



Heavy Duty Continuous Debearder

with Gear Drive & Digital Motor Controller

Model: DB3101-800

Serial Number: xxx

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OEM, Inc.
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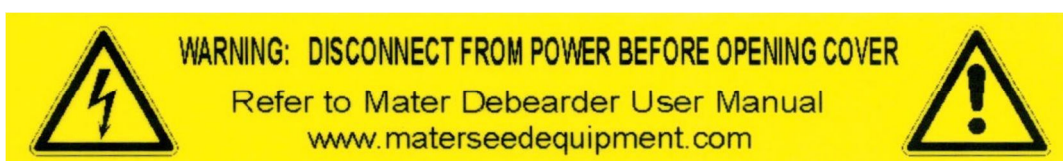


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Safety

This equipment operates from electric main power. **Careless or improper use can cause serious injury or death.** Do not take chances!

Heed the warning “**Disconnect From Power Before Opening Cover**”.



This means to unplug the **Debearder** from the electrical energy source.

Do not attempt any service work on the electrical components of the equipment.



THINK SAFETY FIRST



There are no user serviceable electronic components inside the variable speed drive housing or, if you have the continuous model, the feeder and feeder control.

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Safety (continued)

*Do not operate this equipment with the **End Plate** removed. The rotating **Brush Assembly** or **Impeller** can cause significant injury to probing fingers.*



*Never put a finger into the **Inlet Fitting** or **Discharge Port**.*

Should you need to stop the drive system quickly, press the **Red Panic Stop** button on top of the control housing.

To reset the system, follow the instructions on the label next to the **Panic Stop** button.

Panic Stop To **Restart**, turn Red Knob clockwise to **Unlock**.
Press the Red Reset Button to clear alarm.

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2016 Revision

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Introduction

The **Mater Heavy Duty Continuous Debearder** is designed to remove awns, beards, hairs, glumes and other appendages from seed. It can also be adapted to hull, defluff and scarify seed. Small quantities can be readily processed to facilitate research or larger quantities for production. Please read the following instructions for the most efficient use of your new **Mater Heavy Duty Continuous Debearder**.

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Unpacking & Assembly

Your **Mater Heavy Duty Continuous Debearder** is shipped in a plywood crate to insure that it arrives undamaged. If there is obvious damage, please note it on the receipt from the freight company. If the damage is concealed, notify the freight company promptly to file your claim. Any damage claims are between you and the freight carrier.

- Unscrew the top of the crate. Remove the top and the packing material beneath it.
- Remove the other cardboard boxes that contain the **Aluminum Scoop, Hex Key, Spare Fuse, Specimen Trays** and any other accessories ordered with the **Debearder**
- Reach under the **Debearder Housing** and carefully lift the **Debearder** out of the crate.
- **Caution** -- the **Vibratory Feeder**, which is packet in its own carton, is attached by its power cable to the **Vibratory Feeder Controller** as shown in **Figure 1a** below.



Figure 1a

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Unpacking & Assembly (continued)

- Remove the nuts with built-in washers and flat washers underneath them from the three rubber standoffs on the bottom of the **Vibratory Feeder**.
- Place the **Vibratory Feeder** on the slotted support by inserting the rubber standoff's threaded ends through the top support slots.
- Put the flat washer on first, then the three nuts with washers loosely onto the standoff threads.
- Position the **Vibratory Feeder** such that the **Feed Tray** is over the **Inlet Hopper**.
- Once the **Vibratory Feeder** is in place, tighten the three nuts with a wrench.
- Using the three wire ties furnished, attach the **Vibratory Feeder's** power cord as shown in the **Figure 1b** below.
- Pull the wire ties tight using a pliers and then cut off the hanging ends as shown in the red circles.



Figure 1b

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Standard Accessories



Figure 2

Batch & Continuous Debearder Standard Accessories:

- DB0055 Inlet Hopper
- DB0100 End Plate Assembly, Solid for batch operation (not shown)
- DB0160 End Plate Assy with Discharge Ports for continuous operation (shown)
- DB0180 Specimen Trays (2)
- DB0590 Blocking Plate, solid without Inlet Opening
- DB3595 Blocking Plate with Square Inlet Opening
- ESS98xx Power Cord with country specific plug
- Aluminum Scoop
- Cleaning (paint) Brush
- Small (acid) Brush
- T-Handle Hex Wrench, 1/8 inch
- note Spare Fuse included but not shown

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Setup

- Place the **Debearder** on a level work surface of convenient height.
- The **Digital Motor Controller** and the open end of the **Debearder Housing** require unimpeded access for easy use.
- Confirm that the operating voltage (115-120, 60 Hz or 230-240 V, 50 Hz) for the unit is correct before plugging the **Debearder** into mains power.
- Slide the **Specimen Tray** under the discharge opening on the bottom of the **Debearder Housing**.
- Insert the **Feed Hopper** into the inlet fitting on the motor end of the **Debearder Housing**.
- One **Blocking Plate**, **Debearder Drum** and **Brush Assembly** or **Impeller** will be shipped already installed.
- Before operating your new **Debearder**, open the red-handled **Toggle Clamps**, swinging their spindles out to the sides and slide the end plate out.
- Rotate Impeller as needed to line up the **Motor Coupling Setscrew** with the access hole in the **Motor Coupling Guard** shown in **Figure 3** below. Remove the **Brush Assembly** or **Impeller**.

