



*Grow a Better Crop*

# ***JOHN SHEARER***

## ***6M AS2400 Tyne Airseeder***

## ***6M AS2400 DDO Airseeder***

***Operators  
Manual  
142J3***



# SAFETY

## SAFETY FIRST

DO NOT OPERATE THE IMPLEMENT WITH CHAIN DRIVE GUARDS REMOVED

DO NOT ATTEMPT ANY WORK ON THE IMPLEMENT WHILE THE IMPLEMENT IS IN MOTION. (I.E. CLEANING OF BOXES OR LUBRICATION OF DRIVES ETC.

BEFORE WORKING UNDERNEATH THE IMPLEMENT (E.G. CHANGING POINTS ETC.) ALWAYS CHECK THAT THE IMPLEMENT IS ADEQUATELY SUPPORTED ON BLOCKS.



**CUSTOMER'S WARRANTY REGISTRATION CARD**  
(Please retain for your records)

JOHN SHEARER LIMITED

IMPLEMENT TYPE: SERIAL No.

SELLING DEALER: DATE PURCHASED:

PLEASE READ OPERATOR'S MANUAL TO ENSURE CORRECT APPLICATION, OPERATION AND MAINTAINANCE FOR THIS MACHINE.

THANK YOU FOR BUYING JOHN SHEARER



**WARRANTY REGISTRATION CARD**

DEALER COPY

DEALER NAME: DEALER TOWN:

IMPLEMENT MODEL: SIZE:

PRODUCT No. (as per price book) SERIAL No.

DEALER'S PRE DELIVERY IMPLEMENT CHECK WHEN DONE SIGNATURE

PURCHASERS NAME (Full)

ADDRESS (Full)

DATE OF PURCHASE: IMP. RECEIVED IN GOOD ORDER & CONDITION

PURCHASER ACKNOWLEDGES THAT THE PURCHASERS ATTENTION HAS BEEN DRAWN TO THE TERMS AND CONDITIONS OF THE JOHN SHEARER LIMITED WARRANTY POLICY ENDORSED HERE-ON.

PURCHASERS SIGNATURE.....



**WARRANTY REGISTRATION CARD**

IMPORTANT:- TO ENSURE YOUR CLIENTS ARE COVERED UNDER WARRANTY YOU MUST FILL OUT THIS PORTION OF THE CARD AND RETURN WITHIN 7 DAYS TO JOHN SHEARER LIMITED  
P.O. BOX 32, WELLAND, S.A. 5007

JOHN SHEARER LIMITED AREA MANAGER:

DEALER'S NAME: DEALER TOWN:

DEALER A/C No.:

IMPLEMENT MODEL: SIZE:

PRODUCT No. (as per price book) SERIAL No.

DEALER'S PRE DELIVERY IMPLEMENT CHECK WHEN DONE SIGNATURE

PURCHASERS NAME (Full)

ADDRESS (Full)

DATE OF PURCHASE: IMP. RECEIVED IN GOOD ORDER & CONDITION

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PURCHASERS SIGNATURE.....



## CUSTOMER'S MACHINERY REGISTER

We ask for your assistance in registering your holdings of equipment. This information can assist us greatly in after-sales service, development of new products and customer awareness of Shearer products.

- Name:.....  
Address:.....  
.....State: .....Postcode: .....
- Type of purchaser (please tick) ☐ Owner / Manager ☐ Share Farmer ☐ Contractor
- Major activities (please number in order of importance)  
☐ Sheep and cereal grain Vegetable Sugar  
☐ Sheep only ☐ Poultry ☐ Tobacco  
☐ Cereal Grain Only ☐ Pigs ☐ Oilseeds  
☐ Meat Cattle ☐ Vineyards ☐ Others (please list)  
☐ Milk Cattle ☐ Fruit ☐ .....
- What is the size of your holding (hectares)? .....  
What is the total area of your crop (hectares)? .....  
What is your area under cereal crop (hectares)? .....
- In what town is your associated Shearer dealer? (i.e. either the dealer with whom you normally trade or the one who is closest)
- What John Shearer machines do you currently have on your property?

Serial No.	Implement type	Size	Date Delivered	Comments
...../...../.....				
...../...../.....				
...../...../.....				
...../...../.....				
...../...../.....				
...../...../.....				

Thank you for your assistance; please feel free to use the back of this form to make any comments you wish.





# JOHN SHEARER LIMITED

ESTABLISHED 1877  
INCORPORATED IN SOUTH AUSTRALIA

**HEAD OFFICE & FACTORY**  
**PO BOX, 2466 REGENCY PARK**  
**SOUTH AUSTRALIA 5942**

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**Website** [www.johnshearer.com.au](http://www.johnshearer.com.au)  
**Spare parts email** [spares@johnshearer.com.au](mailto:spares@johnshearer.com.au)

## WHEN ORDERING SPARE PARTS PLEASE STATE:

1. MODEL, SERIAL NUMBER & SIZE (OF THE MACH. / IMP.)
2. PART NUMBER AND DESCRIPTION (OF THE SPARE PART).
3. NUMBER OF PARTS REQUIRED.
4. FORWARDING INSTRUCTIONS.
5. CORRECT NAME & ADDRESS OF DESTINATION.



### MODEL & SERIAL NUMBER PLATE

IS PLACED ON THE LEFT-HAND FRONT OF  
THE MAIN-FRAME.

MADE & PRINTED IN AUSTRALIA BY JOHN SHEARER LIMITED.

M142J3 MAY 2019

## CONTENTS

PAGES	DESCRIPTION
4	WARRENTY
5-6	PRE-DELIVERY CHECK, STORAGE
7	SPECIFICATION
8-12	SAFTY
13-15	SETTING UP
16-18	DOUBLE DISC OPENERS
19	MAINTAINANCE OF "T" BOOTS
20	LUBRICATION, TYRE PRESSURES
21	OPERATING INSTRUCTIONS
22	SET UP ON TABLET
23-30	GRAIN AND FERTILISER CHARTS
31	TROUBLESHOOTING - PHASING HYDRAULIC CYLINDERS
32-33	T BOOT ASSY
34-35	DOUBLE DISC OPENER
36-37	DISCS AND SCRAPERS ETC. (DISC DRILL)
38	TROUBLESHOOTING



Congratulations on the purchase of your new JOHN SHEARER LIMITED implement. You have just joined the growing number of John Shearer customers, and we trust that your implement will give you many years of satisfaction. The following information contained in this manual is provided with regards to your implement's operation, maintenance and warranty; however, should you require further assistance, contact your registered John Shearer Dealer.

## WARRANTY POLICY

JOHN SHEARER LIMITED (JSL) warrants to purchaser that in normal use, if any part of goods manufactured by JSL is proved to be defective material such part will be replaced or repaired by JSL if returned to Dealer at the cost of customer within 12 months of delivery of goods, but such warranty shall to the extent permissible by law cease to apply forthwith if goods are misused or used contrary to recommendations of JSL and/or Dealer or if any unauthorised alterations, modifications or substitution of any part of goods is made or there is any breach by customer of the terms and conditions.

Customer agrees that JSL shall not be liable for any claim for damages due to loss of time in use of goods or loss of profits due to defective goods or for any other consequential damages whatsoever except to the extent that such exclusion of liability is prohibited by law.

All failures must be reported immediately by the purchaser to the Dealer (or in the event of the Dealer ceasing to hold the JSL franchise, then to the Dealer nominated by John Shearer Limited).

The only parts which would be replaced or repaired under warranty are those which are proven to be of defective materials by persons in authority in the JSL Field Service Department.

It is the policy of JSL to continually strive to improve their products whenever possible. Therefore, JSL reserves the right at all times to modify its products or parts without notification and undertakes no liability to modify products sold, to conform with any such modifications.

Travelling and kilometre charges are not accepted by JSL as JSL has no control where equipment is sold.

Nothing in this warranty policy and instructions shall purport to exclude or limit any liability the exclusion or limitation of which is prohibited or rendered void by the Trade Practices Act 1974 as amended or any other Federal or applicable State Legislation.

All pre-delivery checks must be done by the Dealer and signed when completed on the Warranty Registration Card.

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**FREIGHT:** The JSL policy does not extend to cover freight charges.

**SERVICE & MAINTENANCE:** It is the responsibility of the owner to read the Operator's Manual and to maintain and operate the implement in a safe and correct manner within the manufacturer's specified capacity and operating limitations. Using the implement for purposes other than those for which it is designed voids all warranty.

Regular service to your implement can save costly repairs and save valuable time lost because of breakdown.

Resultant damage or failures originating from neglect of machine is not covered under warranty. For your spare part requirements contact your John Shearer Dealer.

**PRE-DELIVERY CHECK**

1. On delivery of AS2400lt AIR SEEDER CULTIVATOR, ensure there are no shortages.
2. Check Implement equipment, to ensure as ordered.
3. Check for trans-shipping damage.
4. Refer to lubrication section, page 20, for greasing and routine check-points.
5. Check and tighten bolts and nuts, (including wheel nuts).
6. Check Tyne and Double Disc Opener spacing.
7. Ensure that implement is fully assembled and operating correctly.
8. Demonstrate and explain the operation to the client.
9. Explain terms and conditions of Warranty to the client.

## **STORAGE**

At the end of the season, the following steps should be taken to maintain and protect your air seeder throughout the off-season.

- Prop lids open 25 mm - 30 mm to relieve pressure on the lid seals.
- Open the bottom tray.
- Clean thoroughly. Remove all particles of grain, fertiliser etc.
- Worn or damaged parts should be replaced or repaired where necessary.
- Relieve weight off tyres.
- Lubricate all grease fittings.
- Remove flexible plumbing from the implement and store it dry and out of sunlight.



