

Teagle




 **OMAHAWK**
8080 WB Range (Incl. Dual Chop)

Instruction Book & Parts List



Issue 03/10
From Serial Number 1001
Please Record The Serial Number Of Your Machine Here

SAFETY FIRST!

- 1. READ THE INSTRUCTION BOOK THOROUGHLY** before attempting to operate or carry out any maintenance on the machine. If you do not understand any part of this manual, ask your dealer for assistance.
- 2.  ALWAYS CARRY OUT SAFE MAINTENANCE.** Never clean, adjust or maintain the machine until the engine has been stopped, the machine come to rest, the PTO disengaged and the key removed.
- 3.  NEVER WORK UNDER A MACHINE RAISED ON THE 3-POINT LINKAGE** unless it is securely supported.
- 4. NEVER OPERATE THE MACHINE WITH ANY PARTS OR GUARDS MISSING.** Check that all guards including the PTO shaft guards are in good condition and in place before operating the machine.
- 5. OPERATE SAFELY.** Before starting work, check that there are no persons or animals in the immediate vicinity of the machine or tractor. Always maintain full control of the tractor and machine. Ensure that you know how to stop the tractor and machine quickly in case of emergency.
- 6. SECURE THE PTO GUARD BY MEANS OF CHECK CHAINS** to suitable points on the tractor and machine to prevent the outer plastic shield from rotating.
- 7. NEVER STAND BETWEEN THE MACHINE AND THE TRACTOR WHEELS.**
- 8. DO NOT WEAR LOOSE OR RAGGED CLOTHING**
- 9. BEWARE OF DUST.** Under dusty conditions, keep the cab windows and doors closed. The use of a dust mask conforming to EN149 is strongly recommended.
- 10.  BEWARE OF HIGH NOISE LEVELS.** Some tractor/implement combinations give noise levels in excess of 90dB at the operator's ear. Under such circumstances, ear defenders should be worn. Keep cab windows and doors closed to reduce noise level.

Throughout this handbook, the term `tractor' is used to refer to the power source used to drive the machine. It does not necessarily refer to a conventional agricultural tractor.

HEALTH AND SAFETY AT WORK

Our equipment is designed so as to conform with current Health & Safety Regulations and therefore poses no significant hazard to health when properly used. Nevertheless, in the interests of all concerned, it is essential that equipment of our manufacture is used in accordance with the instructions that are supplied or are available from our Technical Staff.

Legislation requires that all operators are instructed in the safe operation, cleaning and maintenance of equipment and machines. This handbook forms part of that instruction and it must be read and understood before fitting the machine onto the tractor or attempting to use it.

Your supplier is responsible for carrying out any necessary pre-delivery inspection, fitting the machine onto the tractor and test running. The supplier must also give instruction in the safe use, maintenance and adjustment of the machine.

In the interests of safety, please ensure that the instructions referred to above are brought to the attention of all your employees who are to use the equipment. We recommend that the use of this equipment is restricted to capable trained operatives. Persons under the age of sixteen should not operate the machine and should be kept away from where it is being used.

WARRANTY

The standard warranty is for 12 calendar months against faulty materials and workmanship. Components supplied as part of the original machine, but manufactured by another company, e.g. PTO shafts, wheels etc., are subject to the original manufacturer's conditions and warranty.

Where repairs are carried out under warranty:-

- Claims for the fitting of non original parts will not be considered unless prior agreement has been obtained.
- The repairer must be advised that the work is to be the subject of a warranty claim beforehand.

c) Any claim must be submitted within four weeks of the repair.

d) The damaged parts must be retained for inspection and returned carriage paid if required.

The right to withdraw warranty is reserved if:-

- Non-original parts are fitted.
- The machine has been abused, badly maintained or used for purposes other than that for which it was designed.

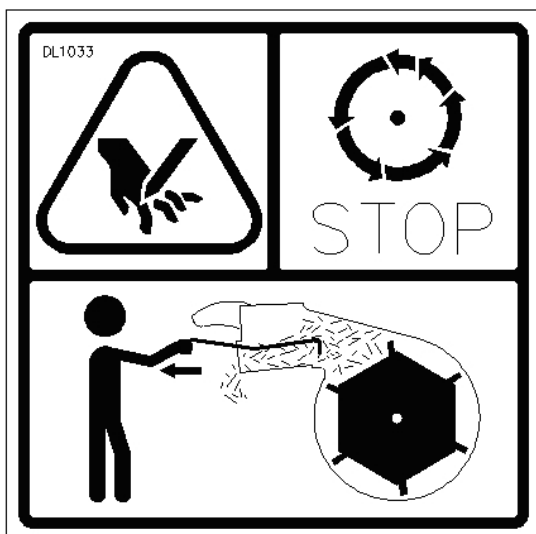
INDEX

INSTURCTIONS	Page
Specifications	2
Explanation Of Pictograms	2
Safety	4
Left And Right Hand	4
Use Of The Tomahawk	4
Use On The Public Highway	4
Preparation Of The Tractor	4
Fitting The Machine Onto The Tractor	5
Fitting The Control Box Onto The Tractor	5
Operation	6
Maintenance	8
Optional Extras	11
Disposal	11
 FAULT FINDING CHART	
Part 1	12
Part 2	13
 PARTS LISTS	
Tailgate Ram	14
Chute Ram	14
Chassis	15
Front Housing & Rotor	16
Drawbar	17
Sloping Flange Giraffe Chute & Housing	18
Floor Assembly	20
Wiring Diagram – Lights	21
Decals	21
Silage Crossbeater & Drive	22
Dual Chop Crossbeater & Drive	24
Body	26
Wheel Equipment	27
Bed Chain Drive	28
Electric Controls	29
Hydraulic Hoses	30
Solenoid Valve	31
Comer PTO Shaft - Combined Slip And Overrun Clutch	32
Comer PTO Shaft – Wide Angle C.V. Joint	33
Lights	34

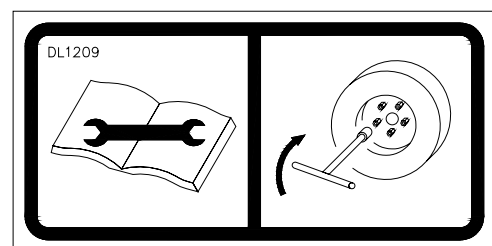
SPECIFICATIONS

Specifications	
Model	T8080 WB
Chamber width	1.55 m
Side discharge Height - Barrier	2.38 m
Giraffe discharge height - Max	3.66 m
Giraffe rotation angle	280 degrees
Overall width (Chute closed)	2.30 m
Overall width (Chute raised)	2.50 m
Overall height - maximum	3.50 m
Overall height - minimum	2.72 m
Overall length (Tailgate up)	4.10 m
Overall length (Tailgate down)	5.40 m
Max Round bale diameter	2.00 m
Maximum Rectangular Bale Size	1.5m x 1.2m x 2.5m
Tyre size (Standard tyres)	10.0/75 – 15.3
Wheel track (Standard Tyres)	1.90 m
Weight	2080 Kg
Volume of clamp silage	4.5 m ³
Max. Hydraulic Oil Pressure	220 bar
Max. Hydraulic Oil Flow	60 litres/minute
Min. Hydraulic Oil Flow	35 litres/minute
Maximum Drawbar Load	650 Kg
Minimum Tractor Size	60kW (80hp)
Sound power level	95 dbA

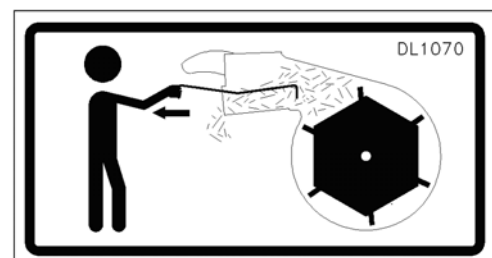
EXPLANATION OF PICTOGRAMS



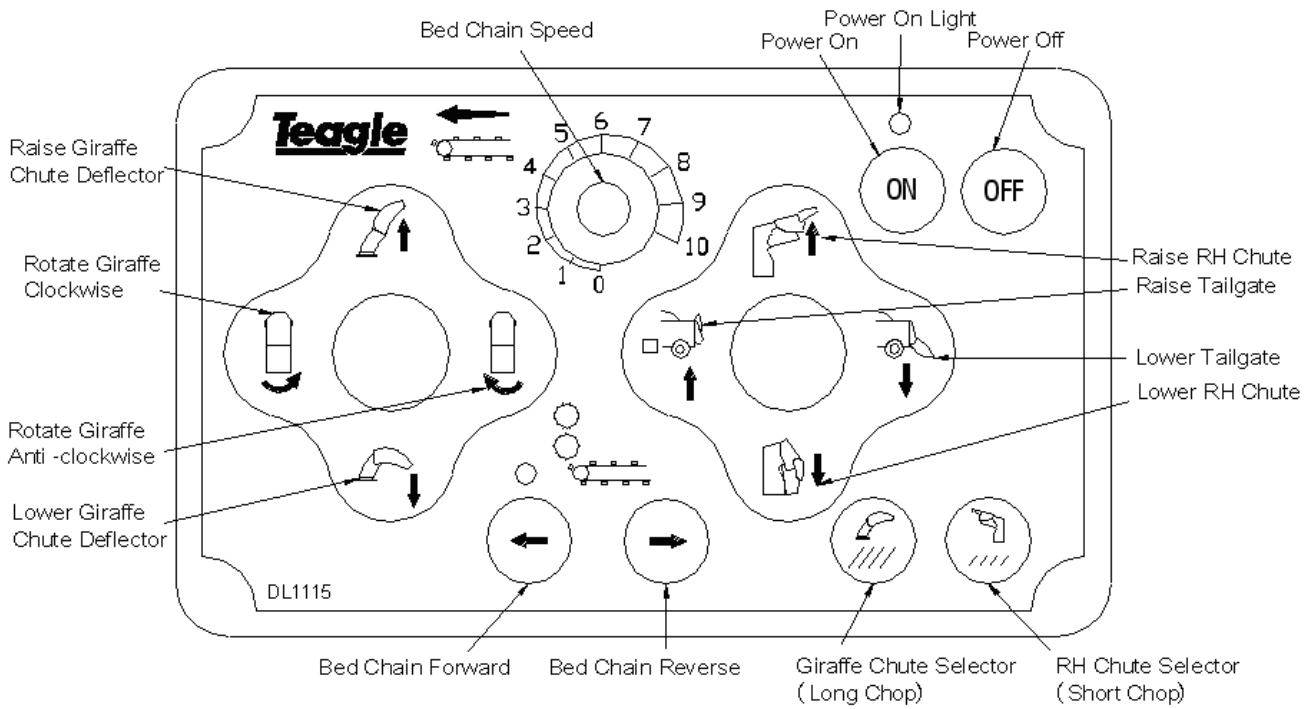
Allow Rotor To Stop Before Removing Blockage With Blockage Removal Tool Provided



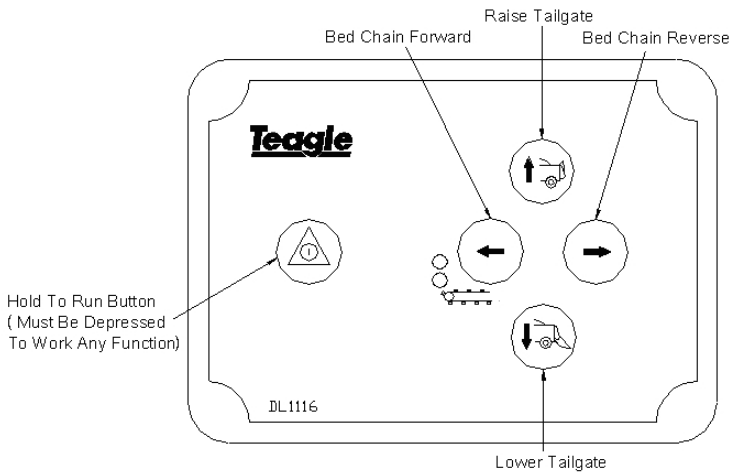
Tighten Wheel Nuts To Torque Setting In Instruction Book



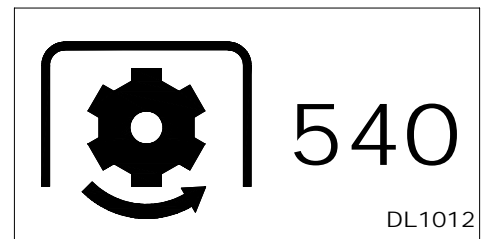
Blockage Removal Tool



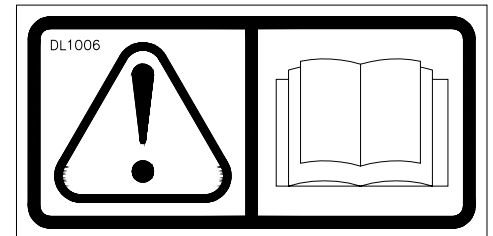
Tractor Control Box Panel



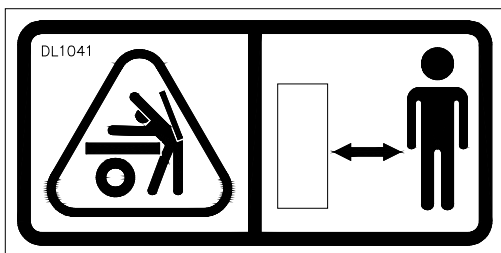
Remote Tailgate Control Box Panel



Direction Of Rotation & Frequency Of PTO Input Shaft

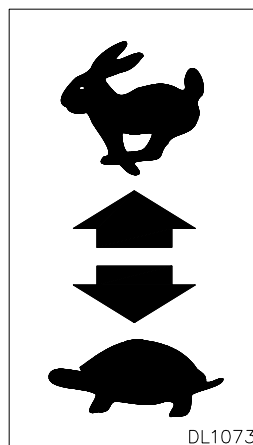


Please Read Instruction Book Before Using The Machine

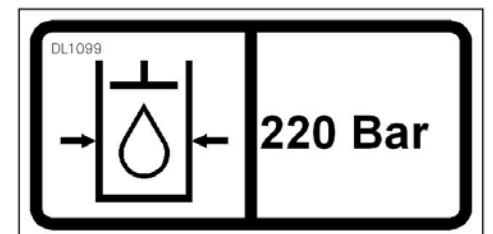


Beware Crushing Hazard Keep Clear

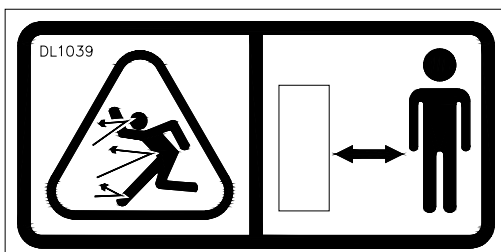
High Rotor Speed



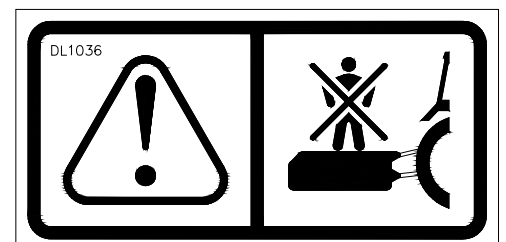
Low Rotor Speed



Maximum Hydraulic Circuit Pressure









Beware Thrown Objects Keep Your Distance



Do Not Allow Anyone To Ride On Machine

SAFETY

In addition to the standard safety guidelines listed at the beginning of this handbook, the following special safety items apply to the Tomahawk.

- 1  The machine shall be operated by one person only.
- 2  **NEVER** put your hands inside the delivery chutes. In the event of a blockage clear it using the Blockage Removal Tool provided, located on the front of the lower housing. First, disengage the PTO, stop the engine, remove the key, and wait for the rotor to come to rest.
- 3  **NEVER** enter the bale chamber unless the PTO has been disengaged, the engine has been stopped with key removed from the ignition, and the machine has come to rest.
- 4  **NEVER** insert anything inside the chute or bale chamber while the machine is running.
- 5  **DANGER.** When entering or leaving the bale chamber take care, the tailgate surface may be slippery.
- 6  Beware of overhead power lines when the swivel chute deflectors are fully raised. Contact with power lines could result in the operator receiving a severe electric shock.
- 7 Do not climb onto the top edges of the bale chamber whilst the machine is use.
- 8 Do not allow anyone to ride on the machine or tractor linkage or drawbar.
- 9 Do not allow persons or animals to stand in front of the outlet chutes whilst the machine is running.
- 10 Do not operate the tailgate if any person or animal is standing in the loading area behind the machine, always ensure good rearward visibility when lowering the tailgate.
- 11 Never put your hand over a hydraulic leak. Oil under pressure may enter the blood stream.
- 12 The shredding of dusty or mouldy material can create dust which may have adverse health effects. Operator exposure to such conditions should be avoided where possible. When circumstances prevent this, either use a tractor with a suitable forced air cab filtration system or an adequate respirator. Respirators must comply with the relevant Standard and be approved by the Safety Inspectorate. Disposable filtering face piece respirators to EN149 or half mask respirators to EN140 fitted with filters to EN 143 are likely to be adequate.
- 13 Before disconnecting the hydraulic hoses always lower the tailgate onto the ground for safety reasons and to avoid residual pressure in the hoses.
- 14 Always fit the correct size tyre onto the rims when fitting replacements.
- 15 Care must be taken when handling large bales, as they have sufficient weight and density to cause serious injury. Large bales should be handled with

appropriate machinery either directly into the Tomahawk or into a position where they can be self loaded. Do not manually load bales from the stack above the machine, so as to prevent the risks of falling into the machine and collapse of the stack of bales.

LEFT AND RIGHT HAND


In this Handbook and Parts List, the terms Left and Right Hand apply to the machine when viewed looking towards the rear of the tractor.

USE OF THE TOMAHAWK

The Tomahawk is designed for shredding either round or rectangular bales of hay, straw or silage. It can also be used to dispense clamp silage. Its use for shredding other materials is not recommended without first seeking advice from the manufacturers.

The machine must never be run with the chute components removed. Unapproved chute modifications should not be carried out as Safety Regulations may be infringed.

