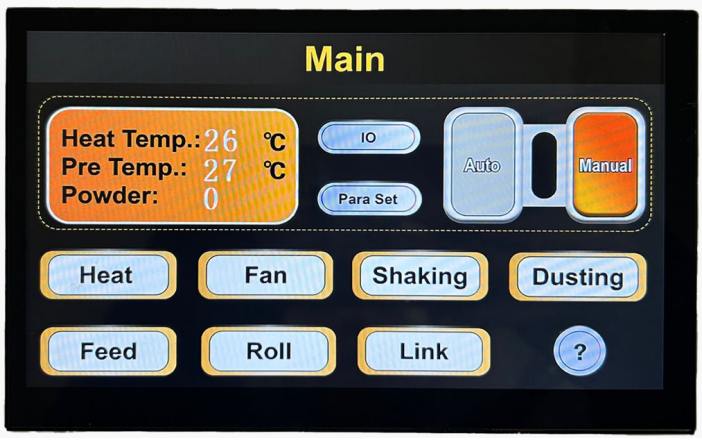
Stsinks S-20 Powder Shaker Operations Manual

Shaker specifications: 208/220V 50/60Hz Single-Phase 30Amp / Max width: 24” / 610mm (about 2 ft) / 6KW Power / Shaker Size: 1150mm (about 3.77 ft) W x 1850mm (about 6.07 ft) L x 1050mm (about 3.44 ft) H / 46” W x 73” L x 42”H

Table of contents: (by page)

This is the first iteration of the S-20 shaker manual, updates will be made to this manual

Main home screen overview

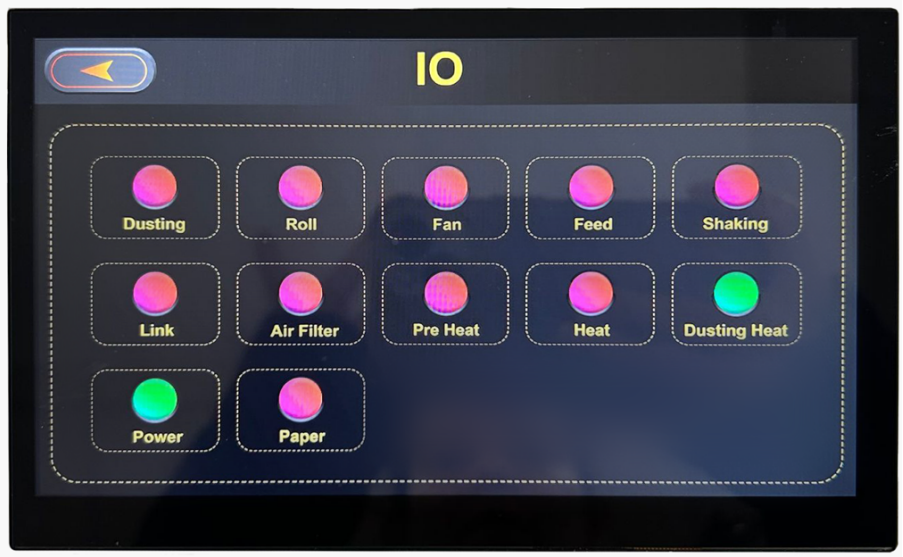


Note: All these selections are the on and off function for their process.

1. Heat: heat tunnel toggle button
2. Fan: Suction function for the Belt
3. Shaking: Beater bar that shakes the excess TPU from the images
4. Dusting: the function that allows TPU to fall from the reservoir to the basket
5. Feed: Belt control function
6. Roll: Take up roll at the end of the machine
7. Link: Logic switch (this allows the machine to communicate with other features in the machine)
8. IO Menu: Sensor reading menu (the trouble shooting menu)
9. Para Set Menu: Settings menu
10. Automatic Mode: This mode allows Automation & Communication from the different parts.
11. Manual Mode: This mode disables all sensors and should not be used if Sub straight is still attached to the printer.

Heat Temp is the temperature in the heat tunnel
Pre Temp is the heat for the media ramp into the basket area
Powder is the current Weight of the TPU basket (How much powder is on your sub straight when sitting in the basket)

IO screen (Trouble shooting screen)



On this screen, you will be able to see input/output status that relate to Page 1.

Example: The front Paper sensor when not reading sub straight should be Red, when reading Sub straight it should turn Green to show that the sensor is working appropriately, if it is not reading when the media is in front of it, then you would know that this needs to be Adjusted.

Para Set Screen (Settings Menu) Minimum Maximum values

Pre-Temp: Temperature for the Powder resevoir	45-65
Heat Temp: Temperature for the Heat tunnel	100-170
Shaking Strength: Beater bar interval speed	2500
Feed Speed: Belt movement speed	1500-3500
Roll Interval: Roll timer	1-10
Tension: Roll Speed	500-1000

Para Set Screen 2 (Settings Menu)

For the top row; Para Set 2
1 = Forward 0 = Reverse

Dusting Direction: The Reservoir feed direction

Roll Direction: Take up roll direction

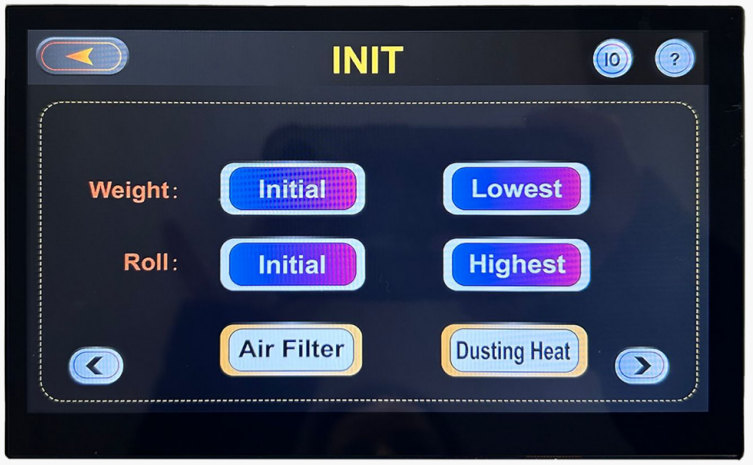
Feed Direction: Belt Direction

Dusting Speed: Reservoir dusting speed	4000
Max Temperature: Heat limiter	170
Fan Speed: Suction pressure	5000 (must be this number for vacuum fan)

Para Set Screen 3 (Settings Menu)

Purify: Internal Fan speed (exhaust fan) Value should be set to 5000 for unit to operate optimally

Calibration Menu



Init Menu: Calibration Menu – Prior to Calibrating set all these buttons to Grey out by clicking on them, Excluding Air filter / Dusting Heat

Weight = Powder Basket

weight Initial is to set the native position of the basket (when there is no powder or sub straight on it) you would then hit the Initial button.

Weight lowest is to be performed to set the basket to the lowest position, then hit the lowest button to complete the calibration for the basket as you are holding the basket in its “Lowest” position.