## SPECIFICATION

No. OF SOWING ROWS		47	40	35	COIL TYNE DRILL:					
					Tyne Type –		25mm (1") Square Coil Tyne			
SOWING WIDTH:		m	5.97	6	6.22	Tyne Breakaway Force –		Maximum N (lb)		
		(ft)	(19'8")	(19'8")	(19'6")	Tyne Spacing:				
						Between Rows -		550mm (21.65")		
SOWING SPACING:			125mm	150mm	175mm	Along Rows -		500mm		
			(5")	(6")	(7")	Weight Empty -		kg	5380	
						(approx.)		(lb)	(11861)	
									5260	
									5170	
									(11398)	
BOX CAPACITY:					BLOWER:					
Rear – fertilizer -		kg	1425	1425	1425	Max speed -		4000 rpm		
		(lb)	(3142)	(3142)	(3142)	Hydraulic flow rate:		40 LpM (10.4 GpM)		
Front – seed -		kg	966	966	966	Hydraulic pressure:		17.2 MPA (2500 psi)		
		(lb)	(2130)	(2130)	(2130)					
DDO DRILL:					SEED & FERTILISER DISTRIBUTORS:					
DDO Type -		Parallelogram			Seed -		Fluted roller for common seed and fertiliser			
Travel (Total) -		254mm (10")			Fertilizer -		Fluted roller for common seed and fertiliser			
Disc Size -		15" x 4mm			Gates -		Adjustable gate with the handle			
DDO Spacing:					GEARBOX:		Easy switchable gears to adjust roller speed			
Between Rows -		1100mm			OPTIONAL EQUIPMENT:		Coulter Bar			
Along Rows -		250mm					Quick switch for finer calibration			
Weight Empty -		kg	7231	6780	6484			A wide range of Points & Fittings		
(approx.)		(lb)	(15942)	(14947)	(14295)			Spring harrow bar		
TYNE DRILL:					Press wheel bar					
Tyne Type –		"630" spring release			Dual seeding kit					
Jump Height –		250mm (10")			Auger kit					
Tyne Breakaway Force –		16mm diameter spring, adjustable to a maximum 158 kg (350lbs)								
Tyne Spacing:										
Between Rows -		550mm (21.65")								
Along Rows -		500mm								
Weight Empty -		kg	6340	6060	5850	Due to our policy of continuing research, these specifications are subject to change without prior notification.				
(approx.)		(lb)	(13977)	(13360)	(12897)					

## SAFETY

### GENERAL SAFETY

1. All farm machinery is potentially dangerous and should be treated with caution and respect.
2. Never allow anyone to ride on the tractor drawbar, or on the air seeder. The person(s) riding may fall and be seriously or fatally injured.
3. Machinery should be operated **ONLY** by persons responsible and qualified to do so.
4. Never allow anyone to climb or play on the tractor or air seeder. They may fall and be seriously injured.
5. Follow all safety precautions in your tractor and air seeder manuals.
6. Always exercise extreme caution in the vicinity of sharp edges and points. Ensure guards are always fitted during operation.
7. Footboards, footsteps and other machine surfaces may be slippery when wet or muddy. Apply extra caution in wet conditions and early morning when surfaces are wet.
8. Keep a first aid kit in the tractor at all times.
9. Pay attention when handling agricultural chemicals, wear necessary protective clothing or equipment when required.

### OPERATION SAFETY

1. Be sure person(s) are standing clear when starting or moving the tractor and air seeder.
2. When air seeder is being operated or transported, be sure all person(s) stay away from rotating shafts, gears and pulleys. If a person's limbs or clothing is caught by the rotating parts, serious injury or death may result.
3. When calibrating through the tablet, be sure to keep your hands and other person's hands clear of the gears and motors. If hands are caught in gears, serious injury can result.
4. Before starting the calibration test, make sure the air seeder cultivator and tractor are parked in a safe and stable area, shut off tractor hydraulic system and engage park brake to prevent movement. If tractor and air seeder unit rolled while you or others were under the air seeder tank, serious injury or death might occur.
5. Never stand between the tractor and air seeder when hitching air seeder unless all tractor controls are in neutral and the parking brake is set. The tractor or tractor and airseeder could roll backwards which could result in serious injury or death to you or those nearby.
6. Operate the air seeder at a sowing speed of **8 - 12 km/hr** (5 - 7.5mph).

Sowing too slow may cause overseeding at low sowing rate (for example 2kg/hect for canola);

Sowing too fast can result in poor contour following and uneven sowing depth.

More extreme conditions can cause greater vibration and damage to the air seeder.

7. Apply extra care when operating the air seeder on hillsides. The tractor or air seeder may tip over if:

It strikes a hole, ditch or other irregularity, resulting in serious injury or death to the operator or those nearby.

Maximum GRADE OF THE ROAD (slope) should no more than **25% (1:4)**.

8. **DO NOT** make sharp turns (**over 40°**) on both left turns and right turns. Sharp turns may cause machine tilting, may damage the ladder or Auger on the machine, and can cause serious injury.
9. Never allow anyone to ride on air seeder while it is being operated. The person riding may fall and be seriously or fatally injured or may be caught by rotating shafts, belts, or pulleys and be fatally or seriously injured.
10. To avoid personal injury or death, always stay clear of the folding wings when they are being raised or lowered into the field position. If the hydraulic system failed, or if the hydraulic lever was accidentally operated, the wings could drop, resulting in serious injury or death to you or those nearby.
11. **KEEP CLEAR.** Make sure all persons are clear of the area of air seeder before and during operation.
12. Always relieve the pressure in the hydraulic system when air seeder and cultivator is not being operated.

13. Tank seal must not leak during seeding or fertilising operations. Seal leaks can cause product distribution to stop and start or cease altogether. This kind of erratic distribution will leave unseeded strips in your field.

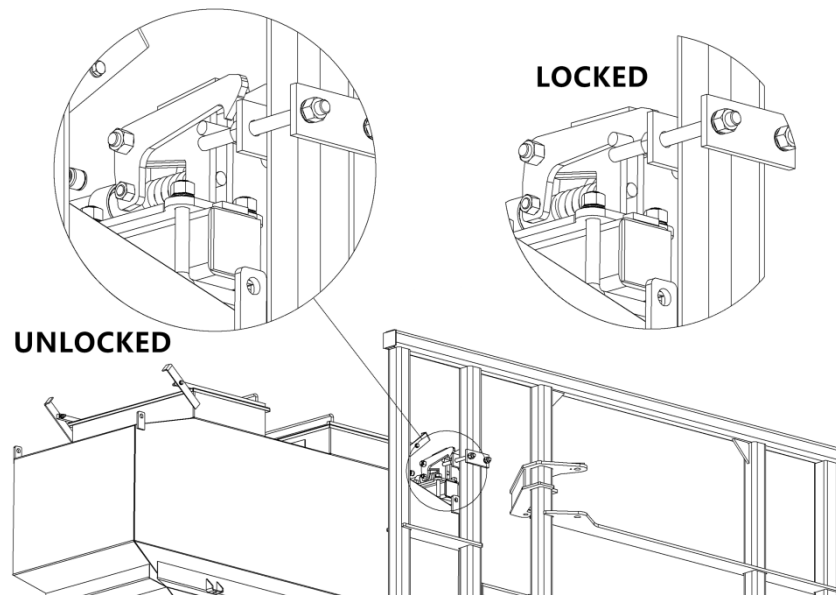
14. Never operate air seeder without fan motor case drain hose hooked up. This hose must be hooked up unrestricted to tractor hydraulic reservoir. Failure to properly install fan motor drain hose will result in irreparable damage to the fan motor.

15. Do not use quick couplers to connect fan motor case drain hose to tractor's hydraulic reservoir. Use 3/8" swivel adapters only. This line must be unrestricted **AT ALL TIMES**. No quick couplers can be used. If a quick coupler failed or was disconnected during field operations, fan motor will be irreparably damaged.

## TRANSPORT SAFETY

1. Before transporting air seeder cultivator, read the transport safety recommendations in the tractor's operator's manual.
2. Always lock the tractor's 3-point linkage (lower 2 points) and air seeder hitch before transporting the air seeder. Serious damage and injury could result from the cultivator separating from the tractor.
3. When transporting the air seeder with the wings folded (up), be sure there is sufficient clearance under all power lines and other overhead obstructions lower than **3.8m**. Serious injury or death can result from contact with electrical lines when moving or operating the and air seeder.

4. When transporting the air seeder with the wings folded (up), be sure there is sufficient clearance of the road, the overall transport width of the machine is **2.97m**. Check local road regulation for the allowance.
5. During the transport, **DO NOT** travel over **30 km/hr**. Over speed can result in losing control of the airseeder, damage to the tyres and bearings of the airseeder and high risk of a traffic accident.
6. Take extra care when transport with hopper fully filled.
7. Before the transport, check the necessity to open the light kit according to local road regulation.



8. Always make sure lock the wings in the folded position with the transport locks before transporting the air seeder. Serious damage to the cultivator and serious injury or death could result from the wings falling during transport.
9. Regulate your speed on hillsides and curves when transporting the cultivator and air seeder. Loss of tractor control could result in serious damage to the air seeder and possible serious injury or death to you or those nearby.
10. Be sure no one is standing near air seeder when hitching air seeder and tractor. Severe injury or death could occur if a person(s) nearby were struck or caught by the air seeder.

#### MAINTENANCE SAFETY

1. Always put all tractor controls in neutral set the parking brake and shut off the engine before servicing the air seeder. If tractor and air seeder were to roll, you could be seriously or fatally injured.
2. Do **NOT** enter tank of air seeder **AT ALL TIMES**. The tank is NOT designed for people to come in; cleaning is available through lower hopper door. You would have difficulty getting out and may hurt yourself from falling through the top hopper door.
3. Do not lubricate the air seeder when it is in motion. You may fall and be seriously or fatally injured.
4. Do not loosen or disassemble hydraulic components when there is pressure within those components. Escaping hydraulic fluid under pressure has sufficient force to penetrate skin. Always relieve the pressure in the hydraulic system before making adjustments to the hydraulic system.

