



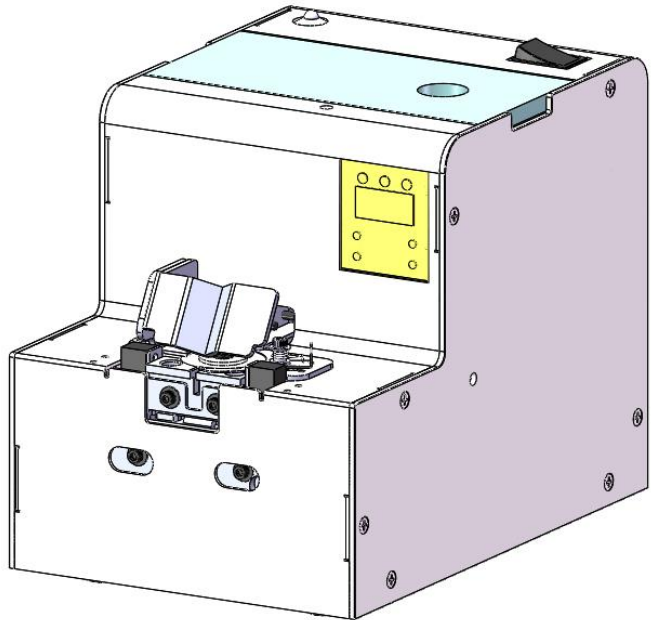
# **AUTOMATIC SCREW FEEDER**

## **DRFF-500R**

(VACUUM TYPE)

### **Instruction Manual**

( ENGLISH )



**CAUTION** - Please read, understand, and follow all operating and safety instructions in this manual before using the tools.

**If you have any questions or concerns, please contact us at:**

**Delta Regis Tools, Inc.  
7370 Commercial Circle  
Fort Pierce, FL  
USA 34951**

## SAFETY INSTRUCTIONS

### PLEASE NOTE FOLLOWING CONDITIONS BEFORE USING DRFF-500R

- ⦿ For a normal performance, please install this machine on a flat and stable working table, do not slant or pad, otherwise machine function might be affected.
- ⦿ Turn off the power switch and unplug the AC adaptor when this machine is not being used for a period of time.
- ⦿ To avoid damage and malfunction, use the AC adaptor supplied with this machine only.
- ⦿ Keep the surface of the rail groove clean and free from dust and oil. Failure to keep the rail groove clean could result in damage to the machine.
- ⦿ The applied screws must be clean without grease or dust, and screw size is within specified range as machine rail.
- ⦿ Handle screws on rails with care, do not use excess force to remove them or the rails may be damaged.
- ⦿ When scooping chamber is turning, do not put fingers or objects other than screws into the chamber.
- ⦿ Do not turn ON the power switch before the rails are set properly for operation.
- ⦿ In case of malfunction during operation, please turn off the power and unplug the AC adaptor. Contact your supplier at on

**Whenever this machine requires service, please contact your supplier for assistance, or go to our website & e-mail us your contact detail and requirement, we will respond ASAP.**

# CONTENTS

<b>CHECK BEFORE OPERATION</b> .....	<b>1</b>
ACCESSORIES INCLUDED.....	1
CHECK THE SCREW SIZE .....	1
<b>FUNCTIONS WITH ADJUSTING HOLES ON HOUSING AND PCB .....</b>	<b>2</b>
<b>ADJUSTMENT</b> .....	<b>3</b>
ADJUST THE RAIL ASSEMBLY.....	3
DISMANTLE THE RAIL ASSEMBLY.....	3
ADJUST THE WIDTH OF RAIL ASSMEBLY.....	6
INSERT THE RAIL ASSEMBLY.....	8
ADJUST THE HOLDING PLATE.....	10
ADJUST THE FEEDING STRUCTURE.....	11
ADJSUT THE SENSOR FUNCTION.....	13
ADJUST THE V CHASE ON ROLLER.....	14
ADJUST THE BRUSH.....	15
<b>OPERATION METHOD</b> .....	<b>16</b>
LOAD SCREWS INTO CHAMBER.....	16
PICKING UP SCREW.....	17
DISPLAY PANEL OPERATION.....	18
<b>MAINTENANCE &amp; TROUBLE SHOOTING</b> .....	<b>21</b>
<b>MAINTENANCE &amp; CLEANING</b> .....	<b>22</b>
<b>INTERNATIONAL WARRANTY CONDITIONS</b> .....	<b>23</b>

