



The Operators Manual

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Foreword

The purpose of this manual is to comprehensively explain to the operator how to both setup and operate the Claydon SR Seed Drilling machine.

It is advisable that the operator reads this book before he uses the machine. If anything in this manual is at all unclear please contact Claydon Yieldometer Ltd on 01440 820 327 or your local dealership who should be able to answer your questions.

The Claydon Drill will give many years of excellent service with little maintenance due to its lack of moving parts. However to gain optimum life from the machine some service will be necessary.

We reserve the right to make modifications to the machine in the future that may make some diagrams in this manual 'out of date', this should not affect the clarity of this manual.

Machine Specifications

Machine	Working Width (Metres)	Transport Width (Metres)	Depth (Metres)	Max Height (Metres)	Weight (Tonnes)	Max Hopper Capacity (Litres)	Number of Working Rows
3m	3m	3m	3.5m	2.65m	2.5T	1700	9
3.45m	3.45m	3.45m	3.5m	2.65m		1700	11
4m	4m	4m	3.5m	2.65m		1700	13

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Introduction

Thank you for purchasing a new Claydon SR seed drill. Please fill in this section of the manual as soon as you receive your machine,

Claydon Serial Number;.....

You can find the serial number on the left hand plate near to where the tractor top link is attached to the machine.



You may be required to quote this number when you order spare parts in the future.

Definitions

The terms 'front' and 'rear', 'left' and 'right' in this manual refer to the machine as follows:-

Front – indicates the three point linkage end of the machine.

Rear or back – indicates the opposite end of the machine to the front.

Left – indicates the left side of the machine as you are looking at its rear.

Right – indicates the right side of the machine as you are looking at its rear.



Preparation

1. General
2. Connecting the drill to your tractor
3. Lubricating points
4. Marker Arms
5. Changing Wearing Parts
6. Setup Options

1. General

As soon as you receive delivery of your Claydon Drill, make a thorough inspection for any damage that may have occurred in transit. Remove loose parts from the seed hopper. Your drill may have had some parts removed for transportation. You will need to fit these parts before use.

The parts that may have been removed are the press wheels on the rear of the machine and their carriers. The carriers will need to be swung down and bolted into place, then the press wheel fitted.



If you purchased the harrow kit it will not have been fitted for transport. You will need to decide if you require the harrows to be fitted and fit them if necessary as follows;

1 – Fit the L-bracket to the wheel carrier

2 – Fit the tine, plate and wheel scraper to the L-bracket with the bolts supplied.



2. Connecting the drill to your tractor

The SR range of drills can be hooked up to any tractor with CATIII linkages on its 3 point linkage. A good general rule of thumb to gauge the size of tractor you require for the drill is 50Hp per meter. Therefore a 3m drill will require 150Hp, a 4m drill will require a 200Hp tractor.

Connect the three point linkage to the linkage points on the drill with the CATIII pins supplied and some CATIII balls (not supplied).



Connect the hydraulic hoses to the spool valves on the back of the tractor ensuring that you connect the pairs of hoses to the pairs of spool valves.

IMPORTANT NOTE:- the hydraulic hose that has its end painted RED must be connected to the PRESSURE side of the hydraulic system (i.e. the spool valve on the tractor). The hydraulic hose to the fan that has its end painted BLUE must be connected to a FREE FLOW RETURN on the tractor. Failure to do this will result in terminal damage to the pressure gauge and possibly the motor. These will not be covered under warranty! Please refer to your tractors manual or your local dealership to find the location of your free flow return as different tractors have them in different locations.



Now fix the electronic box in a suitable position in your tractor cab. Connect the electronic box to the power plug and to the sensor cable from the drill. Make sure that the cable is well clear of any trap or catch points as these cables are not cheap!



