



**Grow a Better Crop**

# **JOHN SHEARER**

***Pasture Tyne Drill***

***Pasture Coulter Tyne Drill***

***Pasture Disc Drill***

**Operators  
Manual  
126J4**



# 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.







**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

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.....



**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 ☐ Vegetables ☐ 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.



## PRE-DELIVERY CHECK

1. On delivery of PASTURE 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 13, for greasing and routine check points.
5. Check and tighten bolts and nuts, (including wheel nuts).
6. Check tyre spacing. For specific dimensions refer to page 20 & 21.
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



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



# JOHN SHEARER LIMITED

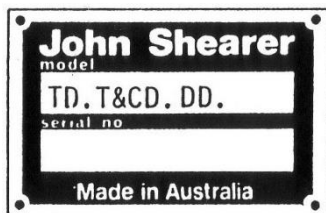
ESTABLISHED 1877  
INCORPORATED IN SOUTH AUSTRALIA

**HEAD OFFICE & FACTORY**  
**BOX 32 WELLAND**  
**SOUTH AUSTRALIA 5007**

**TELEPHONE +61 8 8268 9555**  
**STREET LOCATION SHARE STREET, KILKENNY**  
**FAX No. +61 8 8268 1103 (SPARE PARTS)**  
**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.**

M126J4 JULY 2009

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**SPECIFICATIONS**

No. OF SOWING ROWS		10	13	16	19
SOWING WIDTH:	m	1.8	2.3	2.9	3.4
	(ft)	(5'10")	(7'8")	(9'6")	(11'2")

SOWING SPACING: 180mm (7")

**BOX CAPACITY:**

Rear – seed -	kg	160	210	260	310
	(lb)	(352)	(462)	(572)	(675)
Front – fertilizer -	kg	220	285	352	420
	(lb)	(484)	(627)	(774)	(920)

**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:					
Between Rows -		1 <sup>st</sup> and 2 <sup>nd</sup> – 475mm (18 7/8")			
		2 <sup>nd</sup> and 3 <sup>rd</sup> – 425mm (16 7/8")			
Along Rows -		540mm (21 1/4")			
Weight Empty -	kg	670	780	890	1070
(approx.)	(lb)	(1475)	(1715)	(1960)	(2355)

**COULTER TYNE DRILL:**

Spring Release (Double & Single) Coulter Units					
Disc Diameter -		280mm (11") or 356mm (14")			
Jump Height -		160mm (6 1/4")			
Tynes -		"Same as tyne drill"			
Tyne Spacing:					
Between Rows -		425mm (16 7/8")			
Along Rows -		360mm (14")			
Weight Empty -	kg	820	970	1130	1425
(approx.)	(lb)	(1800)	(2135)	(2485)	(3050)

**DISC DRILL:**

Disc Diameter -		330mm (13")			
Jump Height -		350mm (13 3/4")			
Disc Spacing -		180mm (7")			
Weight Empty -	kg	808	959	1111	1332
(approx)	(lb)	(1781)	(2114)	(2449)	(2937)

**DEPTH WHEELS:**

235/75 X 15  
(215/85 X 16 on 19R DDO Version)  
Max. working depth 100mm (4")  
Adjustable by screw adjustment.

**SEED & FERTILISER DISTRIBUTORS:**

Seed -	Fluted roller with restrictor for small seeds, low rates
Fertilizer -	Nylon peg tooth distributor roller.
Gates -	Adjustable rubber in both compartments.

**GEARBOX:**

Fully enclosed 31 speed oil bath gearbox, with external change gears, for both compartments.

**OPTIONAL EQUIPMENT:** Spring Tooth Harrows

Broad Bean Rollers

A wide range of Points & Fittings

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

## SETTING UP / OPERATING INSTRUCTIONS

Congratulations on the purchase of your new PASTURE 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 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 13)

### SETTING UP – LINKAGE IMPLEMENT

The following steps should be taken to achieve satisfactory operation of this implement.

#### IMPLEMENT LEVELING “FRONT TO REAR”

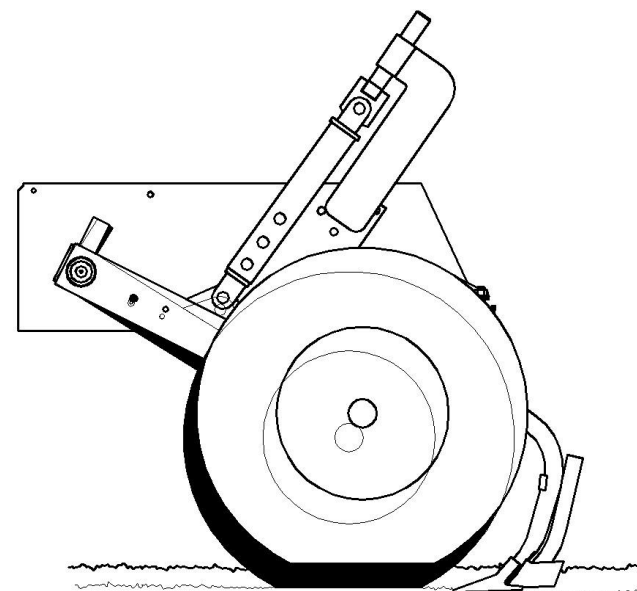
Adjust top lift link length on tractor to level implement, “front to rear”. Extend the link to increase depth of working of the rear tynes. Set the Disc Drill with the grain and fertilizer box support “level” in the working position.

#### IMPLEMENT LEVELING “SIDE TO SIDE”

Screw assemblies on both left and right hand sides of the implement are adjusted to level the implement, at working depth. Also adjust the tractor lower links so that tynes or discs enter the soil evenly.

#### DEPTH ADJUSTMENT

Set telescopic depth adjusters to the maximum working depth desired.



#### TURNING

Avoid turning sharply with points / discs in the ground. At corners, lift them out of the ground. The sowing of headlands will then eliminate oversowing on corners.

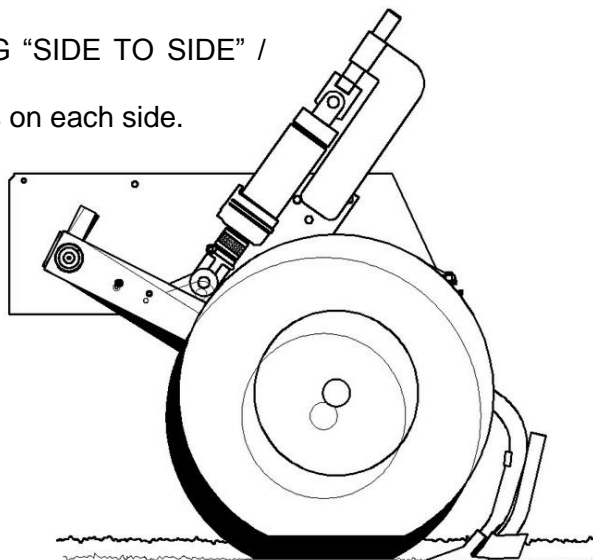
## SETTING UP – TRAILED IMPLEMENT

### 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.

### 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 low headlands separately to avoid oversowing.



(TO PREVENT THE  
POSSIBILITY OF  
MACHINE  
OVERTURNING  
BACKWARDS.)

## SOWING RATES

Select sowing rates as per the sowing chart.

N.B. This chart is to be used as a guide only.

Check sowing rate as follows:-

The sowing rate chart is based on an effective wheel rolling radius of 330mm. That is 1410 revolutions (19 row), 1675 revolutions (16 row), 2061 revolutions (13 row) and 2679 revolutions (10 row) of the drive correspond to 1 hectare.

## CALIBRATION

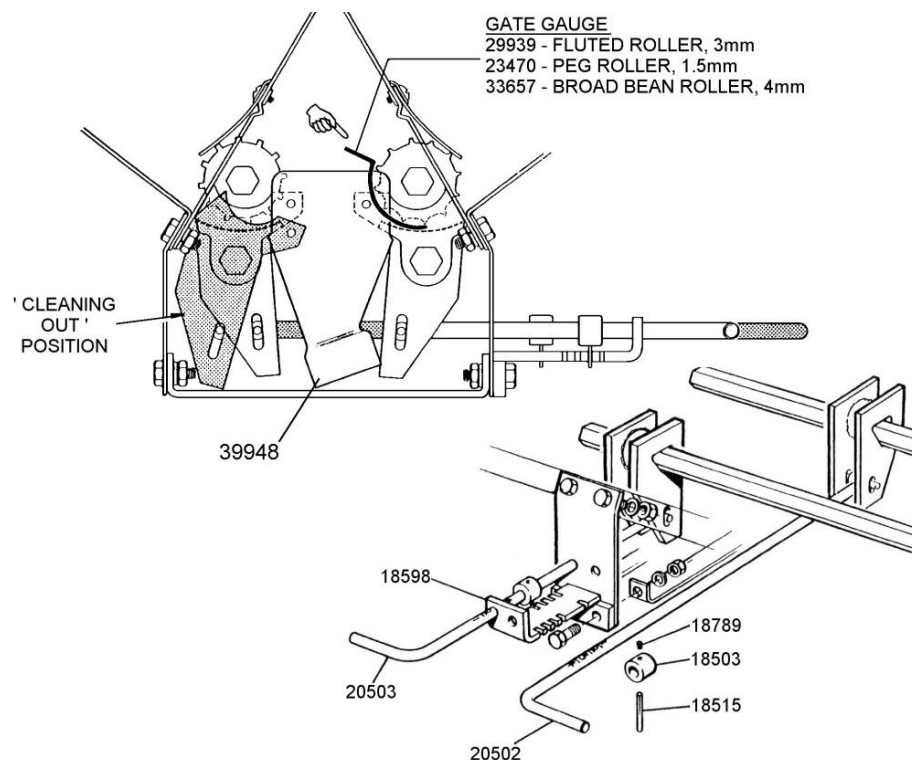
See page 15

## 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)

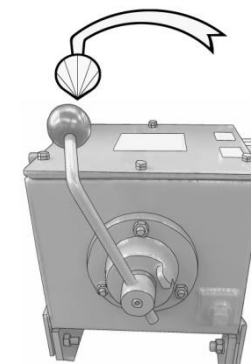
6. Do not have too tight, otherwise the edge of gate will wear on rollers.
7. When you have the gauge (as selected) in this position, you have gate setting **one (1)**.
8. For placing the pin part number 18515 in position **one (1)** on bracket part number 18598 and tightening socket screw part number 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

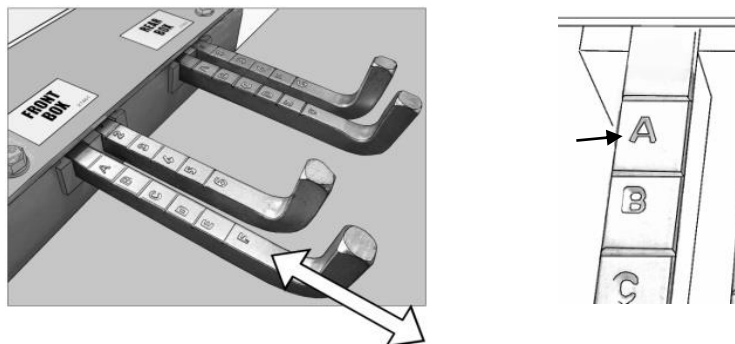
The JSL gearbox has 31 settings for each box compartment of the drill. These settings are shown on the Grain and Fertilizer Chart on page 16, together with a guide to the output for the various products when using the different settings.

Procedure for selecting gear settings on the JSL gearbox:

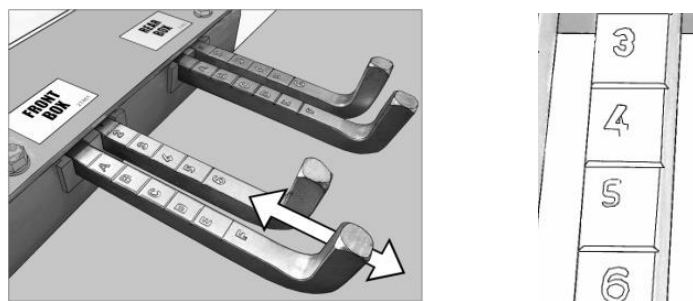
1. Disengage the gearbox: Move the handle across and out as shown.



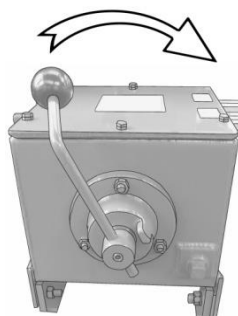
2. Select Letter Gears for the front box (eg. For setting A5 on the chart, move the selector so that "A" is the letter on the edge of the housing)



3. Select Number Gears for the front box (eg. For setting A5 on the chart, move the selector so that "5" is the number on the edge of the housing)



4. Repeat 2 and 3 for the rear box selectors.
5. Engage the gearbox: move the handle back all the way to the stop, as shown. Please Note: Do not force the handle. If the handle does not easily move all the way to the stop, it may be necessary to move the gear selectors slightly.



### 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 (front) compartment. However it is recommended to fill the heavier material (usually fertilizer) into the front compartment, to improve stability.

The relative volumes are:-

FRONT COMPARTMENT = 55%, REAR COMPARTMENT = 45%  
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 55kg/ha and for the rear 45kg/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 27)

## 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.

## COULTERS

Coulter assemblies are designed to incorporate “stump jump” capabilities.

The “jumper head” of the assembly provides an in-built (fixed) stop to limit the downward travel of the coulter assembly and an adjustable loading spring.

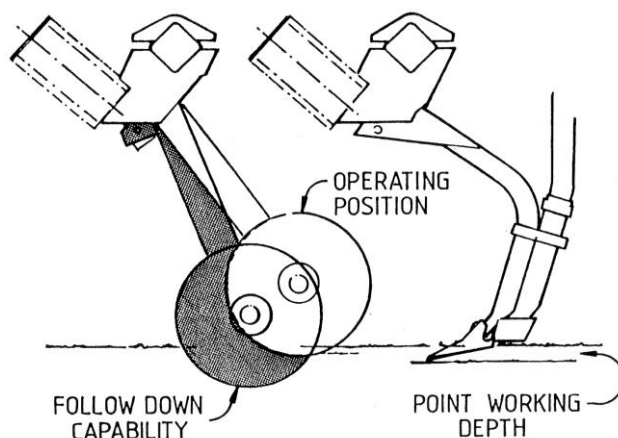
The “out of ground” height of the coulter, with respect to the tyne points, is adjustable by extending the arm.

To ensure that the coulter will continue to cut the ground cover material even while traversing “hollow ground”, it is desirable that the coulter assembly contacts the ground “well before the implement tynes are at their normal operating depth”. That is, in normal operation on level ground the coulters will be “dragged back” - the jumper head assembly will be normally operating

“off the stop”, and with the spring consequently being compressed “beyond the initial preload setting”.

Begin initially with minimum spring preload settings.

If – after having set up the static “out of ground” geometry as recommended –



the operating depth is too shallow (at normal point operating depth) spring pressure may then be increased as required.

## STEPS TO SETTING UP COULTERS

Set coulter spring pressure at MINIMUM.

Adjust length of coulter arm to provide maximum “follow down” capability.

Operate at desired working depth.

If coulter working depth is inadequate, increase spring pressure as necessary. Double coulters will require more pressure.

## PASTURE DISC DRILL

### PENETRATION OF DISCS

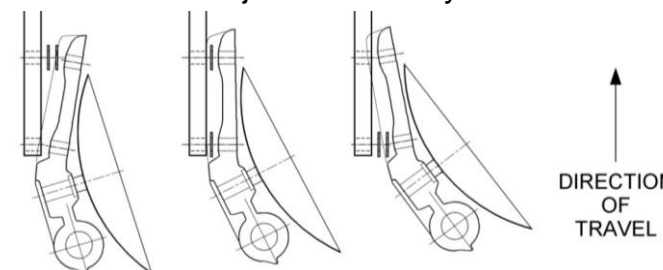
Where you are unable to gain enough penetration with the discs due to hard conditions, more pressure can be obtained by compressing the springs on the pressure rods.

### BREAST SET ON DISCS

The set of the disc may be altered by fitting or removing breast adjustment spacers (item 18, page 38) 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 all together 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.



### CONVOLUTED TUBES AND RUBBER CUPS

Fit two convolutions of the hose over the adaptor then fit the adaptor inside the cup, fit also two convolutions in to the drill boot. They are to be fitted so that the lip inside the boot holds the second convolution.

To fit, squeeze the end of the tube and insert in so far as three convolutions then manipulate back into the second convolution, kneading as required to remove kinks, stretching, also helps to settle the tube into correct position. If only one convolution is fitted it could pull out when strain is placed on it during working. Fit hose cup to the distributor with the straight side of the cup facing the front. Align cup by rotating tube in boot.

### 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

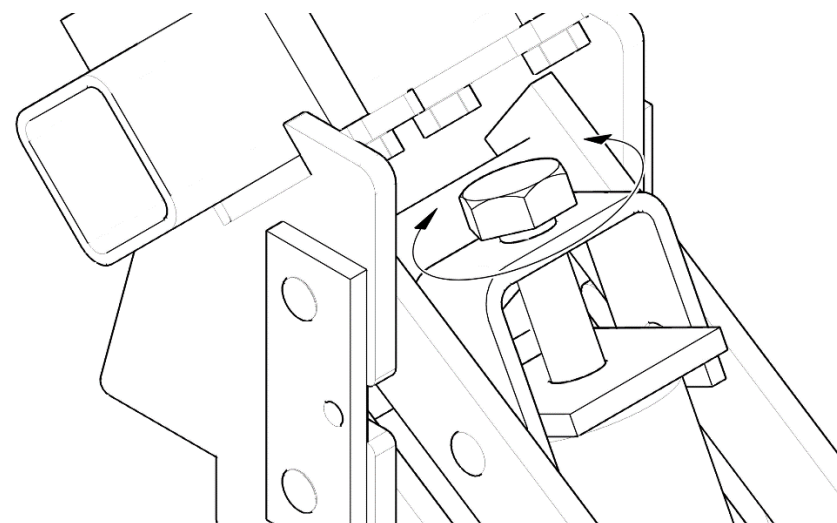
This recommendation is applicable irrespective of the kind of fertilizer in use, but is more important with the higher analysis, high nitrogen, fertilizers.

### DOUBLE DISC OPENERS

#### DOWN PRESSURE

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

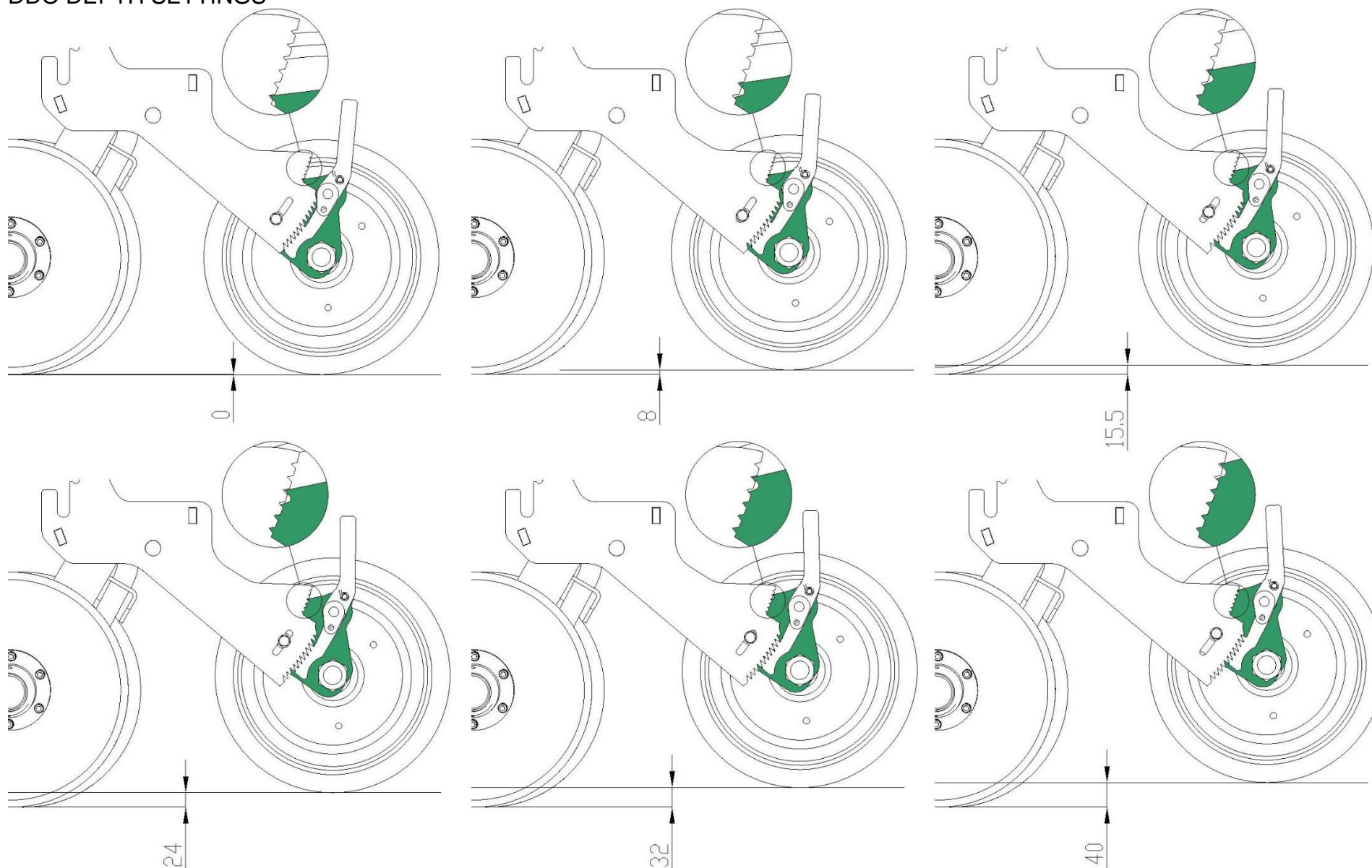
To adjust, turn the bolt as shown below to increase or decrease the spring pressure as required. Increasing spring pressure will increase the down pressure on the opener/press wheel.



#### TURNING

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

## DDO DEPTH SETTINGS



**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.

WITH STANDARD LINKAGE COULTER TYNE DRILL



WITH TRAILER HITCH FITTED (OPTIONAL EXTRA)



### 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.

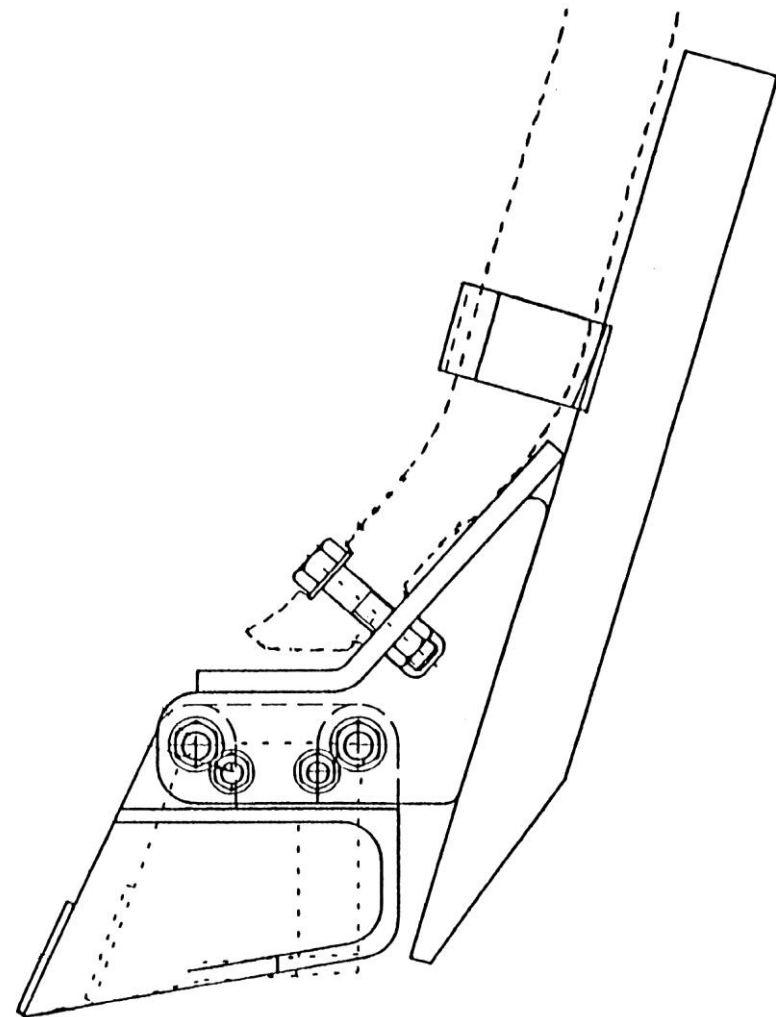
### TENSION ON SPRINGS

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

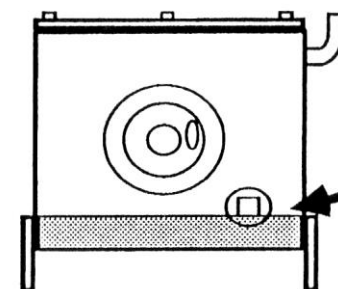
## LUBRICATION

ITEM	INSTRUCTIONS
WHEEL BEARINGS	GREASE ONCE PER WORKING MONTH
DISTRIBUTOR BEARINGS	GREASE ALL DISTRIBUTOR BEARINGS WEEKLY
DRIVE CHAINS	ANNUAL STORAGE MAINTAINANCE
CLUTCH (Trailed Kit)	GREASE DAILY
TYNE ASSEMBLIES	GREASE DAILY IN ADVERSE CONDITIONS – LESS FREQUENTLY ACCORDING TO ACTUAL OPERATING CONDITIONS.
AXLE ROCKSHAFTS	GREASE DAILY, WITH WHEELS RAISED CLEAR OF GROUND
SPROCKET ASSEMBLY (DOUBLE)	GREASE DAILY
GEARBOX OIL	AS PER THIS PAGE – CHECK ANNUALLY
GREASE NIPPLES	ALL GREASE NIPPLES SHOULD BE LUBRICATED PRIOR TO STORAGE OF THE IMPLEMENT AT END OF EACH WORKING PERIOD.

