Berry Precision Vacuum Seeder Instruction Manual

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The Precision Vacuum Seeder is perfect for small to midsize operations. Directly seed plug trays and cell packs up to 120 trays per hour with very high accuracy. Transparent seeder body allows for easy inspection for clogged or empty holes. Standard 1020 tray format. Made in the USA.

Materials Included:

- Seeder assembly
- Seed collection tray and holder
- Small Shop Vac
- Orifice cleaner
- Inspection light



OPERATION:

1. **Set up:** Set up the seeding system as shown above with the valves away from the operator and the vacuum hose connected on the right. The valve on the operator's right-hand side will be the on/off valve used to direct the air flow from the vacuum to the seeder body. The valve on the left-hand side is the vacuum bypass valve; adjustment of this valve controls vacuum pressure in the seeder body — the force holding the seeds onto the plate. The two valves are used in conjunction to properly hold the seeds in place until they can be deposited into the cells of the growing tray.

2. **Filling with seed:** To begin the seeding process, first turn on the vacuum and open the on/off valve. **Always open the on/off valve prior to sprinkling seed on the seeder plate.** This minimizes doubles and multiple seeds per cell. Sprinkle the seed in one corner of the plate. A large amount of seed is not required; however, the more seeds that are placed on the plate, the shorter the time required for moving the seed about the plate in order to fill each hole. With some types of seed, large amounts of seed on the seeder plate may increase multiples.

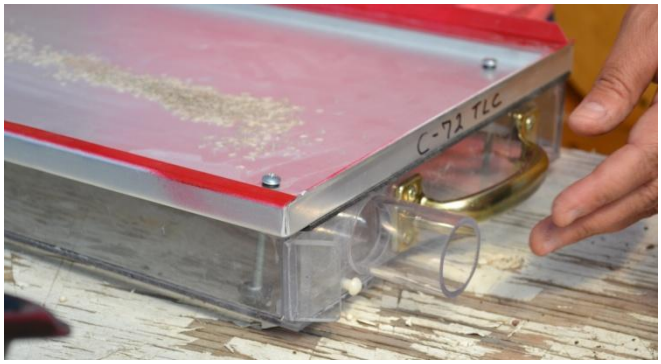


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3. **Valve adjustments:** Note two generalities: Small, light seeds require very little air flow and lower vacuum pressure in order to be attracted to the seed holes (i.e.: bypass valve more open). Conversely, larger, heavier seeds require greater air flow and higher vacuum pressure in to defy gravity (i.e.: bypass valve more closed).



On/Off Valve
(On the same side as the hose)

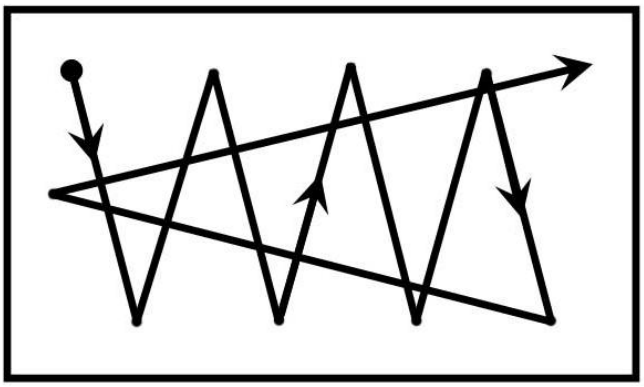


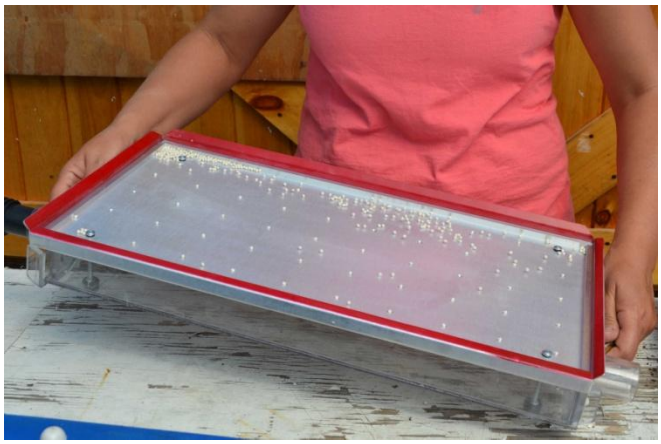
Bypass Valve
(On the side without the hose)

