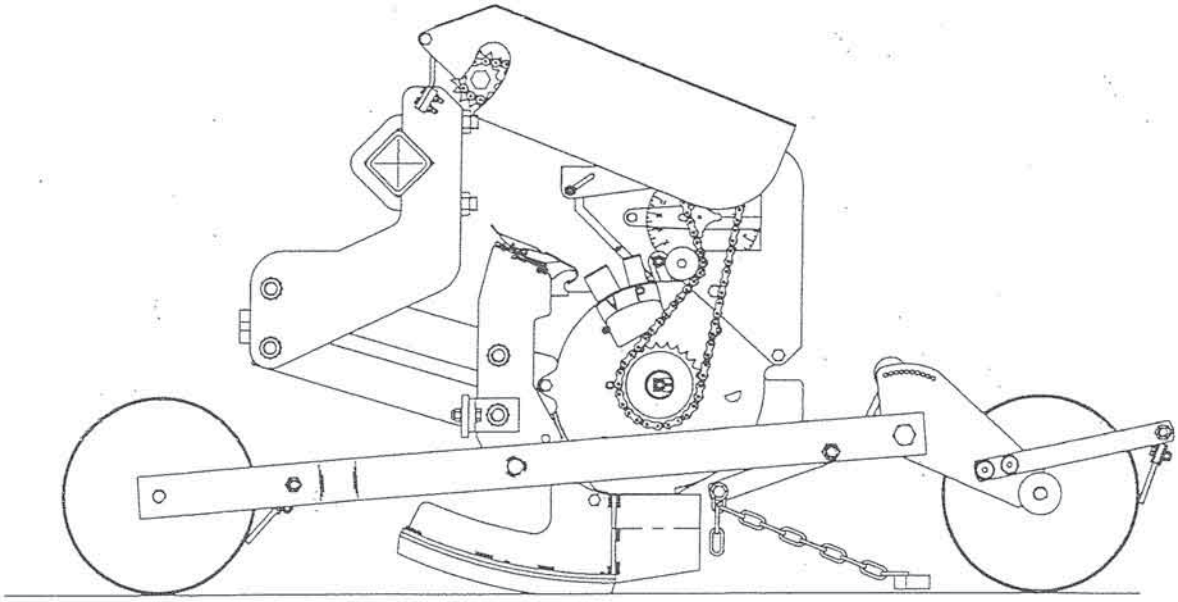


Singulaire 780

Operators & Parts Manual

IMPORTANT NOTICE TO OPERATORS

YOU are the person responsible for the **SAFE** and **SUCCESSFUL** operation of this machine. You **MUST:**

- **READ** this users guide carefully
- **UNDERSTAND** the guide **BEFORE** using the machine
- **FOLLOW** the instructions in the guide about:

  PREPARATION
  OPERATION
  SAFETY
  MAINTENANCE
  REPAIR

- **USE YOUR COMMON SENSE** if this machine does not conform to descriptions in the guide.
- **CHECK** periodically that **THE PERFORMANCE YOU EXPECT IS BEING ACHIEVED.** In adverse conditions you should check performance more frequently.
- **IF EXPECTED PERFORMANCE IS NOT BEING ACHIEVED**, it is your responsibility to **STOP THE MACHINE.** The suppliers of this machine cannot be held responsible.
- **SEEK HELP** on mechanical problems from your Stanhay Webb dealer.

SAFETY

1. **When transporting the machine on public roads, it is the responsibility of the operator to ensure prevailing Road Traffic Regulations are strictly adhered to.**
2. The machine is designed for one-man operation, and to comply with Safety Regulations, it is understood that the operator is in the tractor cab when the machine is in motion.

RECORD DETAILS OF YOUR MACHINE IN THE SPACE PROVIDED BELOW

Model: *Singulaire 780* **Serial Number:**
Date Purchased: **Supplier:**

ALL ENQUIRIES

Stanhay Webb Ltd
Houghton Road, Grantham
Lincs, NG31 6JE
England

Tel: +44(0) 1476 515406
Fax: +44(0) 1476 515407
Email: sales@stanhay.com

Part No: 6417162 Issue 1/04

STANHAY SINGULAIRE 780

INSTRUCTION MANUAL

Contents

FAN ASSEMBLIES

IMPORTANT WARNING

IMPELLER INSPECTION

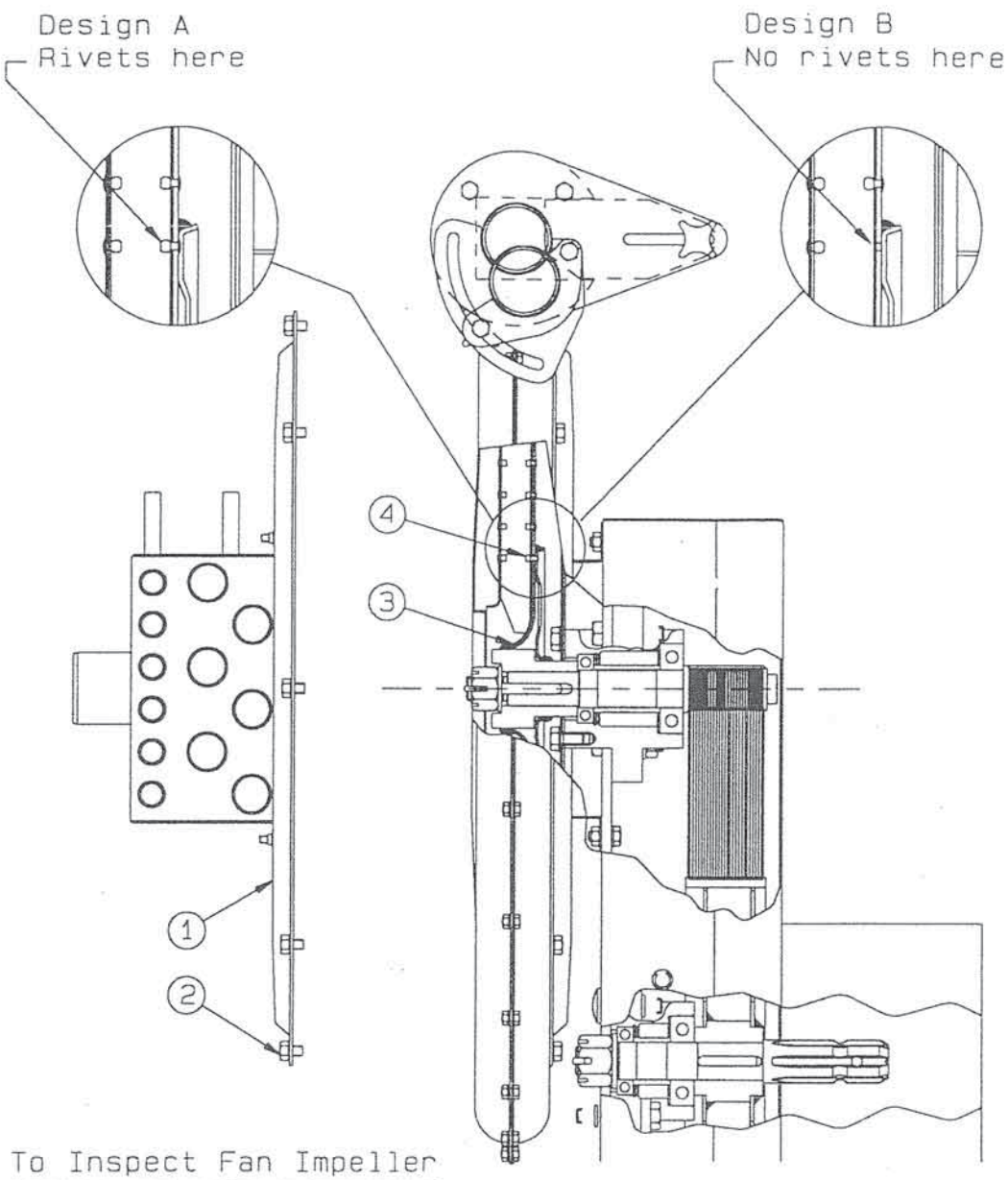
We have been issued with an advisory by the manufacturers of the fans. Please take the following request as a mandatory safety action.

1. All new fans should be inspected after one days usage to check the integrity of the central impeller weld as indicated on the illustration opposite.

2. If there is any evidence of stress cracking or weld failure do not use the fan until a new impeller has been fitted.

3. Inspect the fan on an annual basis thereafter.

From the illustration opposite, you will see that there are two types of impeller, A and B. Please report any failures, stating whether it is type A or B.



To Inspect Fan Impeller

1/. Disconnect PTO drive line from tractor.

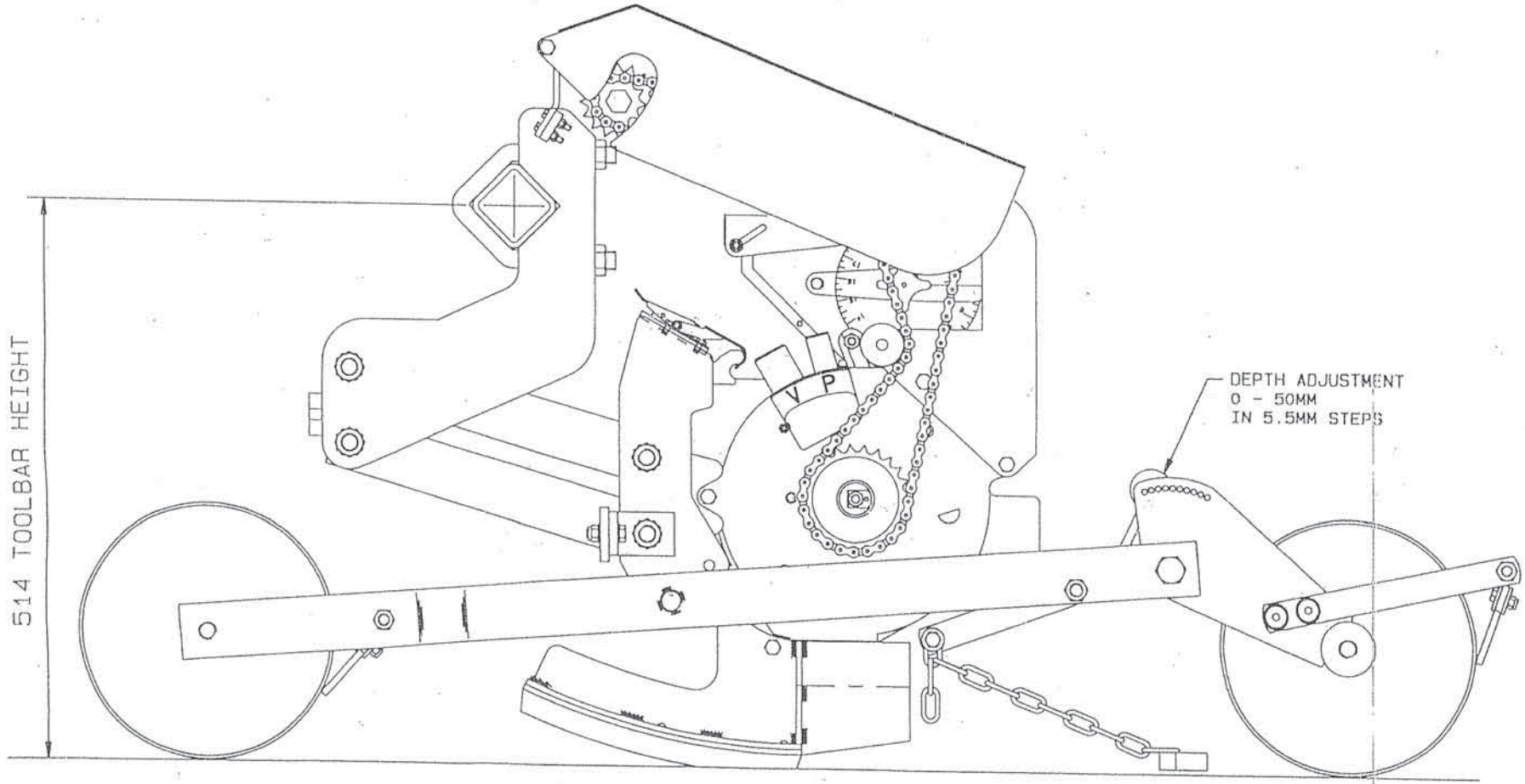
2/. Remove outer cover (1) by removing 8 screws (2)

3/. Carefully clean the curved area marked (3) on the drawing round the entire circumference.

4/. Using a bright light, carefully inspect the clean area (3) for signs of stress or weld cracking.

5/. IF ANY CRACKING IS FOUND, STOP USING THE FAN UNTIL THE IMPELLER IS REPLACED.

6/. Please note whether Design A or B impeller is fitted, by reference to the line of rivets at (4)



780 ROW UNIT
MULTI-LINE
HYLINE (NON-STICK)

SETTING UP FOR WORK

PRELIMINARY CHECKS

1. **Number metering units** Mark identification number on both halves of each metering unit and on each singulator. (**Note**: singulators are factory calibrated to ensure all units perform similarly: they **must** remain fitted to the units as supplied).

2. **Check row units** Raise machine off the ground, then check:

   a) **Wheels**: check all wheels rotate: check adjustment of scrapers and cleaners.
   b) **Pivots**: check nuts and bolts are tight: check chassis will pivot freely.
   c) **Clod deflectors**: check that blade slides freely in track: then pin out of work.

3. **Check P.T.O. shaft** Start P.T.O., raise machine fully. Adjust stop on tractor linkage control lever quadrant. If necessary, shorten P.T.O. shaft to ensure end float at all times.

   Fit the **P.T.O. drive shaft** clutch end to fan unit, cutting to length as required. Try to obtain maximum sliding profile overlap, but without bottoming out, to avoid mechanical damage to the fan unit.
   NOTES: SEE SHAFT MANUFACTURERS SERVICE INSTRUCTIONS.

   a) In its working position, the drive shaft must not be extended by more than half the sliding profile overlap available when fully compressed.
   b) Shorten inner and outer guard tubes equally.
   c) Shorten sliding profiles by same length as guard tubes.
   d) Remove all sharp edges and burrs.
   e) **Grease sliding profiles.**
   f) GUARD CHAINS MUST BE PROPERLY FITTED.
   g) Do not suspend drive shaft from the chain.

   DO NOT RELY ON TRACTOR HYDRAULICS. DO NOT WORK UNDER UN-PROPPED MACHINE.

4. **Check hoses** Check all hoses are correctly and securely fitted:-

   Raise and lower machine: check hoses are not too tight, and do not contact shafts, sprockets or chains. (**Note**: unused hose stubs on the fan must be plugged).

5. **Check hydraulics** Check operation of hydraulic markers or other hydraulic equipment.

6. **Check drives** Check all drive chains are in line and drive shaft locking collars and bearing grub screws are fitted securely.

7. **Check tyre pressures**

Chain Land Drive Wheels:	400-16	1.5 bar (22 psi)
	600-16	3.3 bar (48 psi)
Transport Wheels:		4.0 bar (59 psi)

Notes on disconnecting unit drive This procedure facilitates removal of metering unit from chassis for fitting alternative coulters:

a) Pull long drive chain upwards to compress knee joint spring. With other hand, transfer the R-clip in the end of the spring rod to a hole exposed about 50mm down the rod. Release the drive chain from the knee joint sprocket.

b) To reconnect drive, re-fit drive chain, pull upwards to compress knee joint spring, and re-fit R-clip in normal position.

SINGULAIRE SEED DISCS
CHECKING, FITTING AND CARE

CHECKING SEED DISCS BEFORE USE

1. Discs should not be completely flat but should look slightly curved or warped. Completely flat discs should be discarded.
2. Run a finger round the edge of discs (Fig.1) which should be completely smooth. Roughness indicates "under etching". Discs with seed holes of 0.8mm diameter and above should, if under etched, have the edge smoothed off with a fine abrasive stone. Those with holes smaller than 0.8mm should be discarded.
3. Inspect discs for dents or creases. Damaged discs will not work and should be discarded.
4. Hold discs up to the light and check for blocked holes.

FITTING SEED DISCS

1. Seed discs must always be fitted concave towards the unit air gallery block even if they appear to function either way round. (Fig.2).
   If in doubt the discs can be checked by laying them on a flat surface and pressing them firmly down. (Fig.3). The outside edge of the disc should contact the flat surface all the way round indicating the way the disc should be fitted into the unit. If it does not, turn the disc over and try again.
2. Having established which way round the discs should be fitted mark the outside face of the disc with a felt tip pen to avoid future incorrect fitting as seed discs should never be turned over.
3. Mark the seed discs so they remain with their respective units, and always fit them with the etched part number opposite the "red" dowel on the unit turntable. (Fig.1)

CARE OF SEED DISCS

1. Remember that seed discs are fragile and no attempt should be made to remove a disc from a unit while vacuum is still applied.
2. Discs are not manufactured from stainless material and if not stored in the blue plastic bags supplied, or if left unused in a damp environment, corrosion may occur. Slight surface corrosion is not detrimental to the performance of the disc and no attempt should be made to clean off corrosion as this may damage the disc and render it unusable.
3. Under no circumstances should oil or other corrosion inhibitors be applied to the surface of seed discs as residue will impair performance particularly with small seeds.

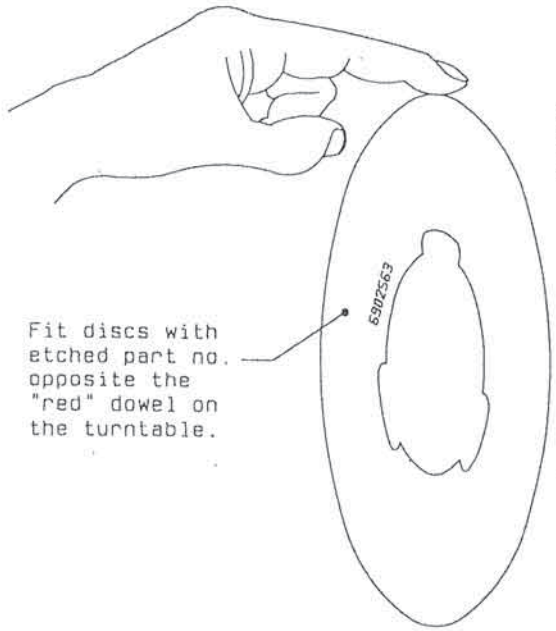


Fig.1
Run finger round edge of disc

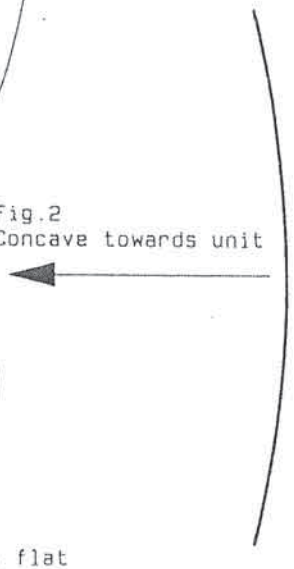


Fig.2
Concave towards unit

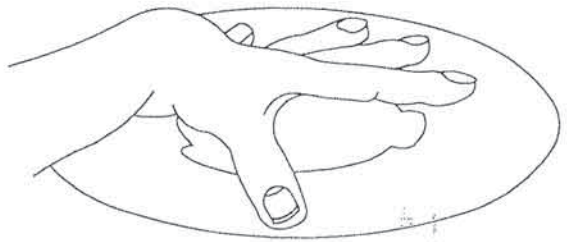


Fig.3
Disc should contact flat surface all round outside edge when pressed firmly in centre as shown

PREPARATION FOR WORK - IN THE YARD

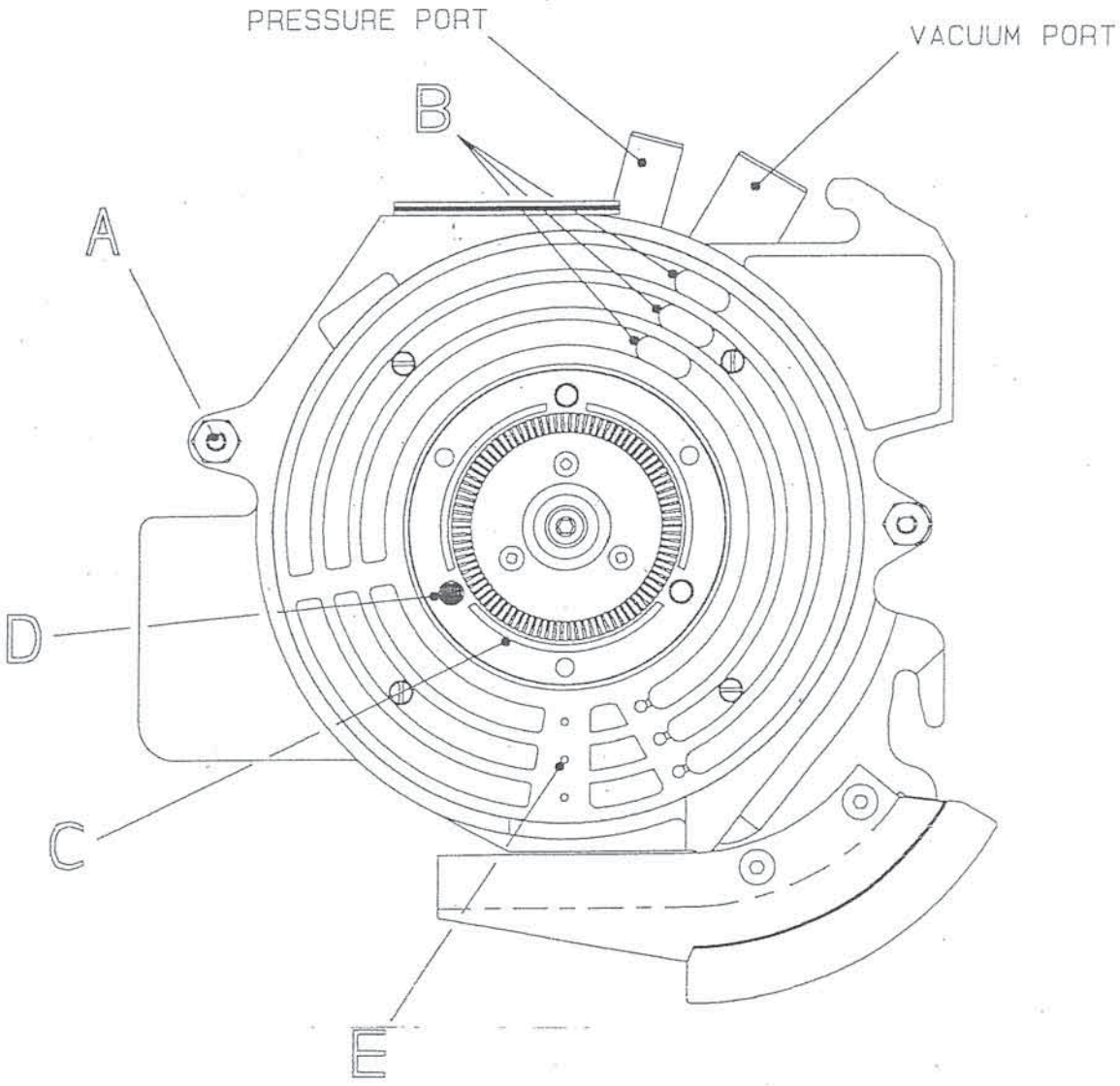
1. Check coulters Check required coulters are fitted correctly. For detailed instructions, see Page 10 (COULTER FITTING INSTRUCTIONS). Clip each metering unit into its unit carrier.

2. Check row widths Lower machine to ground, draw forward and check row widths at coulter tips.

3. Clean metering units Empty seed from hopper, using removable drain plug. Remove hopper side of metering units and ensure the unit is absolutely clean. Use soft brush to clean vacuum galleries B; dry cloth to clean face of gallery block; air line to blow dust and seed dressing from inaccessible galleries. (Note: remove pressure hose from metering unit to allow dust to escape, and direct air line behind turntable C and through hole cleaning jets E.)

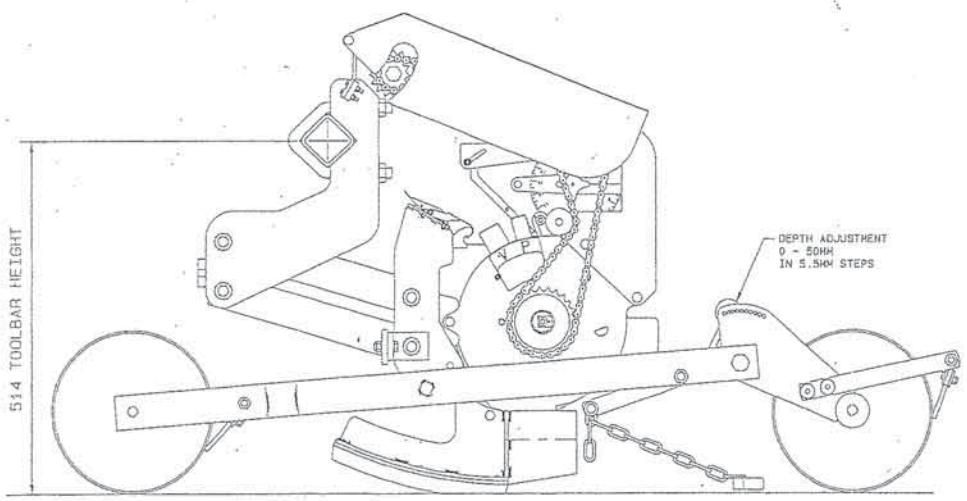
   IMPORTANT: METERING UNITS SHOULD BE CLEANED AT LEAST TWICE A DAY AND AFTER WORK.

(Note: avoid using dirty or heavily dressed seed, as the unit will not function correctly with such seed: if its use is unavoidable, the unit must be cleaned frequently.)



4. Set Drilling Depth

Coulter Depth: -set unit carriers to give a sowing depth slightly shallower than the required nominal drilling depth. (Note: -field adjustment of sowing depth is most easily achieved by progressively adjusting coulters downwards until until the desired sowing depth is achieved).



780 ROW UNIT

EMPTY SEED FROM HOPPERS BEFORE TRANSPORTING TO FIELD

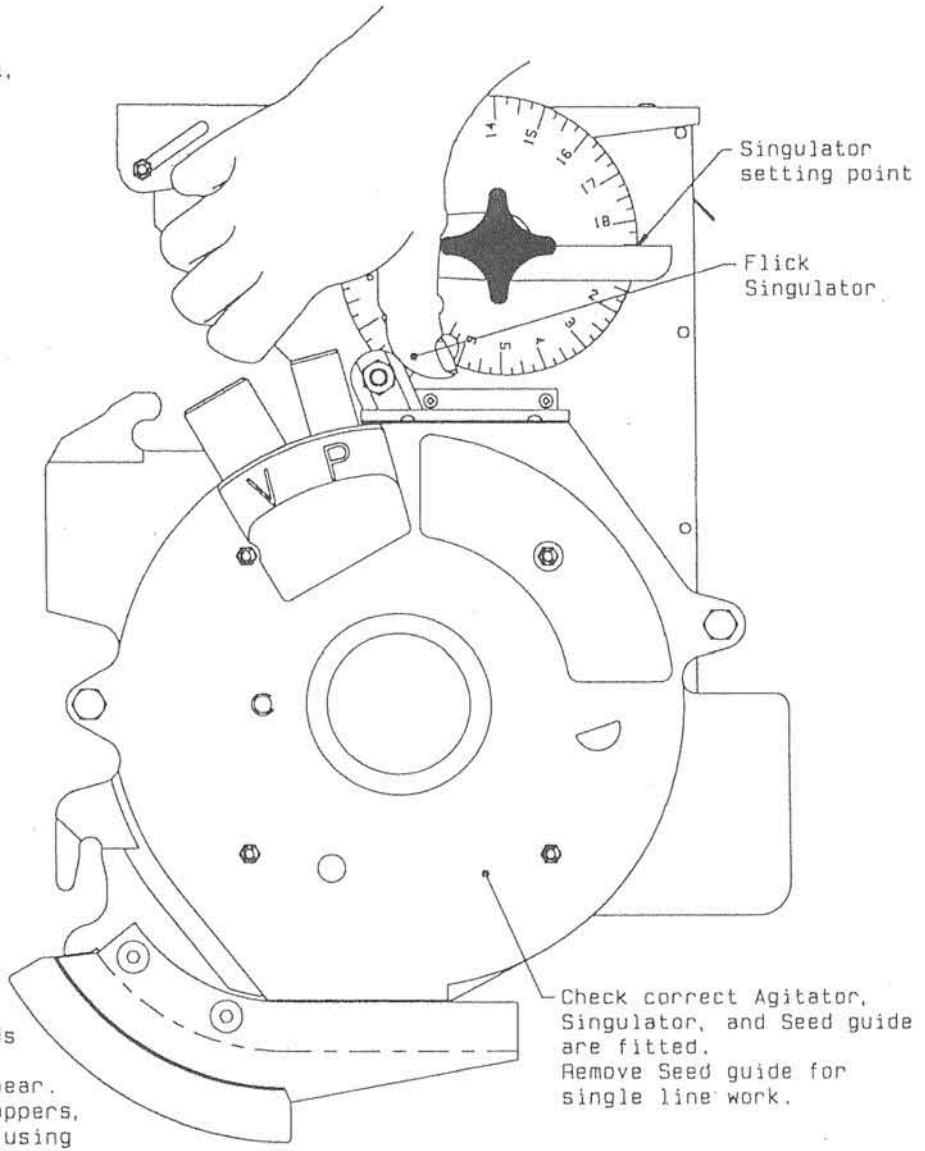
1. Raise machine on tractor three point linkage until main drive wheels are clear of ground.
2. Refer to seed setting guide and seed spacing charts, to determine seed disc and gear setting required.
3. Set landwheel drive gearbox in required gear, rotate landwheel, and check drive chain is tight and in line.
4. Remove hopper halves of units, retained by two conical nuts, making sure they are marked in such a way they will be paired with the same metering units when replaced. Normally with row number.
5. Refer to seed setting guide and check the units are set up to handle the seed to be metered.
6. Select, check and fit seed discs - See separate instruction.
7. Start tractor, engage P.T.O., and open throttle until the vacuum gauge reads 30mb. See separate instruction.
8. Rotate the drive landwheel(s) and check that the seed discs are being sucked firmly to the plastic air gallery blocks. The discs will vibrate if air is leaking, and this will be clearly audible.
   If discs are leaking air, pull off the vacuum hose, turn the offending disc(s) over, replace hose, and check again.

NOTE: A seed disc that does not appear to work should be tried on a unit that IS working, to establish that the problem is with the seed disc, and not the offending unit. Do not be tempted to increase vacuum to get a disc to seal, as field problems will inevitably result. Mark seed discs so they remain with their respective units.

9. Refit unit hopper halves to their respective units, and tighten the conical nuts with the tool supplied.
10. Flick singulator arms away from setting cams a few times, to ensure singulators are seated squarely and firmly against face of seed discs.
11. Choose a convenient unit to calibrate, where the seed disc is easily visible. Set the singulator on no.16, check the seed emptying plug is fitted, and pour seed into the hopper.
12. Turn the calibration handle at about the correct speed, indicated in the seed spacing charts, and gradually increase the vacuum level using the tractor throttle, until at least one seed is present on each hole in the seed disc.

NOTE: With some seeds the odd miss is unavoidable so resist the temptation to increase vacuum unnecessarily. NOTE VACUUM LEVEL.

13. Set air pressure to 20% of vacuum or 10mb, whichever higher.
14. While rotating calibration handle, adjust singulator downwards until NO seeds are present on the seed disc, and then, very gradually readjust to a higher setting until single seeds appear.
15. Adjust all singulators to the same setting, pour seed into hoppers, and turn calibration handle. If vacuum level rises, readjust using tractor throttle. NOTE ENGINE R.P.M. required for work. Check all units are performing satisfactorily, adjusting if necessary.



UNIT SETTING AND CALIBRATION

FIELD OPERATION

1. Tractor linkage control and coulters

   a) ALWAYS lower and raise machine on the move to prevent coulter blockage.

   b) ALWAYS raise machine and check coulters for blockage if you have stopped for any reason whilst drilling.

   c) ALWAYS move tractor linkage control lever to 'fully down' position when going into work to ensure adequate land wheel drive.

   d) ALWAYS raise machine fully when turning at headlands.

2. Tractor forward speed

   a) ALWAYS operate at the recommended forward speed.

3. Hoppers and transport

   a) ALWAYS fill hoppers with seed to the same level, and check periodically that seed levels go down evenly.

   b) ALWAYS keep hopper lids firmly closed except when filling.

   c) ALWAYS empty hoppers of seed before transporting machine or driving long distances: for short distances, keep P.T.O. engaged to ensure discs remain seated against vacuum galleries.

4. Gauges and seed discs

   a) REGULARLY check vacuum and pressure readings during work: immediately investigate cause of any unexpected change of readings, or of any unusual noise from the fan. A loud whistling noise from the metering unit indicates complete loss of vacuum. (Note: the tractor engine can be allowed to idle when the tractor is turning or is stationary at headlands: only during work must the vacuum and pressure be maintained.)

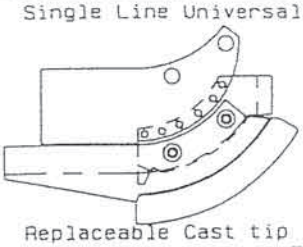
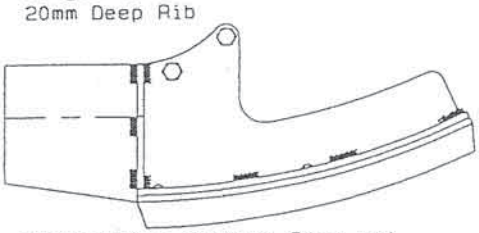
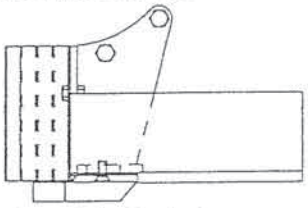
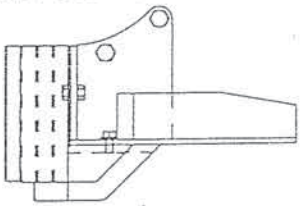
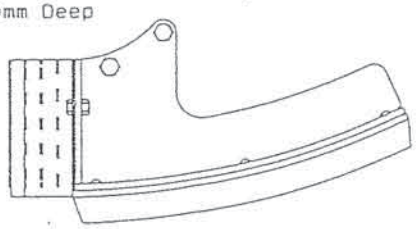
   b) REGULARLY check unit performance. To check seed disc pick up, raise machine on the move at normal drilling speed, maintain vacuum, stop and inspect seed discs. (Note: misses usually indicate blocked holes in disc, or unit requires cleaning.)

   c) ALWAYS wipe seed off the disc in the area of the singulator before replacing hopper side of metering unit, to avoid trapping seed between the singulator and the disc.

   d) ALWAYS clean units at least twice a day and after work do not leave seed, seed dressing or dust in the unit overnight: if the machine is to be out of use for more than ONE DAY, the seed discs should be removed and stored in a dry place.

NOTES: CORRECT OPERATION IS THE RESPONSIBILITY OF THE OPERATOR WHO SHOULD CHECK PERIODICALLY THAT THE DESIRED SEEDING RATE, PLANTING DEPTH AND MACHINE PERFORMANCE ARE BEING ACHIEVED.

COULTERS FOR SINGULAIRE 780

SINGLE LINE	Recommended for: -	Description	Part No.
Single Line Universal  Also Required: - B003510 Hyline Adaptor Replaceable Cast tip or Replaceable Ceramic Tip or Replaceable TEK Tip Stainless Steel Sides	General Purpose Work	Cast Tip	B002617
	Sticky and/or abrasive soils Hard Wearing	Ceramic Tip	B002550
	Extra Hard Wearing	TEK Tip	B003407
Single Line Non-Stick 20mm Deep Rib  Replaceable Polymer Base and Replaceable Polymer Rib or Replaceable Cast Tip. 6mm Packer - 1 or 2 may be fitted for planting deeper than 20mm.	Sticky and/or trashy non-abrasive soils Watch for wear if the soil is slightly abrasive	Polymer Rib	7703504
	Sticky and/or trashy abrasive soils	Cast Rib	7703505
MUTI-LINE			
Hyline Shallow Fin  Replaceable Cast Base	Fine, cloddy or stoney seedbeds. (shallow fin shoes can handle stones and clods without blocking)	65mm x 2 line 65mm x 3 line 75mm x 2 line 75mm x 3 line 100mm x 3 line	7703271 7703272 7703384 7703387 7703214
Hyline Deep Fin  Replaceable Cast Base	Fine clean seedbeds. (deep fin shoes produce produce minimum soil disturbance)	75mm x 2 line 75mm x 3 line 100mm x 2 line 100mm x 3 line 125mm x 2 line 125mm x 3 line 150mm x 3 line	7703263 7703264 7703267 7703213 7703381 7703382 7703215
Hyline Non-Stick 20mm Deep  Replaceable Polymer Base and Replaceable Polymer Rib or Replaceable Cast Rib. 6mm Packer - 1 or 2 may be fitted for planting deeper than 20mm.	Sticky and/or trashy non-abrasive soils. Watch for wear if the soil is slightly abrasive	Polymer Tip 65mmm x 2 line 65mm x 3 line 75mm x 2 line 75mm x 3 line 100mm x 2 line 100mm x 3 line 125mm x 2 line 125mm x 3 line 150mm x 2 line 150mm x 3 line	7703309 7703308 7703310 7703311 7703312 7703313 7703377 7703379 7703314 7703315
	Sticky and/or trashy abrasive soils.	Cast Tip 65mmm x 2 line 65mm x 3 line 75mm x 2 line 75mm x 3 line 100mm x 2 line 100mm x 3 line 125mm x 2 line 125mm x 3 line 150mm x 2 line 150mm x 3 line	7703514 7703515 7703516 7703517 7703518 7703519 7703520 7703521 7703522 7703523

COULTER FITTING INSTRUCTIONS

1. Fitting 2 or 3 Line Coulter and Seed Guide

   a) Fit coulter over the bottom of the unit body casting, align the holes A and retain with the fasteners supplied.

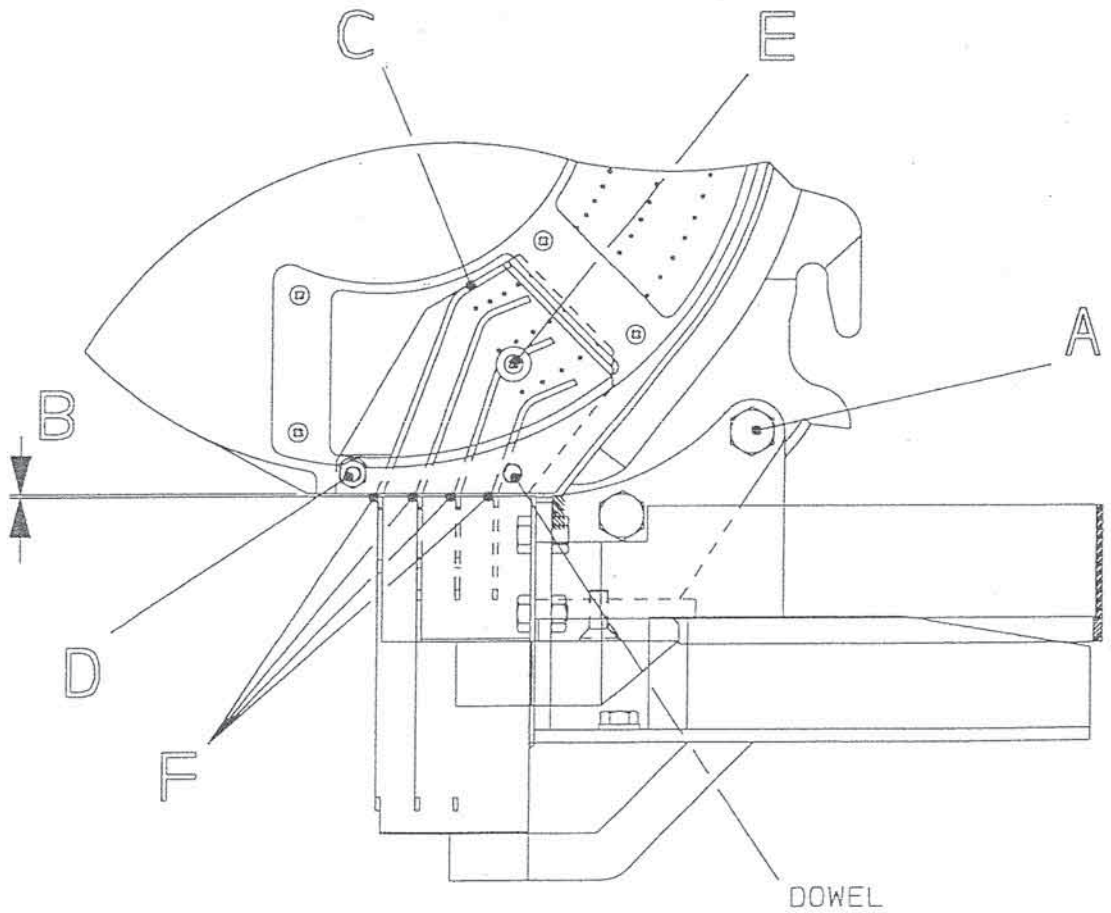
   b) Pivot the rear of the coulter upwards to achieve the minimum gap B between the underside of the body casting and the top of the seed chutes at the rear of the coulter, 1mm maximum.

   c) Holding the coulter in position, tighten the fasteners until the coulter is firmly clamped in place.

   d) Fit seed guide C to the hopper side of the metering unit locating the dowel on the guide through the hole in the casting. Attach using the screw and self locking nut D with the nut on the outside, as shown.

