Thank you for buying a Bunning spreader. For your Bunning guarantee please fill in the form below and return it to G.T. Bunning Ltd.

LOWLANDER WARRANTY REGISTRATION FORM	
Customer Name	
Company Name	
Address	
Post Code	
Telephone	
Fax	
Email	
Machine ID Number	
ID No. Example	01/01/9999/U/MSL75
Date of delivery	
Dealer	

Important Data Protection Information.
We or our business partners may contract you by mail, telephone, e-mail or other electronic messaging services with offers of goods and services or information that may be of interest to you.
By providing us with your telephone number or e-mail address you consent to being contacted by these methods.
If you do not wish to receive marketing information by these methods from GT Bunning or our business partners please tick this box. ☐

GT Bunning & Sons Ltd
The Green
Gressenhall, Dereham
Norfolk
NR20 4DT ENGLAND

Bunning Lowlander Mk4

Pre-Delivery Inspection sheet

The purpose of this document is to ensure that the operator, hirer or owner is fully appraised of all safey guidelines and operating and maintenance methods before taking possession of the machine.

GENERAL		
1	Ensure the operator receives a copy of the instruction & spares manual.	
2	Draw attention to the safety decals located on the machine.	
3	Explain the functions of the machine.	
4	Locate, identify & explain spreader to towing vehicle air ,hydraulic and electric connectors.	
5	Check oil level of floor drive gearbox and auger drive gearbox.	
6	Explain how to cut the PTO guard to size and where to fit the safety chains.	

LIGHTING		
12	Check operation of lights	
13	Check condition of cabling & 7 pin connector.	

BRAKING		
7	Check operation of parking brake.	
8	Check operation of service brake.	

HYDRAULICS & PNUEMATICS		
14	Check hydraulic hose condition especially brake hoses & connectors.	
15	Check hydraulic cylinder for leaks and damage.	
16	Check air system hose condition and connectors. (Option).	

STRUCTURE		
9	Check condition of body, drawbar & augers	
10	Check condition of all cylinders & pins.	
11	Grease all points if necessary.(see manual).	

WHEELS & TYRES		
17	Check condition of tyres.	
18	Ensure tyre pressures are correct for speed & load.	
19	Check wheel nut torque. (Check daily for first week of use)	

DATE:	SIGNATURE	
I have received a copy of the instruction & spares manual and understand the method of operation, the safety requirements and the maintenance methods.		OPERATOR
I have given basic instruction in the method of operation, the position of safety stickers and methods of maintenance, and ensured that the owner/operator is in possession of the Manual.		DEALER

CHASSIS SERIAL NUMBER.....

**** THIS MANUAL IS THE ORIGINAL INSTRUCTIONS ****

PREFACE

The instructions in the manual must be read carefully and followed by all persons concerned with the operation, maintenance, repair or inspection of this machine in order to prevent accidents.

Especially read sections relating to safety, operating instructions and maintenance.

The use of spare parts, accessories and additional equipment which is not originally manufactured checked and release by GT Bunning Ltd can have a negative effect on specific design features of the machine and on its operability. This may impair its operating safety, as well as safety at work for the operator and could invalidate warranty.

GT Bunning will in no way be liable for damage or personal injury caused by the use of other than original GT Bunning parts, accessories and additional equipment.

Technical specifications, dimensions and weights are given with the usual tolerances **(+ or -2%)**.

GT Bunning Ltd operates a policy of continual improvement; as such some items in this manual may differ slightly from that of your machine. GT Bunning reserves the right to make changes to the machine or manual without notice. If in any doubt regarding any aspect of the design or operation of this machine contact GT Bunning Ltd or your GT Bunning Ltd agent for clarification.

HOW TO USE THIS MANUAL

The manual contains sections that cover all of the following, Safety, Operating instructions, Maintenance, Specifications and Technical data. Refer to the contents pages for the relevant page number.

Before use of the machine familiarise yourself with the manual and its contents

The machine should only be operated, serviced and repaired by persons who are familiar with the machine and who have read and understood this manual, and are informed of the risks.

This manual should stay with the machine/operator at all times.

OPERATING ON PUBLIC ROADS

Before operating on public roads the spreader must be correctly connected to the towing vehicle, the lights must be connected and function of the lighting equipment must be checked. The braking system of the spreader must be correctly connected to the towing vehicle, check for correct operation. **Remember, max gross combination weight is 24390Kg and maximum gross spreader weight is 18290kg. If your spreader is wider then 2.55m and up to 3.5m your maximum speed is 20 mph, above 3.5m is 12 mph.**

INTRODUCTION

This manual provides information on the use, adjustment and servicing of the GT Bunning range of Lowlander spreader.

Following the advice on the correct maintenance and servicing procedures will ensure maximum performance and a long service life of your machine.

Failure to carry out maintenance work correctly or incorrect operation will result in poor machine efficiency and loss of valuable time.

By ensuring the correct operation, and by carrying out maintenance and service work with care, you will be able to make full use of the technical knowledge and the experience with which your Lowlander spreader was originally designed.

DISPOSAL

Upon completion of the useful life of the machine, all parts can be disposed of at a suitable waste disposal facility.

Care must be taken if oxy-acetylene cutting equipment is to be used.

The wheels and tyres, hydraulic cylinders, valves and hoses must be removed before using cutting equipment.

Oil must be drained collected and disposed of in accordance with current legislation.

Electrical components must be disposed of in accordance with the relevant legislation.

G.T.BUNNING & SONS LIMITED

SPREADERS, TRAILERS & TANKS

Telephone: 01362 860352
Fax: 01362 860930

E-mail: sales@gtbunning.co.uk
www.gtbunning.co.uk

Registered Office:
Smithy House,
TheGreen
Gressenhall, Dereham
Norfolk, NR20 4DT

EC MACHINERY DIRECTIVE
2006/42/EC
DECLARATION OF CONFORMITY

We hereby ceritify that the machinery stipulated below complies with all the relevant provisions of the EC Machinery Directive 2000/42/EC & regulations adopting the Directive.

Modifications to this machine without prior written approval from the undersigned will render the declaration null & void.

Machine Description: Unbalanced trailer for the carriage & application of manure

Machine Type: Agricultural manure spreader

Model: **Lowlander MSL**

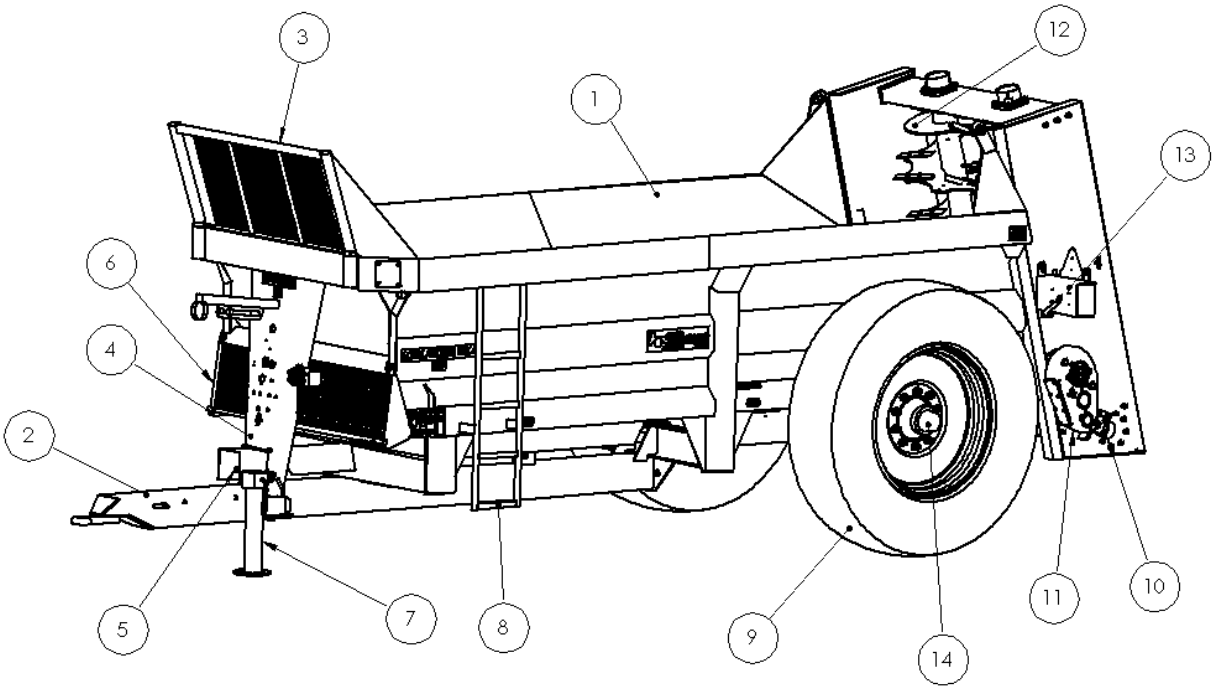
Serial Number: / / /U/MSL

Standards used.
BS ISO 4251-1:2005+A1:2012, BS EN ISO 12100-1:2010, BS EN ISO 4254-1:2009, BS EN 690: 1994+A1:2009, BS EN 15811: 2009, BS EN ISO 13857:2008, BS EN 349:1993+A1:2008, BS EN 12965:2003+A2:2009, BS EN 953:1997+A1:2009, BS EN ISO 5674:2009, BS ISO 4413:2010.

Signed Greg Shepherd
Name: Greg Shepherd

Date :
Position: Joint Managing Director

MACHINE OVER VIEW



KEY	QTY	DESCRIPTION
1	1	BODY
2	1	DRAWBAR
3	1	STONE GUARD
4	1	FRONT PILLAR
5	1	PTO DRIVE LINE
6	1	FINGER GUARD
7	1	SUPPORT LEG
8	1	LADDER
9	2	WHEEL & TYRE ASSEMBLY
10	1	AUGER GEARBOX
11	1	FLOOR DRIVE GEARBOX, MOTOR AND VALVE
12	2	AUGER
13	2	LAMP ASSEMBLY
14	1	AXLE

1. OPERATING INSTRUCTIONS

The intended purpose of the vehicle is to tow and spread manure and other materials.

1.1 Hitching to tractor.

Attach spreader to pick-up hook or static hitch stub. Do not attach to swinging drawbar or pick-up hook in extended position.

Remove screwjack from drawbar (if fitted) and locate in transport position provided at the front of spreader.

Turn off the tractor and remove key before fitting PTO.

Slide the tractor end of the PTO shaft out and fit to the tractor PTO. Lay the two halves of the PTO shaft alongside one another and mark the required lengths, allowing for turning. Maximum pull out of 300mm (12 inches) of the 2 shafts. Cut to size and clean burrs at each end of shaft **KEEP SHAFT SLIDING SURFACES GREASED.** Attach chains fitted to PTO guard (to prevent rotation of guard) to suitable point on the tractor and hole provided on metal cover over PTO shaft on spreader. Ensure that the spring loaded pins in splined yokes are fully locked in position. Always disengage the PTO when turning sharply to avoid damage to shafts universal joints. Where a wide angle PTO is fitted attach this end to the tractor. Please refer to the DVD for more information.

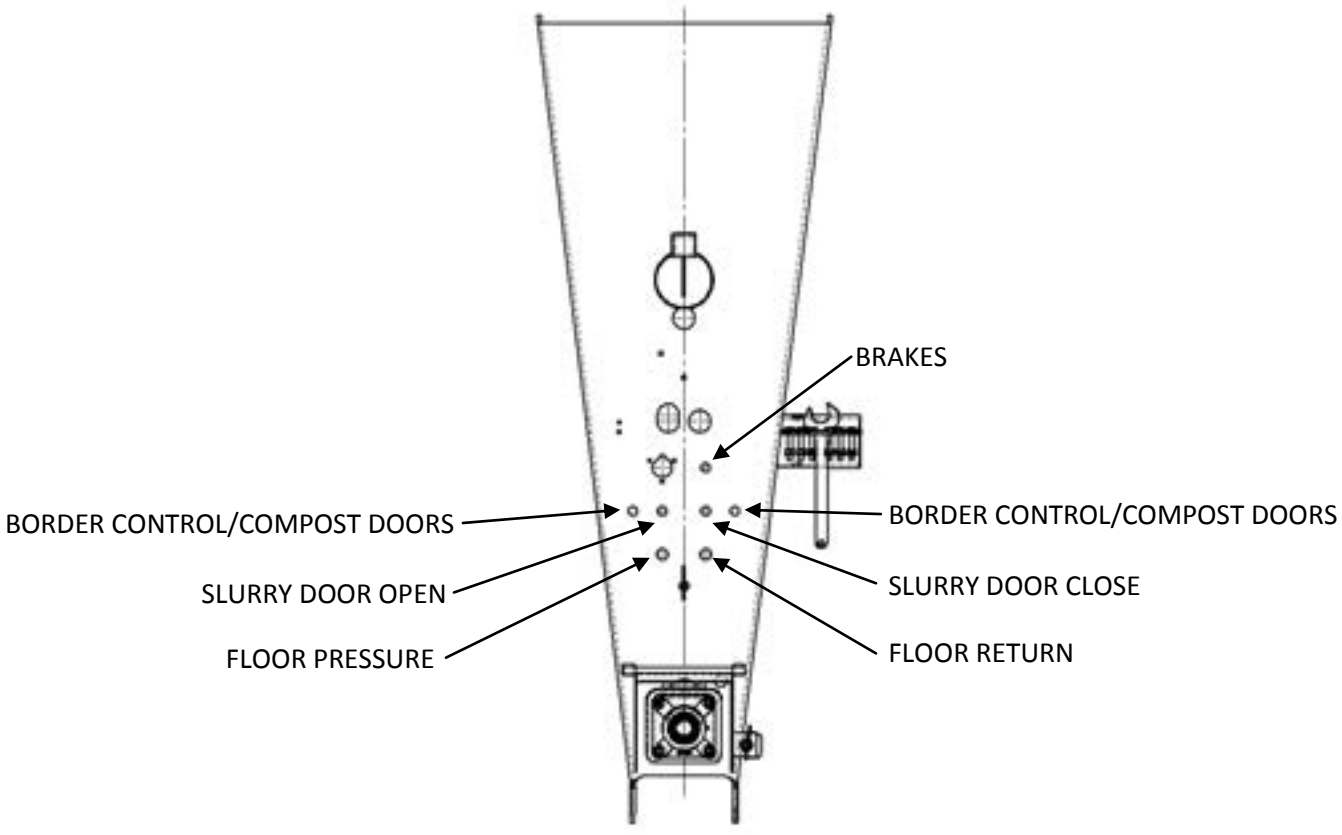
1.2 Coupling of hydraulic hoses.

Fit the two hoses for the floor drive hydraulic motor (one to feed and one for return) to double spool valve on tractor. Choose position of spool lever for ease of control to obtain floor movement to rear. Reversing of floor is done by selecting the opposite position of the hydraulic control lever. Universal quick release probes are fitted as standard to hose ends. Mark hose as required to assist in the future coupling for correct position of feed and return. When a slurry door is fitted connect the hydraulic hoses to a double spool valve and select the hose positions to suit the operator to open and close the door.

Fit hydrualic brake hose to trailer brake valve on tractor (male fitting).
A universal female brake coupling is fitted as standard to the hose ends.

N.B CHECK DIRECTION OF FLOOR BEFORE LOADING.
Do not run floor in reverse with full load. Speed of floor in reverse is at **MAXIMUM**.
Only reverse floor for a few seconds.

Ensure the braking system is connected and that it functions correctly before moving.



1.3 Hand brake.

The handbrake is a multi-stroke ratchet type. To apply the handbrake give the handle short pumps (a clicking of the ratchet will be heard) until resistance occurs and subsequent tightening of the cable. To release the handbrake give the handle one sharp movement in the opposite direction This releases the ratchet mechanism.

1.4 Brake adjustment.

Brake adjustment is carried out at the hydraulic brake ram unit fitted to each wheel axle giving independent adjustment to each wheel. To adjust, jack up the spreader, slacken the locknut in the set screw and turn the set screw clockwise. (See section 7)
BEWARE NOT TO OVER ADJUST. Make sure the wheel can rotate freely.

1.5 Floor adjustment.

When adjusting floor chains ensure that the adjustment is carried out equally to both sides.

DO NOT ALLOW THE CHAINS TO BECOME TOO SLACK.
ADJUST CHAINS AFTER A FEW LOADS.
KEEP CHAINS ADJUSTED CORRECTLY AT ALL TIMES, A GUIDE IS TO BE ABLE TO SEE A WHOLE LINK BELOW FRONT SIDE OF THE SPREADER i.e. FROM CENTRE TO FRONT POST.

Reverse floor
The floor should only be reversed for very short periods, to clear the augers.
Do not reverse if the floor chain is slack, tighten floor chain first.

1.6 Method of operation.

1) Select speed of floor required on control valve.
2) Engage PTO to power the rear augers – tractor engine revs low.
3) Raise slurry door if fitted.
4) Engage spool valve to power floor to rear.

1.7 Slurry Door

As the load height reduces lower the slurry door to cover the augers. This will help prevent foreign objects being thrown forward.

1.8 INSTALLATION AND GENERAL USE OF DETACHABLE SPINNER DECK

GENERAL USE

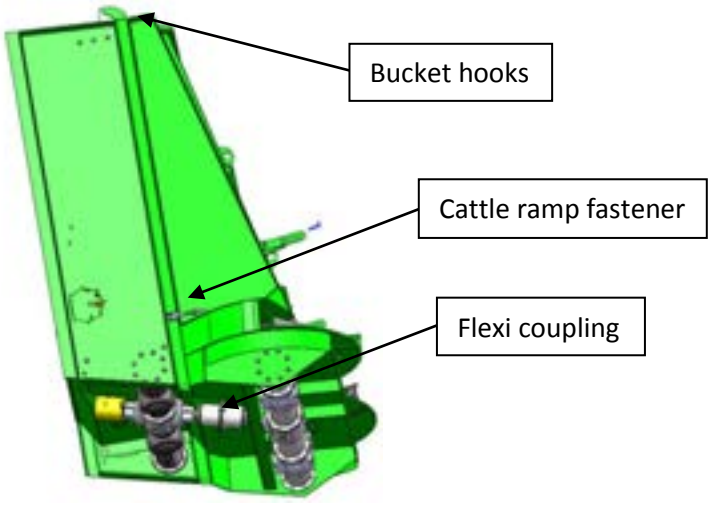
The detachable spinner deck is designed purely for wider spread patterns and low application rates of between 1 and 3 tonnes per acre (2 ½ to 7 ½ tonnes per hectare). It must **NEVER** be used to spread long straw based material or heavy applications beyond 5 tonnes per acre.

INSTALLATION

When fitting or removing the spinner deck assembly great care must be taken not to endanger an assistant in any way, especially when raising or lowering the unit. Persons must not be put at risk.
Before making any adjustments, fitting or removing attachments, the tractor that the spreader is attached to must be switched off and the key removed.

FITTING THE SPINNER DECK

1 Remove guard from output spigots of the auger gearbox.
2 Slide one half of 'flexi coupling' onto the shaft, through shaft of spinner gearbox.
3 Slide other half of the 'flexi coupling' on the input spigot of the spinner gearbox.
4 Using approved lifting apparatus lift the complete spinner deck assembly using lower lifting eye on canopy.
5 Offer the assembly to rear of the machine and lower into position. Firstly locate the 'bucket hooks' of deck into clevises at the top rear corners of the spreader.
6 Hinge hook bolt No. 14 into anchors and tighten.
7 Fit and tighten 4 bolts to join the two halves of the flexi coupling.
8 The machine is now ready for use with the spinner deck.



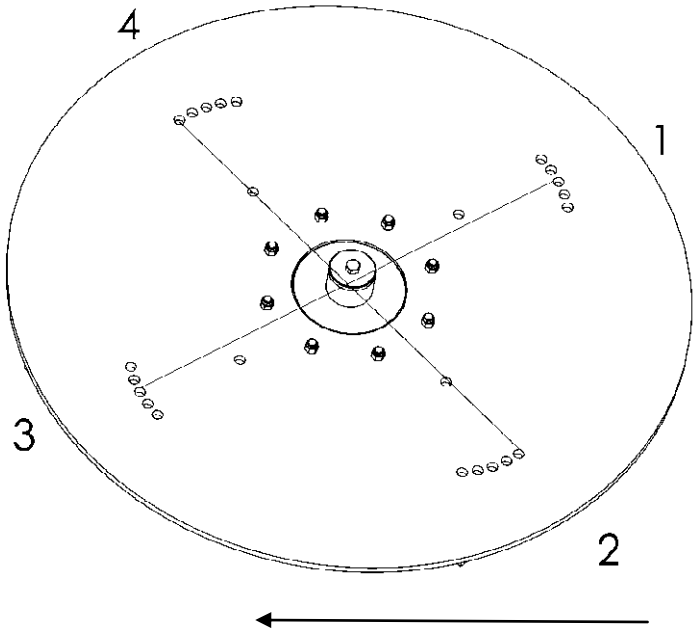
REMOVING THE SPINNER DECK

1 Clean all material from spinners and decks.
2 Remove 4 bolts from the flexi coupling.
3 Loosen hook bolts No. 14 and hinge back to clear anchors.
4 Using approved lifting apparatus lift from lower lifting eye on the canopy firstly pulling the bottom of the deck assembly away from rear of spreader to the clear auger blades.
5 Lift the assembly clear of the spreader and stand on level ground with the front of the assembly close to, or against a wall or stable object.
6 Fit the shaft cover to the output spigot of the spreader auger gearbox.
7 The machine is now ready for use without spinner deck.

ADJUSTMENT OF CANOPY & BLADES

<u>For the best results</u>

1 Fix the canopy on the inner positions for light materials i.e. Poultry manure.
2 For heavy material i.e. slurry or sludge adjust canopy out as far as possible so as not to deposit material beyond the deck into gaps between the discs.
3 To increase the width of the spread pattern adjust the angle of blades forward on the disc.
4 If the spread pattern is light immediately behind the machine adjust the angle of the blades back.
5 It is possible to achieve an even spread by adjusting the blades, as opposing pairs. i.e. Blade 1 and 3 position 3 and blade 2 and 4 in position 1.



LEFT HAND SPINNER

Direction of spin

1.9 OPERATING INSTRUCTIONS FOR HORIZONTAL BEATERS

General use

The horizontal beater with spinner discs is designed primarily for wider spread patterns and lower application rates for product such as chicken and turkey manure, however long straw based materials can be spread effectively. It must be expected that application rates maybe slower than a vertical auger spreader.

Adjustments for spread patterns

The position of the lower section of rear canopy and the angle of the blades on the discs will affect the spread pattern and width.

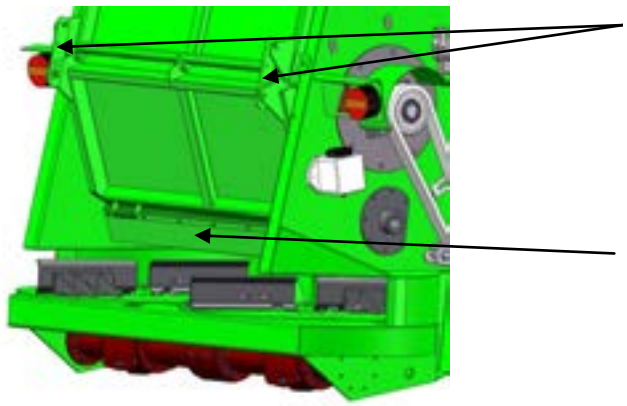
Select a ho le position that places the rubber strip over the middle of the discs for a lighter application rates and wider widths. Adjust the hole position to move the rubber strip rearwards for higher application rates e.g. for straw based materials. Excessive rearward adjustment will cause the material to miss the discs and hit the ground without being spread.
Each spinning disc is supplied with 2 blades on and the others loose; it has been proven that many materials are spread more effectively with just 2 blades per disc.

1 To increase the width of the spread pattern adjust the angle of blades forward on the disc.

2 If the spread pattern is light immediately behind the machine adjust the angle of the blades back.

3 With 4 blades fitted it is possible to achieve an even spread by adjusting the blades, as opposing pairs. i.e. Blade 1 and 3 in position 3 and blade 2 and 4 in position 1.

4 When adjusting angle use the 2nd set of holes on the blade to keep the tip of the blade on the edge of the disc



2. MAINTENANCE

2.1 Lubrication of spreader.

DAILY GREASE	Front and rear floor shaft
	Overrun clutch to front of main 'T' gearbox
	Hitch eye
WEEKLY GREASE	All sealed bearing – 1/2 pump of grease gun maximum.

TAKE CARE NOT TO DAMAGE GREASE SEAL BY OVERGREASING

Sliding tube of PTO shaft.
PTO universal joints – **Follow manufacturers instructions.**
Screwjack top (when fitted)
Shearbolt bush

MONTHLY	Check gearbox oil levels
ANNUALLY	Change oil to all gearboxes
TYPE OF LUBRICATION GREASE	Multi purpose
GEARBOXES	EP90

2.2 Servicing intervals

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication or oil changes.

IMPORTANT: *ENSURE CV JOINT IS GREASED BEFORE FIRST USE!*
TAKE CARE NOT TO DAMAGE SEALS BY OVERGREASING.

DAILY (8 HRS)

1. Check for hydraulic fluid leaks and damaged hoses.
2. Grease Front and Rear floor chain shaft bearings.

a. Front shaft.
- Remove front Finger Guard to access bearings.

b. Rear Shaft.

- Grease both left and right bearings.

LEFT BUSHING RIGHT BUSHING

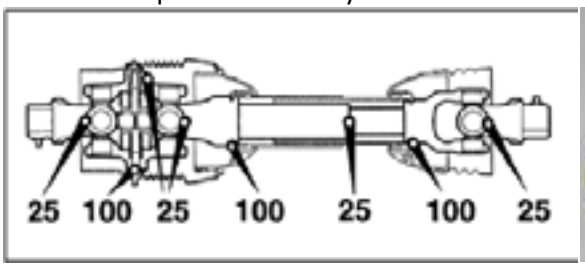
3. Grease the Overrun Clutch to front of the auger gearbox.

Over-Running Clutch

WEEKLY (40 HRS)

1. Check wheel nuts. Re-torque as needed.
2. Grease all sealed bearings
   a. Driveline hanger bearings (2 or 3 depending on model).
   b. Top auger bearings (Grease nipples access provided on right turret).
3. Grease the telescoping section of the PTO shaft.

4. Grease PTO input drive system.
    a. Input shaft.
    b. Cross joint fittings.
    c. Guard bearings.
    d. Shear bolt housing.
    e. Over-running clutch (5 pumps).
5. Grease the implement jack top.
6. Check gearbox oil level
    a. Floor Chain Drive Gearbox
        - Oil should be level with the middle of the sight glass.
        - Add oil as required through the top plug.
    b. Auger Gearbox
        - Spreader must be unhooked from tractor and set on level ground to check oil. Oil should be level with the middle of the sight glass.
        - Add oil as required through the top plug.
        - Oil may take a while to distribute in casing, recheck level after 30 – 40 minutes and repeat if necessary.



MONTHLY

1. Apply grease or heavy oil to apron chain.
2. Grease telescoping section of PTO shaft.
3. Grease the CV Joint of PTO shaft (15 pumps)

4. Grease suspension system spring bushings on each side.
5. Grease brake pivot bushings (Tandem Suspension machines).
6. Grease parking brake leaver joint.
7. Check and adjust the apron chain tension. Refer to section 5.2.2 - page 50.

ANNUALLY

1. Change oil to all gearboxes.
2. Check the condition of the frame sealing flaps. Replace if not sealing the sides or bottom.
   a. Front.
   b. Rear Slurry Door Auger Deck.
3. Check brake setting.

   Brakes can be checked by depressing the brake petal with the engine running and the tractor in gear; release clutch to determine brake adjustment.
4. Check condition of rotor blades and paddles. Repair when there are loose bolts, cracked welds, chipped, bent or broken blades or paddles. Replace when any components are worn within 1 inch (25 mm) of flighting.
5. Clean machine.
6. Check general hardware/bolt tightness. Retighten if necessary.

   It is recommended to apply waste oil to the floor chains periodically when spreading dry material and particularly at the end of the spreading season. This assists in the smooth running of the machine and prolongs the working life of the components.
7. Check bearings in gearboxes.

2.3 SERVICE RECORD

See Lubrication and Mainteneance sections for details of service. Copy this page to continue record.

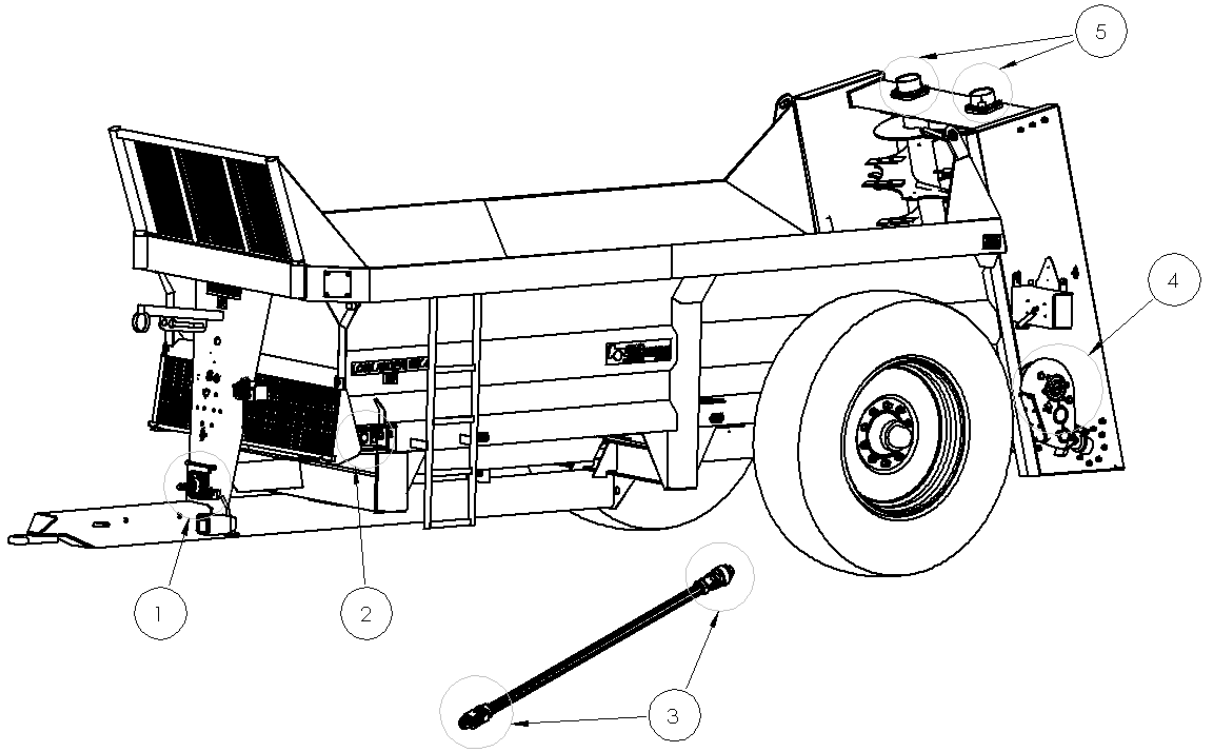
ACTION CODE CK = CHECK CL = CLEAN G = GREASE

MAINTENANCE / HOURS / SERVICED BY																								
25 Hours or Monthly																								
G PTO Driveline																								
G Telescoping Section PTO																								
G PTO Input Drive System																								
G Hub Ratcheting Mech.																								
G Apron Chain Shaft Bearings																								
G Roller Bearings																								
CK Oil Levels in Gearboxes																								
G Apron Chain																								
100 Hours or 4 Months																								
G Telescoping Section PTO																								
G Spring Bushings																								
G Brake Pivot Bushings																								
G Tandem Pivot																								
CK Apron Chain Tension																								
Annually																								
CK Sealing Flaps																								
CK Brake Settings																								
CK Rotor Blades & Paddles																								
CL Machine																								

2.4 Shearbolt Protection.

Only one shearbolt is fitted to the spreader. This is located on the spreader end of the PTO shaft. The bolt is M10 x 60 grade 6.8 mild steel.
ON NO ACCOUNT MUST A BOLT OF HIGHER GRADE THAN 6.8 TENSILE STRENGTH BE FITTED.