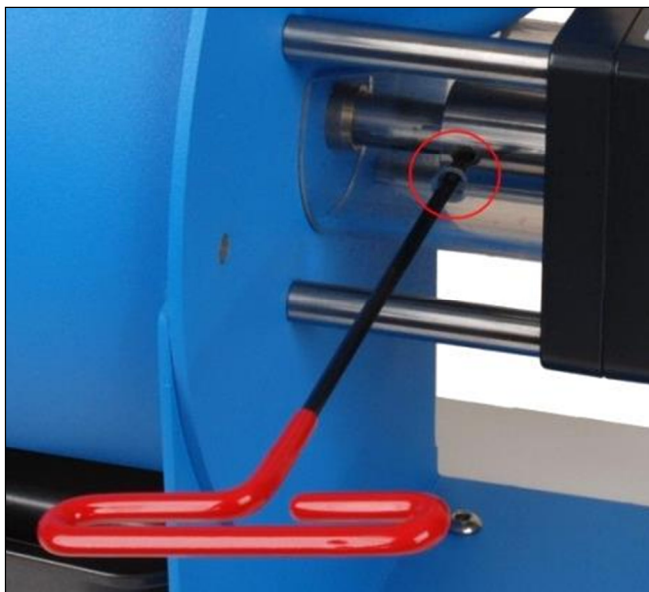


Figure 3

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Setup (continued)

- Install your choice of **Inlet Blocking Plate** or **Inlet Plate with Hole**. Be sure to line up the slots in the plate with the alignment pins in the **Debearder Housing**.
- Install your choice of **Debearder Drum**. Line up the indexing holes in the drum with the alignment pins in the **Debearder Housing**.
- **Bushings:**
 - a) For models with the tan permanently lubricated bushing on the motor end and the tan permanently lubricated bushing in the End Plate, no lubrication should be necessary for normal use.
 - b) For models with the bronze motor end bushing, lubricate the bushing wear areas on the **Brush Assembly, Paddle or Tined Impeller Shaft** with a thin film of general purpose white grease (supplied).
 - c) For models with the white plastic **End Plate** bushing, lubricate that shaft end at least weekly, or more often during heavy use, with a thin film of general purpose white grease (supplied).
- Carefully center the **Brush Assembly, Paddle Assembly, or Tined Impeller** between the ends of the **Debearder Drum**.
- Tighten the **Motor Coupling Setscrew** on to the flat on the **Impeller or Bush Assembly Shaft**.
- By hand rotate the **Brush Assembly, Paddle Assembly, or Tined Impeller** a few turns to insure that it rotates freely.
- Install the **End Plate** making sure it is securely seated inside the end of the **Debearder Housing** and close **Toggle Clamps**. The **Toggle Clamp Spindles** should press firmly against the **End Plate**.

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Disassembly

1. Turn the switch on the **Power Inlet** shown in **Figure 6** to the off position.
2. Open the red-handled **Toggle Clamps** shown in **Figures 4a & 4b**, swinging their spindles out to the sides and slide the **End Plate** out.
3. Rotate the **Brush Assembly** to line up the **Motor Coupling Set Screw** with the access hole in the **Motor Coupling Guard**
4. Using the **T-Handled Hex Key** furnished with the equipment, loosen the **Motor Coupling Setscrew** shown in **Figure 3**.
5. Pull out the **Brush Assembly, Paddle Assembly** or **Impeller**.
6. Remove the **Debearder Drum**.
7. Remove the **Inlet Blocking Plate** or **Inlet Plate with Hole**.



Figure 4a

Shown above is the DB0100
Debearder Solid End Plate
Standard with the Batch Debearder



Figure 4b

Shown above is the DB0160
Debearder End Plate with Exit Ports
Standard with the Continuous Debearder

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Assembly

1. For batch operation, place the **Inlet Port Blocking Plate** as shown in **Figure 4c** on the left. When it is lined up correctly, the two slots will slide over the alignment pins inside the housing.
2. For Continuous or Manually Fed Operation, place the **Inlet Plate with Hole** as shown in **Figure 4d** on the right, orient so that the hole for the **Inlet Port** is up. When it is lined up correctly the two slots will slide over the alignment pins inside the housing.