Roll = Take up roll

Roll initial is to be set when the take-up bar is in its native position, you would hit Initial button

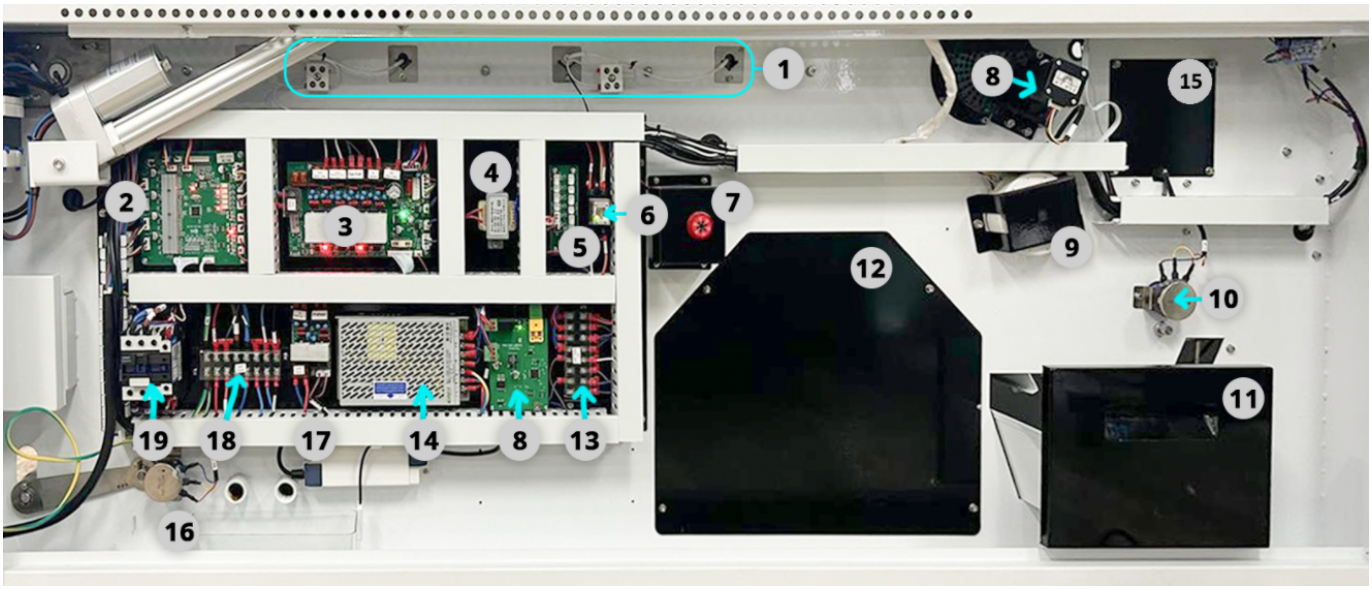
Highest would require you to prop up the Take up bar, then to hit Highest (or have someone help you lift it while you hit the Highest button) That would complete the calibration for the take-up roller bar.

Airfilter: Should be on, this controls the Exhaust fan

Dusting Heat: this is the heater for the powder reservoir

Shaker part location Guide

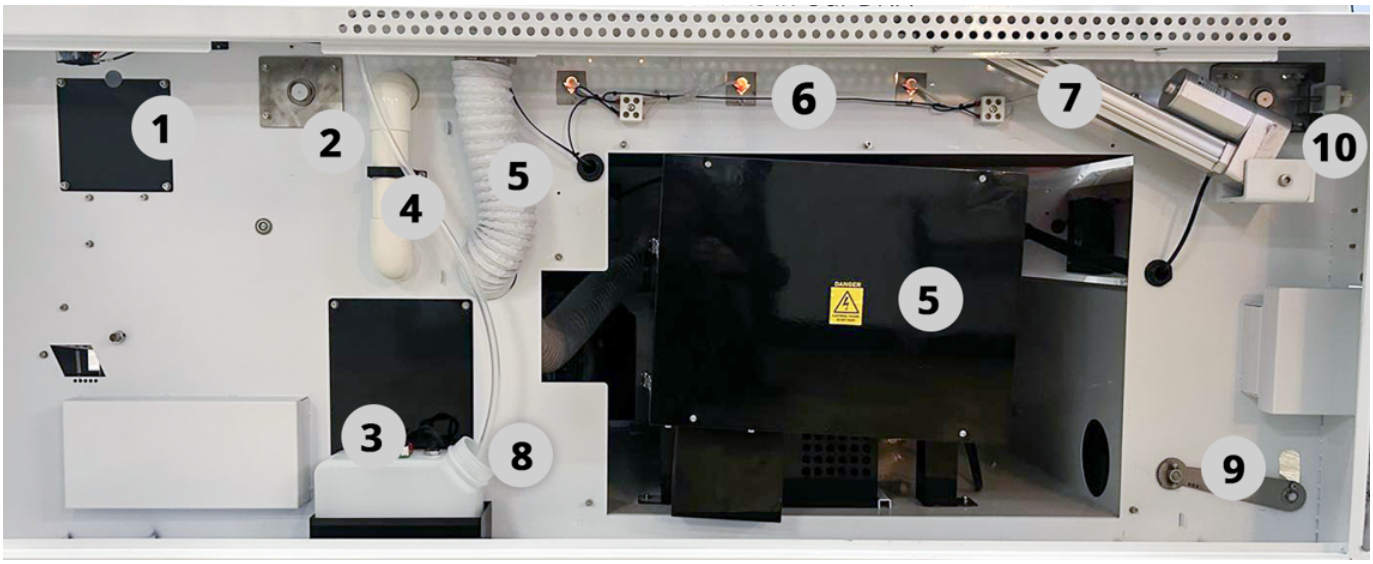
LCD Side



1. Under belt bulb housing + Ceramic wire blocks
2. Main control board
3. 6-way heater board
4. Small Transformer
5. Glycerin Sensor Relay board
6. Air filter relay
7. overflow alarm
8. Belt motor
9. Shaking motor
10. Potentiometer for powder basket
11. powder tray
12. Fan Vacuum cover / access port
13. Connection terminal splitter
14. power supply
15. Dusting Access port
16. Take up roller potentiometer / Exhaust Glycerin Sensor
17. two-way board
18. Connection terminal splitter
19. Terminal Block - main power
20. Temp safety sensor board

Shaker part location Guide

Opposite LCD Side



1. Dusting access port
2. roller belt bearing
3. reservoir sensor
4. suction pvc pipe
5. Filtration exhaust hose
6. Under belt bulb housing
7. Ceramic wire blocks
8. Glycerin reservoir
9. Take-up roller arm
10. hydraulic arm base

1. Overflow liquid sensor
2. hydraulic lift AC Voltage in
3. hydraulic lift DC Voltage out
4. Potentiometer Connection

Shaker part location Guide front of shaker

8

1. Power Button
2. LCD Panel
3. Pre-temp cooling fan assembly
4. Powder reservoir
5. Suction fan / Belt assembly
6. Powder Basket / Beater bar
7. Power Cut off switch
8. Front Media Sensor (There's a Small flat head adjustable screw on the back of this to adjust length, or retract the length)

Shaker part location Guide Back of shaker

1. hydraulic arms
2. quartz heating element bulbs
3. opening / closing switch for heating bay
4. Cooling fans
5. Take up bar

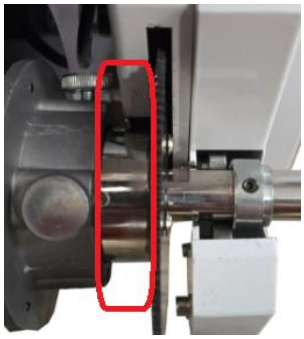
Safety notice: Avoid keeping any objects in the way of the unit when closing and opening the lid, the arms can exert excess pressure which can cause injury

Media Spindle correct orientation

The spindle orientation can be adjusted by adjusting this piece on each side.