   Finally, fit the self tapping screw E through the hole in the perspex window into the boss moulded onto the guide. The seed guide is fragile and will be damaged if the fasteners are over-tightened.

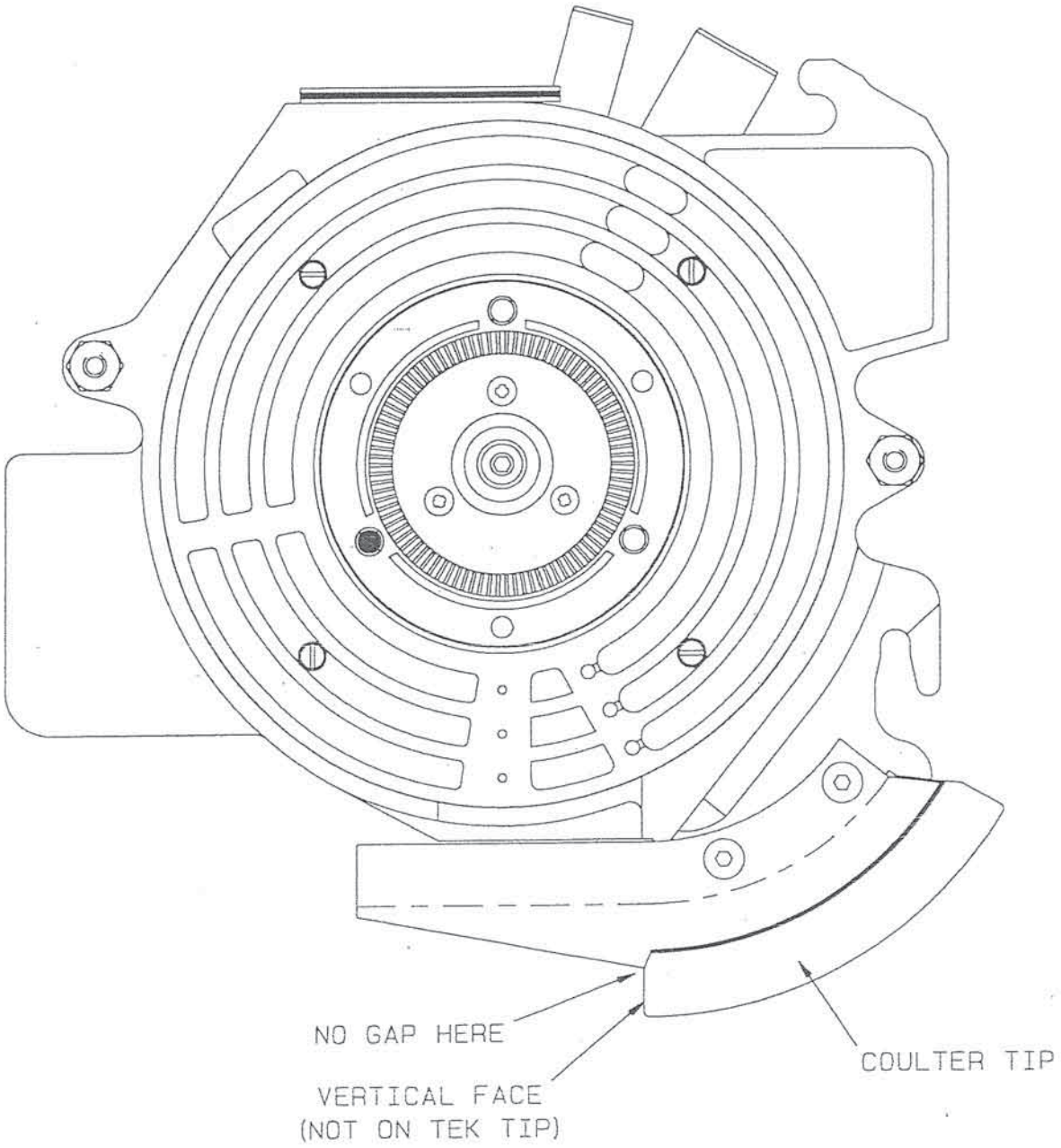
(Note: when the hopper side is fitted to the body, check that the bottom of the seed guides F line up with their respective coulter seed chutes.)

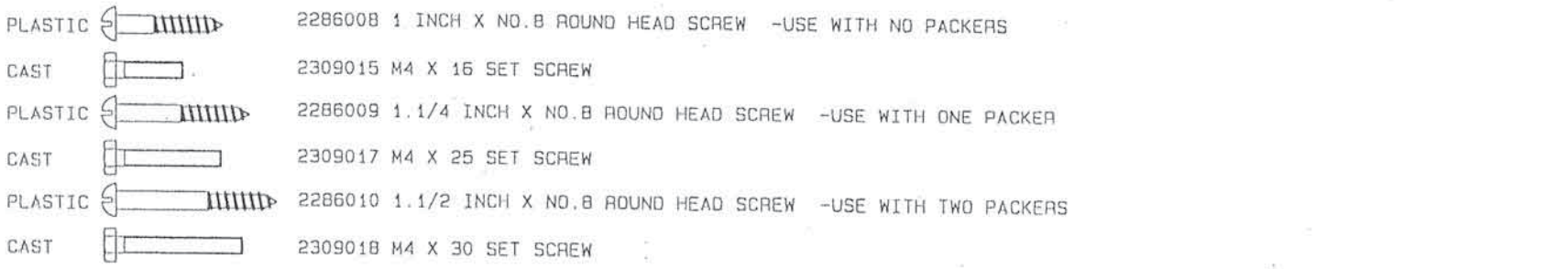


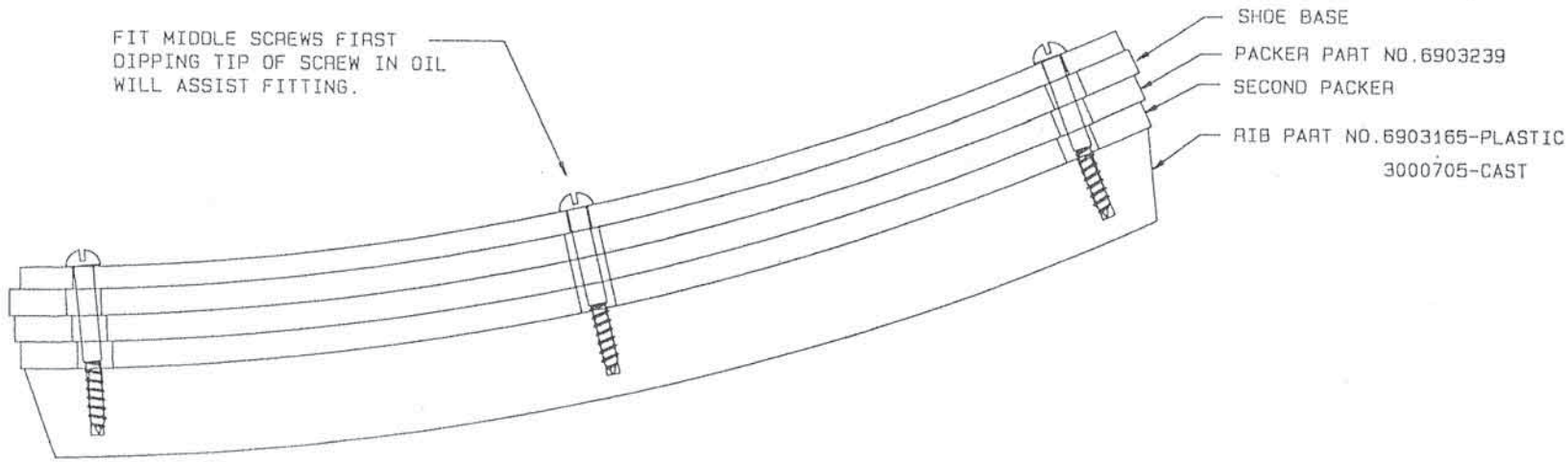
2. Fitting Single Line Coulter

a) The coulter tip is clamped to the bottom of the unit body casting between stainless steel clamping plates, by two pairs of socket head screws. When fitting, ensure that the vertical rear face of the coulter tip locates firmly against the cut-outs in the clamping plates as shown, to prevent soil entering the seed outlet area.

b) When changing from 2 or 3 line coulter to single line, remove the seed guide from the hopper side of the metering unit to allow seed to fall centrally to the furrow bottom.







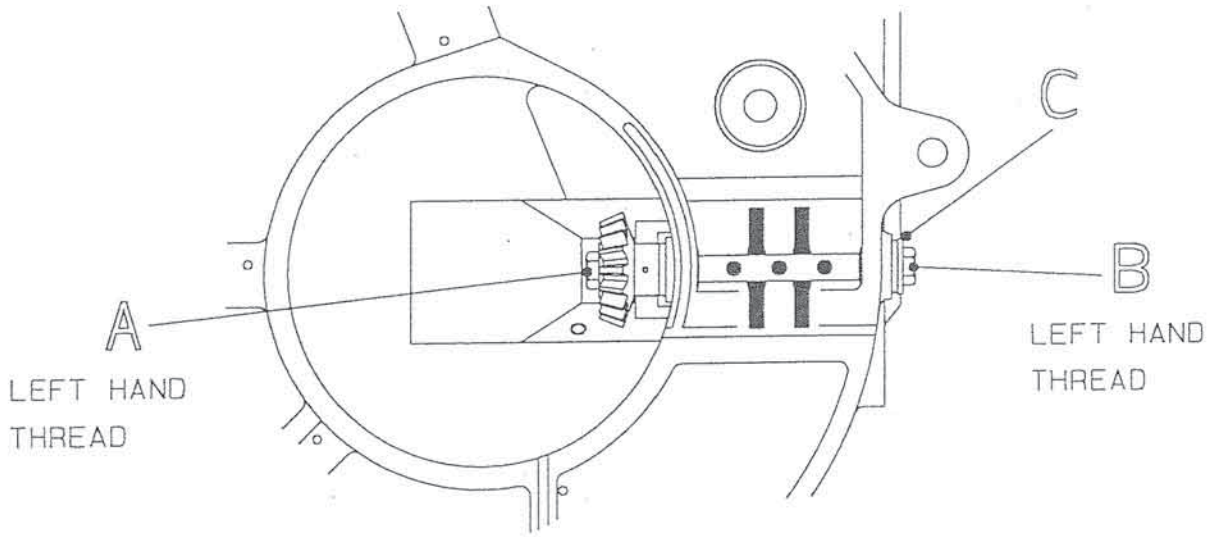
FITTING RIB PACKERS TO
NON-STICK SKI SHOES

PREPARING METERING UNITS

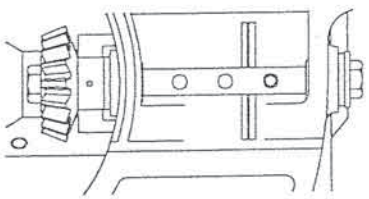
1. **Fitting replacement Agitator** Most seed types require the STANDARD AGITATOR with various numbers of rubber fingers, except for some pelletted (full coated) seed, and raw parsnip. See Seed Setting Guides. To prepare a PELLETTED AGITATOR, snip off the fingers of a standard agitator to 3mm length. The PARSNIP AGITATOR has two roll pins in place of the rubber fingers. To fit, follow this procedure:

   a) Holding the agitator spindle with a pair of grips, unscrew gear assembly A (left hand thread) and bolt B (left hand thread). The complete agitator may then be removed.

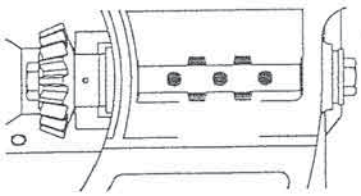
   b) When re-assembled the agitator should turn freely. If more end float is required, washer C may be removed.



STANDARD AGITATOR



PARSNIP AGITATOR



PELLET AGITATOR

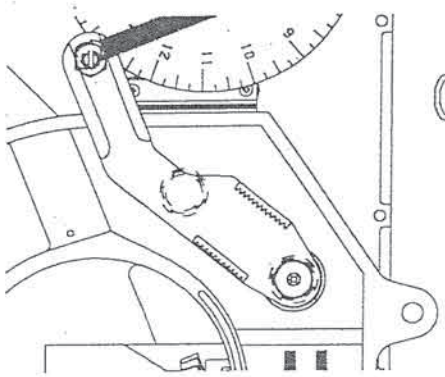
Fitting replacement Singulator Arm The STANDARD SINGULATOR is suitable for most one, two and three line drilling. To handle some larger seeds, the alternative SINGLE LINE SINGULATOR may be required. Refer to SEED SETTING GUIDE. To change Singulators, follow this procedure:

a) Remove handwheel B and lift off setting arm C and setting cam D. Remove retaining cap A, if fitted.

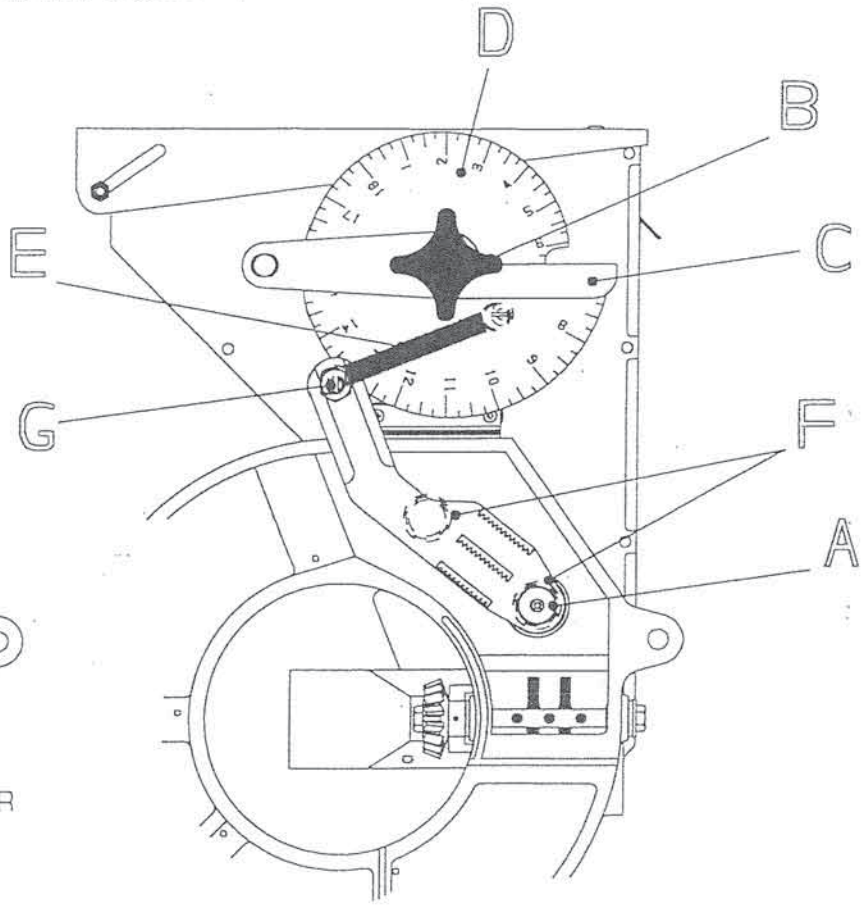
b) Lift off Singulator, and unhook spring E.

c) When re-assembling, ensure that springs F are located over the bosses on the underside of the Singulator.

(Note: Singulators are factory calibrated to ensure all units perform similarly: they **must** remain fitted to the units as supplied. When fitting new Singulators, the units must be re-calibrated - see instructions below.)



SINGLE LINE SINGULATOR



STANDARD SINGULATOR

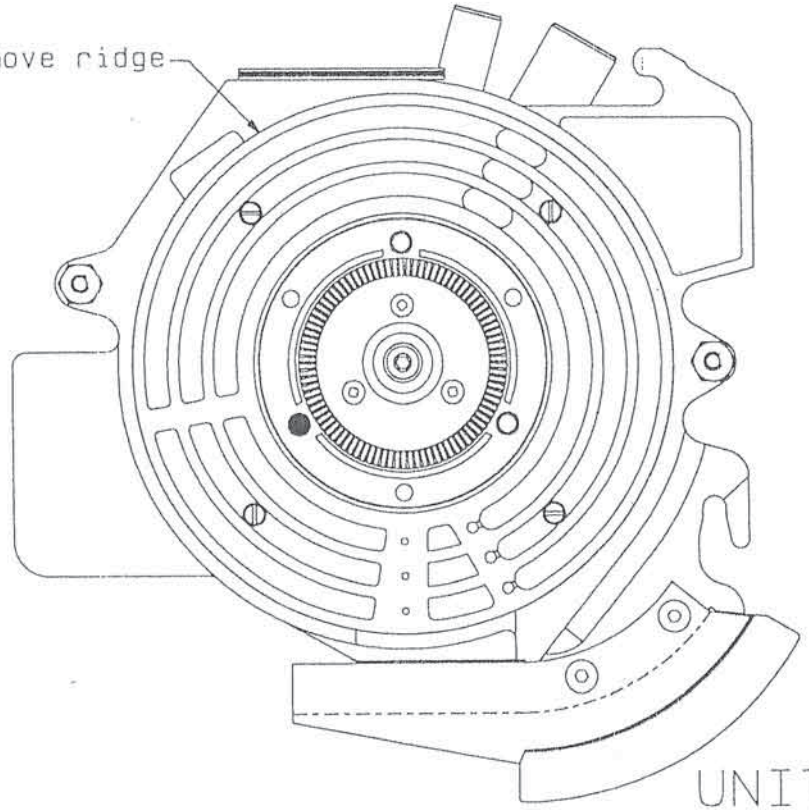
Calibrating singulator assemblies. It is the responsibility of the operator to ensure that all units are calibrated similarly. Machine calibration must be checked and adjusted when the machine is new, periodically thereafter, and when fitting new or alternative singulators. Follow this procedure:

a) Select your most difficult seed (for example raw carrot, raw chicory, raw lettuce).

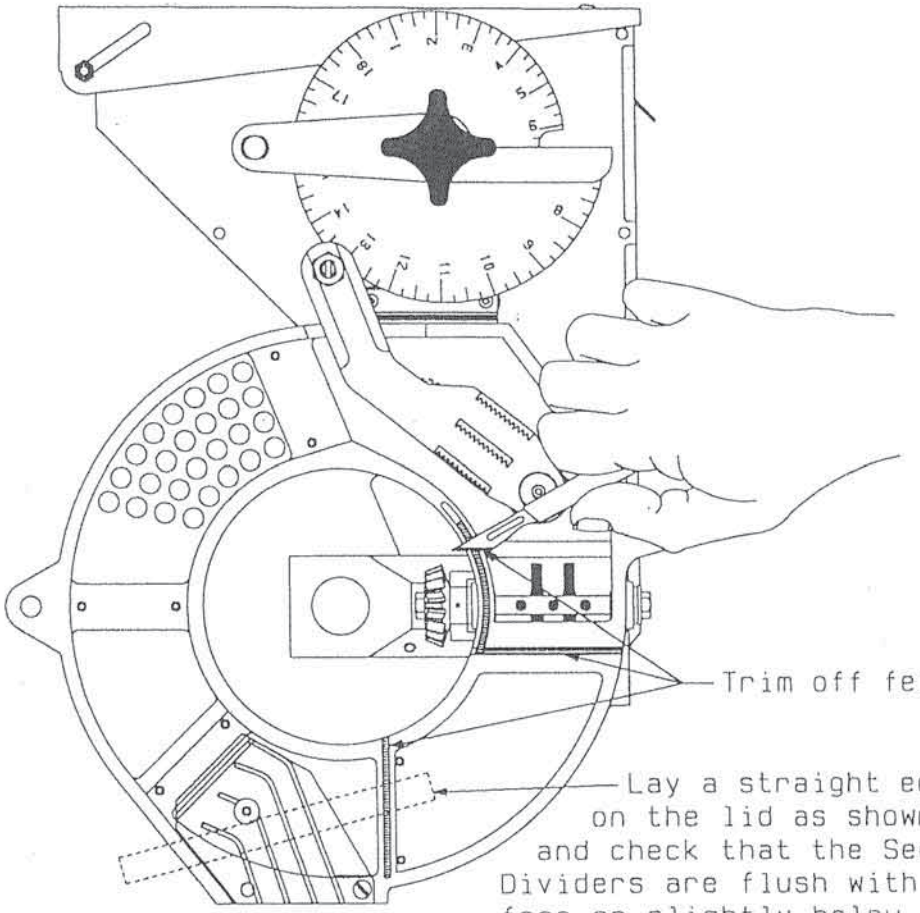
b) Clamp the singulator cam on all units to setting 6 and leave them at this setting throughout the calibration procedure. Then calibrate each unit **individually** by turning the "eccentric boss" G until all units deliver the same. (To adjust the "eccentric boss", loosen the lock nut nut until the boss can just be turned by a large screwdriver, then adjust by turning anti-clockwise. When satisfied, hold the boss in position using the screw-driver, and re-tighten the lock nut.

c) Check in work that the seed usage from all units is similar. If seed usage from any unit is slightly different from the remainder, adjust the singulator until all units perform similarly.

Because the Seed Disc is slightly smaller in diameter than the Vacuum Gallery Block, as the block wears, a small ridge will develop round the outside.
Because this ridge may grip the outside edge of the Seed Disc and make the unit difficult to drive, it is recommended it be removed with a sharp knife or file, taking care not to damage the face of the Gallery Block.
The block may be removed if desired, and if replaced in the same unit, re-sealing is unnecessary.



Most premature Seed Disc wear is caused by the disc being clamped against the Vacuum Gallery Block by the felt seals in the unit lid, or by the Seed Dividers. Before fitting a Seed Disc, always check that the felt seals are flush with the face of the unit lid casting. If not, trim flush, using a scalpel or sharp utility knife as shown below.



UNIT MAINTENANCE

SEED DISCS

Choosing the correct Seed Disc Choosing the correct disc is vital to achieve the desired performance. Follow these guidelines.

a) Find the seed you wish to plant in the SEED SETTING GUIDE. Select the number of lines you will be planting (1, 2 or 3) and note the recommended seed disc. (**Note**: the first digit - for example 0.6 - is the diameter of each hole in mm: the second digit - for example 96 - is the number of holes in each line: a single line disc of this specification is designated **0.6 x 96 x 1 line**, a two line disc **0.6 x 96 x 2 line**, and a three line disc **0.6 x 96 x 3 line**.)

b) You may be given a choice of seed discs (for example, 96 or 48 holes). If so, for faster forward speeds, choose the greater number of holes, but for best accuracy of seed spacing when multi-line drilling, choose the lesser number of holes.

c) Two disc speeds are shown: slow (12 rpm), and fast (25 rpm). As a general rule, the slower the disc speed the better the seed spacing, particularly with multi-line drilling. The special instructions section on the SEED SETTING GUIDE indicates where alternative instructions apply.

d) Having selected a seed disc, refer to the SEED SPACING CHART for the appropriate number of holes and the unit drive shaft sprocket you will be using (11 tooth or 16 tooth). Then check that the disc speed you have chosen (rpm seed disc) gives an acceptable forward speed at the seed spacing you require.

e) Standard seed discs are shown in the SEED SETTING GUIDE. Other discs are available to special order. These include 3-line discs for carrot and onion giving 75% seeding rate in the central line (for example 0.6 x 144/144/108; 0.8 x 96/96/72; etc.) For full list, see page 1 of Parts List Section.

SETTING SEED SPACING

1. **Choose settings** Select the required gear setting from the appropriate SEED SPACING CHART. The setting indicates both the lower 'drive sprocket' and the upper 'sliding sprocket' that are required.

   There are 3 interchangeable '**sliding sprockets**' in the gearbox:

   a) **17T : 24T** Standard fitment: provides the most popular range of spacings.

   b) **13T : 30T** Provides spacings both above and below the standard range.

   c) **11T** For use when very close spacings are required.

   (Note: **16T shaft sprockets** give closer spacings than **11T shaft sprockets**.)

2. **Set seed spacing** Follow this procedure:

   a) Loosen handle A, pivot layshaft downwards to slacken drive chain.

   b) Check required 'sliding sprocket' is fitted: if not, follow procedure * below.

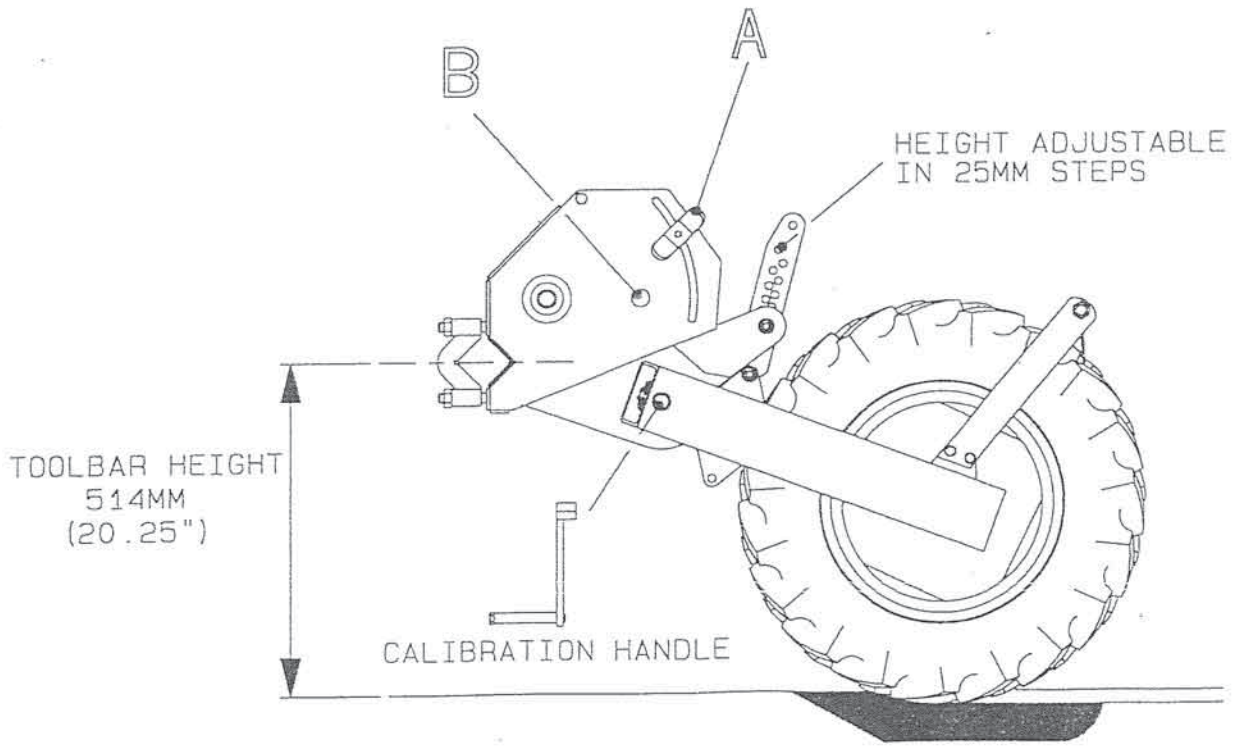
   c) Fit drive chain over appropriate 'drive sprocket' and 'sliding sprocket', check that the chain is in line, and re-tension.

   d) Turn landwheel by hand and check chain tension and drive.

   * **To change sliding sprocket**

   a) Pivot layshaft until it is in line with the holes in the gearcase B.

   b) Gently tap layshaft through the hole towards the wheel area, change 'sliding sprockets' as required, and tap layshaft back into position.



SETTING AIR SUPPLY

1. Choose settings Identify the required **vacuum** and **pressure** settings, and the recommended **forward** speed. Check recommended seed discs are fitted in all units.

2. Check for leaks Check all hoses are securely connected. Check unused vacuum and pressure ports on fan are securely plugged.

3. Set valves Follow this procedure:

   a) Open fully valves 4 and 5 on fan, start tractor, engage P.T.O. on minimum engine speed.

   b) Increase tractor engine speed until required vacuum reading shows on vacuum gauge.

   SAFETY INSTRUCTION. NEVER EXCEED 540 RPM P.T.O. SPEED.
   (**Note**: if the gauge does not respond immediately to the increase in engine speed, or the belt screams, the fan drive belt is probably slack.

   c) Progressively close valve 4 until the required pressure reading shows on pressure gauge. Increase engine speed if necessary to maintain vacuum level. If pressure reading is too high even with valve 4 fully open, remove plugs from unused pressure ports.

   d) Pour seed into hoppers, turn land drive wheel(s) in forward direction to prime the discs with seed, and readjust vacuum and pressure if necessary (see notes below).

Notes on Setting Valves

a) Increasing tractor engine speed increases both vacuum and pressure.

b) Closing valve 4 increases pressure and reduces vacuum.

c) Valve 5 is normally left fully open: closing it reduces both vacuum and pressure.

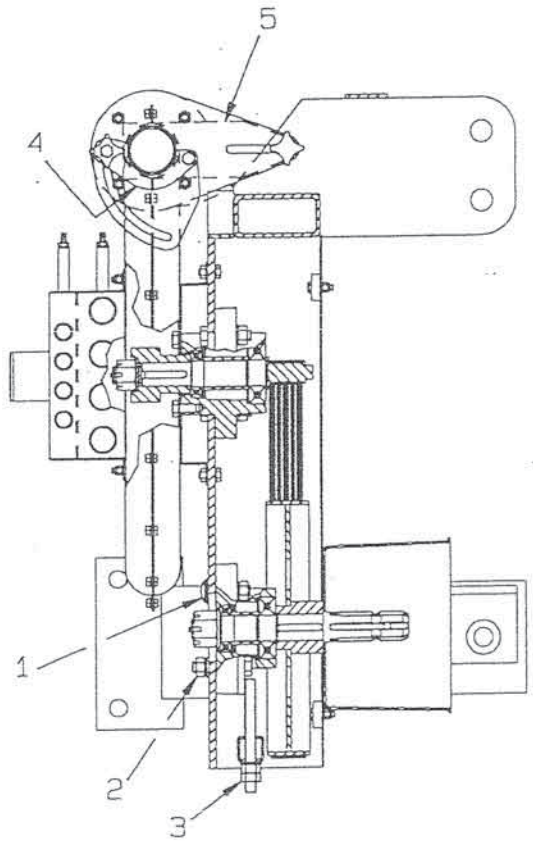
BELT TENSION

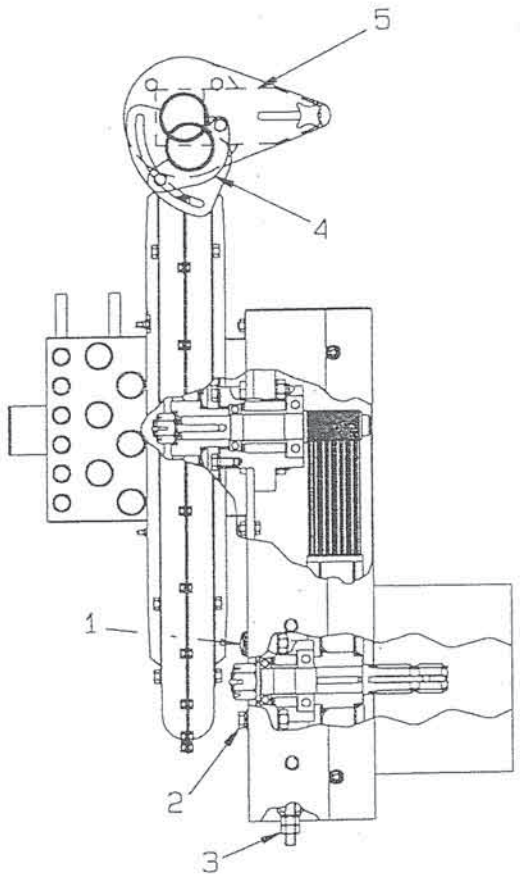
1. Slacken off the bottom bearing housing nuts and bolts (1 & 2) until the PTO pulley moves under its own weight.

2. Tighten the adjusting screw nut (3) whilst rotating the PTO pulley by hand until the slack is taken out of the belt.

3. For the 17 rib fan, tighten the adjuster screw nut a further 0.83 turns (5 flats on the nut) whilst turning the PTO pulley. For the 26 rib fan, tighten the adjuster screw nut a further 1.5 turns (9 flats on the nut) whilst turning the PTO pulley.

4. The belt will now be under the correct tension. Lock the adjuster nut and tighten the bottom bearing housing mounting nuts and bolts.



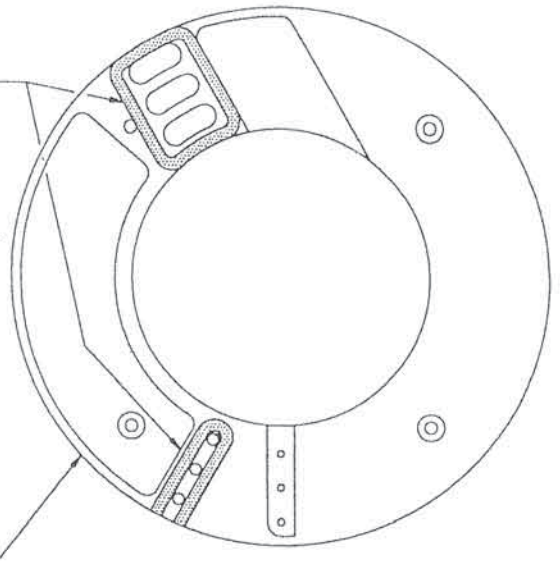


STANHAY SINGULAIRE

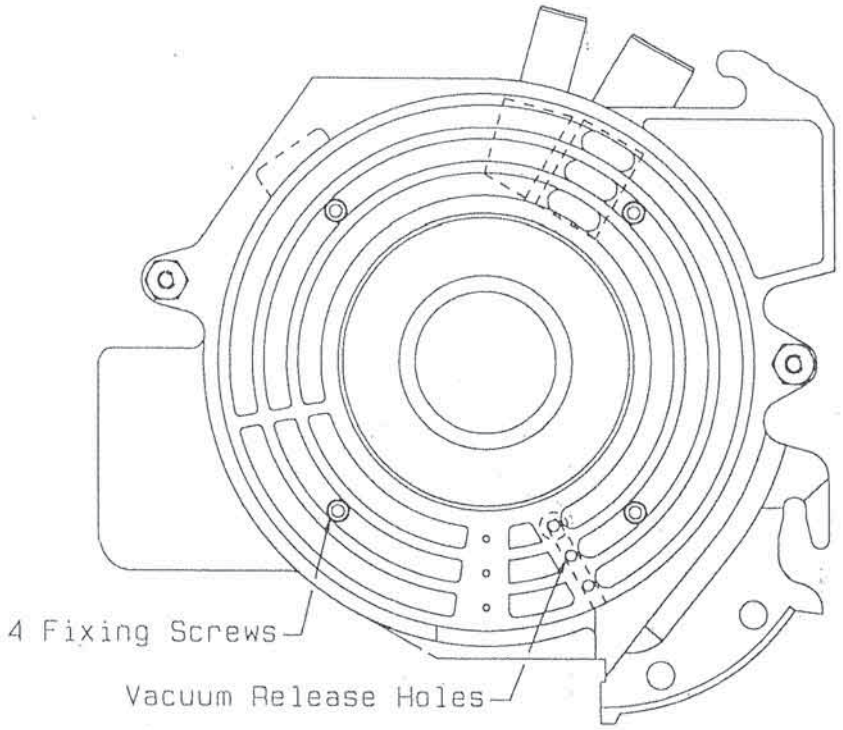
REPLACEMENT OF GALLERY BLOCKS

FITTING INSTRUCTIONS

1. Remove existing gallery block and thoroughly clean body.
2. Apply a thin bead of gasket compound such as Red Hermetite to the back of the gallery block where shown.
3. Fit gallery block to body, replace the four fixing screws and tighten.
4. Check that no compound has contaminated the working face of the gallery block or exuded into the vacuum release holes.



Grey Air Gallery Block: -Part No. 2810205
Red Air Gallery Block: -Part No. 2810224



END TOW TRANSPORT SYSTEM

The end tow transport system may be used with a **Rigid Yoke bar** and allows drill transport over long distances with ease.

Where drill toolbars are mounted to the yoke bar by means of pivots to allow contour following, the amount of movement is controlled by Pivot Limiters, which should be set symmetrically so that they do not restrict the toolbars pivoting in work.

The transport wheels fit to the left hand end of the yoke bar, with a single pin, and the drawbar is fitted to the right, following the procedure below.

1. To INITIALLY remove Transport System

   a) Attach tractor lower links.
   b) Lift until front transport wheel clears ground by approximately 100mm.
   c) Fit tractor top link and fully lift.
   d) Withdraw locking pins and remove wheels and drawbar.

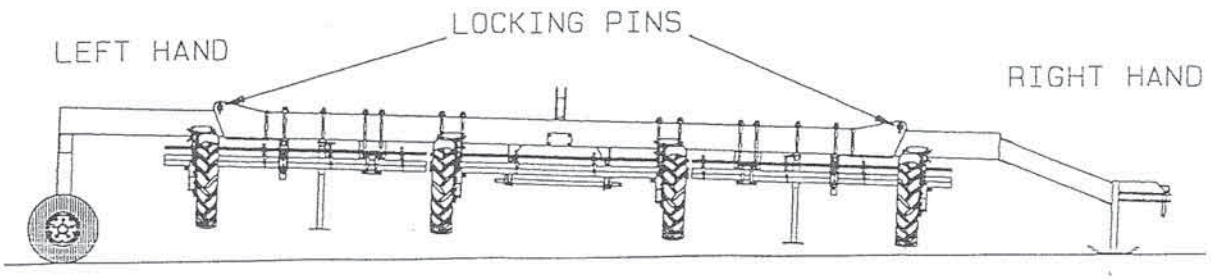
   IN FIELD, ADJUST TRACTOR TOP LINK TO GIVE CORRECT TOOLBAR ATTITUDE.

2. To FIT Transport System

   a) Fully lift on three point linkage, locate wheel beam and drawbar between attachment plates as shown, and secure with locking pins.
   b) Fully lower - the rear transport wheel should be on the ground and the wheel nearest to the tractor should be clear.
   c) Gently raise the three point linkage until the top link becomes loose, then remove.
   d) Fully lower and gently drive tractor forward until both transport wheels are firmly on the ground.
   e) Disconnect tractor lower links and hydraulics if fitted.
   f) Attach transport system drawbar to tractor lower links with a linkage drawbar.

3. To REMOVE Transport System

   a) Attach tractor lower links and gently raise until the top link can be fitted.
   b) Fully lift on three point linkage.
   c) Withdraw locking pins and remove wheels and drawbar.



