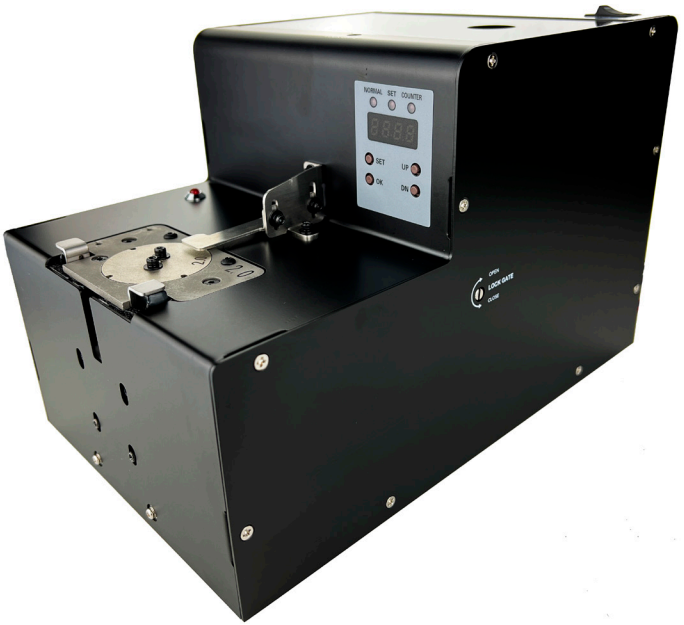
DRFF-530
Screw Feeder
Operation and Setup Manual



CAUTION — Please read, understand, and follow all operating and safety instructions in this manual before using a DRFF screw feeder.

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

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Delta Regis_DRFF-530_M_R0.0

Warning — Failure to understand and follow proper installation guidelines, safety requirements, and operating instructions may result in malfunction, component damage, property damage, shock hazard, fire hazard, injury or death.

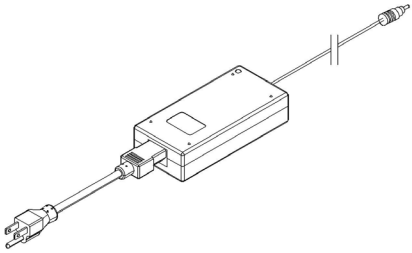
- Please read and understand the operation manual and follow all safety and operation instructions.
- Use these products in a suitable dry, indoor location. Do not use the screw feeder in damp, wet, or high temperature environments. Do not use in the presence of flammable liquids or gases.
- Use only a properly grounded electrical outlet of the correct supply voltage to power the screw feeder.
- Ensure that the supply outlet is overload protected and of sufficient amperage capacity.
- Use only the supplied AC adapter and power cord for the screw feeder and outlet. Hold the plug of the power cord when connecting or disconnecting. Do not pull on the cable.
- Do not expose the cable, AC adapter or screw feeder to oil, chemicals, or heat. Ensure that the cable is routed and used in such a manner as to not be subject to sharp objects that may abrade or cut the cable.
- Locate the screw feeder in a suitable, safe location on a steady, level surface.
- Do not place in a high location where there may be a risk of it falling.
- Do not tilt the screw feeder.
- Do not raise the front or rear of the screw feeder.
- The screw feeder rail must be kept free from oil, grease, dust or any other contaminates.
- Do not place you hand or any foreign objects into the screw hopper when the unit is running.
- In the event that the screw feeder is overloaded beyond the maximum current rating, an internal circuit will disrupt power and the screw feeder will produce an error code. Should the screw feeder stop functioning, or exhibit abnormal or intermittent operation, please discontinue use immediately and send the screw feeder to an authorized service center for troubleshooting and repair.
- Turn the main power switch off when the screw feeder is not being used. Unplug the screw feeder if it is not being used on a regular basis.
- Do not attempt to disassemble or repair the screw feeder. Repairs should only be performed by qualified technicians properly trained in the safe operation, troubleshooting, and repair of these devices. Please consult Delta Regis for the location of the nearest service depot.
- Use only the factory specified Delta Regis brand replacement parts and accessories with these screw feeders.
- Any damage to the screw feeder resulting from misuse, abuse, or failure to follow these guidelines will void the limited product warranty.

