



Simplicity
AUSTRALIA

SEEDING KIT

Fitment and Setup Guide





WARNING

Observe safe work practices.

DO NOT work, or allow others to work, under a raised and unsupported seeding tool.

Always ensure all safety mechanisms are in place and operational to prevent any part of the seeding tool falling.

Working under unsupported seeding tool components can cause death or serious injury.

Prior to any Folding/Unfolding, make certain area is free from obstructions, and be sure that there are no people in the immediate vicinity of the equipment.

Be aware of the equipment height when folding around overhead power lines. Contact with overhead powerlines will cause serious injury or death.



Simplicity
A U S T R A L I A

INTRODUCTION

Seeding kit setup is a critical aspect of the correct pre-delivery of any Simplicity Airseeder product. It has a direct relationship to seeder performance and customer satisfaction. Incorrect seeding kit setup can result in problems such as blockages, force feeding, unacceptable distribution, decreased seeder capacity and poor crop yields.

Genuine Simplicity Seeding Kits are specifically designed to suit the design of the Simplicity product. To achieve maximum performance from your Simplicity Air Seeder, a genuine Simplicity Seeding Kit is a requirement.

Whilst fitting your Seeding Kit or working on any Simplicity Australia product, care should be taken to ensure safe work practices are adhered to. Of particular note with this section is working under unsupported lift of wing fold circuits. Always ensure safety stops are in place prior to entering these areas.

Although all care has been taken with the information supplied within this document, it is important to note that this should be used for assistance or as a guide. Care should be taken to check carefully all details as each cultivator will have its own characteristics that need to be addressed.

TERMINOLOGY – SEEDING KIT COMPONENTS

Airseeder Hose



Primary Lines: These are the hoses that carry product from the Airseeder metering units to the Primary Dividers. This hose is always 76mm internal diameter and has a smooth hard interior.

Secondary Lines: These are the hoses that carry product from the primary dividers out to the secondary head stand pipes. This hose can be either 44.5mm or 50mm internal diameter and has a smooth hard interior.

Terminal Lines: These are the hoses that carry product from the secondary head to the planting boot. This is always 32.5mm internal diameter and is preferred to have a smooth interior.

WARNING: Avoid Rubber Hose

Rubber hose has a high coefficient of friction compared with nylon. This makes it harder to blow product through, making it more susceptible to blockages. It also requires higher fan speed and pressure to move the same amount of product. This problem is magnified with longer hose lengths.

Primary Dividers

Primary Dividers can be supplied as 2 way, 3 way, or 4 way. These items equally disperse the air volume from primary supply line into 2, 3, or 4 secondary lines.



2 way primary dividers come supplied with 50mm secondary outlets.

3 and 4 way primary dividers come supplied with 44.5mm secondary outlets.

Secondary Heads



Secondary Heads can have either a 44.5mm or 50mm base to suit the uptube. This size is determined by the primary divider outlet required. Secondary heads can be supplied with 4 to 10 outlets per head. Numbers over 10 or fewer than 4 can not be supplied. The outlets in the secondary heads are always 32.5mm outside diameter to suit above mentioned tertiary hose. All Secondary heads are made from Stainless Steel for durability.

Uptubes and Mounting Hardware



Secondary uptubes are supplied as 44.5mm or 50mm outside diameter dictated by the primary divider system supplied.

Secondary Mounts are supplied with mounting hardware as per the dealer order. U-bolts and mounts are available to suit the cultivator frame size.

Secondary Head Caps are made of a durable rubber to avoid seed damage and for long life.

The bend in the secondary stand pipe is shaped with the use of a "Mandrel" bending machine which shapes the pipe without causing the crushing effect of a standard exhaust pipe bender. The uptube is not available with a 90 degree bend due to premature wear and seed damage.

The secondary head is simply riveted to the uptube once the desired positioning has been determined.



Correct head height – top of riser just below lip.

Incorrect head height – top of riser above lip. Allows seed or fertiliser to accumulate around rim, accelerating corrosion.



Restrictors



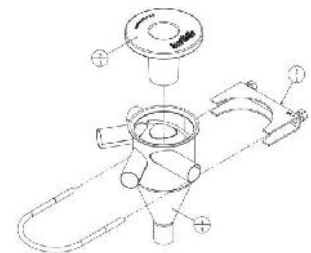
Restrictors are used to balance the line airflow where large variations of sowing rates occur between lines when double or triple shooting.

Restrictors are placed inside the male camlock fitting of the lines carrying the smallest amount of product.

Cyclones/Diffusers

Cyclones/Diffusers are used as a quick and convenient way of changing sowing configuration. For example: Converting a 32 row winter crop configuration to an 8 row summer crop configuration is easily achieved by rerouting four terminal lines through one cyclone to one sowing boot.

