Shearer

Grow a Better Crop

Pasture Renovation Drill

Operators Manual 143J1

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.

PRIOR TO 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)

Customer copy

IMPLEMENT TYPE:

IMPLEMENT SIZE: SERIAL NO

SELLING DEALER: DATE PURCHASED:

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

THANK YOU FOR BUYING JOHN SHEARER

PLEASE COMPLETE AND RETURN THE WARRANTY CARDS ON THE FOLLOWING PAGE TO ENSURE WARRANTY IS VALID.

IF THE WARRANTY CARDS ARE NOT CONFIRMED, THE WARRANTY PERIOD WILL BEGIN ON THE DATE THE MACHINE LEAVES THE FACTORY.

Dealer copy **WARRANTY REGISTRATION CARD**

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:.....

PURCHASER ACKNOWLEDGES THAT THE IMPLEMENT WAS RECEIVED IN GOOD ORDER & CONDITION AND THAT PURCHASERS ATTENTION HAS BEEN DRAWN TO THE TERMS AND CONDITIONS OF THE JOHN SHEARER LIMITED WARRANTY POLICY ENDORSED HERE-ON.

PURCHASERS SIGNATURE.....

John Shearer Pty Ltd copy **WARRANTY REGISTRATION CARD**

DEALER NAME: ..... DEALER TOWN: .....

IMPLEMENT MODEL: ..... SIZE: .....

PRODUCT No. (As per price book)..... SERIAL NO. .....

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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.

1. Name:.....

   Address:.....

   ..... State:..... Postcode:.....

   Phone..... E-mail:.....

2. Type of purchaser (please tick) ☐ Owner / Manager ☐ Share Farmer ☐ Contractor

3. Major activities (please number in order of importance)

☐ Sheep and cereal grain	☐ Vegetables	☐ Sugar
☐ Sheep only	☐ Poultry	☐ Tobacco
☐ Cereal Grain Only	☐ Pigs	☐ Oilseeds
☐ Meat Cattle	☐ Vineyards	☐ Others (please list)
☐ Milk Cattle	☐ Fruit	☐ .....

4. 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)?.....

5. In what town is your associated Shearer dealer? (i.e. either the dealer with whom you normally trade or the one who is closest).....

6. 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.

Congratulations on the purchase of your new JOHN SHEARER PTY LTD 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

This warranty ('**this Warranty**') provides information regarding the operation, maintenance and warranty of John Shearer Pty Limited's ('**John Shearer**') products.

Warranty against Defects

John Shearer warrants to the original purchaser ('**you**' or '**your**') that any product manufactured by John Shearer ('**Product**') and sold to you whether directly or through a dealer ('**the Dealer**') will be free from defects to the extent set out in this Warranty.
John Shearer warrants that any Product or parts of a Product proven to be defective ('**the Defective Product**') will either be repaired or replaced by John Shearer.
Products will only be proven to be defective by a person appointed by John Shearer.
John Shearer holds the discretion to determine whether a Defective Product is to be repaired or replaced.
Any Defective Product must be returned to the Dealer at your cost within 12 months of delivery of the Product to you.
No warranty is given in relation to:

- any Product that has been misused;
- any Product that has been used contrary to its normal and, or intended use;
- any Product that has been used contrary to the recommendations of John Shearer and, or the Dealer;
- any Product that has been altered, modified or had any parts substituted in any way not authorised by John Shearer and, or the Dealer;
- any defect of which you should have reasonably identified by examining the Product or of which you were notified of; and
- general wear and tear during normal use of the Product.

All defects must be reported immediately by you to the Dealer.

Modifications by John Shearer

John Shearer reserves the right at all times to vary, modify and, or improve its Products or parts without notification.
John Shearer has no responsibility to vary, modify and, or improve Products sold to conform with any such modifications.

Freight and Travel Charges

John Shearer accepts no responsibility in relation to:

- travelling and, or freight charges; and
- damage caused during travel and, or freight.

Limitation of Liability

To the fullest extent permitted by law, John Shearer and the Dealer will not be liable for any actions, suits, proceedings, claims, demands, costs, expenses or damages whatsoever which may arise either directly or indirectly in respect of the Product, including but not limited to negligent use of the Product.
To the fullest extent permitted by law, any non-compliance with this Warranty will automatically void any warranty given by John Shearer in relation to the Product.
No warranty is given if you have breached any terms and conditions forming part of the contract between you and John Shearer and, or the Dealer by which the Product was sold to you.
John Shearer will not be held responsible for any third party warranties offered in addition to the warranties offered under this Warranty. Any third party warranties are directly between you and the third party offering those warranties.

Consumer Rights

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
The warranties given by John Shearer under this Warranty are in addition to your other rights and remedies under the Australian Consumer Law in relation to the Product.
However, to the fullest extent permissible by law, John Shearer does not provide any consumer guarantees which are not required to be given at law.

Service and Maintenance

It is your responsibility to:

- maintain and operate the Product in a safe and correct manner and in accordance with the specifications and operating limitations set out by John Shearer; and
- service the Product regularly in accordance with the recommendations of John Shearer.

Claims

All claims under this Warranty are to be sent to for the attention of Franco Perrotta at John Shearer Pty Ltd. P.O. Box 2466 Regency Park SA 5942
For further assistance, contact the Dealer.

Warranty Provider

This Warranty is provided to you by:
John Shearer Pty Limited
34 Burleigh Ave, Woodville North SA 5012
(08) 8468 4190
info@johnshearer.com.au

PRE-DELIVERY CHECK

1. On delivery of PASTURE RENOVATION DRILL 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 10, for greasing and routine check points.

5. Check and tighten bolts and nuts, (including wheel nuts).

6. Check tyne spacing. For specific dimensions refer to page 27-29 to 31.

7. Ensure that implement is fully assembled and operating correctly.

8. Demonstrate and explain operation to the client.

9. Explain terms and conditions of Warranty to client

JOHN SHEARER

PTY LTD

ESTABLISHED 1877
INCORPORATED IN SOUTH AUSTRALIA

HEAD OFFICE & FACTORY
PO Box 2466 REGENCY PARK
SOUTH AUSTRALIA 5942

TELEPHONE +61 8 8468 4190
STREET LOCATION: 34 BURLEIGH AVE, WOODVILLE NORTH
FAX No. +61 8 8468 4135 (SPARE PARTS)
Website: www.johnshearer.com.au
Spare parts email: 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 PTY LTD.

M143J1 FEB 2019

CONTENTS

SPECIFICATION

No. OF SOWING ROWS:		13	16	19	22
SOWING WIDTH:	m	2.0	2.4	2.8	3.3
	(ft)	6' 6"	8'	9' 6"	11'
SOWING SPACING:	mm	152			
	(in)	(6")			
BOX CAPACITY:					
Rear - Fertilizer	kg	335	403	471	556
	(lb)	739	889	1039	1226
Front - Seed	kg	188	226	265	312
	(lb)	415	498	584	688

COIL TYNE DRILL

Tyne Type		25mm Square Shank Coil Tyne			
Tyne Spacing:		152mm (6")			
Weight Empty	Kg	735	1364	885	1622
(approx.)	(lb)	1620	3007	1952	3577

TYNE DRILL

Tyne Type		"580" Spring Release			
Jump Height		250mm (10")			
Tyne Breakaway Force		16mm diameter spring, adjustable to a maximum 740N (165lbf)			
Tyne Spacing:		152mm (6")			
Weight Empty	Kg	718	1344	861	1594
(approx.)	(lb)	1583	2962	1898	3515

DISC DRILL

Disc Diameter		330mm (13")			
Jump Height		350mm (13 ¾")			
Disc Spacing		152mm (6")			
Weight Empty	Kg	818	1466	1006	1763
(approx.)	(lb)	1802	3232	2219	3886

DEPTH WHEELS	235/75 R15 or 215/85 R16 (depending on size of machine) Max. working depth 76mm (3")

SEED & FERTILISER DISTRIBUTORS:

Seed -	Fluted roller with restrictor for small seeds, low rates
Fertiliser -	Nylon Peg tooth distributor roller
Gates -	Adjustable rubber in both compartments
DRIVE	Electric Drive Standard
OPTIONAL EQUIPMENT	Broad Bean Rollers Varidrive Gearbox (in lieu of Electric Drive) Coulter Bar A wide range of points and fittings

Due to our policy of continuing research, these specifications may change without prior notification.

SETTING UP / OPERATING INSTRUCTIONS

Congratulations on the purchase of your new PASTURE RENOVATION DRILL.

This manual has been prepared to assure the proper set up, 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 PASTURE RENOVATION DRILL 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 10)

SETTING UP – TRAILED IMPLEMENT

IMPLEMENT LEVELLING “FRONT TO REAR”.
Adjust hitch link to level implement “front to rear”. Extend the link to increase depth of working of the rear tynes. Set the Disc Drill with the grain and fertilizer box support “level” in the working position.

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 & CALIBRATION
See page 11 for Varidrive Gearbox, 14-22 for Electric Drive

GRAIN AND FERTILISER BOX CAPACITIES
The Grain and Fertilizer box is fitted with distributors, which allow either grain or fertilizer in both compartments. The two compartments of the box are unequal in volume. This feature allows whichever material is being used in higher quantities to be placed in the larger (rear) compartment. The relative volumes are:-

FRONT COMPARTMENT = 45%, REAR COMPARTMENT = 55%
Where both compartments are being used for the same material, optimum use is made of the whole box capacity if the sowing rates selected for each compartment are in the same ratio as the compartment volumes.

$$\text{i.e. } \frac{1.25}{1}$$

For example: If a sowing rate of 100 kg/ha is required, the sowing rates selected for the front compartment should be 45kg/ha and for the rear 55kg/ha. This will provide, as near as possible, simultaneous emptying of both compartments.

DISTRIBUTORS

The peg tooth distributor in the front compartment is suitable for both fertilizer and smaller grains, up to the size of peas and lupins. The fluted distributor in the rear compartment is suitable for fertilizers and grains including pasture and larger seeds. For low rates use the restrictor.

DO NOT USE THE RESTRICTOR WITH FERTILISERS.
NOTE: For broad beans, a special distributor is available. (see page 32-33)

STORAGE

At seasons end, this implement should be stored away, jacked up and placed on blocks to take the weight off the tyres. It should be thoroughly cleaned, removing all traces of seed or fertilizer from compartments and distributors.
Fill gearbox with oil.
Remove chains, clean, lubricate and store in a clean, dry location.
Grease all bearings.
Touch up scratched or damaged paintwork.

FERTILIZER CORROSION DAMAGE

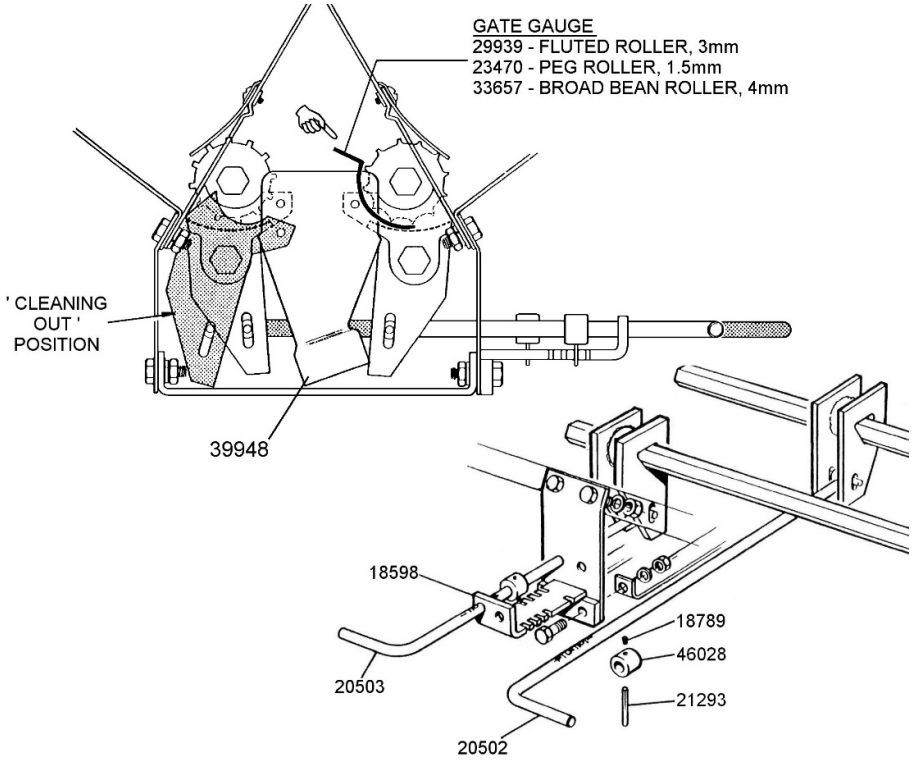
The hopper must be “COMPLETELY AND THOROUGHLY CLEANED OUT” after use, to help prevent corrosion. It is especially important that the hopper is not left overnight with any fertilizer remaining in it. Particular attention should be paid to keeping the area around the critical distributor/bearing/gate components free of fertilizer
This recommendation is applicable irrespective of the kind of fertilizer in use, but is more important with the higher analysis, high nitrogen, fertilizers.

GATE SETTING

The seed and fertilizer metering rollers have an adjustable gate at the metering point under the roller. This adjustment allows for the diversity in size of seed and types of fertilizer. To ensure accurate metering of material, it is essential that these gates be correctly adjusted in accordance with the information supplied below.

Gauges for Setting Gap

# 29939	Gauge gate 3mm	Fluted roller
# 23470	Gauge gate 1.5mm	Peg roller
# 33657	Gauge gate 4mm	Broad bean roller



Procedure for resetting gates if required:

1. Remove the sowing cups part number 39948.
2. Loosen collar part number 18503 on gate levers and disengage pin part number 18515 from bracket assembly part number 18598.
3. Obtain a spanner to fit the gate shafts. (20mm)
4. With one hand place the gauge between the lip of the gate and the roller.
5. With other hand move the gate shaft using the spanner until the gauge fits nicely between roller and the gate (rather like a feeler gauge)
6. Do not have too tight, otherwise the edge of gate will wear on rollers.
7. When you have the gauge (as selected) in this position, you have gate setting **one (1).**
8. For placing the pin part number 18515 in position **one (1)** on bracket part number 18598 and tightening socket screw part number 18789 – it is preferable to have the help of another person.
9. Note the gate levers when set in position **one (1)**, are in a different relationship to each other.

GEARBOX SETTINGS (if fitted)

The gearbox can be adjusted to any rate between 0 (no distributor rotation) to 100 percent. The chart on page 12 are a guide to what rate can be expected for various products. Be aware that these chart is a guide only and for accuracy a calibration check must be done before seeding.

TYNE SPRING TENSION

Set tyne spring tensions equally on each row.

Tynes 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.

PASTURE DISC DRILL – SINGLE DISC

PENETRATION OF DISCS

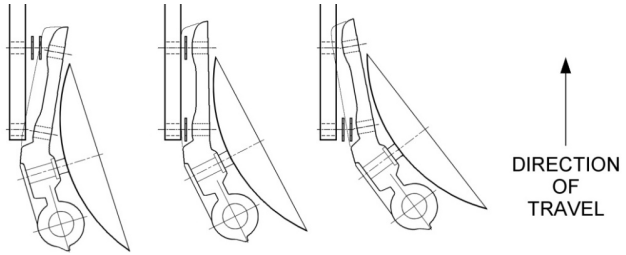
Where you are unable to gain enough penetration with the discs due to hard conditions, more pressure can be obtained by compressing the springs on the pressure rods.

BREAST SET ON DISCS

The set of the disc may be altered by fitting or removing breast adjustment spacers (item 18, page 43) between the arm and the drill boot.

Spacers fitted between the arm and the front hole of the disc boot gives a 50mm set to the disc and to the back hole gives a 70mm set. Spacers taken out altogether give a 60mm set to the disc. Increasing breast angle of disc aids trash or clod clearance, but reduces penetration.

The breast cut of the discs is adjustable to vary the width of the sowing slot.



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.

