the best 3D printing effect, we do not recommend you to use the consumables of other brand other than the exclusive consumables provided by us. The maintenance and repairs caused by using consumables not provided by ZhuHai CTC Electronic Co., Ltd is not valid for the product warranty of our company.

When it is printing or has just finished printing, the temperature of module, nozzle, print bed or the other parts within printer body, so do not touch with hand.

When the printer is powered, it is forbidden to touch the power source, power port cable, or motherboard cable with hand or conductive article

It is forbidden to print directly on the heating bed. A piece of glass plate is required to be put on the bed under this condition.

If you need to contact the after-sales service for 3D printer offered by ZhuHai CTC Electronic Co., Ltd, you can directly request to be added into the enterprise group (the group No. Is 102304634) about 3D printing of our company to obtain online technical support. You can also get relevant information about 3D printer use and fault shooting in the use manual offered with printer

2. Materials and Parts

Note: Only large assemblies are listed in table 1. Other parts are listed in appendix 1: Bill of Materials for DIY Printer

Table 1:

No.	Name	Description	Qty	Remark
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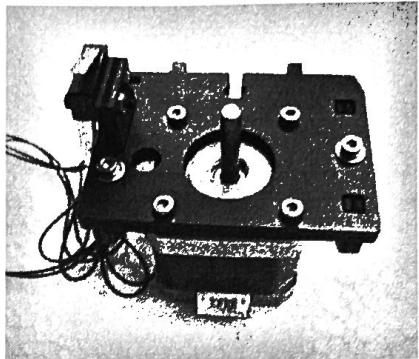
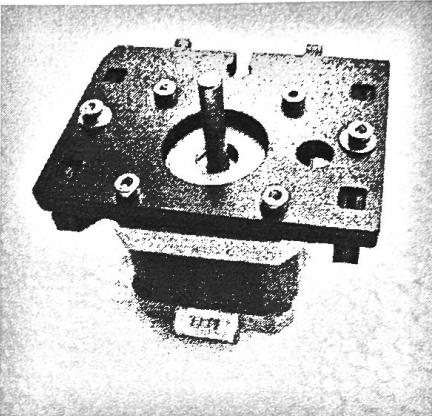
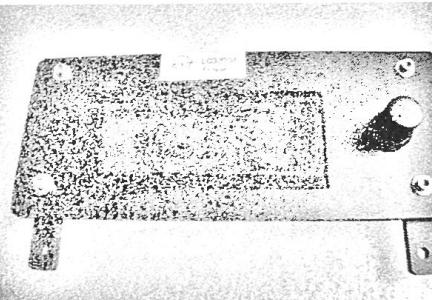
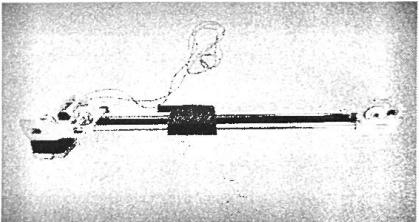
1	A4 Assembly		1	 A black rectangular electronic assembly with several circular mounting holes, a central circular component, and some wires.
2	A5 Assembly		1	 A black rectangular electronic assembly with several circular mounting holes, a central circular component, and some wires.
3	LED Assembly		1	 A black rectangular electronic assembly with a central LED component and some wires.
4	Q Assembly		1	 A black rectangular electronic assembly with a central component and some wires.

Figure 12

Figure 13

Figure 14

Figure 15

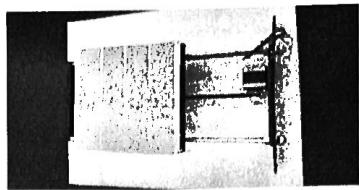
5	P Assembly		1	
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Figure 16

3. Notes

Before installation, find A1 board, A2 board and A3 board, then align the holes of each board. Use ③, ④ and ⑥ to install each board for assembling a main framework. The installation direction must comply with the following figures (Figure 1 to Figure 5). The connection of each board and assemblies are shown in Figure 6.

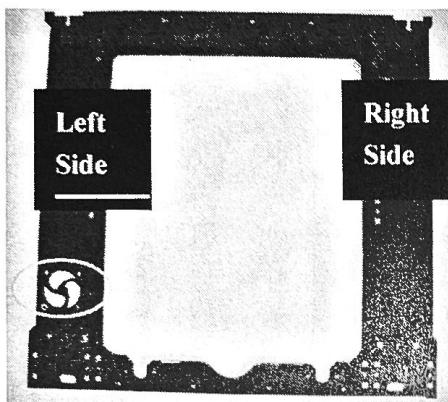


Figure 1. Front View of A1 Board

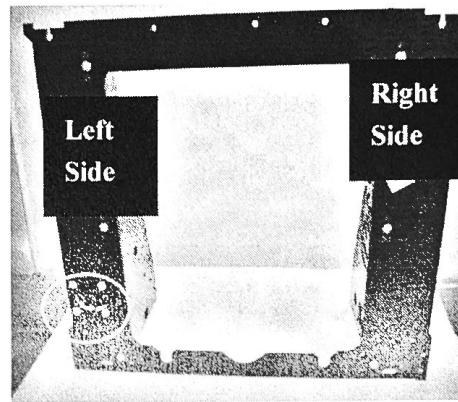


Figure 2 Front View of Main Framework

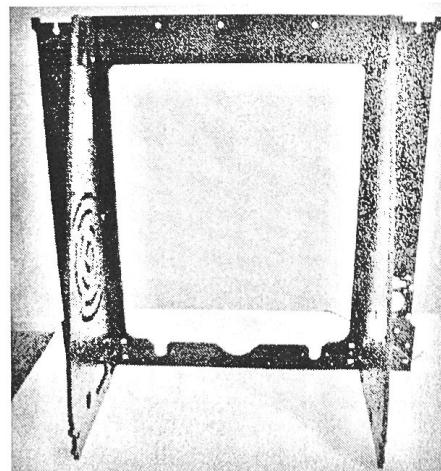


Figure 3 Back View of Main Framework



Figure 4 Right View of Main Framework

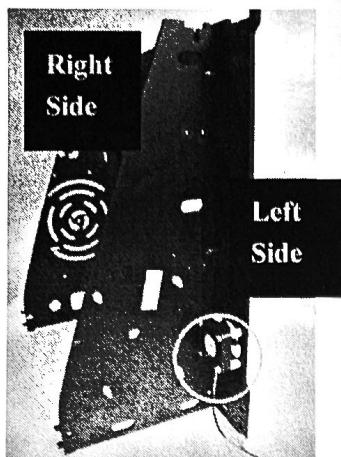


Figure 5 Left View of Main Framework

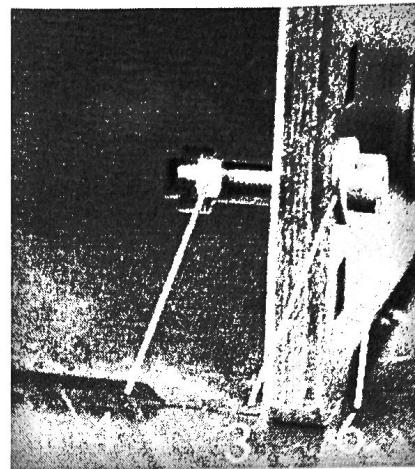


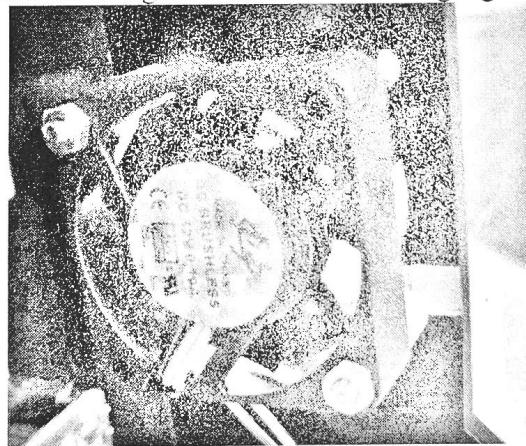
Figure 6 Connection of Boards and Assemblies

Installation of Motherboard

1. A1 Assembly

Accessories: ⑩, ⑦ × 4, ⑧ × 4, ③ × 4, ④ × 4.