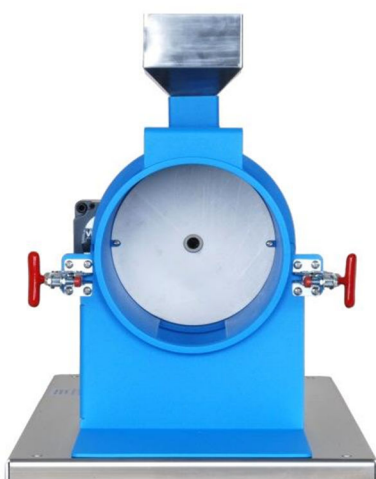


Figure 4c



Figure 4d

3. Insert the **Debearder Drum** and rotate it until seated on the alignment pins.
4. Confirm that the **Debearder Drum's** flange is up against the end of the **Debearder Housing**.
5. **Bushings:**
 - a. The tan bushings are permanently lubricated, so no grease is necessary for normal use.
 - b. For the bronze motor end shaft bushing, lubricate the bushing areas on the **Brush Assembly**, **Paddle** or **Tined Impeller Shaft** with a thin film of general purpose white grease (supplied).
 - c. For the white plastic the End Plate bushing, lubricate it at least weekly, or more often during heavy use, with a thin film of general purpose white grease (supplied).

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Assembly (continued)

6. Put in the Brush Assembly or Impeller with the shaft flat lined up with the Motor Coupling Setscrew. Carefully center the Brush Assembly or Impeller between the ends of the Debearder Drum, and then tighten the Motor Coupling Setscrew shown in **Figure 3**.
7. By hand rotate the Brush Assembly or Impeller a few turns to insure that it rotates freely.



Figure 4a

Shown above is the DB0100
Debearder Solid End Plate
Standard with the Batch Debearder



Figure 4b

Shown above is the DB0160
Debearder End Plate with Exit Ports
Standard with the Continuous Debearder

8. On the Batch model shown in **Figure 4a**, slide the **End Plate** over the end of the shaft.
9. For the Continuous model in **Figure 4b**, rotate the **End Plate** until the alignment pins go in.
10. Close the red-handled **Toggle Clamps**, forcing the **End Plate** against the **Drum**.

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Digital Motor Controller

Mater **Heavy Duty Batch and Continuous Debearders** utilize a **Gear Drive Motor** with a **Digital Motor Controller** to achieve high torque and repeatable speed control under varying loads. The **Digital Motor Controller** receives feedback from an encoder attached to the motor shaft in order to regulate the speed and torque to match the load.

To run the Debearder, first insert a power cord into the receptacle on the **Power Inlet** pictured in **Figure 6** on the right side of the controller housing. Be sure that the voltage matches that specified on the Mater data tag attached to the machine base.



Figure 5



Figure 6

Next plug the other end into an electrical outlet and press the “—” side of the switch on the **Power Inlet** in to turn on the main power. The display on the controller will turn on, but the motor will not start until you press the green “**RUN**” button.

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Digital Motor Controller (continued)

Each time the motor controller is powered on the display will indicate **Impeller** speed in revolutions per minute (rpm). You can also press the “↑”, “↓” keys to toggle between rpm display and load factor display. Load factor display shows % of motor torque 40% and above. Readings below 40% will not be displayed and the readout will just show “- - - -”.

To start the **Gear Drive Motor**, press the green “RUN” button and adjust the speed by turning the knob on the front.

The program for the controller incorporates ramp up and ramp down times to smoothly accelerate and decelerate the motor. As a consequence the motor does not instantaneously come up to speed when you press the “RUN” button or stop instantly when you press the red “STOP” button.

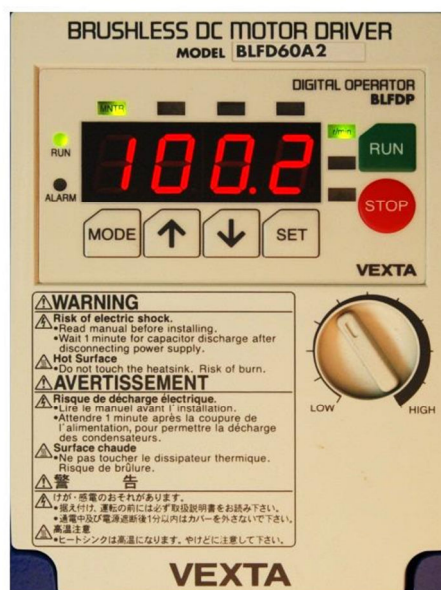


Figure 7

The “**MODE**” and “**SET**” keys are not used for general debearder operation. Detailed information on the **Motor Controller** is available in the manufacturer’s product literature in the back of the user manual binder or online at <http://www.orientalmotor.com>.

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Digital Motor Controller (continued)

Should you need to stop the drive system quickly, press the red **Panic Stop** button on top of the control housing.