Folding Yoke Bar

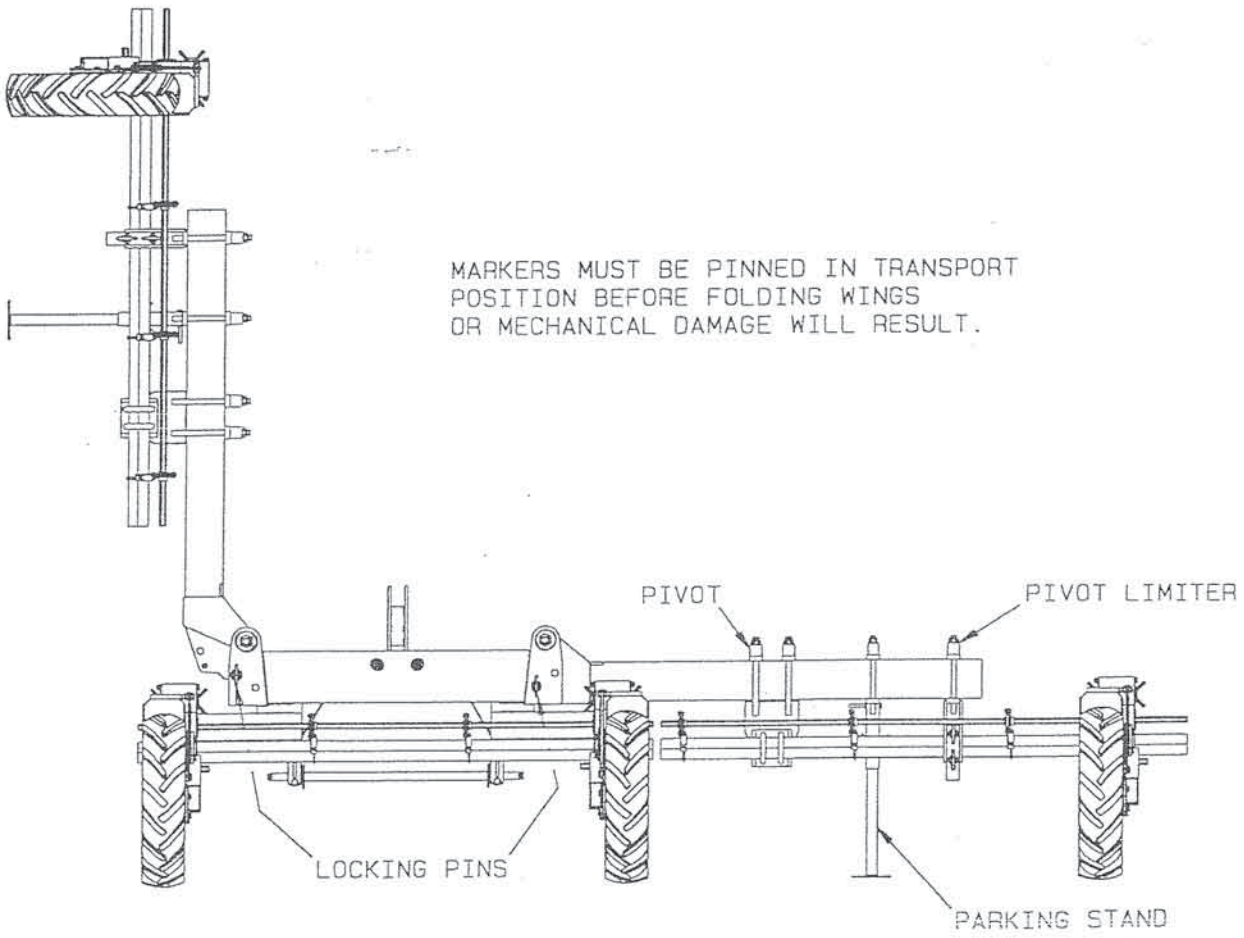
The folding yoke bar comprises a central section fitted with tractor three point linkage attachment, and two wings which fold up vertically by means of single acting hydraulic rams.

For efficient operation when markers are fitted, each ram must be connected to its own hydraulic service, as one wing **MUST** be fully folded before operating the other. Failure to follow this procedure may result in markers fouling each other with subsequent damage. It follows that when unfolding for work, the correct wing is unfolded first to allow markers to disengage.

Each wing is individually locked up, or down in the working position, by means of a locking pin in the appropriate hole. The **LOCKING PINS MUST ALWAYS BE FITTED**, whether in working or transport position. To avoid damage the three point linkage must be in the **FULLY RAISED** position **BEFORE** attempting to operate the folding mechanism.

Where drill toolbars are mounted to the yoke bar by means of **pivots** to allow contour following, the amount of movement is controlled by **Pivot Limiters** which should be set symmetrically so as not to restrict the toolbars pivoting in work.

Note: **Empty seed from hoppers before folding.**



FAULT FINDING GUIDE

BE FULLY FAMILIAR WITH ALL INSTRUCTIONS IN THIS MANUAL
BEFORE USING THIS GUIDE

VACUUM READING DROPS

Reason:	Solution:
1. No seed in hoppers.	Fill hoppers and re-prime seed discs
2. Seed disc(s) not holding vacuum.	Check discs for damage or wear.
3. Seed, seed dressing or contamination between seed discs and vacuum gallery blocks.	Clean units thoroughly and clean out any blocked holes in seed discs. Check for seed migrating up around edge of seed disc. See Instruction VACUUM GALLERY BLOCK.
4. Damaged agitator.	Check rubber fingers are securely fitted and repair or replace as necessary.
5. Vacuum hose disconnected or damaged.	Check hoses for free play and reconnect or replace as necessary.
6. Fan unit not driving.	Check P.T.O. shaft. Remove drive cover and check belt for tension and damage. Check that top or bottom pulleys rotate freely and bearings have not seized or collapsed.
7. Spare vacuum stubs on fan unit unplugged.	Securely plug all spare vacuum and pressure stubs.

UNITS NOT PICKING UP SEED

Reason:	Solution:
1. Seed disc holes too small for seed size.	Check recommended hole size.
2. Singulators incorrectly set.	Back off, check seed pick-up and re-set correctly.
3. Units turning too quickly.	Check forward speed/gear recommendations and re-set as necessary.
4. Incorrect vacuum or pressure levels.	Check recommendations and re-set.
5. Seed discs worn, damaged or with blocked holes.	Clean units thoroughly and clean out any blocked holes in seed discs. Check discs are holding vacuum.
6. Seed, seed dressing or contamination between seed discs and vacuum gallery blocks.	Clean units thoroughly. Check seed flows freely into coulter. Check discs are holding vacuum.

7. Unit vacuum and pressure hoses incorrectly fitted.	Check and re-fit, if necessary.
8. Insufficient seed agitation or incorrect agitator fitted.	Check rubber fingers are securely fitted, and repair or replace as necessary. Check that agitator rotates freely.

SEED DISC HOLES CONSTANTLY BLOCKING

Reason:	Solution:
1. Incorrect hole size.	Check recommendations.
2. Dirty or poor quality seed.	The most common cause of blocked holes. Large clean seed should be used if possible for best performance.

UNITS NOT DROPPING SEED CORRECTLY

Reason:	Solution:
1. Insufficient pressure and/or too much vacuum causing small seed to be sucked back up into unit.	Check recommendation and reset accordingly. Unit must have 26 x 9mm holes at top of window.
2. Seed splitters and/or coulters incorrectly fitted.	See fitting instructions and re-adjust.
3. Dirty, damp or plugged coulter seed chutes.	Clean seed chutes and if coulters are plugged, investigate cause and rectify.
4. Seed disc being clamped by centre of unit hopper side. Disc not running smoothly or seizing.	Remove disc and clean with fine abrasive. Remove vacuum gallery block. Seal and re-fit using suitable gasket sealant.

SEED LEAKING AT BACK OF COULTER

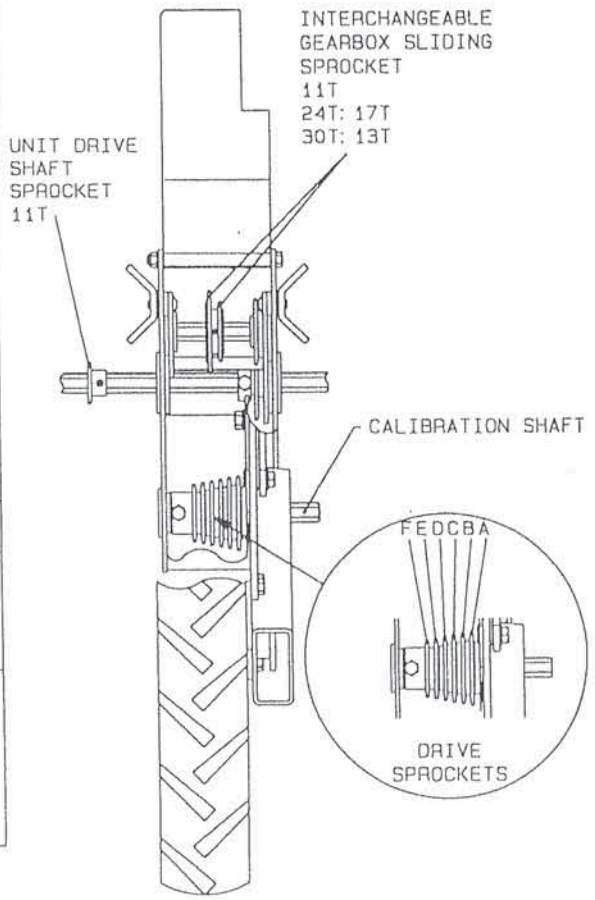
Reason:	Solution:
1. Metering unit castings incorrectly fitted.	Ensure casting faces are clean. Refit and lightly tighten conical nuts.

INCONSISTENT SINGULATION

Reason:	Solution:
1. Singulator not pressed flat onto disc.	Flick singulator arm several times, then re-calibrate unit.
2. Worn singulator arm.	Remove singulator arm, blacken all three wearing faces with felt tip pen, grip firmly and rub on fine abrasive paper until all black ink is removed. If severely worn or damaged, replace with new. Re-fit, and re-calibrate unit.

SEED SPACING CHART
11T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 12 HOLE DISC

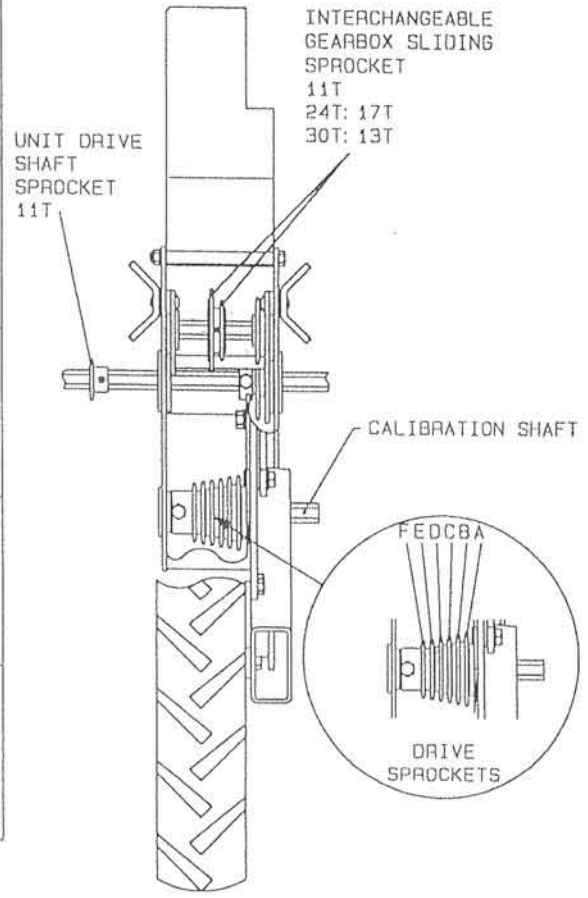
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	198.0	7.80				3.57	2.22	30.3	20.7
B11	207.9	8.18				3.74	2.33	31.8	19.7
C11	218.8	8.62				3.94	2.45	33.5	18.7
D11	230.9	9.09				4.16	2.58	35.3	17.7
E11	244.6	9.63				4.40	2.74	37.4	16.7
F11	259.9	10.23				4.68	2.91	39.7	15.7
A13	234.0	9.21				4.21	2.62	35.8	17.5
B13	245.7	9.67				4.42	2.75	37.6	16.6
C13	258.6	10.18				4.66	2.89	39.5	15.8
D13	273.0	10.75				4.92	3.05	41.7	15.0
E13	289.1	11.38	2.50	1.55	21.2	5.20	3.23	44.2	14.2
F13	307.1	12.09	2.65	1.65	22.5	5.53	3.44	47.0	13.3
A17	306.0	12:05	2.54	1.64	22.5	5.51	3.42	46.8	13.4
B17	321.3	12.65	2.78	1.73	23.6	5.78	3.59	49.1	12.8
C17	338.2	13.32	2.92	1.82	24.9	6.09	3.78	51.7	12.1
D17	357.0	14.06	3.09	1.92	26.2	6.43	3.99	54.6	11.5
E17	378.0	14.88	3.27	2.03	27.7	6.81	4.23	57.8	10.8
F17	401.6	15.81	3.47	2.16	29.5	7.23	4.49	61.4	10.2
A24	432.0	17.01	3.73	2.32	31.7	7.78	4.83	66.0	9.5
B24	453.6	17.86	3.92	2.44	33.3	8.17	5.07	69.3	9.0
C24	477.5	18.80	4.12	2.56	35.0	8.60	5.34	72.8	8.6
D24	504.0	19.84	4.36	2.71	37.0	9.07	5.64	77.0	8.1
E24	533.7	21.01	4.61	2.87	39.2	9.61	5.97	81.6	7.7
F24	567.0	22.32	4.90	3.05	41.6	10.21	6.34	86.7	7.2
A30	540.0	21.26	4.67	2.90	39.6	9.72	6.04	82.5	7.6
B30	567.0	22.32	4.90	3.05	41.6	10.21	6.34	86.7	7.2
C30	596.8	23.50	5.16	3.21	43.8	10.75	6.68	91.2	6.8
D30	630.0	24.80	5.44	3.38	46.2	11.34	7.05	96.3	6.5
E30	667.0	26.25	5.76	3.58	48.9	12.01	7.46	102.0	6.1
F30	708.7	27.90	6.12	3.81	52.0	12.76	7.93	108.3	5.8



SEED SPACING CHART
11T DRIVE SHAFT SPROCKET
SEED SPACING WITH 12 HOLE DISC

SEED SPACING CHART
11T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 24 HOLE DISC

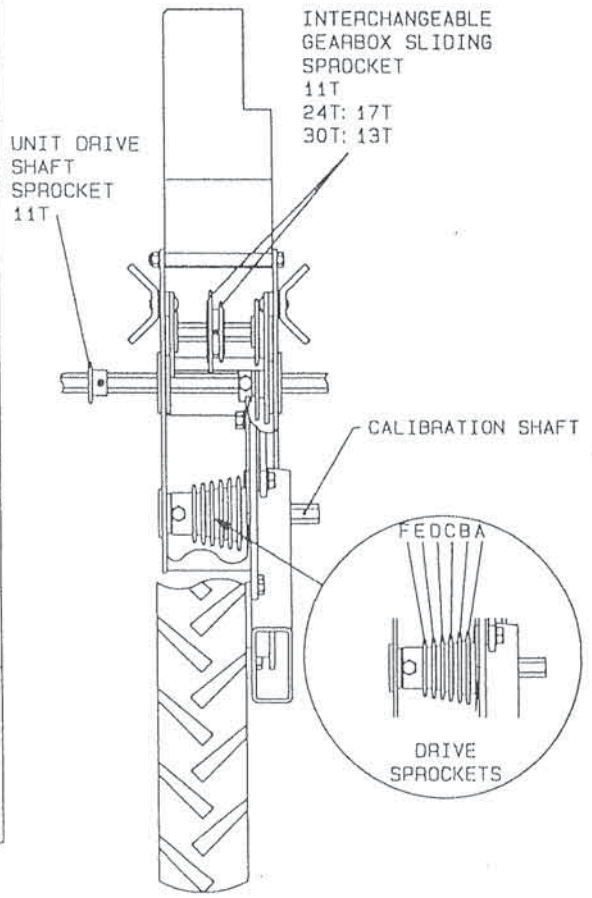
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	99.0	3.90				3.57	2.22	30.3	20.7
B11	103.9	4.09				3.74	2.33	31.8	19.7
C11	109.4	4.31				3.94	2.45	33.5	18.7
D11	115.5	4.55				4.16	2.58	35.3	17.7
E11	122.3	4.82				4.40	2.74	37.4	16.7
F11	129.9	5.12				4.68	2.91	39.7	15.7
A13	117.0	4.60				4.21	2.62	35.8	17.5
B13	122.9	4.84				4.42	2.75	37.6	16.6
C13	129.3	5.09				4.66	2.89	39.5	15.8
D13	136.5	5.37				4.92	3.05	41.7	15.0
E13	144.5	5.69	2.50	1.55	21.2	5.20	3.23	44.2	14.2
F13	153.6	6.05	2.65	1.65	22.5	5.53	3.44	47.0	13.3
A17	153.0	6.02	2.64	1.64	22.5	5.51	3.42	46.8	13.4
B17	160.6	6.33	2.78	1.73	23.6	5.78	3.59	49.1	12.8
C17	169.1	6.66	2.92	1.82	24.9	6.09	3.78	51.7	12.1
D17	178.5	7.03	3.09	1.92	26.2	6.43	3.99	54.6	11.5
E17	189.0	7.44	3.27	2.03	27.7	6.81	4.23	57.8	10.8
F17	200.8	7.91	3.47	2.16	29.5	7.23	4.49	61.4	10.2
A24	216.0	8.50	3.73	2.32	31.7	7.78	4.83	66.0	9.5
B24	226.8	8.93	3.92	2.44	33.3	8.17	5.07	69.3	9.0
C24	238.8	9.40	4.12	2.56	35.0	8.60	5.34	72.8	8.6
D24	252.0	9.92	4.36	2.71	37.0	9.07	5.64	77.0	8.1
E24	266.8	10.51	4.61	2.87	39.2	9.61	5.97	81.6	7.7
F24	283.5	11.16	4.90	3.05	41.6	10.21	6.34	86.7	7.2
A30	270.0	10.63	4.67	2.90	39.6	9.72	6.04	82.5	7.6
B30	283.5	11.16	4.90	3.05	41.6	10.21	6.34	86.7	7.2
C30	298.4	11.75	5.16	3.21	43.8	10.75	6.68	91.2	6.8
D30	315.0	12.40	5.44	3.38	46.2	11.34	7.05	96.3	6.5
E30	333.5	13.13	5.76	3.58	48.9	12.01	7.46	102.0	6.1
F30	354.4	13.95	6.12	3.81	52.0	12.76	7.93	108.3	5.8



SEED SPACING CHART
11T DRIVE SHAFT SPROCKET
SEED SPACING WITH 24 HOLE DISC

SEED SPACING CHART
11T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 48 HOLE DISC

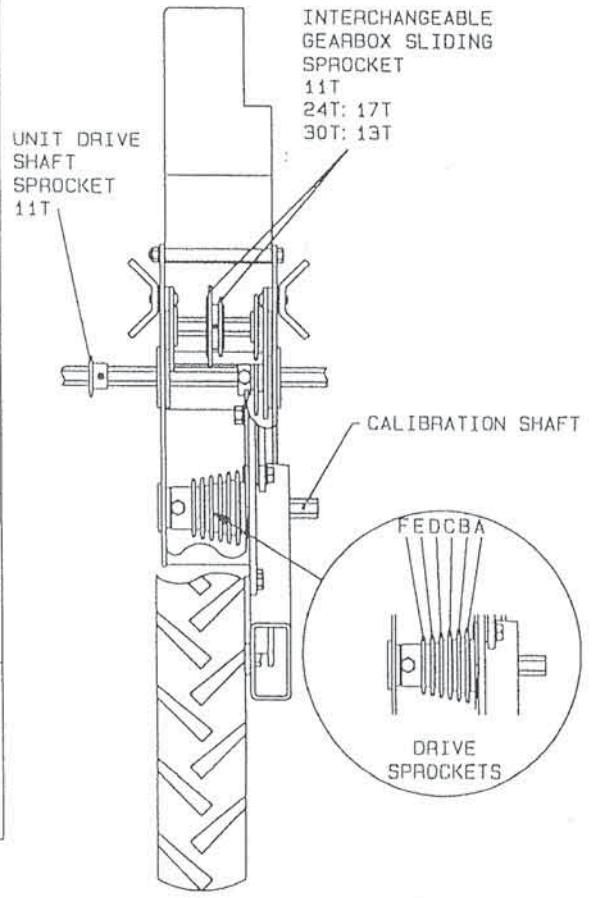
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	49.5	1.95				3.57	2.22	30.3	20.7
B11	51.9	2.05				3.74	2.33	31.8	19.7
C11	54.7	2.15				3.94	2.45	33.5	18.7
D11	57.8	2.27				4.16	2.58	35.3	17.7
E11	61.2	2.41				4.40	2.74	37.4	16.7
F11	65.0	2.56				4.68	2.91	39.7	15.7
A13	58.5	2.30				4.21	2.62	35.8	17.5
B13	61.4	2.42				4.42	2.75	37.6	16.6
C13	64.7	2.55				4.66	2.89	39.5	15.8
D13	68.3	2.69				4.92	3.05	41.7	15.0
E13	72.2	2.85	2.50	1.55	21.2	5.20	3.23	44.2	14.2
F13	76.8	3.02	2.65	1.65	22.5	5.53	3.44	47.0	13.3
A17	76.5	3.01	2.64	1.64	22.5	5.51	3.42	46.8	13.4
B17	80.3	3.16	2.78	1.73	23.6	5.78	3.59	49.1	12.8
C17	84.6	3.33	2.92	1.82	24.9	6.09	3.78	51.7	12.1
D17	89.3	3.51	3.09	1.92	26.2	6.43	3.99	54.6	11.5
E17	94.5	3.72	3.27	2.03	27.7	6.81	4.23	57.8	10.8
F17	100.4	3.95	3.47	2.16	29.5	7.23	4.49	61.4	10.2
A24	108.0	4.25	3.73	2.32	31.7	7.78	4.83	66.0	9.5
B24	113.4	4.46	3.92	2.44	33.3	8.17	5.07	69.3	9.0
C24	119.3	4.70	4.12	2.56	35.0	8.60	5.34	72.8	8.6
D24	126.0	4.96	4.36	2.71	37.0	9.07	5.64	77.0	8.1
E24	133.4	5.25	4.61	2.87	39.2	9.61	5.97	81.6	7.7
F24	141.8	5.58	4.90	3.05	41.6	10.21	6.34	86.7	7.2
A30	135.0	5.32	4.67	2.90	39.6	9.72	6.04	82.5	7.6
B30	141.8	5.58	4.90	3.05	41.6	10.21	6.34	86.7	7.2
C30	149.2	5.87	5.16	3.21	43.8	10.75	6.68	91.2	6.8
D30	157.5	6.20	5.44	3.38	46.2	11.34	7.05	96.3	6.5
E30	166.8	6.57	5.76	3.58	48.9	12.01	7.46	102.0	6.1
F30	177.2	6.98	6.12	3.81	52.0	12.76	7.93	108.3	5.8



SEED SPACING CHART
11T DRIVE SHAFT SPROCKET
SEED SPACING WITH 48 HOLE DISC

SEED SPACING CHART
11T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 72 HOLE DISC

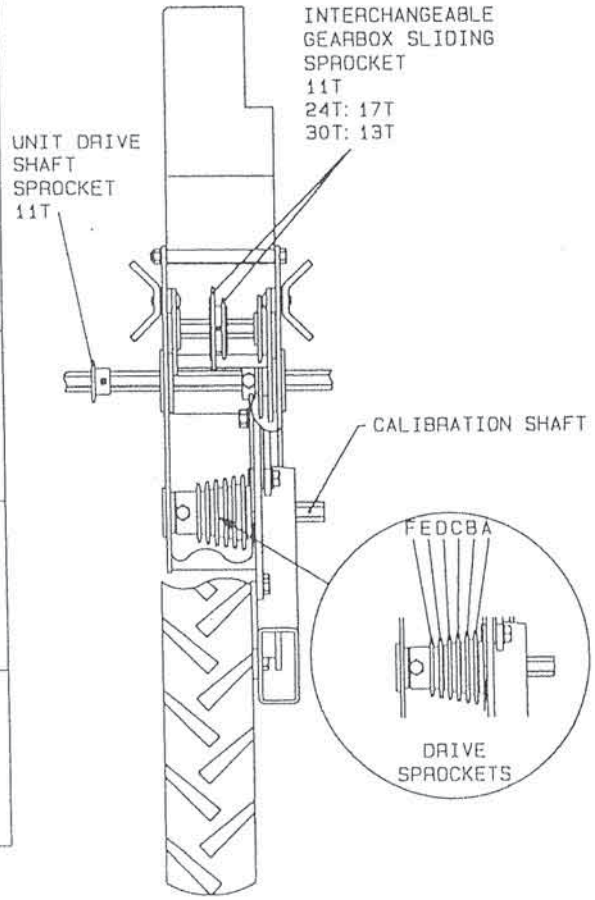
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	33.0	1.30				3.57	2.22	30.3	20.7
B11	34.7	1.36				3.74	2.33	31.8	19.7
C11	36.5	1.44				3.94	2.45	33.5	18.7
D11	38.5	1.52				4.16	2.58	35.3	17.7
E11	40.8	1.61				4.40	2.74	37.4	16.7
F11	43.3	1.71				4.68	2.91	39.7	15.7
A13	39.0	1.54				4.21	2.62	35.8	17.5
B13	41.0	1.61				4.42	2.75	37.6	16.6
C13	43.1	1.70				4.66	2.89	39.5	15.8
D13	45.5	1.79				4.92	3.05	41.7	15.0
E13	48.2	1.90	2.50	1.55	21.2	5.20	3.23	44.2	14.2
F13	51.2	2.02	2.65	1.65	22.5	5.53	3.44	47.0	13.3
A17	51.0	2.01	2.64	1.64	22.5	5.51	3.42	46.8	13.4
B17	53.6	2.11	2.78	1.73	23.6	5.78	3.59	49.1	12.8
C17	56.4	2.11	2.92	1.82	24.9	6.09	3.78	51.7	12.1
D17	59.5	2.34	3.09	1.92	26.2	6.43	3.99	54.6	11.5
E17	63.0	2.48	3.27	2.03	27.7	6.81	4.23	57.8	10.8
F17	67.0	2.64	3.47	2.16	29.5	7.23	4.49	61.4	10.2
A24	72.0	2.84	3.73	2.32	31.7	7.78	4.83	66.0	9.5
B24	75.6	2.98	3.92	2.44	33.3	8.17	5.07	69.3	9.0
C24	79.6	3.13	4.12	2.56	35.0	8.60	5.34	72.8	8.6
D24	84.0	3.31	4.36	2.71	37.0	9.07	5.64	77.0	8.1
E24	88.9	3.50	4.61	2.87	39.2	9.61	5.97	81.6	7.7
F24	94.5	3.72	4.90	3.05	41.6	10.21	6.34	86.7	7.2
A30	90.0	3.54	4.67	2.90	39.6	9.72	6.04	82.5	7.6
B30	94.5	3.72	4.90	3.05	41.6	10.21	6.34	86.7	7.2
C30	99.5	3.92	5.16	3.21	43.8	10.75	6.68	91.2	6.8
D30	105.0	4.13	5.44	3.38	46.2	11.34	7.05	96.3	6.5
E30	111.2	4.38	5.76	3.58	48.9	12.01	7.46	102.0	6.1
F30	118.1	4.65	6.12	3.81	52.0	12.76	7.93	108.3	5.8



SEED SPACING CHART
11T DRIVE SHAFT SPROCKET
SEED SPACING WITH 72 HOLE DISC

SEED SPACING CHART
11T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 96 HOLE DISC

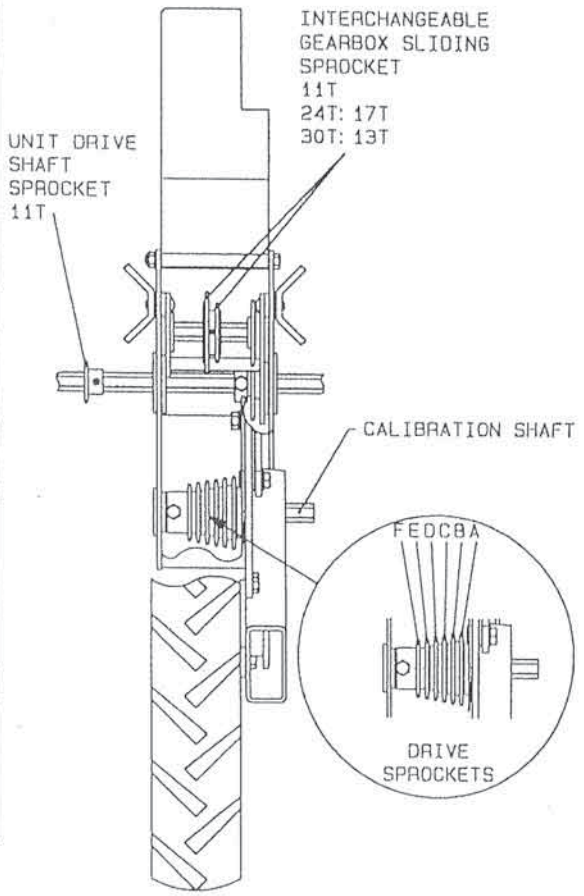
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	24.8	0.97				3.57	2.22	30.3	20.7
B11	26.0	1.02				3.74	2.33	31.8	19.7
C11	27.4	1.08				3.94	2.45	33.5	18.7
D11	28.9	1.14				4.16	2.58	35.3	17.7
E11	30.6	1.21				4.40	2.74	37.4	16.7
F11	32.5	1.28				4.68	2.91	39.7	15.7
A13	29.3	1.15				4.21	2.62	35.8	17.5
B13	30.7	1.21				4.42	2.75	37.6	16.6
C13	32.3	1.27				4.66	2.89	39.5	15.8
D13	34.1	1.35				4.92	3.05	41.7	15.0
E13	36.1	1.42	2.50	1.55	21.2	5.20	3.23	44.2	14.2
F13	38.4	1.51	2.65	1.65	22.5	5.53	3.44	47.0	13.3
A17	38.3	1.51	2.64	1.64	22.5	5.51	3.42	46.8	13.4
B17	40.1	1.58	2.78	1.73	23.6	5.78	3.59	49.1	12.8
C17	42.3	1.67	2.92	1.82	24.9	6.09	3.78	51.7	12.1
D17	44.6	1.76	3.09	1.92	26.2	6.43	3.99	54.6	11.5
E17	47.3	1.86	3.27	2.03	27.7	6.81	4.23	57.8	10.8
F17	50.2	1.98	3.47	2.16	29.5	7.23	4.49	61.4	10.2
A24	54.0	2.13	3.73	2.32	31.7	7.78	4.83	66.0	9.5
B24	56.7	2.23	3.92	2.44	33.3	8.17	5.07	69.3	9.0
C24	59.7	2.35	4.12	2.56	35.0	8.60	5.34	72.8	8.6
D24	63.0	2.48	4.36	2.71	37.0	9.07	5.64	77.0	8.1
E24	66.7	2.62	4.61	2.87	39.2	9.61	5.97	81.6	7.7
F24	70.9	2.79	4.90	3.05	41.6	10.21	6.34	86.7	7.2
A30	67.5	2.66	4.67	2.90	39.6	9.72	6.04	82.5	7.6
B30	70.9	2.79	4.90	3.05	41.6	10.21	6.34	86.7	7.2
C30	74.6	2.94	5.16	3.21	43.8	10.75	6.68	91.2	6.8
D30	78.8	3.10	5.44	3.38	46.2	11.34	7.05	96.3	6.5
E30	83.4	3.29	5.76	3.58	48.9	12.01	7.46	102.0	6.1
F30	88.6	3.49	6.12	3.81	52.0	12.76	7.93	108.3	5.8



SEED SPACING CHART
11T DRIVE SHAFT SPROCKET
SEED SPACING WITH 96 HOLE DISC

SEED SPACING CHART
11T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 120 HOLE DISC

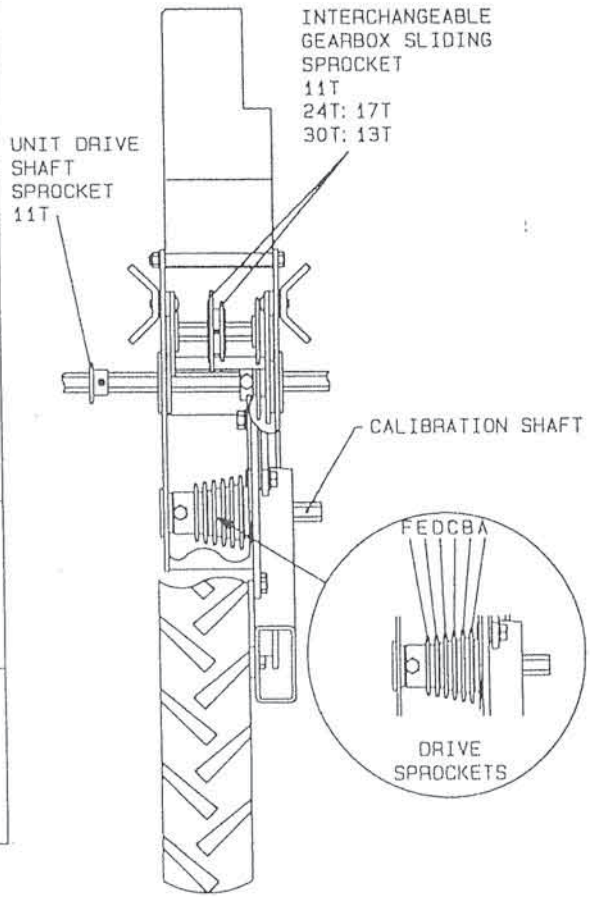
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	19.8	0.78				3.57	2.22	30.3	20.7
B11	20.8	0.82				3.74	2.33	31.8	19.7
C11	21.8	0.86				3.94	2.45	33.5	18.7
D11	23.1	0.90				4.16	2.58	35.3	17.7
E11	24.5	0.96				4.40	2.74	37.4	16.7
F11	26.0	1.02				4.68	2.91	39.7	15.7
A13	23.4	0.92				4.21	2.62	35.8	17.5
B13	24.6	0.97				4.42	2.75	37.6	16.6
C13	25.8	1.01				4.66	2.89	39.5	15.8
D13	27.3	1.08				4.92	3.05	41.7	15.0
E13	28.9	1.14	2.50	1.55	21.2	5.20	3.23	44.2	14.2
F13	30.7	1.20	2.65	1.65	22.5	5.53	3.44	47.0	13.3
A17	30.6	1.20	2.64	1.64	22.5	5.51	3.42	46.8	13.4
B17	32.1	1.27	2.78	1.73	23.6	5.78	3.59	49.1	12.8
C17	33.8	1.33	2.92	1.82	24.9	6.09	3.78	51.7	12.1
D17	35.7	1.41	3.09	1.92	26.2	6.43	3.99	54.6	11.5
E17	37.8	1.48	3.27	2.03	27.7	6.81	4.23	57.8	10.8
F17	40.1	1.58	3.47	2.16	29.5	7.23	4.49	61.4	10.2
A24	43.2	1.70	3.73	2.32	31.7	7.78	4.83	66.0	9.5
B24	45.4	1.79	3.92	2.44	33.3	8.17	5.07	69.3	9.0
C24	47.8	1.88	4.12	2.56	35.0	8.60	5.34	72.8	8.6
D24	50.4	1.98	4.36	2.71	37.0	9.07	5.64	77.0	8.1
E24	53.3	2.10	4.61	2.87	39.2	9.61	5.97	81.6	7.7
F24	56.7	2.23	4.90	3.05	41.6	10.21	6.34	86.7	7.2
A30	54.0	2.13	4.67	2.90	39.6	9.72	6.04	82.5	7.6
B30	56.7	2.23	4.90	3.05	41.6	10.21	6.34	86.7	7.2
C30	59.7	2.34	5.16	3.21	43.8	10.75	6.68	91.2	6.8
D30	63.0	2.48	5.44	3.38	46.2	11.34	7.05	96.3	6.5
E30	66.7	2.62	5.76	3.58	48.9	12.01	7.46	102.0	6.1
F30	70.8	2.79	6.12	3.81	52.0	12.76	7.93	108.3	5.8



SEED SPACING CHART
11T DRIVE SHAFT SPROCKET
SEED SPACING WITH 120 HOLE DISC

SEED SPACING CHART
11T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 144 HOLE DISC

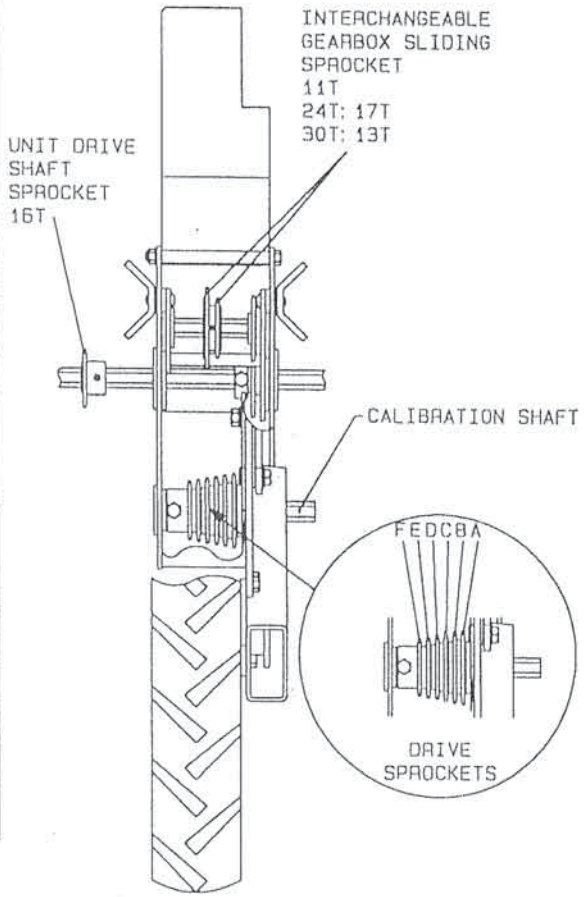
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	16.5	0.65				3.57	2.22	30.3	20.7
B11	17.3	0.68				3.74	2.33	31.8	19.7
C11	18.2	0.72				3.94	2.45	33.5	18.7
D11	19.3	0.76				4.16	2.58	35.3	17.7
E11	20.4	0.80				4.40	2.74	37.4	16.7
F11	21.7	0.85				4.68	2.91	39.7	15.7
A13	19.5	0.78				4.21	2.62	35.8	17.5
B13	20.5	0.80				4.42	2.75	37.6	16.6
C13	21.6	0.85				4.66	2.89	39.5	15.8
D13	22.8	0.90				4.92	3.05	41.7	15.0
E13	24.1	0.95	2.50	1.55	21.2	5.20	3.23	44.2	14.2
F13	25.6	1.01	2.65	1.65	22.5	5.53	3.44	47.0	13.3
A17	25.5	1.00	2.64	1.64	22.5	5.51	3.42	46.8	13.4
B17	26.8	1.06	2.78	1.73	23.6	5.78	3.59	49.1	12.8
C17	28.2	1.11	2.92	1.82	24.9	6.09	3.78	51.7	12.1
D17	29.8	1.17	3.09	1.92	26.2	6.43	3.99	54.6	11.5
E17	31.5	1.24	3.27	2.03	27.7	6.81	4.23	57.8	10.8
F17	33.5	1.32	3.47	2.16	29.5	7.23	4.49	61.4	10.2
A24	36.0	1.42	3.73	2.32	31.7	7.78	4.83	66.0	9.5
B24	37.8	1.49	3.92	2.44	33.3	8.17	5.07	69.3	9.0
C24	39.8	1.57	4.12	2.56	35.0	8.60	5.34	72.8	8.6
D24	42.0	1.65	4.36	2.71	37.0	9.07	5.64	77.0	8.1
E24	44.5	1.75	4.61	2.87	39.2	9.61	5.97	81.6	7.7
F24	47.2	1.86	4.90	3.05	41.6	10.21	6.34	86.7	7.2
A30	45.0	1.77	4.67	2.90	39.6	9.72	6.04	82.5	7.6
B30	47.2	1.75	4.90	3.05	41.6	10.21	6.34	86.7	7.2
C30	49.7	1.96	5.16	3.21	43.8	10.75	6.68	91.2	6.8
D30	52.5	2.07	5.44	3.38	46.2	11.34	7.05	96.3	6.5
E30	55.6	2.19	5.76	3.58	48.9	12.01	7.46	102.0	6.1
F30	59.0	2.33	6.12	3.81	52.0	12.76	7.93	108.3	5.8