Grounding — The AC power cord is equipped with a 3-prong electrical receptacle/plug with ground pin. The screw feeder must be connected to a properly grounded AC electrical outlet. Do not attempt to use this screw feeder without a properly functioning ground connection. Never connect a live circuit to the ground pin or internal yellow-green ground wire.

This machine has been set up according to the sample fasteners and/or technical drawing you had provided us during your purchase. If fine tuning is required, please follow the instructions starting on page 5.

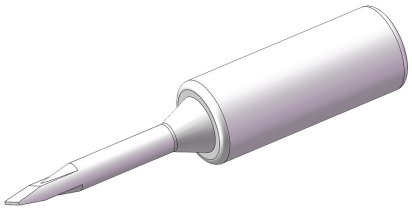
Included Accessories

2.5mm hex key



AC Adapter with power cord

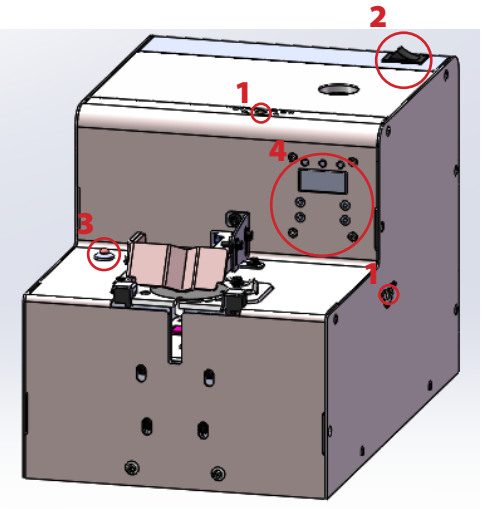
Grounding wire (ESD applications)

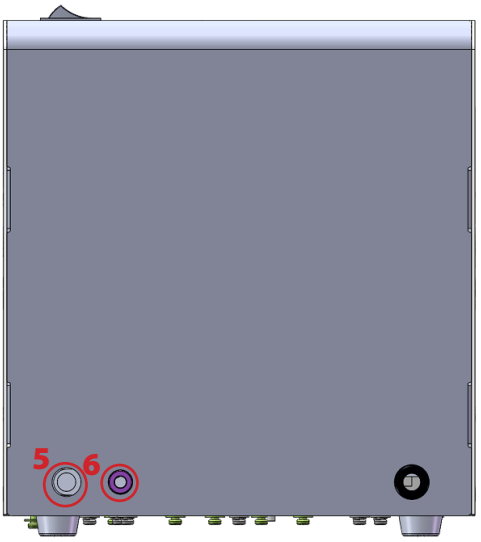


Flat head screwdriver

Product Overview

1 - Rail Gates
2 - Power Switch
3 - Screw Present/Error LED
4 - Programming Key Pad w/ LCD



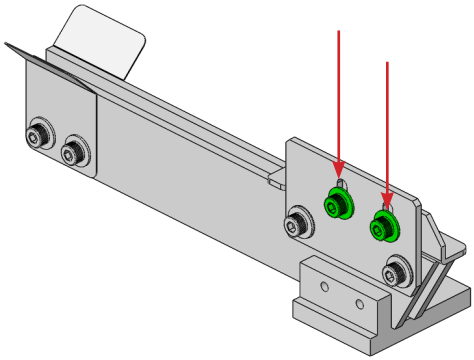


5 - DC Receptacle
6 - Grounding Lug
(ESD Applications)

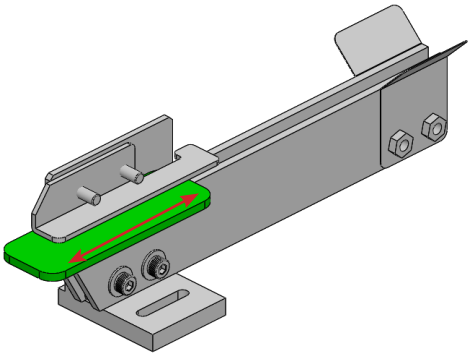
User Adjustments

Screw Guide Plate

1. Locate and loosen highlighted screws using a 2mm hex key.



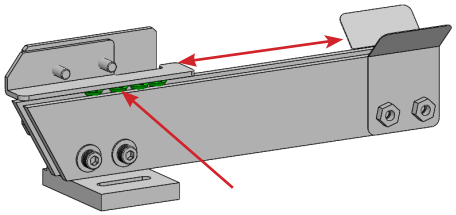
2. Using the included shims, insert under the screw head guide, press down on the plate and tighten screws from step 1. Remove shims.