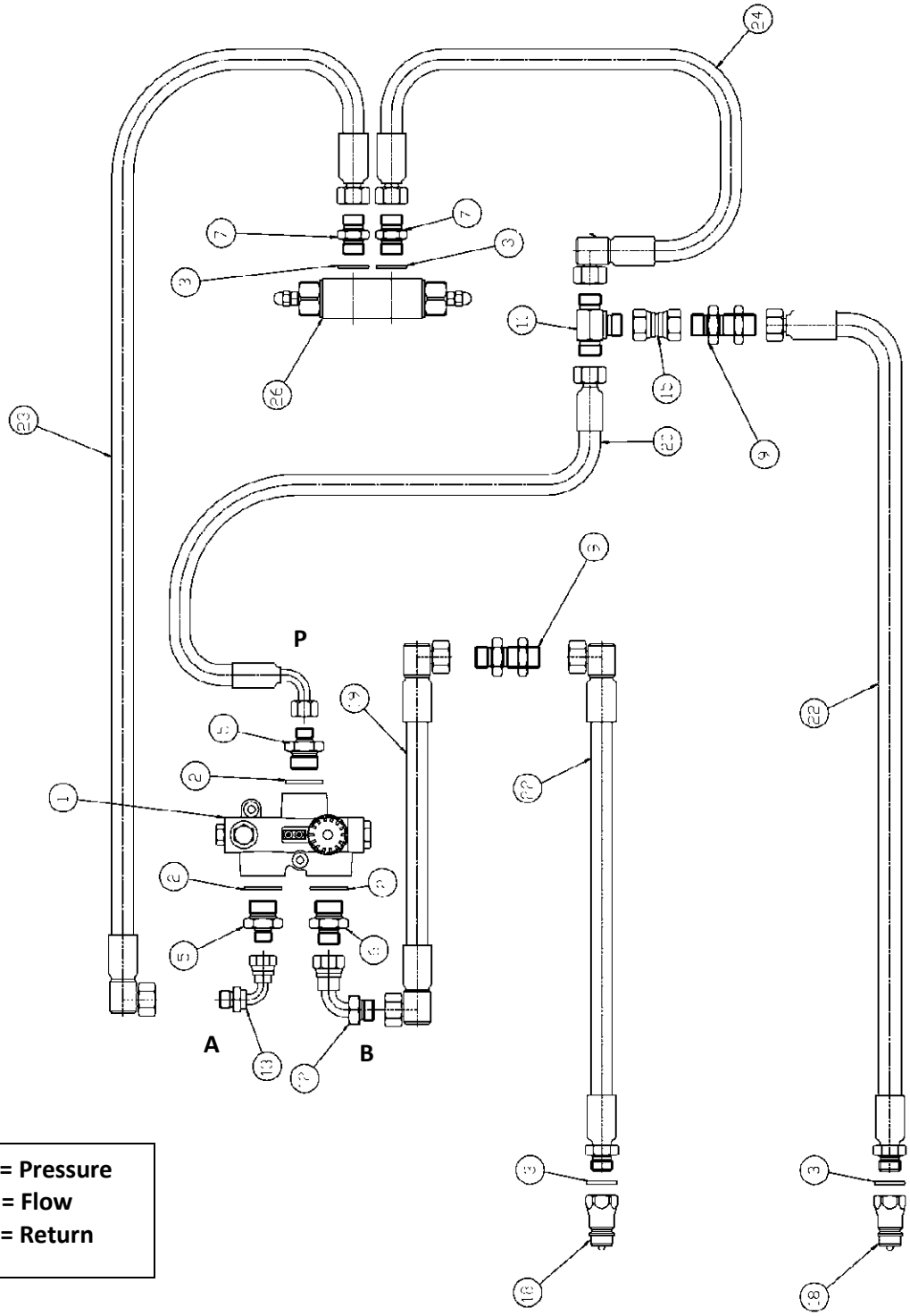
2.5 Greasing points



KEY	GREASE POINT
1	ALL BEARINGS IN DRIVE LINE
2	FRONT SHAFT
3	PTO KNUCKLES
4	REAR SHAFT
5	BEARINGS TOP OF AUGERS (GREASE POINT O/S ON TURRET)

3. FLOOR DRIVE

3.1 HYDRAULIC CIRCUIT FOR FLOOR DRIVE

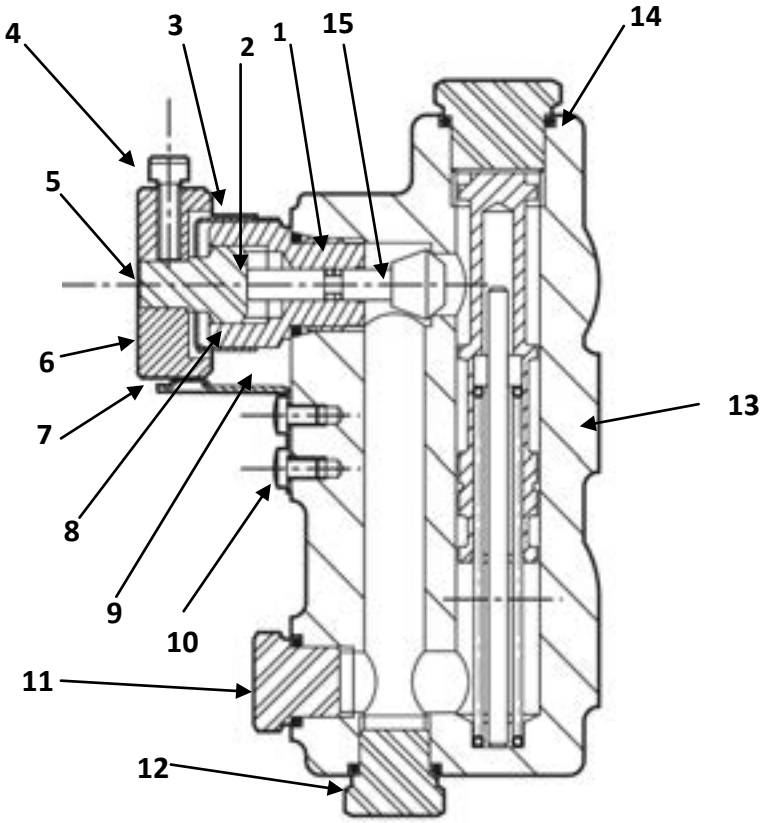


P = Pressure
A = Flow
B = Return

3.1 HYDRAULIC CIRCUIT FOR FLOOR DRIVE PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B3000	FLOW CONTROL 45 LPM
1	1	B3004	ELECTRIC FLOW CONTROL 45 LPM
1	1	B3001	FLOW CONTROL 76 LPM
1	1	B3005	ELECTRIC FLOW CONTROL 76 LPM
2	3	51593	3/4" BONDED SEAL
3	4	51591	1/2" BONDED SEAL
4	1	51590	3/8" BONDED SEAL
5	2	51337	3/4" TO 3/8"ADAPTOR
6	1	51340	3/4" / 1/2" ADAPTOR
7	2	51336	1/2" TO 3/8" ADAPTOR
8			
9	2	51464	1/2" BULKHEAD
10			
11	1	51447	3/8" MALE TEE
12	1	51412	1/2" MALE/FEMALE 90 DEG
13	1	51414	3/8" MALE/FEMALE 90 DEG
14			
15	1	51393	1/2" TO 3/8" FEMALE/FEMALE
16			
17			
18	1	51576	1/2" MALE PROBE
19	2	B4400	HYD HOSE 230mm
20	1	B4401	HYD HOSE 610mm
21			
22	2	B4414	HYD HOSE 2500mm
		B4415	EXPORT 2440mm
23		B4416	HYD HOSE FLOW 75 & 105C
		B4418	HYD HOSE FLOW 90
		B4420	HYD HOSE FLOW 105
		B4422	HYD HOSE FLOW 120
		B4424	HYD HOSE FLOW 150
24		B4417	HYD HOSE RETURN 75 & 105C
		B4419	HYD HOSE RETURN 90
		B4421	HYD HOSE RETURN 105
		B4423	HYD HOSE RETURN 120
		B4425	HYD HOSE RETURN 150
26	1	B3068	DOUBLE CROSS LINE RELIEF VALVE

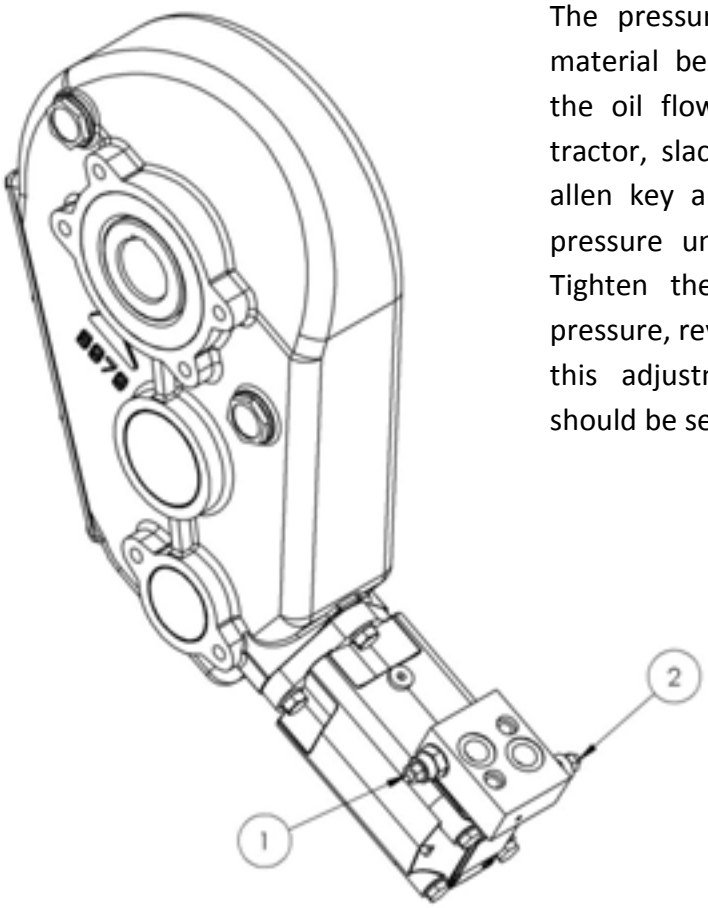
3.2 FLOOR SPEED CONTROL UNIT – PART No. B3000



KEY	QTY	DESCRIPTION
1	1	O RING
2	1	BACK-UP RING
3	1	O RING
4	1	SET SCREW
5	1	ADJUSTER SCREW
6	1	ADJUSTING KNOB
7	1	INDEX SPRING
8	1	PLUG
9	1	CONTROL SLEEVE
10	1	SCREW
11	1	PLUG
12	1	O RING
13	1	BODY
14	1	PLUG
15	1	NEEDLE VALVE

3.3 FLOOR DRIVE RELIEF VALVES

This valve is cross line type and fitted to the hydraulic motor on the floor drive gearbox. The pressure can be varied to suit the material being spread. To adjust, engage the oil flow via the spool valve on the tractor, slacken the locknut and insert an allen key and turn clockwise to increase pressure until the floor starts to move. Tighten the locknut. To decrease the pressure, reverse procedure. When making this adjustment, the spreader pressure should be set lower than the tractor PRV.



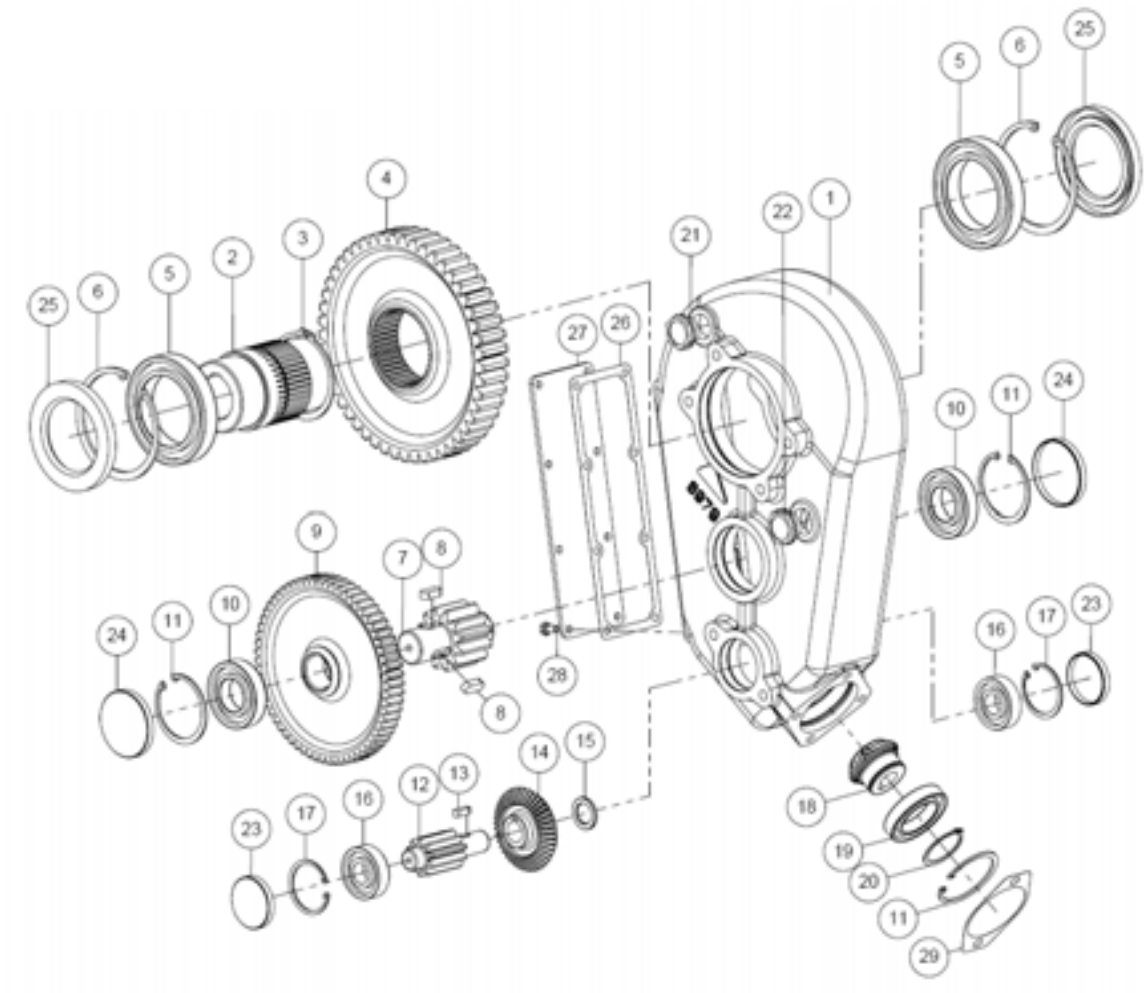
To adjust relief valve pressure

No.1
Cartridge contols movement of floor to rear. To increase pressure release locknut turn screw clockwise and retighten locknut.
To decrease pressure turn screw anticlockwise.

No.2
Cartridge controls movement of floor to front. To increase pressure release locknut turn screw clockwise and retighen locknut.
To decrease pressure turn screw anticlockwise.

NOTE
Maximum protection can be given to moving parts by keeping relief valve pressure set to a minimum.

3.4 FLOOR DRIVE GEARBOX MK4 75/90/105/105C/120 – B3105 500/50/25

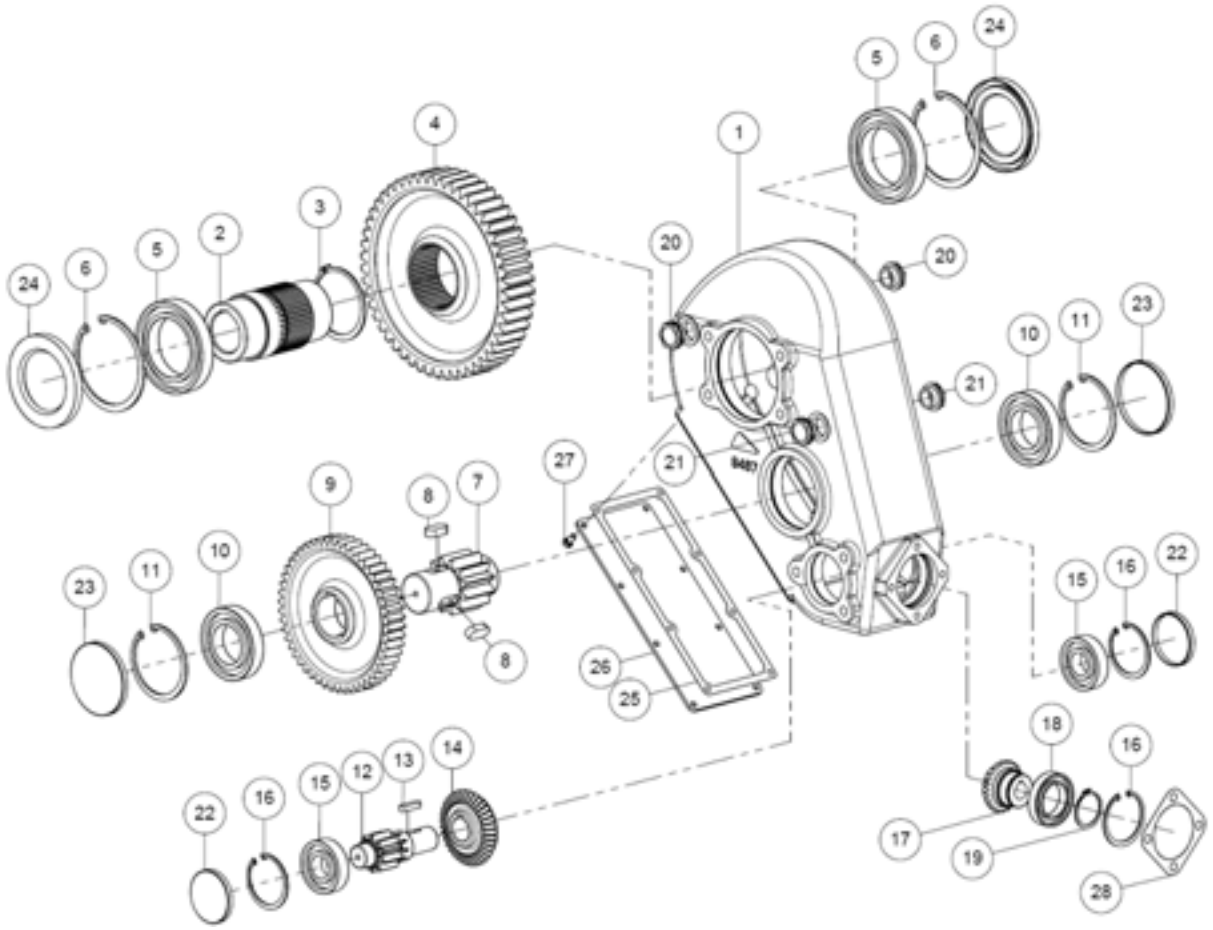


Note:
Motor not shown Part No. **B3040**
When a hybrid machine (WB beaters) or with 20mm floor chains the gearbox used is B3106 500/60/25. See the item 2 on the table for the parts difference.

3.4 FLOOR DRIVE GEARBOX MK4 75/90/105/105C/120 – B3105 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B3203	CASING
2	1	B3228	SLEEVE M50
2	1	B3229	SLEEVE M60 (W.B BEATERS &)
3	1	B4099	CIRCLIP
4	1	B3231	GEAR
5	2	BR320	BEARING
6	2	B4015	CIRCLIP
7	1	B3237	PINION SHAFT
8	2	B2271	KEY
9	1	B3234	GEAR
10	2	BR350	BEARING
11	3	B4006	CIRCLIP
12	1	B3232	PINION SHAFT
13	1	B2270K	KEY
14	1	B3238	CROWN BEVEL
15	1	B3478	SPACER
16	2	BR375	BEARING
17	2	B4002	CIRCLIP
18	1	B3233	PINION SHAFT
19	1	BR310	BEARING
20	1	B4019	CIRCLIP
21	2	B3997	BREATHER PLUG
22	2	B3995	SIGHT GUAGE
23	2	SL255	CAP SEAL
24	2	SL265	CAP SEAL
25	2	SL200	SEAL
26	1	B3222	GASKET
27	1	B3218	COVER PLATE
28	8	73030/1	BOLT
29	1	B3226	GASKET

3.5 FLOOR DRIVE GEARBOX MK4 150 – B3122 800/60/32



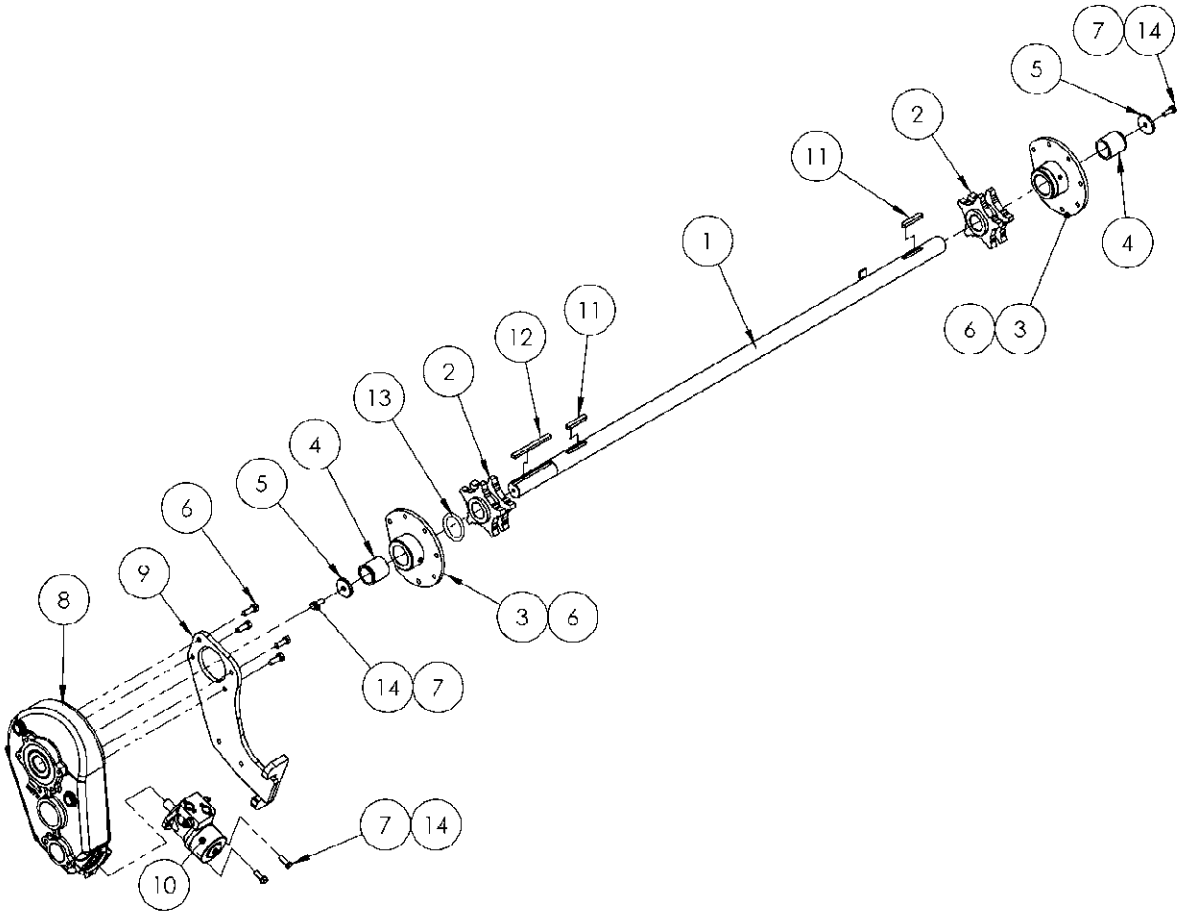
Note:
Motor not shown Part No. **B3052**

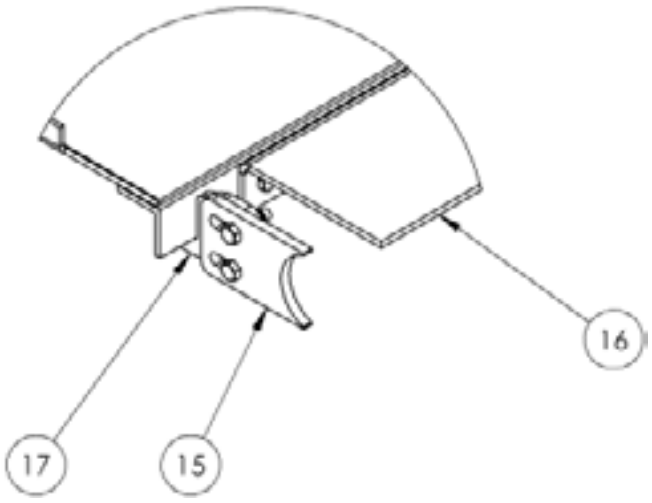
3.5 FLOOR DRIVE GEARBOX MK4 150 – B3120 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B3204	CASING
2	1	B3230	SLEEVE
3	1	B4030	CIRCLIP
4	1	B3236	GEAR
5	2	BR325	BEARING
6	2	B4016	CIRCLIP
7	1	B3240	PINION
8	2	B2276	KEY
9	1	B3244	GEAR
10	2	BR365	BEARING
11	2	B4012	CIRCLIP
12	1	B3242	PINION
13	1	B2270L	KEY
14	1	B3248	CROWN GEAR
15	2	BR390	BEARING
16	3	B4006	CIRCLIP
17	1	B3252	PINION
18	1	BR310	BEARING
19	1	B4019	CIRCLIP
20	2	B3997	BREATHER BUNG
21	2	B3995	SIGHT GLASS
22	2	SL265	CAP SEAL
23	2	SL270	CAP SEAL
24	2	SL205	SEAL
25	1	B3224	GASKET
26	1	B3220	COVER PLATE
27	8	73030/1	BOLT
28	1	B3227	GASKET

NOTE: 60mm Rear shaft.

3.6 REAR FLOOR SHAFT ASSEMBLY

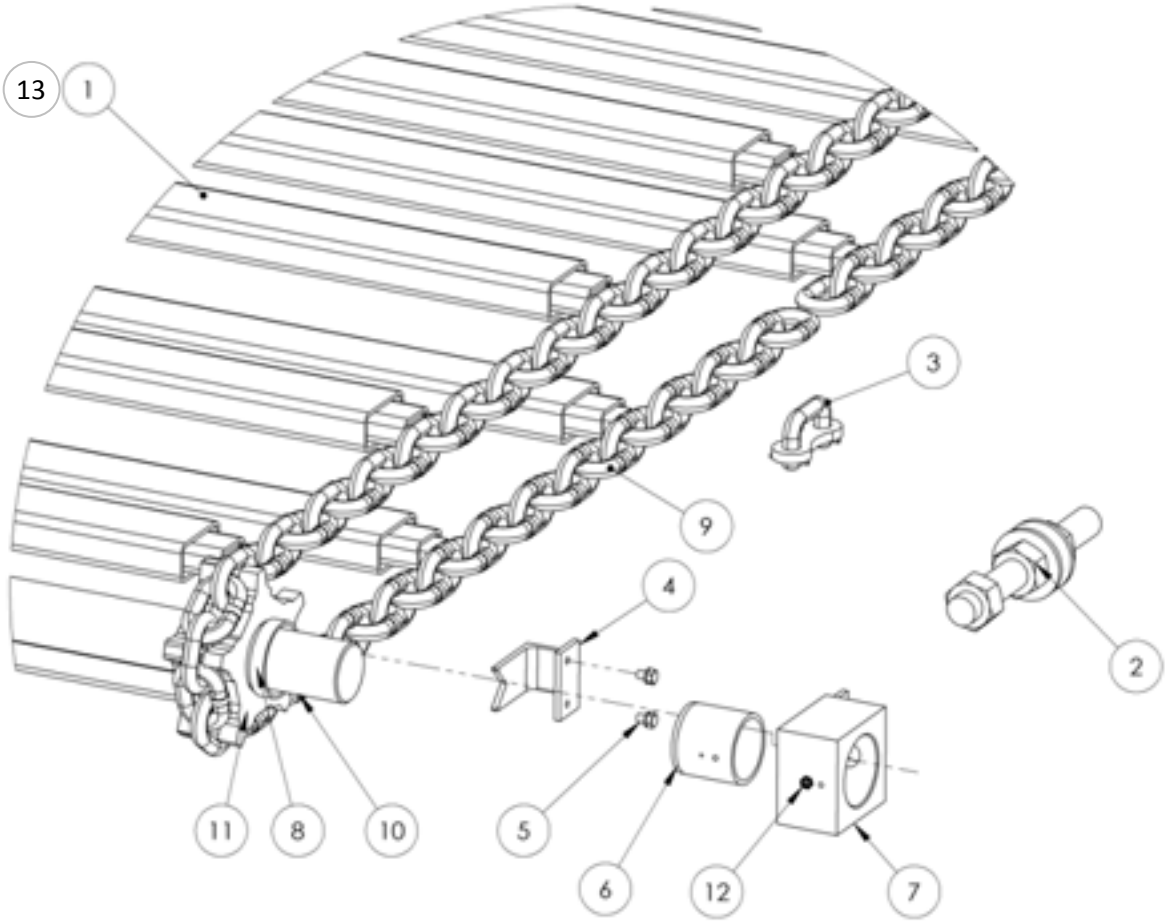




3.6 REAR FLOOR SHAFT ASSEMBLY PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B2250	REAR SHAFT M50
	1	B2254	REAR SHAFT M60 MK4 150 ONLY
	1	B2256	REAR SHAFT M60 MK4 WITH W.B BEATERS
2	2	B2100	GYPSY WHEEL M50 MK4 75-120
	2	B2102	GYPSY WHEEL M60 MK4 WITH W.B BEATERS & 150
3	2	B2300	BEARING FLANGE M50
	2	B2302	BEARING FLANGE M60
4	2	B2320	ACM BUSH M50
	2	B2322	ACM BUSH M60
5	2	B2280	END PLATE M60
6	4	B1101/1	BOLT & WASHER M14
7	4	BOLT	M12 x 35
8	1	B3105	GEARBOX 75/90/105/105C/120
	1	B3106	GEARBOX WITH W.B BEATERS
	1	B3120	GEARBOX 150 ONLY
9	1	B3212	TORQUE PLATE 75/90/105/105C/120
	1	B3214	TORQUE PLATE 150 ONLY
10	1	B3040	HYDRUALIC MOTOR
11	2	B2274	KEY FOR M50 SHAFT
	2	B2275	KEY FOR M60 SHAFT
12	1	B2277	KEY FOR M50 SHAFT
	1	B2278	KEY FOR M60 SHAFT
13	1	B2348	SPACER 150 ONLY
14	4	WASHER	SPRING WASHER M12
15	2	B2122	REAR GYPSY SCRAPER
16	1	B2822	DRIVE SHAFT COVER MK4
17	2	B2124	MOUNT PLATE FOR SCRAPER

3.7 FRONT SHAFT AND CHAIN ASSEMBLY

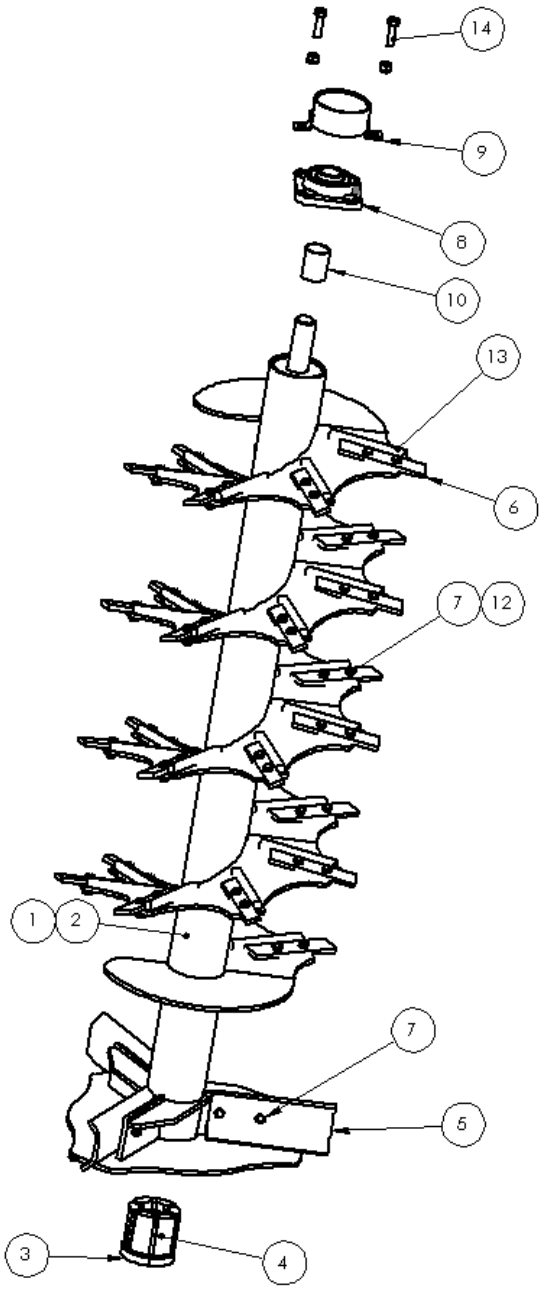


3.7 FRONT SHAFT AND CHAIN ASSEMBLY PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	22	B2012	BOX FLOOR SLAT MK4 75/105C
	28	B2012	BOX FLOOR SLAT MK4 90/105/150C
	30	B2012	BOX FLOOR SLAT MK4 120
	33	B2012	BOX FLOOR SLAT MK4 150
2	2	B2286	ADJUSTERS M24 MK4
	2	B2288	ADJUSTERS M30 MK4 150 ONLY
3	2	B2202	JOINER LINK
4	2	B2126	FRONT CLEANER
5	4	73031	BOLT
6	2	B2320	BUSH M50
	2	B2322	BUSH M60 MK4 150 ONLY
7	2	B2290	BEARING HOUSING M50
	2	B2294	BEARING HOUSING M60 MK4 150 ONLY
8	2	B2345	SPACER M50
	2	B2346	SPACER M60 MK4 150 ONLY
9	1PR	B2152	FLOOR CHAIN 28FT STD SPACED TAB EVERY 4TH LINK 75/105C
	1PR	B2162	FLOOR CHAIN 35FT STD SPACED TAB EVERY 4TH LINK 90/105
	1PR	B2172	FLOOR CHAIN 37FT STD SPACED TAB EVERY 4TH LINK 120
	1PR	B2182	FLOOR CHAIN 40FT STD SPACED TAB EVERY 4TH LINK 150
	1PR	B2154	FLOOR CHAIN 28FT CLOSE TAB EVERY 2ND LINK 75/105C
	1PR	B2164	FLOOR CHAIN 35FT CLOSE TAB EVERY 2ND LINK 90/105
	1PR	B2174	FLOOR CHAIN 37FT CLOSE TAB EVERY 2ND LINK 120
	1PR	B2184	FLOOR CHAIN 40FT CLOSE TAB EVERY 2ND LINK 150
10	1	B2220	SHAFT M50
	1	B2222	SHAFT M60 FOR MK4 150 ONLY
11	1	B2214	PLATE WHEEL SET OF 4
	1	B2218	PLATE WHEEL SET OF 4 MK4 150 ONLY
12	2	50726	GREASE NIPPLE
13	55	B2015	105MSL 50x30x4 BOX SLAT USED ON HBD
13	59	B2015	120MSL 50x30x4 BOX SLAT USED ON HBD
13	65	B2015	150MSL 50x30x4 BOX SLAT USED ON HBD

4 AUGERS AND DRIVES

4.1 SHREDDING AUGER MK4

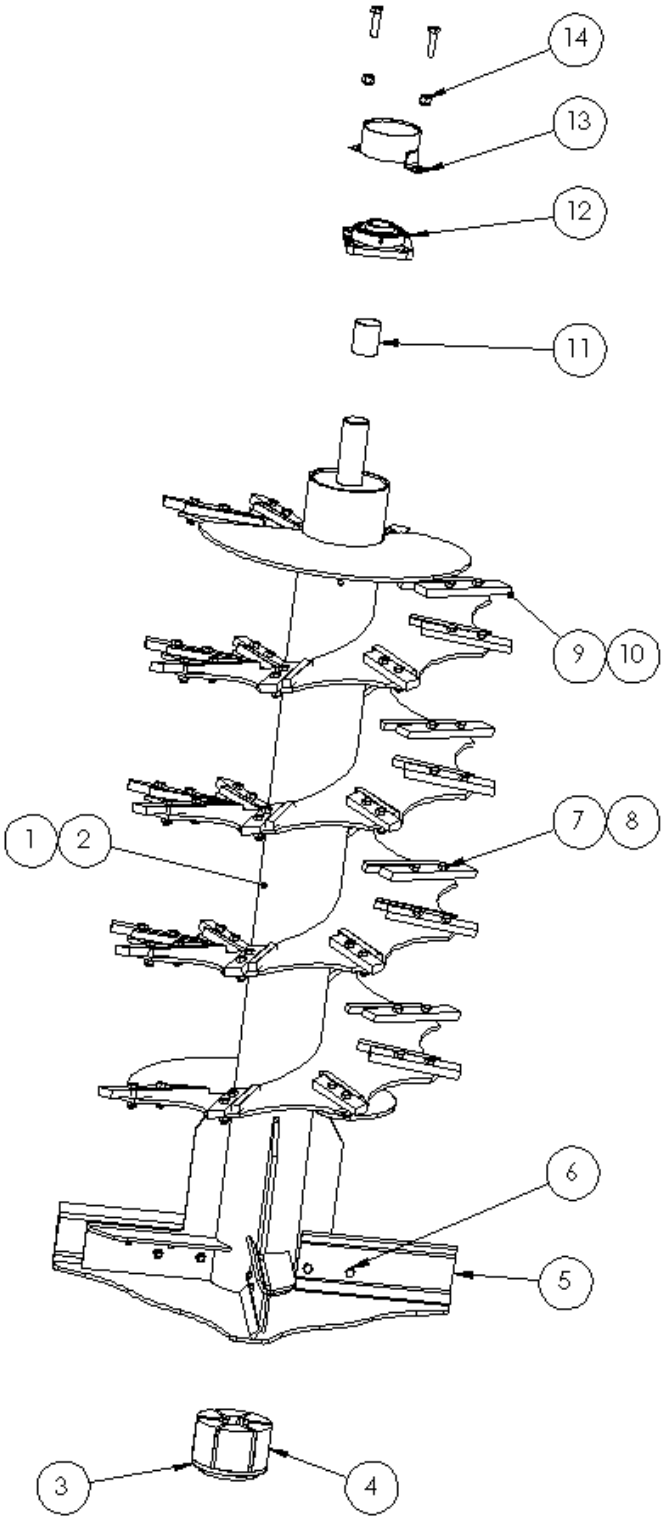


4.1 SHREDDING AUGERS MK4 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B1021	AUGER R.H 75/90
	1	B1031	AUGER R.H 105/105C/120/150/150C
2	1	B1020	AUGER L.H 75/90
	1	B1030	AUGER L.H 105/105C/120/150/150C
3	2	B1152	DRIVE FLANGE
4	12	B1142	RUBBER DRIVE BLOCK
5	3	B1122	BLADE BORON EACH AUGER
6	44	B1100/1	CUTTER 75/90 BORON *
	56	B1100/1	CUTTER 105/105C/120/150 BORON
7	100	B1103	BOLT & NUT 75/90
	124	B1103	BOLT & NUT 105/105C/120/150
8	2	B1178/1	BEARING
9	2	B1160	BEARING COVER
10	2	B2350	SPACER
11		B1106	ANGLE THROWER - OPTION
12	8	B1105	BOLT & NUT
13	44	B1098	REINFORCING BAR
14	4	73154	16 x 45 BOLT

* B1100 CUTTER STEEL EN8.