SEED SPACING CHART
11T DRIVE SHAFT SPROCKET
SEED SPACING WITH 144 HOLE DISC

SEED SPACING CHART
16T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 12 HOLE DISC

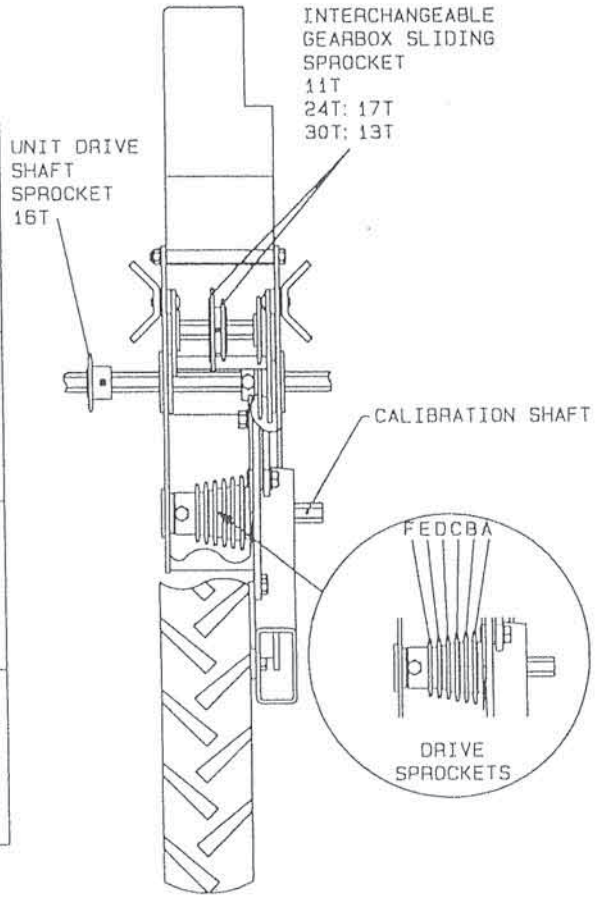
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	136.1	5.36				2.45	1.52	20.8	30.0
B11	142.9	5.63				2.57	1.60	21.9	28.6
C11	150.5	5.92				2.71	1.68	23.0	27.2
D11	158.8	6.25				2.86	1.78	24.3	25.8
E11	168.2	6.62				3.03	1.88	25.7	24.3
F11	178.7	7.03				3.22	2.00	27.3	22.9
A13	160.9	6.33				2.90	1.78	24.3	25.4
B13	168.9	6.65				3.04	1.89	25.8	24.2
C13	177.8	7.00				3.20	1.99	27.2	23.0
D13	187.7	7.39				3.38	2.10	28.7	21.8
E13	198.7	7.82				3.58	2.22	30.3	20.6
F13	211.1	8.31				3.80	2.36	32.3	19.4
A17	210.4	8.28				3.79	2.35	32.1	19.4
B17	220.8	8.69				3.98	2.47	33.8	18.5
C17	232.5	9.15				4.19	2.60	35.5	17.6
D17	245.4	9.66				4.42	2.75	37.6	16.7
E17	259.8	10.23				4.68	2.91	39.8	15.7
F17	276.0	10.87	2.39	1.48	20.2	4.97	3.09	42.2	14.8
A24	297.0	11.69	2.57	1.60	21.9	5.35	3.32	45.4	13.8
B24	311.8	12.28	2.70	1.68	23.0	5.58	3.47	47.4	13.1
C24	328.2	12.92	2.84	1.76	24.0	5.91	3.67	50.2	12.5
D24	346.5	13.64	2.99	1.86	25.4	6.24	3.88	53.0	11.8
E24	366.9	14.44	3.17	1.97	26.9	6.61	4.11	56.2	11.2
F24	389.8	15.35	3.37	2.09	28.6	7.02	4.36	59.6	10.5
A30	371.2	14.61	3.21	1.99	27.2	6.68	4.15	56.7	11.0
B30	389.8	15.35	3.37	2.09	28.6	7.02	4.36	59.6	10.5
C30	410.3	16.15	3.55	2.20	30.0	7.39	4.59	62.7	10.0
D30	433.1	17.05	3.74	2.33	31.8	7.80	4.85	66.3	9.4
E30	458.6	18.06	3.96	2.46	33.6	8.26	5.13	70.1	8.9
F30	487.3	19.18	4.21	2.62	35.8	8.77	5.45	74.5	8.4



SEED SPACING CHART
16T DRIVE SHAFT SPROCKET
SEED SPACING WITH 12 HOLE DISC

SEED SPACING CHART
16T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 24 HOLE DISC

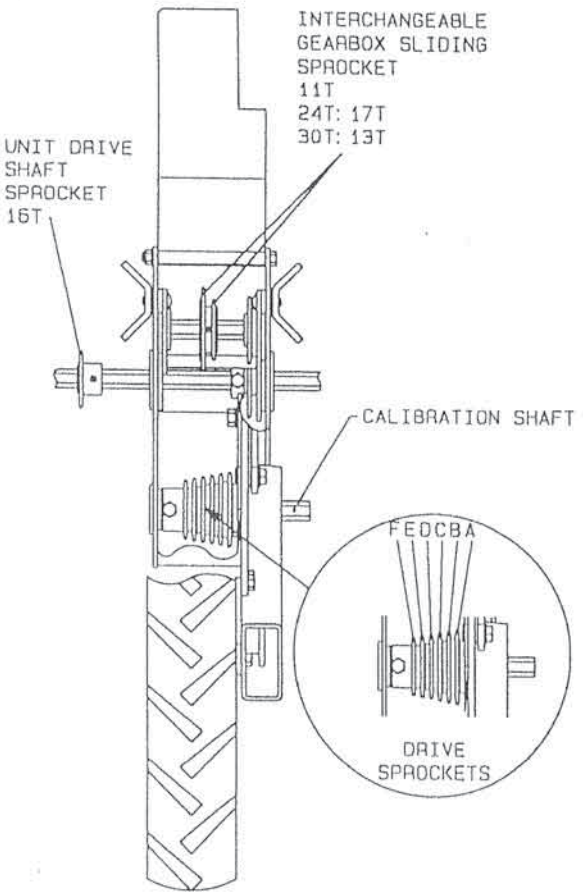
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	68.1	2.68				2.45	1.52	20.8	30.0
B11	71.5	2.81				2.57	1.60	21.9	28.6
C11	75.2	2.96				2.71	1.68	23.0	27.2
D11	79.4	3.13				2.86	1.78	24.3	25.8
E11	84.1	3.31				3.03	1.88	25.7	24.3
F11	89.3	3.52				3.22	2.00	27.3	22.9
A13	80.4	3.17				2.90	1.78	24.3	25.4
B13	84.5	3.33				3.04	1.89	25.8	24.2
C13	88.9	3.50				3.20	1.99	27.2	23.0
D13	93.8	3.69				3.38	2.10	28.7	21.8
E13	99.4	3.91				3.58	2.22	30.3	20.6
F13	105.6	4.16				3.80	2.36	32.3	19.4
A17	105.2	4.14				3.79	2.35	32.1	19.4
B17	110.4	4.35				3.98	2.47	33.8	18.5
C17	116.3	4.58				4.19	2.60	35.5	17.6
D17	122.7	4.83				4.42	2.75	37.6	16.7
E17	129.9	5.12				4.68	2.91	39.8	15.7
F17	138.1	5.44	2.39	1.48	20.2	4.97	3.09	42.2	14.8
A24	148.5	5.85	2.57	1.60	21.9	5.35	3.32	45.4	13.8
B24	155.9	6.14	2.70	1.68	23.0	5.58	3.47	47.4	13.1
C24	164.1	6.46	2.84	1.76	24.0	5.91	3.67	50.2	12.5
D24	173.2	6.82	2.99	1.86	25.4	6.24	3.88	53.0	11.8
E24	183.4	7.22	3.17	1.97	26.9	6.61	4.11	56.2	11.2
F24	194.9	7.67	3.37	2.09	28.6	7.02	4.36	59.6	10.5
A30	185.6	7.31	3.21	1.99	27.2	6.68	4.15	56.7	11.0
B30	194.5	7.67	3.37	2.09	28.6	7.02	4.36	59.6	10.5
C30	205.2	8.08	3.55	2.20	30.0	7.39	4.59	62.7	10.0
D30	216.6	8.53	3.74	2.33	31.8	7.80	4.85	66.3	9.4
E30	229.3	9.03	3.96	2.46	33.6	8.26	5.13	70.1	8.9
F30	243.6	9.59	4.21	2.62	35.8	8.77	5.45	74.5	8.4



SEED SPACING CHART
16T DRIVE SHAFT SPROCKET
SEED SPACING WITH 24 HOLE DISC

SEED SPACING CHART
16T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 48 HOLE DISC

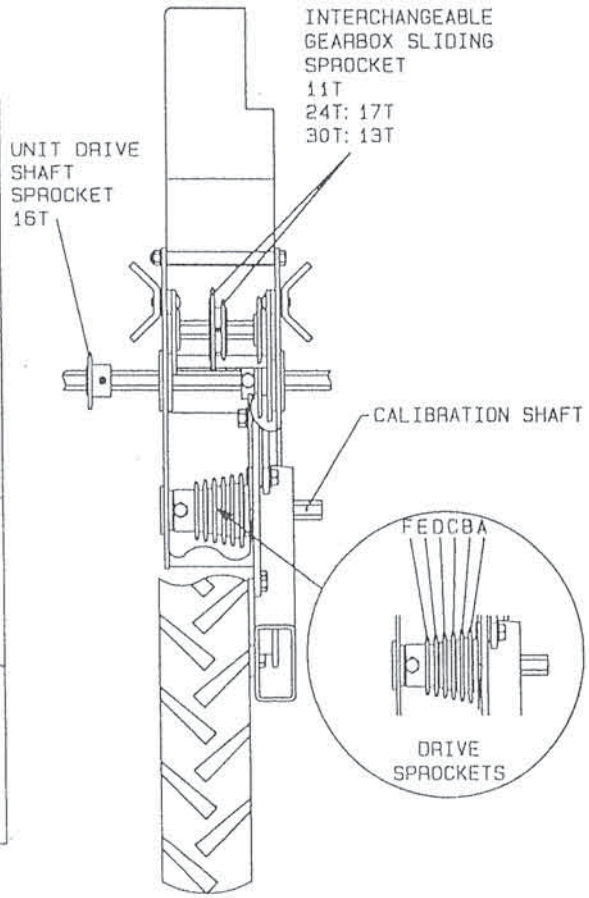
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	34.0	1.34				2.45	1.52	20.8	30.0
B11	35.7	1.41				2.57	1.60	21.9	28.6
C11	37.6	1.48				2.71	1.68	23.0	27.2
D11	39.7	1.56				2.86	1.78	24.3	25.8
E11	42.0	1.66				3.03	1.88	25.7	24.3
F11	44.7	1.76				3.22	2.00	27.3	22.9
A13	40.2	1.58				2.90	1.78	24.3	25.4
B13	42.2	1.66				3.04	1.89	25.8	24.2
C13	44.5	1.75				3.20	1.99	27.2	23.0
D13	46.9	1.85				3.38	2.10	28.7	21.8
E13	49.7	1.96				3.58	2.22	30.3	20.6
F13	52.8	2.08				3.80	2.36	32.3	19.4
A17	52.6	2.07				3.79	2.35	32.1	19.4
B17	55.2	2.17				3.98	2.47	33.8	18.5
C17	58.1	2.29				4.19	2.60	35.5	17.6
D17	61.4	2.42				4.42	2.75	37.6	16.7
E17	65.0	2.56				4.68	2.91	39.8	15.7
F17	69.0	2.72	2.39	1.48	20.2	4.97	3.09	42.2	14.8
A24	74.3	2.92	2.57	1.60	21.9	5.35	3.32	45.4	13.8
B24	78.0	3.07	2.70	1.68	23.0	5.58	3.47	47.4	13.1
C24	82.0	3.23	2.84	1.76	24.0	5.91	3.67	50.2	12.5
D24	86.6	3.41	2.99	1.86	25.4	6.24	3.88	53.0	11.8
E24	91.8	3.61	3.17	1.97	26.9	6.61	4.11	56.2	11.2
F24	97.5	3.84	3.37	2.09	28.6	7.02	4.36	59.6	10.5
A30	92.8	3.65	3.21	1.99	27.2	6.68	4.15	56.7	11.0
B30	97.5	3.84	3.37	2.09	28.6	7.02	4.36	59.6	10.5
C30	102.6	4.04	3.55	2.20	30.0	7.39	4.59	62.7	10.0
D30	108.3	4.26	3.74	2.33	31.8	7.80	4.85	66.3	9.4
E30	114.7	4.51	3.96	2.46	33.6	8.26	5.13	70.1	8.9
F30	121.8	4.80	4.21	2.62	35.8	8.77	5.45	74.5	8.4



SEED SPACING CHART
16T DRIVE SHAFT SPROCKET
SEED SPACING WITH 48 HOLE DISC

SEED SPACING CHART
16T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 72 HOLE DISC

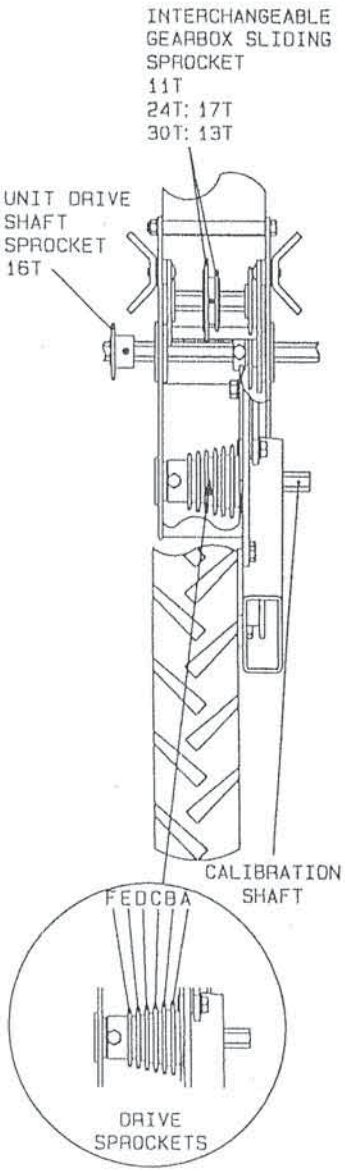
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	22.7	0.89				2.45	1.52	20.8	30.0
B11	23.8	0.94				2.57	1.60	21.9	28.6
C11	25.1	0.99				2.71	1.68	23.0	27.2
D11	26.5	1.04				2.86	1.78	24.3	25.8
E11	28.0	1.10				3.03	1.88	25.7	24.3
F11	29.8	1.17				3.22	2.00	27.3	22.9
A13	26.8	1.06				2.90	1.78	24.3	25.4
B13	28.1	1.11				3.04	1.89	25.8	24.2
C13	29.6	1.17				3.20	1.99	27.2	23.0
D13	31.3	1.23				3.38	2.10	28.7	21.8
E13	33.1	1.30				3.58	2.22	30.3	20.6
F13	35.2	1.34				3.80	2.36	32.3	19.4
A17	35.0	1.38				3.79	2.35	32.1	19.4
B17	36.8	1.44				3.98	2.47	33.8	18.5
C17	38.7	1.53				4.19	2.60	35.5	17.6
D17	40.9	1.61				4.42	2.75	37.6	16.7
E17	43.3	1.70				4.68	2.91	39.8	15.7
F17	46.0	1.81	2.39	1.48	20.2	4.97	3.09	42.2	14.8
A24	49.5	1.95	2.57	1.60	21.9	5.35	3.32	45.4	13.8
B24	51.9	2.05	2.70	1.68	23.0	5.58	3.47	47.4	13.1
C24	54.7	2.15	2.84	1.76	24.0	5.91	3.67	50.2	12.5
D24	57.8	2.27	2.99	1.86	25.4	6.24	3.88	53.0	11.8
E24	61.2	2.41	3.17	1.97	26.9	6.61	4.11	56.2	11.2
F24	65.0	2.56	3.37	2.09	28.6	7.02	4.36	59.6	10.5
A30	61.9	2.44	3.21	1.99	27.2	6.68	4.15	56.7	11.0
B30	65.0	2.56	3.37	2.09	28.6	7.02	4.36	59.6	10.5
C30	68.3	2.69	3.55	2.20	30.0	7.39	4.59	62.7	10.0
D30	72.2	2.84	3.74	2.33	31.8	7.80	4.85	66.3	9.4
E30	76.4	3.01	3.96	2.46	33.6	8.26	5.13	70.1	8.9
F30	81.2	3.20	4.21	2.62	35.8	8.77	5.45	74.5	8.4



SEED SPACING CHART
16T DRIVE SHAFT SPROCKET
SEED SPACING WITH 72 HOLE DISC

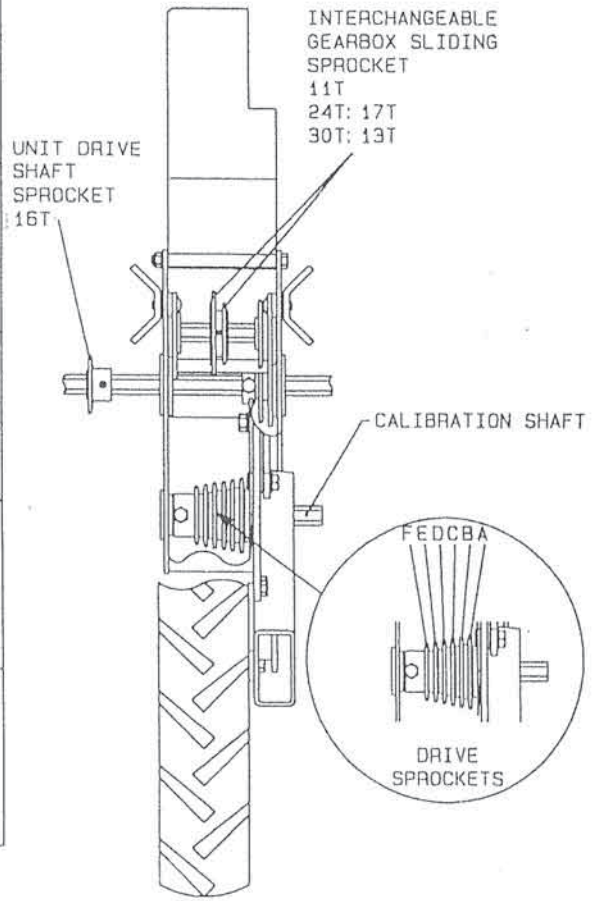
SEED SPACING CHART
16T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 96 HOLE DISC

GEAR	SEED SPACING		FORWARD SPEED TO GIVE									REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			40 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	17.0	0.67				2.45	1.52	20.8	3.92	2.44	33.3	30.0
B11	17.9	0.70				2.57	1.60	21.9	4.10	2.55	34.8	28.6
C11	18.8	0.74				2.71	1.68	23.0	4.33	2.69	36.8	27.2
D11	19.9	0.78				2.86	1.78	24.3	4.57	2.84	38.8	25.8
E11	21.0	0.83				3.03	1.88	25.7	4.84	3.01	41.1	24.3
F11	22.3	0.88				3.22	2.00	27.3	5.14	3.20	43.7	22.9
A13	20.1	0.79				2.90	1.78	24.3	4.63	2.88	39.4	25.4
B13	21.1	0.83				3.04	1.89	25.8	4.87	3.02	41.3	24.2
C13	22.2	0.87				3.20	1.99	27.2	5.12	3.18	43.5	23.0
D13	23.5	0.92				3.38	2.10	28.7	5.40	3.35	45.8	21.8
E13	24.8	0.98				3.58	2.22	30.3	5.72	3.56	48.6	20.6
F13	26.4	1.04				3.80	2.36	32.3	6.08	3.77	51.5	19.4
A17	26.3	1.04				3.79	2.35	32.1	6.06	3.76	51.4	19.4
B17	27.6	1.09				3.98	2.47	33.8	6.36	3.95	54.0	18.5
C17	29.1	1.15				4.19	2.60	35.5	6.70	4.16	56.8	17.6
D17	30.7	1.21				4.42	2.75	37.6	7.07	4.39	60.0	16.7
E17	32.4	1.28				4.68	2.91	39.8	7.48	4.65	63.5	15.7
F17	34.5	1.36	2.39	1.48	20.2	4.97	3.09	42.2	7.95	4.94	67.5	14.8
A24	37.1	1.46	2.57	1.60	21.9	5.35	3.32	45.4	8.56	5.32	72.7	13.8
B24	39.0	1.54	2.70	1.68	23.0	5.58	3.47	47.4	8.98	5.58	76.2	13.1
C24	41.0	1.62	2.84	1.76	24.0	5.91	3.67	50.2	9.45	5.87	80.2	12.5
D24	43.3	1.71	2.99	1.86	25.4	6.24	3.88	53.0	9.98	6.20	84.7	11.8
E24	45.9	1.81	3.17	1.97	26.9	6.61	4.11	56.2	10.57	6.57	89.8	11.2
F24	48.7	1.92	3.37	2.09	28.6	7.02	4.36	59.6	11.22	6.98	95.4	10.5
A30	46.4	1.83	3.21	1.99	27.2	6.68	4.15	56.7	10.69	6.65	90.9	11.0
B30	48.7	1.92	3.37	2.09	28.6	7.02	4.36	59.6	11.22	6.98	95.4	10.5
C30	51.3	2.02	3.55	2.20	30.0	7.39	4.59	62.7	11.81	7.34	100.3	10.0
D30	54.1	2.13	3.74	2.33	31.8	7.80	4.85	66.3	12.50	7.75	105.9	9.4
E30	57.3	2.26	3.96	2.46	33.6	8.26	5.13	70.1	13.21	8.20	112.0	8.9
F30	60.9	2.40	4.21	2.62	35.8	8.77	5.45	74.5	14.03	8.72	119.1	8.4



SEED SPACING CHART
16T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 120 HOLE DISC

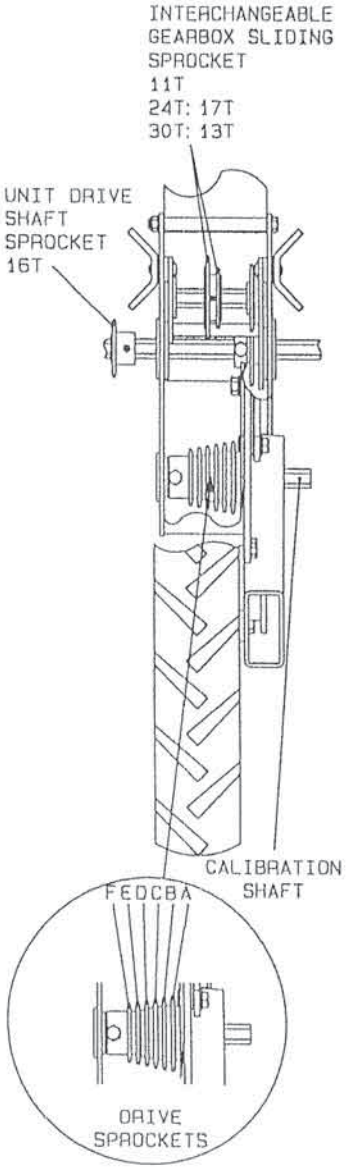
GEAR	SEED SPACING		FORWARD SPEED TO GIVE						REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	13.6	0.54				2.45	1.52	20.8	30.0
B11	14.3	0.56				2.57	1.60	21.9	28.6
C11	15.1	0.59				2.71	1.68	23.0	27.2
D11	15.9	0.62				2.86	1.78	24.3	25.8
E11	16.8	0.66				3.03	1.88	25.7	24.3
F11	17.9	0.70				3.22	2.00	27.3	22.9
A13	16.1	0.63				2.90	1.78	24.3	25.4
B13	16.8	0.66				3.04	1.89	25.8	24.2
C13	17.8	0.70				3.20	1.99	27.2	23.0
D13	18.8	0.74				3.38	2.10	28.7	21.8
E13	19.8	0.78				3.58	2.22	30.3	20.6
F13	21.1	0.83				3.80	2.36	32.3	19.4
A17	21.0	0.82				3.79	2.35	32.1	19.4
B17	22.1	0.87				3.98	2.47	33.8	18.5
C17	23.2	0.91				4.19	2.60	35.5	17.6
D17	24.5	0.96				4.42	2.75	37.6	16.7
E17	26.0	1.02				4.68	2.91	39.8	15.7
F17	27.6	1.09	2.39	1.48	20.2	4.97	3.09	42.2	14.8
A24	30.0	1.16	2.57	1.60	21.9	5.35	3.32	45.4	13.8
B24	31.2	1.23	2.70	1.68	23.0	5.58	3.47	47.4	13.1
C24	32.8	1.29	2.84	1.76	24.0	5.91	3.67	50.2	12.5
D24	34.7	1.36	2.99	1.86	25.4	6.24	3.88	53.0	11.8
E24	36.7	1.44	3.17	1.97	26.9	6.61	4.11	56.2	11.2
F24	39.0	1.54	3.37	2.09	28.6	7.02	4.36	59.6	10.5
A30	37.1	1.46	3.21	1.99	27.2	6.68	4.15	56.7	11.0
B30	39.0	1.54	3.37	2.09	28.6	7.02	4.36	59.6	10.5
C30	41.0	1.62	3.55	2.20	30.0	7.39	4.59	62.7	10.0
D30	43.3	1.70	3.74	2.33	31.8	7.80	4.85	66.3	9.4
E30	45.9	1.81	3.96	2.46	33.6	8.26	5.13	70.1	8.9
F30	48.7	1.91	4.21	2.62	35.8	8.77	5.45	74.5	8.4



SEED SPACING CHART
16T DRIVE SHAFT SPROCKET
SEED SPACING WITH 120 HOLE DISC

SEED SPACING CHART
16T UNIT DRIVE SHAFT SPROCKET
SEED SPACING WITH 144 HOLE DISC

GEAR	SEED SPACING		FORWARD SPEED TO GIVE									REVS OF SEED DISC FOR 25 REVS OF CALIBRATION SHAFT
			12 RPM SEED DISC			25 RPM SEED DISC			40 RPM SEED DISC			
	MM	INS	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	KPH	MPH	CALIBRATION SHAFT RPM	
A11	11.3	0.45				2.45	1.52	20.8	3.92	2.44	33.3	30.0
B11	11.9	0.47				2.57	1.60	21.9	4.10	2.55	34.8	28.6
C11	12.5	0.49				2.71	1.68	23.0	4.33	2.69	36.8	27.2
D11	13.2	0.52				2.86	1.78	24.3	4.57	2.84	38.8	25.8
E11	14.0	0.55				3.03	1.88	25.7	4.84	3.01	41.1	24.3
F11	14.9	0.59				3.22	2.00	27.3	5.14	3.20	43.7	22.9
A13	13.4	0.53				2.90	1.78	24.3	4.63	2.88	39.4	25.4
B13	14.1	0.55				3.04	1.89	25.8	4.87	3.02	41.3	24.2
C13	14.8	0.58				3.20	1.99	27.2	5.12	3.18	43.5	23.0
D13	15.6	0.61				3.38	2.10	28.7	5.40	3.35	45.8	21.8
E13	16.6	0.65				3.58	2.22	30.3	5.72	3.56	48.6	20.6
F13	17.6	0.69				3.80	2.36	32.3	6.08	3.77	51.5	19.4
A17	17.5	0.69				3.79	2.35	32.1	6.06	3.76	51.4	19.4
B17	18.4	0.72				3.98	2.47	33.8	6.36	3.95	54.0	18.5
C17	19.4	0.76				4.19	2.60	35.5	6.70	4.16	56.8	17.6
D17	20.4	0.81				4.42	2.75	37.6	7.07	4.39	60.0	16.7
E17	21.7	0.85				4.68	2.91	39.8	7.48	4.65	63.5	15.7
F17	23.0	0.91	2.39	1.48	20.2	4.97	3.09	42.2	7.95	4.94	67.5	14.8
A24	24.8	0.98	2.57	1.60	21.9	5.35	3.32	45.4	8.56	5.32	72.7	13.8
B24	26.0	1.02	2.70	1.68	23.0	5.58	3.47	47.4	8.98	5.58	76.2	13.1
C24	27.3	1.08	2.84	1.76	24.0	5.91	3.67	50.2	9.45	5.87	80.2	12.5
D24	28.9	1.14	2.99	1.86	25.4	6.24	3.88	53.0	9.98	6.20	84.7	11.8
E24	30.6	1.21	3.17	1.97	26.9	6.61	4.11	56.2	10.57	6.57	89.8	11.2
F24	32.5	1.28	3.37	2.09	28.6	7.02	4.36	59.6	11.22	6.98	95.4	10.5
A30	30.9	1.22	3.21	1.99	27.2	6.68	4.15	56.7	10.69	6.65	90.9	11.0
B30	32.5	1.28	3.37	2.09	28.6	7.02	4.36	59.6	11.22	6.98	95.4	10.5
C30	34.2	1.35	3.55	2.20	30.0	7.39	4.59	62.7	11.81	7.34	100.3	10.0
D30	36.1	1.42	3.74	2.33	31.8	7.80	4.85	66.3	12.50	7.75	105.9	9.4
E30	38.2	1.50	3.96	2.46	33.6	8.25	5.13	70.1	13.21	8.20	112.0	8.9
F30	40.6	1.60	4.21	2.62	35.8	8.77	5.45	74.5	14.03	8.72	119.1	8.4



SEED SPACING/POPULATION CALCULATIONS

BED SYSTEMS

$$\text{Average Seed Spacing}_{\text{millimetres}} = \frac{10,000,000 \times \text{Total No. Lines on Bed}}{\text{Tractor Wheel Track}_{\text{metres}} \times \text{Seeds/Hectare}}$$

$$\text{Seeds/Hectare} = \frac{10,000,000 \times \text{Total No. Lines on Bed}}{\text{Tractor Wheel Track}_{\text{metres}} \times \text{Average Seed Spacing}_{\text{millimetres}}}$$

$$\text{Average Seed Spacing}_{\text{inches}} = \frac{6,272,640 \times \text{Total No. Lines on Bed}}{\text{Tractor Wheel Track}_{\text{inches}} \times \text{Seeds/Acre}}$$

$$\text{Seeds/Acre} = \frac{6,272,640 \times \text{Total No. Lines on Bed}}{\text{Tractor Wheel Track}_{\text{inches}} \times \text{Average Seed Spacing}_{\text{inches}}}$$

FIELD SYSTEMS

$$\text{Average Seed Spacing}_{\text{millimetres}} = \frac{1,000,000,000 \times \text{No. lines/Row}}{\text{Row Width}_{\text{centimetres}} \times \text{Seeds/Hectare}}$$

$$\text{Seeds/Hectare} = \frac{1,000,000,000 \times \text{No. lines/Row}}{\text{Row Width}_{\text{centimetres}} \times \text{Average Seed Spacing}_{\text{millimetres}}}$$

$$\text{Average Seed Spacing}_{\text{inches}} = \frac{6,272,640 \times \text{No. Lines/Row}}{\text{Row Width}_{\text{inches}} \times \text{Seeds/Acre}}$$

$$\text{Seeds/Acre} = \frac{6,272,640 \times \text{No. Lines/Row}}{\text{Row Width}_{\text{inches}} \times \text{Average Seed Spacing}_{\text{inches}}}$$

APPLICATION RATE FOR 4 ROW MACHINE ON 80 INCH BED CENTRES
11T UNIT DRIVE

	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
GEAR	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	121.2	36.9	2385842	965517	111.1	33.9	2187021	885057	181.8	55.4	3578762	1488275	166.7	50.8	3280532	1327586
B11	115.5	35.2	2272730	919742	105.9	32.3	2083335	843097	173.1	52.8	3409095	1379613	158.7	48.4	3215004	1264646
C11	109.8	33.5	2158777	873627	100.6	30.7	1978879	800825	164.4	50.1	3238156	1310440	150.7	45.9	2968317	1201237
D11	103.8	31.6	2044857	827525	95.2	29.0	1874453	758565	155.7	47.5	3067286	1241288	142.8	43.5	2811678	1137847
E11	98.1	29.9	1931867	781800	89.9	27.4	1770879	716650	147.0	44.8	2897801	1172700	134.8	41.1	2656319	1074975
F11	92.4	28.1	1817828	735650	84.6	25.8	1666343	674345	138.0	42.1	2726743	1103475	126.6	38.6	2499515	1011519
A13	102.6	31.3	2019108	817105	94.0	28.7	1850848	749013	153.9	46.9	3028662	1225657	141.1	43.0	2776273	1123519
B13	97.8	29.8	1923079	778244	89.6	27.3	1762823	713390	146.4	44.6	2884619	1167365	134.2	40.9	2644233	1070084
C13	92.7	28.3	1826396	739117	85.0	25.9	1674196	677524	139.2	42.4	2739595	1108676	127.6	38.9	2511295	1016286
D13	87.9	26.8	1730557	700332	80.6	24.6	1586344	641971	132.0	40.2	2595835	1050498	121.0	36.9	2379515	962957
E13	83.1	25.3	1634448	661439	76.2	23.2	1498245	606319	124.5	37.9	2451672	992158	114.1	34.8	2247367	909478
F13	78.0	23.8	1538209	622492	71.5	21.8	1410026	570617	117.3	35.8	2307314	933737	107.5	32.8	2115037	855926
A17	78.6	24.0	1543826	624765	72.0	21.9	1415025	572702	117.6	35.8	2315740	937148	107.8	32.9	2122762	859052
B17	74.7	22.8	1470590	595127	68.5	20.9	1348041	545534	111.9	34.1	2205885	892691	102.6	31.3	2022061	818300
C17	71.1	21.7	1396817	565273	65.1	19.8	1280417	518167	106.5	32.5	2095226	847909	97.6	29.7	1920624	777250
D17	67.2	20.5	1323280	535513	61.6	18.8	1213007	490887	100.8	30.7	1984920	803270	92.4	28.2	1819511	736331
E17	63.6	19.4	1250002	505858	58.1	17.7	1145834	463703	95.1	29.0	1875002	758787	87.2	26.6	1718750	695555
F17	59.7	18.2	1176323	476042	54.7	16.7	1078296	436371	89.7	27.3	1764485	714062	82.2	25.1	1617444	654557
A24	55.5	16.9	1093862	442670	50.9	15.5	1002706	405781	83.4	25.4	1640792	664006	76.4	23.3	1504060	608672
B24	52.8	16.1	1041668	421549	48.4	14.8	954863	386420	79.5	24.2	1562502	632323	72.8	22.2	1432294	579629
C24	50.4	15.4	989573	400466	46.2	14.1	907109	367094	75.6	23.0	1484360	600700	69.2	21.1	1360664	550642
D24	47.7	14.5	937523	379394	43.7	13.3	859376	347777	71.4	21.8	1406252	569090	65.5	20.0	1289064	521666
E24	45.0	13.7	885378	358300	41.2	12.6	811596	328442	67.5	20.6	1328067	537450	61.9	19.9	1217395	492662
F24	42.3	12.9	833185	337178	38.8	11.8	763753	309080	63.6	19.4	1249778	505768	58.3	17.8	1145630	463621
A30	44.4	13.5	874883	354053	40.7	12.4	801977	324549	66.6	20.3	1312325	531080	61.1	18.6	1202965	486823
B30	42.3	12.9	833185	337178	38.8	11.8	763753	309080	63.6	19.4	1249778	505768	58.3	17.8	1145630	463621
C30	40.2	12.3	791625	320360	36.9	11.2	725657	293663	60.3	18.4	1187438	480539	55.3	16.9	1088484	440495
D30	38.1	11.6	749880	303466	34.9	10.6	687389	278177	57.0	17.4	1124820	455199	52.3	15.9	1031085	417266
E30	36.0	11.0	708302	286640	33.0	10.1	649277	262754	54.0	16.5	1062454	429960	49.5	15.1	973916	394130
F30	33.9	10.3	666572	269753	31.1	9.5	611025	247273	50.7	15.5	999858	404629	46.5	14.2	916537	370910

APPLICATION RATE FOR 4 ROW MACHINE ON 80 INCH BED CENTRES

APPLICATION RATE FOR 4 ROW MACHINE ON 76 INCH BED CENTRES
11T UNIT DRIVE

	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
GEAR	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	121.2	36.9	2511412	1016334	111.1	33.9	2302127	931639	181.8	55.4	3767118	1524500	166.7	50.8	3453191	1397458
B11	115.5	35.2	2392347	968150	105.9	32.3	2192984	887470	173.1	52.8	3588521	1452224	158.7	48.4	3289478	1331206
C11	109.8	33.5	2272397	919607	100.6	30.7	2083030	842973	164.4	50.1	3408595	1379410	150.7	45.9	3124544	1264460
D11	103.8	31.6	2152481	871079	95.2	29.0	1973108	798489	155.7	47.5	3228722	1306618	142.8	43.5	2959661	1197733
E11	98.1	29.9	2186026	822947	89.9	27.4	1864083	754368	147.0	44.8	3050317	1234421	134.8	41.1	2796125	1131553
F11	92.4	28.1	1913503	774368	84.6	25.8	1754045	709837	138.0	42.1	2870256	1161553	126.6	38.6	2631069	1064757
A13	102.6	31.3	2125377	860110	94.0	28.7	1948261	788435	153.9	46.9	3188065	1290165	141.1	43.0	2922392	1182651
B13	97.8	29.8	2024293	819204	89.6	27.3	1855603	750936	146.4	44.6	3036441	1228805	134.2	40.9	2783403	1126404
C13	92.7	28.3	1922522	778018	85.0	25.9	1762311	713183	139.2	42.4	2883784	1167027	127.6	38.9	2643468	1069775
D13	87.9	26.8	1821639	737192	80.6	24.6	1669836	675759	132.0	40.2	2731581	1105787	121.0	36.9	2504753	1013638
E13	83.1	25.3	1720472	696251	76.2	23.2	1577100	638230	124.5	37.9	2580707	1044377	114.1	34.8	2365649	957345
F13	78.0	23.8	1619167	655254	71.5	21.8	1484237	600650	117.3	35.8	2428751	982881	107.5	32.8	2226354	900974
A17	78.6	24.0	1625080	657647	72.0	21.9	1489500	602844	117.6	35.8	2437621	969352	107.8	32.9	2234486	904265
B17	74.7	22.8	1547990	626450	68.5	20.9	1418991	574246	111.9	34.1	2321984	939674	102.6	31.3	2128485	861369
C17	71.1	21.7	1470334	595024	65.1	19.8	1347807	545439	106.5	32.5	2205501	892536	97.6	29.7	2021709	818158
D17	67.2	20.5	1392926	563698	61.6	18.8	1276849	516723	100.8	30.7	2089389	845547	92.4	28.2	1915274	775085
E17	63.6	19.4	1315791	532482	58.1	17.7	1206141	488109	95.1	29.0	1973687	798723	87.2	26.6	1809211	732163
F17	59.7	18.2	1238235	501096	54.7	16.7	1135048	459338	89.7	27.3	1857352	751644	82.2	25.1	1702573	689008
A24	55.5	16.9	1151433	465967	50.9	15.5	1055480	427138	83.4	25.4	1727150	698953	76.4	23.3	1583221	640708
B24	52.8	16.1	1096492	443736	48.4	14.8	1005119	406757	79.5	24.2	1644748	665603	72.8	22.2	1507678	610136
C24	50.4	15.4	1041656	421543	46.2	14.1	954851	386415	75.6	23.0	1562485	632316	69.2	21.1	1432277	579623
D24	47.7	14.5	986867	399362	43.7	13.3	904606	366081	71.4	21.8	1480265	599042	65.5	20.0	1356909	549122
E24	45.0	13.7	931977	377158	41.2	12.6	854312	345728	67.5	20.6	1397965	565737	61.9	19.9	1281468	518592
F24	42.3	12.9	877037	354924	38.8	11.8	803950	325348	63.6	19.4	1315555	532387	58.3	17.8	1205927	488022
A30	44.4	13.5	920930	372688	40.7	12.4	844186	341631	66.6	20.3	1381395	559031	61.1	18.6	1266279	512445
B30	42.3	12.9	877037	354924	38.8	11.8	803950	325348	63.6	19.4	1315555	532387	58.3	17.8	1205927	488022
C30	40.2	12.3	833289	337221	36.9	11.2	763849	309118	60.3	18.4	1249934	505831	55.3	16.9	1145773	463678
D30	38.1	11.6	789347	319438	34.9	10.6	723568	292818	57.0	17.4	1184021	479157	52.3	15.9	1085353	439227
E30	36.0	11.0	745581	301727	33.0	10.1	683450	276583	54.0	16.5	1118372	452589	49.5	15.1	1025174	414874
F30	33.9	10.3	701654	283950	31.1	9.5	643184	260287	50.7	15.5	1052482	425925	46.5	14.2	964776	390431

