USER MANUAL

AMPD OPERATION LIQUID & POWDER SYSTEMS

MENU

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LEGAL & SAFETY

This manual contains technical information regarding Bayer SeedGrowth™ Equipment. Please read and understand these instructions completely before proceeding to install and operate the equipment. Bayer reserves the right to change specifications, models, components, or materials at any time without notice. For additional equipment information contact us at 1.800.634.6738. Please have this manual available when contacting Bayer.

Always use caution and common sense when working with any chemical. Read the product label and SDS carefully and follow their instructions exactly as described.

Optimal operating conditions for this piece of equipment requires an ambient temperature 32° F to +104° F (0° C to +40° C), relative humidity less than 90% (minimum condensation). Make necessary provisions to protect this piece of equipment against excessive dust, particles containing iron, moisture and against corrosive and explosive gases.

Our technical information is based on extensive testing and is, to the best of our current knowledge, true and accurate but given without warranty as the conditions of use and storage are beyond our control. Variables, such as humidity, temperature, change in seed size or variety and viscosity of chemical products can all affect the accuracy of the chemical application and seed coverage. To ensure the desired application rate and optimum seed coverage, check the calibration periodically throughout the day, and make adjustments as needed.

Any person who is involved in the installation or periodic maintenance of this equipment should be suitably skilled or instructed and supervised using a safe system of work. Isolate the treater before removing guards for maintenance.

EXPOSURE CONTROL

Always use caution and common sense when working with chemicals. Read the product label and SDS carefully and follow their instructions exactly as described. The following Personal Protective Equipment (PPE) recommendations and best practices help promote safe use in seed treatment.

Note: Exposure Control signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.

Wear protective clothing

Wear disposable or reusable coveralls with long sleeves.

Hand protection required

Wear chemical-resistant gloves.

Wear rubber boots

Wear chemical resistant rubber boots.

Labels

Label recommendations and directions for handling must be followed, including treatment procedure (use of sticker) as well as the safety requirements.

Treatment products

Keep products in a locked room that has been approved for crop protection products.

Wear a mask

Wear respiratory protection.

Eye protection required

Wear protective eyewear.

Calibration

Seed treatment equipment must be checked and calibrated regularly to ensure accurate and safe application.

Clean seed

Use well cleaned seed to avoid creation of polluted dust that will contaminate the machine, treating facility, workers, farmers and the environment during sowing.

Cleaning

Use a vacuum to clean machines. Avoid using compressed air for cleaning.

Laundry

Wash soiled reusable clothing separately. Workers must take a shower after each shift.

Empty containers

Non-returnable empty containers must be triple rinsed before they can be disposed. For others the recommendation of the producer must be followed.

Spillage

Spillage must be avoided; it must be thoroughly cleaned up to avoid contaminating the environment and waterways.

Maintenance

Keep machinery clean between treating sessions.

REFERENCE SYMBOLS

Symbols and signal words are used to identify the level of hazard and help avoid personal injury.

Note: Safety signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.

Shock Hazard

Alerts that dangerous voltage may be present.

Warning

Alerts that a hazard may cause serious injury or death.

Caution

Alerts that a hazard may cause minor or moderate injury.

Hand crush - moving parts

Alerts crushing is possible.

Pinch point

Keep hands away from pinch points.

Rotating shaft

Do not wear loose clothing around turning parts.

Disconnect

Disconnect to de-energize before opening.

Tools

Required tools for installation and maintenance.

Use guards

Keep guards in place. Do not remove during operation.

Parts

Required parts for installation and maintenance.

Lifting

Requires two people to safely lift an item.

Tip

Calls attention to special information.

Lift points

Requires the use of proper rigging and lifting techniques based on the lift plan.

Note

Emphasizes general information worthy of attention.

Center of gravity

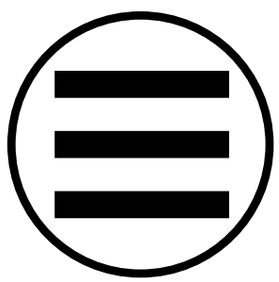
Indicates the center of gravity of the machine to help assist when rigging and lifting.

Example

Provides a problem or exercise that illustrates a method or principle.

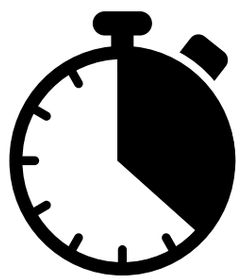
PICTOGRAMS

Each Signifier displayed here is specific to this User Manual.

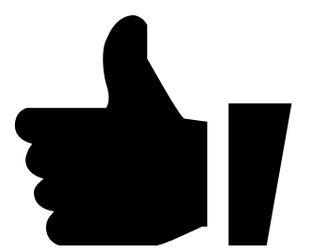

Menu


Previous

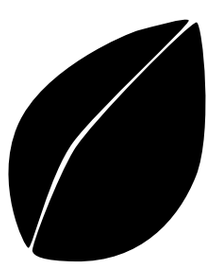

Advance

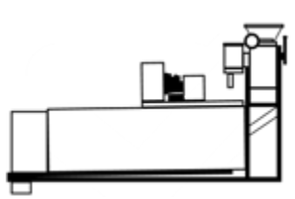

Time

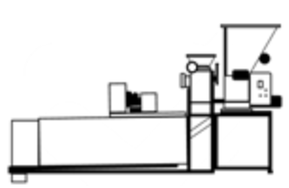

Powder


Like


Run Sequence


Seed


AMPD Liquid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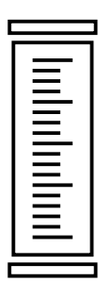
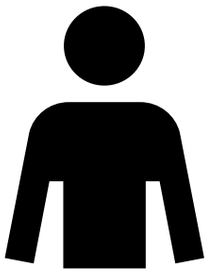

Calibration


Liquid


Person

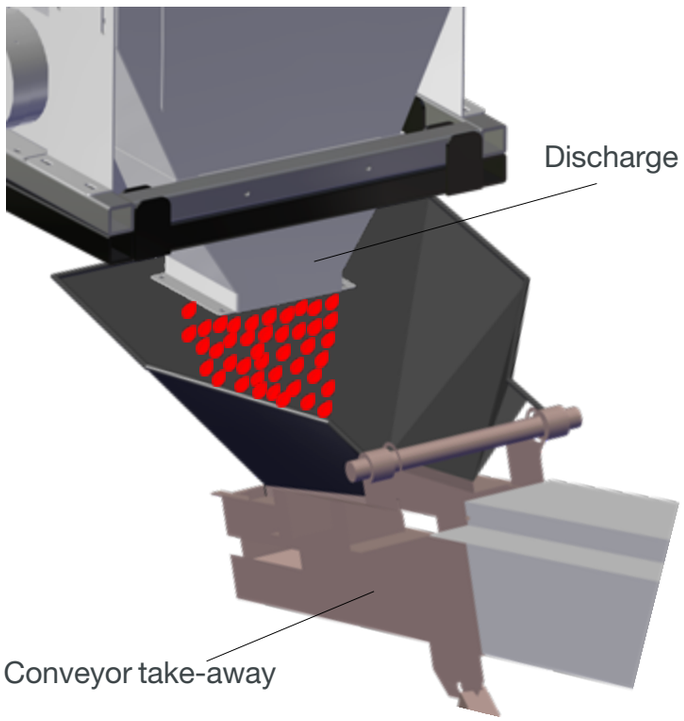
SEED FLOW RATE

Warning! Do NOT run chemical at this time!

Treating Capacities

PEANUTS
Liquid Only (fungicides): 3,970-12,000bu./hr (1.8-5.4 M.T./hr)
Dry Powder Only: 3,970-15,000bu./hr (1.8-6.8 M.T./hr)

SOYBEANS
Liquid Only: 200-400 bu./hr (5.4-10.9 M.T./hr)
Dry Powder Only: 100-200 bu./hr (2.7-5.4 M.T./hr)



Establish Good Seed Flow

The Seed Gate and the Slide gate opening on the Treating Head determine the seed flow capacity.

- Once adjusted, leave in position.
- Seed flow is the same for both Liquid and Powder Systems.
- If using a Liquid system, do not fill the Metering Tank with chemical at this time!
- 60 pounds of soybeans equals one bushel.
- Bushels per hour equal pounds per minute (bu./hr.=lb. min.).

Trial run

Step 1: Provide a take-away system (conveyor) underneath the discharge end of the treater.

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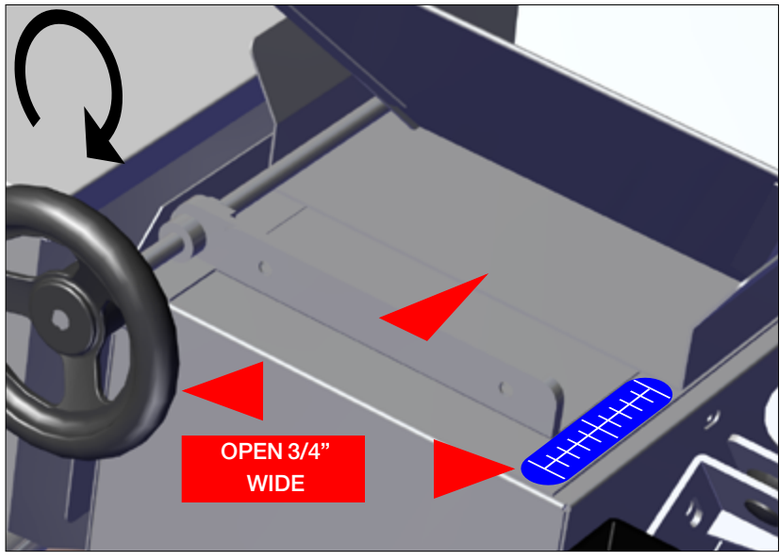
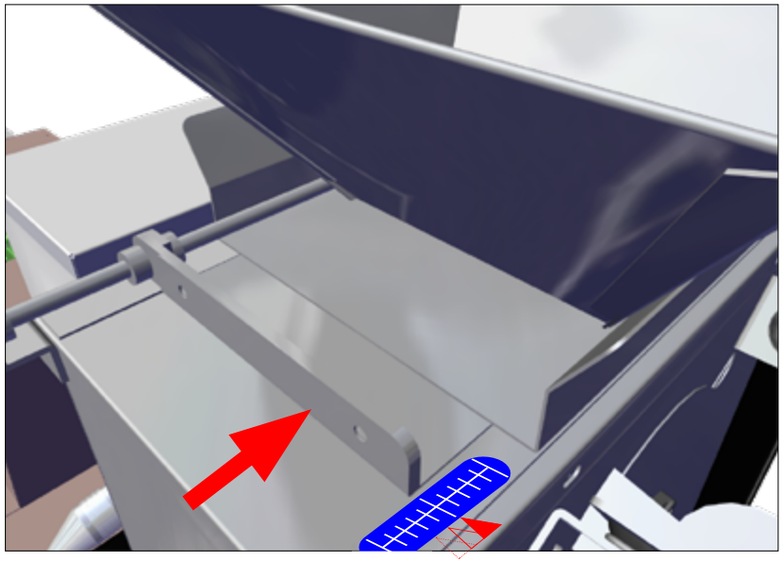
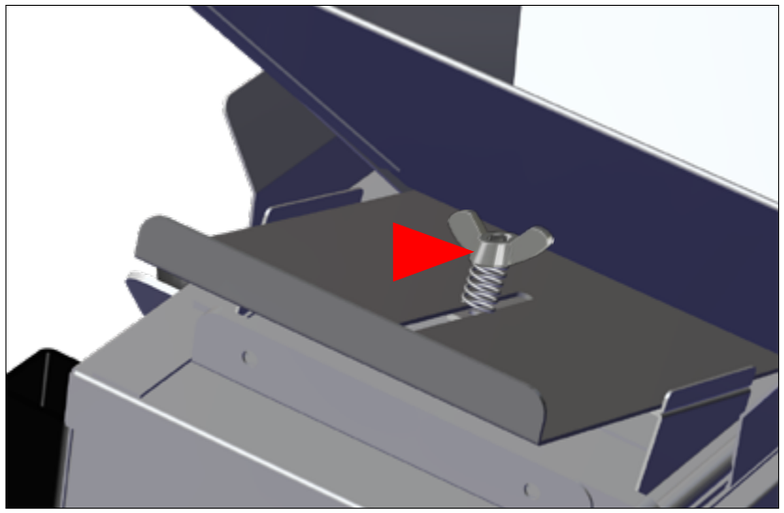
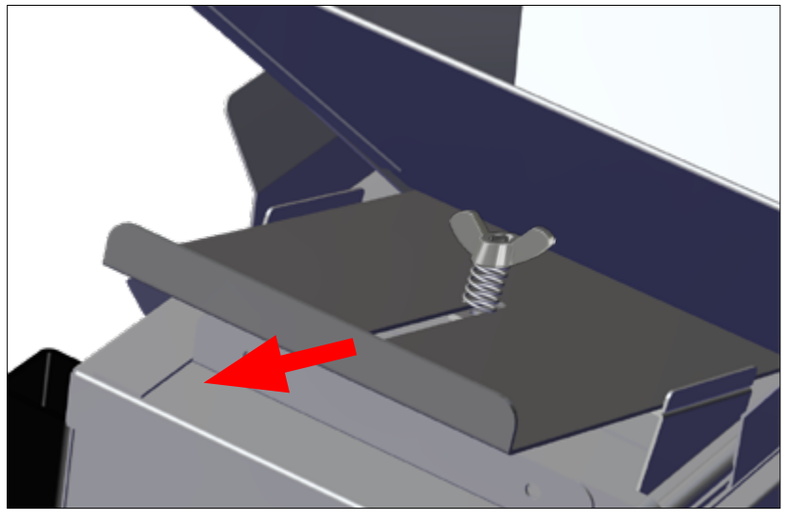




Step 2: Turn the Hand Wheel on the Inlet Hopper clockwise (right) to open the Feed Hopper Seed Gate approximately 3/4 wide (refer to the blue Inlet opening Gauge sticker).

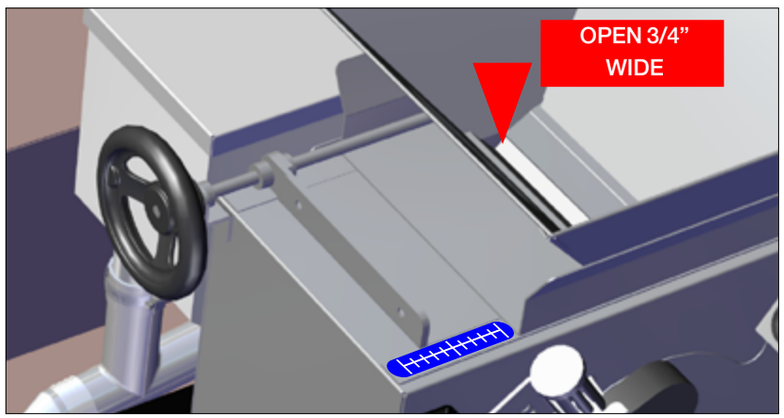
- This moves the Gate Bracket Assembly IN towards the Hopper.

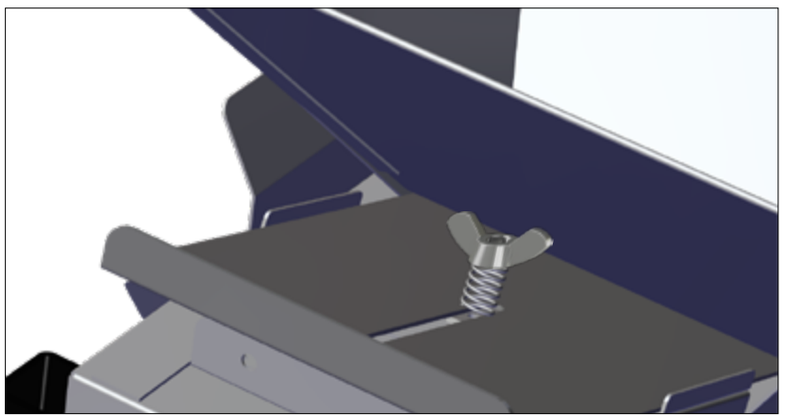




Step 3: Loosen the Tension Spring wing nut on the Slide Gate.

- Pull the Slide Gate out to open the Hopper.





Step 4: Look inside the Hopper to ensure the inlet throat is open 3/4”.

- Tighten the Slide Gate Tension Spring wing nut to keep it from closing.

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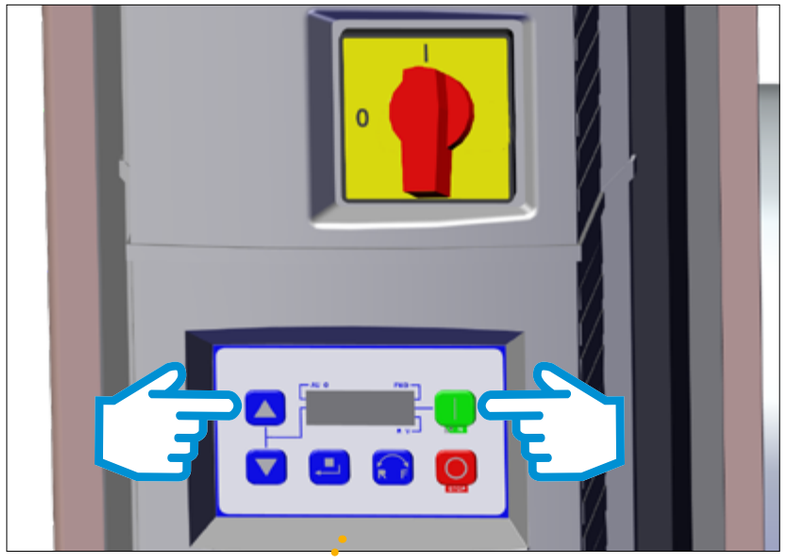

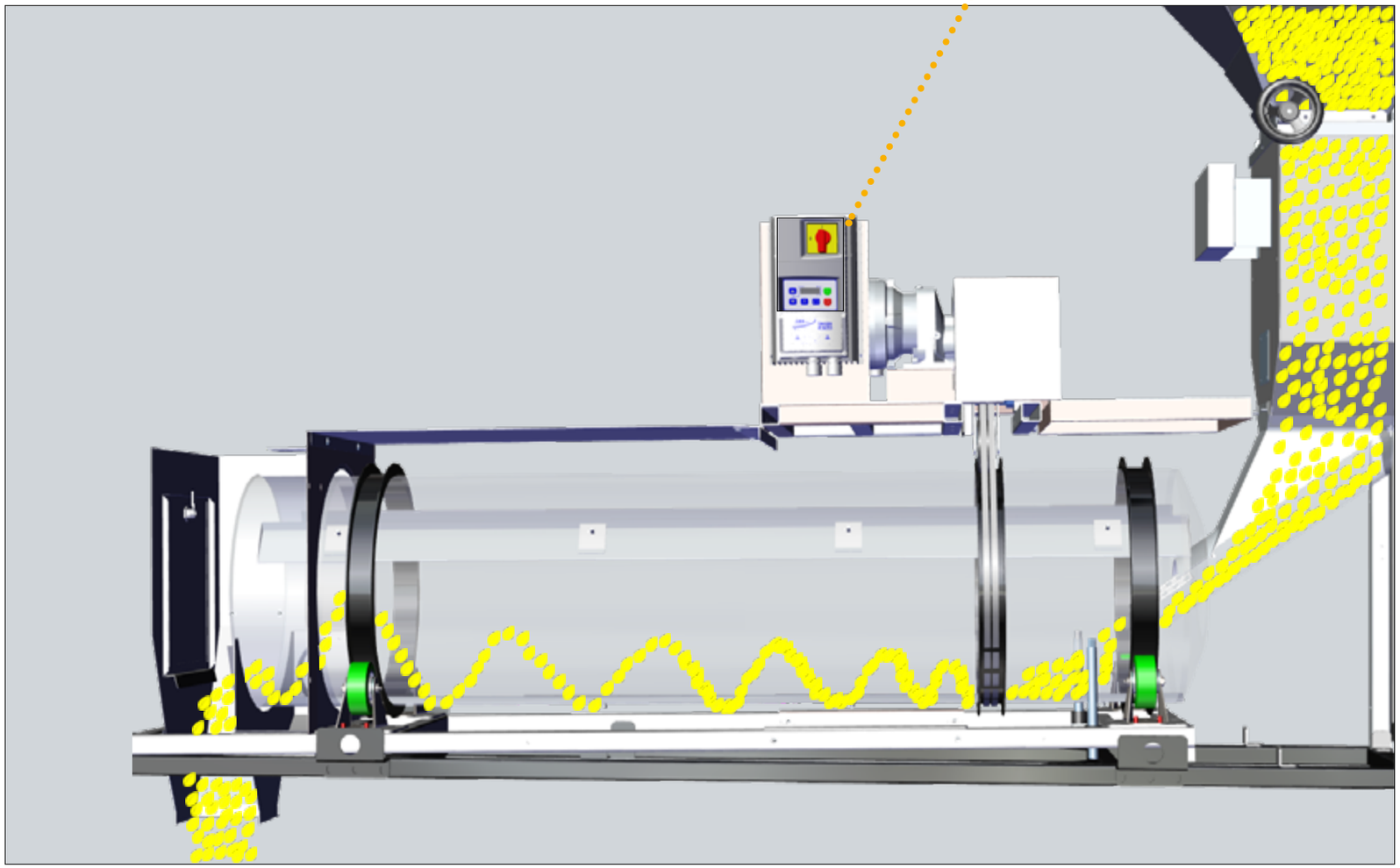

Step 5: Power ON the Drum Motor Inverter: turn the red power switch to the UP position).