5. Check all hydraulic hoses periodically for signs of ruptures and leaks. Always use wood or cardboard as a backstop, and wear gloves and eye protection when searching the hydraulic system for leaks. Spurting hydraulic fluid can cause injury if it penetrates the skin or the eyes. If injured by escaping hydraulic fluid, see a medical doctor immediately.
  6. Always permit parts, which contain hot fluid to cool to a safe temperature before handling or disconnecting these parts.
  7. Always wear safety glasses or goggles and gloves when working on the hydraulic system.
  8. Tank must be pressurised to maintain an accurate metering rate. Air leaks around the lid seals and the seed cup can cause uneven distribution.
  9. Be aware of worn or ruptured electric wires, a short circuit of the electricity may cause fire and certain injury to people who touched it.
  10. When performing maintenance work on the fan, be sure tractor engine is shut off to prevent the fan from being accidentally operated. If the fan was accidentally operated, serious injury or death could occur to the person(s) performing maintenance.
2. Be sure all bolts and hydraulic fittings are tight, and all cotter pins are installed in their pins.
  3. Use extra care when assembling guard-rail and hand-rail on tank platform. The person assembling railing may fall from the platform when no guardrail is in place.
  4. Platform and ladder will be slippery if wet or muddy. Serious injury could result if you fell from the air seeder platform or ladder.
  5. Be sure all wheel bolts are checked for tightness during initial transport or when first air seeding. Loose wheel bolts may result in the wheel falling off causing serious damage to the air seeder and may cause serious injury to the operator or persons nearby.
  6. When replacing main wheels, make sure the tyre size is **400/60-15.5**. The allowed load is over 2900kg per tyre. Be aware of the correct side and the pattern of the tyre. Check the tyre pressure before operate.
  7. When replacing wing wheels, make sure the tyre size is **215/85-16**. Be aware of the correct side of the tyre. Check the tyre pressure before operate.
  8. Wear gloves, heavy clothing and heavy footwear when assembling the air package and seed boots. Points and sharp corners of cultivator can cause injury.
  9. Do not walk across the top of cultivator frame when assembling air package. Serious injury could result if you fell.

#### **ASSEMBLY SAFETY**

1. Use an aligning punch to line up holes. Keep your fingers out of these holes. Any sudden movements of heavy components will severely injure or sever your fingers.

10. Before applying pressure to the hydraulic system, be sure all connections are tight, and the components are not damaged.
11. Do not use quick couplers to connect fan motor case drain hose to tractor's hydraulic reservoir. Also, do not use a quick coupler to connect fan motor drain hose between air seeder and cultivator. Use 3/8" swivel adaptors only. This line must be unrestricted **AT ALL TIMES**. No quick couplers can be used. If a quick coupler failed or was disconnected during field operations, fan motor will be irreparably damaged.

## SETTING UP

Congratulations on the purchase of your new Air Drill.

This manual has been prepared to assure the proper setup, operation and trouble-free service.

After reading this manual, keep it in the carrier provided on the implement for quick and easy reference should any question arise concerning operation or service.

Your AIR SEEDER is designed to give maximum service life, but a routine lubrication and maintenance schedule must be followed as shown on the lubrication chart (see page 20)

### SETTING UP – TRAILED IMPLEMENT

#### IMPLEMENT LEVELLING “FRONT TO REAR”.

Adjust hitch link to level implement “front to rear” at working position. Extend the link to increase the depth of working of the rear tynes. Set the Disc Drill with the grain and fertiliser box support “level” in the working position.

#### IMPLEMENT LEVELING “SIDE TO SIDE” / DEPTH ADJUSTMENT

Set the adjusting screws on each side.

### TURNING

Avoid turning sharply with tynes/discs in the ground. Lift the machine out of the ground at corners and sow headlands separately to avoid oversowing.



### SOWING RATES

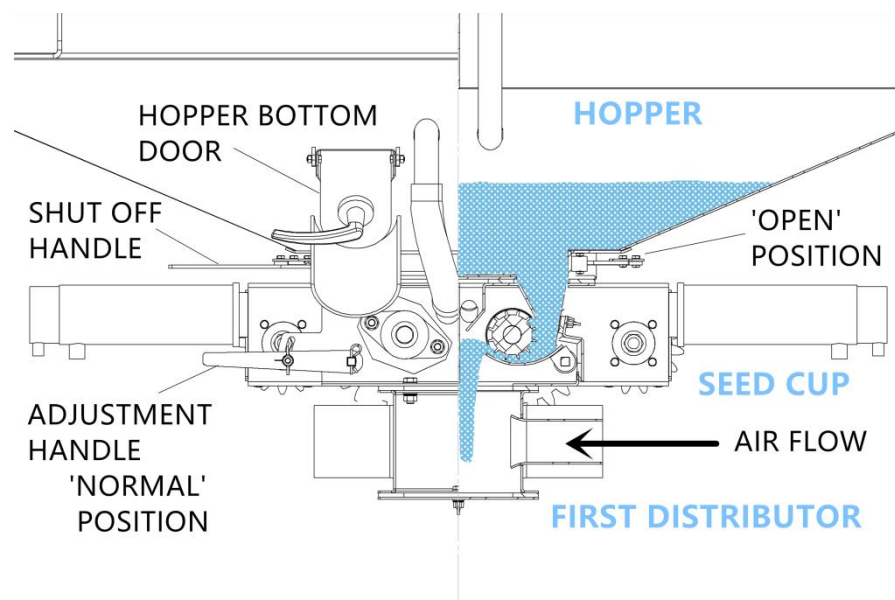
Select sowing rates as per the sowing chart. N.B. This chart is to be used as a guide only.

The new AS2400lt air seeder is sowing through the electric motor. After calibration, the sowing rate is automatically controlled by the John Shearer App.

Check sowing rate for a reference as follows:

The sowing rate chart is based on an effective wheel rolling perimeter of 2568mm. That is 649 revolutions of the drive wheel correspond to 1 hectare.

## SEEDING FLOW



Seed and fertilisers stored in each compartment go through the hopper gate to the seed cup where the sowing rate is controlled. The components from both hoppers will be mixed in the first distributor.

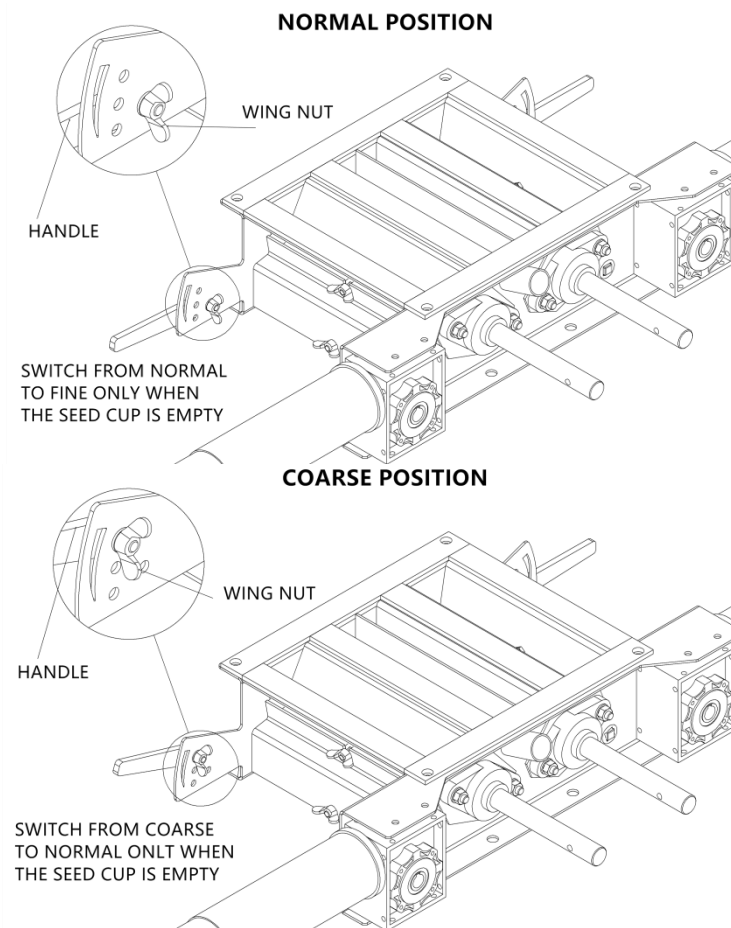
The mixture is sown to the riser and distributor heads by the air from the blower. In the default setting, both distributor heads contain the same mixture.

For dual seeding kits, seed and fertilisers will not be mixed and will be sent to risers separately. Each distributor head sows different components.

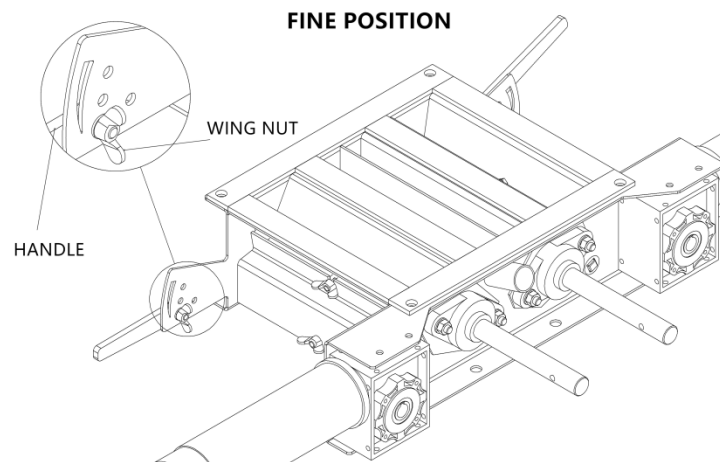
**TO GET AN ACCURATE CALIBRATION RESULT, A PRERUN CALIBRATION TEST CAN HELP FILL UP THE GAPS AND CLEAN UP ANY REMAINING SEEDS IN THE PAST.**

## GATE SETTING

In the seed cup, seed and fertiliser metering rollers have adjustable gates at the metering point under the roller. This adjustment allows for the diversity in size of seed and types of fertiliser. To ensure accurate metering of material, it is essential that these gates be correctly adjusted in accordance.







#### PROCEDURE FOR RESETTING GATES IF REQUIRED:

1. Empty the hopper or close the hopper gate and uninstall the seed cup from the hopper.
2. Use 8mm wrench to loosen wing nut and free the adjustment handle.
3. Adjust the handle to a proper position according to the 'GRAIN & FERTILIZER CHART'.
4. Hold the wing nut and use the wrench to lock the handle tight.

**'NORMAL' POSITION** is suitable for most seed and fertilisers: Oats, Barley, Sunflower, Rice, etc.

**'COARSE' POSITION** is suitable for large seeds and higher rate:

Lupin, Soybean, etc.