USE ON THE PUBLIC HIGHWAY

 If the machine is to be transported along the public highway (any road where the public have access) behind the tractor, it may be necessary to fit lights to comply with local road traffic legislation, as the machine is likely to obscure the tractor rear light units.

Suitable lighting kits are available from your local supplier or may be obtained by contacting Teagle Machinery.

The Tomahawk is classed as a trailed implement and as such does not require brakes when used in the United Kingdom so long as a maximum speed limit of 20 mph is observed. For all other countries local regulations must be observed.

Failure to comply with road traffic legislation may lead to prosecution by local law enforcement agencies and could also result in a road traffic accident.

PREPARATION OF THE TRACTOR

For good visibility down both sides of the machine when working and reversing, the tractor should be fitted with mirrors.


The PTO power required to drive the Tomahawk is typically about 60KW (80 HP). However, the suitability of any particular tractor will depend upon, a) the distance over which the straw is to be spread, and b) the type of bale to be spread. The machine is designed to use the standard 540 rpm PTO shaft.

The hydraulic valve block requires a double acting spool valve or a single acting valve with an unrestricted return. Whichever is used, the hydraulic supply must be independent of the 3-point linkage.

Where the machine is to be operated on a tractor with closed centre hydraulics, the valve must be adapted with a closed centre plug, details of which can be obtained from Teagle Machinery.

The control box / cable control unit mounting bracket should be fitted inside the cab so that it is conveniently situated for the operator. It should be remembered that structural members of the cab must not be drilled or welded.

FITTING THE MACHINE ONTO THE TRACTOR

 Ensure that the clutch end of the PTO Shaft is fitted to the machine and is supported by the Drawbar Bracket. Hitch the machine up by the Drawbar. Switch off the engine and attach the PTO Shaft to the tractor.

Make sure the Drawbar is securely attached to the tractor, when loading bales or silage the weight of the material on the Tailgate may cause the Drawbar to lift.

Check that the lower links are at a height such that they will not foul the PTO shaft when the tractor is turning. If they are not used regularly, it is recommended that they be removed.

Gradually turn the tractor until maximum turning lock is achieved checking that the PTO shaft does not come to within 100 mm (4 inches) of bottoming. With the shaft in its most extended position, there should not be less than half of the original overlap between the sliding members. If necessary, cut the PTO shaft to the correct length.

Connect the hydraulic hoses into the spool valve connections of the tractor. It is important that the supply hose to the valve is connected to the pressure port of the tractor, this hose is marked with a red band. Place the control box / cable control unit in the cab and attach it to the auxiliary socket.

It is essential to get the relationship between the tractor PTO shaft and the gearbox input shaft correct to give a satisfactory PTO shaft life. The correct geometry exists when the machine is horizontal, see Figure 1.

If the machine is shredding whilst turning on a regular basis it is recommended that a PTO shaft with a wide angle, constant velocity joint be fitted.

FITTING THE CONTROL BOX ONTO THE TRACTOR

BATTERY SUPPLY CABLE

The Battery Supply Cable provided with the controls is the supply cable for direct connection to the tractor battery. When fitting to the tractor, make sure that the positive cable is fitted to the positive terminal of the battery. Failure to connect the wires to the correct terminal will cause the in-line fuse to blow. The fuse will continue to blow until the power cables are connected correctly. When fitting the cable, make sure it is routed away from high temperature and moving engine components. Avoid sharp edges that might damage the cable, particularly when passing the cable through a bulkhead. Position the two pin socket in a suitable position within the cab.

CONTROL BOX

Supplied with the machine is a Control Box Mounting Plate. This should be fitted in the cab in a suitable position ensuring no damage to the cab structure.

To reverse the bracket, remove the mounting bolts beneath the Control Box lid and re-position the control box. Make sure the seal is in correct position when reassembling.

A 7.5 amp blade type fuse is fitted in the supply lead of the Control Box. If the connector provided on the supply lead is not to be used, it is essential that the 7.5 amp fuse is retained to prevent damage resulting from current overload and incorrect connection to the tractor battery.

MACHINE CABLE

Once the Control Box has been positioned, route the Machine Cable into the cab making sure it is kept away from the rear wheel and any pinch points between the PTO shaft and link arms. Where possible, route into the cab through cable entry points on the tractor, allowing the rear window to be kept closed during use. Plug the cable connector into the socket on the Control Box and secure by rotating the locking collar.

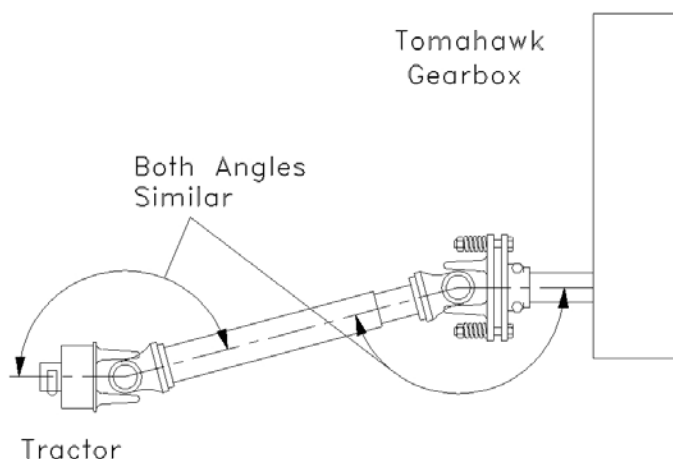



Figure 1. Correct PTO Geometry.

OPERATION

 The machine is fitted with a 2-speed Gearbox. For blockage free operation it is important that the correct gearbox speed is selected for the material being shredded.

The gearbox has a neutral position, make sure the required gear has been properly selected. If operated in neutral, material will enter the Rotor Housing possibly resulting in a blockage. Make sure all material is removed before restarting the rotor.

For shredding straw and other dry materials either rotor speed may be used. For maximum throw distance the handle should be moved towards the position marked by the Hare to give a 1:1 ratio.

For shredding silage and other wet materials it is recommended that the slow rotor speed is used as long throw distances are not usually required and wastage is reduced. To set the slow rotor speed the gearbox handle should be moved to the position marked by the Tortoise to give a 1.85:1 ratio.


To achieve maximum throw distance, operate the tractor engine at PTO speed. For reduced throw distances operate the tractor at reduced engine speeds, as per Table 1. Very slow rotor speeds may cause blockages.

Material	Distance Spread	Gearbox Speed	PTO Speed
Straw	Maximum	High	540
Straw	Close	High	300
Baled Silage	Close	Low	540
Clamp Silage	Close	Low	300

Table 1. Gearbox & PTO settings - right hand chute.

The valve block includes a flow control valve to vary the rotational speed of the bed chain. A rotational speed of the Bed Chain speed indicator of approximately 15 rpm is required for the shredding of rectangular bales and dispensing clamp silage. For round bales, indicator speeds of up to 30 rpm may be used to improve the feed rate.

DUAL CHOP OPERATION

 Dual Chop machines can not chop Silage.

The Sliding Blade Carrier is controlled through the hydraulic spool valve. Slots located on the front of the machine indicate the engaged / disengaged positions of the Sliding Blade Carrier, yellow for disengaged.

When a long chop length is desired raise the Blade Carrier disengaging the blades.

When a fine chop length is desired lower the Blade Carrier to engage the blades against the Crossbeater. Before lowering the Blade Carrier, stop the Bed Chain and wait for the material to stop flowing into the Rotor.

BALE RESTRAINT BEAM

The Bale Restraint Beam is factory set in the most desirable position. If problems occur with excessive breaking of Shear Bolts, it may be advisable to adjust the Bale Restraint Beam backwards by one hole.

SWIVEL CHUTE

The Swivel Chute rotates through 270 degrees and can be operated in any position.

To deliver silage close to the machine position the Chute so that material is passed onto the Feed Passage Slide. The position of the Slide can be adjusted as desired.

Alternatively the material feed direction can be controlled by the Chute. It may be necessary to rotate the Chute fully to deliver material alongside the drawbar.

In transport, rotate the Chute to the right hand side of the machine aligning the indicators on the Chute and Top Housing. Fully lower the Deflector to keep the width and height of the machine to a minimum.

BED CHAIN OPERATION


The Bed Chain is operated by pressing forward button to move forwards, pressing forward button to stop, and pressing and holding reverse button to reverse. It is not necessary to stop the Bed Chain before pressing the reverse button as this will automatically cancel the forward direction before engaging reverse.


COMMENCING OPERATION


LOADING THE MACHINE

The strings or net should be removed from the bale as it is being loaded into the machine. The Tomahawk will shred some string but some will tend to wrap around the Crossbeater. Putting twine or netwrap through the machine is not recommended as it will eventually be spread on the land, polluting future crops.

Bales can be loaded into the machine in two ways, by using a loader or by self-loading using the machine Tailgate. If a loader is used, simply load the bale into the Bale Chamber so that it is fully inserted. Ensure the bale is not rammed against the crossbeater. With square bales it is recommended that the bales are laid on their side to aid string removal.

 When loading the machine, avoid running the Bed Chain without the rotors turning. If there is a large amount of material still in the Bale Chamber it will be placed into the Rotor Housing causing the Rotor to jam at start up.

 Do not stand above the machine on a stack of bales or in a barn to load the machine manually.

 When removing string or netwrap from bales never climb into the bale chamber or onto the tailgate behind a bale unless, the PTO has been disengaged, the engine has been stopped, the key removed from the ignition and the machine has come to rest.

The Tailgate is designed to load bales into the Bale Chamber of the machine. For large rectangular bales place the bale on the ground with one end against a solid object. For easy removal of the strings place the bale on its side so that the strings are not in contact with the ground. Reverse the machine with the Tailgate lowered until the bale slides up the Tailgate and into the Bale Chamber. Raise the Tailgate until it is in a horizontal position and engage the Bed Chain to move the bale fully onto the Tailgate.

! Make sure that the bale is not forced against the Crossbeater as this may cause problems when starting the machine. Before removing the strings, place the two posts in the sockets on the Tailgate and put the chain around the rear of the bale.

To load round bales reverse the machine forcing the Tailgate under the bale. Lift the Tailgate slightly and drive forward a short distance before raising it further into a horizontal position. Cut the strings / netwrap on the bale as low as possible and on the machine side of the bale. Raise the Tailgate forcing the bale into the Bale Chamber and before removing the strings / netwrap completely. A second bale can be loaded and carried on the Tailgate.

SHREDDING AND SPREADING MATERIAL

Adjust the Deflector to give the desired spread direction.

Switch the control box on. Engage the spool valve on the tractor, engage the PTO with the tractor engine on idle, once the clutch has fully engaged increase the speed rapidly. When the Rotor is rotating at working speed start the Bed Chain by operating the forward switch to begin the shredding and spreading of material.

! It is important to ensure that the Rotor is turning at full working speed before engaging the Bed Chain. Failure to do so is likely to result in a blockage.

With two round bales in the machine, the Tailgate must be lowered so that the second bale is not in contact with the first. This allows the first bale to rotate freely within the Bale Chamber, see Figure 2 for details.

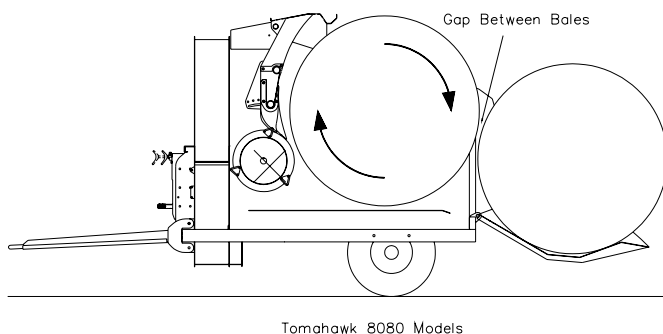


Figure 2. Shredding round bales.

! Do not force bales against the Crossbeater using the tailgate as this will reduce the desired rotation of the bale in the Bale Chamber. This may cause a blockage and could also damage the machine.

When shredding rectangular bales, keep the tailgate in a position so that the rear section of the bale is falling away from the front section. Thus no pressure is applied to the front half of the bale allowing it to rotate in the Bale Chamber in the same way that a round bale would rotate, see Figure 3.

Allow the front half of the bale to be almost fully discharged before raising the Tailgate to shred the rear half of the bale. Once the rear half of the bale is moving on the Bed Chain, lower the Tailgate slightly to create room for the bale to rotate within the Bale Chamber.

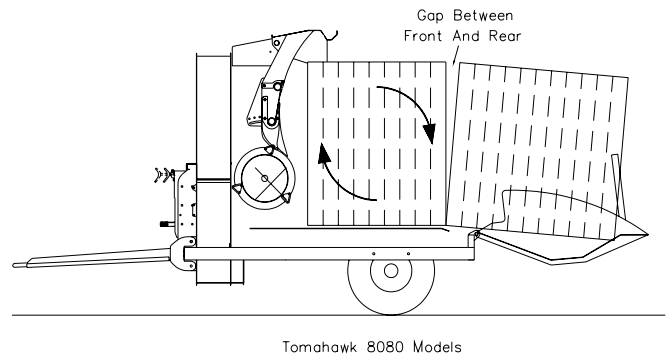


Figure 3. Shredding rectangular bales.

When it is necessary to stop shredding part way through a bale, always stop the Bed Chain rotation and put it in reverse for a few seconds before stopping the Crossbeater and Rotors. This allows the material in the area around the Crossbeater and Rotor to be blown clear of the machine. Failure to do this may result in a blockage when the machine is re-started.

! The length of chop will vary with the condition of the bale. Fresh clean straw will tend to result in a longer chop length, where as old, slightly damp, weathered or matted bales will tend to have a shorter chop length. The power consumption will also vary with the material being shredded. In general, baled silage and damp or matted straw materials will require a relatively high power input.

Should the Rotor or Crossbeater become blocked and material become jammed it may be necessary to turn the Rotor backwards. This can be achieved by pushing the Rotor Paddles with a post through the Outlet Chute. Further access may be gained by removing the Blockage Panels from the front of the Upper and Lower Rotor Housing.

! DUAL CHOP: Always fully raise the blade carrier before attempting to remove blocked material from the Crossbeater.

! Never begin to unblock a machine until the PTO has been disengaged, the engine stopped with the key removed from the ignition, and the machine has come to rest.

! Care must be taken when removing blocked material, Crossbeater Blades are extremely sharp. Leather gloves will give some protection against minor cuts.


IMPORTANT: The machine is fitted with a Shear Bolt on the Crossbeater drive line. After a blockage, the Shear Bolt may have failed and require replacing. Grease must be applied to the slipping surfaces via the grease nipple before the Shear Bolt is replaced.


Shear Bolt Grades: Silage Machine - 10.9 M8 x 50
Dual Chop Machine - 8.8 M8 x 50

IMPORTANT: The machine is fitted with a Slip Clutch on the Rotor Shaft. If this slips repeatedly, the machine must be fully examined to check that there is no fault or blockage before tightening the Slip Clutch. Refer to 'Maintenance' for the correct Slip Clutch setting.


The Slip Clutch can get very hot. Care should be taken when removing it from either the machine or tractor.

MAINTENANCE

 Never enter the bale chamber unless the PTO has been disengaged, the engine has been stopped, the key removed and the machine come to a rest.

 Always keep your hands away from the edges of blades - particularly new ones, as they are extremely sharp. Be aware that even when the leading edges of the blades appear to be blunt the trailing edges will remain sharp. Leather gloves will provide some protection against minor cuts.

BLADES

 Extreme care must be taken when carrying out maintenance work on or around the Blades as they are incredibly sharp. When replacing Blades use 13mm ring spanners with long handles to allow the bolts to be removed whilst avoiding contact with the sharp edges of the Blades. Always wear heavy duty leather gloves, and work slowly and methodically.

SILAGE CROSSBEATER BLADES

Enter the Bale Chamber via the Tailgate. Wedge the Crossbeater and the Rotor to prevent them from turning and pinching hands and fingers between the Bale Restraints Fingers and the Crossbeater.

Cover areas of the Crossbeater not being worked on with old carpet or hessian sacking.

Blades can simply be rotated and repositioned to achieve a new sharp cutting edge. When both edges are blunt the Blades themselves will require replacing altogether.

To achieve further cutting aggression, a selection of Blades can be positioned using the outer holes on the Crossbeater rings.

DUAL CHOP BLADES

Disengage the blades by raising the Blade Carrier. Enter the Bale Chamber and lock the Blade Carrier in the raised position by placing two bars through the $\frac{3}{4}$ " diameter holes in the Slides.

Remove the M12 bolt (1) from the Cover Plate located on the LH Mid Body Panel, as indicated in Figure 4.

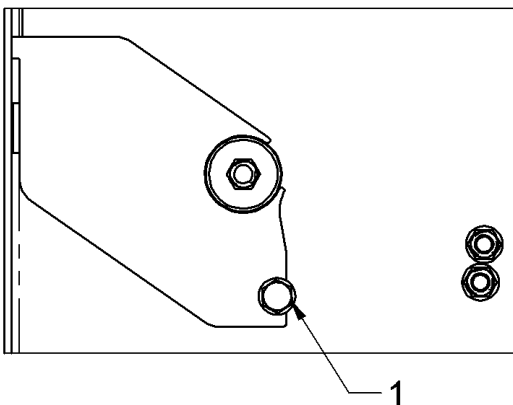


Figure 4. Cover Plate closed position, bolt removal.

Rotate the Cover Plate and position as shown in Figure 5.

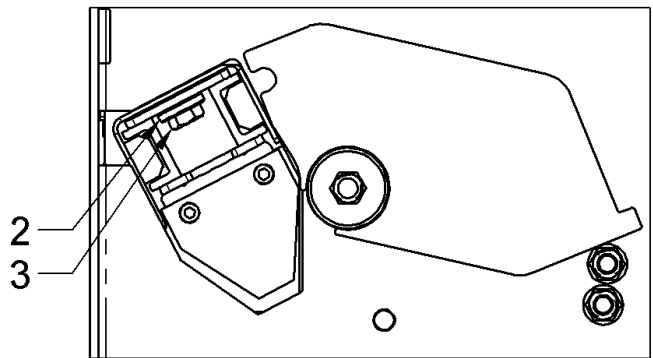


Figure 5. Cover Plate open, bolt and boss removal.