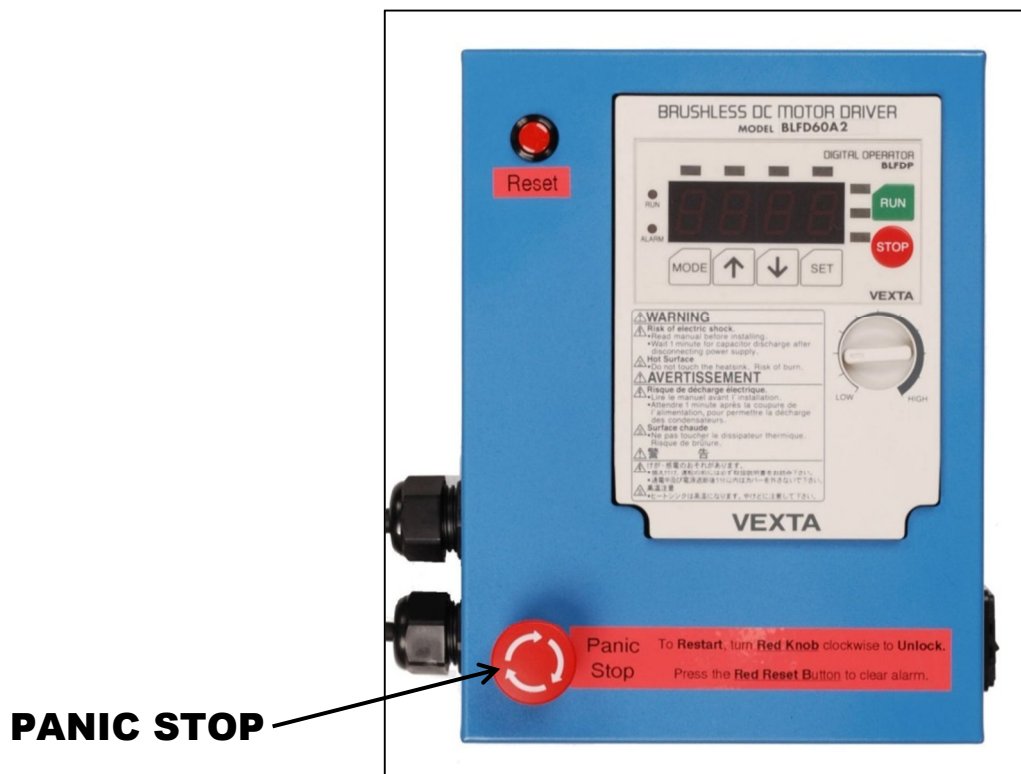


Figure 8

To reset the drive system, follow these steps:

1. Turn the **Red Knob** of the **Panic Stop** button clockwise to **Unlock**.
2. Press the red **Reset Button** to clear alarm.

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Manual Feed

The **Mater Heavy Duty Debearders** can be fed manually through the removable **Feed Hopper** on the debearder housing inlet. Shown below is an example of a customer adaptation – adding a 2 liter funnel on the top of the **Feed Hopper**. Any type of bulk seed hopper will work with **Mater Heavy Duty Debearders** providing that the seeds flow freely from the hopper into the **Debearder Inlet**.



Figure 9

One option that facilitates seeds exiting the processing drum while the machine is running is the **DB0160 Continuous Debearder End Plate**. As shown in **Figure 4b**, it has two **Discharge Ports** and **Adjustable Port Covers**. The user can adjust the opening of either gate to control the how long the seeds remain in the drum.

Passed plant material leaves the machine via the opening on the bottom of the **Debearder Housing**.

Opening one of the **Discharge Ports** allows the discharge of the fraction of the plant material that does not pass thru the drum. Combined with manual feeding, the user gains some of the benefits of a Continuous Debearder but without the vibratory feeder.

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Batch Load

For volumes of plant material up to 1,000 cc, the **Batch Load** technique is appropriate. The user places the material inside the drum, covers the end of the drum with the **End Plate** and locks it in place with the **Toggle Clamps**.



Figure 10



Figure 11

The **Inlet Blocking Plate** in **Figure 10** fits inside the **Debearder Housing** as shown in **Figure 11** and blocks the **Inlet Tube** opening into the housing. The object is to prevent seeds in the drum from being pushed into that opening by the rotating **Impeller**.

To install the **Inlet Blocking Plate** inside the **Debearder Housing**, vacuum up or blow out any plant material inside the **Debearder Housing**. Then slide the plate all the way to the far end of the housing with the notches on the outside aligned with the two alignment pins.

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Batch Load (continued)

Now install the **Drum** of your choice. Be sure to line up the indexing holes in the **Drum** with the alignment pins and seat it against the motor end of the **Debearder Housing**.