4.2 SHREDDING AUGER MK2 HD & WIDE BODY



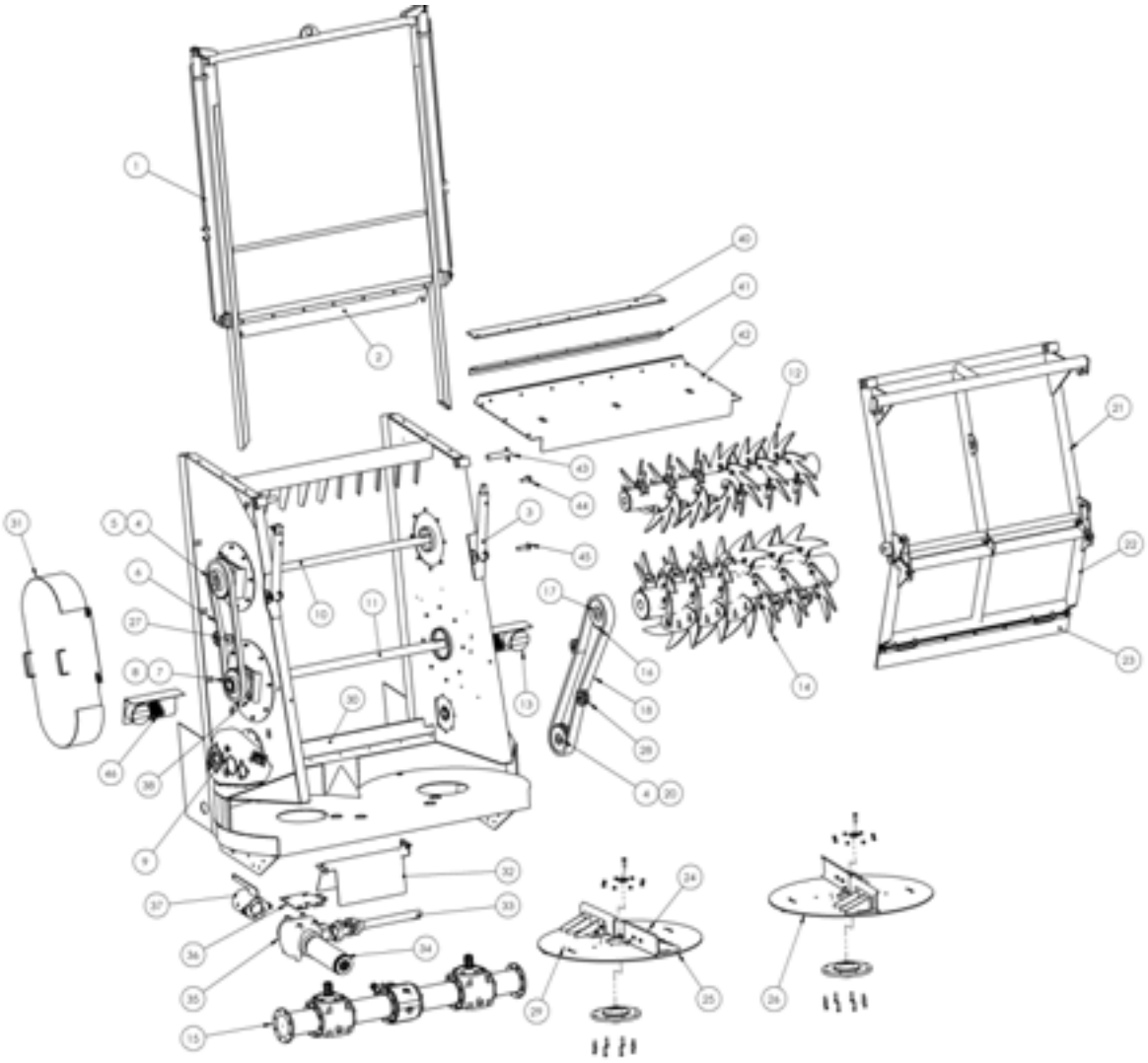
4.2 SHREDDING AUGER MK2 HD & WIDE BODY PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B1044	AUGER L.H
2	1	B1045	AUGER R.H
3	2	B1156	DRIVE FLANGE
4	12	B1146	RUBBER DRIVE BLOCK W.B MK2
5	8	B1122	AUGER BLADE BORON
6		B1103	BOLT & LOCKNUT
7		B1105	BOLT & LOCKNUT FOR STD CUTTER & ANGLE THROWER
8		B1101/1	BOLT & NYLOC FOR H.D CUTTERS
9		B1100/1	CUTTER POINT STD BORON *
9		B1101/B	CUTTER POINT H.D BORON *
10		B1106	ANGLE THROWER OPTIONAL
11	2	B2352	SPACER
12	2	B1180/1	BEARING M60
13	2	B1162	BEARING COVER
14	8	B1105	BOLT & LOCKNUT

* B1100 CUTTER STEEL EN8.

* B1101 CUTER STEEL EN8

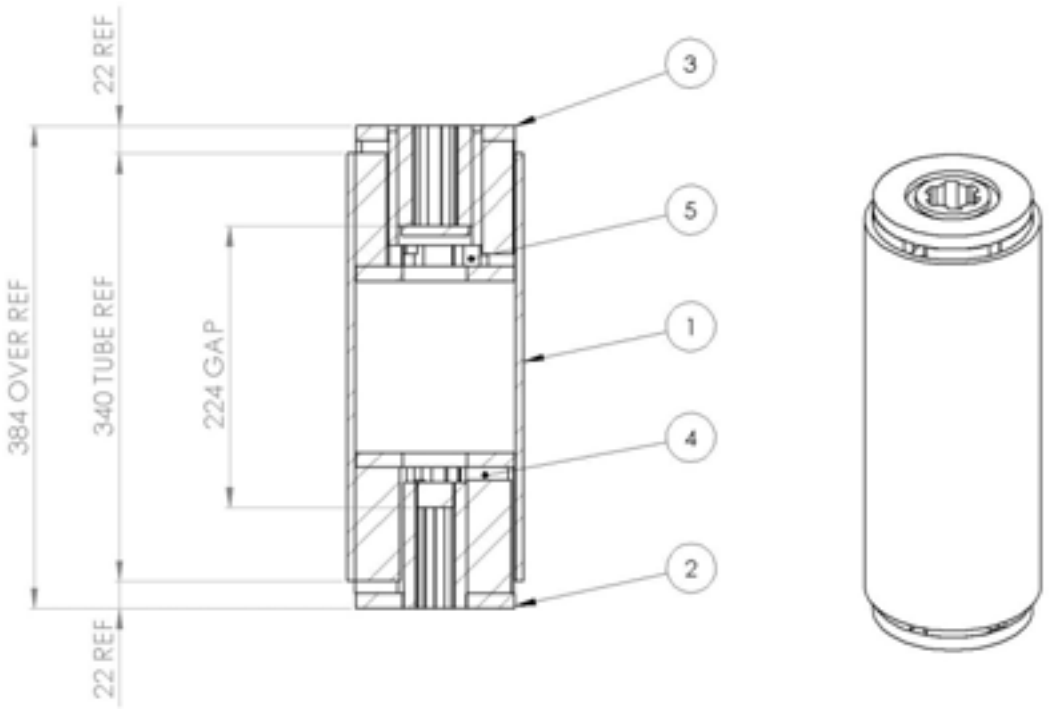
4.3 HORIZONTAL BEATER x 2 WITH SPINNING DISC



4.3 HORIZONTAL BEATER x 2 WITH SPINNING DISC PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	2	B4138	RAM 50mm BORE 1626mm STROKE
2	1	B4158	RUBBER SEAL
3	2	65093	12" CANOPY RAM
4	2	BC442	TAPERLOCK BUSH 3020/50
5	1	BC258	30T SINGLE SPROCKET 3020
6	1	BC120	1" SINGLE CHAIN
7	1	BC248	25T SINGLE SPROCKET
8	1	BC436	TAPERLOCK BUSH 2517/60
9	1	B3122	FLOOR DRIVE GEARBOX
10	1	B8220	TOP SHAFT
11	1	B8226	BOTTOM SHAFT
12	18	B1101/4A	BEATER KNIFE TOP CUTTER
13	2	70009/3	REAR LAMP
14	18	B1101/7A	BEATER KNIFE BOTTOM CUTTER
15	1	B3190	SPINNER GEARBOX
16	1	BC294	25T DUPLEX SPROCKET
17	1	BC445	TAPERLOCK BUSH 3020/60
18	1	BC140	1" DUPLEX CHAIN
20	1	BC290	23T DUPLEX SPROCKET 3020
21	1	B8450	TOP DOOR
22	1	B8451	BOTTOM DOOR
23	1	B4161	CANOPY RUBBER
24	2 & 2	B1118 / B1119	PADDLE RH & LH
25	1	B8246	SPINNING DISC RH
26	1	B8245	SPINNING DISC LH
27	1	BC214	11T TENSIONER SINGLE SPROCKET
28	1	BC222	11T TENSIONER SINGLE DUPLEX
29	8	B8354/B8355	PADDLE HOLDER LH/RH
30	1	B4160	SPINNER DECK RUBBER
31	2	AMS0984	CHAIN GUARD
32	1	DMS2583-1	TRANSVERSE DRIVE GUARD
33	1	AMS0689-1	TRANSVERSE DRIVE ASSEMBLY
34	1	AMS0064	COUPLING ASSEMBLY
35	1	B3084	TEE GEARBOX
36	1	DMS2521	MOUNT TOP PLATE
37	1	AMS1524	GEARBOX GUARD
38	2 & 3	B1180/1 & B1178/1	BEARING MSF 60 BRG & MSF 50 BRG
39	2	AMS0940-2	BOTTOM RAM PIN
40	1	B4172	RUBBER SEAL CANOPY
41	1	DMS2595	CLAMP ANGLE
42	2	DMS1781-1	CANOPY LID
43	2	DMS2381	PIVOT PIN
44	2	DM0940-1	TOP RAM PIN

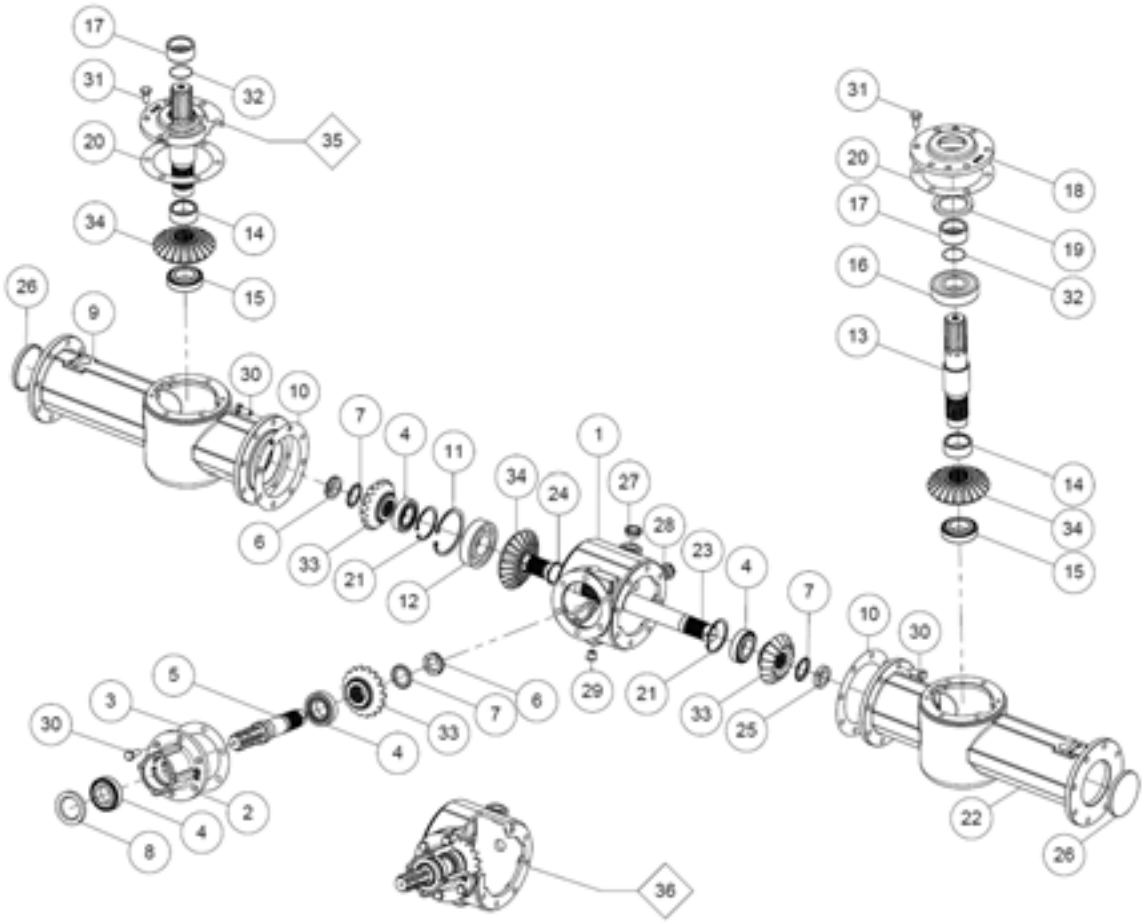
4.4 COUPLING ASSEMBLY SPINNER DECK HBD PART No. AMS0064



4.4 COUPLING ASSEMBLY SPINNER DECK HBD PART No. AMS0064 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B8484	TUBE CONNECTING DRIVE ASSY
2	1	B8486	DRIVE COUPLING ASSY 1 3/8"
3	1	B8488	DRIVE COUPLING ASY 1 3/4"
4	6	B1142	RUBBER SEGMENT 127 O/D x 50mm I/D
5	6	B1142	RUBBER SEGMENT 127 O/D x 74mm I/D

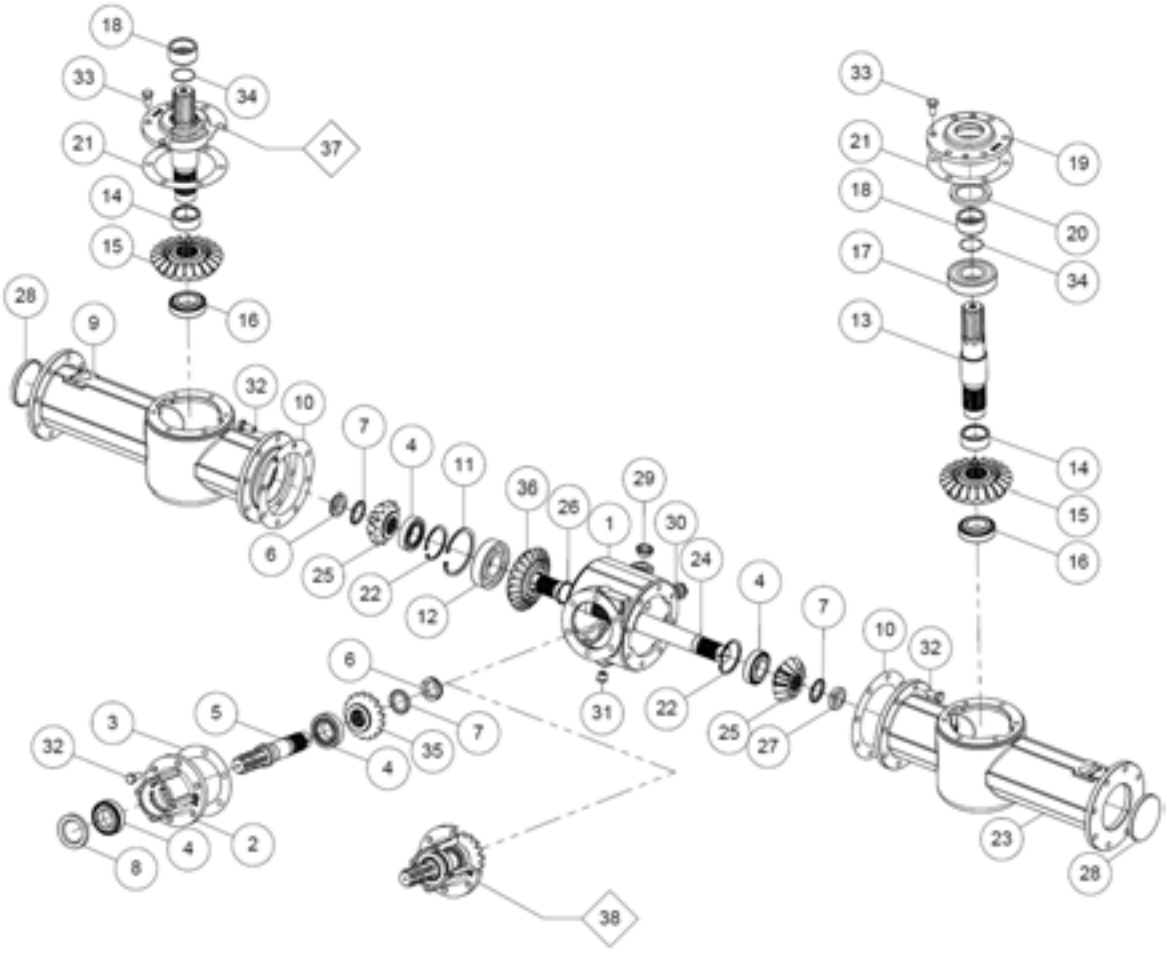
4.5 GEARBOX 540/360 STANDARD PART No. B3172



4.5 GEARBOX 540/360 STANDARD PART No. B3172 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B3404	CASING
2	1	B3410	EXTENSION
3	1	B3494	GASKET
4	4	BR175	BEARING
5	1	B3440	SHAFT
6	2	B3510	NUT LH THREAD
7	3	B3520	WASHER
8	1	SL165	SEAL
9	1	B3400	CASING R.H
10	2	B3492	GASKET
11	1	B4014	CIRCLIP
12	1	BR410	BEARING
13	2	B3442	SHAFT
14	2	B3480	SPACER
15	2	BR180	BEARING
16	2	BR405	BEARING
17	2	B3482	SLEEVE
18	2	B3420	TOP PLATE
19	2	SL195	SEAL
20	2	B3490	GASKET
21	2	B4007	CIRCLIP
22	1	B3402	CASING
23	1	B3446	SHAFT
24	1	B4020	CIRCLIP
25	1	B3512	NUT R.H THREAD
26	2	SL275	CAP SEAL
27	1	B3998	PLUG
28	1	B3996	SIGHT GLASS
29	1	B3990	DRAIN BUNG
30	22	73125	BOLT
31	12	73124	BOLT
32	2	B3939	O -RING
33	3	B3454	PINION
34	3	B3464	GEAR
35	2	B3420	DRIVE ASSEMBLY
36	1	B3409/1	NOSE CONE ASSEMBLY

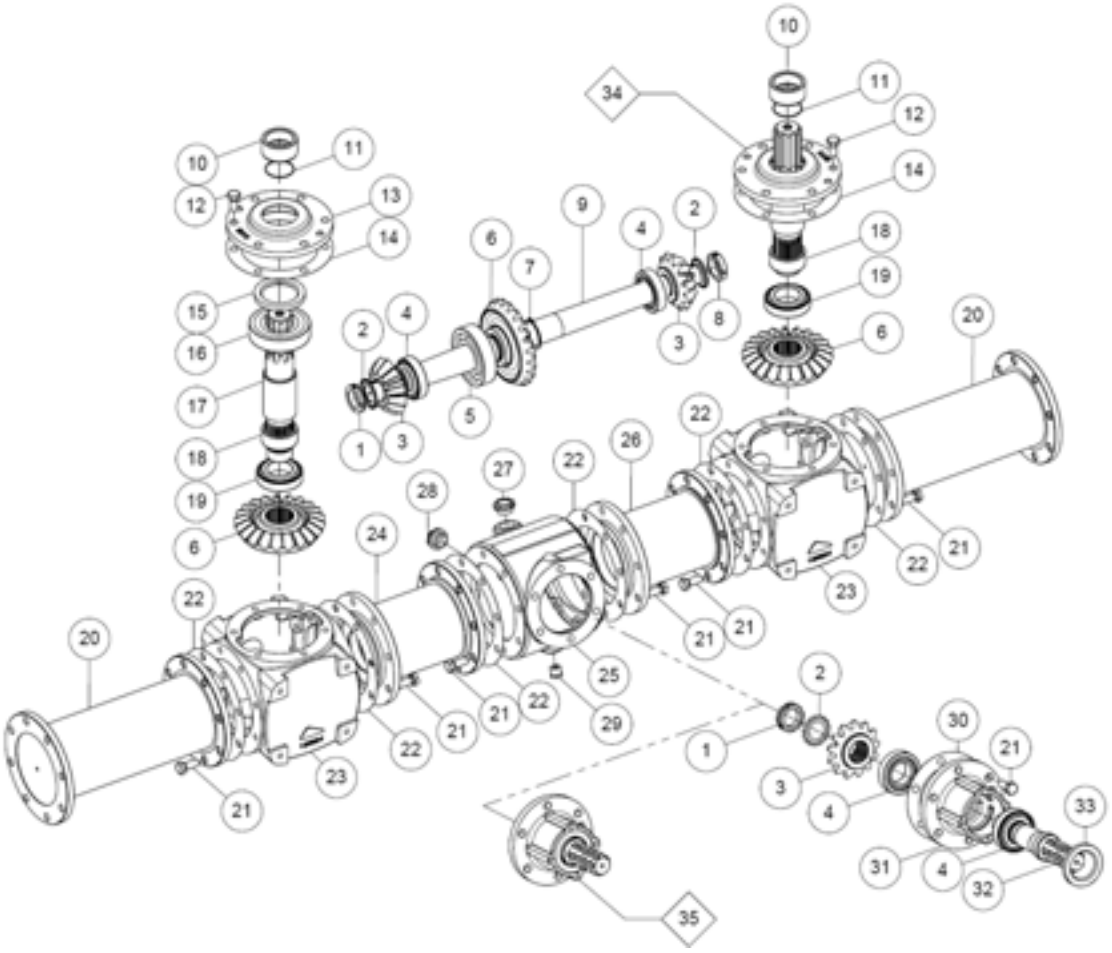
4.6 GEARBOX 1000/420 STANDARD PART No. B3170



4.6 GEARBOX 1000/420 STANDARD PART No. B3170 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B3404	CASING
2	1	B3410	EXTENSION
3	1	B3494	GASKET
4	4	BR175	BEARING
5	1	B3440	SHAFT
6	2	B3510	NUT LH THREAD
7	3	B3520	WASHER
8	1	SL165	SEAL
9	1	B3400	CASING
10	2	B3492	GASKET
11	1	B4014	CIRCLIP
12	1	B3866	BEARING
13	2	B3442	SHAFT
14	2	B3480	SPACER
15	2	B3466	CROWN GEAR
16	2	BR180	BEARING
17	2	BR405	BEARING
18	2	B3482	SLEEVE
19	2	B3420	TOP PLATE
20	2	SL195	SEAL
21	2	B3490	GASKET
22	2	B4007	CIRCLIP
23	1	B3402	CASING
24	1	B3446	SHAFT
25	2	B3456	PINION GEAR
26	1	B4020	CIRCLIP
27	1	B3512	NUT RH THREAD
28	2	SL275	CAP SEAL
29	1	B3998	PLUG
30	1	B3996	SIGHT GLASS
31	1	B3990	DRAIN BUNG
32	22	73125	BOLT
33	12	73124	BOLT
34	2	B3939	O RING
35	1	B3458	PINION GEAR
36	1	B3468	PINION GEAR
37	2	B3420	DRIVE ASSEMBLY
38	1	B3409	NOSE CONE ASSEMBLY

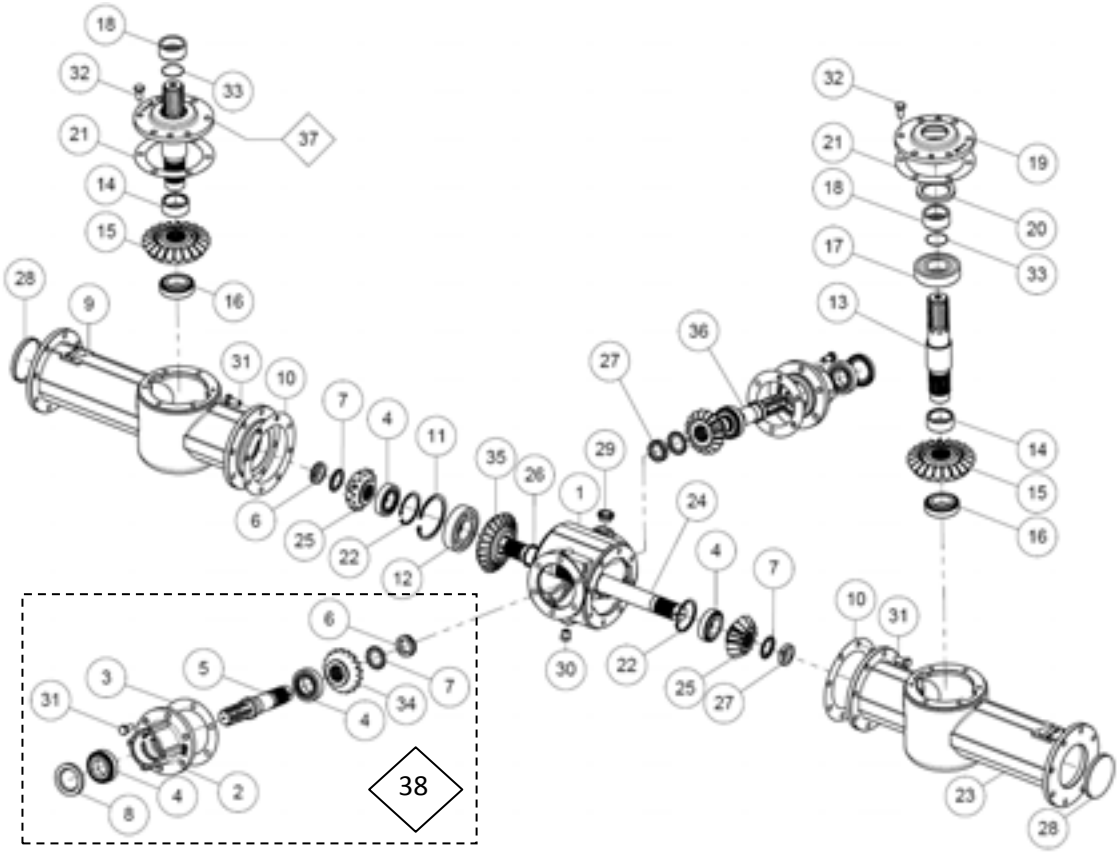
4.7 GEARBOX 1000/350 WIDEBODY PART No. B3180



4.7 GEARBOX 1000/350 WIDEBODY PART No. B3180 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B3510	NUT
2	3	B3520	LOCKING WASHER
3	3	B3460	PINION GEAR
4	4	BR175	BEARING
5	1	BR410	BEARING
6	3	B3470	CROWN GEAR
7	1	B4020	CIRCLIP
8	2	B3510	NUT
9	1	B3448	CROSS SHAFT
10	2	B3482	SPACER SLEEVE
11	2	B3939	O RING
12	12	73124	BOLT
13	2	B3420	TOP PLATE
14	2	B3490	GASKET
15	2	SL195	SEAL
16	2	BR405	BEARING
17	2	B3444	OUTPUT SHAFT
18	2	B3480	GEAR SPACER
19	2	BR180	BEARING
20	2	B3412	OUTER CASE SECTION
21	54	73125	BOLT
22	6	B3492	GASKET
23	2	B3418	AUGER GEAR CASE
24	1	B3414	INNER CASE SECTION
25	1	B3404	CENTRE CASE
26	1	B3417	INNER CASE SECTION
27	1	B3998	BREATHER PLUG
28	1	B3996	SIGHT GLASS
29	1	B3990	DRAIN PLUG
30	1	B3494	GASKET EXT
31	1	B3410	EXTENSION
32	1	B3440	INPUT SHAFT
33	1	SL165	SEAL
34	2	B3420	DRIVE ASSEMBLY
35	1	B3408	NOSE CONE ASSEMBLY

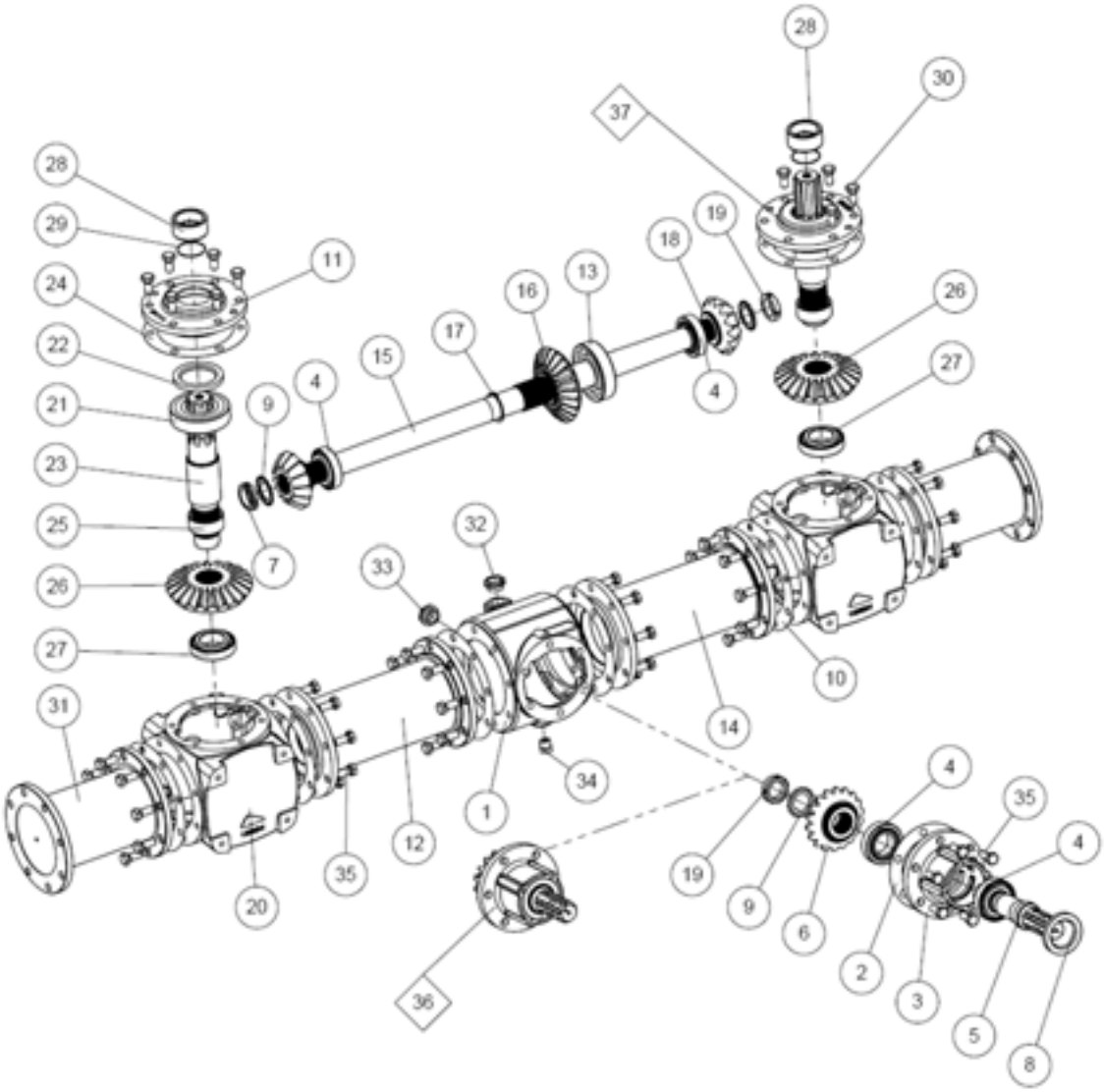
4.8 GEARBOX 1000/420 SPINNER DECK PART No. B3175.