Left

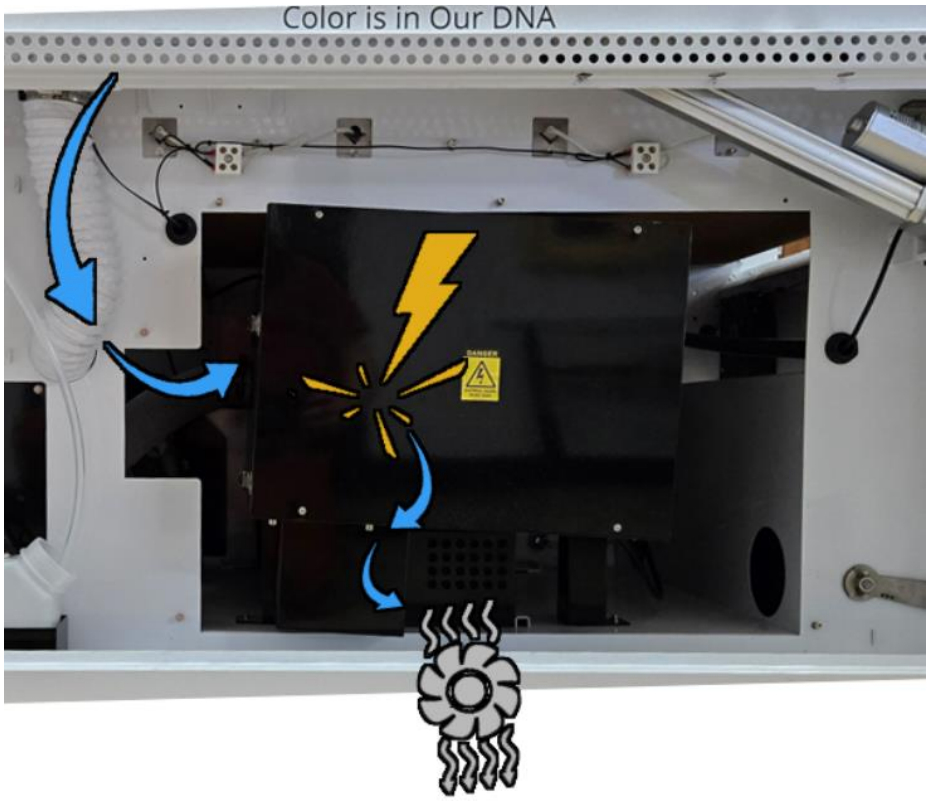
Right



Make sure that there is a gap between the flange and the gear to ensure spacing.

Fume Hood Chamber / Static Device / Exhaust Filter Box

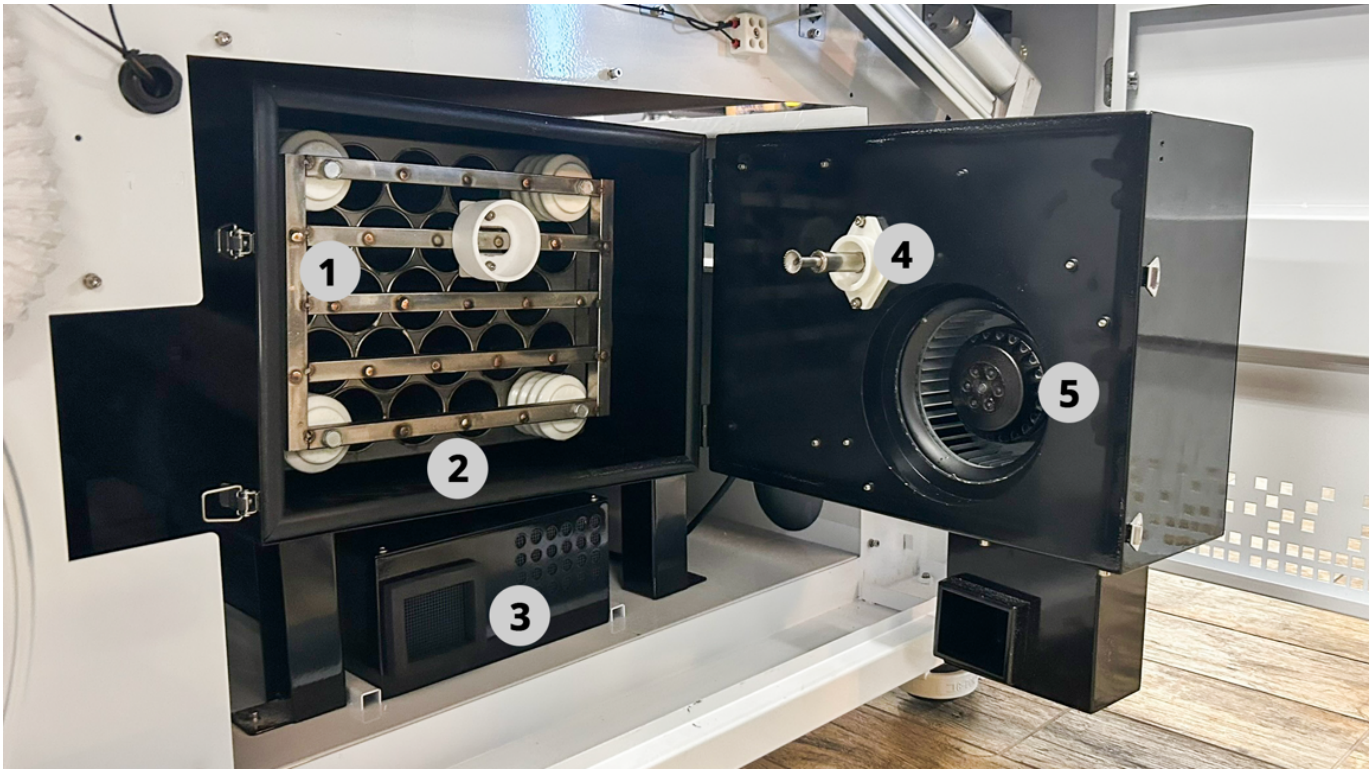
Fume Hood Chamber design – How it works



As the TPU and water-based ink prints travel through the heat tunnel, fumes begin to accumulate. The fume hood exhaust fan then draws these fumes into the static chamber, where a static device rapidly converts them into liquid form. The chamber is tilted to funnel the liquid towards the glycerin exhaust. Meanwhile, the remaining fumes pass through a filter box containing four charcoal filters and two HEPA filters, ensuring thorough filtration.