User Adjustments

Screw Guide Plate (Continued)

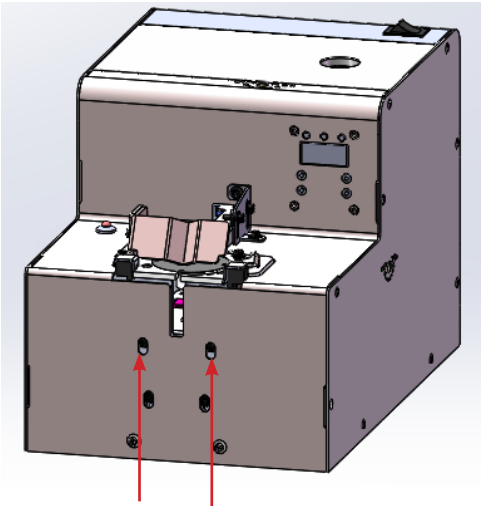
3. Add several screws into the rail assembly. Tilt the screw feeder forward, ensure the screws can smoothly pass under the guide plate.



NOTE:
When adjusting the screw guide plate, the screws from step 1 must be fully tightened to avoid loosening during use.

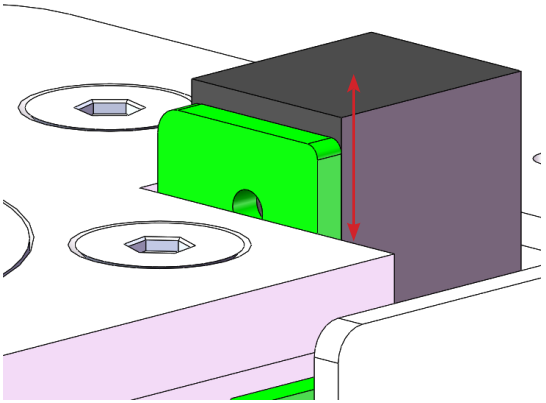
Infrared Sensor Adjustment

1. Loosen the highlighted screws using a 2mm hex key.



Infrared Sensor Adjustment (Continued)