APPLICATION RATE FOR 4 ROW MACHINE
ON 76 INCH BED CENTRES

APPLICATION RATE FOR 4 ROW MACHINE ON 72 INCH BED CENTRES
11T UNIT DRIVE

	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
GEAR	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	121.2	36.9	2650935	1072797	111.1	33.9	2430023	983397	181.8	55.4	3976402	1609194	166.7	50.8	3645035	1475095
B11	115.5	35.2	2525255	1021934	105.9	32.3	2314817	936774	173.1	52.8	3787883	1532903	158.7	48.4	3472227	1405162
C11	109.8	33.5	2398641	970697	100.6	30.7	2198754	889805	164.4	50.1	3597962	1456044	150.7	45.9	3298130	1334707
D11	103.8	31.6	2272063	919472	95.2	29.0	2082725	842850	155.7	47.5	3408095	1379208	142.8	43.5	3124087	1264274
E11	98.1	29.9	2146519	868667	89.9	27.4	1967643	796277	147.0	44.8	3219779	1303000	134.8	41.1	2951465	1194417
F11	92.4	28.1	2019809	817388	84.6	25.8	1851492	749272	138.0	42.1	3029714	1226083	126.6	38.6	2777239	1123910
A13	102.6	31.3	2243453	907894	94.0	28.7	2056497	832237	153.9	46.9	3365180	1361841	141.1	43.0	3084747	1248354
B13	97.8	29.8	2136754	864715	89.6	27.3	1958692	792655	146.4	44.6	3205132	1297072	134.2	40.9	2938037	1188982
C13	92.7	28.3	2029329	821241	85.0	25.9	1860217	752804	139.2	42.4	3043994	1231862	127.6	38.9	2790327	1129207
D13	87.9	26.8	1922841	778147	80.6	24.6	1762604	713301	132.0	40.2	2884261	1167220	121.0	36.9	2643906	1069952
E13	83.1	25.3	1816053	734932	76.2	23.2	1664717	673687	124.5	37.9	2724080	1102397	114.1	34.8	2497074	1010531
F13	78.0	23.8	1709121	691657	71.5	21.8	1566695	634019	117.3	35.8	2563682	1037486	107.5	32.8	2350041	951028
A17	78.6	24.0	1715342	694183	72.0	21.9	1572250	636335	117.6	35.8	2573044	1041275	107.8	32.9	2358624	954502
B17	74.7	22.8	1633989	661252	68.5	20.9	1497823	606148	111.9	34.1	2450983	991878	102.6	31.3	2246734	909222
C17	71.1	21.7	1552019	628081	65.1	19.8	1422685	575741	106.5	32.5	2328029	942121	97.6	29.7	2134027	863611
D17	67.2	20.5	1470311	595014	61.6	18.8	1347785	545430	100.8	30.7	2205383	892522	92.4	28.2	2021678	818145
E17	63.6	19.4	1388891	562064	58.1	17.7	1273149	515226	95.1	29.0	2083336	843097	87.2	26.6	1909722	772838
F17	59.7	18.2	1307026	528935	54.7	16.7	1198107	484857	89.7	27.3	1960538	793402	82.2	25.1	1794660	727286
A24	55.5	16.9	1215402	491856	50.9	15.5	1114117	450845	83.4	25.4	1823102	737784	76.4	23.3	1671177	676302
B24	52.8	16.1	1157408	468387	48.4	14.8	1060959	429355	79.5	24.2	1736113	702581	72.8	22.2	1591437	644032
C24	50.4	15.4	1099526	444962	46.2	14.1	1007898	407882	75.6	23.0	1649289	667444	69.2	21.1	1511848	611824
D24	47.7	14.5	1041692	421548	43.7	13.3	954862	386419	71.4	21.8	1562502	632322	65.5	20.0	1432293	579629
E24	45.0	13.7	983753	398111	41.2	12.6	901773	364935	67.5	20.6	1475630	597167	61.9	19.9	1352661	547402
F24	42.3	12.9	925761	374642	38.8	11.8	848614	343422	63.6	19.4	1388642	561964	58.3	17.8	1292922	515134
A30	44.4	13.5	927092	393392	40.7	12.4	891085	360610	66.6	20.3	1458139	590088	61.1	18.6	1336627	540914
B30	42.3	12.9	925761	374642	38.8	11.8	848614	343422	63.6	19.4	1388642	561964	58.3	17.8	1272922	515134
C30	40.2	12.3	879583	355955	36.9	11.2	806285	326292	60.3	18.4	1319375	533932	55.3	16.9	1209427	489438
D30	38.1	11.6	833200	337184	34.9	10.6	763766	309086	57.0	17.4	1249800	505777	52.3	15.9	1145650	463628
E30	36.0	11.0	787002	318489	33.0	10.1	721419	291948	54.0	16.5	1180504	477733	49.5	15.1	1082128	437922
F30	33.9	10.3	740635	299725	31.1	9.5	678917	274747	50.7	15.5	1110953	449587	46.5	14.2	1018374	412122

APPLICATION RATE FOR 4 ROW MACHINE
ON 72 INCH BED CENTRES

APPLICATION RATE FOR 4 ROW MACHINE ON 68 INCH BED CENTRES
11T UNIT DRIVE

	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
GEAR	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	121.2	36.9	2806872	1135902	111.1	33.9	2572966	1041244	181.8	55.4	4210309	1703853	166.7	50.8	3859449	1561865
B11	115.5	35.2	2673799	1082050	105.9	32.3	2450982	991879	173.1	52.8	4010700	1623074	158.7	48.4	3676475	1487818
C11	109.8	33.5	2539737	1027796	100.6	30.7	2328093	942146	164.4	50.1	3809606	1541694	150.7	45.9	3492138	1413220
D11	103.8	31.6	2405732	973559	95.2	29.0	2205238	892429	155.7	47.5	3608571	1460338	142.8	43.5	3307856	1338643
E11	98.1	29.9	2272785	919765	89.9	27.4	2083887	843117	147.0	44.8	3409178	1379647	134.8	41.1	3125081	1264676
F11	92.4	28.1	2138621	865470	84.6	25.8	1960403	793347	138.0	42.1	3207933	1298206	126.6	38.6	2940606	1190022
A13	102.6	31.3	2375421	961300	94.0	28.7	2177468	881192	153.9	46.9	3563132	1441949	141.1	43.0	3266203	1321787
B13	97.8	29.8	2262446	915581	89.6	27.3	2073909	839282	146.4	44.6	3393669	1373370	134.2	40.9	3110862	1258923
C13	92.7	28.3	2148701	869549	85.0	25.9	1969642	797087	139.2	42.4	3223053	1304324	127.6	38.9	2954464	1194531
D13	87.9	26.8	2035949	823920	80.6	24.6	1866287	755260	132.0	40.2	3053923	1235880	121.0	36.9	2799430	1132890
E13	83.1	25.3	1922880	778163	76.2	23.2	1762641	713316	124.5	37.9	2884320	1167244	114.1	34.8	2643961	1069974
F13	78.0	23.8	1809657	732343	71.5	21.8	1628854	671314	117.3	35.8	2714486	1098514	107.5	32.8	2488279	1006971
A17	78.6	24.0	1816266	735018	72.0	21.9	1664735	673766	117.6	35.8	2724400	1102526	107.8	32.9	2497367	1010649
B17	74.7	22.8	1730106	700150	68.5	20.9	1585931	641804	111.9	34.1	1050224	1050224	102.6	31.3	2378895	962706
C17	71.1	21.7	1643314	665027	65.1	19.8	1506372	609608	106.5	32.5	997540	997540	97.6	29.7	2259558	914411
D17	67.2	20.5	1556800	630015	61.6	18.8	1427066	577514	100.8	30.7	945023	945023	92.4	28.2	2228836	866271
E17	63.6	19.4	1470590	595127	58.1	17.7	1348040	545533	95.1	29.0	892691	892691	87.2	26.6	2022060	818299
F17	59.7	18.2	1383910	560049	54.7	16.7	1268584	513378	89.7	27.3	840073	840073	82.2	25.1	1902875	770067
A24	55.5	16.9	1286896	520789	50.9	15.5	1179654	477389	83.4	25.4	781183	781183	76.4	23.3	1769482	716085
B24	52.8	16.1	1225491	495940	48.4	14.8	1123369	454611	79.5	24.2	743909	743909	72.8	22.2	1685051	681917
C24	50.4	15.4	1164204	471137	46.2	14.1	1067186	431876	75.6	23.0	706706	706706	69.2	21.1	1512545	647814
D24	47.7	14.5	1102969	446345	43.7	13.3	1011030	409150	71.4	21.8	669518	669518	65.5	20.0	1516546	613725
E24	45.0	13.7	1041621	421529	41.2	12.6	954819	386402	67.5	20.6	632294	632294	61.9	19.9	1432229	579603
F24	42.3	12.9	980217	396680	38.8	11.8	898533	363624	63.6	19.4	595021	595021	58.3	17.8	1347800	545436
A30	44.4	13.5	1029274	416533	40.7	12.4	943502	381822	66.6	20.3	624799	624799	61.1	18.6	1415253	572833
B30	42.3	12.9	980217	396680	38.8	11.8	898533	363624	63.6	19.4	595021	595021	58.3	17.8	1347800	545436
C30	40.2	12.3	931324	376894	36.9	11.2	853714	345485	60.3	18.4	565340	565340	55.3	16.9	1280569	518229
D30	38.1	11.6	1133152	357019	34.9	10.6	808693	327267	57.0	17.4	535528	535528	52.3	15.9	1213041	490901
E30	36.0	11.0	833297	337224	33.0	10.1	763856	309122	54.0	16.5	505835	505835	49.5	15.1	1145783	463683
F30	33.9	10.3	784202	317356	31.1	9.5	718853	290909	50.7	15.5	476034	476034	46.5	14.2	1078279	436364

APPLICATION RATE FOR 4 ROW MACHINE ON 64 INCH BED CENTRES
11T UNIT DRIVE

GEAR	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	121.2	36.9	2982302	1206896	111.1	33.9	2733777	1106321	181.8	55.4	4473453	1810343	166.7	50.8	4100664	1659482
B11	115.5	35.2	2840912	1149678	105.9	32.3	2604169	1053871	173.1	52.8	4261369	1724516	158.7	48.4	3906255	1580807
C11	109.8	33.5	2698471	1092034	100.6	30.7	2473598	1001031	164.4	50.1	4047707	1638050	150.7	45.9	3710396	1501546
D11	103.8	31.6	2556071	1034407	95.2	29.0	2343066	948206	155.7	47.5	3834107	1551609	142.8	43.5	3514598	1422308
E11	98.1	29.9	2414834	977250	89.9	27.4	2213599	895812	147.0	44.8	3622252	1465875	134.8	41.1	3320398	1343719
F11	92.4	28.1	2272285	919562	84.6	25.8	2082928	842932	138.0	42.1	3408428	1379344	126.6	38.6	3124394	1264399
A13	102.6	31.3	2523885	1021381	94.0	28.7	2313560	936266	153.9	46.9	3785828	1532071	141.1	43.0	3470341	1404398
B13	97.8	29.8	2403848	972804	89.6	27.3	2203528	891737	146.4	44.6	3605773	1459206	134.2	40.9	3305291	1337605
C13	92.7	28.3	2282995	923896	85.0	25.9	2092745	846905	139.2	42.4	3424493	1385844	127.6	38.9	3139118	1270358
D13	87.9	26.8	2163196	875415	80.6	24.6	1982930	802463	132.0	40.2	3244793	1313123	121.0	36.9	2974394	1203696
E13	83.1	25.3	2043060	826798	76.2	23.2	1872806	757898	124.5	37.9	3064590	1240197	114.1	34.8	2809208	1136847
F13	78.0	23.8	1922761	778115	71.5	21.8	1762532	713272	117.3	35.8	2884142	1167172	107.5	32.8	2643796	1069907
A17	78.6	24.0	1929783	780956	72.0	21.9	1768781	715877	117.6	35.8	2894675	1171434	107.8	32.9	2653452	1073814
B17	74.7	22.8	1838238	743909	68.5	20.9	1685051	681917	111.9	34.1	2757356	1115863	102.6	31.3	2527576	1022875
C17	71.1	21.7	1746022	706591	65.1	19.8	1600521	647708	106.5	32.5	2619033	1059886	97.6	29.7	2400780	971562
D17	67.2	20.5	1654100	669391	61.6	18.8	1515826	613609	100.8	30.7	2481150	1004087	92.4	28.2	2274388	920413
E17	63.6	19.4	1562502	632322	58.1	17.7	1432293	579629	95.1	29.0	2343753	948484	87.2	26.6	2148438	869443
F17	59.7	18.2	1470404	595052	54.7	16.7	1347870	545464	89.7	27.3	2205606	892578	82.2	25.1	2021805	818197
A24	55.5	16.9	1367327	553338	50.9	15.5	1253382	507226	83.4	25.4	2050990	830007	76.4	23.3	1880075	760840
B24	52.8	16.1	1302084	526936	48.4	14.8	1193579	483024	79.5	24.2	1953128	790403	72.8	22.2	1790367	724537
C24	50.4	15.4	1236967	500583	46.2	14.1	1133886	458868	75.6	23.0	1855450	750875	69.2	21.1	1700829	688302
D24	47.7	14.5	1171904	474242	43.7	13.3	1074219	434722	71.4	21.8	1757814	711363	65.5	20.0	1611330	652083
E24	45.0	13.7	1106723	447875	41.2	12.6	1014495	410552	67.5	20.6	1660084	671813	61.9	19.9	1521743	615828
F24	42.3	12.9	1041481	421473	38.8	11.8	954691	386350	63.6	19.4	1562222	632210	58.3	17.8	1423038	579526
A30	44.4	13.5	1093604	442567	40.7	12.4	1002470	405686	66.6	20.3	1640407	663849	61.1	18.6	1503706	608528
B30	42.3	12.9	1041481	421473	38.8	11.8	954691	386350	63.6	19.4	1562222	632210	58.3	17.8	1432038	579526
C30	40.2	12.3	989531	400449	36.9	11.2	907071	367078	60.3	18.4	1484297	600674	55.3	16.9	1360605	550618
D30	38.1	11.6	937350	379332	34.9	10.6	859237	347722	57.0	17.4	1406025	568999	52.3	15.9	1288856	521582
E30	36.0	11.0	885378	358300	33.0	10.1	811597	328442	54.0	16.5	1328067	537450	49.5	15.1	1217394	492663
F30	33.9	10.3	833214	337191	31.1	9.5	763781	309091	50.7	15.5	1249823	505786	46.5	14.2	1145671	463637

APPLICATION RATE FOR 4 ROW MACHINE ON 60 INCH BED CENTRES
11T UNIT DRIVE

	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
GEAR	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	121.2	36.9	3181122	1287356	111.1	33.9	2916028	1180076	181.8	55.4	4771683	1931033	166.7	50.8	4374042	1770114
B11	115.5	35.2	3030306	1226323	105.9	32.3	2777780	1124129	173.1	52.8	4545460	1839484	158.7	48.4	4166672	1686194
C11	109.8	33.5	2878369	1164836	100.6	30.7	2638505	1067766	164.4	50.1	4317554	1747253	150.7	45.9	3957756	1601649
D11	103.8	31.6	2726476	1103367	95.2	29.0	2499270	1011420	155.7	47.5	4089714	1655050	142.8	43.5	3748904	1517129
E11	98.1	29.9	2575823	1042400	89.9	27.4	2361172	955533	147.0	44.8	3863735	1563600	134.8	41.1	3541758	1433300
F11	92.4	28.1	2423771	980866	84.6	25.8	2221790	899127	138.0	42.1	3635657	1471300	126.6	38.6	3332687	1348692
A13	102.6	31.3	2692144	1089473	94.0	28.7	2467797	998684	153.9	46.9	4036216	1634209	141.1	43.0	3701697	1498025
B13	97.8	29.8	2564105	1037658	89.6	27.3	2350430	951186	146.4	44.6	3846158	1556486	134.2	40.9	3525644	1426779
C13	92.7	28.3	2435195	985489	85.0	25.9	2232261	903365	139.2	42.4	3652793	1478234	127.6	38.9	3348393	1355048
D13	87.9	26.8	2307409	933776	80.6	24.6	2115125	855961	132.0	40.2	3461113	1400664	121.0	36.9	3172687	1283942
E13	83.1	25.3	2179264	881918	76.2	23.2	1997660	808425	124.5	37.9	3268896	1322877	114.1	34.8	2996489	1212637
F13	78.0	23.8	2050945	829989	71.5	21.8	1880034	760823	117.3	35.8	3076418	1244983	107.5	32.8	2820049	1141234
A17	78.6	24.0	2058435	833020	72.0	21.9	1886700	763602	117.6	35.8	3087653	1249530	107.8	32.9	2830349	1145402
B17	74.7	22.8	1960787	793503	68.5	20.9	1797388	727378	111.9	34.1	2941180	1190254	102.6	31.3	2696081	1091067
C17	71.1	21.7	1862423	753697	65.1	19.8	1707222	690889	106.5	32.5	2793635	1130545	97.6	29.7	2560832	1036333
D17	67.2	20.5	1764373	714017	61.6	18.8	1617342	654516	100.8	30.7	2646560	1071026	92.4	28.2	2426014	981774
E17	63.6	19.4	1666669	674477	58.1	17.7	1527779	618271	95.1	29.0	2500003	1011716	87.2	26.6	2291667	927406
F17	59.7	18.2	1568431	634722	54.7	16.7	1437728	581828	89.7	27.3	2352646	952083	82.2	25.1	2156592	872743
A24	55.5	16.9	1458482	590227	50.9	15.5	1336941	541041	83.4	25.4	2187723	885341	76.4	23.3	2005413	811563
B24	52.8	16.1	1388890	562065	48.4	14.8	1273151	515226	79.5	24.2	2083336	843097	72.8	22.2	1909725	772839
C24	50.4	15.4	1319431	533955	46.2	14.1	1209478	489459	75.6	23.0	1979147	800933	69.2	21.1	1814218	734189
D24	47.7	14.5	1250031	505858	43.7	13.3	1145834	463703	71.4	21.8	1875002	758787	65.5	20.0	1718752	695555
E24	45.0	13.7	1180504	477733	41.2	12.6	1082128	437922	67.5	20.6	1770756	716600	61.9	19.9	1623193	656883
F24	42.3	12.9	1110913	449571	38.8	11.8	1018337	412107	63.6	19.4	1666370	674357	58.3	17.8	1527507	618161
A30	44.4	13.5	1166511	472071	40.7	12.4	1069302	432732	66.6	20.3	1749767	708106	61.1	18.6	1603953	649097
B30	42.3	12.9	1110913	449571	38.8	11.8	1018337	412107	63.6	19.4	1666370	674357	58.3	17.8	1527507	618161
C30	40.2	12.3	1055500	427146	36.9	11.2	967542	391550	60.3	18.4	1583250	640719	55.3	16.9	1451312	587326
D30	38.1	11.6	999840	404621	34.9	10.6	916519	370903	57.0	17.4	1499760	606932	52.3	15.9	1374780	556354
E30	36.0	11.0	944403	382187	33.0	10.1	865703	350338	54.0	16.5	1416605	573280	49.5	15.1	1298554	525507
F30	33.9	10.3	888762	359670	31.1	9.5	814700	329697	50.7	15.5	1333144	539505	46.5	14.2	1222049	494546

APPLICATION RATE FOR 4 ROW MACHINE ON 80 INCH BED CENTRES
16T UNIT DRIVE

	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
GEAR	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	176.3	53.7	3470768	1404571	161.6	49.3	3181537	1287524	264.5	80.6	5206151	2106857	242.4	73.9	4772306	1931285
B11	167.9	51.2	3305447	1337669	153.9	46.9	3029993	1226196	251.9	76.8	4958171	2006502	230.9	70.4	4544990	1839294
C11	159.5	48.6	3140228	1270806	146.3	44.6	2878542	1164905	239.3	72.9	4710341	1838709	219.3	66.9	4317813	1747358
D11	151.1	46.1	2974919	1203908	138.6	42.2	2727009	1103582	226.7	69.1	4462379	1805862	207.8	63.3	4090514	1655374
E11	142.7	43.5	2809673	1137035	130.9	39.9	2575534	1042283	214.1	65.3	4214510	1705553	196.3	59.8	3863301	1563424
F11	134.3	40.9	2644417	1070159	123.2	37.5	2424049	980978	201.5	61.4	3966626	1605238	184.7	56.3	3636073	1471468
A13	149.2	45.5	2936824	1188491	136.8	41.7	2692088	1089451	223.8	68.2	4405236	1782737	205.1	62.5	4038133	1634176
B13	142.1	43.3	2796965	1131893	130.2	39.7	2563885	1037568	213.1	65.0	4195448	1697839	195.4	59.5	3845828	1556353
C13	135.0	41.1	2657089	1075286	123.7	37.7	2435665	985679	202.5	61.7	3985634	1612930	185.6	56.6	3653497	1478519
D13	127.9	39.0	2517269	1018703	117.3	35.8	2307497	933812	191.8	58.5	3775903	1528055	175.8	53.6	3461244	1400717
E13	120.8	36.8	2377421	962109	110.7	33.7	2179302	881933	181.2	55.2	3566131	1443164	166.1	50.6	3268953	1322900
F13	113.7	34.7	2237572	905514	104.2	31.8	2051108	830054	170.5	52.0	3356358	1358271	156.3	47.6	3076661	1245082
A17	114.1	34.8	2245784	908837	104.6	31.9	2058635	833101	171.1	52.2	3368375	1363256	156.9	47.8	3087953	1249651
B17	108.7	33.1	2138864	865568	99.6	30.4	1960625	793438	163.0	49.7	3208297	1298353	149.4	45.5	2940938	1191565
C17	103.2	31.5	2031899	822281	94.6	28.8	1862574	753758	154.8	47.2	3047849	1233422	141.9	43.3	2793862	1130636
D17	97.8	29.8	1924967	779007	89.6	27.3	1764554	714090	146.7	44.7	2887451	1168511	134.5	41.0	2646830	1071135
E17	92.4	28.2	1818032	735732	84.7	25.8	1666529	674421	138.5	42.2	2727047	1103598	127.0	38.7	2499794	1011632
F17	82.9	25.3	1711172	692487	79.7	24.3	1568575	634781	130.4	39.7	2566759	1038731	119.5	36.4	2352862	952170
A24	80.8	24.6	1590775	643764	74.1	22.6	1458210	590117	121.2	36.9	2386163	965647	111.1	33.9	2187315	885176
B24	77.0	23.5	1515011	613103	70.5	21.5	1388760	562012	115.4	35.2	2272516	919655	105.8	32.3	2083139	843017
C24	73.1	22.3	1439263	582449	67.0	20.4	1319324	533912	109.7	33.4	2158895	873674	100.5	30.6	1979986	800868
D24	69.3	21.1	1363514	551795	63.5	19.4	1249888	505812	103.9	31.7	2045270	827693	95.2	29.0	1874831	758718
E24	65.4	19.9	1287768	521142	58.6	17.9	1180454	477713	94.9	28.9	1931652	781712	89.9	27.4	1770681	716570
F24	61.6	18.8	1212021	490488	56.4	17.2	1111019	449614	92.4	28.2	1818032	735732	84.7	25.8	1666529	674421
A30	64.7	19.7	1272617	515010	59.3	18.1	1166565	472093	97.0	29.6	1908925	772515	88.9	27.1	1749848	708139
B30	61.6	18.8	1212021	490488	56.4	17.2	1111019	449614	92.4	28.2	1818032	735732	84.7	25.8	1666529	674421
C30	58.5	17.8	1151419	465963	53.6	16.3	1055468	427133	87.7	26.7	1727129	698945	80.4	24.5	1583201	640700
D30	55.4	16.9	1090816	441438	50.8	15.5	999914	404651	83.1	25.3	1636224	662157	76.2	23.2	1499872	606977
E30	52.3	15.9	1030217	416915	48.0	14.6	944366	382172	78.5	23.9	1545325	625371	72.0	21.9	1416548	573257
F30	49.3	15.0	969611	392388	45.1	13.7	888810	359689	73.9	22.5	1454416	588582	67.7	20.6	1333214	539534

APPLICATION RATE FOR 4 ROW MACHINE ON 76 INCH BED CENTRES
16T UNIT DRIVE

GEAR	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	176.3	53.7	3653439	1478496	161.6	49.3	3348986	1355288	264.5	80.6	5480159	2217744	242.4	73.9	5023479	2032932
B11	167.9	51.2	3479418	1408072	153.9	46.9	3189467	1290733	251.9	76.8	5219128	2112107	230.9	70.4	4784200	1936099
C11	159.5	48.6	3305503	1337691	146.3	44.6	3030044	1226216	239.3	72.9	4958254	1935483	219.3	66.9	4545066	1839324
D11	151.1	46.1	3131494	1267272	138.6	42.2	2870536	1161666	226.7	69.1	4697241	1900907	207.8	63.3	4305804	1742499
E11	142.7	43.5	2957551	1196879	130.9	39.9	2711088	1097139	214.1	65.3	4436327	1795319	196.3	59.8	4066633	1645709
F11	134.3	40.9	2783597	1126483	123.2	37.5	2551630	1032609	201.5	61.4	4175395	1689724	184.7	56.3	3827445	1548913
A13	149.2	45.5	3091393	1251043	136.8	41.7	2833777	1146790	223.8	68.2	4637091	1876566	205.1	62.5	4250666	1720185
B13	142.1	43.3	2944174	1191466	130.2	39.7	2698826	1092177	213.1	65.0	4416261	1787199	195.4	59.5	4048239	1638266
C13	135.0	41.1	2796936	1131880	123.7	37.7	2563858	1037557	202.5	61.7	4195404	1697821	185.6	56.6	3845786	1556336
D13	127.9	39.0	2649756	1072319	117.3	35.8	2428944	982959	191.8	58.5	3974634	1608479	175.8	53.6	3643415	1474439
E13	120.8	36.8	2502548	1012746	110.7	33.7	2294002	928351	181.2	55.2	3753822	1519119	166.1	50.6	3441003	1392526
F13	113.7	34.7	2355339	953173	104.2	31.8	2159061	873741	170.5	52.0	3533008	1429759	156.3	47.6	3238590	1310612
A17	114.1	34.8	2363983	956671	104.6	31.9	2166984	876948	171.1	52.2	3545974	1435006	156.9	47.8	3250476	1315422
B17	108.7	33.1	2251436	911124	99.6	30.4	2063816	835198	163.0	49.7	3377154	1366687	149.4	45.5	3095724	1252796
C17	103.2	31.5	2138814	865559	94.6	28.8	1960604	793429	154.8	47.2	3208262	1298338	141.9	43.3	2940907	1190143
D17	97.8	29.8	2026281	820007	89.6	27.3	1857425	751674	146.7	44.7	3039422	1230012	134.5	41.0	2786137	1127511
E17	92.4	28.2	1913717	774455	84.7	25.8	1754241	709917	138.5	42.2	2870576	1161682	127.0	38.7	2631362	1064875
F17	82.9	25.3	1801234	728934	79.7	24.3	1651131	668190	130.4	39.7	2701851	1093401	119.5	36.4	2476697	1002284
A24	80.8	24.6	1674500	677646	74.1	22.6	1534958	621176	121.2	36.9	2511750	1016470	111.1	33.9	2302437	931764
B24	77.0	23.5	1594748	645372	70.5	21.5	1461853	591591	115.4	35.2	2392122	968058	105.8	32.3	2192778	887387
C24	73.1	22.3	1515013	613104	67.0	20.4	1388762	562013	109.7	33.4	2272521	919657	100.5	30.6	2083143	843019
D24	69.3	21.1	1435277	580836	63.5	19.4	1315671	532434	103.9	31.7	2152916	871255	95.2	29.0	1973507	798651
E24	65.4	19.9	1355545	548571	58.6	17.9	1242583	502856	94.9	28.9	2033318	822855	89.9	27.4	1863875	754284
F24	61.6	18.8	1275812	516303	56.4	17.2	1169494	473278	92.4	28.2	1913717	774455	84.7	25.8	1754241	709917
A30	64.7	19.7	1339596	542116	59.3	18.1	1227963	496940	97.0	29.6	2009394	813174	88.9	27.1	1841945	754409
B30	61.6	18.8	1275812	516303	56.4	17.2	1169494	473278	92.4	28.2	1913717	774455	84.7	25.8	1754241	709917
C30	58.5	17.8	1212020	490487	53.6	16.3	1111018	449613	87.7	26.7	1818030	735731	80.4	24.5	1666527	674421
D30	55.4	16.9	1148227	464672	50.8	15.5	1052541	425949	83.1	25.3	1722341	697007	76.2	23.2	1578812	638923
E30	52.3	15.9	1084438	438857	48.0	14.6	994069	402286	78.5	23.9	1626658	658285	72.0	21.9	1491103	603429
F30	49.3	15.0	1020643	413040	45.1	13.7	935589	378620	73.9	22.5	1530964	619560	67.7	20.6	1403383	567930

APPLICATION RATE FOR 4 ROW MACHINE ON 72 INCH BED CENTRES
16T UNIT DRIVE

GEAR	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	176.3	53.7	3856408	1560634	161.6	49.3	3535041	1430582	264.5	80.6	5784612	2340952	242.4	73.9	5302562	2145872
B11	167.9	51.2	3672719	1486298	153.9	46.9	3366659	1362440	251.9	76.8	5509079	2229447	230.9	70.4	5049989	2043660
C11	159.5	48.6	3489142	1412007	146.3	44.6	3198380	1294339	239.3	72.9	5233712	2043010	219.3	66.9	4797570	1941509
D11	151.1	46.1	3305466	1337676	138.6	42.2	3030010	1226202	226.7	69.1	4958199	2006513	207.8	63.3	4545016	1839304
E11	142.7	43.5	3121859	1263372	130.9	39.9	2861704	1158092	214.1	65.3	4682789	1895059	196.3	59.8	4292557	1737137
F11	134.3	40.9	2938241	1189065	123.2	37.5	2693387	1089976	201.5	61.4	4407362	1783597	184.7	56.3	4040081	1634964
A13	149.2	45.5	3263137	1320546	136.8	41.7	2991209	1210501	223.8	68.2	4894707	1980819	205.1	62.5	4486814	1815751
B13	142.1	43.3	3107739	1257658	130.2	39.7	2848761	1152853	213.1	65.0	4661609	1886487	195.4	59.5	4273142	1729281
C13	135.0	41.1	2952321	1194762	123.7	37.7	2706294	1095199	202.5	61.7	4428482	1792144	185.6	56.6	4059441	1642799
D13	127.9	39.0	2796965	1131892	117.3	35.8	2563885	1037568	191.8	58.5	4195447	1697839	175.8	53.6	3845827	1556352
E13	120.8	36.8	2641578	1069010	110.7	33.7	2421447	979926	181.2	55.2	3962367	1603515	166.1	50.6	3632170	1469888
F13	113.7	34.7	2486191	1006127	104.2	31.8	2279008	922282	170.5	52.0	3729287	1509190	156.3	47.6	3418512	1383424
A17	114.1	34.8	2495565	1009819	104.6	31.9	2287372	925667	171.1	52.2	3742972	1514728	156.9	47.8	3431058	1388501
B17	108.7	33.1	2376516	961742	99.6	30.4	2178472	881597	163.0	49.7	3564774	1442614	149.4	45.5	3267709	1322396
C17	103.2	31.5	2257666	913646	94.6	28.8	2069527	837508	154.8	47.2	3386499	1370468	141.9	43.3	3104291	1256262
D17	97.8	29.8	2138852	865563	89.6	27.3	1960615	793433	146.7	44.7	3208279	1298346	134.5	41.0	2940922	1190150
E17	92.4	28.2	2020035	817480	84.7	25.8	1851699	749357	138.5	42.2	3030052	1226220	127.0	38.7	2777548	1124035
F17	82.9	25.3	1901302	769430	79.7	24.3	1742861	705312	130.4	39.7	2851954	1154146	119.5	36.4	2614291	1057967
A24	80.8	24.6	1767527	715293	74.1	22.6	1620233	655686	121.2	36.9	2651292	1072941	111.1	33.9	2430350	983528
B24	77.0	23.5	1683345	681226	70.5	21.5	1543067	624457	115.4	35.2	2525017	1021839	105.8	32.3	2314599	936686
C24	73.1	22.3	1599161	647166	67.0	20.4	1465916	593236	109.7	33.4	2398772	970749	100.5	30.6	2198873	889853
D24	69.3	21.1	1515015	613105	63.5	19.4	1388764	562013	103.9	31.7	2272522	919658	95.2	29.0	2083146	843020
E24	65.4	19.9	1430853	579047	58.6	17.9	1311616	530792	94.9	28.9	2146280	868569	89.9	27.4	1967423	796188
F24	61.6	18.8	1346690	544987	56.4	17.2	1234466	499571	92.4	28.2	2020035	817480	84.7	25.8	1851699	749357
A30	64.7	19.7	1414018	572233	59.3	18.1	1296183	524547	97.0	29.6	2121027	858350	88.9	27.1	1944275	786821
B30	61.6	18.8	1346690	544987	56.4	17.2	1234466	499571	92.4	28.2	2020035	817480	84.7	25.8	1851699	749357
C30	58.5	17.8	1279354	517737	53.6	16.3	1172742	474592	87.7	26.7	1919032	776605	80.4	24.5	1759112	711888
D30	55.4	16.9	1212017	490487	50.8	15.5	1111016	449612	83.1	25.3	1818027	735730	76.2	23.2	1666524	674419
E30	52.3	15.9	1144685	463238	48.0	14.6	1049295	424635	78.5	23.9	1717027	694857	72.0	21.9	1573942	636952
F30	49.3	15.0	1077345	435987	45.1	13.7	987567	399654	73.9	22.5	1616017	653980	67.7	20.6	1481349	599482

APPLICATION RATE FOR 4 ROW MACHINE ON 72 INCH BED CENTRES

APPLICATION RATE FOR 4 ROW MACHINE ON 68 INCH BED CENTRES
16T UNIT DRIVE

GEAR	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	176.3	53.7	4083256	1652436	161.6	49.3	3742984	1514734	264.5	80.6	6124884	2478655	242.4	73.9	5614477	2272100
B11	167.9	51.2	3888761	1573728	153.9	46.9	3564698	1442584	251.9	76.8	5833143	2360591	230.9	70.4	5347047	2163875
C11	159.5	48.6	3694385	1495066	146.3	44.6	3386520	1370477	239.3	72.9	5541578	2163187	219.3	66.9	5079780	2055716
D11	151.1	46.1	3499905	1416371	138.6	42.2	3208246	1298332	226.7	69.1	5249858	2124544	207.8	63.3	4812370	1947499
E11	142.7	43.5	3305498	1337689	130.9	39.9	3030040	1226215	214.1	65.3	4958247	2006533	196.3	59.8	4545060	1839322
F11	134.3	40.9	3111079	1259010	123.2	37.5	2851822	1154092	201.5	61.4	4666618	1888515	184.7	56.3	4277733	1731139
A13	149.2	45.5	3455087	1398225	136.8	41.7	3167163	1281707	223.8	68.2	5182631	2097338	205.1	62.5	4750744	1922560
B13	142.1	43.3	3290547	1331638	130.2	39.7	3016335	1220668	213.1	65.0	4935821	1997457	195.4	59.5	4524503	1831003
C13	135.0	41.1	3125987	1265043	123.7	37.7	2865488	1159623	202.5	61.7	4688981	1897564	185.6	56.6	4298231	1739434
D13	127.9	39.0	2961492	1198474	117.3	35.8	2714702	1098602	191.8	58.5	4442239	1797712	175.8	53.6	4072052	1647903
E13	120.8	36.8	2796965	1131893	110.7	33.7	2563885	1037569	181.2	55.2	4195448	1697839	166.1	50.6	3845827	1556352
F13	113.7	34.7	2632437	1065311	104.2	31.8	2413068	976534	170.5	52.0	3948656	1597966	156.3	47.6	3619601	1464802
A17	114.1	34.8	2642098	1069220	104.6	31.9	2421924	980119	171.1	52.2	3963147	1603830	156.9	47.8	3632885	1470177
B17	108.7	33.1	2516311	1018316	99.6	30.4	2306618	933456	163.0	49.7	3774467	1527474	149.4	45.5	3459927	1400184
C17	103.2	31.5	2390470	966507	94.6	28.8	2191264	886774	154.8	47.2	3585705	1451084	141.9	43.3	3286896	1330160
D17	97.8	29.8	2264667	916479	89.6	27.3	2075945	840106	146.7	44.7	3397001	1374719	134.5	41.0	3113918	1260159
E17	92.4	28.2	2138861	865567	84.7	25.8	1960623	793436	138.5	42.2	3208291	1298351	127.0	38.7	2940934	1190155
F17	82.9	25.3	2013144	814691	79.7	24.3	1845382	746801	130.4	39.7	3019716	1222037	119.5	36.4	2768073	1120200
A24	80.8	24.6	1871500	757369	74.1	22.6	1715541	694256	121.2	36.9	2807250	1136055	111.1	33.9	2573312	1041383
B24	77.0	23.5	1782365	721298	70.5	21.5	1633835	661190	115.4	35.2	2673548	1081947	105.8	32.3	2450752	991785
C24	73.1	22.3	1693250	685234	67.0	20.4	1552146	628132	109.7	33.4	2539876	1027852	100.5	30.6	2328219	942198
D24	69.3	21.1	1604134	649170	63.5	19.4	1470456	595073	103.9	31.7	2406200	973756	95.2	29.0	2205684	892609
E24	65.4	19.9	1515021	613108	58.6	17.9	1388770	562016	94.9	28.9	2272532	919661	89.9	27.4	2083154	843023
F24	61.6	18.8	1425907	577045	56.4	17.2	1307081	528957	92.4	28.2	2138861	865567	84.7	25.8	1960623	793436
A30	64.7	19.7	1497196	605894	59.3	18.1	1372429	555403	97.0	29.6	2245794	908841	88.9	27.1	2058644	833104
B30	61.6	18.8	1425907	577045	56.4	17.2	1307081	528957	92.4	28.2	2138861	865567	84.7	25.8	1960623	793436
C30	58.5	17.8	1354610	548192	53.6	16.3	1241726	502509	87.7	26.7	2031916	822288	80.4	24.5	1862589	753764
D30	55.4	16.9	1283313	519339	50.8	15.5	1176370	476060	83.1	25.3	1924969	779008	76.2	23.2	1764555	714091
E30	52.3	15.9	1212019	490488	48.0	14.6	1111018	449614	78.5	23.9	1818029	735731	72.0	21.9	1666526	674420
F30	49.3	15.0	1140718	461633	45.1	13.7	1045659	423163	73.9	22.5	1711077	692449	67.7	20.6	1568487	634745