- Touch the green Run button.
- Drum begins rotating counterclockwise (when looking at it from the discharge end ↺).
- Touch the blue UP or DOWN arrows to increase or decrease drum speed.
- Faster drum speed moves seed along quicker, slow drum speed allows seed to dwell inside the drum longer.

Example: 300 pounds of seed trips the Counterweight 36 times in one minute:
300 pounds / 36 trips = 8.33 pounds per trip.

Formula: 300 ÷ 36 = 8.33

Step 6: As per example above, load 300 pounds of seed in the Inlet Hopper.

- 300 pounds of seed empties from the Inlet Hopper into the Treater Head, into the Drum and out the Discharge.

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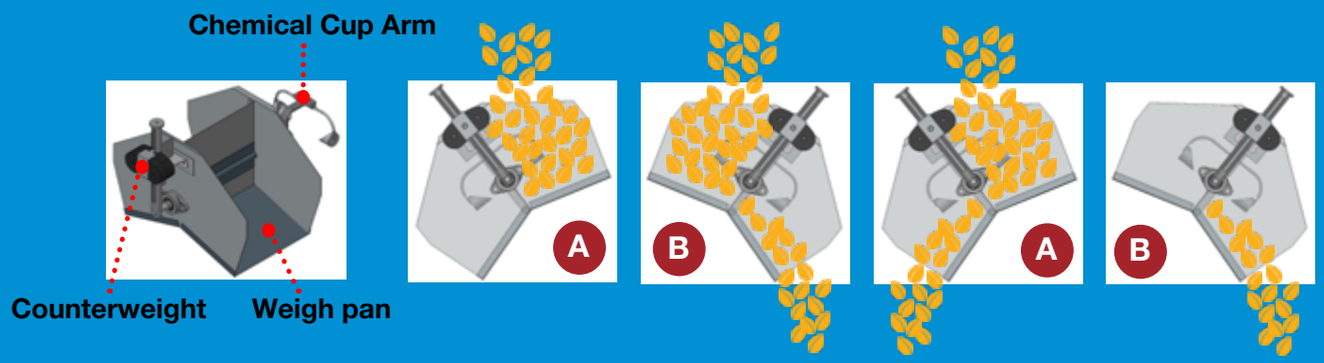

Note: Liquid System - Theory of Operation

A Seed in the weigh pan activates seed & chemical metering. Begin with the counterweight tipped to the left (the weigh pan inside the treater head and chemical cup inside the metering tank are also tipped to the left (all are connected and move together in tandem). The weigh pan right side pocket fills with seed and the left chemical cup fills with chemical.

B Seed & chemical empty simultaneously. When the weigh pan right side pocket fills with seed, the counter-weight, weigh pan and chemical cup tip over to the right and dump the seed down into the seed transition and the chemical into the chemical funnel (chemical will not flow until the weigh pan tips). Chemical flows down the clear vinyl tube (connected to the bottom of the chemical funnel) to the PPS (reservoir cup) and then to the spray nozzle (inside the drum at the end of the transition). Seed is sprayed with chemical as it passes out of the transition and mixes together, then discharges from the mixing drum. Seed & chemical metering trips end when seed stops filling the weigh pan. **A + B = 1 TRIP** and will repeat as long as seed fills the weigh pan.

Note: Seed size and seed type will always run at different rates. Operator must calibrate whenever seed type and / or seed size is changed!

Step 7: Count the number of times the Counterweight trips to the right and to the left per minute.

- A complete swing in one direction against the Bumper Pad is one trip.
- A swing back in the opposite direction is another trip.

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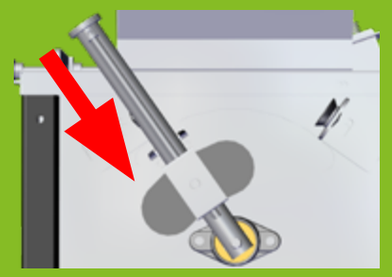
Counterweight Adjustment

Adjustments can be made to improve the seed flow to the Counterweight.

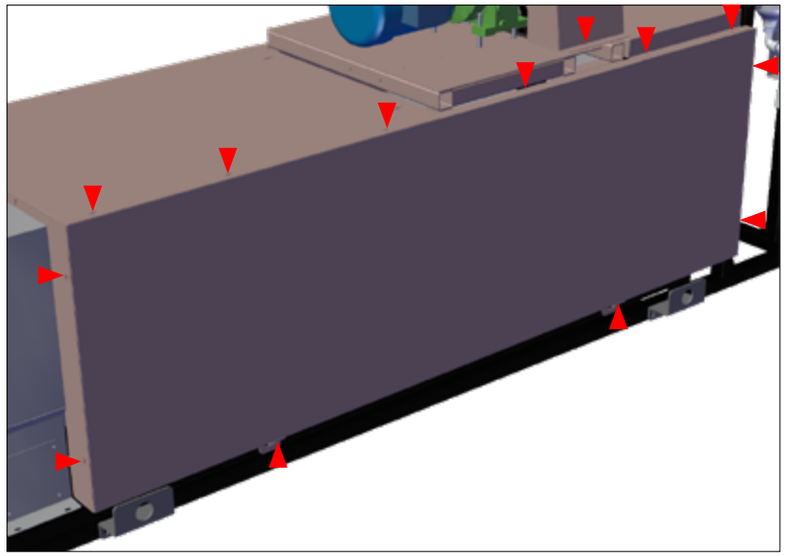
To decrease the number of trips per minute, use a 9/16” wrench to loosen the 3/8” Nut on the Counterweight. Move the Counterweight up towards the top of the Counterweight Arm and tighten the nut. This cause the Counterweight to trip more slowly, decreasing the number of trips per minute.

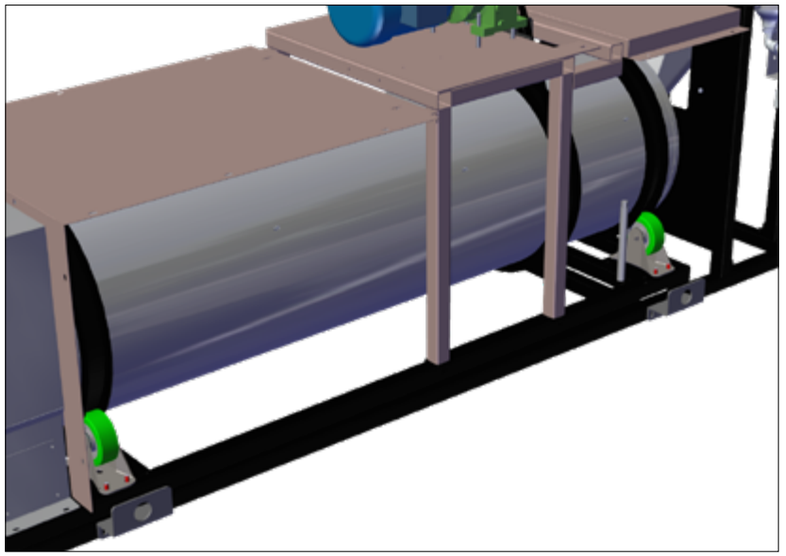
To increase the number of trips per minute, use a 9/16” wrench to loosen the 3/8” Nut on the Counterweight. Move the Counterweight down towards the bottom of the Counterweight Arm and tighten the nut. This causes the Counterweight to trip more rapidly, increasing the number of trips per minute.

Move Counterweight
Up to Decrease Trips



Move Counterweight
Down to Increase Trips



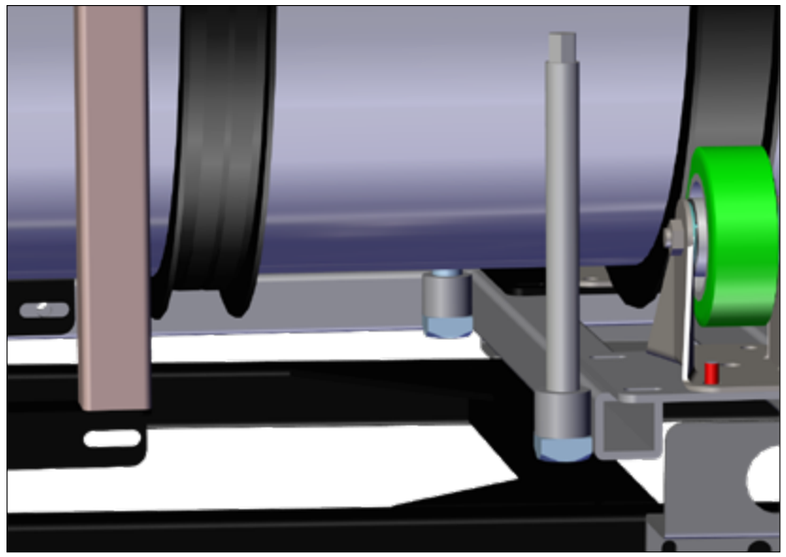


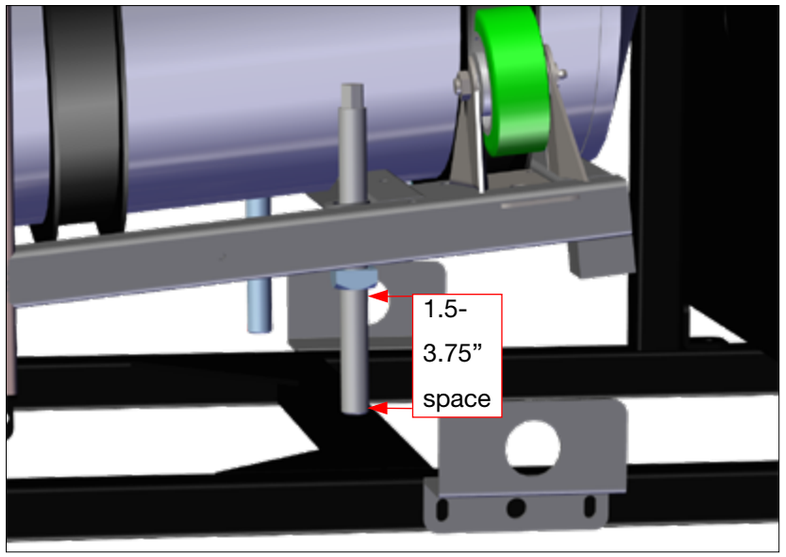
Adjusting the Drum Angle - Seed Flow Control

Adjustments to the Drum angle can be made to improve the seed flow.

Step 1: Use a 7/16” wrench to remove the 1/4-20” hardware on the Belt Guard and right & left Drum Access panels.

- Also the two (2) tabs along the bottom of the Drum Frame.





The angle of the drum will increase or decrease the amount of seed coverage and mixing time, not the capacity of the Treater Head.

The steeper the angle, the faster the seed will flow but with less coverage. Adjust as needed.

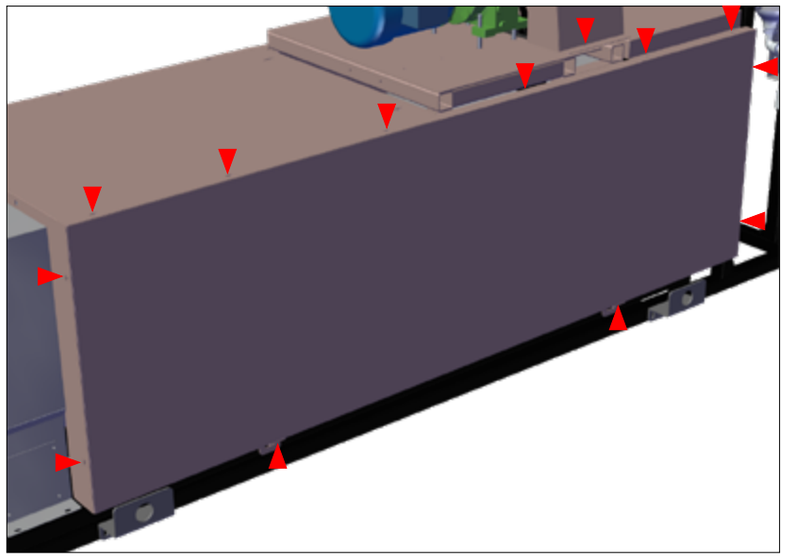
Step 2: Adjust the Threaded Bolt (both sides equally) 3/4-10 SQ Nut between 1.5 - 3.75” of space between the lower frame and the bottom of the bolt.

Continued ➲

The maximum the Drum angle is 2.25” before the Drum hits the Transition. DO NOT RAISE HIGHER THAN 2.25”!

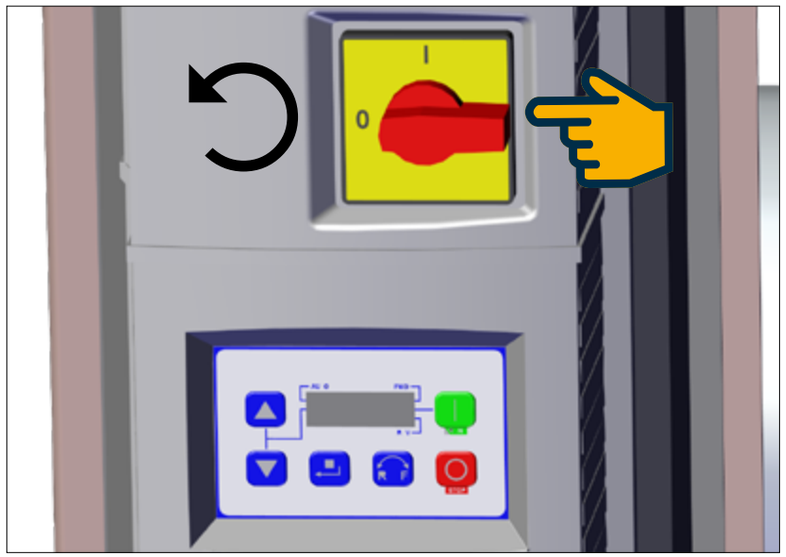
Estimated frame lift per pound per minute (based on soy beans)

- 200lbs/Min = 3.0” lift
- 400lbs/Min = 3.5” lift



Step 3: Dry run seed through the treating head again and count the number of times the Counterweight trips to the right and to the left in one minute (example: 300 pounds of seed trips the Counterweight 36 times in one minute).

- Repeat the Counterweight adjustment steps if needed, until the desired flow of seed is achieved.
- Keep the adjustments made to the Counterweight and the Drum angle set once the seed flow is at the desired rate!
- Some adjustments will need to be made when a new variety of seed is introduced.
- Use a 7/16” wrench to replace and connect the 1/4-20” hardware on the Belt Guard and right and left Drum Access panels as well as the two (2) tabs along the bottom of the Drum Frame.



Step 4: When finished determining the correct seed flow, power OFF the Drum Motor Inverter: turn the red power switch to the LEFT position).

This completes the Seed Flow Rate procedure.

LIQUID CALIBRATION

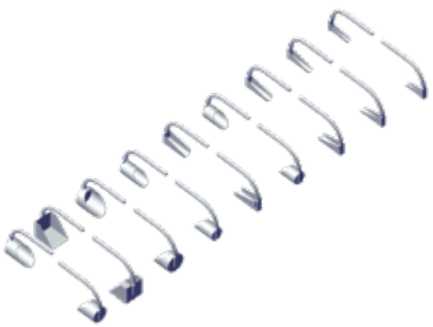
RATE
PRODUCT “X”

8.0 fl oz/cwt*

*Cwt = 100 pounds of seed

Example: 8 ounces per 100 pounds of seed will be the application rate: 236.8/100 = 2.37cc / lb.

Formula: 8oz x 29.6cc = 236.8cc per 100 pounds of seed



Establish Good Treatment Flow

Check the seed treatment container label for the desired application rate: typically, it will be listed in fl oz/cwt (per 100 pounds of seed).

- Convert the ounces listed to cubic centimeters (1 fl oz = 29.6 cc).

Step 1: Use one of the following...

A Determine the total pounds of seed per trip = seed weight/number of trips

B Determine total cc of treatment per 100 pounds of seed = ounces of treatment per 100 pounds of seed x 29.6 cc (ounce)
C Determine cc per pound of seed = cc required per 100 pounds of seed/100
D Determine cc per Counterweight trip (chemical cup size) = cc per pound x pounds per trip

Step 2: Choose one of two calibration methods:
E Weigh an amount of seed before running it through the Treater Head.
F Dry run the treater for one minute and weigh the seed that is discharged from the Treater.

The following example represents method E above; typical 300 pound trip load:

Step 3: Assume 300 pounds of seed trips the Counterweight 36 times: 300 pounds / 36 trips = 8.33 pounds per trip.

Formula: 300 ÷ 36 = 8.33

To determine the cc/trip, multiply the total cc per pound times the pound/trip:

Formula: 2.37cc x 8.33lb/trip = 19.74cc per trip

Step 4: Select a Chemical Cup size for the Weigh pan (if the cc/trip is between Chemical Cup sizes, choose the next size up).
- For 19.74cc per trip, select the 20cc Chemical Cup size.