Lubricating Points



Drive Shaft from Spider Wheel to Hopper



Depth Wheel Hub



Marker Arm Pivot and both ends of the Ram

Marker Arms

When you receive your new Claydon Drill the marker arms may be set to their shortest position for transportation reasons. You will need to set the marker arms up for your machine as follows:

To obtain centre marking distance; you need to measure perpendicular from the centre of the Machine to the centre of the marker point (with the marker arm swung out). This measurement needs to be equal to the width of your machine. i.e. if you have a 3m Claydon Drill the measurement should be 3m perpendicular from the centre of the machine across to where the marker point is running. The following picture demonstrates how to do this on a 3m machine.



To adjust the marker arm, you will need to slacken the two nuts on the U-Bolt that is located half way down the marker arm and slide the bottom length of the arm in/out to the desired distance from the centre point.

Changing Bourgault Wearing Parts

It is important that you change the Bourgault parts properly. Failure to change wearing parts correctly may cause serious injury, loss of parts or damage to parts.

Health and Safety

Always wear a pair of gloves and some safety goggles when changing wearing parts to avoid injury.

Removing the Wearing Part

Hook the special Bourgault tool over the top of the wearing part and push the pin down with the tool. With the pin pushed down knock the top of the tool with a hammer to remove the point. NEVER use a punch and a hammer to push the pin in as this will damage the spring.



Replacing the wearing part

To replace the wearing part; slide the wearing part up the foot and knock on the end with a hammer and block of wood to drive the part into place. **Always place a block of wood on the end of the point and hit the wood with a hammer.**

This method is used to change both the front and rear points.

NEVER HIT A TUNGSTEN CARBIDE POINT DIRECTLY WITH A HAMMER AS THIS CAN CAUSE THEM TO SHATTER (LIKE GLASS) AND CAUSE SERIOUS INJURY.



Changing the Seed Distributor

To change the seed distributor; undo the bolt that runs through the seed boot holder, remove the bolt and the seed boot will drop out, now place the new seed boot in the holder and replace the bolt and pinch up the nut.



Bolt to remove

Setting up the Claydon Drill for various crops.

To get the best results from the Claydon Drill it is necessary to use varying points and seed boots for different seed types. Also the depth at which the seed is sown is important and will be dealt with at a later point in this manual.

The following are the interchangeable points and seeding equipment on the Claydon Drill.

Front Tine



Tungsten Carbide

Chromium

Rear Tine



A-Share (5" or 7" available)

3" Spoon

Seeding Boot



Splitter Boot

Bean Chute

Straight Boot

The table depicting the setup of the points on the drill can be found at the end of this manual.

OPERATING INSTRUCTIONS

How and where to make adjustments

The top link on the tractor is used to adjust the level of the machine (front to back). It is crucial that the machine runs level through front to back for correct seed placement and coulter depth.



To alter the depth of the breaking tines you must use the link arm adjustment on your tractor. Simply lower the arms to let the tines in further and raise them to lift the tines out.



The force used in the breaking tine can be adjusted on the bolts on each tine. Tighten the bolts and lock them into place to increase the release pressure or slacken them and lock them to decrease the release pressure. If the spring pre-tension is slackened right off and the spring is still too strong you will need to remove the centre spring from the unit so only the outer one is left working.



The depth wheel top links adjust the level of the machine side to side, so please ensure that both top links are the same length and the tyre pressures are the same. The depth wheels only control the depth of the seeding tines NOT the breaking tines.



Adjustment of the pressure to the press wheels / harrow tines can be achieved by moving the bolts into the relevant holes. There are three settings, the front pair of holes for least

pressure, middle pair of holes for medium pressure and the rear set of holes for most pressure. THIS ADJUSTMENT DOES NOT AFFECT THE SOWING DEPTH.



The top link on the roll bar at the back of the machine alters the pressure on the press wheels that run between the rear seeding tines. These should be set to approximately the same pressure as the press wheels at the rear of the machine. To check this, just pull forward with the machine in the ground, stop, then get out and try to lift a wheel at the back of the machine and one that is attached to the roll bar. Use the top link to adjust the pressures to be the same on both sets of press wheels. The roll bar should only be used to adjust the pressure on the press wheels of the machine, it is not a device to level the machine from front to rear.