APPLICATION RATE FOR 4 ROW MACHINE
ON 68 INCH BED CENTRES

APPLICATION RATE FOR 4 ROW MACHINE ON 64 INCH BED CENTRES
16T UNIT DRIVE

	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
GEAR	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	176.3	53.7	4338459	1755713	161.6	49.3	3976921	1609404	264.5	80.6	6507689	2633571	242.4	73.9	5965382	2414107
B11	167.9	51.2	4131809	1672086	153.9	46.9	3787492	1532745	251.9	76.8	6197714	2508128	230.9	70.4	5681238	2299118
C11	159.5	48.6	3925284	1588508	146.3	44.6	3598178	1456132	239.3	72.9	5887927	2298386	219.3	66.9	5397266	2184198
D11	151.1	46.1	3718649	1504885	138.6	42.2	3408761	1379478	226.7	69.1	5577974	2257328	207.8	63.3	5113143	2069217
E11	142.7	43.5	3512092	1421294	130.9	39.9	3219417	1302853	214.1	65.3	5268138	2131942	196.3	59.8	4829126	1954280
F11	134.3	40.9	3305521	1337698	123.2	37.5	3030061	1226223	201.5	61.4	4958282	2006547	184.7	56.3	4545091	1839335
A13	149.2	45.5	3671030	1485614	136.8	41.7	3365110	1361813	223.8	68.2	5506545	2228422	205.1	62.5	5047666	2042720
B13	142.1	43.3	3496207	1414866	130.2	39.7	3204856	1296960	213.1	65.0	5244310	2122298	195.4	59.5	4807284	1945441
C13	135.0	41.1	3321361	1344108	123.7	37.7	3044581	1232099	202.5	61.7	4982042	2016162	185.6	56.6	4566871	1848149
D13	127.9	39.0	3146586	1273379	117.3	35.8	2884371	1167264	191.8	58.5	4719878	1910069	175.8	53.6	4326555	1750897
E13	120.8	36.8	2971776	1202636	110.7	33.7	2724128	1102417	181.2	55.2	4457663	1803954	166.1	50.6	4086191	1653624
F13	113.7	34.7	2796965	1131893	104.2	31.8	2563884	1037568	170.5	52.0	4195448	1697839	156.3	47.6	3845826	1556352
A17	114.1	34.8	2807229	1136047	104.6	31.9	2573294	1041376	171.1	52.2	4210844	1704069	156.9	47.8	3859941	1562063
B17	108.7	33.1	2673580	1081960	99.6	30.4	2450782	991797	163.0	49.7	4010371	1622941	149.4	45.5	3676173	1487695
C17	103.2	31.5	2539874	1027852	94.6	28.8	2328218	942197	154.8	47.2	3809812	1541777	141.9	43.3	3492327	1413295
D17	97.8	29.8	2406209	973759	89.6	27.3	2205692	892613	146.7	44.7	3609314	1460639	134.5	41.0	3308538	1338919
E17	92.4	28.2	2272539	919665	84.7	25.8	2083162	843026	138.5	42.2	3408809	1379498	127.0	38.7	3124742	1264539
F17	82.9	25.3	2138965	865609	79.7	24.3	1960718	793476	130.4	39.7	3208448	1298414	119.5	36.4	2941077	1190213
A24	80.8	24.6	1988468	804705	74.1	22.6	1822763	737647	121.2	36.9	2982703	1207058	111.1	33.9	2734144	1106469
B24	77.0	23.5	1893763	766379	70.5	21.5	1735950	702515	115.4	35.2	2840645	1149569	105.8	32.3	2603924	1053772
C24	73.1	22.3	1799078	728062	67.0	20.4	1649155	667390	109.7	33.4	2698618	1092093	100.5	30.6	2473733	1001085
D24	69.3	21.1	1704392	689743	63.5	19.4	1562360	632265	103.9	31.7	2556588	1034616	95.2	29.0	2343539	948398
E24	65.4	19.9	1609710	651428	58.6	17.9	1475568	597142	94.9	28.9	2414565	977140	89.9	27.4	2213351	895712
F24	61.6	18.8	1515026	613110	56.4	17.2	1388774	562017	92.4	28.2	2272539	919665	84.7	25.8	2083162	843026
A30	64.7	19.7	1509771	643763	59.3	18.1	1458206	590116	97.0	29.6	2386156	965644	88.9	27.1	2187309	885173
B30	61.6	18.8	1515026	613110	56.4	17.2	1388774	562017	92.4	28.2	2272539	919665	84.7	25.8	2083162	843026
C30	58.5	17.8	1439273	582454	53.6	16.3	1319334	533916	87.7	26.7	2158911	837681	80.4	24.5	1979001	800874
D30	55.4	16.9	1363520	551798	50.8	15.5	1249893	505814	83.1	25.3	2045280	827696	76.2	23.2	1874840	758722
E30	52.3	15.9	1287771	521143	48.0	14.6	1180457	477714	78.5	23.9	1931656	781714	72.0	21.9	1770684	716572
F30	49.3	15.0	1212013	490485	45.1	13.7	1111018	449611	73.9	22.5	1818020	735728	67.7	20.6	1666518	674417

APPLICATION RATE FOR 4 ROW MACHINE ON 64 INCH BED CENTRES

APPLICATION RATE FOR 4 ROW MACHINE ON 60 INCH BED CENTRES
16T UNIT DRIVE

GEAR	DISC															
	6902563 Ø0.6x96x96x96				6902630 Ø0.6x96x96x72				6902667 Ø0.6x144x144x144				6902669 Ø0.6x144x144x108			
	SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION		SEEDS PER ROW		POPULATION	
	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE	/METRE	/FOOT	/HA	/ACRE
A11	176.3	53.7	4627690	1872761	161.6	49.3	4242049	1716698	264.5	80.6	6941535	2809142	242.4	73.9	6363074	2575047
B11	167.9	51.2	4407263	1783558	153.9	46.9	4039991	1634928	251.9	76.8	6610895	2675336	230.9	70.4	6059987	2452392
C11	159.5	48.6	4186970	1694408	146.3	44.6	3838056	1553207	239.3	72.9	6280455	2451612	219.3	66.9	5757084	2329811
D11	151.1	46.1	3966559	1605211	138.6	42.2	3636012	1471443	226.7	69.1	5949839	2407816	207.8	63.3	5454019	2207165
E11	142.7	43.5	3746231	1516047	130.9	39.9	3434045	1389710	214.1	65.3	5619347	2274071	196.3	59.8	5151068	2084565
F11	134.3	40.9	3525889	1426878	123.2	37.5	3232065	1307971	201.5	61.4	5288834	2140317	184.7	56.3	4848097	1961957
A13	149.2	45.5	3915765	1584655	136.8	41.7	3589451	1452601	223.8	68.2	5873648	2376983	205.1	62.5	5384177	2178901
B13	142.1	43.3	3729287	1509190	130.2	39.7	3418513	1383424	213.1	65.0	5593931	2263785	195.4	59.5	5127770	2075137
C13	135.0	41.1	3542785	1433715	123.7	37.7	3247553	1314239	202.5	61.7	5314178	2150573	185.6	56.6	4871329	1971359
D13	127.9	39.0	3356358	1358271	117.3	35.8	3076662	1245082	191.8	58.5	5034537	2037407	175.8	53.6	4614992	1867623
E13	120.8	36.8	3169894	1282812	110.7	33.7	2905736	1175911	181.2	55.2	4754841	1924218	166.1	50.6	4358604	1763866
F13	113.7	34.7	2983429	1207352	104.2	31.8	2734810	1106739	170.5	52.0	4475144	1811028	156.3	47.6	4102214	1660109
A17	114.1	34.8	2994378	1211783	104.6	31.9	2744847	1110801	171.1	52.2	4491567	1817674	156.9	47.8	4117270	1666201
B17	108.7	33.1	2851819	1154091	99.6	30.4	2614167	1057917	163.0	49.7	4277729	1731137	149.4	45.5	3921251	1586875
C17	103.2	31.5	2709199	1096375	94.6	28.8	2483432	1005010	154.8	47.2	4063799	1644562	141.9	43.3	3725149	1507515
D17	97.8	29.8	2566623	1038676	89.6	27.3	2352738	952120	146.7	44.7	3849935	1558015	134.5	41.0	3529107	1428180
E17	92.4	28.2	2424042	980976	84.7	25.8	2222039	899228	138.5	42.2	3636063	1471464	127.0	38.7	3333058	1348842
F17	82.9	25.3	2281563	923316	79.7	24.3	2091433	846374	130.4	39.7	3422345	1384975	119.5	36.4	3137149	1269560
A24	80.8	24.6	2121033	858352	74.1	22.6	1944280	786823	121.2	36.9	3181550	1287529	111.1	33.9	2916420	1180234
B24	77.0	23.5	2020014	817471	70.5	21.5	1851680	749349	115.4	35.2	3030021	1226207	105.8	32.3	2777519	1124023
C24	73.1	22.3	1919017	776599	67.0	20.4	1759099	711883	109.7	33.4	2878526	1164899	100.5	30.6	2638648	1067824
D24	69.3	21.1	1818018	735726	63.5	19.4	1666517	674416	103.9	31.7	2727027	1103590	95.2	29.0	2499775	1011624
E24	65.4	19.9	1717024	694856	58.6	17.9	1573939	639951	94.9	28.9	2575536	1042283	89.9	27.4	2360908	955426
F24	61.6	18.8	1616028	653984	56.4	17.2	1481359	599485	92.4	28.2	2424042	980976	84.7	25.8	2222039	899228
A30	64.7	19.7	1696822	686680	59.3	18.1	1555420	629457	97.0	29.6	2545233	1030020	88.9	27.1	2333130	944185
B30	61.6	18.8	1616028	653984	56.4	17.2	1481359	599485	92.4	28.2	2424042	980976	84.7	25.8	2222039	899228
C30	58.5	17.8	1535225	621284	53.6	16.3	1407290	569510	87.7	26.7	2302838	931926	80.4	24.5	2110934	854266
D30	55.4	16.9	1454421	588584	50.8	15.5	1333219	539535	83.1	25.3	2181632	882876	76.2	23.2	1999829	809303
E30	52.3	15.9	1373622	555886	48.0	14.6	1259154	509562	78.5	23.9	2060433	833828	72.0	21.9	1888730	764343
F30	49.3	15.0	1292814	523184	45.1	13.7	1185080	479585	73.9	22.5	1939221	784776	67.7	20.6	1777619	719378

STANHAY SINGULAIRE 780

OPERATOR CHECK LIST

READ OPERATORS MANUAL FULLY BEFORE OPERATING THIS MACHINE. THIS CHECK LIST IS ONLY A REMINDER OF THE KEY STEPS IN SETTING A MACHINE, AND IS NOT COMPREHENSIVE.

A In Yard

1. Check units are **clean** and **dry**.
2. Check **coulters** and **seed guides** are correctly fitted.
3. Check **agitator, singulator, vacuum release hole** are all as recommended for the seed to be planted.
4. Using operators manual, **select** and **note** recommended seed disc, **vacuum mb, pressure mb, rpm seed disc, gear setting, forward speed, landwheel rpm.**
5. Set **gearbox(es)** to required gear setting. Check all drive chains are in line and drive shaft locking collars and bearing grub screws are fitted securely.
6. Fit **discs,** (concave side towards vacuum galleries), open both valves on fan, engage PTO, raise engine rpm to give **recommended vacuum,** turn landwheels or handle and **check discs seal**.
7. Fit hopper side of units; flick singulators several times; check drive chains and units all **turn smoothly.**
8. Check seed emptying plugs fitted, fill hoppers, adjust singulators to setting 16 (for zero singulation), place container under each unit, rotate landwheels to **prime discs.**
9. Adjust **vacuum and pressure** to recommended levels, noting required tractor engine speed.
10. Rotate landwheel at approximately recommended landwheel rpm and set **singulator** on calibration unit.
11. Set and clamp **all singulators** to same setting.
12. Set depth of **coulter** (and seed press wheel).
13. Empty hoppers or maintain vacuum during journey to field.

B. In Field

1. Check **linkage stabilizers** or **check chains** are adjusted and tight.
2. Adjust tractor linkage so that **toolbar is level** and **headstock is vertical** in work.
3. Check and adjust landwheels so **toolbar working height** is 514mm (20.25 ins.) at centre.
4. Selector **tractor gear** to give recommended forward speed at required tractor engine speed.
5. Fill hoppers, **prime discs**, check **vacuum and pressure** levels.
6. Check all seed discs are **picking up and delivering** seed.
7. Check **coulters** are not blocked, chutes are dry.
8. Check **bout marker** setting and operation.

C. In Work

1. Check **sowing depth, clod deflectors, coverers, seed press wheel, wheel scrapers**.
2. Check **row matching**.
3. Always raise and lower machine fully, and **on the move**. If in doubt, **check coulters for blockage**.
4. Always operate at **recommended forward speed**, and **check vacuum and pressure** readings regularly.
5. Check **seed disc pick-up** regularly: raise machine on the move at normal drilling speed, maintain vacuum, stop and inspect seed discs.
6. **Clean** units at least twice a day and after work: store discs in dry place.

NOTE: 1. SECURE P.T.O. SHAFT COVER TO PREVENT ROTATION IN USE. NEVER EXCEED 540 RPM P.T.O. SPEED.

2. CORRECT OPERATION IS THE RESPONSIBILITY OF THE OPERATOR WHO SHOULD CHECK PERIODICALLY THAT THE DESIRED SEEDING RATE, PLANTING DEPTH AND MACHINE PERFORMANCE ARE BEING ACHIEVED.

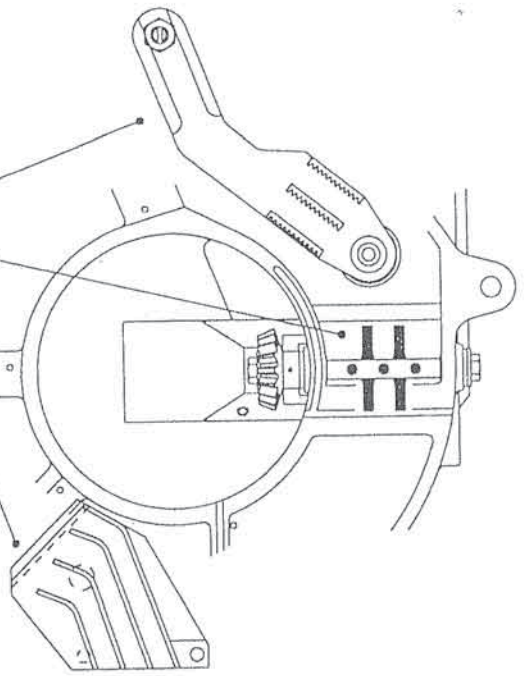
GUIDE LIST

ARAMANTHUS - GREEN
ASPARAGUS - RAW
BORAGE
BRASSICAE
CARROT - RAW
CARROT - PELLETED
CARTHAMUS
CHICORY - WITLOOF
CHRYSANTHEMUM
CORIANDER
CUCUMBER
DELPHINIUM
DILL
FENUGREEK
HELICHRYSUM
LARKSPUR
LEEK - RAW
LEEK - PELLETED
LETTUCE - RAW
LEAF LETTUCE - RAW
MELON
MUSTARD
NIGELLA BLACK POD
NIGELLA ORIENTALIS
ONION - RAW
ONION - PELLETED
PAPRIKA
PARSLEY
PARSNIP - RAW
PARSNIP - ENCRUSTED/PROCOAT
PARSNIP - PELLETED
PINUS RADIATA
POPPY
RADISH
RED BEET
SPINACH - RAW
SUGARBEET - PELLETED
SWEDE
SWEET WILLIAM
TOMATO
TURNIP - COATED
WATERMELON
WHEAT

ARAMANTHUS - GREEN

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
33-117 seeds / metre per row	6902558 Ø0.5x96x 2 L	50	20% of Vac	25 r.p.m.	Use 16T Unit Drive Shaft Sprocket

USE SINGLE LINE COULTER



Notes:
1/. Use standard singulator for green Aramanthus.
2/. Use standard agitator for green Aramanthus.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

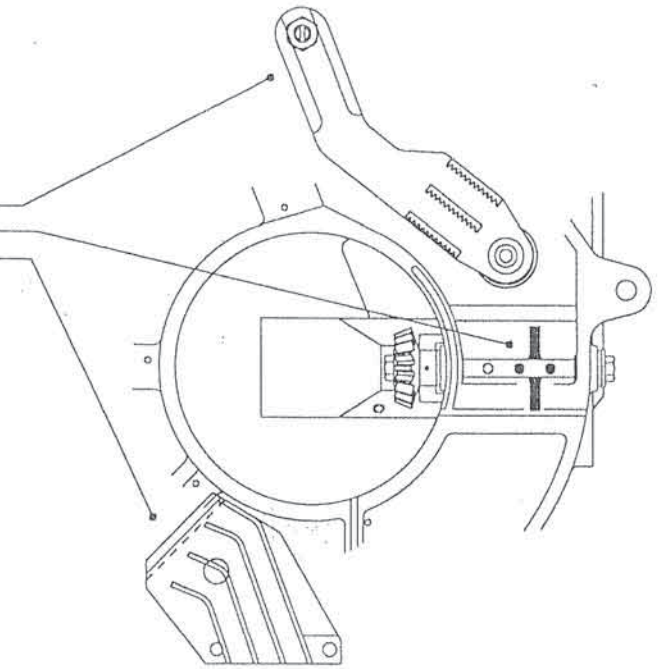
ASPARAGUS - RAW ●

- FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range	Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-89mm (2.0-3.5ins)	6902975	Ø1.4x96x 1 L	50	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket
50-177mm (2.0-7.0ins)	6902963	Ø1.4x48x 1 L	60	20% of Vac	25 r.p.m.	
108-177mm (4.2-7.0ins)	6902963	Ø1.4x48x 1 L	40	20% of Vac	12 r.p.m.	

Notes:

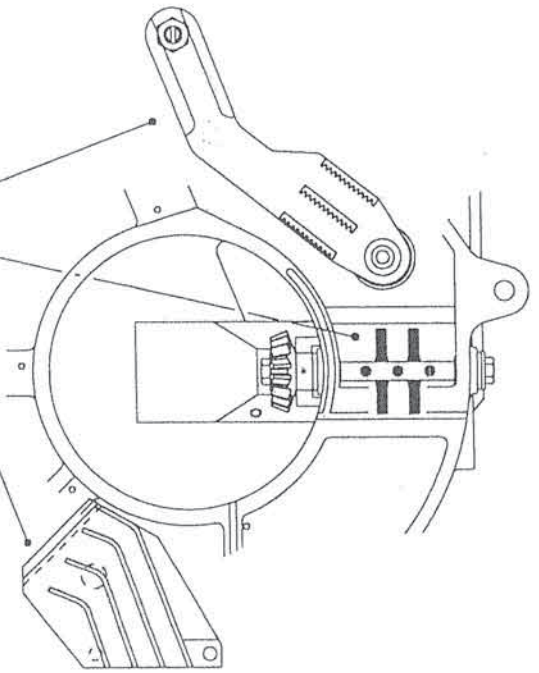
1/. Use standard singulator for raw asparagus.
2/. Use agitator with only 3 fingers where shown for raw asparagus.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



BORAGE

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902975 Ø1.4x96x 1 L	60	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use standard singulator for borage.
2/. Use standard agitator for borage.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



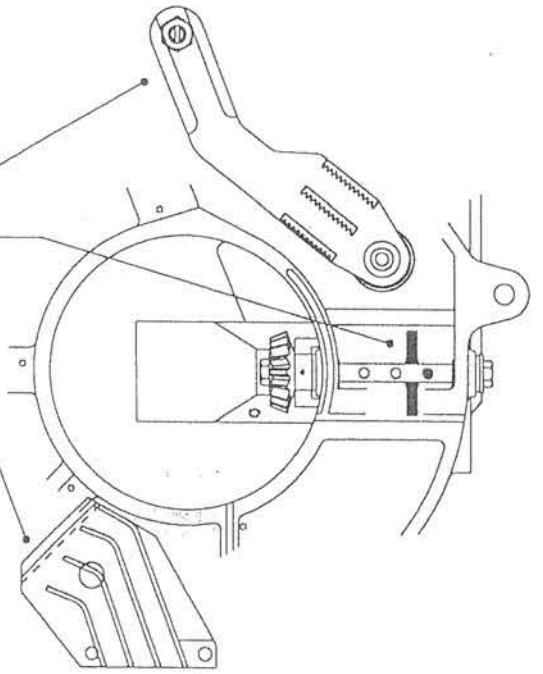
BRASSICAE 1.75 - 2.0mm . GRADE H

IF SEED IS NOT POWDER DRESSED IT WILL LEAVE THE DISC AT THE VACUUM RELEASE POINT MORE READILY, IMPROVING SPACING, IF DRESSED WITH FRENCH CHALK.
FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range		Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line	50-177mm (2.0-7.0ins)	6902565	Ø0.8x48x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
	99-354mm (3.9-14.0ins)	6902643	Ø0.8x24x 1 L	50	20% of Vac	25 r.p.m.	
	198-709mm (7.8-27.9ins)	6902966	Ø0.8x12 Groups 3	50	20% of Vac	25 r.p.m.	
Multi-line	67-120mm (2.6-4.7ins)	6902930	Ø0.8x72x 2 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket
	108-177mm (4.2-7.0ins)	6902646	Ø0.8x48x 2 L	30	20% of Vac	12 r.p.m.	
	200-354mm (7.9-14.0ins)	6902812	Ø0.8x24x 2 L	30	20% of Vac	12 r.p.m.	

Notes:

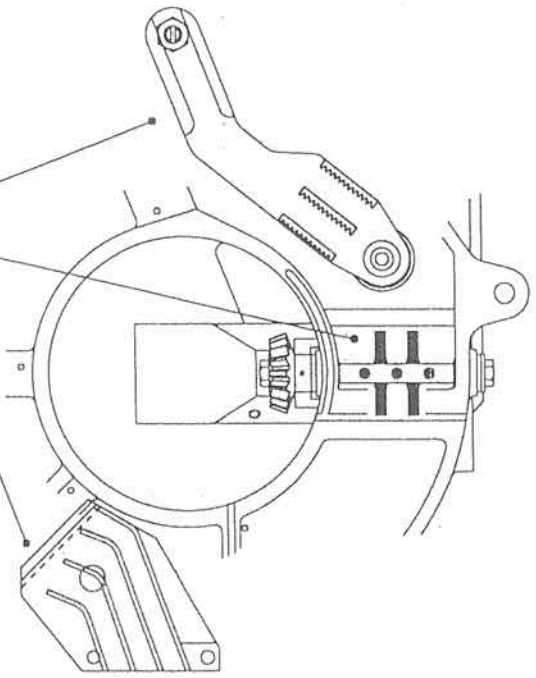
1/. Use standard singulator for brassicae.
2/. Use agitator with only 2 fingers fitted where shown for brassicae.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



CARROT - RAW

A/. WHEN PLANTING RAW CARROT USE A Ø0.6MM HOLE SIZE SEED DISC, AND MAXIMUM DISC SPEED OF 25 RPM.
B/. REFER TO CHARTS ON PAGES 40 TO 51 TO ESTABLISH SEED DISC REQUIRED, TOGETHER WITH GEAR SETTING.
CHARTS HAVE BEEN PREPARED FOR ALL POPULAR BED WIDTHS, AND BOTH 11T & 16T UNIT DRIVE SPROCKETS.
RATES SHOWN ARE BASED ON 4 THREE LINE ROW UNITS PER BED.
FOR NON 4 ROW UNIT BED MACHINES, DIVIDE THE REQUIRED POPULATION BY ACTUAL NUMBER OF ROW UNITS ON EACH BED, MULTIPLY THIS FIGURE BY 4, AND USE THIS POPULATION WHEN REFERING TO CHARTS.
C/. HAVING ESTABLISHED GEAR SETTING, REFER TO CHARTS ON PAGES 25 TO 38 FOR MAXIMUM FORWARD SPEED.
D/. VACUUM LEVELS WILL DEPEND ON DISC SELECTION, DISC SPEED AND SEED SIZE, BUT 50 MB IS TYPICAL.
E/. PRESSURE SHOULD BE SET AT 20% OF VACUUM, OR 10 MB, WHICHEVER IS HIGHER.

Notes:
1/. Use standard singulator for raw carrot.
2/. Use standard agitator for raw carrot.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing.
Increasing disc speed will cause seed spacing to deteriorate.
Reducing disc speed will result in spacing improvement together with lower vacuum requirements.
5/. Excessive vacuum requirements normally indicate a problem :-
a) Worn or damaged seed discs or air gallery blocks.
b) Incorrect hole size in seed discs.
c) Excessive disc speed.
d) Singulators set too aggressively.



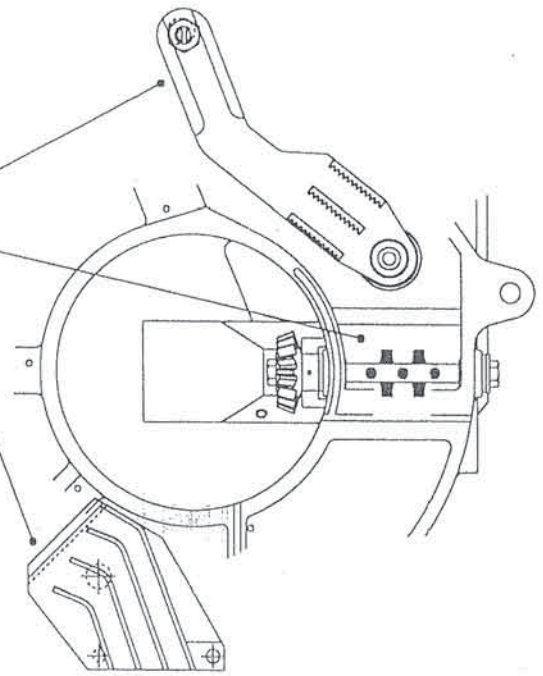
CARROT - PELLETED - 2.0 - 2.75mm

FINAL VACUUM ADJUSTMENTS TO MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range	Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-89mm (2.0-3.5ins)	6902534	Ø1.2x96x 1 L	50	20% of Vac	12 r.p.m.	Use 11T Unit Drive
108-177mm (4.2-7.0ins)	6902626	Ø1.2x48x 1 L	40	20% of Vac	12 r.p.m.	Shaft Sprocket
Multi-line 50-89mm (2.0-3.5ins)	6902640	Ø1.2x96x 2 L	60	20% of Vac	12 r.p.m.	Use 11T Unit Drive
50-89mm (2.0-3.5ins)	6902564	Ø1.2x96x 3 L	60	20% of Vac	12 r.p.m.	Shaft Sprocket
108-177mm (4.2-7.0ins)	6902960	Ø1.2x48x 2 L	50	20% of Vac	12 r.p.m.	

Notes:

1/. Use standard singulator for pelleted carrot.
2/. Use pelleted agitator for pelleted carrot.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

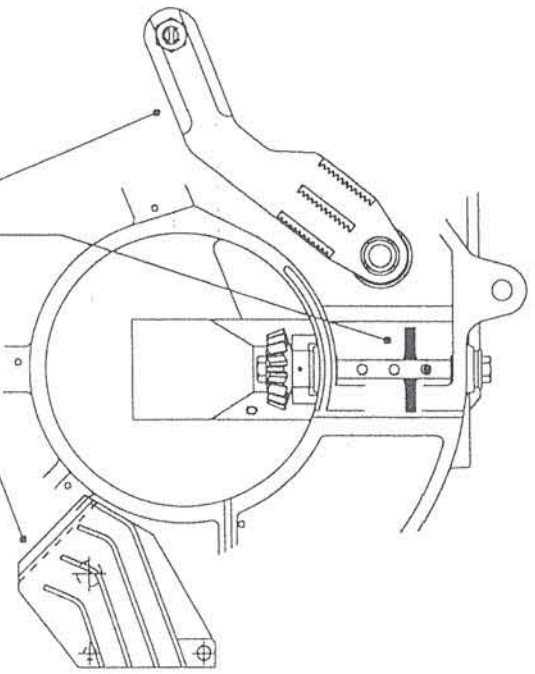


CARROT - PELLETED

3.0 - 3.5mm : NOT POLYMER COATED : APPROX. 560/10g
HEAVIER SEED WILL REQUIRE HIGHER VACUUM LEVELS.
FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6903144 Ø1.6x96x 1 L	70	20% of Vac	25 r.p.m.	Use 11T Unit Drive
33-118mm (1.3-4.7ins)	6903209 Ø1.6x72x 1 L	70	20% of Vac	25 r.p.m.	Shaft Sprocket
50-177mm (2.0-7.0ins)	6903210 Ø1.6x48x 1 L	60	20% of Vac	25 r.p.m.	
Multi-line 50-89mm (2.0-3.5ins)	6903211 Ø1.6x96x 2 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive
67-120mm (2.6-4.7ins)	6903157 Ø1.6x72x 2 L	40	20% of Vac	12 r.p.m.	Shaft Sprocket
108-177mm (4.2-7.0ins)	6902821 Ø1.6x48x 2 L	40	20% of Vac	12 r.p.m.	

Notes:
1/. Use standard agitator for pelleted carrot.
2/. Use agitator with only 2 fingers fitted where shown for pelleted carrot.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing.
Increasing disc speed will cause seed spacing to deteriorate.
Reducing disc speed will result in spacing improvement together with lower vacuum requirements.
5/. Excessive vacuum requirements normally indicate a problem :-
a) Worn or damaged seed discs or air gallery blocks.
b) Incorrect hole size in seed discs.
c) Excessive disc speed.
d) Singulators set too aggressively.

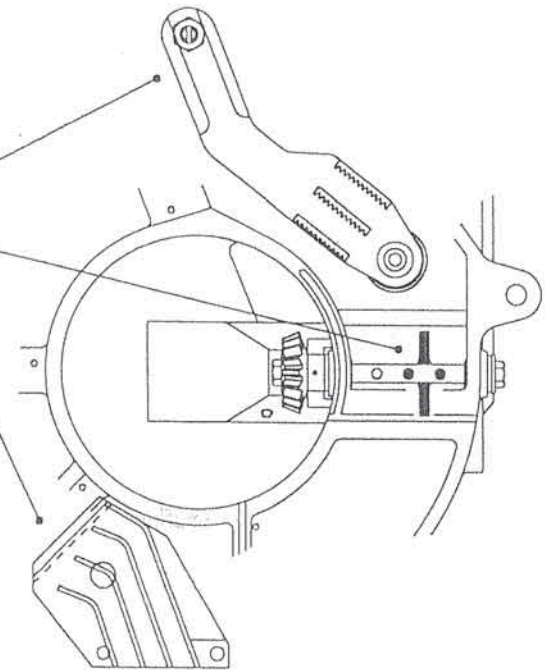


CARTHAMUS

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
8-29 seeds / metre per row	6902671 Ø2.0x48x 1 L	50	20% of Vac	25 r.p.m.	Use 16T Unit Drive Shaft Sprocket

Notes:

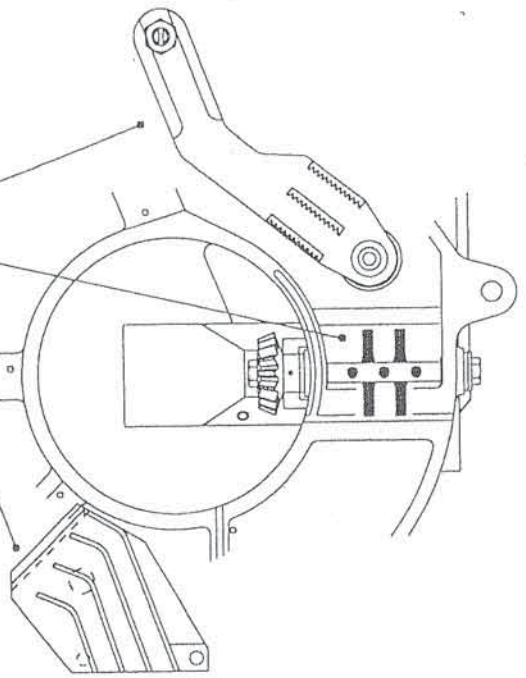
1/. Use standard singulator for Carthamus.
2/. Use agitator with only 3 fingers where shown for Carthamus.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



CHICORY-WITLOOF RAW / COATED

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-89mm (2.0-3.5ins)	6902532 ∅0.5x96x 1 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use standard singulator for raw/coated chicory.
2/. Use standard agitator for raw/coated chicory.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing.
Increasing disc speed will cause seed spacing to deteriorate.
Reducing disc speed will result in spacing improvement together with lower vacuum requirements.
5/. Excessive vacuum requirements normally indicate a problem :-
a) Worn or damaged seed discs or air gallery blocks.
b) Incorrect hole size in seed discs.
c) Excessive disc speed.
d) Singulators set too aggressively.

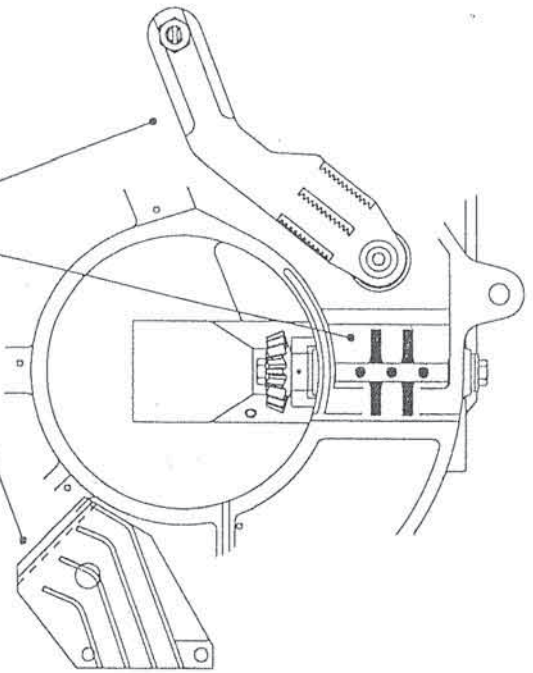


CHRYSANTHEMUM

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Multi-line 17-59mm (0.7-2.3ins)	6902667 Ø0.6x144x 3 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:

1/. Use standard singulator for chrysanthemum.
2/. Use standard agitator for chrysanthemum.
3/. Fit chrysanthemum seed divider.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

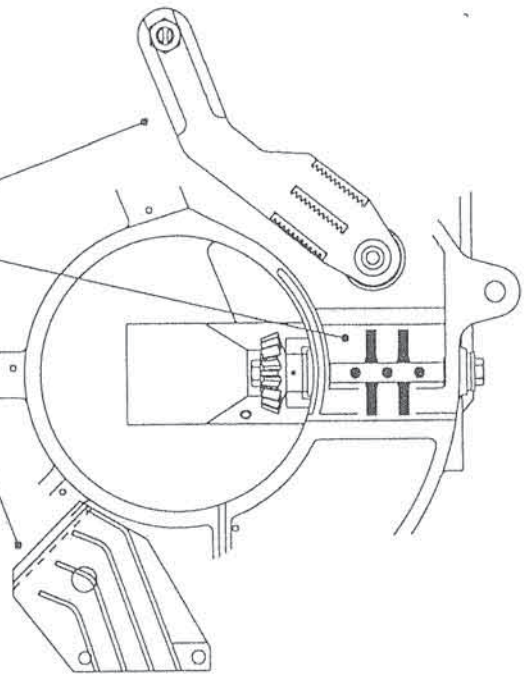


CORIANDER

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902975 Ø1.4x96x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi-line 25-89mm (1.0-3.5ins)	6903139 Ø1.4x96x 2 L	50	20% of vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:

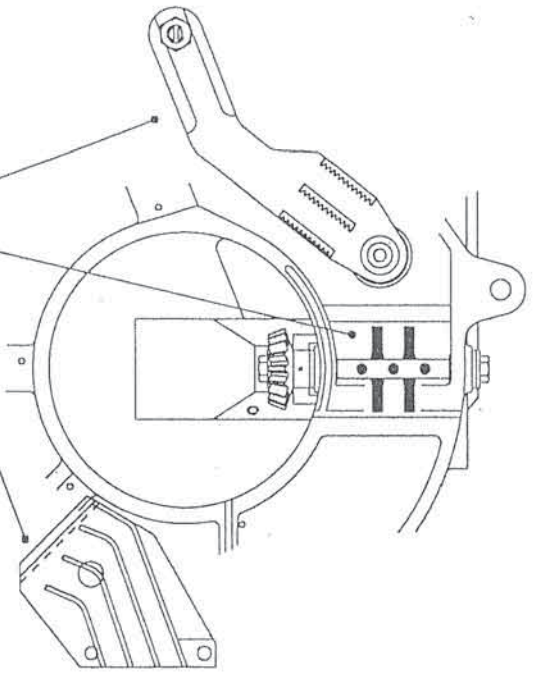
1/. Use standard singulator for coriander.
2/. Use standard agitator for coriander.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



CUCUMBER

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 99-354mm (3.9-14.0ins)	6902712 Ø1.6x24x 1 L	40	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

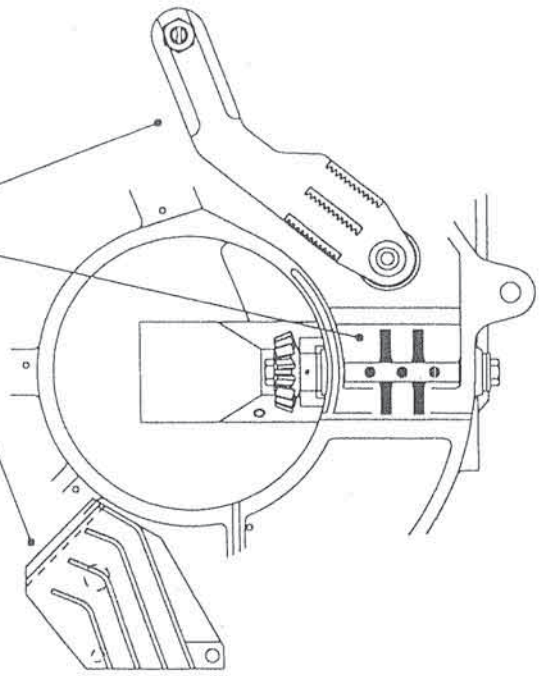
Notes:
1/. Use standard singulator for cucumber.
2/. Use standard agitator for cucumber.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



DELPHINIUM

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
25-88 Seeds / metre per row	6902958 ∅0.8x144x 1 L	60	20% of Vac	25 r.p.m.	Use 16T Unit Drive Shaft Sprocket

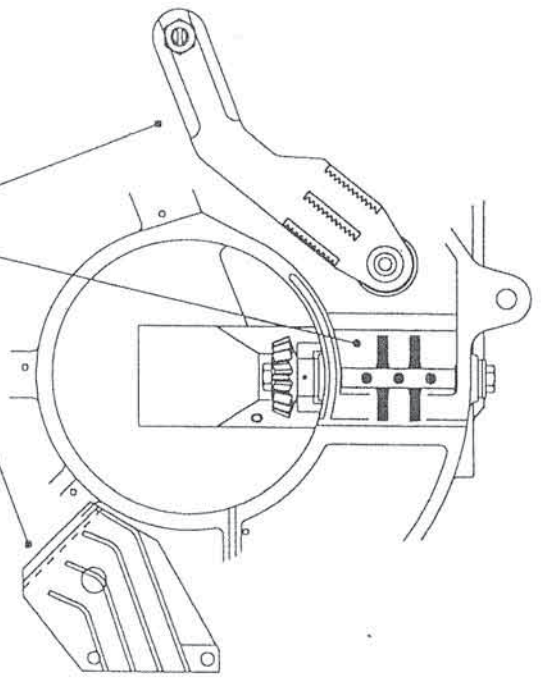
Notes:
1/. Use standard singulator for Delphinium.
2/. Use standard agitator for Delphinium.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



DILL

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902566 Ø0.6x96x 1 L	40	10% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

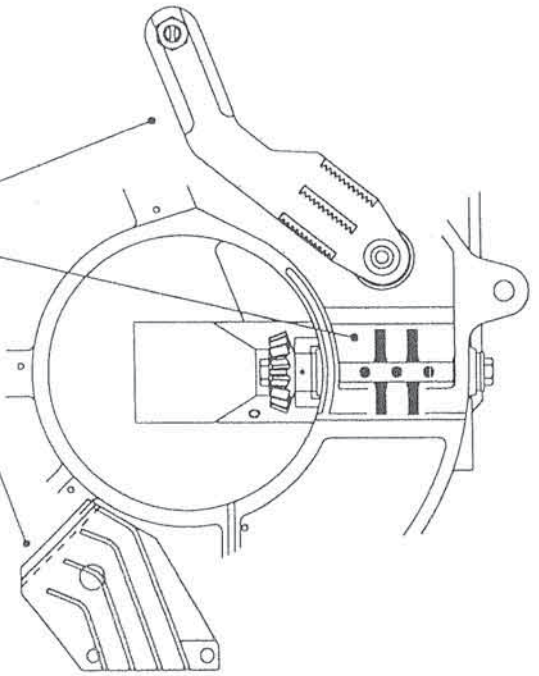
Notes:
1/. Use standard singulator for dill.
2/. Use standard agitator for dill.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



FENUGREEK

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902975 Ø1.4x96x 1 L	60	20% of vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi-line 25-89mm (1.0-3.5ins)	6903139 Ø1.4x96x 2 L	60	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use standard singulator for fenugreek.
2/. Use standard agitator for fenugreek.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

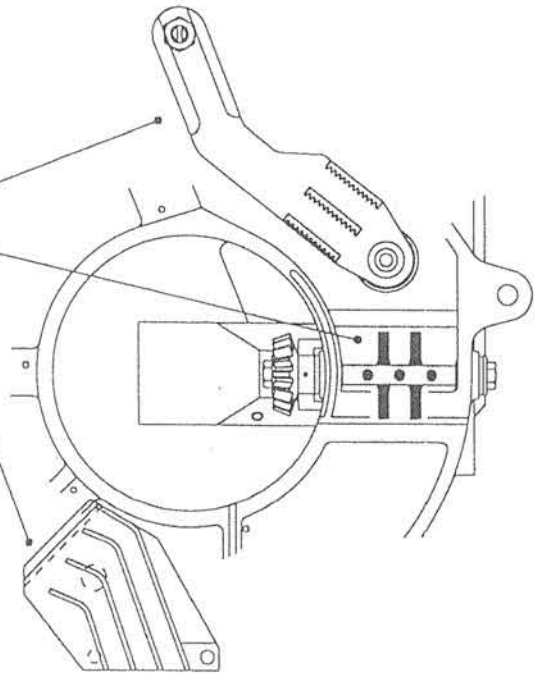


HELICHRYSUM

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
25-88 seeds / metre per row	6903247 Ø0.6x144x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:

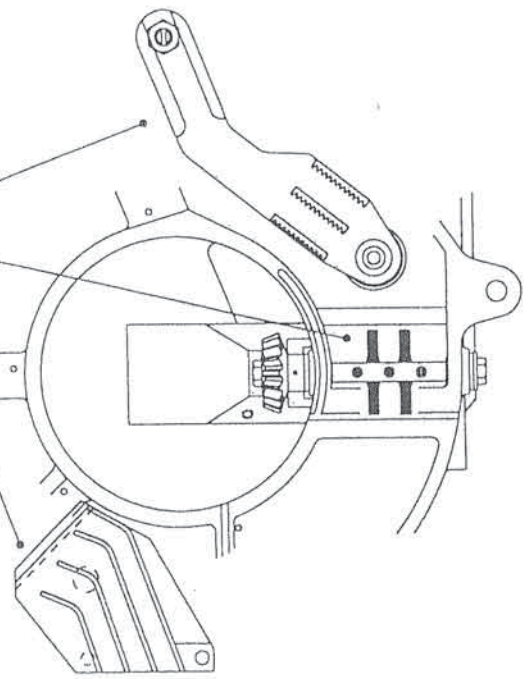
1/. Use standard singulator for Helychrysum.
2/. Use standard agitator for Helichrysum.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



LARKSPUR

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
25-88 seeds / metre per row	6902958 Ø0.8x144x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use standard singulator for Larkspur.
2/. Use standard agitator for Larkspur.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

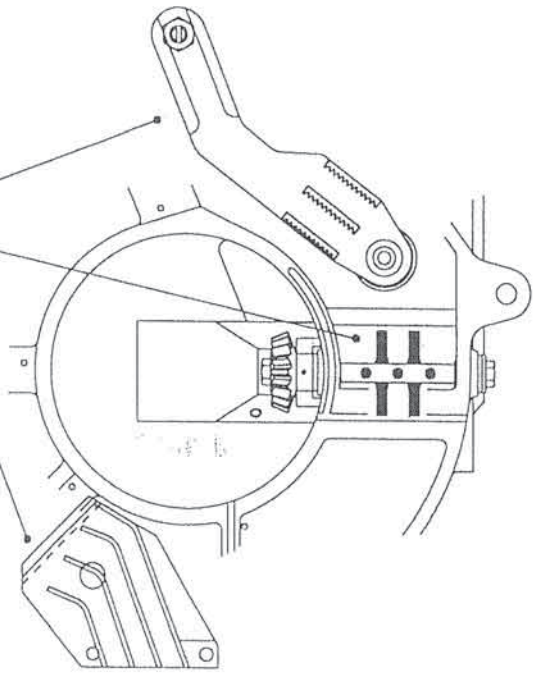


LEEK - RAW

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902567 Ø0.8x96x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
33-118mm (1.3-4.7ins)	6902828 Ø0.8x72x 1 L	40	20% of Vac	25 r.p.m.	
50-177mm (2.0-7.0ins)	6902565 Ø0.8x48x 1 L	40	20% of Vac	25 r.p.m.	
Multi-line 50-89mm (2.0-3.5ins)	6902629 Ø0.8x96x 2 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket
67-118mm (2.6-4.6ins)	6902930 Ø0.8x72x 2 L	40	20% of Vac	12 r.p.m.	
106-177mm (4.2-7.0ins)	6902646 Ø0.8x48x 2 L	40	20% of Vac	12 r.p.m.	