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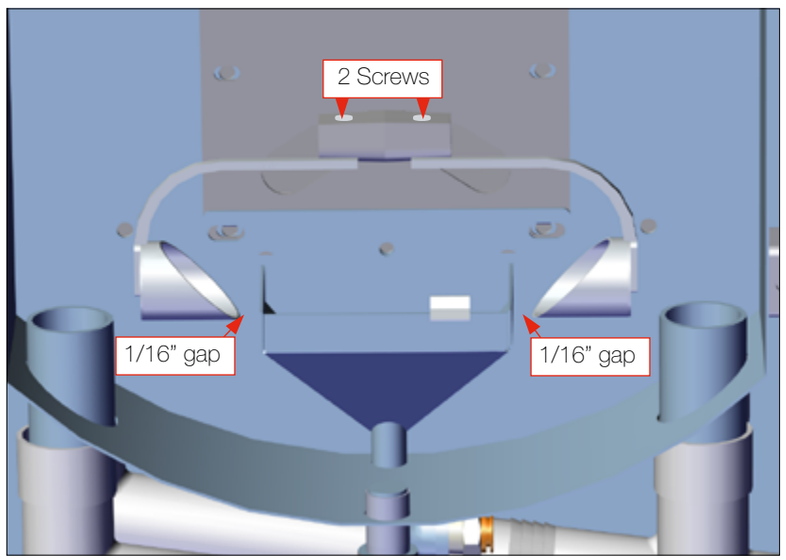
Warning! Do NOT run seed at this time!

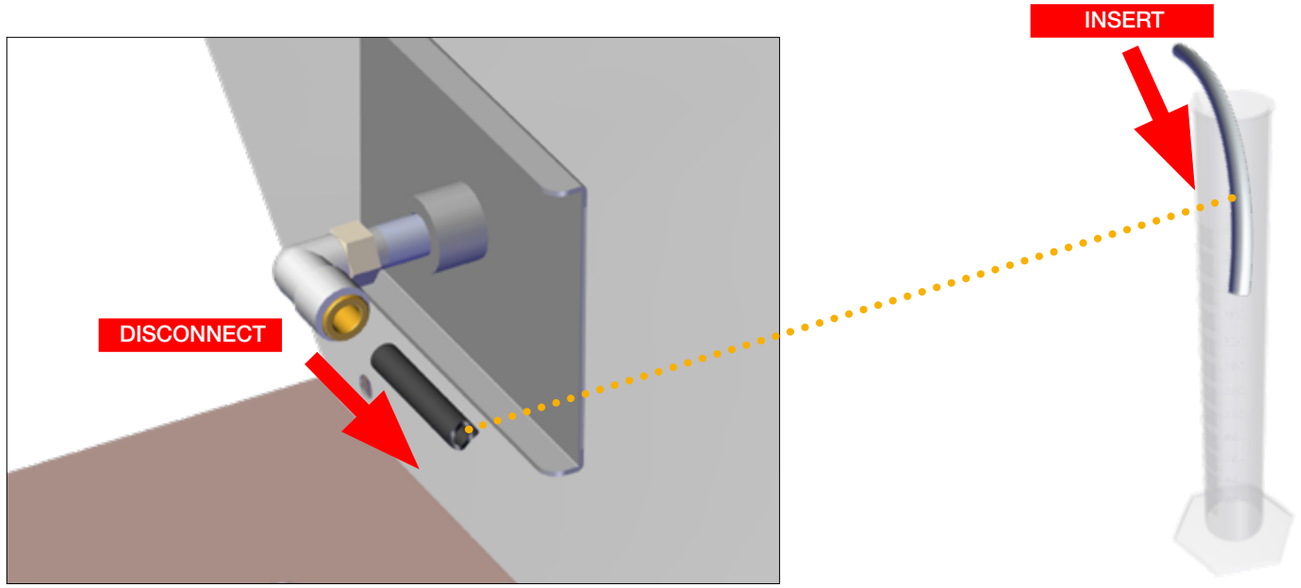
Warning! Exercise extreme caution when working with chemicals! Wear proper PPE >>



Step 5: Insert each chemical cup in the Dual Bracket Arm inside the Metering Tank.

- Use a 7/16" wrench to tighten the screws.
- Allow approximately 1/16" space between cups and the Funnel receptacle.

Refer to the Slurry Mix Guide and Charts on pages 33-36 to configure a slurry mix.



Liquid Product Calibration

Step 1: Once the slurry mix is configured, push on the orange fitting tab and disconnect the supply tube from the spray nozzle elbow fitting on the Treater Head.

- Place the tube in a Graduated Cylinder (250-500ml).
- This will be used to capture spent chemical during calibration.

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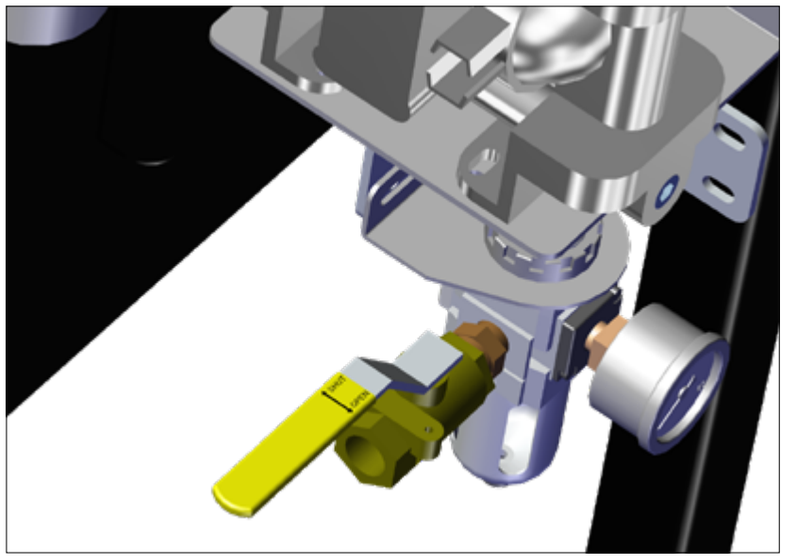
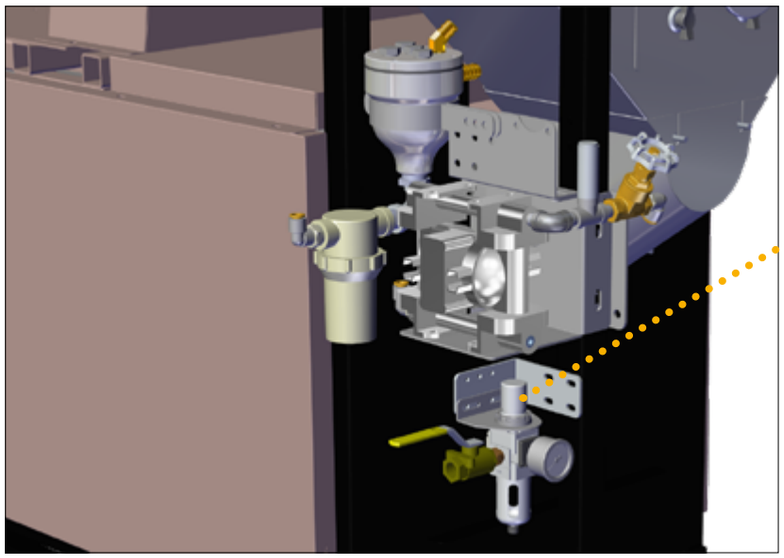
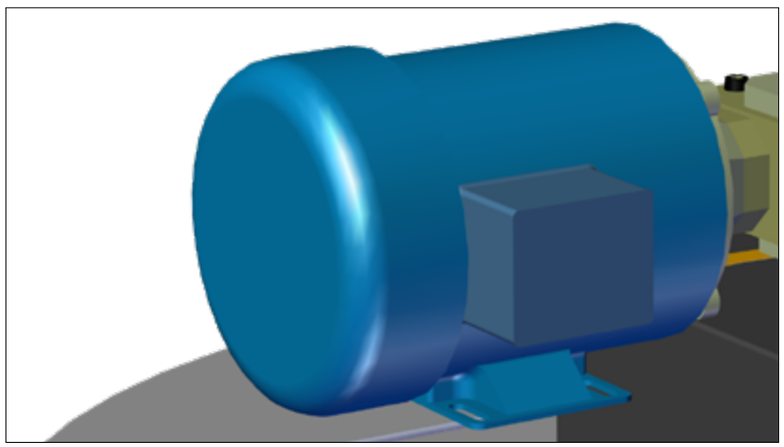




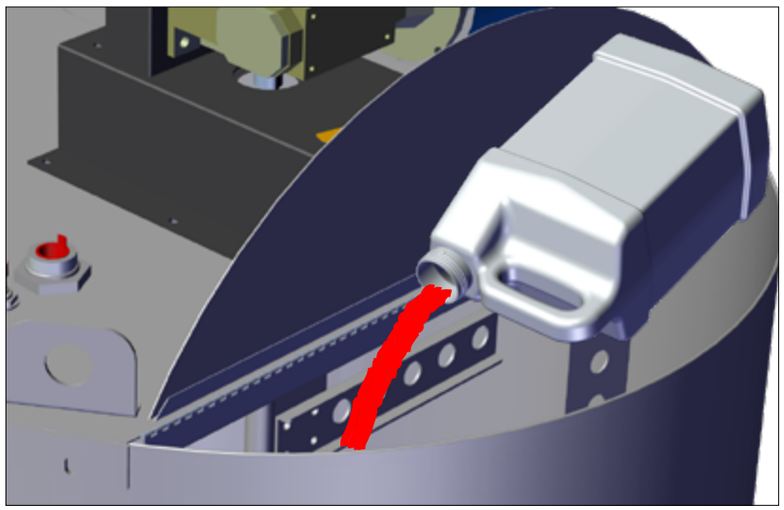
Step 2: Turn the PPS Air Inlet Shut-off Valve ON.

- Adjust the Filter Regulator air pressure to 50-60psi.



Step 3: Connect the PSD Tank Agitation Power Cord to an external power source.

- Tank agitation begins when power cord is connected to power.



Step 4: Open the Hinged Cover Lid and add Slurry ingredients in the Supply Tank.

- Allow slurry to mix and agitate for a few minutes.

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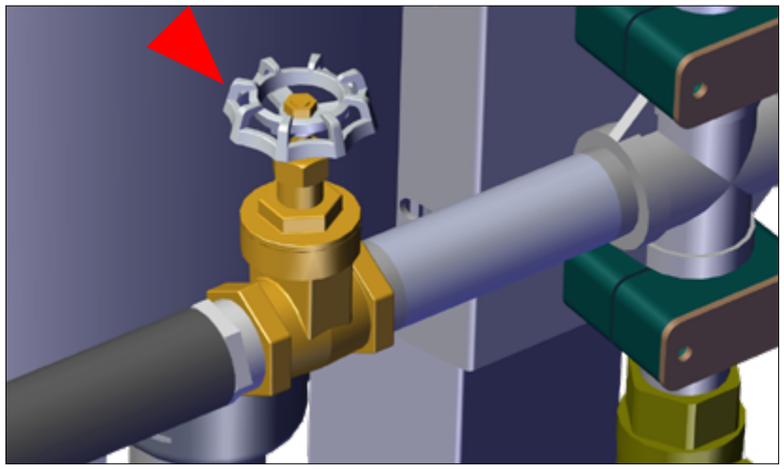
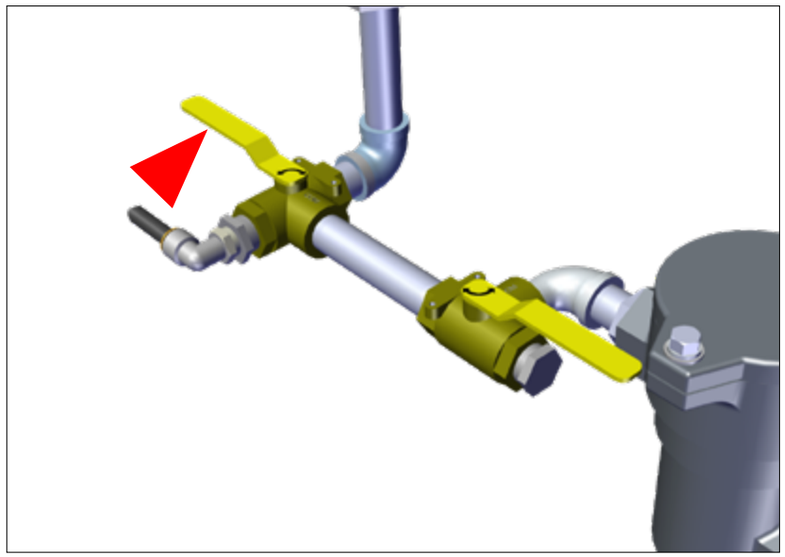
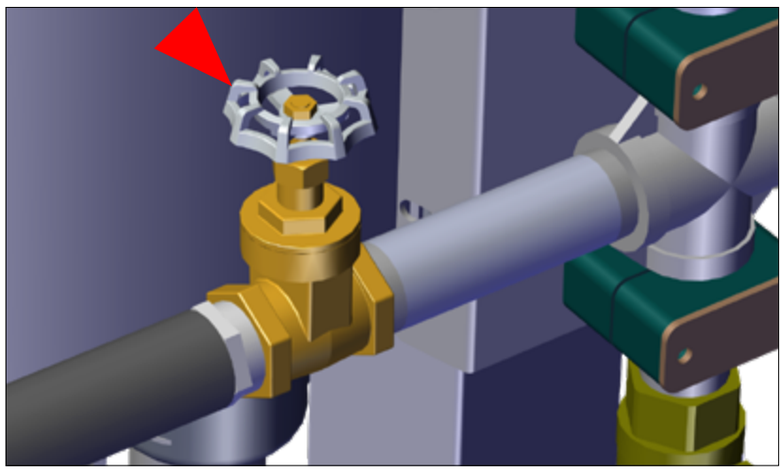


Step 5: Open the Gate Valve on the PSD Supply Tank.



Step 6: Open the Main Supply Ball Valve (located underneath the Tank).

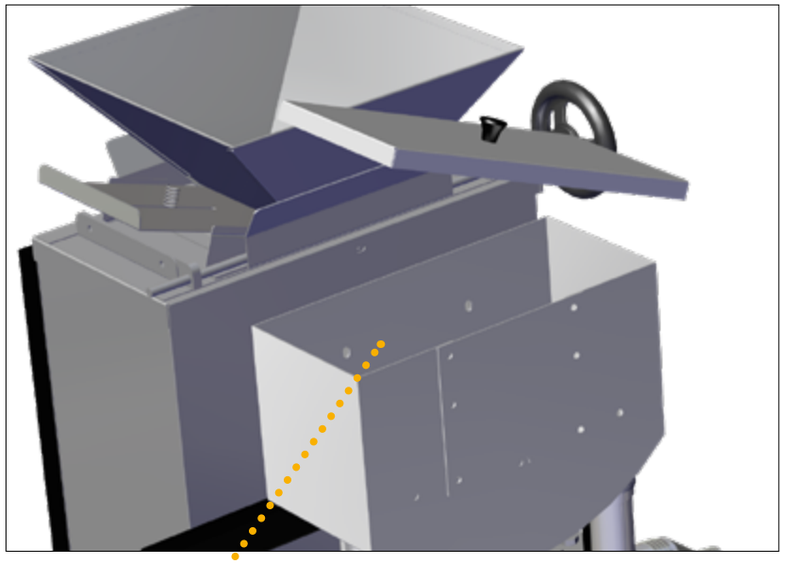


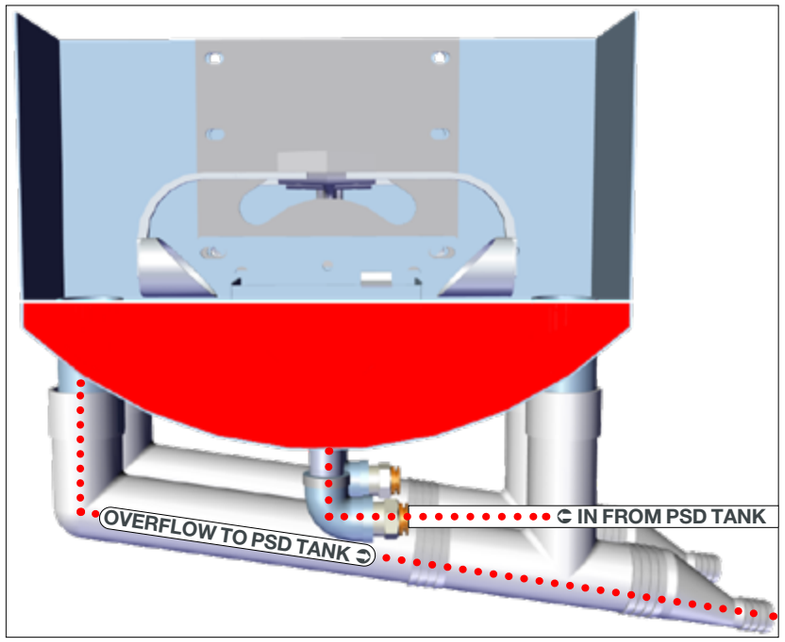
Step 7: Use the PSD Supply Tank Gate Valve to control a constant and even chemical flow to the Metering Tank.

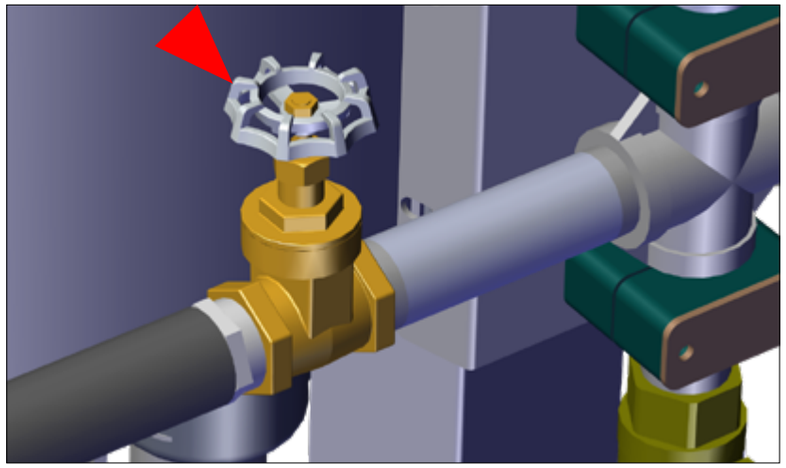
Continued ➲

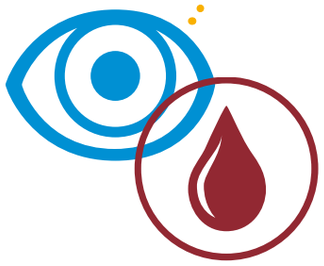
Step 8: Remove the Metering Tank Lid and monitor the Metering Tank chemical level.

- Ensure the proper level is maintained.
- Chemical enters the tank from the bottom up to the top of the Chemical Overflow Tube Outlets (refer to the illustration below).
- There should be a constant overflow back to the PSD Supply Tank.
- Adjust the flow of chemical with the PSD Supply Tank Gate Valve (increase or decrease) to maintain the proper chemical flow:
- Turn the Gate Valve < LEFT to open and increase chemical flow.
- Turn the Gate Valve > RIGHT to close and decrease chemical flow.
- A slow even pulse is desired rather than fast pulsing.
- This helps to prevent cavitation: the formation and collapse of low-pressure air bubbles in liquids (pulsate).