4.8 GEARBOX SPINNER DECK 1000/420 PART No. B3175.

KEY	QTY	PART No.	DESCRIPTION
1	1		CASING
2	2	B3410	EXTENSION
3	2	B3494	GASKET
4	6	BR175	BEARING
5	1	B3440	SHAFT
6	2	B3510	NUT LH THREAD
7	4	B3520	WASHER
8	2	SL165	SEAL
9	1	B3400	CASING
10	2	B3492	GASKET
11	1	B4014	CIRCLIP
12	1	BR410	BEARING
13	2	B3442	SHAFT
14	2	B3480	SPACER
15	2	B3466	CROWN GEAR
16	2	BR180	BEARING
17	2	BR405	BEARING
18	2	B3482	SLEEVE
19	2	B3420	TOP PLATE
20	2	SL195	SEAL
21	2	B3490	GASKET
22	2	B4007	CIRCLIP
23	1	B3402	CASING
24	1	B3446	SHAFT
25	2	B3456	PINION GEAR
26	1	B4020	CIRCLIP
27	2	B3512	NUT RH THREAD
28	2	SL275	CAP SEAL
29	1	B3998	PLUG
30	1	B3996	SIGHT GLASS
31	2	B3990	DRAIN BUNG
32	22	73125	BOLT
33	12	B3939	O RING
34	2	B3458	PINION GEAR
35	1	B3468	PINION GEAR
36	1		SHAFT
37	2	B3420	DRIVE ASSEMBLY
38	1	B3409	NOSE CONE ASSEMBLY

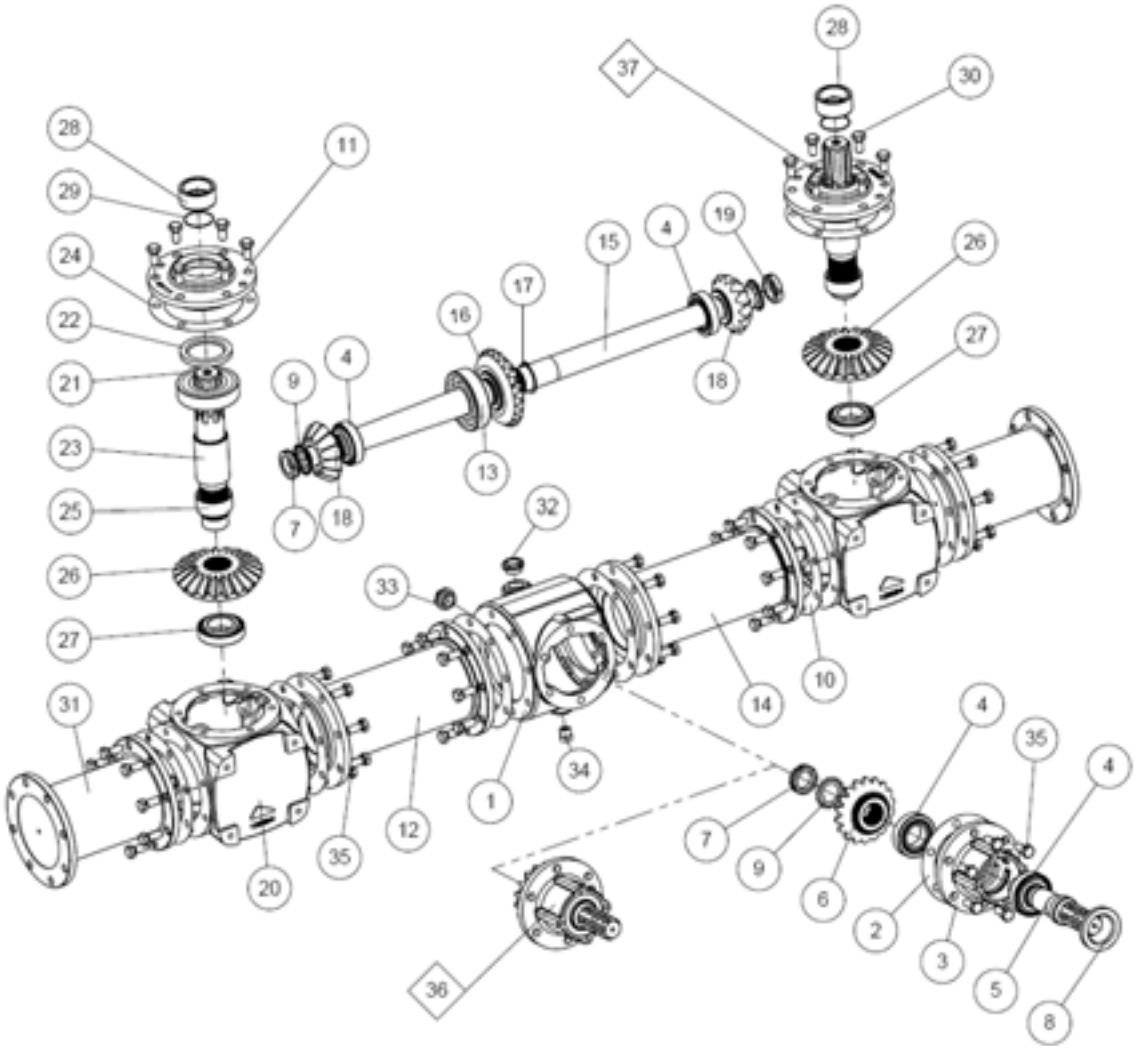
4.9 GEARBOX SPINNER DECK 1000/520 PART No. B3190



4.9 GEARBOX SPINNER DECK 1000/520 PART No. B3190 PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	1	B3405	CASING
2	1	B3494	GASKET
3	1	B3410	EXTENSION
4	4	BR175	BEARING
5	1	B3440	SHAFT
6	1	B3454	PINION GEAR
7	1	B3510	NUT LH THREAD
8	1	SL165	SEAL
9	3	B3520	WASHER
10	6	B3492	GASKET
11	2	B3420	TOP PLATE
12	1	B3415R	INNER CASE SECTION
13	1	BR410	BEARING
14	1	B3416R	INNER CASE SECTION
15	1	B3449R	CROSS SHAFT
16	1	B3464	PINION GEAR
17	1	B3430	CIRCLIP
18	2	B3459	PINION GEAR
19	2	B3512	NUT
20	2	B3418	AUGER GEAR CASE
21	2	BR405	BEARING
22	2	SL195	SEAL
23	2	B3444	OUTPUT SHATF
24	2	B3490	GASKET
25	2	B3480	SPACER
26	2	B3469	CROWN GEAR
27	2	BR180	BEARING
28	2	B3482	SLEEVE
29	2	B3939	O RING
30	12	73124	BOLT
31	2	B3413	OUTER CASE SECTION
32	1	B3998	PLUG
33	1	B3996	SIGHT GLASS
34	1	B3990	DRAIN BUNG
35	54	73125	BOLT
36	1	B3408/1	NOSE CONE ASSEMBLY
37	2	B3420	DRIVE ASSEMBLY

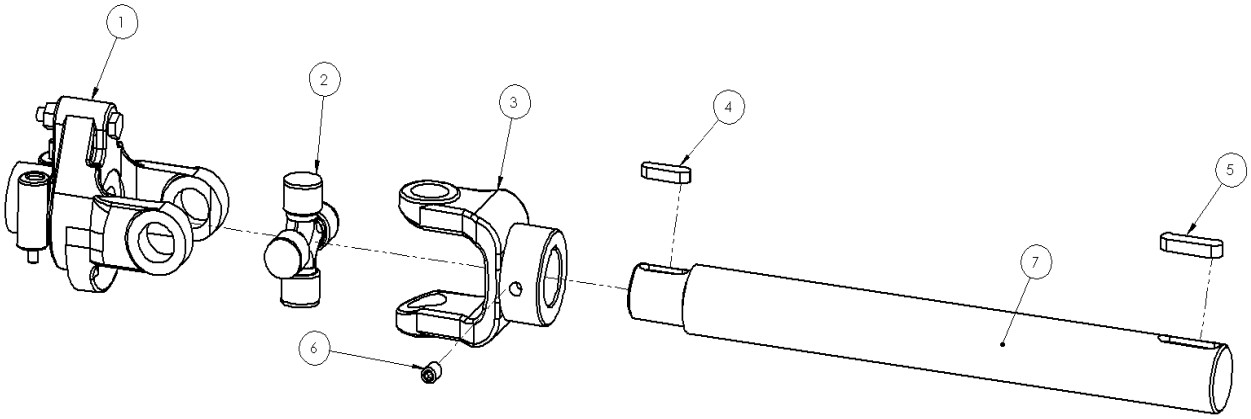
4.10 GEARBOX HORIZONTAL BEATER 1000/520 PART No. B3192



4.10 GEARBOX HORIZONTAL BEATER 1000/520 PART No. B3192 PARTS LIST

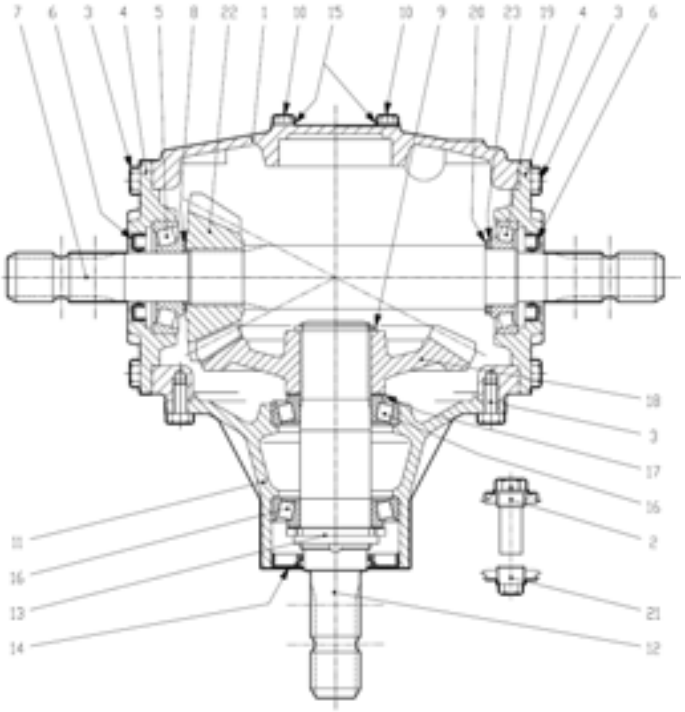
KEY	QTY	PART No.	DESCRIPTION
1	1	B3405	CASING
2	1	B3494	GASKET
3	1	B3410	EXTENSION
4	4	BR175	BEARING
5	1	B3440	SHAFT
6	1	B3454	PINION GEAR
7	2	B3510	NUT
8	1	SL165	SEAL
9	3	B3520	WASHER
10	6	B3492	GASKET
11	2	B3420	TOP PLATE
12	1	B3415	INNER CASE SECTION
13	1	BR410	BEARING
14	1	B3416	INNER CASE SECTION
15	1	B3450	SHAFT
16	1	B3464	PINION GEAR
17	1	B4020	CIRCLIP
18	2	B3459	PINION GEAR
19	1	B3512	NUT RH THREAD
20	2	B3418	AUGER GEAR CASING
21	2	BR405	BEARING
22	2	SL195	SEAL
23	2	B3444	OUTPUT SHAFT
24	2	B3490	GASKET
25	2	B3480	SPACER CROWN GEAR
26	2	B3469	CROWN GEAR
27	2	BR180	BEARING
28	2	B3482	SPACER SLEEVE
29	2	B3939	O RING
30	12	73124	BOLT
31	2	B3413	OUTER CASE SECTION
32	1	B3998	BREATHER PLUG
33	1	B3996	SIGHT GLASS
34	1	B3990	DRAIN PLUG
35	54	73128	BOLT
36	1	B3408/1	NOSE CONE ASSEMBLY
37	2	B3420	DRIVE ASSEMBLY

4.11 TRANSVERSE DRIVE ASSEMBLY HORIZONTAL BEATERS – AMS0689



KEY	QTY	PART No.	DESCRIPTION
1	1	42760	YOKE
2	1	42701	JOURNAL
3	1	42755	YOKE
4	1		KEY WAY 12x8x40 lg
5	1		KEY WAY 14x9x51 lg
6	1	73898	GRUB SCREW M12x16 lg
7	1	B8440	DRIVE SHAFT

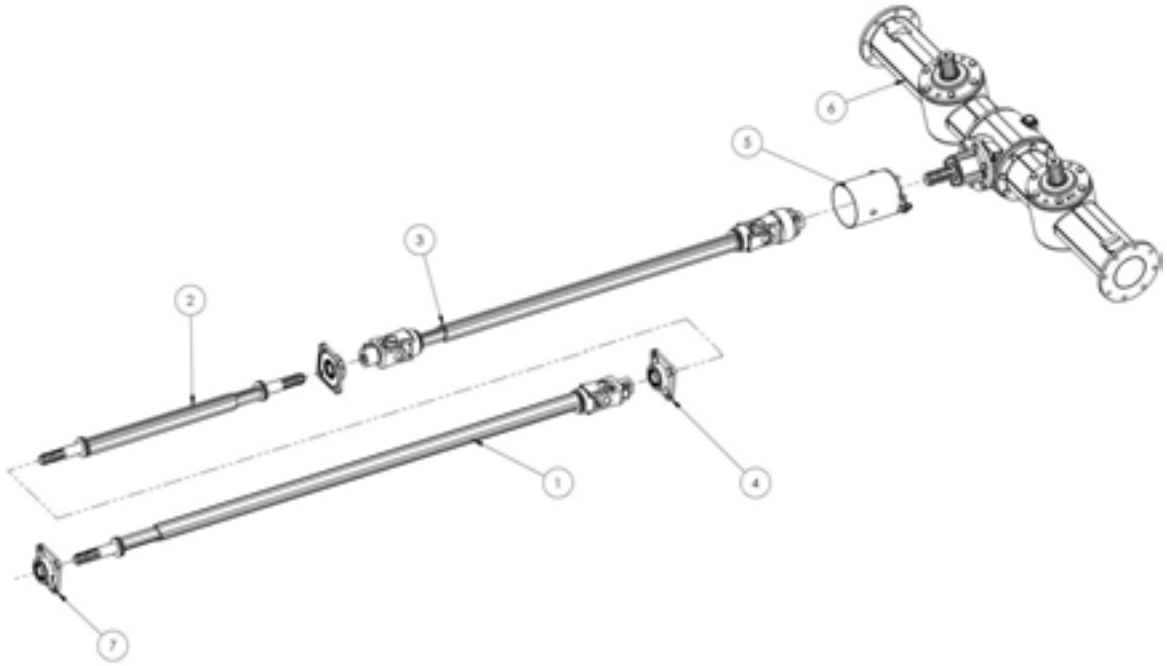
4.12 TRANSVERSE GEARBOX HORIZONTAL BEATERS



KEY	QTY	PART No.	DESCRIPTION
1	1		CASING
2	1		OIL FILLER PLUG 1/2" GAS
3	24		BOLT M10X22 8,8
4	2		COVER
5	1	BR140	BEARING
6	2	SL110	OIL SEAL
7	1		SHAFT
8	1		SHIM
9	1		SNAP RING
10	2		BOLT M10X22 8,8
11	1		EXTENSION
12	1		SHAFT
13	1		NUT
14	1	SL175	OIL SEAL
15	2		COPPER WASHER
16	2	BR115	BEARING
17	1		SHIM
18	1		CROWN WHEEL
19	1	BR105	BEARING
20	1		SHIM KIT
21	1		PLUG
22	1		PINION SHIM
23	1		SHIM

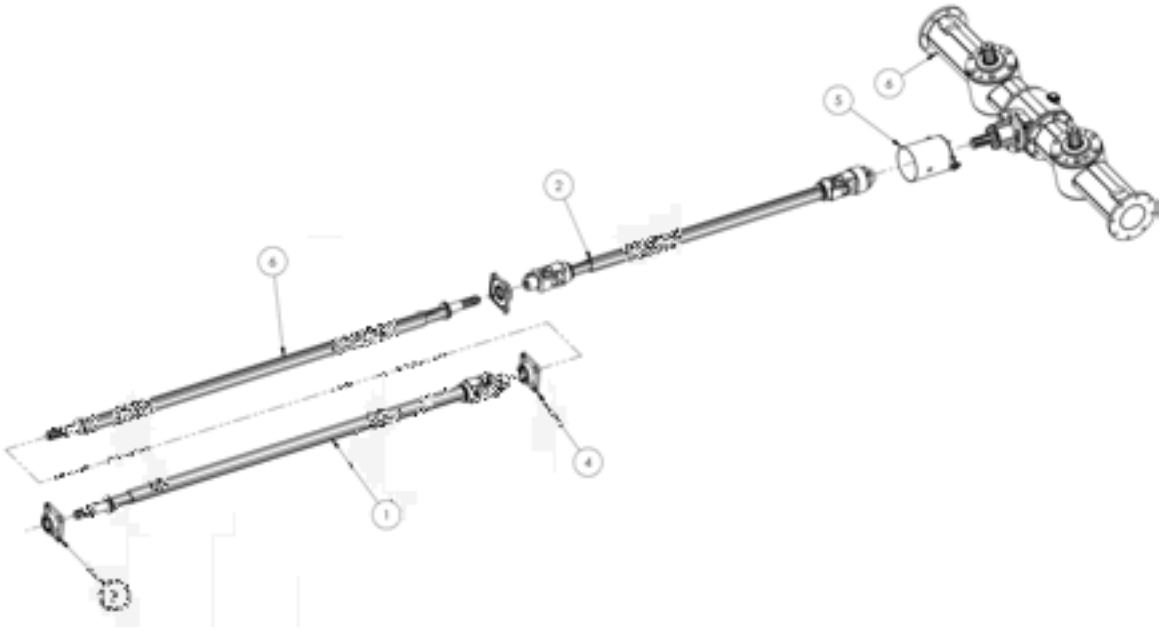
5. P.T.O AND TRANSMISSION

5.1 MK4 TRANSMISSION MODEL 75/105C



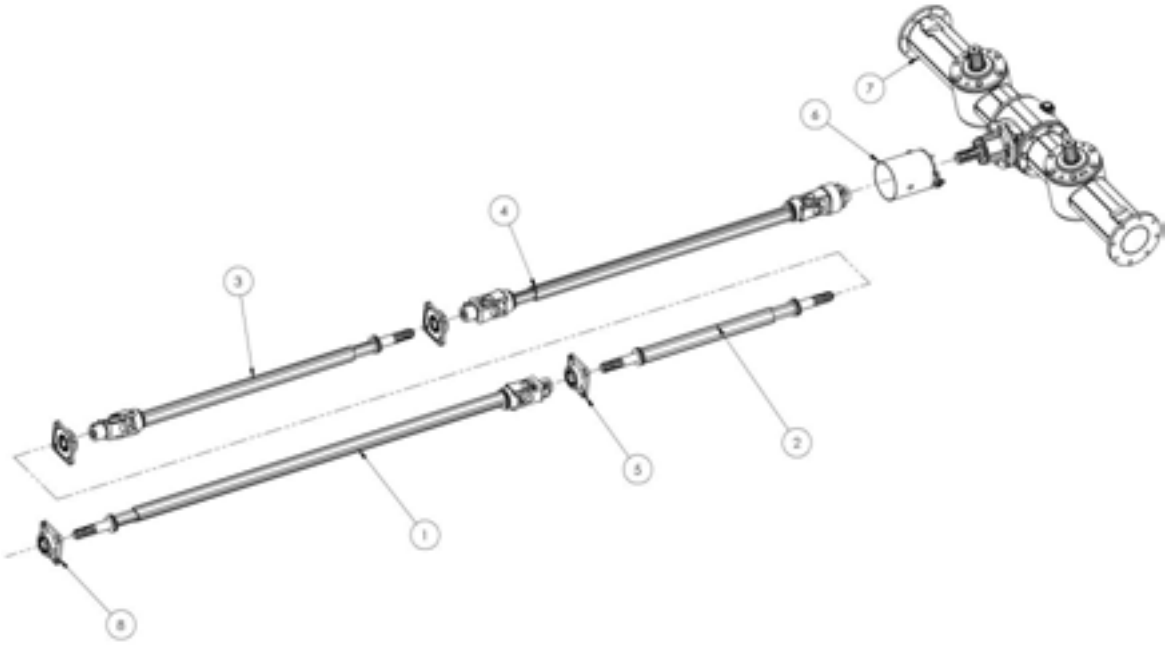
KEY	QTY	PART No.	DESCRIPTION
1	1	42260	PTO SHAFT F/M
2	1	42301	PTO SHAFT M/M SHORT
3	1	42300	PTO SHAFT F/F
4	2	B1170/1	BEARING M35
5	1	AMS1524	GUARD
6	1	B3170	GEARBOX
7	1	B1173	BRG MSF35 FRONT ONLY

5.2 MK4 TRANSMISSION MODEL 90/105/105HY/150C



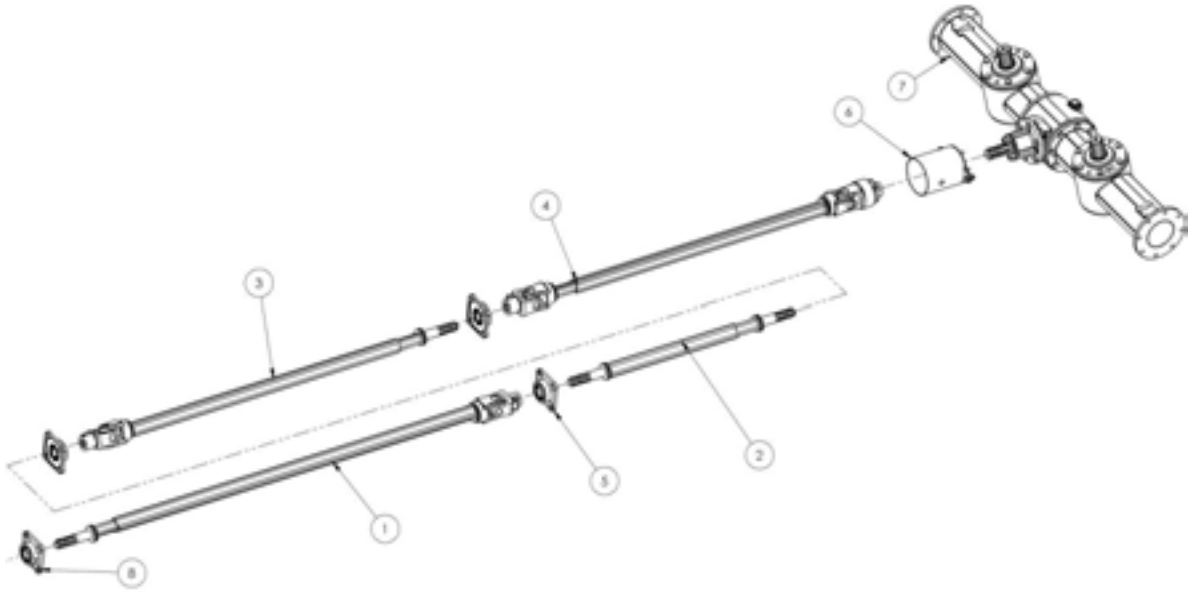
KEY	QTY	PART No.	DESCRIPTION
1	1	42260	PTO SHAFT F/M
2	1	42302	PTO SHAFT M/M
3	1	42300	PTO SHAFT F/F
4	3	B1170/1	BEARING M35
5	1	AMS1524	GUARD
6	1	B3170	GEARBOX
7	1	B1173	BRG MSF35 FRONT ONLY

5.3 MK4 TRANSMISSION 120/120HY



KEY	QTY	PART No.	DESCRIPTION
1	1	42260	PTO SHAFT F/M
2	1	42301	PTO SHAFT M/M
3	1	42250	PTO SHAFT F/M
4	1	42300	PTO SHAFT F/F
5	2	B1170/1	BEARING M35
6	1	AMS1524	GUARD
7	1	B3170	GEARBOX
8	1	B1173	BGR MSF35 FRONT ONLY

5.4 MK4 TRANSMISSION MODEL 150/150HY



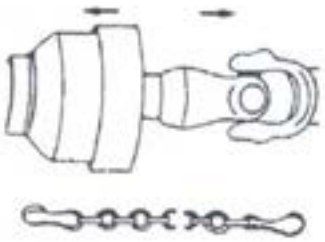
KEY	QTY	PART No.	DESCRIPTION
1	1	42260	PTO SHAFT F/M
2	1	42301	PTO SHAFT M/M
3	1	42255	PTO SHAFT F/M
4	1	42300	PTO SHAFT F/F
5	3	B1170/1	BEARING M35
6	1	AMS1524	GUARD
7	1	B3170	GEARBOX
8	1	B1173	BGR MSF35 FRONT ONLY

5.5 MK4 TRANSMISSION FOR HORIZONTAL BEATERS

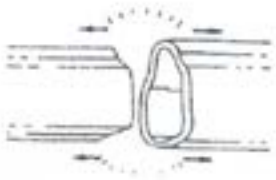
MODEL	FRONT	MIDDLE	REAR
105HB	42260	42250	42270
120HB	42260	42255	42270
150HB	42260	42250 x 2	42270

Note: Cut PTO shaft 42270 to suit.

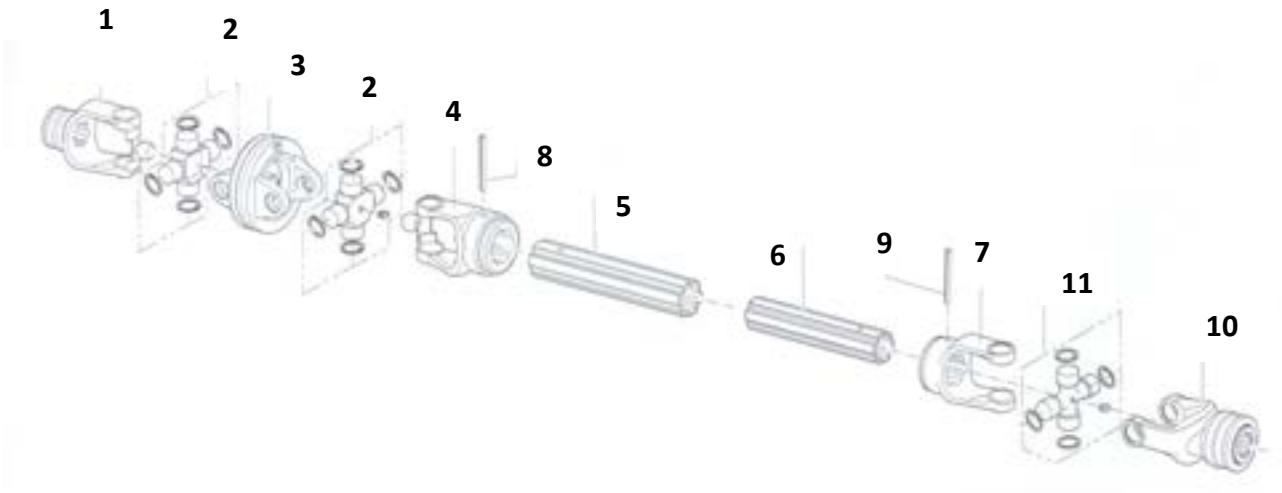
5.6 PROBLEMS AND POSSIBLE SOLUTIONS

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
 Torsion of telescopic tubes	Excessive twisting of shafts	Fit an appropriate safety device onto the drive
		Upgrade the drive
 Rapid wear on tubes	Excessive slipping under load of drive	Use drive polyamide coated tubes. (Rilsan coated)
	Drive too short so tubes are not coupled well	Replace drive with one of an adequate length
	Poor lubrication	Lubricate as prescribed
 Rapid wear on shielding ring nuts	Poor lubrication	Lubricate as prescribed
 Shielding coming out of its seat and chain giving way	Bad chain connection	Position chain properly so that even at the maximum drive angle the chain is not under tension

5.6 PROBLEMS AND POSSIBLE SOLUTIONS

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
 Yoke eyes opening / deforming	Excessive twisting of shafts	Fit an appropriate safety device onto the drive
	Drive too long	Upgrade the drive
 Wear on yoke arms	Excessive working angle of worn joint	Use a constant velocity joint or disengage the P.T.O. on tight bends
 Cross pins break	Excessive twisting movement	Fit an appropriate safety device onto the drive
		Upgrade the drive
 Rapid wear on cross pins	Excessive continuous load or excessive working angle	Check that the choice of working conditions and type are appropriate
	Lubrication intervals not respected	Respect the prescribed lubrication intervals
 Telescopic tubes disengaging during work or manoeuvring	Drive too short	Replace drive with a longer one

5.7 COMER SERIES V PTO SHAFT ASSEMBLY.



KEY	QTY	DESCRIPTION	PART No.
1	1	W/A YOKE 6 SPLINE 1⅜	42810
1	1	W/A YOKE 21 SPLINE 1⅜	42815
1	1	W/A YOKE 20 SPLINE 1¾	42825
2	2	W/A JOURNAL	42848
3	1	W/A CENTRAL BODY	42845
4	1	W/A YOKE TO OUTER	42830
5	1	MULTI LOBE OUTER TUBE	42780
6	1	MULTI LOBE INNER TUBE	42785
7	1	YOKE TO INNER MULTI LOBE	42835
8	1	ROLL PIN	42792
9	1	ROLL PIN	42790
10	1	T60 YOKE TO SHEARBOLT	42760
11	1	T60 JOURNAL	42701
12	1	SHEARBOLT 4.6	B1310
12	1	SHEARBOLT 6.8	B1311
12	1	SHEARBOLT 8.8	B1312
12	1	SHEARBOLT 10.9	B1313

5.8 COMER STANDARD GUARD COMPLETE SHEAR BOLT

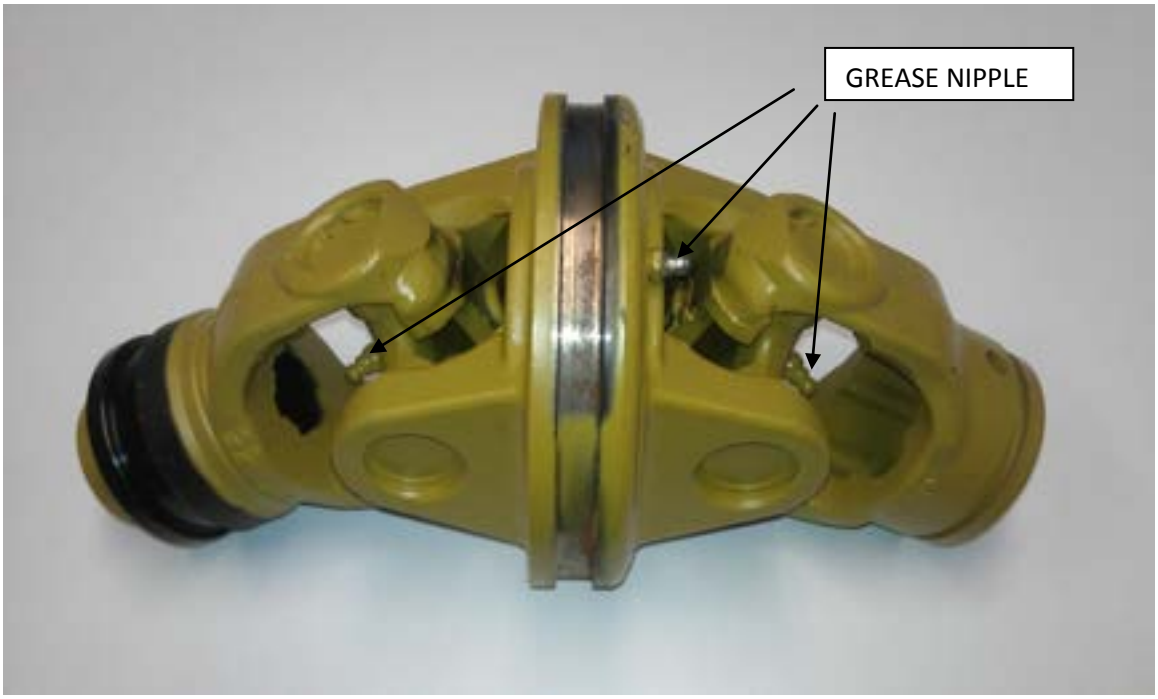
KEY	QTY	DESCRIPTION	PART No.
1	1	T60 STD COMER PTO 6 SPLINE	42210
2	1	T60 STD COMER PTO 21 SPLINE	42220

5.9 COMER WIDE ANGLE GUARD COMPLETE 42242 6 SPLINE, 42244 21 SPLINE.

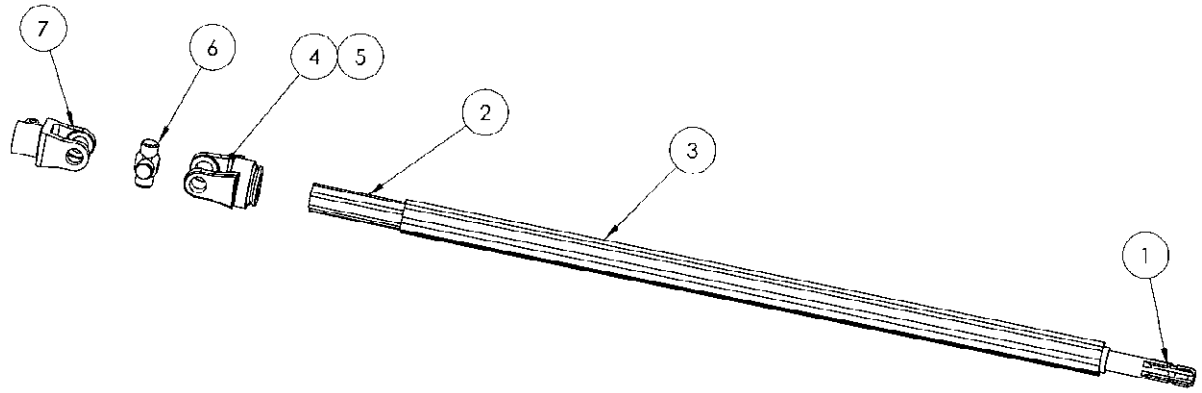
KEY	QTY	DESCRIPTION	PART No.
1	1	PLASTIC GUARD INNER & OUTER	42910
2	1	W/A CONE	42920
3	1	W/A GUARD COMPLETE	42088

5.10 WALTERSCHEID TORQUE LIMITER COMPLETE 6 SPLINE W/A PART No. 43006TL

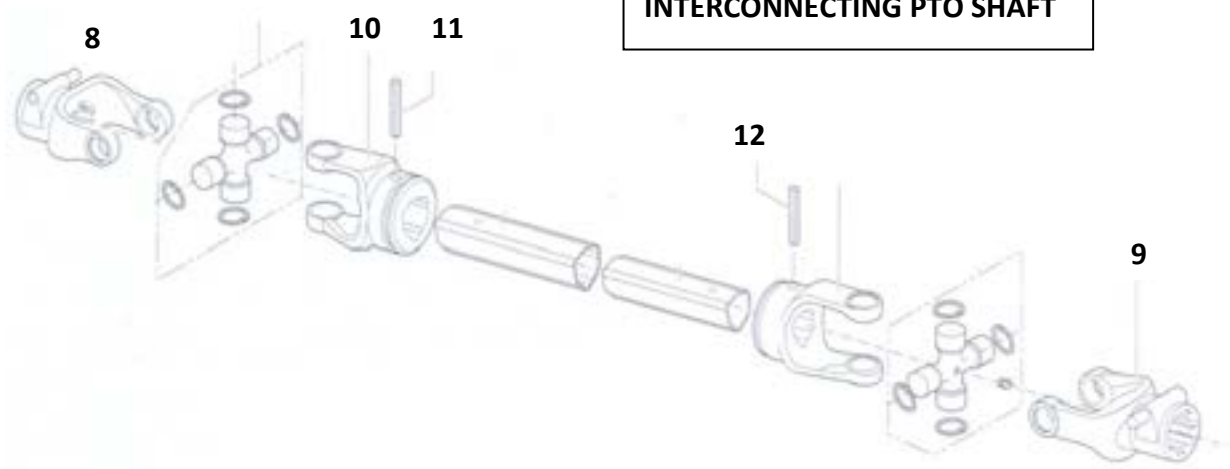
5.11 COMER WIDE ANGLE GREASE POINTS



5.12 COMER T60 UNDERBODY DRIVESHAFT.

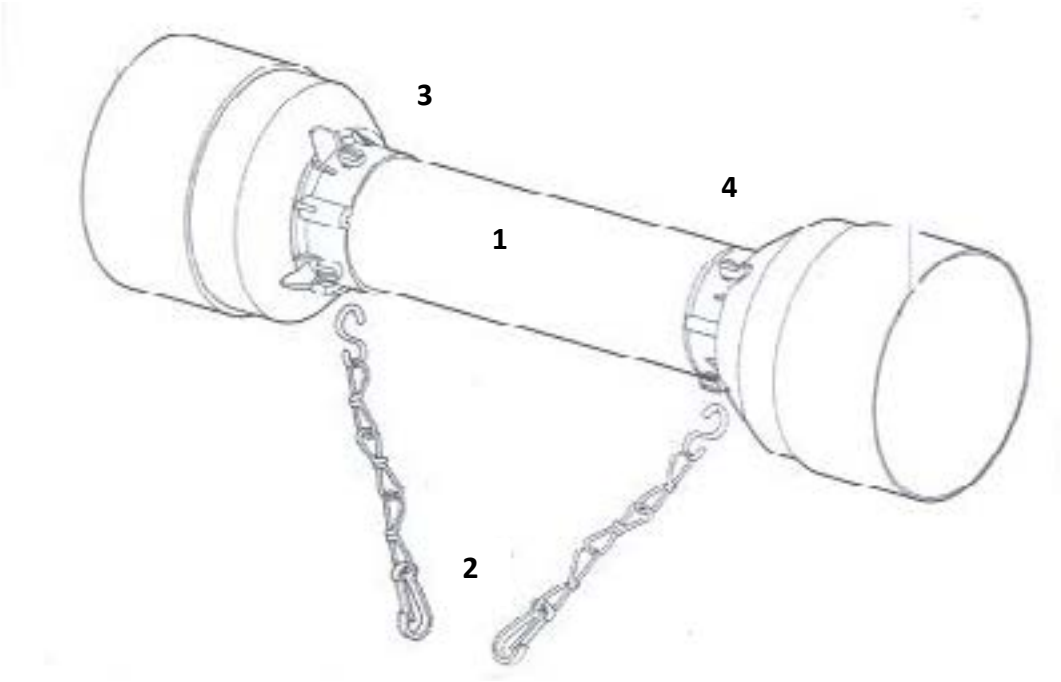


INTERCONNECTING PTO SHAFT



KEY	QTY	DESCRIPTION	PART No.
1	1	SPLINED BAR	42041
2	1	T60 INNER TUBE (PER METER)	42775
3	1	T60 OUTER TUBE(PER METER)	42770
4	1	YOKE TO OUTER	42745
5	1	ROLL PIN	42030
6	1	JOURNAL	42701
7	1	YOKE 6 SPLINE CLAMP BOLT	42715
7	1	1¾ YOKE 6 SPLINE OVERRUN CLAMPBOLT	42766
8	1	1⅜ 6 SPLINE YOKE QUICK RELEASE SHEARBOLT	42760
9	1	1⅜ 6 SPLINE YOKE QUICK RELEASE SHEARBOLT	42705
9	1	1 ⅜ 21 SPLINE YOKE QUICK RELEASE SHEARBOLT	42725
9	1	1 ⅜ 21 SPLINE YOKE QUICK RELEASE SHEARBOLT	42740
10	1	YOKE TO INNER	42750
11	1	ROLL PIN	42790
12	1	ROLL PIN	42792

5.13 COMER PLASTIC GUARD ASSEMBLY.



KEY	QTY	DESCRIPTION	PART No.
1	1	PLASTIC GUARD COMPLETE	42910
2	1	SAFETY CHAIN	42058
3	1	BEARING RING INNER	42056
4	1	BEARING RING OUTER	42057

5.14 COMER PTO GUARD SAFETY CHAIN FIXING

Care should be taken when fixing the PTO safety chains, by following the guidelines below you can help avoid unnecessary and possibly expensive damage to the PTO guard and its component parts.

SEE DVD OR LOCAL DEALER.

The purpose of the safety chain is to stop the guarding from rotating during its normal operation thus preventing foreign objects becoming entangled in it including you!, the safety chains must be fixed in a position that limits the risk of damage to both operator and shaft guarding.

Because each application varies there is no one perfect way of fitting, as we are all aware tractors vary as do machines, some come with ideal fixing points others don't. The chains are supplied at a set length, this is not the length they have to be used at, more so the length exists to ensure attachment can be achieved should a suitable anchor point be some distance from the guard.

In the case where a chain can be shortened it should be, not so much as to then cause damage by pulling on the guard but enough to stop the whole chain wrapping around the guard cuffs as the shaft starts to work. This is especially true when fixing wide angle constant velocity joints, by its nature the shaft will be moving to the left and right as the tractor turns, in this case we have to leave enough slack on the chain to allow this movement but at the same time ensuring that the chain does not wrap around the wide angle cover or pull across its surface causing damage, in an ideal world the chain would be fixed at 90 degrees to the guard, in effect the only point of contact between guard and chain would be where the chain is fixed to the guard, getting the anchor point as close to 90 degrees to the shaft will certainly help prevent damage.

Sometimes with the wide angle shafts it is possible to fix one chain to the other, at the same time shortening the length of chain as it is done, this can be achieved by taking the main tube guard chain that is at the wide angle end of the drive shaft and clipping it to the chain running from the wide angle guard which in turn is anchored as close to 90 degrees from the shaft as is possible, again providing there is some slack left in the chain, the length of chain can be reduced thus avoiding damage casued by excess chain wrap around and crossover.

The following pointers should help keep your guard serviceable for many hours.