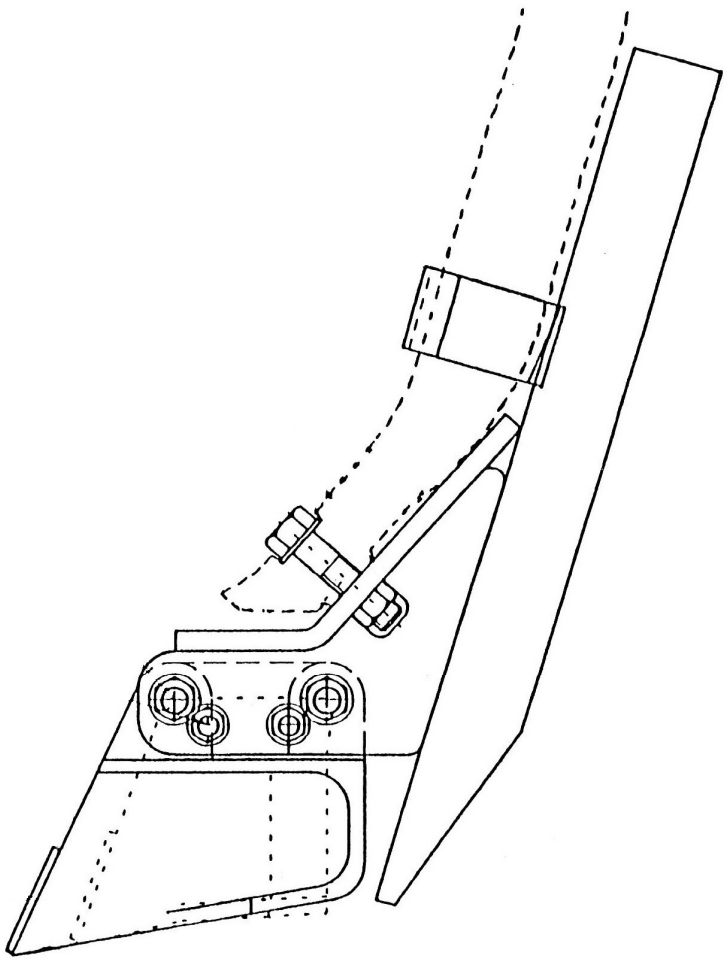
MAINTENANCE OF “T” BOOTS
A tungsten carbide insert has been fitted to the leading edge of the blade

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 buildup of grain or fertilizer 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 guide lines to follow to minimize wear.

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



“T” BOOT

LUBRICATION

Item	Operation	Schedule
Wheel Hub	Grease	200hrs
Axle Rockshafts	Grease	Daily / 10hrs
Clutch	Grease	Daily / 10hrs
Tynes	Grease	Daily / 10hrs
Distributor shafts	Grease	50hrs
Trimming Screw	Grease	Annually
Varidrive Gearbox	Check for leaks (topup if necessary- SAE 50W/40 Motor Oil)	Annually
Tyres	Check Pressure	Daily
Chains	Check adjustment	Daily
Chains	Annual Maintenance – thorough check and re-grease	Annually
General Inspection (Nut & Bolts)	Check for tightness	Daily
Hopper	Clean out at end of each day (Particularly Hydroscopic Fertilizer)	Daily
Grease Nipples	Lubricate all prior to storage at the end of each working period	Seasonally

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

TYRE PRESSURES

TYRE PRESSURES ARE IMPORTANT

OVER INFLATION will impair flotation -
Increasing sowing depth variations as ground conditions vary.

UNDER INFLATION can result in tyre failures.

TYRE SIZE	Pasture Renovation Drill							
	2.0		2.4		2.8		3.3	
	Tyne	Disc	Tyne	Disc	Tyne	Disc	Tyne	Disc
235/75 R15 TYRE PRESSURE kPa	250	275	280	300				
psi	36	40	41	44				
215/85 R16 TYRE PRESSURE kPa					450	480	525	560
psi					65	70	76	81

SPEED LIMIT 25km/h (10km/h SOWING)

SOWING RATES (Gearbox Option)

Select sowing rates as per chart on the left hand side of the implement. N.B. This chart is to be used as a guide only.

Check sowing rates as follows:
Example: For tyre size 235/75x15 the sowing rate chart is based on an effective wheel rolling radius of 330mm. For a 19 row drill at 155.5mm spacings, 1638 revolutions of the drive wheel corresponds to 1 hectare.

Rotating drive wheel:

1. Lower the machine to engage drive clutch, jack up the left hand drive wheel.

2. Rotate the wheel (anti-clockwise)
   49 times – 2.0m (15” wheels)
   40 times – 2.4m (15” wheels)
   29 times – 2.8m (16” wheels)
   25 times – 3.3m (16” wheels)

TYRE	LOADED RADIUS (mm)	WHEEL REVS. /Ha
2.0m 13 Row PASTURE RENOVATION DRILL		
235/75x15	330	2441
2.4m 16 Row PASTURE RENOVATION DRILL		
235/75x15	330	1983
2.8m 19 Row PASTURE RENOVATION DRILL		
215/85x16	374	1474
3.3m 22 Row PASTURE RENOVATION DRILL		
215/85x16	374	1273

tyre/machine size/cranking revolutions

3. Collect and weigh the delivered seed or fertilizer and multiply by 50. This will give the actual sowing rate per hectare for that particular product.

See table below for different configurations of:

Note: the above is based on checking for all rows. If you want to only calibrate using some of the outlets you will need to calculate accordingly.
Equation:

$$\frac{(kg\ collected)\ \times\ (Rows\ on\ the\ machine)\ \times\ 50}{(Rows\ collected\ from)} = kg/ha$$

example
If you turn the handle 10.5 times and weigh the output collected from 3 rows and it is 0.19 kg (190 grams), then multiply this weight by 19 (for a 19 row drill) and then divide by 3 (for the 3 rows). Since 10.5 turns is equal to 1/50 of a hectare, you need to multiply this by 50 to get the rate per hectare, which is in this example, 60 kg/ha.

$$\frac{(0.19kg)\ \times\ (19\ Rows)\ \times\ 50}{(3\ Rows)} = 60\ kg/ha$$

PASTURE RENOVATION DRILL GRAIN & FERTILIZER CHART - Sowing at 152mm spacing.

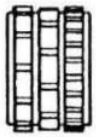
46986

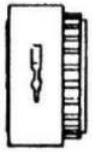
TO SUIT VARIDRIVE GEARBOX

QUANTITIES SHOWN ARE IN KG/HA AND ARE APPROXIMATE ONLY.
CHECK IN FIELD WHEN SOWING COMMENCES

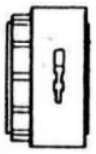
GEARBOX SETTINGS		0	10	20	30	40	50	60	70	80	90	100	GATE SET
GRAN. SUPER PHOS.	NO	0	51	102	152	203	254	305	355	406	457	508	2
HIGH ANAL. FERT.	NO	0	35	71	106	141	177	212	247	282	318	353	2
UREA	NO	0	20	39	59	79	99	118	138	158	178	197	1
WHEAT & PEAS	COARSE	0	7	14	21	27	34	41	48	55	62	68	W, 2.P,3.
	NO	0	30	59	89	118	148	178	207	237	266	296	
OATS & RICE	COARSE	0	4	9	13	17	22	26	31	35	39	44	2
	NO	0	16	33	49	66	82	99	115	132	148	165	
BARLEY	COARSE	0	5	10	14	19	24	29	34	39	43	48	2
	NO	0	20	40	60	79	99	119	139	159	179	198	
LUPIN & SOYBEAN	NO	0	39	79	118	158	197	237	276	316	355	395	3
SORGHUM	FINE	0	4	8	12	16	20	24	27	31	35	39	1
MILLET & CANARY	FINE	0	3	5	8	10	13	15	18	21	23	26	1
SUNFLOWER	NO	0	7	15	22	29	36	44	51	58	66	73	2
LINSEED	NO	0	14	28	41	55	69	83	97	110	124	138	1
LUCERNE & CANOLA	FINE	0	3	7	10	13	17	20	24	27	30	34	1
RYE GRASS	NO	0	7	15	22	29	36	44	51	58	66	73	1
RYE GRASS	COARSE	0	2	4	5	7	9	11	13	15	16	18	1
RYE GRASS	FINE	0	1	3	4	6	7	9	10	12	13	15	1

NO RESTRICTOR RESTRICTOR RESTRICTOR



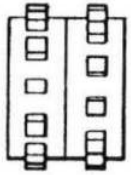


FINE

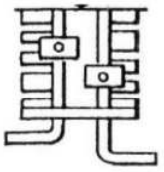


COARSE

FLUTED ROLLER DISTRIBUTOR



PEG TOOTH ROLLER DISTRIBUTOR



When lower sowing rates are required use restrictor.

Factors are:- COARSE = UNRESTRICTED x 0.25
FINE = UNRESTRICTED x 0.2

Grain or fertilizer can be sown from either the front or rear compartment. If grain or fertilizer is sown from both compartments, the sum of feed rates selected from each compartment should equal total rate required.

This implement delivers similar VOLUME of all materials. Sowing rates in kg/ha vary in proportion to density (kg/L) of materials.

Sowing rates for unlisted materials may be estimated as follows:-

$$\text{rate for wheat} \times \frac{\text{kg/L (for material)}}{\text{.8 (kg/L for wheat)}}$$

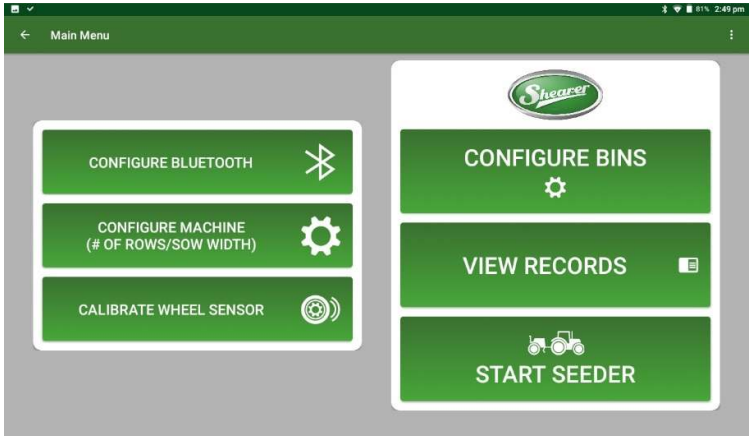
NOTES

Setup and Operation

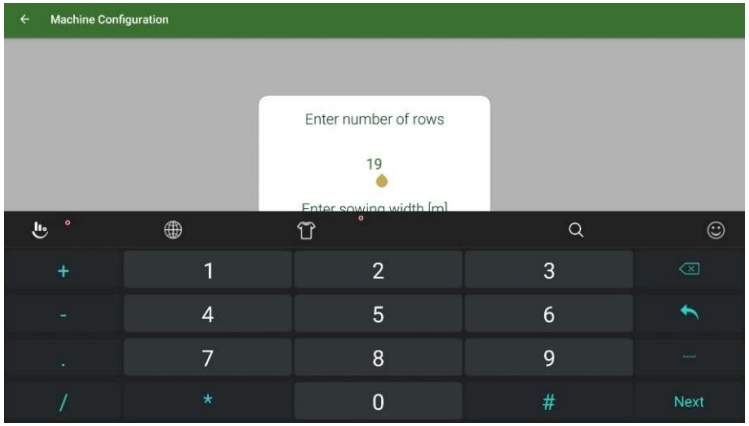
The John Shearer App on the tablet will step you through the setup. Here is a guide to how it works:

Section 1 - Machine Setup

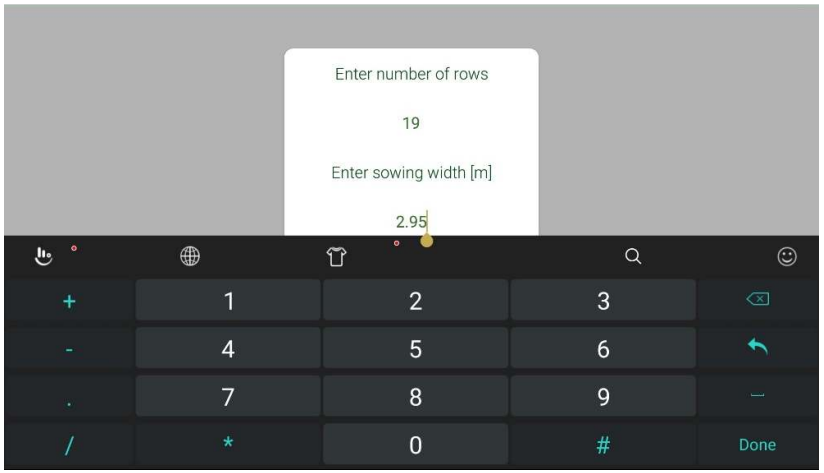
Step1) press “Configure Machine”



Step 2) enter the number of rows on the machine



Step 3) enter the sowing width of the machine in metres.



Section 2 - Wheel Calibration:

In order to get an accurate measurement of distance and therefore an accurate rate, it is necessary to perform a wheel calibration. This should be performed before the first use of the machine or if a change is made to the wheels on the machine (such as a change in the size of wheels and/or tyres). It is *not* necessary to do this every time the machine is used.

In this process you will need to tow the machine a set number of sensor pulses which will be shown on screen. It is recommended that you perform this test at roughly the same speed as you would normally sow (typically around 8km/h), although it is best to slow down towards the end of the count down, in order to stop accurately at a sensor pulse.

Step 1) Press “Calibrate Wheel Sensor”

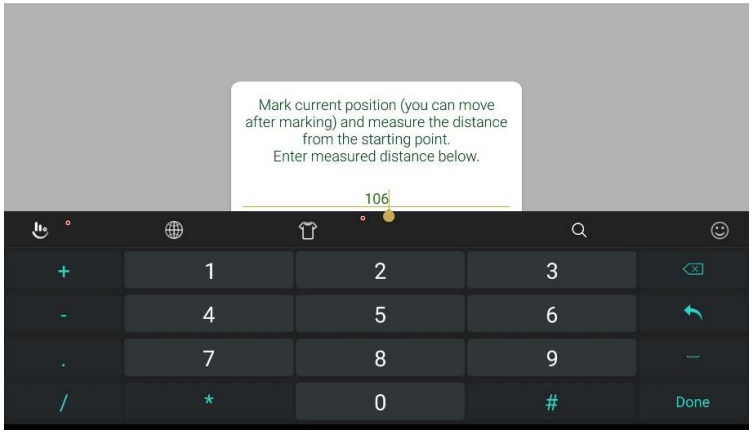
Step 2) Mark the starting position of the wheel

Step 3) Move until the sensor is aligned (it will show on screen when ready)

Step 4) Drive until 100 sensor pulses are achieved. The screen will show a countdown.

Step 5) when you have achieved enough pulses, align the sensor again. Then press “Go Next”.

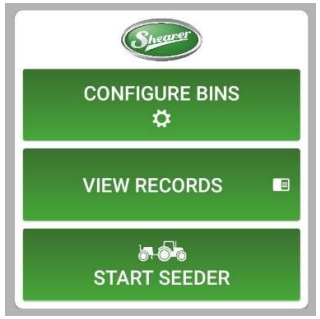
Step 6) Measure and enter the distance travelled.



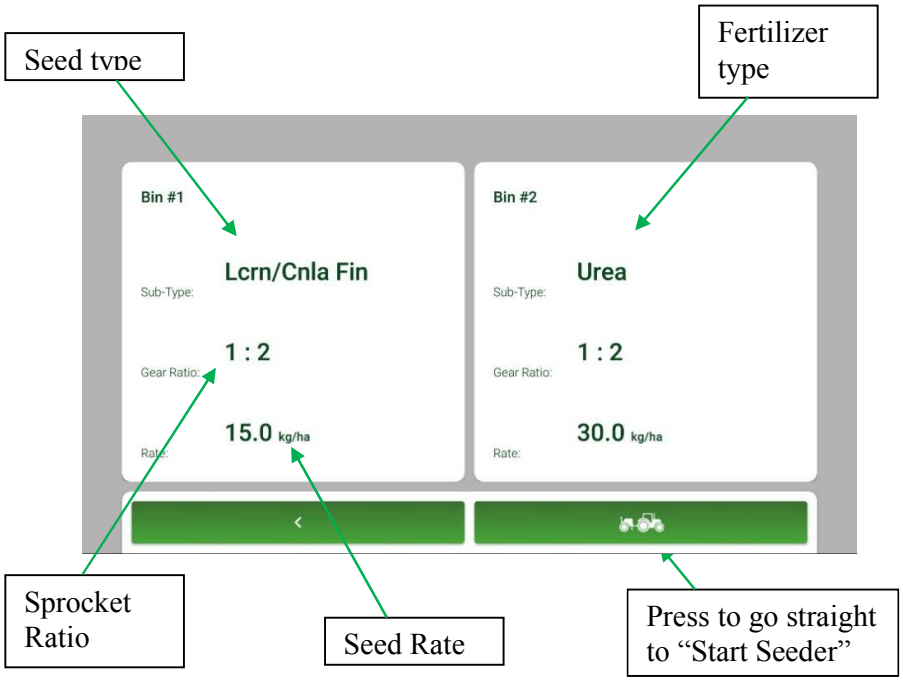
Section 3 - Seed calibration:

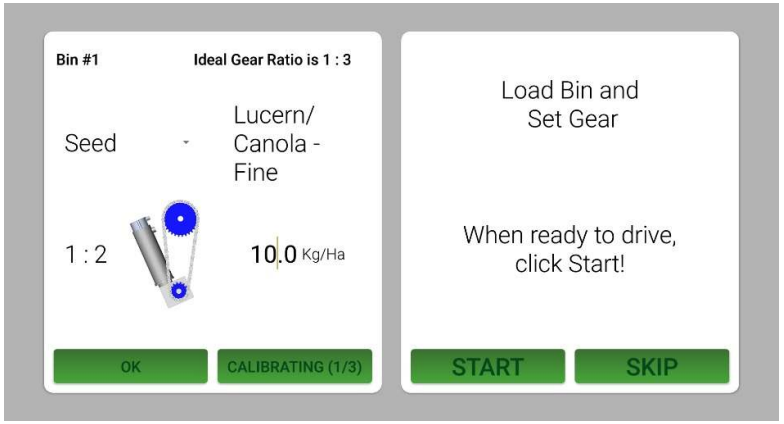
Step 1) Choose your settings

Choose what seeds and/or fertilizer you want to sow first, and what rate (in kg/ha) you want to sow at. The front box (1) usually holds seed, and the rear (2) fertilizer. In “Configure Bins” you can choose these variables and perform a calibration.