Hints:

- One method of removing the **Inlet Blocking Plate** from inside the drum is to blow compressed air into the **Inlet Tube**.
- Another method is to place the flat end of a vacuum cleaner hose against the plate and use the suction to pull the plate towards you.

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Operation with Brush or Paddle Assemblies

The instructions which follow are for the **Brush Assembly** shown in **Figure 12** or the **Paddle Assembly** shown on page 40. The clearance adjustment procedure is identical between the two.

The parameters for your debearding operation will depend on the type of seed and the combination of **Debearder Drum** and **Brush** or **Paddle Assembly** employed.

Brush Type, Clearance and Impeller Speed also affect the results.

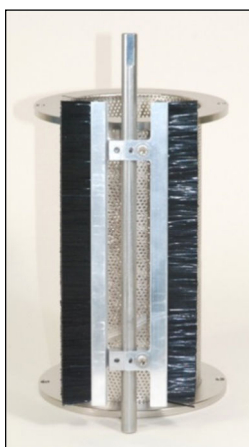


Figure 12



Figure 13

If you purchased the **Brush Holder Assembly** and **Brush Strips**, slide the brush strips into the two adjustable **Brush Strip Holders**. They are mounted on the **Brush Holder Shaft Assembly**. To change or to remove **Brush Strips** for cleaning, simply slide them out the end of the **Brush Strip Holders** as shown in **Figure 13**.

Setting the paddle or brush clearance inside the **Debearder Drum** requires a small metal scale for repeatable results or the **Mater Brush Setting Fixture**. A beginning clearance setting would be the diameter of the seed.

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Operation with Brushes (continued)

The ends of properly adjusted paddle or brushes force the seed against the inside of the **Debearder Drum** without actually touching the **Debearder Drum** itself. Each side should be independently adjusted, and then then reinstalled inside the **Debearder Drum**. Next by hand rotate the **Brush Assembly** and confirm proper clearance

If the **Brush Strips** become loose in the **Brush Strip Holders**, slightly bend the **Brush Strip** until it fits snugly. To change from one set of **Brush Strips** to another of a different stiffness, slide out the brushes of one set and slide in the others.

Put an empty **Specimen Tray** underneath the bottom discharge opening. Scoop seeds into the **Debearder Drum**. Put the **End Plate** on the **Impeller** shaft, slide the **End Plate** into the **Debearder Housing** and close the **Toggle Clamps**.

With the **Debearder** completely assembled, turn on the **Power Switch** and **Start** the **Motor Controller**. Suggested initial settings is a motor speed of 100 rpm with a 2 minutes run time.

While the batch runs using the **Perforated Debearder Drum**, the passed fraction of the plant material will go thru the holes. You may collect the passed fraction in the **Specimen Tray** on the underside of the **Debearder Housing**. You collect the retained fraction from the **Debearder Drum** when the processing is complete.

Using an **Unperforated Debearder Drum**, you collect all the plant material from the **Debearder Drum** when the processing is complete.

When finished, **Stop** the **Motor Controller**, undo the **Toggle Clamps**, remove the **End Plate**, loosen the setscrew in the **Motor Shaft Coupling** and pull out the **Paddle** or **Brush Assembly**. Take out the **Debearder Drum**, and then dump the material inside into the **Specimen Tray**. Remove the **Inlet Blocking Plate**. Remove the rest of the material and then vacuum the inside of the **Debearder Housing**. You may also blow out the inside of the **Debearder Housing** with an air nozzle.

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Operation with Brushes (continued)

How long to run the test and the setting of the brushes will be determined by analyzing the results of several tests. Keeping detailed records will assist you in establishing appropriate operating parameters.

We have included sample **Data Sheets** in the back of this manual and on our website:

www.materseedequipment.com/files/debearding.datasheet.xls

Contact OEM if you desire a quote on an **Impeller** or **Debearder Drum** for a specific type of seed or process.

If you process seeds that have appendages on the end, but are fragile, try putting the Rubber Wrap **Figure 14** on your **Perforated Drum**. This technique works on marigold seeds for example and assists in breaking “tail” off the seed.



Figure 14

The **Rubber Wrap** goes all the way around the drum and overlaps several inches to secure it. Duct tape is appropriate for sealing the edges and keeping it from unraveling during processing. To make wrapping the tape easier, first put a small bit of tape in the center to hold the end down. To obtain the best seal at the edges, run the duct tape all the way around and overlap the ends.

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Operation with Tined Impeller & Drum

Use the **Impeller** with **Unperforated (Solid) Debearder Drum** with the 5 **Removable Stationary Tines**, **Figure 15**. The **Stationary Tines** tear or shred the fibrous seed material when the **Impeller** passes between them.



Figure 15

The parameters for your debearding operation will depend on the **Crop Seed** and the **Motor Speed**. Also you may replace the **Stationary Tines** with other lengths or types to facilitate processing of difficult to break up seed material.