## ROUTINE CHECKS

- CHECK TYRE PRESSURES (REF, PAGE 14)
- CHECK ADJUSTMENT OF ALL DRIVE CHAINS.
- GENERALLY INSPECT ALL BOLTS AND NUTS FOR TIGHTNESS

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



**IMPORTANT**  
CHECK GEARBOX OIL LEVEL  
ON DELIVERY.  
FILL TO OIL LEVEL PLUG  
USING SAE 120.



## 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	10 ROW			13 ROW			16 ROW			19 ROW		
	TYNE	T & C	DISC	TYNE	T & C	DISC	TYNE	T & C	DISC	TYNE	T & C	DISC
235/75 R15 TYRE PRESSURE kPa	182	182	182	182	207	207	207	234	207	234	276	234
psi	26	26	26	26	30	30	30	34	30	34	40	34

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

### SOWING RATES CALIBRATION

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 16 row drill 1675 revolutions of the drive wheel or 570 of the crankshaft on gearbox correspond to 1 hectare.

You can check rates in two ways:

A) Using crank provided

1. lift up machine using the hydraulic system to disconnect drive clutch.
2. Set gear box in neutral position for the compartment not being tested.
3. Rotate gear box shaft (anti-clockwise) with the crank provided
  - 26 times – 10 row
  - 20 times – 13 row
  - 16 times – 16 row
  - 14 times – 19 row
4. Collect and weigh the delivered seed and fertilizer and multiply by 50. This will give the actual sowing rate per hectare for that particular product.

B) Rotating drive wheel:

1. Lower the machine to engage drive clutch, jack up the left hand drive wheel.
2. Rotate the wheel (anti-clockwise)
  - 54 times – 10 row
  - 41 times – 13 row
  - 33 times – 16 row
  - 28 times – 19 row
  - 27 times – 19 row (16" wheels)

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:  
tyre/machine size/cranking revolutions

TYRE	LOADED RADIUS (mm)	WHEEL REVS. /Ha	CRANK REVS./Ha
10 ROW DRILL			
235/75X15	330	2679	1314
13 ROW DRILL			
235/75X15	330	2061	1011
16 ROW DRILL			
235/75X15	330	1675	821
19 ROW DRILL			
235/75X15	330	1410	692
215/85X16	348	1337	698



JANUARY 1988

**GRAIN & FERTILIZER CHART Sowing at 180mm spacing. P/No. 33759**

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

GEARBOX SETTING		F6	F5	F4	E6	E5	F3	D6	E4	D5	F2	C6	E3	D4	C5	B6	A6	A5	B4	C3	D2	A4	E1	B3	C2	A3	D1	B2	A2	C1	B1	A1	GATE SET.	
GRAN. SUPER PHOS.	NO	52	60	71	73	84	87	93	99	107	111	113	120	126	131	134	154	177	181	188	197	209	214	221	240	255	274	283	326	333	393	453	2	
HIGH ANAL. FERT.	NO	36	42	49	51	58	60	65	69	74	77	79	83	88	91	93	107	123	126	131	137	145	149	154	167	177	190	197	227	231	273	315	2	
UREA	NO	20	23	28	28	32	34	36	38	42	43	44	47	49	51	52	60	69	70	73	77	81	83	86	93	99	106	110	127	130	153	176	1	
WHEAT & PEAS	COARSE	7	8	10	10	11	12	13	13	14	15	15	16	17	18	18	21	24	25	25	27	28	29	30	33	34	37	38	44	45	53	61	W,2,P,3.	
	NO	30	35	41	42	49	50	54	57	62	64	66	70	74	76	78	90	103	106	109	115	122	125	129	140	148	159	165	190	194	229	264		
OATS & RICE	COARSE	4	5	6	6	7	7	8	8	9	9	10	10	11	11	11	13	15	16	16	17	18	18	19	21	22	23	24	28	28	33	39	2	
	NO	17	19	23	24	27	28	30	32	35	36	37	39	41	42	43	50	57	59	61	64	68	69	72	78	82	89	92	106	108	127	147		
BARLEY	COARSE	5	6	7	7	8	8	9	10	10	10	11	11	12	12	13	15	17	17	18	19	20	20	21	23	24	26	27	31	32	38	43	2	
	NO	20	23	28	29	33	34	36	39	42	43	44	47	49	51	52	60	69	71	74	77	82	84	87	94	100	107	111	128	130	154	177		
LUPIN & SOYBEAN	NO	40	47	55	57	65	68	72	77	83	86	88	93	98	102	104	120	137	141	146	153	162	166	172	186	198	213	220	253	259	305	352	3	
SORGHUM	FINE	4	5	6	6	7	7	7	8	8	8	9	9	10	10	10	12	14	14	15	15	16	17	17	19	20	21	22	25	26	31	35	1	
MILLET & CANARY	FINE	3	3	4	4	4	5	5	5	6	6	6	6	7	7	7	8	9	9	10	10	11	11	11	12	13	14	15	17	17	20	23	1	
SUNFLOWER	NO	7	9	10	10	12	12	13	14	15	16	16	17	18	19	19	22	25	26	27	28	30	30	31	34	36	39	40	46	47	56	65	2	
LINSEED	NO	14	16	19	20	23	24	25	27	29	30	31	33	34	36	36	42	48	49	51	54	57	58	60	65	69	74	77	89	91	107	123	1	
LUCERNE	FINE	4	4	5	5	6	6	6	7	7	8	8	9	9	10	10	11	11	12	13	14	15	16	17	18	19	20	21	22	23	27	30	1	
RYE GRASS	FINE	2	2	3	3	3	3	3	4	4	4	4	4	4	4	5	5	5	5	5	6	6	6	7	7	7	8	8	9	9	10	11	13	1

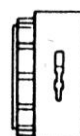
NO RESTRICTOR

RESTRICTOR

RESTRICTOR

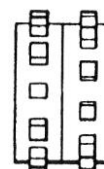


FINE

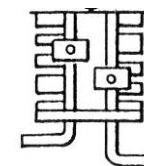


COARSE

**FLUTED ROLLER  
DISTRIBUTOR**



**PEG TOOTH ROLLER  
DISTRIBUTOR**



When lower sowing rates are required use restrictor.

Factors are:- COARSE = UNRESTRICTED x .25

FINE = UNRESTRICTED x .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.

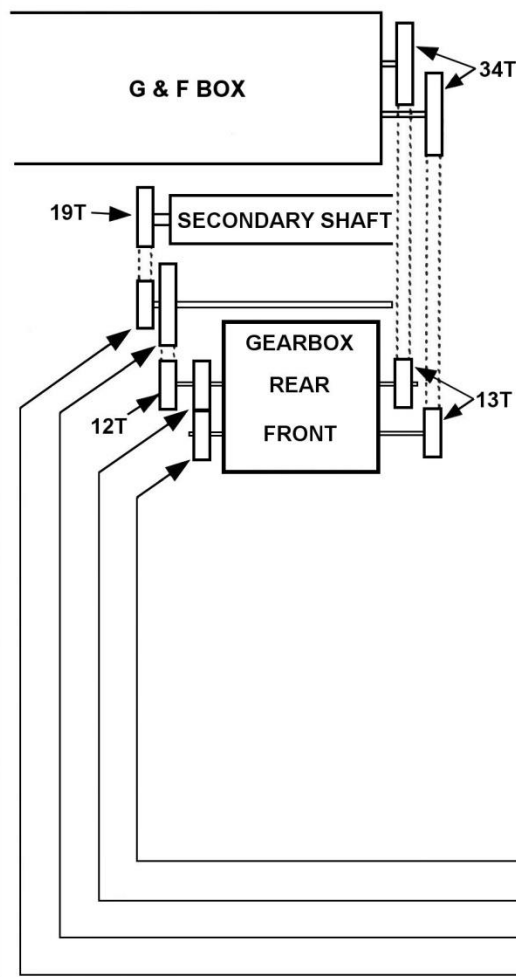
Sowing rates in kg/ha vary in proportion to density (kg/L) of materials.

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

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



## DRIVE FACTOR CHART



A drive factor is the ratio of output of the drill to the figures on the Grain and Fertilizer Chart (33759, page 14). The Standard drive factor as supplied from the factory is 1.0, i.e. the output of the drill will be approximately 1.0 times (i.e. the same as) the figure on the Grain & Fertilizer chart for the selected gear setting.

If a lower than standard seeding rate is required, this drive factor chart will show you how to apply change gears and sprockets.

To achieve a drive factor of 0.43 for both the front and rear compartments of the Grain & Fertilizer box, the 15/23 tooth sprocket must be reversed as shown below. To change the sprocket, first remove the chains at the joiner links and remove the circlip and washer holding the sprocket on the shaft. Slide the sprocket off the shaft and turn it over before re-installing the washer and circlip. The length of the chains will need to be adjusted to suit before they are reinstalled. i.e. Remove the additional joiner and four links from the longer chain and add them to the "shorter" chain – re-fit the chains and adjust tensioners.

If a 0.43 drive factor is required on the front compartment and 1.0 on the rear, or vice versa, the two 25 tooth gears will need to be replaced with optional 15 tooth (P/N: 18490) and 35 tooth (P/N: 18491) gears as shown in the chart below. Please note that these gears are not supplied as standard with the machine.

If a faster rate is required, the 34 tooth sprockets on the distributor shafts at the end of the grain & fertilizer box can be replaced with optional 15 tooth sprockets (P/N: 18802, not supplied as standard). This will give a drive factor of 2.3.

DRIVE FACTOR CHART					
DRIVE FACTOR ➔		1.0 Front 1.0 Rear	0.43 Front 0.43 Rear	1.0 Front 0.43 Rear	0.43 Front 1.0 Rear
DRIVEN	CHANGE	25 Teeth	25 Teeth	15 Teeth *	35 Teeth *
DRIVE	GEARS	25 Teeth	25 Teeth	35 Teeth *	15 Teeth *
DRIVEN	CHANGE	23 Teeth	15 Teeth	15 Teeth	23 Teeth
DRIVE	SPROCKETS	15 Teeth	23 Teeth	23 Teeth	15 Teeth

\* OPTIONAL EXTRA



# Shearer Grass Seed Box

## CHART P/No.24519

March 1982

Quantities stated are in KILOGRAMMES per HECTARE and are approximate only. Check in field when sowing commences. For seeds not listed select nearest equivalent in size and type.

OPENING NUMBERS	1/2	1	2	3	4	5	6	7	8
COCKSFOOT	.2	.4	.8	1.4	2.0	2.2	2.9	3.1	3.5
BARREL CLOVER	1.0	2.1	3.9	6.6	7.3	8.1	9.4	10.8	11.5
PERENNIAL RYE	.7	.8	1.8	2.1	2.8	3.4	3.9	4.3	4.6
PHALARIS TUBEROSA	.5	1.1	2.5	3.6	4.8	5.9	7.0	8.0	8.4
CANARY	.6	1.3	2.5	3.9	5.0	5.9	7.0	7.7	8.1
EVENING PRIMROSE	.6	1.3	2.4	3.6	4.6	5.8	6.9	7.6	8.3
SUBTERRANEAN CLOVER	1.0	2.1	3.8	5.5	7.0	8.3	9.7	10.8	11.2
LUCERNE	1.0	2.1	4.2	6.2	8.0	10.0	11.6	13.2	14.2
STRAWBERRY CLOVER	.7	1.4	2.4	3.5					
RAPE	1.1	2.2	4.4						
CHOU MOULLIER	.5	1.1	2.7						
TURNIP	.8	1.6	3.1						

CONVERSION: 1 kg/ha = 0.9 lbs/acre  
1 lb/acre = 1.12 kg/ha

Machine delivers similar VOLUME of all materials.  
Sowing rates for unlisted materials may be estimated as follows;

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

## TROUBLESHOOTING - PHASING HYDRAULIC CYLINDERS

[Note: the numbers in brackets below refer to the item numbers on the optional hitch kit part pages (page 48 & 49)]

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 (21) 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.

## Electric Drive Setup and Operation

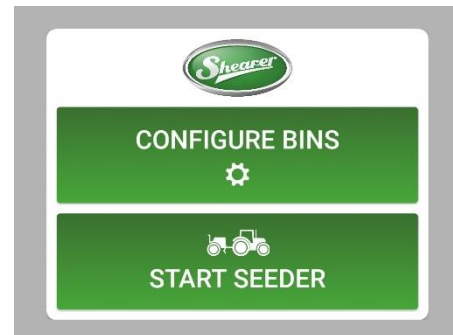
The John Shearer App on the tablet will step you through the setup. Here is a guide to how it works:

### 1<sup>st</sup>) 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.

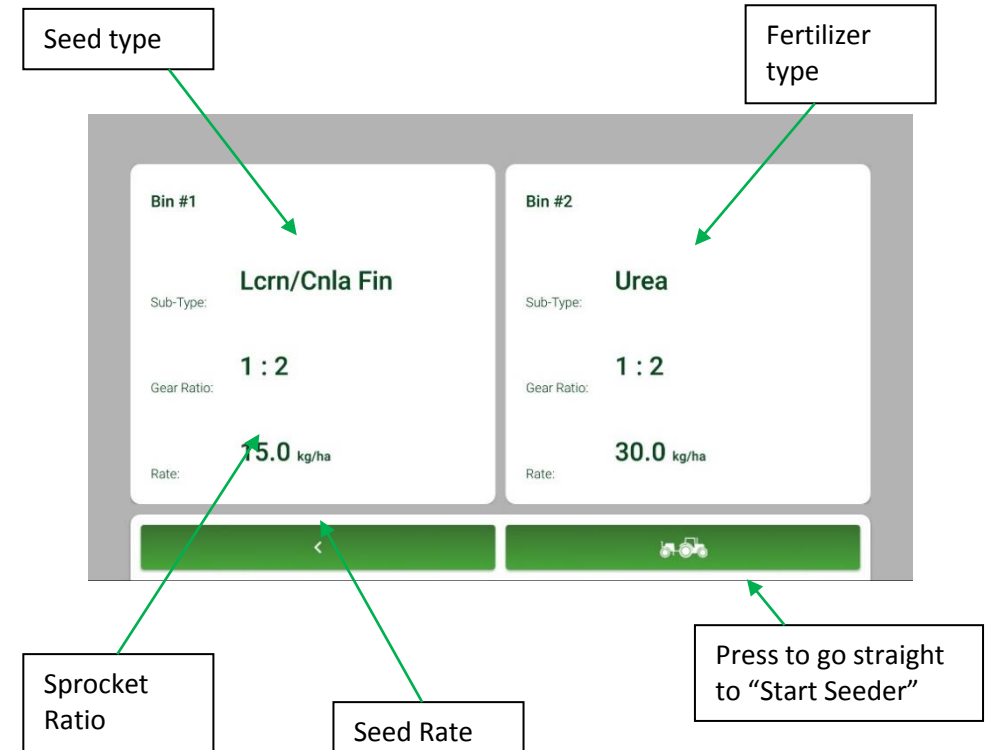
### 2<sup>nd</sup>) Seed calibration:

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.

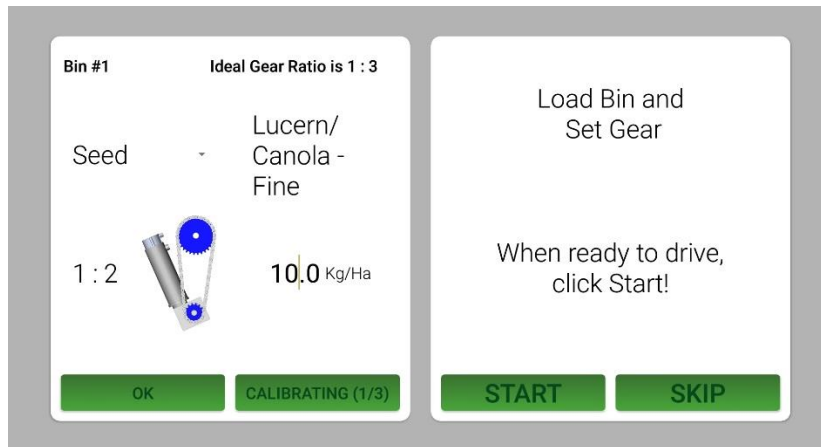


The calibration is necessary since not all seeds are the same (for example, wheat from one bag may not be the same as another, due to the size of the grains, moisture content and other factors). The machine remains stationary through this process. The ratio of the drive sprockets is

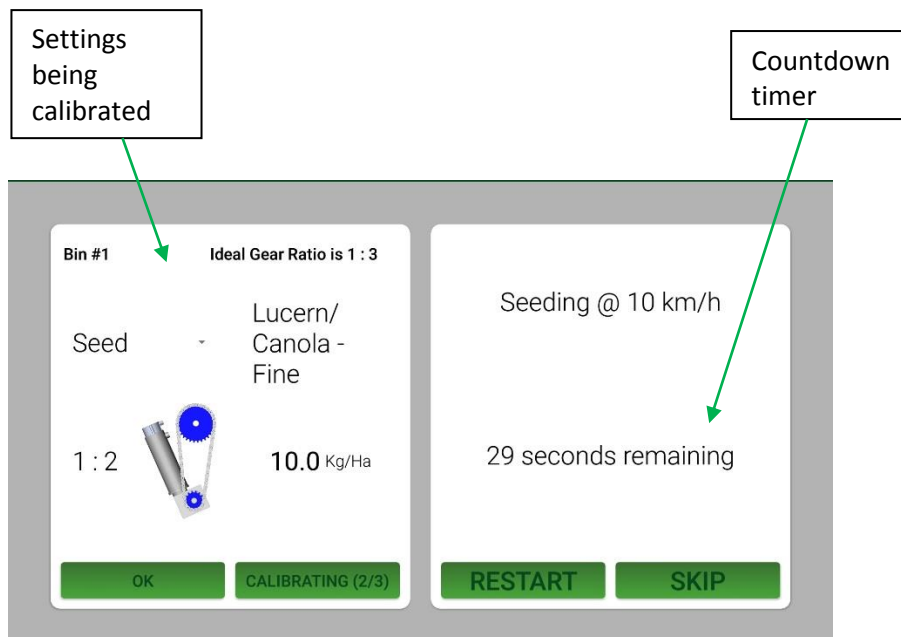
important as it will affect the output. These ratios can be changed to allow for particularly low or high rates to be achieved (see table below). Performing this calibration regularly will help maintain an accurate rate.



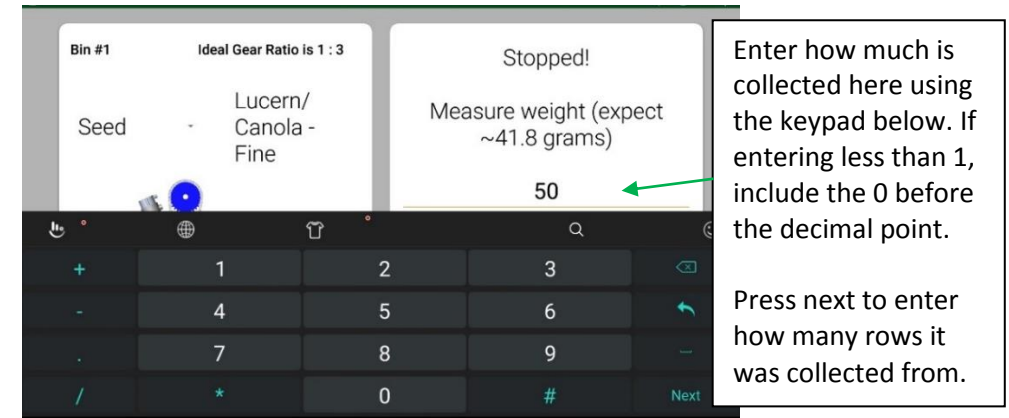




On this page select the type of seed or fertilizer, the seeding rate and the sprocket ratio (note: the image helps to identify where the sprockets are positioned). When these have been entered, the box is full and you are ready to collect the product, press “Start”. You can collect the product for as many rows as you like (more rows is more accurate). It is recommended to collect from at least 3 rows.



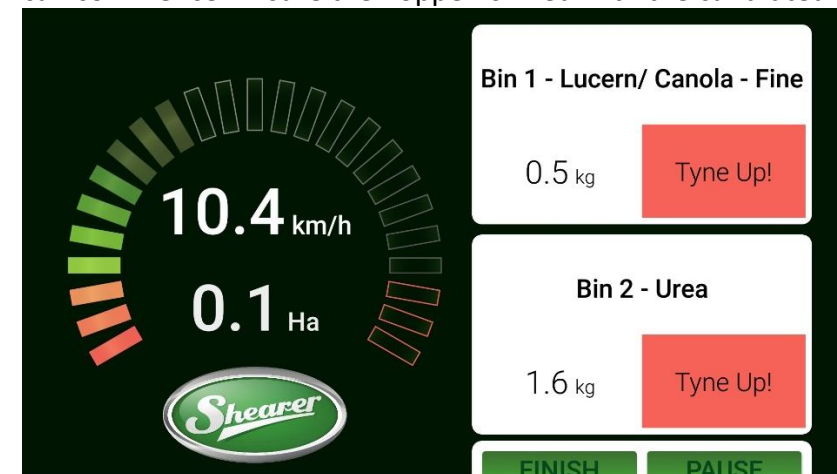
The motor will turn and the screen will show a countdown equating to 100m of travel at 10km/h.



When the calibration stops, enter the amount of grain collected and how many rows it was collected from.