Fume Hood Chamber / Static Device / Exhaust Filter Box

An inside look



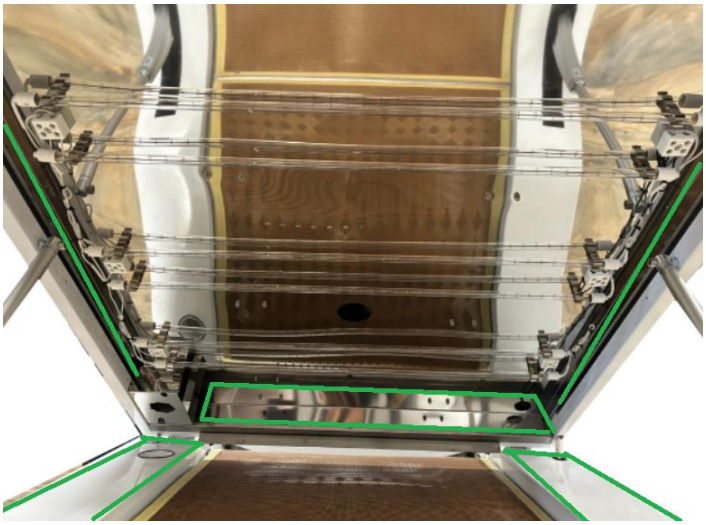
1.Fume dispersion rack
2.Tilted liquid chamber
3.Filter box
4.Static device
5.High power filtration fan

Filter Box correct orientation

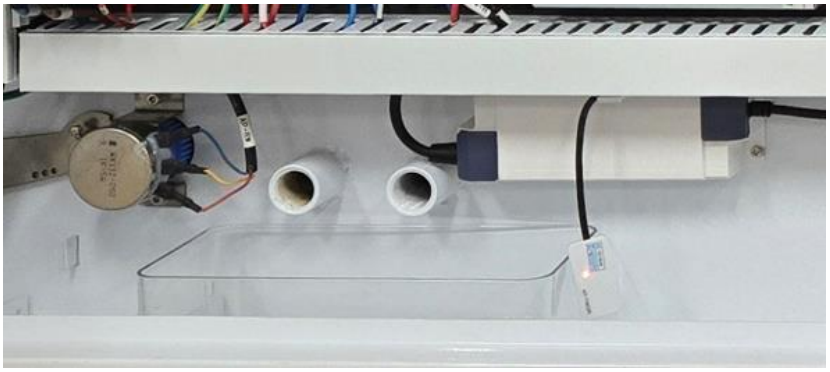
To open the filter box, you can remove 3 of the screws from the top, then slide the top off.

The filter box consists of 3 Charcoal filters 1 Hepa filter two sponge filters and 3 charcoal tray filters

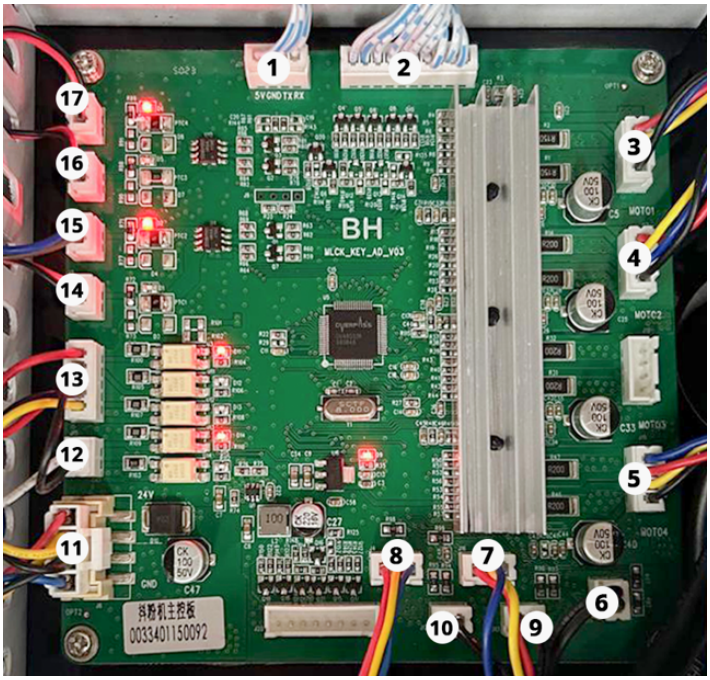
Maintenance Guide



Daily wipe down of the indicated green areas will ensure that no buildup of glycerin causes unwanted smoke. Unlike previous models, the S-20 requires much less maintenance due to iterations of the unit and adjustments to the internals. Glycerin from inside the machine will accumulate in this section. The exhaust tubes will slowly secrete glycerin, and when they are full or need disposal, the unit will start to beep.

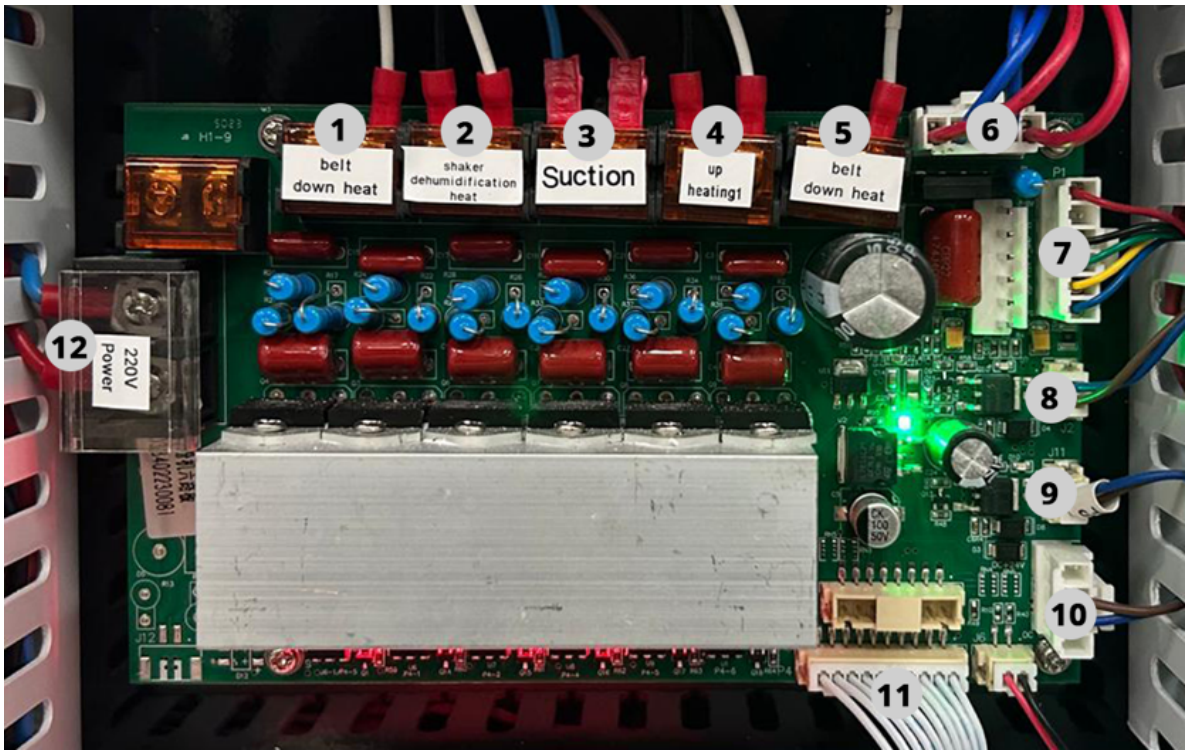


Mainboard Breakdown



1. Display
2. Junction cable to 6 way board
3. shaking motor
4. take up motor
5. rewind motor
6. preheat sensor
7. dusting angle positioner
8. paper delivery corner sensor
9. powder bin sensor
10. oven temperature sensor
11. 24v input
12. basket cover stop function
13. out of paper synchronizer sensor
14. upper heating control
15. relay control
16. dual system heating
17. preheat control

