Standen

Spectra

De-stoner/De-clodder

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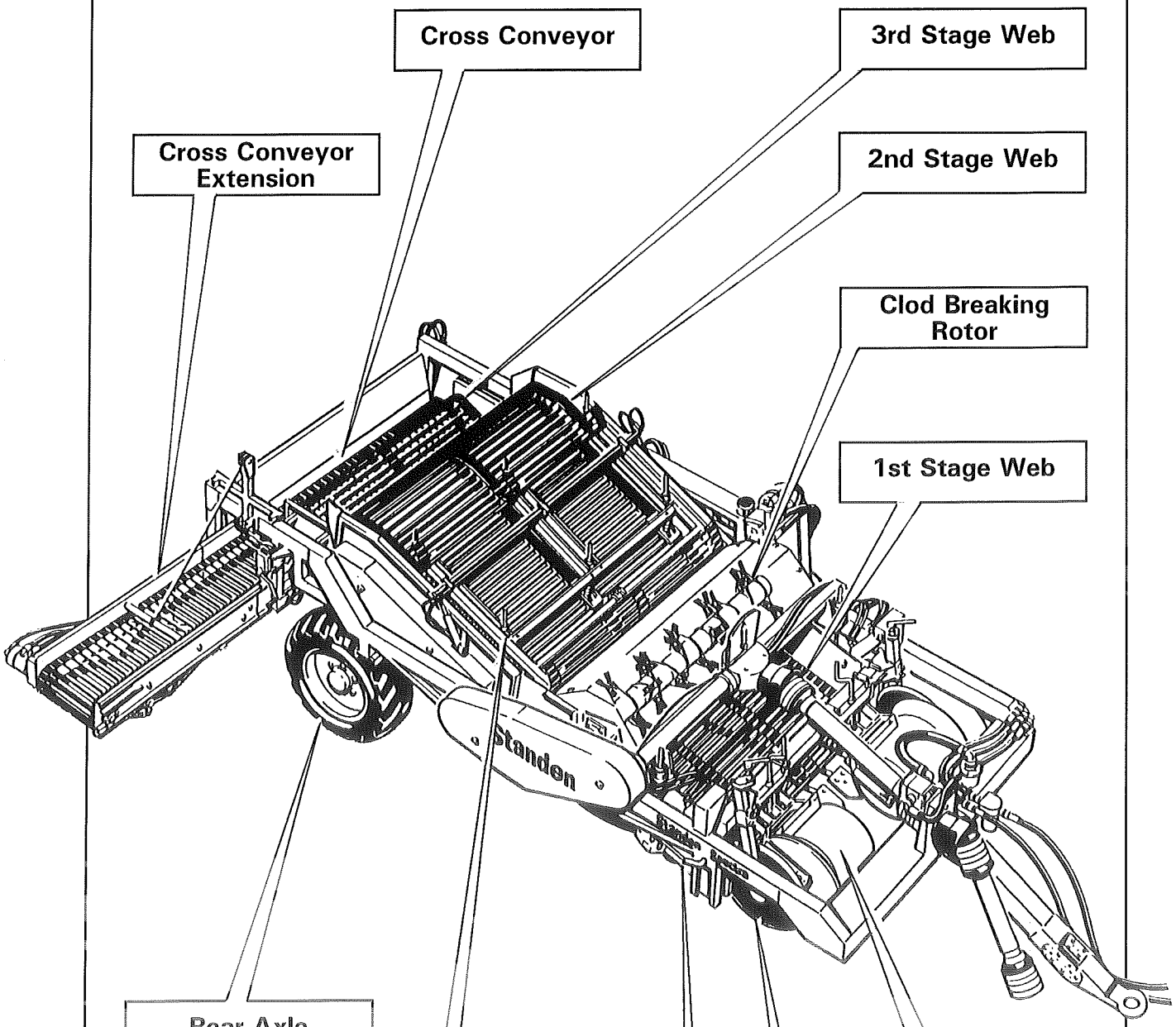
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IMPORTANT

- This operators handbook should be regarded as part of the machine. Suppliers of both new and second-hand machines are advised to retain documentary evidence that this handbook was supplied along with the machine.
- On installation of the machine (i.e. starting off in the field), the New Machine Installation Record Card should be completed by the dealer/distributor and be countersigned by the customer. The document is proof that the correct procedures have been followed.
- The New Machine Installation Record Card should be returned to Standen Engineering Limited within 7 days of installation. Failure to do so may invalidate the machine warranty.

On delivery, check that the machine is as ordered and has not been damaged in transit. Please report any shortfall to your Standen dealer.

The contents of this handbook, although correct at the time of publication, may be subject to alteration by the manufacturers without prior notice.

Standen Engineering Limited operate a policy of continual product development. Therfore, some illustrations and/or text within this publication may differ from your machine.

Introduction to the Handbook

This handbook provides the information for the operation, adjustment and maintenance of your **Standen Spectra**. To enable you to achieve the best results from the machine, the manufacturer recommends that you read the handbook thoroughly prior to using the machine for the first time.

Record below the details of your machine.

Dealers name.....

Address.....

.....

Telephone number.....

Machine serial number.....

Date purchased.....

Date started work.....

This symbol indicates important safety messages within this handbook. When you see this symbol, be alert to the possibility of injury to yourself or others and/or damage to the machine and carefully read the message that follows.

Throughout this handbook the terms 'front', 'rear', 'left hand' (LH) and 'right hand' (RH) are derived from the tractor drivers position facing forward in the normal direction of travel.

Adjustments to the machine may have to be made singly or in combination according soil conditions. Always allow the machine to settle to a new setting before making further adjustments.

Warranty

Should the machine suffer any faults or defects within the warranty period, please contact your dealer. The warranty shall be effective only if the dealer is informed of any such defect as soon as practicable upon discovery.

Replacement Parts

Recommended replacement parts are designed for your machine and have the full backing of the warranty. Only when recommended parts are used can responsibility be considered under the terms of the warranty.

Section 2 of this handbook contains a list of spare parts available through your Standen Agents. Each illustration shows a complete unit or assembly in exploded form. Standen's policy of continual product development means that components or even complete assemblies are redesigned from time to time. Where possible the modifications are shown in the remarks column.

The first printing of each page in the spare parts section is identified as issue 1 at the foot of the page. When a complete unit or assembly has been redesigned the appropriate pages are revised and printed as issue 2. The revised pages are filed behind the existing issue so that a complete modification history is gradually built up. When using an illustration and parts list it is essential that both are of the same issue.

Note: Always quote the full serial number of your machine when ordering spare parts.

1.3 SAFETY PRECAUTIONS

SAFETY

The Standen Spectra has been designed to comply with current Safety Regulations. However, as with all machinery there will be inherent dangers whilst operating and carrying out maintenance on the machine. The following list of precautions should therefore be brought to the attention of all persons operating and working on the machine. The list is not exhaustive. All machinery is potentially dangerous and great care must be exercised by the operators at all times. Standen Engineering Limited will not accept liability for damage or injury caused by their products except when such liability is specifically imposed by English statute.

OPERATION

The machine must never be operated by untrained personnel or children.

Before attempting to lower the 1st stage, ensure the locking pins are in the unlocked position.

Never operate the machine with the cross conveyor extension in the folded transport position. When in operation, the cross conveyor extension must be locked in the working position.

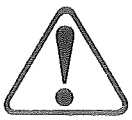
Never set machinery in motion before ensuring that everyone in the vicinity is aware of your intentions.

Never allow children in the vicinity where machines are working and never allow anyone to ride on the machine.

Never attempt to fit drive chains or drive belts to the machine while the drive sprockets or pulleys are in motion.

Normal safe working procedures should be adopted at all times. Reduce speed when transporting the machine on sloping ground.

Do not work on ground where there is a possibility of overturning or across steep slopes.



The working area should be kept clear and free of obstructions at all times.

Be alert for hidden obstructions. Should the machine hit an obstruction, stop and check for damage before proceeding.

Wear substantial or proper safety footwear. Avoid loose clothing near moving parts. Wear gloves when handling the implement or parts with sharp edges.

Before carrying out any work on the machine, lower the machine to the ground, switch off the tractor engine, apply the handbrake, remove the ignition key and disconnect the PTO shaft.

The operator must not leave the tractor seat until the machine has been lowered to the ground, the tractor engine switched off, the handbrake applied and the ignition key removed.

Never reverse or turn unless the 1st stage is in the fully raised position.

All guards, covers, warning transfers and safety devices must be correctly fitted and operable at all times.

Inspect the machine on a regular basis and replace damaged or worn parts as necessary.

Inspect the machine for damage after use. Rectify as required.

Never operate the machine in a state of disrepair.

TRANSPORT

When in transport, the 1st stage must be locked in the raised position using the locking pins.

When in transport the cross conveyor extension must be raised and locked in the transport position.

Only transport the machine at a speed suitable to the prevailing conditions. Be aware of the weight and overall length of the machine at all times

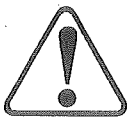
MAINTENANCE

When left free standing i.e. not attached to the tractor, the machine must be on level ground.

When working under the machine or if the machine is to be left to stand for any length of time, the 1st stage must be locked in the raised position using the locking pins.

Before working on the machine, all free moving parts should be locked to prevent them moving.

Inspect the hydraulic hoses and fittings for cuts and abrasions. Replace immediately.



The hydraulic system may be under pressure with the machine at rest. Ensure all residual pressure is released before disconnecting any pipework.

Regularly lubricate the machine as per the operators handbook and check the tightness of all nuts and bolts.

Always use mechanical or additional help when lifting heavy parts.

Safety is the responsibility of the persons working with this machine. Think "safety" at all times. Read and remember the contents of this handbook.

Standen Spectra

The Standen Spectra de-stoner/de-clodder is a 3 web machine with the option of a powered rotary clod breaker mounted over the digger web.

All of the hydraulic rams, with the exception of the boulder box rams, are operated electronically from the in-cab control box. The boulder box rams (if fitted) are controlled directly from the tractor double-acting spool valve.

Before operating the machine, check that the wheel nuts and the sprocket keys are tight. Also check the bearing grub screws, especiallly before starting off a new machine and then during the first day or two work.

Pay attention to the lubrication and maintenance instructions within this handbook and pay particular attention to the safety precautions, they are written as a guide to protect you and others.

Tractor Suitability

The tractor power requirement for the Spectra is 100hp minimum. The machine also requires a constant hydraulic flow and return rate from the tractor of 10 gallons/minute and a double-acting spool valve for control of the boulder box rams (if fitted).

Tractor Wheel Setting

Both the front and rear wheels of the tractor must be set to straddle the bed. This will ensure the wheels run in the centre-line of the wheelings. The instructions for adjusting the tractor wheels are given in the tractor manufacturer's handbook.

When carrying out wheel adjustments, always place the jack on firm ground under a solid part of the tractor. Before removing a wheel, place a stout support under the tractor frame in case the jack should become dislodged.

Attaching the Machine to the Tractor

The operator should have read and understood the tractor operators manual prior to attaching the machine and putting it into work.

1. Level the machine whilst standing it on a firm piece of ground and reverse the tractor up to it.
2. Adjust the drawbar to align with the tractor pick-up hitch ensuring that the towing eye remains parallel with the ground. To adjust the angle of the towing eye, remove the twelve securing bolts *(item 1, figure 1)* and loosen the four pivot bolts *(item 2, figure 1)*. Reposition the towing eye and securing bolts and retighten.

3. Attach the machine to the tractor pick-up hitch.
4. Connect the hydraulic pressure hose *(item 1, figure 2)* (the hose connected to the pressure filter) to the tractor supply port. Connect the return hose *(item 2, figure 2)* to the tractor return port.
5. Set the tractor hydraulics to give a constant flow of 10 gallons/minute.
6. Connect the two hoses for the boulder box rams (if fitted) to the tractor double-acting valve.
7. Situate the in-cab control box in a convenient position inside the tractor cab.
8. With the tractor battery disconnected, connect the negative (-) blue lead from the control box to the negative (-) terminal on the battery and then connect the positive (+) brown lead to the positive (+) terminal on the battery.

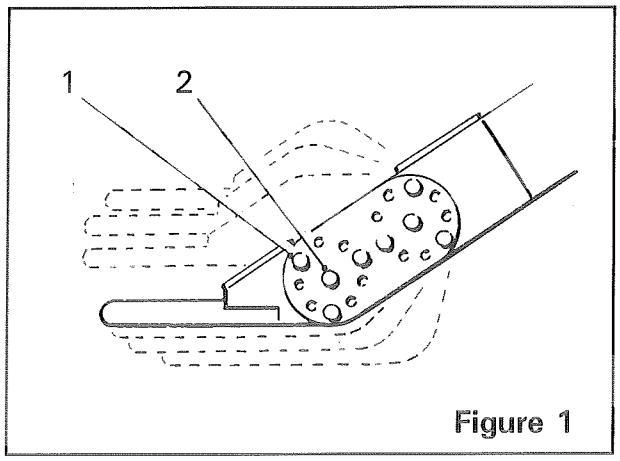


Figure 1

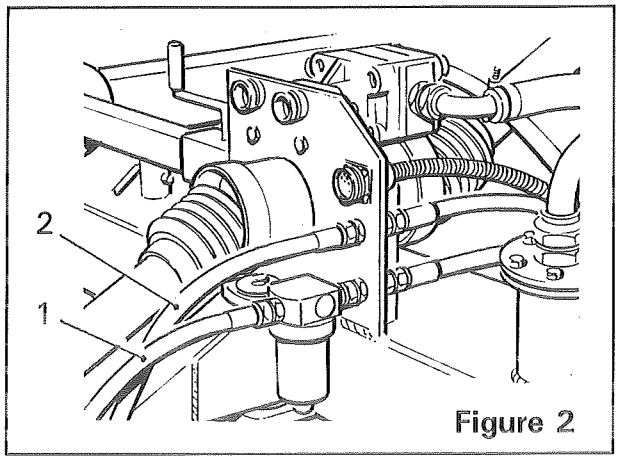


Figure 2

PTO Shaft

It is essential that the PTO shaft is matched to the tractor to give the correct drive line and to ensure that it is safe in work.

The PTO shaft supplied with the machine may require cutting to the correct length to suit individual tractors. To do this:

1. Part the two ends of the shaft and fit one end to the tractor and the other end to the machine.
2. The male shaft *(item 1 figure 3)* and female shaft *(item 2, figure 3)* can now be measured alongside each other and adjustments made by cutting the surplus length from both male and female shafts.

Ensure that there will be a minimum of $^{1}/_{3}$rd overlap and that there is no possibility of the shafts butting up when the tractor linkage is raised.

3. Once the correct length of shaft has been obtained, deburr the ends and remove chips. Grease the shafts to enable them to move correctly when in work.

4. Shorten the shield tubes to match the shafts and reassemble.
5. Fit the PTO shaft to the tractor and machine.
6. Check the PTO shaft does not foul any part of the machine or tractor and inspect all guards to make sure they are fitted correctly and are not damaged.
7. Finally, attach the safety chains *(item 3, figure 3)* to secure points on the tractor and machine ensuring that the chains will not overtighten when the machine is lifted.

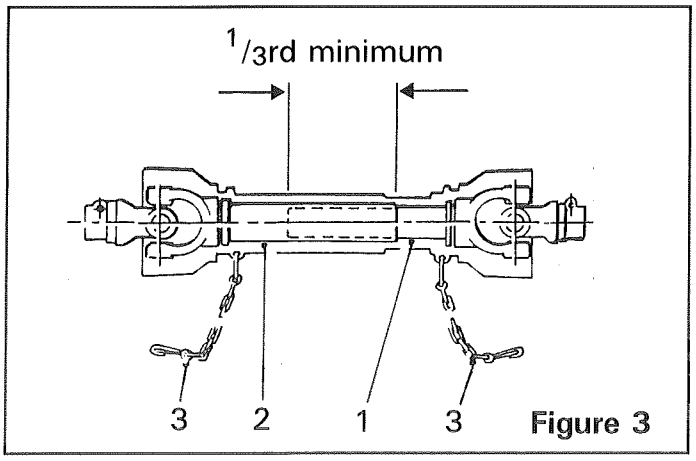


Figure 3

Refer to the manufacturers instructions, these are fitted to all PTO shafts when the machine is delivered.

An incorrectly fitted or badly guarded PTO shaft can be lethal. Do not take chances.

1st Stage

The 1st stage, which includes the digger web, digger share, diablo rollers and disc coulters is hydraulically adjustable for height. To raise or lower the 1st stage, operate the control box switch marked 'Digger Raise/Lower'.

Before attempting to lower the 1st stage, ensure that the locking pins (item 1, figure 4) are in the unlocked position. To unlock the 1st stage, raise the digger web slightly and then rotate the locking pins through 90° and pull them out.

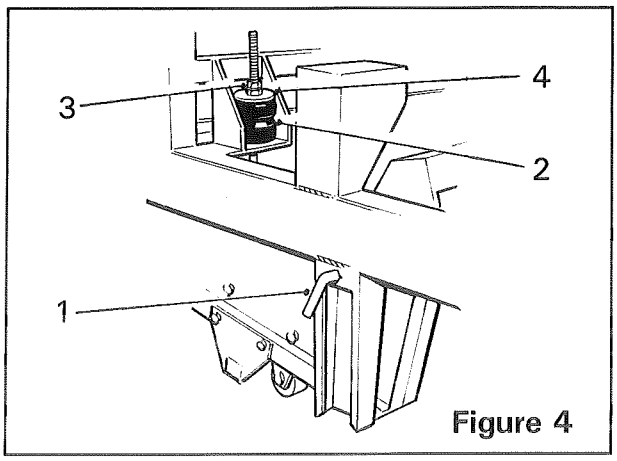


Figure 4

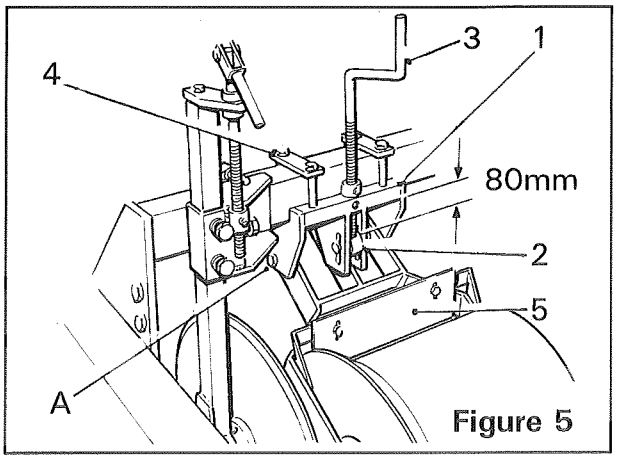


Figure 5

Diablo Rollers

The diablo rollers control the digging depth while at the same time ensure even digging with the help of the dampers *(item 2, figure 4)*. The rollers are adjustable for depth of work and for different widths of bed.

The diablo roller is mounted in a frame *(item 1, figure 5)* which is free to pivot about point A. When the 1st stage is lowered and the diablo roller comes into contact with the bed, the roller is able pivot upward until the stop boss *(item 2, figure 5)* comes into contact with the depth screw *(item 3, figure 5)*. The depth screw setting therefore determines the depth at which the machine will dig.

Diablo Roller Depth and Width Adjustment

To set-up the digging depth:

1. Set the depth screw *(item 3, figure 5)* so that it protrudes 80mm through the pivot frame *(item 1, figure 5)* as shown. This setting will give a digging depth of approximately 30cm (12"). Adjust both rollers equally.
2. Loosen and completely back-off the damper adjusting nuts *(item 3, figure 4)*.
3. Lower the 1st stage until the stop boss *(item 2, figure 5)* contacts the depth screw *(item 3, figure 5)*.
4. Turn the damper adjusting nuts *(item 3, figure 4)* until the lower nut touches the washer *(item 4, figure 4)* and then lock it in position with the upper nut. Adjust both sides equally.