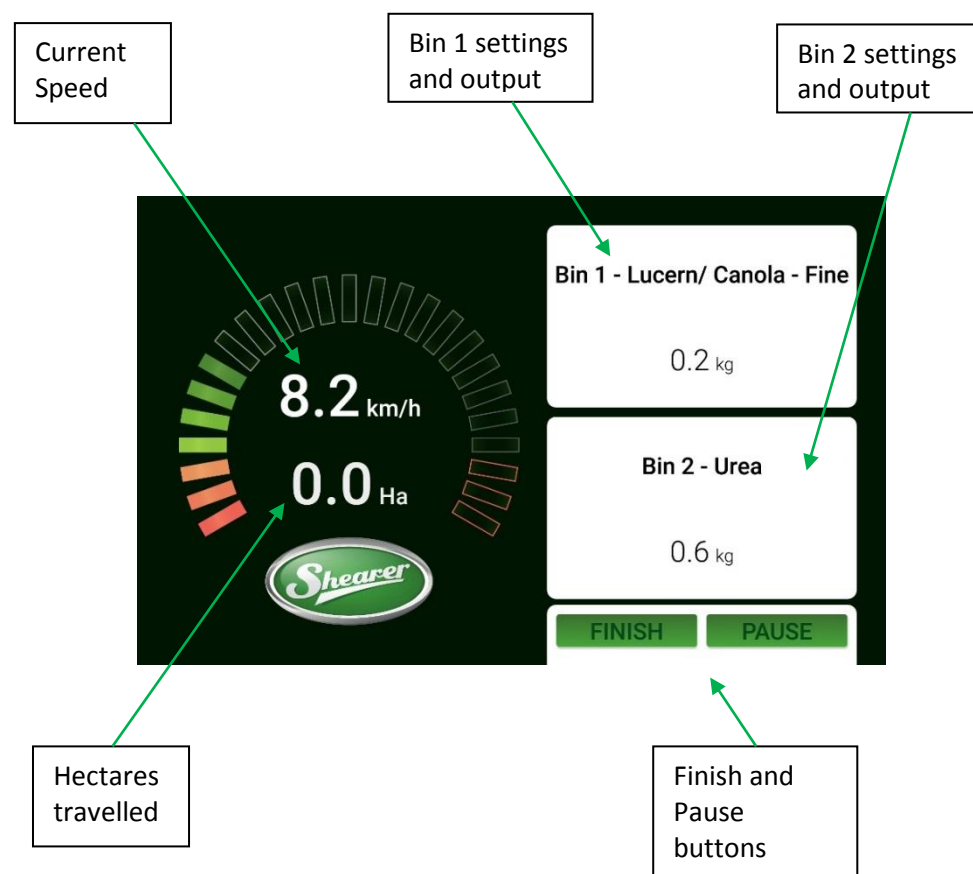
3<sup>rd</sup>) Operation:

Go to the “Start Seeder” screen – when the machine is lifted out of the ground you will see a warning on the screen to that effect. 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.

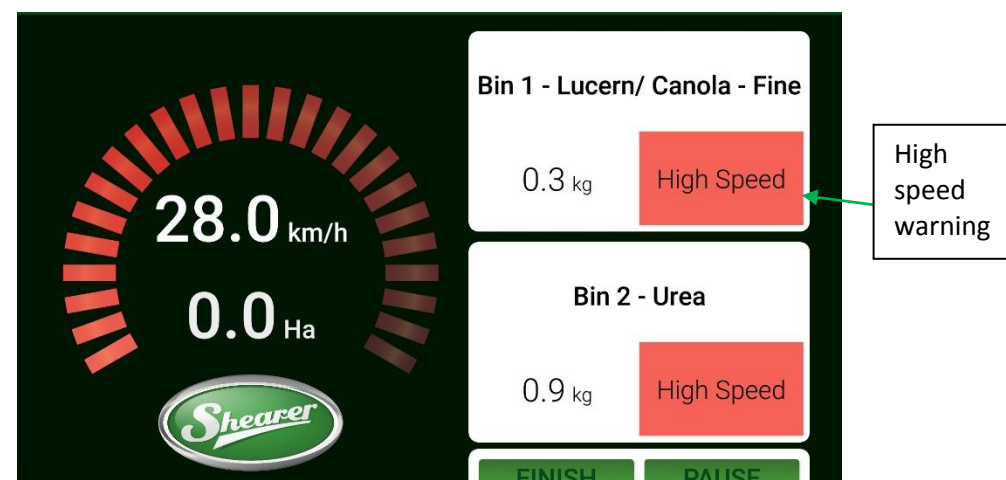




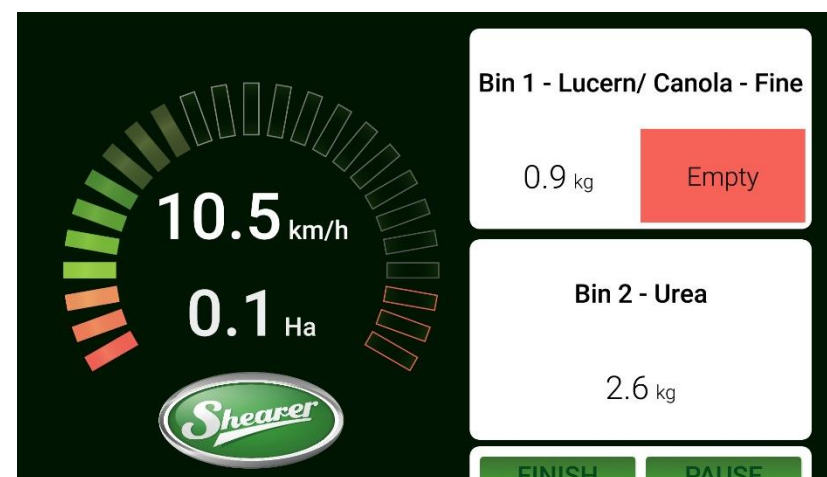
Press the run button on the screen to start sowing. The display will show the distance covered in hectares and the amount of product that has been distributed in the current run. Seeding will automatically stop when the machine stops (or drops below 3km/h) to conserve product. You can also adjust rates up and down on this screen.



If the incorrect sprocket ratio has been selected for the product, or you are driving too fast, you may see a warning like this:



This means that the limits of the motor have been exceeded. The solutions could be to either drive slower or to calibrate with a more acceptable sprocket ratio for the selected rate. If seeding continues with this warning, the rate accuracy will be affected.



On machines with bin level sensors, "empty" will show up when a bin is very low.

Electric Drive Guideline chart

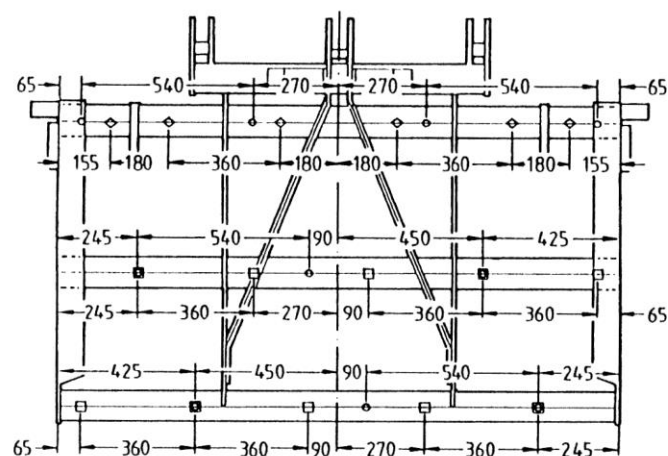
ratio	1 : 3	1 : 2	1 : 1	2 : 1	3 : 1
Ideal	<p>medium high rate small seeds (such as canola)</p> <p>very low rate medium seeds (wheat, rye)</p>	medium rate small seeds	medium rate medium seeds	very high rate medium seeds	
Acceptable	low rate small seeds (such as canola)	low rate medium seeds	medium rate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

# TYNE / TYNE & COULTER SPACING

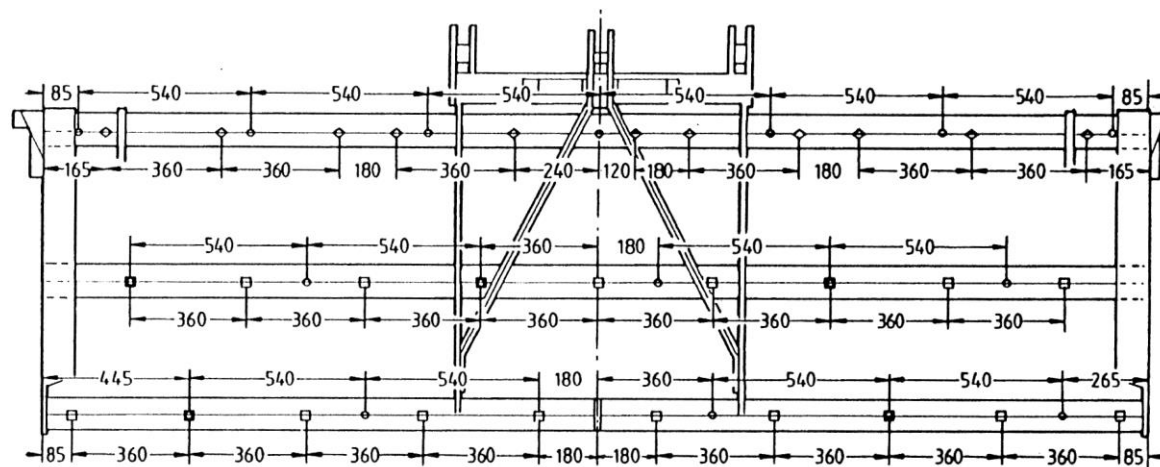
○ TYNE POSITIONS

◇ COULTER POSITIONS

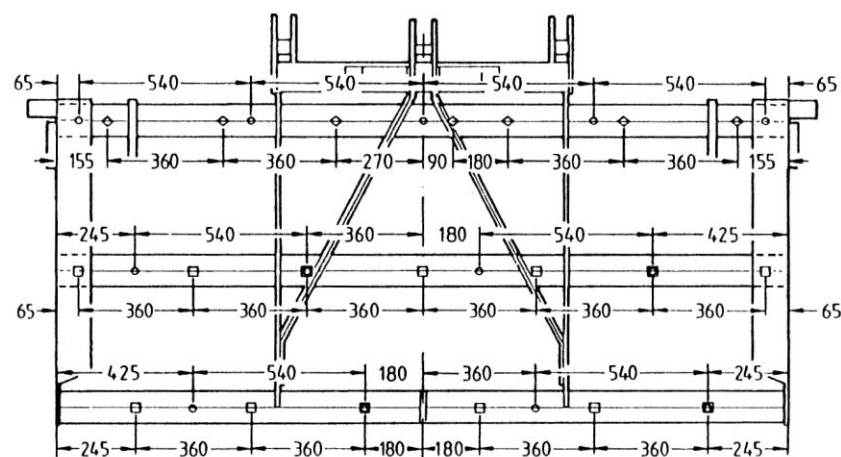
□ TYNE POSITIONS [when using coulters]



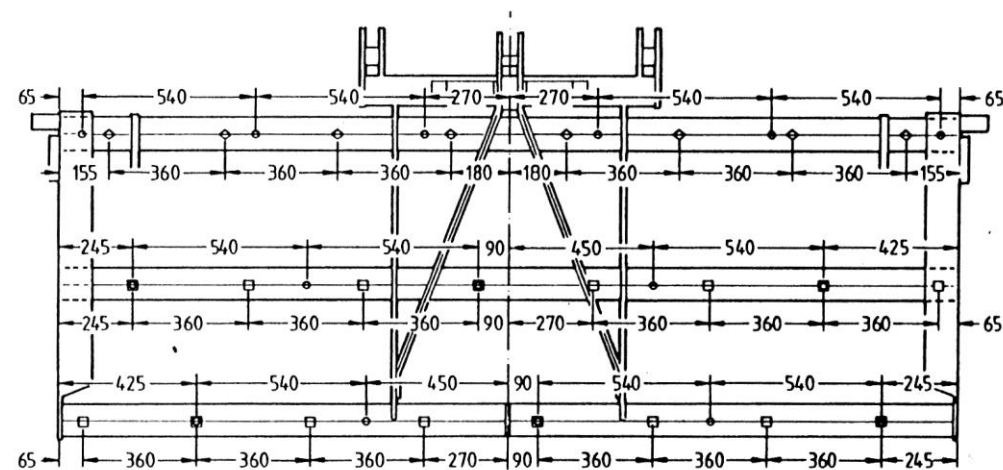
10 ROW



19 ROW

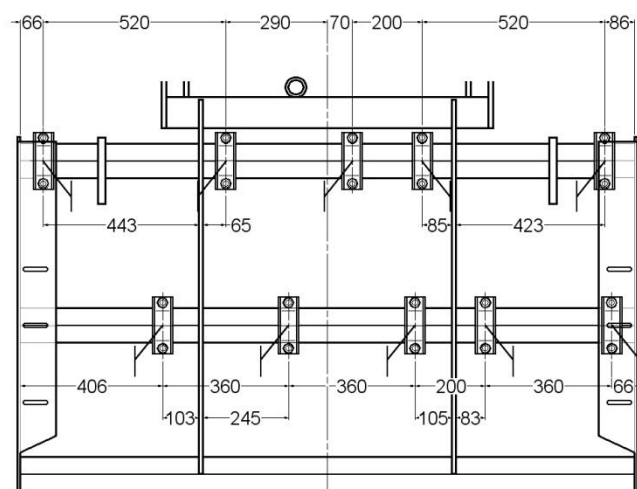


13 ROW

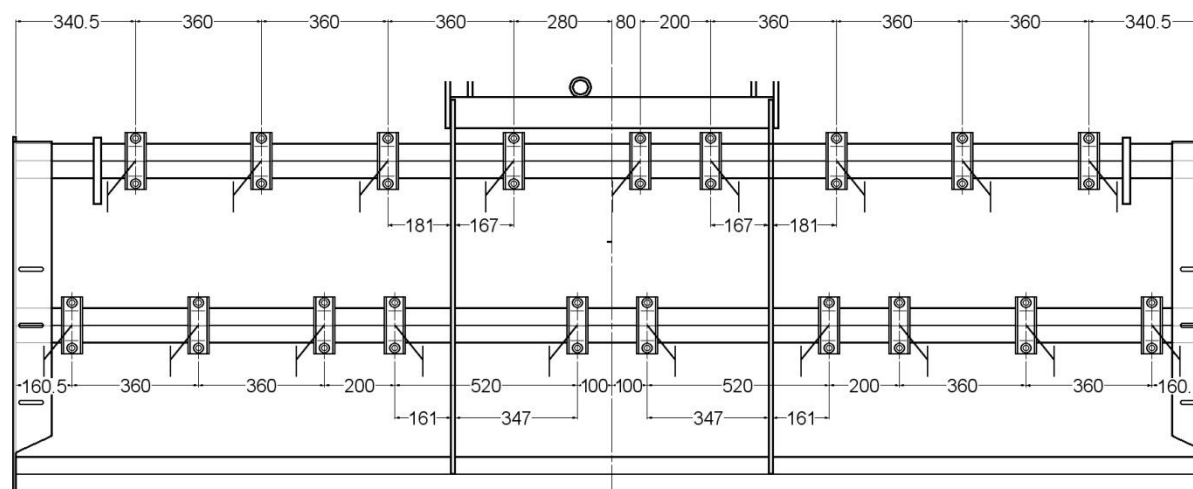


16 ROW

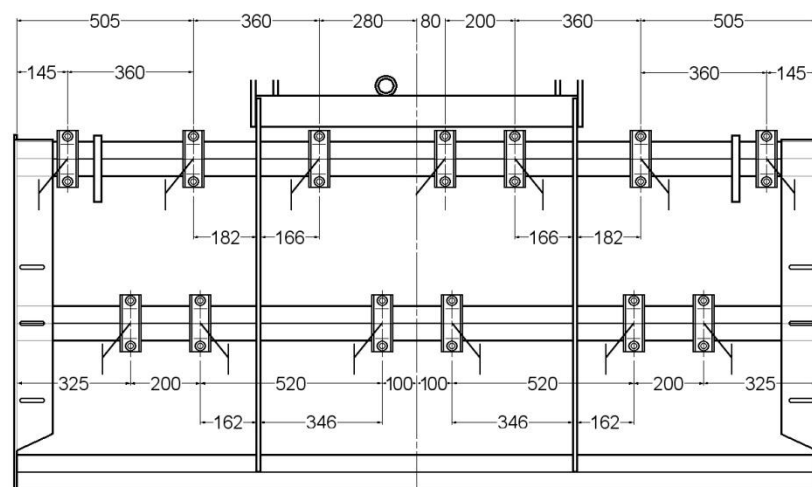
## DISC DRILL - DISC SPACING



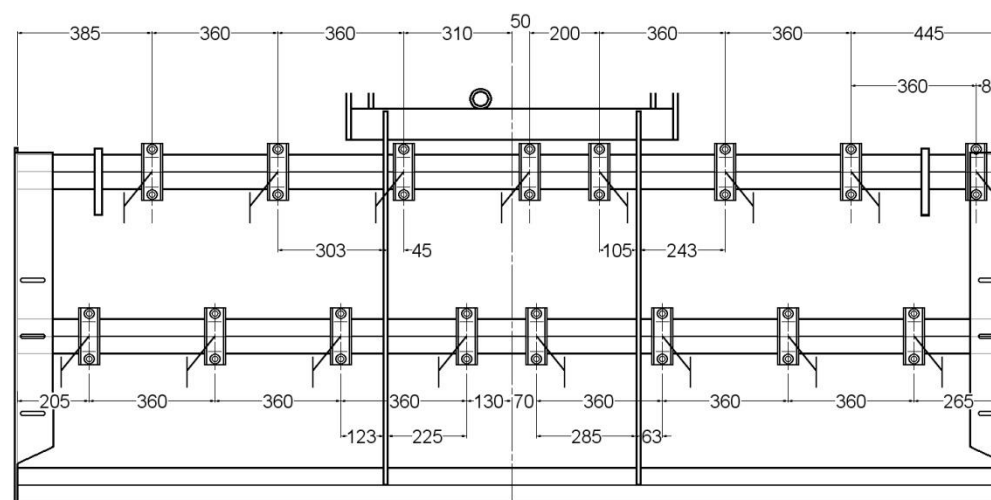
10 ROW



19 ROW



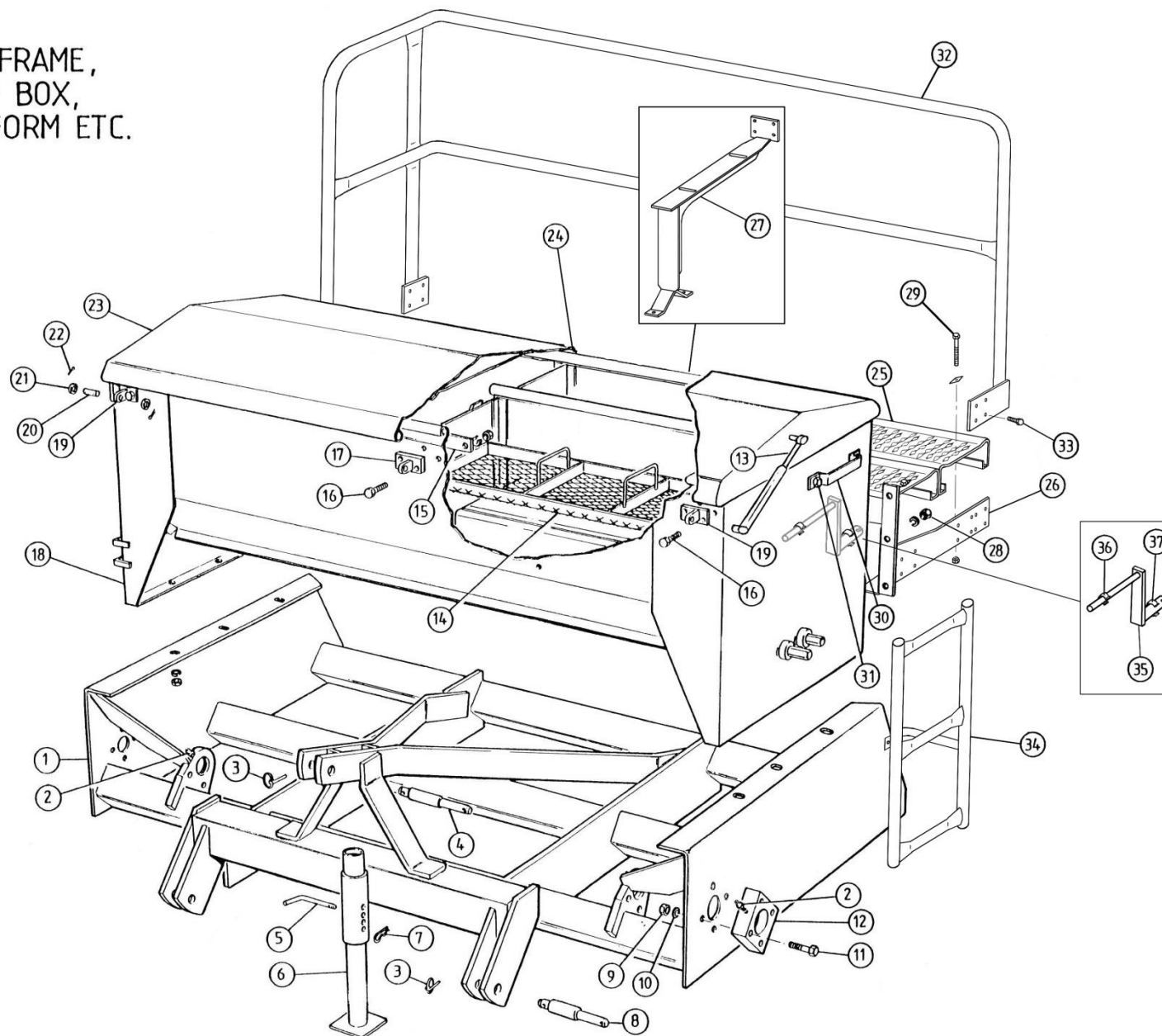
13 ROW



16 ROW



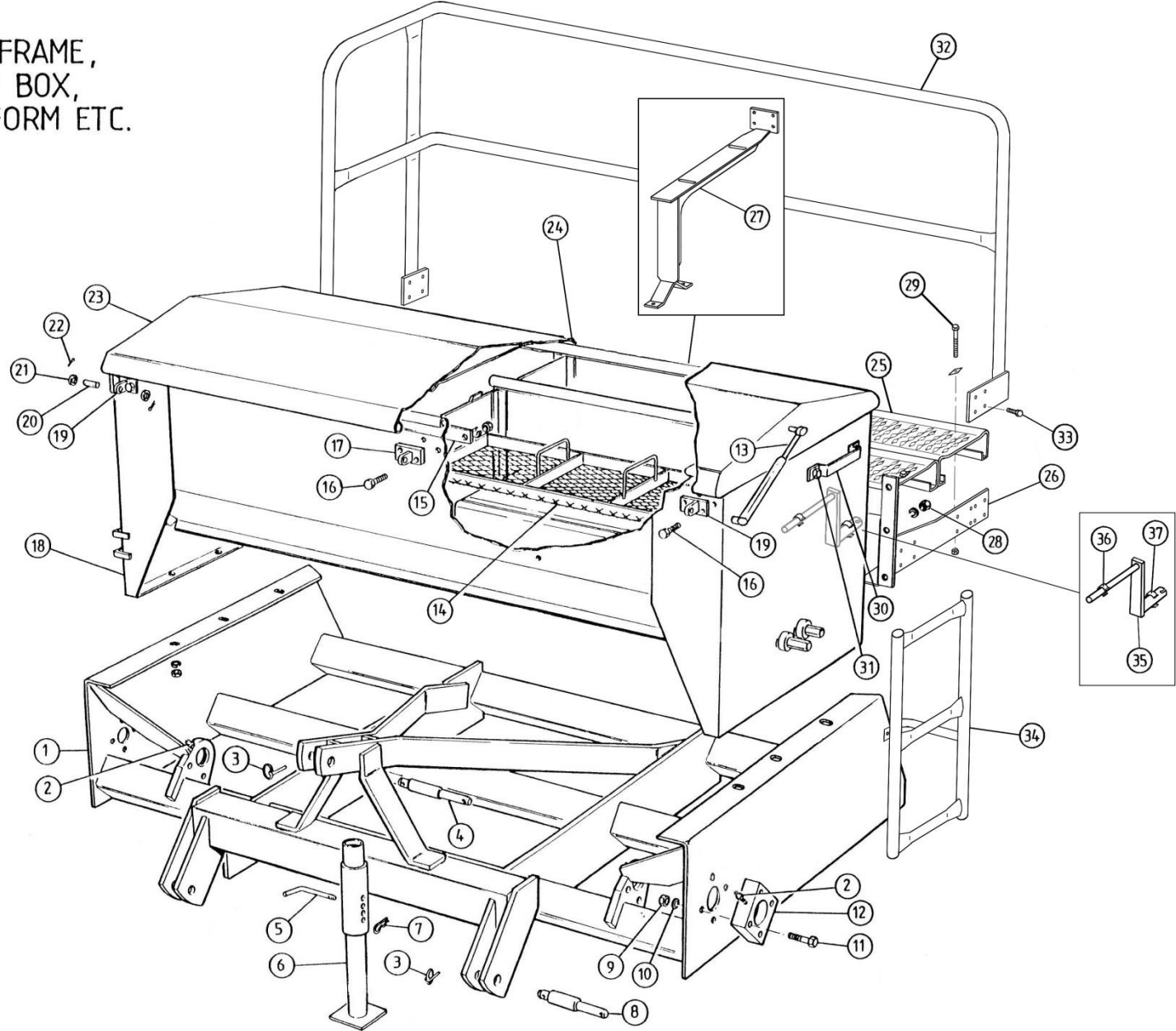
MAIN FRAME,  
G & F BOX,  
PLATFORM ETC.