## CHECK BEFORE OPERATION

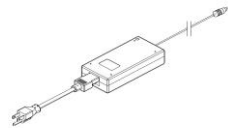
## ACCESSORIES INCLUDED

Please check if there are complete accessories included with your DRFF-500R

HEX Wrench 2.0\*107mmL Type\*1



Power Controller AC 100~240V/DC12V\*1



Orbit Back-End Chip Rule

20\*10\*0.2mm\*2pcs&0.5mm\*6pcs

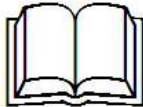


Orbit Front-End Chip Rule

20\*10\*0.2mm\*2pcs&0.5mm\*6pcs



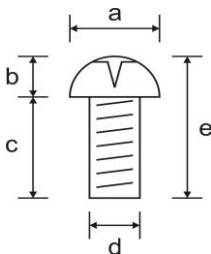
Instruction Manual\*1



## CHECK THE SCREW SIZE

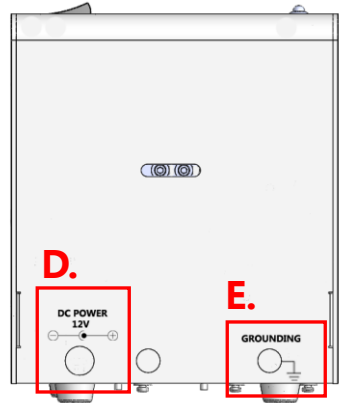
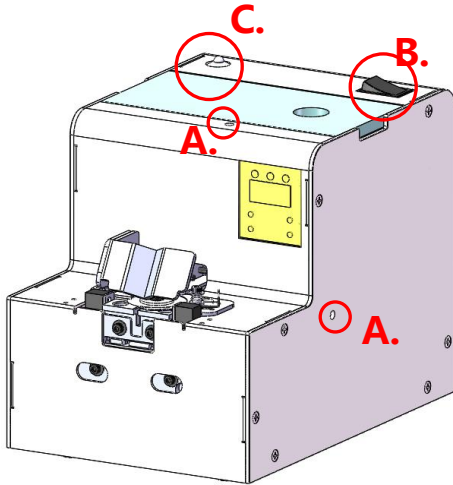
Measure the size precisely on each part of applied screw with a caliper.

Table A



a	Dia. of screw head
b	Height of screw head
c	Length of screw body
d	Dia. of screw bolt
e	Total length of screw

## FUNCTION WITH ADJUSTING HOLES ON HOUSING AND PCB



- A. Lock Gate Plate
- B. Power S.W.
- C. Indication Light
- D. DC Power Hole
- E. Grounding Hole

### ※ Attention ※

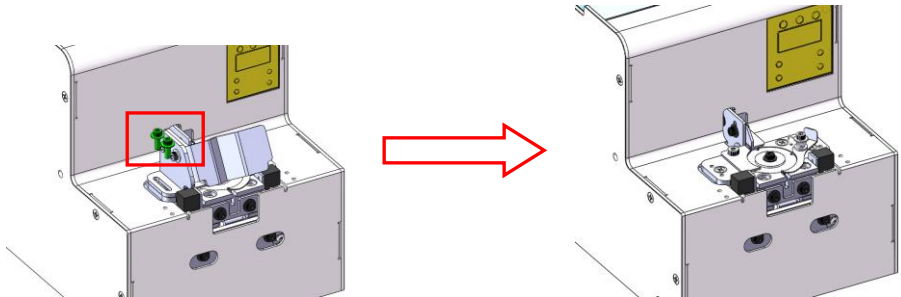
- a. Part F, G, H are installed and set properly by Kilews, please do not adjust by your own.
- b. Part F,G,H are on the PBC, do not adjust with improper tool or do the process too hard, in case to damage VR.

## ADJUSTMENT

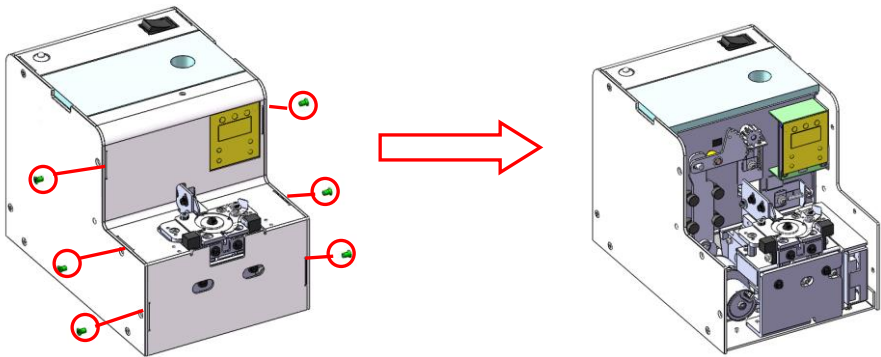
After checking the screw size, it needs to adjust all related parts according to the screw size for the first use.