General Setup of the machine

Set the machine level

Firstly, ensure that the machine is set level from front to back. This can be done by setting it as level as possible in the yard by eye. To adjust the level of the machine you will need to adjust the top link on the tractor's three point linkage. By lengthening the top link the rear of the machine will travel deeper than the front and vice versa.

Make sure that the top links that control the depth wheels are both the same length. You can measure the length with a tape measure. If they are not the same length the machine will be seeding deeper one side than the other. However, if you find that one side is consistently sowing deeper you may need to make one top link slightly longer than the other; this could be due to tyre pressure or replaced top links with a different thread.

Fan Speed

The fan should be set to around 3400rpm. This can be monitored on the RDS electronic box.

IMPORTANT NOTE: - the hydraulic hose to the fan that has a RED end must be attached to the pressure side of the hydraulic system on your tractor. The BLUE hose end **MUST** go to a FREE FLOW return on the tractor. Failure to do this will result in the pressure gauge and hydraulic motor on the fan being damaged. You will need to refer to your Tractor's hand book or ask you dealer where you can find the free flow return as different tractors have them in different locations.



Seed Rate

You can find a quick guide on how to set up your seed rate inside the seed tray located on the rear of the seed distributor unit. This manual will give you a quick setup guide or you can refer to the Sulky Burel manual supplied with the drill for full instructions.



Distribution System Setup for OSR and other Small Seeds

Remove the seed tray from the back of the unit, loosen (but do not undo) the black plastic knobs and slide them up then re-tighten them. Now slide the blue coloured part forward to the stop position and slide the seed tray into its place.



Slide the tabs up.



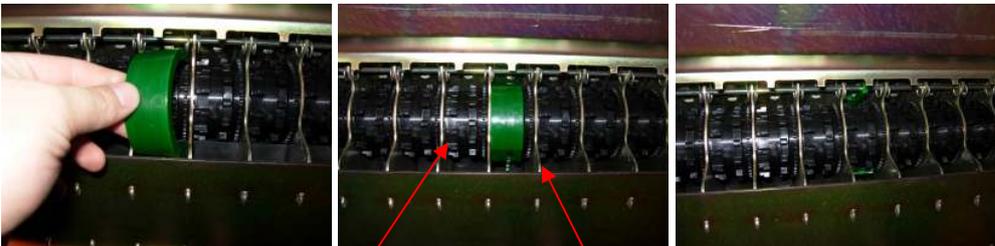
Slide the blue part forward.

For small seed crops such as OSR you need to insert your green rape shields. Before you put any seed into the system. To do this you must drop the lever on the right hand side in to the lowest position.



Handle dropped off the end of the settings.

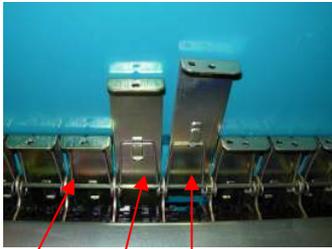
You must now slide the green rape shields around the roller to cover the large teeth leaving only the narrow row of small teeth on the right hand side of the metering wheel visible. The rape shields only need to be used on the metering wheels being employed. You can determine this by knowing that only the rollers above a plastic seed hose are used.



Coarse Teeth

Fine Teeth

Now set the gold coloured sliders above the employed meter wheels to position 2, ensure that all the sliders above the unemployed metering wheels are set to 0.



0 1 2 (settings)

The lever on the right hand side needs to be set to position 1 (as shown below).



Now turn on the electronic box. Ensure that SE comes up on the display (if DP comes up press either + or – button to get to SE), press OK, the box displays INT, press OK, the box will then set the actuator to 35 (jump out of the cab and check that it lines up with 35 on the sticker or at least is close to), the box then displays TEST, press OK.