## MAIN FRAME, GRAIN AND FERTILIZER BOX, PLATFORM ETC. (TYNE DRILL)

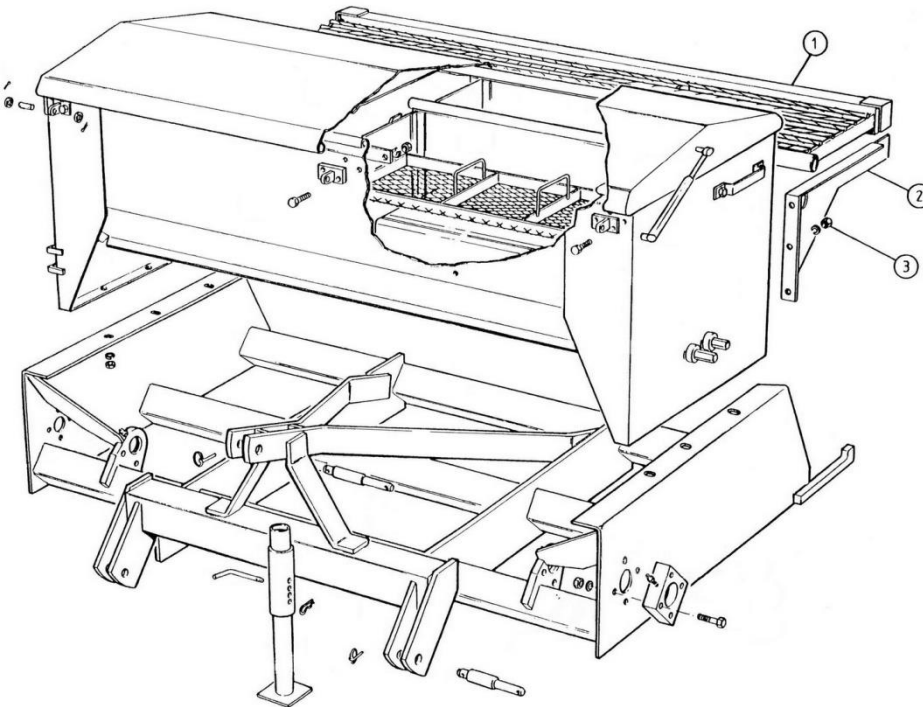
ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	33559	FRAME ASSY. 10 row	24	37590	LATCH Draw
	33558	FRAME ASSY. 13 row		37549	SPACER Latch
	33557	FRAME ASSY. 16 row		37591	SCREW C'Sunk thread M5 x 50mm
	33584	FRAME ASSY. 19 row		33575	WASHER Spring 5mm 3/32" x 1/16"
2	18596	NIPPLE grease self tap		37999	NUT Hex - M5 plated
3	22889	LYNCH PIN & CLIP		39625	SCREW C'Sunk thread M5 x 20mm
4	CR160-95	PIN hitch top (Cat 1 + 2) - 10 & 13R	25	42421	WALKWAY GRATING 10 Row
	32741	PIN hitch top (Cat 2) - 16 & 19R		42422	WALKWAY GRATING 13 Row
5	H160-105	PIN locating		42423	WALKWAY GRATING 16 Row
6	34352	STAND ASSY.		42424	WALKWAY GRATING 19 Row
7	H160-106	PIN hair	26	42419	BRACKET Platform L.H.
8	11463	PIN hitch bottom (Cat 1+ 2) - 10 & 13R		42420	BRACKET Platform R.H.
	32742	PIN hitch bottom (Cat 2) - 16 & 19R	27	42736	SUPPORT ASSY Middle – Low Platform
9	18021	NUT hex M16		42737	SUPPORT ASSY Middle – High P'form (with GSB)
10	17606J1	WASHER spring Ø16		800-629	CLAMP, SUPPORT Walkway (not shown)
11	17887J1	BOLT hex M16 x 60		17495J1	SETSCREW M8 x 30mm
12	34528	BLOCK bearing outer		18464	NUT M8
13	37481	GAS STRUT 150N		18465	WASHER Spring - M8
14	32820	SCREEN ASSY. 10 row	28	18613	SET SCREW hex M10 x 20 H.T.
	32819	SCREEN ASSY. 13 row		17776J1	WASHER spring Ø10
	24520	SCREEN ASSY. 16 row		17777J1	NUT hex M10
	18615	SCREEN ASSY. 19 row	29	942-652	BOLT Cup/Hd M8 x 90
15	18614	PLATE base		18464	NUT M8
16	18877	SET SCREW hex M10 x 25		989-337	CLIP Anchorage
	17776J1	WASHER spring Ø10		18465	WASHER Spring - M8
	17777J1	NUT hex M10	30	23770	LATCH handle
17	21757	LUG ASSY. box centre	31	18747	SET SCREW hex M10
18	32795	BOX ASSY. welded 10 row		17776J1	WASHER spring Ø10
	32794	BOX ASSY. welded 13 row		17777J1	NUT hex M10
	32793	BOX ASSY. welded 16 row	32	42415	GUARDRAIL ASSY 10 Row
	34286	BOX ASSY. welded 19 row		42416	GUARDRAIL ASSY 13 Row
19	18612	LUG ASSY. box		42417	GUARDRAIL ASSY 16 Row
20	18594	PIN Hinge lid		42418	GUARDRAIL ASSY 19 Row
21	FBW4	WASHER flat Ø3/8"	33	19151	BOLT M8 x 25
22	16945J1	PIN cotter 3.2 x 20		34095	NUT, NYLOC M8
23	32808	LID ASSY welded 10 row		18465	WASHER Spring - M8
	32807	LID ASSY welded 13 row			
	24513	LID ASSY welded 16 row			
	30113	LID ASSY welded 19 row			

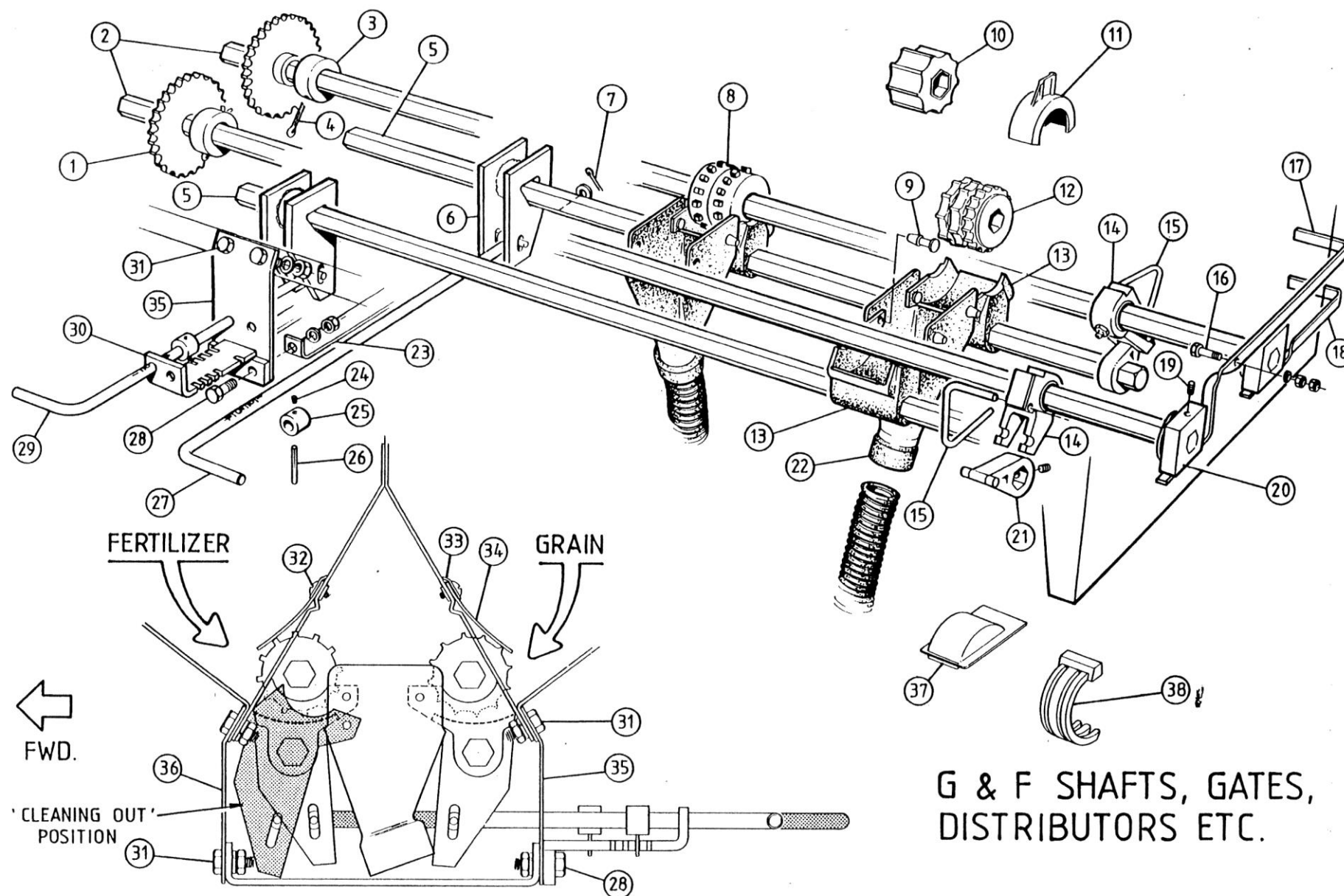
MAIN FRAME,  
G & F BOX,  
PLATFORM ETC.





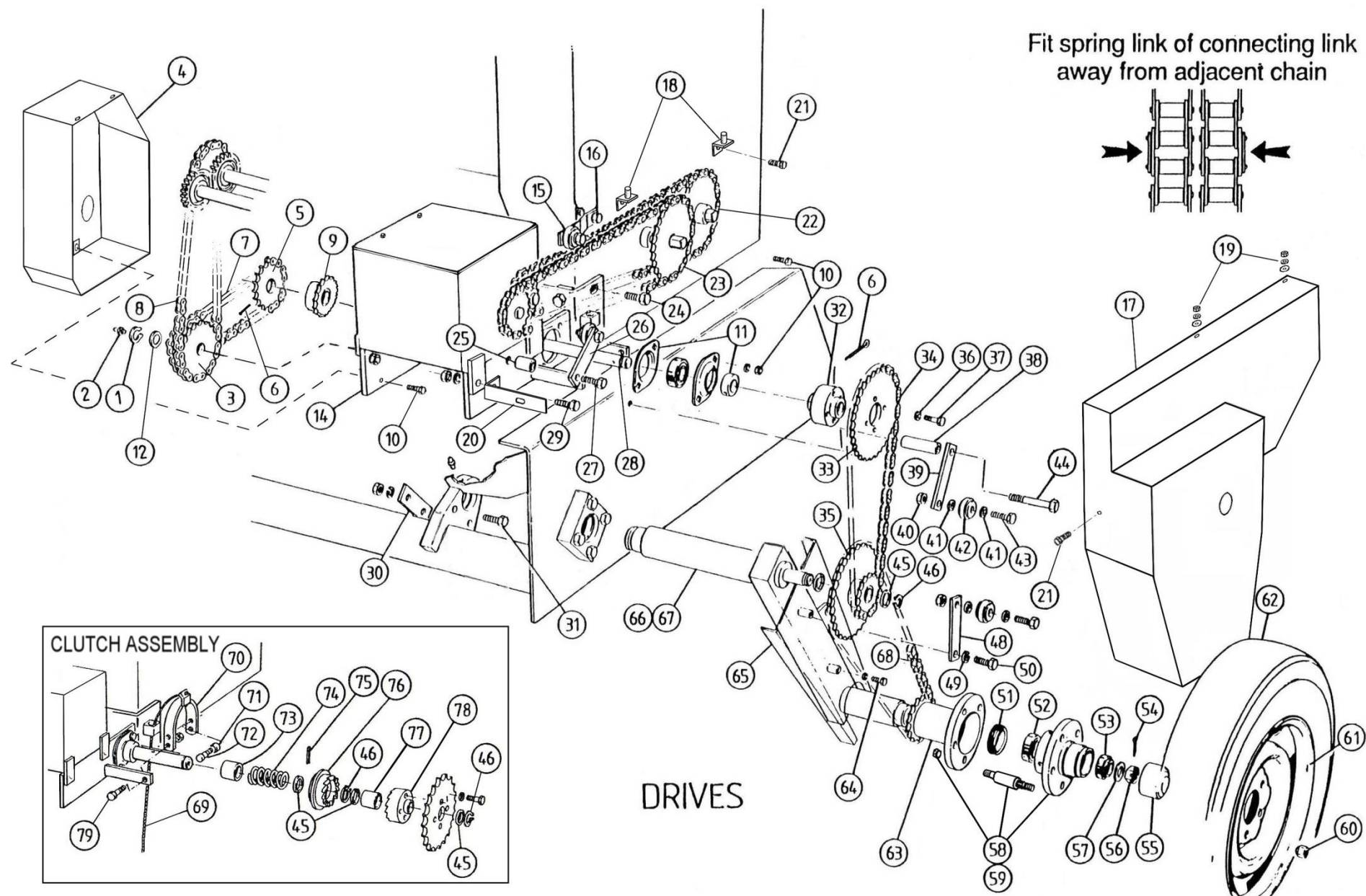
## MAIN FRAME, GRAIN AND FERTILIZER BOX, PLATFORM ETC. (TYNE DRILL)

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
34	42413	LADDER	 <p><b>PREVIOUS PLATFORM ASSEMBLY</b></p>		
	800-629	CLAMP, SUPPORT			
	945-635	BOLT			
	17777J1	NUT			
	17776J1	WASHER			
35	37982	CRANK ASSEMBLY			
36	37969	CLIP			
	18872	SCREW			
	18873	NUT			
	37972	WASHER			
37	37968	CLIP	1	32826	PLATFORM ASSY.
	18872	SCREW		32825	PLATFORM ASSY.
	18873	NUT		27397	PLATFORM ASSY.
	37972	WASHER		18313	PLATFORM ASSY.
	37968	CLIP	2	32838	BRACKET
	18872	SCREW		32837	BRACKET
	18873	NUT	3	18613	SET SCREW
	37972	WASHER		17776J1	WASHER
				17777J1	NUT
		ASSEMBLIES			
	32792	GRAIN & FERTILISER BOX COMPLETE 10 ROW			
	32791	GRAIN & FERTILISER BOX COMPLETE 13 ROW			
	32790	GRAIN & FERTILISER BOX COMPLETE 16 ROW			
	34285	GRAIN & FERTILISER BOX COMPLETE 19 ROW			
NOTE: ITEM 27 IS REQUIRED ONLY ON 19R MACHINES. THE HIGH PLATFORM SUPPORT IS USED WITH THE GRASS SEED BOX OPTION.					



## GRAIN &amp; FERTILIZER SHAFTS, GATES, DISTRIBUTORS ETC.

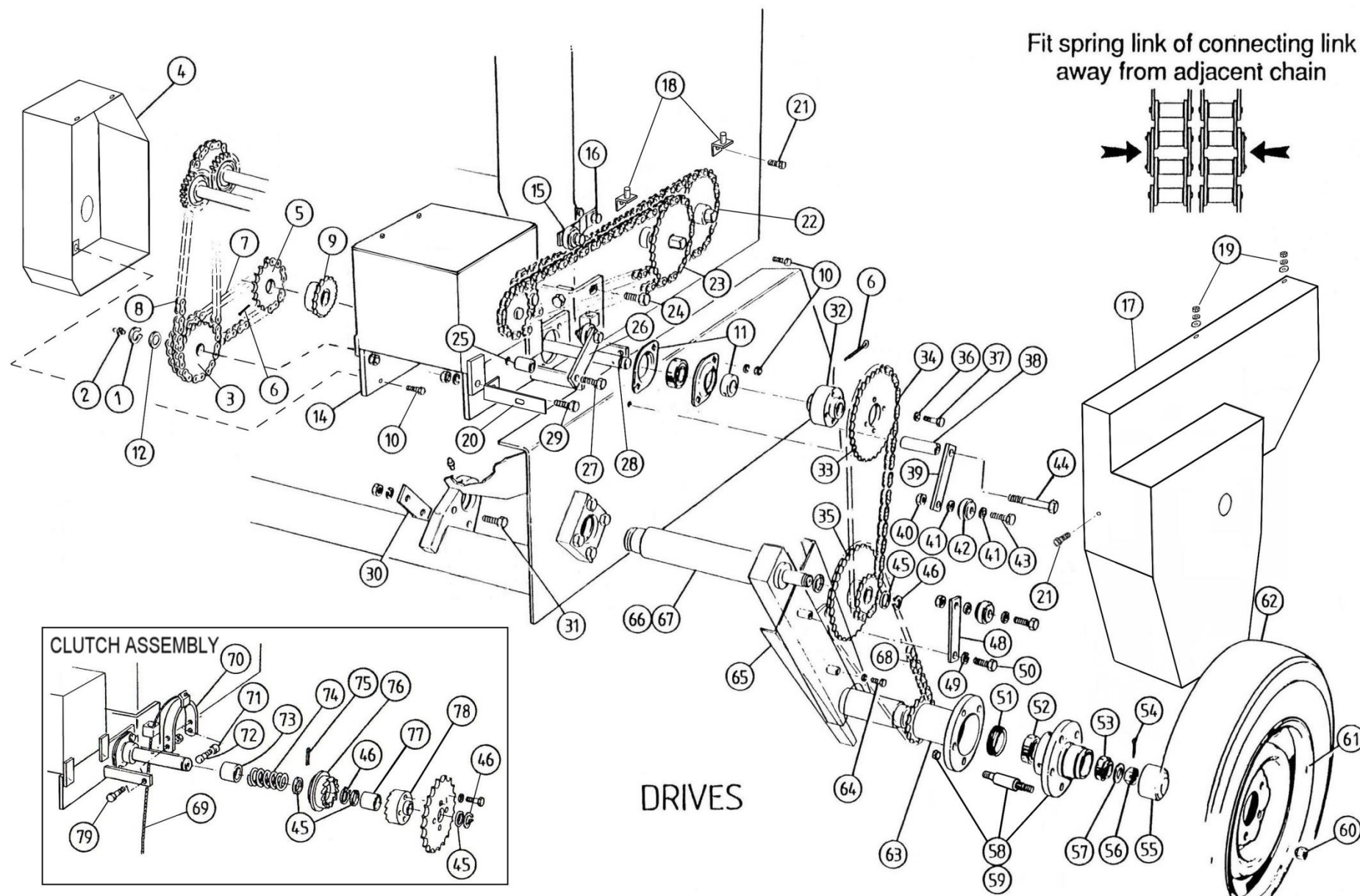
ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	30039	SPROCKET ASSY. 34T	27	20502	LEVER front
	18892	SCREW soc. hd. M10 x 16 cone pt.	28	19151	SET SCREW hex M8 x 25
2	32813	SHAFT distributor 10 row 1835mm	29	20503	LEVER rear
	32812	SHAFT distributor 13 row 2345mm	30	18598	BRACKET ASSY. gate lever
	24511	SHAFT distributor 16 row 2855mm	31	18463	BOLT hex M8 x 25
3	18652	COLLAR Stop shaft	32	GB7G	BOLT/NUT gutter 5/8" x 1/4"
4	17589J1	PIN Cotter Ø5 x 50	33	21767	STRIP retainer (3 hole flap) 10 & 13R
5	32816	SHAFT gate 10 row 1630mm		18636	STRIP retainer (4 hole flap)
	32815	SHAFT gate 13 row 940mm	34	32818	FLAP box bottom 10 row
	32814	SHAFT gate 13 row 1110mm		32817	FLAP box bottom 13 row
	18442	SHAFT gate 16 row 1265mm		24507	FLAP box bottom 16 row
6	20504	LINKAGE ASSY. gate shaft	35	18599	BRACKET rear G & F lever
	18893	SCREW soc. hd. M8 x 10 cone pt.	36	18808	BRACKET front G & F lever
7	18647	WASHER steel thick – bright	37	18424	COVER cut-off distributor
	20680	PIN 2.5 x 12 split cotter	38	18746	INSERT distributor
8	18435	WHEEL distributor peg			ASSEMBLIES
9	18597	BUTTON cup			
10	31187	ROLLER ASSY. broad bean (optional)			
11	27897	RESTRICTOR wheel distributor	18847		BEARING DISTRIBUTOR ASSY. COMPLETE item 14
12	27896	WHEEL distributor fluted			
13	39994	GATE distributor	18648		KIT. INDICATOR GRAIN & FERTILIZER items 16 - 20
14	18848	BEARING shaft distributor			
	18422	BUSH shaft distributor			
	18596	NIPPLE grease self tap	23470		GUAGE Gate 1.5mm peg tooth roller
15	20525	RETAINER bearing			
16	18659	SET SCREW hex M16 x 25	29939		GUAGE Gate 3mm fluted roller
	FBW2	WASHER Ø1/4" service			
	18656	NUT hex M6	33657		GUAGE Gate 4mm broad bean roller
17	18650	INDICATOR fertilizer			
18	18651	INDICATOR grain			
19	18663	SCREW soc. hd. M10 x 10	32198		KIT. FLUTED ROLLER & RESTRICTOR items 11 & 12
20	18649	BLOCK indicator			
	FBW11	WASHER 1" service			
21	18849	HINGE gate			REMOTE GREASING KITS
	18789	SCREW soc. hd. M6 x 8	37493		KIT, REMOTE GREASING 10 row
22	39948	CUP Hose	37513		KIT, REMOTE GREASING 13 row
23	18657	BRACE Support	37514		KIT, REMOTE GREASING 16 row
24	18789	SCREW soc. hd. M6 x 8	36966		KIT, REMOTE GREASING 19 row
25	46028	BUSH small adjusting			
26	21293	PIN sellock Ø4 x 20			