### ADJUST THE RAIL ASSEMBLY

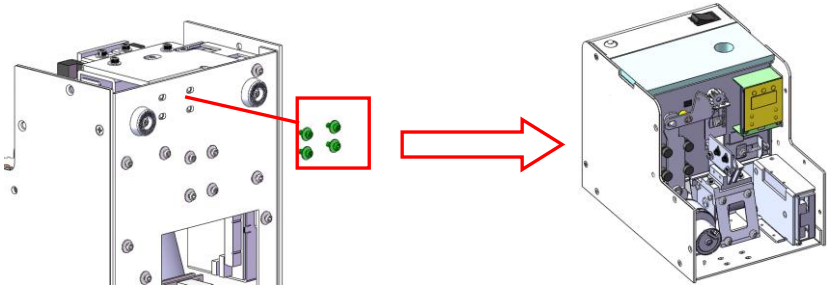
1. Remove the fixing screws of guide assembly, dismantle the guide assembly.



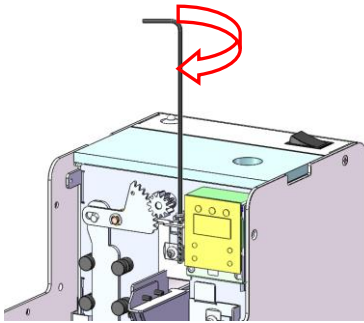
2. Remove the fixing screws (6pcs) of front housing, and take off the front housing.



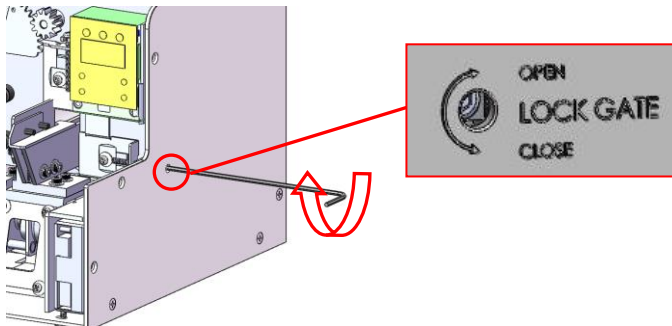
3. Dismantle the fixing screws (4pcs) of feeding structure, and take it off.



4. Facing the machine, use Hex wrench to loose the screw clockwise to open the lock gate upward.

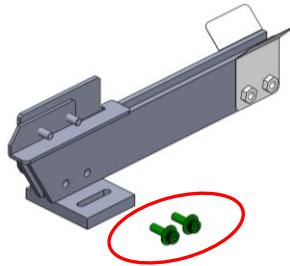


5. Facing the machine, use Hex wrench to loose the screw clockwise to open the lock gate rightward.

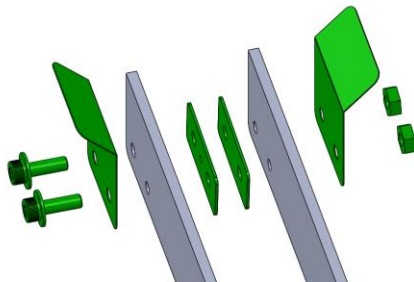


## ADJUST THE WIDTH OF RAIL ASSEMBLY

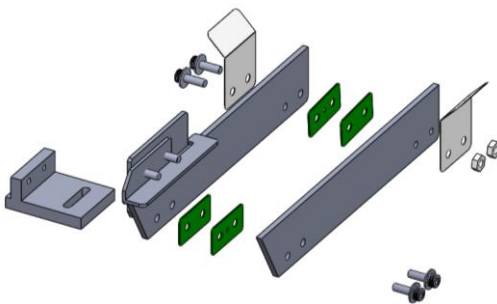
1. Remove the fixing screws on the front end of rail assembly.



2. Remove the screws on the rear end of rail assembly. Then take off the tooling plate.



3. According to Table b, insert the suitable tooling plate into the front and rear end of the rail. Then adjust the width for left and right rail. Tighten the screw of step 1 and 2.

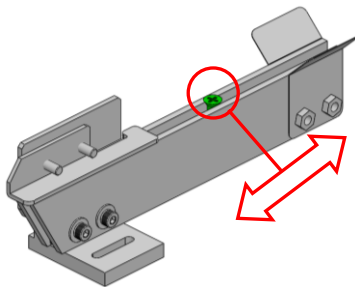




※ **COMBINATION OF THE THICKNESS FOR REFERENCE** ※ **Table b**

Dia. of Screw Bolt (d) mm	Accessory-Tooling Plate (Rear) mm	Dia. of Screw Bolt (d) mm	Accessory-Tooling Plate (Rear) mm
1.2	$0.5 * 2 + 0.2 * 2 = 1.4$	2.6	$0.2 + 0.5 * 5 = 2.7$
1.4	$0.5 * 3 = 1.5$	3.0	$0.2 + 0.5 * 6 = 3.2$
1.7	$0.2 * 2 + 0.5 * 3 = 1.9$	3.5	$0.2 + 0.5 * 7 = 3.7$
2.0	$0.2 + 0.5 * 4 = 2.2$	4.0	$0.2 + 0.5 * 8 = 4.2$
2.3	$0.2 * 2 + 0.5 * 4 = 2.4$	5.0	$0.2 + 0.5 * 10 = 5.2$

4. After width adjustment of the rail assembly, place a screw into the groove and slide it up and down to both sides. Then check whether the movement is smoothly.

