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Operation and Maintenance Manual

SEM Model DC-S1-3



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Contents

Safety 1

1. About Your Shredder..... 2

 1.1 Overview and Intended Use.....2

 1.2 Shredder Configuration.....2

 1.3 Media Type and Throughput.....2

 1.4 Unacceptable Media3

2. Unpacking and Installation 3

 2.1 Uncrating4

 2.2 General Installation.....4

3. Operation 6

 3.1 Pre-Start Up.....6

 3.2 Start Up & Operation7

 3.3 Clearing a Jam.....8

 3.4 Shutdown Procedure.....8

4. Maintenance 9

 4.1 Maintenance Schedule9

 4.2 Filter Change10

 4.3 Current Relay Adjustment11

5. General Assembly Drawing 12

6. Troubleshooting..... 14

7. Options and Spare Parts 15

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Warning: The combo SSD chute is intended for the destruction of solid state media only. Attempting to shred rotational drives in the SSD chute could cause catastrophic damage to the unit and will void warranty.

Safety

1. Read and understand instruction manual and be aware of all warning labels.
2. Make sure that all guards and access panels are in place at all times, EXCEPT when the power is locked off for maintenance work or cleaning.
3. Always know where emergency stop buttons are located.
4. Always have a standard break-in time for a new operator. A minimum of two hours is suggested.
5. Never wear loose fitting clothing, ties, or jewelry while in the vicinity of this shredder.
6. Never allow long hair to be in the vicinity of the machine without use of a protective hair net.
7. Never place any part of your body in or on any part of the machine while in operation.
8. Never remove guards, perform maintenance, or clear debris without first locking out power disconnect.
9. Never bypass or interfere with any safety limit switches or guards. They are safety devices and serious injury can result if bypassed.
10. Always use appropriate PPE and follow proper LOTO procedures.

1. About Your Shredder

1.1 Overview and Intended Use

The SEM Model DC-S1-3 series was specifically designed to destroy enterprise drives. SEM offers a DC-S1-3 HDD shredder, an SSD shredder, and an HDD/SSD combo unit. The combo unit is capable of destroying both enterprise and commercial hard disk drives, solid state enterprise and commercial drives, as well as tapes, phones and various other forms of electronic media depending on cutting head configuration chosen at purchase. If using the HDD/SSD combo unit, do not use both feed chutes at the same time, as doing so may damage the unit and will void the warranty.

Size and Weight: When fully assembled, the SEM Model DC-S1-3 is approximately 48.75 in. (1238mm) tall by 57 in. (1448mm) wide and 22.5 in. (635mm) deep. These measurements include the E-STOP, infeed chute(s), and power cord.

Note: The images shown in this manual may appear different than your device based on the age of the machine and the features with which it was ordered. All functionality and locations remain the same or very similar to your device. Contact SEM customer service with any questions. All media is not made the same and it is the customer's responsibility to qualify the correct destruction equipment, process, PPE, and environmental controls.

1.2 Shredder Configuration

Device	Cut Size	In-feed Chute (WxH)	Weight
DC-S1-3 Combo	1.5 in./38mm HDD 0.375 in./9.5mm SSD	(2) 4.5 in. x 1.5 in. 114mm x 38mm	1,830 lbs./830kg
DC-S1-3 HDD	1.5 in./38mm	4.5 in. x 1.5 in. 114mm x 38mm	1,830 lbs./830kg
DC-S1-3 SSD	0.375 in./9.5mm	10.5 in. x 1.5 in. 266mm x 38mm	1,830 lbs./830kg

1.3 Media Type and Throughput

The SEM Model DC-S1-3 series is designed to handle enterprise hard drives and solid state drives. The device is capable of destroying approximately 200 3.5 in. format or 600 2.5 in. format drives per hour at DIN 66399 Level H-4 (for HDDs)/E-3 (for SSDs).

Note: Remove all rails from drives before shredding.

1.4 Unacceptable Media

The following materials should never be destroyed using a Model DC-S1-3 shredder.



Batteries



Capacitors



LCDs

Batteries, capacitors, and LCDs should never be destroyed using this machine. These items can be found inside of cell phones, tablets, etc. They must be removed from all devices before shredding.

Destruction of these materials could lead to safety hazards and cause damage to the machine. All batteries, capacitors, and LCDs must be removed from cell phones, PDAs, tablets, etc. prior to destruction.