The calibration is necessary since not all seeds are the same (for example, wheat from one bag may not be the same as another, due to the size of the grains, moisture content and other factors). The machine remains stationary through this process. The ratio of the drive sprockets is important as it will affect the output. These ratios can be changed to allow for particularly low or high rates to be achieved (see table below). Performing this calibration regularly will help maintain an accurate rate.





On this page select the type of seed or fertilizer to calibrate, the seeding rate and the sprocket ratio (note: the image helps to identify which way the sprockets are positioned).

Step 2) Prepare to collect the seed.

If restrictors need to be added or removed do this now before you fill the box.

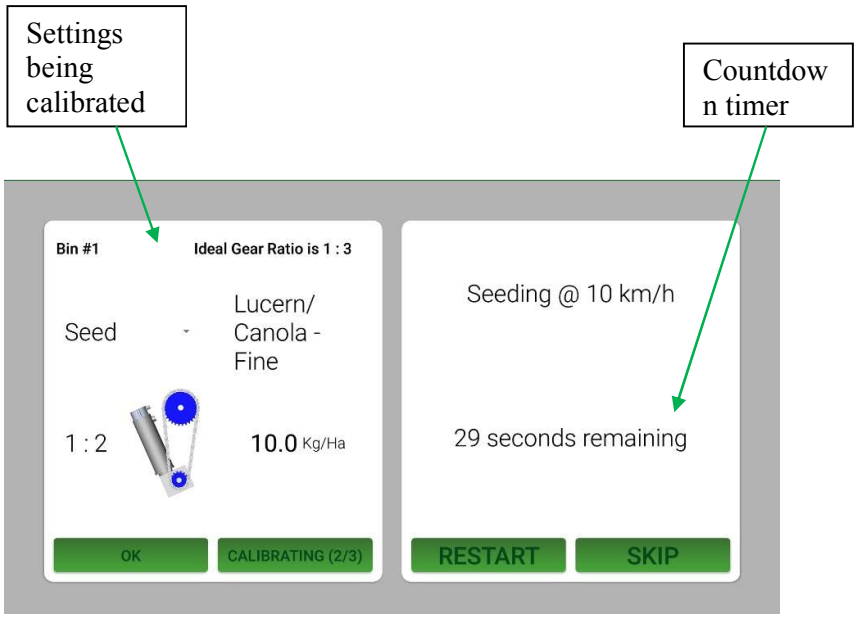
Fill the box with the seed you want to calibrate. Make sure there is enough seed to at least complete the calibration. If you are ready to start seeding you may want to fill the bin all the way.

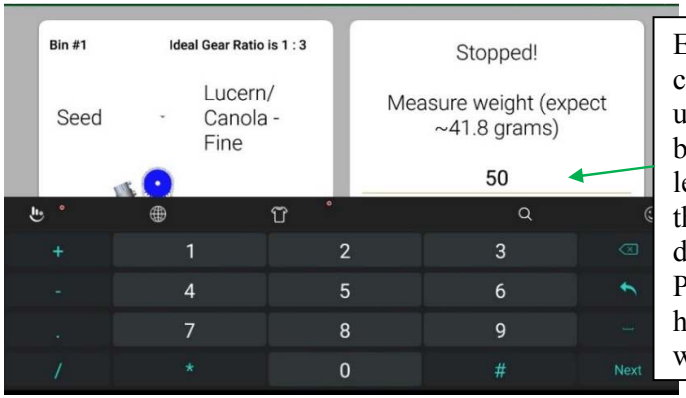
Place a container under the hoses you want to calibrate from (use at least 3 up to as many rows as the machine has – more will be more accurate). The container can be anything large enough to catch the calibrated amount – i.e. a bag, bucket, etc. Make sure it is empty so you aren't calibrating something else as well.

Step 3) Run the Calibration

When the information has been entered, the box is full and you are ready to collect the product, press "Start".

The calibration will run – you will see a countdown on the screen which is equivalent to 100 meters of travel at 10km/h.





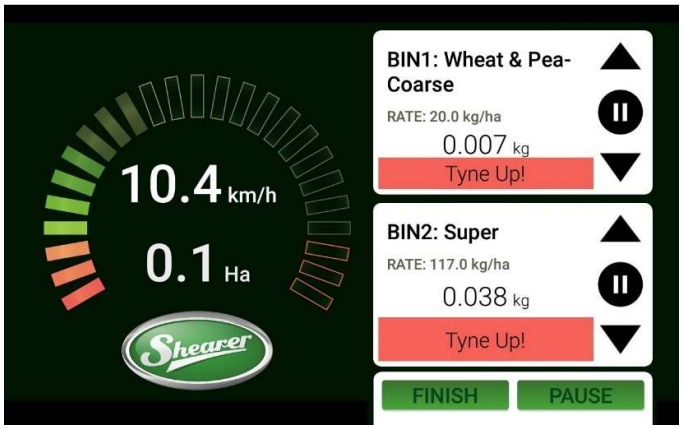
Enter how much is collected here using the keypad below. If entering less than 1, include the 0 before the decimal point. Press next to enter how many rows it was collected from

When the calibration stops, weigh the grain you collected and enter the amount on the screen with how many rows it was collected from.

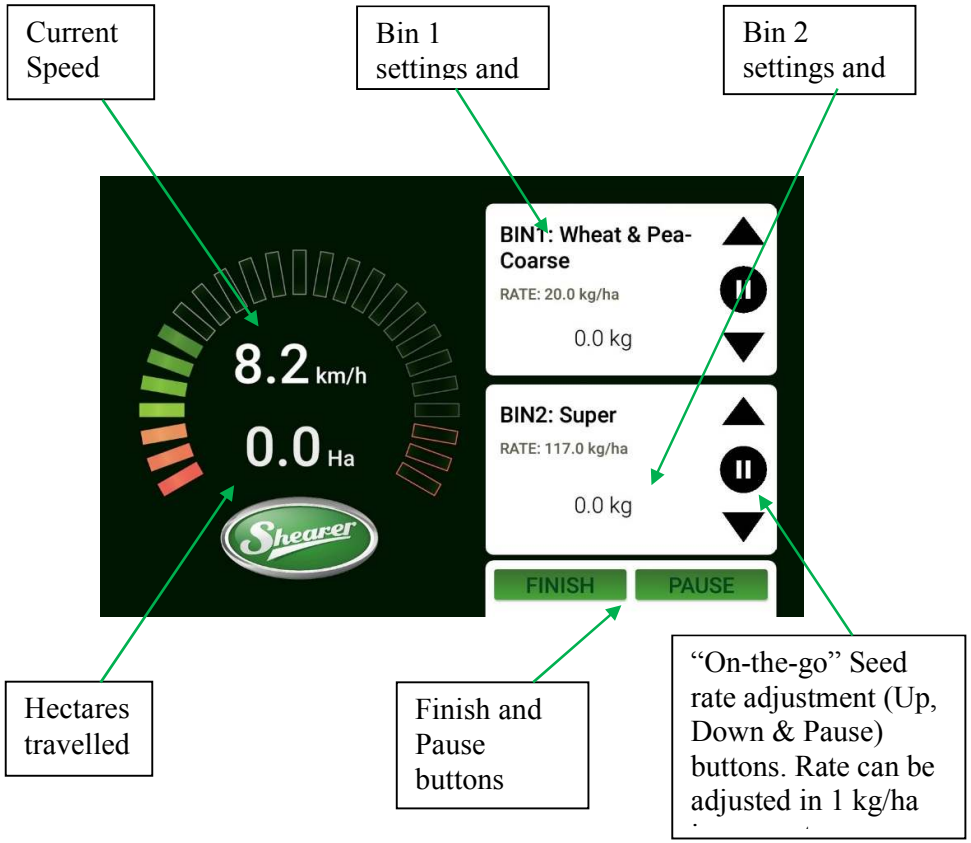
There is an expected weight shown on the screen with a rough guide to how much you can expect, but the actual value can vary quite a lot. **Make sure that the weight is entered in the correct units after the number of rows has been selected.**

Section 4 – Seeding/Operation:

Step 1) Go to the "Start Seeder" screen – note: when the machine is lifted out of the ground you will see a warning on the screen saying "Tyne Up!" (See below). When you lower the machine into the ground, this warning will disappear and sowing can commence. Ensure the hopper is filled with the calibrated products.



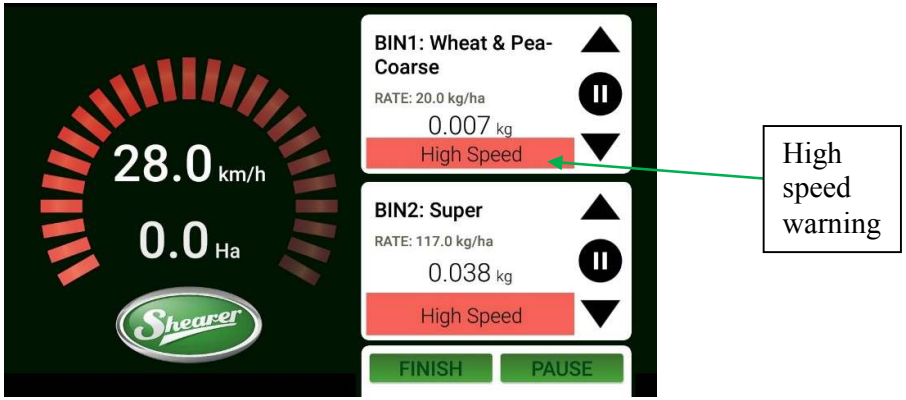
Step 2) Press the "Start" button on the screen to start sowing. The display will show the distance covered in hectares and the amount of product that has been distributed for each bin in the current run. Seeding will automatically stop when the machine stops (or drops below 3km/h) to conserve product. You can also use the up and down arrows to adjust the rate on the go (in 1kg/ha increments). There is a pause button for each bin to pause only that bin (if you only want to sow seed from Bin 1 for example)



Step 3) Press "Pause" of "Finish" to stop seeding. If you press pause, you can re-start from where you left off.

Note1)

If the incorrect sprocket ratio has been selected for the product, or you are driving too fast (or too slow – for a low speed warning), you may see a warning like this below:

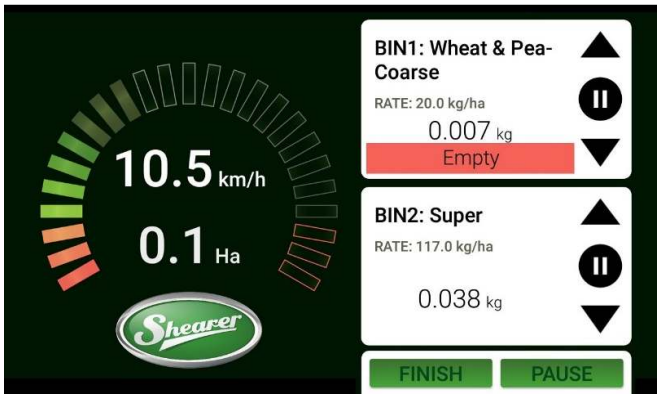


This means that the limits of the motor/s have been exceeded. The solutions could be to either drive slower (or faster for a low speed warning) or to calibrate with a more acceptable sprocket ratio for the selected rate.

The chart on the following page will guide you to an appropriate sprocket ratio.

If seeding continues with this warning, the rate accuracy will be affected.

Note 2)



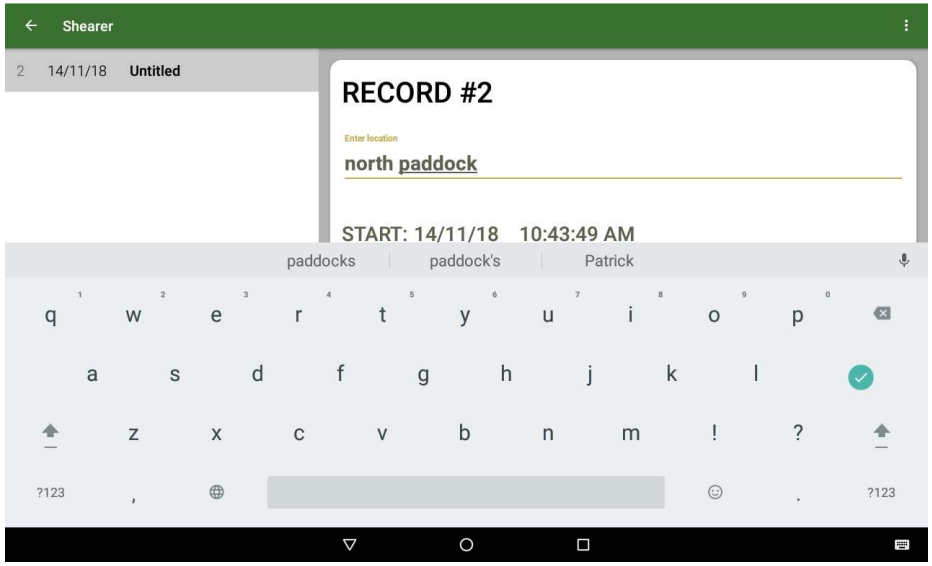
On machines with bin level sensors, "empty" will show up when a bin is very low or empty. This means it is time to stop and top up the bin.

Continuing with an almost empty bin may lead to the distributor rollers not being able to collect enough seed to maintain an accurate rate.

Records

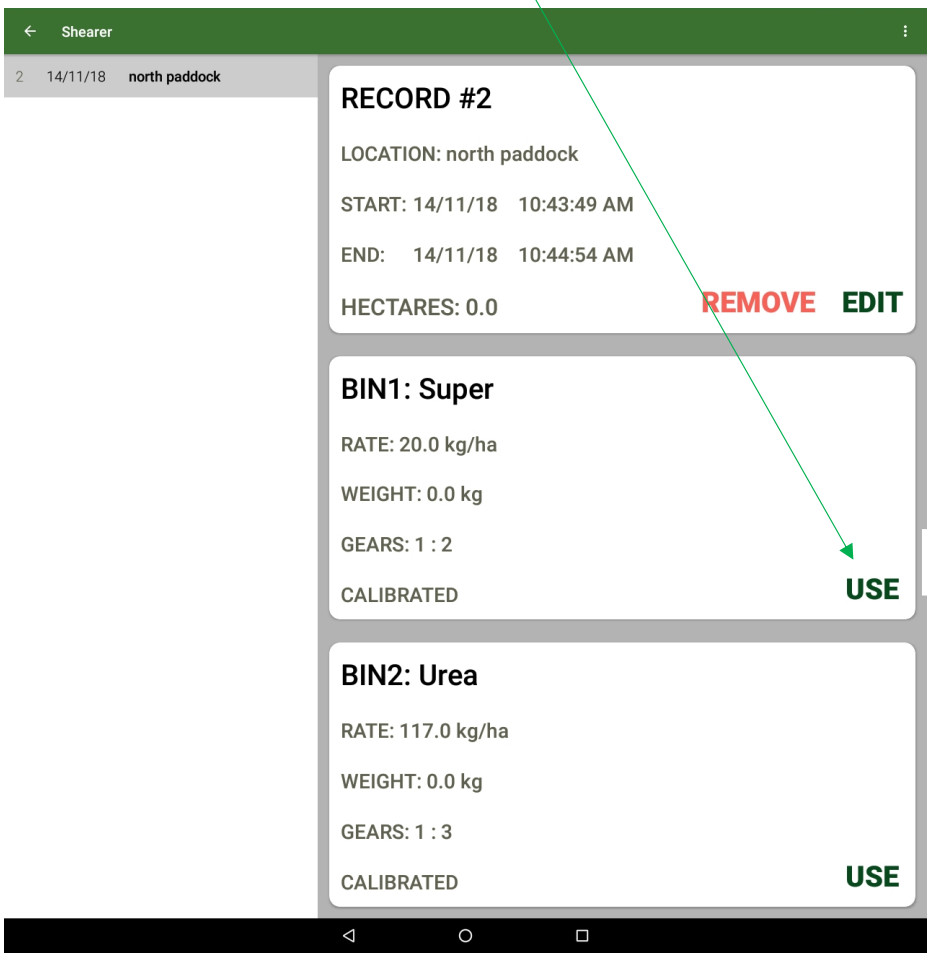
Tap the View Records button in the main menu.