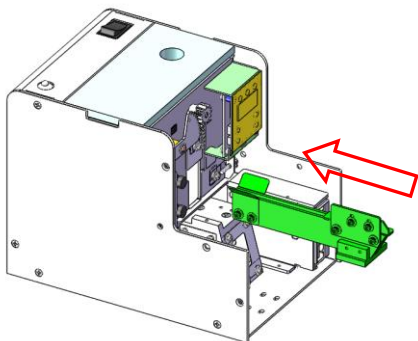


※ **NOTE THE FOLLOWING WHEN MAKING ABOVE ADJUSTMENT**

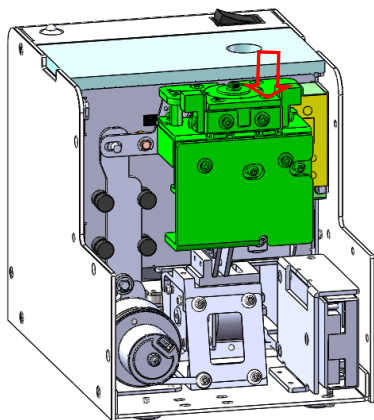
- Please be sure to keep the width of rail from the beginning to the end uniformly.
- When adjusting the width of front rail assembly, the screw of step 1 must be fastened.

## INSERT THE RAIL ASSEMBLY

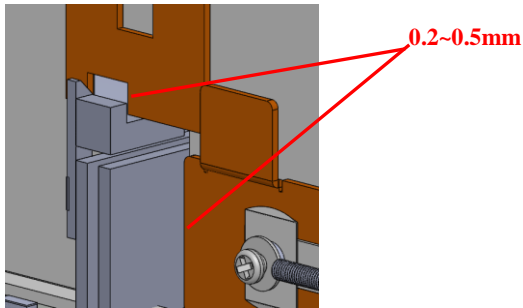
1. After the width adjustment of rail assembly, insert it into machine, and then fasten the fixing screw.



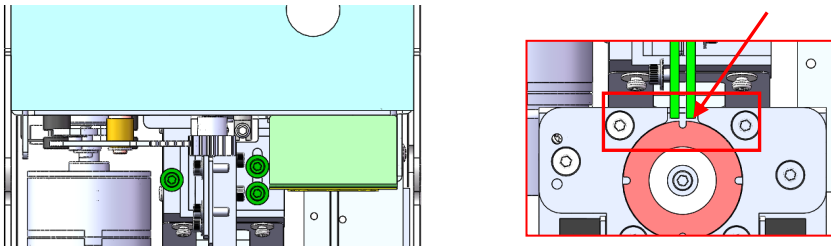
2. Install the feeding structure. Then fasten the screws.



3. Set the lock gate, keep 0.2~0.5mm open space between gate to rail assembly.



4. Loosen the fixing screw of rail assembly. Keep 0.2~0.5mm open space between the front end of rail assembly and circled plate. Then fasten the screws.

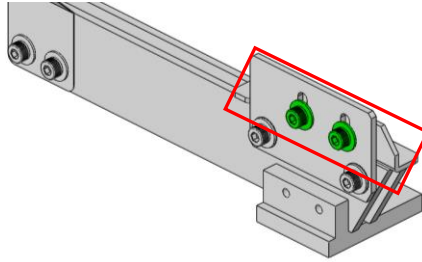


※ NOTE THE FOLLOWING WHEN MAKING ABOVE ADJUSTMENT ※

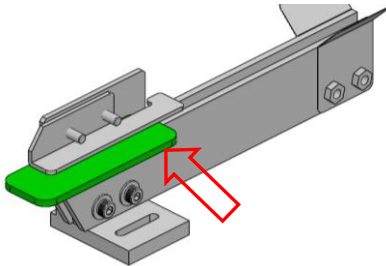
- When inserting the rail assembly, it must keep 0.2~0.5mm open space from the circled plate.
- When the rail can't be installed, please check if the position of V chase is installed too low.
- Keep 0.2~0.5mm open space between the lock gate and rail assembly.

## Force-down plate adjustment

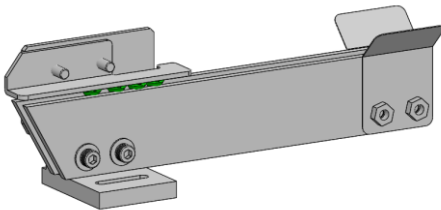
1. Loosen fixing screw on force-down plate