5. Start the machine and drive it down the bed. Set the control box switch marked 'Digger Float On/Off' to the on position, this allows the diablo rollers to carry the weight of the 1st stage.

6. After a hundred yards, check the depth of the bed behind the machine and adjust accordingly. By adjusting the damper nuts *(item 3, figure 4)* downwards, additional assistance can be given to the diablo rollers. Always adjust both rollers and dampers equally.

The large flanges on the outer edge of the diablo rollers assist in holding the bed together when digging. To adjust the diablo rollers for different width beds, loosen the retaining bolts *(item 4, figure 5)* and slide the complete units to the required position and retighten. Ensure the adjustment is made equally about the centre-line of the machine.

The diablo rollers are each fitted with a scraper *(item 5, figure 5)*. The scrapers must be kept as close as possible to the roller to enable their efficient operation.

Discs Coulters

The discs *(item 1, figure 6)*, fitted on either side of the digger web, are designed to retain the soil whilst feeding it onto the digger web. The position of the discs is very important. An incorrect setting may result in a loss of soil in the bed. The discs are adjustable for depth and width.

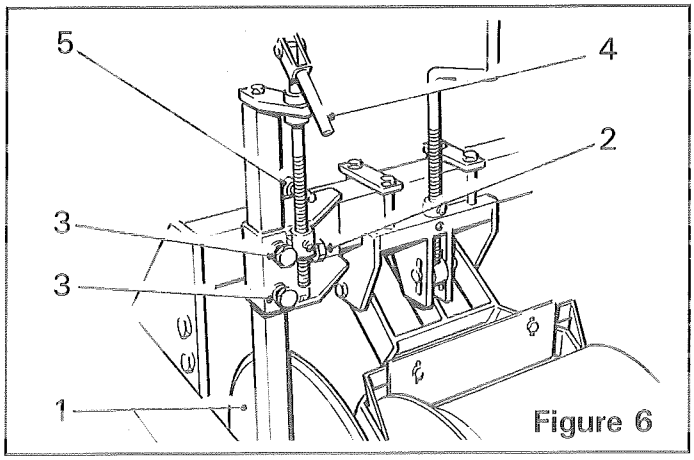


Figure 6

Disc Coulter Depth and Width Adjustment

To adjust the depth of the discs, loosen the three retaining bolts *(item 2&3, figure 6)* and turn the depth screw *(item 4, figure 6)* to give the desired setting.

Note: When retightening the retaining bolts *(item 2&3, figure 6)*, always fully tighten the inner bolt *(item 2, figure 6)* first.

To adjust the discs for different bed widths, slacken the securing bolts *(item 5, figure 6)* and slide the disc units to the required position and retighten.

Shares

The shares are mounted on a fixed share bar. The width of the bed determines the share arrangement used.

Narrow Setting (60"-64"wheelings).
When digging this width of bed, the two outer shares blades will be narrower than the inner ones.

Middle Setting (68"-72"wheelings).
When digging this width of bed, all of the shares blades will be the same width.

Wide Setting (80"wheelings).
When digging this width of bed, the two outer share blades will be wider than the inner ones.

Digger Web

The digger web is 1560mm wide from inner web side to inner web side and is available in 36mm, 42mm, 45mm and 50mm pitches. The soil, clod and stones etc. are fed onto the digger web by the shares. The digger web is shaken by an agitator which assists in sieving the soil through the web.

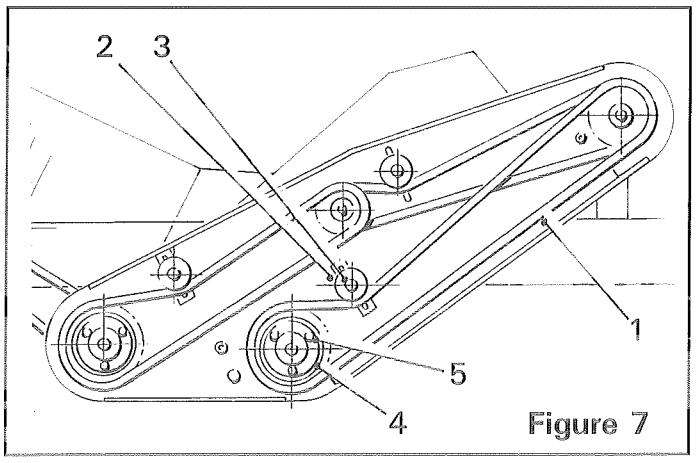


Figure 7

Digger Web and Agitator Drive Adjustment

The digger web drive chain *(item 1, figure 7)* is tensioned by a roller *(item 2, figure 7)*. To adjust the tension of the drive chain, loosen the securing bolt *(item 3, figure 7)* and and slide the roller to to achieve the correct tension. Once achieved, retighten the securing bolt ensuring that the roller is still able to turn

The digger web torque limiter *(item 4, figure 7)* is fitted to prevent serious damage should the digger web become jammed or obstructed. The amount of torque required to start the torque limiter slipping can be varied by turning the three setscrews *(item 5, figure 7)*.

Over-tightening of the setscrews (item 5, figure 7) will render the torque limiter ineffective. The setting of the torque limiter should be checked regularly to ensure that it is working correctly.

The torque limiter should be set to just drive without slipping under normal working conditions. Adjust the three setscrews *(item 5, figure 7)* a 1/4 turn at a time. Always adjust the setscrews equally.

The agitator drive chain *(item 1, figure 8)* is tensioned by a tension block *(item 2, figure 8)*. To adjust the tension of the drive chain, loosen the securing bolt *(item 3, figure 8)* and and slide the tension block to increase/decrease the chain tension. Once the correct tension is achieved, retighten the securing bolt.

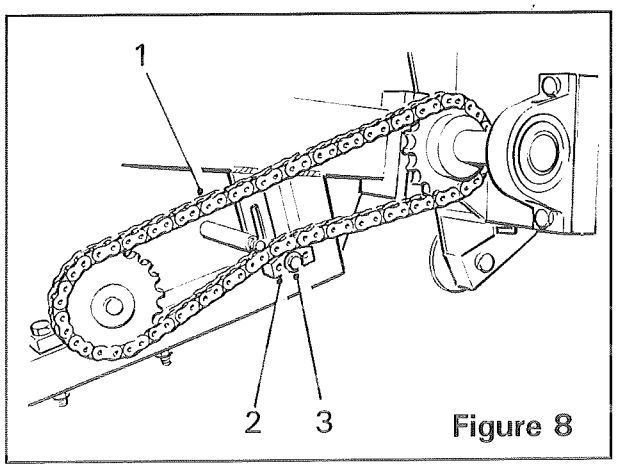


Figure 8

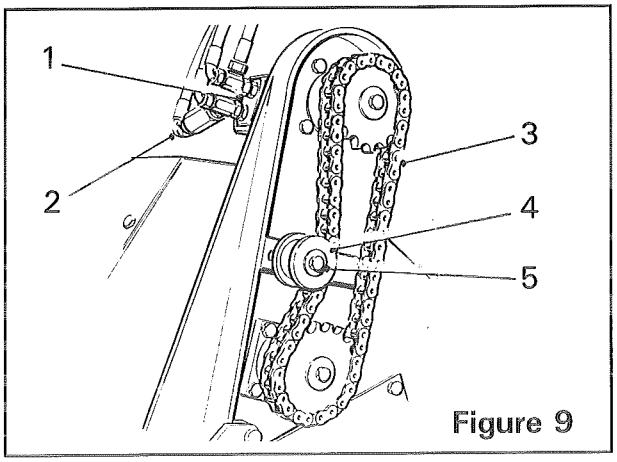


Figure 9

Clod Breaking Rotor Unit

The optional clod breaking rotor is mounted above the digger web. As the name suggests, the clod breaker breaks up the soil passing beneath it and in doing so helps it to pass through the machine much more quickly.

The rotor is adjustable for height and speed. Both adjustments are made on the in-cab control box.

To adjust the height of the rotor unit, operate the control box switch marked 'Rotor Raise/Lower'. With the rotor in the fully raised position, the soil is able to pass underneath the rotor without the soil flow being disturbed.

Always switch off the rotor when in the fully raised position.

To adjust the rotor speed, turn the control box dial marked 'Rotor Speed Control'. The higher the number, the faster the rotor will turn. By turning the dial below '1', the rotor can be stopped.

Note: If the rotor is turning too slowly relative to the speed of the digger web, the rotor may cause an obstruction to the soil flow.

Rotor Drive Adjustment

The clod breaking rotor is driven by a hydraulic motor *(item 1, figure 9)*. Attached to the motor is a check valve *(item 2, figure 9)* which allows the rotor to gradually slow down when the power has been switched off.

The check valve (item 2, figure 9) is an important safety feature and must remain fitted and operable at all times.

The rotor unit drive chain *(item 3, figure 9)* is tensioned by a roller *(item 4, figure 9)*. To adjust the chain, loosen the securing bolt *(item 5, figure 9)* and slide the roller to achieve the correct tension. Once achieved, retighten the securing bolt ensuring that the roller is still able to turn.

2nd Stage

The 2nd stage provides another area for the soil to be separated. The 2nd stage web is available in 36mm, 42mm and 50mm pitches.

The 2nd stage web is shaken by an agitator which assists in sieving the soil through the web. The speed of the agitator can be adjusted from the in-cab control box. To increase/decrease the agitator speed, turn the control box dial marked '2nd Stage Agitator Speed'. The higher the number, the faster the agitator will turn. By turning the dial below '1', the agitator can be stopped.

The angle of the 2nd stage can be adjusted to facilitate hillside work. To increase/decrease the angle of the 2nd stage, operate the control box switch marked '2nd Stage Raise/Lower'.

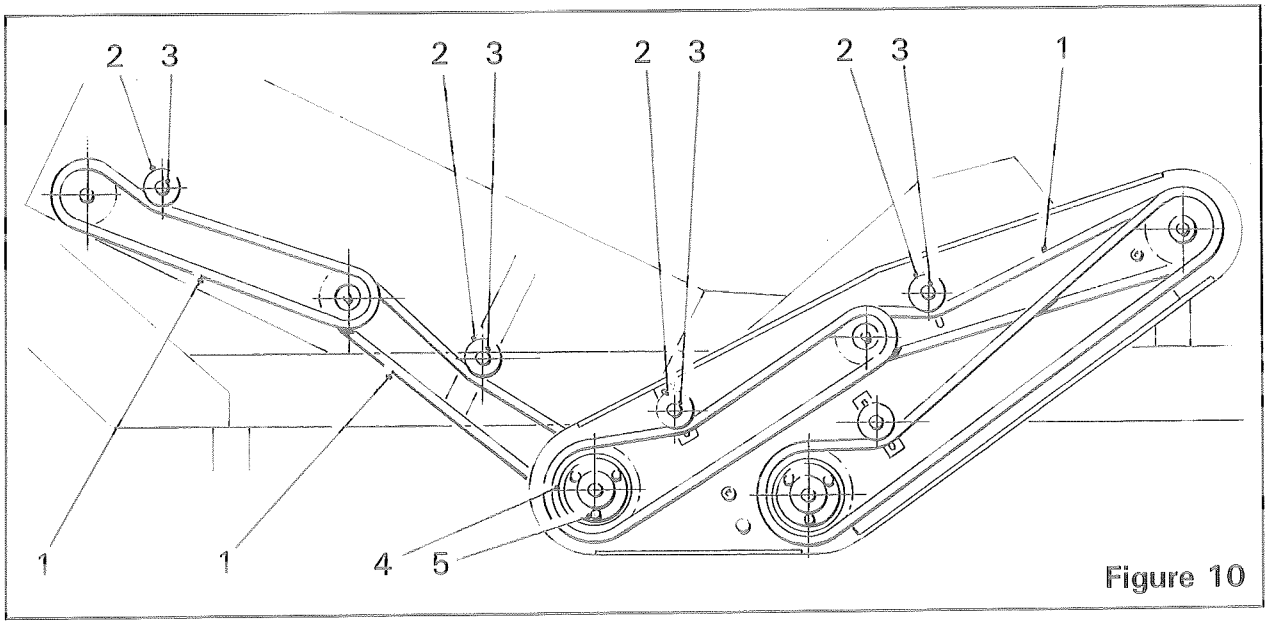


Figure 10

2nd Stage Drive Adjustment

The 2nd stage is driven by four drive chains *(item 1, figure 10)*. Each drive chain is tensioned by a roller *(item 2, figure 10)*. To adjust the tension of a chain, loosen the securing bolt *(item 3, figure 10)* and slide the roller to achieve the correct tension. Once achieved, retighten the securing bolt ensuring that the roller is still able to turn.

The 2nd stage torque limiter *(item 4, figure 10)* is fitted to prevent serious damage should the 2nd stage become overloaded, jammed or obstructed. The amount of torque required to start the torque limiter slipping can be varied by turning the three setscrews *(item 5, figure 10)*.

Over-tightening of the setscrews (item 5, figure 10) will render the torque limiter ineffective. The setting of the torque limiter should be checked regularly to ensure that it is working correctly.

The torque limiter should be set to just drive without slipping under normal working conditions. Adjust the three setscrews *(item 5, figure 10)* a 1/4 turn at a time. Always adjust the setscrews equally.

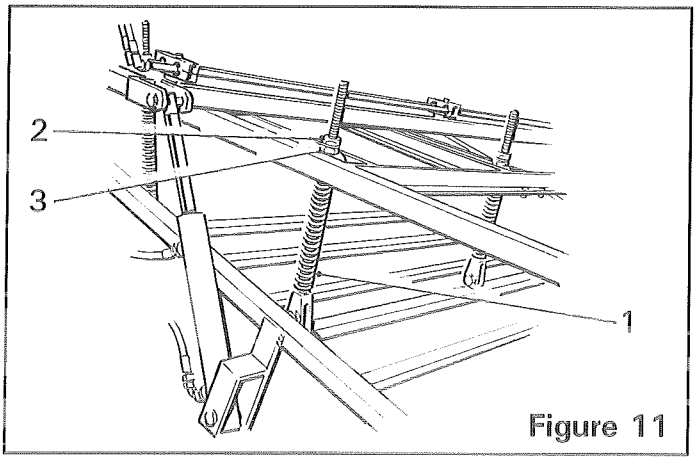


Figure 11

Scrubber Web

The scrubber web, fitted above the 2nd stage web, provides yet another facility for soil separation. The scrubbing web is spring loaded to ensure sufficient pressure to break up the clods etc. Adjustment is provided to vary the pressure applied by the springs *(item 1, figure 11)*. To adjust the pressure, loosen the locknuts *(item 2, figure 11)* and turn the adjusting nuts *(item 3, figure 11)*.

The height of the scrubber web relative to the 2nd stage web is adjustable. The height can be increased/decreased by operating the in-cab control box switch marked 'Scrubber Web Raise/Lower'.

Note: Lowering the scrubber web will increase the pressure exerted by the springs and may have the adverse effect of forcing stones through the 2nd stage web.

3rd Stage

The 3rd stage provides another area for the soil to be separated. The 3rd stage web is available in 28mm and 42mm pitches. The 3rd stage web is shaken by an agitator which assists in sieving the soil through the web. The agitator can be switched on and off as required by operating the switch on the control box marked '3rd Stage Agitator On/Off'.

3rd Stage Drive Adjustment

The 3rd stage web is driven by two drive chains *(item 1, figure 12)*. Each drive chain is tensioned by a tension block *(item 2, figure 12)*. To adjust the tension of the chains, loosen the securing bolts *(item 3, figure 12)* and slide the blocks to achieve the correct tension. Once achieved, retighten the securing bolt.

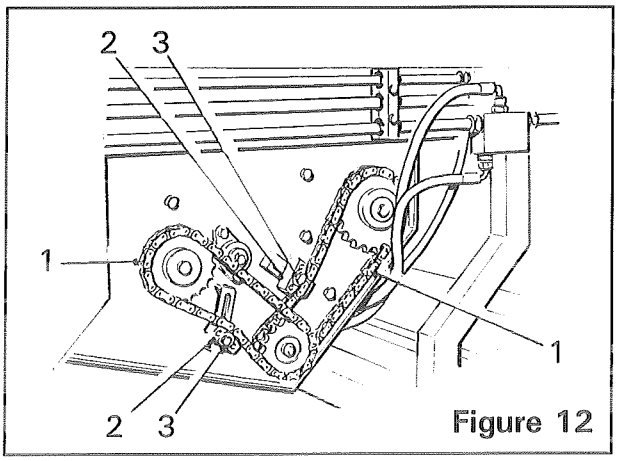


Figure 12

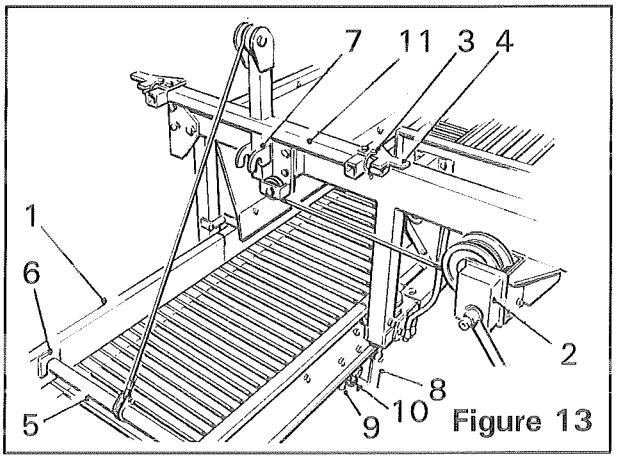


Figure 13

Cross Conveyor

Never operate the cross conveyor when the extension is folded in the transport position. When in operation, the cross conveyor extension must be locked in the working position.

The cross conveyor is designed to transfer the stone and clod etc. from the 3rd stage and place it into the bottom of the wheelings. A hydraulic ram positions the cross conveyor to discharge on either the left or right hand side of the machine. To position the cross conveyor to the right or left, operate the control box switch marked 'Cross Conveyor Side Shift'. The cross conveyor web is driven by two hydraulic motors. To alter the direction of discharge, operate the control box switch marked 'Cross Conveyor Drives'.

To reduce the width of the machine, the cross conveyor is fitted with an extension *(item 1, figure 13)*. The extension is raised into the transport position and lowered into the working position by a winch *(item 2, figure 13)*.

Lowering the Cross Conveyor Extension

To lower the cross conveyor extension into the working position:

1. Remove the retaining pins *(item 3, figure 13)* and rotate the catch plates *(item 4, figure 13)* to the unlocked position.
2. Lower the extension by using the winch *(item 2, figure 13).*

   Note: When lowering the extension, the winch will not produce a clicking sound but the load will remain in position when the handle is released.
3. When fully lowered, unwind the winch a few extra turns to allow the winch bar *(item 5, figure 13)* to be removed from the locating plates *(item 6, figure 13).*
4. Rewind the winch and locate the winch bar *(item 5, figure 13)* in the storage plates *(item 7, figure 13).*
5. Swing the locking arm *(item 8, figure 13)* until it locates in the slots *(item 9, figure 13)* and secure it with the locking pins *(item 10, figure 13).*

Raising the Cross Conveyor Extension

To raise the cross conveyor extension into the transport position:

1. Using the control box, move the cross conveyor fully over to the right hand side of the machine.
2. Remove the locking pins *(item 10, figure 13)* and allow the locking arm *(item 8, figure 13)* to swing down.
3. Unwind the winch *(item 2, figure 13)* and locate the winch bar *(item 5, figure 13)* securely in the locating plates *(item 6, figure 13).*
4. Rewind the winch and raise the extension *(item 1, figure 13)* until it makes contact with the stop bar *(item 11, figure 13).*

   Note: When raising the extension, the winch will produce a loud clicking sound. The load will remain in position when the handle is released.
5. Rotate the catch plates *(item 4, figure 13)* to secure the extension and lock them in position with the retaining pins *(item 3, figure 13).*

Never leave the cross conveyor extension in the middle position. The cross conveyor extension must be set in either the working position or the transport position. When set in the transport position, the catch plates (item 4, figure 13) must be locked in position with the retaining pins (item 3, figure 13).