Remove the Blade Bar Boss (2) by undoing the M12 bolt (3), illustrated in Figure 6. Using the Blockage Removal Tool, which is stored on the front of the machine, slide out Blade Beam by hooking the Boss hole.

To obtain fresh cutting edges on the Blades, the Blade Beam can be fully removed from the machine and replaced in the opposite direction.

After the Blade Beam has been inserted back into the machine, replace the Blade Bar Boss but do not tighten the M12 bolt, this allows the blade position to be adjusted. Check the Blade clearances on the Crossbeater by lowering the Sliding Blade Carrier. Align the Blades centrally between the Crossbeater Rings by adjusting the Blade Beam Tension Bar on the Sliding Blade Carrier. Finally tighten the M12 bolt securing the Blade Bar Boss.

Once both edges of the Blades have become blunt the individual knives themselves will require replacing. Do this using a 13mm ring spanner and an allen key, both with long handles, this will allow the bolts to be removed whilst avoiding contact with the sharp edges of the Blades.

BED CHAIN

To tension the Bed Chain, release the front lock nut on the Bed Chain Tensioner and jack the mounting bush using the other nut. The Bed Chain should be tensioned such that the chain can be lifted 50mm above the bed midway between the drive sprockets. Retighten the lock nuts.

After tensioning the Bed Chain the position of Rear Sprocket Scrapers must be altered. To adjust slacken the nut on the outside of the body. Slide the Scraper towards the Chain Wheel so that it runs tightly against the bottom of the groove in the centre of the Chain Wheel, retighten the nut, see Figure 6. Repeat procedure on the opposite side of the machine.

If the Bed Chain becomes tight in use, check that the grooves in the Chain Wheels have not become tightly packed with straw or silage. If they have they need clearing and the Scrapers will require repositioning.

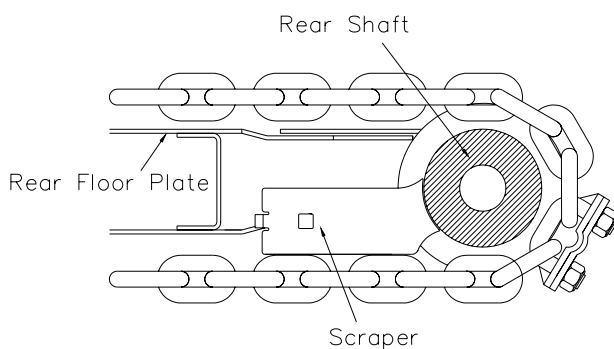


Figure 6. Sprocket Scraper position.

If the area beneath the Bed Chain becomes blocked or requires attention, remove the bolted Inspection Panel underneath the machine and clear the blockage.

Check the Front Scrapers for excessive wear, these may require replacing over time.

BALE RESTRAINT BEAM ADJUSTMENT AND REMOVAL

To adjust the Bale Restraint Beam remove the two M12 bolts located in the holes on both sides of the Restraint Beam, and loosen the third bolt in the slot. Reposition the Bale Restraint Beam by aligning the necessary holes, replace and tighten bolts.

To remove take the weight of the Bale Restraint Beam using a suitable lifting device. Remove the 3 bolts from each end before extracting the Bale Restraint Beam itself.

Refitting is the reverse of above.

DUAL CHOP SIEVE REMOVAL

Raise the Blade Beam and lock it in the upper position by entering the Bale Chamber and sliding two bars through the $\frac{3}{4}$ " diameter holes in the Slides.

Remove the Bale Restraint Beam as detailed above. Remove the six M10 bolts that hold the sieve to the Mid Body Panels. Remove the six cup squares retaining the screen to the support beam. The Sieve can then be removed by rolling it over the Crossbeater.

Refitting is the reverse of the above.

CROSSBEATER SHEAR BOLTS

To replace the shear bolt, open the left hand Hinged Drive Chain Guard to gain access to the Shear Sprocket. Grease the Sprocket Hub before replacing the Shear Bolt with a Shear Bolt of the correct grade.

Shear Bolt Grades: Silage Machine - 10.9 M8x 50
Dual Chop Machine - 8.8 M8 x 50

GEAR BOX

Check the oil level in the Gearbox daily.

After 50 hours of use the Gearbox oil should be drained and replaced with new oil. To drain the oil, remove the Valve Guard, remove the drain and filler plugs and allow it to empty. Waste oil should be collected and disposed of at an oil recycling facility.

Refill the Gearbox with SAE90.EP Gearbox oil. The oil capacity of the Gearbox is 4.7ltrs (1.25 Gallon).

DRIVE CHAINS

Apply chain lubricant or oil weekly to these chains.

To tension the Bed Chain Drive, remove the Chain Guard on the right hand side of the machine, release the 4 clamp bolts on the Motor Mounting Plate. Using the tensioning bolt jacking the motor mounting plate until the chain has 12mm movement midway between the Sprockets, see Figure 7.

To tension the Crossbeater Chain Drive open the Hinged Drive Chain Guard and loosen the four bolts retaining the Layshaft. Slacken the clamp bolt on the Layshaft universal joint. Slacken the M16 locking nut on the tension bolt and tighten the tension bolt until there is 15mm deflection midway between the Sprockets, see Figure 7. Tighten the tension Bolt locking nut and the four Layshaft bearing retaining nuts. Tighten the Layshaft universal joints clamping nut and bolt before finally closing the Chain Guard.

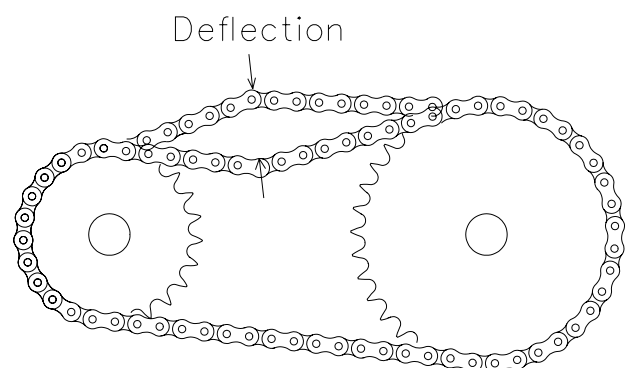



Figure 7. Chain tension.

HYDRAULIC VALVE

 Before attempting to dismantle any of the hydraulic system, the Tailgate and Deflectors must be fully lowered to prevent injury from the unexpected lowering of these components.

To split the Valve Slices, withdraw the three long studs through the Valve. The positions of the seals are shown in the diagram on Page 38. When reassembling the Valve, the studs should be tightened to a torque of 13.5 Nm (10 lb.ft). If over tightened then the Spools may jam.

If contaminated oil enters the bypass valve in the flow control slice, it may jam open causing the hydraulic circuit to fail. The bypass valve is found on the lower sloping face of the flow control valve below the pressure relief valve. To clear the blockage, undo the cap, carefully making sure the return spring is not lost. Using a pair of long nosed pliers withdraw the spool from the valve body. Clear any contamination and refit the spool, which should move freely. Refit the return spring and cap.

Contamination may also jam open the pressure relief valve in the flow control slice. To clear, remove the relief valve from the body and clear any contamination.

If oil contamination is a persistent problem an Inline Filter Kit can be fitted, these are available from your local dealer or the manufacturer.

RELIEF VALVE SETTING

The relief valve for the Bed Chain is factory set at 120 bar and should require no adjustment during service. The relief valve for all other functions can be set in the range of 140—175 bar. To adjust relief valve remove cap and turn screw clockwise.

SLIP CLUTCH

If the clutch slips repeatedly for no apparent reason there are a number of things to be checked:

Firstly check that the clutch linings do not show signs of damage or excessive wear. If so, they should be replaced. When new they are 3mm, (1/8") thick.

Make sure that the compressed spring length is set to give the correct torque setting – see PTO shaft parts list.

If the clutch continues to slip it should be adjusted as follows.

1. Remove the guard fitted to the Rotor Gearbox.
2. Fit the PTO shaft with the Slip Clutch at the machine end.
3. Insert a piece of wood through the Discharge Chute and position it such that it prevents the Rotor from turning.
4. Insert a steel bar through the rear PTO yoke and use a spring balance to obtain the correct torque setting. The clutch should just slip at a torque of 1200 Nm (900 lbft) - equal to a force of 1000N at 1.2m (225 lb at 4ft) from the centre of the yoke. Adjust the Clutch as necessary using the eight spring loaded clamp bolts.

WHEEL REPLACEMENT

If it is necessary to remove a Wheel, place a jack underneath the Axle Beam, loosen the wheel nuts and raise the machine until the Wheel can be removed. Place an axle stand underneath the machine before removing the Wheel. Refit the Wheel and tighten the wheel nuts.

WHEEL NUTS

Before using a new machine and daily during use, check the wheel nuts are tight. The recommended torque for the 6 Stud Wheel is 400Nm (320lb.ft).

Once the nuts are allowed to work loose, it may be impossible to keep them tight and new nuts and studs will be required. In extreme cases, damage to the wheel rims and hubs may result.

TYRE PRESSURES

Check tyre pressures regularly, inflating to the pressures shown in the following table. Over inflation can be dangerous.

Tyre Size	8080 Pressure bar (psi)
10.0/75-15.3	2.0 (29)
11.5/80-15.3	1.2 (17)
12.5/80-15.3	1.2 (17)
7.50 - 16.0 (14PR)	Refer To Tyre

Table 2. Tyre Pressures.

LUBRICATION

Good quality semi-solid grease should be applied to the following grease points:

Twice weekly:

- Bed Chain Bearings (4 nipples)
- Crossbeater Bearings (4 nipples)
- Gearbox output side shaft\drive (2 Nipples)
- Shearbolt Sprocket Bearing (1 nipple)
- Chute ram pivots (2 nipples)
- Ring Hitch
- Oil Crossbeater & Bed Chain roller chains

Every 2 weeks:

- Swivel Chute ring gear (4 nipples)
- PTO Shaft joints (2 nipples)
- PTO Guard Bearings (2 nipples)
- PTO Shaft sliding members

The above frequencies are based on typical daily use for bedding & feeding purposes. Continuous use for special applications may necessitate more frequent lubrication.

To gain access to PTO shaft joints, use two flat ended screwdrivers to release the clips in the plastic guard. The guard cone can then be pulled back to allow access, this is shown in Figure 8. To reassemble, align the clips with the two tabs on the inner ring, push the cone back towards the PTO shaft joint, the guard cone will snap back into position.

Regularly oil the PTO shaft spring plungers at both ends of the shaft.

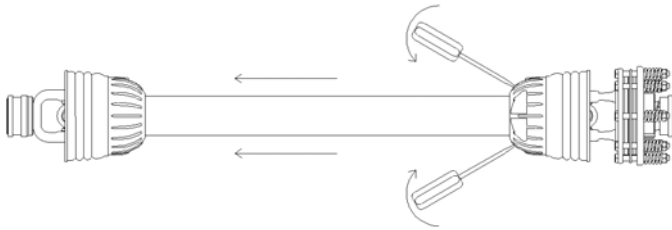


Figure 8. PTO Guard Cone removal.

The frequencies stated are based on typical daily use for bedding & feeding purposes. Continuous use for special applications may necessitate more frequent lubrication.

ELECTRIC CONTROLS

Before maintaining any part of the electronic controls and wires, disconnect the 12v supply. Failure to do so may result in damage to the electronic circuit controlling the bed chain speed.

It is recommended that the controls are repaired by a competent person. Please contact Teagle Machinery when repairs are required. Copies of the circuit diagram are available from the manufacturer on request.

When the machine is not being used it is recommended that the Control Box is stored safely away from the machine in a dry position. The plug on the end of the machine cable should be kept stored in the bracket provided to keep it clean and safe from damage.

OPTIONAL EXTRAS

OVERSIZE WHEELS

Larger wheels may be fitted to the Tomahawk.

DRAWBAR JACK

Where the machine is fitted with a Drawbar Jack, adjust the height of the Drawbar to match the height of the hitch point on the tractor. Reverse the tractor and attach the Drawbar. Lower the machine until the weight is fully transferred to the tractor. Remove the pin retaining the Jack to the Drawbar and transfer it onto the transport position across the front of the Chassis.

DISPOSAL

At the end of the machine's working life, the method of disposal must be within the legislation laid down by the local authority or the National Environment Agency.

The machine is composed of ferrous materials, synthetic paints and rubber compounds.

TOMAHAWK FAULT FINDING CHART – PART 1

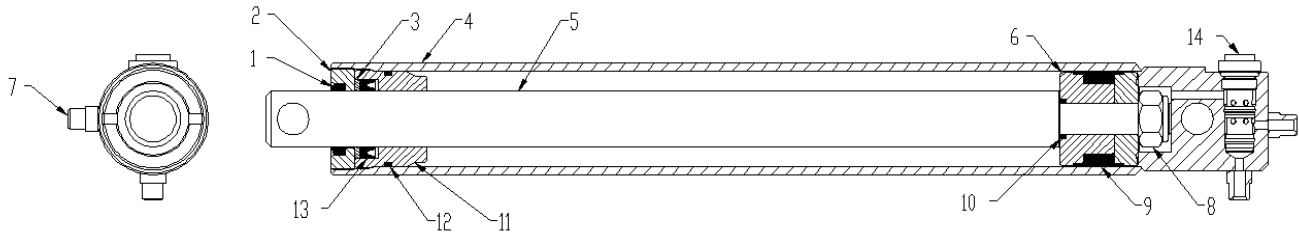
Symptom	Fault	Possible Solutions
High power Consumption.	Bale fed too quickly into crossbeater. Blades too aggressive.	Reduce bed chain speed. Reduce aggression of bales.
Rotor won't start	Bale jammed hard against crossbeater. Material in rotor housing jamming Rotor Clutch setting too low	Reverse bed chain. Reverse rotor to clear blockage. Check setting and adjust
Bed chain no longer operates or only very slowly. Failure may be sudden or intermittent.	Hydraulic valve problem. Tractor hydraulic oil pressure low. Relief valve setting too low. Material jammed between bed chain and bodywork. Bed chain has come off the sprockets. Bed chain broken. Scraper has jammed sprocket. Motor not turning. Sprockets seized. Dirt or contamination in the Bypass Valve or the Pressure Relief Valve in the flow control slice.	See section below. Check pressure delivered by tractor. Adjust relief valve or replace if spring worn. Clear material and check bed chain tension. Check sprocket condition, replace the bed chain and tension it. Check sprocket groove is clean and that the chamber below the floor is free from obstructions. Repair chain and refit. Replace scraper. Check connections and tractor hydraulics. If motor is seized reverse flow to release. Consult your dealer if this fails. Replace bearings. Firstly, remove the Bypass Valve from the Flow Control Slice inspect for contamination clean and replace. If problem still exists, remove the Pressure Relief Valve and inspect for contamination. If problem persists or re occurs regularly replace tractor hydraulic oil with new clean oil. Fit Inline Filter Kit.
Slow discharge	Bed Chain speed too slow. Bed Chain speed too slow. Material jammed hard against bale restraint above crossbeater. Blades blunt or worn. Rotor speed low. Rotor speed low.	Increase forward speed of bed chain using flow control valve. Insufficient oil flow from tractor. Check oil level on tractor or adjust flow rate. Consult dealer if hydraulic flow cannot be controlled using tractor valve. See handbook for recommended speeds. Reverse bed chain direction for at least 5 seconds until feed is restored. Sharpen, reverse or replace blades. Check that slip clutch is not slipping - indicated by hot clutch assembly. Check tractor tachometer.
Bale stops discharging	Crossbeater not rotating. Gearbox in neutral. Bed Chain not rotating.	Replace shear bolt in drive sprocket. Remove material from rotor housing before restarting and select correct gear. See above.