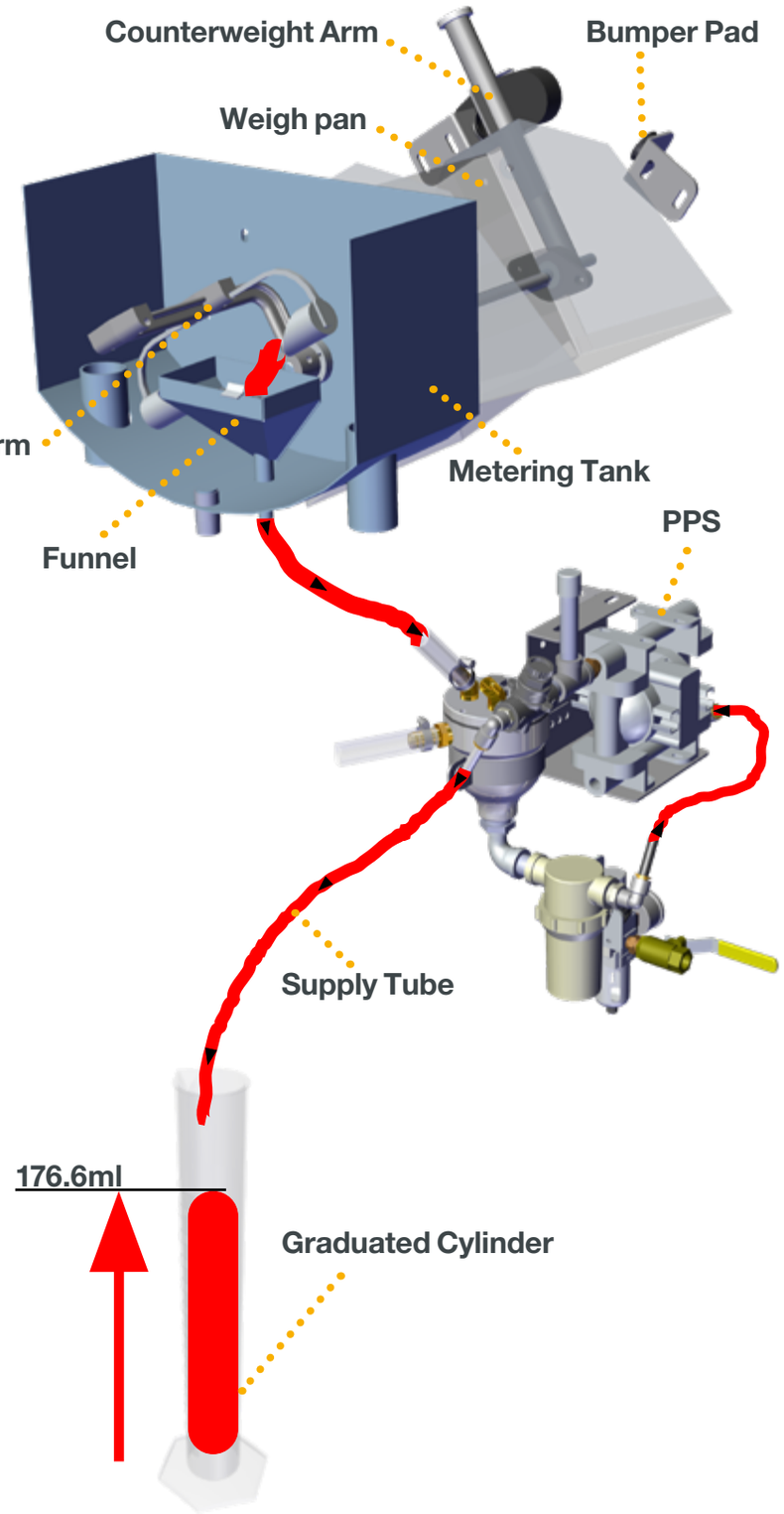


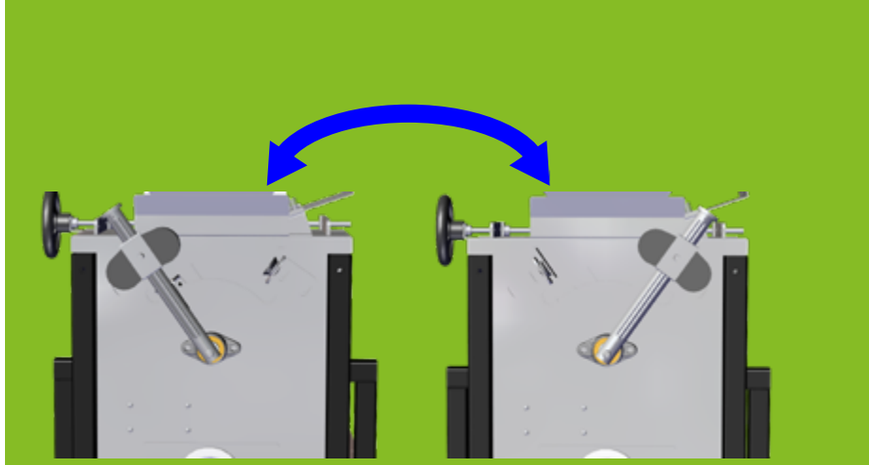
- Once the desired slow pulsating rhythm is achieved, leave the Gate Valve set in position and do not adjust.
- Chemical will overflow the Metering Tank through the Chemical Overflow Tube Outlets and return to the PSD Supply Tank.

Continued ➲

Example: if the required application rate is 10 ounces (296ml) of treatment per hundredweight (cwt) of seed (60lbs in 1 minute), the desired amount of treatment that needs to fill the calibration beaker in 1 minute would be 177.6ml...

Formula:
296ml ÷ 100cwt = 2.96ml x 60lbs = 177.6





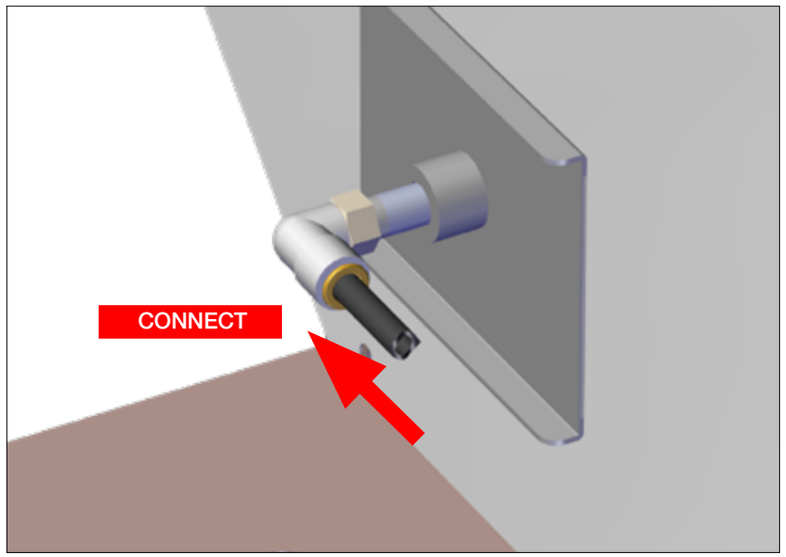
Step 9: REQUIRES TWO PEOPLE!

Capture dispensed chemical in the Graduated Cylinder while manually tripping the Counterweight Arm from side to side at the same rate it tripped during the dry run (refer to page 9): 36 times in one minute.

- Manually tripping the Counterweight Arm (moving it from left to right) also moves the Chemical Cup Arm inside the Metering Tank in tandem and dispenses chemical into the Funnel and on into the Graduated Cylinder through the Supply Tube.
- A complete swing in one direction against the Bumper Pad is one trip.
- Use a watch or stopwatch to time the simulated liquid calibration for one minute.
- After one minute stop tripping the Counterweight Arm.
- Record the amount of chemical (ml) dispensed into the Graduated Cylinder in one minute.
- Empty the Graduated Cylinder contents back into the PSD Supply Tank for reuse.
- May need to repeat the above process several times to achieve the output target rate.

Continued ➲

It is highly recommended that calibration checks be made periodically throughout the day, to help ensure proper application rates are achieved.



Step 10: When finished calibrating, insert the Supply Tube into the Spray Nozzle Elbow Fitting on the Treating Head.

This completes the Liquid Calibration procedure.

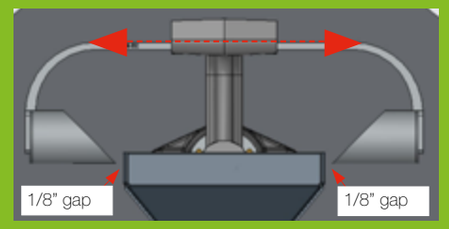
Example: assume the Counterweight Arm tripped 12 times and dispensed 240cc's of liquid treatment in the cylinder (12 trips = 240cc).
The desired calculation indicates:

Formula: 12 x 19.74cc = 236.9cc

This results in 3.1cc over the desired application rate.

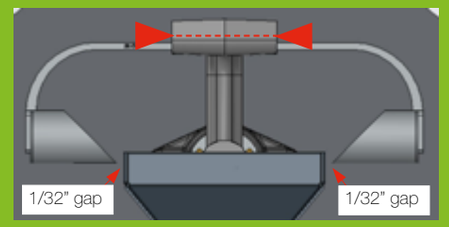
Decrease Liquid Output

Loosen the two screws on the Cup Arm and move the Chemical Cups further away from the Funnel and increase the gap to 1/8".
Tighten screws.



Increase Liquid Output

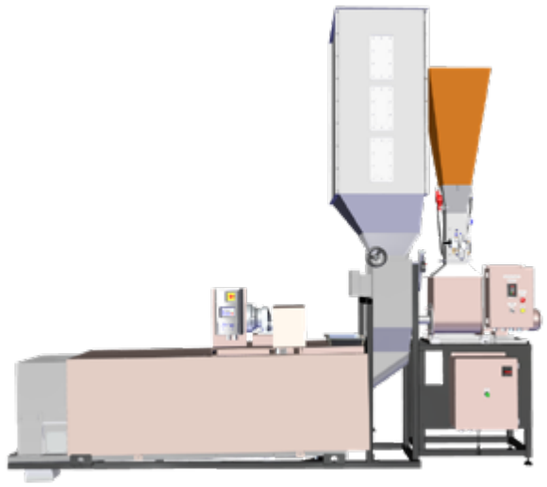
Loosen the two screws on the Cup Arm and move the Chemical Cups closer to the Funnel or change to another Cup size.
Tighten screws.
Repeat the calibration procedure until desired chemical output is achieved.



POWDER CALIBRATION

Warning! Do NOT run seed or chemical at this time!

Warning! Exercise extreme caution when working with chemicals! Wear proper PPE >>

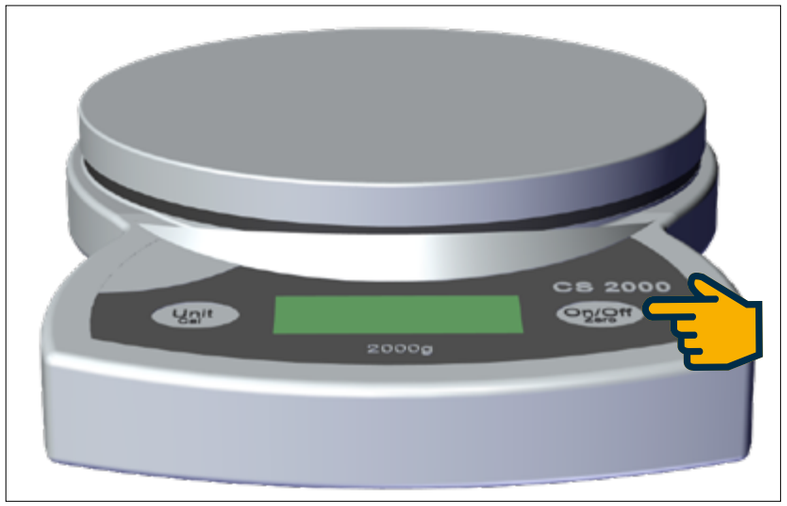


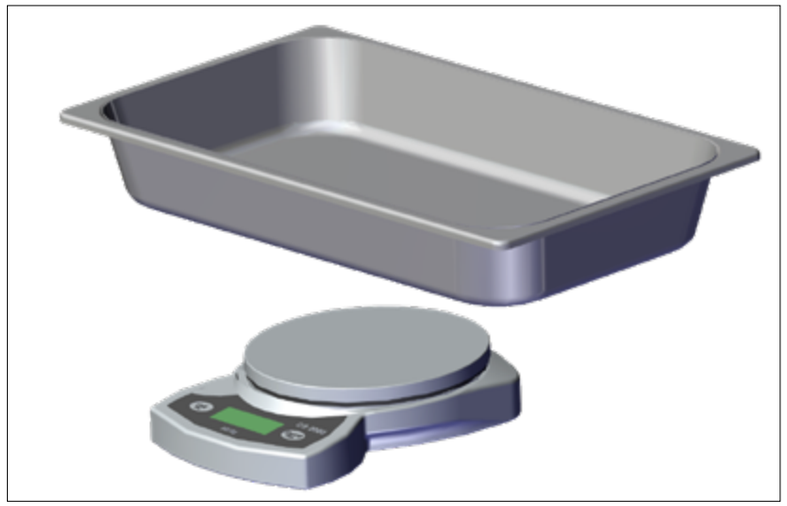
Dry Delivery System (Pyramid Box Style)

Step 1: Determine the desired operating seed flow rate.

- Refer to Treating Capacities listed on page 4.

Example: Peanuts 400 lbs/min.





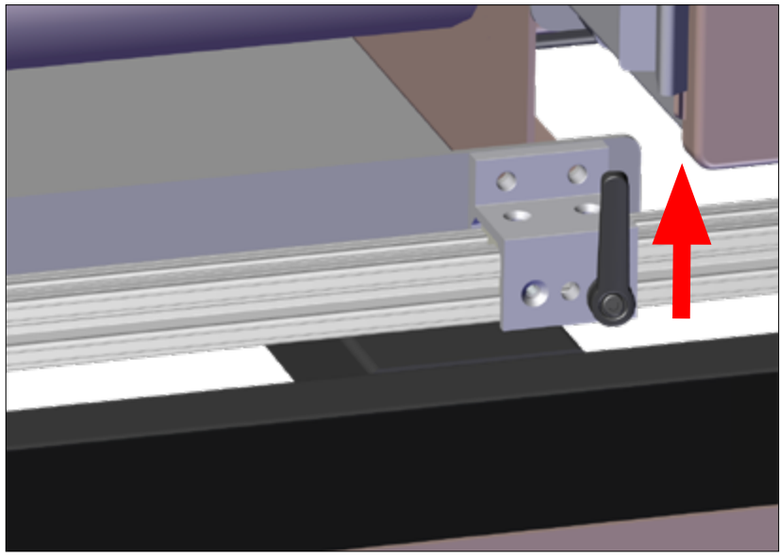
Step 2: Plug in the Portable Bench Scale Power Cord (115V AC) to an external power source.

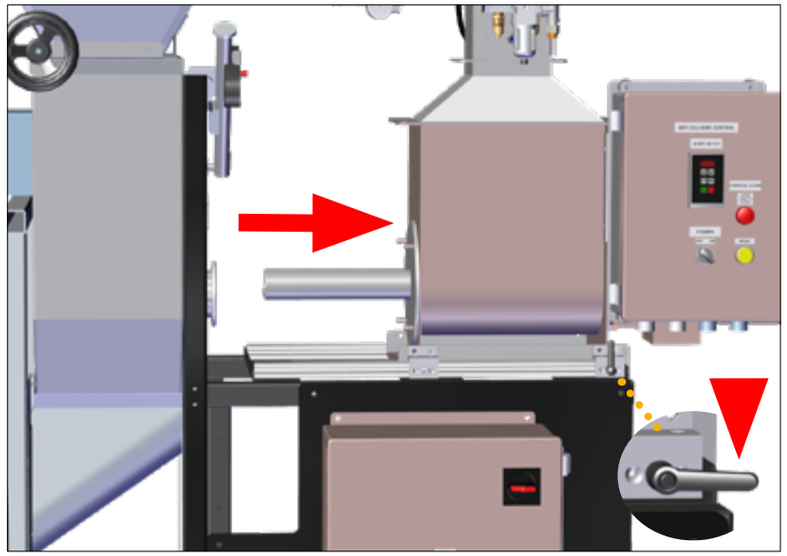
- Turn **ON** (touch) the Portable Scale Power **On/Off** button.
- Set the empty collection tray on the Scale and touch the **On/Off ZERO** button to zero out the Scale.
- The digital readout should display **0.00** value.
- Remove the collection tray from the Scale.

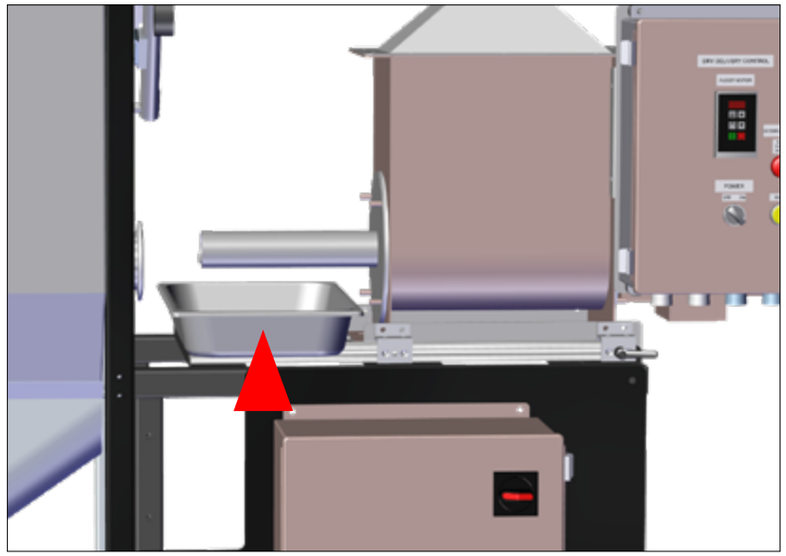
Continued ➲

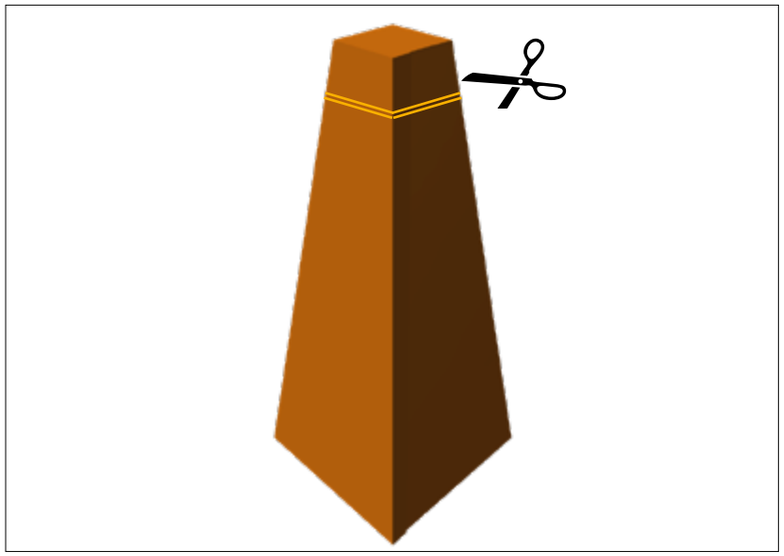
Step 3: Release the Dry Delivery System Slide Mechanism Lever (UP position).

- Slide the Dry Delivery System back out of the Treating Head Assembly on the Slide Rails until it stops at the end of the Slide Rails (Auger Tube exposed).
- Slide the Mechanism Lever down to lock the Dry Delivery System in place.
- Place the Collection Tray under the exposed end of the Auger Tube, as shown.







