

SMTmax Corp.

AE-3090D Automatic Stencil printer

User Manual



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AE-3090D

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Introductions

Automatic alignment and printing

Precision linear guide way with bottom raising PCB supporter will lift up using mechanical system that automatically aligns the PCB to the stencil for each print without operator intervention—simply insert PCB into conveyor rails.

Board precision mechanical alignment mechanism eliminates alignment errors

Mark points erratic, shadows; parallax error or solder residue will not affect accuracy when PCB comes to align up position, eliminating vision system errors from image distortion.

Dual stroke control reduces solder paste consumption

A dual squeegee/dual stroke control system for the most efficient use of solder paste.

AE-3090D cycle time is just 5-10 seconds per PCB with registration repeatability of ± 0.1 mm. All movements—PCB position, mounting table and squeegee head—rely on precision linear guides. Print speed and table up/down speed are controlled.

Large print area, PCB bottom support, easy PCB setup

AE-3090D comes with two rails conveyor open up to 400mm, PCB size up to 400 x 350 mm. Flexible tooling holders that can be used with tooling pins (included) or vacuum, for edge-to-edge printing, make PCB setup and changeover very quick. Stencil frames can be up to 750 mm. Precision PCB bottom supports designed to move up and down for supporting single or double sided PCBs flat.

Easy programming

All parameters—print speed, stroke length, squeegee pressure, etc.—are fully programmable using the graphical, Windows-based control software. During operation, the onscreen process status shows all details of the current print job.

Easy to clean stencil screen

The printing squeegee holder can lift up 45 ° in front to make cleaning and handling of the stencil screen and squeegee blades easier.

Machine specifications

| | |
|---------------------------------------|--|
| Working area | 350 (W)x450mm (L) |
| Printer surface | 350x450mm |
| Max. Stencil screen size | 600x750mm |
| Min. stencil screen size | 500x370mm |
| Precision adjustment | 1.forward/backward±10mm 2.Left/Right±10mm 3.Rotation±30° |
| Power | Single Phase 110V/220V 50/60HZ |
| Air pressure | 5-7kg/cm² |
| speed | VR set up (squeegee speed set up); frequency loader (left and right moving speed); display。 |
| Machine overall Dimensions | 1100mm(L)x900mm(W)x1650mm(H) |
| Screen frame holder | Air pressure+manual |

Installation guidelines

1 installation location: Location of the machine placed should have enough room reserved as machine maintenance and calibration.

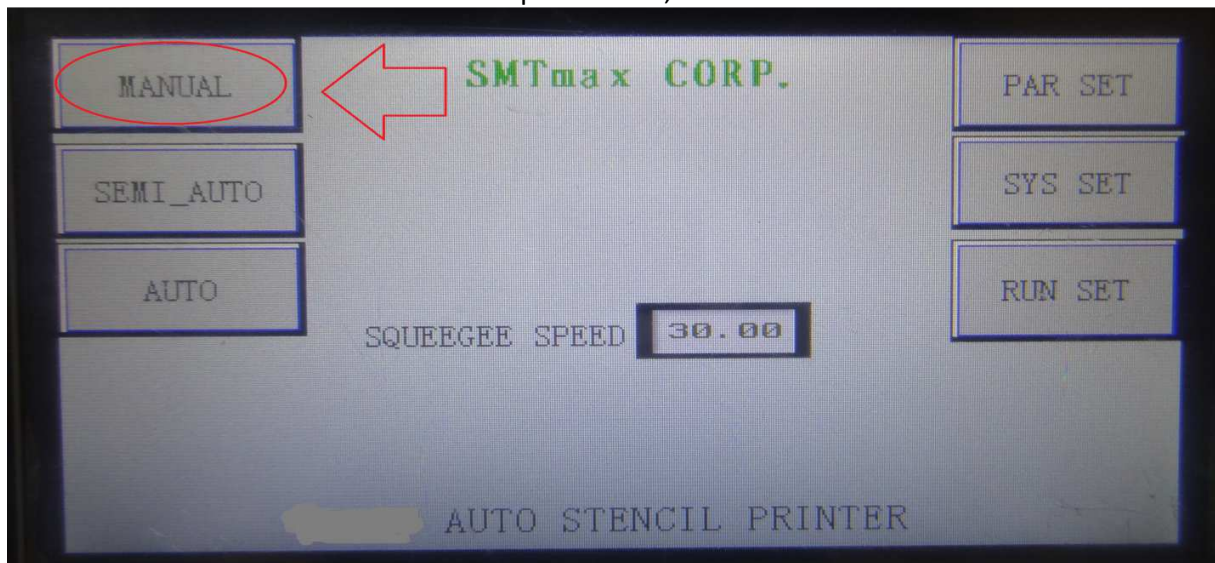
2 Power supply: single phase: 220V, 50/60HZ。