Example 1: *When seeding raw petunias, adjust on/off valve so it is only open approximately $^{3}/_{16}$ inch (0.5 cm) and adjust the vacuum bypass valve so that it is almost completely open.*

Example 2: *When seeding graphite-coated marigold seed, adjust the on/off valve so that it is ⅔ of the way open (it is never necessary to open the on-off valve greater than this for any type of seed). Adjust the vacuum bypass valve so that it is nearly or fully closed.*

4. **Distributing Seed:** Make a side-to-side shaking motion while slowly tilting the seeder forward and backward. Try to keep the seeds moving at all times.





By moving in consistent patterns rather than random movements, seeding efficiency can be significantly increased. Also, by moving the seed in a predictable manner, less attention has to be paid to filling individual holes with seed. Next, move the seed to the back edge of the seeder plate prior to discarding the excess seed into the collection tray.

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5. **Singulating:** From this point, there are a number of things that can be done to enhance singulation (i.e.: one seed per hole) depending on the type of seed and the desired singulation accuracy. Most methods involve making some type of tapping motion:



Method A: Tilt the seeder forward at a 10° angle, as shown on the right. Lightly tap the back bottom edge of the seeder body on the plastic bumpers on the excess seed collection tray holder or on your work surface. **Note:** Be careful so as not to tap so hard that you damage the seeder. Continue tapping while gradually tilting the seeder to a 45° angle or until you have achieved desired singulation.

Method B: Hold the seeder vertically above the plastic bumpers on the excess seed collection tray holder with the seed plate facing away from you. Raise the seeder about 1 inch (3 cm) and moderately hit the back edge on the plastic bumpers while holding the seeder body slightly forward so the falling excess seeds do not hit the seeds below them as they fall.

Method C: Hold the seeder in the same position as Method B, but rest the back edge of the seeder body on the plastic bumpers and tilt the seeder slightly forward. With a screwdriver handle or similar device, tap along the top edge of the lip of the aluminum seeder plate. This tapping is transmitted to the surface of the seeder plat and causes a very controlled resonance, or vibration, on the surface of the seeder plate, releasing excess seeds.

Notes: *Method C is the most precise method, but requires the most time. Method B is the quickest and is best used with highly uniform or pelleted seed. Method A will work well with most seed and can be combined with methods B and C.*

Finally, tilt the seeder approximately 10–15° forward as in Method B and make a quick side-to-side movement. This removes any seed remaining on the back edge of the seeder plate.

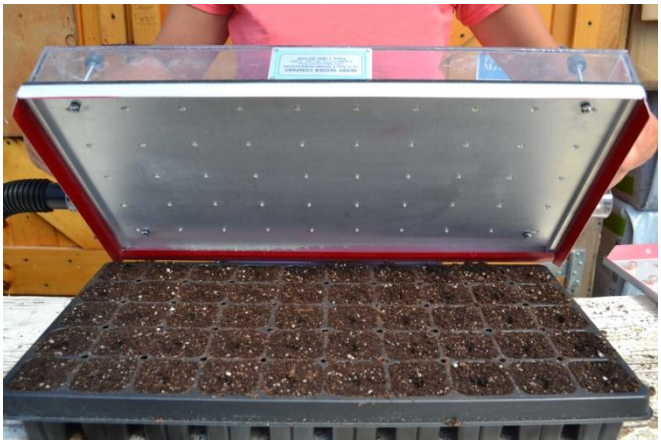
6. **Checking for misses:** After the seeds are in position on the seeder plate, the seeder can be checked for misses by viewing the back of the seeder body and looking for illuminated holes while moving the seeder body in front of the fluorescent light. This is particularly useful when you are first learning to use the seeder and helps you move the seed about the tray in a proper pattern. Note that this light scanning technique is also quite useful when checking for clogged holes.