Notes:

1/. Use standard singulator for raw leek.
2/. Use standard agitator for raw leek.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.
6/. If very small seed is found to be difficult to single on a Ø0.8 hole, a disc with Ø0.6 holes should be used.

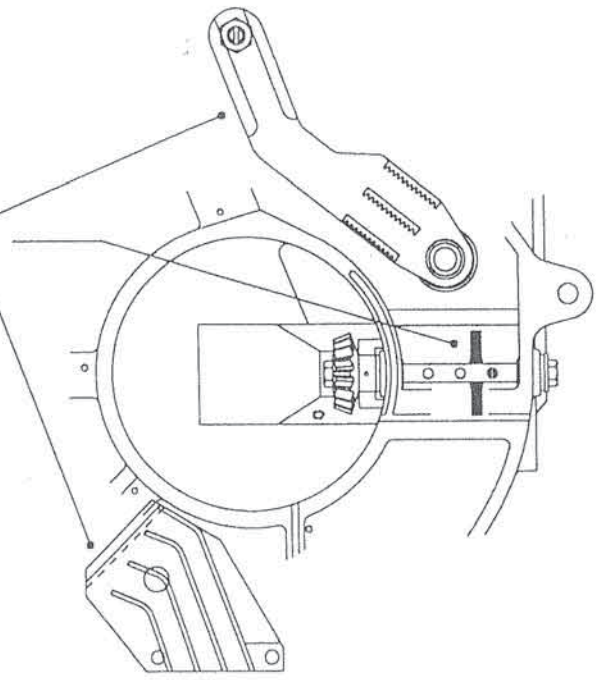


LEEK - PELLETED

3.0 - 3.5mm : NOT POLYMER COATED : APPROX. 560/10g
HEAVIER SEED WILL REQUIRE HIGHER VACUUM LEVELS.
FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range		Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line	25-89mm (1.0-3.5ins)	6903144	Ø1.6x96x 1 L	70	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
	33-118mm (1.3-4.7ins)	6903209	Ø1.6x72x 1 L	70	20% of Vac	25 r.p.m.	
	50-177mm (2.0-7.0ins)	6903210	Ø1.6x48x 1 L	60	20% of Vac	25 r.p.m.	
Multi-line	50-89mm (2.0-3.5ins)	6903211	Ø1.6x96x 2 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket
	67-120mm (2.6-4.7ins)	6903157	Ø1.6x72x 2 L	40	20% of Vac	12 r.p.m.	
	108-177mm (4.2-7.0ins)	6902821	Ø1.6x48x 2 L	40	20% of Vac	12 r.p.m.	

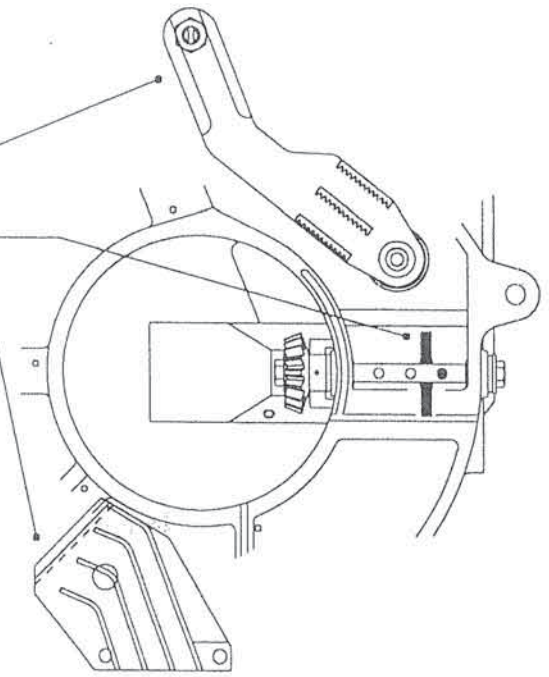
Notes:
1/. Use standard singulator for pelleted leek.
2/. Use agitator with only 2 fingers fitted where shown for pelleted leek.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



LETTUCE - RAW

Spacing Range	Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line						
50-177mm (2.0-7.0ins)	6902488	Ø0.5x48x 1 L	40	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
99-354mm (3.9-14.0ins)	6903150	Ø0.5x24 Groups of 2	40	20% of Vac	25 r.p.m.	
99-354mm (3.9-14.0ins)	6902489	Ø0.5x24x 1 L	40	20% of Vac	25 r.p.m.	
200-700mm (7.8-27.0ins)	6902970	Ø0.5x12 Groups of 3	40	20% of Vac	25 r.p.m.	

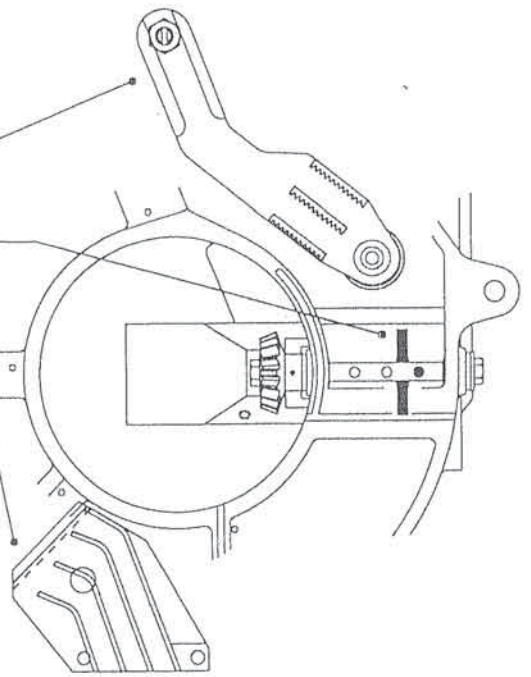
Notes:
1/. Use standard singulator for Lettuce.
2/. Use agitator with only 2 fingers where shown for Lettuce.
3/. Remove plastic dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



LEAF LETTUCE - RAW

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 17-61mm (0.7-2.4ins)	6902532 Ø0.5x96x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi-line 17-61mm (0.7-2.4ins)	6902558 Ø0.5x96x 2 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

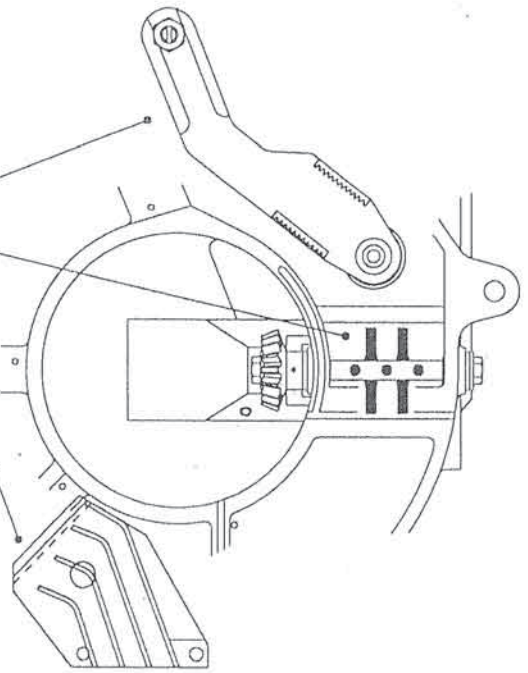
Notes:
1/. Use standard singulator for Leaf Lettuce.
2/. Use agitator with only 2 fingers where shown for Leaf Lettuce.
3/. Fit lettuce seed dividers for multi line. Remove dividers for single line.
4/. The seed disc speeds recommended will produce acceptable spacing.
Increasing disc speed will cause seed spacing to deteriorate.
Reducing disc speed will result in spacing improvement together with lower vacuum requirements.
5/. Excessive vacuum requirements normally indicate a problem :-
a) Worn or damaged seed discs or air gallery blocks.
b) Incorrect hole size in seed discs.
c) Excessive disc speed.
d) Singulators set too aggressively.



MELON

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 99-354mm (3.9-14.0ins)	6903212 Ø2.0x24x 1 L	60	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use single line singulator for melon.
2/. Use standard agitator for melon.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



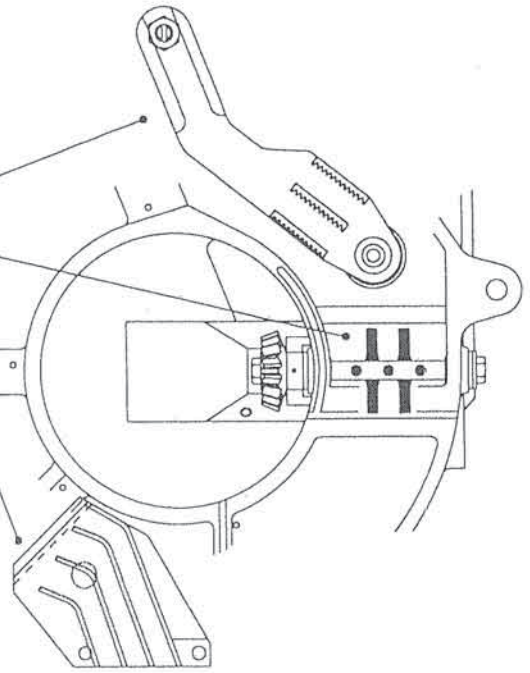
MUSTARD - 1.5 - 1.75mm

LARGER SEED WILL NEED HIGHER VACUUM LEVELS

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902566 Ø0.6x96x 1 L	60	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:

1/. Use standard singulator for mustard.
2/. Use standard agitator for mustard.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem ; -
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

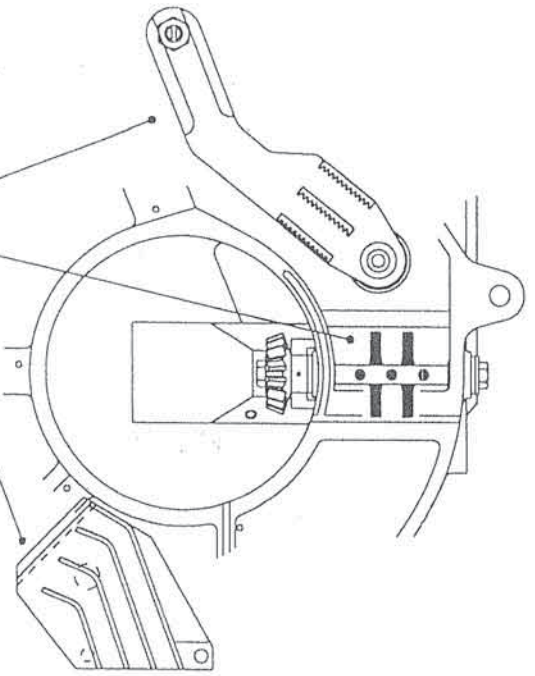


NIGELLA BLACK POD

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
16-58 seeds / metre per row	6902567 Ø0.8x96x 1 L	40	20% of Vac	25 r.p.m.	Use 16T Unit Drive Shaft Sprocket

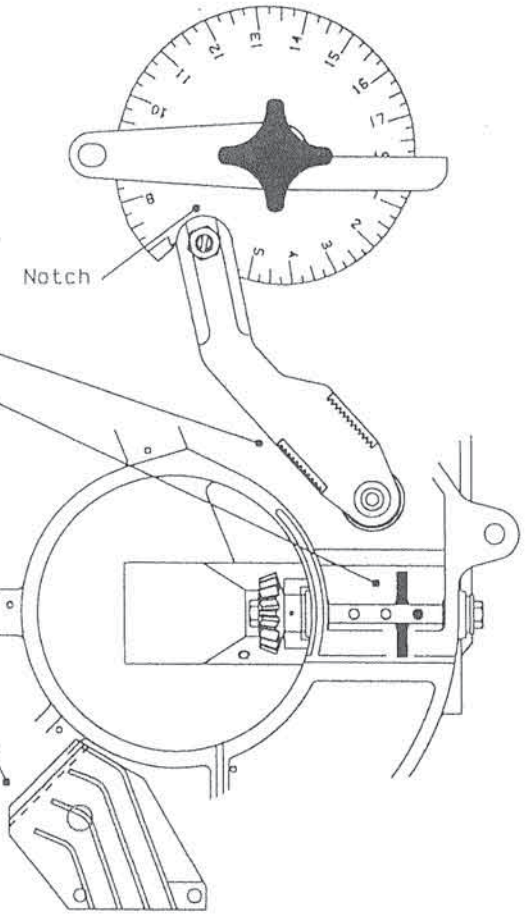
Notes:

1/. Use standard singulator for Nigella Black Pod.
2/. Use standard agitator for Nigella Black Pod.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



NIGELLA ORIENTALIS

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Seed Disc Speed	Special Instructions
12-43 seeds / metre per row	6903241 Ø1.2x72x 1 L	60	20% of Vac	25 r.p.m.	Use 16T Unit Drive
8-29 seeds / metre per row	6902626 Ø1.2x48x 1 L	60	20% of Vac	25 r.p.m.	Shaft Sprocket



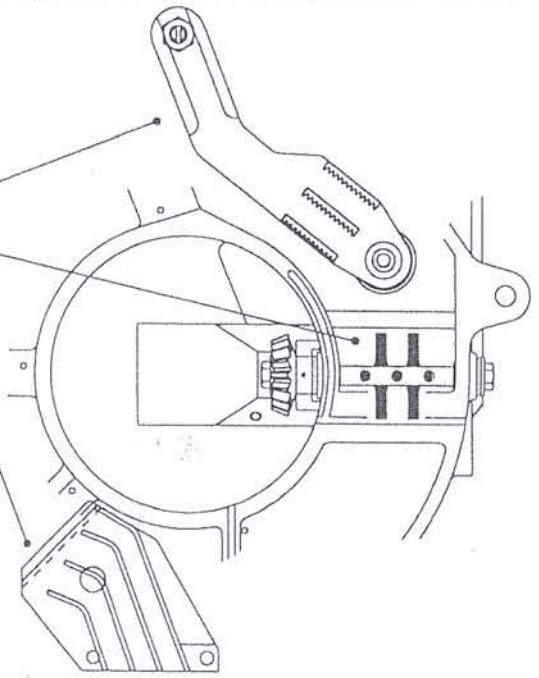
Notes:
1/. Fit single line singulator and set in notch - as shown.
2/. Use agitator with only 2 fingers for Nigella Orientalis.
3/. Remove plastic seed dividers.
4/. 25 r.p.m. must be adhered to.
5/. Excessive vacuum requirements normally indicate a problem: -
    a) Worn or damaged seed discs or air gallery blocks.
    b) Incorrect hole size in seed disc.
6/. For higher application rates a 23 tooth unit drive should be used.

ONION - RAW

Spacing Range	Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
High Density - Green: Spring: Salad Good even distribution required. Exact seed spacing unnecessary. See Seed Spacing Charts for Seed Disc Selection.	6902958	Ø0.8x144x 1 L	70	20% of Vac	40 r.p.m.	Use 16T Unit Drive Shaft Sprocket
	6903007	Ø0.8x144x 2 L	70	20% of Vac	40 r.p.m.	
	6903164	Ø0.8x144x 3 L	70	20% of Vac	40 r.p.m.	
	6902567	Ø0.8x96x 1 L	70	20% of Vac	40 r.p.m.	
	6902629	Ø0.8x96x 2 L	70	20% of Vac	40 r.p.m.	
	6902647	Ø0.8x96x 3 L	70	20% of Vac	40 r.p.m.	
Single line 25-89mm (1.0-3.5ins)	6902567	Ø0.8x96x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
50-177mm (2.0-7.0ins)	6902565	Ø0.8x48x 1 L	40	20% of Vac	25 r.p.m.	
Multi-line 40-60mm (1.6-2.3ins)	6903007	Ø0.8x144x 2 L	50	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket
	6903164	Ø0.8x144x 3 L	50	20% of Vac	12 r.p.m.	
43-71mm (1.7-2.8ins)	6903156	Ø0.8x120x 2 L	40	20% of Vac	12 r.p.m.	
50-89mm (2.0-3.5ins)	6902629	Ø0.8x96x 2 L	40	20% of Vac	12 r.p.m.	
	6902647	Ø0.8x96x 3 L	40	20% of Vac	12 r.p.m.	
67-120mm (2.6-4.7ins)	6902930	Ø0.8x72x 2 L	40	20% of Vac	12 r.p.m.	
108-177mm (4.2-7.0ins)	6902646	Ø0.8x48x 2 L	40	20% of Vac	12 r.p.m.	
	6902562	Ø0.8x48x 3 L	40	20% of Vac	12 r.p.m.	

Notes:

1/. Use standard singulator for raw onion.
2/. Use standard agitator for raw onion.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

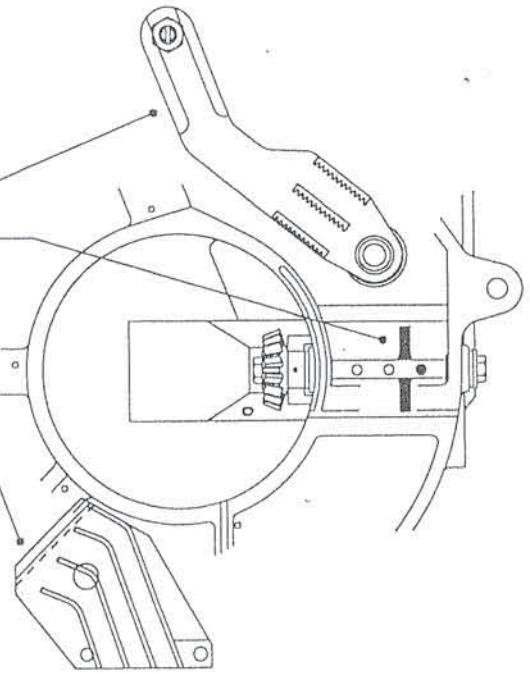


ONION - PELLETED

3.0 - 3.5mm : NOT POLYMER COATED : APPROX. 560/10g
HEAVIER SEED WILL REQUIRE HIGHER VACUUM LEVELS.
FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range	Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6903144	Ø1.6x96x 1 L	70	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
33-118mm (1.3-4.7ins)	6903209	Ø1.6x72x 1 L	70	20% of Vac	25 r.p.m.	
50-177mm (2.0-7.0ins)	6903210	Ø1.6x48x 1 L	60	20% of Vac	25 r.p.m.	
Multi-line 50-89mm (2.0-3.5ins)	6903211	Ø1.6x96x 2 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket
67-120mm (2.6-4.7ins)	6903157	Ø1.6x72x 2 L	40	20% of Vac	12 r.p.m.	
108-177mm (4.2-7.0ins)	6902821	Ø1.6x48x 2 L	40	20% of Vac	12 r.p.m.	

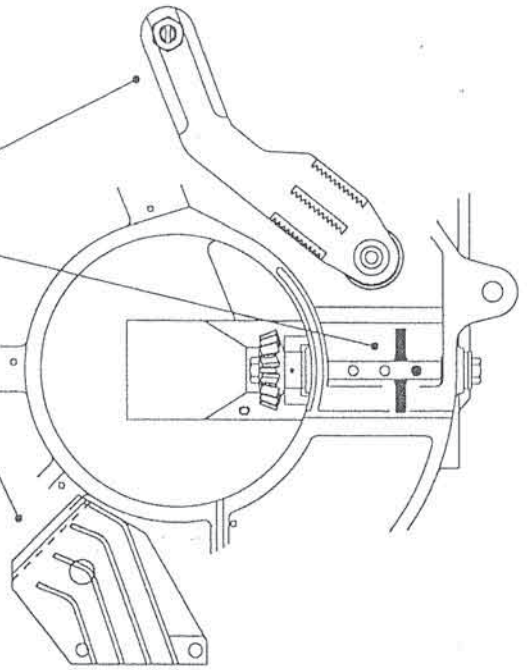
Notes:
1/. Use standard singulator for pelleted onion.
2/. Use agitator with only 2 fingers fitted where shown for pelleted onion.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing.
Increasing disc speed will cause seed spacing to deteriorate.
Reducing disc speed will result in spacing improvement together with lower vacuum requirements.
5/. Excessive vacuum requirements normally indicate a problem :-
a) Worn or damaged seed discs or air gallery blocks.
b) Incorrect hole size in seed discs.
c) Excessive disc speed.
d) Singulators set too aggressively.



PAPRIKA

Application Rate	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-177mm (2.0-7.0ins)	6902625 Ø1.0x48x 1 L	60	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

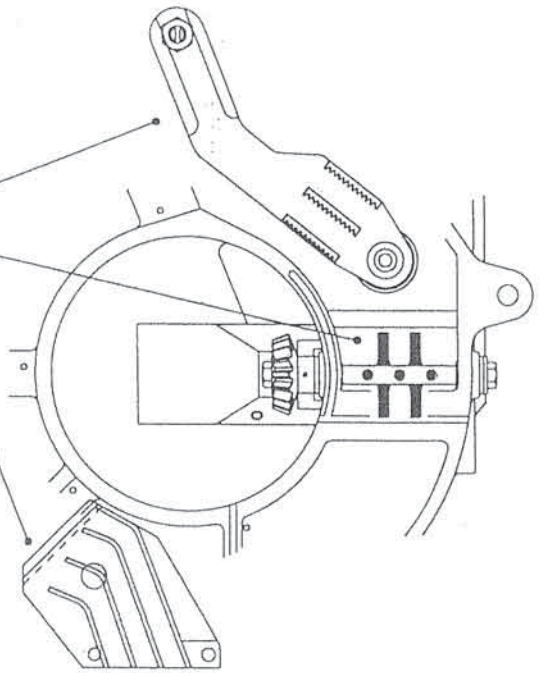
Notes:
1/. Use standard singulator for Paprika.
2/. Use agitator with only 2 fingers where shown for Paprika.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



PARSLEY

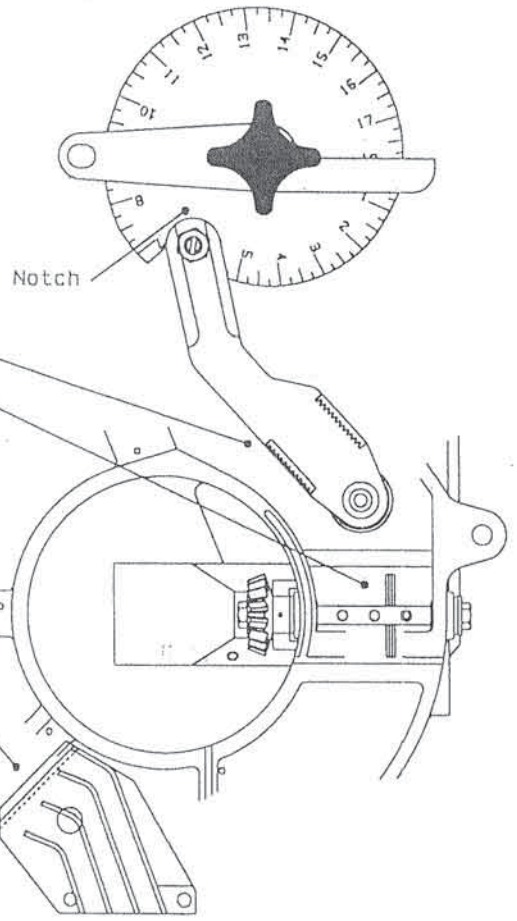
Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Multi-line 17-59mm (0.7-2.3ins)	6902667 Ø0.6x144x 3 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use standard singulator for parsley.
2/. Use standard agitator for parsley.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



PARSNIP - RAW

Spacing Range	Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Seed Disc Speed	Special Instructions
Single line 33-116mm (1.3-4.7ins)	6902828	Ø0.8x72x 1 L	40-60	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
50-177mm (2.0-7.0ins)	6902565	Ø0.8x48x 1 L	40-60	20% of Vac	25 r.p.m.	



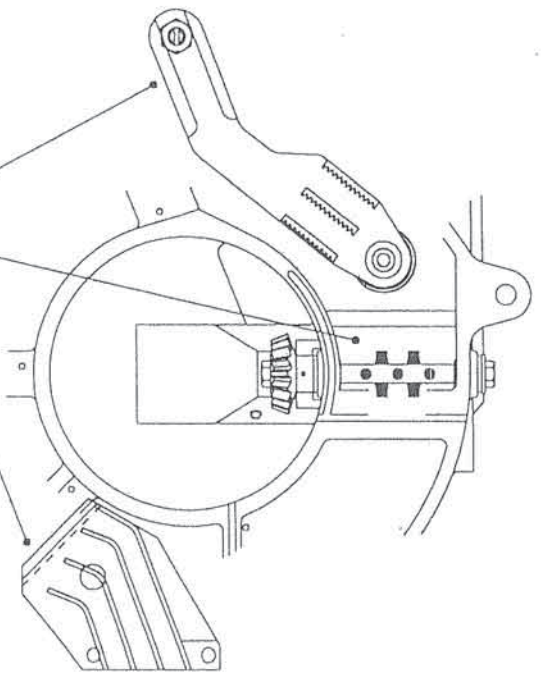
Notes:

1/. Fit single line singulator and set in notch - as shown.
2/. Fit Parsnip agitator - 2 tension pins as shown.
3/. Remove plastic seed dividers.
4/. 25 r.p.m. must be adhered to.
5/. Adjust vacuum levels between 40 and 60 m.b. until best results are obtained on disc.
6/. Excessive vacuum requirements normally indicate a problem: -
    a) Worn or damaged seed discs or air gallery blocks.
    b) Incorrect hole size in seed disc.

ENCRUSTED PARSNIP / PROCOAT - FINAL VACUUM ADJUSTMENT TO MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-177mm (2.0-7.0ins)	6902956 Ø2.2x48x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi-line 50-177mm (2.0-7.0ins)	6902693 Ø2.2x48x 2 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

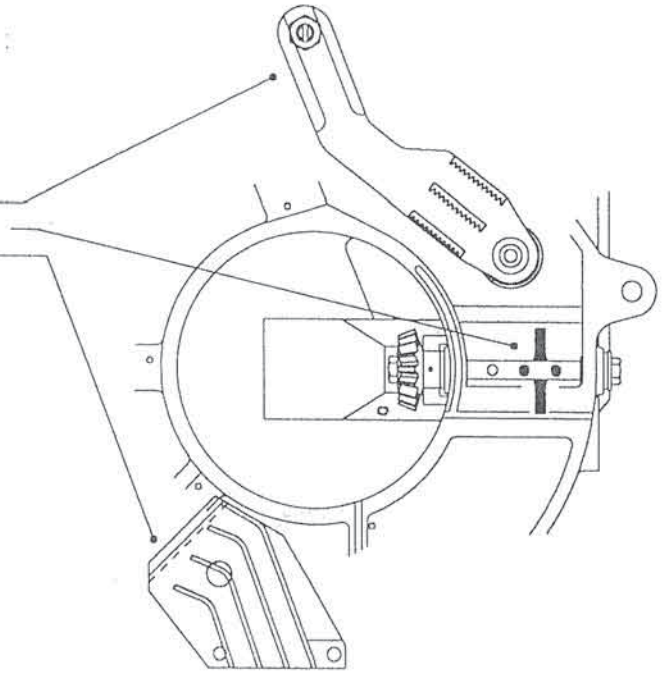
Notes:
1/. Use standard singulator for encrusted parsnip.
2/. Use pelleted agitator for encrusted parsnip.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



PARSNIP - PELLETED - LIGHTWEIGHT MINIMUM COATED.
FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-177mm (2.0-7.0ins)	6902956 Ø2.2x48x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi-line 50-177mm (2.0-7.0ins)	6902693 Ø2.2x48x 2 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use standard singulator for pelleted parsnip.
2/. Use agitator with only 3 fingers where shown for pelleted parsnip.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

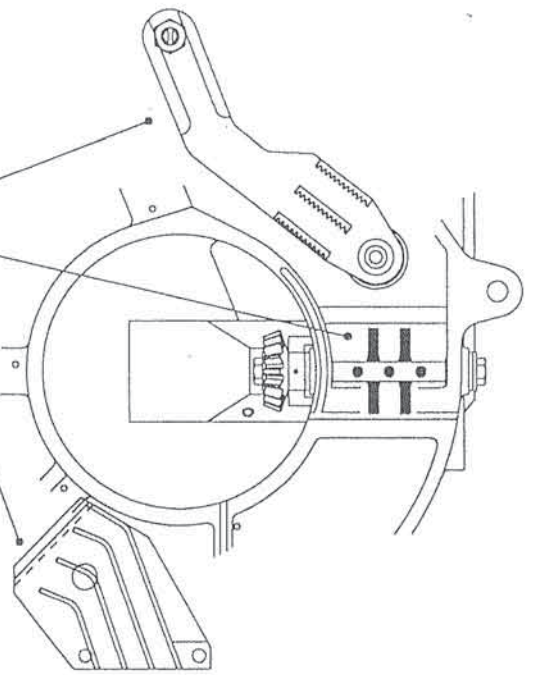


PINUS RADIATA

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Multi-line 89-177mm (3.5-7.0ins)	6902535 ∅2.0x48x 2 L	50	20% of Vac	12 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Typical seed spacing 9cm down row in each line - Gear D17.
Use 125mm x 2 line Hyline coulter.

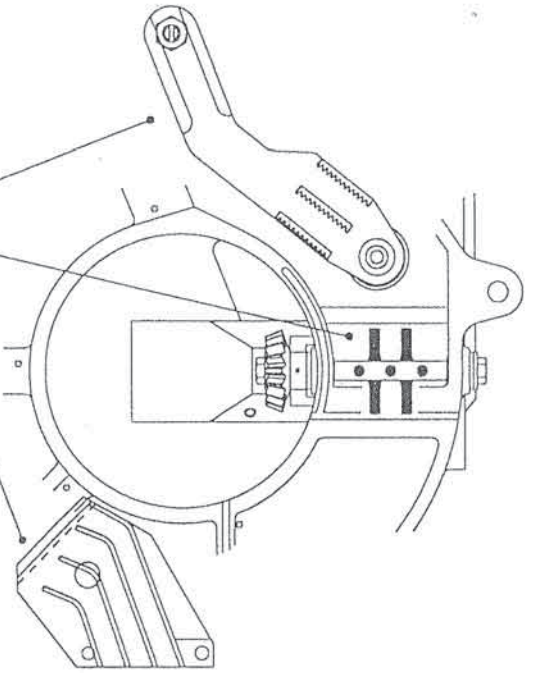
Notes:
1/. Use standard singulator for Pinus Radiata.
2/. Use standard agitator for Pinus Radiata.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



POPPY

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902532 Ø0.5x96x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

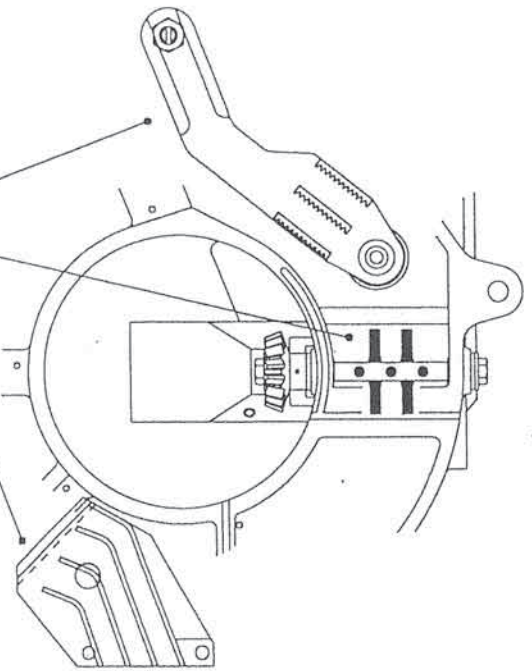
Notes:
1/. Use standard singulator for poppy.
2/. Use standard agitator for poppy.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



RADISH

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902975 Ø1.4x96x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi-line 25-89mm (1.0-3.5mm)	6903139 Ø1.4x96x 2 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use standard singulator for radish.
2/. Use standard agitator for radish.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



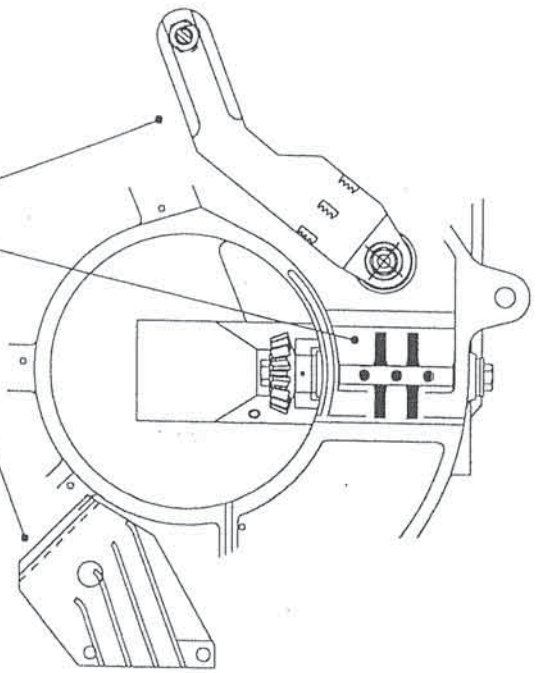
RED BEET

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-177mm (2.0-7.0ins)	6903210 Ø1.6x48x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi line 50-177mm (2.0-7.0ins)	6902821 Ø1.6x48x 2 L 6903273 Ø1.6x48x 3 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Note: Seed Discs with Ø1.6 holes are recommended for most seed varieties although for very small seed a Ø1.4 hole size may be more suitable. If vacuum levels greater than 60 m.b. are required to obtain a full Seed Disc this indicates the holes are too small.

Notes:
1/. Use Red Beet singulator for red beet. (part no. 7704026)
2/. Use standard agitator for red beet.
3/. Use Red Beet seed dividers for multi-line work. (part no.6903213)
4/. Remove seed dividers for single line work.
5/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
6/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

NOTE: -A conversion kit (part no.8003674) is available. This consists of Singulator, Splitter & fasteners. See page 14 calibration of new singulators.