TOMAHAWK FAULT FINDING CHART – PART 2

Symptom	Fault	Possible Solutions
Shear bolt fails repeatedly.	<p>Bolt bushes worn or damaged.</p> <p>Tailgate raised too high forcing bale into crossbeater.</p> <p>Front half of large rectangular bale not rotating freely.</p> <p>Blades too aggressive.</p>	<p>Replace with new bushes.</p> <p>Lower to tailgate allow material in bale chamber to rotate freely.</p> <p>Lower the tailgate to allow material in bale chamber to rotate freely and increase the bed chain speed to encourage rotation of the front half of bale.</p> <p>Reduce aggression of blades by sloping backwards.</p>
Single beater shear bolt fails repeatedly	One or more bale restraint fingers bent and interfering with crossbeater.	Straighten or replace damaged bale restraint finger.
Twin beater shear bolt fails repeatedly	Long dry silage wrapping around crossbeater and bale restraint.	Consult manufacturer.
Chute and rotor blocks	<p>Chute exit blocked.</p> <p>Material not flowing smoothly.</p> <p>Rotor speed low.</p>	<p>Incorrect discharge rotor speed selected on gearbox, check high rotor speed is selected.</p> <p>Make sure material can leave the chute freely.</p> <p>Raise deflector to improve flow and rotate chute to achieve desired delivery position.</p> <p>Check that slip clutch is not slipping - indicated by hot clutch assembly. Also Increase engine speed.</p>
Hydraulic valve fails to operate	Hydraulic connections to tractor faulty or not connected.	Rectify making sure pressure is applied to the valve via the supply hose and that the return line flow is not restricted.
	Dirt or contamination in the Bypass Valve or the Pressure Relief Valve in the flow control slice.	<p>Firstly, remove the Bypass Valve from the Flow Control Slice inspect for contamination clean and replace. If problem still exists, remove the Pressure Relief Valve and inspect for contamination. If problem persists or re occurs regularly replace tractor hydraulic oil with new clean oil.</p> <p>Fit Inline Filter Kit.</p>
Loss of operation of rams and swivel slices. Also operation of bed in only 1 direction may occur. Failure may be sudden or deteriorate slowly over a few days.	<p>Oil leaking from between slices of the valve.</p> <p>Internal failure in valve</p> <p>Pilot cartridge contaminated.</p> <p>Pilot manifold orifice blocked.</p>	<p>See section below.</p> <p>Contact manufacturer for advice.</p> <p>Replace cartridge.</p> <p>Replace manifold.</p>
Oil leaking from between slices of the valve.	<p>Internal pressure in valve.</p> <p>Clamping bolts loose.</p> <p>Separation of slices in valve block as a result of reverse oil flow (only when connected to a double acting spool valve).</p> <p>Interface seals damaged by either of the above.</p>	<p>Check return line hose connected and that return line flow is not restricted by damaged fittings or the tractor spool valve</p> <p>Check bolts through valve tightened to correct torque specified in the maintenance section.</p> <p>Fit return pipe to free flow return on tractor, or fit check valve on outlet port to prevent reverse flow.</p> <p>Replace damaged seals.</p>

TAILGATE RAM (With Pilot Operated Check Valve)

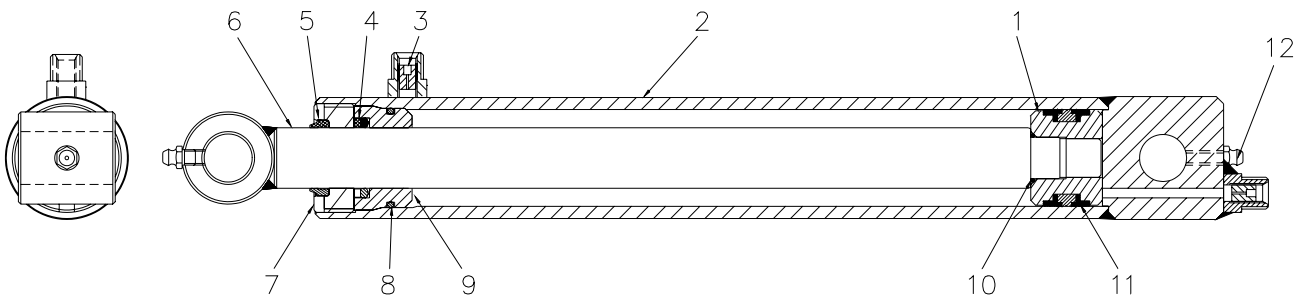
Closed centres 571, Open centres 971, Stroke 400



Ref.	Description	Part No.	Qty.	Ref.	Description	Part No.	Qty.
	Ram assembly	CYL1125	2				
	Seal kit (items 1,9,10,12 & 13)	HYD4812	1				
	(Check valve seals not included, see item 15)						
1	Wiper seal	HYD4517	1	9	Seal	HYD4422	1
2	Wiper seal housing	CYL1004	1	10	"O" ring	HYD4007	1
3	Rod seal back up ring	DC1233	1	11	Rod seal housing	CYL1068	1
4	Cylinder assembly	CYL1066	1	12	"O" ring	HYD4022	1
5	Piston rod	CYL1067	1	13	"U" packing	HYD4327	1
6	Piston	DC1381	1	14	Pilot operated check valve	CYL1128	1
7	Restrictor 1.3mm	HYD1744	2	15	Check valve seal kit (not shown)	HYD4870	1
8	Locknut M20	FAS2336	1				

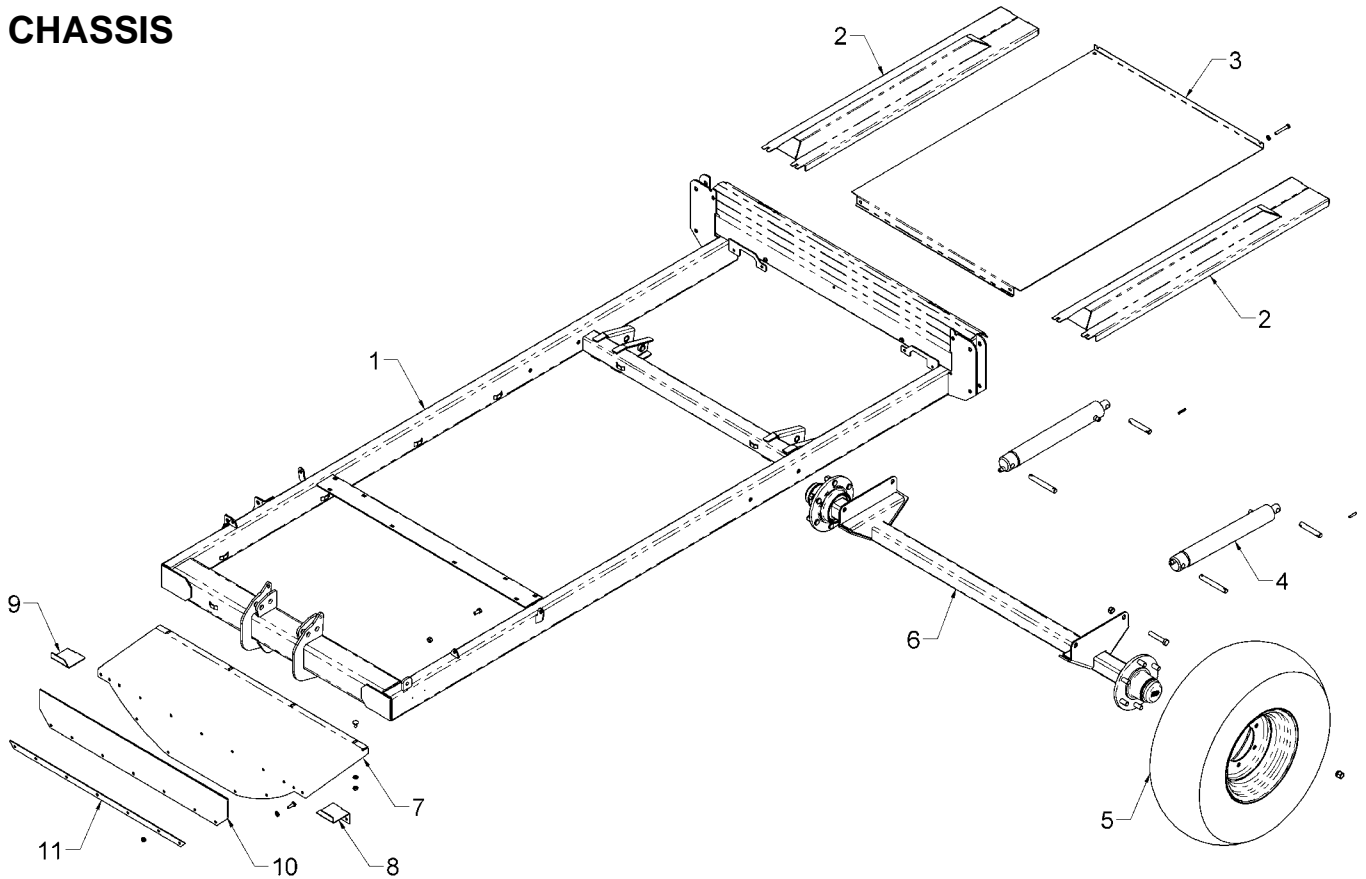
CHUTE RAM

Closed centres 386, Open centres 642, Stroke 256.



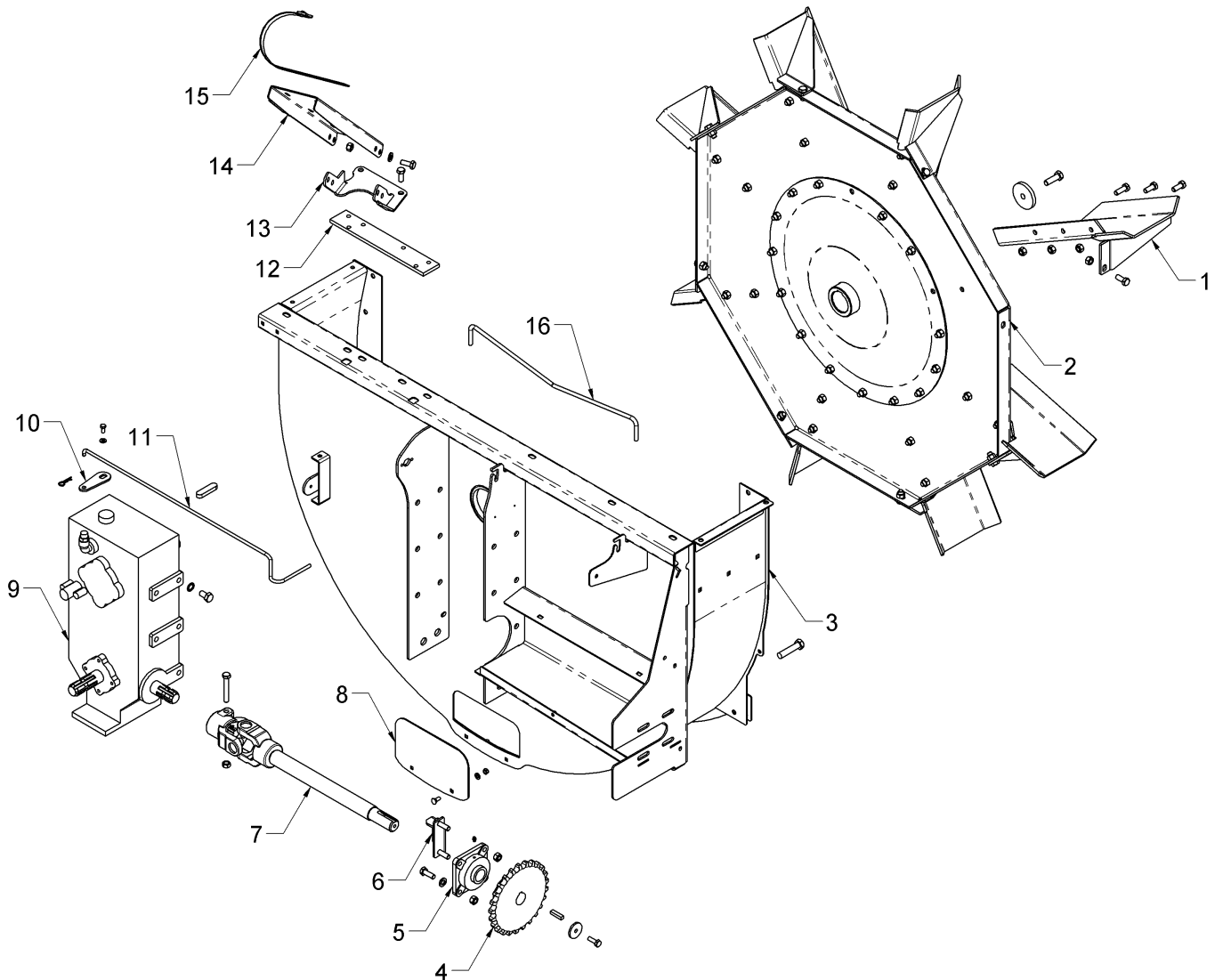
Ref.	Description	Part No.	Qty.	Ref.	Description	Part No.	Qty.
	Ram assembly	CYL1084	1				
	Seal kit (items 4, 5, 8 & 10)	HYD4860	1				
1	Piston	CYL1075	1	7	Wiper seal housing	CYL1077	1
2	Cylinder body	CYL1082	1	8	"O" ring B.S. 216	HYD4039	1
3	Restrictor 0.8mm dia	HYD1746	2	9	Rod seal housing	CYL1076	1
4	Rod seal 25mm	HYD4496	1	10	"O" ring B.S. 017	HYD4033	1
5	Wiper seal 16mm	HYD4524	1	11	Piston seal 40mm dia.	HYD4431	1
6	Piston rod	CYL1083	1	12	Grease Nipple ¼" BSF	BRG5004	2

CHASSIS



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
1	Chassis	SC4600	1	Setscrew M12 x 25 Locknut M12	FAS2677P FAS2334	2 2
2	Outer Lower Panel	SC3613	2	Setscrew M10 x 25 Cup Square Bolt M10 x 25 Plain Washer M10 Locknut M10	FAS2654P FAS9262P FAS2344P FAS2333	4 4 4 8
3	Rear Inspection Panel	SC4609	1	Bolt M10 x 70 Plain Washer M10	FAS9663P FAS2344P	2 2
4	Tailgate Ram	CYL1125	2	Axle Pivot Pin Tailgate Pivot Pin Spring Tension Pin 8 x 40	SC3296 TRM0738 FAS4131	2 2 8
5	Wheel 10/75 x 15	WE1105	2	Wheel Rim – 6 Stud Inner Tube Tyre	WE1124 WE1103 WE1102	2 2 2
6	Axle Beam	SC4618	1	Bolt M16 x 80 Locknut M16	FAS9711P FAS2335	4 4
7	Front Lower Panel	SC4608	1	Setscrew M10 x 30 Cup Square M10 x 20 Plain Washer M10 Locknut M10	FAS2655P FAS9261P FAS2344P FAS2333	4 4 12 8
8	Front Cover Plate LH	SC4646	1	Setscrew M10 x 30 Plain Washer M10 Locknut M10	FAS2655P FAS2344P FAS2333	1 2 1
9	Front Cover Plate RH	SC4647	1	Setscrew M10 x 30 Plain Washer M10 Locknut M10	FAS2655P FAS2344P FAS2333	1 2 1
10	Seal Strip	SC4610	1	Setscrew M10 x 30 Locknut M10	FAS2655P FAS2333	7 7
11	Clamp Plate	SC4621	1			

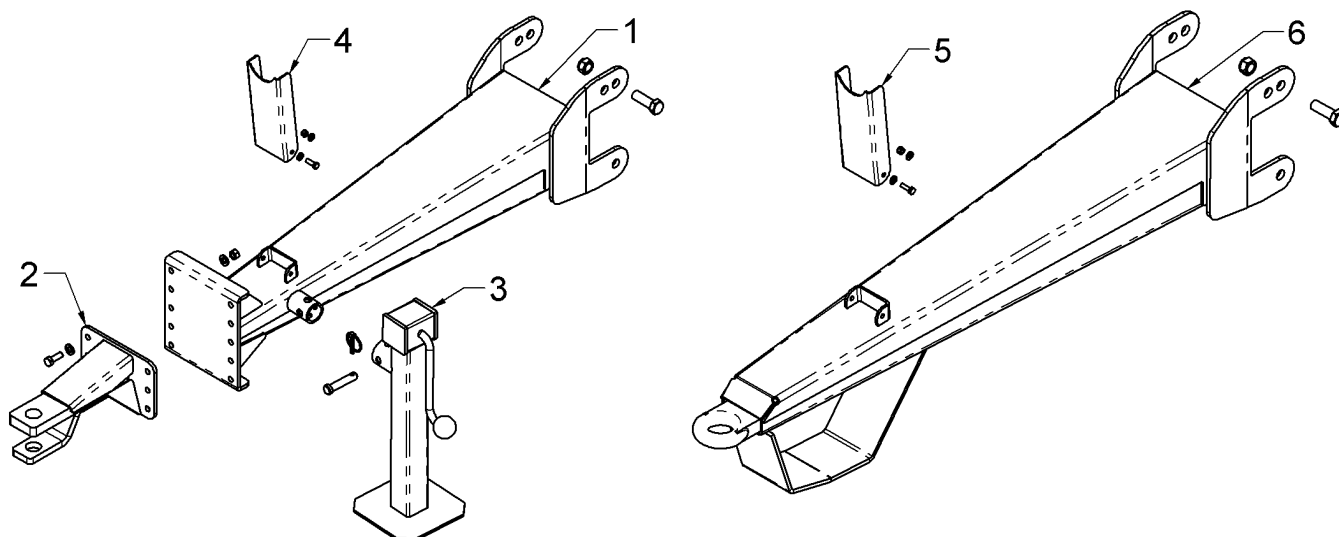
FRONT HOUSING & ROTOR



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
	Rotor c/w Paddles	SC4617	1	Item 1 & 2		
1	Paddle (4 Bolt Fixing)	SC4616	8	Setscrew M12 x 30	FAS2678P	32
				Setscrew M12 x 35	FAS2679P	8
				Locknut M12	FAS2334	32
2	Rotor	SC4502	1	Setscrew M14 x 45	FAS2696P	1
				Washer 75 x 15 x 10	FAS4805P	1
3	Front Housing	SC4602	1			
4	Sprocket 14 Tooth (Silage)	SC3356	1	Key 10 x 8 x 40	FAS8120	1
	Sprocket 25 Tooth (Dual Chop)	SC4556	1	Setscrew M10 x 30	FAS2655P	1
				Washer 45 x 10 x 5	FAS2412P	1
5	Flange Bearing 1 3/8"	BRG1305	1	Grease Nipple M6 Straight	BRG5030	1
				Setscrew M12 x 35	FAS2679P	2
				Plain Washer M12	FAS2345P	2
				Locknut M12	FAS2334	2
6	Drive Adjustment Plate	SC4120	1	Locknut M12	FAS2334	2
7	Layshaft - Splined Yoke	SC4620	1	End Yoke	PTO2794	1
	End Yoke	PTO2794	1	Cross Journal Kit	PTO2321	1
	Cross Journal Kit	PTO2321	1	Setscrew M12 x 80	FAS2688P	1
				Plain Nut M12	FAS2304	1
8	Lower Access Panel	SC4052	1	Cup Square Bolt M8 x 20	FAS9241P	2
				Plain Washer M8	FAS2343P	2
				Locknut M8	FAS2332	2