1. Don't leave the chains too long allowing them to wrap around the guard it will damage the guard.
2. Don't leave the chains so short they pull on the guard.
3. Always try and avoid contact between chain and guard, keep contact to a minimum.
4. Anchor the chains as close to 90 degrees from the shaft as possible.
5. If needed attach one chain to the other, to avoid cross over and chain wrap around.
6. Always ensure there is enough slack to allow for exaggerated movement especially when using a wide angle shaft.
7. Always maintain the shaft as instructed by the manual supplied with it.
8. Grease your shaft and guard bearings regularly.
9. Always replace worn chains and guarding, damaged guards are potentially lethal.
10. Always stop the tractor engine, wait for the machine to stop turning and remove the ignition key before attempting to work on or around your driveshaft.

Refer to DVD supplied.

Safety chain fixing positions

Grease points tractor end

Grease points machine end

For more information on fitting and maintaining your Comer PTO see:-

www.youtube.com/watch?v=dDxK0e9rA9E

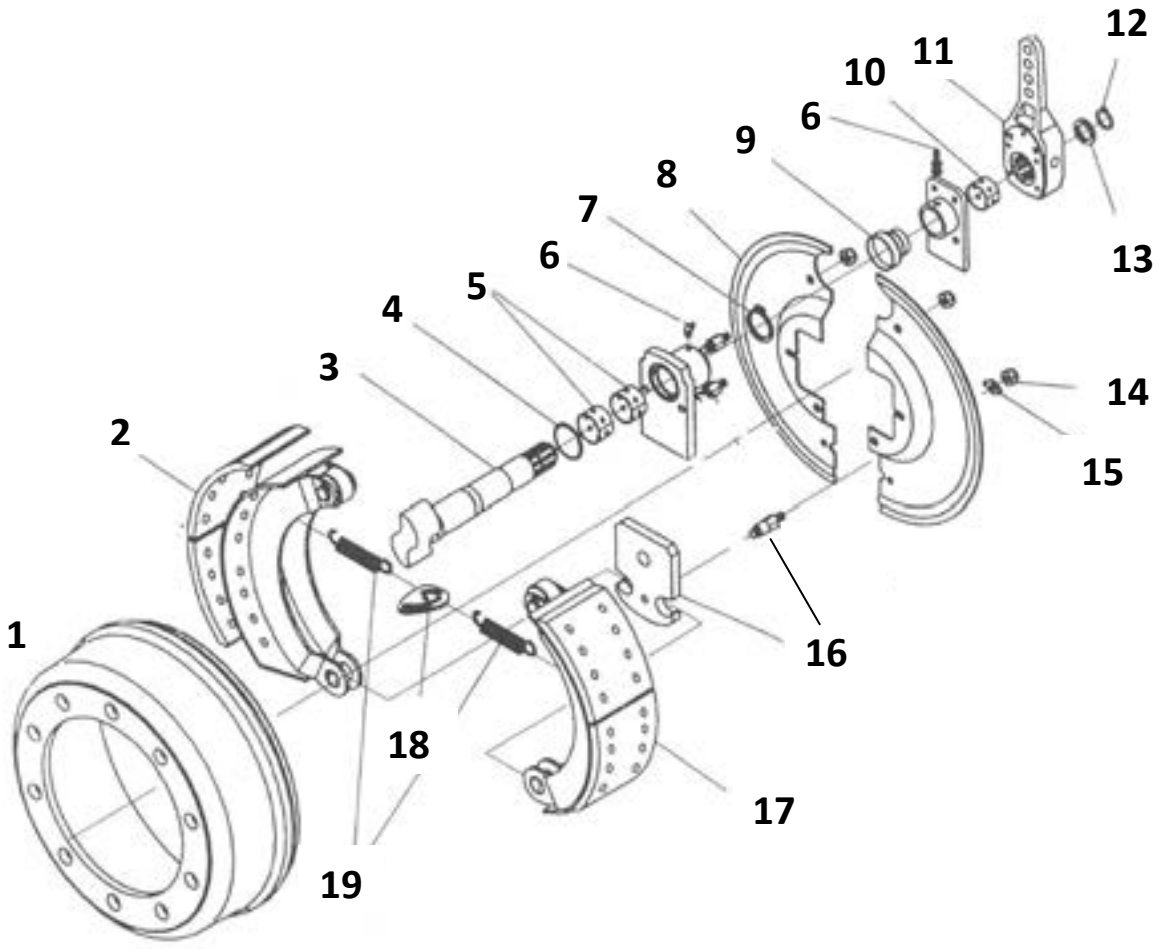
5.15 PTO STOWAGE

When the spreader is not in use stow PTO as shown to prevent damage.

Please check the condition of the PTO guard regularly, if damaged replace as soon as possible.

6. BRAKE & AXLE ARRANGEMENTS

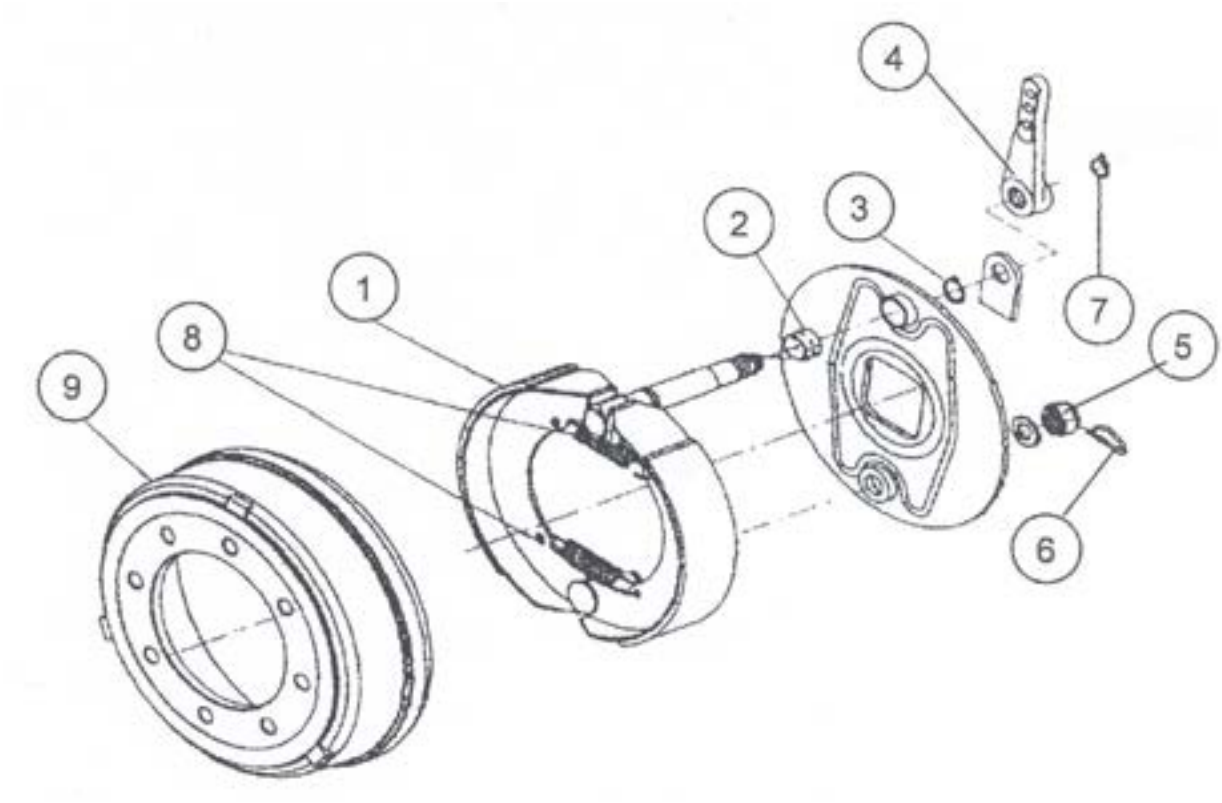
6.1 MK4 BRAKE ARRANGMENT 120/150 & WB



6.1 MK4 BRAKE ARRANGMENT 120/150 & WB PARTS LIST

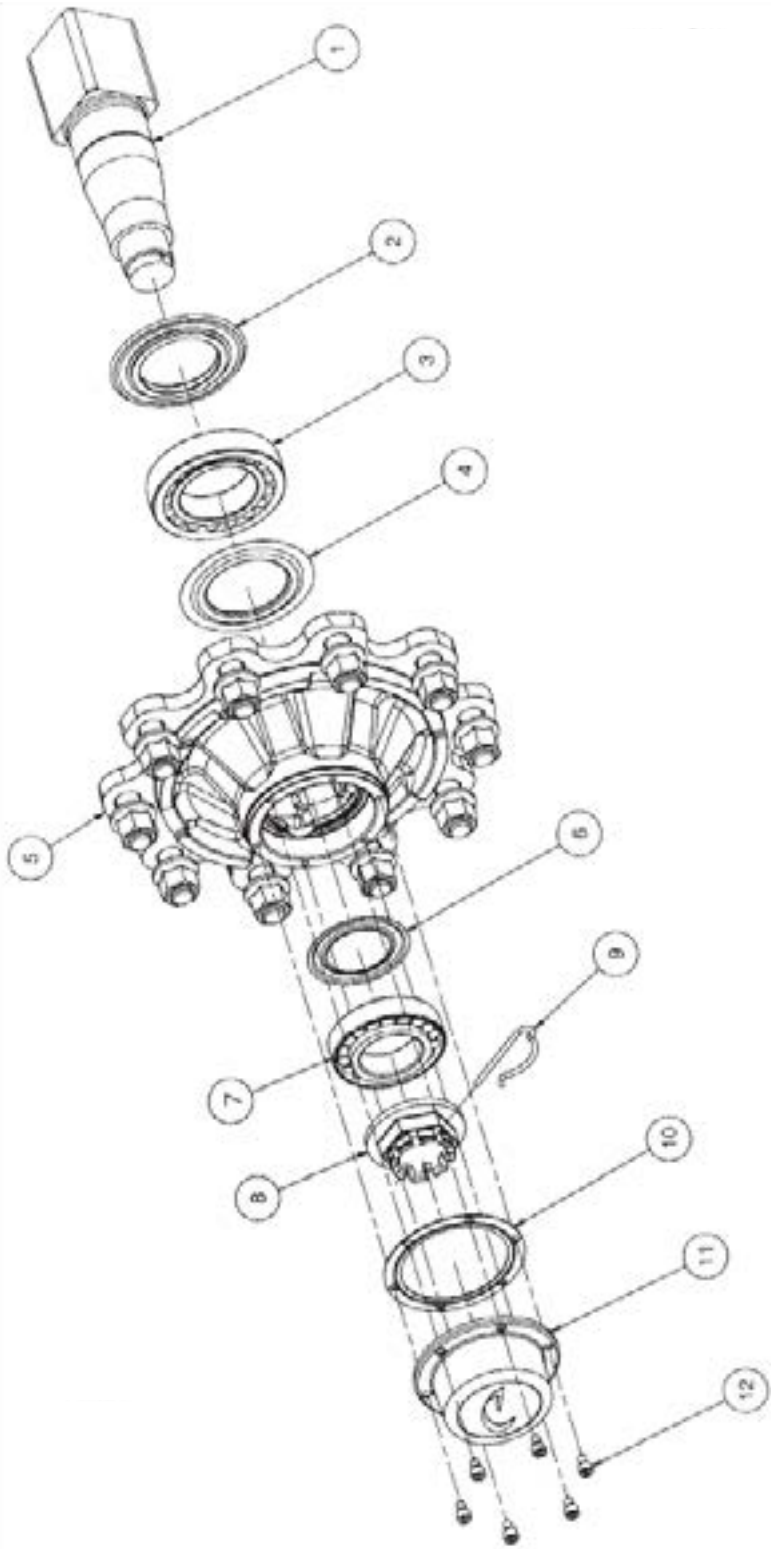
		MODEL	120	150/180
		AXLE SIZE	140mm SQ	150mm SQ
		BRAKE TYPE	412S	414S
KEY	**QTY**	**DESCRIPTION**	**PART No.**	**PART No.**
1	2	DRUM	F10017/6	F10017/7
2	4	LINING	97726D08	97726013
3	2	S' CAM ROD	97831	97831
4	2	WASHER	97770008	97770008
5	4	BUSH	97610568	97610568
6	4	GREASER	50731/3	50731/3
7	2	CIRCLIP 42E	98900042	98900042
8	2	BACK COVER PER PAIR	F10123/4	F10123/5
9	2	RUBBER BOOT	97610575	97610575
10	2	BUSH	771382601	771382601
11	2	BRAKE LEVER	F1030	F1030
12	2	CIRCLIP	98900025	98900025
13	2	WASHER	92630030	92630030
14	10	NUT	92411008	92411008
15	2	TAB WASHER	97610579	97610579
16	2	STUD	97620583	97620583
17	2 PR	BRAKE SHOE	F10108/2	F10108/3
18	2	SPRING TENSIONER	97610576	97610576
19	4	RETURN SPRING	738119	738119

6.2 MK4 BRAKE PARTS MK4 75/90/105/105C



	MODEL	75/105C	90/105
	AXLE SIZE	EF938	EUR 1010/1110
	BRAKE TYPE	A 410	A 610
	BRAKE SIZE	355 x 80	400 x 80
KEY	**DESCRIPTION**	**PART No.**	**PART No.**
1	BRAKE SHOES	F10107	F10108/1
2	BRAKE ROD BUSH	97610514	97610514
3	CIRCLIP 38E	98900038	98900038
4	BRAKE LEVER	F00620	F00620
5	NUT	57524B2	57524B2
6	PIN 4 x 32	98850432	98850432
7	CIRCLIP	98900025	98900025
8	RETURN SPRING	738123	738117
9	DRUM	F10017/4	F10017/5

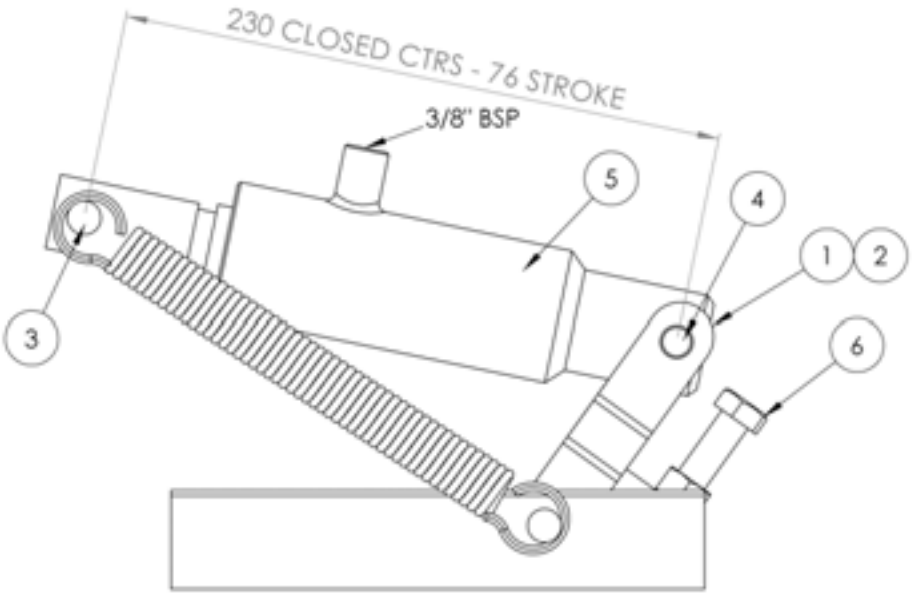
6.3 AXLE HUB AND BEARING PARTS MK4



6.3 AXLE HUB AND BEARING PARTS MK4 PARTS LIST

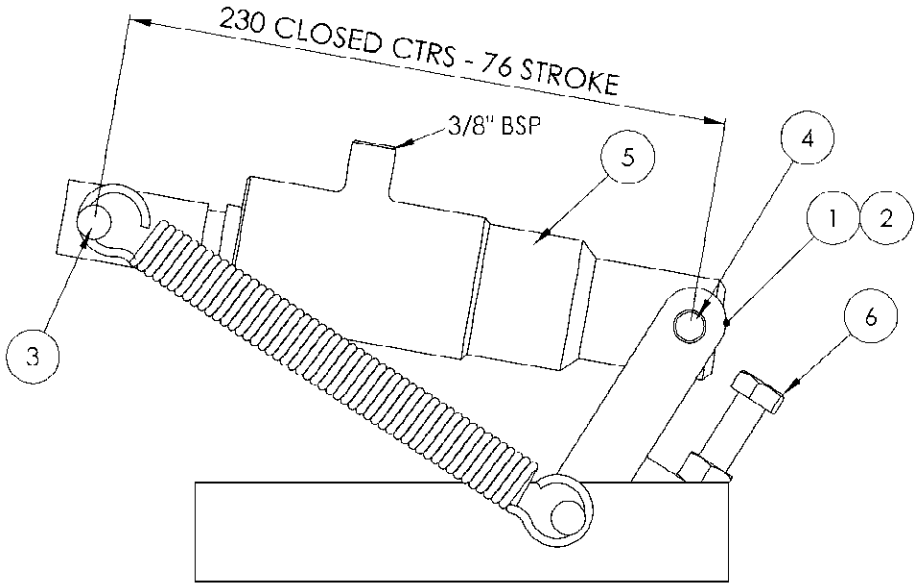
	MODEL	75	90,105&105C	120	150
	AXLE TYPE	EF 938	EUR 1010/1110	EUR 1410	EUR 1520
	AXLE SIZE	90mm	100/110mm	140mm	150mm
KEY	**DESCRIPTION**	**PART No.**	**PART No.**	**PART No.**	**PART No.**
1	AXLE	J1020	J1030/40	J1050	J1060
2 4 6	SEAL KIT	F10061/3	F10061/4	F10061/5	F10061/6
3	BEARING	BR210	BR240	BR228	BR245
5	HUB	F10016/1	F10016/2	F10016/2	F10016/3
7	BEARING OUTER	BR195	BR250	BR250	BR240
8	CASTLE NUT	F10066/1	F10066/2	F10066/2	F10066/2
9	PIN	J1060F1	J1060F1	J1060F1	J1060F1
10	HUB CAP GASKET				
11	HUB CAP	F10073	F10073/1	F10073/1	F10073/2
12	HUB CAP SCREW				
	WHEEL NUT	F00550	F00547	F00547	F00547
	WHEEL STUD	F00545/1	F00546	F00546	F00546

6.4 HYDRAULIC BRAKE RAM ASSEMBLY – MK4 75 30mm BORE – 70830.2



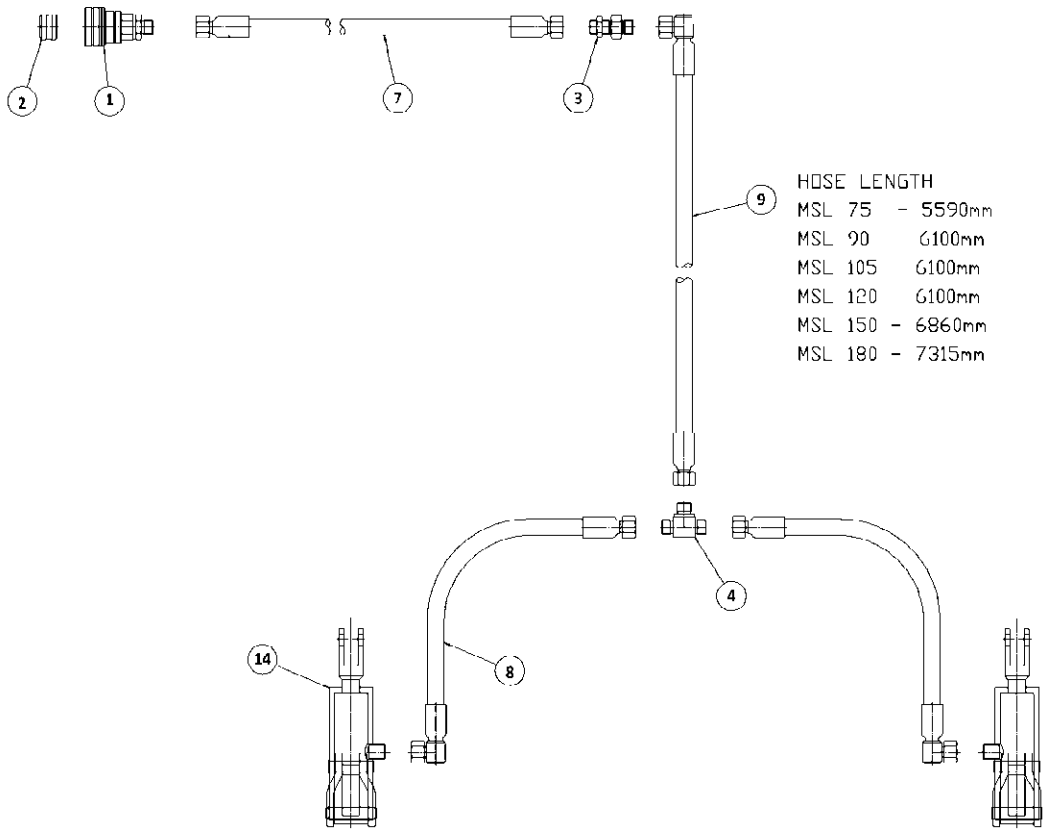
KEY	QTY	PART No.	DESCRIPTION
1	2	70830/2	RAM ASSEMBLY
2	2	70831/2	SEAL KIT
3	2	70830/4	SPRING & PIN KIT
4	2	70836	SELLOCK PIN
5	2	70835/2	CYLINDER
6	2	70834	ADJUSTER

6.5 HYDRAULIC BRAKE RAM ASSEMBLY - MK4 90/105/105c/120/150. 35mm BORE – 70830.3



KEY	QTY	PART No.	DESCRIPTION
1	2	70830/3	RAM ASSEMBLY
2	2	70831/3	SEAL KIT
3	2	70830/4	SPRING & PIN KIT
4	2	70836	SELLOCK PIN
5	2	70835/3	CYLINDER
6	2	70834	ADJUSTER

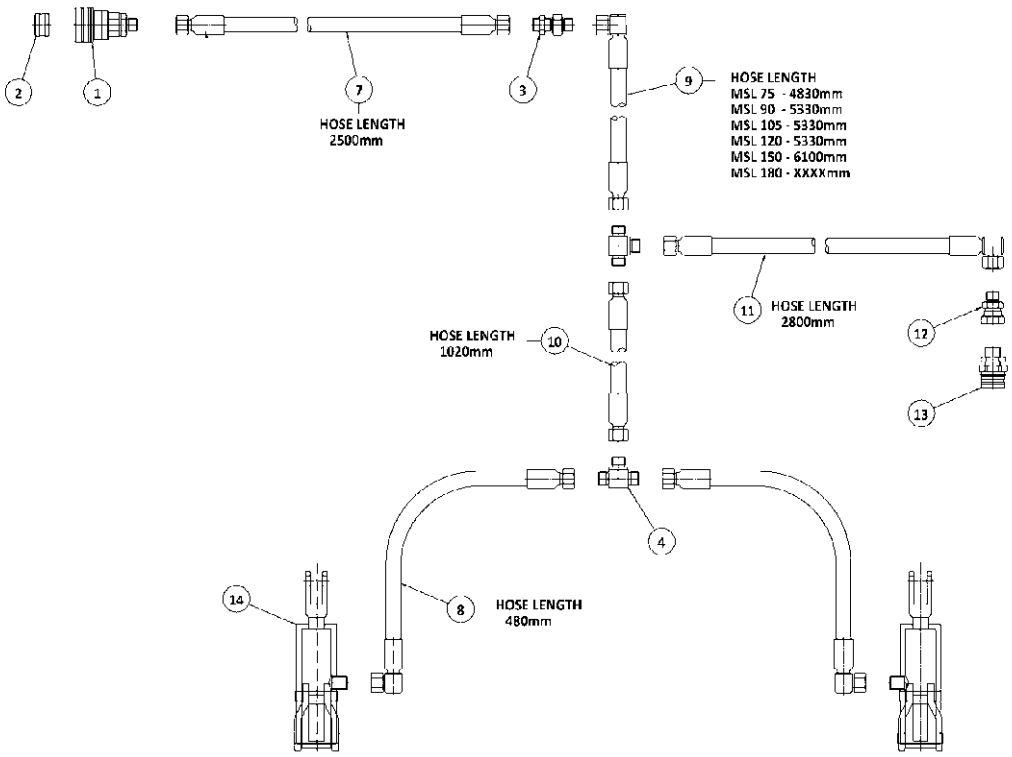
6.6 HYDRAULIC BRAKE CIRCUIT SINGLE AXLE



KEY	QTY	PART No.	DESCRIPTION
1	1	51568	COUPLING 3/8 FEMALE SELF SEAL
2	1	51583-1	DUMMY 3/8 MALE
3	1	51463	3/8"-3/8" NPT BULKHEAD
4	2	51447	3/8"-3/8"-3/8" NPT MALE TEE
7	1	B4462	INTER-CONNECTING HOSE
8	2	B4454	AXLE HOSE
9	1	B4458	LONG HOSE
14	REF		BRAKE ACTUATOR HYDRAULIC

Note: 75 and 105C are the same and so are the 90,105 & 150C.

6.7 HYDRAULIC BRAKE CIRCUIT & CLEVIS DRAWBAR



KEY	QTY	PART No.	DESCRIPTION
1	1	51568	COUPLING 3/8 FEMALE SELF SEAL
2	1	51583-1	DUMMY 3/8 MALE
3	1	51463	3/8"-3/8" NPT BULHKHEAD
4	2	51447	3/8"-3/8"-3/8" NPT MALE TEE
7	1	B4462	INTER-CONNECTING HOSE
8	2	B4454	AXLE HOSE
9	1	B4458	LONG HOSE
10	1		HOSE DIA3/8" BORE 2 WIRE x 1020
11	1		HOSE DIA3/8" BORE 2 WIRE x 2800
12	1	51644	ADAPTOR 3/8" MALE-M20x1.5 FEM
13	1	51569	COUPLING 3/8 MALE SELF SEAL
14	REF		BRAKE ACTUATOR HYDRAULIC

Note: 75 and 105C are the same and so are the 90,105 & 150C.

7.

AXLES

1. SAFETY NOTICE

The authors and publisher are not liable for any physical damage or personal injury resulting from errors or omissions in this manual.

This manual does not replace the manual provided by the vehicle manufacturer.

Maintenance must be carried out by suitably qualified personnel using appropriate tools.

This manual describes everyday maintenance operations and does not cover major repairs.

We recommend that maintenance should be carried out by a specialised workshop.

Carrying out repairs and maintenance work may be dangerous. This safety notice describes only some of the potential hazards and is intended to make users aware of the risks and encourage them to take care.

Personal protection :
Wear appropriate personal protection equipment: goggles, mask, gloves, helmet, safety shoes, overalls, etc.
Work in the presence of another person.

Unstable vehicles :
Never work underneath or near a vehicle that has been raised using only a jack.
When working underneath or near a vehicle that has been jacked up, always make sure that the jack is used in conjunction with stands or other effective supports and that the jack and stands used can bear the weight.
Check that the vehicle is perfectly stable and that the forces applied to the vehicle while carrying out maintenance will not cause it to shift. Also check that the ground is firm.

Hot parts :
Some parts, such as brake drums, for example, may become extremely hot in use.

Pressurised hydraulic or pneumatic systems :
NB: Before carrying out maintenance on hydraulic or pneumatic systems, which may be pressurised, take all necessary precautions to avoid accidental pressure release.

Risk of fire, risks from fumes, toxic gases and irritant substances :
All fuel is highly flammable and petroleum vapour is explosive.
For cleaning and degreasing parts, use only appropriate, recognised cleaning fluids and follow the instructions on the packaging.
Avoid contact with the skin and avoid inhaling vapour, fumes or toxic gases.
Do not smoke, use a naked flame or create sparks, etc if there is a risk of explosion or fire owing to the presence of flammable vapours, fuel, oil, paint, solvents, dust, straw, etc.
A fire extinguisher appropriate for the type of risk should always be to hand.

Asbestos :
The brake linings of our axles no longer contain asbestos. We used asbestos-free linings well before EU regulations prohibited its use.
If there is any doubt about the presence of asbestos (for example, when carrying out maintenance on old axles), the brakes and linings should be handled as if they contained asbestos, as asbestos dust is a major health hazard.

General information.

2. AXLES

2.1 General

The specifications of our axles and suspensions can be found in the general COLAERT ESSIEUX catalogue.
The catalogue provides the following information.

Axles
- The axle cross-section.
- The axle type.
- The axle loads and maximum admissible offset at speeds of 25, 40 and 60 km/h with zero offset wheels, with single, tandem or tridem axles.
- The number and size of studs and the bolt circle.
- The centre hole diameter.
- The brake dimensions (drum internal diameter and lining width).
- The braking characteristics certified by CEMAGREF and TUV.

The general catalogue also gives the admissible load on the axle assembly for different load offsets.
Exceeding these values may cause excessive bending of the axle and possibly permanent damage.

Stabiliser jacks bearing on the axles, weight transfer devices or lifting axles do not increase the maximum load on the axles or suspensions.

Suspension
- The maximum load for the suspension.
- The wheel-base.
- The type of spring, the number of leaves and the number of fixed leaves.
- The height of the axle assembly unladen and laden, for different axle cross-sections.

Axle, maintenance and adjustment.

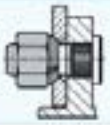
2. AXLES

2.2 Axle, maintenance and adjustment

2.2.1 Assembly and fixing of the wheels

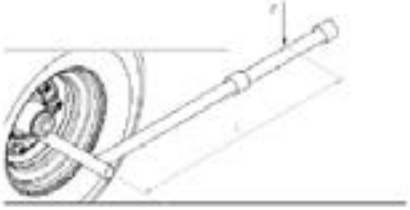
Above all to check that the type of wheel used is compatible with the nut of the wheel stud, for all the cases of fixing of the wheel with centering on the wheel stud, i.e. all those of table below except the nuts of the type M, to check that the holes of the rim have a conical part in order to receive the spherical part as of nuts DIN, the spherical washer of the plain nuts or the conical part of the nuts with "Bec ".

In the case of twim tyres, in order to ensure a good centering, it is necessary to insert a spherical washer between the flask of the hub and the rim except assembly nuts M .

NUT TYP	Spanner	Wheel stud	Tightening torque	Leverage (*L)	Force (*F)
	mm	mm	Nm	mm	Kg
DIN 	17	M12x1,5	90	300	30
	19	M14x1,5	130	300	40
	24	M18x1,5	270	450	60
Plain nut + washer 	24	M18x1,5	270	450	60
	27	M20x1,5	380	600	60
	30	M22x1,5	510	800	60
"Twin" 	24	M18x1,5	270	450	60
	27	M20x1,5	380	600	60
	30	M22x1,5	510	800	60
"M" 	-	-	-	-	-
	27	M20x1,5	450	800	55
	32	M22x1,5	650	1000	65
"Bec" 	28	M18x1,5	270	450	60
	30	M20x1,5	380	600	60
	32	M22x1,5	510	800	60

Tightening of the nuts of wheel

On lately assembled wheels, the nuts can, at the beginning, to loosen itself in consequence of a compressing. It is thus necessary to check the tightening of the nuts after the first course in load. One will proceed in the same way later on after each disassembling of wheels. To tighten the nuts, to use the adapted special spanner. If one uses the machines bolt ones for the nuts of wheel, to regulate the tightening torque well, if not the threading and the metal of the stud and nuts of wheel undergo an overload.



(*) The 2 last columns of the table are useful as reference for those which do not have a torque spanner or of pneumatic screw driver (see the figure at side).

It is allowed to use an impact spanner for disassembling, but it is absolutely necessary to avoid the tightening of the nuts with this type of spanner, because the exerted couple is unverifiable.

2. AXLES

2.2.2 Tightening and retightening wheel nuts (Summary) :

Never use impact wrenches to tighten the wheel nuts as the impact torque may be excessive.

Wheel nuts should be tightened diagonally using a torque wrench.

If power tools are used (for example, pneumatic torque wrench) they must be carefully set to the required torque for tightening.

Otherwise, the studs and wheel nuts may be overtightened which may damage or break them.

Retighten the wheel nuts after:
- The first time of use.
- The first laden journey.
- The first 1,000 km.
- Every 6 months or 25,000 km.

Repeat every time the wheels are changed or removed.

2.2.3 Checking the hubcaps

Missing or damaged hubcaps must be replaced immediately to avoid dirt penetrating into the hub which might result in damage to the bearings.

Check that the hub caps are in place and in perfect condition.

For press fit hubcaps, check visually that they are fully home.

For hubcaps attached using screws, fit a new gasket if necessary when the hubcap is removed and retighten the screws regularly (every 6 months).

2.2.4 Checking the wheel bearing play

- After the first 1,000 km.
- Before intensive use, every 6 months or 25,000 km.

Wheel bearings are subject to wear: their lifetime depends on the operating conditions, the load, the speed, the adjustment and lubrication, etc.

To check the wheel bearings
- Lift the wheel off the ground.
- Turn in both directions slowly to check for any rough points or friction
- Turn it at high speed to check for unusual noises, such as grating or knocking.

If the bearing is damaged or worn, the bearing and seals should all be replaced (see paragraph 2.2.7 Replacing the wheel bearings)

2. AXLES

- Always err on the side of too free rather than too tight.
- When the hub has been adjusted, fit a new split cotter pin or re-fit the hair-pin clip.
- Refit the hubcap.
- Refit the wheel following the instructions in paragraphs 2.2.1 (Fitting wheels) and 2.2.2 (Tightening and retightening wheel nuts).

When the wheel has been refitted, turn it slightly. It should come to rest with a slow rocking movement due to the imbalance.

2.2.6 Lubricating the wheel bearings

In normal operating conditions, lubricate the bearings every 2 years or every 50,000 km and when the brake shoes are replaced.
In harsh conditions the bearings should be lubricated more frequently.

Use a general purpose EP grease formulated for lubricating plain, ball and roller bearings, subject to heavy loads and impacts typical of HGV, agricultural vehicle hubs, etc.

All parts (hub, spindle, bearings, seals, castle nuts, hubcap, cotter pin) should be degreased and perfectly clean before reassembly.

The work should be carried out in a clean environment with appropriate tools as the slightest bit of dirt can damage the bearings or even the spindle.

When carrying out maintenance on the bearings, check the brake linings, drum and return springs, clean the brakes, clean and lubricate the brake cam shaft.

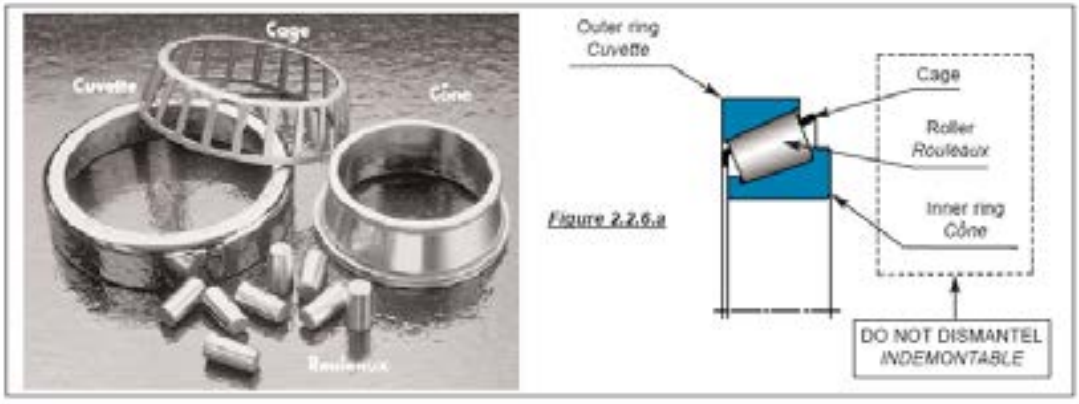


Figure 2.2.6.a

Disassembly : (See figures **2.2.5** and **2.2.6.a**)

- Slacken the wheel nuts.
- Lift the axle until the wheel is off the ground.
- Remove the wheel.
- Release the brakes (make sure that the vehicle cannot move).
- Remove the hubcap.
- Remove the split pin or pin from the spindle.
- Remove the castle nut.