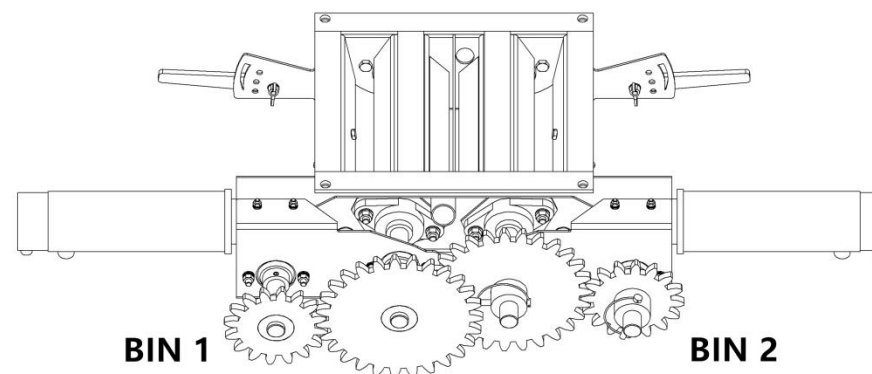
'COARSE' Position is also usable when cleaning or change products in the tank.

**'FINE' POSITION** is suitable for small seeds and lower rate: Lucerne, Canary, Canola, Millet, etc.

#### GEARBOX SETTINGS

The calibration is powered by the electric motor and controlled through John Shearer App on the tablet; therefore a proper setting is important for an accurate calibration.

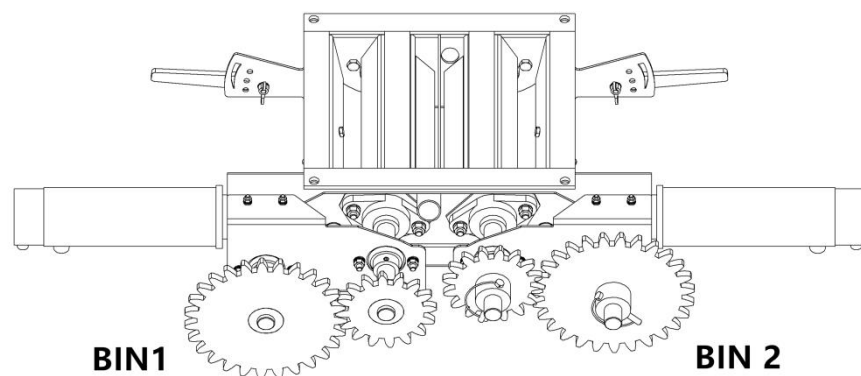
The quick switch gears can be set to allow the electric motor rate between low to high, and special sets of gears are available to meet lower volume needs. The charts on pages 22-30 are a guide to what rate can be expected for various products. Be aware that this chart is a guide only, and for accuracy, a calibration check must be done before seeding.



The drawn shows normal sitting position of how two pair of gears fit into 16 to 27 gear ratio.

**It is important to keep gears facing the right direction and position when switching the gear ratio.**

The following drawing shows the gear ratio 27 to 16 when seeding big amounts.



### GRAIN AND FERTILISER BOX CAPACITIES

The Grain and Fertilizer box is fitted with seed cup, which allows either grain or fertiliser in both compartments. The two compartments of the box are equal in volume, both 1200 litres (966kg Wheat or 1425kg Super).

Both compartments can be closed separately and sowing at a different rate.

The first distributor is set to mix and bisect the outcomes from both hoppers and send to each distributor heads.

Dual seeding kit is also available, in this way, the first distributor separates each hopper, and one compartment comes to one distributor head.

### DISTRIBUTOR ROLLERS

The default roller is suitable for both grains and fertilisers in different sizes. After testing, it is able to provide continuous calibration flow even with small seeds and at very low rate.

### DDO & COULTER UNIT SPRING TENSION

Set DDO & Coulter unit spring tensions equally on each row. DDOs on the front two rows are more likely to need tension. To avoid higher loads than necessary on the Tyne assembly components, use the minimum spring tension that will achieve the penetration required.

### FERTILIZER CORROSION DAMAGE

The hopper must be “COMPLETELY AND THOROUGHLY CLEANED OUT” after use, to help prevent corrosion. It is especially important that the hopper is not left overnight with any fertiliser remaining in it. Particular attention should be paid to keeping the area around the critical distributor/bearing/gate components free of fertiliser. It is necessary to disassemble the seeding gate in the first distributor, as there will have remaining fertilizer on the curved seed gate.

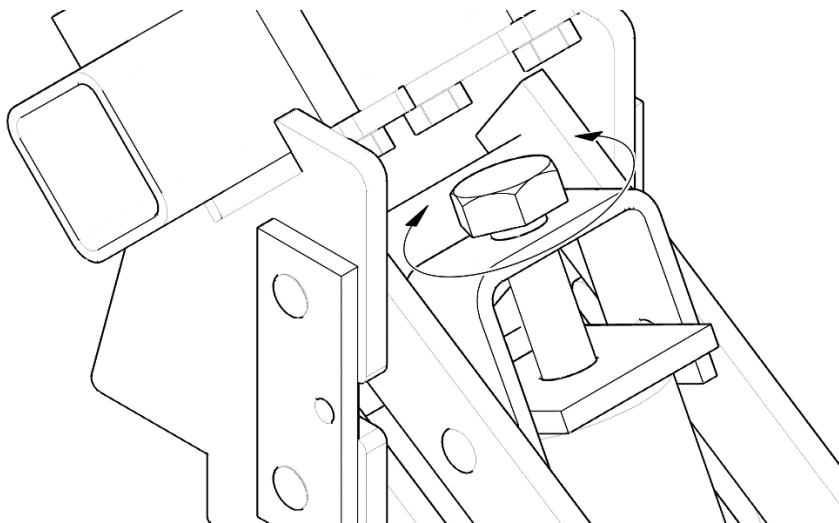
This recommendation is applicable irrespective of the kind of fertiliser in use but is more important with the higher analysis, high nitrogen, and fertilisers.

## DOUBLE DISC OPENERS

### DOWN PRESSURE

For best results, set the pressure only enough to ensure adequate penetration. Packing pressure for use in the soft ground should be much lower than for hard ground.

To adjust, turn the bolt as shown below to increase or decrease the spring pressure as required. Increasing spring pressure will increase the downward pressure on the opener/press wheel.



### TURNING

Lift the disc clear of the ground when turning to avoid damage.

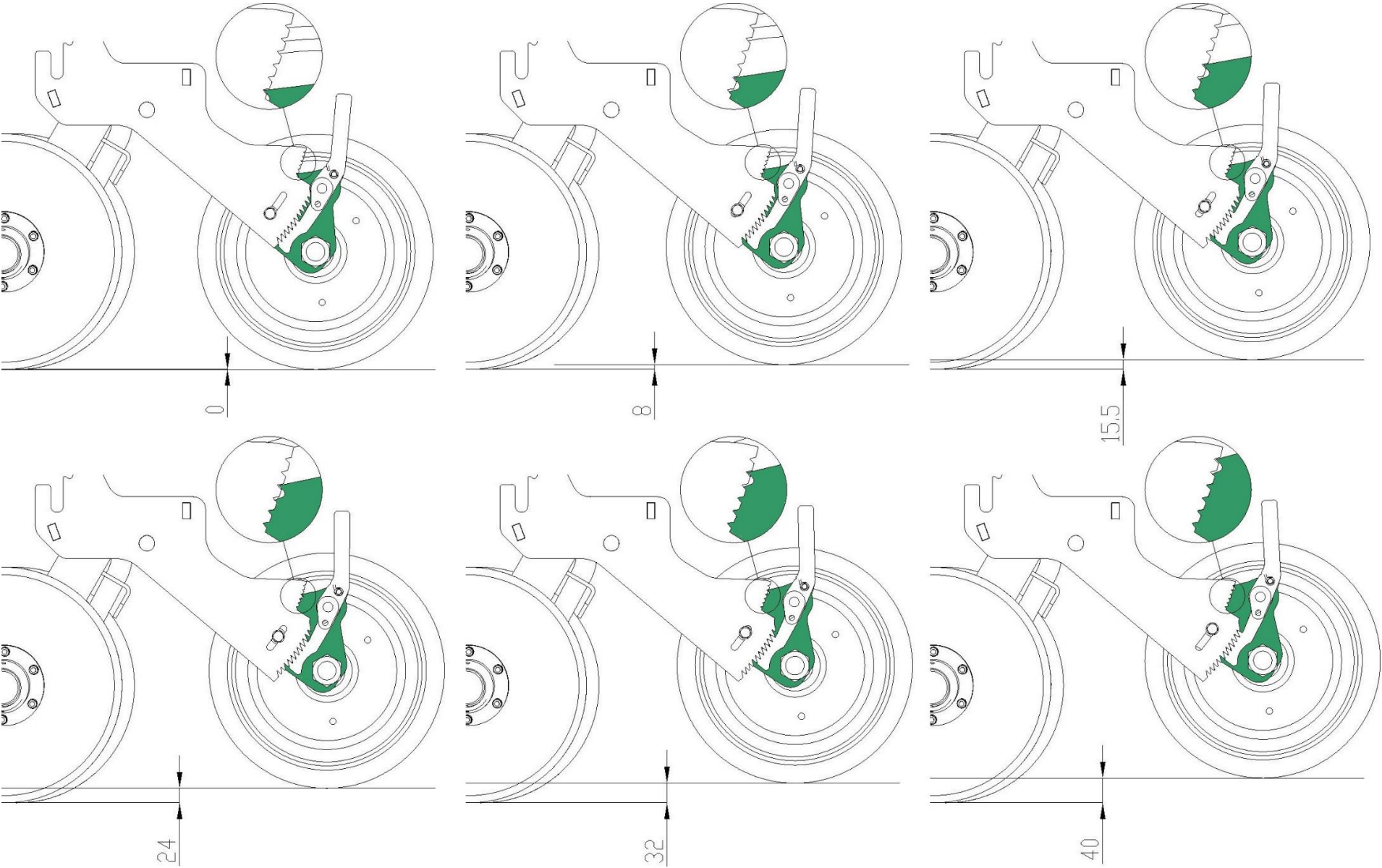
## SAFETY FIRST

DO NOT OPERATE THE IMPLEMENT WITH CHAIN DRIVE GUARDS REMOVED.

DO NOT ATTEMPT ANY WORK ON THE IMPLEMENT WHILE THE IMPLEMENT IS IN MOTION. (I.E. CLEANING OF BOXES OR LUBRICATION OF DRIVES ETC.).

PRIOR TO WORKING UNDERNEATH THE IMPLEMENT (E.G. CHANGING POINTS, ETC.) ALWAYS CHECK THAT THE IMPLEMENT IS ADEQUATELY SUPPORTED ON BLOCKS.