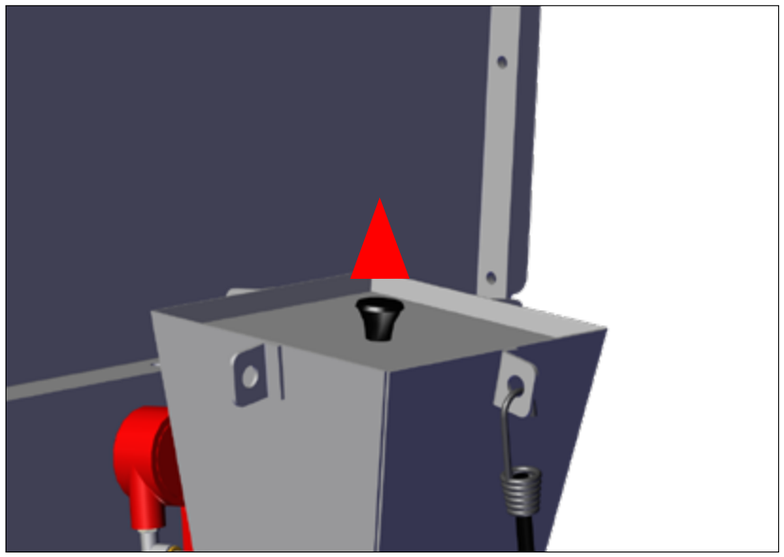


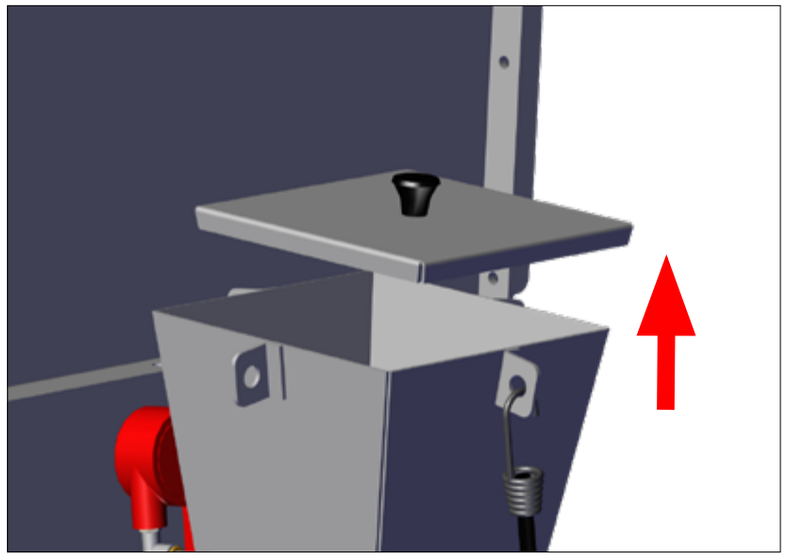
Step 4: Use a utility knife to safely cut the 2.2 cu ft box wrap, as shown.

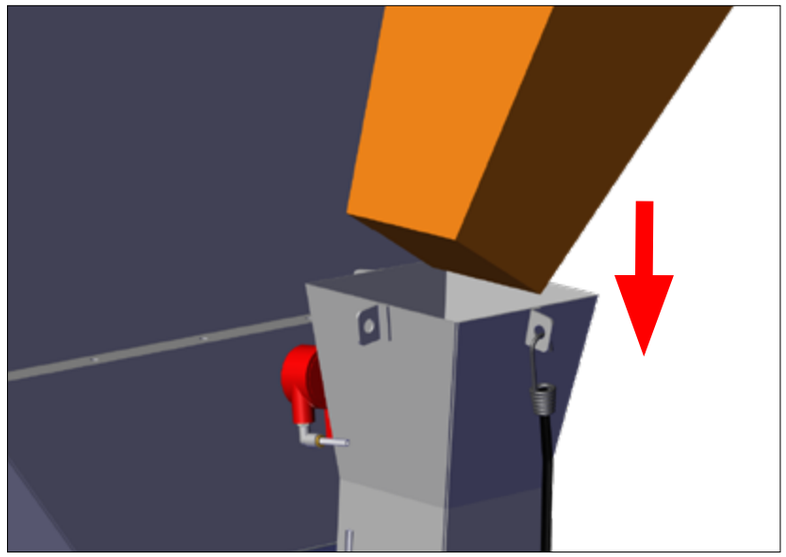
Continued ➲

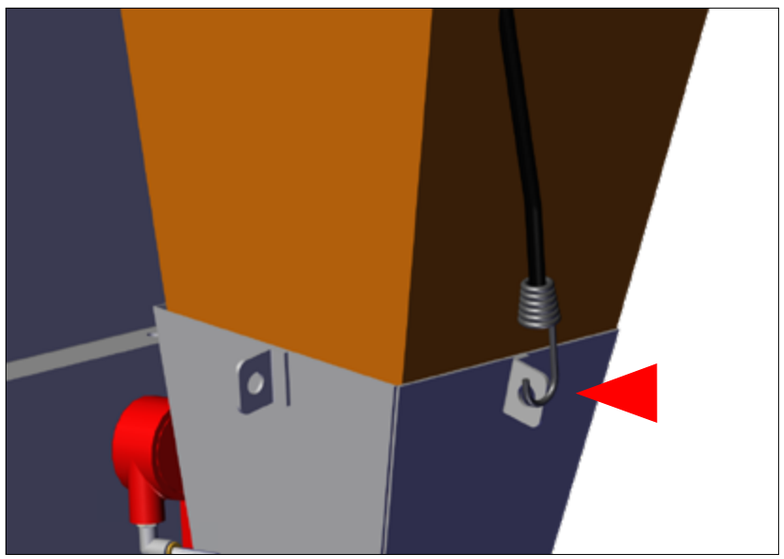
Step 5: Remove the Dust Cover from the Hopper.

- Insert the pyramid box into the hopper, as shown.



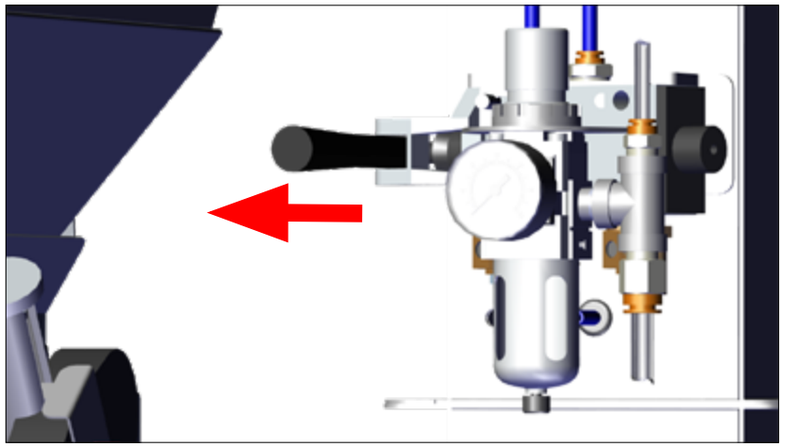


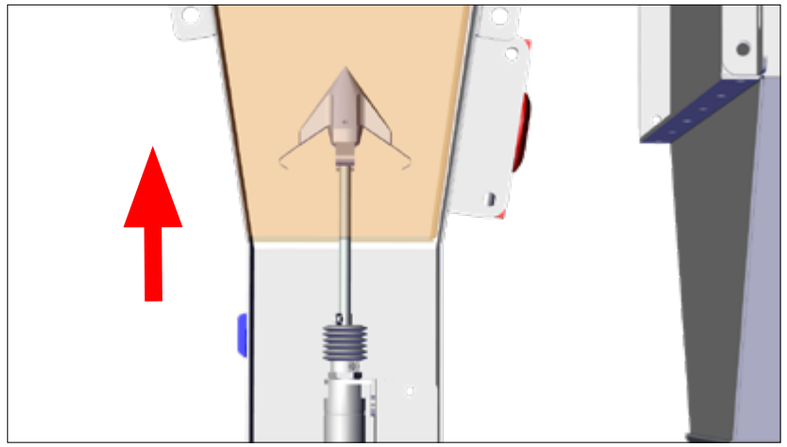




Step 6: Fasten the Box in place with the provided Bungee Cord, as shown.

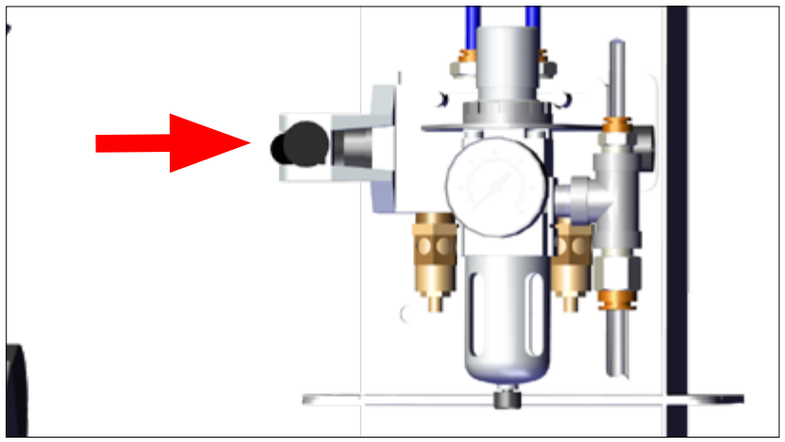
Continued ➲

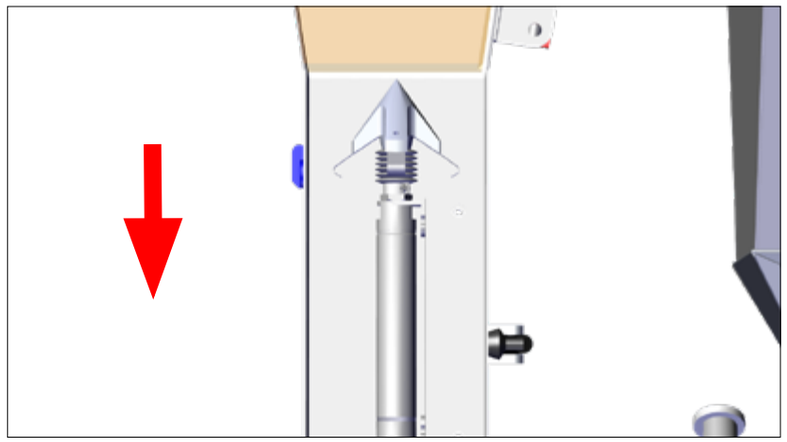




Step 7: Pull the Plunger Lever BACK (out) to engage the Plunger.

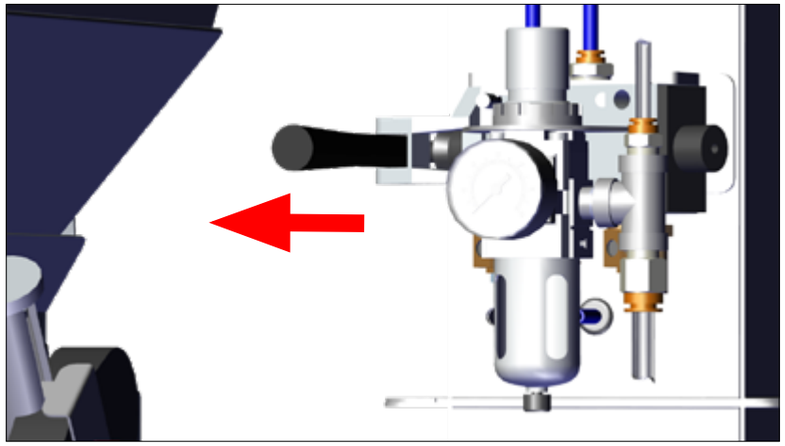
- This action pushes the internal Plunger in puncturing the foil wrapping on the end of the box.

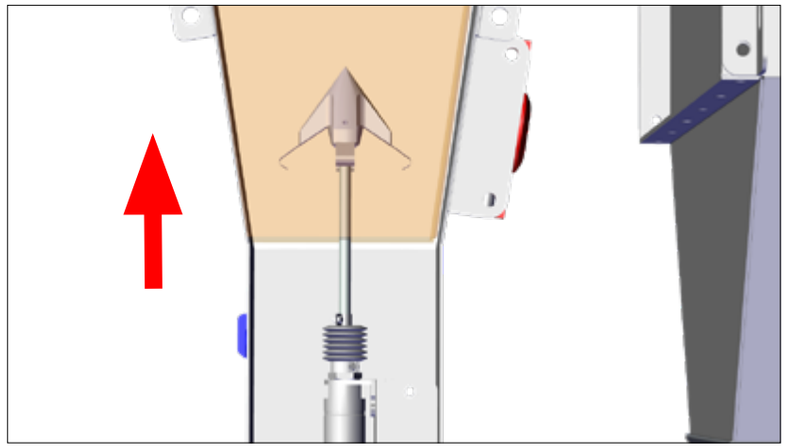




Step 8: Push the Plunger Lever IN, as shown.

- This action pulls the Plunger down out of the end of the Box.

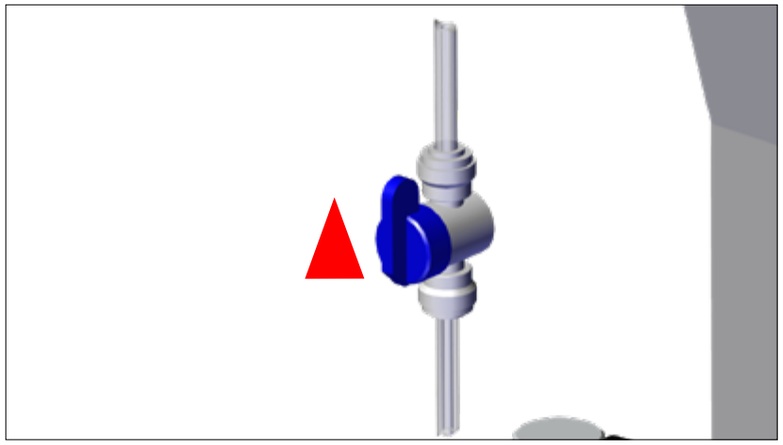




Step 9: Pull the Plunger Lever BACK (out) again. Leave in the OUT position, as shown.

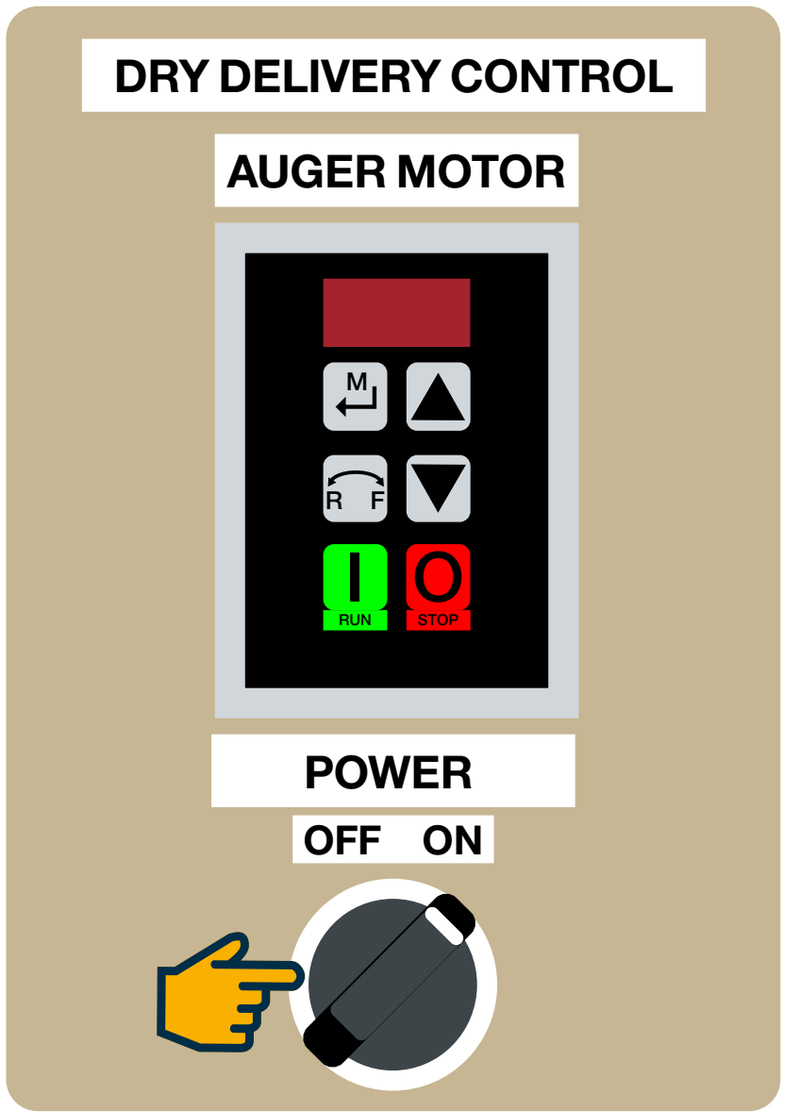
- This action pushes the internal Plunger into the end of the box to allow powder product to flow out.
- Leave in the **OUT** position.

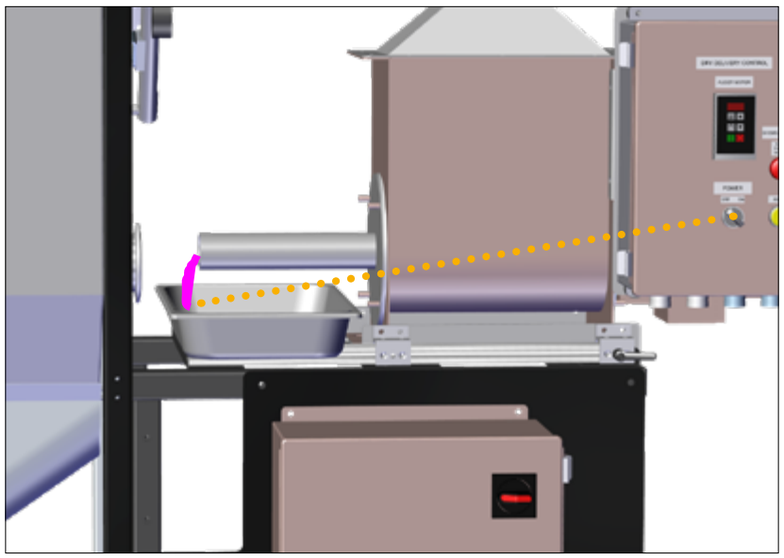
Continued ➲



Step 10: Turn Powder Feeder Vibrator Valve UP (open), as shown.

- This provides air flow to the Powder Vibrator.