Cyclones/Diffusers provide significant benefits to a No-Till Air-Seeding operation by removing the problems and inaccuracies that occur as a result of the influence of air pressure and velocity. They are designed to remove most of the air from the supply line just above the point of sowing, allowing seed and fertilizer to fall gently into the furrow, eliminating seed bounce, and other inaccuracy caused by excessive air flow.



Small Seed/Fertiliser Spray boot



A small seed/fertiliser spray boot is used to broadcast small seed or fertiliser. Using the spray boot with provide a coverage of approximately 650mm when spraying small seeds and 500mm when spreading fertiliser.

Small Seed Induction Tube



Small seeds induction tubes allow for small seeds to be blended with the main system product at the Primary Divider outlets. The blended products then travel via the secondary lines and heads to the sowing boot to be placed in the ground together.

Small Seed Injection Kit



Injection Seeding kit allows product from the small seeds box to be directly injected into the main seeding lines before the seeder camlocks.

SEEDING KIT FITMENT INSTRUCTIONS

Each cultivator will have its own specific attributes and characteristics that need to be considered when fitting the seeding kit. It is recommended that prior to commencing fitment, the following points should be considered. Then upon completion of the fitment, each point should be reconsidered and analysed as to whether it was satisfied.

Assumptions to be considered for Seeding Kit fitment

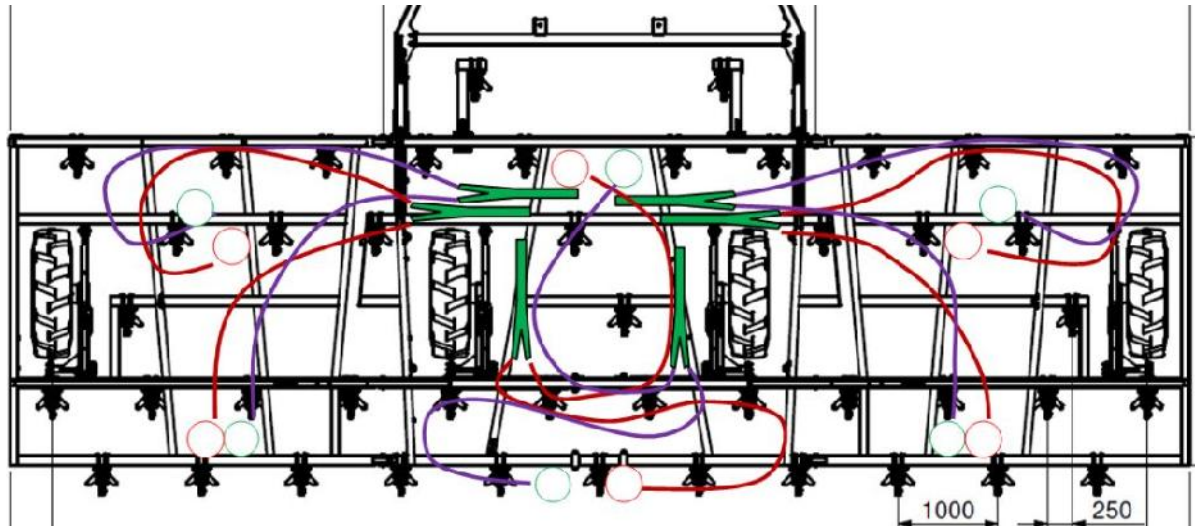
- Simplicity Seeding Kits are designed to “split” air volume. Any modifications to standard equipment may have a detrimental effect on performance and product satisfaction.
- Secondary Heads are to be located as central as possible to the seeding boots they feed.
- Primary Dividers should be mounted in such a position so as to keep secondary hose to an acceptable length.
- All secondary hoses should be the same length and where possible not exceed 5 metres.
- All Primary Hoses should be the same length.
- Air pressure and blower speed should be kept to a minimum.
- Product should be able to fall to the boot through terminal line, NOT BLOWN.
- The Air Seeder delivers a set volume of air relevant to the blower speed. Reducing the hose size and/or using smaller diameter seeding boots will restrict the air flow. Avoid restricting air flow.
- Normal operating air pressure greater than 8Kpa is considered excessive and further investigation or re-fitment may be required.

With these critical point in mind, the following are suggested steps to fitting a seeding Kit:

1. Sketch Secondary Head position and plan layout
2. Mount Secondary Head Risers into position
3. Fold and check for clash points
4. Mount Primary Dividers in position
5. Connect Secondary Hose
6. Connect Primary Hose
7. Attach Secondary Heads to Risers
8. Connect Terminal hose
9. Fold and check for suitability

Step 1: Sketch Secondary Head Position

Where available a detailed layout should be sought, and copies made. With reference to the seeding kit provided and customer requirements, informal sketches can be a valuable starting tool.