2. Adjust the infrared openings so only half of the opening is exposed, tighten screws from step 1.

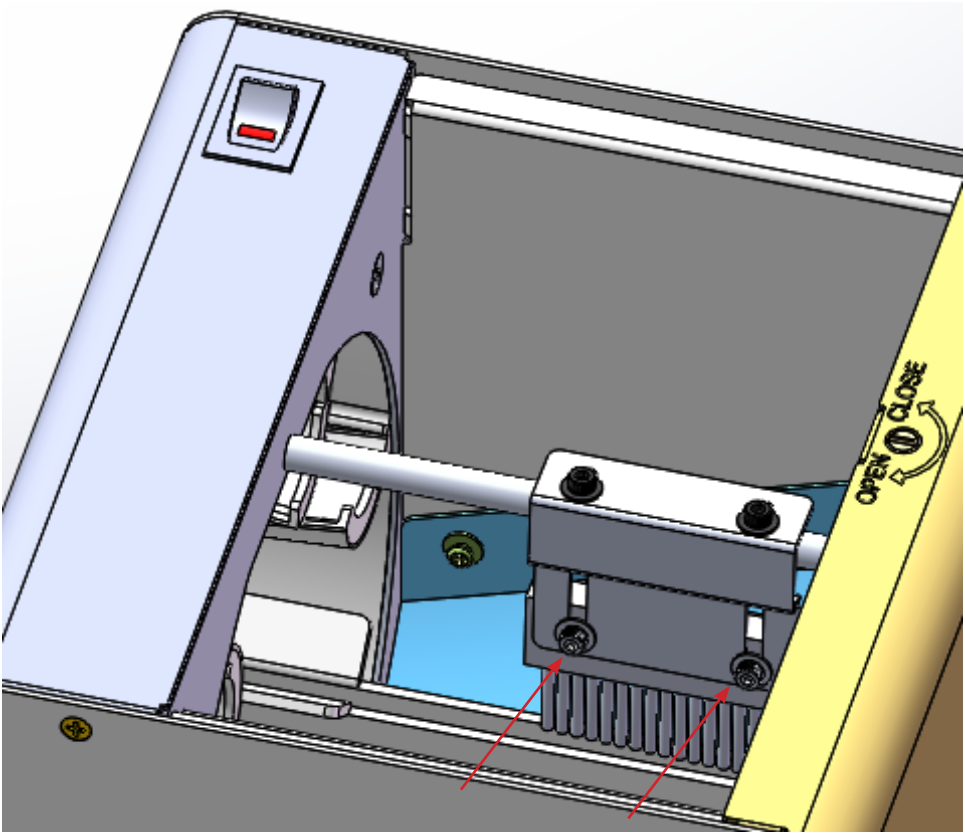


NOTE:
Only half of the infrared opening can be exposed. If the screw cannot be detected, you can make further adjustments.

User Adjustments

Brush Adjustment

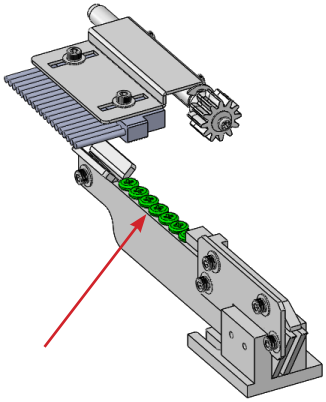
1. Loosen the highlighted screws using a 2.5mm hex key.

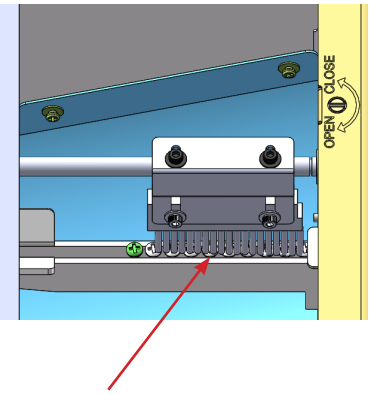


User Adjustments

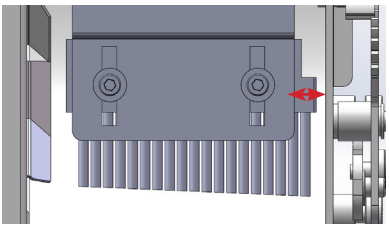
Brush Adjustment (Continued)

2. Insert several screws into the rail, under the brush. Manually sweep the brush across the screw heads. Adjust the brush so slightly touches the screw heads. Re-tighten the screws from step 1.



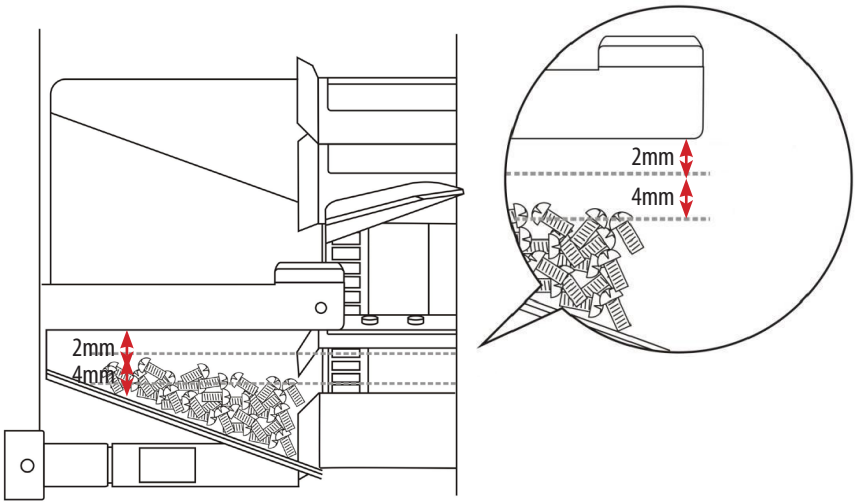


NOTE:
The brush holder must not make contact with any surface of the hopper. Ensure a gap exists to avoid jamming.
The brush bristles are tapered.