## DRIVES

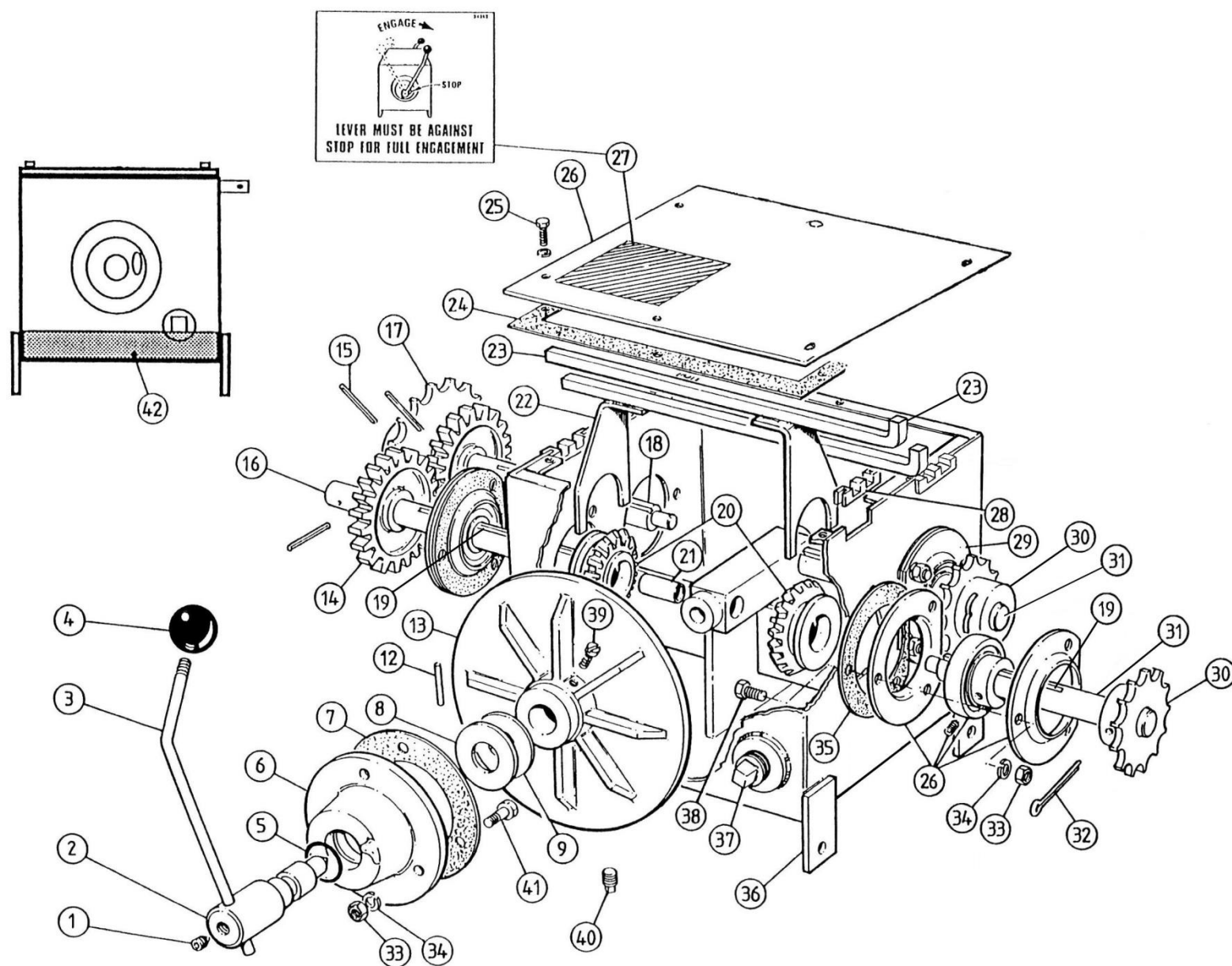
ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	18675	CIRCLIP		18465	WASHER spring Ø8
2	18596	NIPPLE grease		FBW3	WASHER flat Ø5/16"
3	37546	SPROCKET ASSY double 23X15T		18464	NUT hex M8
4	42451	GUARD inner	22	32787	CHAIN roller 5/8"P x 95L
5	18496	SPROCKET ASSY 19T		14214J1	LINK connecting ½ 5/8"P
6	17589J1	PIN cotter Ø5 x 50		10615	LINK connecting 5/8"P
7	29362	CHAIN roller 5/8"P x 39L	23	29364	CHAIN roller 5/8"P x 90L
	10615	LINK connecting 5/8"P		10615	LINK connecting 5/8"P
	14214J1	LINK Cranked	24	20799	BOLT M12 x 35
8	33632	CHAIN roller 5/8"P x 31L	25	30977	SPACER short tensioner (70mm)
	10615	LINK connecting 5/8"P	26	22898	TENSIONER ASSY.
9	36059	SPROCKET ASSY. 16T (grass seed box)	27	17656J1	BOLT hex M12 x 80
10	18437	BOLT hex M8 x 35		17616J1	WASHER spring Ø12
	18465	WASHER spring Ø8		18414	NUT hex M12
	18464	NUT hex M8	28	34560	SHAFT secondary 16 row
11	18715	BEARING flange	29	18613	SET SCREW hex M10 x 30
12	18534	WASHER clutch		17776J1	WASHER spring Ø10
13	18438	KIT – GEARS & SPROCKETS, (optional) comprises:-		17777J1	NUT hex M10
	14214J1	LINK connecting ½ 5/8"P	30	32740	KEY axle crank
	10615	LINK connecting 5/8"P	31	19974	BOLT hex M12 x 45
	18490	GEAR input 15T		17616J1	WASHER Spring Ø12
	18491	GEAR input 35T		18414	NUT hex M12
	18802	SPROCKET 15T 5/8"P	32	34586	BOSS sprocket
14	34566	CRADLE ASSY. 10 row	33	20964	SPROCKET drilled 33T
	34565	CRADLE ASSY. 13 row		(28835	SPROCKET 31T – 19R DDO ONLY)
	34564	CRADLE ASSY. 16 row	34	29332	CHAIN roller 5/8"P x 57L
	34563	CRADLE ASSY. 19 row	35	27908	SPROCKET ASSY. double 15T x 36T (incl. bearings)
15	34590	TENSIONER ASSY. offset comprises of:		(37414	BEARING )
	34591	ARM tensioner & items 40 – 43	36	18465	WASHER spring Ø8
16	18805	BOLT hex M12 x 30	37	18463	BOLT M8 x 20
	17616J1	WASHER spring Ø12	38	34576	SPACER long tensioner (120mm)
	18414	NUT hex M12	39	22899	ARM tensioner chain long
17	42884	GUARD ASSY. outer	40	17604J1	NUT hex M10 Gr. 8 plain
18	34454	BRACKET mounting	41	FBW4	WASHER flat Ø3/8"
19	18464	NUT hex M8	42	18668	ROLLER tensioner chain
	18465	WASHER spring Ø8	43	18669	BOLT special tensioner
	FBW3	WASHER flat Ø5/16"	44	33139	BOLT hex M12 x 150
20	36375	BRACKET guard	45	18534	WASHER clutch
21	19151	SETSCREW hex M8 x 25	46	18675	CIRCLIP Ø25 I.D.





## DRIVES CONT'D

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
48	22899	ARM chain tensioner	75	18871	PIN Sellock Ø6 x 36
49	17616J1	WASHER spring Ø12	76	18532	CLUTCH HALF
50	18876	SETSCREW hex M12	77	18530	SLEEVE Bearing plain
51	36954	SEAL triple lipped	78	18531	CLUTCH HALF
52	16850J1	BEARING Inner	79	18660	PIN
53	16851J2	BEARING Outer		17777J1	NUT
54	16859J1	PIN Cotter Ø4 x 32			
55	16849J1	CAP Dust			(Note: the Clutch assembly components above [Items 68-78] replace item 28 on the standard "Linkage" setup)
56	16853J1	NUT Slotted ¾" UNF			
57	FBW9	WASHER Flat ¾"			ASSEMBLIES
58	16848J2	HUB Drive wheel L.H.			
	18596	NIPPLE Grease self tap			
	37320	STUD, LONG Wheel ½" UNF	22898		TENSIONER ASSY. items 40 – 43 & 48
	18414	NUT Hex M12	34587		TENSIONER ASSY. items 39 – 43
	17616J1	WASHER Spring Ø12	34585		SPROCKET ASSY. items 32, 33, 36 & 37
59	16848J2	HUB R.H.	35487		ARM/CRANK ASSY. COMP. L.H. (695mm) items 51 - 58, 60, 63, 66
	18596	NIPPLE	35488		ARM/CRANK ASSY. COMP. R.H. (695mm) items 51 - 57, 59, 60, 67
	19071	STUD Wheel ½" UNF			-----
60	19072	NUT Cone ½" UNF			NOTE:- FOR AXLE CRANK ASSEMBLIES THAT ARE 600mm LONG BETWEEN CENTRELINES USE THESE ITEMS IN PLACE OF ITEMS 65 – 68,
61	34551	WHEEL ASSY. 15"			
62	42301	TYRE 15" tubeless			
63	37319	EXTENSION SPROCKET 16T			
64	18749	SETSCREW Hex M8 x 12			
	18465	WASHER Spring Ø8			
65	35492	GUARD Chain wheel			
66	35489	AXLE CRANK ASSY. L.H. 695mm between C/L's			
67	35490	AXLE CRANK ASSY. R.H. 695mm between C/L's			
68	35493	CHAIN Roller 5/8"P x 113L			
	10615	LINK Connecting 5/8"P			
		HITCH KIT (OPTIONAL) CLUTCH ASSEMBLY	34584		GUARD chain wheel
69	34479	WIRE ROPE Clutch Ø1/8" 570mm	34536		AXLE CRANK ASSY. L.H.
70	21825	YOKE ASSY Clutch	34537		AXLE CRANK ASSY. R.H.
71	18533	FERRULE Clutch	34579		CHAIN roller 5/8"P x 110L
72	18676	PEG Clutch			
73	34614	SPACER Spring 10T 22/23mm			THE ASSOCIATED COMPLETE ASSEMBLIES ARE: -
	34613	SPACER Spring 13T 37/38mm	34534		ARM/CRANK ASSY. COMP. L.H. (600mm)
	34612	SPACER Spring 16T 52/53mm	34535		ARM/CRANK ASSY. COMP. R.H. (600mm)
74	18681	SPRING	36425		HECTAREMETER KIT - FARMSCAN

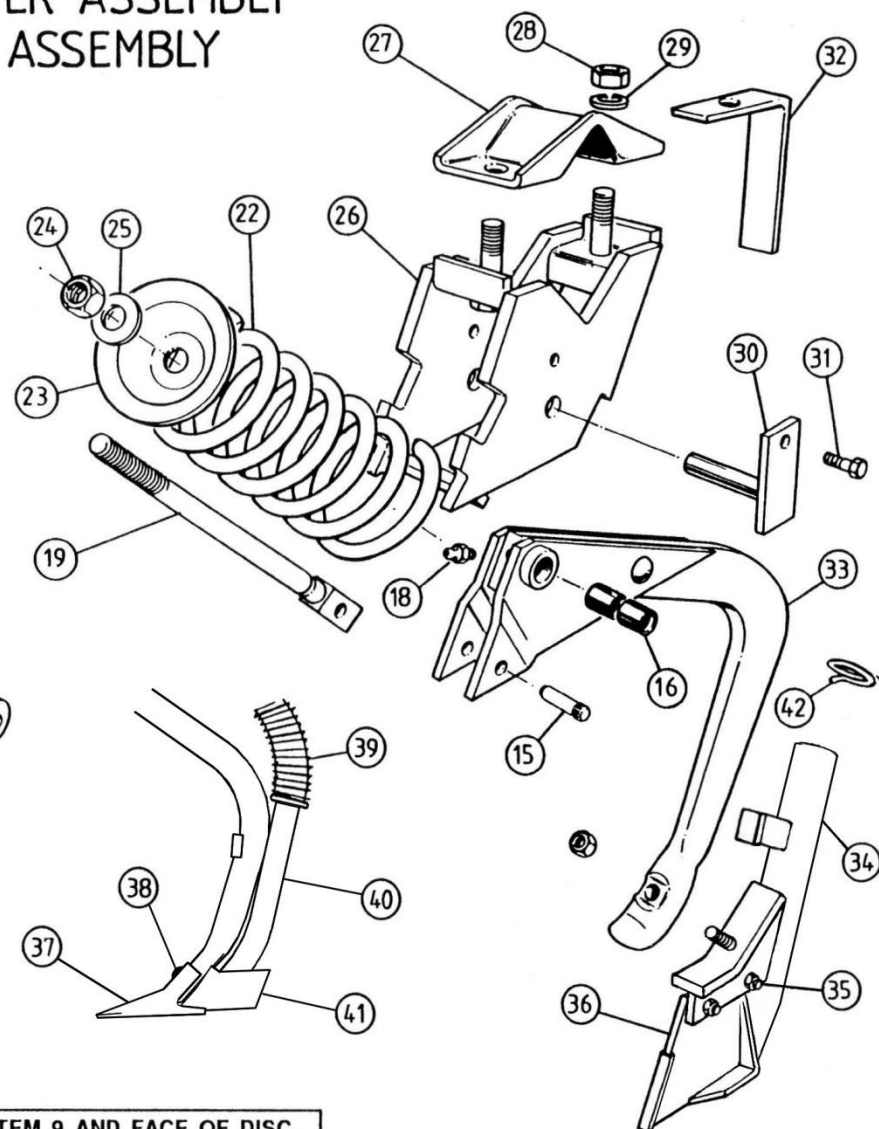
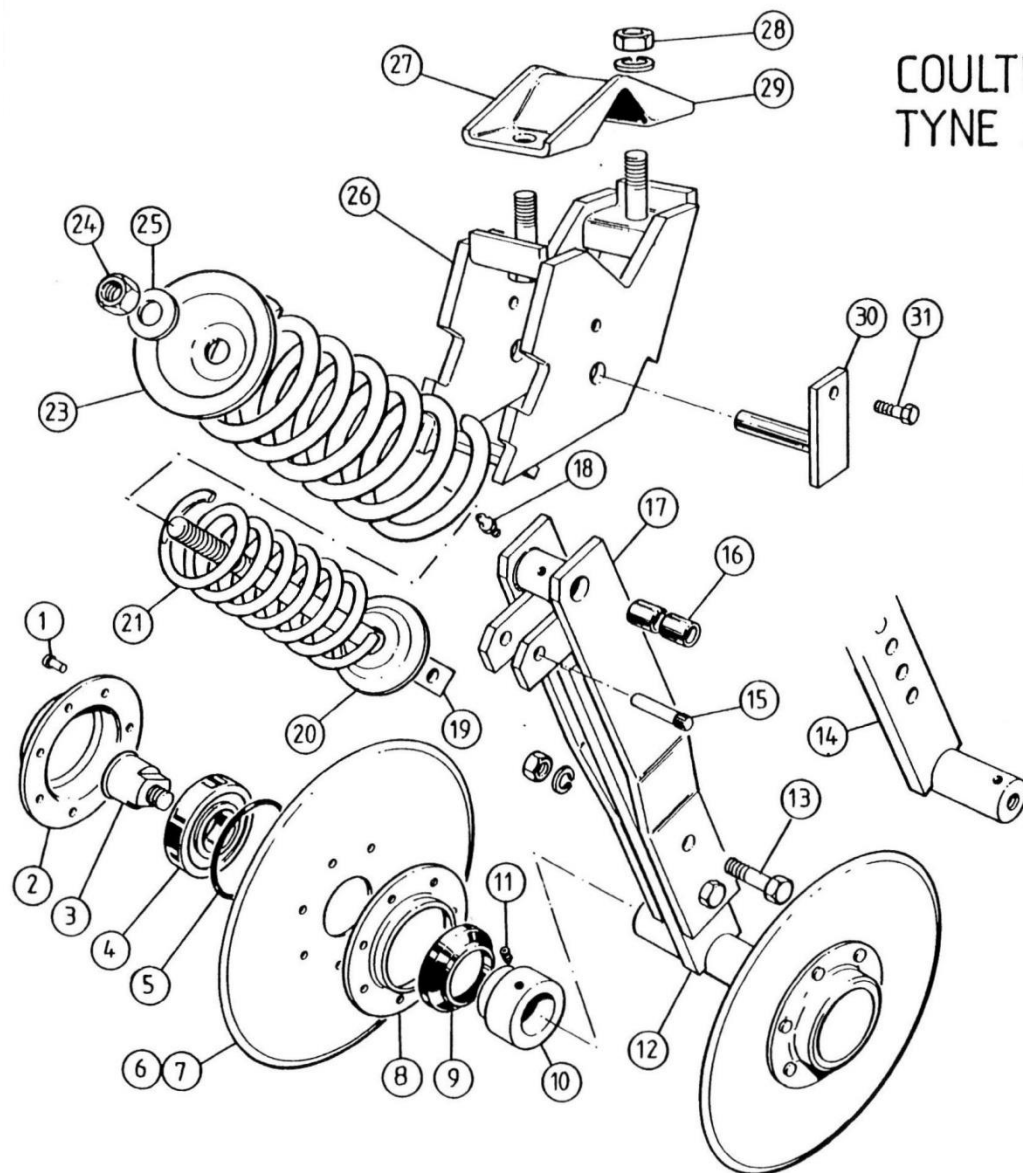




## GEARBOX

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	18663	SCREW grub M10 x 10	38	18502	SETSCREW hex M8 x 16
2	32844	SHAFT sungear	39	18474	SCREW locating
3	33276	LEVER gearbox	40	18493	PLUG drain ¼" BSPT
4	10440	KNOB selector	41	18463	BOLT hex M8 x 20
5	18512	'O' RING 1 ¼" x 1 ½" x 1/8"	42	18511	OIL SAE 120 I L
6	33278	CAP END gearbox			
7	18462	GASKET cap end			
❖8	20518	WASHER flat I.D. 24 x 15t			
❖9	18466	WASHER flat Ø24			
❖10	36777	SHIM WASHER (0.1mm) – not shown		33607	GEARBOX, COMPLETE Items 1-39
❖11	36778	SHIM WASHER (0.7mm) – not shown			
12	18661	PIN sellock Ø5 x 45			
13	32840	GEAR sun			
14	33622	GEAR input 25T x 8P			
15	27307	PIN sellock Ø6 x 40		18490	GEAR input 15 tooth (optional)
16	33619	SHAFT output – grass		18491	GEAR input 35 tooth (optional)
17	33764	SPROCKET 12T			
18	33620	SHAFT input			
19	18500	KEYSTEEL 90mm long			
▲20	42512	PINION ASSY.			
21	32845	BUSH sintered			
22	36268	SELECTOR ASSY. numbered gear			
23	36266	SELECTOR ASSY. lettered gear			
24	18508	GASKET cover top			
25	17966J1	SETSCREW M6 x 12			
	18504	WASHER spring Ø6			
26	18506	LID gearbox			
27	34362	TRANSFER gearbox engagement			
28	18460	GUIDE nylon			
29	32847	BEARING 'Y'			
30	30041	SPROCKET 13T x 5/8"P			
31	33617	SHAFT super			
32	17589J1	PIN cotter Ø5 x 50			
33	18464	NUT hex M8	▲		Note: Previous pinion assembly with brazed key use P/N 32841
34	18465	WASHER spring Ø8			
35	18475	GASKET bearing	❖		Note: Shim washers are used as required to provide correct fit of sun gear
36	33608	BOX ASSY. gear			
		includes item 38			
37	18513	PLUG ¾" BSP sq. hd.			