2. AXLES

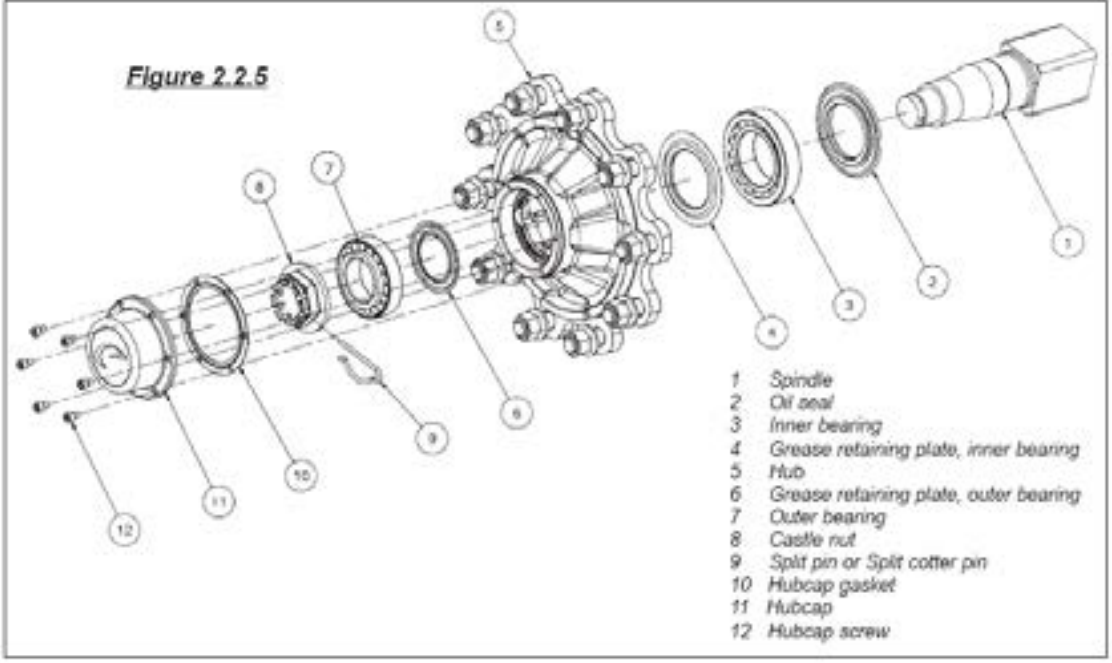
To check the wheel bearing play, raise the axle until the wheel is no longer resting on the ground ***(ensure that the vehicle cannot move)***
Release the brake, grip the wheel at the top and the bottom and check the play by trying to tilt it. The play can also be detected by using a lever between the wheel and the ground.
If you can feel any play, adjust the wheel bearing (see paragraph 2.2.5 Adjusting the wheel bearings).

Make sure that the play does not come from the suspension or a steering axle kingpin.

2.2.5 Adjusting the wheel bearings

Lift the axle until the wheel is no longer resting on the ground.
Large wheels should be removed so that the play is easier to feel and to make it easier to adjust the bearings.

Figure 2.2.5



- Remove the hubcap.
- Remove the cotter pin or hair-pin clip from the spindle.
- Tighten the castle nut (right-hand thread) to take up the internal play (the conical roller bearings should then be firmly held between the hub seatings, the pressure ring, spindle and castle nut).

The rotation of the hub or wheel feels to be slightly stiff.

- Slacken the castle nut until there is no longer any friction between the castle nut and the outer bearing and the hole for the pin is aligned with a notch in the castle nut.
- Tap the hub gently using a mallet to shake down the assembly.
- Check that the hub rotates more freely.

2. AXLES

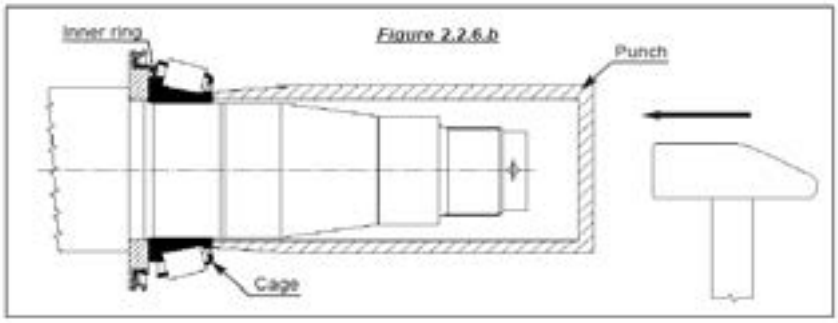
- Remove the drum/hub assembly. using a hub puller if necessary: the outer ring, the grease retaining plates inside the hub (depending on the model), the small bearing cone and cage come with the hub. Check these parts.
  The bearing cups and grease retaining plates can be left inside the hub for cleaning.
- Remove the large bearing cage and cone from the spindle using a bearing puller if necessary.
- Check the oil seal between the spindle and the large bearing (or the wheel bearing seal depending on the model), and replace these parts if necessary. A puller may be required to remove the wheel bearing seal. Note the orientation of the oil seal for reassembly.
- Check the contact surfaces on the spindle for the bearing and seal and the threaded end of the spindle and remove any bumps or asperities.
- Check the hub surfaces in the same way.
- Check the bearing face of the castle nut.

Clean and degrease all parts with a suitable cleaning fluid.

Reassembly :

- Grease the spindle lightly.
- Refit the oil seal or wheel bearing seal (ensure that the seal is the right way round), a punch makes it easier to fit the wheel bearing seal and avoids damaging the seal.
- Apply a generous coating of grease to the large bearing cage and rollers, making sure that the grease penetrates all round the rollers and under the cage.
- Fit at bottom the interior ring (cone) of the large bearing on the rocket, it is important to take care not to damage the cage of the bearing, to go up the cone unit, rollers and cage (figure **2.2.6.a**) on fized to use if necessary tools as shown in the figure **2.2.6.b**, the effort to push must apply only to the cone, in no case on the cage or the rollers what involves a deterioration of the bearing.
- Apply a 15 mm (small axles) or 20 mm (large axles) layer of grease all around and right across the large and small bearing cups that are still in the hub.
- If the hub does not have grease retaining plates, put a large amount of grease in the centre of the hub to act as a reservoir.
- Slide the hub/drum assembly over the spindle and the brake shoes keeping the hub perfectly straight and aligned until it is in contact with the oil seal at the back of the spindle.
- Apply a generous layer of grease to the small bearing cage and rollers and fit the assembly to the spindle.
- Fit the castle nut and adjust it as described above (See paragraph 2.2.5 Adjusting the wheel bearings).
- Lock the castle nut with a hair-pin clip or new split cotter pin as appropriate.
- For hubs without grease retaining plates, fill the hubcap with grease.
- Refit the hubcap.

Figure 2.2.6.b



2. AXLES

2.2.7 Replacing the wheel bearing

New grease retaining plates should be fitted to hubs with grease retaining plates (See figure 2.2.5), as the plates will be damaged while removing the bearing cups.

Unpack the bearings at the last moment and never mix them up.

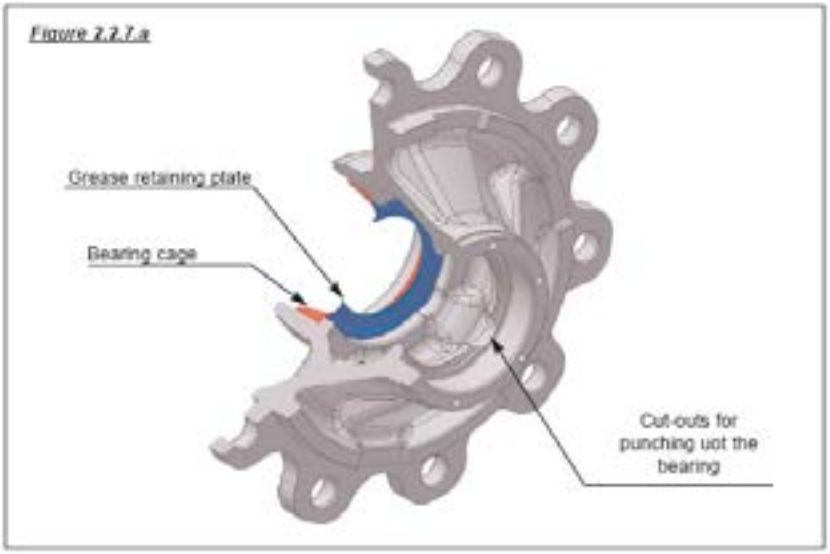
To replace the wheel bearings, follow the instructions for removing the hub (see paragraph 2.2.6 Lubricating the wheel bearings) and remove the bearing cups from the hub as follows.

Removing the bearing cups from the hub

Note the orientation of the bearing cups and grease retaining plates for reassembly.

- The bearing cups are an interference fit and must be punched out using a hammer and a mild steel punch (See figure **2.2.7.a**).
- If the hub has grease retaining plates, these will be punched out at the same time as the bearing cups and will, therefore, be damaged.

Figure 2.2.7.a



Fitting new bearing cups into the hub :

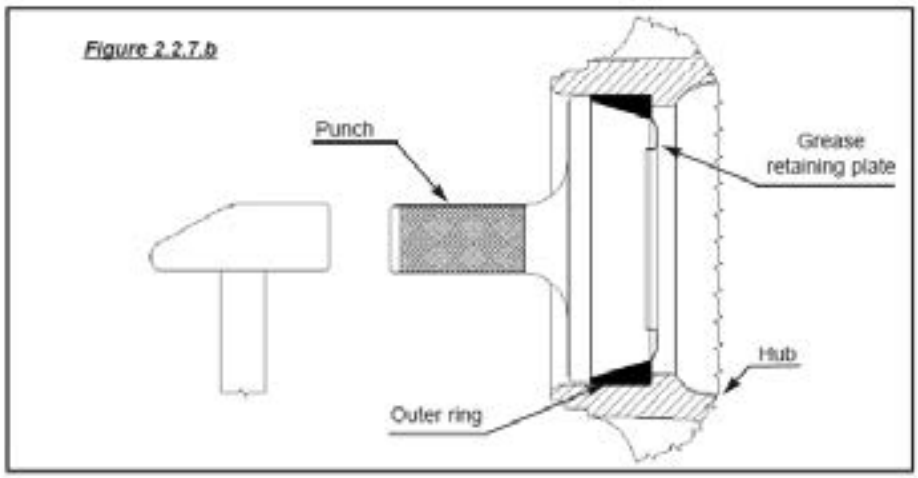
Make sure that the bearing cups and grease retaining plates are the right way round.

NB: Never fit the bearing cup with the bearing cone and rollers in place

- If the hub has grease retaining plates, first put the grease retaining plate in its seating (the right way round) and ensure that it remains well centred and in place while the bearing cup is being fitted. Re-check when the operation is complete.
- Fit the bearing cups and punch into place using a mild steel punch as shown in figure 2.2.7.b.

Take care that the bearing cups are straight and that they are firmly against the seating in the hub.

2. AXLES



2.3 Brake maintenance and adjustment

2.3.1 Initial checks

The brakes should be tested before using for the first time and after the first laden journey:

- Check the actuator and return spring mountings, check the actuator stroke and return travel and check that the road and parking brakes operate and release correctly.
- Tighten the screws and nuts (covers, fulcrum, etc), check the cotter pins, pins, circlips, etc.
- Check for hydraulic fluid and air leaks.

2.3.2 Checking brake clearance and wear

Check and test the brakes before intensive use and every 3 months:

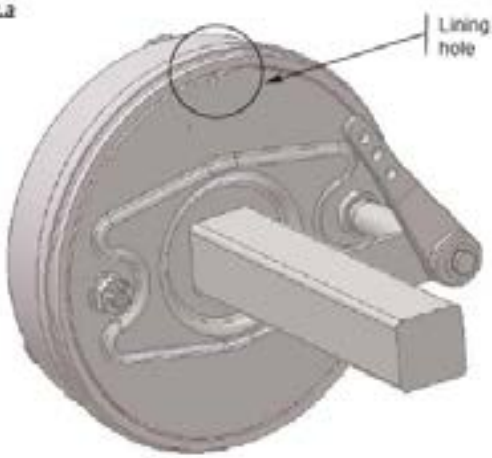
- Check the brake wear and the clearance between the brake linings and the drum visually (See figure **2.3.2.a**). It is probable that the linings are worn when the actuator travel has increased significantly.
- Check the thickness of the brake linings (See table paragraph 2.3.5 Replacing the brake shoes for the minimum thickness).

The brake shoes should be replaced as soon as the minimum lining thickness is reached.

- Check that the brakes are clean and clean them if necessary.
- Lubricate brake cam shaft bearings with grease nipples lightly to avoid grease deposits on the brake linings and drums.
- Carry out the initial checks described above (See paragraph 2.3.1 Initial checks).

2. AXLES

Figure 2.3.2.a



2.3.3 Adjusting brakes with fixed levers

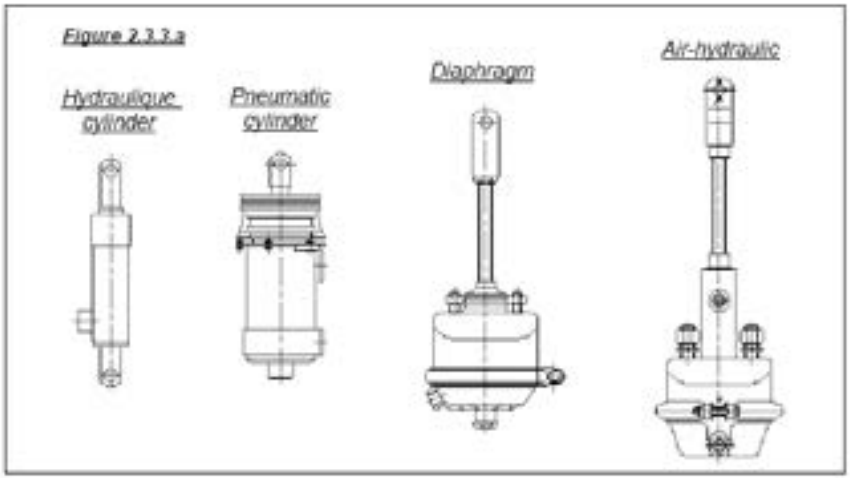
Take up the slack when the actuator stroke reaches about two thirds of the maximum travel (See figure **2.3.3.a**).

To take up the slack, turn the lever by one or more splines, ensuring that the brakes are not touching when released (to prevent overheating the brakes).

Never change the linkage position for the actuator on the lever without authorisation from the vehicle manufacturer as the vehicle will have been tested with the actuator at this position (the brake operating levers have several holes, always use the original hole).

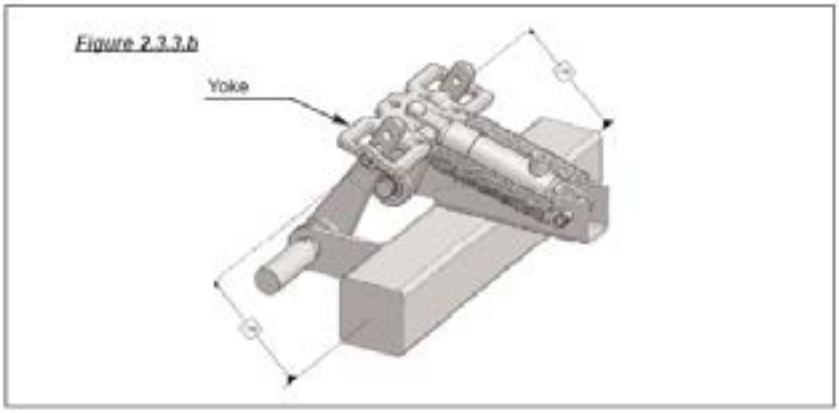
For braking systems with a yoke, the yoke must remain parallel with the axle especially when the brakes are fully applied (See figure 2.3.3.b). This means that the stroke of the levers on the brakes at each side must be identical. Otherwise, the brake slack must be adjusted.

Figure 2.3.3.a



2. AXLES

Figure 2.3.3.b



2.3.4 Adjusting brakes with adjustable levers

Take up the slack when the actuator stroke reaches about two thirds of the maximum stroke (See also paragraph 2.3.3 Adjusting brakes with fixed levers).

To take up the slack, turn the adjustment screw on the lever to adjust the relative position of the cam and the lever (See figure **2.3.4**).

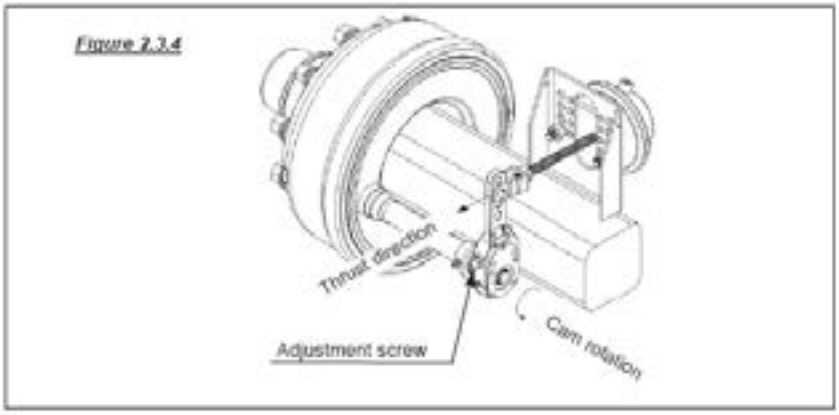
NB. The actuator brakes by pushing the lever to turn it in a particular direction. The screw must be adjusted so that the cam moves in this direction to take up the slack. The direction in which the screw must be turned depends on the configuration.

Ensure that the brakes are not touching when released (to prevent overheating the brakes).

Never change the linkage position for the actuator on the lever without authorisation from the vehicle manufacturer as the vehicle will have been tested with the actuator at this position (the brake operating levers have several holes, always use the original hole)

For braking systems with a tandem yoke, the yoke must remain parallel with the axle especially when the brakes are fully applied (See figure **2.3.3.b**). This means that the stroke of the levers on the brakes at each side must be identical. Otherwise, the brake slack must be adjusted.

Figure 2.3.4



2. AXLES

2.3.5 Replacing the brake shoes

The brake shoes should be replaced as soon as the minimum lining thickness is reached.
When replacing the brake shoes, repack the wheel bearings with grease (See paragraph 2.2.6 Lubricating the wheel bearings).

MINIMUM LINING THICKNESS		
BRAKE TYPE	**DIMENSIONS (Drum internal diameter and lining width)**	**Minimum lining THICKNESS**
A25	250 x 60	2
A30	300 x 60	2
309E	300 x 90	2
310E	300 x 100	5
314E	300 x 135	5
316	300 x 160	5
A320	350 x 60	2
A410	355 x 80	2
A61	400 x 80	2
408E	400 x 80	2
314S	300 x 135	5
A910	406 x 120	5
A940	406 x 140	5
412S	406 x 120	5
414S	406 x 140	5

See paragraphs 2.2.5 Adjusting the wheel bearings and 2.2.6 Lubricating the wheel bearings for hub disassembly and reassembly and wheel bearing lubrication and adjustment.

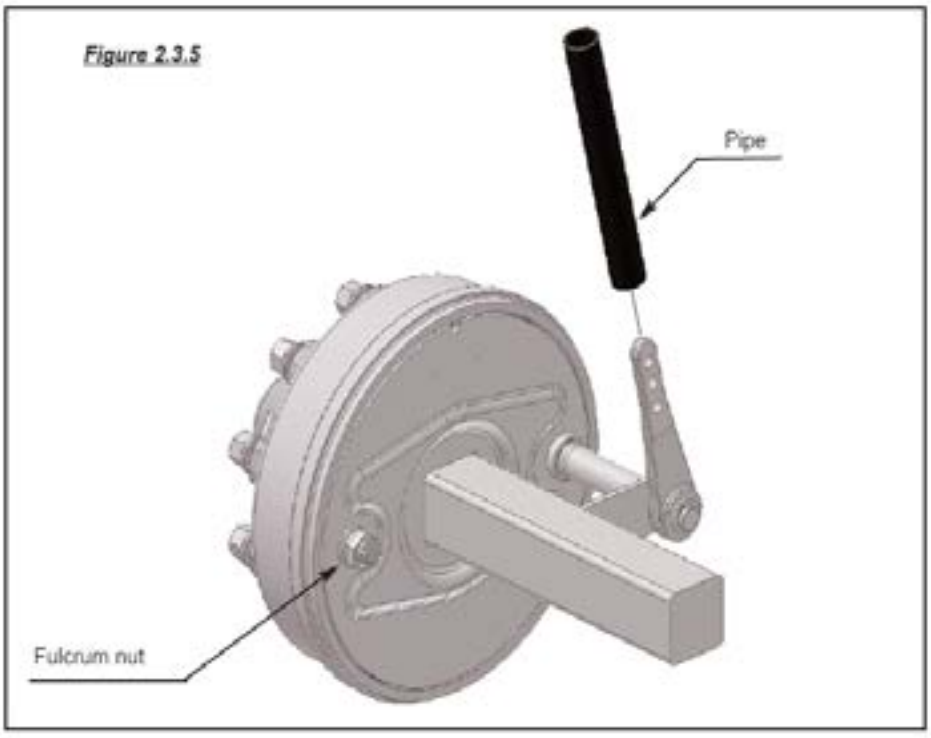
When replacing the brake linings, check all the brake components.
- Condition of the drums.
- Condition of the cam shafts and levers, in particular check the play in the splines.
- Wear on the bushings.
- Condition of the bellows (depending on the model).
- Condition of the shoe return springs.
- Condition the fulcrums and their mountings (depending on the model).
- Check the rotation of the brake shoe rollers (if fitted) and lightly lubricate before reassembly.

2. AXLES

Always replace any worn or damaged parts.

When reassembling, apply a thin coat of grease to all contact surfaces (cams, fulcrums, bushings, etc) being careful to avoid getting any grease on the drums and shoe linings.

For brakes with an adjustable fulcrum, centre the brake shoes before clamping the fulcrum:
When the hub/brake assembly has been reassembled, slacken the fulcrum nut slightly, operate the brake lever in the correct direction (direction of the actuator thrust) by pulling on the lever by hand. (it is easier if a pipe is placed over the lever as shown in figure 2.3.5) to press the shoes against the drum.
Clamp the fulcrum while pressing on the lever.
If the nut is locked using a split cotter pin, always use a new cotter pin.



9. SPRING DRAWBAR

After the first laden journey, before intensive use or every 6 months *(See figure 8)*

- Retighten all the mounting U-bolt nuts to the recommended torque *Item 2*.
- Lubricate the attachment shaft *Item 3*.

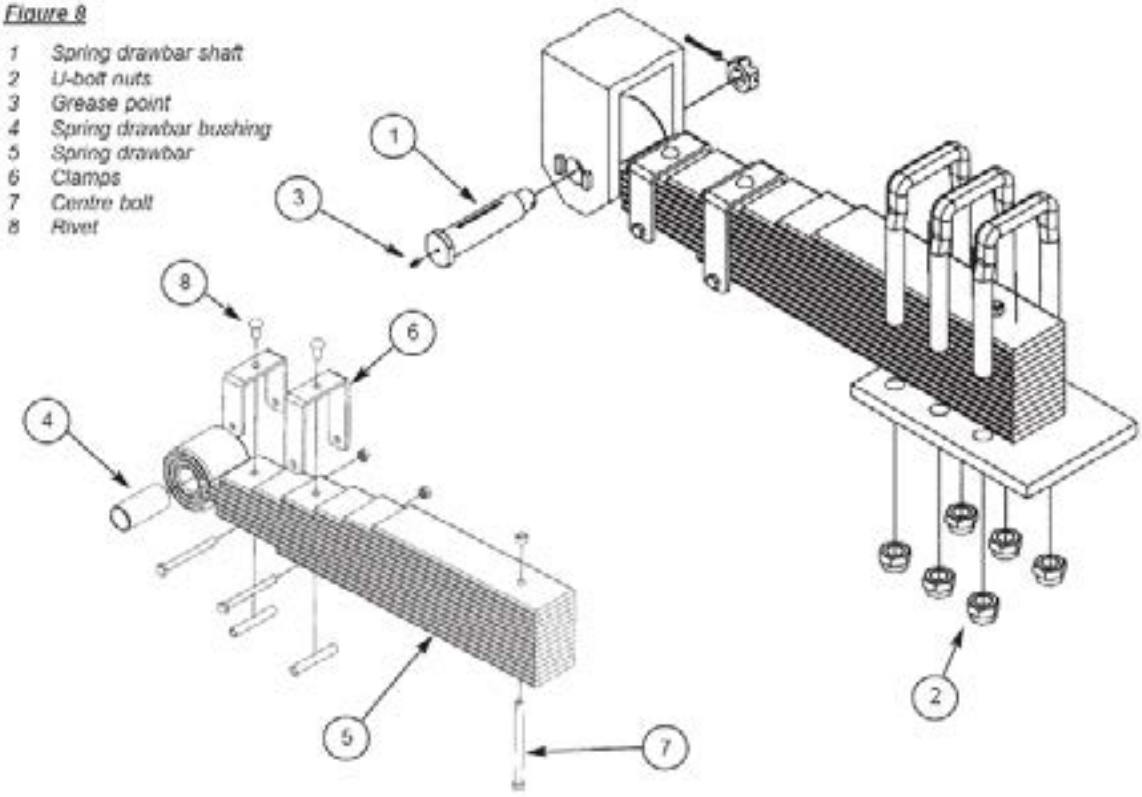
Under harsh or intensive operating conditions, maintenance should be carried out more frequently.

Every year:

- Check the play between the bushing *Item 4* and the spring drawbar shaft *Item 1*, and, if there is excessive play, replace the worn parts.
- Check the general condition of the spring *Item 5*, clean it thoroughly and brush the sides of the springs to check for cracks. Check the condition of the clamps *Item 6*.

Figure 8

1 *Spring drawbar shaft*
2 *U-bolt nuts*
3 *Grease point*
4 *Spring drawbar bushing*
5 *Spring drawbar*
6 *Clamps*
7 *Centre bolt*
8 *Rivet*



11. MINIMUM PROGRAM OF MAINTENANCE

This maintenance plan is intended for normal operating conditions. More frequent maintenance may de required for harsh operating conditions (construction sites, mountains, intensive use, etc).

See the following paragraphs for detailed maintenance instructions.

	on commissioning	after the firt laden journey	after the first 1,000 km	every 3 months	every 6 months or 25,000 km	before intensive service	every 2 years or 50,000 km
2.2 Axle maintenance and adjustment							
2.2.2 Tightening and retightening wheel nuts	X	X	X		X		
2.2.3 Checking the hubcaps	X				X		
2.2.4 Checking the wheel bearing play			X		X	X	
2.2.6 Lubricating the wheel bearings							X
2.3 Brake maintenance and adjustment							
2.3.1 Initial checks	X	X		X		X	
2.3.2 Checking brake clearance and wear				X		X	
2.3.3 Adjusting brakes with fixed levers				X		X	
2.3.4 Adjusting brakes with adjustable levers				X		X	
3. Steering axles							
3.2.1 Normal maintenance				X		X	
3.2.2 Checking and adjusting the wheel alignment					X		
3.2.3 Locking cylinder maintenance and adjustment					X		
3.2.4 Adjusting the clearance, steering axles with tapered pins only						X	
3.2.5 Adjusting the steering angle						X	
4. Bogies suspension		X			X	X	
5. Basic tandem suspension and basic half-tandem suspension		X			X	X	
6. Rod half-tandem suspension, tandem and tridem		X			X	X	
7. Pneumatic suspension		X			X	X	
8. Springs drawbar		X			X	X	

8 TYRES AND WHEELS

8.1 Tyre and wheel maintenance.

Maintenance of correct inflation pressure is the basic essential factor in obtaining the best performance and life from a pneumatic tyre. The air inside the tyre enables it to carry a load. It is only when the inflation pressure is correctly matched that the tyre adopts its optimum cross-sectional shape and the tread rests correctly on the road surface with the correct pressure distribution across its whole width, thus allowing the sidewalls to provide the required degree of flexibility. Both performance and life of the tyres will suffer if pressures are unsuitable so both over or under inflation (or overload which has the same effect) are similary undesirable.

Underinflation results in excessive deflection which increases the heat generated by the tyre, this in turn leads to its eventual disintigration. In addition the distortion of the casing will result in the lifting of the centre of the tread, thus overloading the outer edges of the tread, producing rapid wear at those points.

Overinflation distorts the tyre's casing, but in this case it tends to lift the outer edges of the tread off the road surface and imposes extra load and more rapid wear on the centre of the tread. Owing to reduced flexibilty the tyre will be more vulnerable to impact damage, ride quality will be impaired and the wheels will be more liable to bounce which can result in skidding due to brakes locking.

Unlike cars on which tyre loads do not vary greatly it is not practicable to provide standard recommendations. This is because tyre loading and operating conditions vary widely.

Remember that spreaders travel laden one way and unladen in the opposite direction, it is therefore desirable to estabish a suitable mean pressure that mimimises both under inflation when loaded and excessive over inflation when running light.

Road usage

Max gross combination weight is 24390Kg and maximum gross spreader weight is 18290kg.

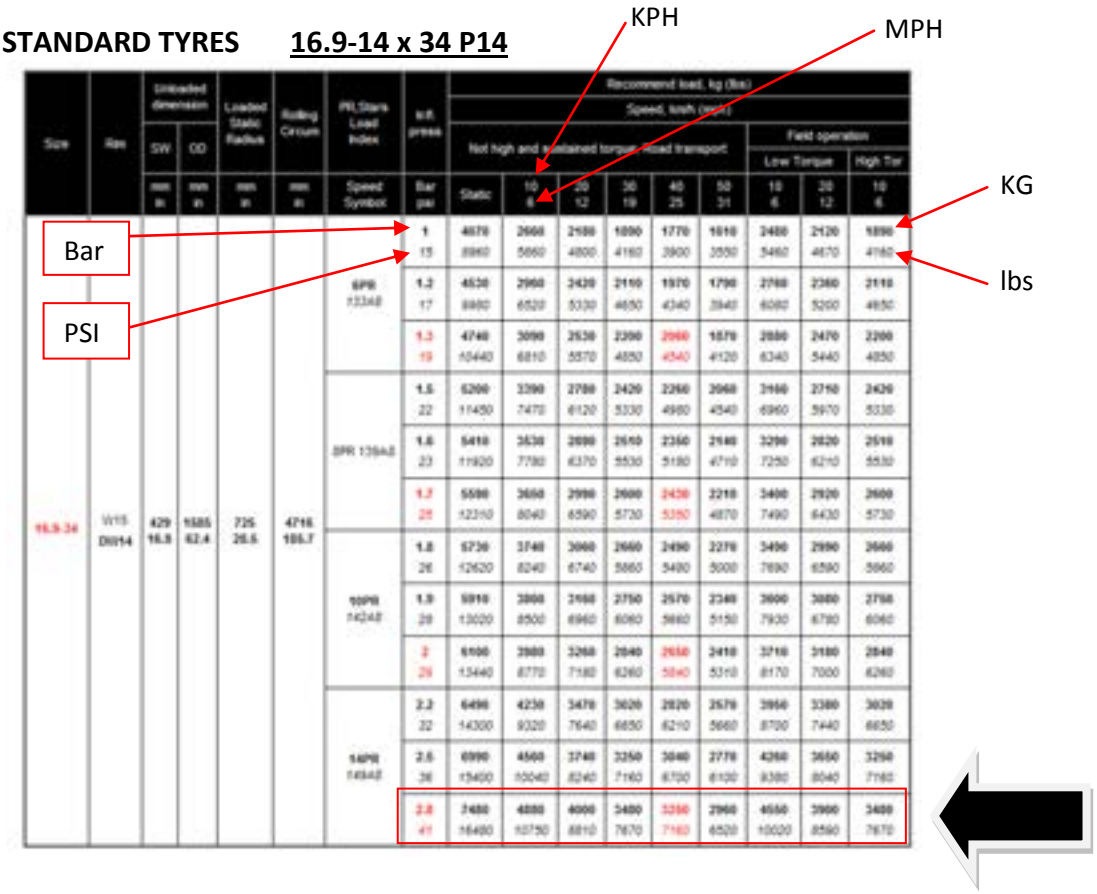
If your machine is wider then 2.55m and up to 3.5m your maximum speed is 20 mph, above 3.5m is 12 mph.

8.2 PRESSURE SETTINGS STD TYRES - GENERAL

TYRE TYPE	6 MPH/10 KPH - Bar/PSI						12 MPH/20 KPH - Bar/PSI			
	10000 kg	13000 kg	15000 kg	17000 kg	18000 kg	20000 kg	10000 kg	10170 kg	15000 kg	20000 kg
16.9-14 x 34 P14	2.8/41						2.5/36			
18.4 x 34 PR14		3.0/44					3.0/44			
18.4 x 38 T-347		2.9/43						3.0/44		
580/70 R38			2.0/29	2.5/36	2.8/41	3.0/44		2.0/29		
710/70 R38			2.0/29	2.0/29	2.3/33	2.5/36		1.7/25		

Recommended rims in red
For stationary service (0 km/h) and speed up to 10 km/h inflation pressure must increase by 20%. Field dual: 88% of field load, field triple: of field load.
Allianze allows for free roliing application: Load capacity to be increased by 15%, after increasing the inflation pressure by 20%.