Put your seed into the hopper, then place the handle on the side of the gear box and turn a few times to prime the rollers, now empty the tray back into the seed box. Turn the handle the number of turns required for your machine (in the table below).

Drill Width	No of Handle Turns
3m	50
3.45m	43
4m	37.5



Now weigh the sample (a very accurate set of digital scales is required for rape seed) and enter the weight into the electronic box. This reading is in Kg, therefore if you wanted to enter 200 grams you would enter 0.200 on the display (be careful that the position of the decimal point is correct!) use the + and – keys to adjust the sample weight accordingly, press enter. Use the + and - keys to move the seed rate to the Kg/Ha you require (tip. If you hold down the button the count moves faster) again bearing in mind the position of the decimal point. Press enter again and the seed rate will automatically adjust to the required rate.

Now double check the output of the box by emptying the seed back into the hopper, replacing the seed tray into position under the rollers, turn the handle relative to the number of turns required for your machine (in the previous table) then weigh the output seed from the box. Multiply this weight by 40 to give the Kg/Ha that the box is metering.

Now remove the seed tray from the drill and pull the blue coloured slider back into position. Slacken the two black knobs and slide them down to secure the channels into place and tighten them up again. Hang the seed distribution tray back on the rear of the metering system and PUT YOUR HANDLE BACK IN THE TOOL BOX.

When you have finished drilling you can slide the channels forward again and slide the seed tray back under the metering system. Drop the handle on the right hand side right down to the bottom (as you did to insert the rape shields), this will let the seed flow freely into the seed tray. You can simply move the handle back up again when the tray is full.

Distribution System Setup for Cereal Size Seeds

Remove the seed tray from the back of the unit, loosen (but do not undo) the black plastic knobs and slide them up then re-tighten them. Now slide the blue coloured part forward to the stop position and slide the seed tray into its place.



Slide the tabs up.



Slide the blue part forward.

For medium seed crops such as wheat and barley you do not need to insert your green rape shields. They will need to be removed before you put any seed into the system. To do this you must drop the lever on the right hand side in to the lowest position.



Handle dropped off the end of the settings.

You must now slide the green rape shields around the roller until you can see the large face of the shield. The green rape shield can now be pulled away.



Now set the gold coloured sliders above the employed meter wheels to position 2, ensure that all the sliders above the unemployed metering wheels are set to 0.



0 1 2 (settings)

The lever on the right hand side needs to be set to position 1 (as shown below).



Now turn on the electronic box. Ensure that SE comes up on the display (if DP comes up press either + or – button to get to SE), press OK, the box displays INT, press OK, the box will then set the actuator to 35 (check the actuator lines up with 35 on the sticker or at least is close to it), the box then displays TEST, press OK.



Put your seed into the hopper, then place the handle on the side of the gear box and turn a few times to prime the rollers, now empty the tray back into the seed box. Turn the handle the number of turns required for your machine (in the table below).

Drill Width	No of Handle Turns
3m	50
3.45m	43
4m	37.5



Now weigh the sample and enter the weight into the electronic box. This reading is in Kg, therefore if you wanted to enter 200 grams you would enter 0.200 on the display or 100Kg is 100, (be careful that the position of the decimal point is correct!) use the + and – keys to adjust the sample weight accordingly, press enter. Now use the + and - keys to move the seed rate to the Kg/Ha you require (tip. If you hold down the button the count

moves faster) again bearing in mind the position of the decimal point. Press enter again and the seed rate will automatically adjust to the required rate at the actuator.

Now double check the output of the box by emptying the seed back into the hopper, replacing the seed tray into position under the rollers, turn the handle relative to the number of turns required for you machine (in the previous table) then weigh the output seed from the box. Multiply this weight by 40 to give the Kg/Ha that the box is metering.