Records of use are kept for reference. You can add a location such as the paddock where the seeding took place. To do so tap edit and then type a name in the “Enter Location” space.



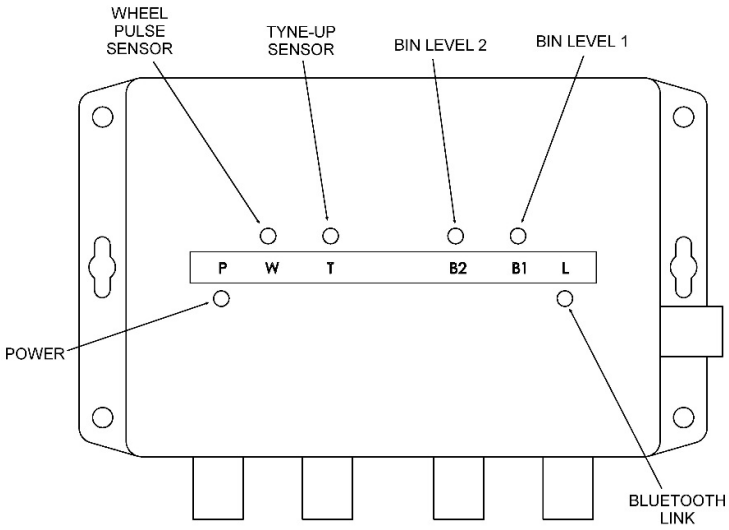
The record feature will record the products sown, rate, sprocket ratios, hectares covered, start and end time, etc. each time the machine is used.

You can also use a previous record to set the same calibrations.



Note: The records can be removed/deleted if they are no longer required.

Indicator Lights

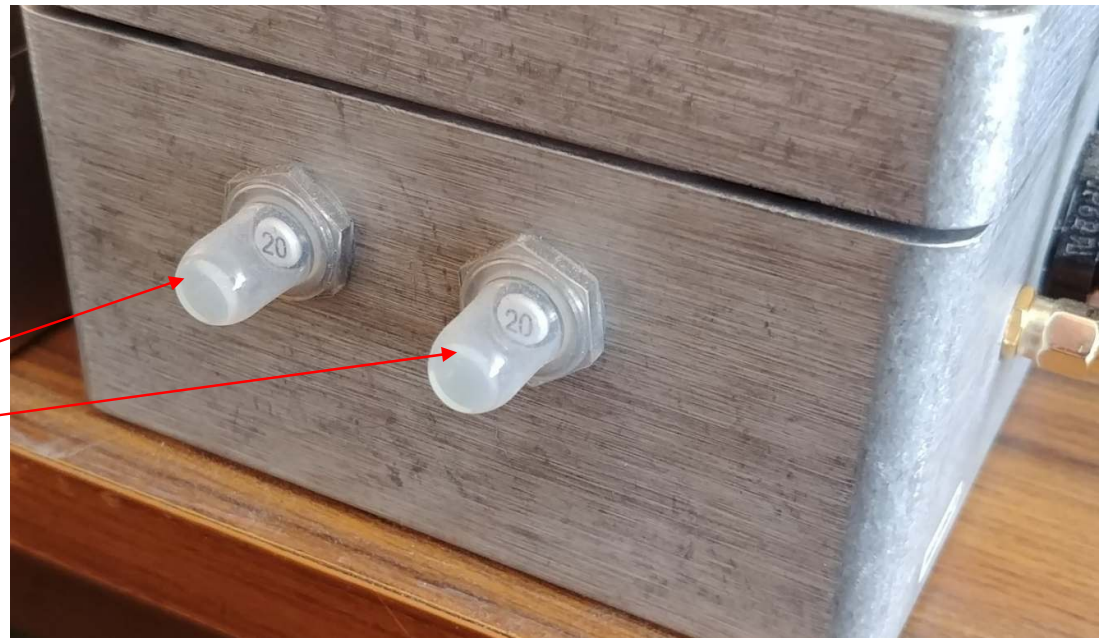


The secondary box has a number of lights to indicate power, sensor signals and when the Bluetooth link is active with the tablet. These lights can be helpful when testing or troubleshooting.

Circuit breakers

If the motors draw excessive current, either by using incorrect settings or if something is jammed in a roller, the circuit breaker will trip to protect the electronics.

When it trips the button under the clear plastic cover on the end of the metal control box will pop out. To reset a circuit breaker first clear any blockages and simply press the button in.



Circuit breaker

Electric Drive Guideline chart

Note: In most use cases for pasture drills, a 1 : 3 ratio is acceptable.

ratio	**1 : 3**	**1 : 2**	**1 : 1**	**2 : 1**	**3 : 1**
Ideal	medium high rate small seeds (such as canola) very low rate medium seeds (wheat, rye)	medium rate small seeds	medium rate medium seeds	very high rate medium seeds	
Acceptable	low rate small seeds (such as canola)	low rate medium seeds	medium rate small seeds	medium rate medium seeds	very high rate medium seeds
Not Recommended	medium high rate medium seeds	medium to high rate medium seeds low or high rate small seeds	high rate medium seeds (especially with no restrictor) any seeds at low rate	low rate medium seeds	small seeds low rate medium seeds

GATE SETTINGS

PRODUCT	GATE SETTING
GRANULAR SUPER PHOSPHATE	2
HIGH ANALYSIS FERT.	2
UREA (granular)	2
WHEAT	2
PEAS	3
OATS	2
RICE	2
BARLEY	2
LUPIN	3
SOYBEAN	3
SORGHUM	1
MILLET	1
CANARY	1
SUNFLOWER	2
LINSEED	1
LUCERNE	1
CANOLA	1
RYE GRASS	1

TROUBLE SHOOTING

PROBLEM	**CAUSE**	**REMEDY**
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 27)
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

TROUBLESHOOTING - PHASING HYDRAULIC CYLINDERS

[Note: the numbers in brackets below refer to the item numbers on the hydraulics part pages (page 58 & 59)]

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).

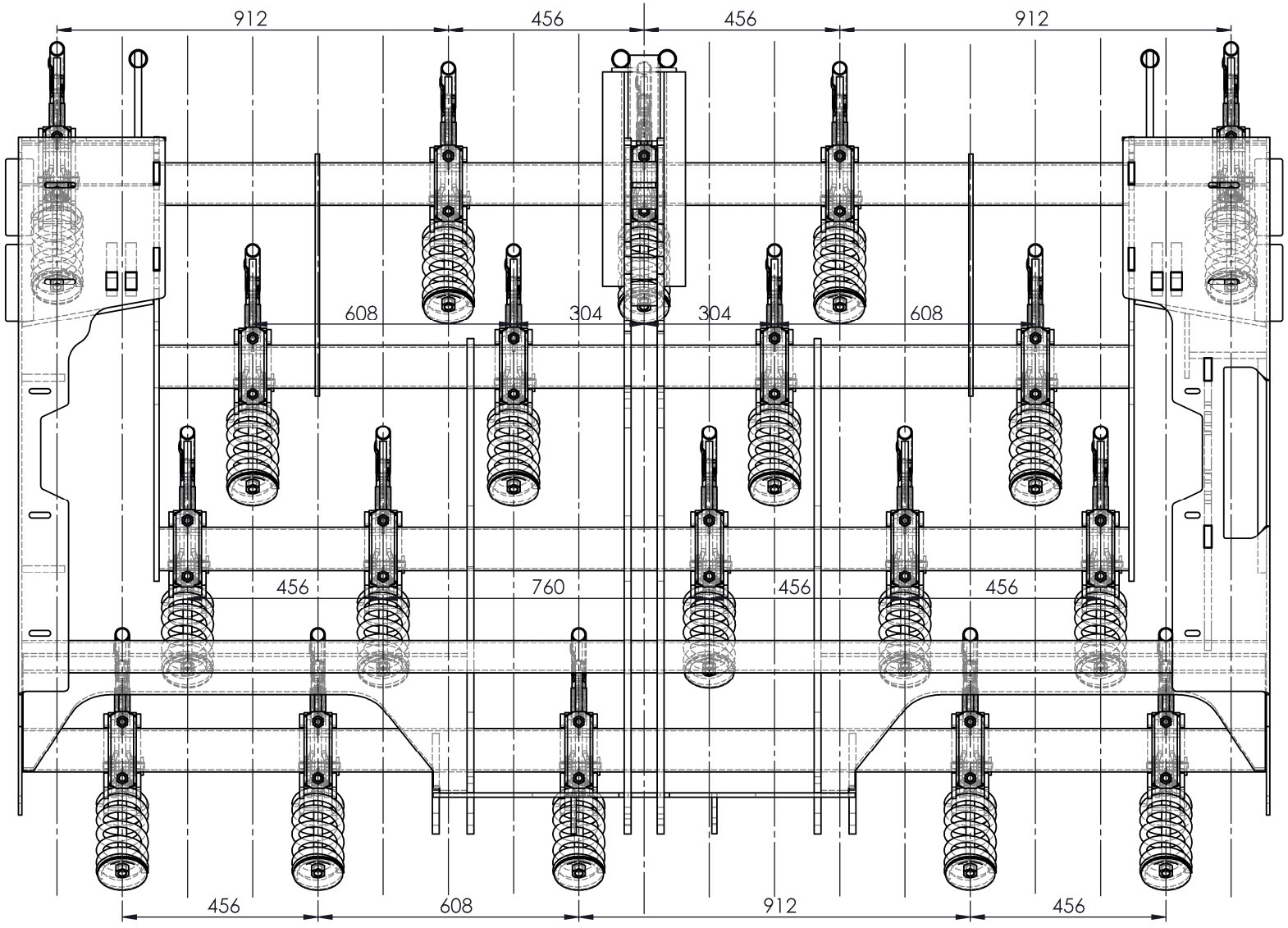
To achieve levelling of the implement (initially, or after storage, or as a result of one cylinder having an imperfect piston seal) the implement should be:
- Fully raised,
- The tractor control valve be held in the raise position with the tractor at idle (it may require holding the valve for several 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).

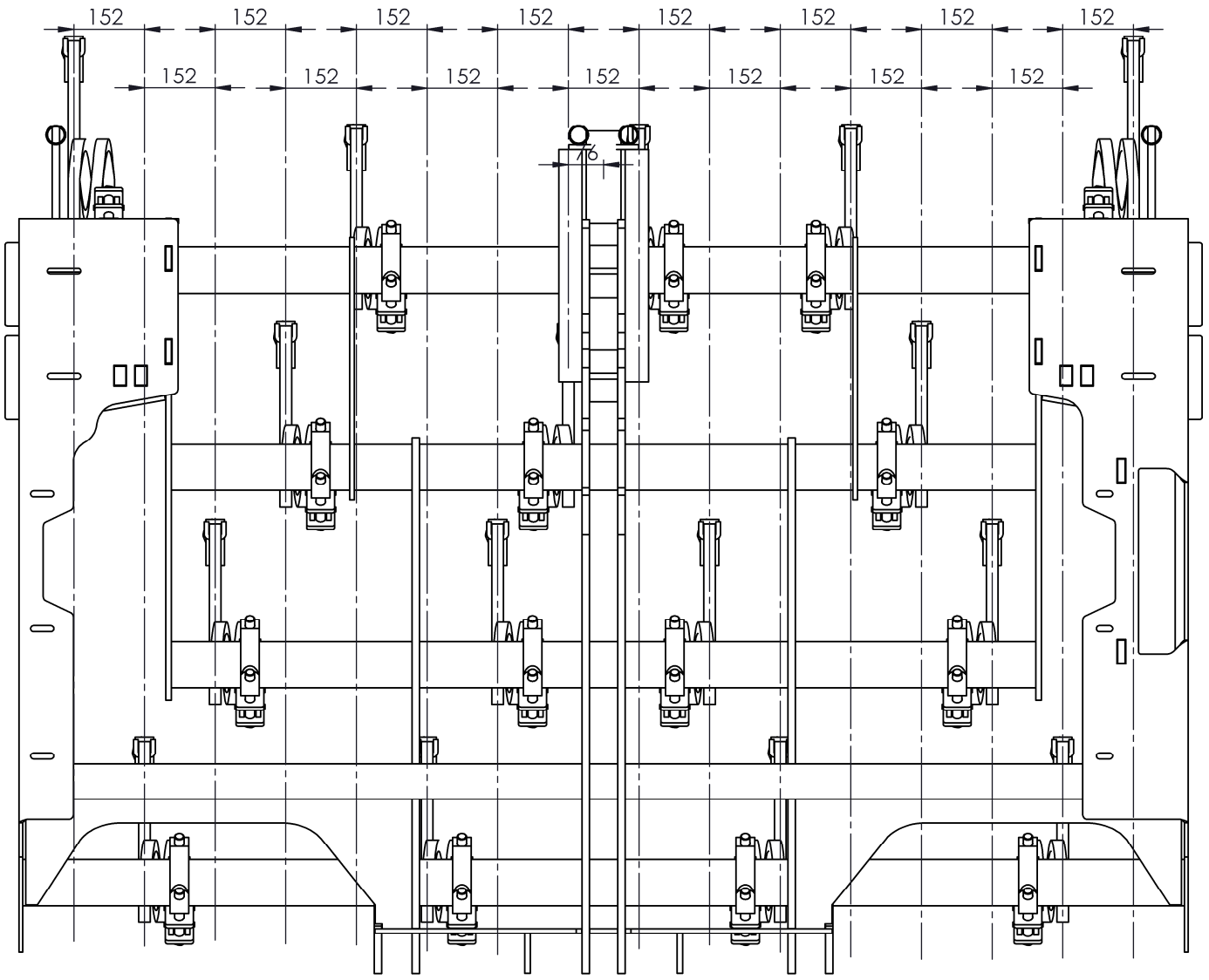
The first cylinder in the series, that has “dropped” is at fault. If only one has “dropped”, it is at fault. If both have “dropped”, the “master cylinder” (5) is at fault