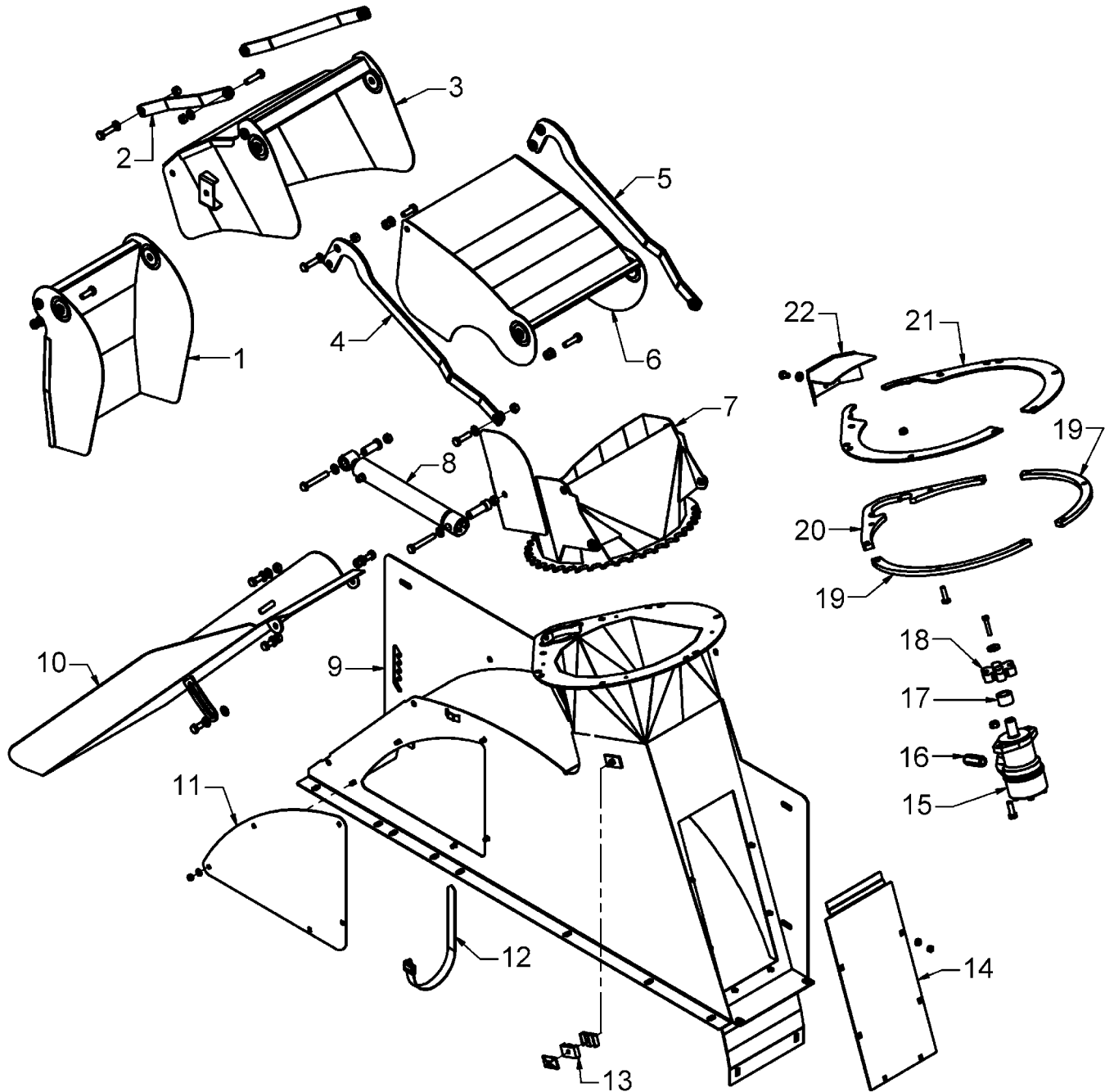
Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
9	Gearbox - Splined Side Output	SC4100	1	Setscrew M14 x 25 Shake Proof Washer M14 Key 18 x 11 x 70	FAS2699P FAS9206 FAS8128	11 11 1
10	Gear Selection Lever	SC3971	1	Bolt M8 x 16 Plain Washer M8	FAS2625P FAS2343P	1 1
11	Gear Change Handle	SC3970	1	R Clip 2.5mm	FAS6002	1
12	Housing Threaded Plate	SC3791	1			
13	Hose Carrier Bracket	SC3739	1	Setscrew M12 x 30 Washer M12	FAS2678P FAS2345P	2 2
14	Hose Carrier (Pivoting)	SC3740	1	Setscrew M12 x 30 Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	4 4 4
15	Strap Re-useable	FAS9001	3			
16	Blockage Removal Tool	SC1247	1			

DRAWBARS



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
	Clevis hitch drawbar Assembly.	SC3837	1	Items 1 To 5		
1	Drawbar Beam	SC3838	1	Bolt M20 x 65 Plain Washer M20 Locknut M20	FAS9733P FAS2347P FAS2336	4 4 4
2	Drawbar Clevis	SC3665	1	Setscrew M12 x 35 Plain Washer M12 Locknut M12	FAS2679P FAS2345P FAS2334	6 12 6
3	Jack	SC1421	1	Pin Lynch Pin	FAS6508 FAS6102	1 1
4	Jack Transport Socket	SC4135	1	Bolt M16 x 80 (8080 model) Bolt M16 x 90 (9090 model) Plain Washer M16 Locknut M16	FAS9711P FAS9711P FAS2643P FAS2335	2 2 2 2
5	PTO Rest	SC4034	1	Setscrew M8 x 25 Plain Washer M8 Locknut M8	FAS2629P FAS2343P FAS2333	2 4 2
	Fixed Drawbar Assembly.	SC3825	1	Items 5 & 6		
6	Drawbar Beam	SC3801	1	Bolt M20 x 65 Plain Washer M20 Locknut M20	FAS9733P FAS2347P FAS2336	4 4 4

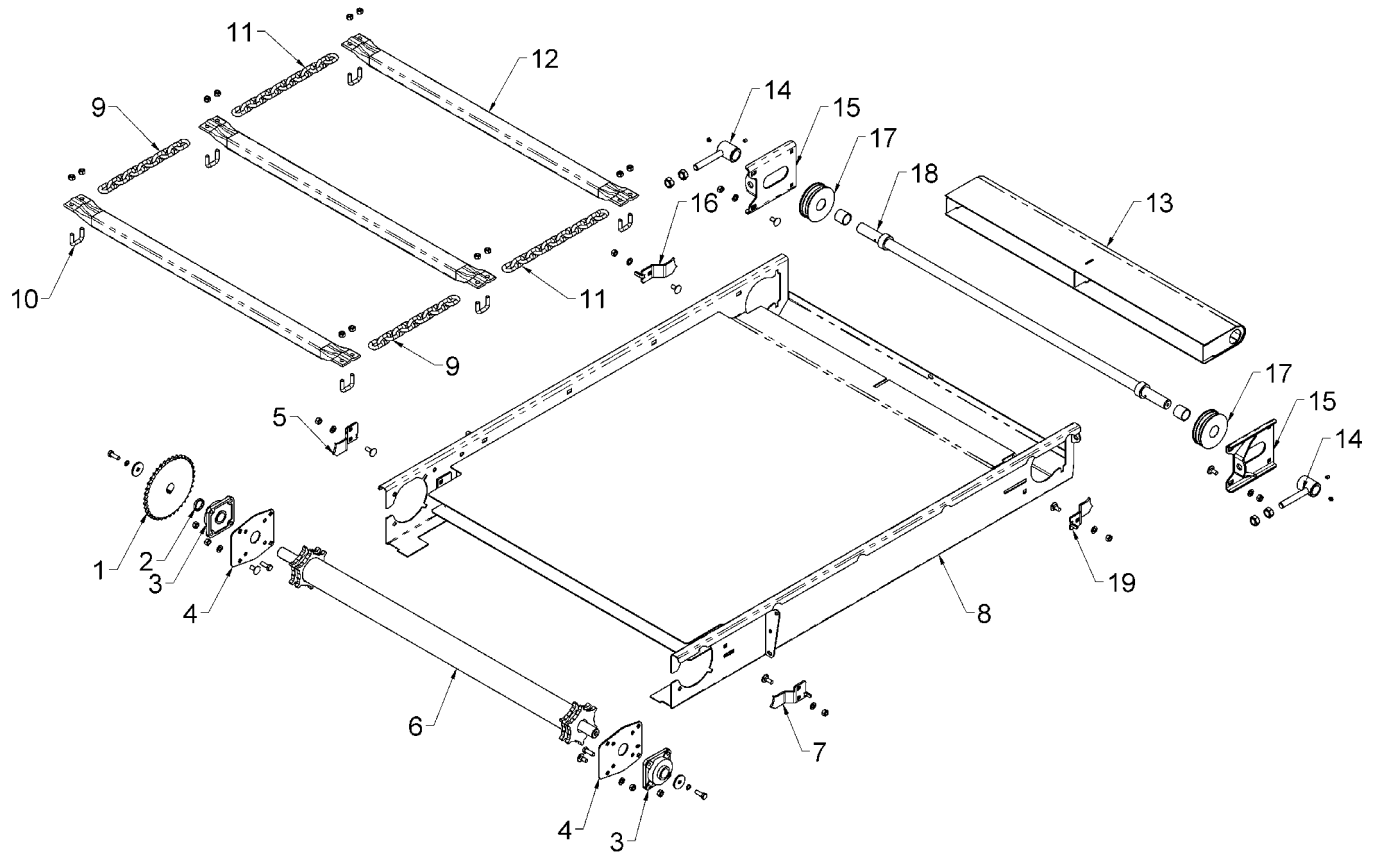
SLOPING FLANGE GIRAFFE CHUTE & HOUSING



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
	Kit Complete	SC4622				
1	End Deflector	SC4044	1	Setscrew M12 x 35 Plain Washer M12 Locknut M12	FAS2679P FAS2345P FAS2334	2 2 2
2	Top Link	SC4047	2	Bolt M12 x 50 Bolt M12 x 55 Plain Washer M12 Locknut M12	FAS9682P FAS2683P FAS2345P FAS2334	2 2 4 4
3	Mid Deflector	SC4043	1			
4	Lower Link LH	SC4045	1	Bolt M12 x 50 Plain Washer M12 Locknut M12	FAS9682P FAS2345P FAS2334	2 2 2
5	Lower Link RH	SC4046	1	Bolt M12 x 50 Plain Washer M12 Locknut M12	FAS9682P FAS2345P FAS2334	2 2 2

Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
6	Lower Deflector	SC4042	1	Setscrew M12 x 35 Bolt M12 x 45 Plain Washer M12 Locknut M12	FAS2679P FAS9681P FAS2345P FAS2334	2 2 4 4
7	Swivel Chute Base	SC4041	1			
8	Chute Ram	CYL1084	1	Pivot Bush - Deflector Bolt M12 x 80 Pivot Bush - Ram Body Bolt M12 x 90 Plain Washer M12 Locknut M12	SC3297 FAS9688P SC4048 FAS9690P FAS2345P FAS2334	1 1 1 1 2 2
9	Housing Top - Inclined	SC4603	1	Grease Nipple 1/4" BSF Setscrew M12 x 25 Plain Washer M12 Locknut M12 Setscrew M10 x 25 Cup Square Bolt M10 x 25 Plain Washer M10 Locknut M10	BRG5004 FAS2677P FAS2345P FAS2334 FAS2654P FAS9262P FAS2344P FAS2333	4 6 12 6 2 2 6 4
10	Feed Passage Slide	SC4039	1	Setscrew M12 x 25 Setscrew M12 x 30 Plain Washer M12 Locknut M12	FAS2677P FAS2678P FAS2345P FAS2334	3 1 6 3
11	Upper Inspection Panel	SC3909	1	Plain Washer M8 Locknut M8	FAS2343P FAS2332	5 5
12	Strap Non Re-usable	FAS9051	1			
13	Hose Clamp 1/4 "	HYD1960	1			
14	Side Inspection Panel	SC4040	1	Plain Washer M8 Locknut M8	FAS2343P FAS2332	6 6
15	Hydraulic Motor – 200cc	HYD5207	1	Setscrew M12 x 35 Plain Washer M12 Locknut M12 Bonded Seal 1/2" BSP 1/2 x 3/8 M/M Union (3/8" Hosing) 1/2 x 1/4 M/M Union (1/4" Hosing) Key Seal Kit – Adan Seal Kit – Comer / M&S	FAS2679P FAS2345P FAS2334 HYD4204 HYD1115 HYD1114 FAS8113 HYD4881 HYD4885	2 2 2 2 2 2 1 1 1
16	One Way Restrictor (3/8" Hosing Only)	HYD1755	2	Bonded Seal 3/8" BSP 3/8" x 3/8" M/M Union	HYD4204 HYD1012	4 2
17	Spacer	SC3413	1			
18	Gear	SC3412	1	Bolt M8 x 45 Plain Washer 30 x 9 x 5	FAS9633P FAS2408	1 1
19	Spacer Segment - Small	SC3707	2			
20	Spacer Segment - Large	SC3708	1			
21	Clamp Segment	SC3709	2	Setscrew M10 x 35 Locknut M10	FAS2656P FAS2333	10 10
22	Drive Guard	SC3710	1	Setscrew M10 x 20 Plain washer M10	FAS2652P FAS2344P	1 1

FLOOR ASSEMBLY

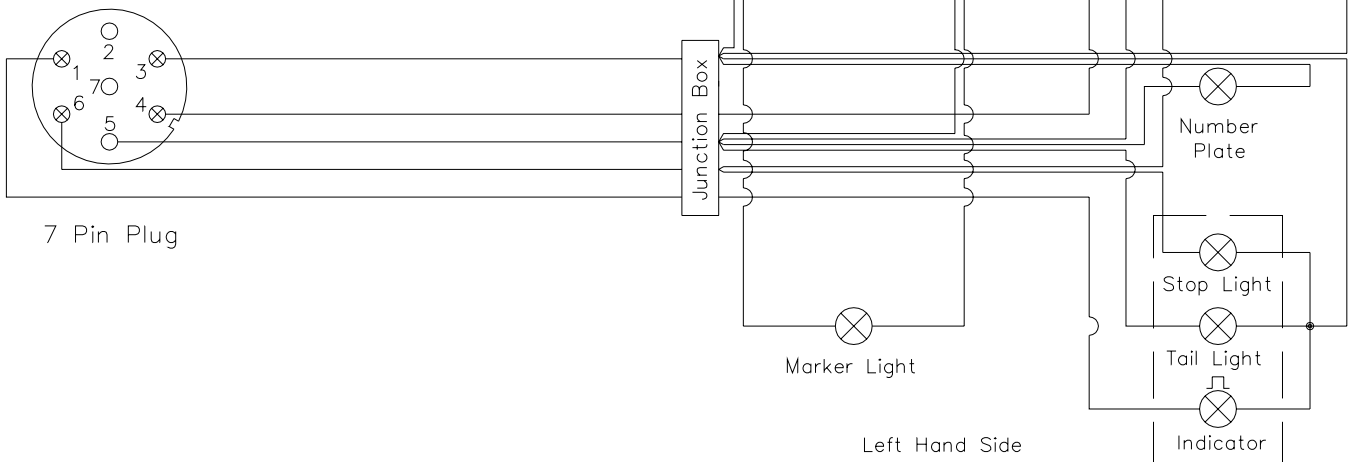


Ref.	Description	Part No.	Qty	Associated Components	Part No.	Qty.
1	Sprocket - 38 Tooth	SC3156	1	Key 10 x 8 x 40	FAS8120	1
2	Sprocket Spacer	SC3191	1			
3	Bearing	BRG1305	2	Setscrew M12 x 35	FAS2679P	8
				Locknut M12	FAS2334	8
				Grease Nipple 1/4" BSF	BRG5004	2
4	Bearing Mounting Plate	SC3022	2	Cup Square Bolt M12 x 25	FAS9282P	8
				Locknut M12	FAS2334	8
5	Sprocket Scraper Front RH	SC3388	1	Cup Square Bolt M12 x 30	FAS9283P	2
				Plain Washer M12	FAS2345P	2
				Locknut M12	FAS2334	2
6	Front Sprocket	SC4604	1	Setscrew M12 x 35	FAS2679P	2
				Washer 50 x 13 x 5 mm	FAS2383P	2
				Spring Washer M12	FAS2374P	2
7	Sprocket Scraper Front LH	SC3387	1	Cup Square Bolt M12 x 30	FAS9283P	2
				Plain Washer M12	FAS2345P	2
				Locknut M12	FAS2334	2
8	Floor Section	SC4601	1	Setscrew M12 x 25	FAS2677P	2
				Setscrew M12 x 30	FAS2678P	2
				Locknut M12	FAS2334	4
				Setscrew M10 x 70	FAS2663P	1
				Locknut M10	FAS2333	1
9	Chain Section - 13 links	SC3367	8			
10	Joiner	SC3351	16	Locknut M12	FAS2334	32
11	Chain Section - 11 links	SC3368	8			
12	Slat - Crushed Ends	SC4607	8			
13	Rear Floor Section	SC4606	1			
14	Bed Chain Tensioner	SC3384	2	Plain Nut M20	FAS2306P	4
				M10 x 10 Grub Screw	FAS8446	2

Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
15	Tensioner Mounting Plate	SC4131	2	Cup Square Bolt M12 x 25	FAS9282P	6
				Cup Square Bolt M12 x 30	FAS9283P	2
				Plain Washer M12	FAS2345P	8
				Locknut M12	FAS2334	8
16	Sprocket Scraper Rear RH	SC3390	1	Cup Square Bolt M12 x 35	FAS9284P	1
				Plain Washer M12	FAS2345P	1
				Locknut M12	FAS2334	1
17	Chain Wheel	SC3382	2	Bush	BRG2401	2
18	Rear Shaft	SC4605	1	Grease Nipple 1/8" BSP	BRG5001	2
19	Sprocket Scraper Rear LH	SC3389	1	Cup Square Bolt M12 x 35	FAS9284P	1
				Plain Washer M12	FAS2345P	1