2. Unpacking and Installation

Your new SEM shredder has been secured to a pallet for shipping. Please inspect equipment immediately for shipping damage.

- **Important Note:** Prior to and after unpacking, check for any damage to the packaging or unit on the Bill of Lading and contact customer service and the shipping party by phone immediately.
- Retain packaging for 90 days.
- Using a lift truck with a minimum capacity of 2,500 lbs./1,130kg (crated device weighs 2,000 lbs./907kg), remove the machine from the carrier and transport to operation site. Remove pallet and discard responsibly.
- SEM shredders are equipped with casters for ease of handling.
- Inspect the machine for any damage prior to installation and operation. Check the oil level and check for any oil leaks.
- After inspection make certain that all guards and safety devices are installed properly.
- If an optional discharge conveyor was ordered with your machine, you must install it before beginning to shred.
- Be sure belt is tracking properly after installation.

2.1 Uncrating

Tools and PPE needed:

- Lift truck with a minimum lifting capacity of 2,500 lbs./1,130kg
- Pry bar and hammer
- Power drill with Phillips head bit
- Gloves and safety eyewear
- Strap cutters

Uncrating:

- Remove sides of crate with drill and use a hammer and pry bar if necessary.
- Cut straps holding Model DC-S1-3 with strap cutters.
- Remove the Model DC-S1-3 from the pallet and bring as close to installation point as possible with lift truck.

2.2 General Installation

- This unit may be installed in an office or warehouse setting within six feet of an appropriate electrical receptacle.
- Keep the left side of the unit at least 12 in. from any walls or obstructions for proper ventilation.
- **Note:** These units are top heavy; use care when moving them and stay clear if they begin to tip.
- **Note:** It is recommended to move the unit as close to the installation location as possible using a fork lift, particularly if it requires traversing uneven surfaces.
- **Transport:** This device is equipped with casters for ease of handling after the device is lifted off of the pallet. Ensure casters are unlocked and push only on flat surfaces. **DO NOT** push the device on inclined or declined surfaces as control of the device may be lost and personal damage may occur.
- **Storage:** If the device requires storage, it may be stored in its shipping crate or unpackaged. If unpackaged, ensure that the wheel caster locks are engaged to prevent unwanted movement of device.
- **Check the waste collection bin:** Check in the waste collection bin inside the unit for keys, electrical schematic, and other related paperwork for this machine.

2.3 Electrical (refer to licensed electrician)

- Be sure to follow proper Lock Out Tag Out (LOTO) procedures.
- All electrical installation and service must be done by a qualified electrician. Follow all national and local electrical codes and ordinances.
- All internal wiring has been factory installed and tested prior to shipping. Electrical installation consists of providing adequate machine power only.
- Check building service to ensure correct voltage is available and that the electrical current requirements can be met.
- Motor Rotation: Ensure area is clear and turn the key switch on. Check for proper motor rotation by feeding a single drive into the appropriate chute; if it does not take the drive, the rotation is wrong. Contact a licensed electrician to fix.
- A customer supplied disconnect throw switch should be mounted on a wall within one to two feet of the device.
- Electrical installation is complete. Replace all guards and safety devices.
- SEM recommends no more than a 3% drop in line voltage while under load.

Voltage Frequency	FLA	Recommended Disconnect	Apparent Power (KVA)
208V/60Hz	12	30A	4.0
230V/60Hz	10.6	30A	4.0
380V/60Hz	7	30A	4.0
400-415V/50Hz	6.7	30A	4.0
460V/60Hz	5.8	30A	3.9

3. Operation

3.1 Pre-Start Up

Pre-start-up procedure:

- Familiarize yourself with all controls and button locations.
- Ensure that all guards and covers are in place.
- A certified SEM service technician is available over the phone or on site for startup instruction and training. Contact SEM Customer Service for details.

Controls:



- **Start:** Activates the cutting head.
- **Reverse:** Reverses the rotation of the cutting head. Button must be held down. Unit will auto reverse if jammed.
- **Stop:** Deactivates the cutting head and stops the unit.
- **Filter:** Activates air filtration system. Button will stay depressed.
- **Reset:** Resets the unit after a jam.
- **Bin Full:** Indicator light will illuminate when the waste collection bin is full.
- **Key Switch:** Used to turn on device or immediately shut down device. Located on the left side of the device above the current relay panel.
- **Hour Meter:** Displays the number of hours the device has been running. Located on the left side of the device above the current relay panel (shown in Section 5).