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

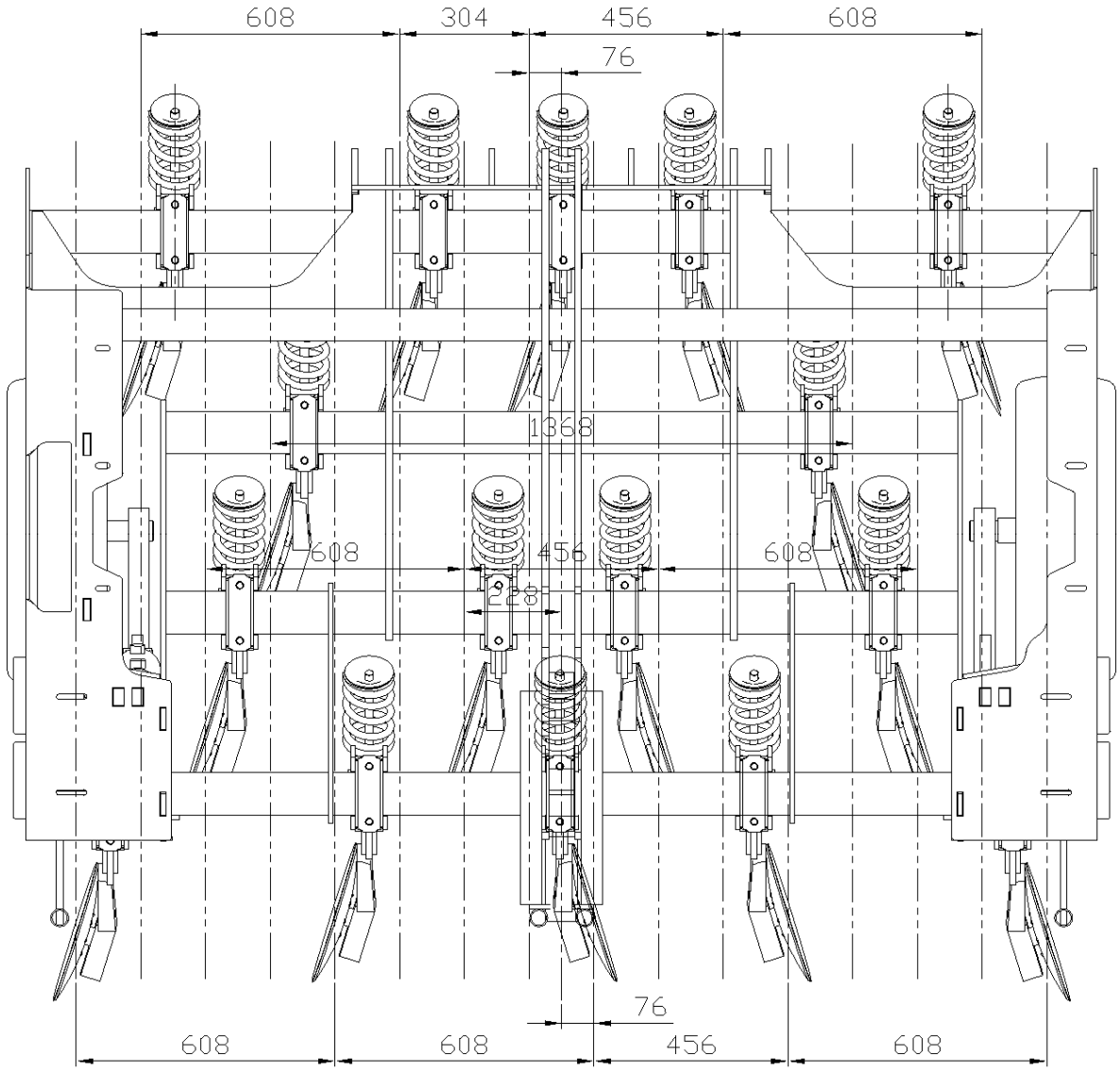
580 TYNE LAYOUT – 2.8m



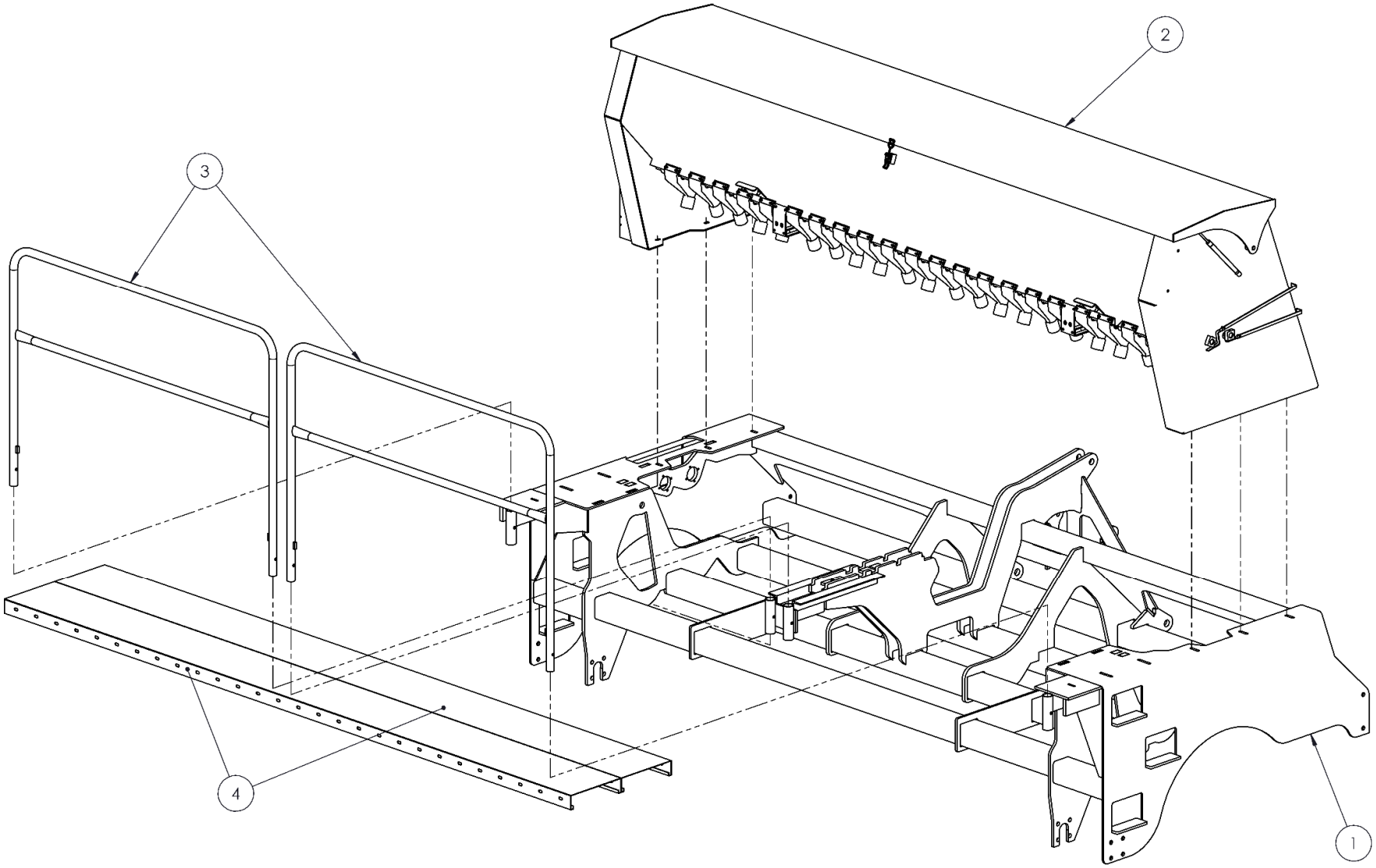
COIL TYNE LAYOUT – 2.4m



DISC LAYOUT

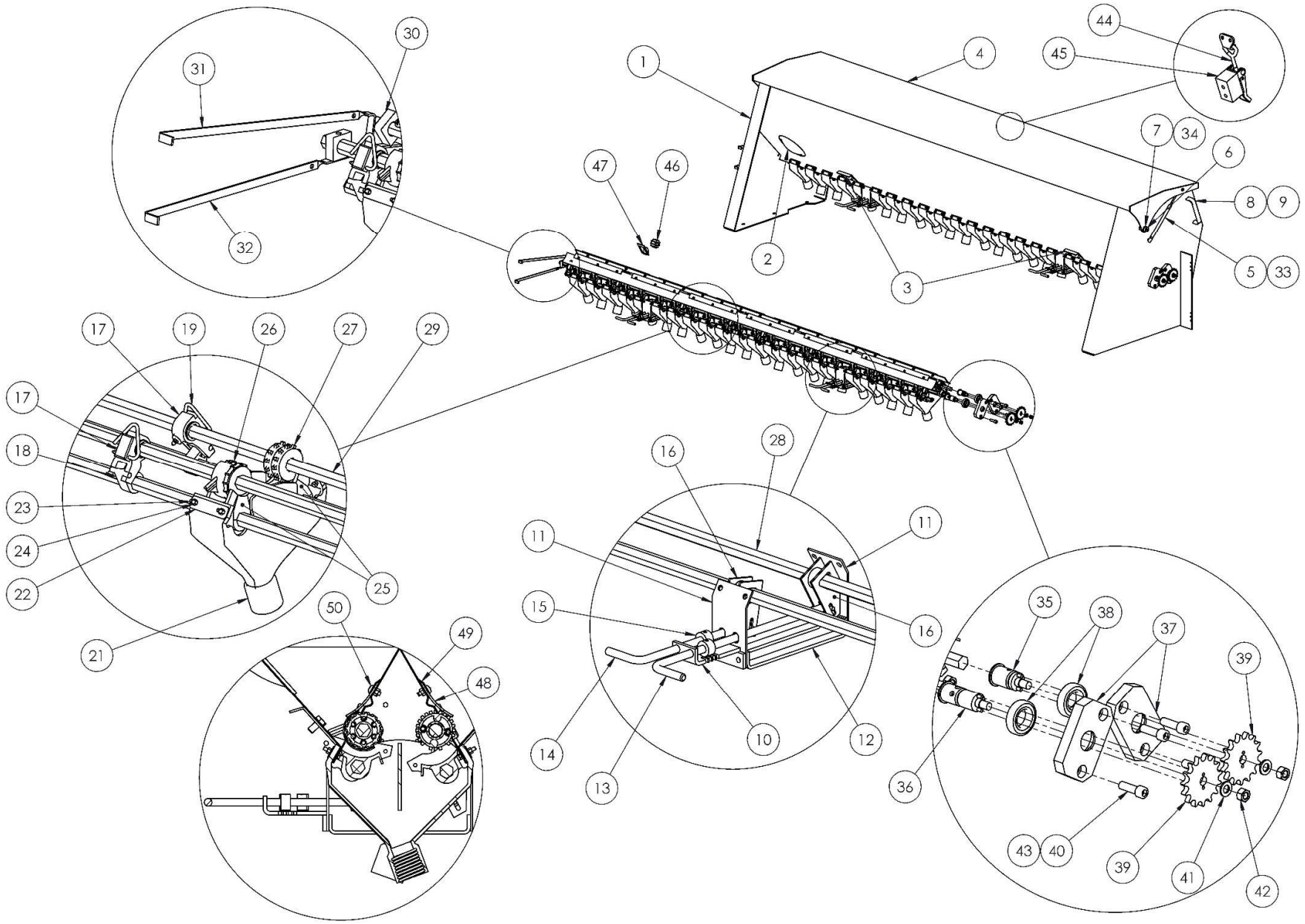


MAIN FRAME, GRAIN AND FERTILIZER BOX, PLATFORM ETC.



MAIN FRAME, GRAIN AND FERTILIZER BOX, PLATFORM ETC.

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	45889	FRAME ASSEMBLY – 3.3m			
	46888	FRAME ASSEMBLY – 2.8m			
	46887	FRAME ASSEMBLY – 2.4m			
	46886	FRAME ASSEMBLY – 2.0m			
2	46575	HOPPER ASSY CPTE (ELECTRIC DRIVE) – 3.3m / 22R			
	46574	HOPPER ASSY CPTE (ELECTRIC DRIVE) – 2.8m / 19R			
	46573	HOPPER ASSY CPTE (ELECTRIC DRIVE) – 2.4m / 16R			
	46572	HOPPER ASSY CPTE (ELECTRIC DRIVE) – 2.0m / 13R			
	47167	HOPPER ASSY CPTE (ELECTRIC DRIVE) – 2.8m / 22R			
	47166	HOPPER ASSY CPTE (ELECTRIC DRIVE) – 2.4m / 19R			
	47165	HOPPER ASSY CPTE (ELECTRIC DRIVE) – 2.0m / 16R			
	46870	HOPPER ASSY CPTE (GEARBOX) – 3.3m / 22R			
	46869	HOPPER ASSY CPTE (GEARBOX) – 2.8m / 19R			
	46868	HOPPER ASSY CPTE (GEARBOX) – 2.4m / 16R			
	46867	HOPPER ASSY CPTE (GEARBOX) – 2.0m / 13R			
	47164	HOPPER ASSY CPTE (GEARBOX) – 2.8m / 22R			
	47163	HOPPER ASSY CPTE (GEARBOX) – 2.4m / 19R			
	47162	HOPPER ASSY CPTE (GEARBOX) – 2.0m / 16R			
3	46790	HANDRAIL ASSEMBLY – 3.3m			
	46789	HANDRAIL ASSEMBLY – 2.4 & 2.8m			
	46787	HANDRAIL ASSEMBLY – 2.0m			
4	46806	PLANK, PLATFORM – 3.3m			
	46805	PLANK, PLATFORM – 2.8m			
	46804	PLANK, PLATFORM – 2.4m			
	46803	PLANK, PLATFORM – 2.0m			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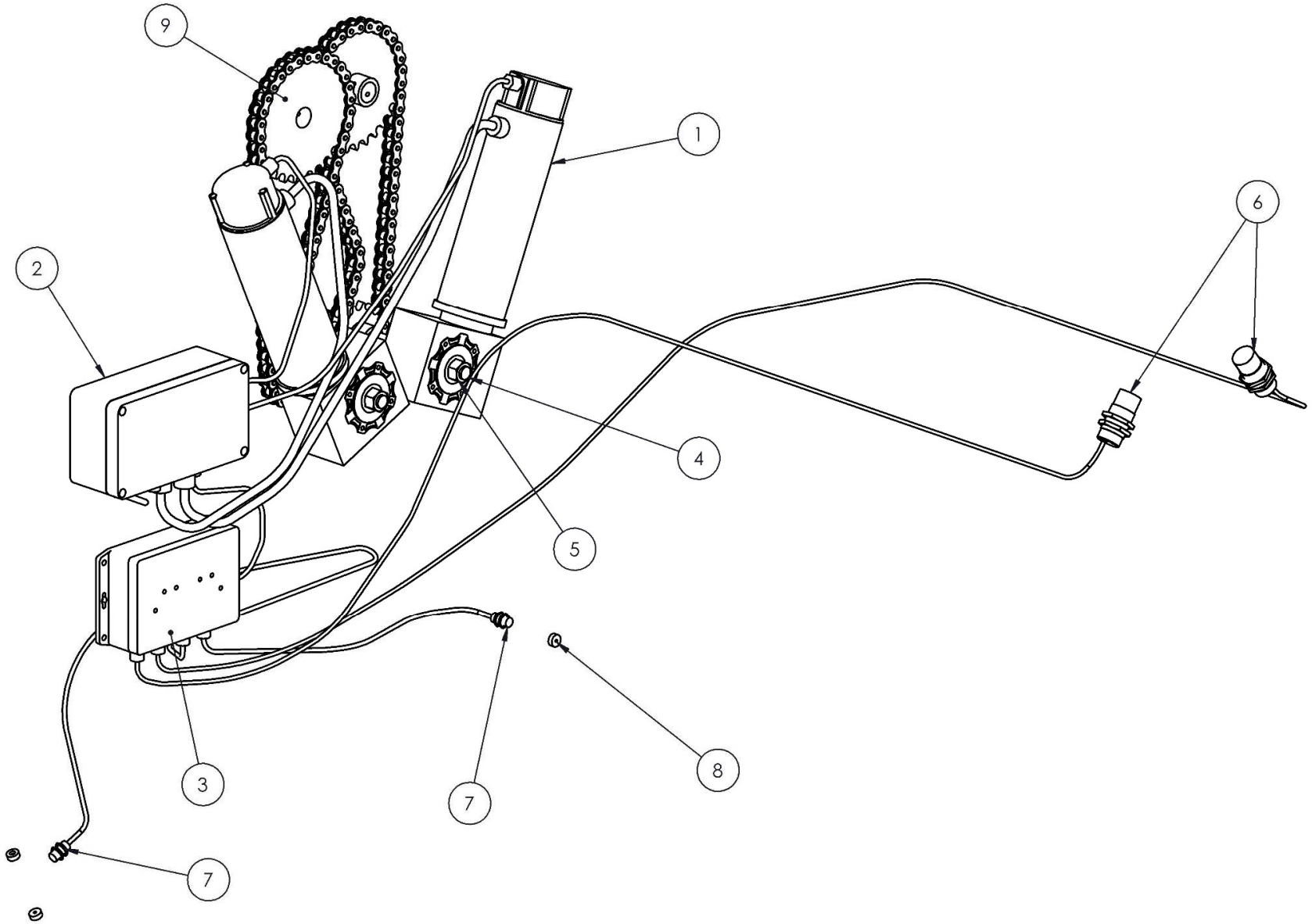
HOPPER ASSEMBLY COMPLETE (ELECTRIC DRIVE)