2. Use accessory tooling plate adjust height of force-down plate and then fasten screw in step 1



3. Put some screws into the groove and slide it up, to check whether the movement is smooth

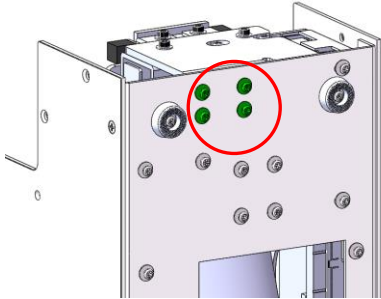


### ※ NOTICE ※

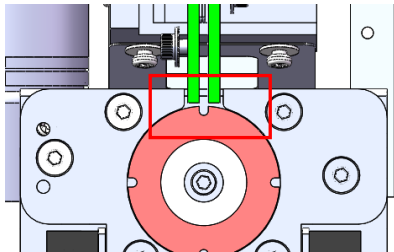
When adjust force-down plate, the screw in step 1 must fasten tightly to avoid losing

## Distribution Mechanism adjustment

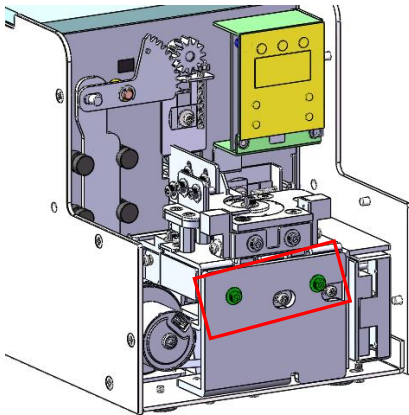
1. Loosen fixing screw from front of distribution mechanism



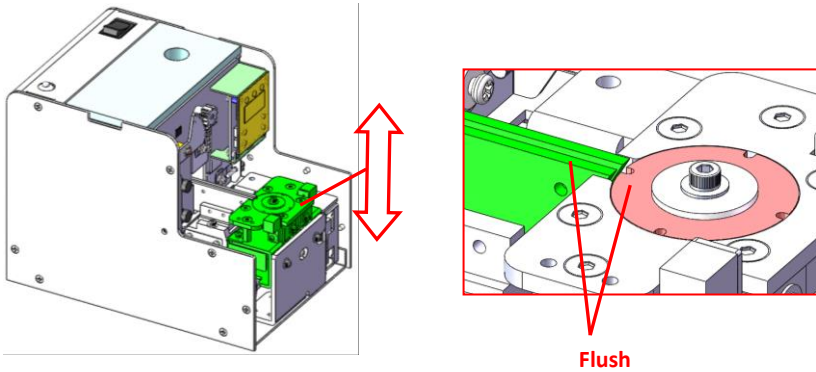
2. Align disc gap with central of rail by adjust front of distribution mechanism by left and right, Fasten the loosen screw in step 1



3. Loosen two hexagon screws



4. Adjust from part by up and down to make disc and rail flush, and then fasten loosen screw in step 3

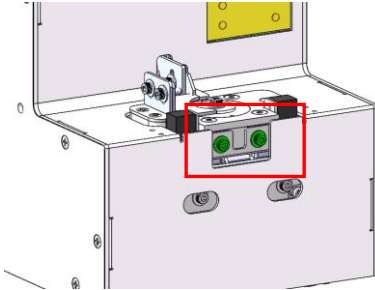


※ NOTICE ※

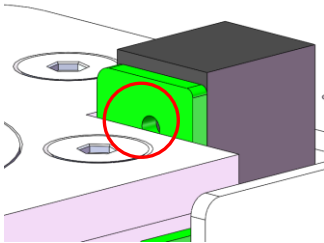
a. Align disc gap with central of rail, and upper plane cannot higher than upper plane of front rail

## Adjust Sensor Function

1. Loosen the fixing screw of sensor fixing plate



2. Make sure to cover half of the hole, and then fasten the screw of step 1.



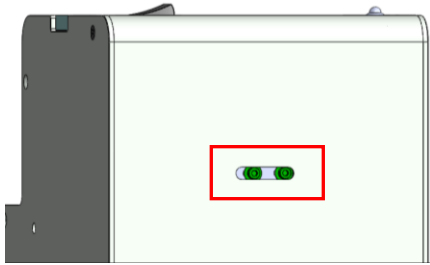
### ※ NOTICE ※

a. Make sure to cover half of the hole, and do adjustment to ensure the sensor function no problem.

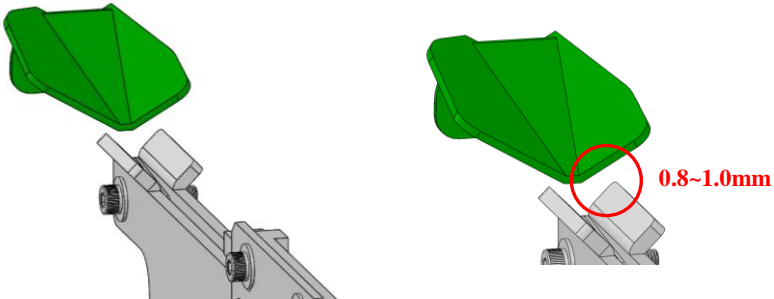
## Adjust V Chase on Scooping Chamber Back

The V Chase is located on top of the rail, and fastened to the back of Roller Assembly. The purpose is to catch fallen screws from the Rollers, and guide screws back to the rail.