3.2 Start Up & Operation

PPE: SEM recommends wearing safety glasses, gloves, and a dust mask while operating this device; however, each individual site should determine its own PPE requirements.

New Operators: New operators should be given a minimum two to three hour training period, beginning with a slow feed rate. Operators will soon be able to judge how quickly they can feed the shredder.

Procedure:

1. Insert key into the **E-STOP** and turn clockwise to activate.
2. If using combo unit, place the chute block over chute not being used.
3. Press the **START** button.
4. Press the **FILTER** button – if **FILTER** button is not depressed, it will turn on automatically the next time it is started.
5. Begin shredding material.
6. For CE Units: Lift chute, insert drive, and close the chute.
7. Wait for the drive to be fully shredded before feeding the next drive.
8. Do not use both feed chutes at the same time (if equipped).
9. Reference Section 1.3 and 1.4 for details about what can and can't be fed into device.

Bin Full: The waste collection bin weighs 15 lbs./6.8kg and is set to trigger the bin full light when the weight of material inside is approximately a combined weight of 45 lbs./20kg. **When shredding tapes, be sure to check the waste collection bin more frequently as the bin full light may not illuminate.**

3.3 Clearing a Jam

1. In the event of a jam, the cutting head will automatically reverse and attempt to shred the media up to three times.
2. Upon failure, the **RESET** button will illuminate after reversing again.
3. De-energize the unit using proper LOTO procedures.
4. To access the cutting chamber, remove the two screws at the front of the unit on the feed chute cover with a 5/32 in. Allen wrench. Lift it up the panel to gain access.
5. Manually remove the jammed material and replace the screws to the feed chute.
6. Re-energize the unit and resume shredding.

3.4 Shutdown Procedure

1. Allow cutting head to clear all material before shutting down.
2. Press the **STOP** button.
3. Turn the key-switch to the **OFF** position.
4. Optional: Turn off the disconnect switch and/or unplug the power cord from the receptacle.
5. Proceed to maintenance.

4. Maintenance

4.1 Maintenance Schedule

Always de-energize the unit using proper LOTO procedures, before cleaning, lubricating, maintaining, removing any guards, and after shredding operation is complete.

SEM recommends wearing safety glasses and cut resistant gloves while performing any maintenance on this unit; however, individual sites should determine their own PPE.

Tools:

- 5/32, 3/16 in. Allen wrench
- Flathead screwdriver
- Long needle-nose pliers

Daily:

- Wipe entire machine clean.
- Empty the waste collection bin before and after each shift.

5,000 Devices:

- Check and record hours of operation.
- Clean cutting head cutters, combs, and side walls of remnant debris and magnetic parts.
- Inspect and clear air manifold of any buildup.
- Remove panels and vacuum inside machine.
- Lubricate the cutting head cutters by applying a few sprays of nonflammable, non-detergent mineral oil to the cutters.
- AFS: Replace pre-filter and vacuum pre-filter chamber along with HEPA filter.
- Remove built-up magnetic material below the cutting head. Open the waste collection bin door and remove waste collection bin to access cutting head.

50,000 Devices:

- AFS: Replace HEPA filter
- Lubrication: Check level of reducer oil; if below halfway, contact SEM.

4.2 Filter Change

The optional air filtration system on this unit is designed to help reduce possible odors and contaminants from escaping into the atmosphere during the destruction process. This system requires periodic inspection, occasional cleaning, and filter changes.

5,000 Devices:

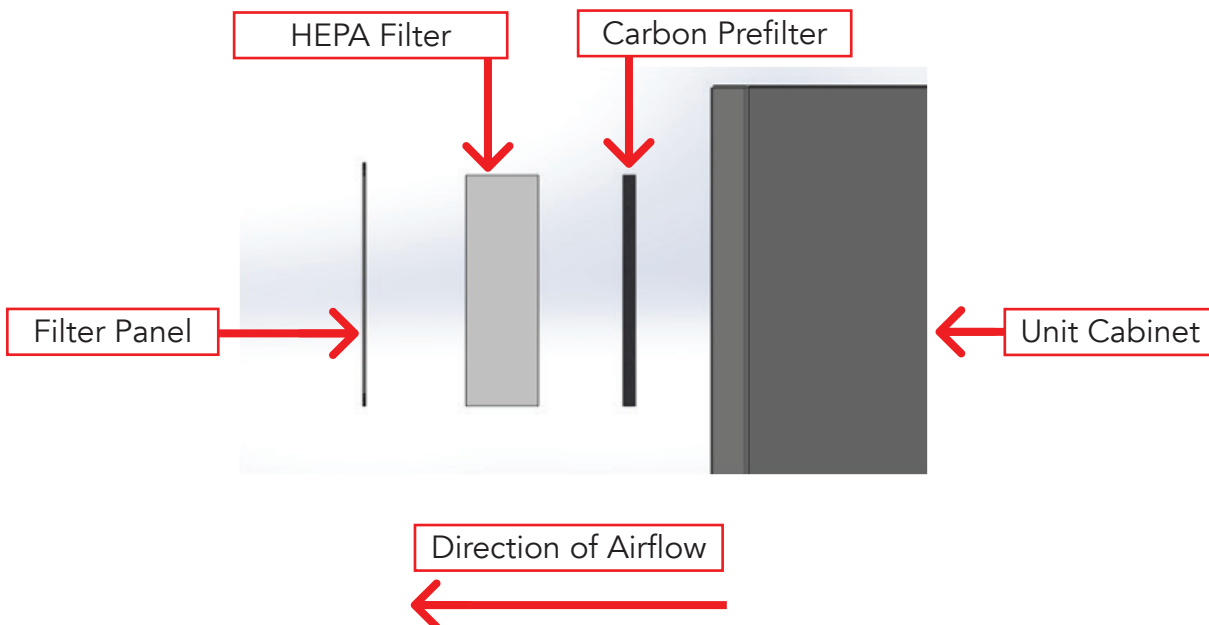
- Change prefilter. Prefilter should be changed minimally four to six times per year depending on use. Clean HEPA filter.

50,000 Devices:

- Change HEPA filter. HEPA filter should be changed yearly depending on use and prefilter upkeep.

Note: Filter and prefilter change times above are recommendations only. They may need to be changed more or less frequently depending on the amount and types of media destroyed.

- The filter cover panel can be found on the left side of the unit at the base. See the general assembly drawing section.
- Panel access requires 5/32 in. Allen wrench.



4.3 Current Relay Adjustment

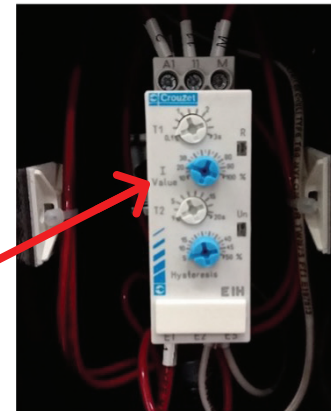
Tools and PPE Required:

- 5/32 in. Allen wrench
- Small Philips head screwdriver

About the Current Relay: This device is designed to automatically reverse if it jams while shredding. The electrical current relay controls this feature and is preset by the factory prior to shipping. However, power variations can cause the device to jam and not reverse. To correct this problem, the current relay may require a small adjustment.