3 air supply: pressure request 5-7KG/cm²。

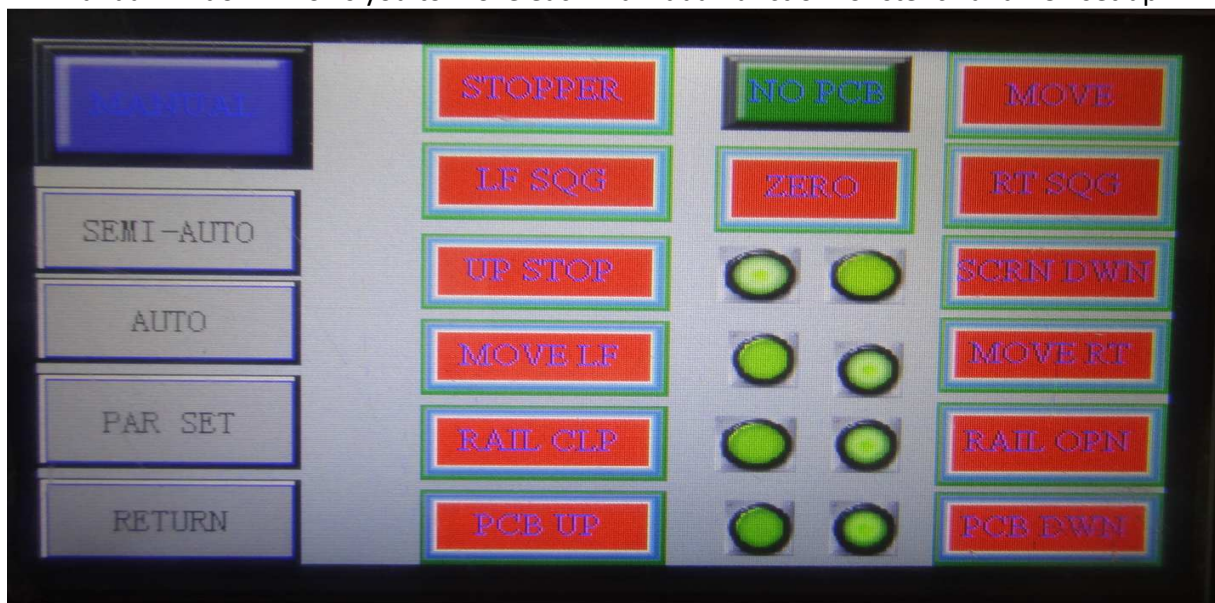
4 level: Placed on the platen level meter, adjust the four screws feet, and fixed

Software Interface

Main user interface window: Set parameters, select auto or semi auto functions.



Manual window: Allows you to move each individual function for stencil and PCB set up.



Stopper: UP/Down PCB stopping point location.

Move: Turns conveyor ON/OFF

LF SQG: left squeegee can be moved up or down

RT SQG: right squeegee can be moved up or down

Zero: everything resets to 0.0 point (starting point before adjustments were made)

Up stop: No use.

SCRN DWN: moves entire stencil up or down

Move LF: moves both squeegees to left side

Move RT: moves both squeegees to right side

Rail CLP: closes the width of the conveyor

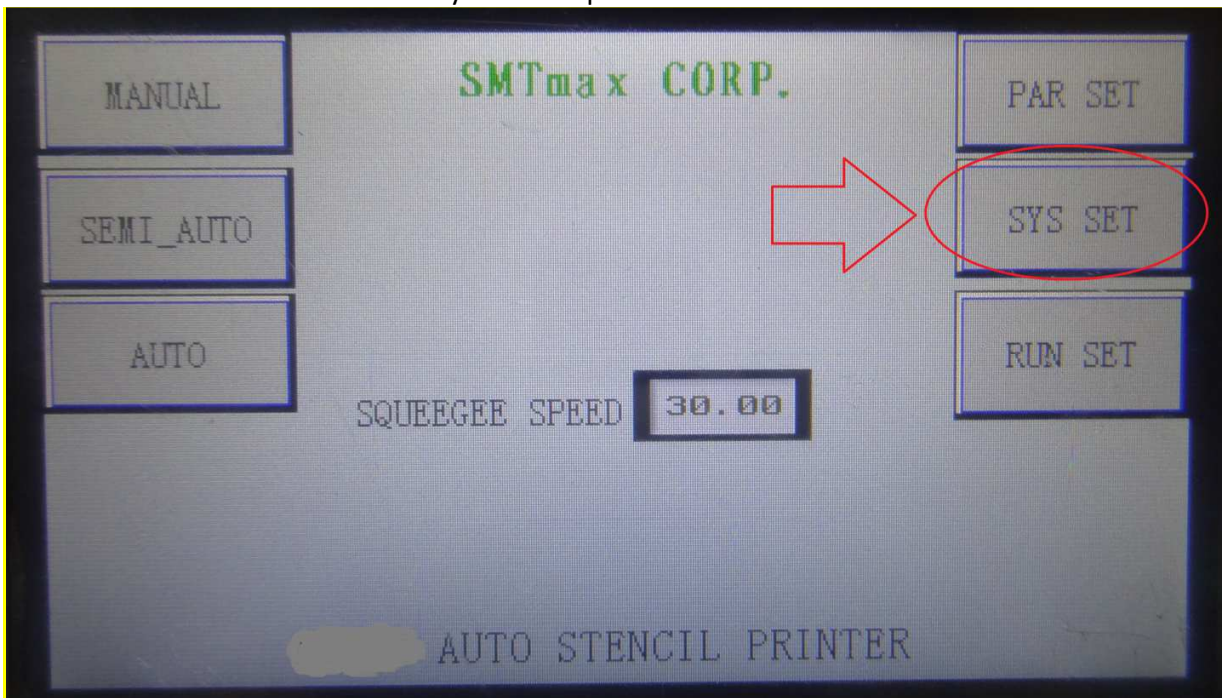
Rail OPN: opens the width of the conveyor