7. **Useful tips and tricks:** There is some initial difficulty with the seeder, especially the first 10–15 minutes. The most important thing to remember is to set up the seeder as indicated and to follow the instructions. Because of the inherent irregularity of seeds, it is virtually impossible to achieve 100% singulation. Typically, the seeds that can be seeded with highest accuracy are those that are more uniform or have been pelleted. 80–85% singulation is considered normal for these types. Excess multiples or lodging (sticking) of the seed in the holes can normally be attributed to having excessive air flow, insufficient vacuum bypass (high vacuum level), or both. Excess misses can normally be attributed to having insufficient air flow, excessive vacuum bypass (low vacuum level), or both. Excess misses can also be caused by not moving seeds about the plate properly or excessive tapping of the seeder to eliminate multiples.

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8. **Placing over the tray:** Invert the seeder onto the growing tray. The angled edges will help to center the plate properly on the tray.



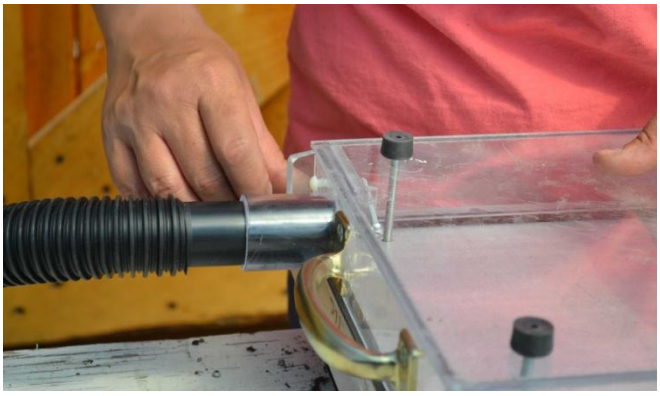






9. **Releasing the seed:** Open the on/off valve. Tap the back of the seeder body with your hands. Lift the seeder body off the growing tray. Cover and water the seeds as you normally would. Repeat steps 2 through 6 for subsequent trays.









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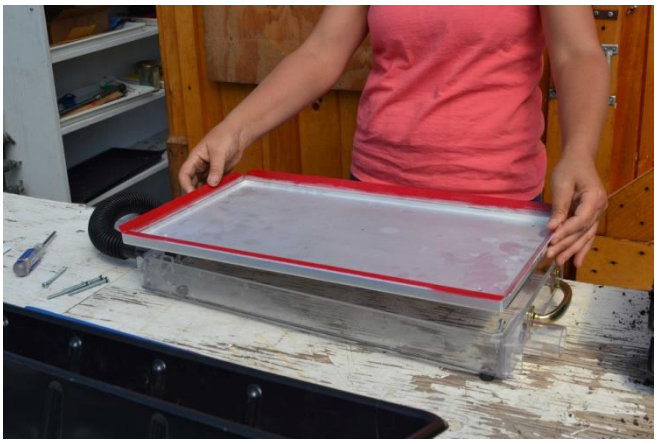
10. **Maintenance:** The seeder plates should be kept clean with window cleaner or something similar. The holes can be cleaned, if they become clogged, with the orifice cleaner. Be sure not to use too large a cleaner in the holes or damage to the plate may occur. Baby powder can be used to prevent small seeds from sticking to the edges of the seeder plate and to the plastic excess seed dumping tray.



11. **Changing Seed Plates:** The seeder plates are very easy to change. Simply loosen the 4 retaining screws in the corners of the plate and remove. Lift the old plate off, replace with the new plate, and replace the screws. These screws have O-ring washers the prevent air leakage. Tighten just a bit tighter than finger tight — just enough to compress the O-rings and seal the plate. If you over tighten, leakage around the screws will likely occur, which will cause seeds to stick to the screw heads and result in wasted time trying to knock these seeds off and/or excess unwanted seeds being deposited in the growing trays.









REV 01/11/2016 RC, MN

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