Now remove the seed tray from the drill and pull the blue coloured slider back into position. Slacken the two black knobs and slide them down to secure the channels into place and tighten them up again. Hang the seed distribution tray back on the rear of the metering system and **PUT YOUR HANDLE BACK IN THE TOOL BOX.**

When you have finished drilling you can slide the channels forward again and slide the seed tray back under the metering system. Drop the handle on the right hand side right down to the bottom (as you did to insert the rape shields), this will let the seed flow freely into the seed tray. You can simply move the handle back up again when the tray is full.

Distribution System Setup for Large Size Seeds (Pulses)

Remove the seed tray from the back of the unit, loosen (but do not undo) the black plastic knobs and slide them up then re-tighten them. Now slide the blue coloured part forward to the stop position and slide the seed tray into its place.



Slide the tabs up.



Slide the blue part forward.

For medium seed crops such as wheat and barley you do not need to insert your green rape shields. They will need to be removed before you put any seed into the system. To do this you must drop the lever on the right hand side in to the lowest position.

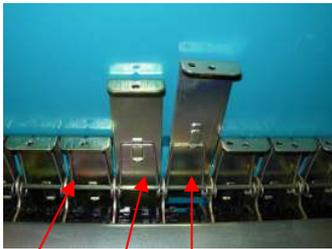


Handle dropped off the end of the settings.

You must now slide the green rape shields around the roller until you can see the large face of the shield. The green rape shield can now be pulled away.



Now set the gold coloured sliders above the employed meter wheels to position 2, ensure that all the sliders above the unemployed metering wheels are set to 0.



0 1 2 (settings)

The lever on the right hand side needs to be set to position 5 (as shown below).



Now turn on the electronic box. Ensure that SE comes up on the display (if DP comes up press either + or – button to get to SE), press OK, the box displays INT, press OK, the box will then set the actuator to 35 (check the actuator lines up with 35 on the sticker or at least is close to it), the box then displays TEST, press OK.



Put your seed into the hopper, then place the handle on the side of the gear box and turn a few times to prime the rollers, now empty the tray back into the seed box. Turn the handle the number of turns required for your machine (in the table below).

Drill Width	No of Handle Turns
3m	50
3.45m	43
4m	37.5



Now weigh the sample and enter the weight into the electronic box. This reading is in Kg, therefore if you wanted to enter 200 grams you would enter 0.200 on the display or 100Kg is 100, (be careful that the position of the decimal point is correct!) use the + and – keys to adjust the sample weight accordingly, press enter. Now use the + and - keys to move the seed rate to the Kg/Ha you require (tip. If you hold down the button the count moves faster) again bearing in mind the position of the decimal point. Press enter again and the seed rate will automatically adjust to the required rate at the actuator.

Now double check the output of the box by emptying the seed back into the hopper, replacing the seed tray into position under the rollers, turn the handle relative to the number of turns required for you machine (in the previous table) then weigh the output seed from the box. Multiply this weight by 40 to give the Kg/Ha that the box is metering.

Now remove the seed tray from the drill and pull the blue coloured slider back into position. Slacken the two black knobs and slide them down to secure the channels into place and tighten them up again. Hang the seed distribution tray back on the rear of the metering system and **PUT YOUR HANDLE BACK IN THE TOOL BOX.**

Emptying the Seed Hopper

When you have finished drilling you can slide the channels forward again and slide the seed tray back under the metering system. Drop the handle on the right hand side right down to the bottom (as you did to insert the rape shields), this will let the seed flow freely into the seed tray. You can simply move the handle back up again when the tray is full.

Operating depth of points

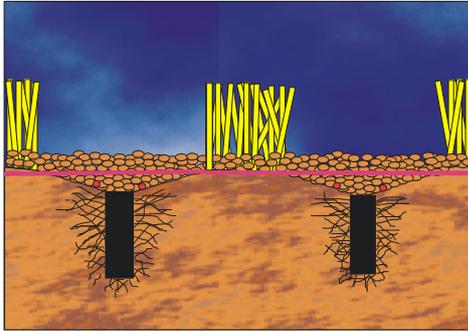
Please refer to the table below for the tine depth depending on varying crops.