Be certain to check the clearance between the **Impeller Tines** and the **Stationary Tines**. If you have carefully centered the **Impeller** within the **Debearder Drum**, the **Impeller Tines** and the **Stationary Tines** will be evenly spaced. Tighten the **Motor Coupling Setscrew** shown in **Figure 3**.

With your hand rotate the **Impeller** a few turns to insure that the **Impeller Tines** and the **Stationary Tines** clear each other. Install the **End Plate** making sure it is securely seated inside the end of the **Debearder Housing** and close **Toggle Clamps**. The **Toggle Clamp Spindles** should press firmly against the **End Plate**.

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Operation with Tined Impeller & Drum (continued)

With the **Debearder** completely assembled, turn on the **Power Switch** and **Start the Motor Controller**. Suggested initial settings is a motor speed of 100 rpm with a 2 minutes run time.

While processing the batch, the material will remain inside the **Unperforated (Solid) Debearder Drum**. When the processing is finished, **Stop the Motor**, undo the **End Plate Toggle Clamps**, remove the **End Plate**, rotate the **Impeller** to line up the **Motor Shaft Coupling Set Screw** with the access hole in the **Motor Coupling Guard**, loosen the set screw in the **Motor Shaft Coupling** and pull out the **Impeller**.

Take out the **Debearder Drum**, and then dump the material inside into the **Specimen Tray**. Remove the **Inlet Blocking Plate**. Remove the rest of the material and then vacuum the inside of the **Debearder Housing**. You may also blow out the inside of the **Debearder Housing** with an air nozzle.

How long to run the test and the setting for the motor speed may be determined by analyzing the results of several tests. Keeping detailed records will assist you in establishing appropriate operating parameters. We have included sample **Data Sheets** in the back of this manual and on our website:

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Setting Fixture for Brushes and Paddles (Optional)



Figure 16

Preparing the Fixture

This **Brush and Paddle Setting Fixture** shown in **Figure 16** is for setting the clearance between the **Drum** and the **Brush** or **Paddle Assembly** and with two different drum diameters.

Determine what diameter drum you have – **117 mm** (4 $\frac{5}{8}$ inch) or **124 mm** (4 $\frac{7}{8}$ inch)

- The “**Large**” drums are all the solid drums as well as some perforated drums.
- The “**Small**” drums are perforated drums only.

The **Support Plate** holds up the **Brush** or **Paddle Assembly**.

Two **Thumb Screws** attach the **Support Plate** to the **Fixture Rail**.

Attach the **Support Plate** to the side of the **Fixture Rail** marked “**Large**” or “**Small**” depending on the drum you are using.

If you are adjusting the **Paddle Assembly**, make sure the word “**Paddle**” is up.

If you are adjusting the **Brush Assembly**, make sure the word “**Brush**” is up.

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Setting Fixture (continued)



Figure 17

Setting the Brush or Paddle Assembly

Loosen the **Adjustment Screws** in the slots of the **Brush or Paddle Assembly** so that the **Brush or Paddle** can slide in and out.

Slide the **Brush or Paddle** all the way in towards the shaft.

Lay the **Brush or Paddle Assembly** in the fixture using the slots nearest the **Support Plate** as shown in **Figure 17**.

Select and insert the pair of **Setting Spacers** for the **Drum** clearance that you want.

Place them on the **Fixture Rail** roughly in line with each of the **Adjustment Screws**.

Lightly push the **Brush or Paddle** against the **Setting Spacers** and tighten the **Adjustment Screws**.

Flip the **Brush or Paddle Assembly** over and set the other side the same way.

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Preventive Maintenance

1. **Gear Drive Motor** – normally none required
2. **Digital Motor Speed Control** – none required
3. **Debearder Housing** – inspect before each run
4. **Debearder Drum** -- normally none required
5. **End Plate** – inspect before each run
6. **Brush Assembly, Paddle Assembly and Tined Impeller**
 - a) Examine the **Shaft** bushing areas weekly for scoring or discoloration.
 - b) For models with the tan bushing on the motor end and in the **End Plate** are permanently lubricated, so no lubrication is necessary for normal use.
 - c) For models with the bronze motor end shaft bushing, lubricate the bushing area on the **Shaft** with a thin film of general purpose white grease (supplied).
 - d) For models with the white plastic bushing in the **End Plate**, lubricate it at least weekly, or more often during heavy use, with a thin film of general purpose white grease (supplied).