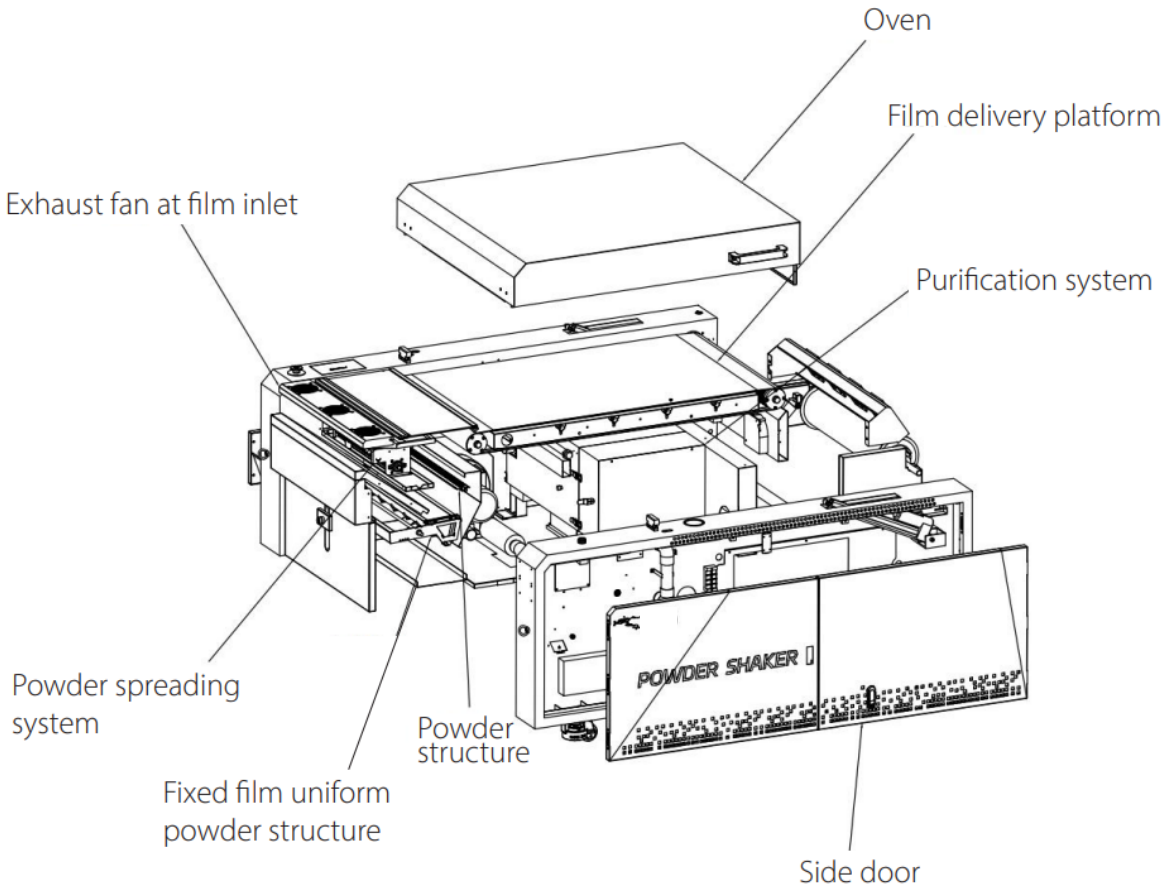
6 Way Heater Board



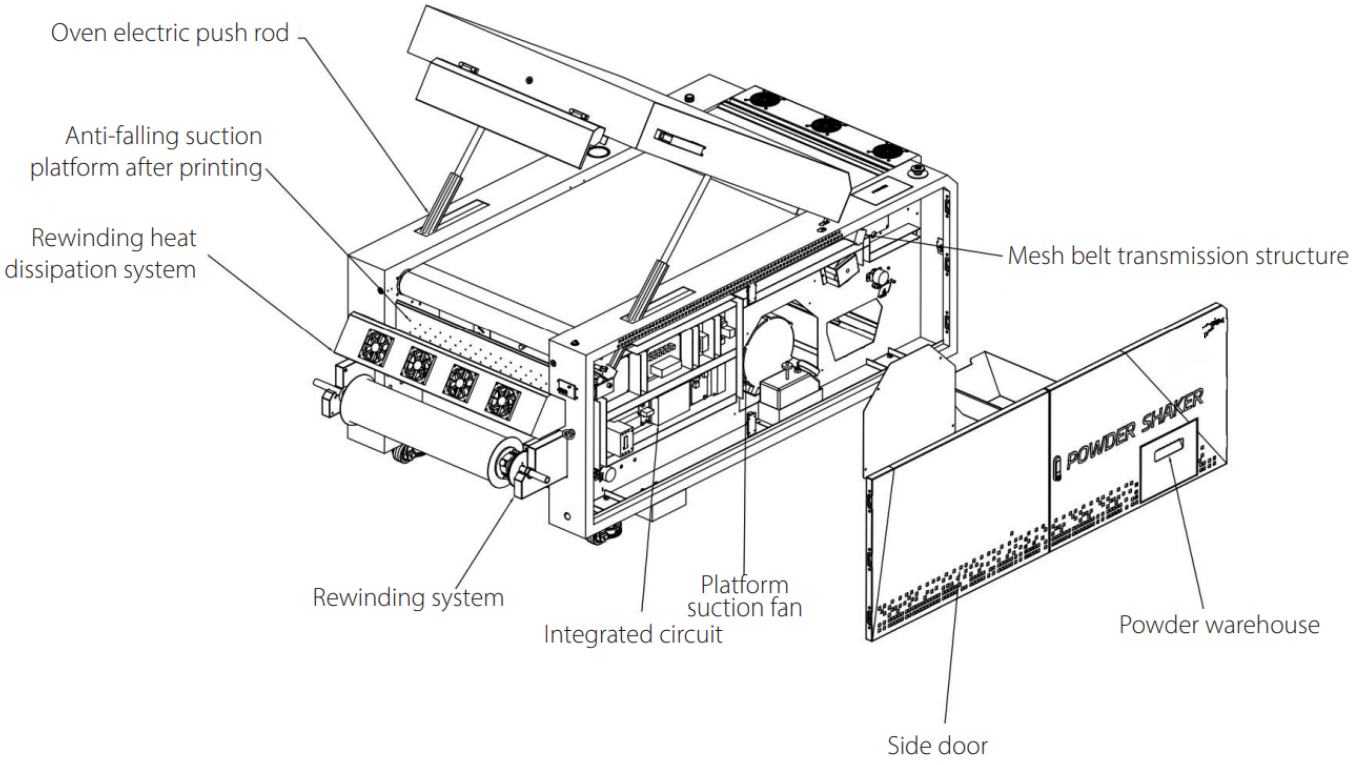
1. Bottom heat
2. dusting heat
3. vacuum suction fan
4. top heating elements
5. bottom heating elements
6. transformer
7. shaking motor