1. Using the Allen wrench to loosen the Hex Socket Head Cap Screws behind the main body



2. Adjust V Chase to face to the center of the rail. Distance between Chase and rail should be 0.8~1.0mm



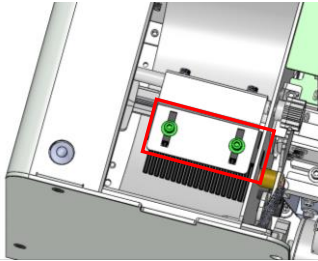
### ※ NOTICE ※

- a. Keep 0.8~1.0mm open space between V Chase and the end of the rail, and V Chase aligned to the center of the rail.

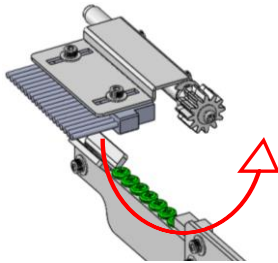


## Adjust the Brush

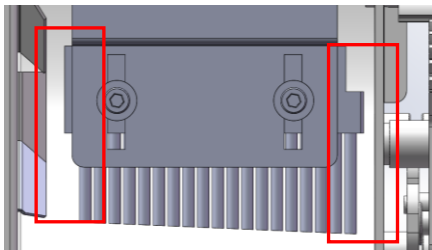
1. Swing the brush to stay almost horizontal, loosen screw on the side of brush bracket.



2. Place 5~8 screws into the rail groove close to the holding plate rear end and loosen 2 screws on the side of the brush bracket. Swing the brush and adjust the height until the brush just touch the screw heads slightly, and tighten the screws after adjustment.



3. When fix the brush position, keep suitable space form the Front Plate and Fixing Plate.



4. Brush bracket and driving rod must be parallel and fix to the center.



### ※ NOTICE ※

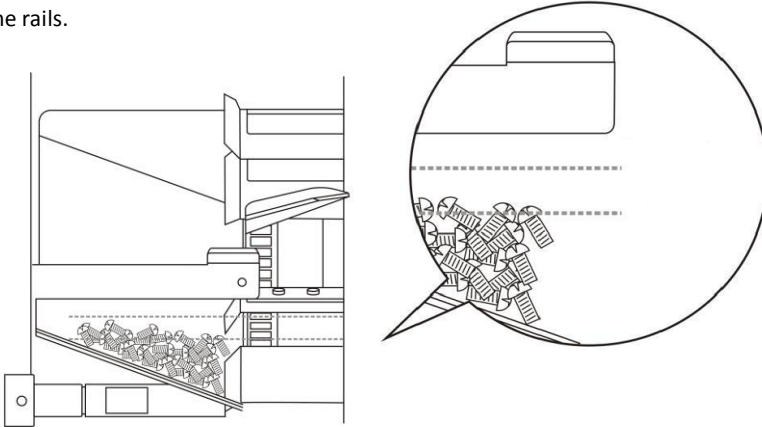
a. After adjustment of the height of the brush, swing the brush by hand to make sure the movement runs smoothly.

b. The brush length is inconsistently, please ensure the brush match rail when replace it.

## Method of Operation

### Load Screws Into the Chamber

Turn off the power first, and open the Top Cover Box. Ensure the screws are loaded without foreign materials, pour in screws until they come up to 1~2mm below the top on both sides of the rails.