Filling the Hopper

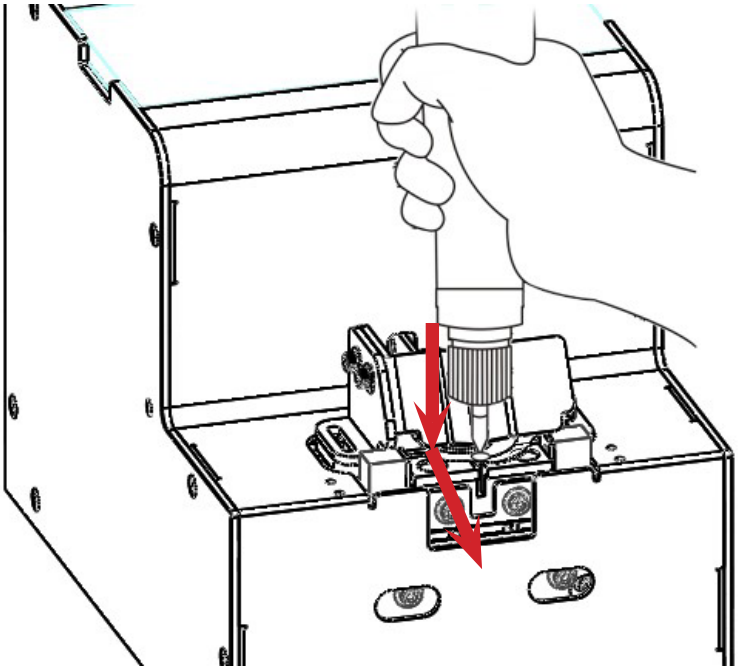
Before filling the hopper, turn the machine OFF.
Remove the hopper cover. Check for debris or foreign objects.
Fill the hopper with screws leaving a minimum of 2 mm space under the rail for thread lengths up to 5mm, 4mm space for thread lengths over 5mm.



The hopper capacity is approximately 500cc (30.51ci).
Mixed screws, debris and/or foreign objects must be removed to prevent poor performance.

Removing Screws

Using a magnetized bit, hold your electric screwdriver at a vertical orientation, move the screwdriver's bit to the bit guide, slide down the guide to the screw head, momentarily start the screwdriver to engage the bit with the screw and pull the screwdriver away from the feeder.

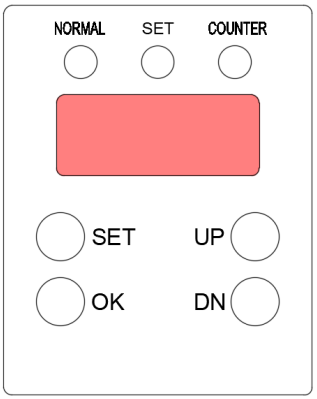


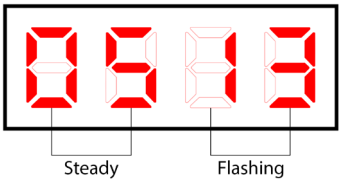
NOTE:
Do not use excessive downward force to avoid damage to the machine.

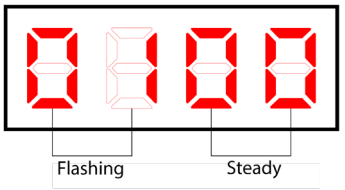
Do not apply excessive force to the bit guide to avoid damage to the machine.

Programming

LCD Display & Programming Keys







1. In any state, long press the SET button for 3 seconds, the system enters programing mode, the SET light illuminates, and the program selection is activated. Currently, the first two digits of the display are flashing, and the last two digits are steady to display the program value under this program. Short press the UP or DN key to select the program to be adjusted.

2. After selecting the program to be adjusted, short press the OK key to enter the value under this program. Currently, the first two digits of the display are solid, and the last two digits are flashing. Short press the UP or DN key to set the program value.