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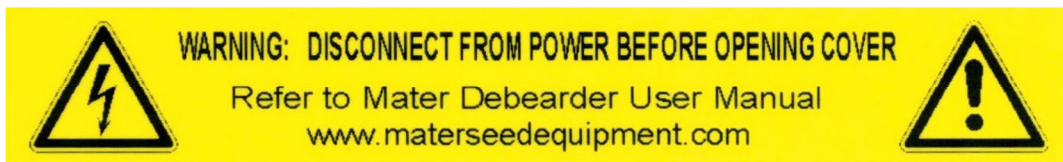
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Troubleshooting

Digital Motor Control will not power up:

- Check to see if the **Power Cord** is plugged in to a powered outlet
- Verify that the other end of the **Power Cord** is plugged into the **Power Inlet Device**
- Confirm that the “—” side of the **On-Off Switch** of the **Power Inlet Device** is pressed in for “On”
- Remove the red fuse holder from the **Power Inlet Device (Figure 6)** on the **Digital Motor Controller** housing to see if it is open (blown) and replace if necessary – see parts list.
- Additional troubleshooting information is available from **Mater Seed Equipment**
- In the back of this user manual is a copy of the Oriental Motor **Brushless DC Motor and Driver Package: BLF Series OPERATING MANUAL** for your reference.



Digital Motor Control error messages:

AL6E indicates that the **Panic Stop** button has been pressed. Follow the instructions on the red label to reset.

AL30 indicates that the torque exceeded the maximum for more than 5 seconds.

To reset the drive system, follow these steps:

1. Turn the **Red Knob** of the **Panic Stop** button clockwise to **Unlock**.
2. Press the red **Reset Button** and alarm message should clear.

For a complete list of error messages, refer to section 10.2 of **Brushless DC Motor and Driver Package: BLF Series OPERATING MANUAL**. A copy of that document is located in the back of this manual.

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Troubleshooting (continued)

Motor Coupling rotates but **Brush Assembly** or **Impeller** does not rotate:

- Align **Brush Assembly** or **Impeller** shaft flat with **Motor Coupling Setscrew**
- With the **Hex Key**, tighten the **Motor Coupling Setscrew** against the shaft flat.

Squeaking while **Brush Assembly**, **Paddle** or **Impeller** rotates:

- Check for **Brushes** or **Impeller Tines** rubbing against either end of the **Debearder Housing**
- **Bushings:**
 - a. Examine the **Shaft** bushing areas for scoring or discoloration.
 - b. Models with the tan bushing on the motor end and in the **End Plate** are permanently lubricated, so no lubrication is necessary.
 - c. For models with the bronze motor end shaft bushing, lubricate the bushing area on the **Shaft** with a thin film of general purpose white grease (supplied).
 - d. For models with the white plastic bushing in the **End Plate**, lubricate it at least weekly, or more often during heavy use, with a thin film of general purpose white grease (supplied).

Brush Assembly or **Impeller** rotates a partial turn and **stops the Motor**

- If an **Impeller Tine** hit a **Stationary Tine** inside the **Debearder Drum**, carefully center the **Impeller** between the ends of the **Debearder Drum**.
- Before starting the unit again, loosen the **Motor Coupling Setscrew**. Then by hand rotate the shaft to verify that it turns freely before tightening the **Motor Coupling Setscrew**.

Seeds do not flow into the Drum:

- Check the **Inlet Tube** for obstructions—do not use your fingers!
- Confirm that the **Inlet Plate with Hole** is oriented so that inlet opening and plate opening line up.

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Parts List

DB3001 Standard Configuration – 110-120 V, 60 Hz, 160 W

Oriental **Vexta** BLF5120A-5FR (Driver, Motor and Gearhead)

Fuse (one inside power inlet's red fuse holder, under black cover)

3 Amp @ 250 Volts, quick acting such as AGC 3

0.25 inch diameter x 1.25 inch long (6.3 mm diameter x 32 mm long)

T-Handle Hex Key 1/8 inch

DB3002 Standard Configuration – 220-240 V, 50 Hz, 160W

Oriental **Vexta** BLF5120A-5FR (Driver, Motor and Gearhead)

Fuse (two inside power inlet's red fuse holder, under black cover)

2 Amp @ 250 Volts, quick acting such as 19195 series

5 mm diameter x 20 mm long

T-Handle Hex Key 1/8 inch

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Parts & Accessories

Drums Electroless Nickel Plated Steel

DB0500-1.5 Perforated, 1.5 mm (0.06 inch) holes

DB0500-2 Perforated, 2 mm (0.08 inch) holes

DB0500-2.5 Perforated, 2.5 mm (0.10 inch) holes

DB0500-3 Perforated, 3 mm (0.12 inch) holes

DB0500-3.5 Perforated, 3.5 mm (0.14 inch) holes

DB0500-4 Perforated, 4 mm (0.16 inch) holes

DB0500-4.5 Perforated, 4.5 mm (0.18 inch) holes

Other size perforations quoted on request.