Rear Axle

The rear wheels are steerable to assist with hillside work and also enable easier headland turning. Operation of the rear wheels is controlled from the in-cab control box. To steer the rear wheels, operate the switch marked 'Rear Axle Right/Left'.

The rear wheels can be centralised automatically by pressing the switch marked 'Rear Axle Auto Centre'. If the wheels do not centralise properly, adjustment can be made by adjusting the self centring switch *(item 1, figure 14)*.

To adjust the self centring switch:

1. Centre the wheels (a judgement can be made by checking the wheels are parallel to the chassis).
2. Switch off the tractor engine, apply the handbrake and remove the ignition key.
3. Switch off the in-cab control box.
4. Set the cam plate *(item 2, figure 14)* so that the corner (A) touches the switch wheel on the centre line *(see figure 14)*. The switch *(item 1, figure 14)* may require moving towards the cam plate *(item 2, figure 14)*. To move the switch, loosen the securing bolts *(item 3, figure 14)*, push the switch toward the cam plate and resecure.
5. Loosen the two securing bolts *(item 3, figure 14)* and move the switch *(item 1, figure 14)* away from the cam plate *(item 2, figure 14)* until a click is heard and then retighten the securing bolts *(item 3, figure 14)*.

   Note: The switch wheel must always be in contact with the cam plate.

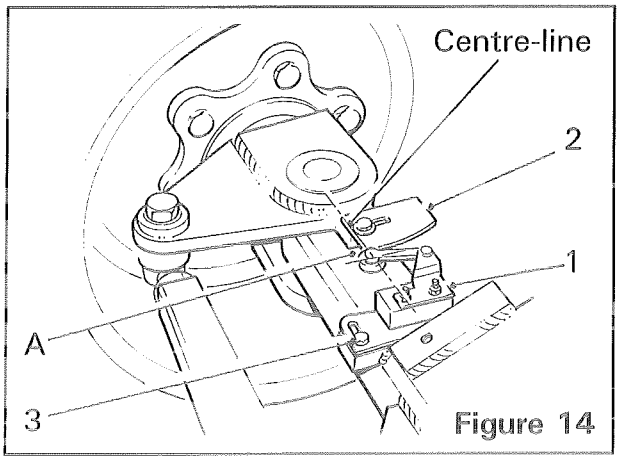


Figure 14

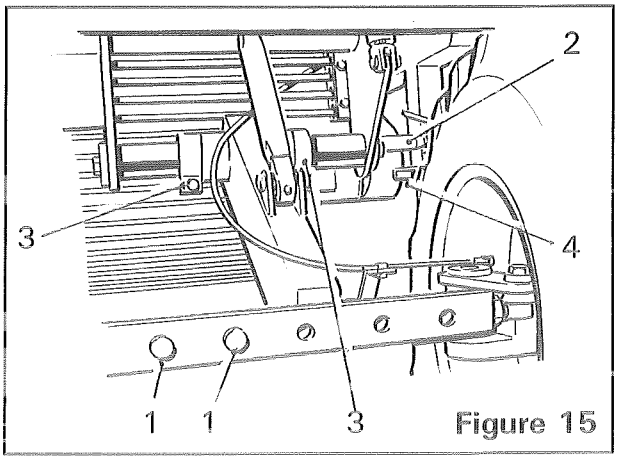


Figure 15

Rear Axle Adjustment

The rear wheels are adjustable from 152cm (60") to 203cm (80") wheelings.

To adjust the rear wheels:

1. Switch off the tractor engine, apply the handbrake and remove the ignition key.
2. Remove the two track rod securing bolts *(item 1, figure 15)*.

3. Position the adjusting link *(item 2, figure 15).*
4. Loosen the two clamps *(item 3, figure 15).*
5. Using the jack supplied, position the jack in the jacking position *(item 4, figure 15)* and raise the wheel.
6. Adjust the wheel using the adjusting link *(item 2, figure 15).*
7. Lower the wheel to the ground and repeat for the other wheel.
8. After adjusting both wheels, lower the machine to the ground and retighten all nuts bolts and clamps etc.

Electrical Control System

Control for the major functions of the Standen Spectra is provided electrically by the switches mounted on the in-cab control box. Eleven of the switches operate solenoid valves on the valve bank *(item 1, figure 16).* The remaining switches, which include 'Rotor Speed Control' and 'Agitator Speed Control', operate the solenoid valves on the valve bank *(item 2, figure 16).*

The solenoid valves on the valve bank *(item 1, figure 16)* can be over-ridden and the valves manually activated by operating the valve knobs *(item 3, figure 16).*

Note: To manually activate the Digger Raise/Lower valve slice *(item 4, figure 16),* the in-cab control box switch marked 'Digger Float On/Off' must be in the on position.

Always switch off the in-cab control box when not in use , so avoiding the possibility of draining the battery.

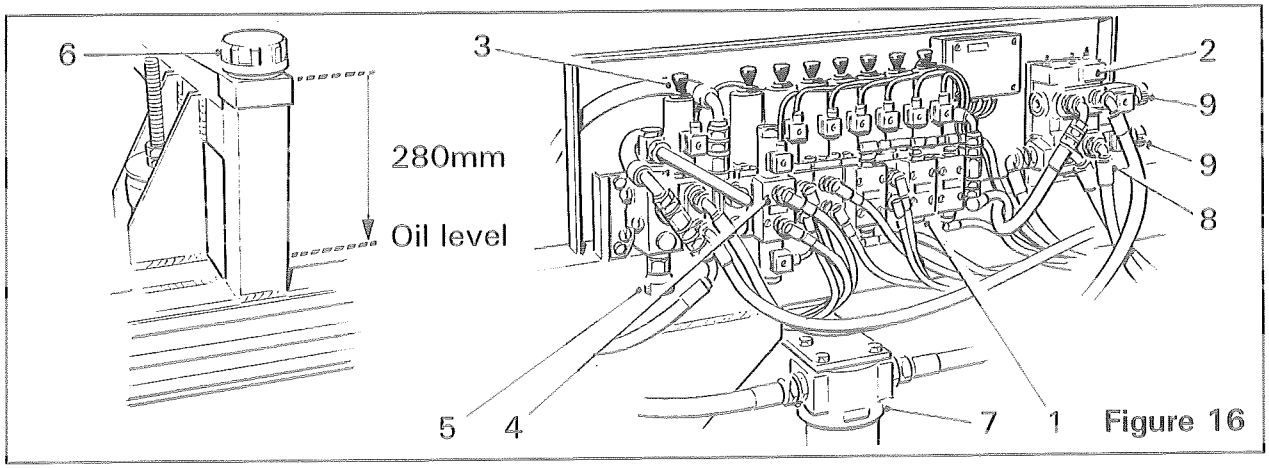


Figure 16

Hydraulic System

The hydraulic oil required to operate the rams, 3rd stage and cross conveyor motors is supplied directly from the tractor. The speed at which these hydraulic motors rotate can be adjusted by turning the valve bank control knob *(item 5, figure 16).* The higher the number, the faster the motor speed.

Maintenance of the Mechanical Drives

The various drives involved in the design of the Standen Spectra consist of chains, sprockets, shafts and gearboxes etc.

Each drive chain is fitted with its own tensioner. The chains should be tensioned correctly to ensure the efficient working of the machine. The chains should not be over-tightened, as this will result in excessive wear of the drive components. Instructions for the adjustment of each drive chain are given in the paragraph relating to that assembly.

All revolving drive machinery; chains, sprockets, pulleys and shafts etc. are potentially dangerous. Before attempting any adjustment or maintenance of the drive equipment, switch off the tractor engine, apply the handbrake, remove the ignition key and disconnect the PTO shaft. Failure to observe the above precaution could result in serious injury to personnel.

The drive is transferred from the tractor to the machine by the PTO shaft *(item 1, figure 17)*. The PTO shaft drives the gearbox which in turn drives the hydraulic pump *(item 2, figure 17)*. The PTO shaft should be checked occasionally to ensure that the inner and outer tubes can slide freely. Binding of the tubes may cause premature wear of the gearbox input bearings.

From the gearbox, the drive is taken via a universal coupling *(item 3, figure 17)* to the second gearbox. The second gearbox transmits the drive to both the 1st and 2nd stages of the machine. The gearbox oil levels should be checked occasionally and topped up with EP 90 gear oil as necessary.

Maintenance of the Hydraulic Systems

The components utilised in the design of the hydraulic systems have been chosen for their maintenance-free characteristics. The only components requiring maintenance are as follows.

The pressure line filter *(item 4, figure 17)* is fitted with an indicator. When the indicator is pointing to the red segment, the filter element should be replaced. To replace the element, unscrew it from the bottom of the filter assembly.

The hydraulic system may be under pressure with the machine at rest. Ensure all residual pressure is released before disconnecting any pipework.

The hydraulic pump *(item 2, figure 17)* supplies the pressurised oil to drive the clod breaking rotor and agitator motors. The pump produces a flow rate of 15 gallons/minute at 540rpm PTO speed. The oil reservoir for this system is integral within the front and left hand frame members of the chassis. Check the oil level regularly by removing the filler/breather cap *(item 6, figure 16)* and top up with Nuto 46 Centistroke Oil to the dimension shown *(see figure 16)*.

The pressure filter *(item 7, figure 16)* should be replaced after the first 50 hours running time and then every 500 hours or annually thereafter.

Every 500 hours or annually, drain the hydraulic reservoir and clean the magnetic drain plug *(item 5, figure 17)*. Remove and clean the suction strainer *(item 6, figure 17)*. Refill the hydraulic reservoir with Nuto 46 Centistroke Oil (35 gallons).

When carrying out maintenance on the hydraulic system, cleanliness is of the utmost importance. Avoid any dirt entering the system.

The pressure relief valve (item 8, figure 16) is fitted to protect the hydraulic system should any major blockage occur. It is an essential safety feature preset at the factory and should never be tampered with.

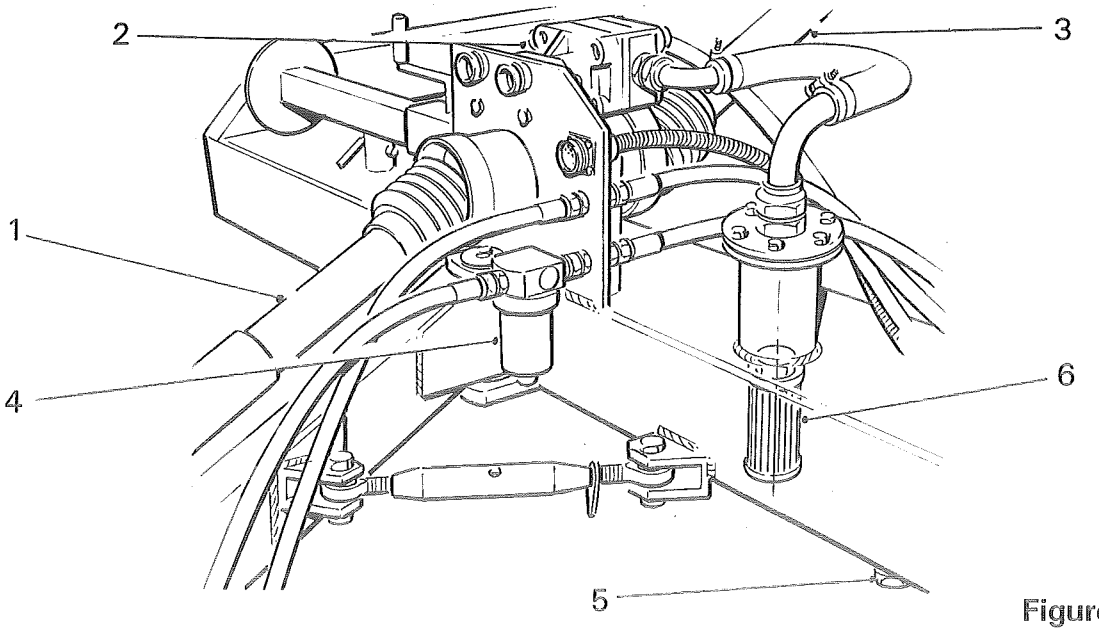


Figure 17

Rotor/Agitator Speed Control Knob Adjustment

To match the rotor and/or agitator speed control dial on the in-cab control box to the valve bank *(item 2, figure 16)*, it is necessary to adjust the variable preset potentiometer on the control card mounted beneath the dial *(see figure 18).* Ensure the proportional valve control knob *(item 9, figure 16)* is set at '10'.

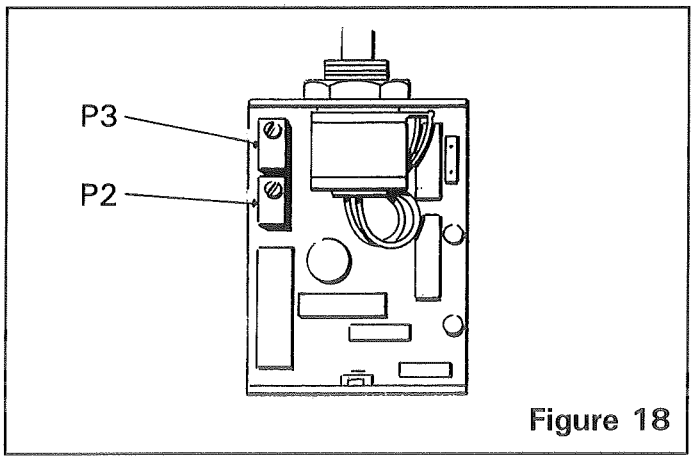


Figure 18

1. To set the minimum speed.
With the rotor/agitator running and the in-cab control box speed control dial turned to '1', adjust the screw marked 'P2' *(see figure 18)* to decrease the speed until the rotor/agitator is just running.

2. To set the maximum speed.
With the rotor/agitator running and the in-cab control box speed control dial turned to '10', adjust the screw 'P3' *(see figure 18)* to increase the speed until the rotor/agitator is running at maximum.

Lubrication

Regular maintenance will ensure the Standen Spectra provides a long and efficient service life. Depending on soil and weather conditions, the service schedule can vary.

Correct lubrication should be employed to ensure the full life of the various working parts and the efficient operation of the machine.

Shafts and bearings fitted with grease nipples should be lubricated using a good quality general purpose grease. Bearings must not be allowed to run dry. When greasing it is better to give a little frequently than a lot a long intervals.

Note: With reference to the lubrication chart (see figure 19), some of the bearings are sealed and pre-lubricated. Care should be taken not to flood these bearings with grease or the seals may burst allowing grease to escape and dirt to get in. Should this happen, more frequent greasing will be required in order to keep the dirt at bay. When lubricating sealed bearings, only two or three strokes of the grease gun every twenty acres of work is necessary.

The non-sealed bearings should be greased at least once a day or every ten acres.

The gearboxes should be checked occasionally and topped up with EP 90 gear oil as necessary.

The universal couplings (such as the PTO shaft) should be dismantled periodically and their shafts smeared with grease.

Apply grease to all pivot points and slideways etc. to ensure they move easily and are free from corrosion.

Particular care must be taken to ensure that grease or oil does not come in contact with the torque limiters.

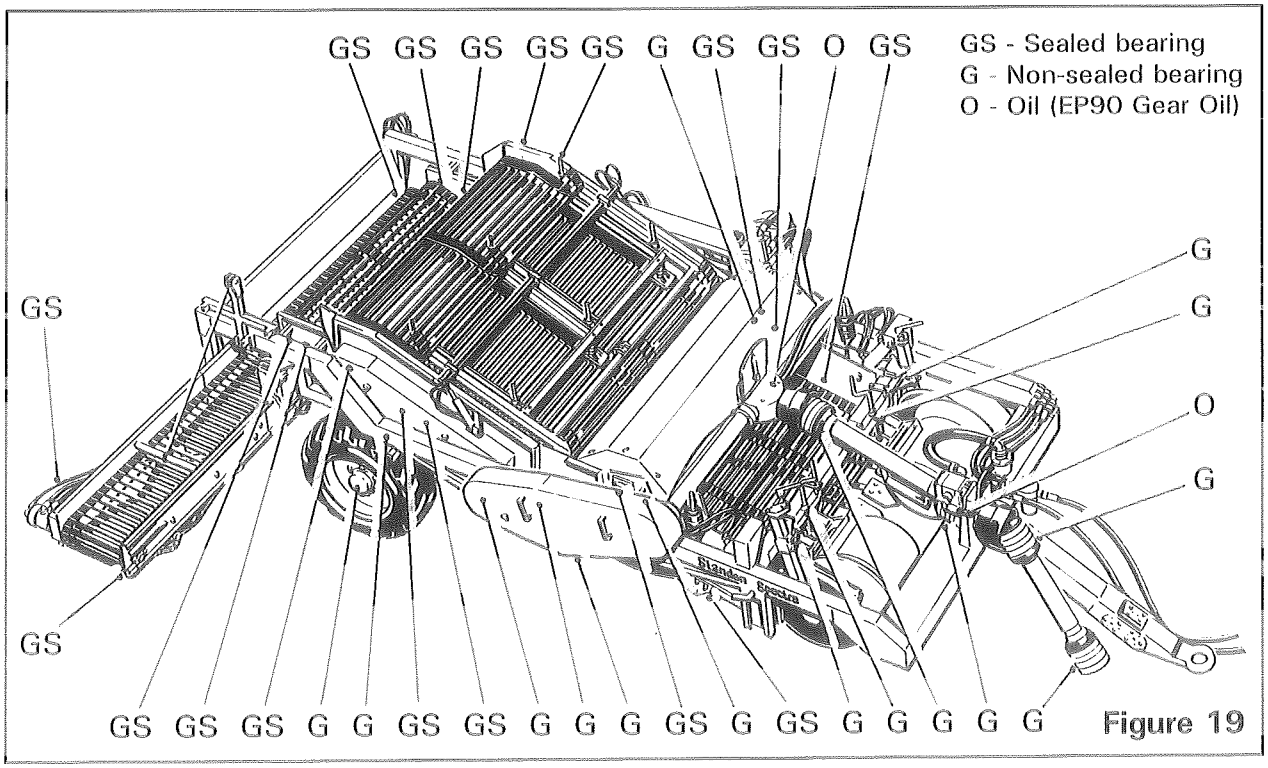


Figure 19

Service Schedule

On delivery and after the first 2 hours	
Nuts, bolts and keyways	Check tightness
Machine	Lubricate

Every day (or every 10 acres)	
Hydraulic oil	Check level
Nuts, bolts and keyways	Check tightness
Non-sealed bearings	Lubricate
Hydraulic hoses and fittings	Check condition
Machine components	Check condition