PCB UP: moves bottom support upwards

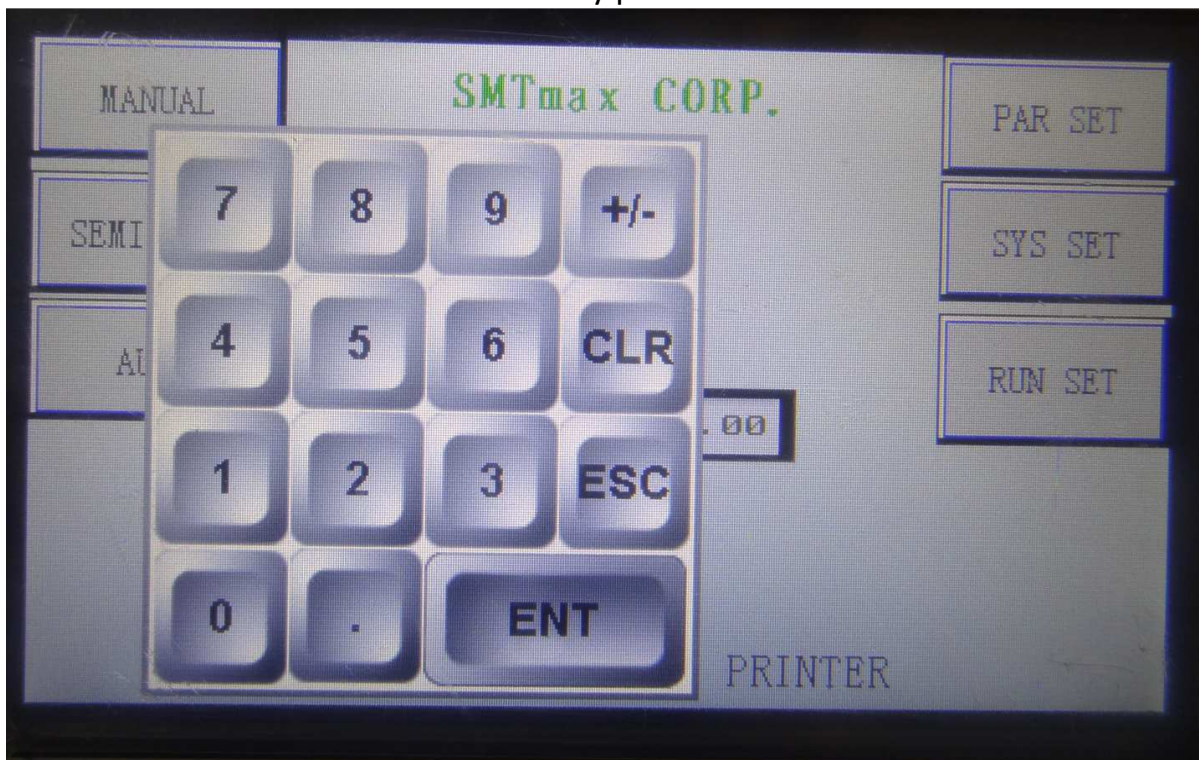
PCB DWN: moves bottom support downwards

System Parameter setup

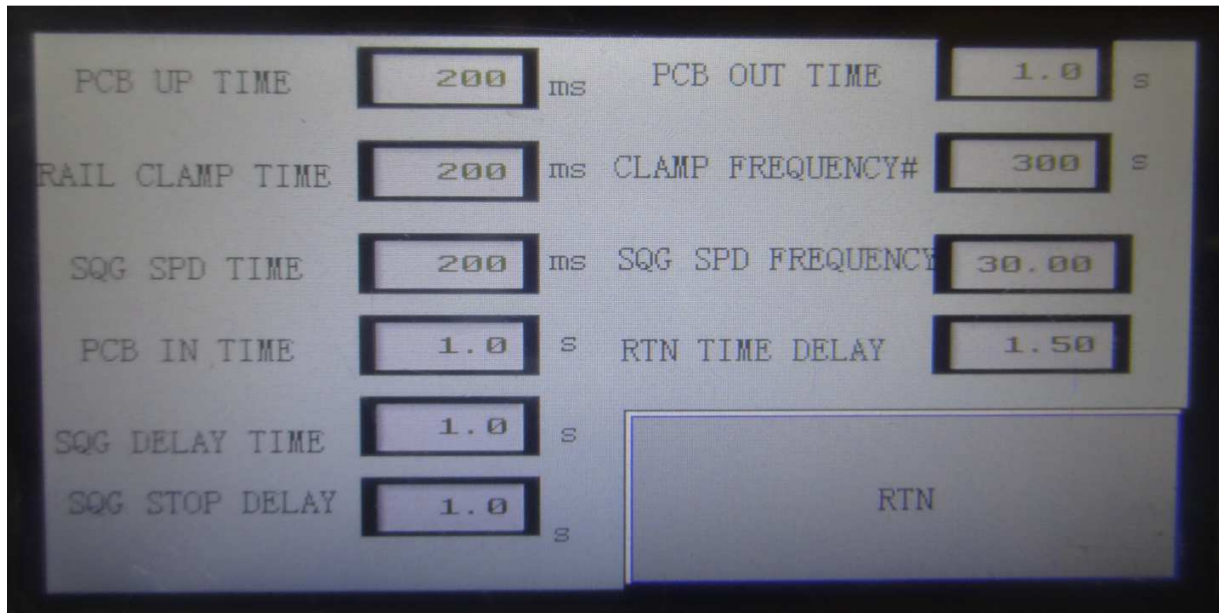
Click System setup in main window



Enter in the factory password of 123

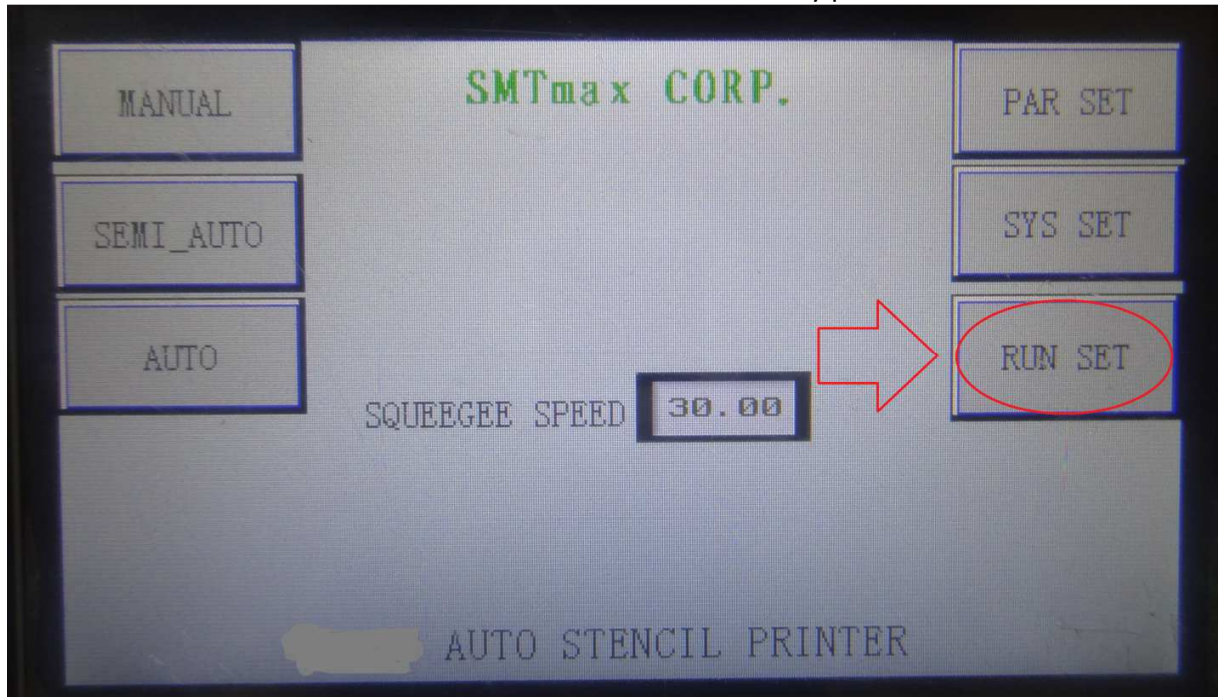


Now you can adjust the available parameters

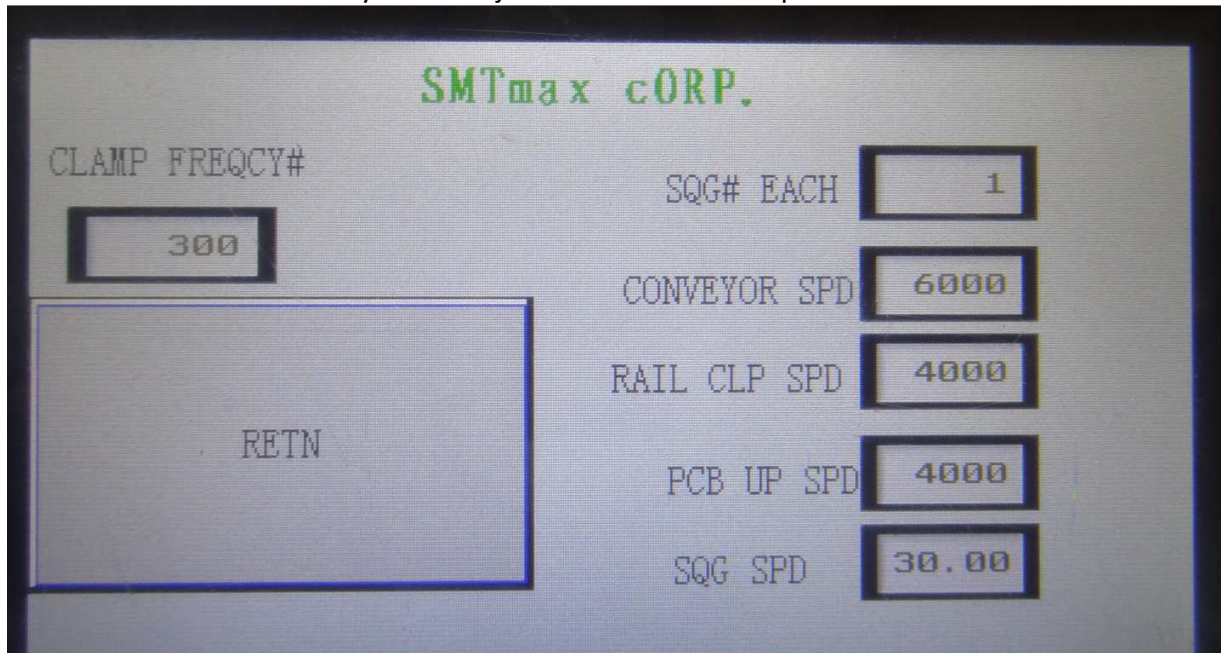


Run Set

Click Run SET on main window and enter factory password 123

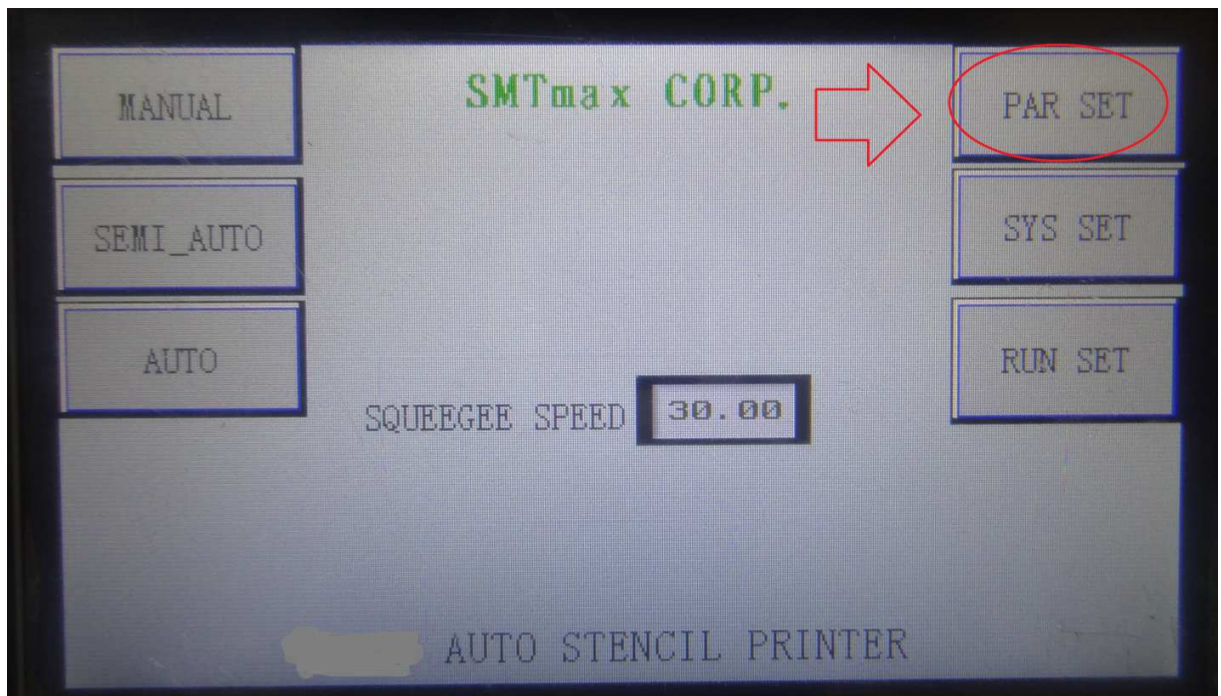