9. preheating fan
10. 24v input
11. Junction cable to main board
12. Power in to 6 way board / 220v input

Exploded view

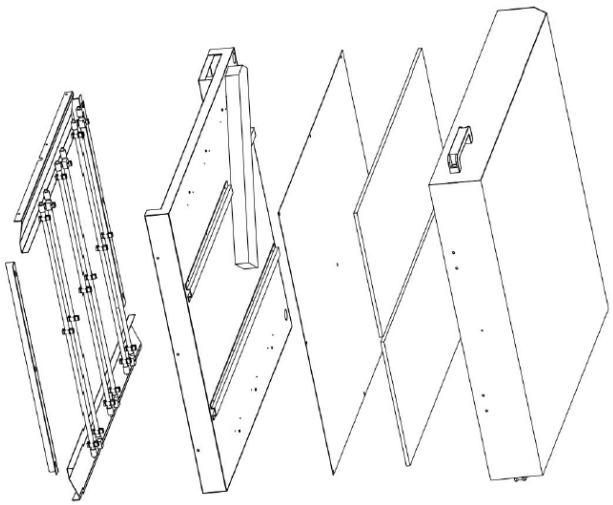


Exploded view

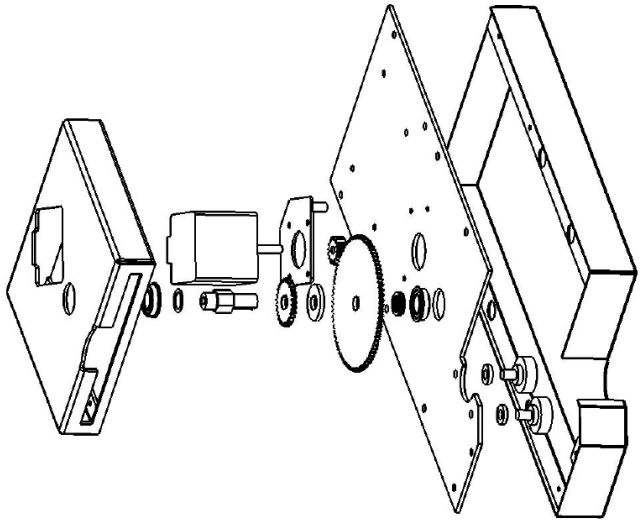


Exploded view

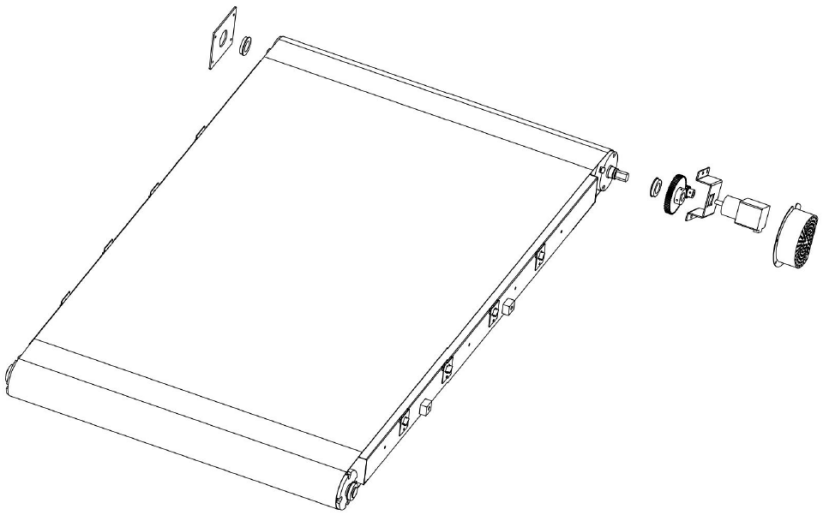
Oven



Receiving structure

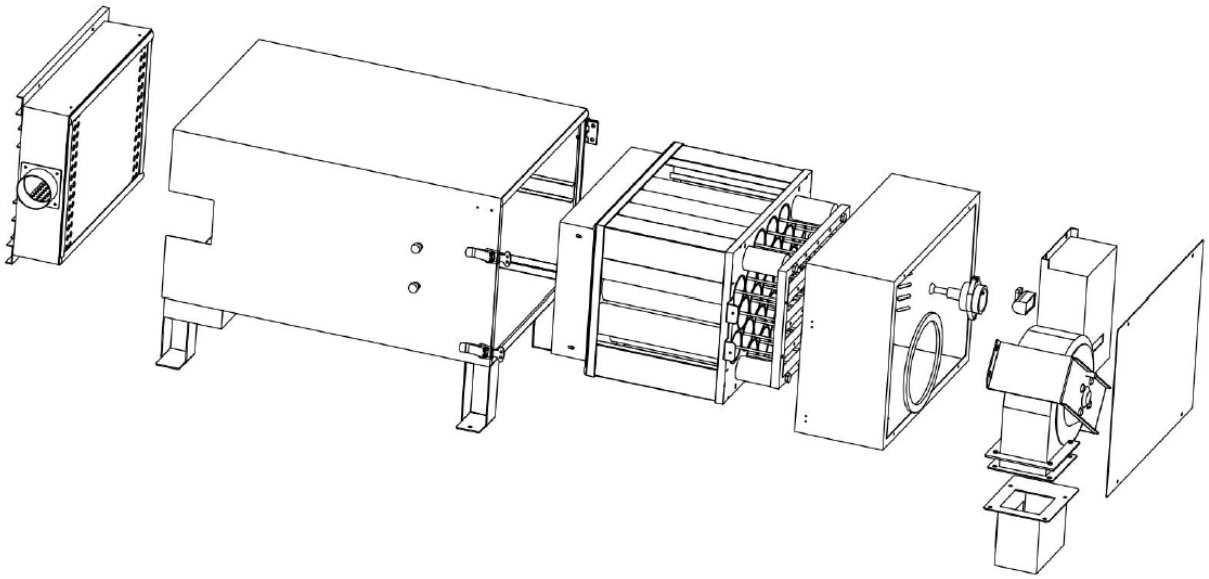


Mesh belt transmission structure

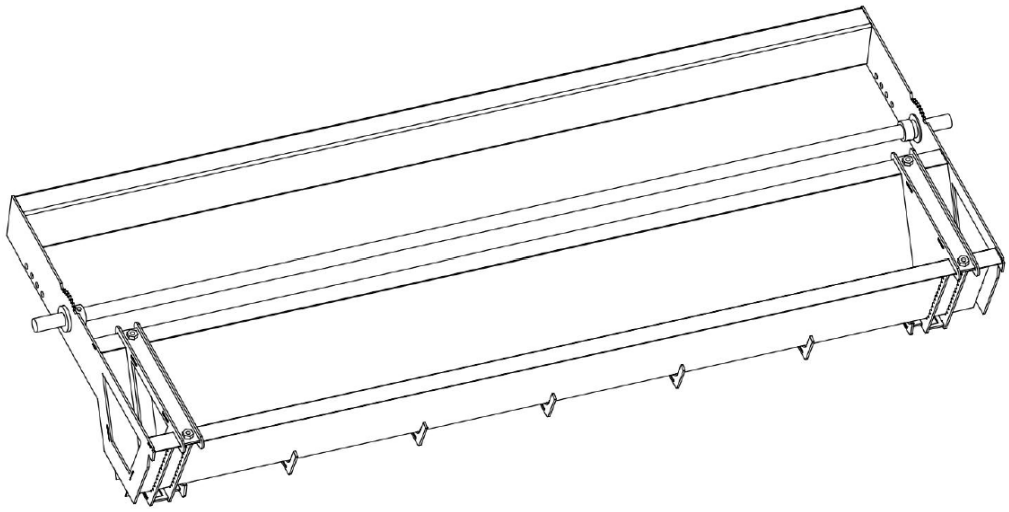