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	45890	BOX ASSEMBLY – 2.0m / 13R	29	45946	SHAFT, DISTRIBUTOR – 2.0m
	45891	BOX ASSEMBLY – 2.4m / 16R		45947	SHAFT, DISTRIBUTOR – 2.4m
	45892	BOX ASSEMBLY – 2.8m / 19R		45948	SHAFT, DISTRIBUTOR – 2.8m
	45893	BOX ASSEMBLY – 3.3m / 22R		45949	SHAFT, DISTRIBUTOR – 3.3m
	47162	BOX ASSEMBLY – 2.0m / 16R	30	18649	BLOCK, INDICATOR
	47163	BOX ASSEMBLY – 2.4m / 19R	31	46861	INDICATOR, LONG (OFFSET)
	47164	BOX ASSEMBLY – 2.8m / 22R	32	46860	INDICATOR, SHORT
2	36940	WINDOW, VIEWING	33	34095	NUT, NYLOC - M8
3	22654	COVER, CLEANING HOLE	34	28912	NUT, NYLOC - M16
4	46568	LID ASSEMBLY – 2.0m	35	46814	SHAFT ADAPTER ASSEMBLY - SHORT
	46569	LID ASSEMBLY – 2.4m	36	46815	SHAFT ADAPTER ASSEMBLY - LONG
	46570	LID ASSEMBLY – 2.8m	37	46366	HOUSING, BEARING
	46571	LID ASSEMBLY – 3.3m	38	21350N	BEARING
5	37481	STRUT, GAS - 150N	39	46874	SPROCKET, 10T
6	46871	SCREW, SHOULDER-M16x20x40		46873	SPROCKET, 15T
7	FBW10	WASHER, FLAT - 20mm		46859	SPROCKET ASSY, 30T
8	38359	HANDLE	40	44178	SHCS M12 x 40
9	19151	SCREW M8 x 25	41	FBW6	WASHER, FLAT – ½"
10	18598	BRACKET ASSY, G & F LEVER	42	18414	NUT, HEX - M12
11	18599	BRACKET, REAR - GRAIN & FERT. LEVER	43	38533	NUT, NYLOC - M12
12	18657	BRACE, SUPPORT	44	19337	LATCH & STRIKE ASSY
13	20502	LEVER, FRONT	45	46964	BLOCK, LATCH
14	20503	LEVER, REAR	46	31187	ROLLER ASSY, BROADBEAN
15	46028	BUSH, ADJUSTING	47	18424	COVER, CUT-OFF - DISTRIBUTOR
	21293	PIN, SELLOCK 4x20	48	46965	RUBBER FLAP – 2.0m
16	20504	LINKAGE ASSY, GATE SHAFT		46966	RUBBER FLAP – 2.4m
17	18847	BEARING ASSY, DISTRIBUTOR		46967	RUBBER FLAP – 2.8m
18	18849	HINGE, GATE		46968	RUBBER FLAP – 3.3m
19	20525	RETAINER, BEARING	49	21767	STRIP, RETAINER - 3 HOLE
20	44341	KIT, SEED CUP (SINGLE)		18636	STRIP, RETAINER - FLAP
21	42977	CUP, HOSE - SINGLE	50	GB7G	GUTTER BOLT & NUT 1/4" x 5/8"
22	43646	PLATE, WASHER			
23	45749	AS 1111.1 - M5 x 25 x 16-WN		COMPLETE BOX ASSEMBLIES	
24	37999	AS 1112.3 C- M5-N		46572	BOX ASSY CPTE – 2.0m / 13R
25	39994	GATE, DISTRIBUTOR		46573	BOX ASSY CPTE – 2.4m / 16R
26	32198	KIT, FLUTED ROLLER & RESTRICTOR		46574	BOX ASSY CPTE – 2.8m / 19R
27	18435	ROLLER, DISTIBUTOR - PEG		46575	BOX ASSY CPTE – 3.3m / 22R
28	45950	SHAFT, GATE – 2.0m		47165	BOX ASSY CPTE – 2.0m / 16R
	45951	SHAFT, GATE – 2.4m		47166	BOX ASSY CPTE – 2.4m / 19R
	45952	SHAFT, GATE – 2.8m		47167	BOX ASSY CPTE – 2.8m / 22R
	45953	SHAFT, GATE – 3.3m			

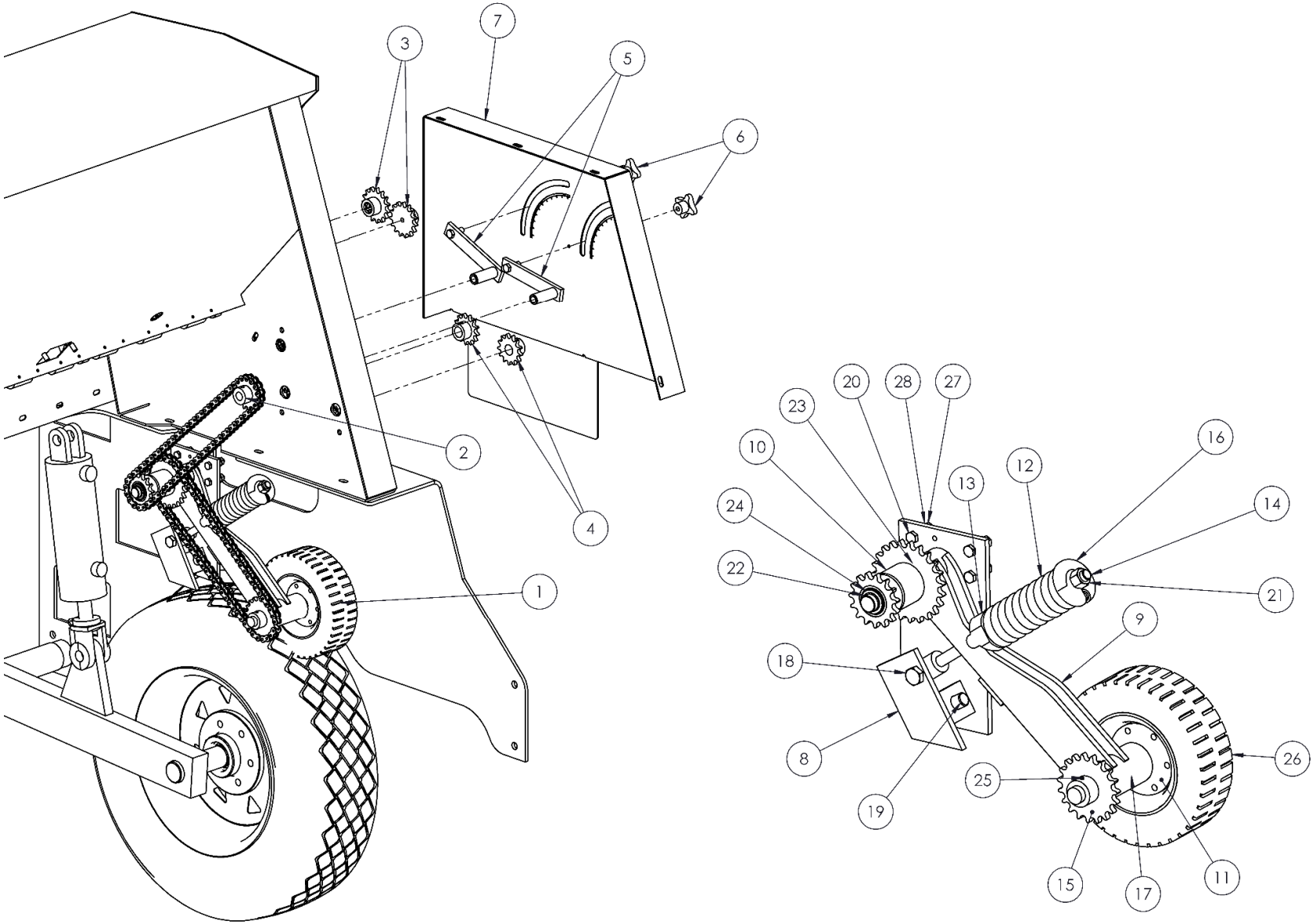
ELECTRIC DRIVE COMPONENTS



ELECTRIC DRIVE COMPONENTS

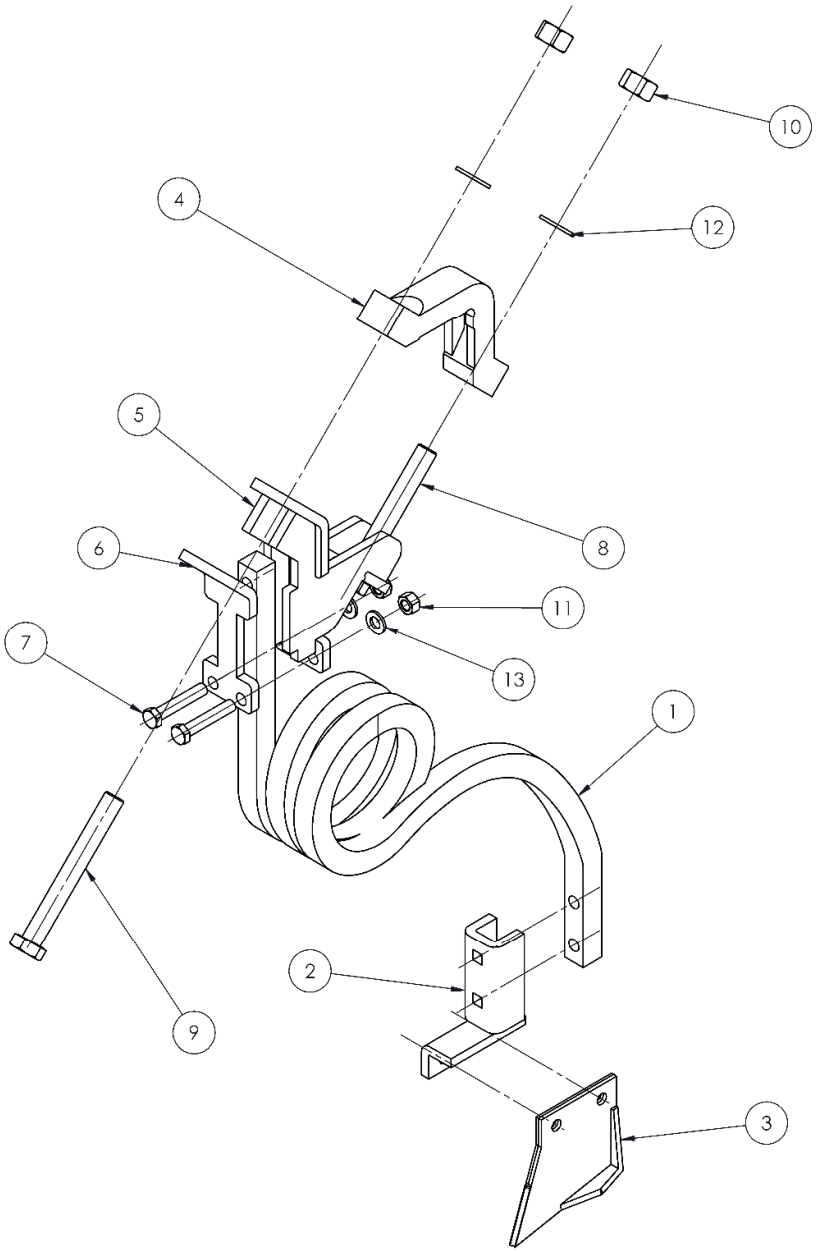
ITEM	Part No	DESCRIPTION	QTY.	ITEM	Part No	DESCRIPTION	QTY.
1	44977	MOTOR ASSEMBLY	2				
2	46445	BOX, MAIN CONTROL	1				
3	46446	BOX ASSY, SPLITTER	1				
4	45927	SHAFT, MOTOR	2				
5	18021	Hex Nut, M16 Gr8	2				
6	46013	SENSOR, BIN LEVEL	2				
7	44975	SENSOR, HALL EFFECT	2				
8	46359	MAGNET	3				
9	46874	SPROCKET, 10T	2				
	46873	SPROCKET, 15T	4				
	46859	SPROCKET ASSY, 30T	2				
		USE SPROCKETS IN COMBINATION FOR APPROPRIATE RATIO, i.e. 1 : 3 or 3 : 1 (10T & 30T) 1 : 2 or 2 : 1 (15T & 30T) 1 : 1 (15T & 15T)					

VARIDRIVE GEARBOX



VARIDRIVE GEARBOX

ITEM	Part No	DESCRIPTION	QTY.	ITEM	Part No	DESCRIPTION	QTY.
1	46953	DRIVE UNIT ASSEMBLY	1				
2	46954	SPROCKET, 14T	1				
3	18802	SPROCKET ASSY, 15T	2				
4	46955	SPROCKET, 13T	2				
5	46594	HANDLE ASSEMBLY, ADJUSTMENT	2				
6	43984	KNOB, M12	2				
7	46956	GUARD - VARIDRIVE/PRD	1				
ITEM 1 MADE OF:							
8	46931	MOUNT ASSY, DRIVE ARM	1				
9	46930	DRIVE WHEEL ARM ASSY	1				
10	46932	EXTENDED DOUBLE SPROCKET	1				
11	46933	AXLE ASSY, DRIVE WHEEL	1				
12	800-055	SPRING FOR PRESSURE ARM	1				
13	11951	SEAT FOR TYNE SPRING NI HARD	1				
14	13407	EYEBOLT M16 - STRAIGHT	1				
15	46935	SPROCKET, 19T	1				
16	11952	CAP FOR TYNE SPRING	1				
17	37414	BEARING 6005LLU	2				
18	18084	M16 x 100-N	1				
19	17605J1	M20 x 90	1				
20	17775J1	M10 x 45	4				
21	18021	NUT, HEX – M16	2				
22	18675	CIRCLIP, SHAFT - 25mm EXT	1				
23	37098	BUSH, ARM JUMPER	2				
24	18534	WASHER, CLUTCH	1				
25	18661	PIN, SELLOCK-5x45mm	1				
26	46934	WHEEL, DRIVE	1				
27	31993	NUT, NYLOC M10	4				
28	FBW4	WASHER, FLAT – 10mm	4				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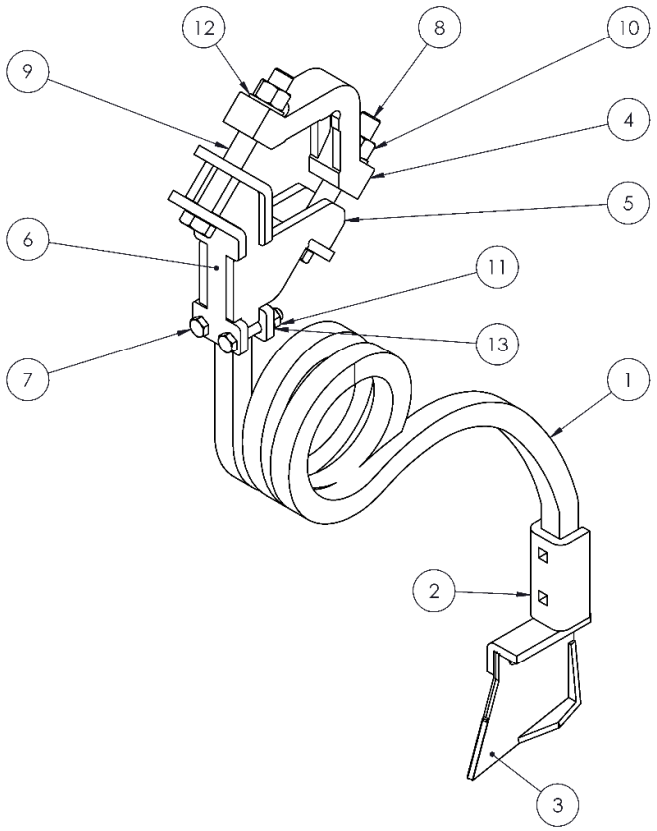
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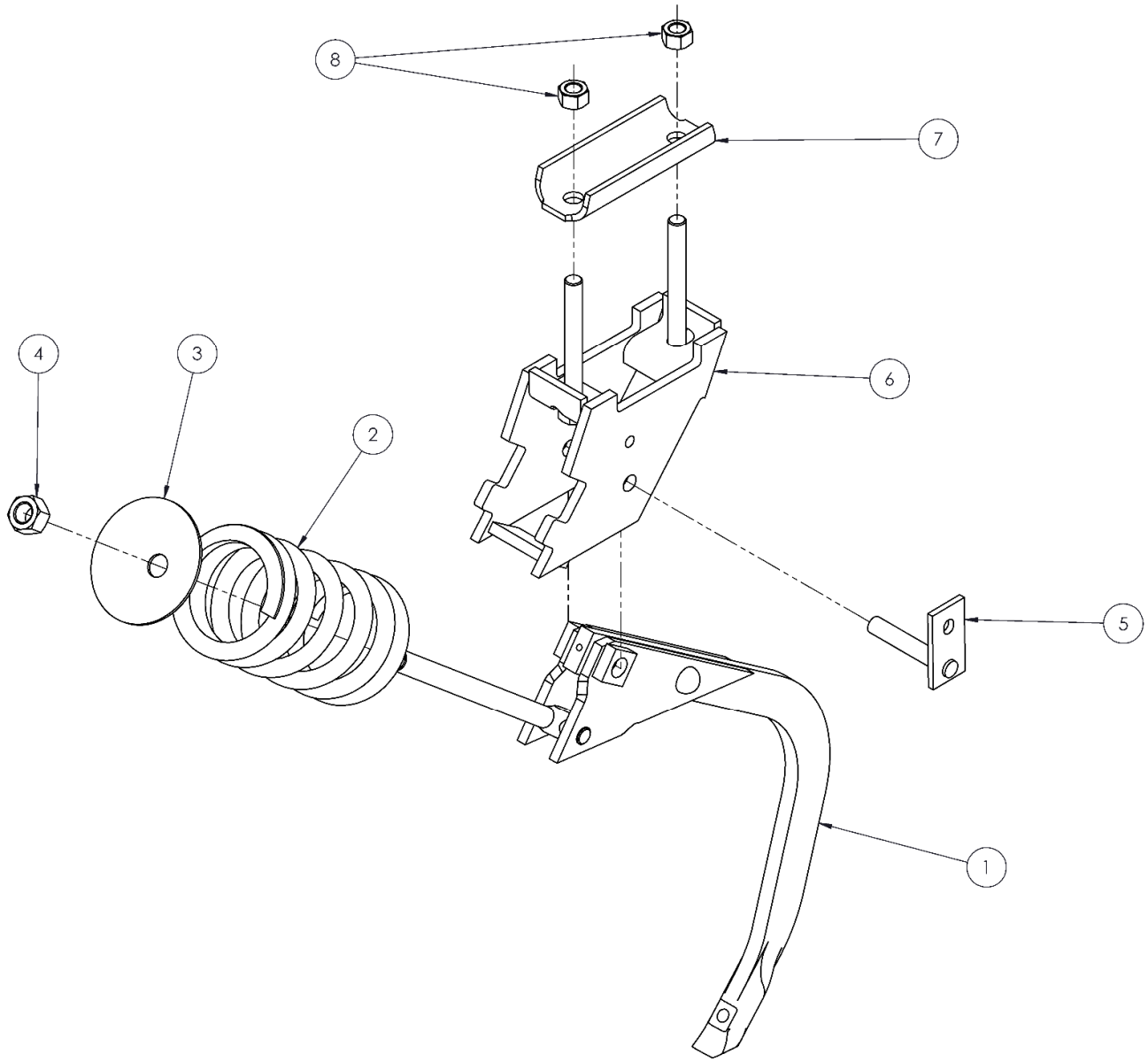
3