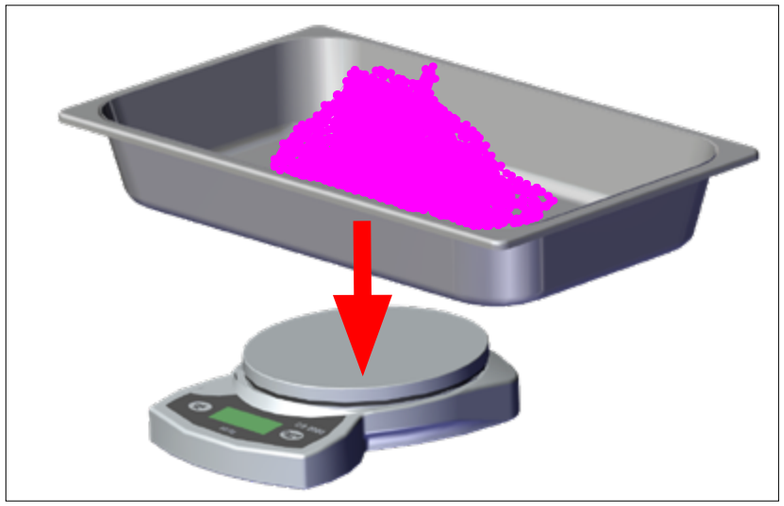


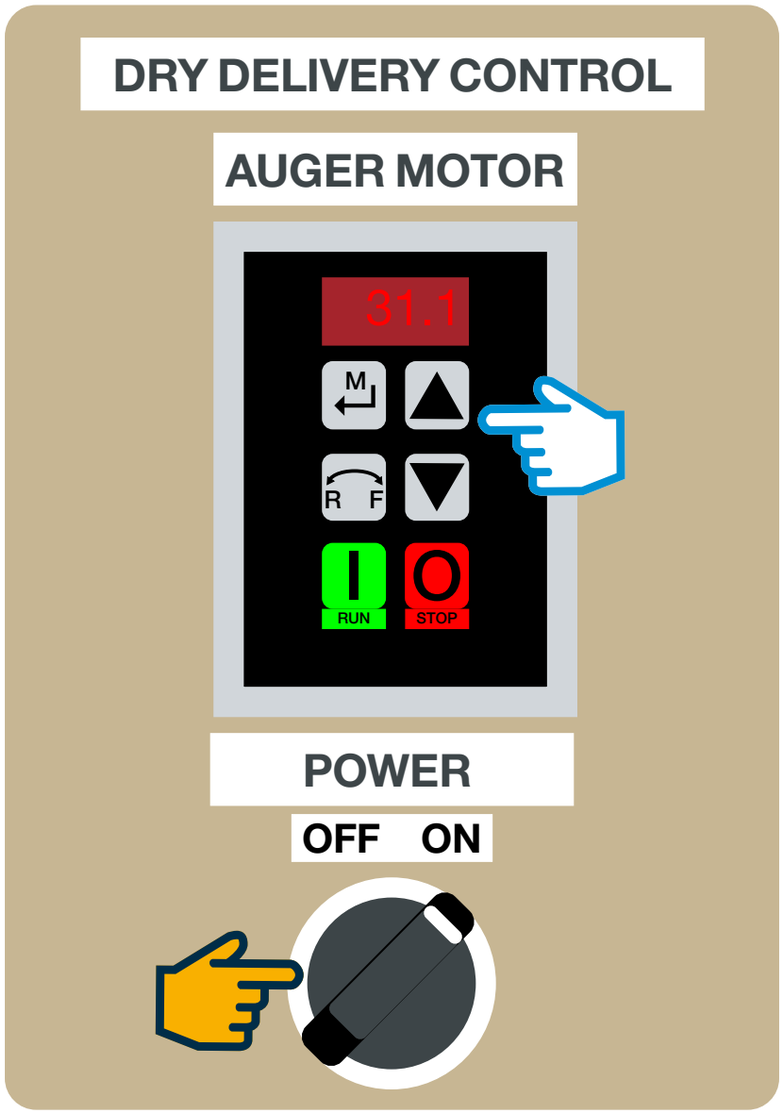


Step 11: Ensure the Dry Delivery System 115V AC Power Cord is connected to an external power source.

- Turn **ON** the Power Switch for one minute.
- Powder will dispense into the Collection Tray, as shown left.

Continued ➲





Step 12: Set the filled collection tray on the Scale and note the digital value displayed.

- If the total amount does not equal the rate per minute given on the product label...
- Press the **UP** or **DOWN** arrow to **INCREASE** or **DECREASE** the speed of the auger.
- The faster the auger runs, the more product output, the slower the auger runs, the less product output.
- Empty the collection tray contents back into the box for reuse.

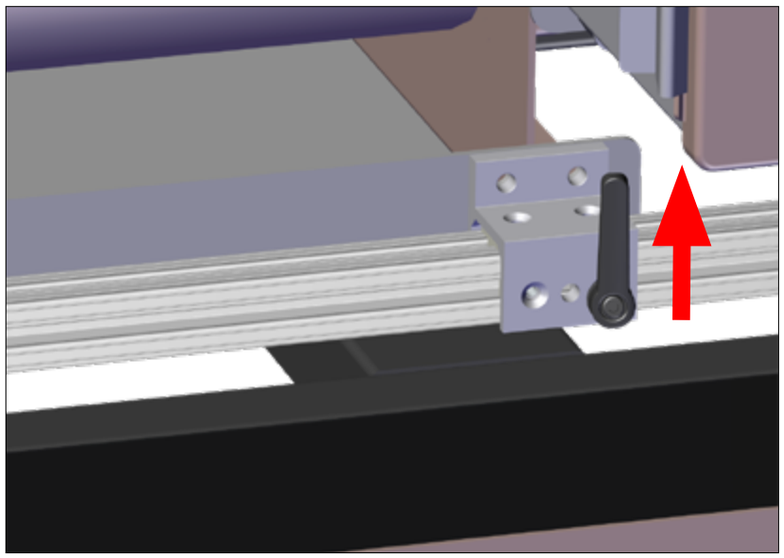
Example: 400 lbs/min. intended amount of peanuts to be treated.

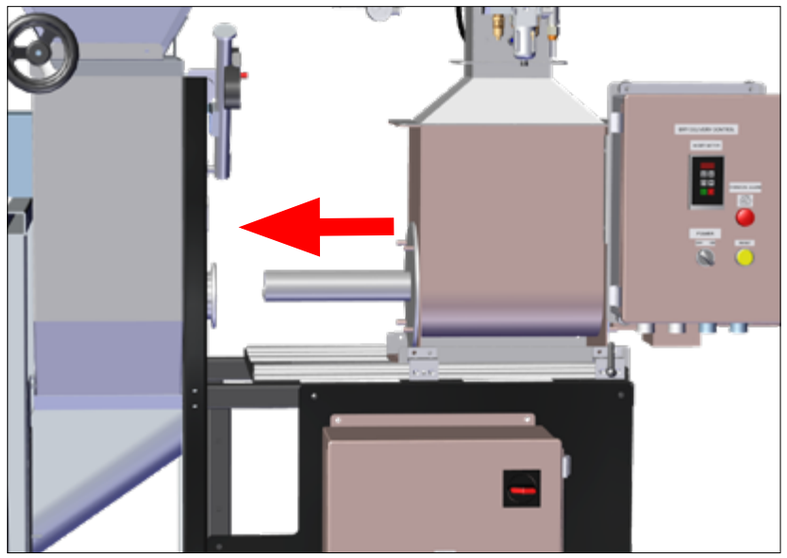
- Total ounces powder = 200oz.
- Set the Auger Motor speed to 31.1rpm.
- May need to repeat the above process several times to achieve the output target rate.

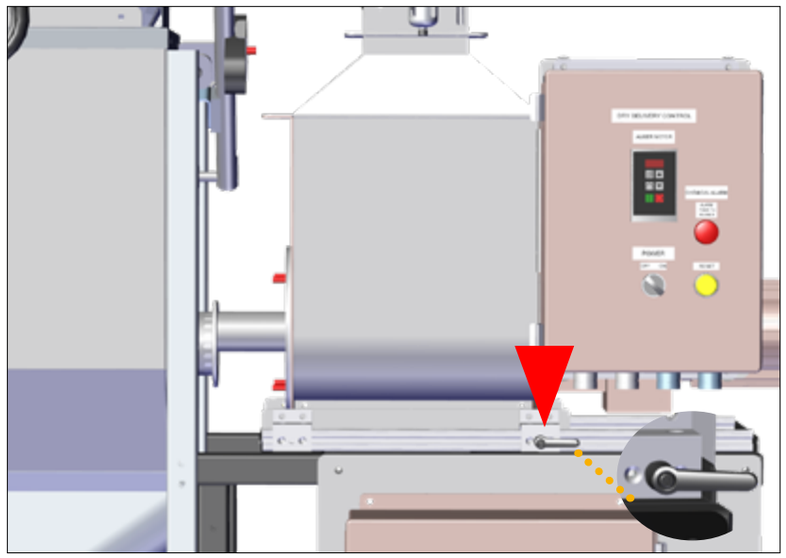
Continued ➲

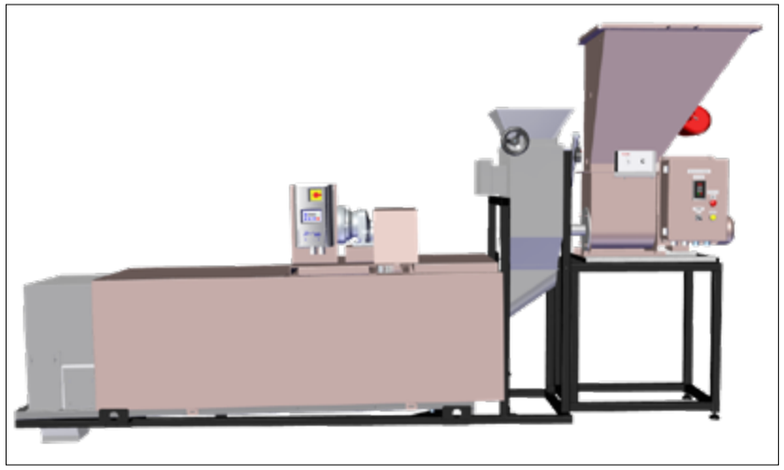
Step 13: Once the desired rate is achieved, release the Slide Mechanism Lever (up) and slide the Dry Delivery System back into the Treating Head Assembly on the Slide Rails.

- Slide the Mechanism Lever down to lock the Dry Delivery System in place.







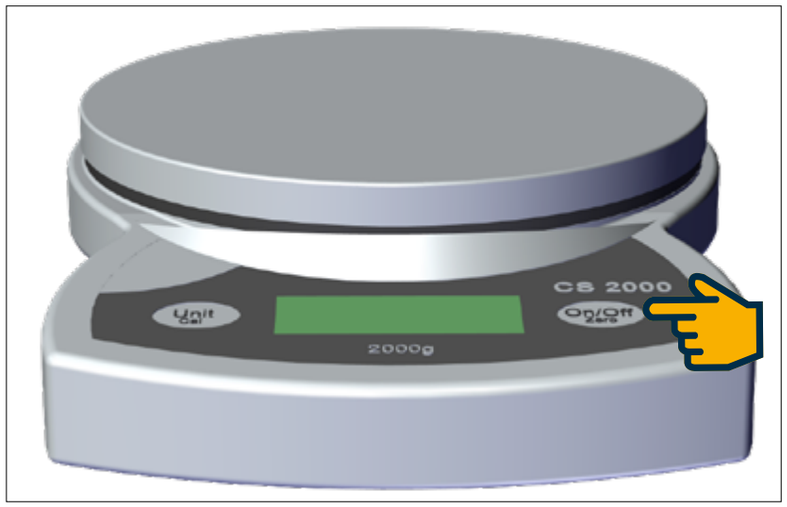


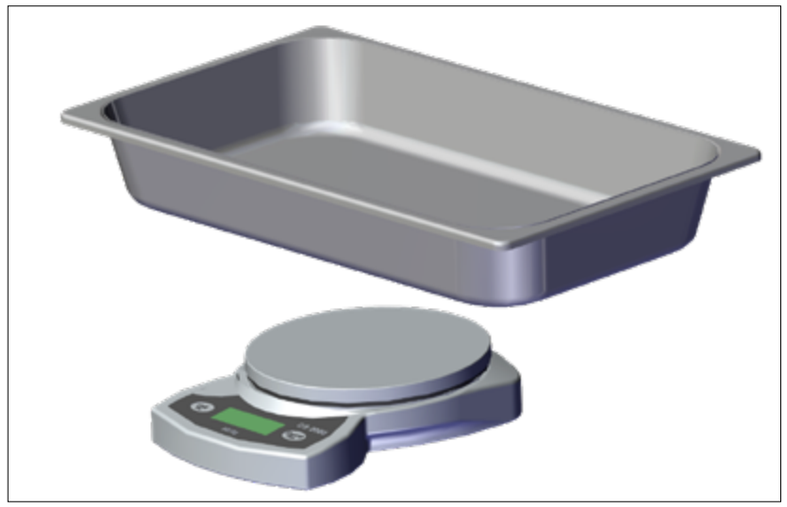
New Style AM/PD (powder only)

Step 1: Determine the desired operating seed flow rate.

- Refer to Treating Capacities listed on page 4.

Example: Peanuts 400 lbs/min.





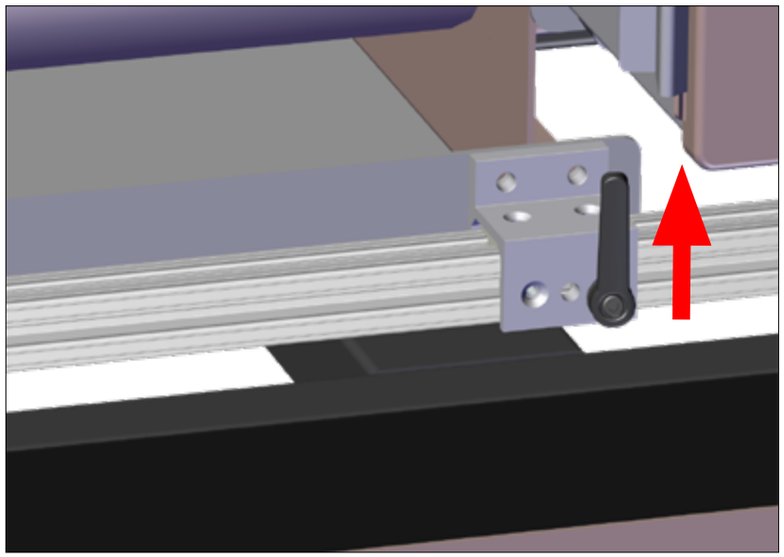
Step 2: Plug in the Portable Bench Scale Power Cord (115V AC) to an external power source.

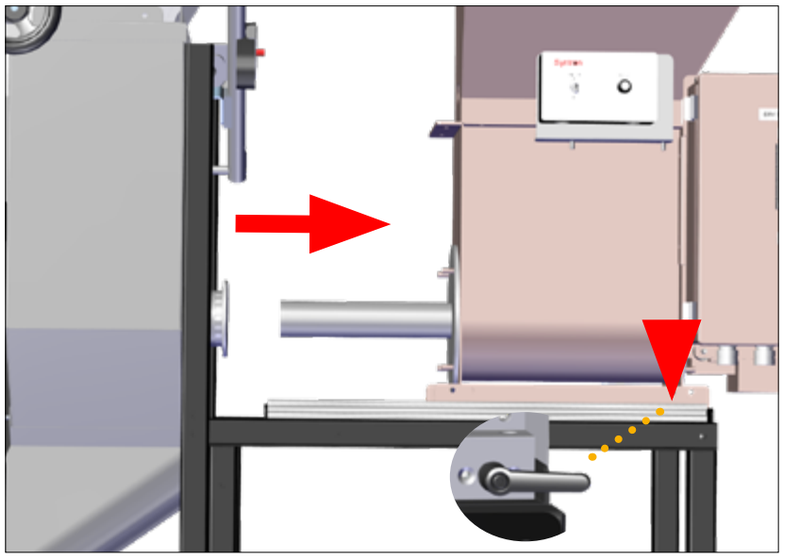
- Turn **ON** (touch) the Portable Scale Power **On/Off** button.
- Set the empty collection tray on the Scale and touch the **On/Off ZERO** button to zero out the Scale.
- The digital readout should display **0.00** value.
- Remove the collection tray from the Scale.

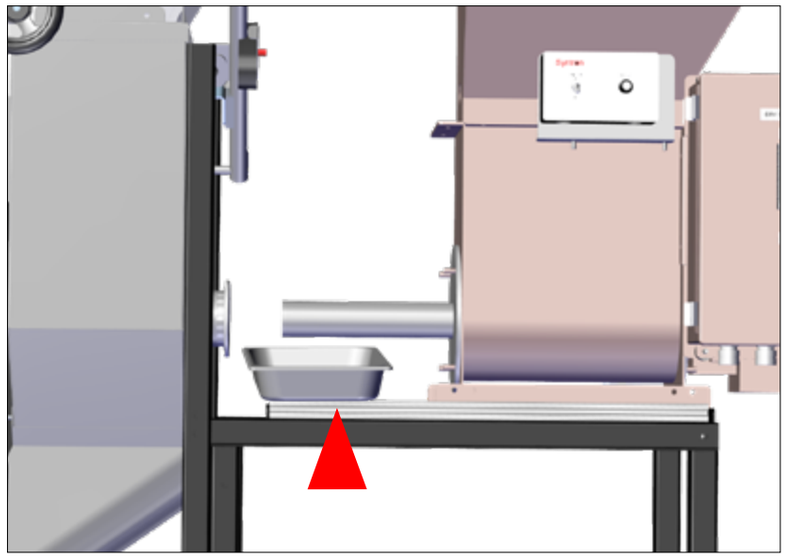
Continued ➲

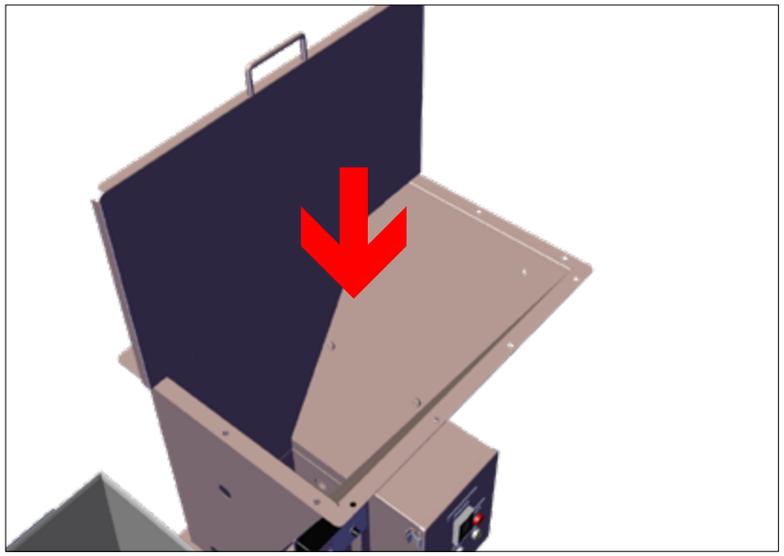
Step 3: Release the Dry Delivery System Slide Mechanism Lever (UP position).

- Slide the Dry Delivery System back out of the Treating Head Assembly on the Slide Rails until it stops at the end of the Slide Rails (Auger Tube exposed).
- Slide the Mechanism Lever down to lock the Dry Delivery System in place.
- Place the Collection Tray under the exposed end of the Auger Tube, as shown.