# COULTER ASSEMBLY TYNE ASSEMBLY



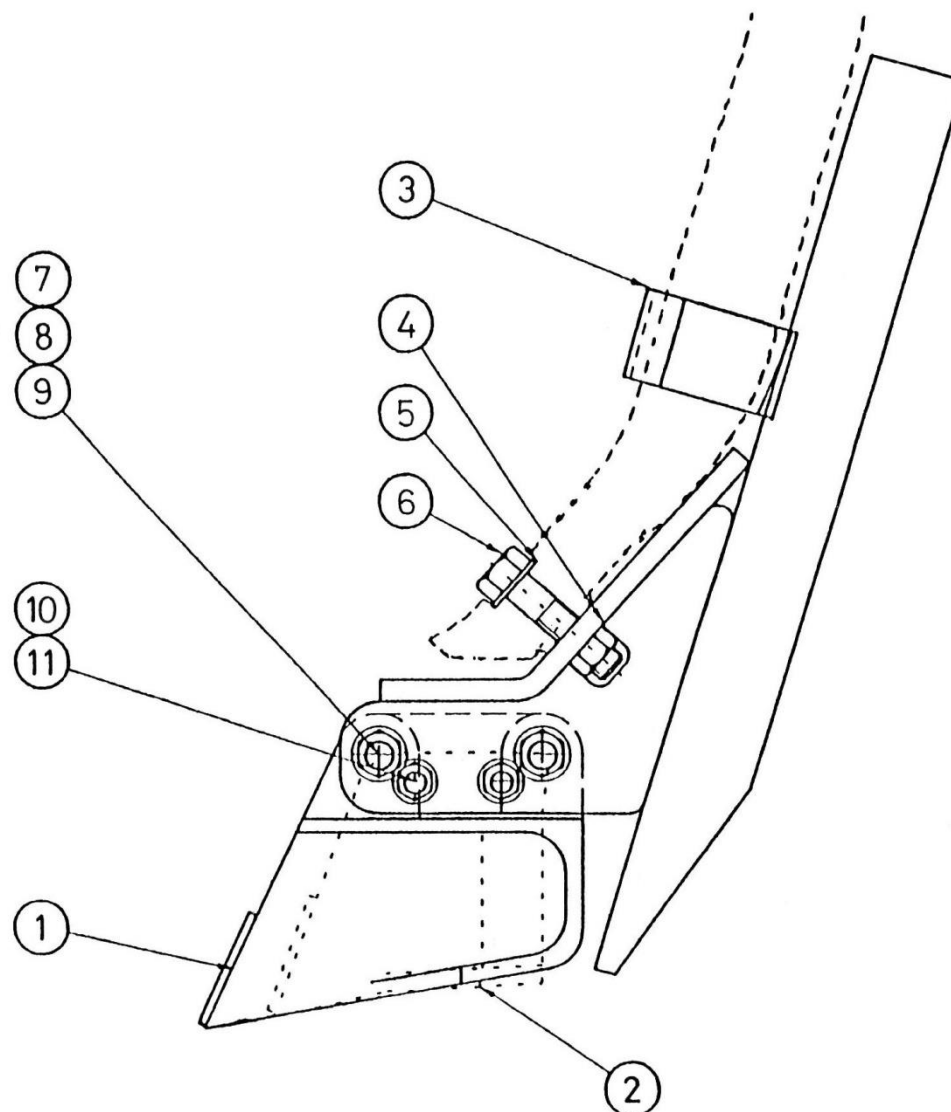
ITEM 3 LOCTITED INTO ARMS

COAT INSIDE OF ITEM 10 WITH  
NEVERSEIZE BEFORE ASSEMBLY

SEAL, ITEM 9 AND FACE OF DISC  
COATED WITH POWDERED GRAPHITE

## COULTER ASSEMBLIES, TYNE ASSEMBLY &amp; POINTS ETC.

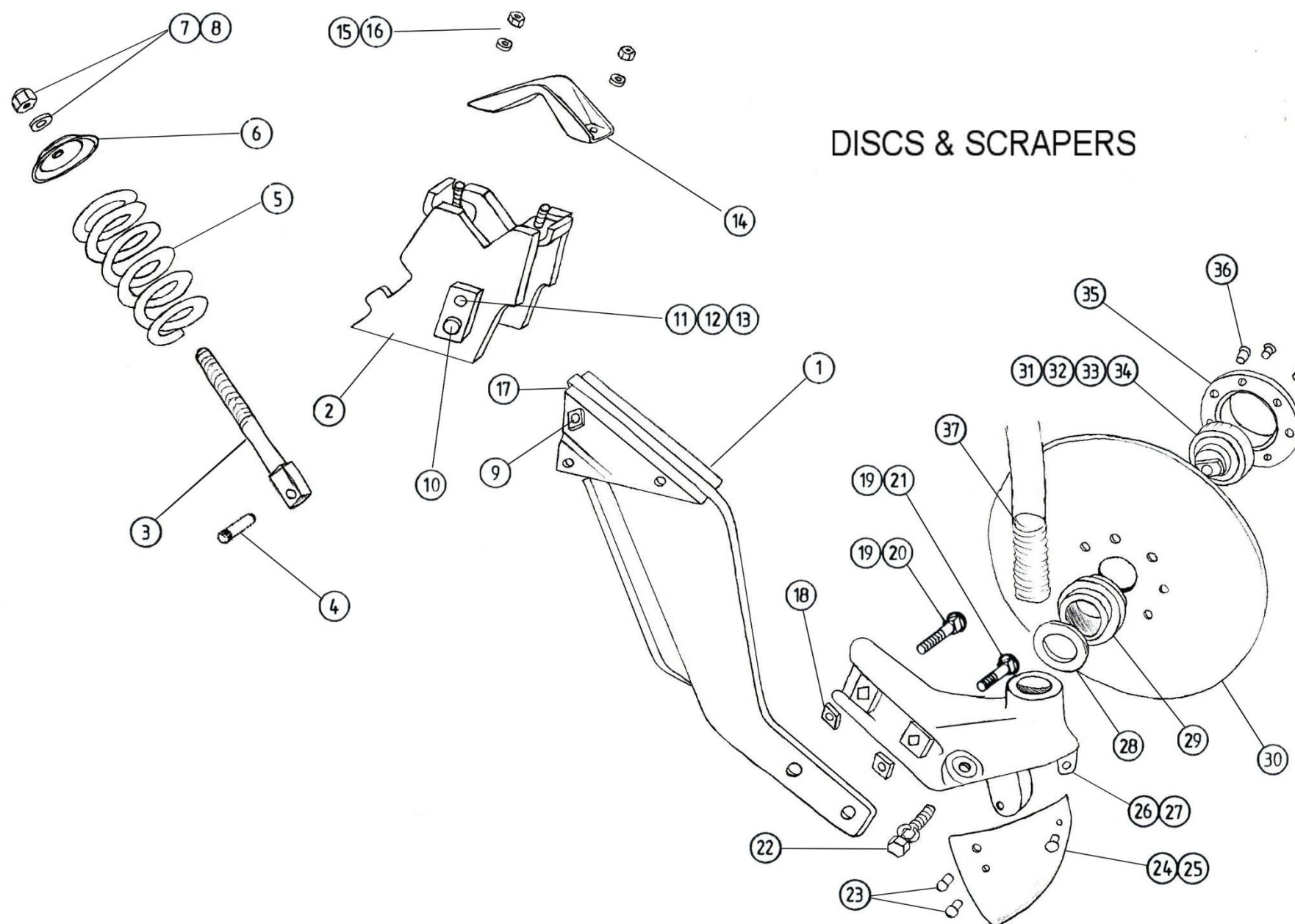
ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	PHR7	RIVET flat hd $\varnothing \frac{1}{4}$ " x 5/8"	35	33259	BOLT hex M8
2	15082J1	CAGE bearing depth wheel		18464	NUT hex M8
3	32778	CORE bearing	36	33258	POINT blade
4	29751	BEARING ball	37	16805K1/6	POINT 5" (308-22)
5	34383	'O' RING	38	18098	BOLT/NUT 1-15/16" x 7/16" BSW
6	240-1024	DISC coultter $\varnothing$ 280 (32777)		17616J1	WASHER spring $\varnothing$ 12 pl
7	240-1034	DISC coultter plain 14" (33753)	39	21863	HOSE barvac $\varnothing$ 35 x 1100
8	32776	SHIELD seal		21839	HOSE barvac $\varnothing$ 35 x 800
9	12348	SEAL ball race	40	36710	BOOT ASSY. sowing steel
10	32779	COLLAR bearing	41	27796	ATTACHMENT firm seed bed E.O.T.
11	18663	SCREW grub M10 x 10	42	35341	CLIP hose 'T' boot
12	32780	SHAFT ASSY. double			
13	19974	BOLT hex M12 x 45		22902	TYNE & SPRING ROD ASSY. items 15, 16, 18, 19, 33
	17616J1	WASHER spring $\varnothing$ 12		22900	TYNE ASSY. COMPLETE '580' EDGE - ON
	18414	NUT hex M12			items 22 - 31 & 22902
14	32781	SHAFT ASSY. single	32775	DISC ASSY. 11"	items 1 - 6 & 8
15	18813	PIN spring rod	35235	DISC ASSY. 14"	items 1 - 5, 7 & 8
16	21612	TYNE split	32772	DISC/SHAFT ASSY. DOUBLE 11"	items 8 - 12 & 32775
17	32782	ARM ASSY. coultter			
18	18596	NIPPLE grease self tap	32773	DISC/SHAFT ASSY. SINGLE 11"	items 8 - 11, 14 & 32775
19	22913	ROD spring E.O.T			
20	35236	CUP spring small	35233	DISC/SHAFT ASSY. DOUBLE 14"	items 8 - 12 & 35235
21	35237	SPRING $\varnothing$ 11" x 60 ID			
22	22927	SPRING $\varnothing$ 16	35234	DISC/SHAFT ASSY. SINGLE	items 8 - 11, 14 & 35235
23	22926	CUP spring			
24	22026	NUT hex M20 nyloc	32769	COULTER UNIT DOUBLE 11"	items 32772, 13, 15 - 31
25	18312	WASHER flat $\varnothing$ 20			
26	22921	CARRIER ASSY.	32770	COULTER UNIT SINGLE R.H. 11"	items 1 - 6, 8 - 11, 13 - 19 & 22 - 31
27	22925	CLAMP top tyne			
28	18021	NUT hex M16	32771	COULTER UNIT SINGLE L.H. 11"	items 1 - 6, 8 - 11, 13 - 19 & 22 - 31
29	17606J1	WASHER spring $\varnothing$ 16			
30	22931	PIN ASSY. tyne	35241	CARRIER/ARM ASSY. COULTER	items 15-31
31	18824	BOLT hex M10	35231	COULTER UNIT DOUBLE 14"	items 13, 35241, 35235, & 35233
	17776J1	WASHER spring $\varnothing$ 10			
	17777J1	NUT hex M10	35232	COULTER UNIT SINGLE 14"	items 13, 35241, 35235, & 35234
32	22097	BRACKET tyne stop			
33	22904	TYNE ASSY. edge - on 580	33256	'T' BOOT	items 34 - 36
34	36713	BOOT ASSY.			



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

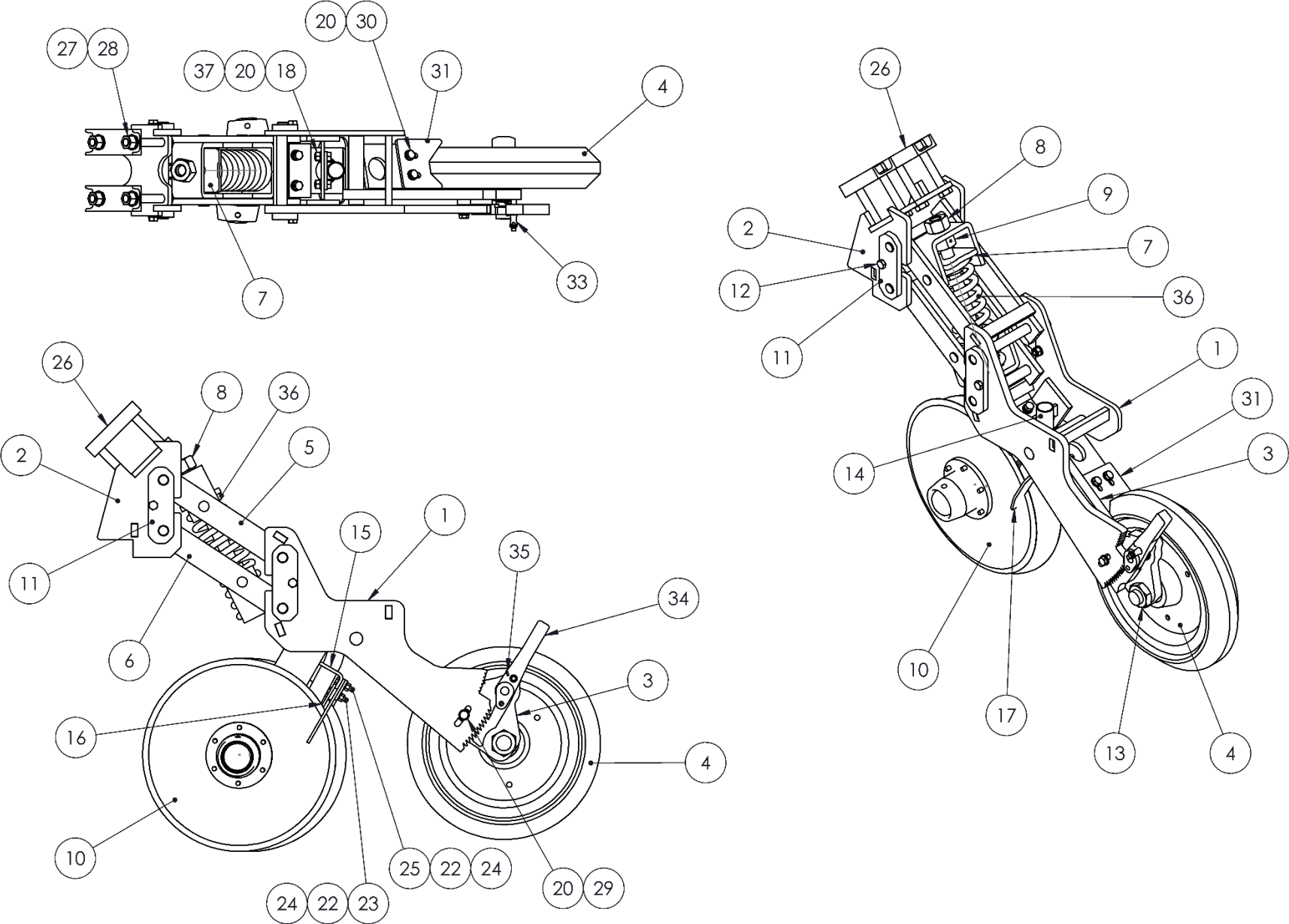
ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	989-881	POINT CBP-60 "Baker T"			
2	33258	POINT CMTB-32 "Mini T"			
3	36713	'T' BOOT			
4	18414	NUT M12 Gr 8			
5	22689	WASHER flat Ø12			
6	36893	BOLT hex M12 x 50 Gr 8.8			
7	17776J1	WASHER spring Ø10			
8	17777J1	NUT M10 Gr 8			
9	22434	BOLT hex M10 x 30 Gr 8.8			
10	34095	NUT Nyloc M8			
11	36892	BOLT hex M8 x 30 Gr 8.8			
	36711	POINT CBP-60 "Baker T"			
		PASTURE DRILL BOOT ASSEMBLY			
	33256	WITH MINI T-BOOT.			
	36712	WITH BAKER INVERTED T-BOOT.			



## DISCS AND SCRAPERS ETC. (DISC DRILL)

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	42256	DISC ARM ASSY.			ASSEMBLIES
2	22921	CARRIER ASSY. Tyne			
3	22913	ROD ASSY. Spring E.O.T.	10368		BOOT / SCRAPER ASSY. R.H. Items 23, 24 & 26
4	18813	PIN Spring rod			
5	22927	SPRING			
6	22926	CUP Spring	10648		BOOT / SCRAPER ASSY. L.H. Items 23, 25 & 27
7	18312	WASHER Flat, Ø20 black			
8	22026	NUT Nyloc M20			
9	21612	BUSH Tyne	10367		DISC / BEARING ASSY. Items 30-36
10	22931	PIN ASSY. Tyne - cranked			
11	17776J1	WASHER Spring Ø10 plated			
12	17777J1	NUT Hex M10 Gr 8.8 plated	10369		BOOT & DISC ASSY. R.H. Items 22-24, 26, 28-36
13	18824	BOLT Hex M10 x 30 plain			
14	22925	CLAMP Top - tyne			
15	17606J1	WASHER Spring Ø16 plated	10649		BOOT & DISC ASSY. L.H. Items 22, 23, 25, 27-36
16	18021	NUT Hex M16			
17	18596	NIPPLE grease			
18	490	SPACER Breast adjustment	11594		BEARING & CAGE ASSY. Items 31-35
19	33099	BOLT Cup hd. Sq. M12 x 50			
20	33098	BOLT Cup hd. Sq. M12 x 65 (ext. d/bar)			
21	26892	BOLT Cup hd. Sq. M12 x 45 (ext. d/bar)			
22	HR115	BOLT Hex 5/8" BSW x 2-1/4"	42284		DISC ASSEMBLY, COMPLETE - R/H Items 1-24, 26, 28-37
23	31242	BOLT Hex M6 x 30 Gr 8.8 (1 off)			
	18659	BOLT Hex M6 x 25 Gr 8.8 (2 off)			
	18656	NUT Hex M6	42283		DISC ASSEMBLY, COMPLETE - L/H Items 1-23, 25, 27-37
	18504	WASHER Spring 6mm			
24	99-9	SCRAPER Disc R.H.			
25	99-10	SCRAPER Disc L.H.			
26	10338	BOOT R.H.			
27	10647	BOOT L.H.			
28	10364	WASHER Shim 26g			
29	12348	SEAL Ballrace			
30	240-1008	DISC Ø13" x 9/32" (10342)			
31	34084	SPINDLE Bearing			
32	34085	COLLAR Seal			
33	29751	BEARING Ball - deep			
34	29843	'O' RING			
35	10341	CAGE Bearing			
36	FHR2	RIVET Flat hd. Ø1/4" x 1/2"			
37	33105	HOSE ASSY. convoluted			

DOUBLE DISC OPENER ASSEMBLY - SPRING

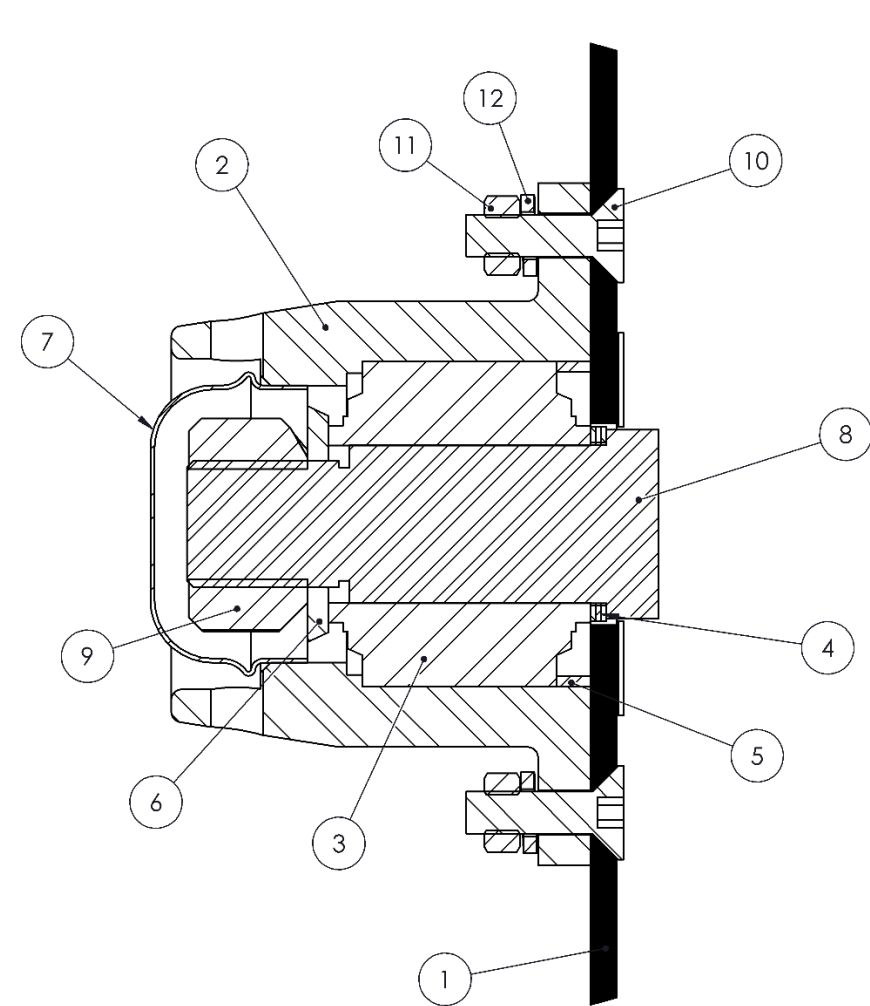




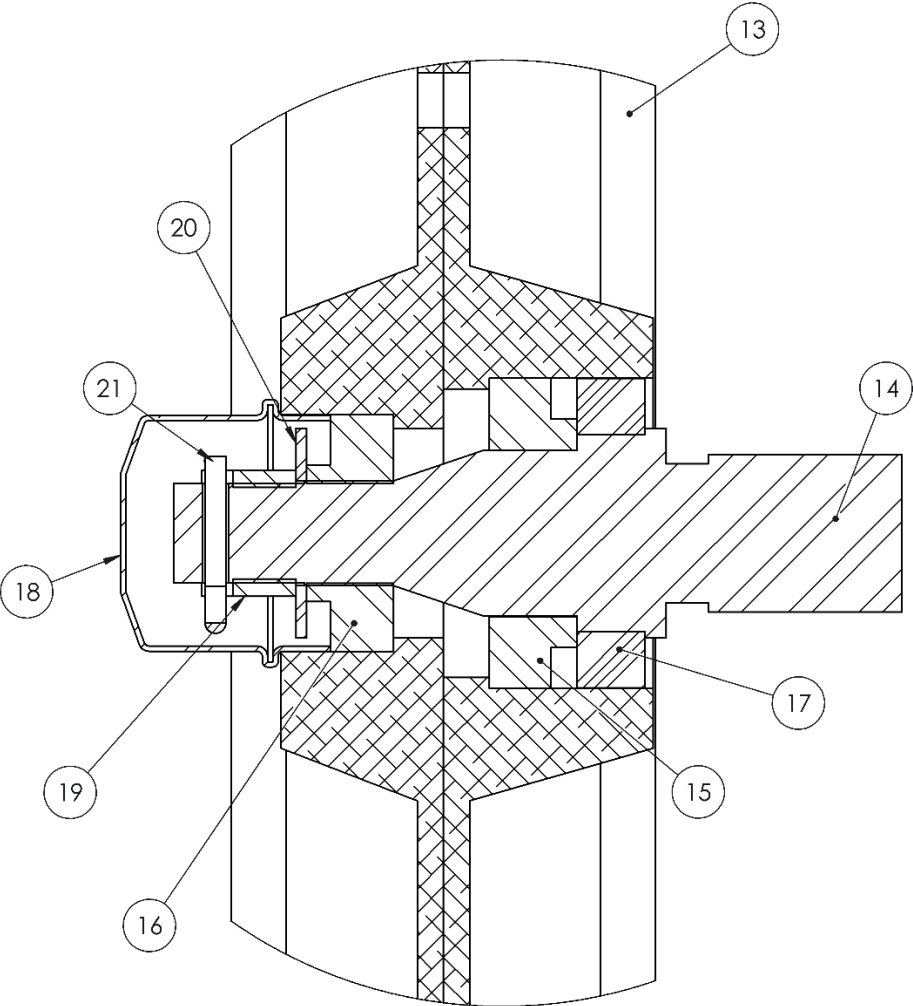
**DOUBLE DISC OPENER ASSEMBLY - SPRING**

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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DOUBLE DISC OPENER COMPLETE ASSEMBLIES																																					
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Torque: 17Nm with Loctite																																					
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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	Torque: 17Nm with Loctite																																	
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	Allow 1-2mm gap to disc/s																																	
17	44431A	SCRAPER, EXTERNAL	2	Allow 1-2mm gap to disc/s																																	
18	31993	AS 1112.2 S2- M10-W-N NYLOC	6																																		
19	18613	HEX, BOLT - M10 x 20	2	Torque: 8.5Nm with Loctite (note: do not tighten with item 32)																																	
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	Torque: 8.5Nm with Loctite																																	
24	FBW3	AS 1237.1 N - 8	4																																		
25	18437	AS 1110.2 - M8 x 35 -C	2	Torque: 8.5Nm with Loctite																																	
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	Do Not Tighten - allow 1mm gap																																	
30	20800	AS 1110.2 - M10 x 30 -C	2	Torque: 17Nm with Loctite																																	
31	43315	SCRAPER, PRESS WHEEL	1																																		
32	43929	PLATE, MOUNT	1																																		
33	45307	PIN, BALL LOCK (PURCH)	1																																		
34	45306	ARM	1	Torque: 17Nm with Loctite																																	
35	45312	SPRING	1																																		

DOUBLE DISC OPENER DETAIL SECTION VIEWS



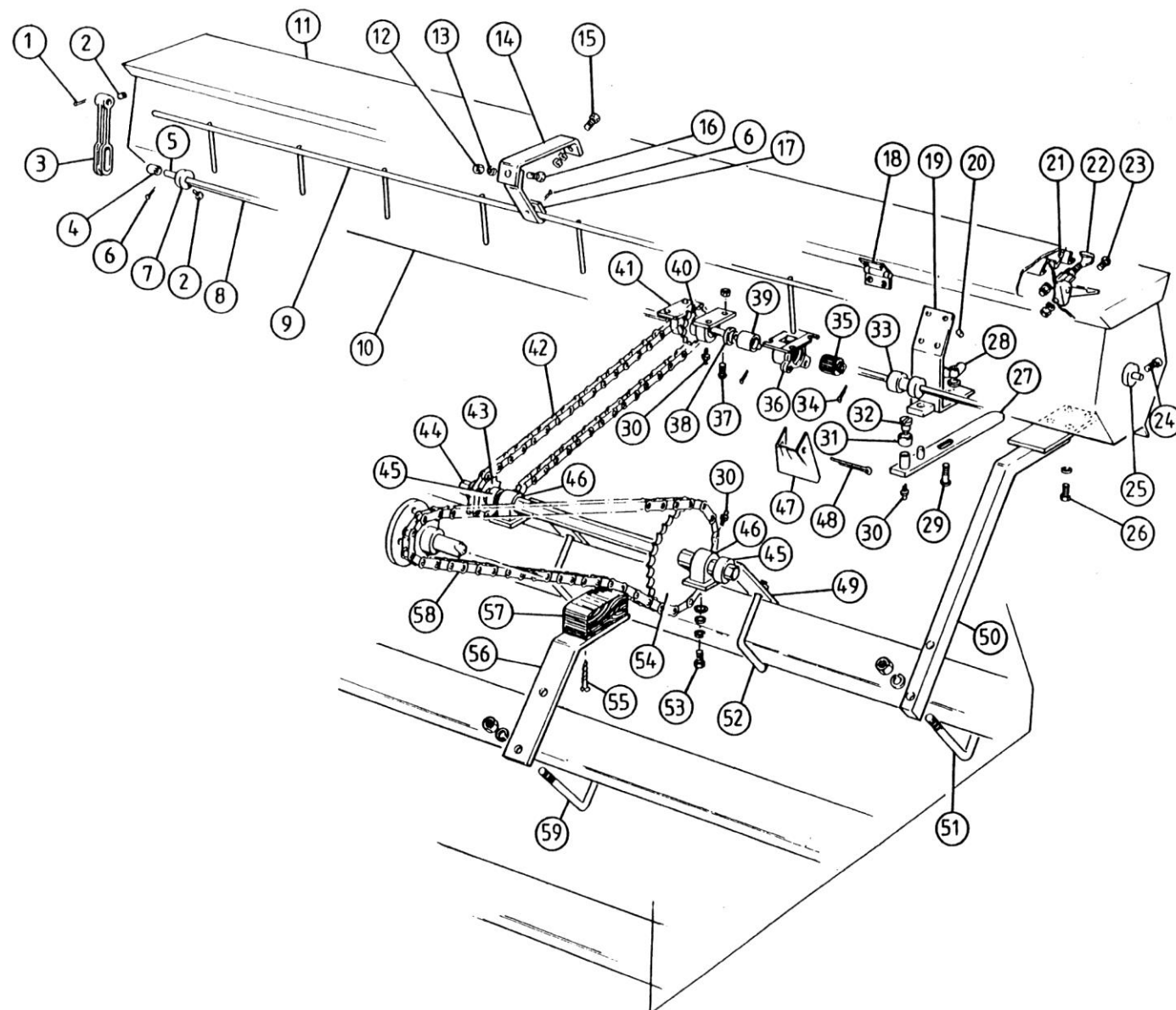
DISC/HUB ASSEMBLY  
SECTION VIEW



PRESS WHEEL ASSEMBLY  
SECTION VIEW

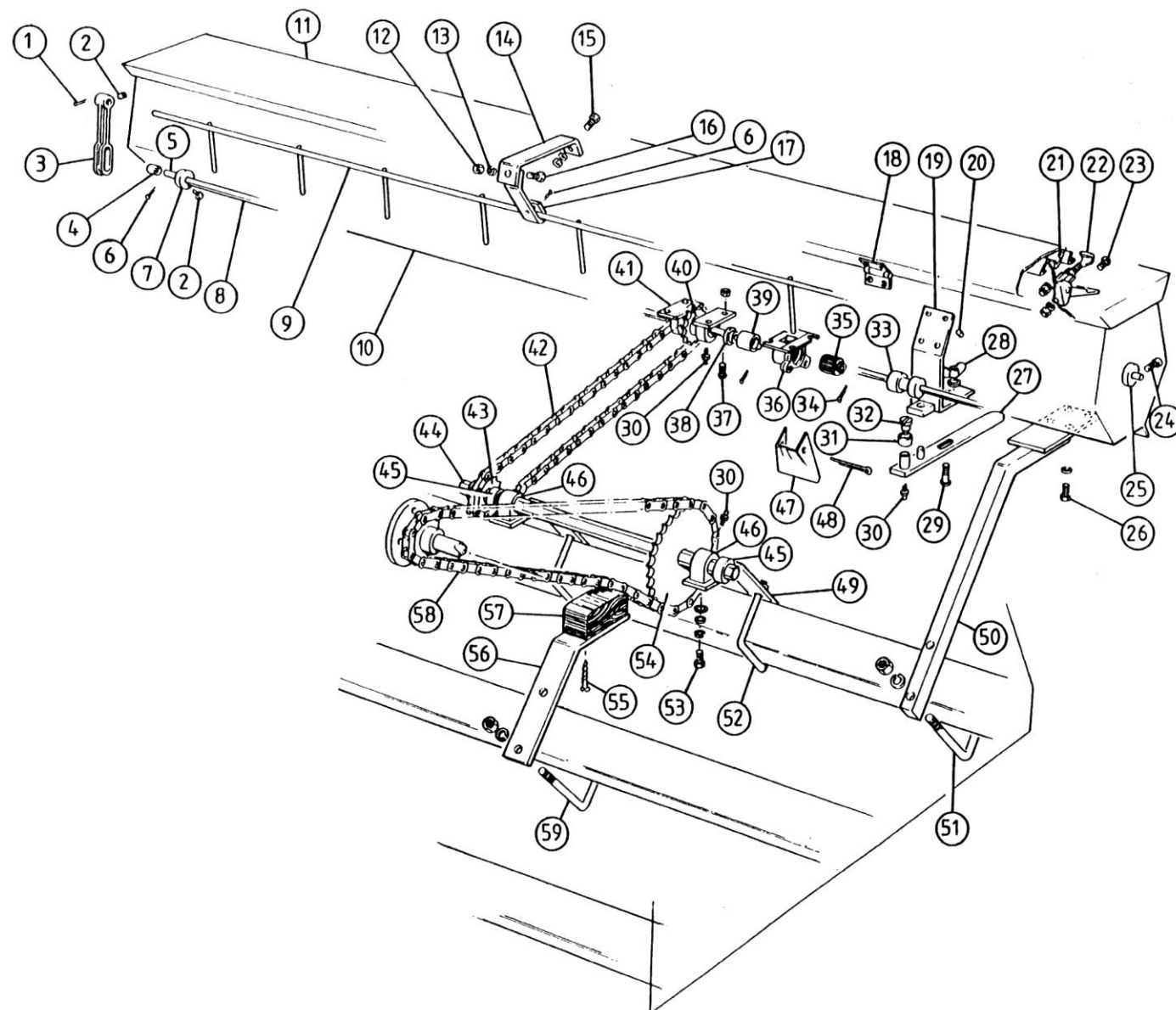
**DOUBLE DISC OPENER DETAIL SECTION VIEWS**