3. After the program value has been set, short press the OK key to exit the setting under this item and return to the program selection.

4. When finishing programming, wait 3 seconds to auto-exit programming mode.

5. To reset the total screw count: long press the SET key and OK key at the same time, the total count will be reset to zero.

6. Normal Mode and Counter Mode can be switched by pressing "OK". Program 01 must have a value of 01 or greater to enable switching between these modes. A value of 00 will only allow Normal Mode to function.

NOTE:
Normal Mode = Accumulative Count
Counter Mode = Batch Count

Program	Program Name	Program Description (set by using UP/DN)
01	Fastener Count	Set the target number of fasteners to count (Program Value: 00-99 (00 disables Counter Mode))
02	Counting Method	Set the counting method of Program 01 - Must have a value set for Program 01 & Counter Mode enabled (Program Value: 00: increase; 01: decrease)
03	Buzzer	Turn the buzzer on or off (Program value: 00: OFF; 01 ON)
04	Vibration Motor Shutdown Delay	Set the delay time for the vibration motor to stop when screw present (Program Value: 01-20 (1 second per unit))
05	Vibration Motor Speed	Set the operating speed of the vibration motor (Program Value: 01-20 (01 min, 20 max))
06	Drum Motor Shutdown Delay	Set the delay time for the drum motor to stop when screw present (Program Value: 01-20 (1 second per unit))
07	Drum Motor Speed	Set the operating speed of the drum motor (Program Value: 01-10 (01 min, 10 max))
08	Turntable Motor Speed	Set the operating speed of the turntable motor (Program Value: 01-10 (01 min, 10 max))
09	Vibration Motor Rotation	Set the direction of the vibration motor (Program Value: 00: CW Rotation; 01: CCW Rotation)
10	Drum Motor Pause	Set the number of counted fasteners to start the drum motor (Program Value: 00-20 (00 disable))
11	Turntable Motor Start Delay	Set the delay time for the turntable motor to start (Program Value: 01-10 (0.5 seconds per unit))

12	Infrared Sensor Voltage	Enters diagnostic mode and displays the DC voltage of the infrared sensors ~0470 when open, ~5000 when screw present (Program Value: 00: disable; 01 enable)
13	Screw Specification	Set according to the thickness of the screw head (Program Value: 00: Large Screw; 01: Small Screw)
14	Brush Motor Shutdown Delay	Set the delay time for the brush motor to stop when screw present (Program Value: 01-20 (1 second per unit))
15	Brush Motor Speed	Set the operating speed of the brush motor (Program Value: 01-10 (01 min, 10 max))

NOTE:
1. Vibration motor shutdown delay value must never exceed brush motor shutdown delay value in order to prevent screws from jamming at the screw head guide plate.

2. When Program 12 is enabled, the vibration and drum & brush motors will not run. The turntable will rotate at minimum speed for several cycles before stopping. Once the turntable has stopped, adjust the infrared sensors to display ~2500 for optimal sensing. After the adjustment has been made, turn the machine off then on to continue using the machine. Screws with a small headed may require a value greater than 2500.

3. Program 13 is set based on the thickness of the screw head. If the screw head is 0.5mm or less, use 01. If the screw head is greater than 0.5mm, use 00.

Error Codes

Error Code	Description
E-01	Drum/Brush motor seized
E-02	Turntable motor seized
E-03	Drum/Brush motor not detected
E-04	Vibration motor not detected
E-05	Drum/Brush and Vibration motor not communicating

Troubleshooting

In the event of a fault, immediately disconnect the power supply and perform the following troubleshooting.