WIRING DIAGRAM – LIGHTS

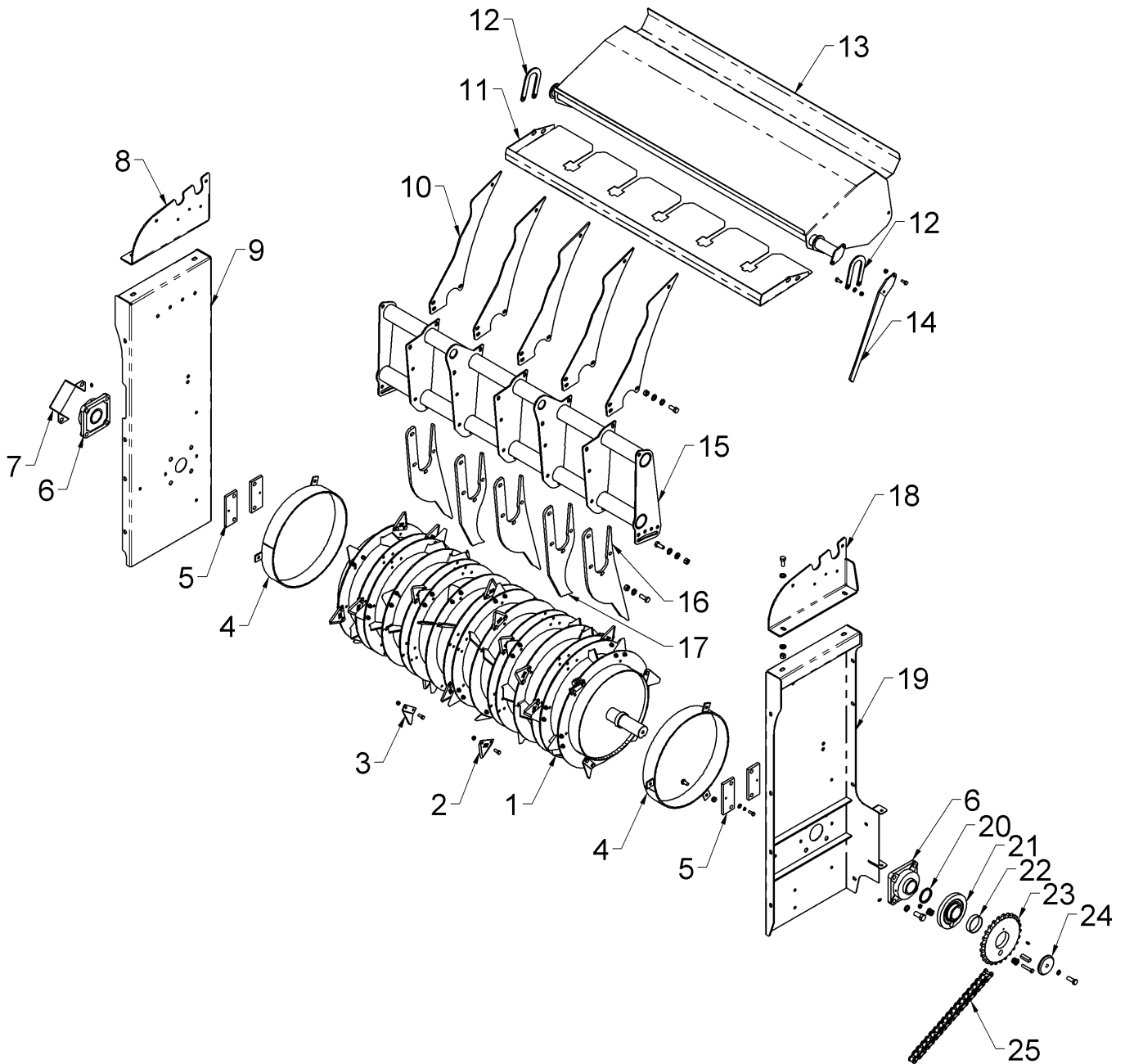
No.	Ref	Colour	Function
1	L	Yellow	Left Hand Indicator
2	54G	Blue	Not Used
3	31	White	Earth
4	R	Green	Right Hand Indicator
5	58R	Brown	Tail, Marker & Number Plate Lights
6	54	Red	Stop Lights
7	58L	Black	Not Used



DECALS

Description	Part No.	Qty.	Description	Part No.	Qty.
Teagle	DL1021	4	Fingers Being Severed	DL10332	1
"Please Read The Instruction Book"	DL1006	1	Do Not Permit Riders	DL1036	1
Bed Chain Speed Indicator	DL1081	1	Tighten Wheel Nuts	DL1209	2
Yellow Body Stripe 8080	DL1079	6m	Crushed Body	DL1041	2
Tomahawk	DL1051	2	Blockage Removal Tool	DL1070	1
8080	DL1112	2	Gearbox Speed	DL1073	1
Serial Number Plate – T8080WB	DL2047	1	PTO Speed 540 rpm	DL1012	1
Rivets	FAS9077	2	Thrown Objects	DL1039	1

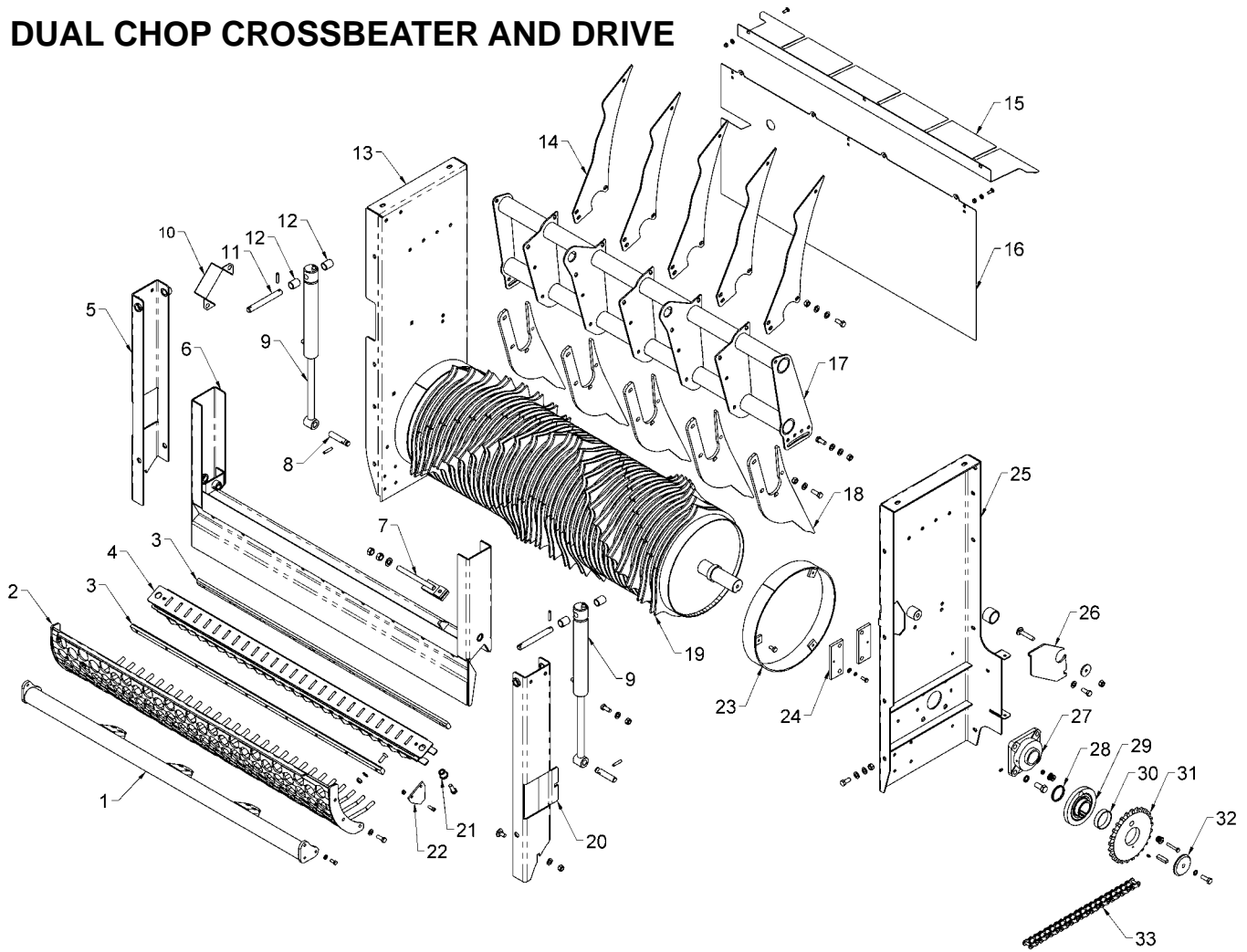
SILAGE CROSSBEATER & DRIVE



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
1	Crossbeater	SC4614	1			
2	Blade - Straight	SC1100	40	Setscrew M8 x 20 Locknut M8	FAS2627P FAS2332	80 80
3	Blade - Bent	SC3850	14	Setscrew M8 x 20 Locknut M8	FAS2627P FAS2332	28 28
4	Shield Ring	SC4115	2	Setscrew M10 X 20 Locknut M10	FAS2652P FAS2333	6 6
5	Nut Retaining Plate	SC3337	4	Setscrew M8 x 20 Plain Washer M8 Spring Washer	FAS2627P FAS2343P FAS2353P	4 4 4
6	Flange Bearing 50mm	BRG1312	2	Setscrew M16 x 35 Spring Washer M16 Grease Nipple M6 Straight	FAS2702P FAS2356P BRG5030	8 8 2
7	Rotor Bearing Cover	SC4134	1			

Ref.	Description	Part No.	Qty.	Associated Component	Part No.	Qty.
8	Top Cover Mount RH	SC3689	1	Setscrew M12 x 30 Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	2 4 2
9	Mid Body Panel RH	SC4106	1	Setscrew M12 x 30 Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	8 16 8
10	Bale Guide Plate	SC3687	5	Setscrew M12 x 30 Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	10 10 10
11	Internal Material Cover	SC4615	1			
12	Top Cover Retainer	SC3693	2	Setscrew M8 x 20 Locknut M8	FAS3693 FAS2332	4 4
13	Top Cover	SC4619	1			
14	Top Cover Handle	SC3696	1	Setscrew M8 x 20 Locknut M8	FAS2627P FAS2332	2 2
15	Bale Restraint Beam	SC4612	1	Setscrew M12 x 30 Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	6 12 6
16	Restraint Finger – Long	SC3720	3	Setscrew M12 x 35 Washer M12 Locknut M12	FAS2679P FAS2345P FAS2334	12 24 12
17	Restraint Finger – Short	SC3721	2	Setscrew M12 x 35 Washer M12 Locknut M12	FAS2679P FAS2345P FAS2334	12 24 12
18	Bale Restraint Mount LH	SC3688	1	Setscrew M12 x 30 Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	2 4 2
19	Mid Body Panel LH	SC4105	1	Setscrew M12 x 30 Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	8 16 8
20	Driveline Spacer	SC4118	1			
	Shear Sprocket Complete	SC3976	1	(Items 21 - 23)		
21	Centre Hub	SC3977	1	Sprocket Bush	SC3499	1
22	Bush	BRG2414	1			
23	Shear Sprocket 25 Tooth	SC3678	1	Sprocket Bush Shearbolt M8 x 50 (10.9) Locknut M8 Grease Nipple 1/4" BSF Straight	SC3499 FAS7634 FAS2332 BRG5004	1 1 1 1
24	Washer Ø 80 x 13 x 10mm	FAS4810P	1	Setscrew M12 x 35 Spring Washer M12 Key 1/2" x 3/8" x 45	FAS2679P FAS2374P FAS8130	1 1 1
25	Chain – 77 Links	SC4637	1	Joiner Half Link Joiner	ROP2116 ROP2117	1 1

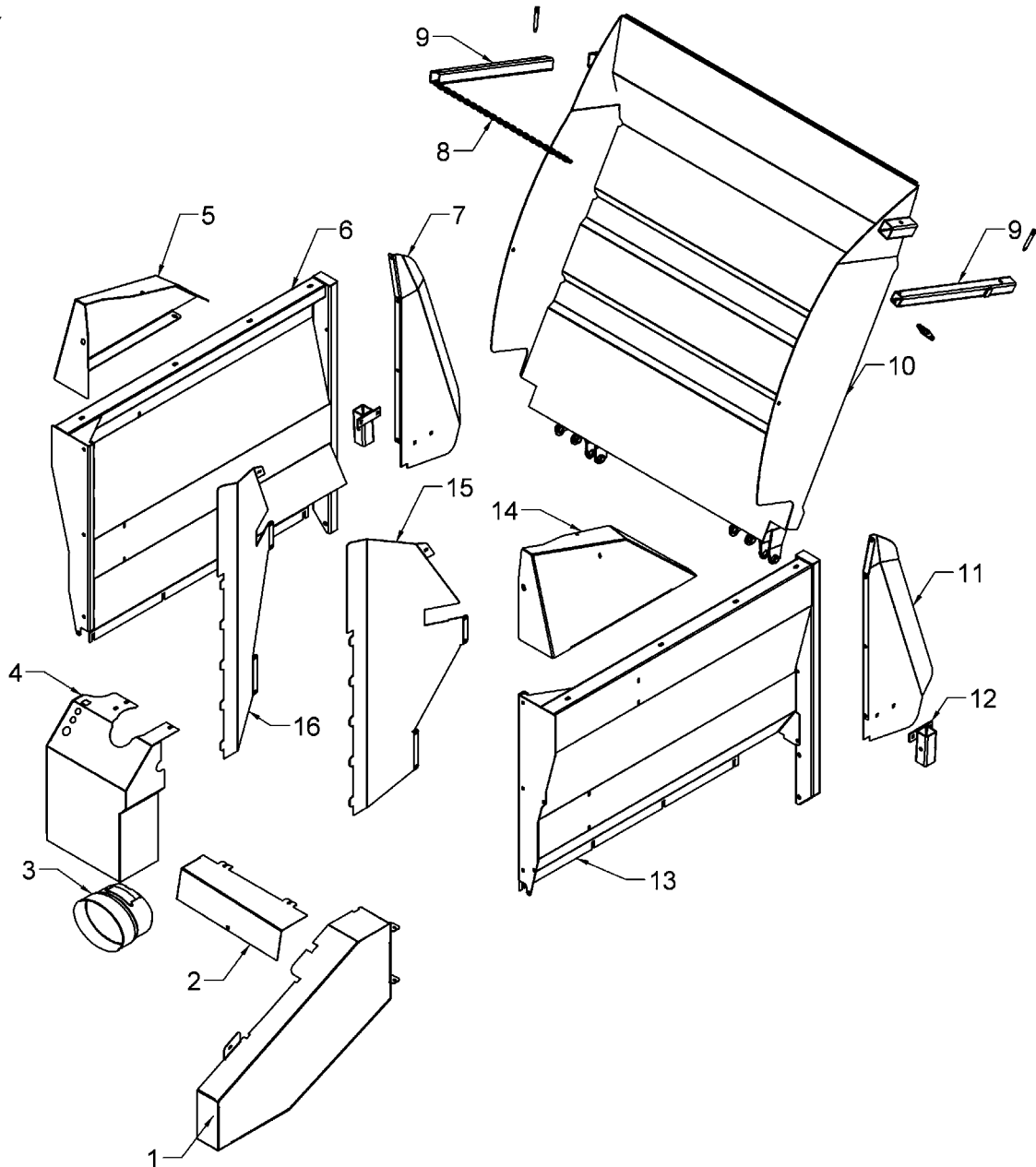
DUAL CHOP CROSSBEATER AND DRIVE



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
KIT Dual Chop Crossbeater		SC4650				
1	Screen Support	SC4655	1	Setscrew M8 x 20 Plain Washer M8	FAS2627P FAS2343P	6 6
2	Screen 50mm Holes Screen 40mm Holes Screen Slotted	SC4652 SC4653 SC4654	1 opt. opt.	Setscrew M10 x 30 Plain Washer M10	FAS2655P FAS2344P	6 6
3	Nylon Strip	SC4408	2	Socket Screw CSK M10 x 35 Plain Washer M10 Locknut M10	FAS9373P FAS2344P FAS2333	20 20 20
4	Blade Beam Assembly	SC4657	1			
5	Slide RH	SC4411	1	Setscrew M12 x 30 Cup Square M12 x 25 Plain Washer M12 Locknut M12	FAS2678P FAS9282P FAS2345P FAS2334	2 2 4 4
6	Sliding Blade Carrier	SC4656	1			
7	Tension Bar	SC4417	1	Plain Washer M16 Plain Nut M16	FAS2346P FAS2305P	1 2
8	Lower Ram Pin	SC4455	2	Split Pin	FAS4144	2
9	Blade Carrier Ram	CYL1084	2			
10	Rotor Bearing Cover	SC4134	1			
11	Tailgate Pivot Pin	SC3615	2	Split Pin	FAS4144	2
12	Ram Spacer	SC4413	4			

Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
13	Mid Body Panel RH	SC4404	1	Setscrew M12 x 30 Plain Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	8 16 8
14	Bale Guide Plate	SC3687	5	Setscrew M12 x 30 Plain Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	10 20 10
15	Cover Plate	SC4659	1	Cup Square M8 x 20 Plain Washer M8 Locknut M8	FAS9241P FAS2343P FAS2332	3 3 3
16	Blanking Plate	SC4662	1	Cup Square M8 x 20 Plain Washer M8 Locknut M8	FAS9241P FAS2343P FAS2332	3 3 3
17	Bale Restraint Beam	SC4612	1	Setscrew M12 x 30 Plain Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	6 12 6
18	Long Finger	SC3720	5	Setscrew M12 x 35 Plain Washer M12 Locknut M12	FAS2679P FAS2345P FAS2334	20 20 20
19	Dual Chop Crossbeater	SC4660	1			
20	Slide LH	SC4409	1	Setscrew M12 x 30 Cup Square M12 x 60 Cup Square M12 x 25 Plain Washer M12 Locknut M12	FAS2678P FAS9289P FAS9282P FAS2345P FAS2334	2 2 1 4 4
21	Blade Bar Boss	SC4416	1	Setscrew M12 x 35	FAS2679P	1
22	Heavy Knife Section	SC4400	28	Socket Cap Screw M8 x 22 Locknut M8	FAS9532 FAS2332	56 56
23	Guard Ring Assembly	SC4002	2	Setscrew M12 x 30	FAS2678P	6
24	Holding Plate	SC3337	4	Setscrew M8 x 20 Spring Washer M8 Plain Washer M8	FAS2627P FAS2353P FAS2343P	4 4 4
25	Mid Body Panel LH	SC4403	1	Setscrew M12 x 30 Plain Washer M12 Locknut M12	FAS2678P FAS2345P FAS2334	8 16 8
26	Beam Cover Assembly	SC4411	1	Setscrew M12 x 25 Plain Washer M12 Plain Washer 45 x 10 x 5 Locknut M12	FAS2677P FAS2345P FAS2412P FAS2334	1 1 1 1
27	Flange Bearing 50mm	BRG1312	2	Setscrew M16 x 35 Spring Washer M16	FAS2702P FAS2356P	8 8
28	Driveline Spacer	SC4118	1			
	Shear Sprocket Complete	SC4420	1	(Items 30 - 32)		
29	Centre Hub	SC3977	1	Sprocket Bush	SC3499	1
30	Bush	BRG2414	1			
31	Shear Sprocket 25 Tooth	SC3678	1	Sprocket Bush Shearbolt M8 x 50 (8.8) Locknut M8 Grease Nipple ¼" Straight	SC3499 FAS9634P FAS2332 BRG5004	1 1 1 1
32	Washer 80 x 13 x 10mm	FAS4810P	1	Setscrew M12 x 35 Spring Washer M12 Key ½" x ⅜" x 45	FAS2679P FAS2374P FAS8130	1 1 1
33	Chain 81 Links	SC4560	1	Joiner	ROP2116	1