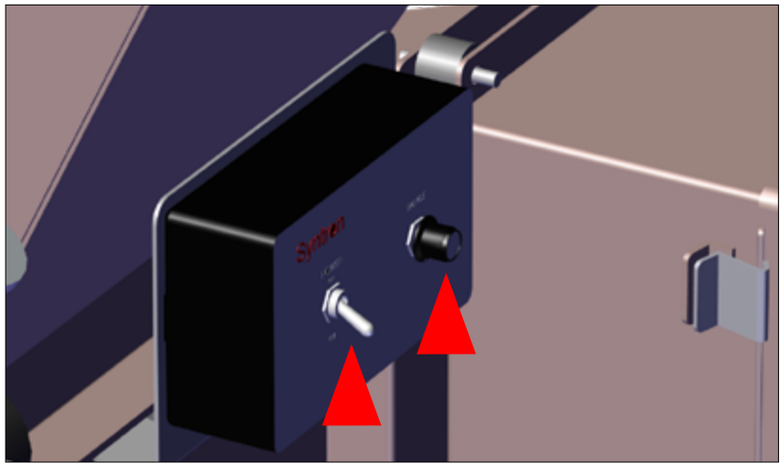






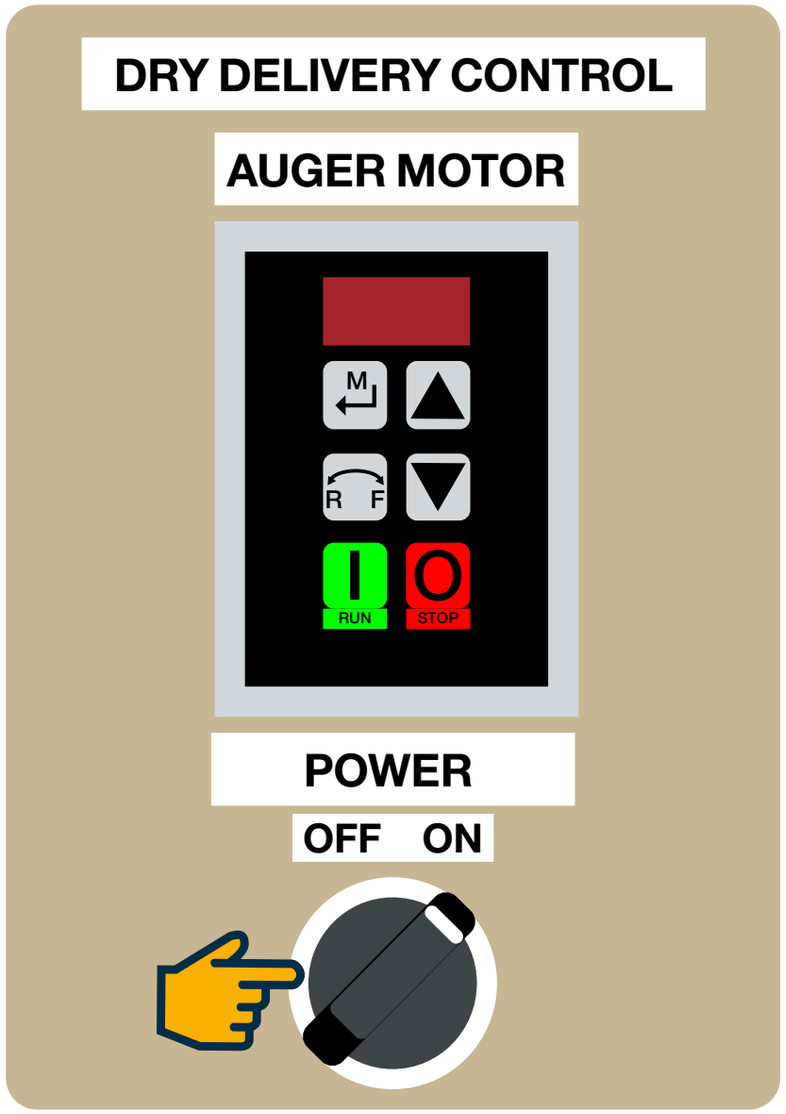


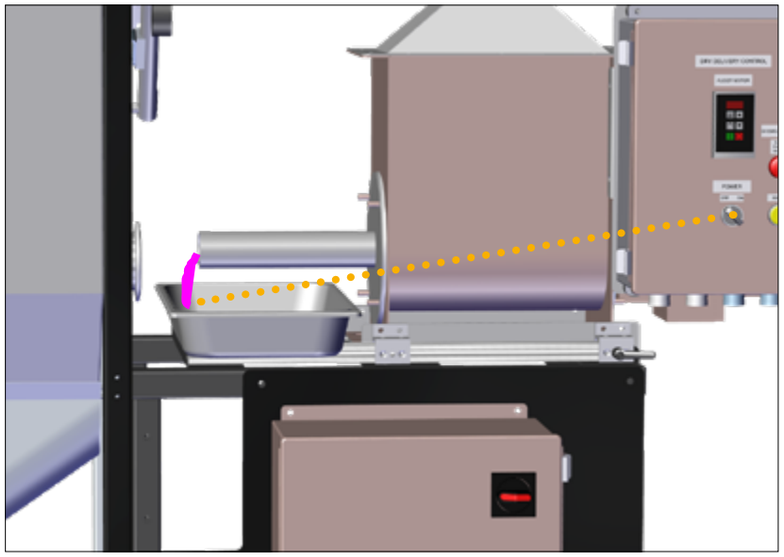
Step 4: Open the Powder Hopper Lid and add an adequate amount of powder in the Hopper (capacity: 3 cu ft).



Step 5: Turn **ON** the Vibrator Power Switch.

- Use the Range Dial to adjust the vibration intensity.
- Hint: a very low intensity prevents powder from packing down on the Auger and allows an even flow of product.

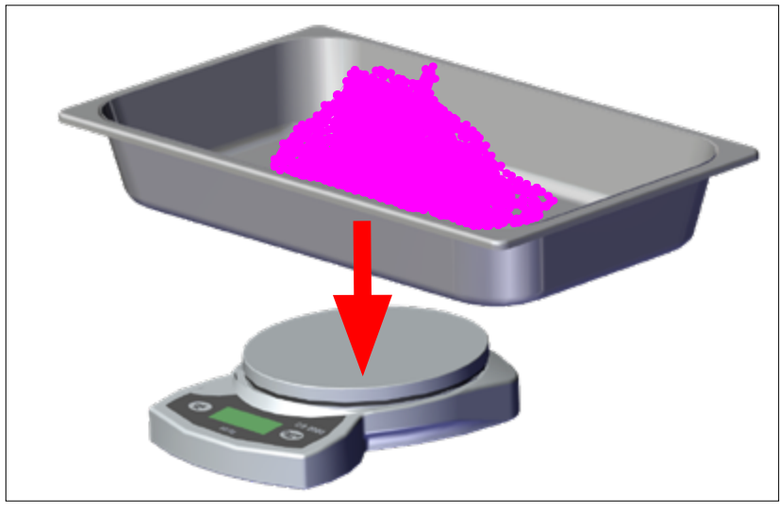


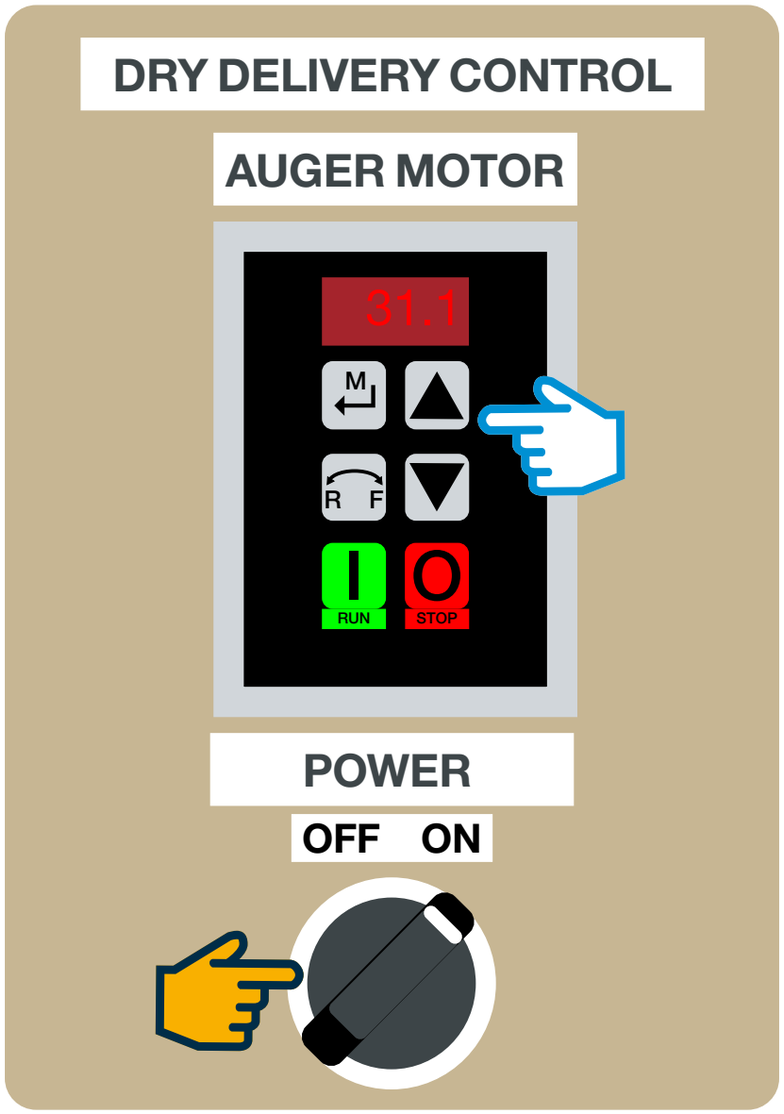


Step 6: Ensure the Dry Delivery System 115V AC Power Cord is connected to an external power source.

- Turn **ON** the Power Switch for one minute.
- Powder will dispense into the Collection Tray, as shown left.

Continued ➲





Step 7: Set the filled collection tray on the Scale and note the digital value displayed.

- If the total amount does not equal the rate per minute given on the product label...
- Press the **UP** or **DOWN** arrow to **INCREASE** or **DECREASE** the speed of the auger.
- The faster the auger runs, the more product output, the slower the auger runs, the less product output.
- Empty the collection tray contents back into the box for reuse.

Example: 400 lbs/min. intended amount of peanuts to be treated.

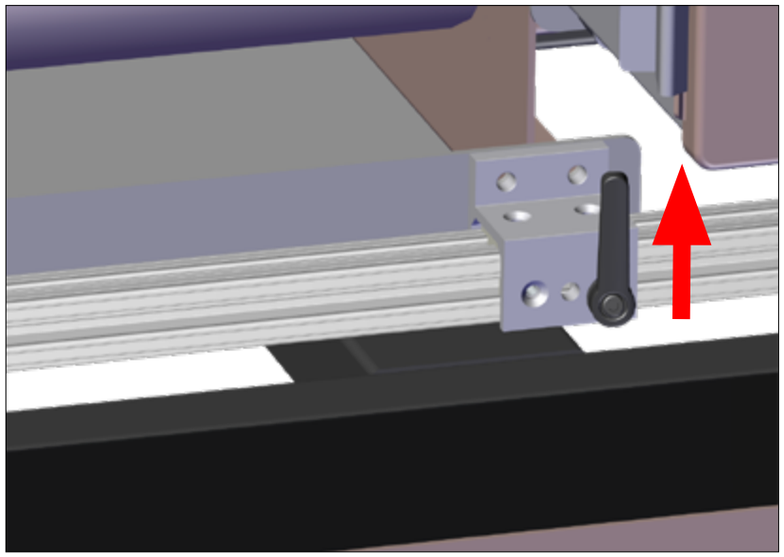
- Total ounces powder = 200oz.
- Set the Auger Motor speed to 31.1rpm.
- May need to repeat the above process several times to achieve the output target rate.

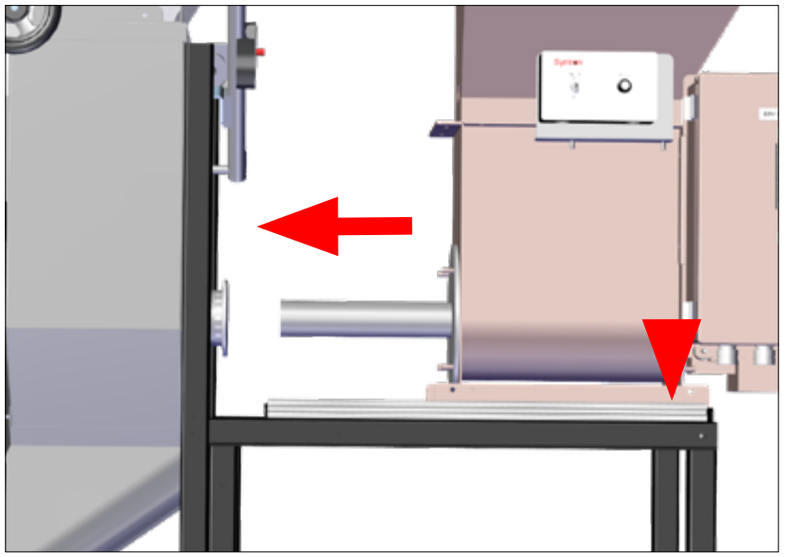
Continued ➲

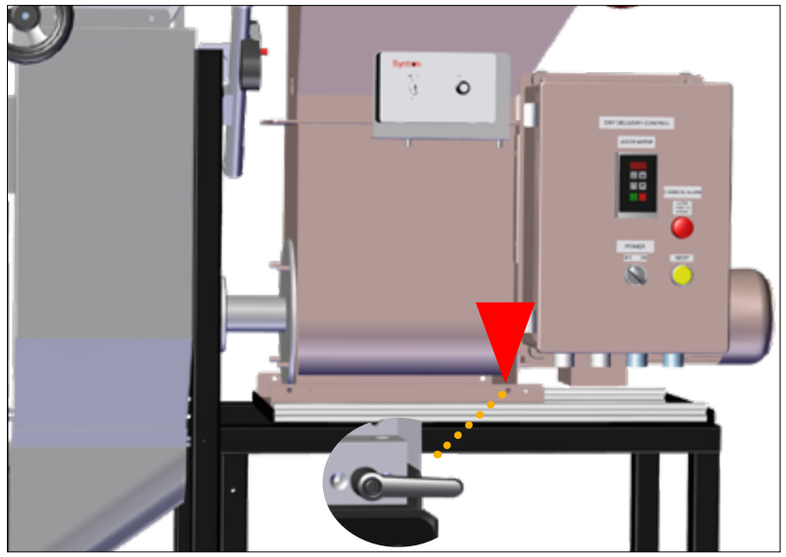
Step 8: Once the desired rate is achieved, release the Slide Mechanism Lever (up) and slide the Dry Delivery System back into the Treating Head Assembly on the Slide Rails.

- Slide the Mechanism Lever down to lock the Dry Delivery System in place.

This completes the Powder Calibration procedure.



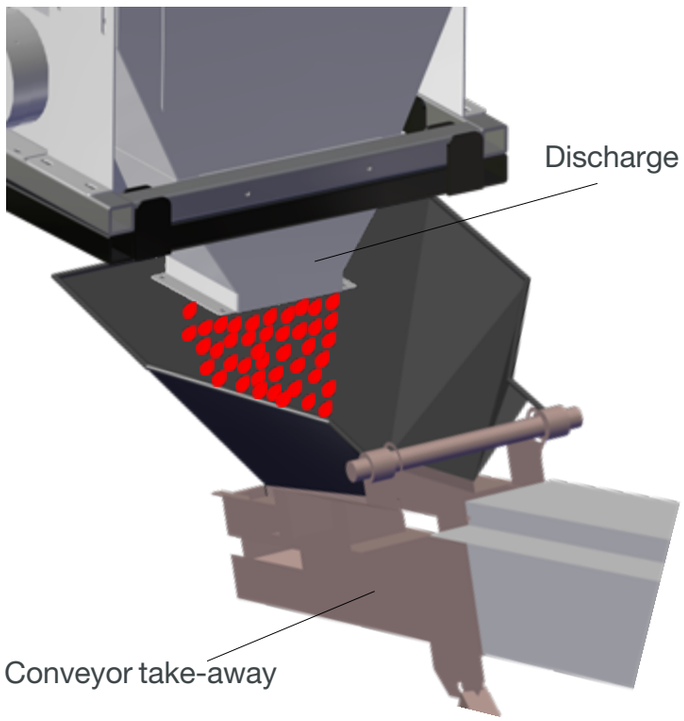




RUN SEQUENCE

Warning! Exercise extreme caution when working with treated seed! Wear proper PPE >>

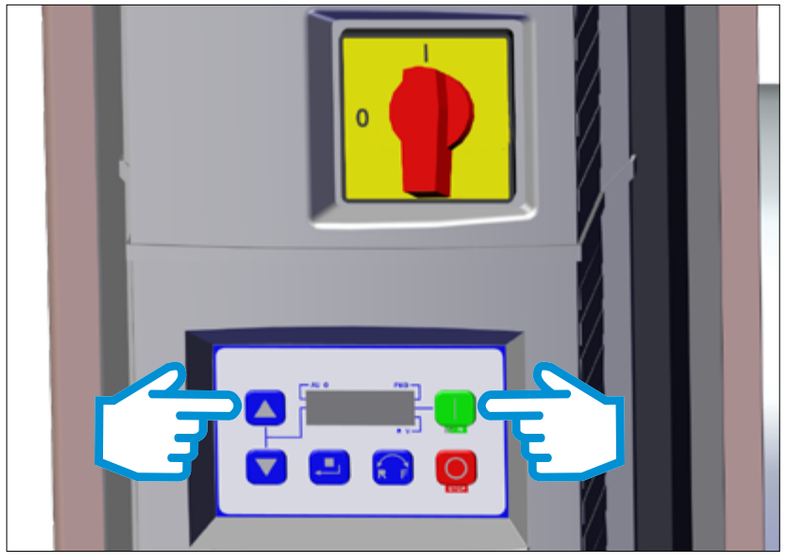
Tip: Always treat clean seed! This can also affect seed flow rate.



Treat mode

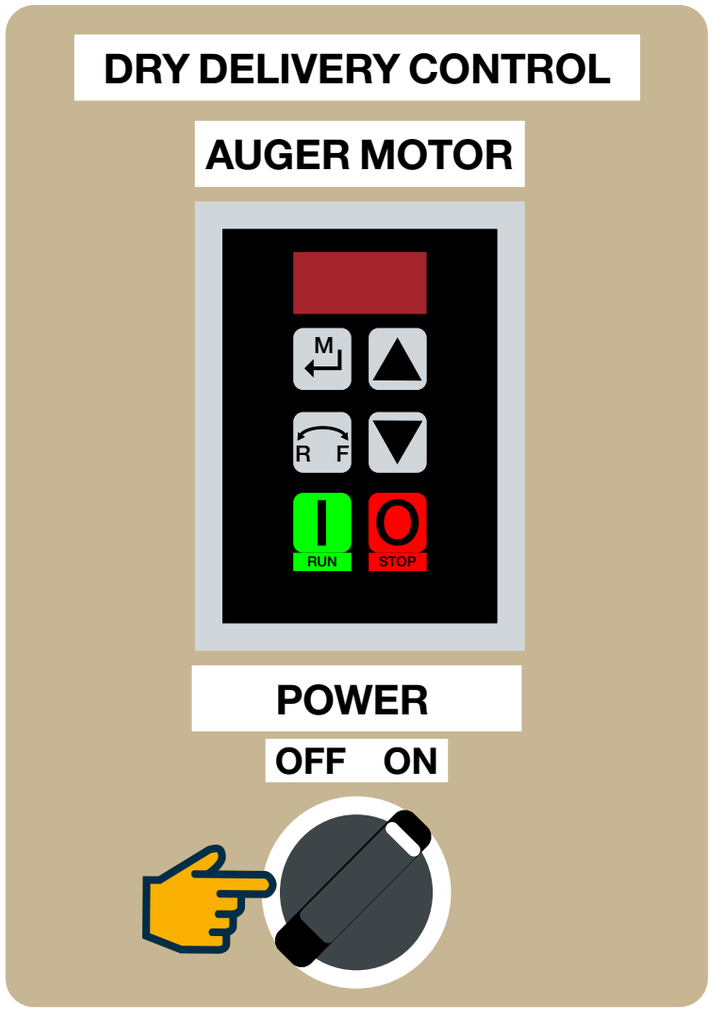
Step 1: When ready to begin treating seed, provide a take-away system (conveyor) underneath the discharge end of the treater.