Problem	Reason	Solution
Turn on power, no function or abnormal sound	The power supply is not plugged in or the connection is loose	Check the AC adapter and power cord for proper termination
	Excessive amount of screws in the hopper	Remove excess amount of screws (see page 10)
	Power switch, motor or PCB failure	Replace switch, motor or PCB
	Screws falling into machine	Ensure the top and side gates are properly closed and remove all screws from inside the machine
	Infrared sensors misaligned	Adjust the alignment of the sensors (see page 7 &14)
	Infrared sensors blocked	Clear obstruction and/ or clean sensors with compressed air
The drum does not rotate	Drum/brush motor failure	Replace the drum/brush motor
	Foreign material or debris stuck in drum gears	Remove the foreign material or debris
Screws do not slide down the rail	Rail gap to narrow	Adjust the rail gap
	Screw has become lodged at the screw head guide plate and cannot be swept by the brush	Remove lodged screw and adjust brush

Problem	Reason	Solution
	Gate opening(s) too tight	Adjust the gates (0.2mm gap)
	Height of screw head guide plate too low	Adjust the height of the guide plate (see page 5)
	Vibration motor speed no good at current setting	Adjust Program 05 until screws feed smoothly
No signal output (if equipped)	Relay PCB damaged or wire disconnected	1. Use a voltmeter set to ohms. Circuit is open when no screw present, circuit is closed when screw present 2. Reconnect wire to PLC and/or relay PCB
	Main PCB damaged or relay wire harness disconnected	1. Reconnect wire harness to main PCB 2. Return for service
Buzzer on, indication LED steady on	Main PCB damaged	Return for service

NOTE:
If any of the above error codes appear on the LCD, please turn off the unit immediately, unplug the power source and return the unit for service.

Continued use in a fault state will void your warranty.

Maintenance

Before maintaining the machine, turn off power and disconnect the power.

Brush cleaning & maintenance:
Wipe the front end of the bristles with a dry, lint free cloth or compressed air to remove dirt and debris. Sweep the brush manually to ensure it makes contact with the screw heads, adjust brush as needed. Brushes worn to the point they cannot make contact with the screw heads, replace immediately.

Rail cleaning & maintenance:
Using a lint free swab dipped in alcohol, clean the inner rail surfaces, clean the rail's sliding surface very well as to remove any debris or oil.

Cleaning and maintaining the machine:
Remove the side covers and check for foreign screws and/or debris that may have fallen inside the machine. Use compressed air to remove any accumulated dust. Check all accessible fasteners to ensure they are tight before reinstalling the covers.

Parts and Accessories
If you require parts or accessories for your Delta Regis product, please refer to our website or contact us for further information. Use only genuine Delta Regis parts when servicing these products.

Service

The DRFF Series screw feeders are not user serviceable. Any repairs must be performed by a Delta Regis authorized service center. Please consult Delta Regis Tools for further information and the location of the nearest authorized service center. Repairs to the DRFF Series screw feeders must be performed by trained personnel, knowledgeable and qualified in the repair of said machinery.

Do not attempt to modify this machine.

Warranty

The DRFF Series screw feeders are warranted for one year from the date of purchase against defects in material and workmanship. This warranty does not cover damage due to transportation, abuse, misuse, modification or improper service. Our sole remedy is to repair or replace (at our discretion) any unit found to be defective due to defects in material or workmanship. It is the responsibility of the user to return any product thought to be defective, freight prepaid, to our warehouse for inspection and evaluation. There is no warranty of merchantability or fitness of purpose. In no event will Delta Regis Tools, Inc. be liable for business interruptions, loss of profits, harm, injury, damage, personal injury, cost of delay, or any other special, indirect, incidental, or consequential losses, costs, or damages.

If you have questions or require assistance with this machine, please contact us by phone at 772-465-4302 or email sales@deltaregis.com

CE

DELTA REGIS Tools Inc.

Declaration of Conformity

Delta Regis Tools Inc.
7370 Commercial Circle
Fort Pierce, FL USA
34951
Ph (772)465-4302

Product: Screw Feeder

Trade Name: Delta Regis

Applicable Models: DRFF-530R, DRFF-530, DRFF-630C

The undersigned hereby declares, on behalf of Delta Regis Tools, Inc., that the product designated in this declaration is in conformity with the provisions of:

MD Directive 2006/42/EC

Standards	EN 62841-1:2018
	EN ISO 12100:2010
	EN ISO 13849-1:2015

Issue Date: Dec 22, 2021

Aaron Smeal

Aaron Smeal
Operations Manager

DELTA REGIS_DRFF-520_DRFF-630C_CE_R0.0