## MAINTENANCE OF “T” BOOTS

A tungsten carbide insert has been fitted to the leading edge of the blade

Because the blade is expected to carve a channel through hard abrasive soils, stones and rocks etc. DO NOT DISREGARD NORMAL MAINTENANCE. Continual maintenance of the blade is necessary. The tungsten carbide will slowly wear, but blade surfaces will wear more quickly. Regularly check that all bolts are tight. Ensure that the boot is kept clean of blockages due to the buildup of grain or fertiliser so that an unrestricted flow of product is possible.

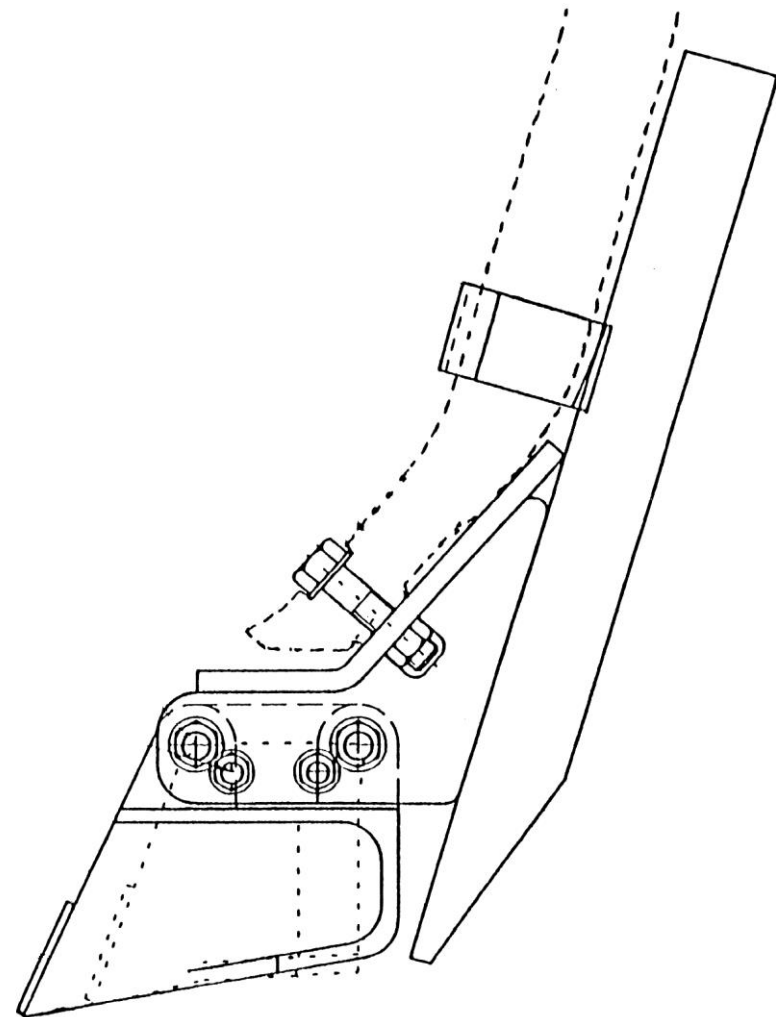
### TENSION ON SPRINGS

The pressure is taken at the bolt that holds the boot on. The correct pressure on tynes is important; the tynes must work on their springs and vibrate to crumble the soil and create tilth over the seed.

### 3 POINT LINKAGE MACHINES

When using 3-point linkage implements fitted with “T” boots, there are guidelines to follow to minimise wear.

- When drilling you must sow in a straight line.
- If you turn without lifting, you will cause excessive wear on sides of blades and sowing tubes.
- Lift implement when you come to a corner.
- Be in motion when entering the ground and lift when stopping.
- Do not let implement rollback, if you do, sowing tubes will block with soil forced into opening.



“T” BOOT

## LUBRICATION CHART

Item	Operation	Schedule
Wheel Hub	Grease	200hrs
Axle Rockshafts	Grease	Daily / 10hrs
DDO Press wheel	Grease	200hrs
Tynes	Grease	Daily / 10hrs
Trimming Screw	Grease	Annually
Tyres	Check Pressure	Daily
Gear	Check adjustment	Daily
Gear	Grease	Daily
General Inspection (Nut & Bolts)	Check for tightness	Daily
Hopper	Clean out at the end of each day (Particularly Hygroscopic Fertilizer)	Daily
Grease Nipples	Lubricate all before storage at the end of each working period	Seasonally

DO NOT LEAVE FERTILISER IN THE IMPLEMENT OVERNIGHT. (PARTICULARLY HYGROSCOPIC FERTILISER, WHICH WILL TAKE UP MOISTURE AND HARDEN)

## TYRE PRESSURES

TYRE PRESSURES ARE IMPORTANT
<p><u>OVER INFLATION</u> will impair flotation – Increasing sowing depth variations as ground conditions vary.</p> <p><u>UNDER INFLATION</u> can result in tyre failures.</p>

TYRE SIZE	6M 6" SPACING
	DDO
<b>CENTRE:</b> 400/60 15.5 TYRE PRESSURE (kPa)	358
psi	52
<b>WING:</b> 215/85 R16 TYRE PRESSURE (kPa)	350
psi	50

SPEED LIMIT 30 km/h (10 km/h SOWING)
--------------------------------------

## OPERATING INSTRUCTIONS

1. Use a sufficiently powerful tractor which is heavy enough to tow the drill in a safe way.
2. Hydraulic Fan, connect the hoses in the following order:  
  
**First:** connect the Case Drain line 3/8" hose to the hydraulic reservoir.  
**IMPORTANT:** THE HYDRAULIC RESERVOIR OR WHAT CASE DRAIN LINE CONNECTED SHOULD HAVE NO BACKPRESSURE.  
  
**Second:** connect Blower Outlet line 3/4" hose to tractor return port.  
  
**Finally:** connect Blower Inlet line 3/4" hose to tractor power port.  
  
 Disconnect in the reverse order to prevent motor seal damage.
3. Connect the inlet & outlet line of lifting circuit and folding circuit in correct tractor hydraulic ports.
4. Check tyres pressure before seeding.
5. Check lubrication before seeding.
6. Adjust the drills or double-disc openers to proper working loads. Boots and air pipes are connected well.

7. Set the working depth of the machine through depth control valves.
8. Check the levelling of the machine at the working height.
9. Calibrate each compartment before seeding.
10. Fulfil the hopper, close hopper doors, and pack up ladder.
11. Raise the air drill before moving to the field.
12. Raise the air drill when turning during the operation.
13. Operate the air drill at a speed of 8-12 km/hr (5-7.5 mph).
14. After long term storage, check to see that all drive mechanism and hydraulic equipment are functioning correctly. Check that the air tubes are not blocked and perished.

## SET UP ON TABLET

1. Connect machine and tablet through Bluetooth.
2. Configure the machine as the app guides, the ideal travel meter after 100 poles count down is around 128m, it varies depend on the tyre pressure, load of the machine and ground condition.
3. The row number is 40, and the sowing width is 6m.
4. Before doing calibration test, set the first distribution to certain positions according to the chart below and setting manual on Page 14. The special gear rate for fine calibration 10&33 is only available on bin #1.
5. **For any seed rate over 42 kg/hectare**, use larger holder to capture calibration seeds, it will be over filled with the origin pan.
6. Weight the pan or holder before the calibration.
7. Scale the collection and row number is 40.
8. A high accurate scale will help the accuracy of the calibration.
9. A second calibration result is more accurate than the first one.
10. After calibrate both bin, the machine is ready to work in the filed!





**Grow a Better Crop**

## GRAIN & FERTILIZER CHART 6M AS2400lt AIR DRILL

USE FOR JOHNSHEARER

Default seeding speed: 10 km/h

QUANTITIES STATED ARE IN kg/hectare AND ARE GUIDE ONLY  
RATE VARIES DUE TO SPEED, SEED SIZE AND GATE SETTING  
CHECK IN FIELD AND MUST DO CALIBRATION TEST

GEAR SETTING				MIN		MAX					MIN		MAX		GATE POSITION
	STANDARD GEAR		GEAR RATIO	kg/hect	kg/hect	SPECIAL GEAR		GEAR RATIO	kg/hect	kg/hect		kg/hect	kg/hect		
	A	B				A	B								
WHEAT 80kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6				NORMAL	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1					
BARLEY 66kg/hl	16	27	1:1.7	3.3	53.4	10	33	1:3.3	1.7	27.3				NORMAL	
	27	16	1.7:1	9.5	152.1	33	10	3.3:1	18.6	297.4					
OATS 50kg/hl	16	27	1:1.7	2.6	41.1	10	33	1:3.3	1.3	21				NORMAL	
	27	16	1.7:1	7.3	117	33	10	3.3:1	14.3	228.8					
CANOLA 68kg/hl	16	27	1:1.7	2.2	35.2	10	33	1:3.3	1.1	18				FINE	
	27	16	1.7:1	6.3	100.2	33	10	3.3:1	12.3	196					
LUPINS 80kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6				COARSE	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1					
GRAN.SUPER 118kg/hl	16	27	1:1.7	5.9	94.5	10	33	1:3.3	3	48.3				NORMAL	
	27	16	1.7:1	16.8	269.1	33	10	3.3:1	32.9	526.2					
D.A.P. 100kg/hl	16	27	1:1.7	5.1	82.2	10	33	1:3.3	2.6	42				NORMAL	
	27	16	1.7:1	14.6	234	33	10	3.3:1	28.6	457.6					
UREA 82kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6				NORMAL	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1					

This implement delivers similar VOLUME of all materials.

Sowing rates in kg/hectare vary in proportion to density (kg/l) of materials.

Sowing rates for unlisted materials may be estimated as follows:

$$\text{rate for wheat} \times \frac{\text{kg/l (for material)}}{0.8 \text{ (kg/l for wheat)}}$$

**AFTER SETTING ALWAYS TAKE A RATE TEST**

NOTES

Handwritten notes on lined paper. The notes are written in cursive and are mostly illegible due to the handwriting and the quality of the scan. The notes appear to be a list or a series of short paragraphs, possibly related to a project or a study. The handwriting is very fluid and cursive, making it difficult to read. The notes are written on a page with horizontal lines, and the paper has a slightly aged appearance.