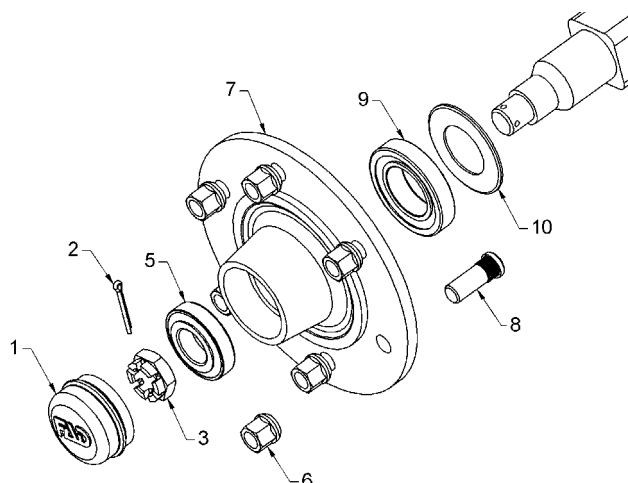
BODY



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
1	Hinged Chain Guard	SC4628	1	Setscrew M8 x 20 Plain Washer M8 Locknut M8	FAS2627P FAS2343 FAS2332	3 5 2
2	Front Drive Cover	SC4629	1	Setscrew M8 x 20 Cup Square Bolt M8 x 20 Plain Washer M8 Locknut M8	FAS2627P FAS9241P FAS2343P FAS2332	1 2 3 2
3	PTO Guard Plastic	PTO9013	1	Setscrew M8 x 20 Plain Washer M8	FAS2627P FAS2343P	4 4
4	Valve Guard	SC4132	1	Setscrew M8 x 20 Plain Washer M8 Setscrew M12 x 25 Plain Washer M12 Locknut M12	FAS2627P FAS2343P FAS2677P FAS2345P FAS2334	1 1 2 2 2
5	Upper Body Panel RH	SC4631	1	Setscrew M12 x 25	FAS2677P	2
	Upper Body Panel RH Long (Optional)	SC3773	1	Plain Washer M12 Locknut M12	FAS2345P FAS2334	4 2
6	Rear Body Panel RH	SC4539	1	Cup Square Bolt M12 x 25 Plain Washer M12 Locknut M12	FAS9282P FAS2345P FAS2334	4 4 4

Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
				Bolt M16 x 90 HT (8.8)	FAS9713P	2
				Plain Washer M16	FAS2346P	4
				Locknut M16	FAS2335	2
7	Guide Plate RH	SC3173	1	Bolt M10 x 70	FAS9663P	4
				Locknut M10	FAS2333	4
8	Chain	SC3192	1	Setscrew M10 x 20	FAS2652P	2
				Locknut M10	FAS2333	2
				Plain Washer M10	FAS2344P	2
				Chain Retainer	SC3206	1
9	Tailgate Post	SC3068	2	Headed Pin	FAS6267P	2
				R Pin 3mm	FAS6003	2
10	Tailgate	SC4611	1	Pivot Pin	SC3615	2
				Spring Tension Pin 8 x 40	FAS4131	4
11	Guide Plate LH	SC3172	1	Bolt M10 x 70	FAS9663P	4
				Locknut M10	FAS2333	4
12	Post Bracket	SC3764	2	Cup Square Bolt M10 x 20	FAS9261P	4
				Plain Washer M10	FAS2344P	4
				Locknut M10	FAS2333	4
13	Rear Body Panel LH	SC4540	1	Cup Square Bolt M12 x 25	FAS9282P	4
				Plain Washer M12	FAS2345P	4
				Locknut M12	FAS2334	4
				Bolt M16 x 90 HT (8.8)	FAS9713P	2
				Plain Washer M16	FAS2346P	4
				Locknut M16	FAS2335	2
14	Upper Body Panel LH	SC4630	1	Setscrew M12 x 25	FAS2677P	2
	Upper Body Panel LH Long (Optional)	SC3772	1	Plain Washer M12	FAS2345P	4
				Locknut M12	FAS2334	2
15	Internal Body Plate LH	SC4544	1	Setscrew M8 x 20	FAS2627P	5
				Plain Washer M8	FAS2343P	5
				Locknut M8	FAS2332	5
16	Internal Body Plate RH	SC4543	1	Setscrew M8 x 20	FAS2627P	5
				Plain Washer M8	FAS2343P	5
				Locknut M8	FAS2332	5

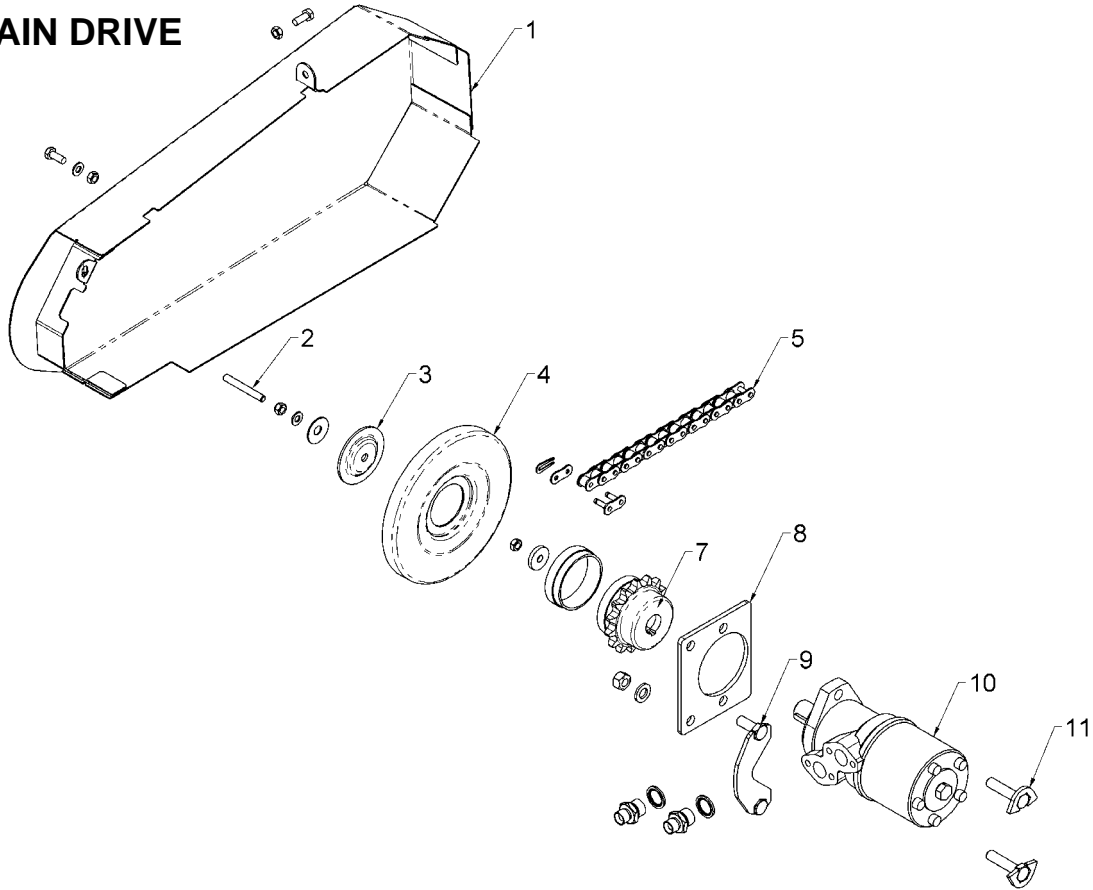
WHEEL EQUIPMENT



Ref.	Description	Part No.	Qty.
	Axle Assembly Complete	SC4618	1
1	Hub Cap	WE1501	1
2	Split Pin	FAS5107	1
3	Slotted Nut	WE1505	1
4	60 x 30 x 4 Plain Washer	FAS4816	1

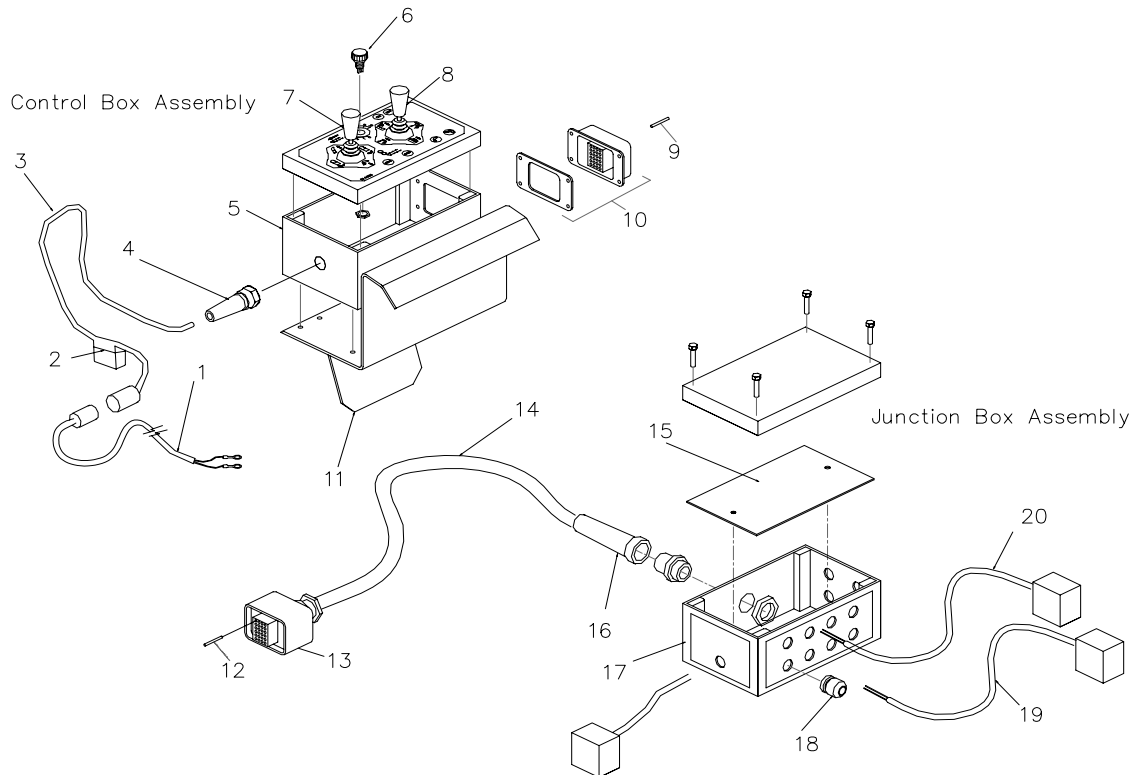
Ref.	Description	Part No.	Qty.
5	Outer Bearing	BRG1222	1
6	Wheel Nut – M18 (Fine)	WE0909	6
7	RIMA Hub Complete With Studs	WE1500	1
8	Wheel Stud – M18 x 55 (Pitch – 1.5mm)	WE1502	6
9	Inner Bearing	BRG1208	1
10	Oil Seal	BRG3066	1

BED CHAIN DRIVE



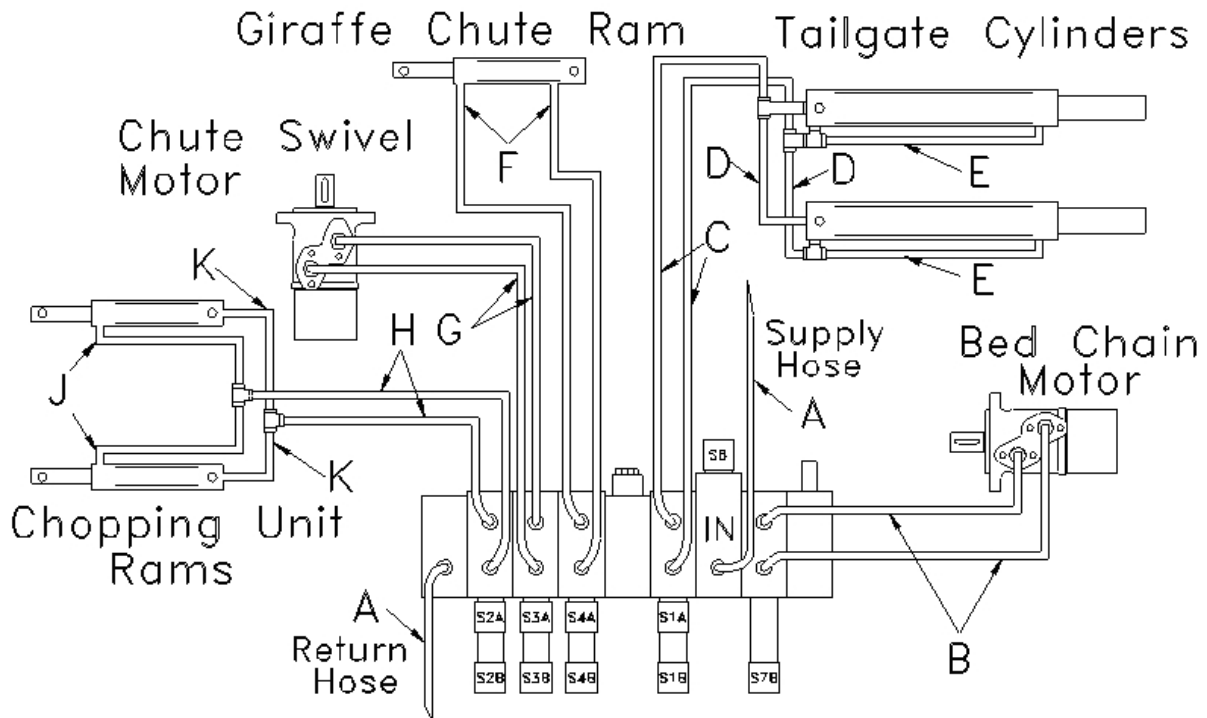
Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
1	Chain Guard	SC3987	1	Setscrew M8 x 20 Locknut M8	FAS2627P FAS2332	2 2
2	Threaded Bar	SC3196	1			
3	Retaining Disc	SC3226	1	Plain Washer M8 Disc Spring Locknut M8	FAS2343P SPR7012 FAS2332	1 1 1
4	Bed Chain Speed Indicator	SC3227	1			
5	Sprocket - 15 Tooth	SC3225	1	Washer 30 x 9 x 5 Plain Nut M8	FAS2408P FAS2302P	1 1
6	Sprocket Spacer – Motor	SC3183	1			
7	Roller Chain	SC3158	1	Joining Link	ROP2123	1
8	Motor Mounting Plate	SC3184	1			
9	Motor Mounting Bolts	SC3291	1	Washer M12 Locknut M12	FAS2345P FAS2334	2 2
10	Hydraulic Motor 400cc	HYD5203	1	Bonded Seal ½" BSP ½" x ⅜" M/M Union Key ¼" x ¼" x 1.¼"	HYD4204 HYD1115 FAS8113	2 2 1
11	Retained Motor Bolt	SC3267	2	Plain Washer M12 Locknut M12	FAS2345P FAS2334	2 2

ELECTRONIC CONTROLS - LARGE RAISED FLAT BUTTONS



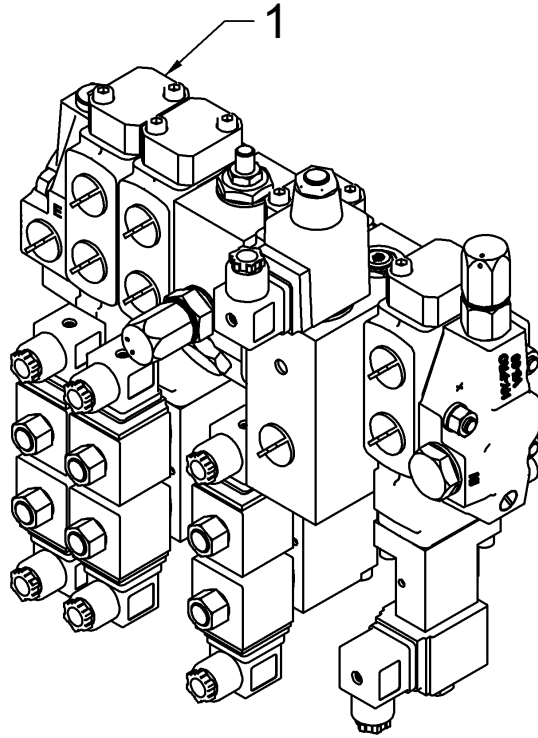
Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
1	Battery To Cab Cable	SC3529	1			
	Control Box Assembly	SC3579	1	(Items 2 - 10)		
2	7.5 A Fuse	SC3535	1			
3	Power Cable	SC3503	1			
4	Cable Gland	SC3504	1			
5	Enclosure	SC3506	1			
	Base	SC3506A	1			
	Lid	SC3506C	1			
6	Potentiometer	SC3513	1			
7/8	Joystick	SC3510	1	Micro - Switches	SC3566	4
9	Male Crimp Contacts	SC3516	18			
10	Control Box Socket	SC3515	1	M4 x 16 Pan Head	FAS2430S	4
				M4 Locknut	FAS2329S	4
11	Support Bracket	SC3538	1	M4 x 16 Pan Head	FAS2430S	4
				M4 Locknut	FAS2329S	4
	Junction Box Assembly	SC3582	1	(Items 12 - 20)		
12	Crimp Contacts	SC3519	18			
13	Cable Socket	SC3518	1			
14	18 Core Cable Assy 4m	SC3522	1			
	18 Core Cable Assy 5m	SC3592	1			
	18 Core Cable Assy 5m	SC3594	1			
15	PCB (Large Controls)	SC3575	1	M4 x 3/8 Pan Head	FAS2431	2
16	Cable Gland	SC3524	1			
17	Enclosure	SC3525	1	M4 x 16 Pan Head	FAS2430S	4
				M4 Locknut	FAS2329S	4
18	Sealing Gland.	SC3537	9			
19	Solenoid Cable - Long	SC3548	2	Connector Screw	SC3585	2
20	Solenoid Cable - Short	SC3547	7			