Now you can adjust the available RUN parameters

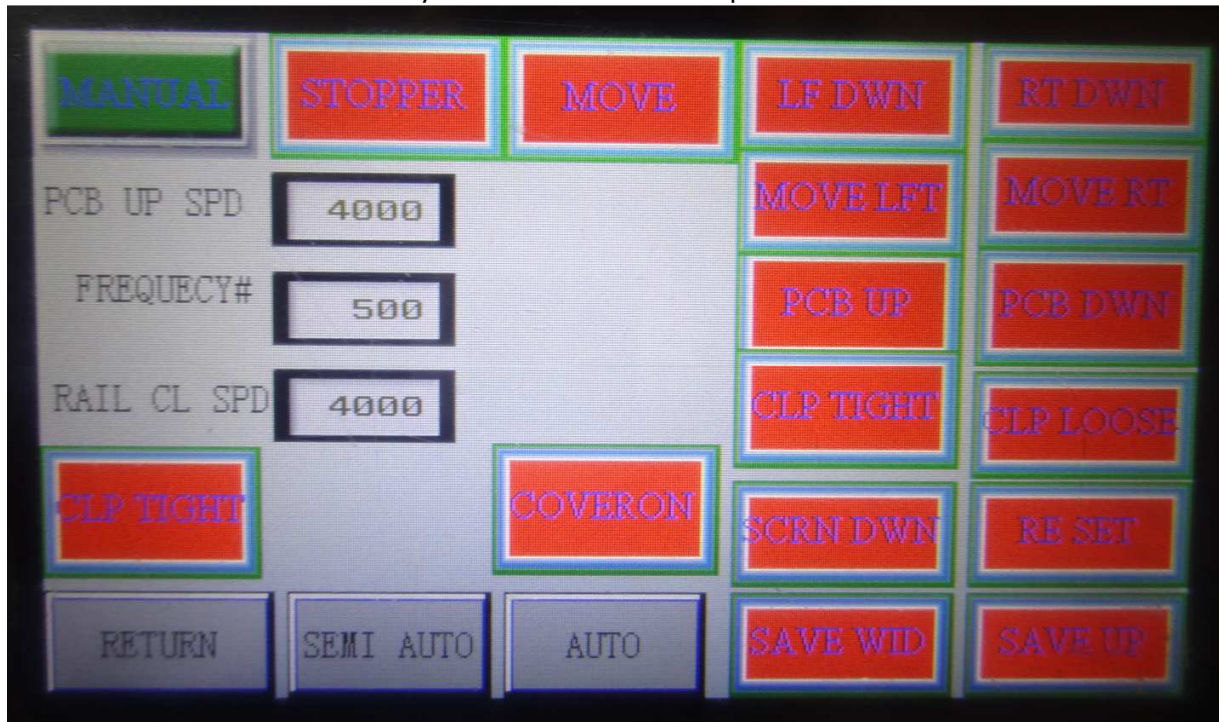


Production Parameter setup

Click production parameter setup in main window



Now you can set the available parameters:



Starting from top to right side:

Manual: Allows you to turn on this function in order to start implementing functions

Stopper: UP/Down PCB stopping point location.

Move: Turns conveyor ON/OFF

LF DWN: left squeegee can be moved up or down

RT DWN: right squeegee can be moved up or down