STANDARD TYRES **<u>16.9-14 x 34 P14</u>**



18.4 x 34 PR14

Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded Static Radius	Rolling Circum	PR Stars Load Index	Infl. press	Recommend load, kg (lbs) Speed, km/h (mph) Not high and sustained torque: Road transport Static	10 6	20 12	30 19	40 25	50 31	Field operation Low Torque 10 6	20 12	High Tor 10 6
		mm in	mm in	mm in	mm in	Speed Symbol	Bar psi									
18.4-34	W16L DW16 W16L	467 18.4	1660 65	748 29.4	4682 192.2	6PR 137A8	0.9 13	4720 10400	3880 8780	2520 5550	2190 4820	2050 4520	1870 4120	2870 6320	2460 5420	2190 4820
							1 15	5010 11040	3270 7200	2680 5900	2330 5130	2180 4800	1980 4360	3050 6720	2620 5770	2330 5130
							1.1 16	5290 11650	3450 7600	2830 6230	2460 5420	2300 5070	2090 4600	3220 7090	2760 6080	2460 5420
						8PR 142A8	1.2 17	5570 12270	3630 8000	2980 6560	2590 5700	2420 5330	2200 4850	3390 7470	2900 6390	2590 5700
							1.3 19	5840 12860	3810 8390	3120 6870	2720 5990	2540 5590	2310 5090	3560 7840	3050 6720	2720 5990
							1.4 20	6100 13440	3980 8770	3260 7180	2840 6260	2650 5840	2410 5310	3710 8170	3180 7000	2840 6260
						10PR 146A8	1.5 22	6210 13680	4050 8920	3320 7310	2890 6370	2700 5950	2460 5420	3780 8330	3240 7140	2890 6370
							1.7 25	6670 14690	4350 9580	3570 7860	3100 6830	2900 6390	2640 5810	4060 8940	3480 7670	3100 6830
							1.8 26	6900 15200	4500 9910	3690 8130	3210 7070	3000 6610	2730 6010	4200 9250	3600 7930	3210 7070
						14PR 153A8	2 29	7380 16260	4820 10620	3950 8700	3430 7560	3210 7070	2920 6430	4490 9890	3850 8480	3430 7560
							2.3 33	8000 17620	5220 11500	4280 9430	3720 8190	3480 7670	3170 6980	4870 10730	4180 9210	3720 8190
							2.5 36	8400 18500	5480 12070	4490 9890	3910 8610	3650 8040	3320 7310	5110 11260	4380 9650	3910 8610

580/70 R38 STANDARD 170/A8 HIGH LOAD 180/A8

Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded Static Radius	Rolling Circum	PR Stars Load Index	Infl. press	Recommend load, kg (lbs) Speed, km/h (mph) Not high and sustained torque: Road transport Static	10 6	25 16	30 19	40 25	50 31	Field operation Low Torque 10 6	20 12	High Tor 10 6
		mm in	mm in	mm in	mm in	Speed Symbol	Bar psi									
580/70R38	W18A	577 22.7	1817 71.5	816 32.1	5343 210.4	155A8 152 B	1 15	6760 14890	4410 9710	3260 7180	3150 6940	2940 6480	2680 5900	4120 9070	3630 7780	3150 6940
							1.3 19	7890 17380	5150 11340	3810 8390	3670 8080	3430 7560	3120 6870	4800 10570	4120 9070	3670 8080
							1.6 23	8910 19630	5810 12800	4300 9470	4150 9140	3875 8540	3530 7780	5430 11960	4650 10240	4150 9140
						Reinforced con 170A8 167 B	2 29	11340 24980	7400 16300	5470 12050	5280 11630	4930 10860	4490 9890	6900 15200	5920 13040	5280 11630
							2.4 35	12600 27750	8220 18110	6080 13390	5860 12910	5480 12070	4990 10990	7670 16890	6580 14490	5860 12910
							2.8 41	13600 30400	9000 19820	6660 14670	6420 14140	6000 13220	5460 12030	8400 18500	7200 15860	6420 14140
						Reinforced con 180A8	3.2 46	14880 32780	9710 21390	7180 15810	6920 15240	6470 14250	5890 12970	9060 19960	7760 17090	6920 15240
							3.6 52	15940 35110	10400 22910	7690 16940	7420 16340	6930 15260	6310 13900	9700 21370	8320 18330	7420 16340
							4 58	16550 37330	11000 24360	8180 18020	7890 17380	7370 16230	6710 14780	10320 22730	8840 19470	7890 17380
							4.4 64	17520 39470	11600 25750	8650 19050	8340 18370	7790 17160	7090 15620	10910 24030	9350 20590	8340 18370
							4.6 67	18400 40530	12000 26430	8880 19560	8560 18850	8000 17620	7280 16040	11200 24670	9600 21150	8560 18850

710/70 R38

Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded Static Radius	Rolling Circum	PR,Stars Load Index	Infl. press	Recommend load, kg (lbs)								
								Speed, km/h (mph)								
								Not high and sustained torque; Road transport						Field operation		
														Low Torque		High Tor
		mm in	mm in	mm in	mm in	Speed Symbol	Bar psi	Static	10 6	25 16	30 19	40 25	50 31	10 6	20 12	10 6
710/70R38	DW23A	716 28.2	1948 76.7	877 34.5	5739 225.9	166A8 163B	1.3	10790	7040	5210	5020	4690	4270	6570	5630	5020
							19	23770	15510	11480	11060	10330	9410	14470	12400	11060
							1.5	11730	7650	5660	5460	5100	4640	7140	6120	5460
							22	25840	16850	12470	12030	11230	10220	15730	13480	12030
							1.6	12190	7950	5880	5670	5300	4820	7420	360	5670
							23	26850	17510	12950	12490	11670	10620	16340	14010	12490
						172A8 169B	1.7	12810	360	6180	5960	5570	5070	7800	6680	5960
							25	28220	18410	13610	13130	12270	11170	17180	14710	13130
							1.9	13660	8910	6590	360	5940	5410	8320	7130	360
							28	30090	19630	14520	14010	13080	11920	18330	15700	14010
							2.1	14490	9450	6990	6740	6300	5730	8820	7560	6740
							30	31920	20810	15400	14850	13880	12620	19430	16650	14850
						178A8 175B	2.2	14970	9770	7230	6970	6510	5920	9110	7810	6970
							32	32970	21520	15930	15350	14340	13040	20070	17200	15350
							2.5	16150	10530	7790	7510	7020	6390	9830	8420	7510
							36	35570	23190	17160	16540	15460	14070	21650	18550	16540
							2.8	17250	11250	8330	8030	7500	6830	10500	9000	8030
							41	38000	24780	18350	17690	16520	15040	23130	19820	17690

OPTION TYRES **520/70 R34**

Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded Static Radius	Rolling Circum	PR,Stars Load Index	Infl. press	Recommend load, kg (lbs)								
								Speed, km/h (mph)								
								Not high and sustained torque; Road transport						Field operation		
														Low Torque		High Tor
		mm in	mm in	mm in	mm in	Speed Symbol	Bar psi	Static	10 6	25 16	30 19	40 25	50 31	10 6	20 12	10 6
520/70R34	W16L W18L W18L	516 20.3	1632 64.3	739 29.1	4826 190	148A8 145 B	1	5500	3590	2650	2560	2390	2170	3350	2870	2560
							15	12110	7910	5840	5640	5260	4780	7380	6320	5640
							1.3	6420	4190	3100	2990	2790	2540	3910	3350	2990
							19	14140	9230	6830	6590	6150	5590	8610	7380	6590
							1.6	7250	4730	3500	3370	3150	2870	4410	3780	3370
							23	15970	10420	7710	7420	6940	6320	9710	8330	7420
						168A8 165 B	3.5	11270	7350	5440	5240	4900	4460	6860	5880	5240
							51	24820	16190	11980	11540	10790	9820	15110	12950	11540
							4	12190	7950	5880	5670	5300	4820	7420	6360	5670
							58	26850	17510	12950	12490	11670	10620	16340	14010	12490
							4.4	12880	8400	6220	5990	5600	5100	7840	6720	5990
							64	28370	18500	13700	13190	12330	11230	17270	14800	13190

18.4 x 38 T347 Cross ply only

Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded Static Radius	Rolling Circum	PR,Stars Load Index	Infl. press	Recommend load, kg (lbs) Speed, km/h (mph) Not high and sustained torque; Road transport Static	10 6	20 12	30 19	40 25	50 31	Field operation Low Torque 10 6	20 12	High Tor 10 6
		mm in	mm in	mm in	mm in	Speed Symbol	Bar psi									
18.4-38	DW16 W16L W15L	467 18.4	1750 68.9	795 31.3	5185 204.1	8PR 143A8	1.2 17	5730 12620	3740 8240	3060 6740	2660 5860	2490 5480	2270 5000	3490 7690	2990 6590	2660 5860
							1.3 19	6000 13220	3920 8630	3210 7070	2790 6150	2610 5750	2380 5240	3650 8040	3130 6890	2790 6150
							1.4 20	6270 13810	4090 9010	3350 7380	2920 6430	2725 6000	2480 5460	3820 8410	3270 7200	2920 6430
						10PR 148A8	1.5 22	6510 14340	4250 9360	3480 7670	3030 6670	2830 6230	2580 5680	3960 8720	3400 7490	3030 6670
							1.6 23	6760 14890	4410 9710	3620 7970	3150 6940	2940 6480	2680 5900	4120 9070	3530 7780	3150 6940
							1.8 26	7250 15970	4730 10420	3870 8520	3370 7420	3150 6940	2870 6320	4410 9710	3780 8330	3370 7420
						14PR 155A8	2.1 30	8050 17730	5250 11560	4310 9490	3750 8260	3500 7710	3190 7030	4900 10790	4200 9250	3750 8260
							2.3 33	8490 18700	5540 12200	4540 10000	3950 8700	3690 8130	3360 7400	5170 11390	4430 9760	3950 8700
							2.5 36	8910 19630	5810 12800	4770 10510	4150 9140	3875 8540	3530 7780	5430 11960	4650 10240	4150 9140

420/85 R34

Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded Static Radius	Rolling Circum	PR,Stars Load Index	Infl. press	Recommend load, kg (lbs) Speed, km/h (mph) Not high and sustained torque; Road transport Static	10 6	20 12	30 19	40 25	50 31	65 40	Field operation Low Torque 10 6	20 12	High Tor 10 6
		mm in	mm in	mm in	mm in	Speed Symbol	Bar psi										
420/85R34	W15L W14L W13	450 17.7	1580 62.2	713 28.1	4696 184.9	139D 142A8	0.8 12	3730 8220	2430 5350	1990 4380	1860 4100	1770 3900	1770 3900	1620 3570	2480 5460	2120 4670	1890 4160
							1 15	4260 9380	2780 6120	2280 5020	2130 4690	2030 4470	2030 4470	1850 4070	2840 6260	2440 5370	2170 4780
							1.3 19	4950 10900	3230 7110	2640 5810	2470 5440	2350 5180	2350 5180	2150 4740	3290 7250	2820 6210	2510 5530
							1.6 23	5590 12310	3650 8040	2990 6590	2790 6150	2650 5840	2650 5840	2430 5350	3710 8170	3180 7000	2840 6260
						144D 147A8	1.8 26	5890 12970	3840 8460	3150 6940	2940 6480	2800 6170	2800 6170	2560 5640	3920 8630	3360 7400	3000 6610
							2.1 30	6440 14190	4200 9250	3440 7580	3220 7090	3075 6770	3075 6770	2800 6170	4310 9490	3690 8130	3290 7250

23.1-26

Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded Static Radius	Rolling Circum	PR,Stars Load Index	In ft press	Recommend load, kg (lbs)								
								Speed, km/h (mph)								
								Not high and sustained torque; Road transport						Field operation		
														Low Torque		High Tor
		mm in	mm in	mm in	mm in	Speed Symbol	Bar psi	Static	10 6	20 12	30 19	40 25	50 31	10 6	20 12	10 6
23.1-26	DW20	587 23.1	1605 63.2	703 27.7	4648 183	8PR 14SAB	0.9 13	6930 13060	3870 8520	3170 6980	2860 6300	2580 5680	2350 5180	3610 7950	3100 6830	2760 6080
							1 15	6300 13880	4110 9050	3370 7420	3040 6700	2740 6040	2490 5480	3840 8460	3290 7250	2930 6450
							1.1 16	6670 14690	4350 9580	3570 7860	3100 6830	2900 6390	2640 5810	4060 8940	3480 7670	3100 6830
						10PR 14SAB	1.2 17	6830 15040	4460 9820	3650 8040	3300 7270	2970 6540	2700 5950	4160 9160	3560 7840	3180 7000
							1.4 20	7480 16480	4880 10750	4000 8810	3480 7670	3256 7160	2960 6520	4550 10020	3900 8590	3480 7670
						12PR 15SAB	1.5 22	7800 17180	5090 11210	4170 9190	3760 8280	3390 7470	3080 6780	4750 10460	4070 8960	3630 8000
							1.7 25	8400 18500	5480 12070	4490 9890	3910 8610	3650 8040	3320 7310	5110 11260	4380 9650	3910 8610
						14PR 15SAB	1.8 26	8650 19050	5640 12420	4620 10180	4170 9190	3760 8280	3420 7530	5260 11590	4510 9930	4020 8850
							1.9 28	8920 19650	5820 12820	4770 10510	4310 9490	3880 8550	3530 7780	5430 11960	4660 10260	4150 9140
							2 29	9200 20260	6000 13220	4920 10840	4280 9430	4000 8810	3640 8020	5600 12330	4800 10570	4280 9430
						16PR 15SAB	1.8 26	8720 19210	5690 12530	4660 10260	4060 8940	3790 8350	3450 7600	5310 11700	4550 10020	4060 8940
							2 29	9270 20420	6050 13330	4960 10930	4310 9490	4030 8880	3670 8080	5640 12420	4840 10660	4310 9490
							2.3 33	10060 22160	6560 14450	5380 11850	4680 10310	4375 9640	3980 8770	6130 13500	5250 11560	4680 10310

620/70 R38 MICHELIN

620/70 R38 170A8/170B TL MEGAXBIB

MSPN : 99512 **CAI : 476088**

*All load values are for maximum indicated speeds at low torque
*20 mph (30 km/h): high torque field work or max road speed.
*All load values for ground slopes up to 20% (above 20% consult Michelin)

Load per tire (single)						
30 mph	25 mph	20 mph	15 mph	6 mph	6 mph Cyc	Pressure
50 km/h	40 km/h	30 km/h	25 km/h	10 km/h	10 km/h Cyc	
7 390 lbs	7 390 lbs	7 890 lbs	8 180 lbs	10 050 lbs	11 050 lbs	15 psi
3 350 kgs	3 350 kgs	3 580 kgs	3 710 kgs	4 560 kgs	5 010 kgs	1.0 bar
7 910 lbs	7 910 lbs	8 470 lbs	8 770 lbs	10 750 lbs	11 860 lbs	17 psi
3 590 kgs	3 590 kgs	3 840 kgs	3 980 kgs	4 875 kgs	5 380 kgs	1.2 bar
8 960 lbs	8 960 lbs	9 600 lbs	9 950 lbs	12 150 lbs	13 490 lbs	23 psi
4 075 kgs	4 075 kgs	4 355 kgs	4 515 kgs	5 510 kgs	6 120 kgs	1.6 bar
10 040 lbs	10 040 lbs	10 740 lbs	11 130 lbs	13 550 lbs	15 130 lbs	29 psi
4 555 kgs	4 555 kgs	4 870 kgs	5 050 kgs	6 145 kgs	6 865 kgs	2.0 bar
11 100 lbs	11 100 lbs	11 870 lbs	12 310 lbs	14 950 lbs	16 770 lbs	35 psi
5 035 kgs	5 035 kgs	5 385 kgs	5 585 kgs	6 780 kgs	7 605 kgs	2.4 bar
12 170 lbs	12 170 lbs	13 020 lbs	13 500 lbs	16 350 lbs	18 400 lbs	41 psi
5 520 kgs	5 520 kgs	5 905 kgs	6 125 kgs	7 415 kgs	8 345 kgs	2.8 bar
13 230 lbs	13 230 lbs	14 150 lbs	14 680 lbs	17 750 lbs	20 040 lbs	46 psi
6 000 kgs	6 000 kgs	6 420 kgs	6 660 kgs	8 050 kgs	9 090 kgs	3.2 bar
				18 440 lbs	20 860 lbs	49 psi
				8 365 kgs	9 460 kgs	3.4 bar
				19 150 lbs	21 670 lbs	52 psi
				8 685 kgs	9 830 kgs	3.6 bar
				19 840 lbs	22 490 lbs	55 psi
				9 000 kgs	10 200 kgs	3.8 bar

Tire Technical Data				Rims (preferred in bold)
Unloaded Dimensions		Loaded Dimensions		
Overall Width	Overall Diameter	Loaded Radius	Rolling Circumference	**DW20B (A)** DW18L
23.9 in	73.4 in	33.5 in	218.8 in	
608 mm	1 864 mm	850 mm	5 557 mm	

Rolling Circumference Index
46
Number of Lugs
20 x 2

Tube MSPN 80303
Tube CAI 170152

Gross Flat Plate		100% Tire Volume	Centerline Tread Depth	Minimum Dual/Triple Spacing
451 sq in		206.5 gals	69/32nd	31.5 in
2 909 sq cm		782 liters	55 mm	801 mm

710/70 R42

Size	Rim	Unloaded dimension		Loaded Static Radius	Rolling Circum	PR,Stars Load Index	In ft. press	Recommend load, kg (lbs)								
								Speed, km/h (mph)								
								Not high and sustained torque; Road transport						Field operation		
														Low Torque		High Tor
		SW	OD			Speed Symbol	Bar psi	Static	10 6	25 16	30 19	40 25	50 31	10 6	20 12	10 6
		mm in	mm in	mm in	mm in											
710/70R42 (Des.365)	DW23B	740 29.1	2055 80.9	936 36.9	6178 243.2	173A8 173 B	0.8 12	7870 17330	5130 11300	3800 8370	3660 8060	3420 7530	3420 7530	4790 10550	4100 9030	3660 8060
							1 15	8950 19710	5840 12860	4320 9520	4160 9160	3890 8570	3890 8570	5450 12000	4670 10290	4160 9160
							1.2 17	9960 21940	6500 14320	4810 10590	4630 10200	4330 9540	4330 9540	6060 13350	5200 11450	4630 10200
							1.4 20	10900 24010	7110 15660	5260 11590	5070 11170	4740 10440	4740 10440	6640 14630	5690 12530	5070 11170
							1.6 23	11800 25990	7700 16960	5690 12530	5490 12090	5130 11300	5130 11300	7180 15810	6160 13570	5490 12090
							2 29	13430 29580	8760 19300	6480 14270	6250 13770	5840 12860	5840 12860	8180 18020	7010 15440	6250 13770
							2.2 32	14210 31300	9270 20420	6860 15110	6610 14560	6180 13610	6180 13610	8650 19050	7420 16340	6610 14560
							2.4 35	14950 32930	9750 21480	7220 15900	6960 15330	6500 14320	6500 14320	9100 20040	7800 17180	6960 15330
						180A8 180B	2.6 38	16200 35860	10620 23390	7860 17310	7580 16700	7080 15590	7080 15590	9910 21830	8500 18720	7580 16700
							2.8 41	17020 37490	11100 24450	8210 18080	7920 17440	7400 16300	7400 16300	10360 22820	8880 19560	7920 17440
							3 44	17710 39010	11550 25440	8550 18830	8240 18150	7700 16960	7700 16960	10780 23740	9240 20350	8240 18150
							3.2 46	18400 40530	12000 26430	8880 19560	8560 18850	8000 17620	8000 17620	11200 24670	9600 21150	8560 18850

8.3 WHEEL TYPE & TORQUE SETTINGS

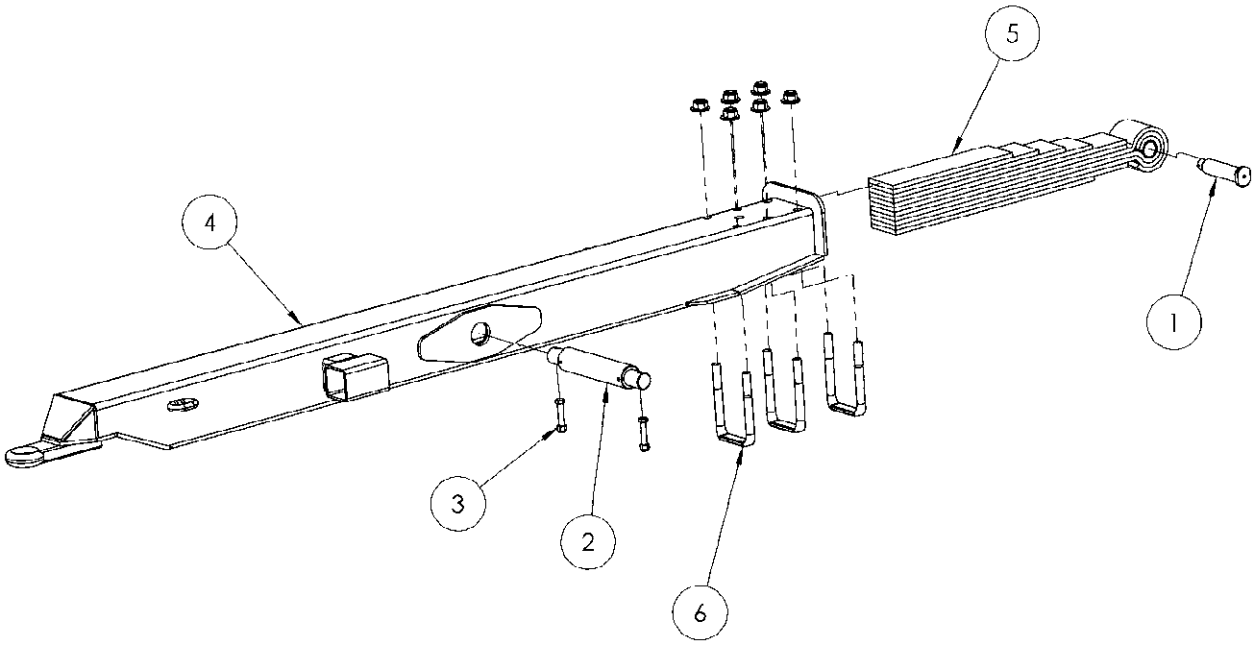
TYRE TYPE	WHEEL TYPE	WHEEL STUD TYPE & SIZE	TORQUE SETTINGS
16.9-14 x 34 P14	DW 16x34 centre nave 220 bore	8 x M18 - 1.5 275 PCD	270 Nm/200 lb/ft
18.4 x 34 PR14	16 x 34 centre nave 280 bore	10 x M22 - 1.5 335 PCD	510 Nm/375 lb/ft
18.4 x 38 PR14	DW 16x38 centre nave 281 bore	10 x M22 - 1.5 335 PCD	450 Nm/330 lb/ft
580/70 R38	W18A x 38 - 45 offset 280 bore	10 x M22 - 1.5 335 PCD	510 Nm/375 lb/ft
710/70 R38	DW 23a x 38 - 50 offset 280 bore	10 x M22 - 1.5 335 PCD	510 Nm/375 lb/ft

IMPORTANT

CHECK WHEEL NUT TORQUE AFTER EACH LOAD FOR THE 1ST 10 LOADS AND THEN DAILY FOR THE FIRST WEEK AND ONCE A WEEK THEREAFTER.

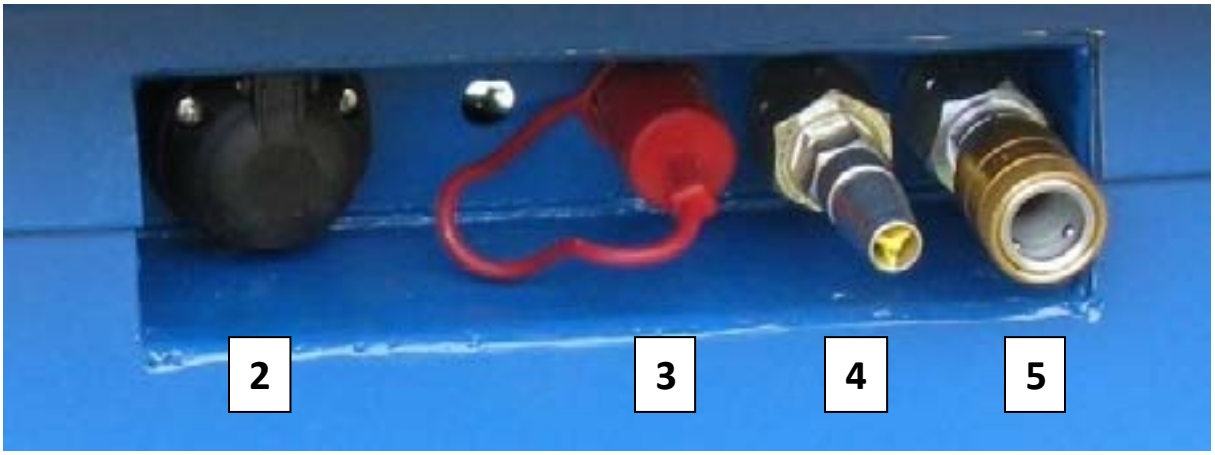
9. OPTIONS

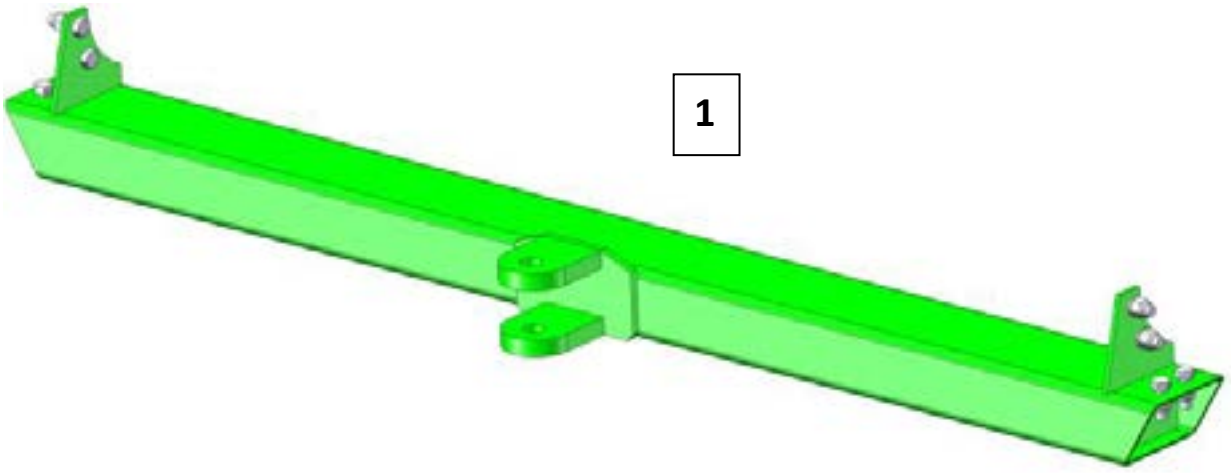
9.1 SPRUNG DRAWBAR – OPTIONAL



KEY	QTY	PART No.	DESCRIPTION
1	1	70440	GUDGEON PIN & NUT
2	2	70442/2	PIVOT PIN
3	1	73102	NUT & BOLT M16
4	1	N/A	DRAWBAR TO SUIT MODEL
5	2	70438/1	SPRING 13 LEAF
6	3	70439/2	U-BOLT 30mm

9.2 REAR CLEVIS DRAWBAR - OPTIONAL



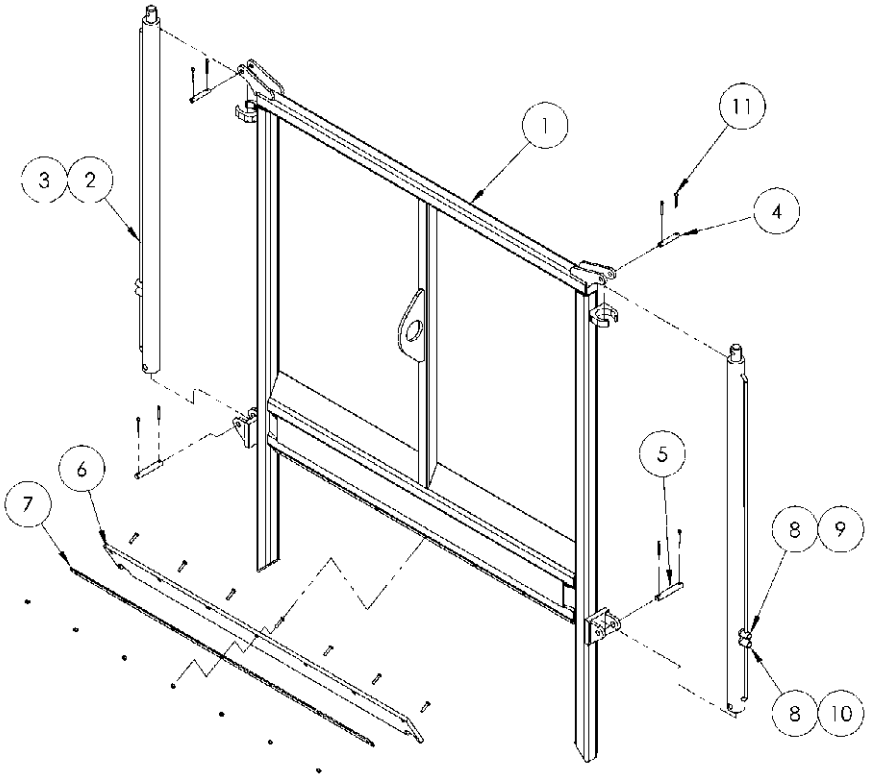


KEY	QTY	PART No.	DESCRIPTION
1	1	B5310	REAR CLEVIS DRAWBAR CROSS MEMBER
2	1	70107	7 PIN LIGHT SOCKET
3	1	51569	HYDRAULIC BRAKE CONNECTION
4	1	CF350932	AIR COUPLING MALE
5	1	CF351543	AIR COUPLING FEMALE

NOTE:

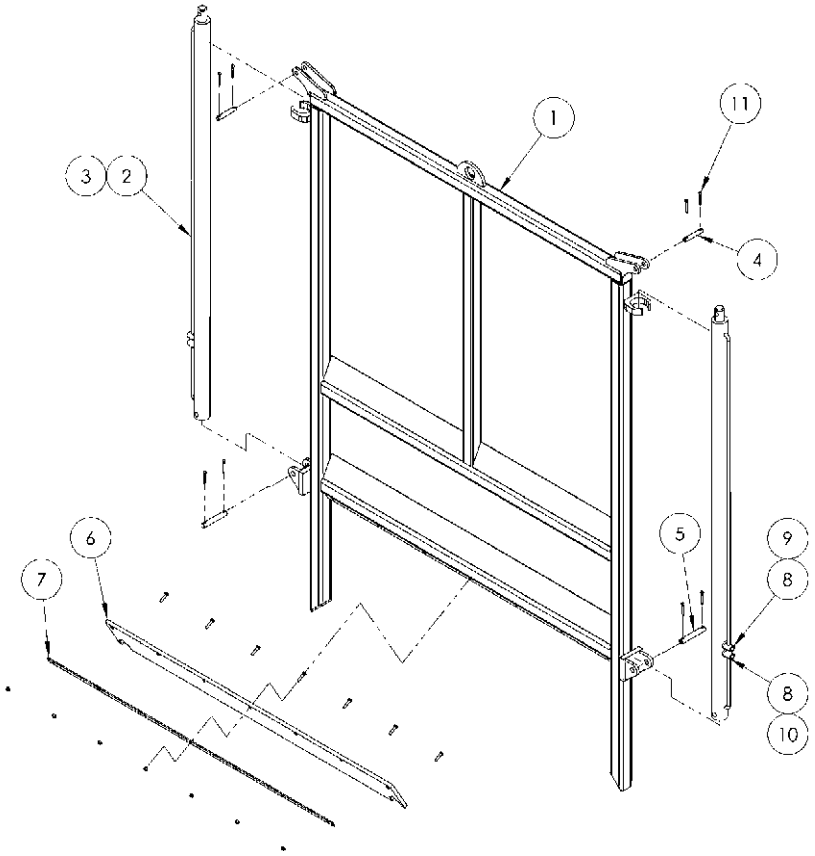
The rear clevis drawbar is designed for highway use **only** towing an unladen spreader.

9.3 GUILLOTINE SLURRY DOOR



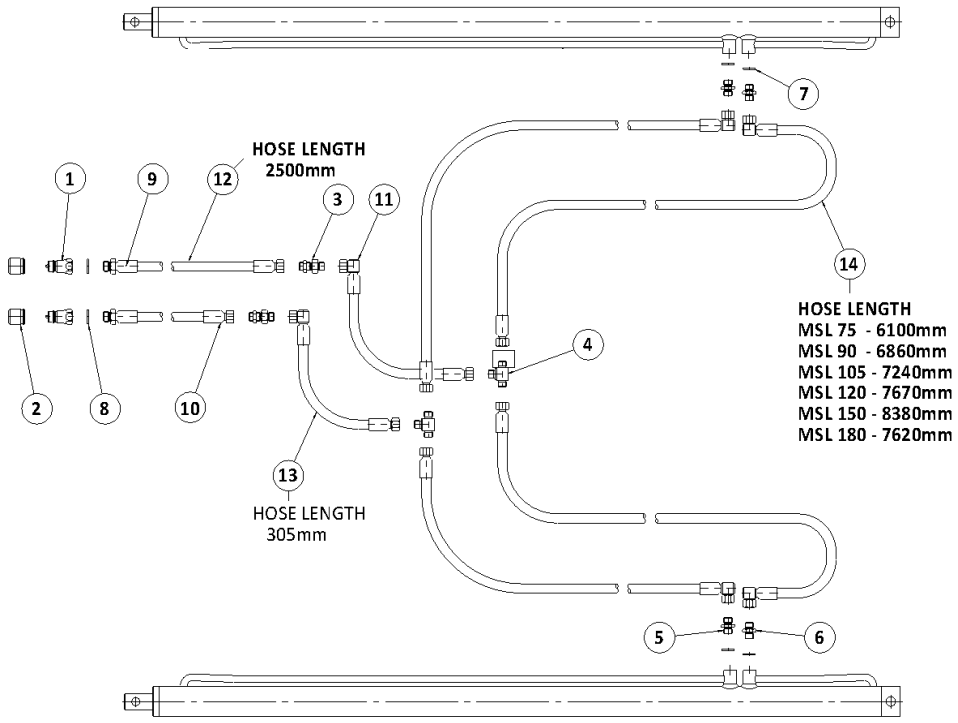
KEY	QTY	PART No.	DESCRIPTION
1	1	B4110	DOOR - 75/90
	1	B4112	DOOR - 105/105C/120/150/150C
	1	B4115	DOOR WITH WB AUGERS
2	2	B4136	50/35 1321 STROKE RAM - 75/90
	2	B4138	50/35 1626 STROKE RAM - 105/105C/120/150
3		65520	SEAL KIT D/A 50x35
4	2	B4130	TOP RAM PIN DIA 5/8"
5	2	B4132	BOTTOM RAM PIN DIA 3/4"
6	1	B4158	RUBBER SEAL
	1	B4184	CLAMPING STRIP & M8 x 35 BOLT C/W S.L NUTS
7	1	B4188	CLAMPING STRIP WITH W.B AUGERS
8	4	51590	3/8" BONDED SEAL
9	2	51335	3/8" M/M ADAPTOR
10	2	10522	3/8" x 1/8" RESTRICTOR
11	8	50988	SPLIT PIN

9.4 GUILLOTINE SLURRY DOOR HORIZONTAL BEATER



KEY	QTY	PART No.	DESCRIPTION
1	1	B4113	DOOR - 105/120/150 HB
	2	B4138	RAM
3		65520	SEAL KIT D/A 50x35
4	2	B4130	TOP RAM PIN DIA 5/8"
5	2	B4132	BOTTOM RAM PIN DIA 3/4"
6	1	B4158	RUBBER SEAL
	1	B4166	RUBBER SEAL WITH WB AUGERS
7	1	B4184	CLAMPING STRIP & M8 x 35 BOLT C/W S.L NUTS
8	4	51590	3/8" BONDED SEAL
9	2	51335	3/8" M/M ADAPTOR
10	2	10522	3/8" x 1/8" RESTRICTOR
11	8	50988	SPLIT PIN

9.5 GUILLOTINE SLURRY DOOR HYDRAULIC CIRCUIT.

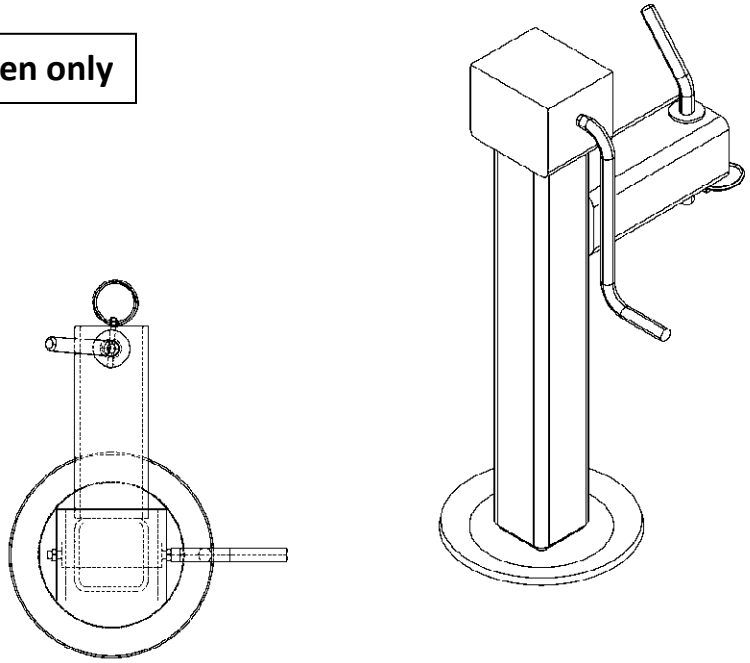


KEY	QTY	PART No.	DESCRIPTION
1	2	51576	1/2" PROBE MALE SELF SEALER
2	2	51583	DUMMY 1/2" FEMALE
3	2	51463	3/8"-3/8"- BPT BULKHEAD
4	2	51447	3/8"-3/8"-3/8" MALE TEE
5	2	51335	3/8"-3/8" BPT NIPPLE
6	2	10522	3/8"-3/8" BPT NIPPLE 1/8" REDUCED
7	4	51590	DIA 3/8" DOWTY WASHER
8	2	51591	DIA 1/2" DOWTY WASHER
9	2	52316	HOSE END DIA 3/8-1/2" BPT MALE
10	8	52311	HOSE END DIA 3/8"-3/8" BPT FEMALE
11	6	52313	HOSE END DIA 3/8"-3/8" BPT 90 DEG FEM
12	2		HOSE 3/8" BORE 2 WIRE x 2500
13	2		HOSE 3/8" BORE 2 WIRE x 305
14	4		HOSE 3/8" BORE 2 WIRE x LENGTH
16	REF	SEE NOTE	HYD RAM 50mm BORE DOUBLE ACTING

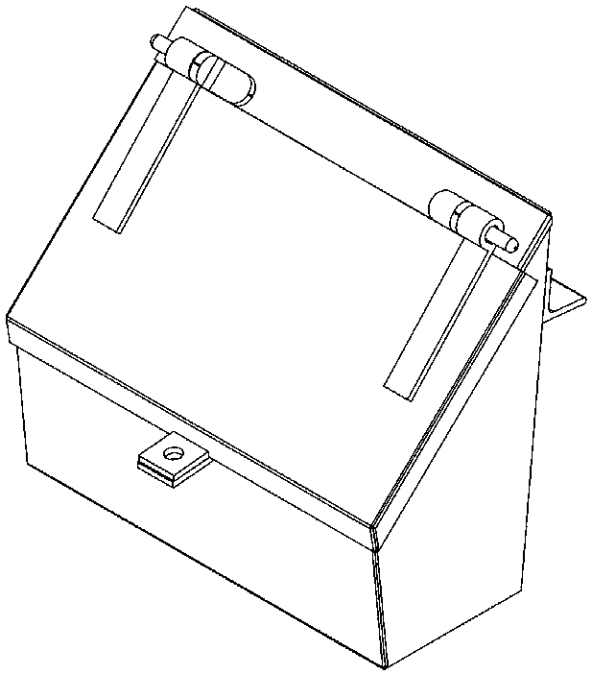
Note: 75 and 105C are the same and so are the 90 & 150C.