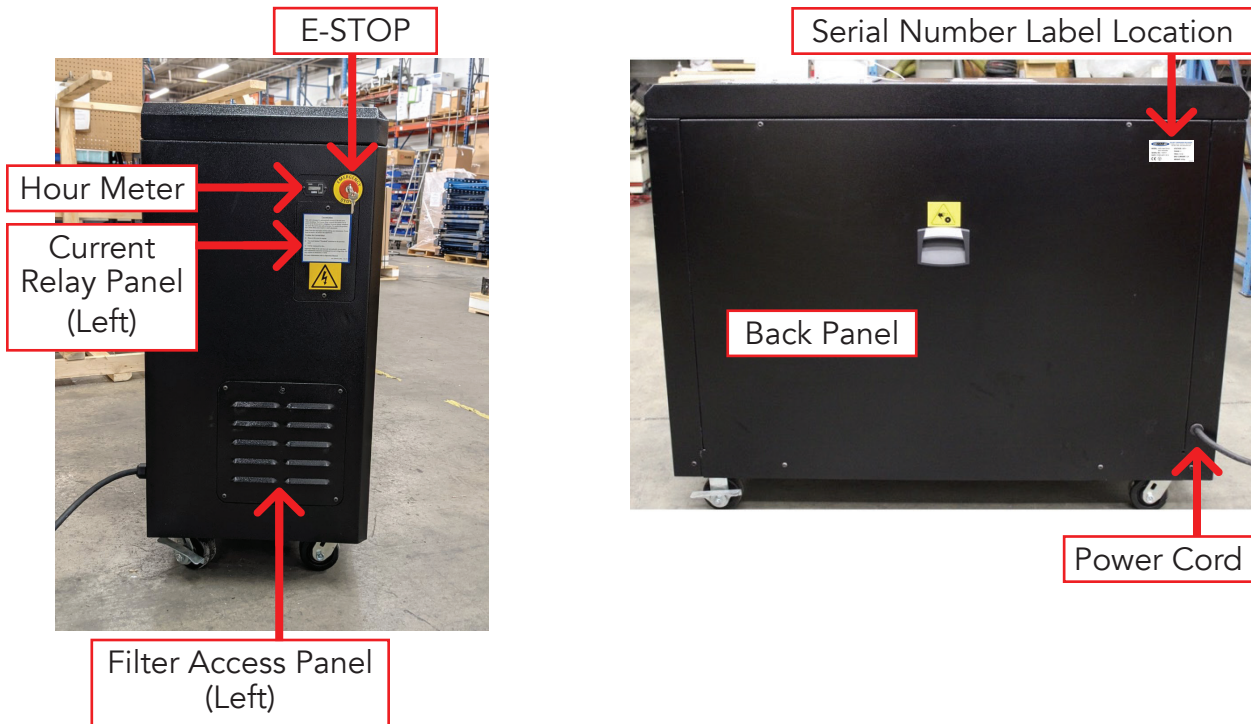
Accessing and Adjusting:

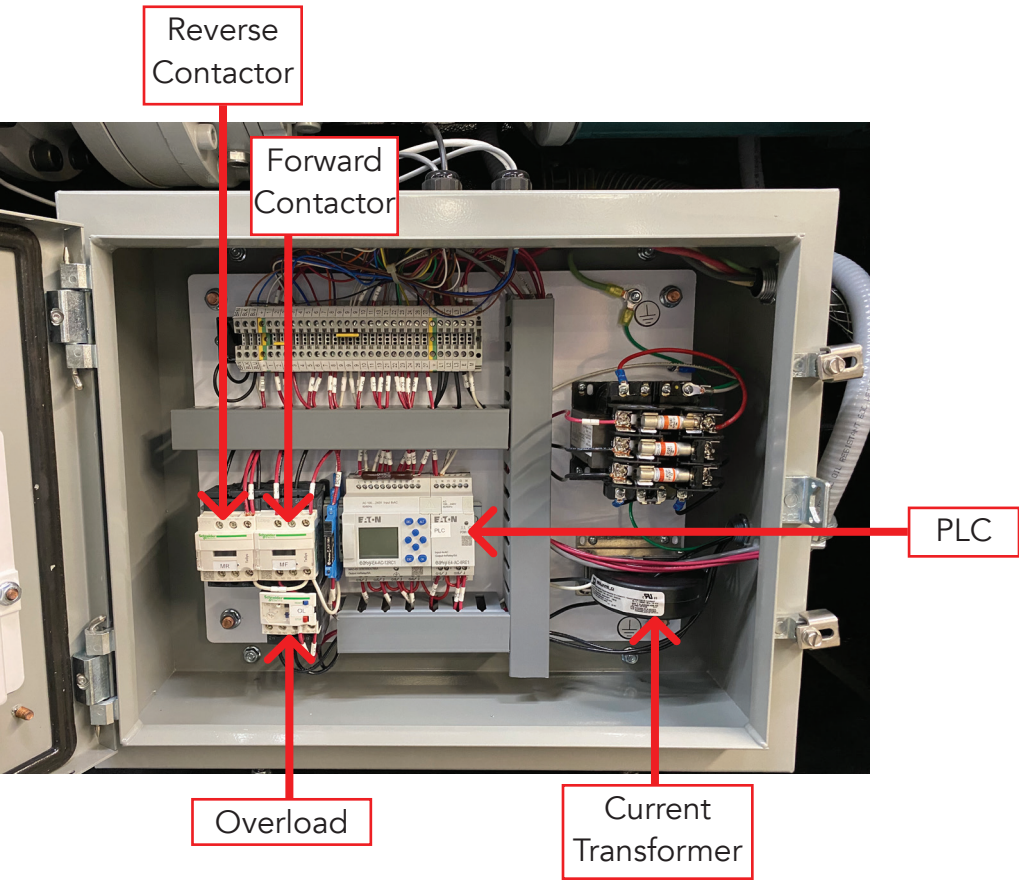
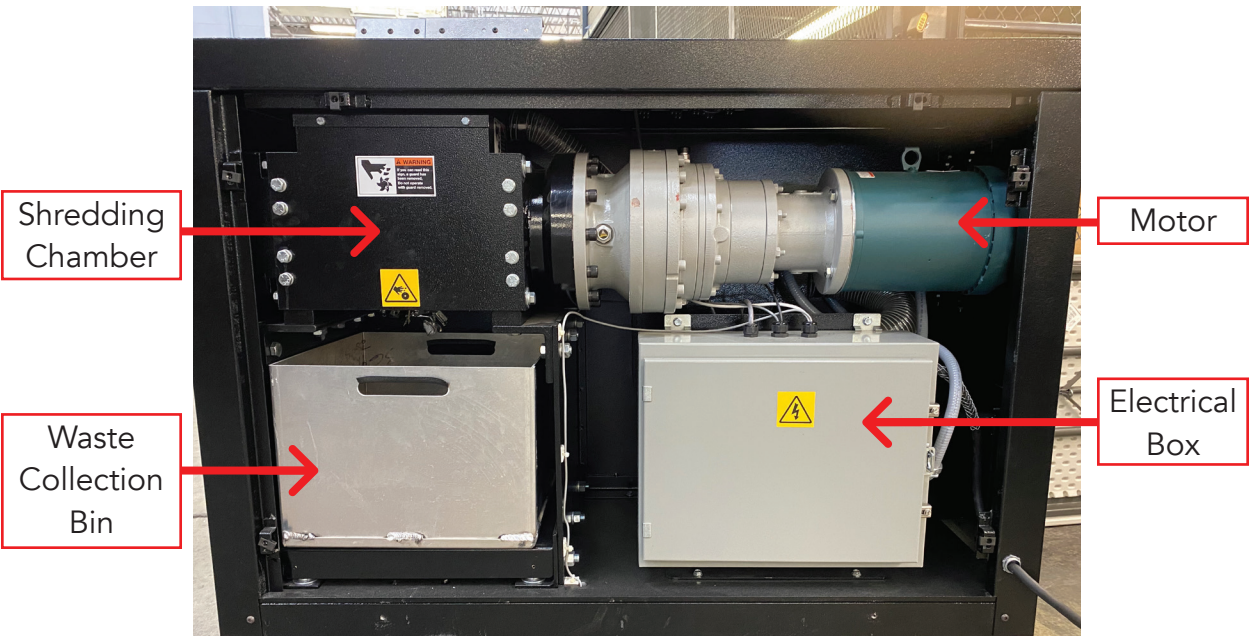
- **Note:** Press the **STOP** button before making any changes to the current relay. The power does not need to be off for this adjustment.
- Remove cover on left side of device below the hour meter to expose current relay.
- Turn the **I Value** knob clockwise to the next tick mark.
- Test by running a drive through the device.
- **Important Note:** If the device does not automatically reverse after three adjustments, check the incoming power and voltage drop. This may require an electrician to verify.



Warning: Overadjustment can cause the overload to trip which will not allow the device to start until the overload is reset. The overload will automatically reset once it has cooled down. This may take several minutes.

5. General Assembly Drawing





6. Troubleshooting

Warning: Lock out power before performing any cleaning, lubrication, maintenance, or troubleshooting.

PROBLEM	CAUSE	SOLUTION
Machine will not run in forward or reverse	No power	Check power supply
	Key-switch off/ E-STOP actuated	Turn on
	Stop button stuck in	Check buttons
Overload tripping	Motor overheating	Check motor cooling fan for objects obstructing air flow
	Dirty or unlubricated cutting head	Thoroughly clean and lubricate machine
	Low voltage/voltage drop >3%	Check voltage at power supply
Shred capacity low	Unlubricated cutting head	Clean and lubricate cutting head
	Low voltage/voltage drop >3%	Check voltage at power supply
	Current relay set too low	See maintenance section, contact factory

7. Options and Spare Parts

Below is a list of spare parts and extras offered for the Model DC-S1-3:

Description	MPN
Replacement Metal Frame HEPA Filter	HF-2SSD
Replacement Carbon Pre-Filter	CF-2SSD
Metal Waste Collection Bin	SA36416

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