Move LFT: moves both squeegees to left side

Move RT: moves both squeegees to right side

PCB UP: moves bottom support upwards

PCB DWN: moves bottom support downwards

CLP Tight: closes the width of the conveyor

CLP Loose: opens the width of the conveyor

SCRN DWN: moves entire stencil up or down

Reset: everything resets to 0.0 point (factory starting point)

SAVE WID: Will save your conveyor width

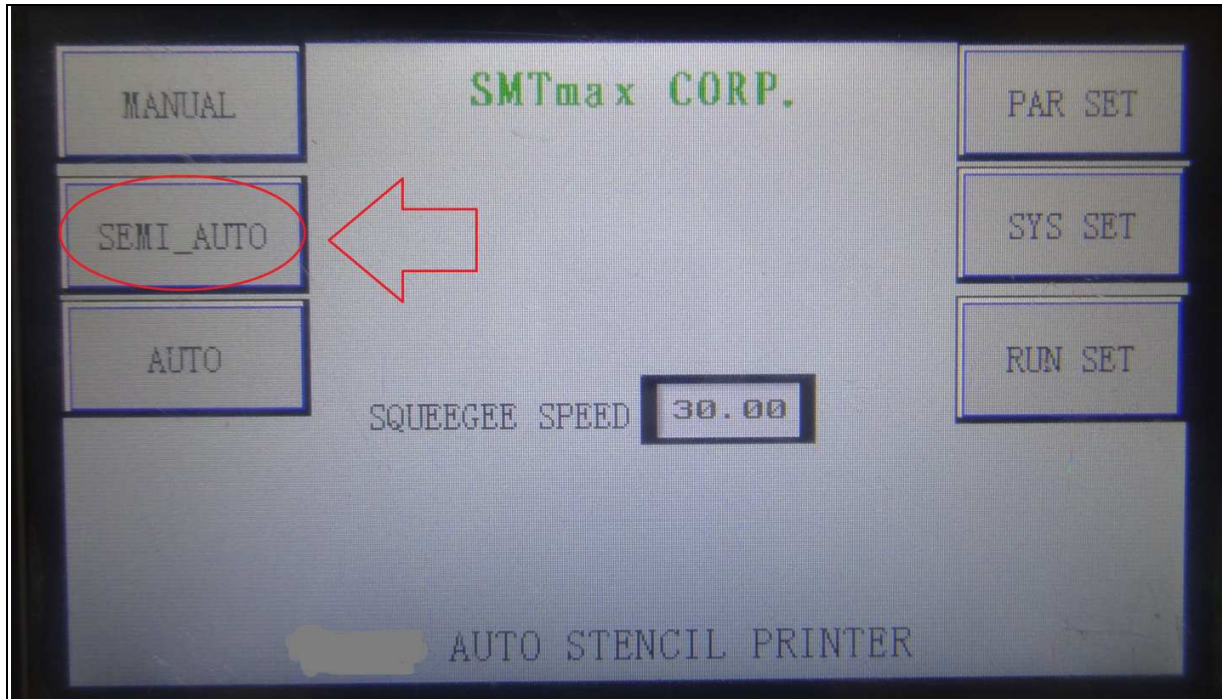
SAVE UP: will save your PCB bottom support