9.6 SUPPORT LEG PART No. 70307

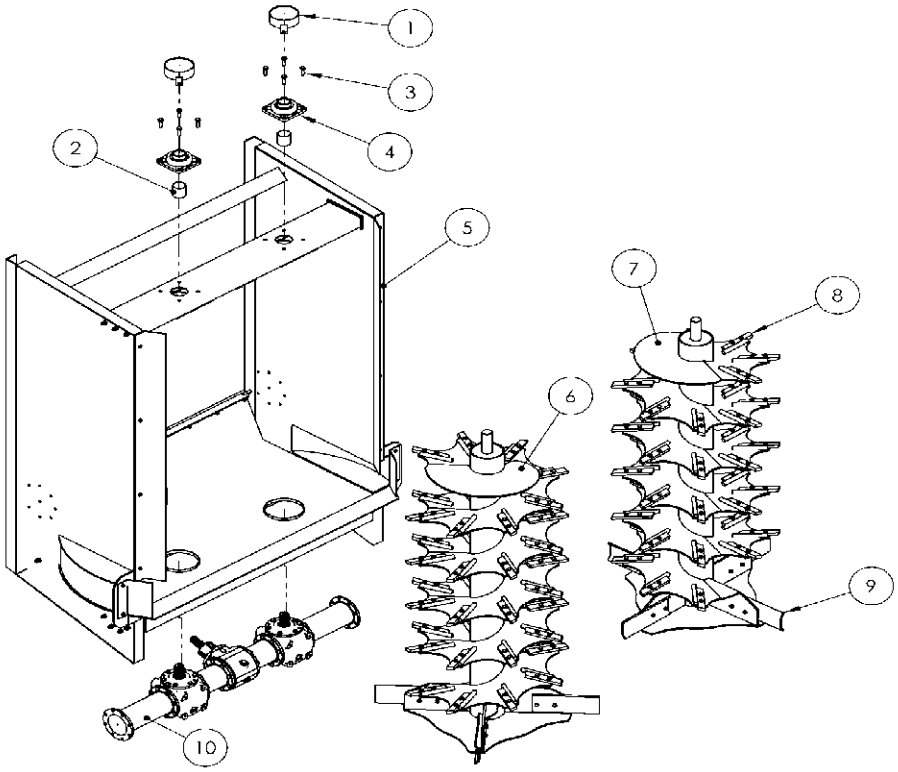
Use unladen only



9.7 TOOLBOX PART No. 80136

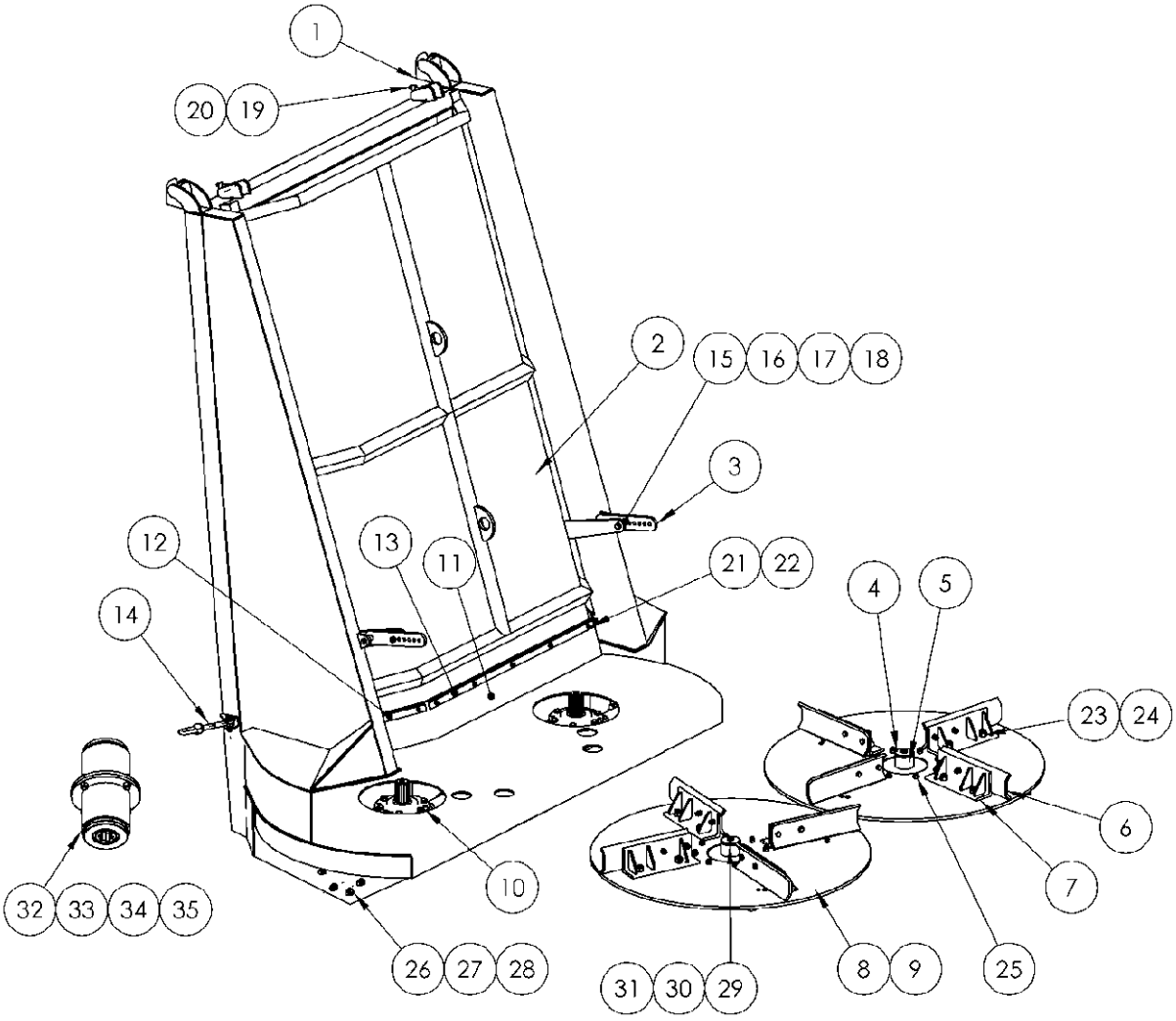


9.8 SLUDGE CAKE OPTION WIDEBODY



KEY	QTY	PART No.	DESCRIPTION
1	2	B1159/1	BEARING CAP
2	2	B2352	SPACER
3	8	73155&73375	BOLT AND LOCKNUT
4	2	B1180/1	BEARING M60
5	1		SLUDGE CAKE BODY
6	1	B1048	AUGER ASSEMBLY LH
7	1	B1049	AUGER ASSEMBLY RH
8	80	B1101/B	CUTTER POINT BORON
9	8	B1123	AUGER BLADE L.H BORON (6 HOLE)
10	1	B3180	AUGER GEARBOX
	160	B1101/1	BOLT AND LOCKNUT (BOLTS FOR CUTTER)
11	24	B1104	BOLTS FOR BLADES

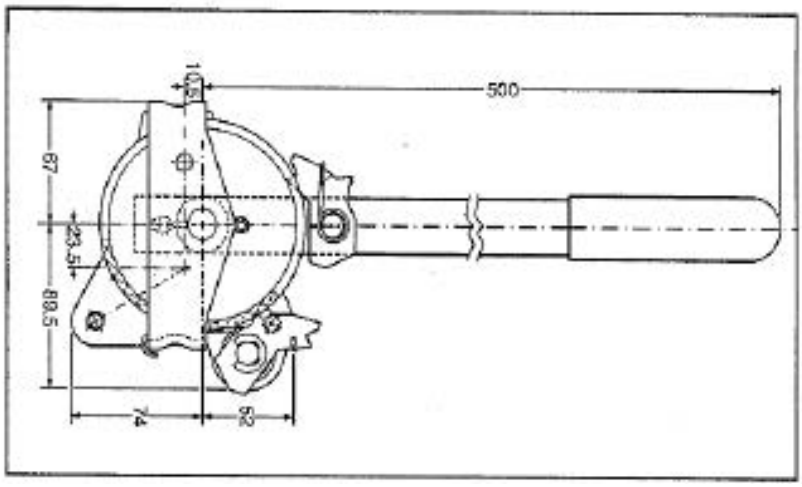
9.9 DETACHABLE SPINNER DECK – ADD ON OPTION



9.9 DETACHABLE SPINNER DECK – ADD ON OPTION PARTS LIST

KEY	QTY	PART No.	DESCRIPTION
1	2	B8810	BUCKET HOOK
2	1	AMS0142	REAR CANOPY ASSEMBLY
3	3	DMS0889	LINK CANOPY
4	2	DMS0322	END CAP
5	2	AMS0141	MOUNTING FLANGE ASSEMBLY
6	8	B1116	AUGER/SPINNER BLADE
7	4	B8354/B8355	BLADE HOLDER ASSEMBLY
8	1	B8340	SPINNER DISC LH
9	1	B8342	SPINNER DISC RH
10	1	B3190	BERMA SRT 18/1830 1000/520 3IN1
11	1	DMS0513	RUBBER SKIRT
12	2	DMS0512	CLAMPING STRIP
13	1	DMS0511	CLAMPING STRIP
14	2	A2134	HOOK BOLT
15	4	DMS0072	HINGE TUBE
16	20		M12 LOCK NUT
17	4		M12 WASHER
18	4		M12 BOLT x 70mm
19	2		M10 BOLT x 70mm
20	2		M10 LOCK NUT
21	8		M8 LOCK NUT
22	8		M8 LOCK NUT
23	8		M16 LOCK NUT
24	8		M16 BOLT x 45mm
25	16		M12 BOLTx 50mm
26	16		M14 LOCK NUT
27	16		M14 BOLT x 50
28	16		M14 WASHER
29	2	B8336	DISC DRIVE FLANGE
30	2	B8339	FLANGE CAP
31	2	73698	CAP SCREW
32	1	B8484	FLEXIDRIVE BODY
33	1	B8486	FLEXIDRIVE
34	6	B1142	RUBBER DRIVE BLOCK
35	6	B1142	RUBBER DRIVE BLOCK

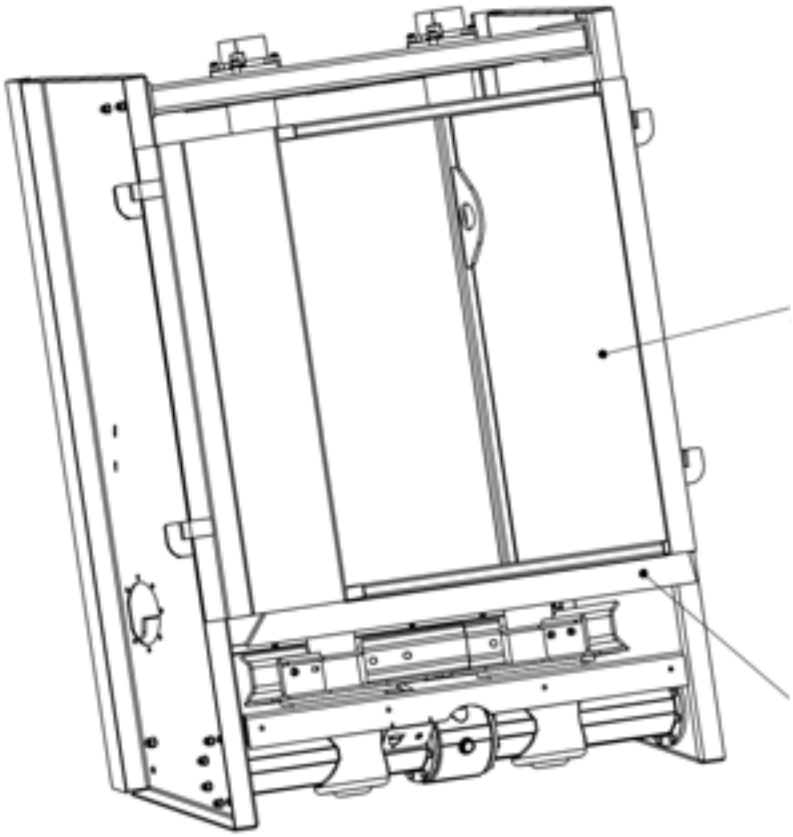
9.10 HANDBRAKE CONTROL MULTI-STROKE MS45 PART No. 70321



9.11 BODY SEAL RUBBERS

KEY	QTY	PART No.	DESCRIPTION
1	1	B4158	SLURRY DOOR & FRONTWALL MK4
2	1	B4160	AUGER DECK MK4
3	1	B4173	DOUBLE WIPE MK4
4	1	B4166	SLURRY DOOR & FRONTWALL WB
5	1	B4175	DOUBLE WIPE WB
6	1	B4171	HORIZONTAL BEATER CANOPY MK4
7	1	B4172	HORIZONTAL TOP WIPE MK4

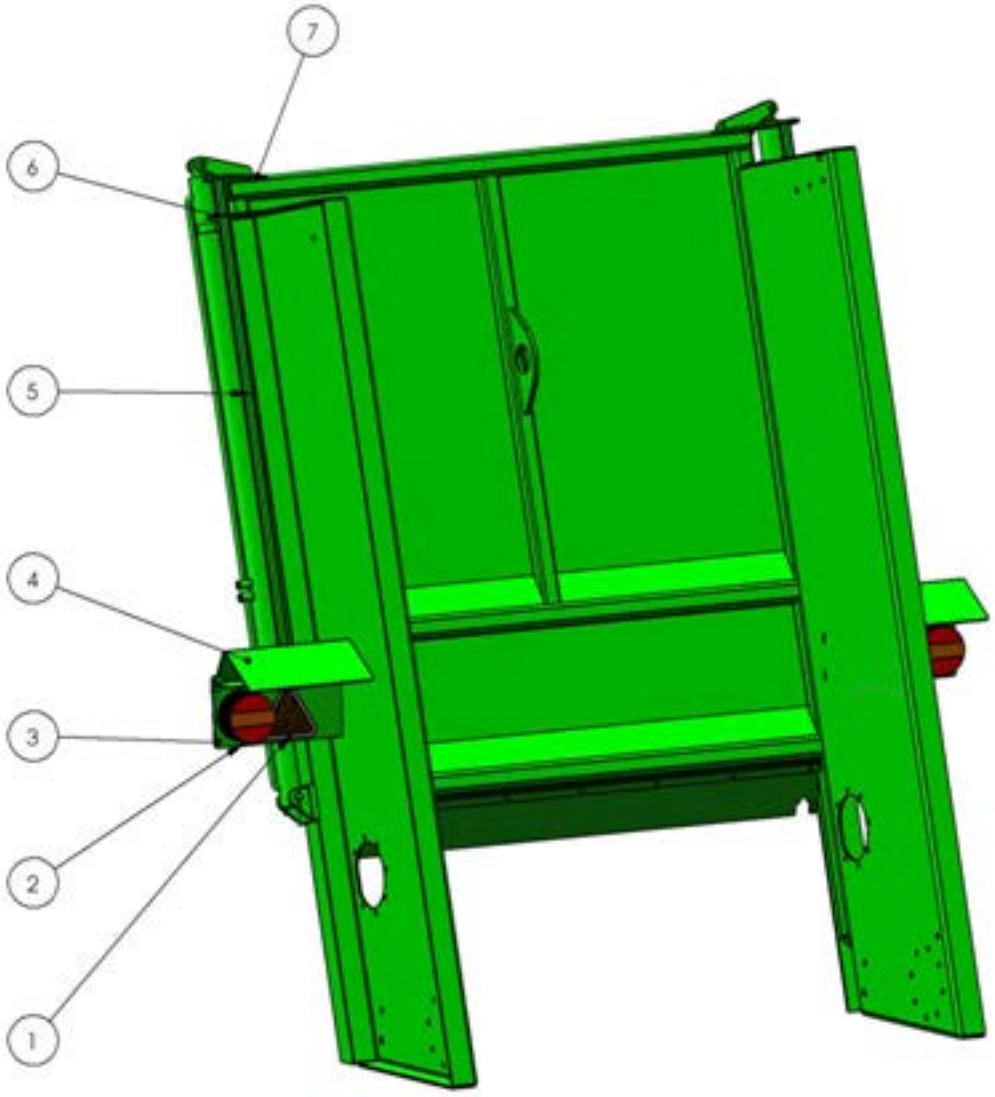
9.12 SIMPLE CANOPY



9.13 HYDRAULIC BORDER CONTROL

KEY	QTY	PART No.	DESCRIPTION
1	1	65078	RAM DA30 20 255
2	1	B4191	MOUNT BRACKET LH
2	1	B4191/1	MOUNT BRACKET RH
3	1	B4190	DEFLECTOR PLATE LH
3	1	B4190/1	DEFLECTOR PLATE RH
		65505	30/20 SEAL KIT

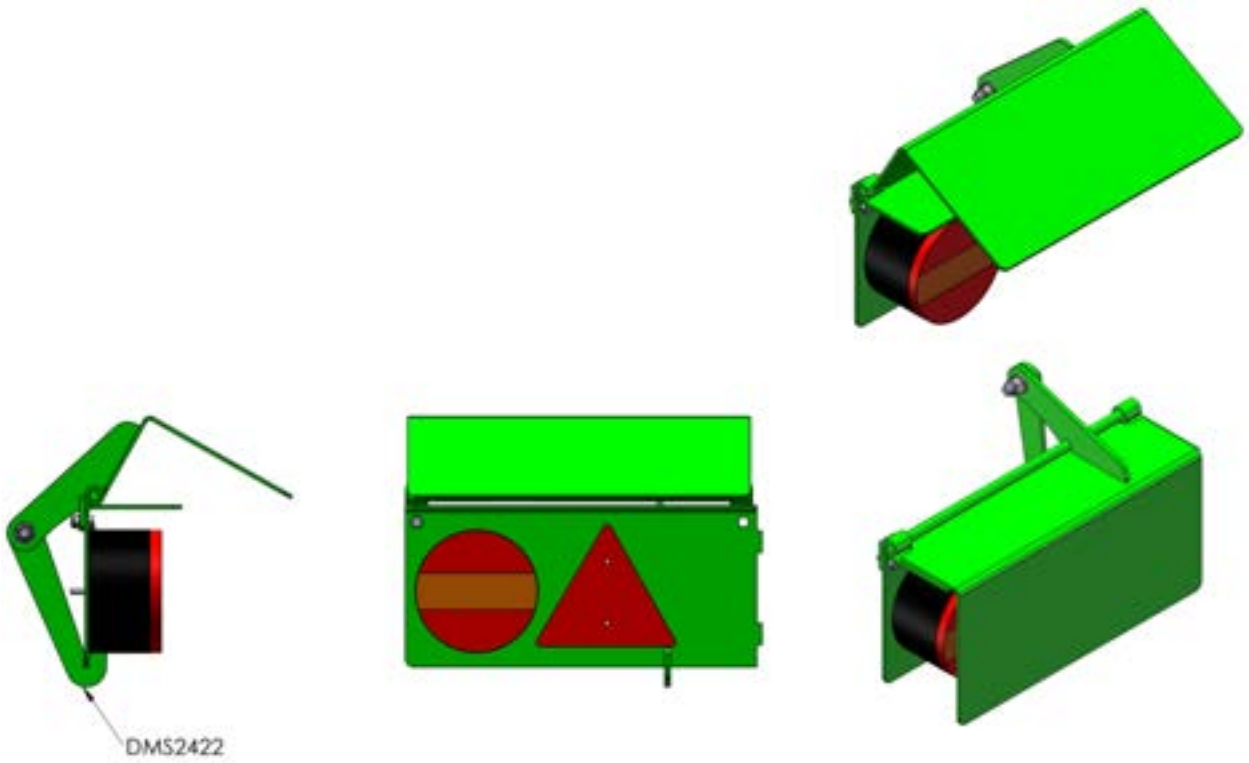
9.14 AUTO REAR LAMPS



KEY	QTY	PART No.	DESCRIPTION
	1	B5232	AUTO LAMP COVER COMPLETE ASSEMBLY
1	2	70081	TRIANGLE
2	2	70009/3	REAR LAMP
3	2	DMS2256-1/-2	LAMP BRACKET LH / RH
4	2	AMS1336-1/-2	LAMP COVER LH / RH
5	2	DMS2254	POST GUIDE
6	2	DMS225	STRIKER PLATE

9.15 MANUAL REAR LAMPS COVERS

Manual rear lamp covers fitted when slurry door is not fitted.



9.16 WEIGH CELL SPARES – GRIFFITH ELDER

Weigh cell B2960

Junction box 95-0385

Weigh cell display / head unit B9051

Mount arm & ball mount 15-0175 & 15-0176

Proximity sensor & 10m cable B9058

Signal cable fem lock 3m B9056

Switch cable 8m B9053

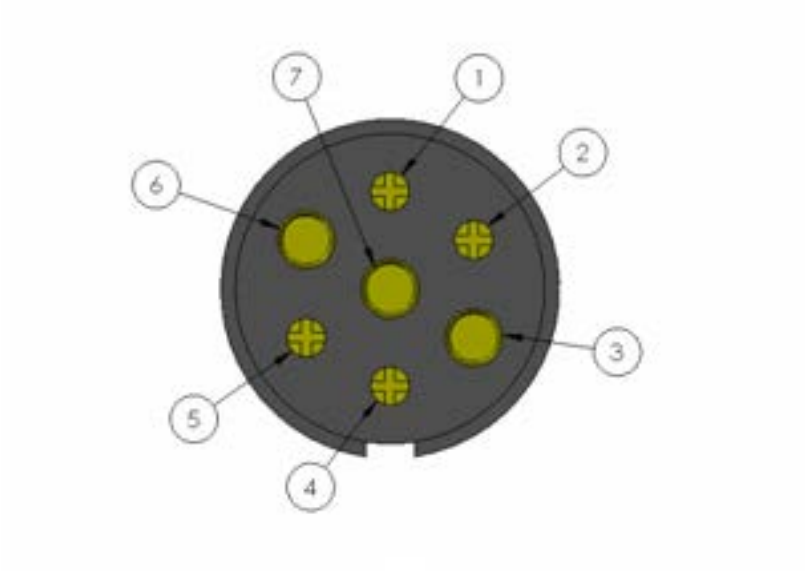
Power cable fem lock 3m B9052

Signal cable fem lock 1m B9055

Signal cable fem lock 7m B9054

10. ELECTRICS

10.1 WIRING FOR 12v 7 PIN PLUG



1) YELLOW –Y– L.H. INDICATOR
2) BLUE –B– FOG
3) WHITE -W– EARTH
4) GREEN – G- R.H. INDICATOR
5) BROWN –BR- TAIL
6) RED –R- STOP
7) BLACK –BL- SIDE MARKERS

Pins 5 & 7 may be linked.

FOR NORTH AMERICAN UNITS / COMMERICAL PLUG

1) WHITE (EARTH) – R- STOP
2) BLACK – G – R.H. INDICATOR
3) YELLOW – BR – TAIL
4) RED – W – EARTH
5) GREEN – BL – SIDEMARKERS
6) BROWN – Y – L.H. INDICATOR
7) BLUE – B - FOG

10.2 REAR LAMPS – 70009/3 3 Spade connector type

10.3 FRONT MARKER LAMP - 70154

HEALTH AND SAFETY & POTENTIAL HAZARDS

11.1 Hazardous machinery warning

This machine is hazardous if improperly used and may cause serious injury or death if not used in accordance with these operating instructions and safety warnings. Employers are required to train and supervise all operators and assistants to observe safety precautions described by this handbook, the installation process and by warning decals.

11.2 Loss of control

Overloading, excessive speed or use on excessive slopes may result in loss of control. The towing tractor must be suitable for the trailer weight and other operating conditions. Trailer brakes must be used at all times. The balance of the spreader can be affected by the load lowering during spreading.

11.3 Operation around bystanders

Do not operate this machine in proximity to bystanders who may be injured by projectiles or other functions including being run over or entangled in the auger.

11.4 Hydraulic fluid penetration or burning

Operators must be trained to avoid risks relating to the possibility of hydraulic fluid penetration resulting from high pressure fluid sprays directly contacting an operators skin. Hydraulic components may also be hot and may cause burning if touched.

11.5 Electrocution

An operator or a bystander could be electrocuted if the guillotine door was raised where there is a possibility of contact with overhead electrical wires.

11.6 Body entry

A person must not enter the body while the machine is running. Care must be taken to avoid slip/fall injuries while entering the body**.**

11.7 Coupling / Decoupling

Care must be taken to avoid crushing an assistant when coupling or decoupling the machine to a tractor.

11.8 Machinery start up

Sound the horn before starting this machine.

11.9 Machinery shut down

This machine must be operated from a tractor driver's seat. The tractor and machine must be shut down, the key removed and hydraulics lowered, if the driver leaves the seat or before any adjustments or repairs are made.

11.10 Additional driver protection

Extra protection can be achieved by lowing the slurry door as the load decreases in height.

11.11 PTO Connection and gaurding

Improper PTO connection and operation may cause machine failure and injury to an operator. PTO shaft guards must be used at all time. See DVD & PTO manual.

11.12 Personal protective equipment (PPE)

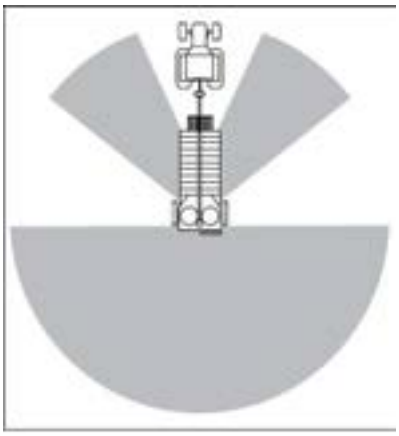
When maintaining and operating this machine make sure appropriate PPE is worn.
i.e. Overalls, gloves, safety shoes, eye and ear protection.

11.13 Safety decal location.

i) Warning – When spreading , lower slurry door to cover exposed augers as the load reduces.

ii) Danger – Keep hands clear of taildoor and mechanism during operation.

11.14 Operating hazard area



- Objects can be thrown out from the rotors with sufficient force to severely injure people. Stay away from machine when it is running. Keep others away.
- Stay out of shaded hazard area.
- Always know where all additional personnel are located when operating the spreader. Never allow anyone within the hazard area.
- Stay away from the sides and rear of the spreader when it is running to prevent being hit by flying debris. Rotors can expel solid objects with sufficient force to cause severe injury. Stay out of hazard area.

NOTE: *Remember any foreign objects hidden in the material i.e. stones, bricks, wood etc. can be thrown further than the actual material, which could result in serious injury or loss of life.*

11.15 WARNINGS

WARNING

Keep all limbs clear of the spreading augers when in motion. Do not attempt to remove obstacles or carry out adjustments without stopping spreader operation first and turning of the tractor engine off and removing the keys. Taking short cuts can result in permanent injury or loss of life.

Before attempting to carry out any checks or adjustments disengage the PTO and stop the tractor engine and remove key.

Guards are provided for your safety. **Never** operate the spreader with any removed or open.

Before engaging the PTO make sure that there is no person standing to the rear or side of the spreader. Please observe at all times during spreading operation that no person or persons are present within the working proximity. Remember any foreign objects hidden in the material i.e. stones, bricks, wood etc can be thrown further than the actual material, which could result in serious injury or loss of life.

HEALTH AND SAFETY EXCUTIVE

NEVER try to clear blockages from a PTO-driven machine while it is moving. Always:

- Disengage the power drive;
- Stop the tractor engine;
- Ensure controls are in neutral and the hand brake is applied;
- Remove the engine key;
- Wait for all movement to cease before attempting to clear any blockage and use a tool to clear the blockage.

12. WARRANTY

During the 3 year warranty period any failures which occur due to faulty components or workmanship must be reported to G.T. Bunning & Sons Ltd before any repairs or replacements of components is carried out. The warranty period commences on the despatch date from the factory. All parts not guaranteed by G.T. Bunning & Sons Ltd are covered by the component manufacturer and are subject to their own warranty. The warranty terms only apply to machines that have been subject to fair wear and tear operation and where routine maintenance has been carried out.

13. IMPORTANT INFORMATION

When using the speader in conjunction with a tractor which has a fast and slow response control on the spool valves, check that the control on the spool valve is not in the slow position in respect of the floor drives, as this will over ride the variable floor speed.
The spreader always runs very quietly when working, if loud banging noises are heard this will mean that foreign objects are in the material. Obviously the shearbolt may well break. If the shearbolts on the PTO has not sheared and the noises persists **STOP THE SPREADER SWITCH OFF TRACTOR ENGINE** and check the spreader.

From new, it is strongly recommended that you do not use a high pressure cold washer and definatley not a hot pressure washer to the outside of the spreader for **12 weeks**.
This will damage the paintwork whilst normal curing of the paint takes place.
Careful low pressure washing is acceptable.

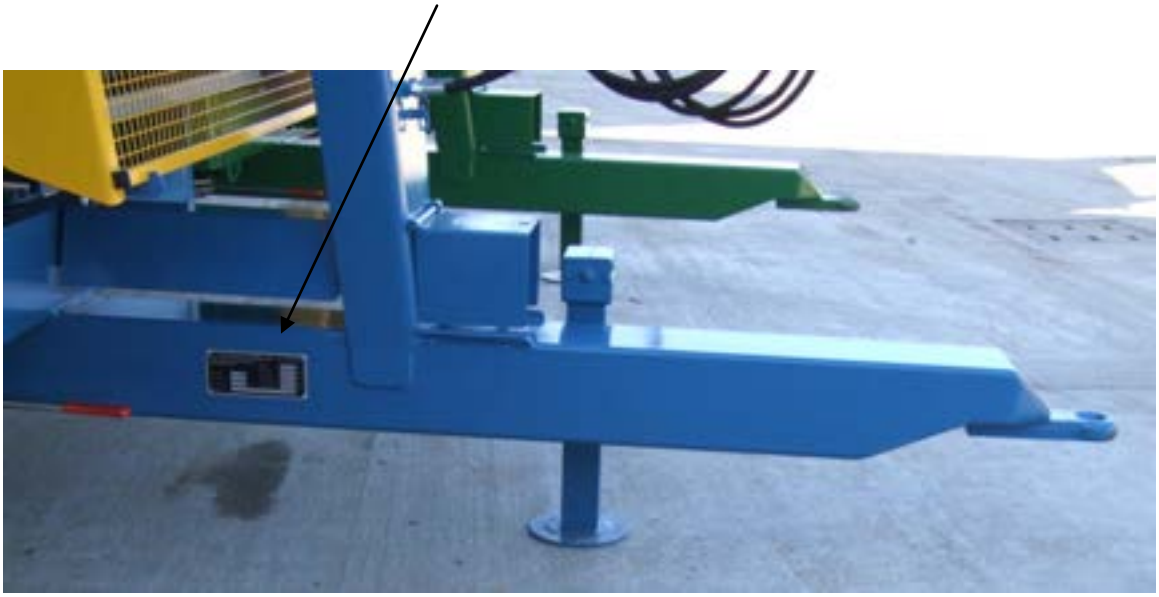
Do not let manure dry and set on fresh paint for the first 3-4 weeks. During this period it is advisable to clean the machine after use as instructed.

14. NOTES

15. IDENTIFICATION PLATE

The machine number (VIN) is required with all orders for spare parts and technical enquires. This is necessary in order to ensure correct delivery of spare parts.

The identification plate with the machine number is attached to the middle right side of the machine drawbar.



16. TECHNICAL DATA & SPECIFICATIONS

	MODEL					
	75	**90**	**105**	**105C**	**120**	**150**
GROSS DESIGN Kg	12500	16000	17500	17500	18750	20750
GROSS GB Kg	12500	13170	13670	13670	13920	13920
AXLE DESIGN Kg	10000	13000	14000	14000	15000	17000
AXLE GB Kg	10000	10170	10170	10170	10170	10170
EYE Kg	2500	3000	3500	3500	3750	3750
TARE WEIGHT Kg	4000	4400	4900	4750	4950	5200
PAYLOAD Kg	7500	9000	10500	10500	12000	15000
PAYLOAD + TARE Kg	11500	13400	15400	15250	16950	20200

Bunning tolerance +/-2%

NB – Machines with extension sides or build in flares are designed for use with light materials. DO NOT EXCEED THE PLATED WEIGHTS.

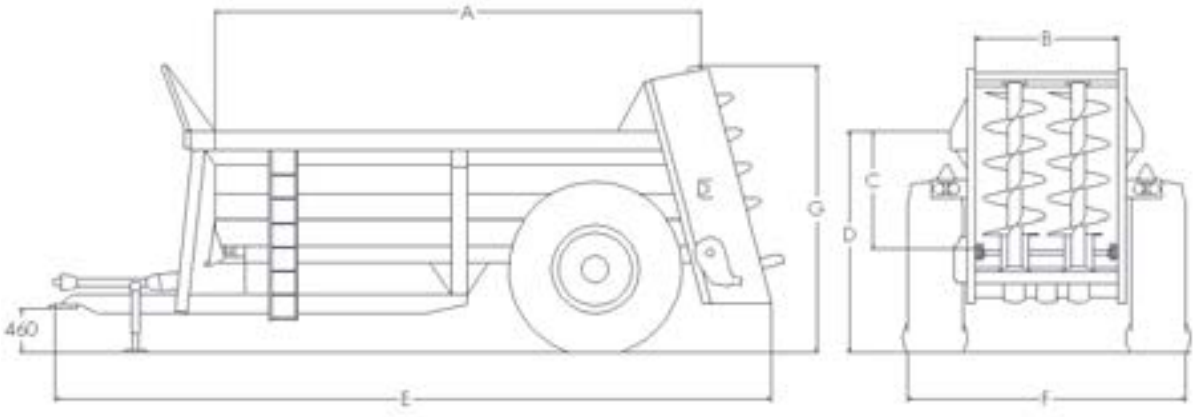
USE ON HIGHWAYS

Maximum gross combination weight is **24390 Kg.**

Maximum spreader weight is **18290 Kg.**

	MODEL					
	75	**90**	**105**	**105C**	**120**	**150**
Axle	Single	Single	Single	Single	Single	Single
Axle beam size	90mm	100mm	110mm	110mm	140mm	150mm
Carrying capacity	7500 Kg	9000 Kg	10500 Kg	10500 Kg	12000 Kg	15000 Kg
Cubic meters level	6.8m	8.6m	10.4m	9.6m	11.6	12.6
Cubic meters heaped	9.1m	11.4m	13.2m	12.9	14.6m	15.9m
Extended capacity	15.3m	18.6m	20.4m	N/A	22.2m	24.3m
Body size (int.mm)	4150x1500x1010	5150x1500x1010x	5150x1500x1230	4200x1500x1270	5450x1500x1290	5950x1500x1290
Floor drive	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Floor chain size	16mm	16mm	16mm	16mm	16mm	16mm
Brake size mm	355x80	400x80	400x80	400x80	406x140	406
Tyre size	16.9x34 PR14	18.4x34 PR14	580/70 R38	580/70 R38	580/70 R38	580/70 R38
Spread Mech	Twin vertical augers	Twin vertical augers	Twin vertical augers	Twin vertical augers	Twin vertical augers	Twin vertical augers
Spread width	Up to 16m	Up to 16m	Up to 16m	Up to 16m	Up to 16m	Up to 16m
PTO speed	1000 RPM	1000 RPM	1000 RPM	1000 RPM	1000 RPM	1000 RPM
Floor plate	5mm	5mm	5mm	5mm	5mm	5mm
Side plate	4mm	4mm	4mm	4mm	4mm	4mm

17. MACHINE DIMENSIONS



MODEL	A	B	C	D	E	F	G
75	4200	1500	990	1970	6500	2630	2640
90	5200	1500	990	2010	7560	2670	2680
105	5200	1500	1230	2350	7560	2920	3060
105C	4200	1500	1270	2383	6515	2920	3060
120	5500	1500	1290	2410	7950	2920	3060
150	6000	1500	1290	2420	8350	2920	3080

Bunning tolerance +/- 2%

This manual should stay with the machine/operator at all times.

This manual is an original English language copy