Install cooling fan to the back of left cooling outlet of A1 board of main framework with accessories ⑦, ③ and ④. The fan label should face to the back of A1 board. **It is required to install 4 piece of support columns** ⑧. Note that the installation direction is shown in figure 5 and the following figure.



2. A2 Assembly

Accessories: ⑫, ⑤ × 3, ⑬, ⑥ × 2, ③ × 4, ④ × 4.

The installation of A2 assembly is shown in Figure 7.1. As instructed in figure 7.2, fix the motherboard ⑫ onto the A2 board on the right side of main framework with 3 pieces of ⑤ screw. Then follow figure 7.4 to fix power source socket onto A2 board with screw ⑥, nut ④ and washer ③. The connected power source socket and motherboard cables are shown in figure 7.3.

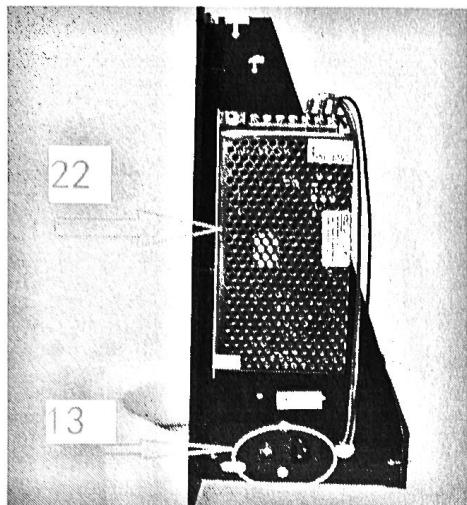


Figure 7.1 A2 Assembly

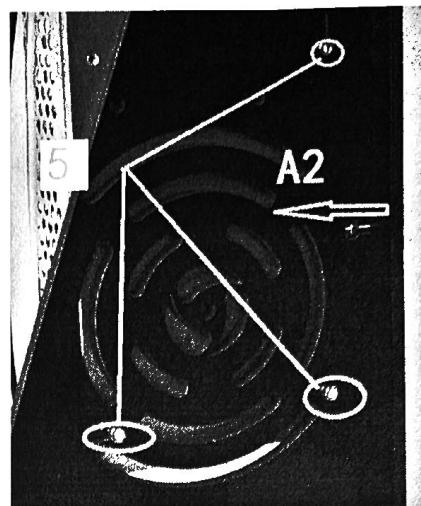


Figure 7.2 Motherboard on the Back and Tightening Screws

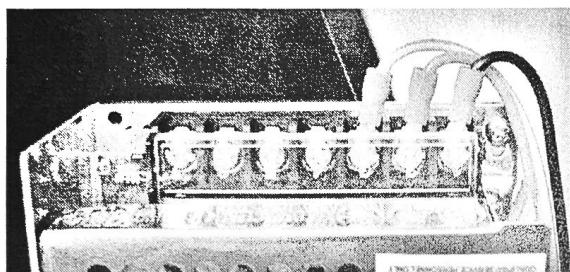


Figure 7.3 Connection of Power Source Socket and Motherboard Cables

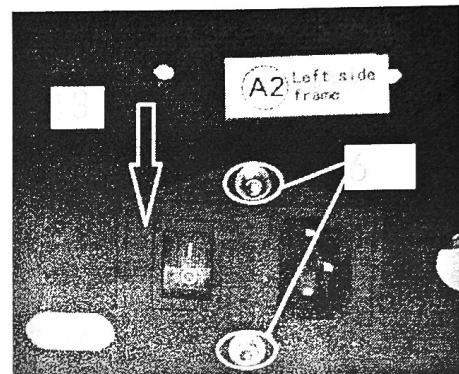


Figure 7.4 Power Source Socket and Tightening Screw

3. A3 Assembly

Accessories: ②③, ⑤×4, ⑨×4.

As shown in figure 8.1 and figure 8.2, insert the four support columns of motherboard into the A3 board on the left side of main framework with 4 pieces of ⑤ screws. Then follow figure 8.3, press motherboard ②③ with its holes in alignment with the 4 columns and pay attention to the installation direction.

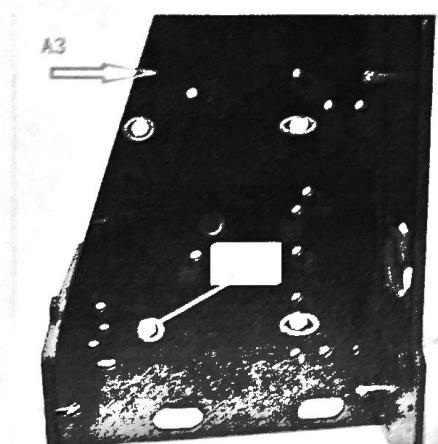


Figure 8.1

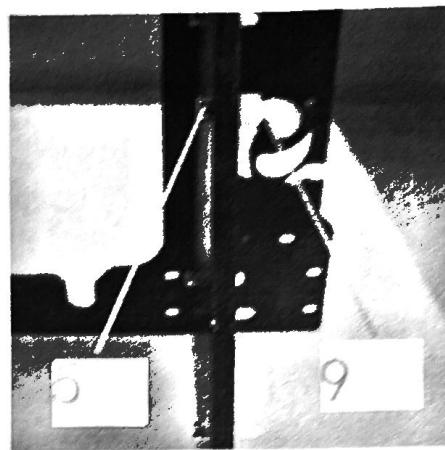


Figure 8.2 A3 Assembly

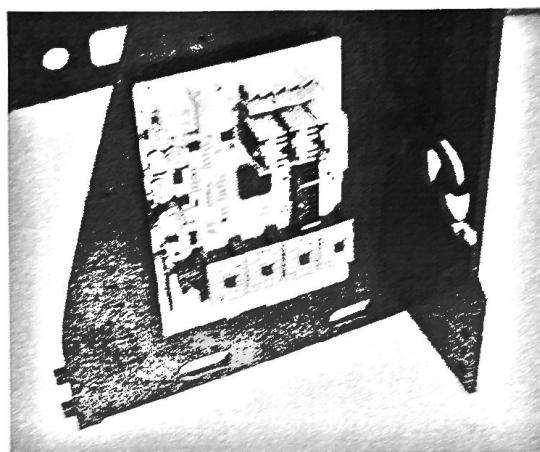


Figure 8.3

Motherboard Structure Installation and Connection of Power Cable Ports

The major effect of main structure is shown in figure 9 and figure 10. The cable ports of motherboard and their functions are shown in figure 11(Back direction from the Y-axis, right and left X-axis direction, the vertical direction of the Z axis). In order to have better installation, it is advisable that user should see the finished product display pictures to generally know of the overall fitting effects and to identify the installation directions and positions.