HYDRAULIC HOSES



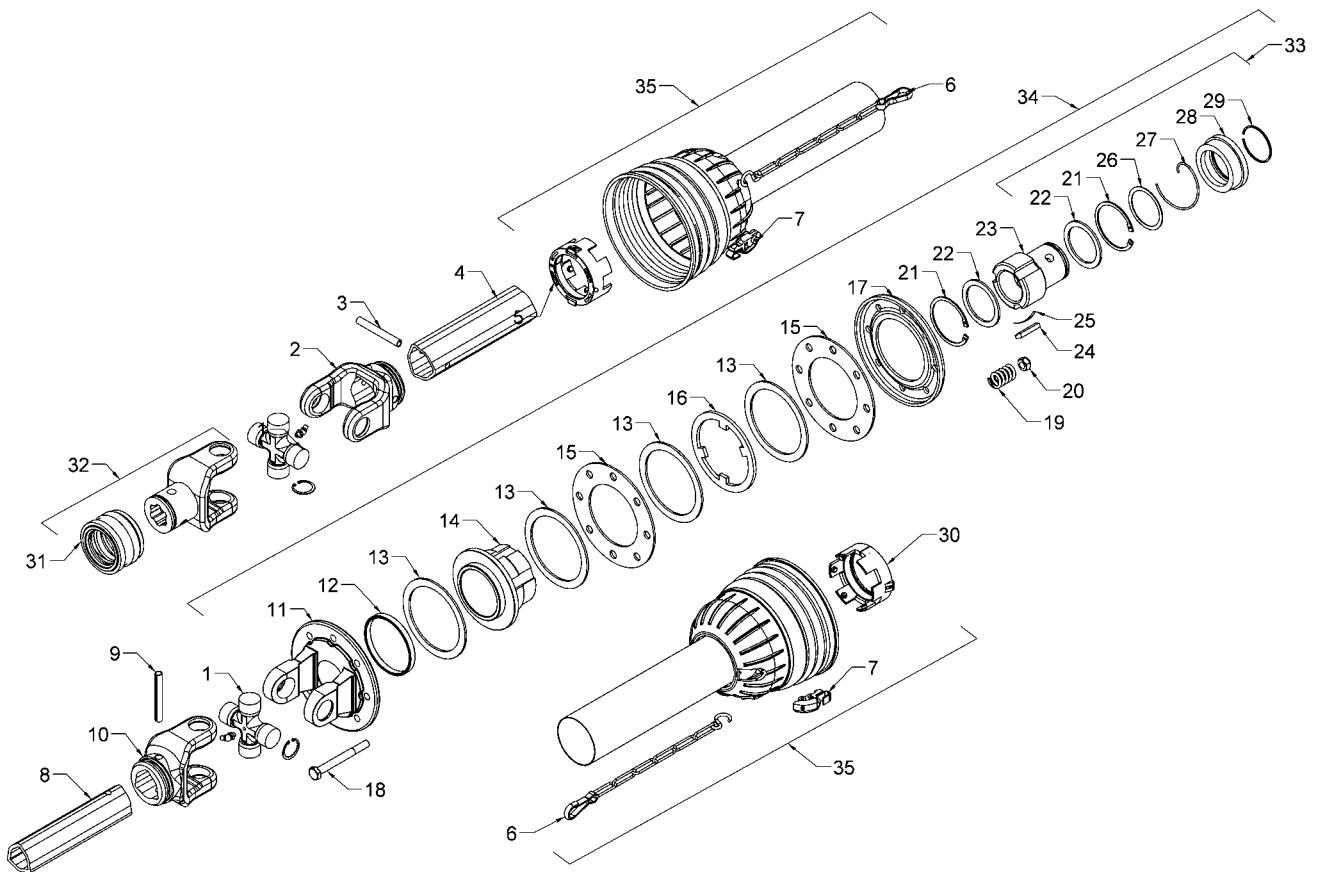
Ref	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
A	Valve Supply Hose	HYD2228	2	Bonded Seal 1/2" BSP Quick Release Coupling Male	HYD4204 HYD1901	2 2
B	Bed Motor Hose	HYD2117	2			
C	Valve To 'T' Piece	HYD2058	2	1/4" BSP T Piece M/M/F	HYD1930	2
D	Tailgate Ram Front Hose	HYD2059	2			
E	Tailgate Ram Rear Hose	HYD2061	2	1/4" BSP T piece M/M/F	HYD1930	2
F	Chute Ram Hose	HYD2047	2	Bonded Seal 1/2" BSP 1/2" x 1/4" BSP M/M Union	HYD4204 HYD1114	2 2
G	Chute Motor Hose	HYD2063	2			
H	Valve to 'T' Piece	HYD2064	2	1/4" BSP T Piece M/M/M	HYD1921	2
J	Chop Unit Side Hose	HYD2065	2	1/4" BSP M/F 90° Elbow	HYD1760	2
K	Chop Unit Rear Hose	HY2066	2			
NOT SHOWN - Strap non re-useable	FAS9051	1				

SOLENOID VALVE



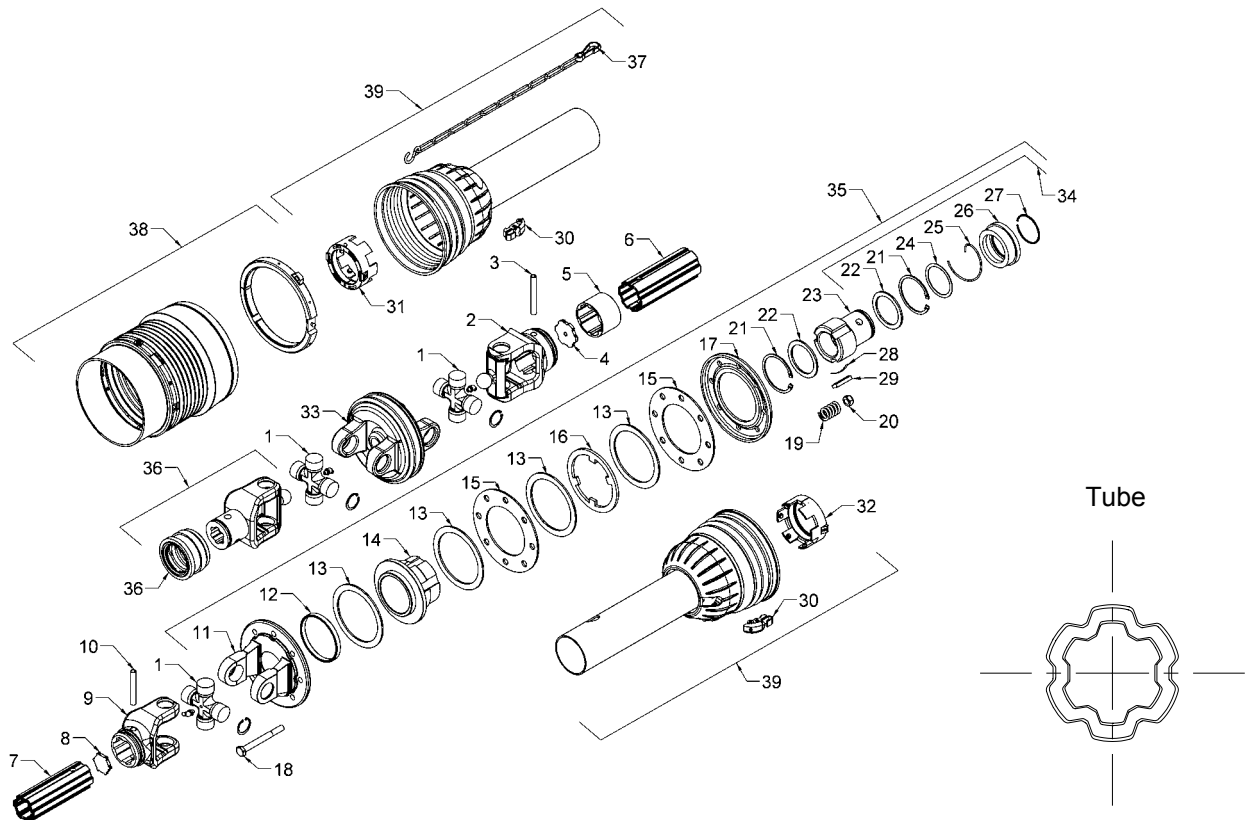
Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
1	Valve SC	HYD5401	1	Valve Mount Bracket	SC3539	1
				Setscrew M8 x 16	FAS2625P	4
				Plain Washer M8	FAS2343P	4
	Valve DC	HYD5402				
	Cover (Bed Control End)	HYD5406	1			
	Relief Valve Assembly	HYD5407	1			
	Double Acting Slice	HYD5192	3			
	Flow Control Slice	HYD5404	1			
	Bed Reverse Slice	HYD5405	1			
	Outlet Cover	HYD5315	1			
	Flow Dividing Slice	HYD5198	1			
	Complete Valve Seal Kit	HYD5174	1			
	Valve Slice Seal Kit	HYD5316	3			
	Reverse Slice Seal Kit	HYD5408	1			
	Flow control slice seal kit	HYD5409	1			

COMER PTO SHAFT – COMBINED SLIP & OVERRUN CLUTCH



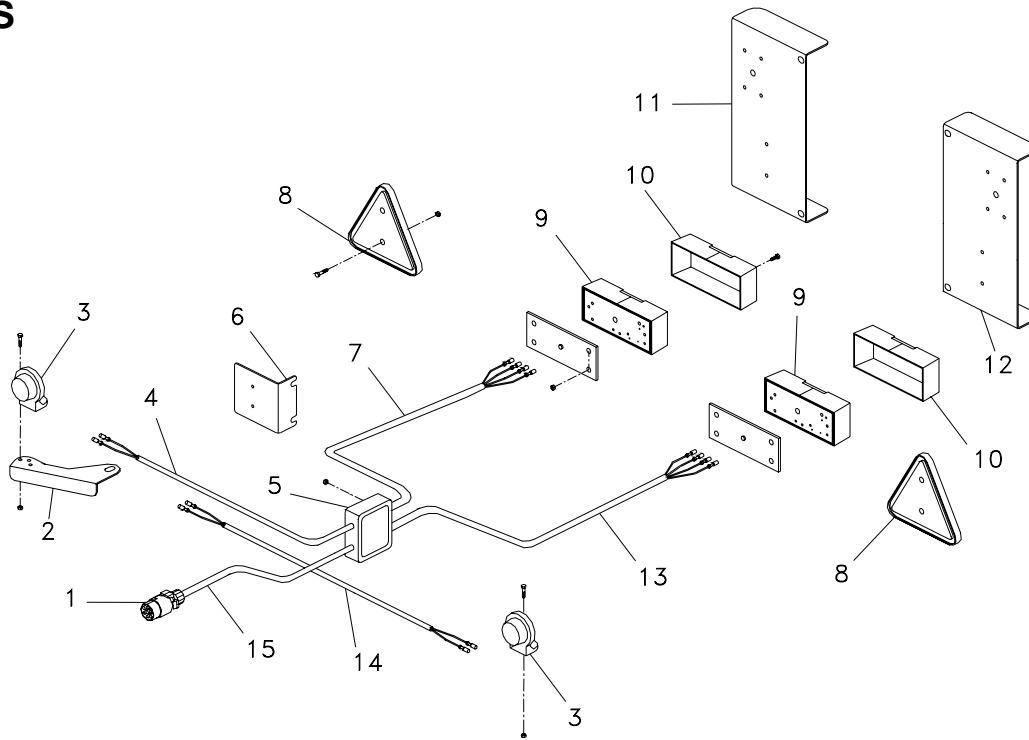
Ref	Description	Part No.	Qty	Ref	Description	Part No.	Qty
	PTO Shaft complete 540rpm	PTO8086		18	M10 x 100mm Bolt	FAS2065	8
	PTO Shaft complete 1000rpm	PTO8079		19	Spring	PTO2076	8
	Tractor end half shaft 540rpm	PTO2785		20	M10 Locknut	FAS2333	8
	Tractor end half shaft 1000rpm	PTO2786		21	Inner Circlip	FAS7112	2
	Machine end half shaft	PTO2793		22	Retaining Washer	PTO2077	2
1	Cross journal kit	PTO2321	2	23	Hub - 6 Spline	PTO1908	1
2	Outer Yoke	PTO1915	1	24	Ratchet Tooth	PTO1911	3
3	10 x 80mm Spring tension pin	FAS4147	1	25	Spring	PTO1912	3
4	Outer tube	PTO2705	1	26	Spring push ring	PTO1906	1
5	Outer guard retaining ring	PTO2768	1	27	Spring	PTO2713	1
6	Anchor chain	PTO2336	2	28	Sliding sleeve collar	PTO2712	1
7	Guard Clip	PTO2707	4	29	Outer circlip	PTO2711	1
8	Inner tube	PTO2706	1	30	Inner guard retaining ring	PTO2769	1
9	10 x 70mm Spring tension pin	FAS4145	1	31	Pull back collar set	PTO2771	1
10	Inner Yoke	PTO1918	1	32	6 Spline yoke	PTO2775	1
11	Flanged yoke	PTO2070	1		21 Spline yoke	PTO2784	1
12	Bush	PTO2071	1	33	Pull back collar set	PTO2937	1
13	Clutch plate 152.5 x 102	PTO2058	4	34	Clutch Assembly	PTO2929	1
14	Overrun clutch body	PTO2072	1	35	T60 Guard Complete	PTO2936	1
15	Inner plate	PTO2073	2		* Spring length to give correct slip clutch torque setting is 32.5mm		
16	Intermediate plate	PTO2074	1				
17	Pressure plate	PTO2075	1				

COMER PTO SHAFT – WIDE ANGLE C.V. JOINT FOR TRAILED MACHINES



Ref	Description	Part No.	Qty	Ref	Description	Part No.	Qty
	PTO Shaft complete 540rpm	PTO8085		19	Spring	PTO2076	8
	PTO Shaft complete 1000rpm	PTO8088		20	M10 Locknut	FAS2333	8
	Tractor end half shaft 540rpm	PTO2737		21	Inner circlip	FAS7112	2
	Tractor end half shaft 1000rpm	PTO2738		22	Retaining washer	PTO2077	2
	Machine end half shaft	PTO2739		23	Hub - 6 spline	PTO1908	1
1	Cross journal kit - c.v. joint	PTO1975	2	24	Spring push ring	PTO1906	1
2	Outer yoke	PTO2728	1	25	Spring	PTO2713	1
3	10 x 80mm Spring tension pin	FAS4147	1	26	Sliding sleeve collar	PTO2712	1
4	Outer cap	PTO2729	1	27	Outer circlip	PTO2711	1
5	Wiper	PTO2731	1	28	Spring	PTO1912	3
6	Outer tube	PTO2730	1	29	Ratchet tooth	PTO1911	3
7	Inner tube	PTO2732	1	30	Guard Clip	PTO2707	4
8	Inner cap	PTO2733	1	31	Outer guard retaining ring	PTO2768	1
9	Inner yoke	PTO2734	1	32	Inner guard retaining ring	PTO2769	1
10	10 x 70 Spring tension pin	FAS4145	1	33	Wide angle double yoke	PTO1911	1
11	Flanged yoke	PTO2070	1	34	Collar kit set	PTO2937	1
12	Bush	PTO2071	1	35	Clutch Assembly	PTO2929	1
13	Clutch plate 152.5 x 102	PTO2058	4	36	6 Spline wide angle collar yoke	PTO2721	1
14	Overrun clutch body	PTO2072	1		21 Spline wide angle collar yoke	PTO2059	1
15	Inner plate	PTO2073	2	37	Anchor chain	PTO2336	2
16	Intermediate plate	PTO2074	1	38	Cone guard set	PTO1974	1
17	Pressure plate	PTO2075	1	39	T60 Guard Complete (Does not include item 38)	PTO2936	1
18	M10 x 100mm Bolt	FAS2065	8	*	Spring length to give correct slip clutch torque setting is 32.5mm		

LIGHTS



Ref.	Description	Part No.	Qty.	Associated Components	Part No.	Qty.
1	7 Pin Plug	TS9040	1			
2	Marker Light Bracket - RH	SC3757	1	Cup Square Bolt M8 x 20	FAS9241P	2
				Washer M8	FAS2343P	2
				Locknut M8	FAS2332	2
3	Front Marker Light Complete	TS9001	2	Lens	TS9002	2
				Bulb (12V 5W)	TS9003	2
				Bolt M5 x 16	FAS2419P	6
				Nut M5	FAS2310	6
4	Front Light Cable (Junction To Light)	TS9004	1			
5	Junction Box	TS9041	1	Nut M5	FAS2310	2
6	Junction Box Mount	SC3245	1			
7	Rear light Cable - RH	TS9016	1			
8	Reflective Triangle	TS9030	2	Bolt M5 x 16	FAS2419P	4
				Nut M5	FAS2310	4
9	Rear light c/w Lens	TS9012	2	Indicator Bulb (12V 21W)	TS9015	2
				Stop/tail Bulb (12V 21/5W)	TS9014	2
				Bolt M5 x 16	FAS2419P	8
				Nut M5	FAS2310	8
10	Rear Light Lens	TS9013	2			
11	Light Bracket - RH	SC3240	1			
12	Light Bracket - LH	SC3239	1			
13	Rear Light Cable - LH	TS9018	1			
14	Front Light Cable (Light To Light)	TS9006	1			
15	7 Pin Plug Cable	TS9038	1			