COIL TYNE ASSEMBLY

ITEM	PART No	DESCRIPTION	QTY	ITEM	PART No	DESCRIPTION	QTY
1	23674	TYNE, COIL - L/H					
	23675	TYNE, COIL - R/H					
2	18985N	BRACKET FOR BAKER BOOT					
3	989-881	POINT, BAKER					
4	19635	CLAMP, TOP TYNE CAST					
5	46821	CLAMP ASSY, COIL TYNE					
6	46825	PLATE, CLAMP					
7	22998	BOLT, HEX - M12 x 65					
8	18124	BOLT, HEX - M20 x 140					
9	46915	BOLT, HEX - M20 x 160					
10	22026	NUT, HEX - M20					
11	38533	NUT, HEX - M12					
12	FBW10	WASHER, FLAT - 20mm					
13	FBW6	WASHER, FLAT - 12mm					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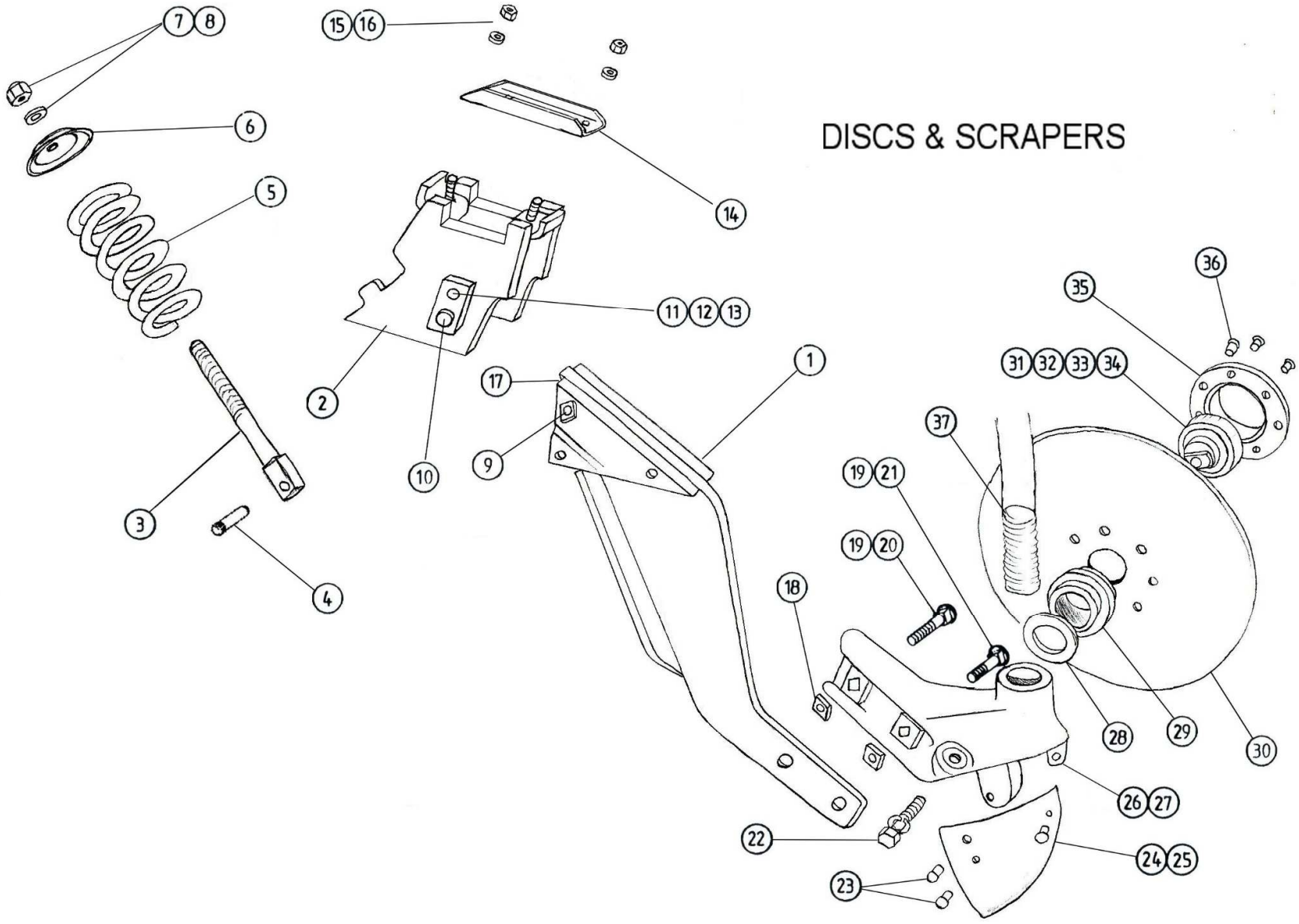
580 TYNE ASSEMBLY

ITEM	PART No	DESCRIPTION	QTY	ITEM	PART No	DESCRIPTION	QTY
1	22902	TYNE & SPRING ROD ASSEMBLY					
2	22927	SPRING, 16mm					
3	22926	CUP, SPRING					
4	22026	AS 1112.1 S1 - M20-D-N					
5	22931	PIN ASSEMBLY, TYNE CRANKED					
6	36949	CARRIER ASSY, TYNE (100SQ)					
7	34527	CLAMP, TOP SQ MOUNT					
8	28912	AS 1112.1 S1 - M16-W-N					
					36952	COMPLETE ASSEMBLY (ITEMS1-8)	
		ITEM 1 (22902) IS MADE UP OF					
	22913	ROD, SPRING EOT (580)					
	22904	TYNE ASSY, 580 EOT					
	21612	BUSH					
	18813	PIN, SPRING ROD					
	18596	NIPPLE, GREASE - SELF TAPPED					

DISC ASSEMBLY



DISC ASSEMBLY

ITEM	PART No	DESCRIPTION		QTY	ITEM	PART No	DESCRIPTION		QTY
1	42256	DISC ARM ASSY.			31	34084	SPINDLE	Bearing	
2	36949	CARRIER ASSY.	Tyne		32	34085	COLLAR	Seal	
3	22913	ROD ASSY.	Spring E.O.T.		33	29751	BEARING	Ball – deep	
4	18813	PIN	Spring rod		34	29843	'O' RING		
5	22927	SPRING			35	10341	CAGE	Bearing	
6	22926	CUP	Spring		36	FHR2	RIVET	Flat hd. ∅¼" x ½"	
7	18312	WASHER	Flat, ∅20 black		37	33105	HOSE ASSY.	convoluted	
8	22026	NUT	Nyloc M20						
9	21612	BUSH	Tyne						
10	22931	PIN ASSY.	Tyne - cranked						
11	17776J1	WASHER	Spring ∅10 plated						
12	17777J1	NUT	Hex M10 Gr 8.8 plated						
13	18824	BOLT	Hex M10 x 30 plain				ASSEMBLIES		
14	34527	CLAMP	Top - tyne						
15	17606J1	WASHER	Spring ∅16 plated			10368	BOOT / SCRAPER ASSY. R.H.		
16	18021	NUT	Hex M16					Items 23, 24 & 26	
17	18596	NIPPLE	grease						
18	490	SPACER	Breast adjustment			10648	BOOT / SCRAPER ASSY. L.H.		
19	33099	BOLT	Cup hd. Sq. M12 x 50					Items 23, 25 & 27	
20	33098	BOLT	Cup hd. Sq. M12 x 65 (ext. d/bar)						
21	26892	BOLT	Cup hd. Sq. M12 x 45 (ext. d/bar)			10367	DISC / BEARING ASSY.		
22	HR115	BOLT	Hex 5/8" BSW x 2-1/4"					Items 30-36	
23	31242	BOLT	Hex M6 x 30 Gr 8.8 (1 off)						
	18659	BOLT	Hex M6 x 25 Gr 8.8 (2 off)			10369	BOOT & DISC ASSY. R.H.		
	18656	NUT	Hex M6					Items 22-24, 26, 28-36	
	18504	WASHER	Spring 6mm						
24	99-9	SCRAPER	Disc R.H.			10649	BOOT & DISC ASSY. L.H.		
25	99-10	SCRAPER	Disc L.H.					Items 22, 23, 25, 27-36	
26	10338	BOOT	R.H.						
27	10647	BOOT	L.H.			11594	BEARING & CAGE ASSY.		
28	10364	WASHER	Shim 26g					Items 31-35	
29	12348	SEAL	Ballrace						
30	240-1008	DISC	∅13" x 9/32" (10342)						
31	34084	SPINDLE	Bearing			42284	DISC ASSEMBLY, COMPLETE – R/H		
32	34085	COLLAR	Seal					Items 1-24, 26, 28-37	
33	29751	BEARING	Ball – deep						
34	29843	'O' RING				42283	DISC ASSEMBLY, COMPLETE – L/H		
35	10341	CAGE	Bearing					Items 1-23, 25, 27-37	
36	FHR2	RIVET	Flat hd. ∅¼" x ½"						
37	33105	HOSE ASSY.	convoluted						

TRANSFERS

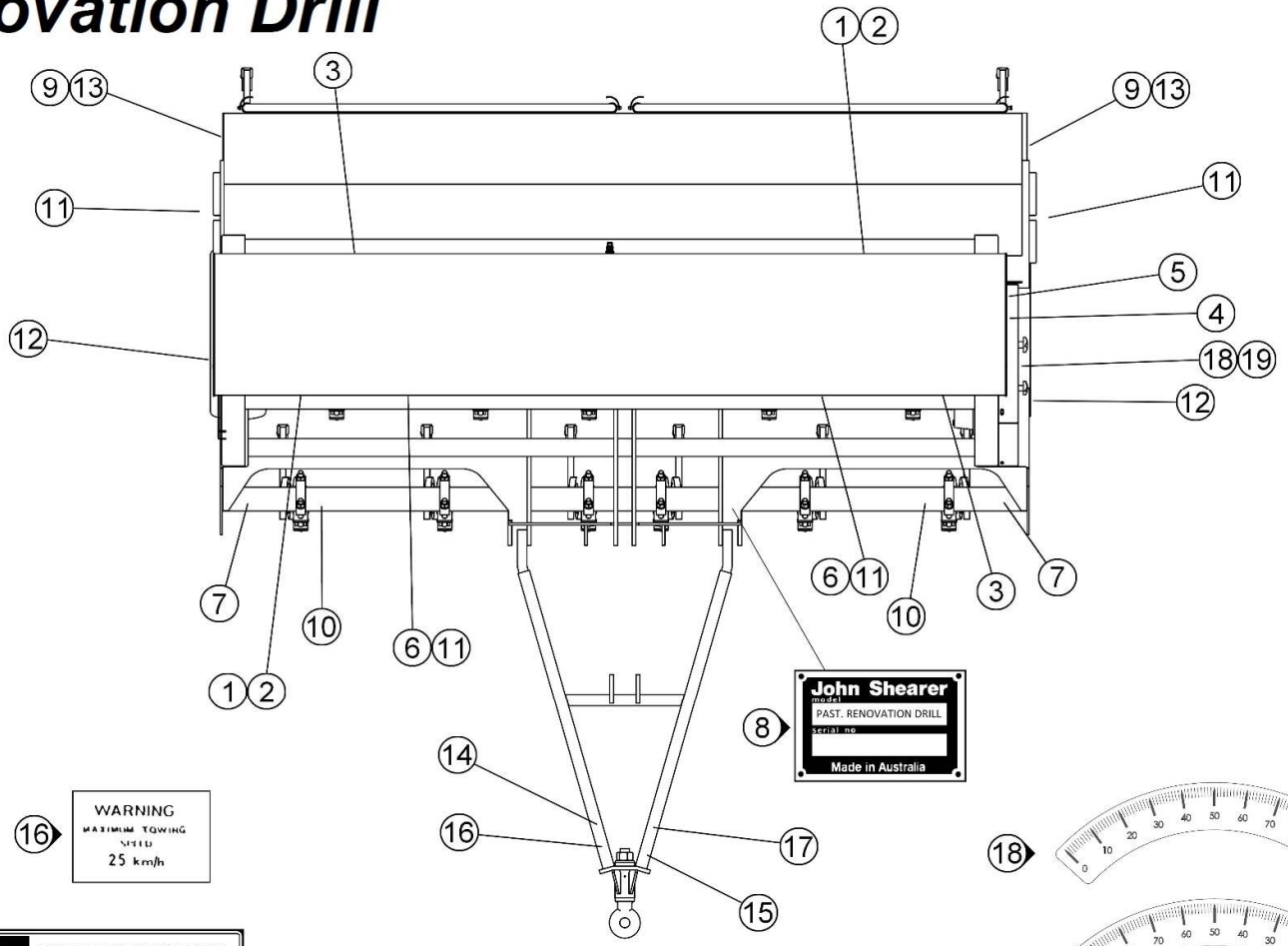
JOHN SHEARER

Grow a Better Crop

johnshearer.com.au

Pasture Renovation Drill

WARNING ! !
SAFETY STOPS MUST BE FITTED TO HYDRAULIC CYLINDERS FOR TRANSPORT AND MAINTAINANCE



GATE SETTINGS

PRODUCT	GATE SETTING
GRANULAR SUPER PHOSPHATE	2
HIGH ANALYSIS FERT.	2
UREA (granular)	2
WHEAT	2
PEAS	3
OATS	2
RICE	2
BARLEY	2
LUPIN	3
SOYBEAN	3
SORGHUM	1
MILLET	1
CANARY	1
SUNFLOWER	2
LINSEED	1
LUCERNE	1
CANOLA	1
RYE GRASS	1

TYRE PRESSURES ARE IMPORTANT

OVER INFLATION will impair flotation –
Increasing sowing depth variations as ground conditions vary.

UNDER INFLATION can result in tyre failures.

TYRE SIZE	19 ROW		23 ROW (SM)		23 ROW (3.5M)	
	TYNE	DDO	TYNE	DDO	TYNE	DDO
23X7R R15 TYRE PRESSURE kPa	207	276	207	276	234	276
psi	30	40	30	40	34	40
12.5/80-15.3 TYRE PRESSURE kPa	155	232	155	250	170	250
psi	22	34	22	36	25	36

SPEED LIMIT 25 km/h (10 km/h SOWING)

GATE SETTING LEVERS — VIEW FROM ABOVE — REAR — FRONT

sling here

WARNING
DO NOT CARRY BAGS OF GRAIN AND FERTILIZER ON LOADING PLATFORM

10hr. 50hr. 200hr.

WARNING
MAXIMUM TOWING SPEED
25 km/h

DANGER
DO NOT RIDE ON THIS IMPLEMENT!