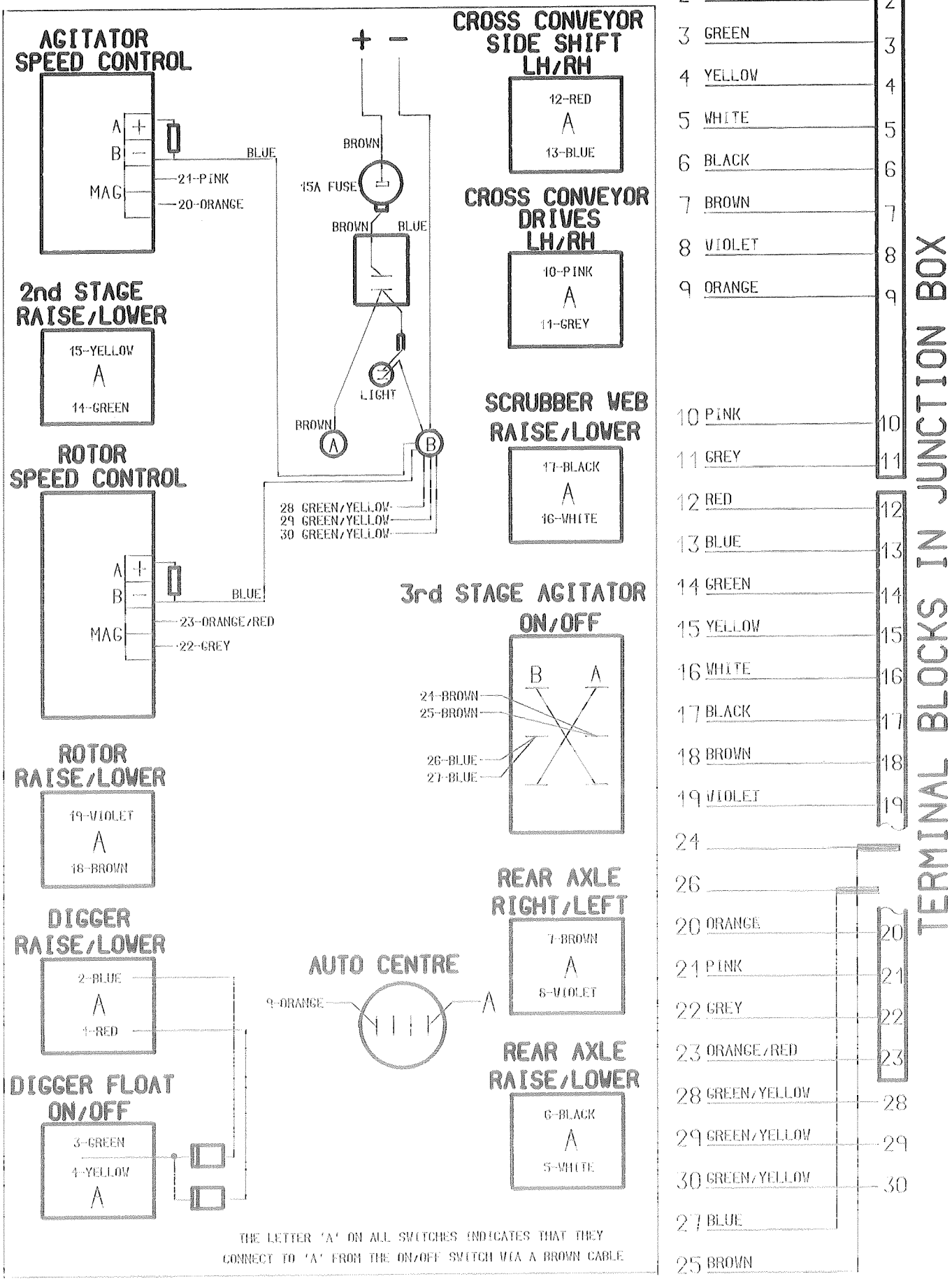
Every two days (or every 20 acres)	
Sealed bearings	lubricate
Chain drives	Check tension
Shafts and chains	Lubricate

After the first 50 hours	
Pressure filter *(item 7, figure 16)*	Replace filter element

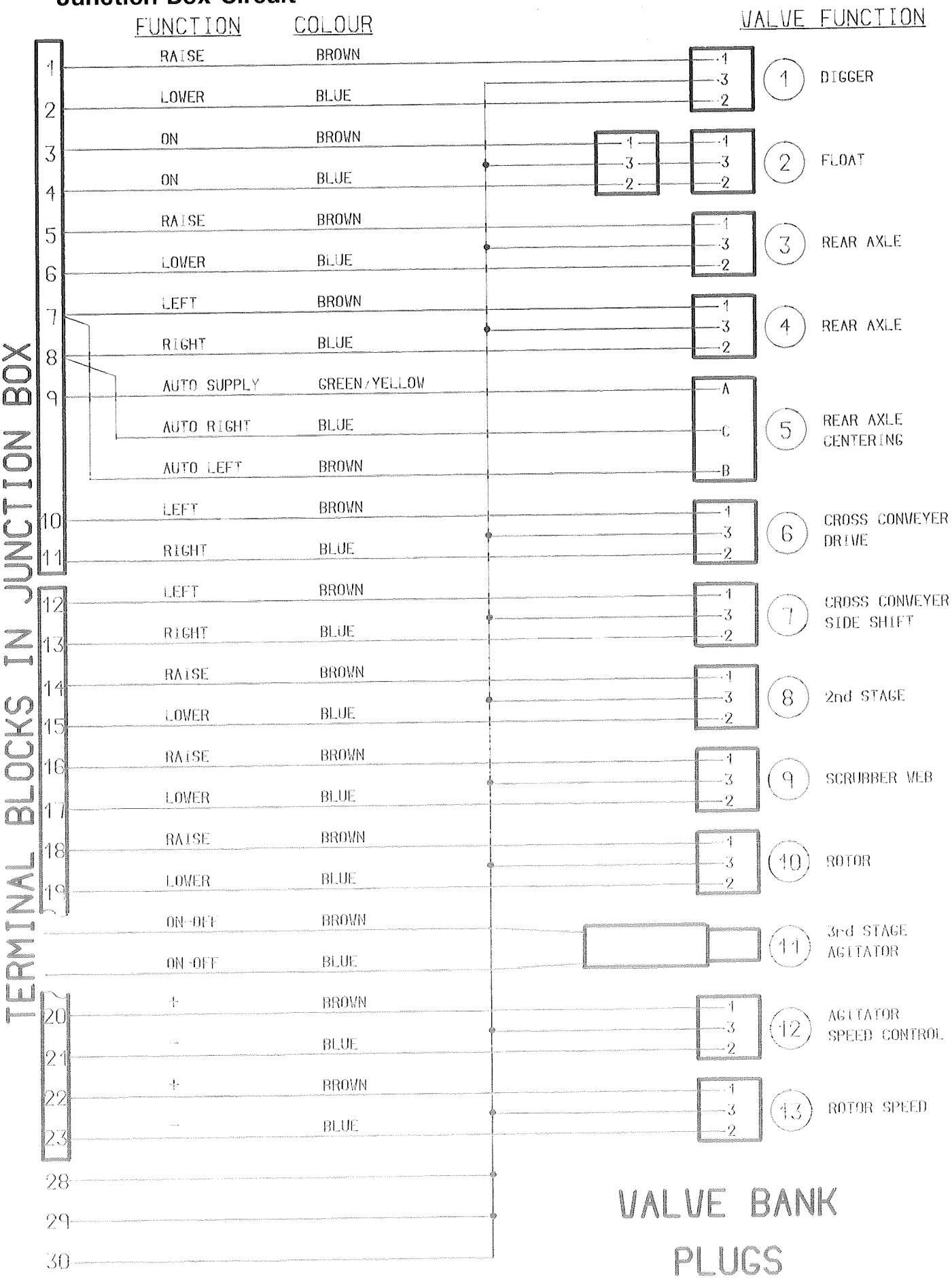
Every 500 hours (or annually)	
Pressure filter *(item 7, figure 16)*	Replace filter element
Hydraulic oil	Change
Suction strainer and magnetic drain plug	Clean

End of the season	
Machine	Clean down thoroughly
Machine components	Check condition
Nuts, bolts and keyways	Check tightness
Machine	Lubricate
Bright surfaces	Treat with rust preventative
Paintwork	Check condition
Torque Limiters	Slacken off
Machine	Store in a dry place

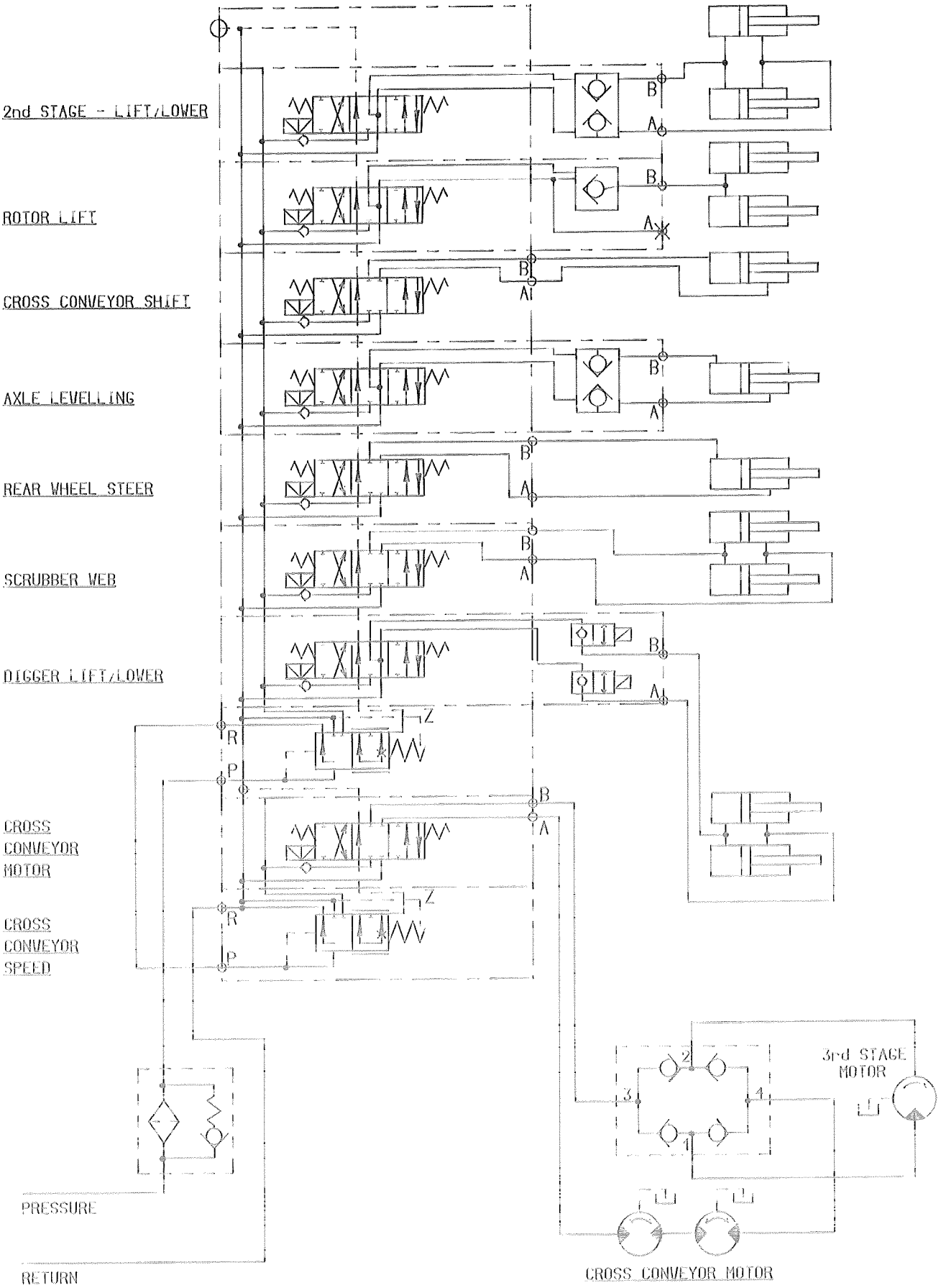
Control Box Circuit



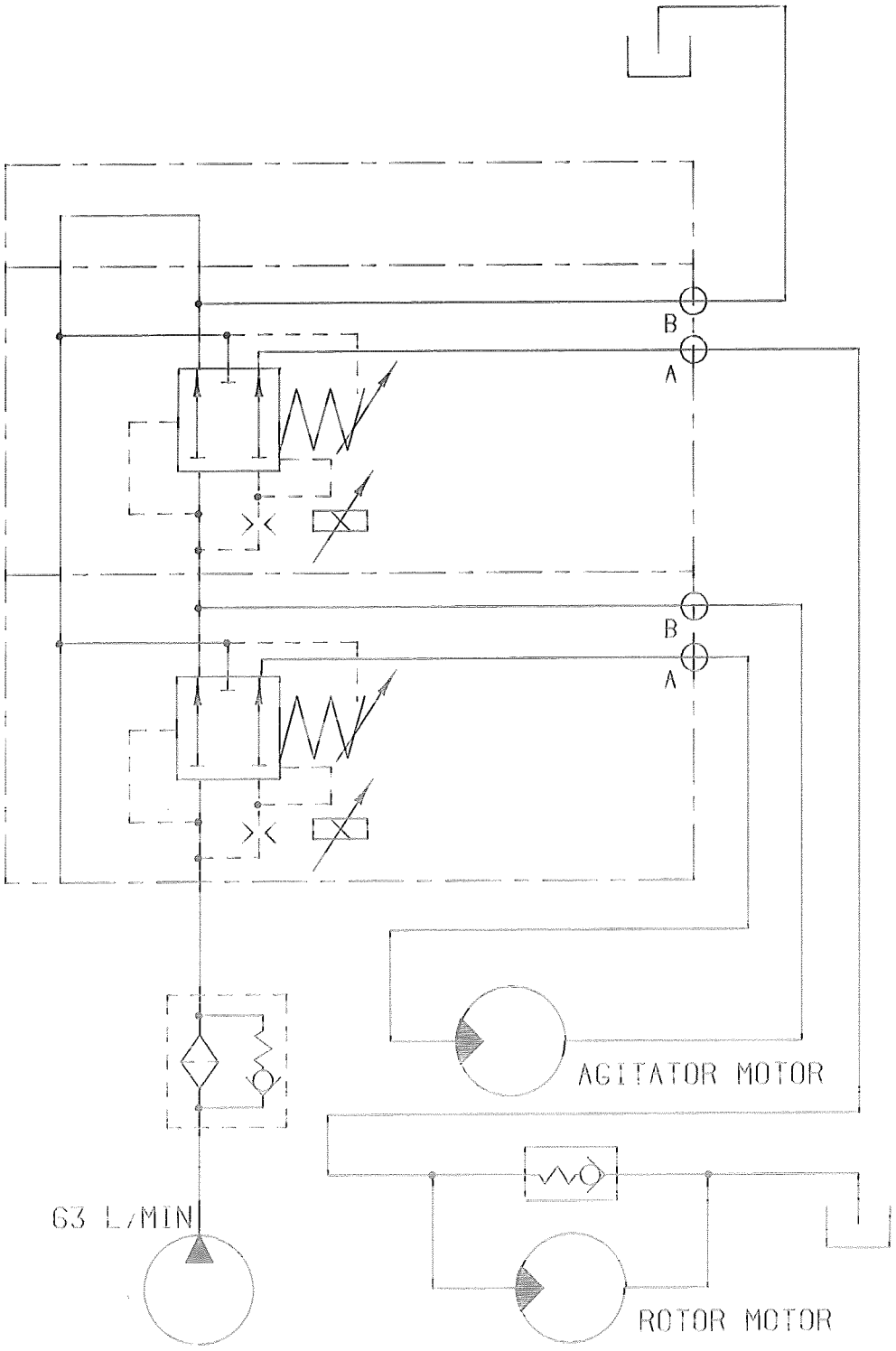
Junction Box Circuit



Ram/Motor Hydraulic Circuit



Rotor/Agitator Hydraulic Circuit



Nut/Bolt Tightening Torque

Description	*Torque*		*Description*	*Torque*
M6 nyloc zinc plated nut	10lb/ft		M6 bolt/steel nut	7lb/ft
M8 nyloc zinc plated nut	23lb/ft		M8 bolt/steel nut	19lb/ft
M10 nyloc zinc plated nut	44lb/ft		M10 bolt/steel nut	38lb/ft
M12 nyloc zinc plated nut	87lb/ft		M12 bolt/steel nut	70lb/ft
M16 nyloc zinc plated nut	208lb/ft		M16 bolt/steel nut	170lb/ft
M20 nyloc zinc plated nut	380lb/ft		M20 bolt/steel nut	325lb/ft
M24 nyloc zinc plated nut	690lb/ft		M24 bolt/steel nut	565lb/ft

Dimensions

Length	7.7m
Width (in transport)	2.9m
Height (in transport)	2.6m

Technical Data

Weight (with clod breaking rotor)	4.4t
Working width	60"-80"
Tractor hp requirement	100hp
Tractor hydraulic flow rate requirement	10 gallons/minute
Hydraulic pump flow rate	15 gallons/minute
Oil reservoir capacity (Nuto 46 Centistroke Oil)	35 gallons
Tyre pressure	40psi

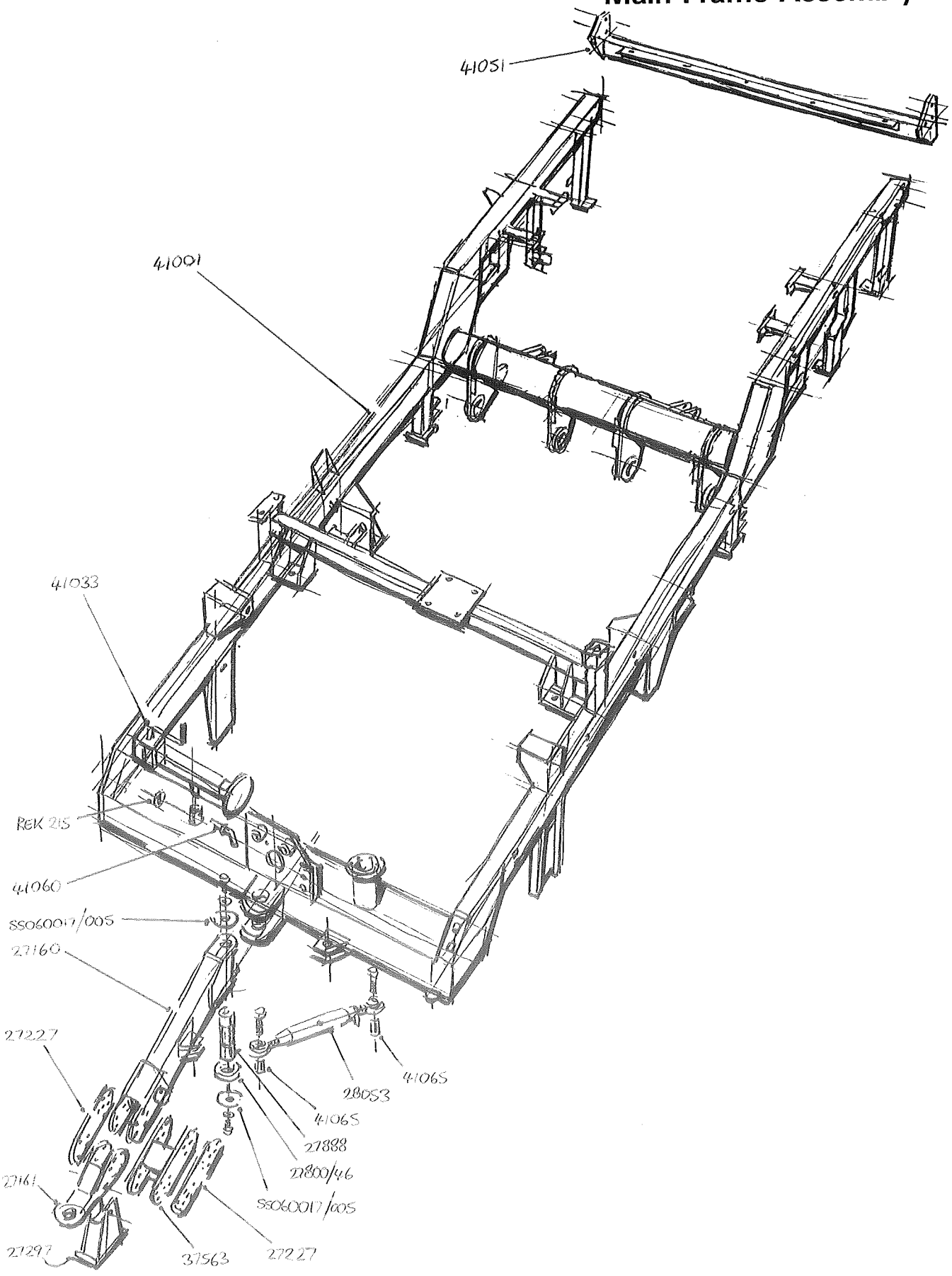
Standen Engineering's policy of continual product development means that specifications may be altered without prior notice. All dimensions are approximate.