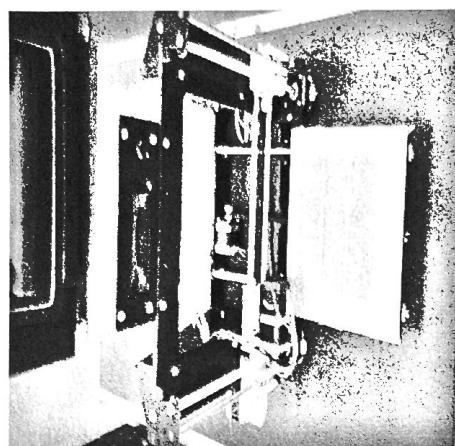


Figure 9 Back View

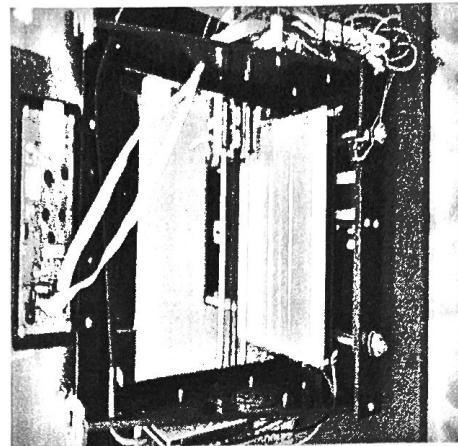


Figure 10 Front View

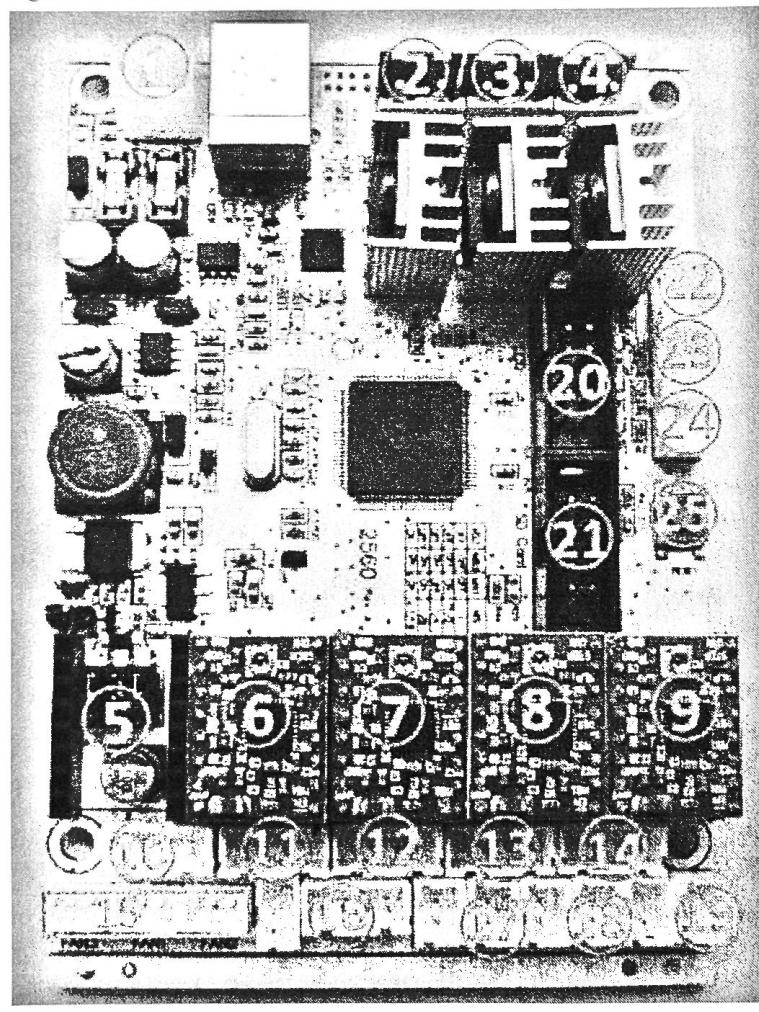


Figure 11 Motherboard Cable Ports

1. power source of motherboard; 2. heating bed; power 3. L nozzle power (spare) ; 4.L nozzle power; 5. L nozzle driver(spare); 6. R nozzle driver ;7.Z shaft driver; 8. Y shaft driver; 9.X shaft driver; 10.motor power of L nozzle(spare); 11. motor power of R nozzle; 12)motor power of Z
16) shaft; 13. motor power of Y shaft; 14. motor power of X shaft; 15. spare power source of cooling fan; 17. Z shaft stopper; 18. Y shaft stopper; 19. X shaft stopper; 20. LED. 21 bar cable ports

of.SD card display; 22.temperature sensor socket of R nozzle; 23.temperature sensor socket of L nozzle 24.temperature sensor of heating bed(spare); 25.function reset key of motherboard.

1. collect all the assemblies before installation: A4, A5, LED, P,Q(different colors) as shown in the following figures.

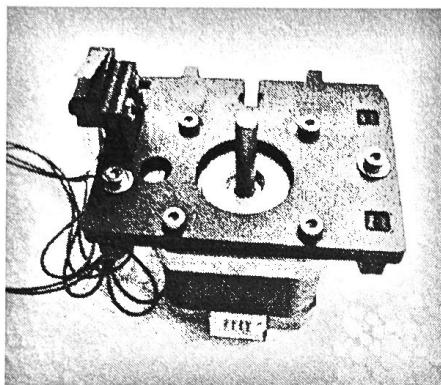


Figure 12 A4 Assembly

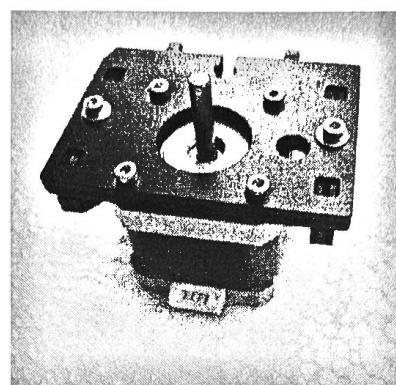


Figure 13 A5 Assembly

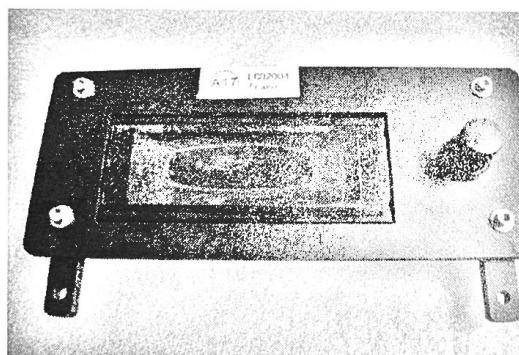


Figure 14. LED (front side on the left and back side on the right)

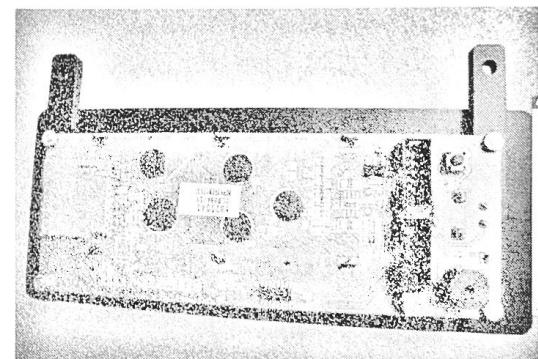


Figure 15 Q Assembly

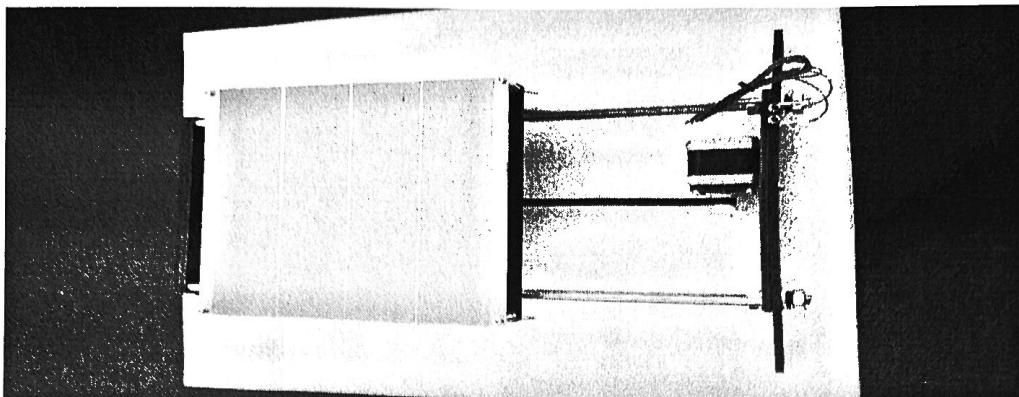


Figure 16 P Assembly

2. Find power cable ⑯ and connect A3 assembly and A2 assembly. One end of the power cable connection is shown in figure 17 and the other end is connected to port 1.