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)		

KITS —  
GRASS SEED BOX

## KIT – GRASS SEED BOX

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
1	16945J1	PIN cotter Ø3.2 x 20	26	19151	BOLT hex M8 x 25
2	1-85	ARM agitator		18465	WASHER spring Ø8
3	20282	SCREW grub M10 x 10	27	35654	LEVER ASSY.
4	1-53	ROLLER agitator	28	22000	NUT wing M8
5	1-51	PIN roller agitator crank		18465	WASHER spring Ø8
6	17883J1	PIN cotter Ø3.2 x 32	29	21999	BOLT cup hd. sq. neck M8 x 25
7	1-21A	CRANK agitator rod	30	18596	NIPPLE grease
8	32989	SHAFT distributor 10 row	31	18533	FERRULE clutch
	32988	SHAFT distributor 13 row	32	24193	PEG lever
	28341	SHAFT distributor 16 row	33	24194	ROLLER feed
	28809	SHAFT distributor 20 row	34	17579J1	PIN cotter Ø5 x 22
9	33125	AGITATOR ASSY. 10 row	35	1-86A	ROLLER fluted
	33124	AGITATOR ASSY. 13 row	36	GBD-1	DISTRIBUTOR ASSY.
	28343	AGITATOR ASSY. 16 row		34058	RIVET pop Ø3/16"
	19751	AGITATOR ASSY. 20 row	37	22156	BOLT gutter 3/16" x 5/8"
10	34631	BOX SUB ASSY. 10 row		19742	NUT nyloc
	34632	BOX SUB ASSY. 13 row	38	1-75A	WASHER distributor
	34633	BOX SUB ASSY. 16 row	39	1-87A	SHUT OFF
	34634	BOX SUB ASSY. 20 row	40	19747	SPROCKET ASSY. 16T
11	33117	LID ASSY. 10 row	41	1-80	BEARING
	33116	LID ASSY. 13 row		18596	NIPPLE grease - self tap
	28347	LID ASSY. 16 row	42	33254	CHAIN ½" extended 41L
	19712	LID ASSY. 20 row		24473	LINK connecting ext. ½"P
12	18656	NUT hex M6	43	19724	SPROCKET ASSY. 16T X ½"P
13	18504	WASHER spring Ø6		18663	SCREW cap. soc. hd. M10 x 10
14	34048	BRACKET support box	44	32993	SHAFT drive hex 10 row 475
15	18655	SETSCREW M6 x 16		32992	SHAFT drive hex 13 row 625
16	19569	BOLT hex M6 x 20		32994	SHAFT drive hex 16 row 970
17	34051	SUPPORT agitator		22866	SHAFT drive hex 20 row 1120
18	19739	HINGE		23443	BOSS sprocket
	19877	RIVET pop Ø3/16"		18663	SCREW cap. soc. hd. M10 x 10
19	30455	INDICATOR ASSY.	46	19733	BEARING
20	19877	RIVET pop Ø3/16"		18422	BUSH shaft distributor
21	19355	RIVET pop Ø5/32"	47	30026	CHUTE G. S. Box
22	19337	LATCH & STRIKE ASSY.	48	17589J1	PIN cotter Ø5 x 50
23	18872	SCREW pan hd. Ø5/32" x ½"	49	19749	SUPPORT bearing
	SWP14	WASHER spring Ø3/16"	50	33568	BRACKET ASSY. box L.H.
	18873	NUT hex 5/32"		33569	BRACKET ASSY. box R.H.
24	303-31	SETSCREW			
25	1-21	COLLAR agitator			

KITS —  
GRASS SEED BOX

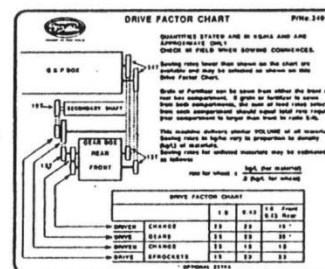
## KIT – GRASS SEED BOX CONT'D

ITEM	PART No	DESCRIPTION	ITEM	PART No	DESCRIPTION
51	13512	CLAMP M6			ASSEMBLIES
	17606J1	WASHER spring Ø16			
	18021	NUT hex M16	19734		BEARING ASSY. COMPLETE
52	18714	CLAMP M16			
	17606J1	WASHER spring Ø16	WF14		CRANK ASSY. AGITATOR
	18021	NUT hex M16			
53	19884	BOLT hex M8 x 16	34624		GRASS SEED BOX ASSY. 10 row
	18465	WASHER spring Ø8	34625		GRASS SEED BOX ASSY. 13 row
	FBW4	WASHER flat Ø3/8"	34626		GRASS SEED BOX ASSY. 16 row
	24184	WASHER flat Ø5/8"	34627		GRASS SEED BOX ASSY. 20 row
54	19722	SPROCKET ASSY. 38T x 1/2"P	32997		KIT – GRASS SEED BOX 10 ROW TYNE DRILL
	18663	SCREW cap. soc. hd. M10 x 10	32996		KIT – GRASS SEED BOX 13 ROW TYNE DRILL
55	CWS1	SCREW wood 1" x 6g csk	32995		KIT – GRASS SEED BOX 16 ROW TYNE DRILL
56	19731	SUPPORT chain tension	33580		KIT – GRASS SEED BOX 20 ROW TYNE DRILL
57	18912	BLOCK chain tension			
58	30258	CHAIN 1/2"P extended 69L			
	24473	LINK connecting 1/2"P ext.			
	22252	LINK cranked 1/2"P ext.			
59	18714	CLAMP M16			
	17606J1	WASHER spring Ø16			
	18021	NUT hex M16			

# JOHN SHEARER

## → **Tyne Drill**

### 3 **Coulter Tyne Drill** **Disc Drill**



**GRAIN & FERTILIZER CHART** Spacing at 160mm spacing. **Plots**

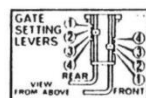
Spacings 100mm, 120mm, 140mm, 160mm, 180mm, 200mm, 220mm, 240mm, 260mm, 280mm, 300mm, 320mm, 340mm, 360mm, 380mm, 400mm, 420mm, 440mm, 460mm, 480mm, 500mm, 520mm, 540mm, 560mm, 580mm, 600mm, 620mm, 640mm, 660mm, 680mm, 700mm, 720mm, 740mm, 760mm, 780mm, 800mm, 820mm, 840mm, 860mm, 880mm, 900mm, 920mm, 940mm, 960mm, 980mm, 1000mm, 1020mm, 1040mm, 1060mm, 1080mm, 1100mm, 1120mm, 1140mm, 1160mm, 1180mm, 1200mm, 1220mm, 1240mm, 1260mm, 1280mm, 1300mm, 1320mm, 1340mm, 1360mm, 1380mm, 1400mm, 1420mm, 1440mm, 1460mm, 1480mm, 1500mm, 1520mm, 1540mm, 1560mm, 1580mm, 1600mm, 1620mm, 1640mm, 1660mm, 1680mm, 1700mm, 1720mm, 1740mm, 1760mm, 1780mm, 1800mm, 1820mm, 1840mm, 1860mm, 1880mm, 1900mm, 1920mm, 1940mm, 1960mm, 1980mm, 2000mm, 2020mm, 2040mm, 2060mm, 2080mm, 2100mm, 2120mm, 2140mm, 2160mm, 2180mm, 2200mm, 2220mm, 2240mm, 2260mm, 2280mm, 2300mm, 2320mm, 2340mm, 2360mm, 2380mm, 2400mm, 2420mm, 2440mm, 2460mm, 2480mm, 2500mm, 2520mm, 2540mm, 2560mm, 2580mm, 2600mm, 2620mm, 2640mm, 2660mm, 2680mm, 2700mm, 2720mm, 2740mm, 2760mm, 2780mm, 2800mm, 2820mm, 2840mm, 2860mm, 2880mm, 2900mm, 2920mm, 2940mm, 2960mm, 2980mm, 3000mm, 3020mm, 3040mm, 3060mm, 3080mm, 3100mm, 3120mm, 3140mm, 3160mm, 3180mm, 3200mm, 3220mm, 3240mm, 3260mm, 3280mm, 3300mm, 3320mm, 3340mm, 3360mm, 3380mm, 3400mm, 3420mm, 3440mm, 3460mm, 3480mm, 3500mm, 3520mm, 3540mm, 3560mm, 3580mm, 3600mm, 3620mm, 3640mm, 3660mm, 3680mm, 3700mm, 3720mm, 3740mm, 3760mm, 3780mm, 3800mm, 3820mm, 3840mm, 3860mm, 3880mm, 3900mm, 3920mm, 3940mm, 3960mm, 3980mm, 4000mm, 4020mm, 4040mm, 4060mm, 4080mm, 4100mm, 4120mm, 4140mm, 4160mm, 4180mm, 4200mm, 4220mm, 4240mm, 4260mm, 4280mm, 4300mm, 4320mm, 4340mm, 4360mm, 4380mm, 4400mm, 4420mm, 4440mm, 4460mm, 4480mm, 4500mm, 4520mm, 4540mm, 4560mm, 4580mm, 4600mm, 4620mm, 4640mm, 4660mm, 4680mm, 4700mm, 4720mm, 4740mm, 4760mm, 4780mm, 4800mm, 4820mm, 4840mm, 4860mm, 4880mm, 4900mm, 4920mm, 4940mm, 4960mm, 4980mm, 5000mm, 5020mm, 5040mm, 5060mm, 5080mm, 5100mm, 5120mm, 5140mm, 5160mm, 5180mm, 5200mm, 5220mm, 5240mm, 5260mm, 5280mm, 5300mm, 5320mm, 5340mm, 5360mm, 5380mm, 5400mm, 5420mm, 5440mm, 5460mm, 5480mm, 5500mm, 5520mm, 5540mm, 5560mm, 5580mm, 5600mm, 5620mm, 5640mm, 5660mm, 5680mm, 5700mm, 5720mm, 5740mm, 5760mm, 5780mm, 5800mm, 5820mm, 5840mm, 5860mm, 5880mm, 5900mm, 5920mm, 5940mm, 5960mm, 5980mm, 6000mm, 6020mm, 6040mm, 6060mm, 6080mm, 6100mm, 6120mm, 6140mm, 6160mm, 6180mm, 6200mm, 6220mm, 6240mm, 6260mm, 6280mm, 6300mm, 6320mm, 6340mm, 6360mm, 6380mm, 6400mm, 6420mm, 6440mm, 6460mm, 6480mm, 6500mm, 6520mm, 6540mm, 6560mm, 6580mm, 6600mm, 6620mm, 6640mm, 6660mm, 6680mm, 6700mm, 6720mm, 6740mm, 6760mm, 6780mm, 6800mm, 6820mm, 6840mm, 6860mm, 6880mm, 6900mm, 6920mm, 6940mm, 6960mm, 6980mm, 7000mm, 7020mm, 7040mm, 7060mm, 7080mm, 7100mm, 7120mm, 7140mm, 7160mm, 7180mm, 7200mm, 7220mm, 7240mm, 7260mm, 7280mm, 7300mm, 7320mm, 7340mm, 7360mm, 7380mm, 7400mm, 7420mm, 7440mm, 7460mm, 7480mm, 7500mm, 7520mm, 7540mm, 7560mm, 7580mm, 7600mm, 7620mm, 7640mm, 7660mm, 7680mm, 7700mm, 7720mm, 7740mm, 7760mm, 7780mm, 7800mm, 7820mm, 7840mm, 7860mm, 7880mm, 7900mm, 7920mm, 7940mm, 7960mm, 7980mm, 8000mm, 8020mm, 8040mm, 8060mm, 8080mm, 8100mm, 8120mm, 8140mm, 8160mm, 8180mm, 8200mm, 8220mm, 8240mm, 8260mm, 8280mm, 8300mm, 8320mm, 8340mm, 8360mm, 8380mm, 8400mm, 8420mm, 8440mm, 8460mm, 8480mm, 8500mm, 8520mm, 8540mm, 8560mm, 8580mm, 8600mm, 8620mm, 8640mm, 8660mm, 8680mm, 8700mm, 8720mm, 8740mm, 8760mm, 8780mm, 8800mm, 8820mm, 8840mm, 8860mm, 8880mm, 8900mm, 8920mm, 8940mm, 8960mm, 8980mm, 9000mm, 9020mm, 9040mm, 9060mm, 9080mm, 9100mm, 9120mm, 9140mm, 9160mm, 9180mm, 9200mm, 9220mm, 9240mm, 9260mm, 9280mm, 9300mm, 9320mm, 9340mm, 9360mm, 9380mm, 9400mm, 9420mm, 9440mm, 9460mm, 9480mm, 9500mm, 9520mm, 9540mm, 9560mm, 9580mm, 9600mm, 9620mm, 9640mm, 9660mm, 9680mm, 9700mm, 9720mm, 9740mm, 9760mm, 9780mm, 9800mm, 9820mm, 9840mm, 9860mm, 9880mm, 9900mm, 9920mm, 9940mm, 9960mm, 9980mm, 10000mm, 10020mm, 10040mm, 10060mm, 10080mm, 10100mm, 10120mm, 10140mm, 10160mm, 10180mm, 10200mm, 10220mm, 10240mm, 10260mm, 10280mm, 10300mm, 10320mm, 10340mm, 10360mm, 10380mm, 10400mm, 10420mm, 10440mm, 10460mm, 10480mm, 10500mm, 10520mm, 10540mm, 10560mm, 10580mm, 10600mm, 10620mm, 10640mm, 10660mm, 10680mm, 10700mm, 10720mm, 10740mm, 10760mm, 10780mm, 10800mm, 10820mm, 10840mm, 10860mm, 10880mm, 10900mm, 10920mm, 10940mm, 10960mm, 10980mm, 11000mm, 11020mm, 11040mm, 11060mm, 11080mm, 11100mm, 11120mm, 11140mm, 11160mm, 11180mm, 11200mm, 11220mm, 11240mm, 11260mm, 11280mm, 11300mm, 11320mm, 11340mm, 11360mm, 11380mm, 11400mm, 11420mm, 11440mm, 11460mm, 11480mm, 1150

LINKAGE DRIEL  
TYPE PRESSURES - are important

OVER INFLATION will mean flotation - increasing string depth variations as ground conditions vary

UNDER INFLATION can result in tyre failures

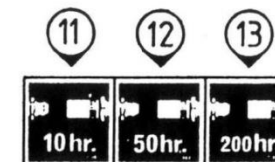
WHD SIZE	TYRE SIZE	PRESSURE
10 ROW	105 x 14 x 4 ply	140 kPa (120 psi)
12 ROW	105 x 14 x 4 ply	150 kPa (127 psi)
16 ROW	105 x 14 x 4 ply	165 kPa (124 psi)
18 ROW	105 x 14 x 4 ply	180 kPa (126 psi)



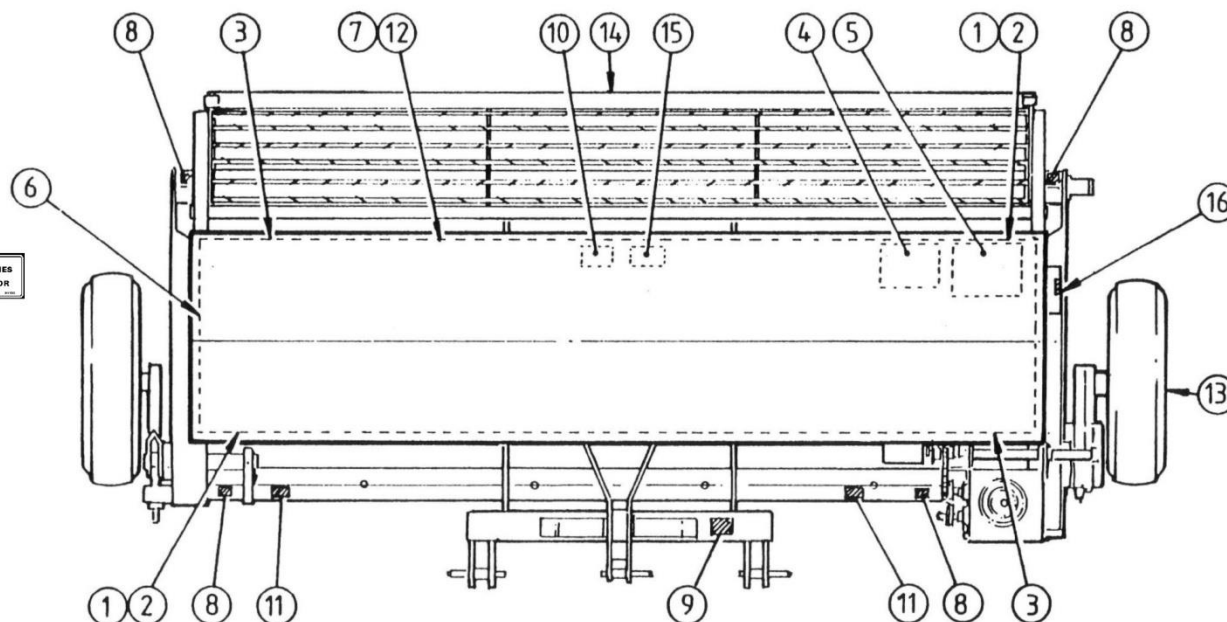
# slings



**WARNING**  
DO NOT CARRY BAGS  
OF GRAIN AND FERTILIZER



**⚠ DANGER**  
DO NOT RIDE ON THIS IMPLEMENT!



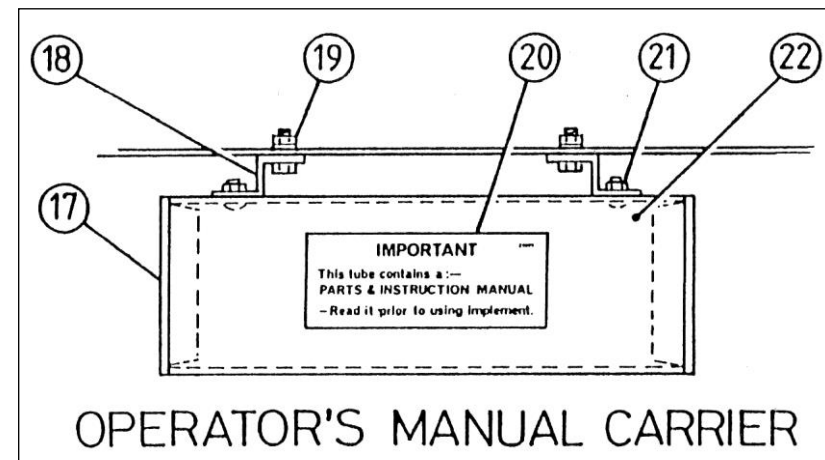
**DANGER** LOWER IMPLEMENT ONTO TYNES  
BEFORE UNHITCHING TRACTOR

**PROTECT YOUR EQUIPMENT**



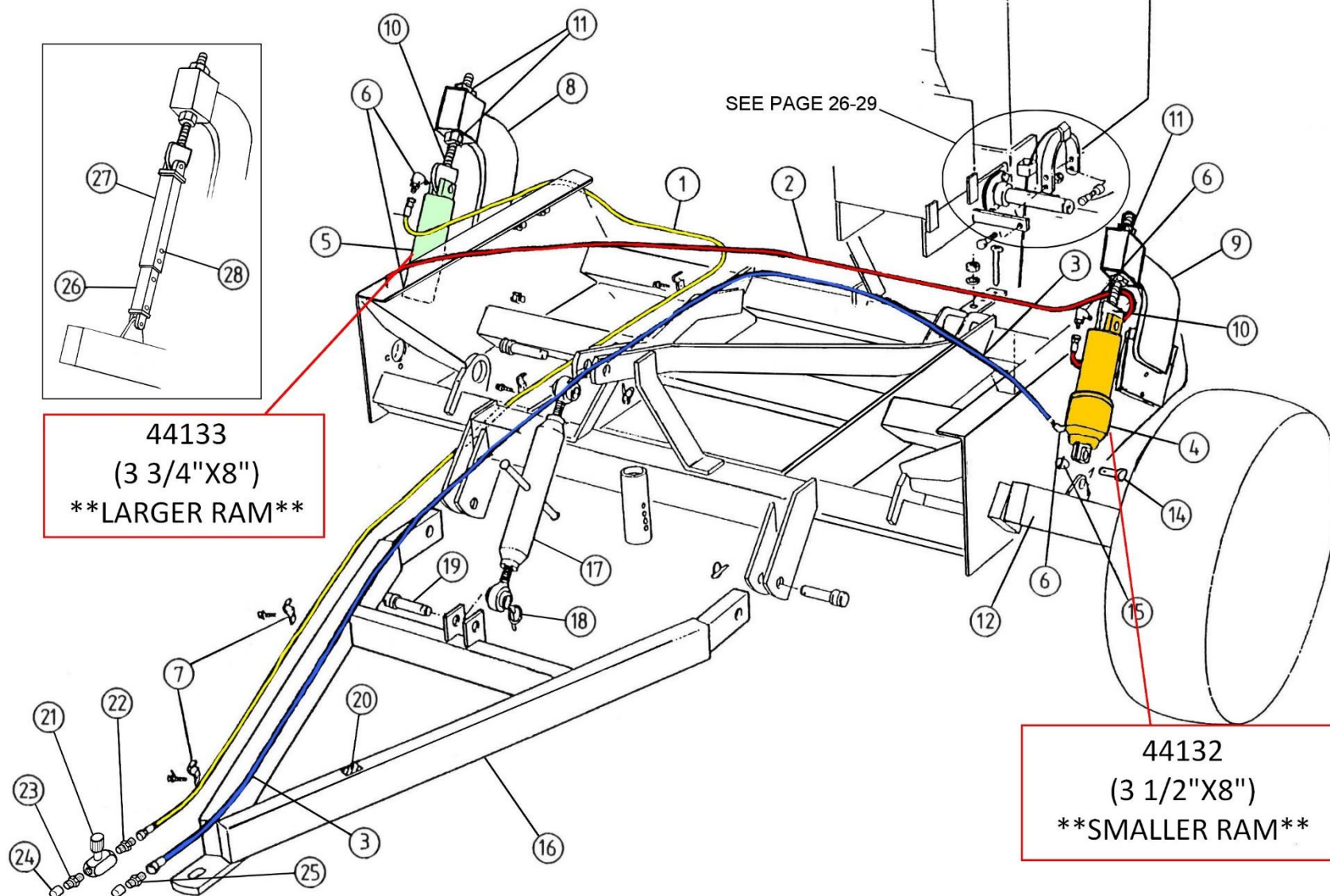
## TRANSFERS

ITEM	PART No	DESCRIPTION
1	36242	TRANSFER John Shearer trademark
2	15875J2	TRANSFER John Shearer
3	33109	TRANSFER Tyne Drill
or	33110	TRANSFER Coulter Tyne Drill
or	42464	TRANSFER Disc Drill
4	34091	TRANSFER Chart – drive factor
5	33759	TRANSFER Chart – grain & fertilizer
6	33269	TRANSFER Tyre pressures
7	22124	TRANSFER Gate setting levers
8	15854J1	TRANSFER Sling here
9	15968J1	PLATE J.S. model & serial no.
	16161J1	SCREW Drive 5/16" x 0.116 x 4U
10	15953J1	TRANSFER Warning do not carry bags
11	27463	TRANSFER Grease 10 hrs
12	27464	TRANSFER Grease 50 hrs
13	27409	TRANSFER Grease 200 hrs
14	22699	TRANSFER Do not ride on implement
15	15880J1	TRANSFER Protect your equipment
16	21532	KIT – CARRIER PARTS MANUAL Items 17 – 22
17	20813	PLUG Tube carrier parts manual
18	20810	SUPPORT Tube carrier parts manual
19	17986J1	SETSCREW Hex M6 x 12
	FBW2	WASHER Flat Ø1/4"
	18656	NUT Hex M6
20	20809	TRANSFER Parts manual
21	GB4	BOLT/NUT Gutter 1/4" BSW x 1/2"
22	20814	TUBE Carrier parts manual
23	34732	TRANSFER Lower onto tynes before disconnecting