Exploded view

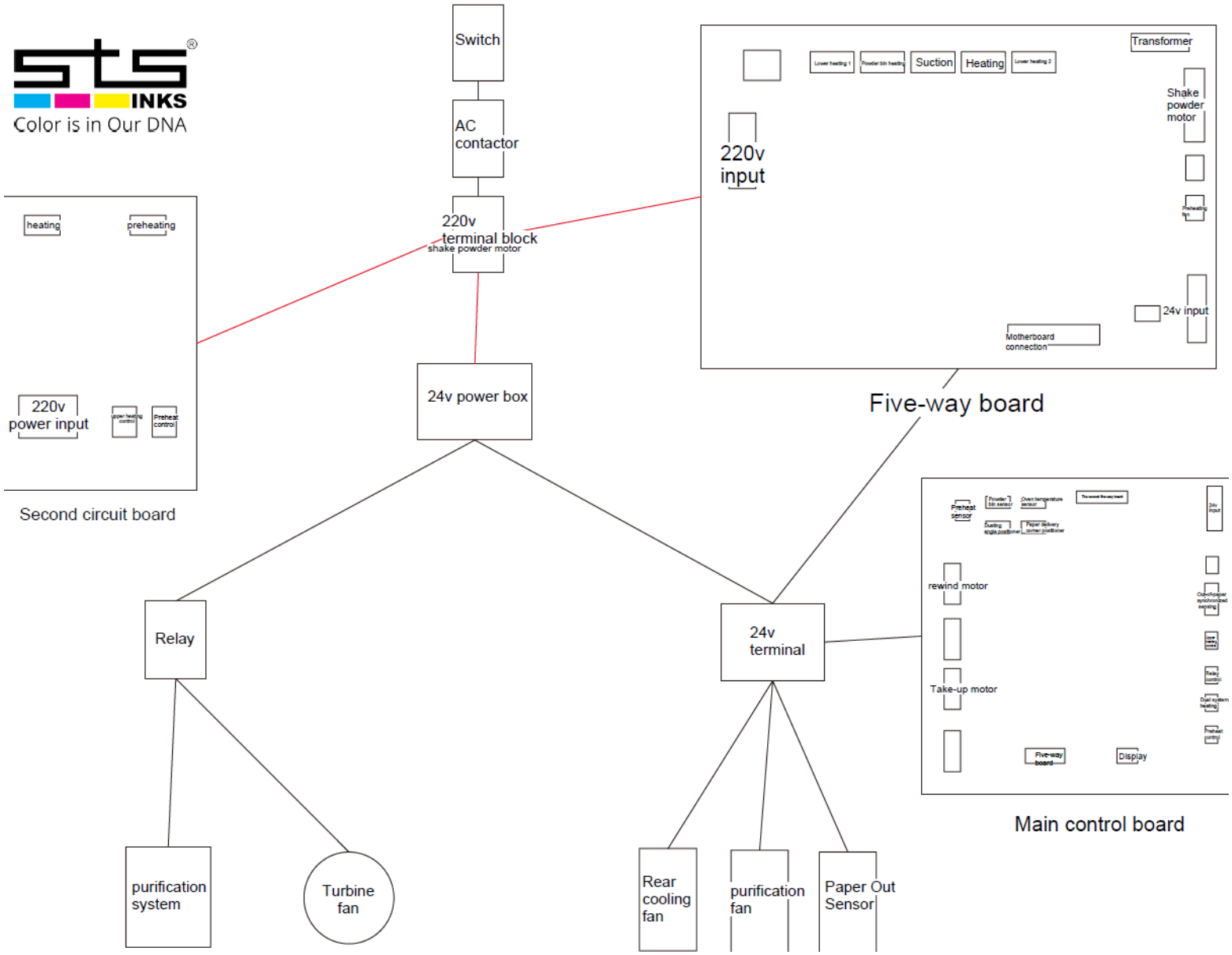
Purification system



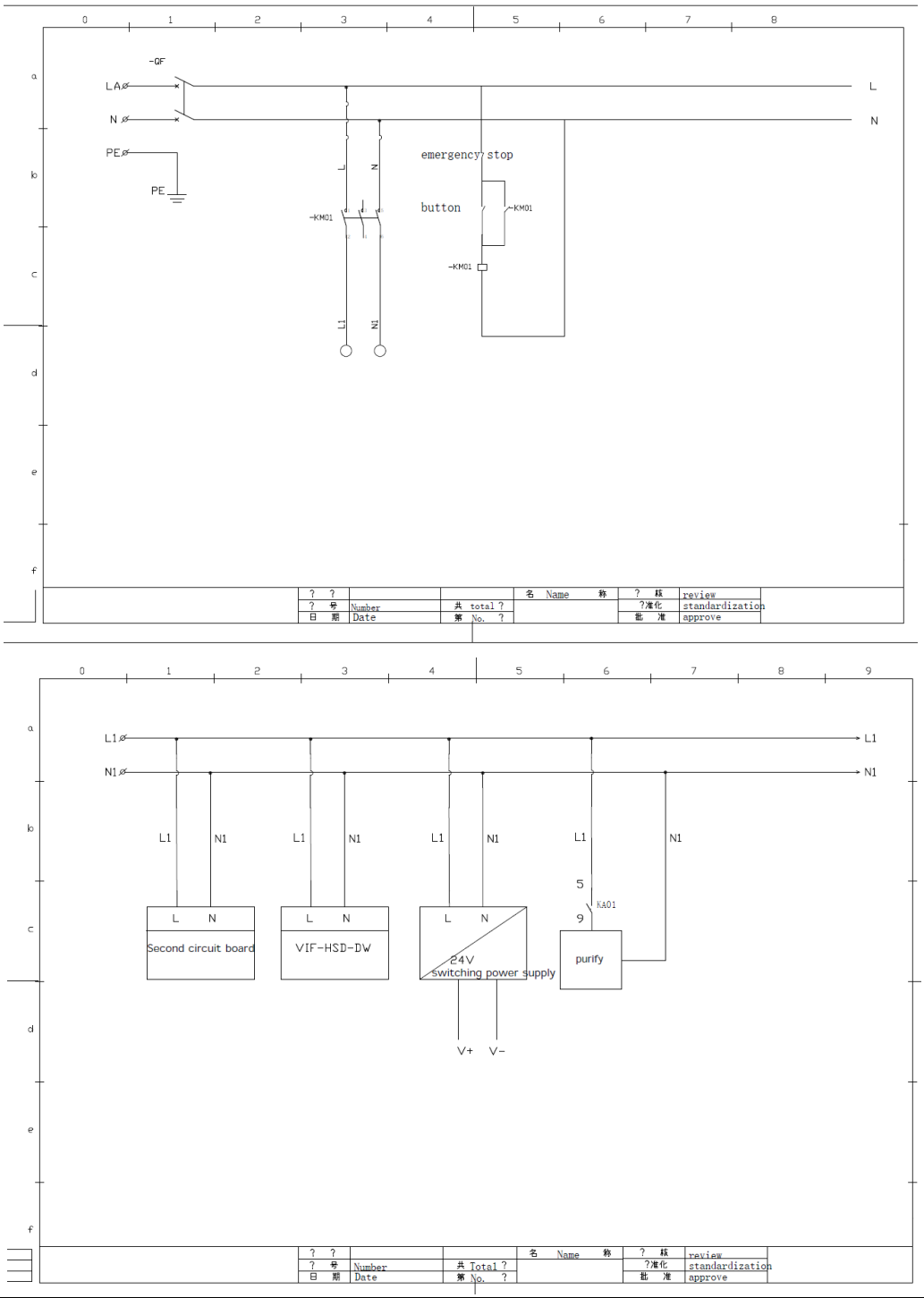
Fixed film uniform powder structure

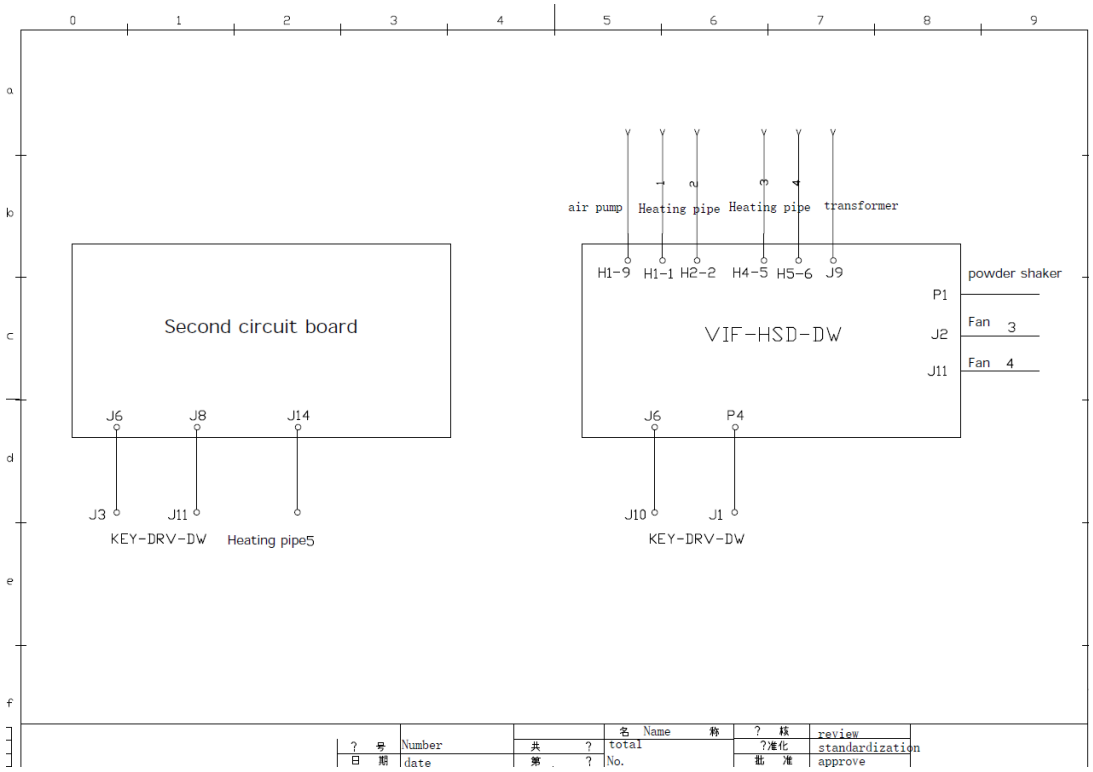


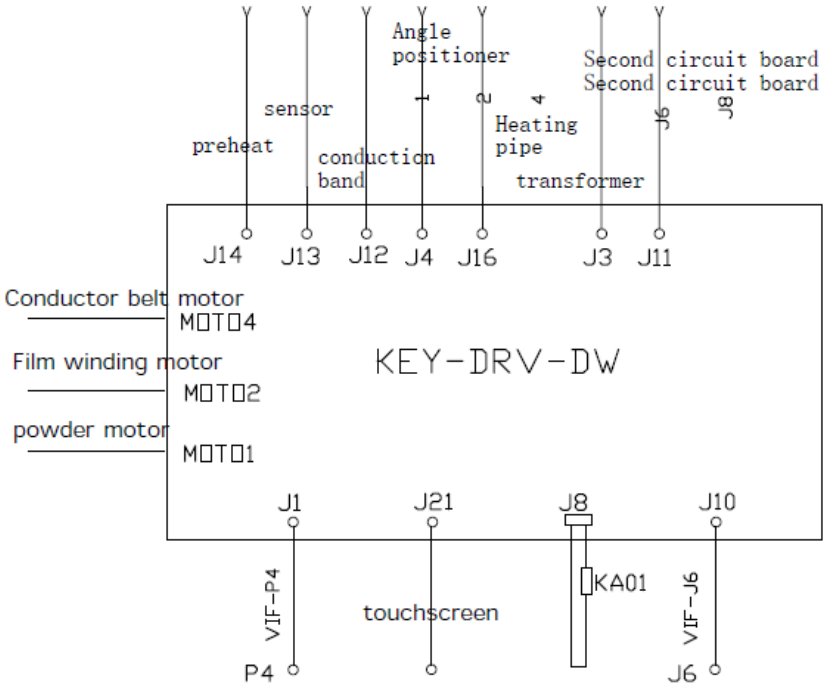
Board layout schematic



Schematic Diagram




air pump
Heating pipe
Heating pipe
transformer
H1-9
H1-1
H2-2
H4-5
H5-6
J9
powder shaker
P1
Fan 3
J2
Fan 4
J11
VIF-HSD-DW
Second circuit board
J6
J8
J14
J3
J11
KEY-DRV-DW
Heating pipe5
J6
P4
J10
J1
KEY-DRV-DW
Number
date
total
No.
review
standardization
approve


Angle positioner
Second circuit board
Second circuit board
sensor
preheat
conduction band
Heating pipe
transformer
J14
J13
J12
J4
J16
J3
J11
Conductor belt motor
MOTO4
Film winding motor
MOTO2
powder motor
MOTO1
KEY-DRV-DW
J1
J21
J8
J10
VIF-P4
P4
touchscreen
KA01
VIF-J6
J6