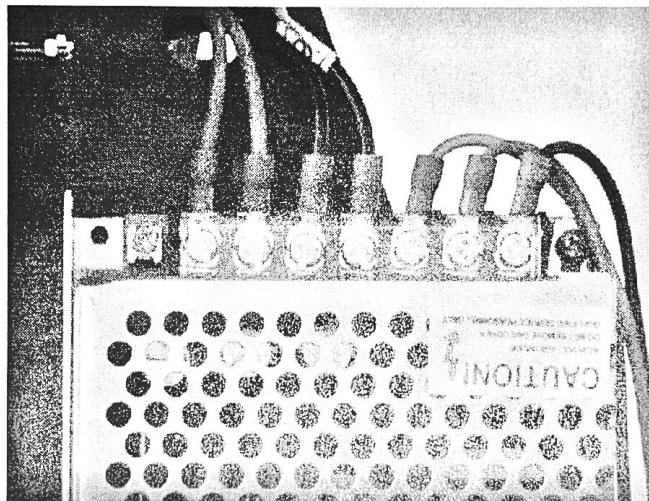


Figure 17

3. Installation of P Assembly

Accessories: ⑥ × 6, ④ × 6, ③ × 6 and ⑯.

yak3
Align the holes of P assembly with the holes of previously installed main structure. Then fix the two and install P assembly to the main structure as shown in figure 18. Then follow figure 19 to install the bottom of P assembly to the A1 assembly. Next connect motor to the port 12 of motherboard with short cable ⑯.

Connect the bottom heating cable to the port 2 of motherboard. Connect the temperature sensor cable of bed to the port 22 of motherboard. Connect the stopper(blue)cable port to the port 17 of motherboard.

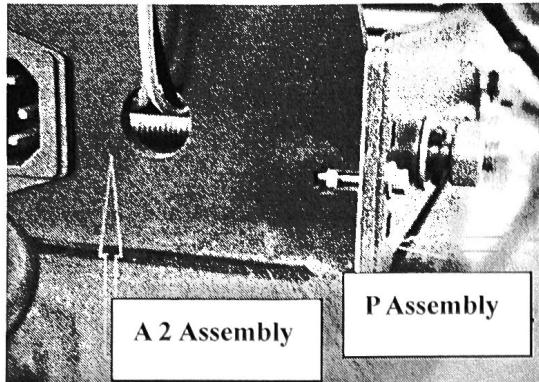


Figure 18

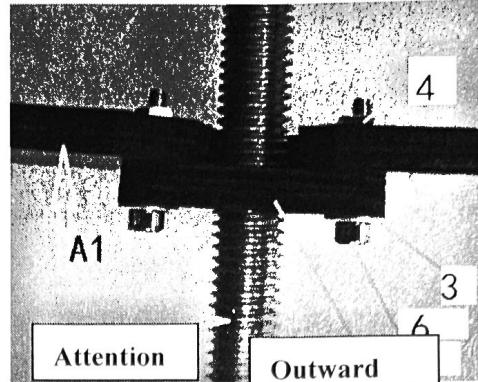


Figure 19

4. Installation of A4 Assembly

Accessories: ⑥ × 3, ④ × 3, ③ × 3.

Align the holes of A4 assembly to the A1 board of front side of main structure, and connect the A4 assembly to the bottom end of left side of A1 assembly. Then connect the motor to port 15 of motherboard with short cable ⑯ and stopper (black) cable to the port 16 of motherboard.

5. Installation of A5 Assembly

Accessories: ⑥ × 3, ④ × 3, ③ × 3.

Align the holes of A5 assembly to the A1 board of main structure and install A5 assembly to the bottom end of right side of A1 board. Then connect motor to the port 17 of motherboard with long cable ⑯.

6. Installation of LED

Accessories: ⑥ × 2, ④ × 2, ③ × 2, ⑩

Align the holes of A18 board on LED and A1 assembly to install the two together in place. The LED is outward as shown in figure 20. Use bar cable ⑩ to connect LED with motherboard with port 19 of motherboard being connected to the EXP1 port of LED motherboard and the port 20 of motherboard being connected to 21 the EXP2 port of LED motherboard.

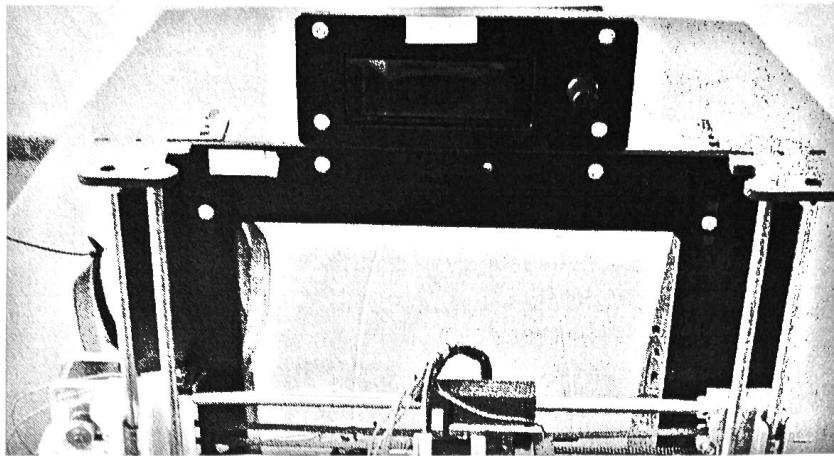
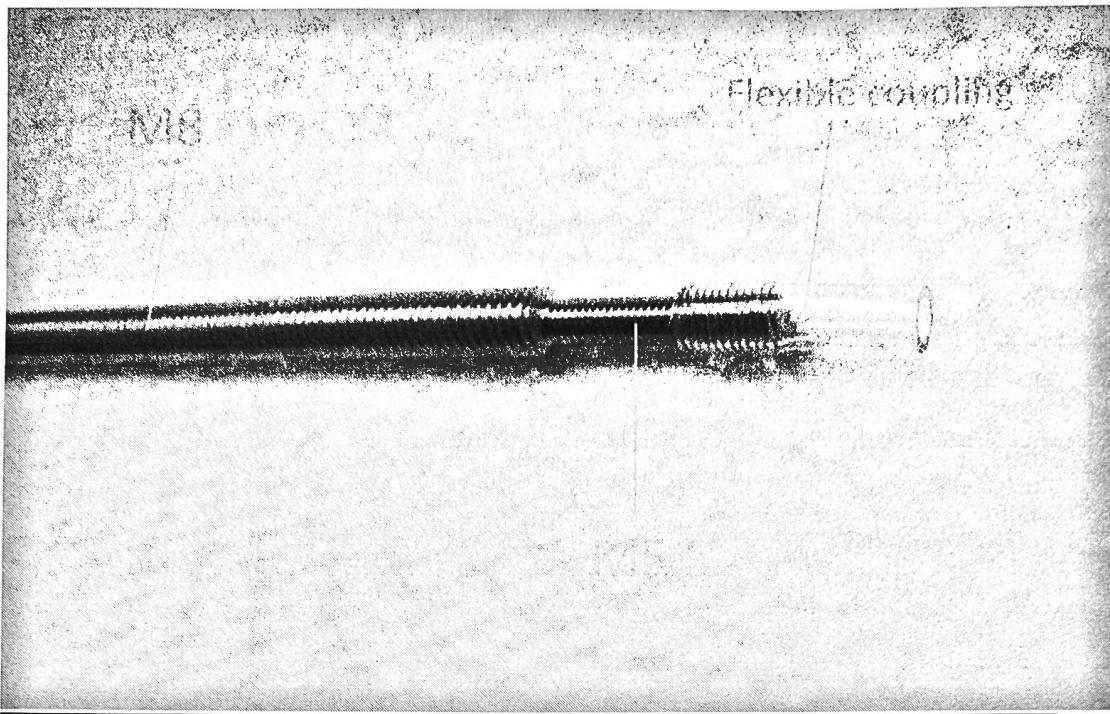


Figure 20 LED Position

7. Installation of Q Assembly

Notes: Because each size of assembly may bear some deviation caused by production, in order to obtain the good installation and functions, it is advisable for you to pay attention to the installation of Q assembly. If necessary, please adjust the right side of Q assembly to left or right for ensuring the normal functions, and adjust the length of belt according to actual gap.