**Grow a Better Crop**

## GRAIN & FERTILIZER CHART 6M AS2400lt AIR DRILL

USE FOR JOHNSHEARER

Default seeding speed: 10 km/h

QUANTITIES STATED ARE IN kg/hectare AND ARE GUIDE ONLY  
RATE VARIES DUE TO SPEED, SEED SIZE AND GATE SETTING  
CHECK IN FIELD AND MUST DO CALIBRATION TEST

GEAR SETTING				MIN		MAX			MIN		MAX		GATE POSITION
	STANDARD GEAR		GEAR RATIO	kg/hect	kg/hect	SPECIAL GEAR		GEAR RATIO	kg/hect	kg/hect			
	A	B				A	B						
WHEAT 80kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6		NORMAL	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1			
BARLEY 66kg/hl	16	27	1:1.7	3.3	53.4	10	33	1:3.3	1.7	27.3		NORMAL	
	27	16	1.7:1	9.5	152.1	33	10	3.3:1	18.6	297.4			
OATS 50kg/hl	16	27	1:1.7	2.6	41.1	10	33	1:3.3	1.3	21		NORMAL	
	27	16	1.7:1	7.3	117	33	10	3.3:1	14.3	228.8			
CANOLA 68kg/hl	16	27	1:1.7	2.2	35.2	10	33	1:3.3	1.1	18		FINE	
	27	16	1.7:1	6.3	100.2	33	10	3.3:1	12.3	196			
LUPINS 80kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6		COARSE	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1			
GRAN.SUPER 118kg/hl	16	27	1:1.7	5.9	94.5	10	33	1:3.3	3	48.3		NORMAL	
	27	16	1.7:1	16.8	269.1	33	10	3.3:1	32.9	526.2			
D.A.P. 100kg/hl	16	27	1:1.7	5.1	82.2	10	33	1:3.3	2.6	42		NORMAL	
	27	16	1.7:1	14.6	234	33	10	3.3:1	28.6	457.6			
UREA 82kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6		NORMAL	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1			

This implement delivers similar VOLUME of all materials.

Sowing rates in kg/hect vary in proportion to density (kg/l) of materials.

Sowing rates for unlisted materials may be estimated as follows:

$$\text{rate for wheat} \times \frac{\text{kg/l (for material)}}{0.8 \text{ (kg/l for wheat)}}$$

**AFTER SETTING ALWAYS TAKE A RATE TEST**

NOTES

Lined area for notes.



**Grow a Better Crop**

## GRAIN & FERTILIZER CHART 6M AS2400lt AIR DRILL

USE FOR JOHNSHEARER

Default seeding speed: 10 km/h

QUANTITIES STATED ARE IN kg/hectare AND ARE GUIDE ONLY  
RATE VARIES DUE TO SPEED, SEED SIZE AND GATE SETTING  
CHECK IN FIELD AND MUST DO CALIBRATION TEST

GEAR SETTING				MIN		MAX			MIN		MAX		GATE POSITION
	STANDARD GEAR		GEAR RATIO	kg/hect	kg/hect	SPECIAL GEAR		GEAR RATIO	kg/hect	kg/hect			
	A	B				A	B						
WHEAT 80kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6		NORMAL	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1			
BARLEY 66kg/hl	16	27	1:1.7	3.3	53.4	10	33	1:3.3	1.7	27.3		NORMAL	
	27	16	1.7:1	9.5	152.1	33	10	3.3:1	18.6	297.4			
OATS 50kg/hl	16	27	1:1.7	2.6	41.1	10	33	1:3.3	1.3	21		NORMAL	
	27	16	1.7:1	7.3	117	33	10	3.3:1	14.3	228.8			
CANOLA 68kg/hl	16	27	1:1.7	2.2	35.2	10	33	1:3.3	1.1	18		FINE	
	27	16	1.7:1	6.3	100.2	33	10	3.3:1	12.3	196			
LUPINS 80kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6		COARSE	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1			
GRAN.SUPER 118kg/hl	16	27	1:1.7	5.9	94.5	10	33	1:3.3	3	48.3		NORMAL	
	27	16	1.7:1	16.8	269.1	33	10	3.3:1	32.9	526.2			
D.A.P. 100kg/hl	16	27	1:1.7	5.1	82.2	10	33	1:3.3	2.6	42		NORMAL	
	27	16	1.7:1	14.6	234	33	10	3.3:1	28.6	457.6			
UREA 82kg/hl	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6		NORMAL	
	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1			

This implement delivers similar VOLUME of all materials.

Sowing rates in kg/hect vary in proportion to density (kg/l) of materials.

Sowing rates for unlisted materials may be estimated as follows:

$$\text{rate for wheat} \times \frac{\text{kg/l (for material)}}{0.8 \text{ (kg/l for wheat)}}$$

**AFTER SETTING ALWAYS TAKE A RATE TEST**

## NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is a small dark mark or smudge near the top left corner. The paper appears to be a standard sheet of notebook paper.





**Grow a Better Crop**

## GRAIN & FERTILIZER CHART 6M AS2400lt AIR DRILL

USE FOR JOHNSHEARER

QUANTITIES STATED ARE IN kg/hectare AND ARE GUIDE ONLY  
RATE VARIES DUE TO SPEED, SEED SIZE AND GATE SETTING  
CHECK IN FIELD AND MUST DO CALIBRATION TEST

Default seeding speed:10 km/h

GEAR SETTING				MIN		MAX					GATE POSITION
	STANDARD GEAR		GEAR RATIO	kg/hec	kg/hec	SPECIAL GEAR		GEAR RATIO	kg/hec	kg/hec	
	A	B				A	B				
WHEAT	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6	NORMAL
80kg/hl	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1	
BARLEY	16	27	1:1.7	3.3	53.4	10	33	1:3.3	1.7	27.3	NORMAL
66kg/hl	27	16	1.7:1	9.5	152.1	33	10	3.3:1	18.6	297.4	
OATS	16	27	1:1.7	2.6	41.1	10	33	1:3.3	1.3	21	NORMAL
50kg/hl	27	16	1.7:1	7.3	117	33	10	3.3:1	14.3	228.8	
CANOLA	16	27	1:1.7	2.2	35.2	10	33	1:3.3	1.1	18	FINE
68kg/hl	27	16	1.7:1	6.3	100.2	33	10	3.3:1	12.3	196	
LUPINS	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6	COARSE
80kg/hl	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1	
GRAN.SUPER	16	27	1:1.7	5.9	94.5	10	33	1:3.3	3	48.3	NORMAL
118kg/hl	27	16	1.7:1	16.8	269.1	33	10	3.3:1	32.9	526.2	
D.A.P.	16	27	1:1.7	5.1	82.2	10	33	1:3.3	2.6	42	NORMAL
100kg/hl	27	16	1.7:1	14.6	234	33	10	3.3:1	28.6	457.6	
UREA	16	27	1:1.7	4.1	65.7	10	33	1:3.3	2.1	33.6	NORMAL
82kg/hl	27	16	1.7:1	11.7	187.2	33	10	3.3:1	22.9	366.1	

This implement delivers similar VOLUME of all materials.  
Sowing rates in kg/hect vary in proportion to density (kg/l) of materials.  
Sowing rates for unlisted materials may be estimated as follows:

$$\text{rate for wheat} \times \frac{\text{kg/l (for material)}}{0.8 \text{ (kg/l for wheat)}}$$

**AFTER SETTING ALWAYS TAKE A RATE TEST**

NOTES

Handwritten notes on lined paper. The notes are written in cursive and are mostly illegible due to the handwriting and the quality of the scan. The notes appear to be a list or a series of short paragraphs, possibly related to a medical or scientific study. The handwriting is very fluid and cursive, making it difficult to decipher the specific words and sentences. The notes are written in dark ink on white paper with horizontal ruling lines.



## TROUBLESHOOTING - PHASING HYDRAULIC CYLINDERS

[Note: the numbers in brackets below refer to the item numbers on the hydraulics part pages (page 54 & 55)]

The two cylinders are connected in series, such that each moves together to provide a level lift of the implement.

When the implement is RAISED, oil delivered from the tractor is directed to the piston end of the master cylinder (5), oil from the rod end flows to the piston end of the next cylinder (4), and oil from the rod end of (4) flows back to tractor. The volumes of the cylinders are matched so that both cylinders extend and retract simultaneously.

To ensure that all cylinders begin work “in phase”, each cylinder has a “phasing bypass” hole in the barrel that allows a small volume of oil to pass across the piston when the cylinder is fully extended (implement fully raised).

To achieve levelling of the implement (initially, or after storage, or as a result of one cylinder having an imperfect piston seal) the implement should be:

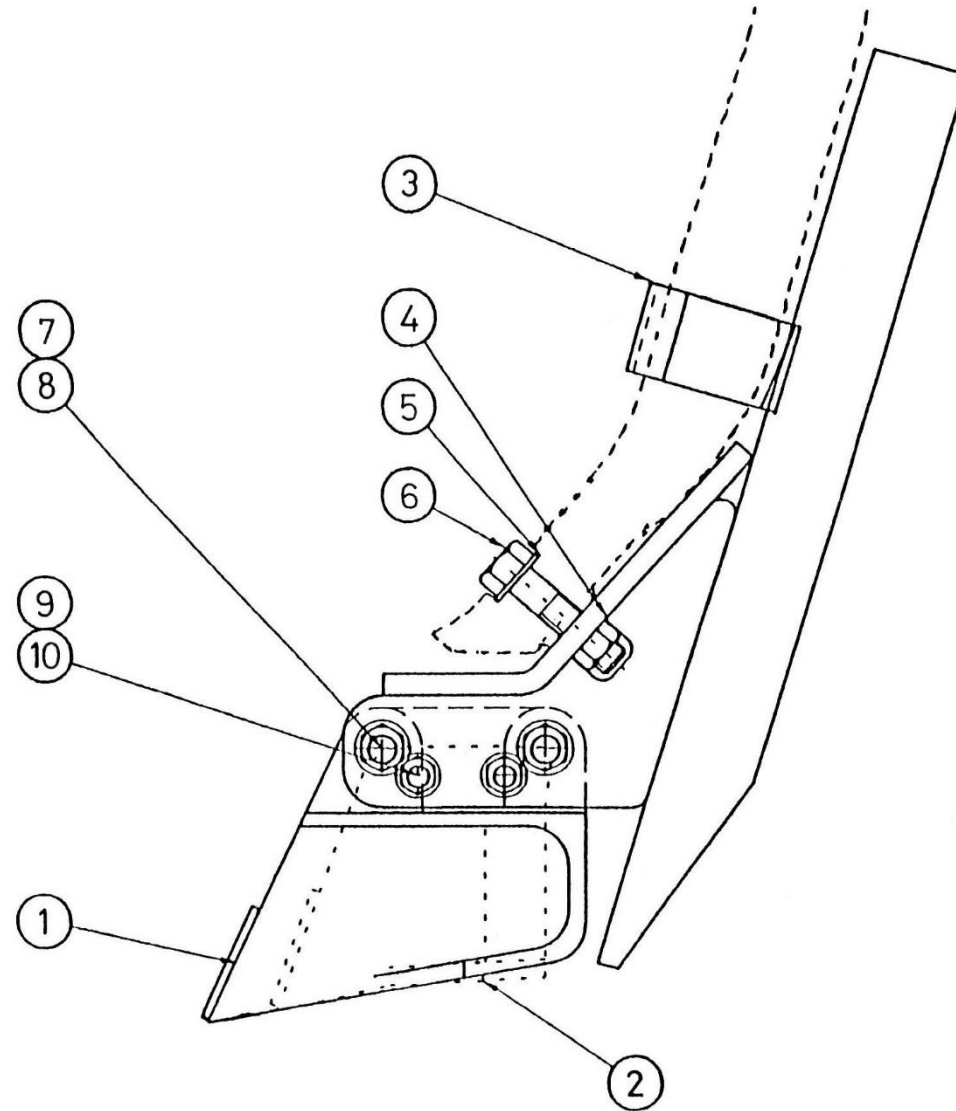
- Fully raised,
- The tractor control valve be held in the raise position with the tractor at idle (it may require holding the valve for several minutes to fully purge the system),
- All cylinders be viewed separately to ensure that they have reached full extension (cylinder travel has ceased),
- The tractor valve is then released and the implement can be lowered, levelled with the levelling screw assembly on the hitch, or transported, as required.