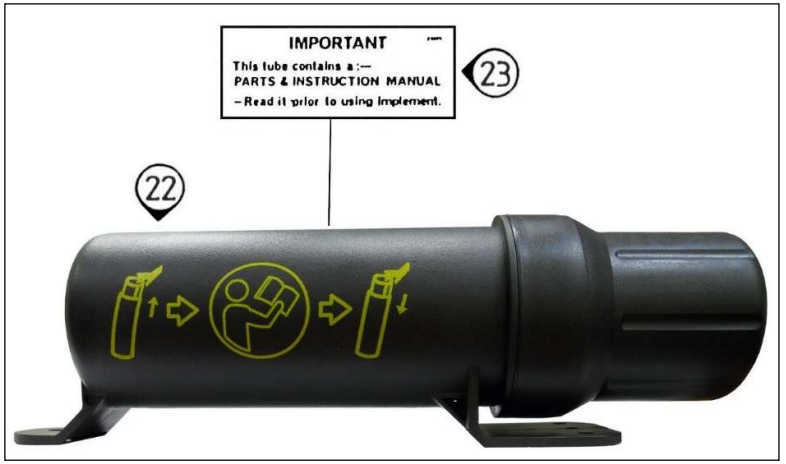
PROTECT YOUR EQUIPMENT

DANGER
LOWER IMPLEMENT ONTO TYNES BEFORE UNHITCHING TRACTOR

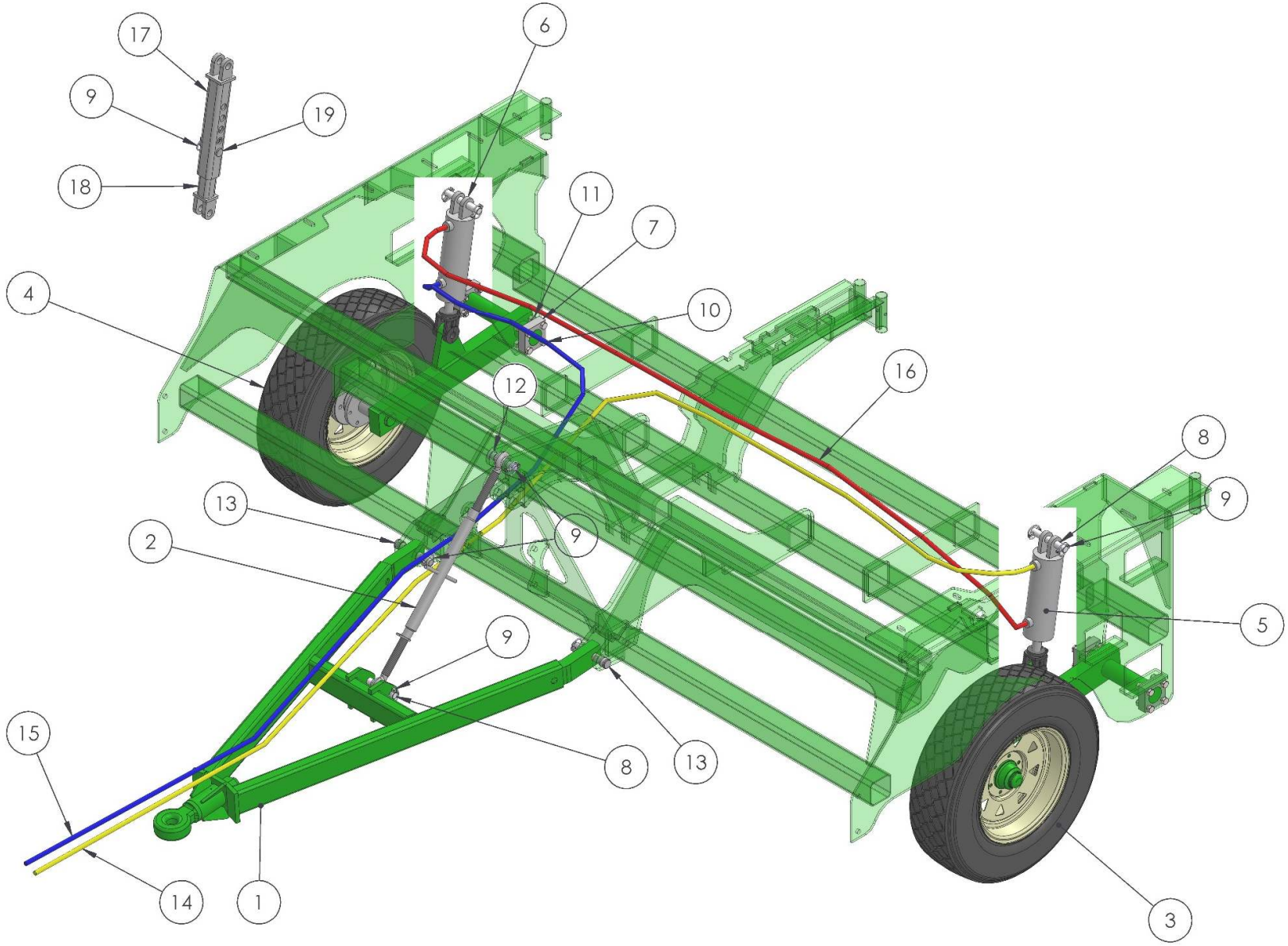
John Shearer
model
PAST. RENOVATION DRILL
serial no
Made in Australia

TRANSFERS

ITEM	PART No	DESCRIPTION	
1	46263	TRANSFER	John Shearer trademark
2	15875J2	TRANSFER	John Shearer
3	46610	TRANSFER	Pasture Renovation Drill
4	46984	TRANSFER	Gate Settings
5	46985	TRANSFER	Tyre pressures
6	28851	TRANSFER	Gate setting levers
7	15854J1	TRANSFER	Sling here
8	15968J1	PLATE	J.S. model & serial no.
	16161J1	SCREW	Drive 5/16” x 0.116 x 4U
9	15953J1	TRANSFER	Warning do not carry bags
10	27463	TRANSFER	Grease 10 hrs
11	27464	TRANSFER	Grease 50 hrs
12	27409	TRANSFER	Grease 200 hrs
13	22699	TRANSFER	Do not ride on implement
14	15880J1	TRANSFER	Protect your equipment
15	34732	TRANSFER	Lower onto tynes before disconnecting
16	18949	TRANSFER	Maximum towing speed
17	43539	TRANSFER	Safety Stops must be fitted
18	46957	TRANSFER	Gauge 0-100 (Gearbox models only)
19	46958	TRANSFER	Gauge 100-0 (Gearbox models only)
20		TRANSFER	Chart (Gearbox models only)
21	21532	KIT – CARRIER PARTS MANUAL ⇨ Items 22 – 24	
22	43313	TUBE	Carrier parts manual
23	20809	TRANSFER	Parts manual
24	18502	SETSCREW	Hex M8 x 16
	FBW3	WASHER	Flat ∅5/16”
	18464	NUT	Hex M8



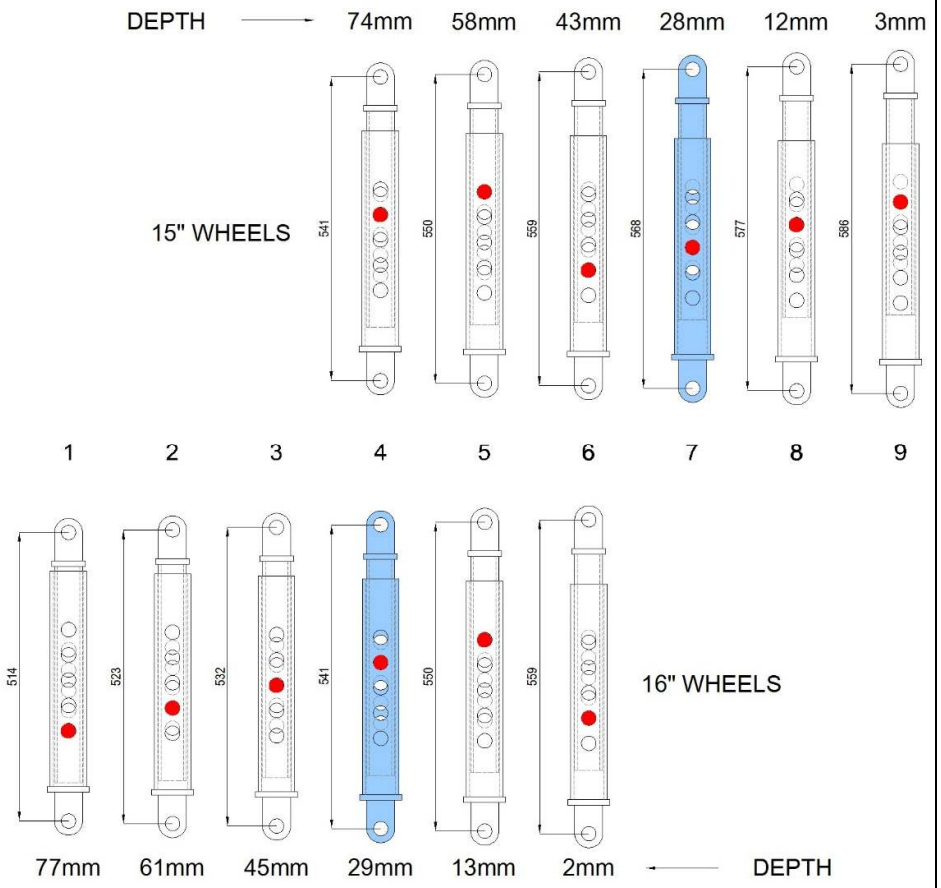
HITCH KIT / HYDRAULICS



HITCH KIT / HYDRAULICS

ITEM	PART No	DESCRIPTION	QTY
1	46000	HITCH ASSEMBLY	1
2	46687	TOP LINK	1
3	46566	ARM AND WHEEL ASSY (LH) – 16”	1
	46813	ARM AND WHEEL ASSY (LH) – 15”	1
4	46565	ARM AND WHEEL ASSY (RH) – 16”	1
	46812	ARM AND WHEEL ASSY (RH) – 15”	1
5	44133	3.75x8" HYD CYLINDER	1
6	44132	3.5 x 8 HYD. CYLINDER	1
7	34528	BLOCK, BEARING - OUTER	4
8	46507	PIN, TOP	3
9	22889	LYNCH PIN	10
10	17887J1	AS 1110.2 - M16 x 60 -N	16
11	28912	AS 1112.1 S1 - M16-W-N	16
12	800-015/2	PIN 26x122	1
13	43618	PIN, HITCH BOTTOM CAT2	2
14		HOSE, HYD. - 3/8" (MAIN)	1
15		HOSE, HYD. - 3/8" (RETURN)	1
16		HOSE, HYD. - 3/8" (ACROSS)	1
FOR LINKAGE MACHINES IN PLACE OF RAMS:			
17	46960	BAR, TELESCOPIC-OUTER ASSY	2
18	46959	BAR, TELESCOPIC-INNER ASSY	2
19	27018	PIN, CLEVIS	2

For linkage machines a telescopic link is included in place of hydraulic rams. The purpose of these is to adjust the digging depth of the tynes or discs in relation to the wheel. These have up to 9 settings in total. For machines with 16 inch wheels, the first 6 settings are applicable. For machines with 15 inch wheels use settings 4 to 9. The factory setting is shown as shaded.



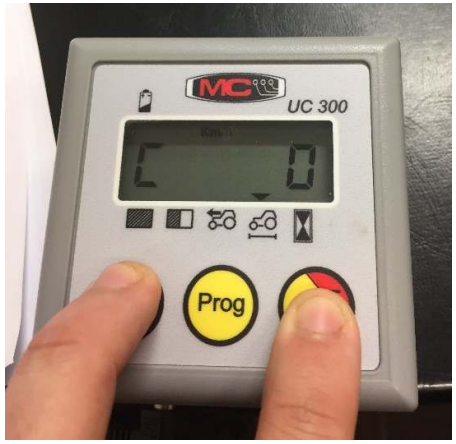
UC 300 Hectaremeter (P/N: 44430) Calibration

(for Gearbox Models)

Programming

Step 1 –hold down the programming button for 3 seconds until the screen shows with Un 0 as shown below. This means that the system will be using the metric system. If you are looking to use the imperial system simply press the + arrow so the display shows UN 1. When happy with ether metric of imperial press the programming button once

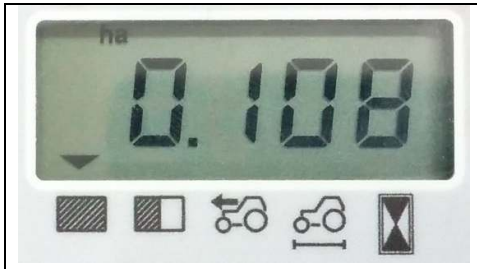
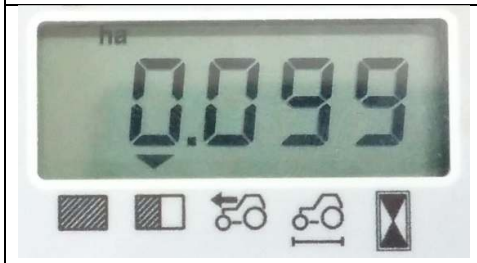
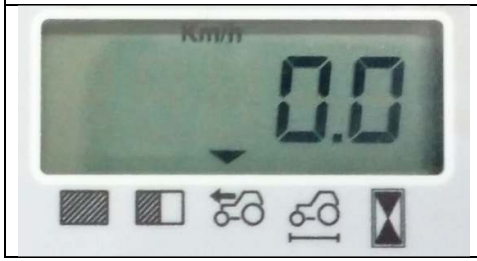
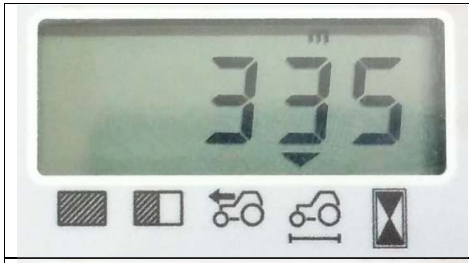
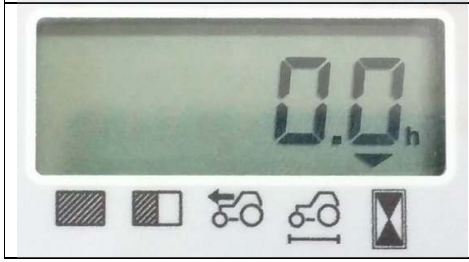
Step 2 – For the next step the display should read C with some numbers followed after it. The C represents the amount of pulses emitted by the speed sensor after each 100 linear meters. The default value for this function is 200 as shown below. If unsure of the value you need for your machine simply press the + and – buttons simultaneously to get the screen to read out C 0 as shown below. Once the screen reads out C 0 simply run your machine for 100 meters and the value displayed should automatically go up accordingly. After you have found the automated value, press Program again to move onto the next step.



Step 3 – for the final step the screen should have L displayed. L is the working width of your machine so simply input the width of the machine into the display using ether the + or – button. (if the buttons are held down the displayed figures move faster in the given direction). Finally hit Program to save all the inputted settings.

Use Modes

The units displayed is chosen in programming. Please read above to find out how to change from metric to imperial or vice versa.

	The first figure is the **total counter** it is the counter used to find out how many hectares have been done in a season, weekly or whatever else you would like to count as a total number.
	The second picture is the **partial counter** which gets reset now and again. It is used more for counting things such as how many hectares have been covered in a day or how many hectares there are in each paddock
	The third picture shows you how fast you are going in km/h.
	The fourth figure tells you how much **distance** has been covered by the machine
	The fifth and final figure is the **working hours** covered which tells you how many hours you have worked

(Each figure must be reset individually by holding the reset button for a few seconds until the figure goes blank)

OPTIONAL JACKAL (P/N: 42978) CALIBRATION

1. Press the MENU key until the input the sensor used for calculating rate information is connected to is displayed (input 1 – 6).

2. Press ENTER to edit the input function and use the NAV keys to select the **SPEED** option as shown in Figure 13 below.

Figure 13.

3. Select **SPEED** setting with desired Units.

- **DO NOT MIX METRIC AND IMPERIAL UNITS.**

4. Clear **PULSES** by holding CLEAR for approximately 1 second.

5. Ensure Jackal is in **RUN** mode (when in **HOLD** mode "ON HOLD" is displayed at the top of the screen)

6. Drive a known distance. Jackal should count **pulses**.

7. Enter distance into monitor using NAV keys and hold SET for approximately 1 second to calculate **WHEEL** factor.

8. Enter the Implement **WIDTH** using the NAV keys.

Note: These steps refer to SET and CLEAR buttons. They are activated by the softkeys which will have the words on the screen above the button (as shown in figure 13 above), when in the correct menu.

For more information refer to the Farmscan Jackal manual.

Jackal - Grain & Fertilizer Shaft Monitoring

The distributor shafts have a magnet embedded in them which together with a sensor can be used to monitor shaft rotations. An alarm can be set to warn you if the shaft speed drops below a certain amount (see section 3.2.1.2 of the Farmscan Jackal Manual). We suggest setting a low figure so that the alarm will give a warning if the shaft stops turning for some reason when seeding.

The shaft sensors, as well as the standard area sensor can be connected to inputs B1-6 with the white wire (note: if you expect to use a coil sensor, do not use port B1). The black ground wire for each sensor all connect to port A1. See section 6.3.1 of the Jackal Manual for more information.

The sensors will need to be calibrated on the Jackal monitor as shown in section 4 of the Jackal Manual (note: these are 'Digital inputs').