Before assembly, the first Z-axis screw M5 ends connect flexible coupling 30, is prohibited after blowing hot and then install the flexible coupling to the M5 terminal end of the flexible coupling insert M5 depth of about 10mm. As shown below:



(1) Accessories: A4×2, ⑥×4, ④×4, ③×4.

Align the holes of A4 board and the A1 assembly and A2 assembly on the right side of main structure, and install these parts together in place. Then align the holes of A4 board and the A1 assembly, A3 assembly on the left side of main structure, and install these parts together in place as shown in figure 21 and figure 22. Please remember to use screw for fixture.

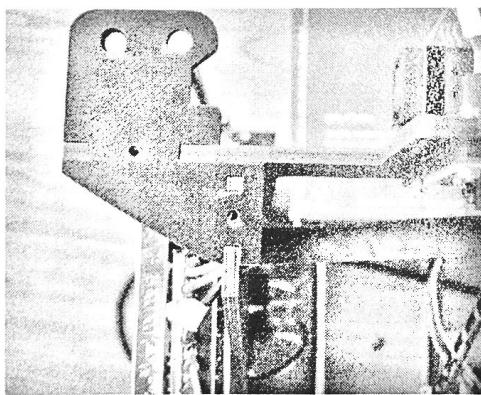


Figure 21

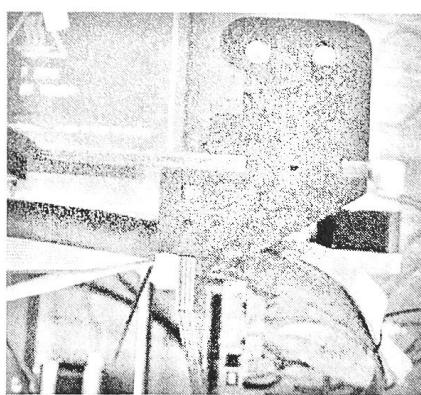


Figure 22

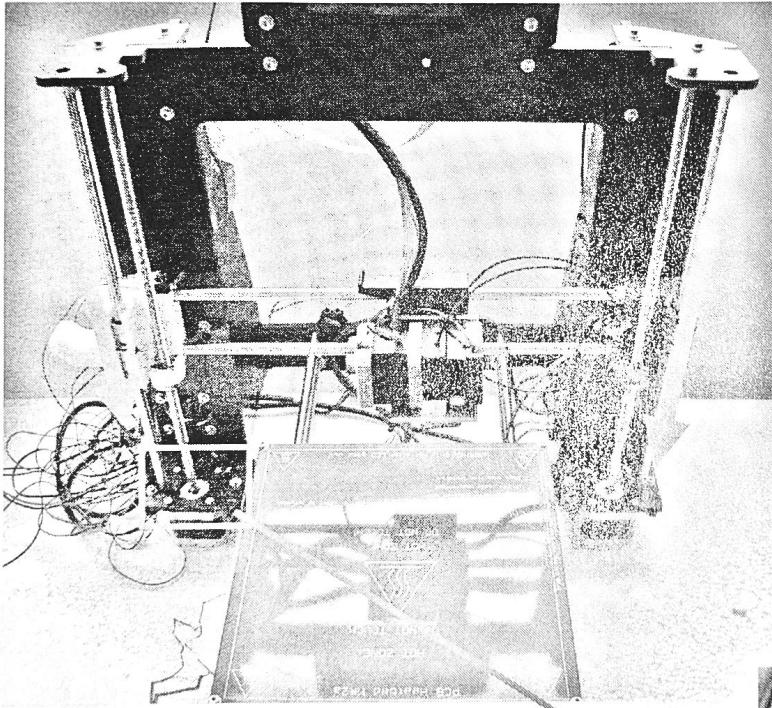
(2) Accessories: ①×2, ②×2

Get the guide rod ① through the external holes on the two sides of A4 board, ②, bearing outside of P assembly, external holes of A4 and A5 assemblies up to

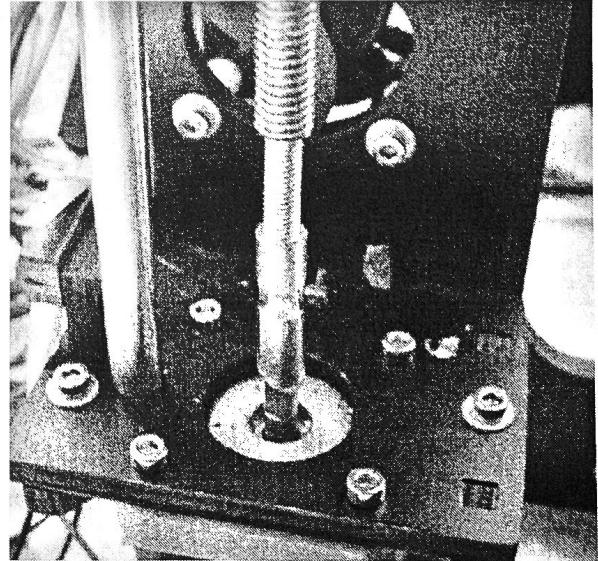
down. Adjust the distances on the two sides of P assembly. Move ⑦ to the joint of guide rod ① and A4 board and fix it.

(3) Accessories: ② ×2

Get screw ② through the internal holes on the two sides of A4 board, the internal holes of P assembly (get it through by rotating), the shaft couplings above the motors of A4 and A5 assemblies from up to down. Adjust the distances on the two sides of P assembly to ensure the future correct installation. Keep the horizontal distance between the outer ends of two screws ② as 320mm. Secure the tightening screws of shaft couplings on the up side of motors.



Downward pressure screw, squeeze the flexible coupling Z-axis motor projecting end



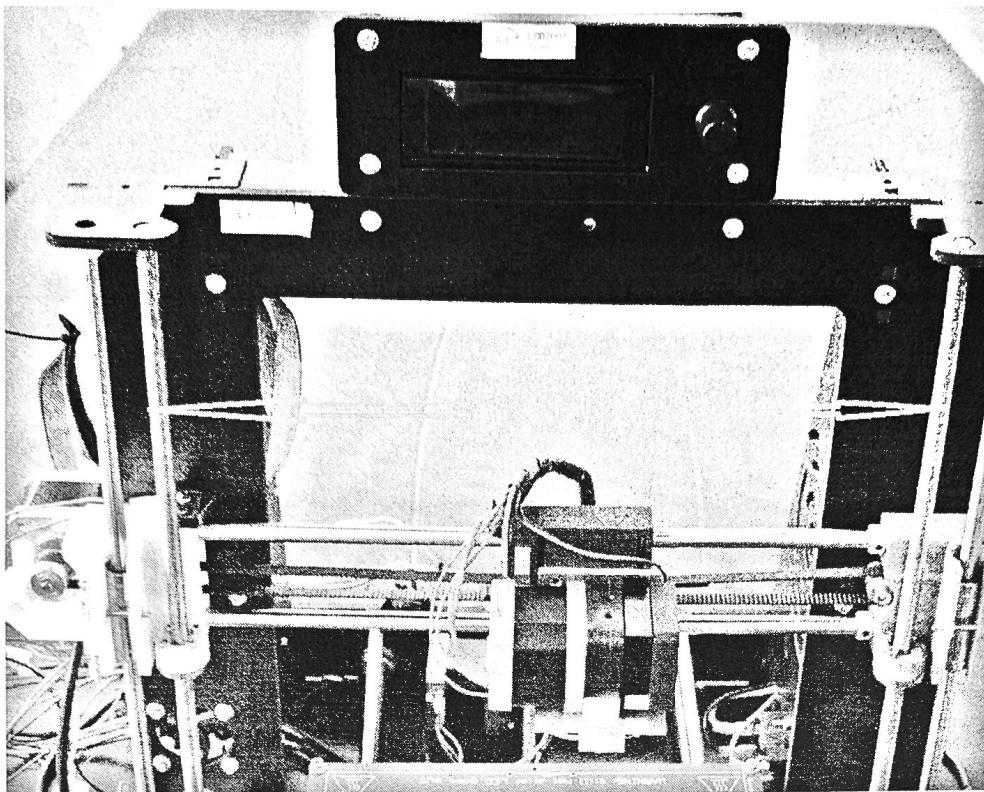


Figure 23

(4) connect the stopper(cable) cable of Q assembly to the port ~~18~~¹⁹ of motherboard

8. Installation of Nozzle

Accessories: ⑥×2, ③×2, ④×2.