CONTENTS

SPARE PARTS

Note: When using the following pages to order replacement parts, please quote the full serial number of your machine.

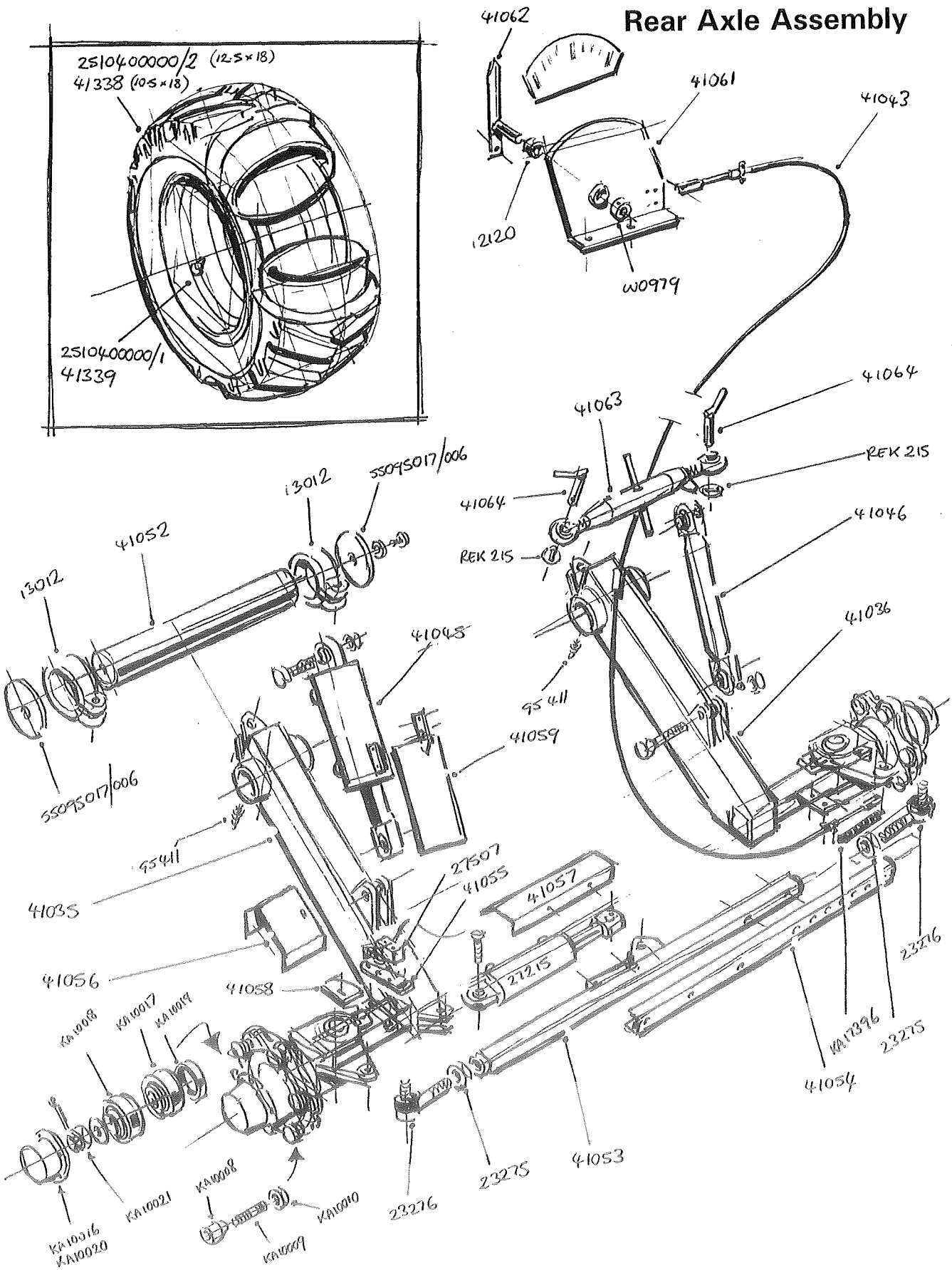
Main Frame Assembly



Main Frame Assembly

Item	Part No.	Description	Qty.	Remarks
1	27160	Drawbar	1	
2	27161	Towing Eye	1	
3	27227	Locking Plate	2	
4	27297	Drawbar Foot	1	
5	27800/46	Spacer	1	
6	27888	Drawbar Pin	1	
7				
8	28053	Top Link Assembly	1	
9				
10	37563	Locking Plate	1	
11				
12	41001	Main Frame	1	
13	41033	Jack	1	
14	41051	Rear Beam	1	Not used with boulder box
15	41060	Securing Pin	1	
16	41065	Bush	2	
17				
18	REK215	Linch Pin	1	
19				
20	SS060017/005	Steel Spacer	2	

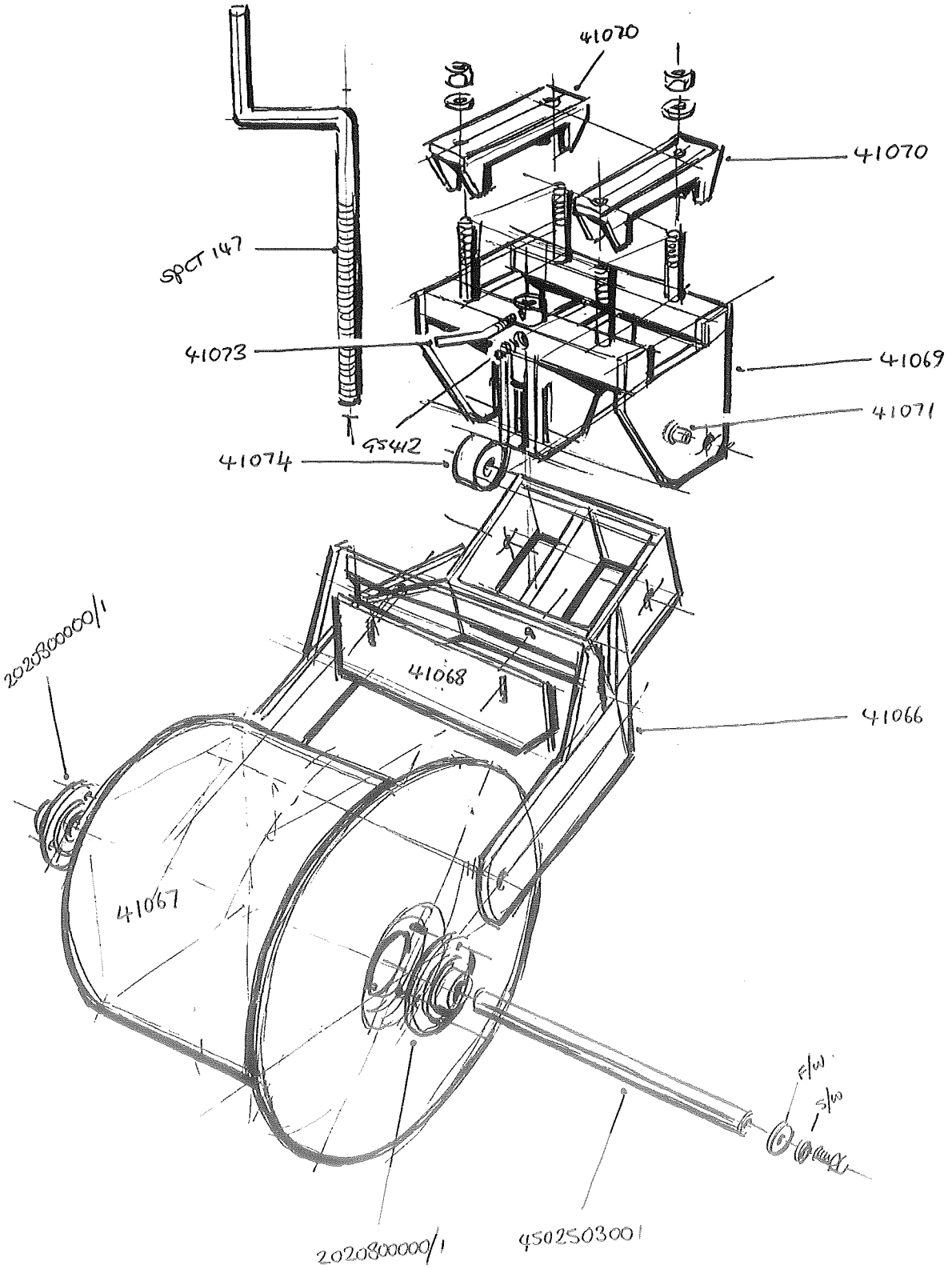
Rear Axle Assembly



Rear Axle Assembly

Item	Part No.	Description	Qty.	Remarks
1	12120	Bush	1	
2				
3	13012	Clamp	4	
4				
5	23275	Locknut	2	
6	23276	Steering Joint	2	
7				
8	27215	Hydraulic Ram	1	
9	27507	Centring Switch	1	
10				
11	41035	LH Wheel Leg Assembly	1	See list at end
12	41036	RH Wheel Leg Assembly	1	See list at end
13	41043	Indicator Cable	1	
14	41045	Hydraulic Ram	1	
15	41046	Axle Stay	1	
16	41052	Pivot Shaft	2	
17	41053	Track Rod Tube	1	
18	41054	Track Rod Channel	1	
19	41055	Centring Switch Mounting Plate	1	
20	41056	Centring Switch Guard	1	
21	41057	Ram Guard	1	
22	41058	Centring Switch Cam Plate	1	
23	41059	Ram Guard	1	
24	41061	Indicator Backplate	1	
25	41062	Pointer	1	
26	41063	Top Link Assembly	1	
27	41064	Locating Pin	2	
28				
29				
30	2510400000/1	Wheel Rim	2	(9x18 Rim 41339)
31	2510400000/2	12.5x18 Tyre and Tube	2	(10.5x18 Tyre 41338)
32				
33	GS411	1/8"BSP Angled Grease Nipple	2	
34				
35	KA17396	Rubber Gaiter	1	
36				
37	REK215	Linch Pin	2	
38				
39	SS095017/006	Steel Spacer	4	
40				
41	W0979	Locking Collar	1	
	41035	**LH Wheel Leg Assembly**		
	41036	**RH Wheel Leg Assembly**		
		Consists Of:		
42	KA10008	3/4"UNF Nut	6	
43	KA10009	3/4"UNF Stud	6	
44	KA10010	3/4"UNF Thin Nut	6	
45	KA10016	Hub Cap	1	
46	KA10017	Rear Bearing	1	
47	KA10018	Front Bearing	1	
48	KA10019	Oil Seal	1	
49	KA10020	Hub Cap Gasket	1	
50	KA10021	Castellated Nut	1	
51	KA10025	Hub c/w Bearings and Seals	1	

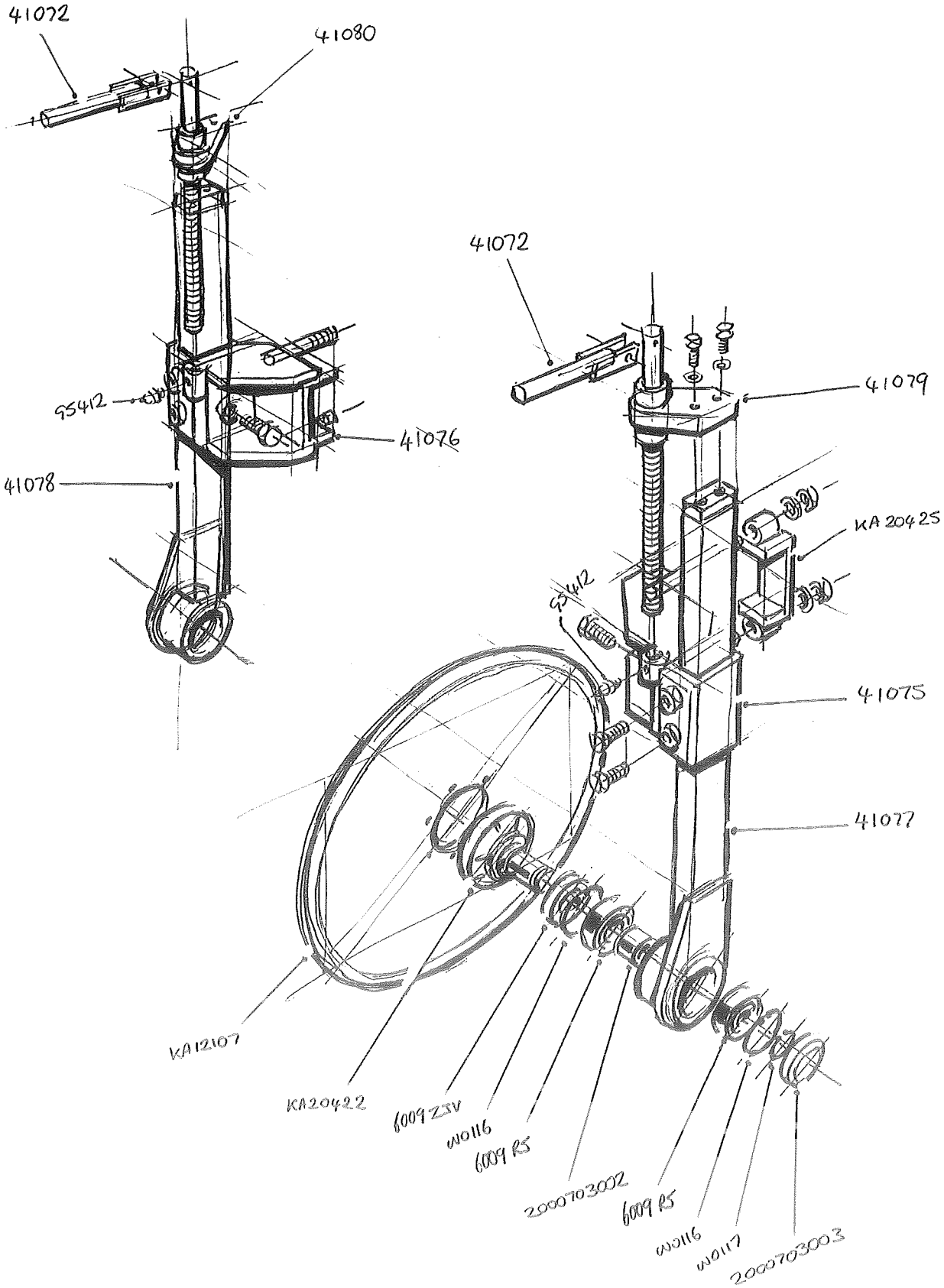
Diablo Roller Assembly



Diablo Roller Assembly

Item	Part No.	Description	Qty.	Remarks
1	41066	Roller Mounting Arm	2	
2	41067	Diablo Roller	2	
3	41068	Scraper	2	
4	41069	Roller Mounting bracket	2	
5	41070	Clamp Plate	4	
6	41071	Pivot Boss	4	
7	41073	Locking Handle	2	
8	41074	Stop Boss	2	
9				
10				
11	2020800000/1	Bearing	4	
12	4502503001	Shaft	2	
13				
14	GS412	1/8"BSP Straight Grease Nipple	2	
15				
16	SPCT147	Depth Screw	2	

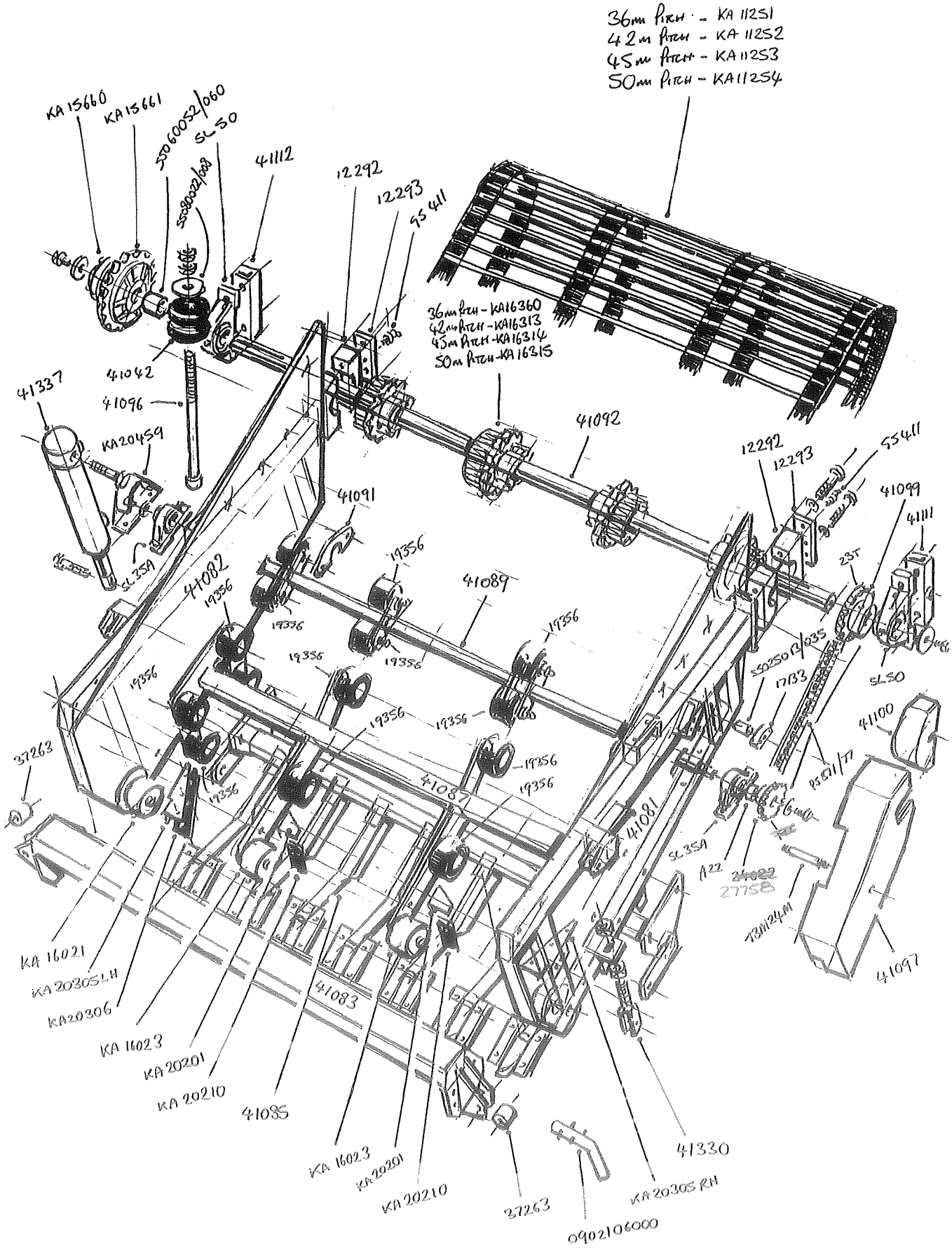
Disc Coulter Assembly



Disc Coulter Assembly

Item	Part No.	Description	Qty.	Remarks
1	41072	Adjuster Handle	2	
2	41075	LH Disc Mounting Bracket	1	
3	41076	RH Disc Mounting Bracket	1	
4	41077	LH Disc Leg	1	
5	41078	RH Disc Leg	1	
6	41079	LH Disc Adjuster Screw	1	
7	41080	RH Disc Adjuster Screw	1	
8				
9				
10	2000703002	Spacer	2	
11	2000703003	Dust Cap	2	
12				
13	6009RS	Bearing	4	
14	6009ZJV	Nilos Ring	2	
15				
16	GS412	1/8"BSP Straight Grease Nipple	2	
17				
18	KA12107	Disc	2	
19	KA20422	Disc Spindle	2	
20	KA20425	Clamp	2	
21				
22	W0116	Internal Circlip	4	
23	W0117	External Circlip	2	