Coulter Equipment To Use				
Crop	Front Tine	Rear Tine	Seed Boot	Following Equipment
OSR	19mm, 13mm Carbide or Chromium	75mm Spoon	Short Seed Boot	Press Wheel with Scraper and Harrow
OSR (Alternative)	19mm, 13mm Carbide or Chromium	175mm, 150mm A-Share	Splitter Boot	Press Wheel with Scraper and Harrow
Cereals (Dry & Normal Conditions)	19mm, 13mm Carbide or Chromium	175mm A-Share	Splitter Boot	Press Wheel with Scraper and Harrow
Cereals (Wet Conditions)	19mm, 13mm Carbide or Chromium	150mm A-Share	Splitter Boot	Following Harrow only
Pulses (Winter)	19mm, 13mm Carbide or Chromium	19mm Carbide or Chromium Point	Injector Boot	Following Harrow only
Pulses (Spring)	19mm, 13mm Carbide or Chromium	19mm Carbide or Chromium Point	Injector Boot	Following Harrow only

Coulter Depths and Setup				
Crop	Front Tine	Rear Tine	Seed Boot	Following Equipment
OSR	150mm Below seed depth	13-25mm Deep	N/A	Middle compression setting
OSR (Alternative)	150mm Below seed depth	13-25mm Deep	N/A	Middle compression setting
Cereals (Dry & Normal Conditions)	75-100mm Below seed depth	25-40mm Deep	N/A	Middle compression setting
Cereals (Wet Conditions)	75-100mm Below seed depth	25-40mm Deep	N/A	To make the tines work but not block
Pulses (Winter)	45-50mm ABOVE seeding depth	150mm Deep	N/A	To make the tines work but not block
Pulses (Spring)	45-50mm ABOVE seeding depth	100mm Deep	N/A	To make the tines work but not block

How to check the machine is working correctly and adjust it to do so.

The depth of the seed can be monitored by scraping back the loose soil. The soil and trash should also be scraped back between the bands of seed. The seed should be the desired depth below the original surface of the field as shown by the pink line below;



The best way to see if the machine is working properly is to look at the effect it is having on the ground behind it.

Firstly check that all the tines are running the same depth. You can check the depth by pushing a long screwdriver down the slot created by the machine and measure the depth it went to. It is best to check both sides of the machine to ensure it is running level from one side to the other. Also measure a slot from the front row of breaking points and a slot from the rear row of breaking points to ensure it is level from front to back.

If the machine is running deeper one side than the other check the top links on the depth wheels are the same length and the tyre pressures are the same.

If the machine is running deeper front to rear you will need to adjust the top link on the tractor.

If the machine is running too deep all the soil profile will be moved as shown below:



If you see this effect and the seed depth is correct you will need to lift the front tines out slightly on the hydraulics of your tractor.

If the seed is being placed too deep; you will need to lengthen the top-links that adjust the depth wheels to raise the whole machine out of the ground.

If you can see seed on top of the ground you will need to determine the cause. This could be that the seed is not being drilled deep enough, or the tyre is plucking it out again or the soil is not crumbling back down and you can see the seeds between the clods.

- If the machine is not drilling deep enough; shorten the top links on the depth wheels.
- If the tyres are plucking the seed out; remove the press wheel assemblies and replace with the harrow assembly (where possible).
- If the soil is not crumbling down; carry on drilling either with the harrow tines or with nothing following the seeding tine at all, leave the field until it has had 24 hours drying time and run a Cambridge roll or a press over it.

General Maintenance

The Claydon Drill needs very little maintenance. The grease nipples are located as follows:

Spider Wheel Drive Shaft, Depth Wheel Hubs, Marker Arm Pivots and Rams. (All shown in the 'lubricating points' section of this manual)

The air box on the Sulky Burel seeding unit should be checked for blockages weekly in normal conditions. In very dry, dusty conditions with a lot of straw blowing about it should be checked daily. See below for picture of blocked air box;



Parts Manual