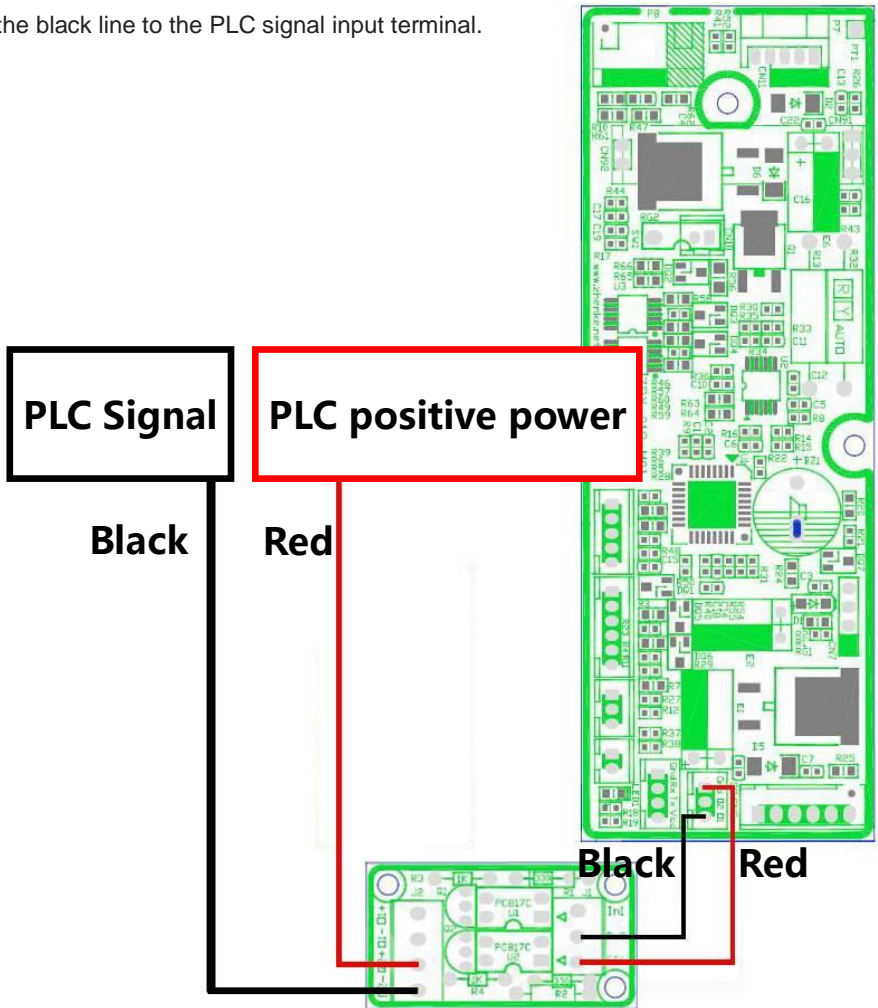


Can contain screws between 200~220cc. All objects other than applied screw are deemed as foreign material which should be removed first; or it will affect the performance of this machi

## Signal Connector Board

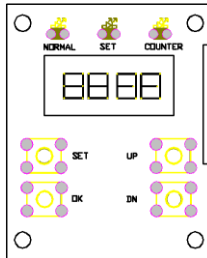
Note: the signal output: screw in place, through the photoelectric sensor, the signal output

Connection: Connect the red line to the positive power supply terminal of the PLC, and the black line to the PLC signal input terminal.



# Counter interface operation

## 1. Display interface diagram



### 1. Function of the Button

SET : Setting mode

UP : Upper ( Increase button )

OK : Confirm ( Counter function )

DOWN : Lower ( Decrease button )

### 2. Operation function and description

**1. Count State** : Automatic counting state and set the counting state, press the OK key to switch. ◦

**2. Restore the factory state**: In the standby or working state press the SET button and OK button at the same time for 3Sec, LED display flashes 3Sec and buzzing prompts the system to restore factory settings.

## 3. SET function description

3.1 In the standby or working state, press the SET button and hold 3Sec to enter the system to

the number of settings, LED flashes and display as , LED display flashes , then Press UP or DN to adjust the count number ( System defaults as 00 , number range of setting from 00~99 ) , Press the OK button within 3sec or 3sec does not press the button; the system confirms the completion of the setting and makes a beep.

※ Note: If the setting count status is not displayed after setting, press the OK key to switch.

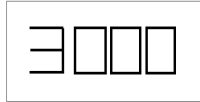
3.2 In the standby or working state, press SET button 2 times to enter the system of increasing ,

decreasing mode , LED flashes and display as , 00 as increment mode ,

01 as decrement mode › press up or down button to change it › ( System defaults as 00 ) › Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.

※ Note: If the setting count status is not displayed after setting, press the OK key to switch.

3.3 In the standby or working state, press SET button 3 times to enter the system of\_Beep



setting › LED flashes and display as 3000 › 00 as turn on the beep, › 01 as turn off the beep function › press UP or Down button to change it, ( system defaults as 00 ) › Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.

3.4 In the standby or working state, press SET button 4 times to enter the system of Vibration



delay setting › LED flashes and display as 400 › press UP or Down button to change the time of vibration delay setting( system defaults time of vibration delay time is based on the property of screw type, setting range as 01~12Sec, ) › Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.


3.5 In the standby or working state, press SET button 5 times to enter the system of Vibration



intensity setting › LED flashes and display as 500 › press UP or Down button to change the setting of vibration intensity ( system defaults time of vibration intensity is based on the property of screw type, setting range as 01~10, 5V~10V, 10 steps in total, every 0.5V as 1 step ) › Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.


3.6 In the standby or working state, press SET button 6 times to enter the system of roller



delay time setting, LED flashes and display as , press UP or Down button to change the setting of delay time (system defaults time of roller delay time is based on the property of screw type, setting range as 01~12s). Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.


3.7 In the standby or working state, press SET button 7 times to enter the system of roller



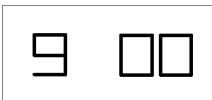
strength setting, LED flashes and display as , press UP or Down button to change the setting of strength value (system defaults strength of roller is based on the property of screw type, setting range as 01~10, 5V~10V, 10 steps in total, every 0.5V as 1 step). Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.