Cover on: no application

CLP Tight: micro conveyor width adjustor

Semi Automatic

Click semi automatic button:



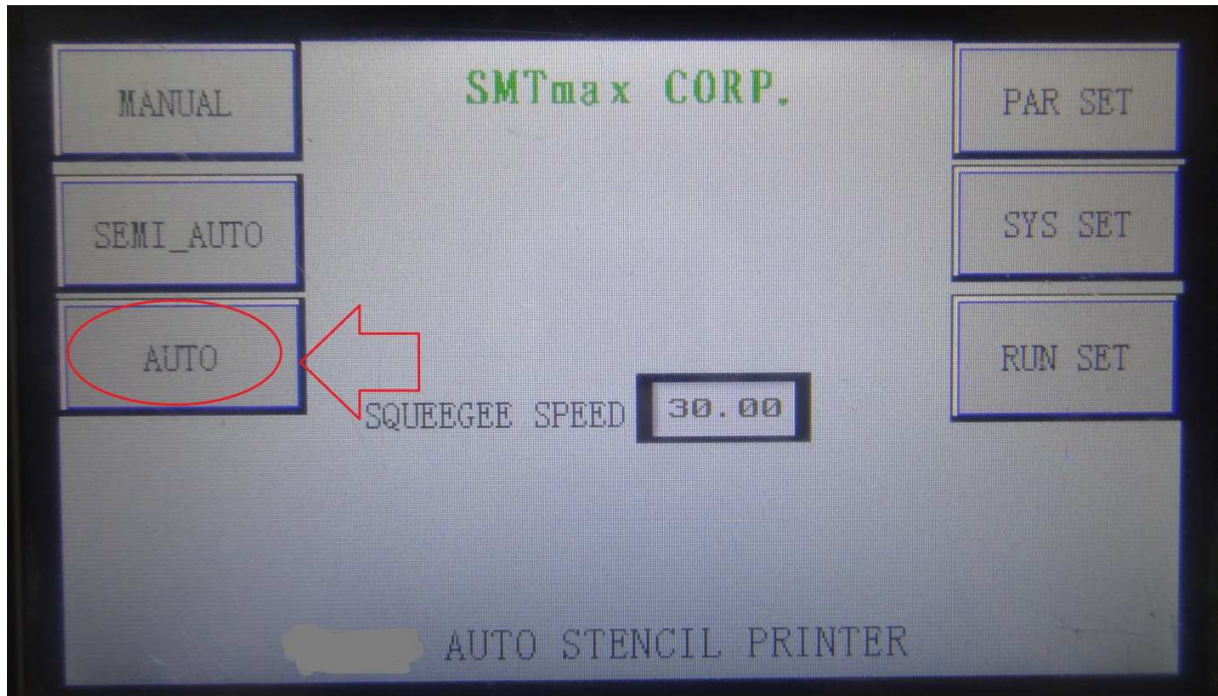
Click SEMI ON: To turn option ON or OFF



Pressing the ON button on the bottom right side will allow you to start the process one step at a time.

Automatic Screen

Click automatic button:



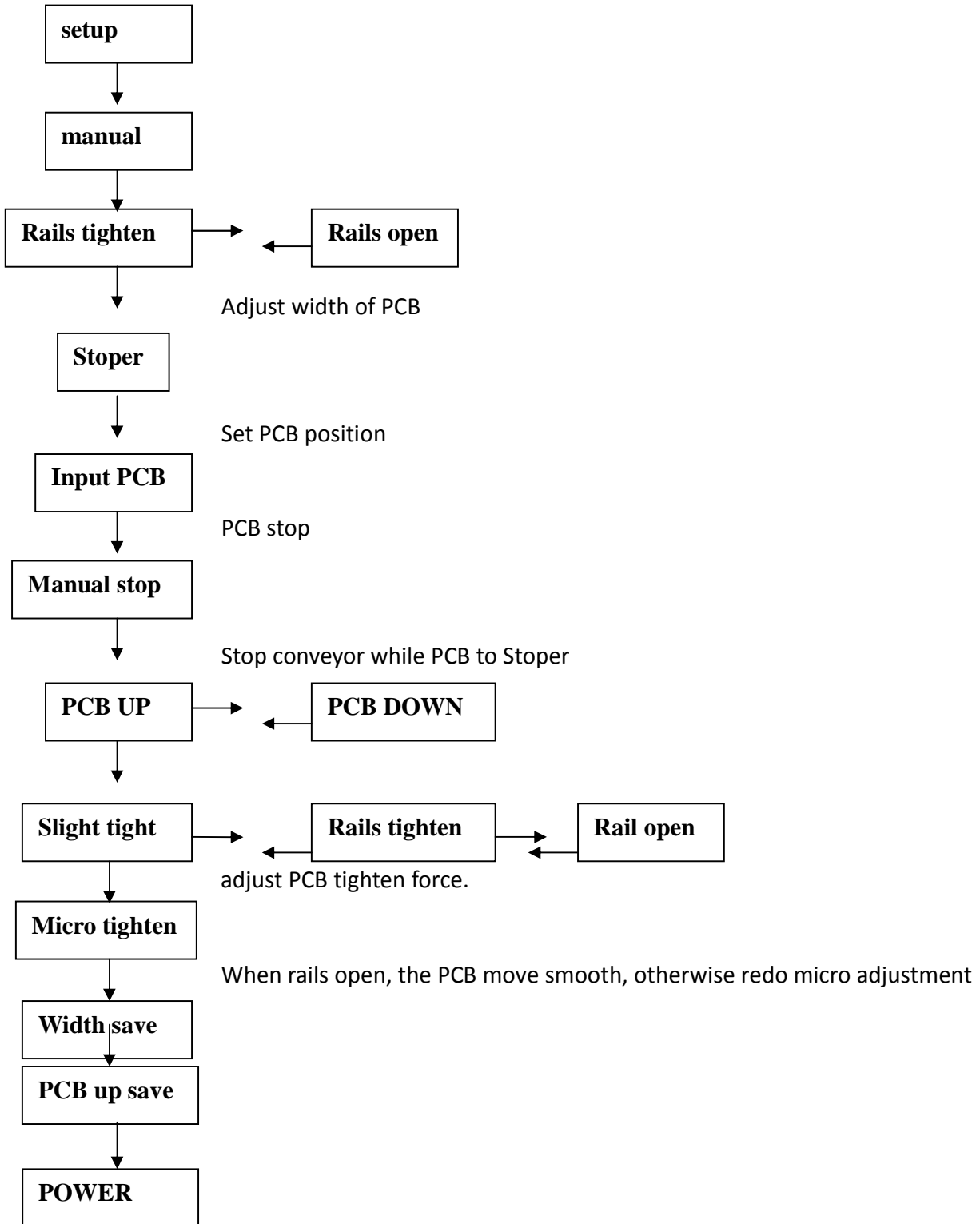
Click Auto ON: To turn option ON or OFF



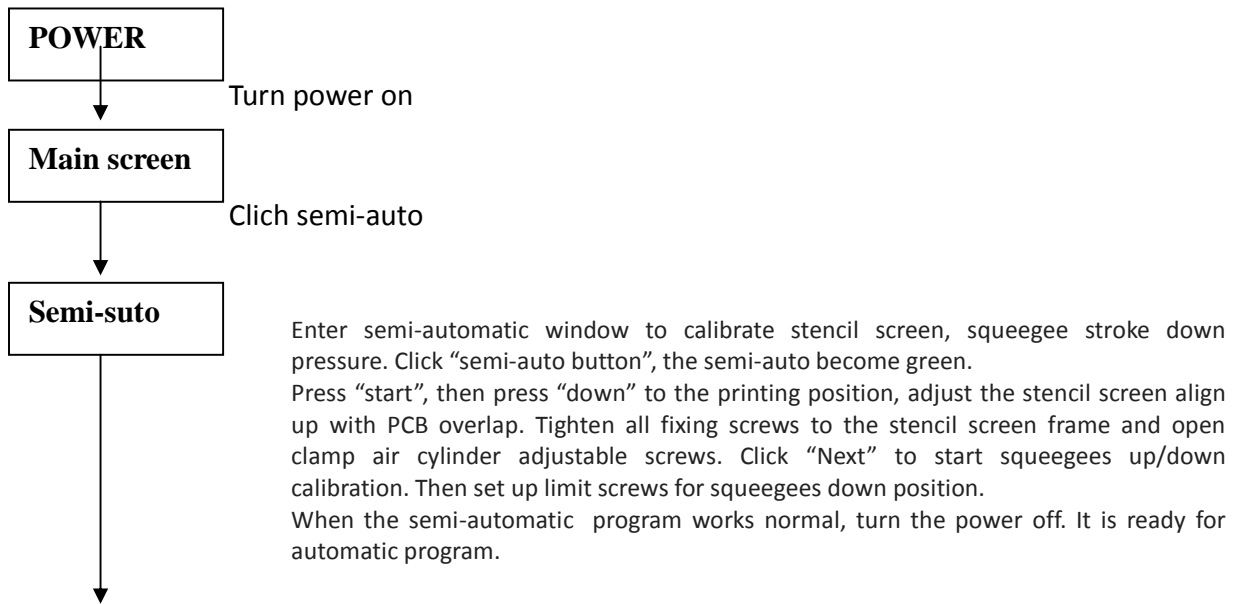
Pressing the RUN button on bottom right side will allow you to start the auto process.

Program diagram

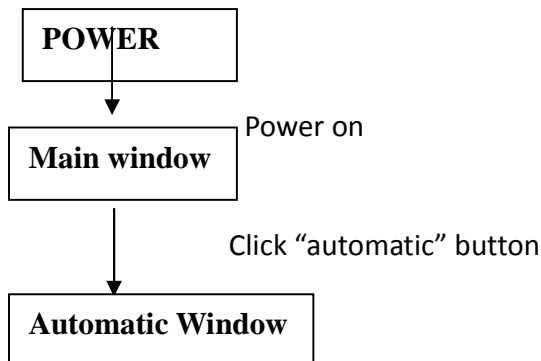
1: set up.



Semi-auto for adjustment of stencil screen and squeegees hight.



3: Automatic production



Press "Start", the machine should start to production. You still can set PCB number or press **START/PAUSE** to clean stencil. After clean click **START/PAUSE** or **START** to resume production. Change stencil screen, click **CLAMPING**.