Digger Web Assembly (1525mm wide)



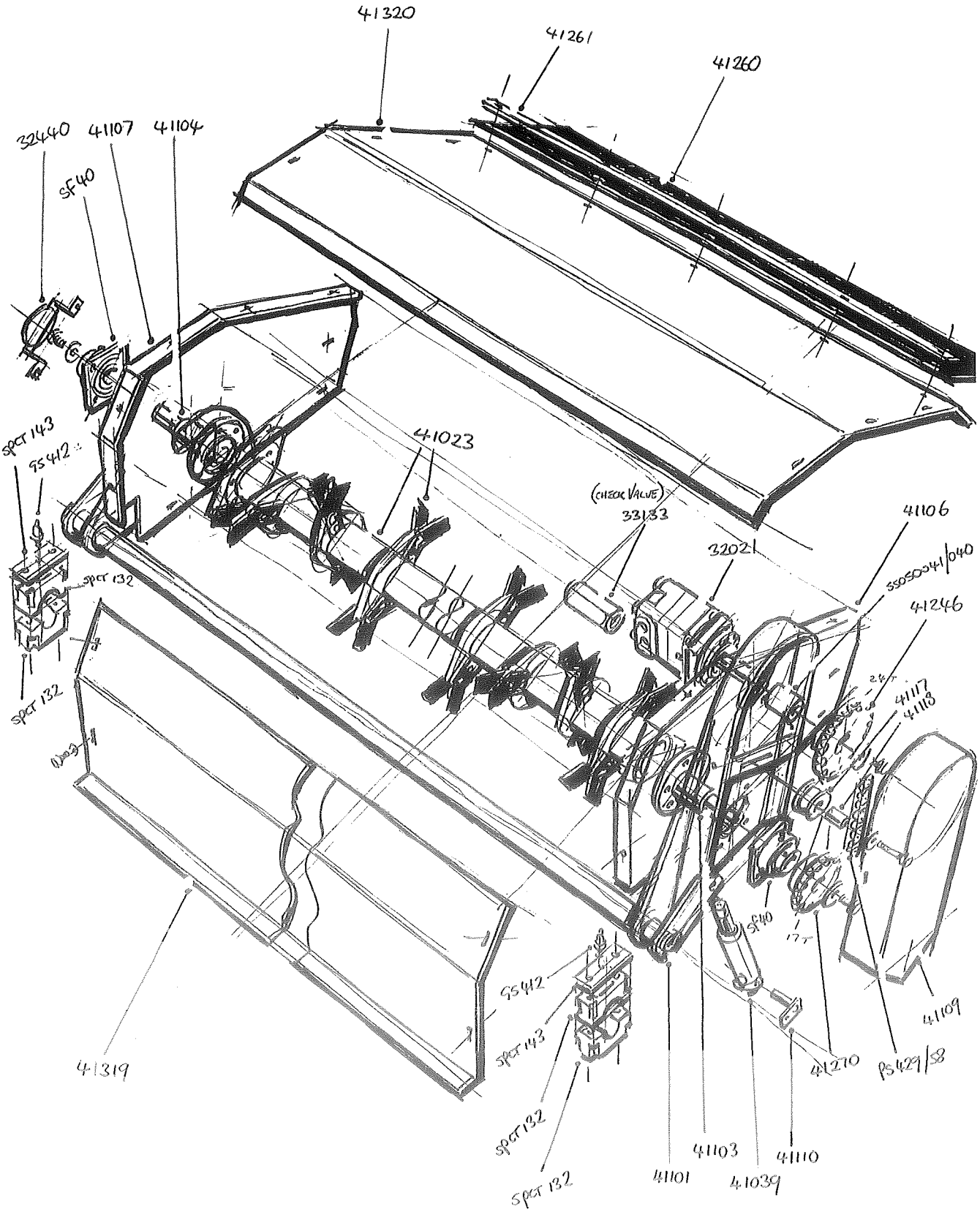
Digger Web Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
1	12292	Bearing Block	4	
2	12293	Clamp Plate	2	
3				
4	17133	Nylon Tensioner	1	
5				
6	19356	Roller Assembly	20	
7				
8	~~24022~~ 27758	~~19t~~ 23t Sprocket	1	
9				
10	37263	Front Beam Roller	2	
11				
12	41042	Rubber Damper Spring	2	
13	41081	LH Digger Web Side	1	
14	41082	RH Digger Web Side	1	
15	41083	Front Beam	1	
16	41085	Share Bar	1	
17	41087	Roller Support	1	
18	41089	Agitator Shaft	1	
19	41091	Roller Locking Plate	2	
20	41092	Drive Shaft	1	
21	41096	Damper Rod	2	
22	41097	Agitator Drive Guard	1	
23	41099	23t Sprocket	1	
24	41100	Bearing Guard	1	
25	41111	LH Bearing Mounting	1	
26	41112	RH Bearing Mounting	1	
27	41330	Share Bar Adjuster	2	
28	41337	Hydraulic Ram	2	
29				
30				
31	0902106000	Transport Safety Bolt	2	
32				
33	A22	Plastic Spacer	1	
34				
35	GS411	1/8"BSP Angled Grease Nipple	2	
36				
37	KA15660	Torque Limiter Complete	1	(Bush KA15697)
38	KA15661	28t Sprocket	1	
39	KA16021	Roller Assembly	2	
40	KA16023	Roller Assembly	2	
41	KA20201	Roller Scraper	2	
42	KA20210	Scraper	2	
43	KA20305LH	Scraper Bracket	1	
44	KA20305RH	Scraper Bracket	1	
45	KA20306	Scraper	2	
46	KA20459	Bearing Guard	1	
47				
48	PS871/77	3/4"Pitch Drive Chain	1	
49				
50	SL35A	Bearing	2	
51	SL50	Bearing	2	
52				
53	SS025013/035	Steel Spacer	1	
54	SS060052/060	Steel Spacer	1	
55	SS080022/008	Steel Spacer	2	

Digger Web Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
56	TBM24M	Guard Bolt	1	
57				
58				
59	KA11251	36mm Pitch Digger Web (1525mm)	1	Options
	KA11252	42mm Pitch Digger Web (1525mm)	1	Options
	KA11253	45mm Pitch Digger Web (1525mm)	1	Options
	KA11254	50mm Pitch Digger Web (1525mm)	1	Options
60	KA16360	36mm Pitch Web Sprocket	4	Options
	KA16313	42mm Pitch Web Sprocket	4	Options
	KA16314	45mm Pitch Web Sprocket	4	Options
	KA16315	50mm Pitch Web Sprocket	4	Options

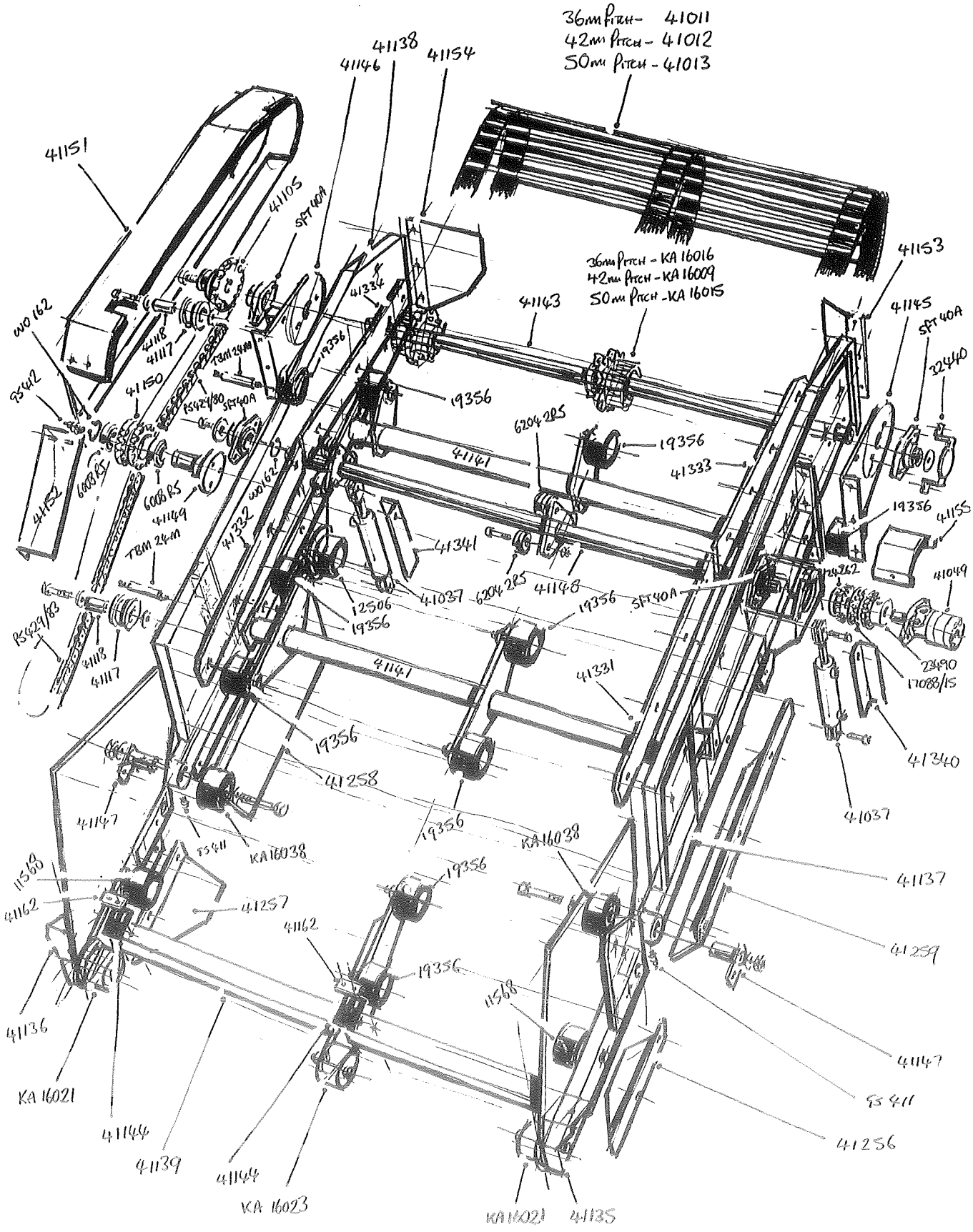
Rotor Assembly (1525mm wide)



Rotor Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
1	32021	Hydraulic Motor	1	
2	32440	Bearing Guard	1	
3				
4	33133	Check Valve	1	
5				
6	41023	Rotor c/w Blades (1525mm)	1	(Blade F4153010 x44)
7	41039	Hydraulic Ram	2	
8	41101	Rotor Frame	1	
9	41103	Stub Shaft (long)	1	
10	41104	Stub Shaft (short)	1	
11	41106	LH Side Panel	1	
12	41107	RH Side Panel	1	
13	41109	Drive Guard	1	
14	41110	Ram Pin	2	
15	41117	Tension Roller	1	
16	41118	Tension Roller Spindle	1	
17	41246	24t Sprocket	1	
18	41260	Rubber Deflector	1	
19	41261	Clamp Strip	1	
20	41270	17t Sprocket	1	
21	41319	Front Panel	1	
22	41320	Top Panel	1	
23				
24				
25	GS412	1/8"BSP Straight Grease Nipple	2	
26				
27	PS429/58	1"Pitch Drive Chain	1	
28				
29	SF40	Bearing	2	
30				
31	SPCT132	Bearing Block	4	
32	SPCT143	Clamp Plate	2	
33				
34	SS050041/040	Steel Spacer	1	

2nd Stage Assembly (1525mm wide)



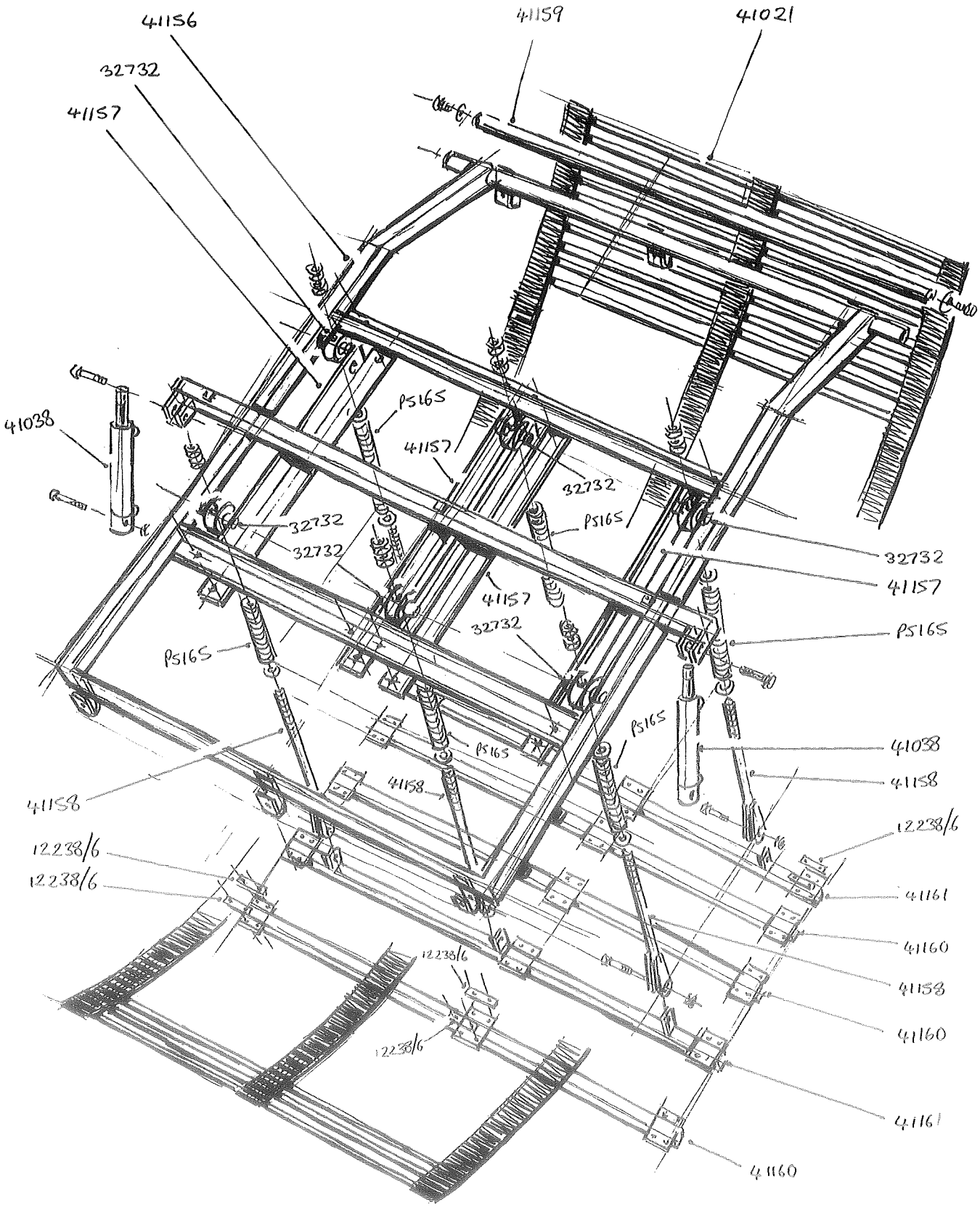
2nd Stage Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
1	11568	Roller Assembly	2	
2				
3	12506	Roller Assembly	2	
4				
5	17088/15	Drive Chain Coupling	1	
6				
7	19356	Roller Assembly	13	
8				
9	23490	15t Drive Coupling Sprocket	1	
10				
11	24262	15t Drive Coupling Sprocket	1	
12				
13	32440	Bearing Guard	1	
14				
15	41037	Hydraulic Ram	2	
16	41049	Hydraulic Motor	1	
17	41105	19t Sprocket	1	
18	41117	Tension Roller	2	
19	41118	Tension Roller Spindle	2	
20	41135	LH Lower Web Side	1	
21	41136	RH Lower Web Side	1	
22	41137	LH Upper Web Side	1	
23	41138	RH Upper Web Side	1	
24	41139	Lower Roller Frame	1	
25	41141	Upper Roller Frame	1	
26	41143	Drive Shaft	1	
27	41144	Scraper	3	
28	41145	LH Bearing Plate	1	
29	41146	RH Bearing Plate	1	
30	41147	Pivot Pin	2	
31	41148	Agitator Shaft	1	
32	41149	Idler Spigot	1	
33	41150	17t Double Sprocket	1	
34	41151	Drive Guard	1	
35	41152	Drive Shield	1	
36	41153	LH Top Deflector	1	
37	41154	RH Top Deflector	1	
38	41155	Drive Coupling Guard	1	
39	41162	Scraper Clamp Plate	3	
40	41256	LH Lower Soil Deflector	1	
41	41257	RH Lower Soil Deflector	1	
42	41258	Upper Soil Deflector	1	
43	41259	Upper Soil Deflector	1	
44	41331	LH Lower Wear Strip	1	
45	41332	RH Lower Wear Strip	1	
46	41333	LH Upper Wear Strip	1	
47	41334	RH Upper Wear Strip	1	
48	41340	LH Ram Shield	1	
49	41341	RH Ram Shield	1	
50				
51				
52	6008RS	Bearing	2	
53	6204 2RS	Bearing	18	
54				
55	GS411	1/8"BSP Angled Grease Nipple	2	

2nd Stage Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
56	GS412	1/8"BSP Straight Grease Nipple	1	
57				
58	KA16021	Roller Assembly	2	
59	KA16023	Roller Assembly	1	
60	KA16038	Roller Assembly	2	
61				
62	PS429/80	1"Pitch Drive Chain	1	
63	PS429/83	1"Pitch Drive Chain	1	
64				
65	SFT40A	Bearing	4	
66				
67	TBM24M	Guard Bolt	2	
68				
69	W0162	External Circlip	2	
70				
71				
72	41011	36mm Pitch Web (1525mm)	1	Options
	41012	42mm Pitch Web (1525mm)	1	Options
	41013	50mm Pitch Web (1525mm)	1	Options
73	KA16016	36mm Pitch Web Sprocket	3	Options
	KA16009	42mm Pitch Web Sprocket	3	Options
	KA16015	50mm Pitch Web Sprocket	3	Options