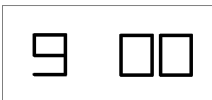
3.8 In the standby or working state, press SET button 8 times to enter the system of turntable



strength setting, LED flashes and display as , press UP or Down button to change the setting of speed value (system defaults strength is based on the property of screw type, setting range as 01~10). Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.

3.9 In the standby or working state, press SET button 12 times to enter the system of Vibration direction Forward or reverse setting, LED flashes and display as



, 00 as forward, 01 as reverse, press UP or Down button to change the setting (system defaults as 00). Press the OK button within 3sec or 3sec does not press the button; The system confirms the completion of the setting and makes a beep.

## Troubleshooting

Please power off for examination once needed

Status	Caused	Solution
No action after power on or come with abnormal sounds	No AC power or loose cable	Check the power controller
	Screws quantity too much	Take some screws out
	Switch, motor, PCB malfunction	Replace Switch, motor or PCB
	Screws fall in to the inside of machine	Clean it up
	Infrared sensor not in the correct position	Adjust the infrared sensor
	The infrared device is blocked	Clean it up
Roller chamber not rotate	Roller motor malfunction	Replace the roller motor
	Foreign stuck between the gears or gear crack	Remove foreign objects, replace components
Screw can't slide out from screw feeder's rail	The track clearance does not match the screw	Adjust the width of the gap between the left and right of the track
	Screws block the gate way that brush can't remove it	Adjust the height of brush
	Gate door too small	Adjust the upper, right gate door
	Push down plate not high enough	Adjust the position of push down plate
	The vibration motor does not vibrate	Replace the motor of vibration
No signal output	Relays PCB burned or connection issue as cables fall	meter detects if there is a signal. ° 1.Signal indicates that the cable is disconnected and just need reconnect. 2. No signal Description Relay burned, replace the relay board
	PCB got damaged or connection issue as cables fall	Use meter to check if there has 5V output ° 1.Signal indicates that the cable is disconnected and just need reconnect. 2. No signal Description PCB burned, need replace the PCB
Beep alarm with signal lights always on	PCB burned out	Replace the main PCB

## **MAINTENANCE & CLEANING**

Turn off the POWER before performing maintenance and cleaning.

### **CLEANING AND MAINTENANCE THE BRUSH**

Using the dry cotton to wipe the brush to remove the dust, Swing the brush by hand and adjust the height of the brush to make the brush in touch with screw heads.

Replace the brush when brush hair is too worn and cannot wipe down screws in an improper position.

### **CLEANING AND MAINTENANCE THE RAIL**

Withdraw the rail assembly, clean the rail groove and top of the rail (area for screws flow) with a clean thin cotton cloth soaked with alcohol or benzene. Use the Allen Key to check if the screws for the parts of rail assembly are fastened.

### **INTERIOR CLEANING**

After cleaning the rail assembly, take out any screw or foreign material inside of machine, and clean whole interior parts, walls particularly the motor, PCB and gear to prevent effecting against machine functions.

### **OPTIONAL PARTS:**

Please use genuine parts to ensure products quality and avoid influences caused against performance of this machine.

### **REMARK:**

When using screw of special types or other than specified, please consult our distributors.



## **WARRANTY CARD**

**The warranty is valid for 12 months from purchase date (based on 8 working hours a day). Please contact your supplier during the warranty period for repair or maintenance.**

**❖ NOTE:**

**1. The service cost shall be considered as chargeable if the failure/cost was induced by any of the following conditions:**

- Failure due to improper handling or un-authorized modification.
- Failure has nothing to do with the original design of the machine.
- Labor and parts cost to replace the consumable parts (brush, motor, rail assembly, etc.).

**2. The WARRANTY will be void under any of the following conditions:**

- Failure arising from a case or an accident beyond one's control or Act of God.
- It has been modified, altered and/ or repaired by an unauthorized dealer, purchaser or third party.
- The serial number, warranty card has been altered, de-faced and /or removed.
- Failing to use genuine parts sold or recommended by the Company.

**3. Under this warranty, the company only provides service at any time during normal business hours. Should emergency service is required outside normal business hours, and such service if available will be provided with a charge on a per call rate basis.**

**4. The warranty is not transferable without the consent of the Company**

## WARRANTY CARD

<b>CUSTOMER :</b>	
<b>TELEPHONE :</b>	
<b>ADDRESS :</b>	
<b>PURCHASE DATE :</b>	
<b>DISTRIBUTOR :</b>	
<b>MODEL NAME</b>	AUTOMATIC SCREW FEEDER (PICK UP TYPE)
<b>MODEL NO.</b>	
<b>SERIAL NO.</b>	
<b>SCREW SIZE</b>	1.2~5.0mm
<b>SWITCHING ADAPTOR</b>	DC IN 12V
<b>MEASUREMENT</b>	MACHINE : 182 ( L ) *124 ( W ) *147 ( H ) mm
	EACH CARTON :282 ( L ) *142 ( W ) *201 ( H ) mm
<b>WEIGHT</b>	N.W 3.1kg
	G.W 3.67kg

**Remark:**