First unscrew cooling fan of nozzle, dismantle the L1, L2 and L3 parts of nozzle as shown in figure 24. **Install L1 part to the movable block in the middle of P assembly** with ⑥, ④ and ③. Please remember that first get screw 6 through the movable block in the middle of P assembly, then install the nozzle in the reverse order that these parts are dismantled, as instructed in figure 25. Connect motor of nozzle to port ~~10~~¹¹ of motherboard with long cable ⑨. Connect cooling fan cable to port ~~14~~^{fan2} of motherboard 14. Connect power cable of nozzle to port ~~3~~⁴ of motherboard. Connect temperature sensor of nozzle to the port 21 of motherboard.

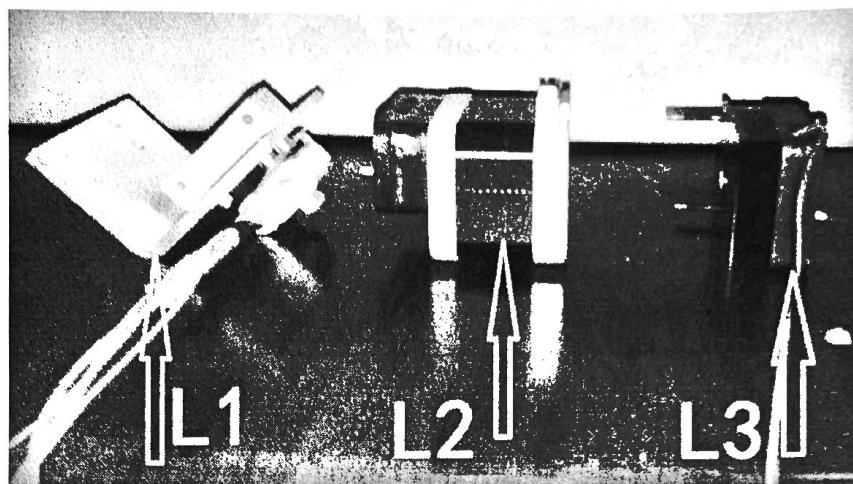


Figure 24

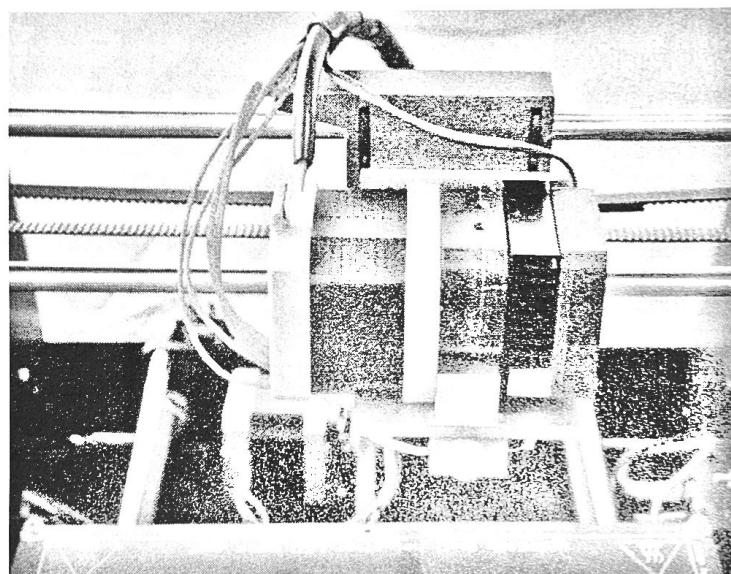


Figure 25

Commissioning and Notes

1. Identify that the sensing resistor of temperature sensor cable of nozzle is in the correct position, as shown in figure 26.

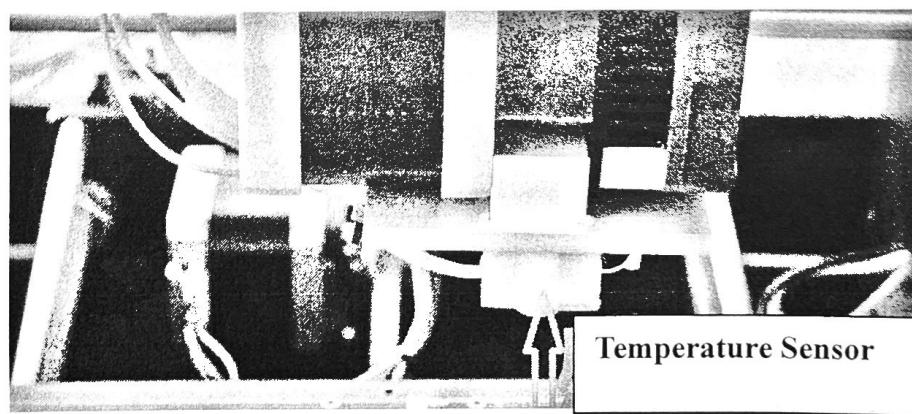


Figure 26

2. First confirm that cables are in normal state. Then commission the position function of stopper under the printer is powered, in particular the commissioning of Z shaft stopper. Click function key to choose Prepare, then choose Auto home and click confirm to check each stopper. Adjust the nut of long screw on the left of Q assembly and the lowest position of Z shaft moving downward to guarantee the gap between Z shaft of nozzle and printing plate.

3. Cut off the power and put square glass on the upside of red heating bed, then use four dovetail clamps to fix the glass. Note that the position of dovetail clamp should not affect the functions of nozzle and among others. Move the nozzle to exam if the printing bed is parallel with the nozzle, and keep a proper gap. Then power the printer, exam the original position of nozzle, the gap between nozzle and printing bed to ensure the correctness of gap.

4. Exam if the threaded rod of Z shaft is deformed. Keep the gap between shaft couplings of motors of A4, A5 assemblies and the beds as 3mm. Try to maintain the shaft line of Z shaft threaded rod and the output shaft of motor in the same straight line. Keep the horizontal distance of upper side of Z shaft threaded rod equal to that of bottom side. **Adjust these distances or gaps until no noise occurrence when motor moves.**

5. The bundling of cables is not supposed to affect the moving space and functions of each part. Adjust the heating temperature of heating head according to practical conditions.

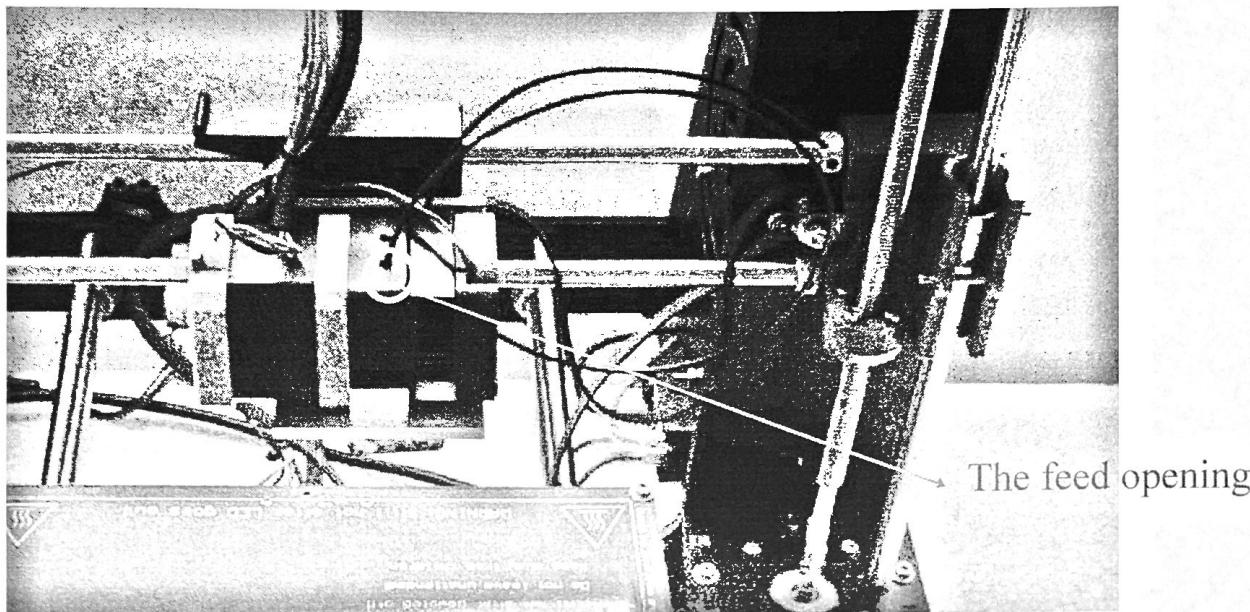
6. The sounds of rotational motor and cooling fan are normal. If the adhesive of glass surface is not enough, you can stick masking tape onto the glass surface. (At the factory, we have you posted a good textured plastic, do not torn blue textured plastic)