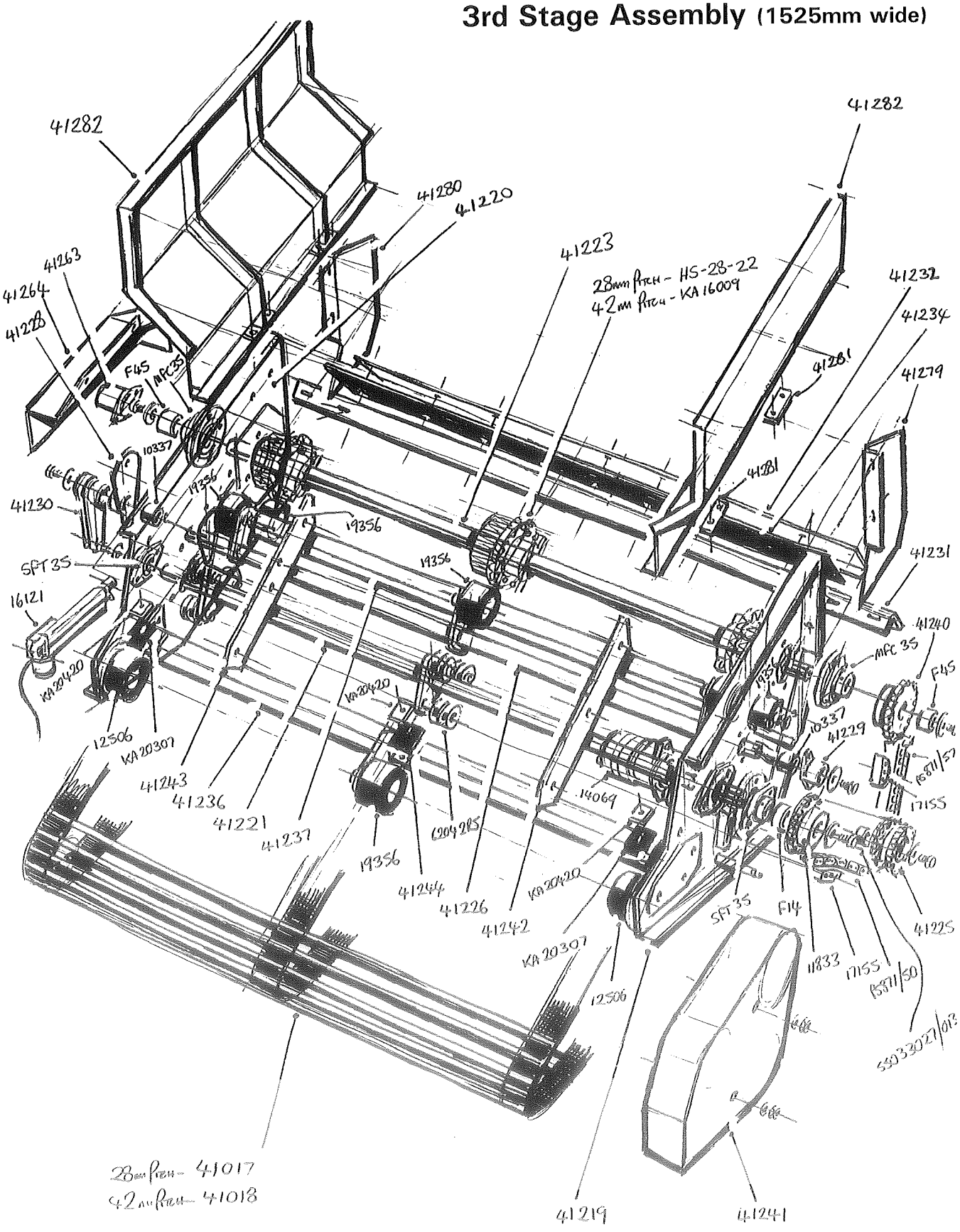
Scrubber Web Assembly (1525mm wide)



Scrubber Web Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
1	12238/6	Clamp Strip	30	
2				
3	32732	Trunnion	6	
4				
5	41021	Scrubber Web	1	
6	41038	Hydraulic Ram	2	
7	41156	Frame	1	
8	41157	Trunnion Support	4	
9	41158	Adjuster Rod	6	
10	41159	Pivot Bar	1	
11	41160	Web Bar (without lugs)	3	
12	41161	Web Bar (with lugs)	2	
13				
14				
15	PS165	Spring	6	

3rd Stage Assembly (1525mm wide)



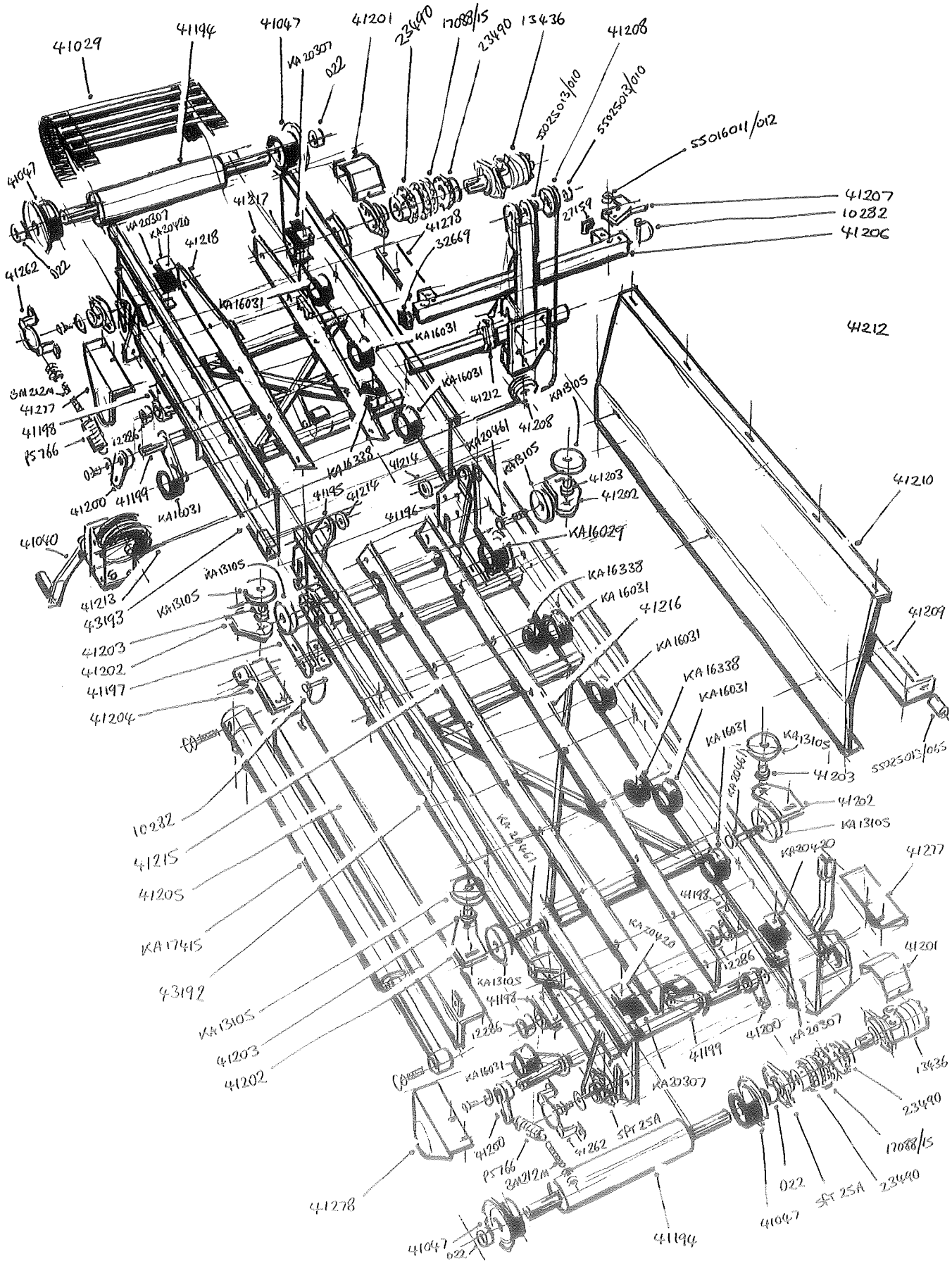
3rd Stage Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
1	10337	Bush	2	
2				
3	11833	21t Sprocket	1	
4				
5	12506	Roller Assembly	2	
6				
7	14069	Hydraulic Motor	1	
8				
9	16121	Linear Actuator	1	
10				
11	17155	Nylon Tensioner	2	
12				
13	19356	Roller Assembly	6	
14				
15	41219	LH Web Side	1	
16	41220	RH Web Side	1	
17	41221	Agitator Shaft	1	
18	41223	Drive Shaft	1	
19	41225	17t Double Sprocket	1	
20	41226	Roller Shaft	1	
21	41228	RH Pivot Plate	1	
22	41229	LH Pivot Plate	1	
23	41230	Adjuster Arm	1	
24	41231	Deflector Support	1	
25	41232	Deflector Panel	1	
26	41234	Rubber Deflector	1	
27	41236	Front Cross Beam	1	
28	41237	Rear Cross Beam	1	
29	41240	26t Sprocket	1	
30	41241	Drive Guard	1	
31	41242	LH Wear Strip	1	
32	41243	RH Wear Strip	1	
33	41244	Centre Scraper	1	
34	41263	Bearing Guard	1	Not used with boulder box
35	41264	Actuator Shield	1	
36	41279	LH Finger Guard	1	Not used with boulder box
37	41280	RH Finger Guard	1	Not used with boulder box
38	41281	Clamp Plate	4	
39	41282	Side Panel	2	
40				
41				
42	6204 2RS	Bearing	18	
43				
44	F14	Plastic Spacer	1	
45	F45	Plastic Spacer	2	Not used with boulder box
46				
47	KA20307	Scraper	2	
48	KA20420	Scraper Clamp Plate	3	
49				
50	MFC35	Bearing	2	
51				
52	PS871/50	3/4"Pitch Drive Chain	1	
53	PS871/57	3/4"Pitch Drive Chain	1	
54				
55	SFT35	Bearing	2	

3rd Stage Assembly (1525mm wide)

Item	Part No.	Description	Qty.	Remarks
56	SS033027/013	Steel Spacer	1	
57				
58				
59	41017	28mm Pitch Web (1525mm)	1	Options
	41018	42mm Pitch Web (1525mm)	1	Options
60	41050	28mm Pitch Web Sprocket	3	Options
	KA16009	42mm Pitch Web Sprocket	3	Options

Cross Conveyor Assembly



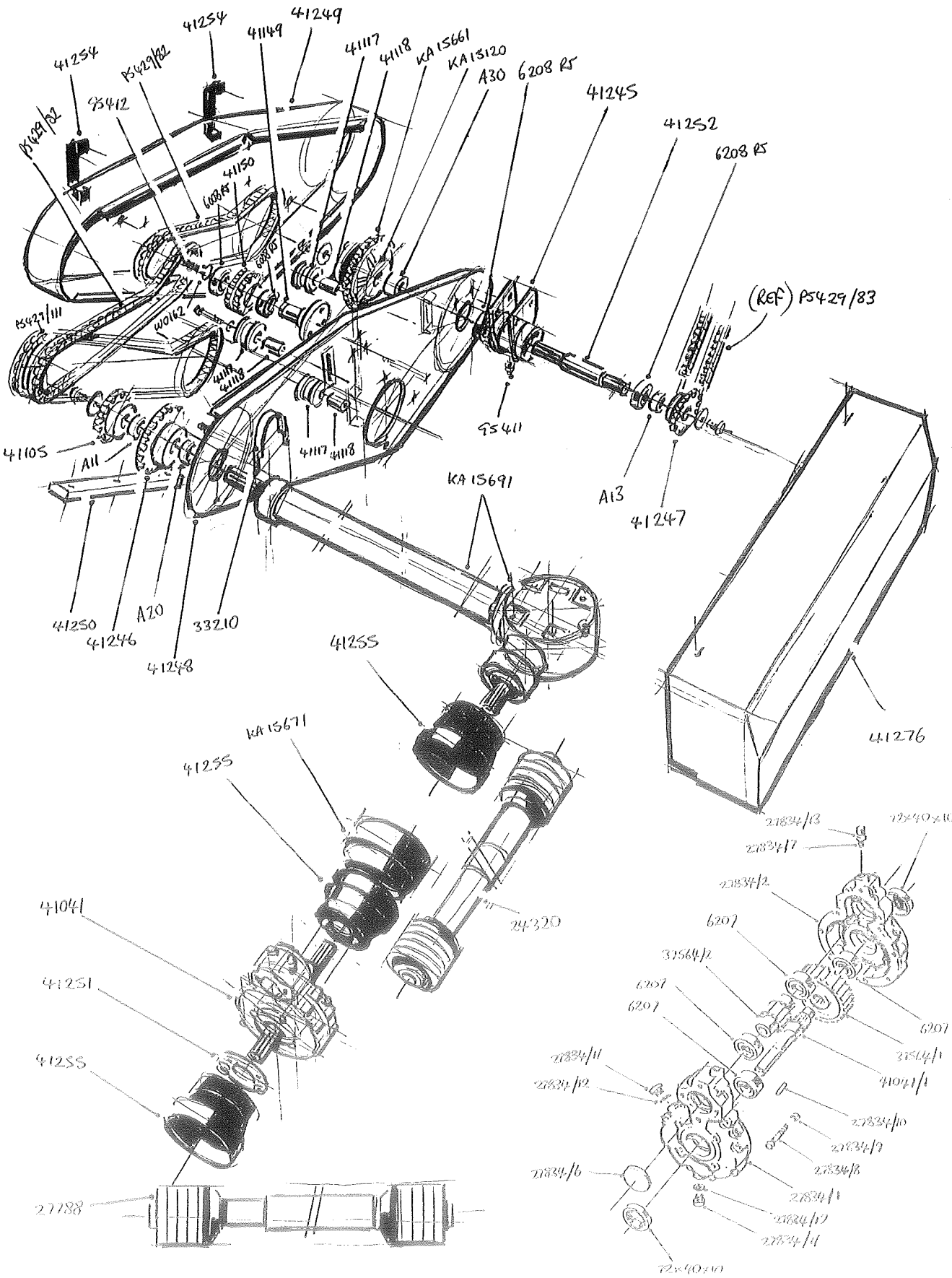
Cross Conveyor Assembly

Item	Part No.	Description	Qty.	Remarks
1	10282	Quick Release Pin	3	
2				
3	12286	Bush	4	
4				
5	13436	Hydraulic Motor	2	
6				
7	17088/15	Drive Chain Coupling	2	
8				
9	23490	15t Drive Coupling Sprocket	4	
10				
11	27159	Plastic Plug (40x40)	2	
12				
13	32669	Plastic Plug (40x60)	2	
14				
15	41029	Cross Web	1	
16	41040	Winch	1	
17	41047	Drive Roller	4	
18	41192	Conveyor Frame	1	
19	41193	Extension Frame	1	
20	41194	Drive Shaft	2	
21	41195	Front Pivot Plate	1	
22	41196	Rear Pivot Plate	1	
23	41197	Extension Locking Arm	1	
24	41198	Bush Housing	4	
25	41199	Web Tension Shaft	2	
26	41200	Spring Arm	4	
27	41201	Drive Coupling Guard	2	
28	41202	Support Roller Mounting Plate	4	
29	41203	Support Roller Spigot	4	
30	41204	Ram Guard Bracket	1	
31	41205	Ram Guard	1	
32	41206	Winch Frame	1	
33	41207	Locking Handle	2	
34	41208	Cable Pulley	2	
35	41209	Rear Panel Support	1	Not used with boulder box
36	41210	Rear Panel	1	Not used with boulder box
37	41212	Winch Bar	1	
38	41213	Winch Cable	1	
39	41214	Pivot Retaining Washer	2	
40	41215	Front Wear Strip (long)	1	
41	41216	Rear Wear Strip (long)	1	
42	41217	Wear Strip (short)	1	
43	41218	Wear Strip (short)	1	
44	41262	Bearing Guard	2	
45	41277	Roller Shield	2	
46	41278	Roller Shield	2	
47				
48				
49	BM212M	Spring Tensioner	4	
50				
51	D22	Plastic Spacer	4	
52				
53	KA13105	Nylon Support Roller	8	
54	KA16029	Flanged Roller Assembly (90mmDia)	2	
55	KA16031	Plain Roller Assembly (90mmDia)	18	

Cross Conveyor Assembly

Item	Part No.	Description	Qty.	Remarks
56	KA16338	Plain Roller Assembly (75mmDia)	6	
57	KA17415	Hydraulic Ram	1	
58	KA20307	Scraper	4	
59	KA20420	Scraper Clamp Plate	4	
60	KA20461	Support Roller Spindle	4	
61				
62	PS766	Spring	4	
63				
64	SFT25A	Bearing	4	
65				
66	SS016011/012	Steel Spacer	2	
67	SS025013/010	Steel Spacer	2	
68	SS025013/065	Steel Spacer	2	Not used with boulder box

Main Drive and Guards Assembly



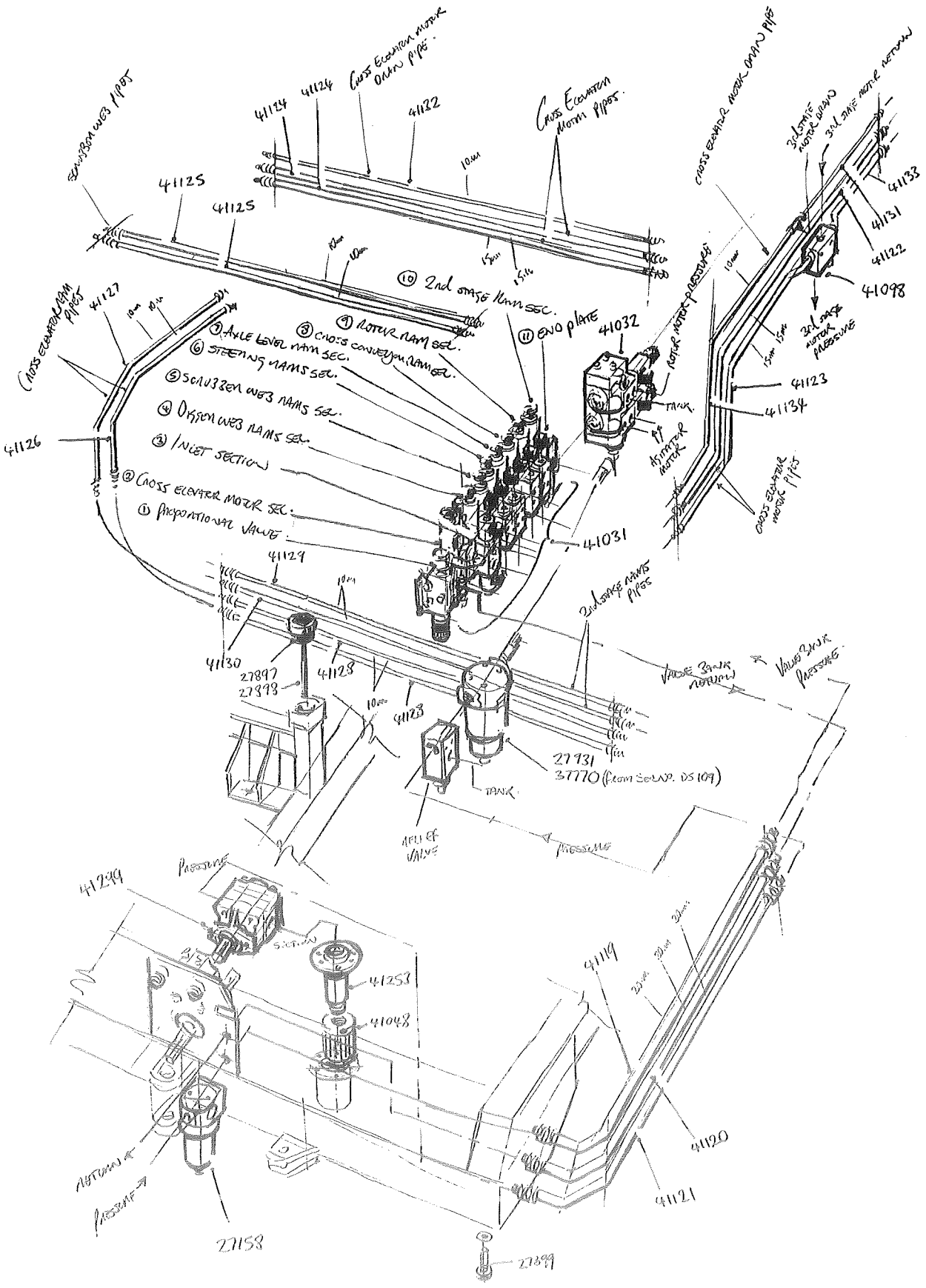
Main Drive and Guards Assembly

Item	Part No.	Description	Qty.	Remarks
1	24320	Intermediate Drive Coupling	1	
2				
3	27788	PTO Drive Coupling	1	
4				
5	33210	Gearbox Clamp	1	
6				
7	41041	Gearbox Assembly	1	See list at end
8	41105	19t Sprocket	1	
9	41117	Tension Roller	3	
10	41118	Tension Roller Spindle	3	
11	41149	Idler Spigot	1	
12	41150	17t Double Sprocket	1	
13	41245	Bearing Housing	1	
14	41246	24t Sprocket	1	
15	41247	17t Sprocket	1	
16	41248	Guard Backplate	1	
17	41249	Drive Guard	1	
18	41250	Drive Chain Runner	1	
19	41251	Guard Mounting	1	
20	41252	Drive Shaft	1	
21	41254	Guard Handle	2	
22	41255	Drive Coupling Guard	3	
23	41276	Valve Bank Guard	1	
24				
25				
26	6008RS	Bearing	2	
27	6208RS	Bearing	2	
28				
29	A11	Plastic Spacer	1	
30	A13	Plastic Spacer	1	
31	A20	Plastic Spacer	1	
32	A30	Plastic Spacer	1	
33				
34	GS411	1/8"BSP Angled Grease Nipple	1	
35	GS412	1/8"BSP Straight Grease Nipple	1	
36				
37	KA15120	Torque Limiter Complete	1	(Bush KA15697)
38	KA15661	28t Sprocket	1	
39	KA15671	Guard Extension	1	
40	KA15691	Gearbox Assembly	1	
41				
42	PS429/82	1"Pitch Drive Chain	2	
43	PS429/111	1"Pitch Drive Chain	1	
44				
45	W0162	External Circlip	1	
	41041	**Gearbox Assembly Consists Of:**		
45	27834/1	Case Half (input side)	1	
46	27834/2	Case Half (output side)	1	
47	27834/6	Protection Cap	1	
48	27834/7	Adaptor	1	
49	27834/8	Bolt	10	
50	27834/9	Nut	10	
51	27834/10	Dowel	2	