Spare Parts

| name | specs | notes |
|---|-----------------------------|--------------|
| PLC | HARUTA | |
| Touch Screen | OP320-A | |
| Proximity switches (left, right) | PSN17-8DN 24V | |
| Sensors (up, down) | CS1-F 24V | |
| Solenoid Valves | 4V210—08 24V | |
| Up, Down air actuators | SC63*150-S | |
| Clamp air actuator | SDAS20*30 | |
| Squeegee air actuator | MD25*50 | |
| Power switch | HF20W-S-24 | |
| Motor | Fixted speed, 3P 60W | |
| Frequency Loarder | 0.25HP | |
| Air valve | AFC-2000 | |

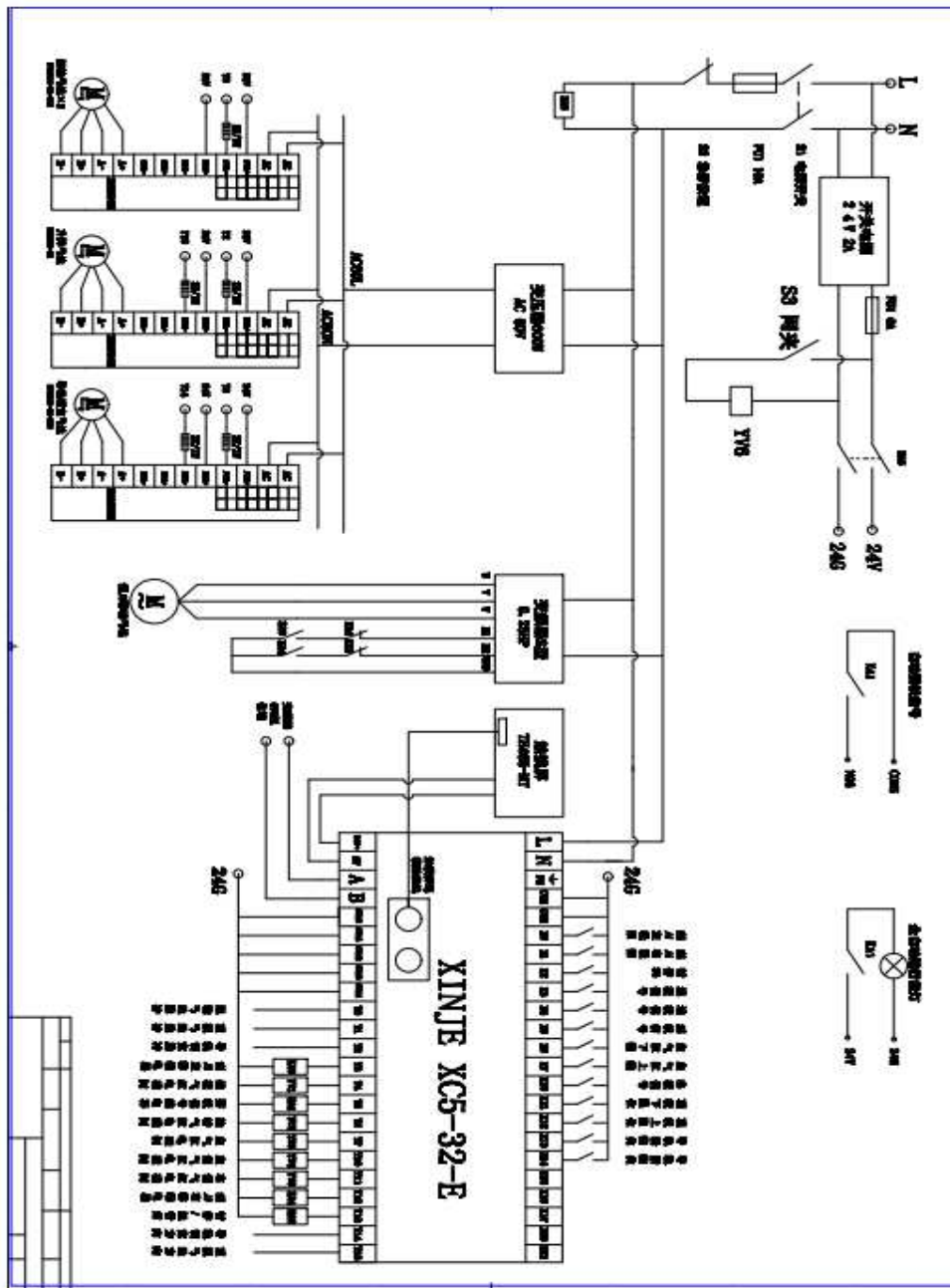
Trouble Shooting

| Situations | Solutions |
|--|--|
| 1.Stencil frame not up 2.Stencil frame not down | <ul style="list-style-type: none"> • check pressure air (should be at 4kg-6kg) . • up sensor, wire broken; up or down solenoid valve; PLC. • stencil settings. • up or down air cylinders air adjustment screws。 |
| 1.stencilscreen not down。 2. squeegees not move。 | 1.up/down solenoid valves、 IC board, up/down sensors adjust。 2.left/right approximated switches adjust。 |
| 1.stencil screen down, but squeegees not move; 2.squeegeemove to the end , but not stoop and stencilscreennot up. | 1.check approximated switch on right or left。 2.horizontal moving motor, frequency loader, belt slippery. 3.software, PLC problems. 5.communication problem. |
| Stencil screen down, but not immediately up. | 1.Adjust left up/right up sensors. 2.up sensors loose |
| Not power in | 1.power plugs 2.wall power and plugs. 3.power switch. 4.fuse. 5.PLC or main board。 |
| Frequency loader no power or can't drive motor | 1.check settings of frequency loader 2.frequency loader bad。 3.communication bad。 |
| Squeegees not move up/down | 1.squeegees up/down sensors bad 2.air actuators adjust screws 3.software or PLC wrong |

Preventive Maintenance

| number | name | methods | time |
|---------------|-------------------|--------------------------------------|-------------|
| 1 | Bearings | Lubricate bearings | 15 days |
| 2 | Air cylinders | Lubricate moving parts | 7 days |
| 3 | Sliding shafts | Grease | 15 days |
| 4 | Linear guild ways | grease | 15 days |
| 5 | Mechanical parts | Rusting prevent WD-40 | 7 days |
| 6 | Screws | Tighten screws | 7 days |
| 7 | Mechanical parts | Inspect broken or missing | 15 days |
| 7 | Air leaks | Inspect leak or broken | 15 days |
| 8 | Wirings | Inspect electrical parts and wirings | 15 days |
| 9 | Functions | Check all functions | 7 days |
| 10 | Surface dust | Dry cloth | 1 day |
| 11 | Electrical clean | Dry air | 7 days |
| | | | |

Wiring Diagram:



For further assistance feel free to contact us at:

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