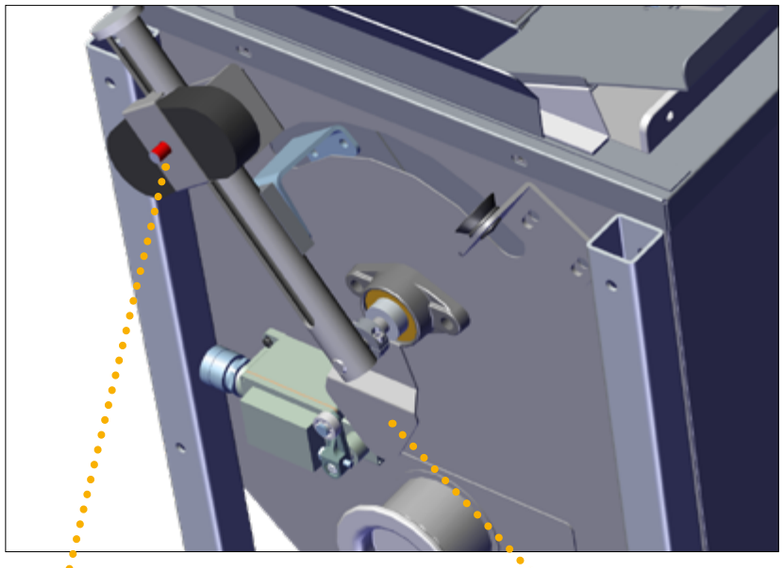
Continued ➲



Step 2: Power ON the Drum Motor Inverter: turn the red power switch to the UP position).

- Touch the green Run button.
- Drum begins rotating counterclockwise (when looking at it from the discharge end ↺).
- Touch the blue UP or DOWN arrows to increase or decrease drum speed.
- Faster drum speed moves seed along quicker, slow drum speed allows seed to dwell inside the drum longer.

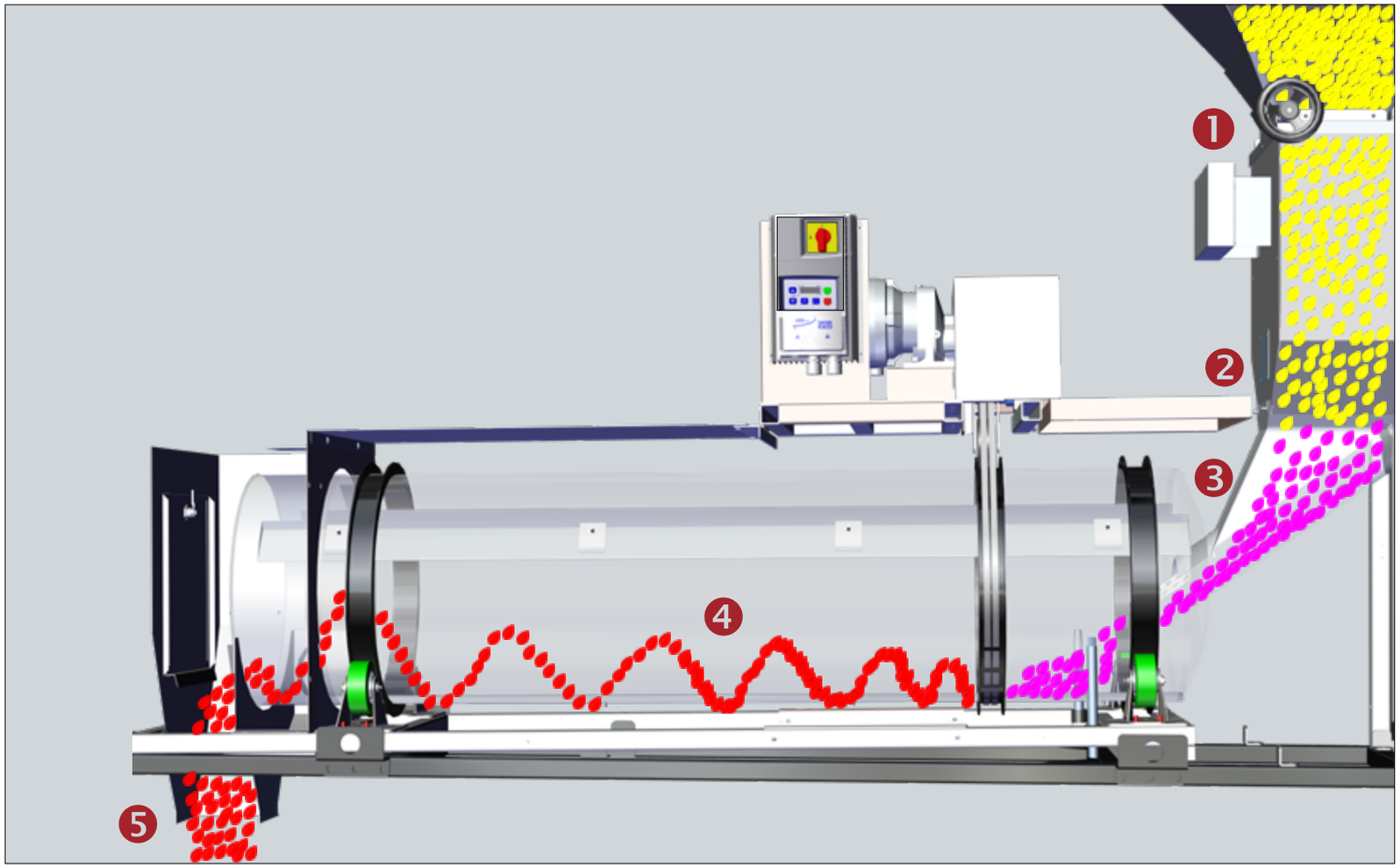




Step 3: Ensure the Dry Delivery System 115V AC Power Cord is connected to an external power source.

- Turn **ON** the Power Switch.
- Powder begins dispensing into the Treater Head once the Ativation Switch trips each time the Counterweight Arm trips.

Continued ➲

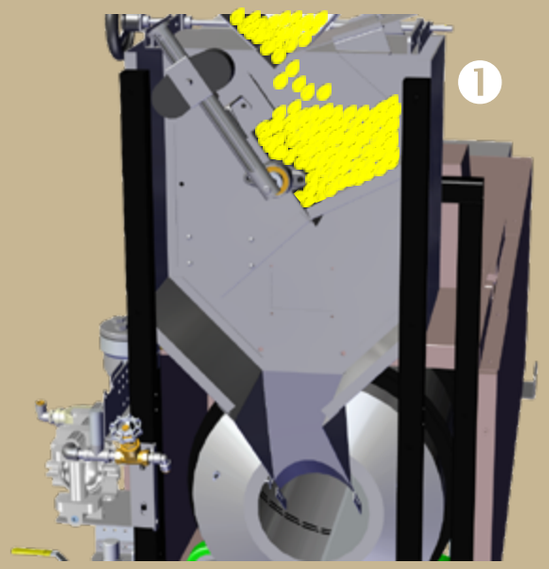


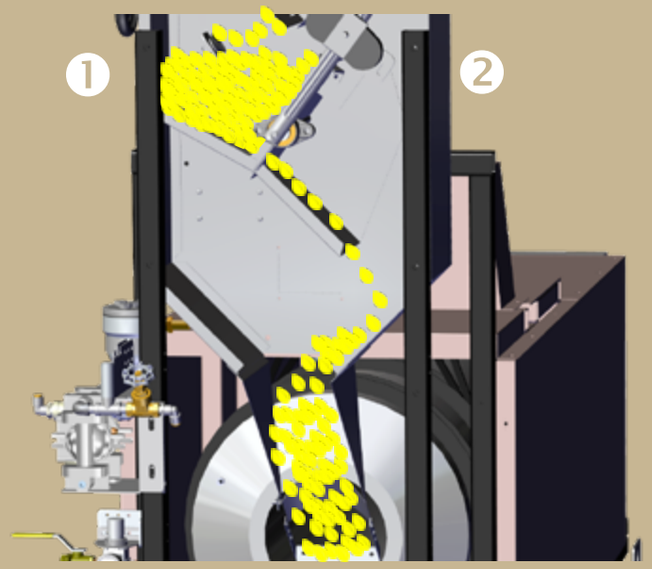
Step 4: As soon as seed enters the Inlet Hopper...

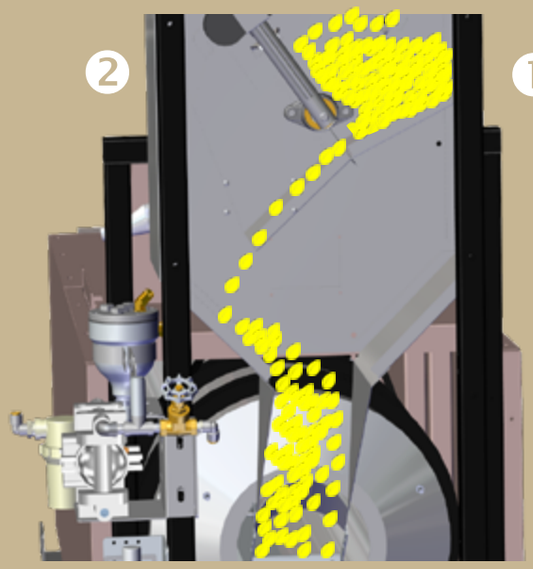
1. Seed empties from the Inlet Hopper and fills one side of the Weight pan inside the Treater Head...
2. When one side of the Weight pan is full, it dumps seed into the Transition and the Counterweight trips the Chemical Arm and empties chemical into the funnel...
3. While seed passes the Spray Nozzles on the Transition, it applies chemical to seed...
4. Treated seed enters into the Drum and mixes with chemical...
5. Then treated seed discharges out of the Drum.
6. If powder is used, each time the Counterweight trips, powder is dispensed into the Treating Head and onto the seed, then into the Mixing Drum and out the Discharge.

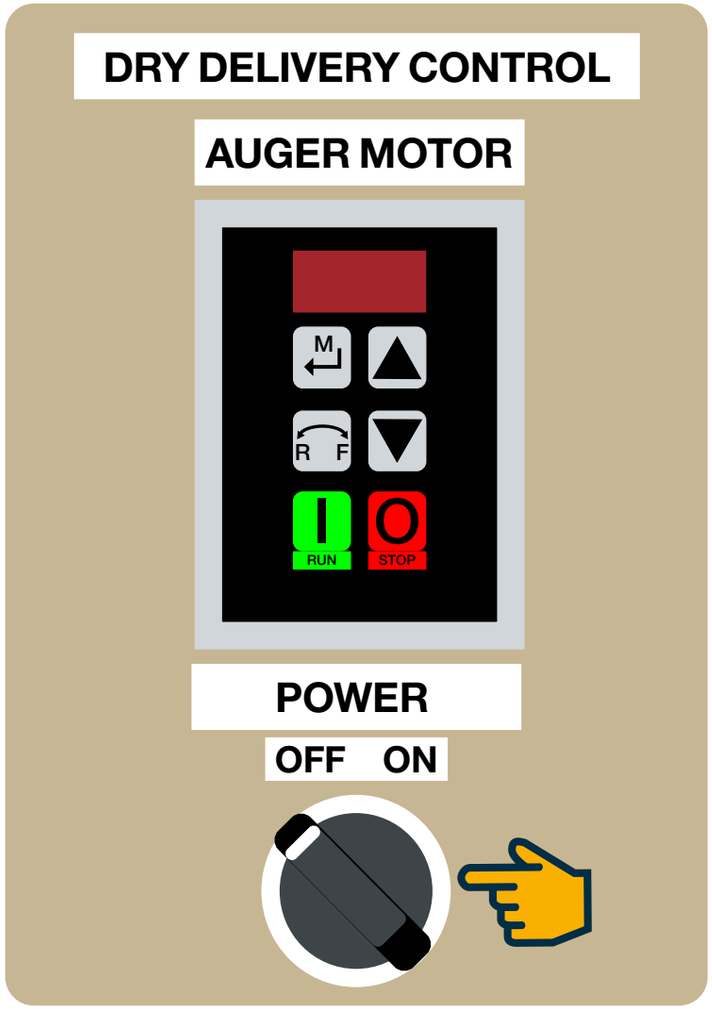
The treating process (Weighing, Dumping, Treating, Mixing, Discharging) repeats itself until there is no more seed in the Inlet Hopper and the Counterweight stops tripping.

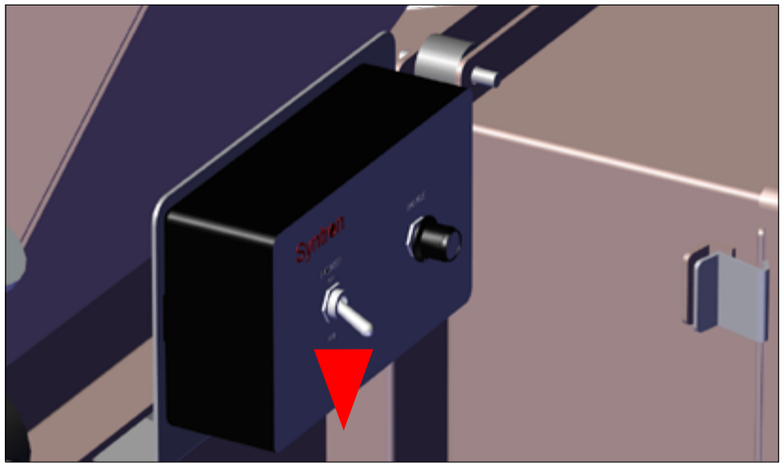
Continued ➲



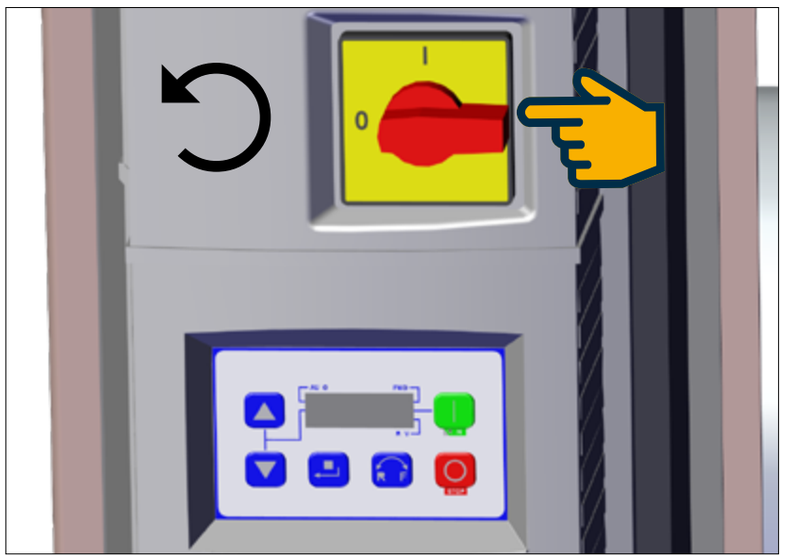








Step 5: Turn **OFF** the Powder Power Switch and the Vibrator Power Switch.



Step 6: **When finished treating seed, power OFF the Drum Motor Inverter: turn the red power switch to the LEFT position).**

This completes the Run Sequence procedure for Seed Treatment.

SLURRY MIX GUIDE

Frequently used conversions:

Liquid Measure

1 cup = 8 ounces
1 pint = 16 ounces
1 quart = 32 ounces
1 gallon = 128 ounces
1 ounce = 29.6 Milliliter (cubic centimeter)

Dry Measure

1 pound = 16 ounces
1 ton = 2,000 pounds
1 metric ton = 2,204 pounds

Recommended sequence for adding products to produce a slurry.

Step 1: Start with approximately 2/3 to 3/4 of the total water volume.

Step 2: Add dyes and/or colorants.

Step 3: Add water soluble products.

Step 4: Add wettable powders.

Step 5: Add any water-dispersible granular products.

Step 6: Add water based flow-ables.

Step 7: Add emulsified concentrates or concentrated emulsion products.

Step 8: Add oil based flow-ables.

Step 9: Polymeric and/or coatings additives are added last (special rules may apply).

Step 10: Use the water balance for container rinsing.

Note: The 8 & 8 Rule says 8 ounces of powder will displace 8 fluid ounces of water.

KEY: AI = Active Ingredient, bu. = Bushel, cc = Cubic Centimeter, cwt = 100 pounds, oz = Ounces

A To convert rate per hundredweight to rate-per-bushel: x the rate per hundredweight by the bushel weight.
Example: 4 oz per cwt (on wheat) = 2.4 oz/bu. 4 x .60 = 2.4

B To convert rate per bushel to rate per hundredweight: ÷ rate per bushel by bushel weight.
Example: 2.4 oz per bushel (on wheat) 4 oz per cwt or 2.4 ÷ 60 = 4 oz per cwt

C To calculate parts per million (ppm): oz of AI/cwt ÷ .0016 = ppm

D To calculate ounces of active ingredient per hundredweight from parts per million: ppm x .0016 = oz of AI/cwt

Continued ➲

E To calculate ounces of active ingredient per fluid ounce (flow-able or liquid):
>>Pounds of active ingredient per gallon x 16 ÷ 128 = oz of AI/cwt

F To calculate ounces of active ingredient: Rate (fluid ounce per hundredweight) x ounces of active ingredient per fluid ounce = ounces of Active ingredient per hundredweight.

G To calculate ounces of active ingredient for powders: Rate x the percent of active ingredient = ounces of active ingredient per Hundredweight.

H Approximate water displacement: one dry ounce displaces one fluid ounce.

I Ounces of chemical per hundred pounds of seed x 29.6 cc = total cc of treatment per hundred pounds of seed.

J Total cc of treatment per hundred pounds of seed ÷ by one hundred pounds of seed = cc per pound.

K Pounds per minute x sixty minutes = pounds per hour.

L Pounds per hour ÷ by bushel weight = capacity in bushels per hour.

Continued ➲

LIQUID PRODUCT WORKSHEET

PRODUCT	RATE PER CWT	CALCULATIONS	PRODUCT PER TANK
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
WATER		X CWTS= FLOZ, ÷ 128 =	GAL
TOTAL SLURRY		X CWTS= FLOZ, ÷ 128 =	GAL
PRODUCT	RATE PER CWT	CALCULATIONS	PRODUCT PER TANK
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
WATER		X CWTS= FLOZ, ÷ 128 =	GAL
TOTAL SLURRY		X CWTS= FLOZ, ÷ 128 =	GAL
PRODUCT	RATE PER CWT	CALCULATIONS	PRODUCT PER TANK
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
		X CWTS= FLOZ, ÷ 128 =	GAL
WATER		X CWTS= FLOZ, ÷ 128 =	GAL
TOTAL SLURRY		X CWTS= FLOZ, ÷ 128 =	GAL

DRY PRODUCT WORKSHEET

PRODUCT	DRY RATE PER CWT	LIQUID RATE PER CWT	CALCULATIONS LIQUID=120 FLOZ/GAL DRY=16 OZ/LBS	DRY PER TANK	LIQUID PER TANK
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWT= OZ÷16	LBS	
			X CWTS= FL OZ÷120		GAL
			X CWT= OZ÷16	LBS	
			X CWTS= FL OZ÷128		GAL
			X CWT= OZ÷16	LBS	
WATER			X CWTS= FL OZ÷128		GAL
TOTAL SLURRY			X CWTS= FL OZ÷128		GAL

PRODUCT	DRY RATE PER CWT	LIQUID RATE PER CWT	CALCULATIONS LIQUID=128 FLOZ/GAL DRY=16 OZ/LBS	DRY PER TANK	LIQUID PER TANK
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWTS= FL OZ÷128		GAL
			X CWT= OZ÷16	LBS	
			X CWTS= FL OZ÷128		GAL
			X CWT= OZ÷16	LBS	
			X CWTS= FL OZ÷128		GAL
			X CWT= OZ÷16	LBS	
WATER			X CWTS= FL OZ÷128		GAL
TOTAL SLURRY			X CWTS= FL OZ÷128		GAL

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