Should a leaking piston seal be suspected, identify cylinder by:

- Phasing the implement as above,
- Lower implement slightly, but with tynes still clear of the ground,
- Close the needle valve (16) to ensure no flow back to tractor,
- Measure the shiny rod extending from each of the cylinders,
- Leave the implement stand long enough to be able to measure any change in the dimensions measured (overnight, and not in direct sunshine is preferable).

The first cylinder in the series, that has “dropped” is at fault. If only one has “dropped”, it is at fault. If both have “dropped”, the “master cylinder” (5) is at fault

This of course assumes no external leakages from any of the cylinders, or their connecting plumbing.

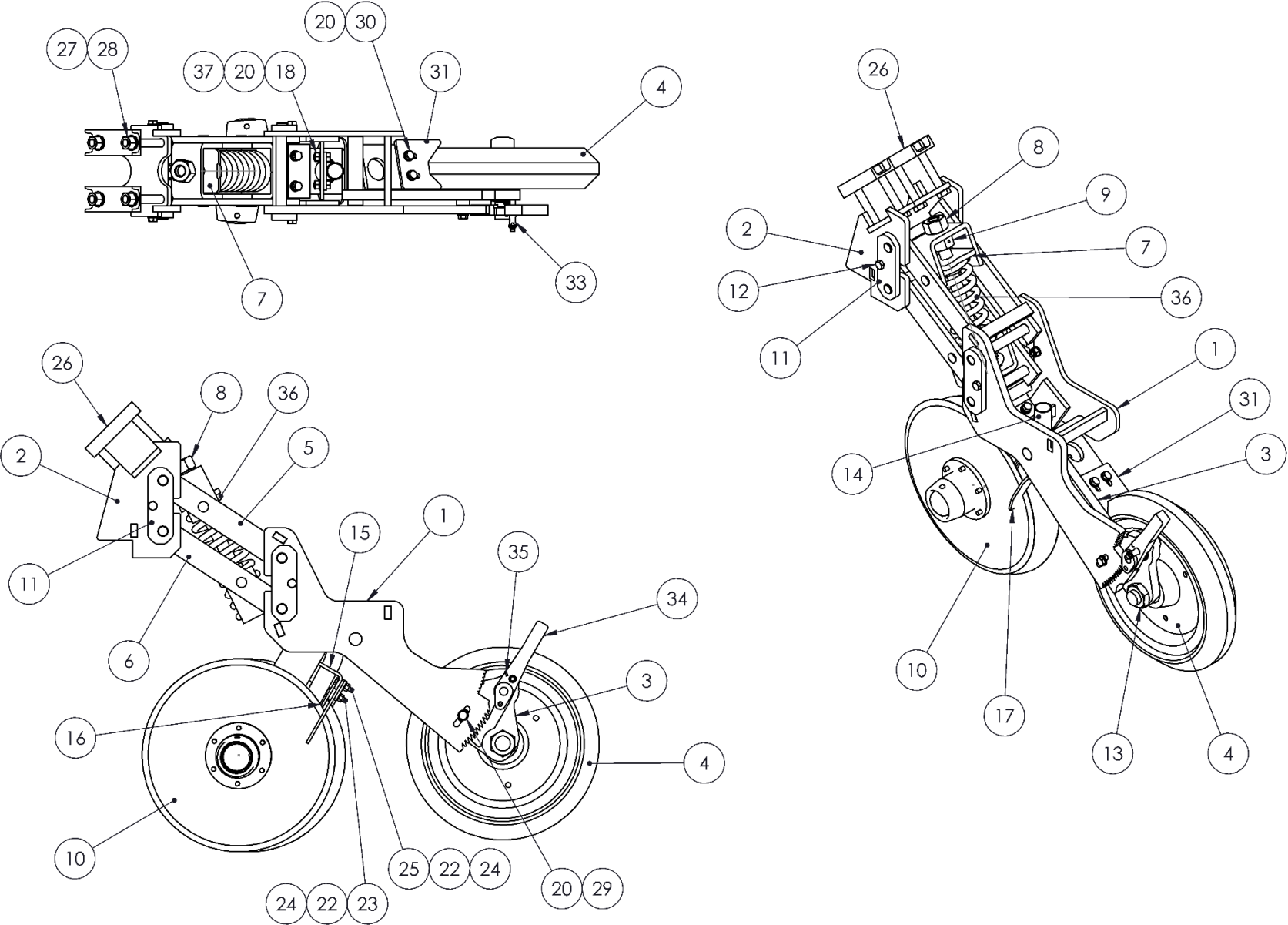


THE PASTURE DRILL BOOT ASSEMBLY IS A MULTI-POINT ADAPTOR, TO ACCEPT EITHER THE MINI T-BOOT OR THE BAKER INVERTED T-BOOT.

## BOOT ASSEMBLY

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	36711	POINT CBP-60 "Baker T"			
2	33258	POINT CMTB-32 "Mini T"			
3	36713	'T' BOOT			
4	18414	NUT M12 Gr 8			
5	17616J1	WASHER Spring 12mm			
6	36893	BOLT hex M12 x 50 Gr 8.8			
7	31993	NUT Nyloc, M10 Gr 8			
8	22434	BOLT hex M10 x 30 Gr 8.8			
9	34095	NUT Nyloc M8			
10	36892	BOLT hex M8 x 30 Gr 8.8			
		PASTURE DRILL BOOT ASSEMBLY			
	33256	WITH MINI T-BOOT.			
	36712	WITH BAKER INVERTED T-BOOT.			