7. Heating tube damage(Suitable for all FDM 3D printers): When stop using the printer or need to clean the nozzle, use spanner to clamp the square aluminum block and unscrewing the nozzle. Make sure the square aluminum block can not move when unscrewing the nozzle, otherwise the heating tube would be damage.

8. Adjustment of belt: Cut off the black nylon tie, adjust the belt length, fix the belt. Then secure the belt with nylon tie.

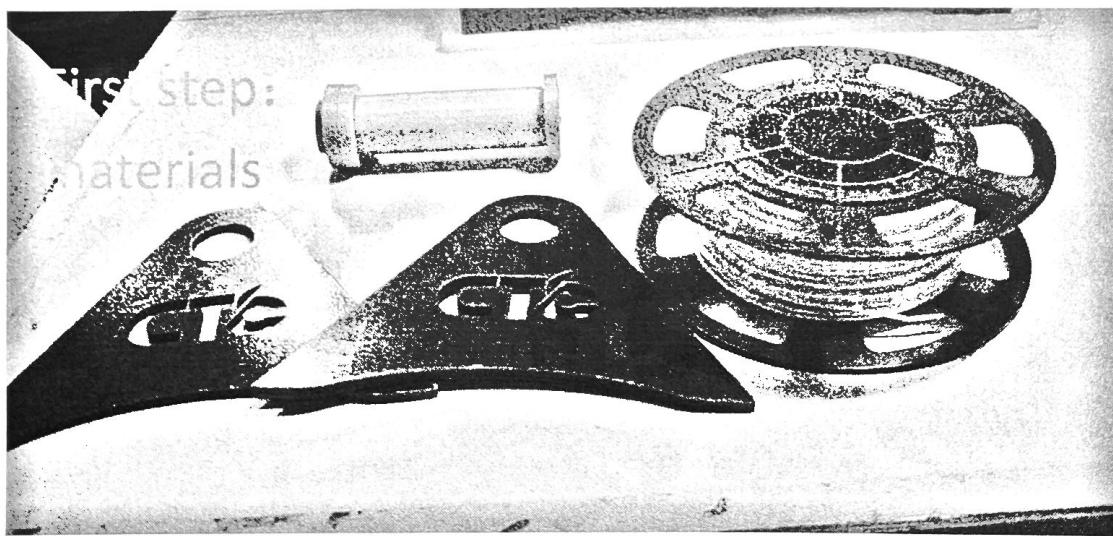
9. Inlet port for the print head outside parties. When to start printing (after refueling), you

need to printing supplies line, insert the print head side of the outer end of the inlet, (do not insert the inner end of the inlet), as shown:



10. When the display screen does not work, the ways:
 1. check the connection lines between the display screen and main board are in order.
 2. check the white colour object on the blue plastic board on the upper left of the back the display screen. please tighten the white object by screwdriver and keep the screen light on.

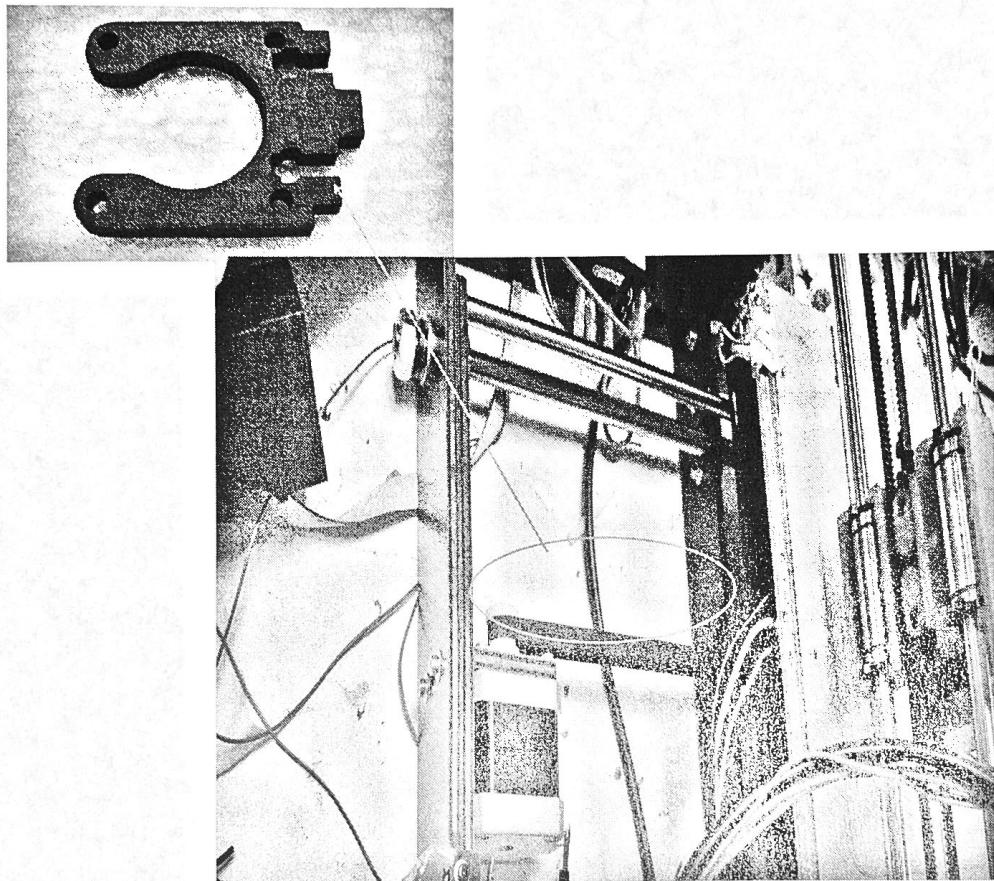
11. Tray to install and use:

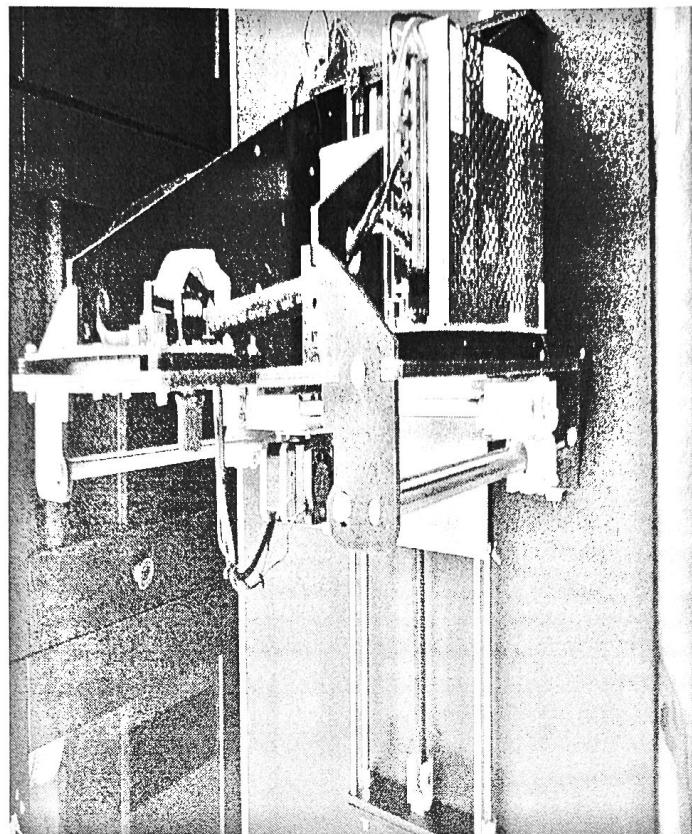




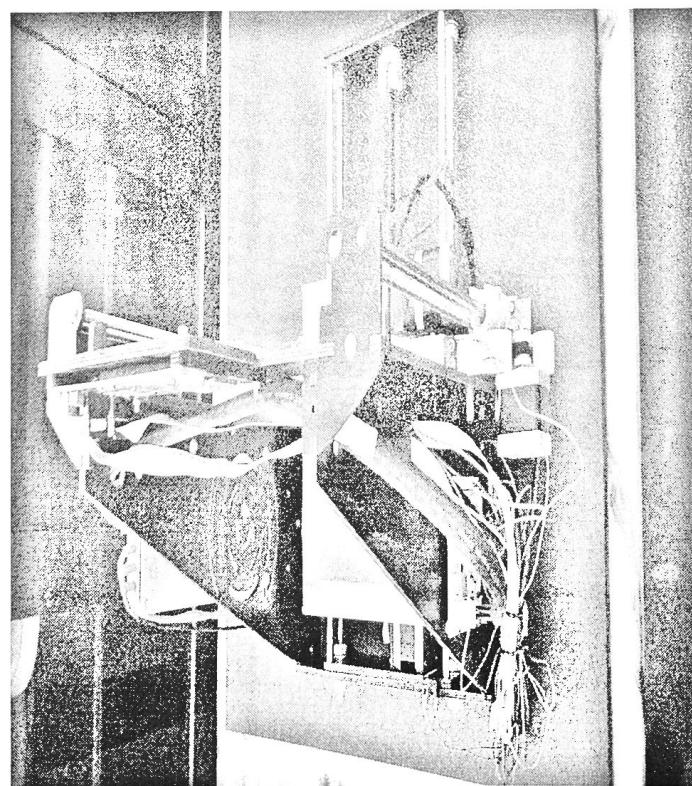
12. Y shaft motor fixing plate (A6)

Y axis motor fixed plate is a spare object. The installation location is shown below:

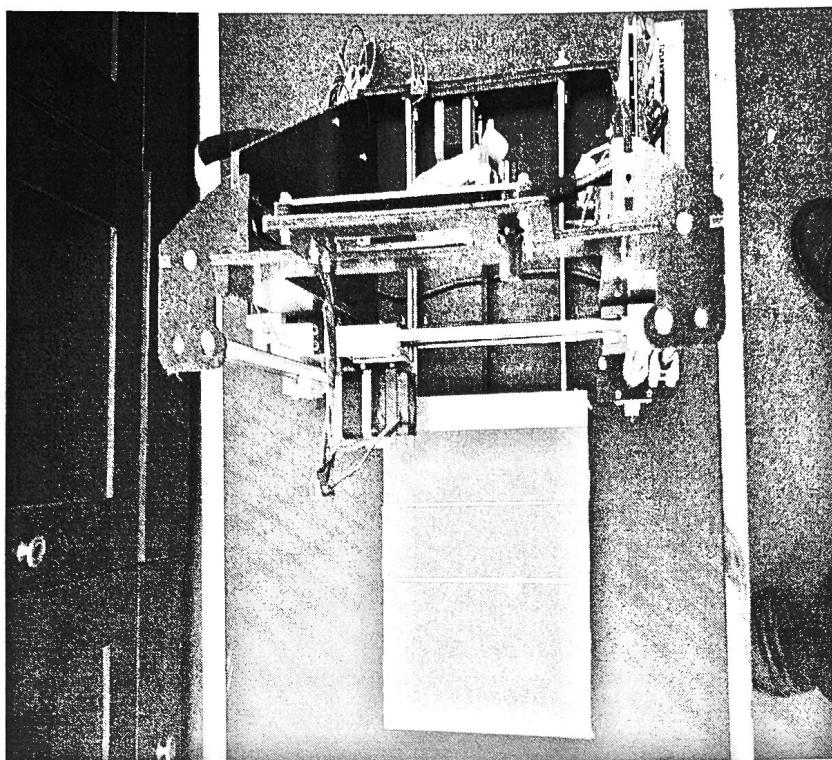


Finished Product Display

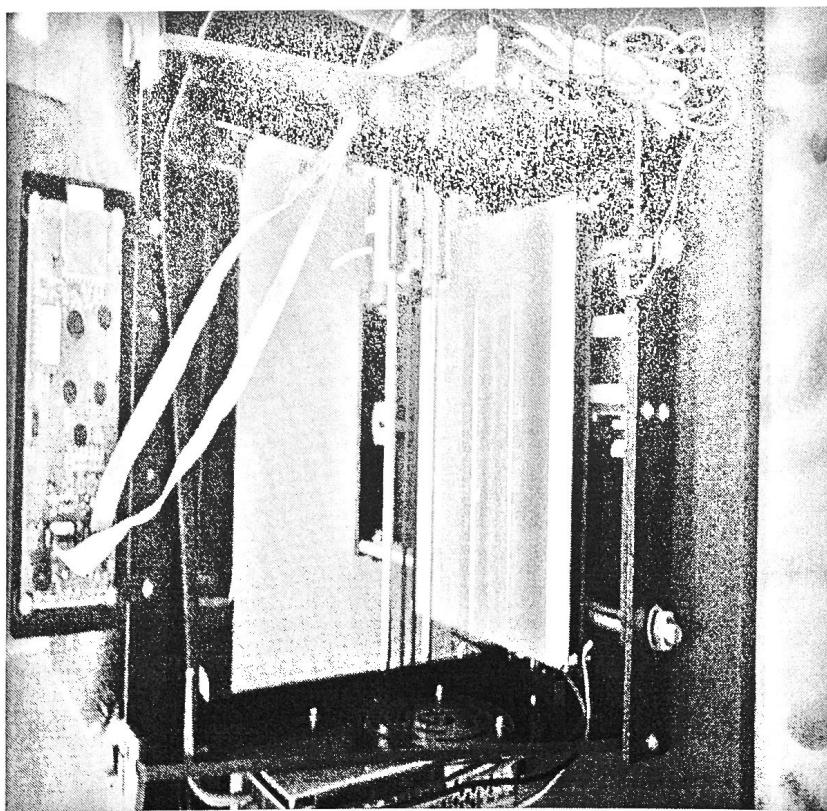
Right View



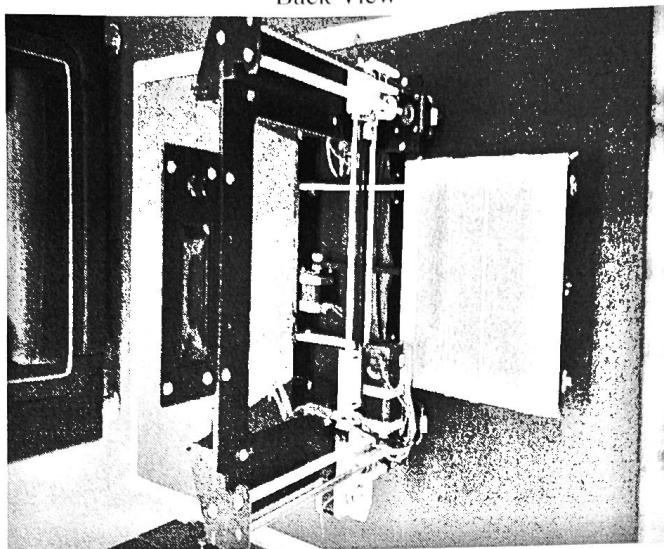
Left View



Overview



Back View



Front View



Material Rolling Wheel