Main Drive and Guards Assembly

Item	Part No.	Description	Qty.	Remarks
52	27834/11	Plug	4	
53	27834/12	Washer	4	
54	27834/13	Breather	1	
55	37564/1	Gear	1	
56	37564/2	Pinion	1	
57	41041/1	Shaft	1	
58				
59	6207	Bearing	4	
60	72x40x10	Oil Seal	2	

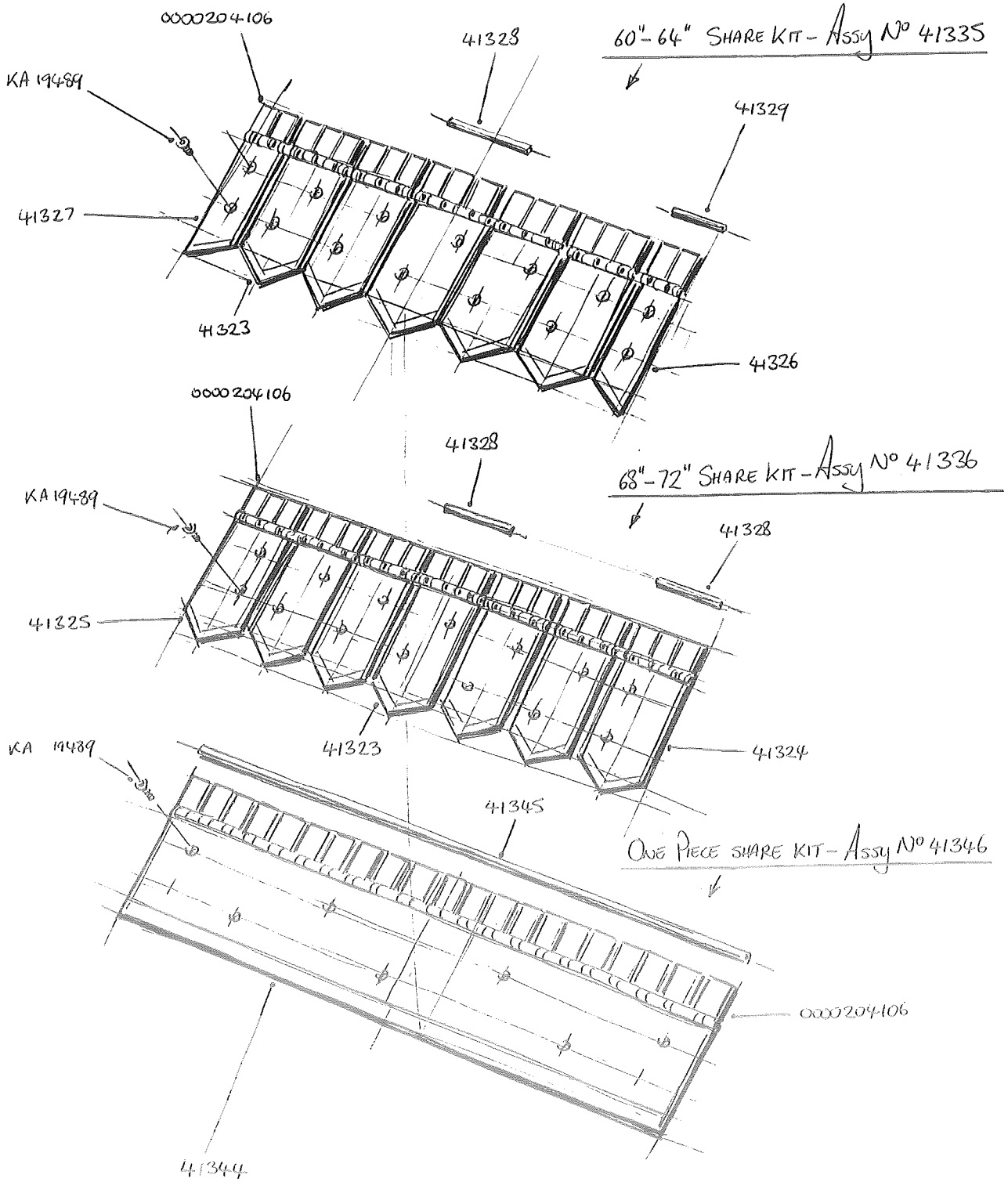
Hydraulic Components Assembly



Hydraulic Components Assembly

Item	Part No.	Description	Qty.	Remarks
1	27158	Pressure Filter	1	(Element 27158/1)
2	27897	Filler/Breather	1	
3	27898	Dipstick	1	
4	27899	Magnetic Drain Plug	1	
5				
6	27931	Pressure Filter	1	Prior to Ser.No.DS109
	37770	Pressure Filter	1	From Ser.No.DS109
7				
8	41031	Ram Service Valve Bank	1	
9	41032	Rotor/Agitator Proportional Valve	1	
10	41048	Suction Strainer	1	
11	41098	Check Valve	1	
12	41119	20mm Steel Pipe Assembly	1	
13	41120	20mm Steel Pipe Assembly	1	
14	41121	20mm Steel Pipe Assembly	1	
15	41122	15mm Steel Pipe Assembly	1	
16	41123	15mm Steel Pipe Assembly	1	
17	41124	15mm Steel Pipe Assembly	2	
18	41125	10mm Steel Pipe Assembly	2	
19	41126	10mm Steel Pipe Assembly	1	
20	41127	10mm Steel Pipe Assembly	1	
21	41128	10mm Steel Pipe Assembly	2	
22	41129	10mm Steel Pipe Assembly	1	
23	41130	10mm Steel Pipe Assembly	1	
24	41131	10mm Steel Pipe Assembly	1	
25	41132	10mm Steel Pipe Assembly	1	
26	41133	15mm Steel Pipe Assembly	1	
27	41134	10mm Steel Pipe Assembly	1	
28	41253	Filter Fitting	1	
29	41299	Hydraulic Pump	1	

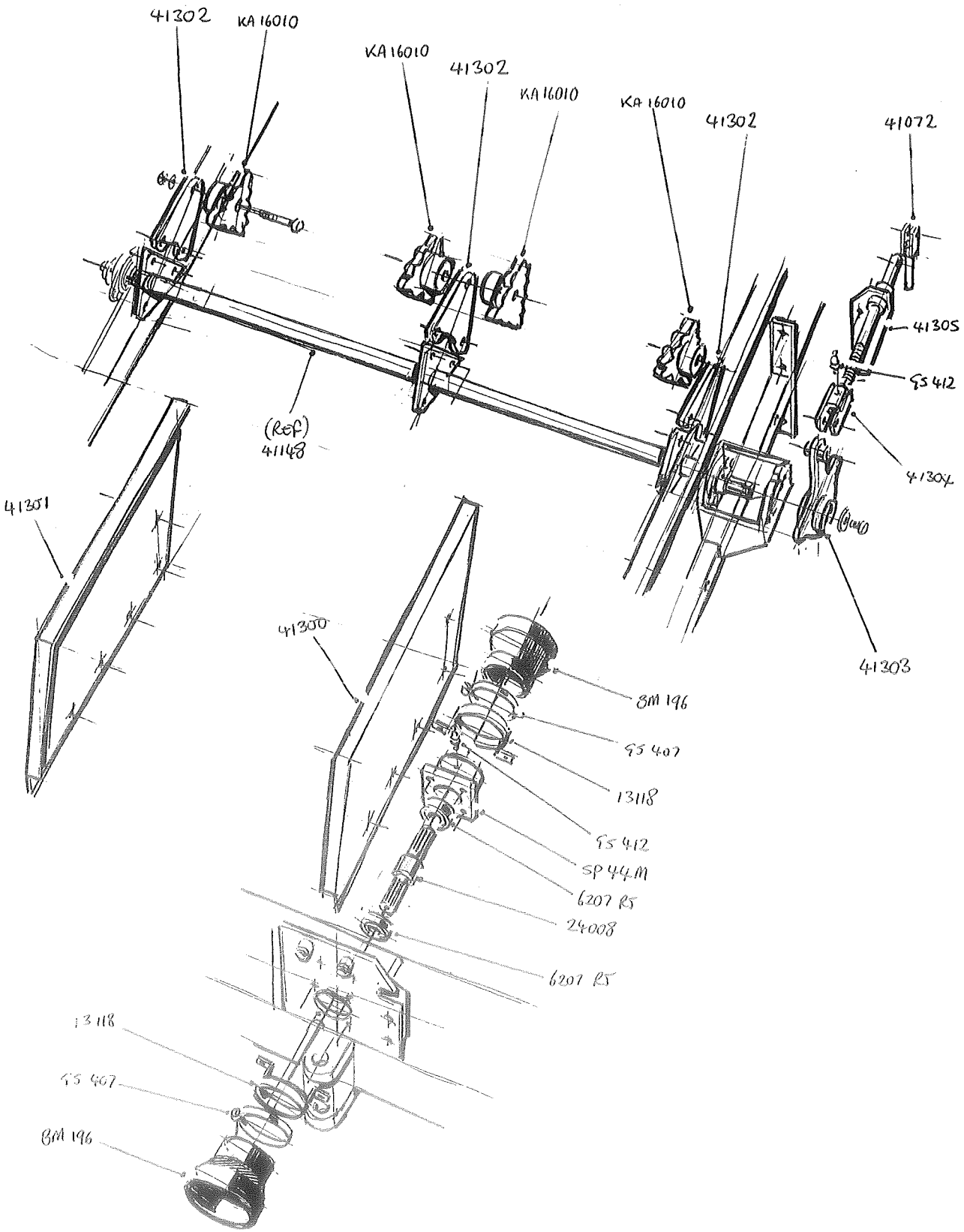
Share Kits


0000204106
41328
60"-64" SHARE KIT - Assy N° 41335
KA 19489
41329
41327
41323
41326
0000204106
41328
68"-72" SHARE KIT - Assy N° 41336
KA 19489
41328
41325
41323
41324
KA 19489
41345
ONE PIECE SHARE KIT - Assy N° 41346
0000204106
41344

Share Kits

Item	Part No.	Description	Qty.	Remarks
	41335	**60"-64"Share Kit Consists Of:**		
1	41323	Wide Share Blade	5	
2	41326	LH Narrow Share Blade	1	
3	41327	RH Narrow Share Blade	1	
4	41328	Tip Plate Pivot Bar (176mm)	5	
5	41329	Tip Plate Pivot Bar (116mm)	2	
6				
7	0000204106	Tip Plate	19	
8				
9	KA19489	Share Bolt	14	
10				
	41336	**68"-72"Share Kit Consists Of:**		
11	41323	Wide Share Blade	5	
12	41324	LH Wide Share Blade	1	
13	41325	RH Wide Share Blade	1	
14	41328	Tip Plate Pivot Bar (176mm)	7	
15				
16	0000204106	Tip Plate	21	
17				
18	KA19489	Share Bolt	14	
19				
	41346	**One Piece Share Kit Consists Of:**		
20	41344	One Piece Share Blade	1	
21	41345	Tip Plate Pivot Bar	1	
22				
23	0000204106	Tip Plate	21	
24				
25	KA19489	Share Bolt	7	
26				

Manual Agitator Kit

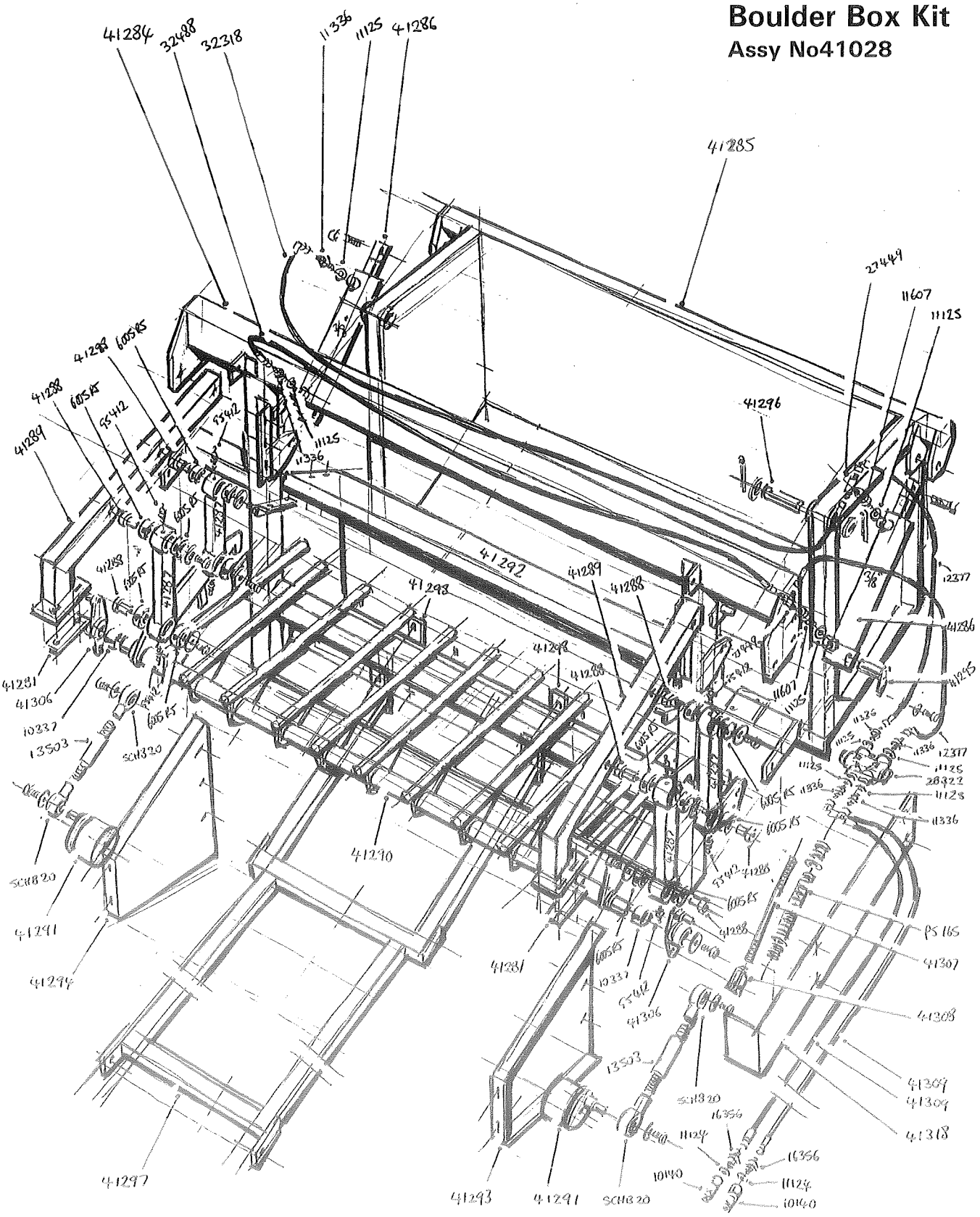


Manual Agitator Kit

Item	Part No.	Description	Qty.	Remarks
1	13118	Guard Support Ring	2	
2				
3	24008	Drive Shaft	1	
4				
5	41072	Adjuster Handle	1	
6	41300	LH Upper Digger Web Panel	1	
7	41301	RH Upper Digger Web Panel	1	
8	41302	Agitator Plate	3	
9	41303	Adjuster Plate	1	
10	41304	Adjuster Clevis	1	
11	41305	Adjuster Screw	1	
12				
13	6207RS	Bearing	2	
14				
15	BM196	Rubber Guard	2	
16				
17	GS407	Jubilee Clip	2	
18	GS412	1/8"BSP Straight Greese Nipple	2	
19				
20	KA16010	Agitator Sprocket	4	
21				
22	SP44M	Bearing Housing	1	

Boulder Box Kit

Assy No41028



Boulder Box Kit

Assy No 41028

Item	Part No.	Description	Qty.	Remarks
1	10140	1/2"BSP Male Q/R Coupling	2	
2	10337	Bush	2	
3				
4	11124	1/2"BSP Dowty Seal	2	
5	11125	3/8"BSP Dowty Seal	8	
6	11336	1/4"x3/8"BSP Male Adaptor	6	
7	11607	1/4"x3/8"BSP F/M Swivel Adaptor	2	
8				
9	12377	Hose Assembly	2	
10				
11	13503	Agitator Rod	2	
12				
13	16356	1/4"x1/2"BSP Male Adaptor	2	
14				
15	27449	1/4"BSP Male Tee	2	
16				
17	28322	3/8"BSP Check Valve	1	
18				
19	32318	Hose Assembly	1	
20	32488	Hose Assembly	1	
21				
22	41281	Clamp Plate	2	
23	41284	Mounting Frame	1	
24	41285	Boulder Box	1	
25	41286	Hydraulic Ram	2	
26	41287	Shaker Arm	4	
27	41288	Shaker Arm Pivot Boss	8	
28	41289	Pivot Frame	2	
29	41290	Shaker Frame	1	
30	41291	Agitator Drive Boss	2	
31	41292	Front Panel	1	
32	41293	LH Side Panel	1	
33	41294	RH Side Panel	1	
34	41295	Ram Pivot Pin	2	
35	41296	Boulder Box Pivot Pin	2	
36	41297	Bottom Support Frame	1	
37	41298	Support Frame Clamp Plate	2	
38	41306	Tensioner Pivot Arm	2	
39	41307	Tensioner Rod	2	
40	41308	Tensioner Clevis	2	
41	41309	Hose Assembly	2	
42	41318	End Guard	1	
43				
44				
45	6005RS	Bearing	16	
46				
47	GS412	1/8"BSP Straight Grease Nipple	8	
48				
49	PS165	Spring	2	
50				
51	SCHB20	Bearing	4	