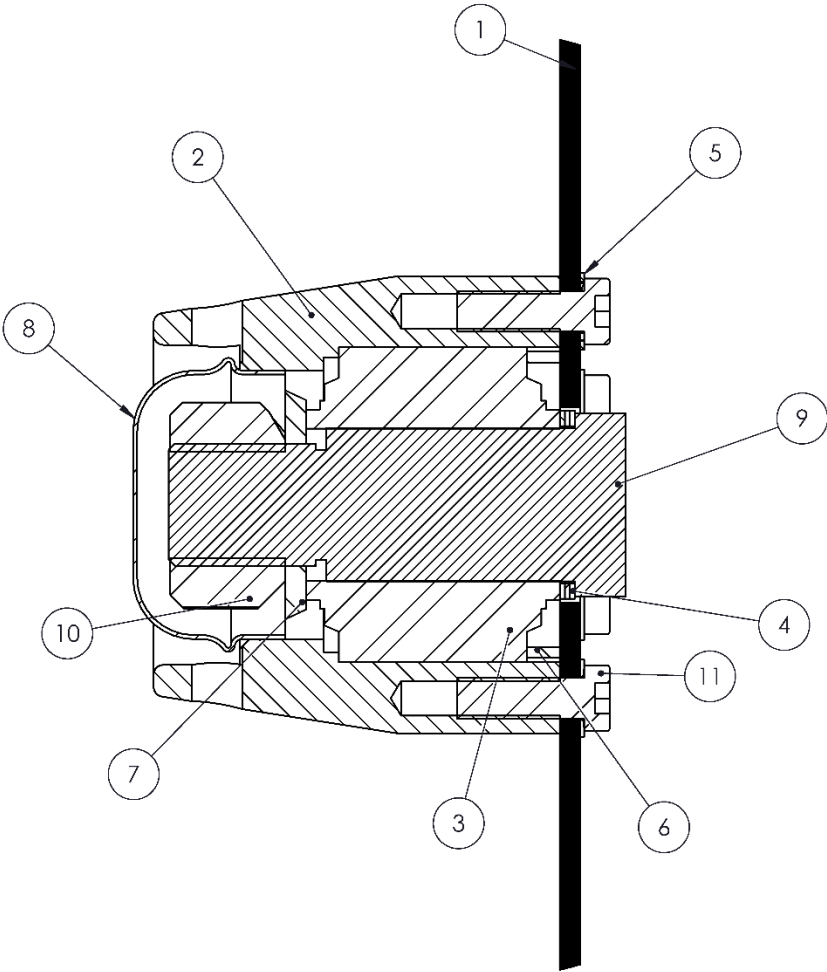
DOUBLE DISC OPENER ASSEMBLY - SPRING



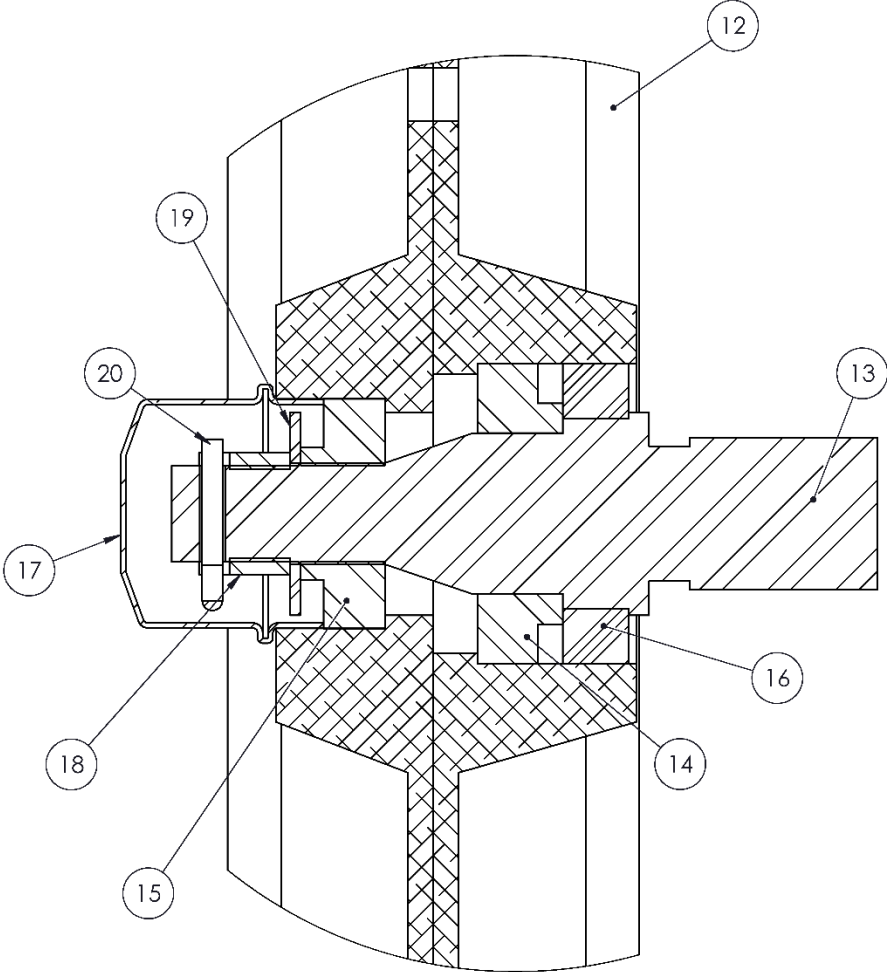
**DOUBLE DISC OPENER ASSEMBLY – SPRING (D.D.O. Drill)**

ITEM	PART No	DESCRIPTION	QTY	ITEM	PART No	DESCRIPTION	QTY																														
1	43021	WHEEL BRACKET ASSEMBLY	1	36	37384	SPRING, 12mm	1																														
2	43271A	BEAM BRACKET ASSEMBLY - DIAMOND	1	37	18520	HEX, BOLT - M10 x 25	2																														
	43271B	BEAM BRACKET ASSEMBLY - SQUARE	1	<table><tr><th>PART No</th><th>DESCRIPTION</th></tr><tr><td colspan="2">DOUBLE DISC OPENER COMPLETE ASSEMBLIES</td></tr><tr><td>43065</td><td>Spring, Diamond Mount, Plain Disc, Single Shoot.</td></tr><tr><td>43132</td><td>Spring, Square Mount, Plain Disc, Single Shoot</td></tr><tr><td>43133</td><td>Spring, Diamond Mount, Plain/Scalloped Disc, Single Shoot.</td></tr><tr><td>43134</td><td>Spring, Square Mount, Plain/Scalloped Disc, Single Shoot.</td></tr><tr><td colspan="2">Torque: 17Nm with Loctite</td></tr><tr><td colspan="2">Allow 1-2mm gap to disc/s</td></tr><tr><td colspan="2">Allow 1-2mm gap to disc/s</td></tr><tr><td colspan="2">Torque: 8.5Nm with Loctite (note: do not tighten with item 32)</td></tr><tr><td colspan="2">Torque: 8.5Nm with Loctite</td></tr><tr><td colspan="2">Torque: 8.5Nm with Loctite</td></tr><tr><td colspan="2">Do Not Tighten - allow 1mm gap</td></tr><tr><td colspan="2">Torque: 17Nm with Loctite</td></tr><tr><td colspan="2">Torque: 17Nm with Loctite</td></tr></table>				PART No	DESCRIPTION	DOUBLE DISC OPENER COMPLETE ASSEMBLIES		43065	Spring, Diamond Mount, Plain Disc, Single Shoot.	43132	Spring, Square Mount, Plain Disc, Single Shoot	43133	Spring, Diamond Mount, Plain/Scalloped Disc, Single Shoot.	43134	Spring, Square Mount, Plain/Scalloped Disc, Single Shoot.	Torque: 17Nm with Loctite		Allow 1-2mm gap to disc/s		Allow 1-2mm gap to disc/s		Torque: 8.5Nm with Loctite (note: do not tighten with item 32)		Torque: 8.5Nm with Loctite		Torque: 8.5Nm with Loctite		Do Not Tighten - allow 1mm gap		Torque: 17Nm with Loctite		Torque: 17Nm with Loctite	
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Torque: 17Nm with Loctite																																					
Torque: 17Nm with Loctite																																					
3	43047	WHEEL ARM ASSEMBLY	1																																		
4	43051	PRESS WHEEL ASSEMBLY	1																																		
5	43013	ARM ASSY, UPPER	1																																		
6	43068	ARM ASSY, LOWER	1																																		
7	43023	UPPER SEAT ASSY	1																																		
8	43046	BOLT, TENSION	1																																		
9	43274	NUT, DRILLED - M24	1																																		
10	43272	DISC/HUB ASSEMBLY - PLAIN	2																																		
	43273	DISC/HUB ASSEMBLY - SCALLOPED	2																																		
11	43024	PLATE, KEEPER	4																																		
12	20679	AS 1111.2 - M10 x 35-NN	4																																		
13	17261J1	AS 1112.4 AB- M30-N	1																																		
14	43669	SEED TUBE ASSEMBLY	1																																		
15	43661	SCRAPER FRAME	1																																		
16	44432	SCRAPER, INTERNAL	1																																		
17	44431A	SCRAPER, EXTERNAL	2																																		
18	31993	AS 1112.2 S2- M10-W-N NYLOC	6																																		
19	18613	HEX, BOLT - M10 x 20	2																																		
20	FBW4	AS 1237.1 N - 10	11																																		
21	17776J1	WASHER, SPRING M10	2																																		
22	34095	AS 1112.2 S2- M8-D-C NYLOC	4																																		
23		AS-NZS 1390 S - M8 x 40-N Cup Head	2																																		
24	FBW3	AS 1237.1 N - 8	4																																		
25	18437	AS 1110.2 - M8 x 35 -C	2																																		
26	43326	CLAMP	2																																		
27	FBW8	WASHER, FLAT M16	4																																		
28	28912	NUT, HEX - M16 NYLOC	4																																		
29	24214	AS 1110.1 - M10 x 50-N	1																																		
30	20800	AS 1110.2 - M10 x 30 -C	2																																		
31	43315	SCRAPER, PRESS WHEEL	1																																		
32	43929	PLATE, MOUNT	1																																		
33	45307	PIN, BALL LOCK (PURCH)	1																																		
34	45306	ARM	1																																		
35	45312	SPRING	1																																		

DOUBLE DISC OPENER DETAIL SECTION VIEWS



DISC/HUB ASSEMBLY  
SECTION VIEW



PRESS WHEEL ASSEMBLY  
SECTION VIEW

**DOUBLE DISC OPENER DETAIL SECTION VIEWS**

ITEM	PART No	DESCRIPTION	QTY	NOTES
1	45043	DISC, PLAIN 15" x 5mm	1	3 per disc (or as required to achieve 0.1-0.5mm disc gap)
	45044	DISC, SCALLOPED 15" x 5mm	1	
2	46551	HUB, DISC	1	
3	43026	BEARING, DOUBLE RACE	1	
4	43030	SHIM	3	
5	43028	RING, SPACER	1	
6	18935	WASHER - STUB AXLE	1	
7	10100N	CAP, DUST 52.9mm WHEEL HUB	1	
8	43014	AXLE, STUB - DISC	1	
9	936-708	NUT, CONELOCK M24	1	
10	44995	M8 x 30 CSK	6	
11	18464	NUT, HEX - M8	6	
12	18465	WASHER, SPRING M8	6	
13	43060	WHEEL/TYRE ASSEMBLY	1	Replacement Tyre P/N: 43327
14	43050	AXLE, STUB	1	
15	SR552	BEARING	1	
16	43052	BEARING	1	
17	43053	SEAL, TRIPLE LIP	1	
18	43057	CAP, DUST	1	
19	43058	NUT, CASTLE	1	
20	43059	WASHER	1	
21	16859J1	PIN, COTTER 4x32	1	
	43272	DISC HUB ASSEMBLY - PLAIN (ITEMS 1-11, NOTE: ITEM 1 43034)		
	43273	DISC HUB ASSEMBLY - SCALLOPED (ITEMS 1-11, NOTE: ITEM 1 43147)		
	43051	PRESS WHEEL ASSEMBLY (ITEMS 12-20)		

## TROUBLE SHOOTING

<b>PROBLEM</b>	<b>CAUSE</b>	<b>REMEDY</b>
DISTRIBUTORS WILL NOT TURN	Clutch not engaged (if trailing hitch kit fitted) Gearbox not engaged Gearbox shear pins broken Secondary shaft shear pins broken	Check clutch Check gearbox Replace Replace
FERTILIZER RATE VARIES	Fertiliser build-up on distributors	Clean distributor rollers
SOWING DEPTH DIFFERS FROM ONE SIDE OF THE MACHINE TO THE OTHER	Ram lug assembly not adjusted properly  Hydraulic cylinders out of phase (if trailing hitch kit fitted)	Check ram lug assembly and adjust if necessary  Re-phase cylinders (see page 31)
DISTRIBUTOR ROLLERS DAMAGE SEED	Gate positions are set too close	Re-adjust gate settings
IMPLEMENT KEEPS DROPPING SEED AND FERTILIZER WHEN IN THE TRANSPORT POSITION	Gate settings too wide  Gate settings in cleaning out position	Re-adjust gates to recommended setting
SOWING RATE UNEVEN ACROSS GRAIN AND FERTILIZER BOX	Gate setting is unequal across box	Re-adjust gates to recommended setting