DB0570 Rubber Wrap for Perforated Drum



DB0600 Unperforated (Solid)



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Parts & Accessories (continued)

Drums Electroless Nickel Plated Steel (more)

DB0650 Unperforated with 8 Ribs for Rice



DB0680 Unperforated with 5 Replaceable Stationary Tines



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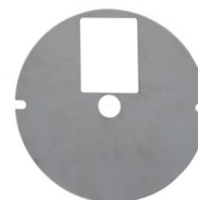
Parts & Accessories (continued)

Blocking and Inlet Plates Stainless Steel

DB0590 Blocking Plate, without Inlet Opening (supplied with machine)



DB0595 Inlet Plate, with Opening (supplied with machine)

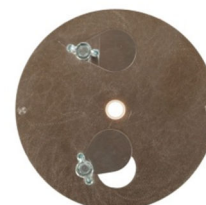


End Plates Electroless Nickel Plated Steel

DB0100 End Plate Assembly, Solid (supplied with machine)



DB0160 End Plate Assembly with Upper and Lower Discharge Ports and Adjustable Port Covers (optional)



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Parts & Accessories (continued)

Impellers

- DB0201 Brush Holder Assembly
- DB0250 Brush Strip Holder for above -- Pair for Replacement
- DB0260 Brush Strip: Extra Fine, Straight, 0.4mm Nylon Bristles -- Pair
- DB0265 Brush Strip: Fine, Straight, 0.5mm Nylon Bristles -- Pair
- DB0266 Brush Strip: Fine, Crimped, 0.5mm Nylon Bristles -- Pair
- DB0270 Brush Strip: Medium, Straight, 0.6mm Nylon Bristles -- Pair
- DB0275 Brush Strip: Coarse, Straight, 1.0mm Polypropylene Bristles -- Pair



- DB0400 Tined Style Impeller (use with DB0680 Drum)



- DB0700 Paddle Style Impeller with Urethane Wipers
- DB0730 Replacement Wipers, Urethane for above – Pair



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Parts & Accessories (continued)

Setting Fixture for Brushes and Paddles (Optional)

DB0900 Brush & Paddle Setting Fixture
with Five Pairs of Setting Spacers:
1.0, 1.5, 2.0, 2.5 & 3.0 mm



Replacement Pairs of Spacers for Standard Set:

DB0910 1.0mm Setting Spacers for Setting Fixture

DB0915 1.5mm Setting Spacers for Setting Fixture

DB0920 2.0mm Setting Spacers for Setting Fixture

DB0925 2.5mm Setting Spacers for Setting Fixture

DB0930 3.0mm Setting Spacers for Setting Fixture

Optional Pairs of Setting Spacers:

DB0935 3.5mm Setting Spacers for Setting Fixture

DB0940 4.0mm Setting Spacers for Setting Fixture

DB0945 4.5mm Setting Spacers for Setting Fixture

We offer special Debearder Drums, Brush Assemblies and Impellers for your Debearder.

Contact OEM if you wish to purchase Continuous Feed Upgrade Kit for your Batch Debearder.

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Drive Configuration Details (set at assembly)

Brushless DC Motor and Driver Package: BLF Series OPERATING MANUAL

A copy of this document is located in the back of this manual.

Mater Debearder Drive Setup Parameters

Set to For

Set Acceleration = **3 s**
Set Deceleration = **1.5 s**

Set Gear Ratio = **10**

23 Sep 15 Revised for SN 81 up

from Section 13.4

■ Driver

Selector switch

Name	Initial setting	Setting range
External voltage selection switch	5 VDC	5 VDC 10 VDC
Sink/Source selector switch	Sink logic	Sink logic Source logic

■ Digital operator

Direction setting mode

Name	Initial setting	Setting range
Direction	For	For: Clockwise rEv: Counterclockwise

Digital operator/external input signal setting mode

Name	Initial setting	Setting range
Digital operator/external input signal setting	Lo	Lo: Operation using the digital operator rE: Operation using external input signals

Speed selection mode

Name	Initial setting	Setting range
Operation data	P.no1	P.no1 to 8
Speed	0 r/min	80 to 4000 r/min
Acceleration time	0.5 s	0.2 to 15 s
Deceleration time	0.5 s	0.2 to 15 s
Speed setting method for operation data No.1	i-vr	i-vr: Internal potentiometer SPD1: Digital setting
Speed setting method for operation data No.2	E-vr	E-vr: External potentiometer or external DC voltage SPD2: Digital setting
Gear ratio	1.00 r/min	r/min: Gearhead output shaft speed m/min: Conveyor transfer speed
Input mode	2wir	2wir: 2-wire input mode 3wir: 3-wire input mode
STOP key enable/disable	on	on: Enable oFF: Disable
Overload warning function	oFF	oFF: Disable the overload warning function on: Enable the overload warning function (Initial setting: 100) 100 to 50: Load factor at which an overload warning will be output (set as a percentage of the rated torque in increments of 10%)

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