OPERATOR'S MANUAL CARRIER

## HITCH KIT - PHASING RAM ASSEMBLY




## PASTURE TYNE/DISC DRILL - HITCH KIT

ITEM	PART No	DESCRIPTION	
	34623	HITCH KIT	10R
	34622	HITCH KIT	13R
	34621	HITCH KIT	16R
	34620	HITCH KIT	19R
1	24634Y	HOSE ASSY.	5150mm
	23192Y	HOSE ASSY.	5300mm
	23364Y	HOSE ASSY.	5700mm
	23365Y	HOSE ASSY.	5900mm
2	22946	HOSE ASSY.	3250mm
	24642	HOSE ASSY.	3760mm
	23781	HOSE ASSY.	4360mm
	24652	HOSE ASSY.	4920mm
3	23365B	HOSE ASSY.	5900mm
	23194B	HOSE ASSY.	6260mm
	23204B	HOSE ASSY.	6460mm
	23228B	HOSE ASSY.	6820mm
4	21356	RAM L/H	3 1/2" x 8" Ph. Cyl.
	(27022)	SEAL KIT FOR 21356)	
4B	44132	RAM L/H	3 1/2" x 8" Ph Cyl. – Ezy Fit
	(44134)	SEAL KIT FOR 44132)	
5	21357	RAM R/H	3 3/4" x 8" Ph. Cyl., (No Depth Stop)
	27019	DEPTH STOP	
	(27356)	SEAL KIT FOR 21357)	
	31437	RAM R/H	3 3/4" x 8" Ph. Cyl. DS (21357 & 27019)
5B	44133	RAM R/H	3 3/4" x 8" Ph Cyl (No DS) - EzyFit
	(27019)	DEPTH STOP)	
	(44135)	SEAL KIT FOR 44133)	
6	15248J1	ELBOW	3/4"UN x 3/4"JIC M/M 90deg
7	26825	CLIP	
	16940J1	BOLT	
8	37691	ANCHOR ASSY. R/H	
9	37692	ANCHOR ASSY. L/H	
10	21648	LUG ASSY	
11	17267J1	NUT, HEX	
12	35489	AXLE / CRANK ASSY. L/H	
13	35490	AXLE / CRANK ASSY. R/H	
14	27018	PIN, CLEVIS	Ram
15	22889	LYNCH PIN & CLIP	
16	34592	HITCH ASSY.	
	17 34597	TOP LINK ASSY.	CAT 2
	18 22889	PIN	Lynch & clip
	19 32741	PIN	Hitch CAT 2
	20 34732	TRANSFER	Lower onto tynes before disconnecting
	21 15503J1	VALVE	Needle 3/8" BSPT female
	22 17257J1	NIPPLE	3/8" BSPT x 3/4" JIC
	23 15525J1	NIPPLE	1/2" BSP x 3/8" BSP
	24 15534J1	CAP	1/2" BSP malleable
	25 14598J1	NIPPLE	1/2" BSP x 3/4" JIC
	26 37695	BAR	Telescopic – Inner Assembly
	27 37696	BAR	Telescopic – Outer Assembly
	28 27018	PIN	Clevis

Note: Items 26, 27 and 28 are used in place of the hydraulic rams (item 4 and 5) when the hitch kit is not supplied.

NOTE: SOME PART NUMBERS HAVE A LETTER (R, G, Y OR B) AT THE END. THIS INDICATES THAT THE PIPE OR HOSE IS COLOUR CODED WITH A COLOURED BAND AT ONE END. THIS COLOUR CODING IS TO AID THE USER IN IDENTIFYING THE SEPARATE HYDRAULIC CIRCUITS SO THAT THEY CAN BE CORRECTLY CONNECTED TO THE TRACTOR AND ENSURE SAFE OPERATION.

SEE THE TABLE BELOW FOR THE RELATIONSHIP BETWEEN COLOUR AND HYDRAULIC CIRCUIT.



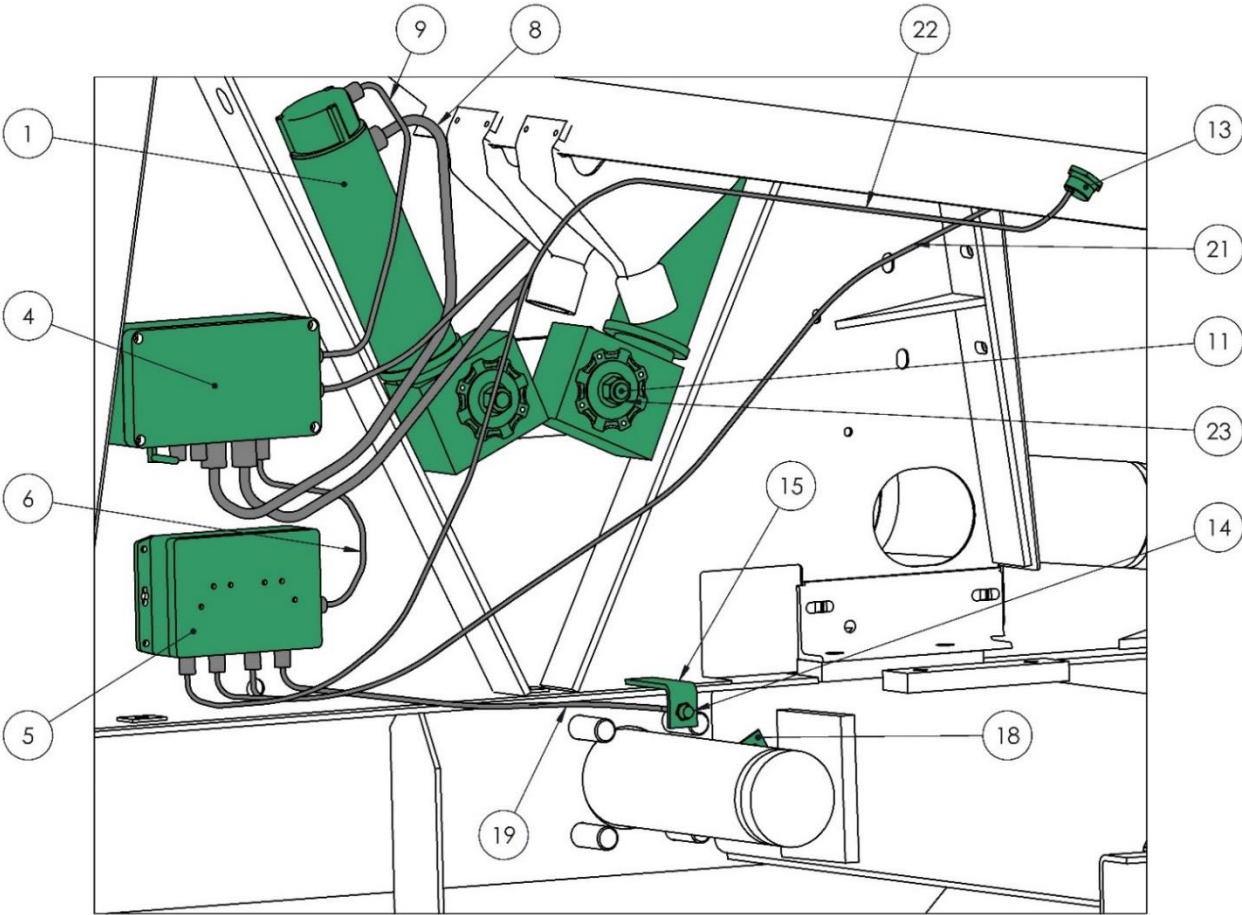
**WARNING**

THE HYDRAULICS (OTHER THAN THE QUICK-COUPLING CONNECTION TO THE TRACTOR) MUST BE CONNECTED BY A QUALIFIED HYDRAULICS TECHNICIAN AND THE OPERATION OF ALL HYDRAULIC FUNCTIONS CHECKED IN A CONTROLLED AND SAFE SITUATION. THIS IS TO ENSURE THAT EVERYTHING IS CORRECT BEFORE THE MACHINE IS USED. ANY MODIFICATIONS TO THE HYDRAULICS MADE AFTER THE MACHINE LEAVES THE FACTORY MUST BE MADE BY A QUALIFIED PERSON AND IT IS THE RESPONSIBILITY OF THAT PERSON TO ENSURE THEY ARE CORRECT AND SAFE.

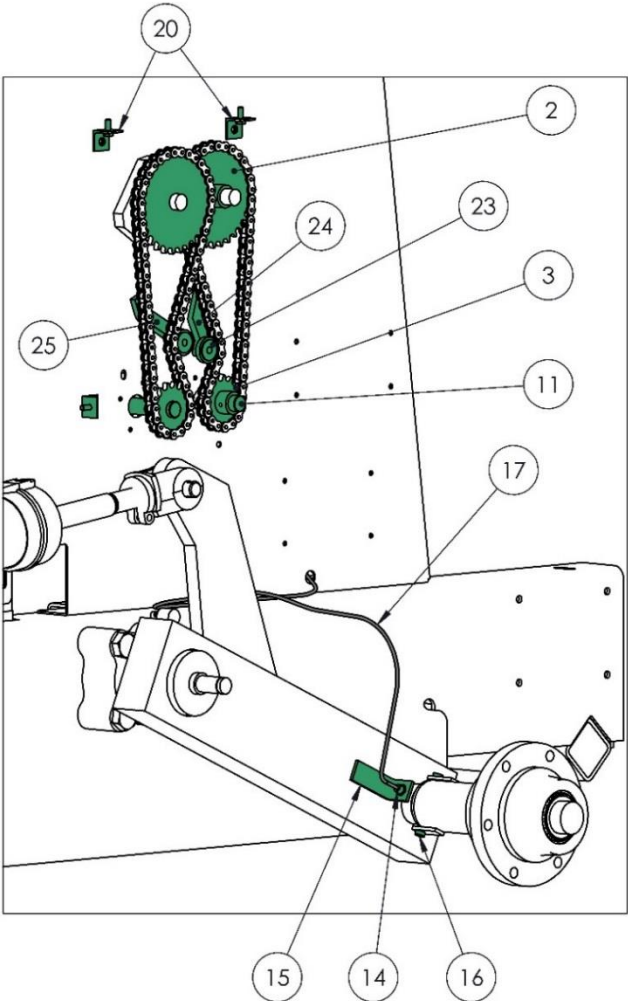
IT IS THE RESPONSIBILITY OF WHOEVER CONNECTS THE MACHINE TO THE TRACTOR TO ENSURE THAT IT IS CONNECTED CORRECTLY.

LETTER	COLOUR	HYDRAULIC CIRCUIT
Y	YELLOW	MACHINE UP
B	BLUE	MACHINE DOWN

ELECTRIC DRIVE COMPONENTS



INSIDE VIEW



OUTSIDE VIEW

**ELECTRIC DRIVE COMPONENTS**

ITEM	Part No	DESCRIPTION	QTY.	ITEM	Part No	DESCRIPTION	QTY.
1	44977	MOTOR ASSEMBLY	2		19431	SETSCREW, M10x25	2
2	46859	SPROCKET, 30T	2		FBW4	WASHER, 10mm	2
3	46873	SPROCKET, 15T	2	24	46378	TENSIONER - DRIVE	1
4	46445	BOX, MAIN CONTROL	1		18805	SETSCREW, M12x30	1
5	46446	BOX ASSY, SPLITTER	1		18414	NUT, M12	1
6	-	CABLE, LINK (PART OF 46446)	1		FBW6	WASHER, 12mm	1
7	-	CABLE, MOTOR (PART OF 44977)	1	25	46378	TENSIONER - DRIVE	1
8	-	CABLE, MOTOR (PART OF 44977)	1		18805	SETSCREW, M12x30	1
9	-	CABLE, ENCODER (PART OF 44977)	1		18414	NUT, M12	1
10	-	CABLE, ENCODER(PART OF 44977)	1		FBW6	WASHER, 12mm	1
11	45927	SHAFT, MOTOR	2				
12							
13	46013	SENSOR, BIN LEVEL (if fitted)	2			<u>EXTRA/ALTERNATE SPROCKETS</u>	
14	44975	SENSOR, HALL EFFECT	2		46874	SPROCKET, 10T (FOR USE ON 3 : 1 RATIO)	2
15	46356	BRACKET, SENSOR	2		46873	SPROCKET, 15T (FOR USE ON 1 : 1 RATIO)	2
16	46359	MAGNET	3				
17	-	CABLE, WHEEL SENSOR (PART OF 44975)	1				
18	46355	BRACKET, MAGNET	1				
19	-	CABLE, "TYNE-UP" (PART OF 44975)	1				
20	26147	BRACKET ASSY, SUPP'T GUARD	3				
21	-	CABLE, BIN LEVEL (PART OF 46013)	1				
22	-	CABLE, BIN LEVEL (PART OF 46013)	1				
23	18668	ROLLER, NYLON	2				

## **CALIBRATION FACTORS FOR FARMSCAN JACKAL AREA METER**

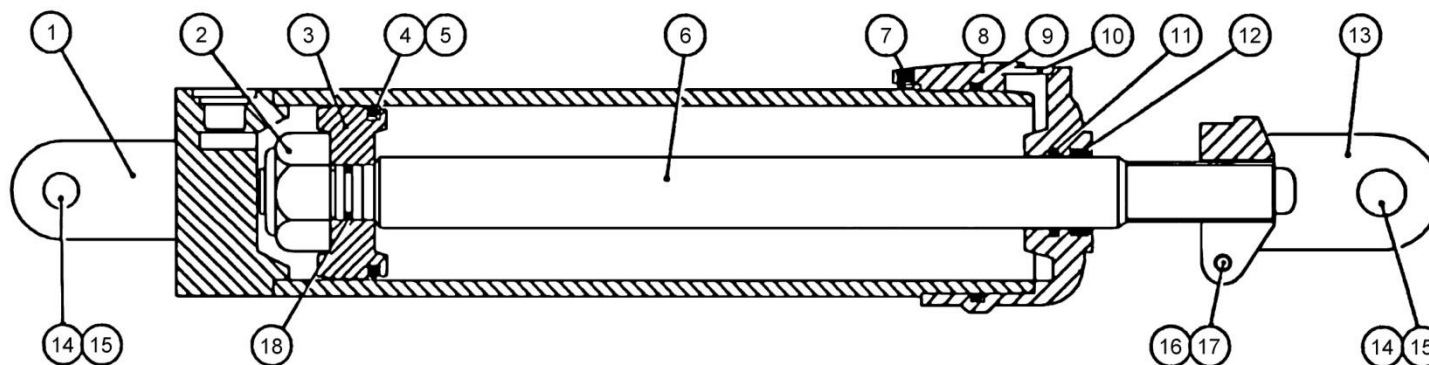
USE THE FOLLOWING SETTINGS FOR JOHN SHEARER MACHINES

(See page 21 of Farmscan Manual)

**NOTE:**

- The Area Meter setup is described in the Jackal manual (Section 5.1 page 21) and requires calibrating the machine over a measured distance.
- The width dimension is shown in the table to the right.

<b>IMPLEMENT TYPE</b>	<b>IMPLEMENT SIZE</b>	<b>TYRE</b>	<b>Width</b>
6.90 TCD	21 ROW	16.9 x 28 x 6P	3.78
	27 ROW	18.4 x 30 x 8P	4.86
	33 ROW	23.1 x 30 x 8P	5.94
4.90 TCD	27 ROW 4 BIN	23.1 x 30 x 8P	4.86
	20 ROW	14.9 x 24 x 8P	3.60
	20 ROW	16.9 x 28 x 6P	3.60
	24 ROW	16.9 x 28 x 6P	4.32
	28 ROW	18.4 x 30 x 8P	5.04
PASTURE DRILL	24 ROW 4 BIN	18.4 x 30 x 8P	4.32
	10 ROW	235/75 x 15 x 4P	1.80
	13 ROW	235/75 x 15 x 4P	2.34
	16 ROW	235/75 x 15 x 4P	2.88
	19 ROW	235/75 x 15 x 4P	3.42



ITEM	21356 3 ½" x 8" PHASING	21357 3 ¾" x 8" PHASING	DESCRIPTION
1	27128	27347	BASE/BARREL
2	29065	29065	NUT Nyloc 1" UNF
3	27006	27351	PISTON
4	27008	*27352	SEAL Piston
5	42851	42852	WEAR RING Piston
6	27045	27097	ROD Piston
7	28665	28665	BOLT Hex M8 x 25 nylon
8	27013	27354	GLAND
9	*27007	*27353	'O' RING Gland
10	27083	27083	PLUG, PLASTIC ¾" UN – not supplied if attached to machine
11	*27015	*27084	SEAL Gland
12	*27014	*16181J1	WIPER Rod
13	27023	27023	CLEVIS
14	27018	27018	PIN
15	22889	22889	LYNCH PIN & CLIP
16	26443	26443	SCREW Soc. hd. cap - M10 x 45
17	17777J1	17777J1	NUT Hex - M10
18	*29064	*29064	'O' RING Piston rod
	27022	27356	SEAL KIT * DENOTES SEAL KIT PARTS

## TROUBLE SHOOTING

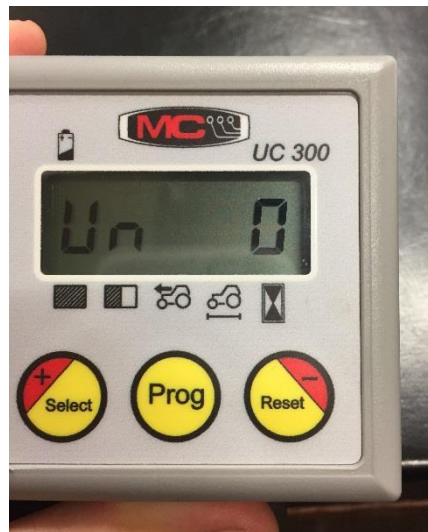
PROBLEM	CAUSE	REMEDY
DISTRIBUTORS WILL NOT TURN	Clutch not engaged (if trailing hitch kit fitted) Gearbox not engaged Gearbox shear pins broken Secondary shaft shear pins broken	Check clutch Check gearbox Replace Replace
FERTILIZER RATE VARIES	Fertiliser build-up on distributors	Clean distributor rollers
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 19)
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



## UC 300 Hectaremeter (P/N: 44430) Calibration

### 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

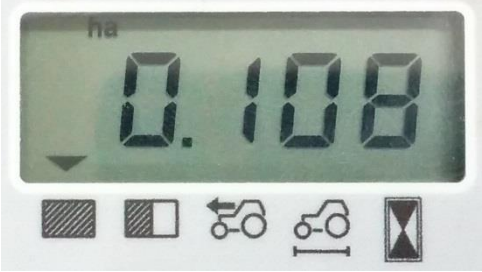

displayed.




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.

	<p>The first figure is the <b>total counter</b> 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.</p>
	<p>The second picture is the <b>partial counter</b> 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</p>

	<p>The third picture shows you how fast you are going in km/h.</p>
	<p>The fourth figure tells you how much <b>distance</b> has been covered by the machine</p>
	<p>The fifth and final figure is the <b>working hours</b> covered which tells you how many hours you have worked</p>

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

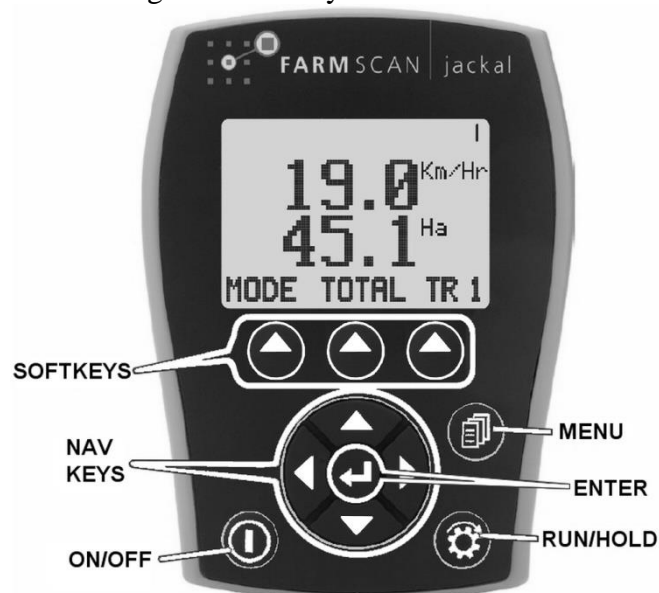
## JACKAL (42978) CALIBRATION

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.



(For machines produced prior to May 2011)

## **CALIBRATION FACTORS FOR FARMSCAN HECTAREMETER**

(See page 9 of Farmscan “Installation and Operating Instructions” booklet)

**NOTE:**

- Settings are for shaft sensor installation with two magnets mounted on the secondary shaft.
- For improved accuracy follow procedure outlined on page 9 of the “Installation and Operating Instructions” booklet (Shaft Sensor section)

USE THE FOLLOWING SETTINGS FOR JOHN SHEARER MACHINES

IMPLEMENT TYPE	IMPLEMENT SIZE	TYRE	H1	H2
6.90 TCD	21 ROW	16.9 x 28 x 6P	5133	3.78
	27 ROW	18.4 x 30 x 8P	5255	4.86
	33 ROW	23.1 x 30 x 8P	5168	5.94
	27 ROW 4 BIN	23.1 x 30 x 8P	5168	4.86
4.90 TCD	20 ROW	14.9 x 24 x 8P	5255	3.60
	20 ROW	16.9 x 28 x 6P	5133	3.60
	24 ROW	16.9 x 28 x 6P	5133	4.32
	28 ROW	18.4 x 30 x 8P	5255	5.04
	24 ROW 4 BIN	18.4 x 30 x 8P	5190	4.32
PASTURE DRILL	10 ROW	235/75 x 15 x 4P	5132	1.80
	13 ROW	235/75 x 15 x 4P	5132	2.34
	16 ROW	235/75 x 15 x 4P	5132	2.88
	19 ROW	235/75 x 15 x 4P	5132	3.42