Secondary Heads are to be located central to the boots they feed. It is generally beneficial with most layouts to "split" the cultivator into a front and rear half. Then have heads positioned accordingly.

DO NOT limit your head positions to the existing frame. You may fabricate some additional "outriggers" to mount secondary risers.



Secondary Heads may need to be staggered, or mounted forward or behind bar on double fold bars to allow for folding.



Once a satisfactory sketch or plan is completed, mark on cultivator frame with chalk and check for suitability. This step may take numerous attempts to arrive at a satisfactory result but is well worth the effort. With experience you will see problems before they arise.

Step 2: Mount Secondary Head Risers into position

Assemble Secondary Risers and Mounts and attach to the frame in the required positions. (Do not fit Secondary Heads at this stage, if you make an error of judgement and it fouls when folding you will only have damaged the riser, not the head also.)

Do not cut Secondary Risers – adjust height using mounting clamps. Tube length has been carefully calculated for optimum performance. If there is no suitable area then you will be required to modify Uptube mounts.

Step 3: Fold and check for clash points

Carefully fold the cultivator and ensure all secondary risers do not foul. It is important to allow for additional height for the secondary head.

If clashes do exist, reposition where required. If in doubt, determine alternative fitment. It is easier to make alterations now than when all the hoses have been connected.

Step 4: Mount Primary Dividers in position

Primary Dividers should be positioned so as not to foul on folds, and avoid “kinking” of hoses during folding operation, as well as keeping secondary hoses to an acceptable length (Approx 5m).



By increasing the primary hose length and keeping the secondary hose to an acceptable length, will result in a more suitable air pressure to fan rpm relationship. This effectively gives the air seeder a greater potential to reach its maximum capacity.

Increased pressure results in poor seeder performance and higher than normal blower rpm requirements.

Care should be taken to ensure that the primary hoses are of similar length and are straight for at least 1 metre before entering the primary divider. This will ensure product disperses evenly into the secondary lines.

Primary Dividers have specific angles and hose diameter suitability. Any modifications to these will be detrimental to their performance. In congested seeding kit situations, a staggered layout can be achieved by shortening mounts.

Step 5: Connect Secondary Hose

Secondary hoses are to be similar length. To calculate this length, measure the longest required (generally to the wing), but in the most direct route possible. This length is then to be used for all secondary hoses. Do not cut all hose to this length, it is more practical to mark the hose to this length, place into position and cut as required. If say 10% is required to be added or subtracted to avoid fouling, then so be it. This will not have dramatic effects on the systems capabilities.

It is important to try to loop the hose in such a way to use the length required. For example a secondary riser may only be 2 metres from the primary divider, but we are required to use 5 metre of hose to supply. Try to use a primary that "points" in the wrong direction then gently loop the hose around to the secondary riser. This keeps the layout neat and tidy and long gentle hose loops will result in longer hose life.

If running across fold lines, avoid over "tying" these hoses. If the hose is free to move or slide as required during folding it will have a less chance of kinking.

When attaching hoses, avoid using a heat gun, as extreme heat will damage the hose and could result in loose connections, air leaks and increases the chance of hoses "blowing off".

Gently warming hose ends in hot water and using a lanolin based lubricating spray will assist in fitting hoses.

Folt cultivator and check for suitability.

Step 6: Connect Primary Hose

Primary hoses are to be of similar length. To calculate this length measure the longest required, but in the most direct route as possible. This length is then to be used for all primary hoses. Do not cut all hose to this length, it is more practical to mark the hose to this length, place into position and cut as required. If say 10% is required to be added or subtracted so as to avoid fouling etc then so be it. This will not have dramatic effects on the systems capabilities.

Care should be taken to ensure that the primary hoses are of similar length and are straight for at least 1 metre before entering the primary divider. This will ensure the product will disperse evenly into the secondary lines.

If running across fold lines, avoid over "tying" these hoses. If the hose is free to move or slide as required during folding it will have a less chance of kinking.

Fold and check for correctness.

Step 7: Attach Secondary Heads to Risers

Attach all secondary heads as required. Position so that the outlet being used for the furthestmost boot "points" directly towards it. Then carefully drill and rivet into position with rivets provided.

Fold and check for clash points

Step 8: Connect Terminal hose

Attach all terminal lines from heads to boots. These should be run as direct as possible and be firm to tight to avoid sagging of the hose which will promote blockages. Remember gravity should carry the product down to the boot through these lines, not air volume/speed.

The length of these hoses is not critical and will vary to requirement. Care should be taken when adapting to seed boot. It is important to maintain the surface area of the 32mm terminal hose. Avoid using connectors that restrict the air flow from secondary head.

Once this is complete, head caps can be attached.

Step 9: Fold and check for suitability

Check to see that bar folds and unfolds without fouling any hoses. Check to ensure that no hoses are kinked when folded. Make any adjustments necessary for suitability.