SPINACH - RAW

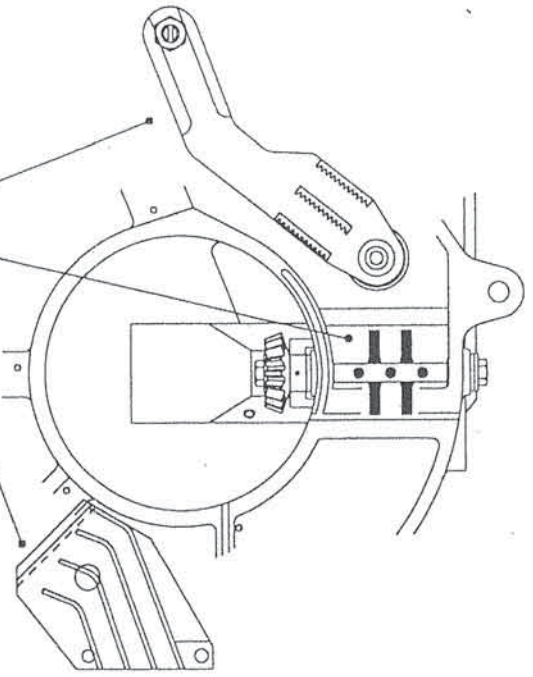
SEED SHOULD BE DE-HORNED & CLEAN

FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 25-89mm (1.0-3.5ins)	6902975 Ø1.4x96x 1 L	60	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
Multi-line 25-89mm (1.0-3.5ins)	6903139 Ø1.4x96x 2 L	60	20% of vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:

1/. Use standard singulator for raw spinach.
2/. Use standard agitator for raw spinach.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



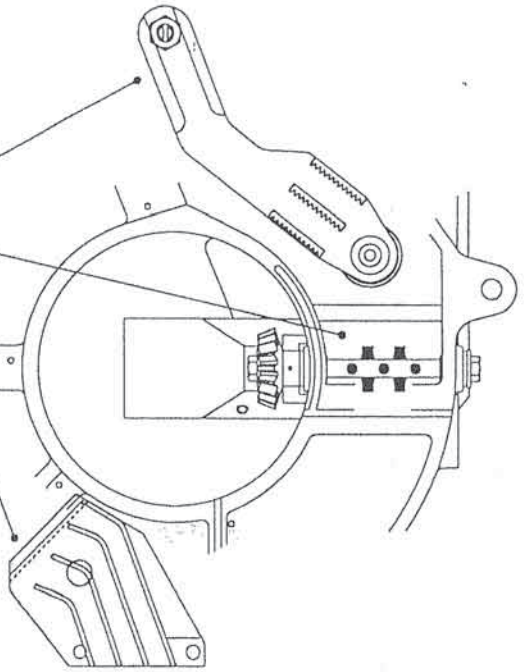
SUGARBEET - PELLETED 3.5 - 4.75mm

FINAL VACUUM ADJUSTMENTS TO BE MADE WHEN DISCS ARE PRIMED WITH SEED

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 99-354mm (3.9-14.0ins)	6902684 Ø2.5x24x 1 L	40	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:

1/. Use standard singulator for pelleted sugarbeet.
2/. Use pelleted agitator for pelleted sugarbeet.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



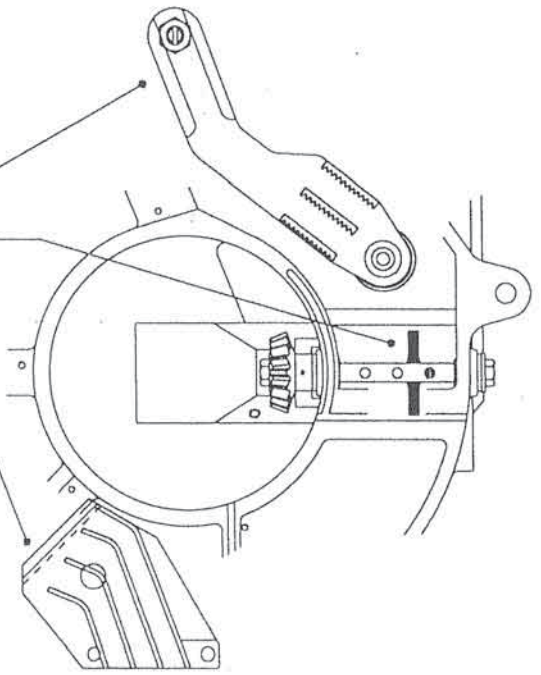
SWEDE 1.75 - 2.0mm . GRADE H

SEED WILL LEAVE THE DISC AT THE VACUUM RELEASE POINT MORE READILY, IMPROVING SPACING, IF DRESSED WITH FRENCH CHALK.
FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range		Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line	50-177mm (2.0-7.0ins)	6902565	Ø0.8x48x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive
	99-354mm (3.9-14.0ins)	6902643	Ø0.8x24x 1 L	50	20% of Vac	25 r.p.m.	Shaft Sprocket
Multi-line	67-120mm (2.6-4.7ins)	6902930	Ø0.8x72x 2 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive
	108-177mm (4.2-7.0ins)	6902646	Ø0.8x48x 2 L	30	20% of Vac	12 r.p.m.	Shaft Sprocket
	200-354mm (7.9-14.0ins)	6902812	Ø0.8x24x 2 L	30	20% of Vac	12 r.p.m.	

Notes:

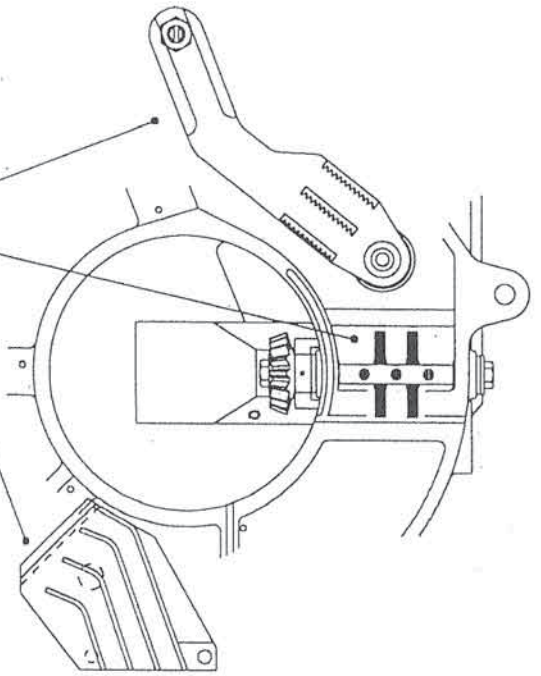
1/. Use standard singulator for swede.
2/. Use agitator with only 2 fingers fitted where shown for swede.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



SWEET WILLIAM

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single Line 99-354mm (3.9-14.0ins)	6902566 Ø0.6x24x 1 L	40	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

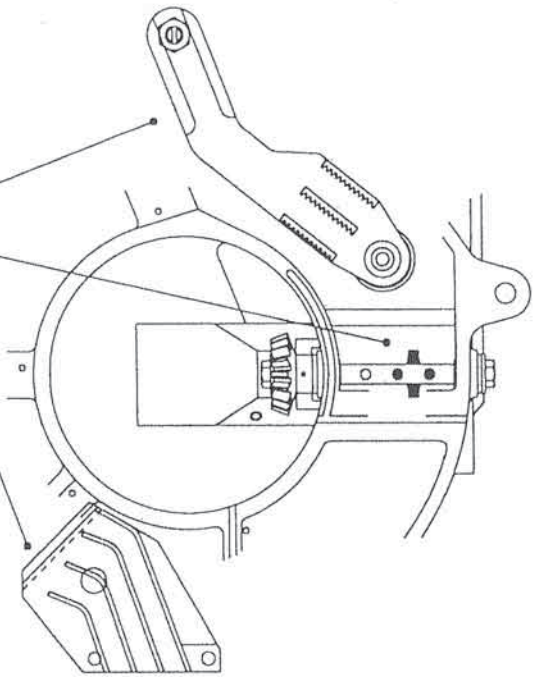
Notes:
1/. Use standard singulator for Sweet William.
2/. Use standard agitator for Sweet William.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



TOMATO

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 198-709mm (7.8-27.9ins)	6902531 Ø0.7x12 Groups of 3	40	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket
25-89mm (1.0-3.5ins)	6902567 Ø0.8x96x 1 L	40	20% of Vac	25 r.p.m.	

Notes:
1/. Use standard singulator for tomato.
2/. Use pelleted agitator with only 3 fingers where shown for tomato.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.

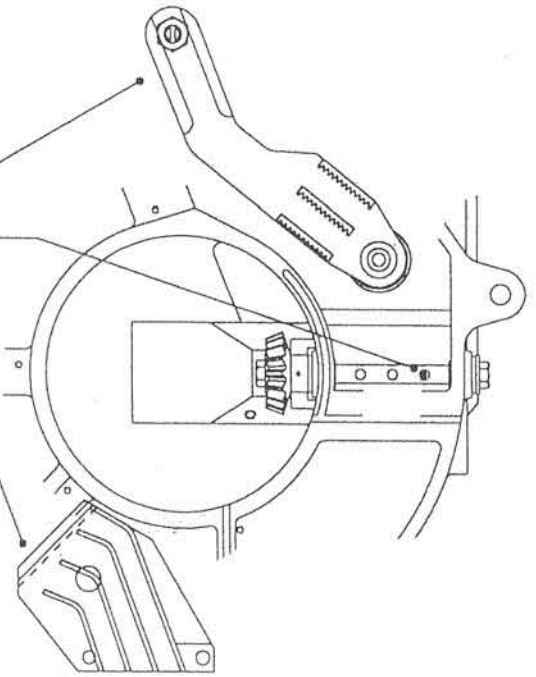


TURNIP - COATED

SEED WILL LEAVE THE DISC AT THE VACUUM RELEASE POINT MORE READILY, IMPROVING SPACING, IF DRESSED WITH FRENCH CHALK.
FINAL VACUUM ADJUSTMENT TO BE MADE WHEN DISCS ARE PRIMED WITH SEED.

Spacing Range		Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line	50-177mm (2.0-7.0ins)	6902565	Ø0.8x48x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive
	99-354mm (3.9-14.0ins)	6902643	Ø0.8x24x 1 L	50	20% of Vac	25 r.p.m.	Shaft Sprocket
Multi-line	67-120mm (2.6-4.7ins)	6902930	Ø0.8x72x 2 L	40	20% of Vac	12 r.p.m.	Use 11T Unit Drive
	108-177mm (4.2-7.0ins)	6902646	Ø0.8x48x 2 L	30	20% of Vac	12 r.p.m.	Shaft Sprocket
	200-354mm (7.9-14.0ins)	6902812	Ø0.8x24x 2 L	30	20% of Vac	12 r.p.m.	

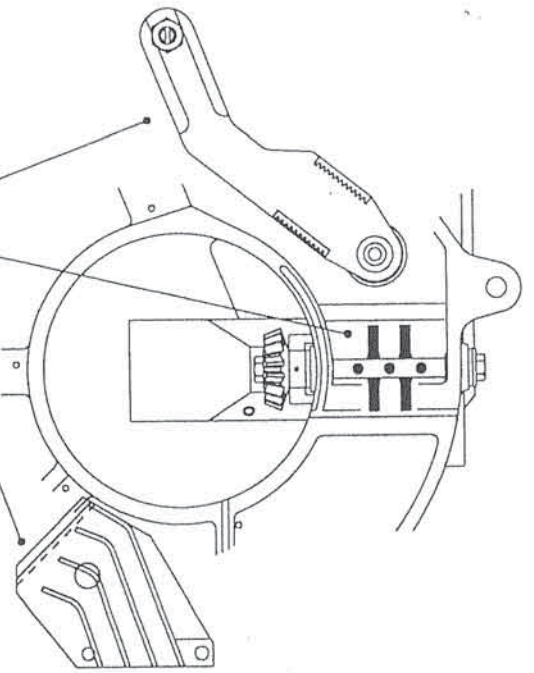
Notes:
1/. Use standard singulator for turnip.
2/. Use agitator with only 1 finger fitted where shown for turnip.
3/. Remove plastic seed dividers for single line work.
4/. The seed disc speeds recommended will produce acceptable spacing.
Increasing disc speed will cause seed spacing to deteriorate.
Reducing disc speed will result in spacing improvement together with lower vacuum requirements.
5/. Excessive vacuum requirements normally indicate a problem :-
a) Worn or damaged seed discs or air gallery blocks.
b) Incorrect hole size in seed discs.
c) Excessive disc speed.
d) Singulators set too aggressively.



WATERMELON

Spacing Range	Recommended Seed Disc Part No. Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 297-1062mm (11.7-47.0ins)	6902651 Ø2.0x8x 1 L	50	20% of Vac	25 r.p.m.	Use 11T Unit Drive Shaft Sprocket

Notes:
1/. Use single line singulator for watermelon.
2/. Use standard agitator for watermelon.
3/. Remove plastic seed dividers.
4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**
5/. Excessive vacuum requirements normally indicate a problem :-
   a) Worn or damaged seed discs or air gallery blocks.
   b) Incorrect hole size in seed discs.
   c) Excessive disc speed.
   d) Singulators set too aggressively.



WHEAT

Spacing Range	Recommended Seed Disc Part No.	Description	Typical Vacuum m.b.	Pressure m.b.	Recommended Max. Seed Disc Speed	Special Instructions
Single line 50-89mm (2.0-3.5ins)	6903144	Ø1.6x96x 1 L	70	20% of Vac	12 r.p.m.	Use 11T Unit Drive
108-177mm (4.2-7.0ins)	6903210	Ø1.6x48x 1 L	70	20% of Vac	12 r.p.m.	Shaft Sprocket
Multi-line 50-89mm (2.0-3.5ins)	6903211	Ø1.6x96x 2 L	70	20% of Vac	12 r.p.m.	Use 11T Unit Drive
50-89mm (2.0-3.5ins)	6902821	Ø1.6x48x 2 L	70	20% of Vac	12 r.p.m.	Shaft Sprocket

Notes:

1/. Use standard singulator for wheat.

2/. Use standard agitator for wheat.

3/. Remove plastic seed dividers for single line work.

4/. The seed disc speeds recommended will produce acceptable spacing. Increasing disc speed will cause seed spacing to deteriorate. **Reducing disc speed will result in spacing improvement together with lower vacuum requirements.**

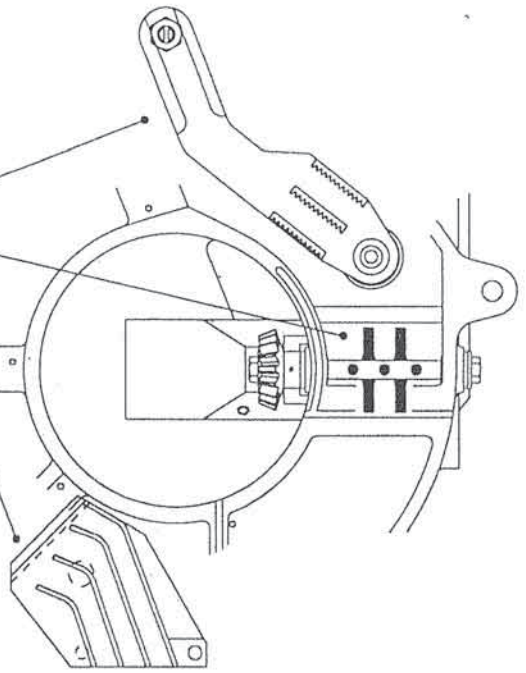
5/. Excessive vacuum requirements normally indicate a problem :-

a) Worn or damaged seed discs or air gallery blocks.

b) Incorrect hole size in seed discs.

c) Excessive disc speed.

d) Singulators set too aggressively.



Singulaire 780

Parts Manual

PARTS ENQUIRIES

Stanhay Webb Limited
Houghton Road
Grantham
Lincs
NG31 6JE
England

Tel: +44 (0)1476 515406
Fax: +44 (0)1476 515407

WHEN ORDERING PARTS PLEASE QUOTE THE FOLOWING INFORMATION:

1. Model: SINGULAIRE 780
2. Order number:
3. Part number and description:

PLEASE NOTE:

The parts listed are not necessarily supplied as unit items, they may be part of an assembly or be packed in quantities.

Some of the parts shown are optional extras and are not fitted as standard to new machines.

SINGULAIRE 780
PARTS LIST

Contents

Item No	Item Description
SHW6902706	SEED DISC-NO HOLES
SHW6902970	SEED DISC-0.5 X 12 GROUPS OF 3
SHW6902868	SEED DISC-0.5 X 12 GROUPS OF 2
SHW6902865	SEED DISC-0.5 X 24 GROUPS OF 2
SHW6903150	SEED DISC-0.5 X 24 GROUPS OF 2
SHW6903543	SEED DISC-0.5X12 GRPS 2 OUTER
SHW6903545	SEED DISC-0.5X12 GRPS 2 INNER
SHW6903544	SEED DISC-0.5X12 GRPS 2 MIDDLE
SHW6903674	SEED DISC-0.50 X 72 X 2LINE
SHW6903405	SEED DISC-0.50 X 72 X 1 LINE
SHW6902557	SEED DISC-0.50 X 48 X 2 LINE
SHW6902558	SEED DISC-0.50 X 96 X 2 LINE
SHW6902559	SEED DISC-0.50 X 192 X 2 LINE
SHW6904507	SEED DISC-0.50 X 96 4 LINE
SHW6902400	SEED DISC-0.50 X 48 X 3 LINE
SHW6902488	SEED DISC-0.50 X 48 X 1 LINE
SHW6902489	SEED DISC-0.50 X 24 X 1 LINE
SHW6903095	SEED DISC-0.50 X 144 X 2 LINE
SHW6903765	SEED DISC-0.50 X 0 /144/144
SHW6902568	SEED DISC-0.50 X 96/96/72 SPEC
SHW6903764	SEED DISC-0.50 X 144/ 0 /144
SHW6902532	SEED DISC-0.50 X 96 X 1 LINE
SHW6902533	SEED DISC-0.50 X 12 X 1 LINE
SHW6902702	SEED DISC-0.50 X 192 X 3 LINE
SHW6902698	SEED DISC-0.50 X 144 X 3 LINE
SHW6902690	SEED DISC-0.50 X 96 X 3 LINE
SHW6904564	SEED DISC-0.6 X 120 4 LINE
SHW6904406	SEED DISC-0.6 X 120 X 3 LINE
SHW6903792	SEED DISC-0.6 X 24 X 1-LINE
SHW6903774	SEED DISC-0.6 X 10 GROUPS OF10
SHW6904577	SEED DISC 0.6X48 2LINE
SHW6903714	SEED DISC-0.6X 9 GRPS 3 INNER
SHW6902566	SEED DISC-0.60 X 96 X 1 LINE
SHW6902645	SEED DISC-0.60 X 48 X 3 LINE
SHW6903436	SEED DISC-0.60 X 144/0/144SPEC
SHW6903435	SEED DISC-0.60 X 0/144/144SPEC
SHW6902648	SEED DISC-0.60 X 24 X 3 LINE
SHW6903406	SEED DISC-0.60 X 96 X I/S LINE
SHW6904504	SEED DISC-0.60 X 96 INNER LINE
SHW6902667	SEED DISC-0.60 X 144 X 3 LINE
SHW6902668	SEED DISC-0.60 X 144 X 2 LINE
SHW6902669	SEED DISC-0.60 X144/144/108 SP
SHW6903272	SEED DISC-0.60 X 72/72/48 SPEC
SHW6903269	SEED DISC-0.60 X 192 X 1 LINE
SHW6903247	SEED DISC-0.60 X 144 X 1 LINE
SHW6904505	SEED DISC 0.60X144X108X108X144
SHW6902691	SEED DISC-0.60 X 48 X 2 LINE
SHW6904563	SEED DISC-0.60X144X0X144X144 S
SHW6904276	SEED DISC-0.60 X 144 4 LINE
SHW6903742	SEED DISC-0.60 X 96 4 LINE
SHW6902639	SEED DISC-0.60 X 48/48/36 SPEC

Item No	Item Description
SHW6902624	SEED DISC-0.60 X 48 X 1 LINE
SHW6902637	SEED DISC-0.60 X 96 X 2 LINE
SHW6903161	SEED DISC-0.60 X 96/72/72 SPEC
SHW6903160	SEED DISC-0.60 X 72/96/72 SPEC
SHW6904562	SEED DISC-0.60X0X144X144X144 S
SHW6902776	SEED DISC-0.60 X 72 X 1 LINE
SHW6902777	SEED DISC-0.60 X 72 X 2 LINE
SHW6902778	SEED DISC-0.60 X 72 X 3 LINE
SHW6903149	SEED DISC-0.60 X 96/96/82 SPEC
SHW6903099	SEED DISC-0.60 X 192 X 3 LINE
SHW6904524	SEED DISC-0.60 X 24 X 2 LINE
SHW6903094	SEED DISC-0.60 X 96/120/0 SPEC
SHW6903093	SEED DISC-0.60 X 120/96/0 SPEC
SHW6903092	SEED DISC-0.60 X 120 X 2 LINE
SHW6903071	SEED DISC-0.60 X 144 X I/S LIN
SHW6902563	SEED DISC-0.60 X 96 X 3 LINE
SHW6902967	SEED DISC-0.60 X 60 X 1 LINE
SHW6902630	SEED DISC-0.60 X 96/96/72 SPEC
SHW6903874	SEED DISC-0.60 X 72 4 LINE
SHW6903111	SEED DISC-0.7 X 24 GROUPS OF 3
SHW6902979	SEED DISC-0.7 X 12 GROUPS OF 4
SHW6903793	SEED DISC-0.7 X 24 X 1 LINE
SHW6902531	SEED DISC-0.7 X 12 GROUPS OF 3
SHW6903788	SEED DISC-0.70 X 48 X 1 LINE
SHW6903167	SEED DISC-0.70 X 12 X 1 LINE
SHW6903147	SEED DISC-0.70 X 120 X 2 LINE
SHW6903146	SEED DISC-0.70 X 96 X 2 LINE
SHW6903122	SEED DISC-0.70 X 120 X 3 LINE
SHW6903417	SEED DISC-0.8 X12GRPS OF 2-ISL
SHW6903794	SEED DISC-0.8 X 20 X 1 LINE
SHW6903899	SEED DISC-0.8 X 192 X 2 LINE
SHW6904034	SEED DISC-0.8 X12GRPS OF 2(T1)
SHW6903359	SEED DISC-0.8 X12GRPS OF 2(T2)
SHW6902966	SEED DISC-0.8 X 12 GROUPS OF 3
SHW6904578	SEED DISC 0.8X72 1 LINE- INNER
SHW6902567	SEED DISC-0.80 X 96 X 1 LINE
SHW6903755	SEED DISC-0.80 X 120 X 3 LINE
SHW6904566	SEED DISC-0.80 X 130/130/117SP
SHW6903753	SEED DISC-0.80 X 12 X I/S LINE
SHW6902647	SEED DISC-0.80 X 96 X 3 LINE
SHW6903724	SEED DISC-0.80 X 96 X 2L-STAG
SHW6904568	SEED DISC-0.80 X 130/143/117SP
SHW6903007	SEED DISC-0.80 X 144 X 2 LINE
SHW6904503	SEED DISC-0.80 X 192 X 3 LINE
SHW6903070	SEED DISC-0.80 X 48 X I/S LIN
SHW6903766	SEED DISC-0.80 X 144/ 0 /144
SHW6903975	SEED DISC-0.80 X108/108/96 SP
SHW6902958	SEED DISC-0.80 X 144 X 1 LINE
SHW6903767	SEED DISC-0.80 X 0 /144/144
SHW6902646	SEED DISC-0.80 X 48 X 2 LINE
SHW6903779	SEED DISC-0.80 X 0 /24 /0

Item No	Item Description
SHW6903986	SEED DISC-0.80 X 96/72/0 SPEC
SHW6904492	SEED DISC-0.80 X 144 MID LINE
SHW6904487	SEED DISC-0.80 X 96 4 LINE
SHW6902953	SEED DISC-0.80 X12GROUPS 4X 2L
SHW6904421	SEED DISC-0.80 X 72 X 2 LINE
SHW6903987	SEED DISC-0.80 X 72/96/0 SPEC
SHW6904411	SEED DISC-0.80 X 108 X 2 LINE
SHW6902562	SEED DISC-0.80 X 48 X 3 LINE
SHW6903362	SEED DISC-0.80 X 108 X 1 LINE
SHW6903361	SEED DISC-0.80 X 104 X 1 LINE
SHW6903360	SEED DISC-0.80 X 88 X 1 LINE
SHW6902643	SEED DISC-0.80 X 24 X 1 LINE
SHW6902930	SEED DISC-0.80 X 72 X 2 LINE
SHW6902750	SEED DISC-0.80 X 12 X 1 LINE
SHW6904511	SEED DISC-0.80 X 96 I/S LINE
SHW6902565	SEED DISC-0.80 X 48 X 1 LINE
SHW6903358	SEED DISC-0.80 X 24 X I/S LINE
SHW6904288	SEED DISC-0.80 X 120 X 1 LINE
SHW6903156	SEED DISC-0.80 X 120 X 2 LINE
SHW6904567	SEED DISC-0.80 X 143/130/117SP
SHW6902632	SEED DISC-0.80 X 96/96/72 SPEC
SHW6903868	SEED DISC-0.80 X 72 X 3 LINE
SHW6903164	SEED DISC-0.80 X 144 X 3 LINE
SHW6902828	SEED DISC-0.80 X 72 X 1 LINE
SHW6904275	SEED DISC-0.80 X 19 X 1 LINE
SHW6902629	SEED DISC-0.80 X 96 X 2 LINE
SHW6903206	SEED DISC-0.80 X 72/72/54 SPEC
SHW6903243	SEED DISC-0.80 X144/144/108 SP
SHW6902826	SEED DISC-0.80 X 24 X 2L STAG
SHW6903897	SEED DISC-0.80 X 32 X 1 LINE
SHW6902812	SEED DISC-0.80 X 24 X 2 LINE
SHW6903875	SEED DISC-0.80 X 72 4 LINE
SHW6902705	SEED DISC-1.0 X12GRPS OF 2(T1)
SHW6903976	SEED DISC-1.00 X144/144/108 SP
SHW6903771	SEED DISC-1.00 X 48 X I/S LINE
SHW6902957	SEED DISC-1.00 X 24 X 1 LINE
SHW6902829	SEED DISC-1.00 X 72 X 1 LINE
SHW6904414	SEED DISC-1.00 X 24 X I/S LINE
SHW6904593	SEED DISC-1.00 X 144 X 3 LINE
SHW6902670	SEED DISC-1.00 X 96 X 1 LINE
SHW6903822	SEED DISC-1.00 X 96/96/60 SPEC
SHW6902977	SEED DISC-1.00 X 96/96/72 SPEC
SHW6902944	SEED DISC-1.00 X 96 X 3 LINE
SHW6902625	SEED DISC-1.00 X 48 X 1 LINE
SHW6902623	SEED DISC-1.00 X 96 X 2 LINE
SHW6902490	SEED DISC-1.00 X 8 X 1 LINE
SHW6904559	SEED DISC-1.00 X 72 X 2 LINE
SHW6903876	SEED DISC-1.00 X 72 4 LINE
SHW6903313	SEED DISC-1.00 X 96/96/48 SPEC
SHW6902914	SEED DISC-1.2 X 12 GROUPS OF 3
SHW6902960	SEED DISC-1.20 X 48 X 2 LINE

Item No	Item Description
SHW6904069	SEED DISC-1.20 X 144 X 2 LINE
SHW6903252	SEED DISC-1.20 X 96 X I/S LINE
SHW6904070	SEED DISC-1.20 X 72 X 2 LINE
SHW6902692	SEED DISC-1.20 X 24 X 1 LINE
SHW6902640	SEED DISC-1.20 X 96 X 2 LINE
SHW6902961	SEED DISC-1.20 X 24 X I/S LINE
SHW6904284	SEED DISC-1.20 X 24 X 2 LINE
SHW6902626	SEED DISC-1.20 X 48 X 1 LINE
SHW6903241	SEED DISC-1.20 X 72 X 1 LINE
SHW6902642	SEED DISC-1.20 X 96/96/72 SPEC
SHW6903790	SEED DISC-1.20 X 120 X 3 LINE
SHW6902863	SEED DISC-1.20 X 12 X 1 LINE
SHW6903148	SEED DISC-1.20 X 48 X I/S LINE
SHW6903151	SEED DISC-1.20 X 72/96/72 SPEC
SHW6902534	SEED DISC-1.20 X 96 X 1 LINE
SHW6903152	SEED DISC-1.20 X 96/72/72 SPEC
SHW6902564	SEED DISC-1.20 X 96 X 3 LINE
SHW6902976	SEED DISC-1.20 X 144 X 1 LINE
SHW6903623	SEED DISC-1.4 X 24 GROUPS OF 2
SHW6904071	SEED DISC-1.4 X 120 X 2 LINE
SHW6904579	SEED DISC 1.4X72 1 LINE- INNER
SHW6903748	SEED DISC-1.40 X 0/48/0 SPEC
SHW6903747	SEED DISC-1.40 X 0/ 0/48 SPEC
SHW6902980	SEED DISC-1.40 X 24 X 1 LINE
SHW6902975	SEED DISC-1.40 X 96 X 1 LINE
SHW6903991	SEED DISC-1.40 X 24 X 2L-STAG
SHW6903481	SEED DISC-1.40 X 144 X 1 LINE
SHW6903768	SEED DISC-1.40 X 96/ 0 /96
SHW6903769	SEED DISC-1.40 X 0 / 96/96
SHW6904445	SEED DISC-1.40 X 24 X 1 LINE
SHW6903140	SEED DISC-1.40 X 96/96/72 SPEC
SHW6903139	SEED DISC-1.40 X 96 X 2 LINE
SHW6903125	SEED DISC-1.40 X 96 X 3 LINE
SHW6904178	SEED DISC-1.40 X 24 X 3 LINE
SHW6902963	SEED DISC-1.40 X 48 X 1 LINE
SHW6903110	SEED DISC-1.40 X 72 X 1 LINE
SHW6903109	SEED DISC-1.40 X 72 X 3 LINE
SHW6902952	SEED DISC-1.40 X 72 X 2 LINE
SHW6904292	SEED DISC-1.40 X 48/48/36 SPEC
SHW6902809	SEED DISC-1.40 X 48 X 2 LINE
SHW6902649	SEED DISC-1.40 X 48 X 3 LINE
SHW6904525	SEED DISC-1.50 96/96/72 SPEC
SHW6904522	SEED DISC-1.50 X 96/72/96 SPEC
SHW6902981	SEED DISC-1.6 X 12 GROUPS OF 2
SHW6903901	SEED DISC-1.6 X 120 X 2 LINE
SHW6904405	SEED DISC-1.6 X 108 X 3 LINE
SHW6904404	SEED DISC-1.6 X 120 X 3 LINE
SHW6903209	SEED DISC-1.60 X 72 X 1 LINE
SHW6903993	SEED DISC-1.60 X 90/72/72SPEC
SHW6903994	SEED DISC-1.60 X 72/90/72SPEC
SHW6903995	SEED DISC-1.60 X 0/72/90SPEC

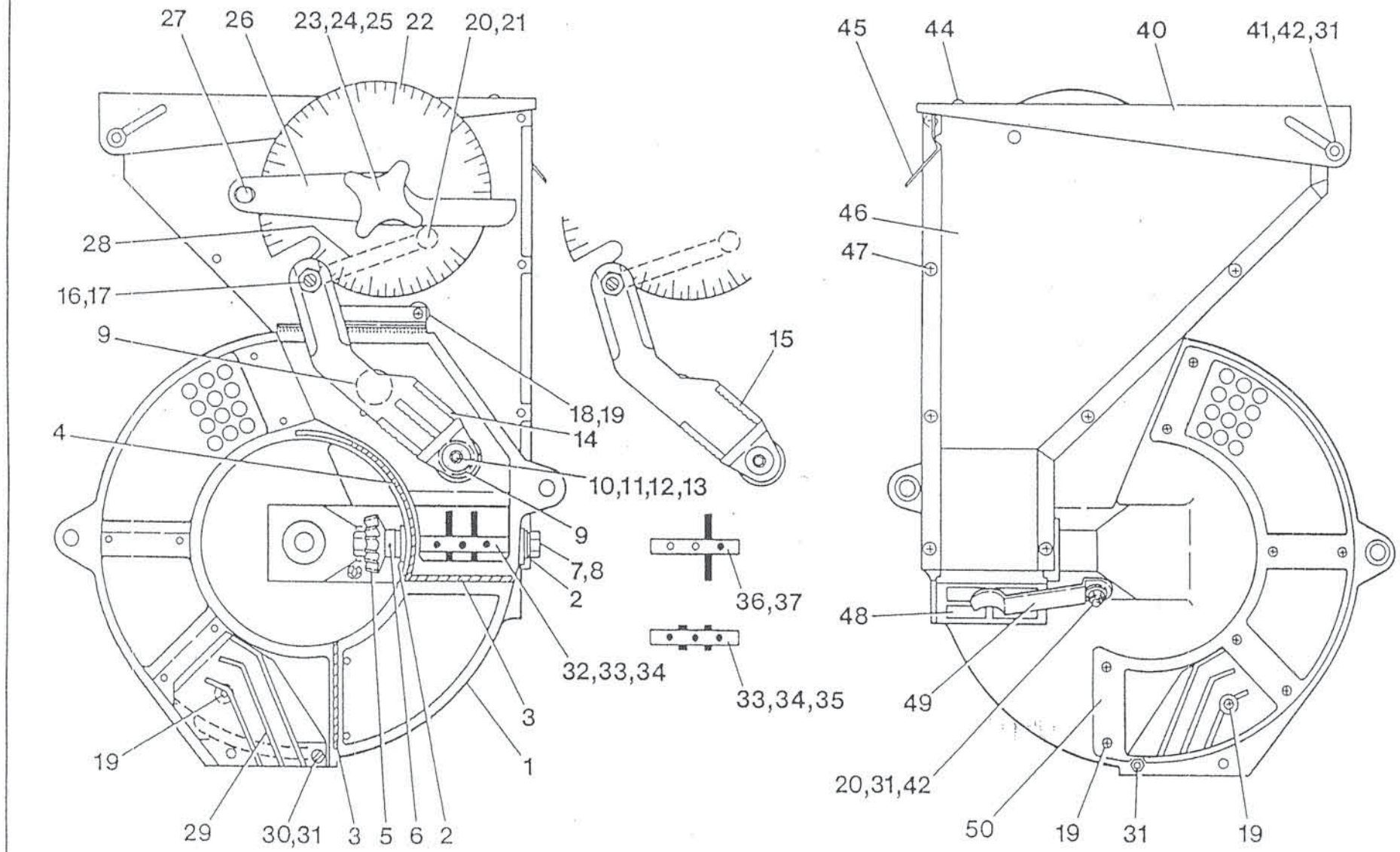
Item No	Item Description
SHW6903996	SEED DISC-1.60 X 90/ 0/72SPEC
SHW6903210	SEED DISC-1.60 X 48 X 1 LINE
SHW6902712	SEED DISC-1.60 X 24 X 1 LINE
SHW6903211	SEED DISC-1.60 X 96 X 2 LINE
SHW6904510	SEED DISC-1.60 X 48 X I/S LINE
SHW6903821	SEED DISC-1.60 X 96/96/72 SPEC
SHW6903820	SEED DISC-1.60 X 96 X 3 LINE
SHW6904304	SEED DISC-1.60 X 72/80/0
SHW6903157	SEED DISC-1.60 X 72 X 2 LINE
SHW6904201	SEED DISC-1.60 X 56/48/48 SPEC
SHW6904202	SEED DISC-1.60 X 48/56/48 SPEC
SHW6903145	SEED DISC-1.60 X 72 X 3 LINE
SHW6903144	SEED DISC-1.60 X 96 X 1 LINE
SHW6903273	SEED DISC-1.60 X 48 X 3 LINE
SHW6902864	SEED DISC-1.60 X 12 X 1 LINE
SHW6904289	SEED DISC-1.60 X 96 X I/S LIN
SHW6902821	SEED DISC-1.60 X 48 X 2 LINE
SHW6904303	SEED DISC-1.60 X 80/72/0
SHW6903690	SEED DISC-1.80 X 72 X 1 LINE
SHW6904394	SEED DISC-1.80 X 60 2 LINE
SHW6904096	SEED DISC-2.0 X 12 GROUPS OF 2
SHW6903414	SEED DISC-2.0 X 12 GROUPS OF 3
SHW6903255	SEED DISC-2.0 X 12 GROUPS OF 3
SHW6903057	SEED DISC-2.0 X 12 GROUPS OF 2
SHW6903438	SEED DISC-2.0 X 12 GROUPS OF 3
SHW6902810	SEED DISC-2.0X48 INNER&MIDDLE
SHW6902811	SEED DISC-2.0X48 INNER&OUTER
SHW6903091	SEED DISC-2.00 X 12 X 1 LINE
SHW6904025	SEED DISC-2.00 X 72 X 3 LINE
SHW6904560	SEED DISC-2.00 X 60 X 2 LINE
SHW6902535	SEED DISC-2.00 X 48 X 2 LINE
SHW6902671	SEED DISC-2.00 X 48 X 1 LINE
SHW6903726	SEED DISC-2.00 X 72 X 2 LINE
SHW6902651	SEED DISC-2.00 X 8 X 1 LINE
SHW6903212	SEED DISC-2.00 X 24 X 1 LINE
SHW6902775	SEED DISC-2.00 X 72 X 1 LINE
SHW6902582	SEED DISC-2.00 X 12 X I/S LINE
SHW6903112	SEED DISC-2.00 X 24 X 2 LINE
SHW6903332	SEED DISC-2.20 X 39 X 2L STG
SHW6903572	SEED DISC-2.20 X 72 X 2 LINE
SHW6902956	SEED DISC-2.20 X 48 X 1 LINE
SHW6902693	SEED DISC-2.20 X 48 X 2 LINE
SHW6903615	SEED DISC-2.20 X 72 X 1 LINE
SHW6904058	SEED DISC-2.5 X 12 GROUPS OF 2
SHW6903863	SEED DISC-2.5 X 12 GROUPS OF 3
SHW6902684	SEED DISC-2.50 X 24 X 1 LINE
SHW6903825	SEED DISC-2.50 X 72 X 1 LINE
SHW6902955	SEED DISC-2.50 X 28/48/20 SPEC
SHW6902954	SEED DISC-2.50 X 48/28/20 SPEC
SHW6903938	SEED DISC-48 HOLE CLUSTER SPIN

SINGULAIRE 780

METERING UNIT - HOPPER SIDE

Item No:	Part No:	Description:
1	7702828	Body - Hopper Side c/w items 2,23,27
2	2002012	Oilite Bearing
3	6902687	Felt Seal
4	6902687	Felt Seal - Inner Ring
5	7702880	15T Pinion/Spindle c/w item 6
6	2214280	Tension Pin
7	2311089	Flat Washer - Form A
8	6902665	Agitator Bolt - Short (L/H thread)
9	2701060	Singulator Spring
10	6902822	Singulator Spindle (spherical ball type)
11	6902823	Singulator Spindle End Cap
12	2375009	Socket Head Cap Screw
13	2303008	Hexagon Nut
14	7703032	Singulator - multi-line (c/w items 16,17)
15	7703033	Singulator - single line (c/w items 16,17)
16	6902711	Eccentric Singulator Pin
17	2303007	Hexagon Nut
18	7702899	Singulator Brush - Hopper Side
19	2357002	Taptite Pozidriv Pan Head Screw
20	2332105	Slotted Cheese Head Screw
21	2303005	Hexagon Nut
22	2810204	Singulator Cam
23	6902496	Cam Stud
24	2311090	Flat Washer - Form A (between Cam and Body)
25	6404015	Handwheel
26	6902498	Singulator Setting Arm
27	6409340	Dowel
28	2702040	Singulator Arm Spring
29	2810215	Seed Splitter
	6903213	Red Beet Seed Splitter
	6903250	Lettuce Seed Splitter
30	2332106	Slotted Cheese Head Screw
31	2303090	Nyloc Hexagon Nut
32	7702830	Agitator - Standard
33	6902664	Agitator Spindle (White - L/H thread both ends)
34	2830040	Agitator Finger (snap-in)
* 35	7702861	Agitator - Large Pellet
36	7702860	Agitator - Raw Parsnip
37	2215260	Tension Pin (finger for raw parsnip)

* For Agitator Finger use item 34 and cut to length after fitting.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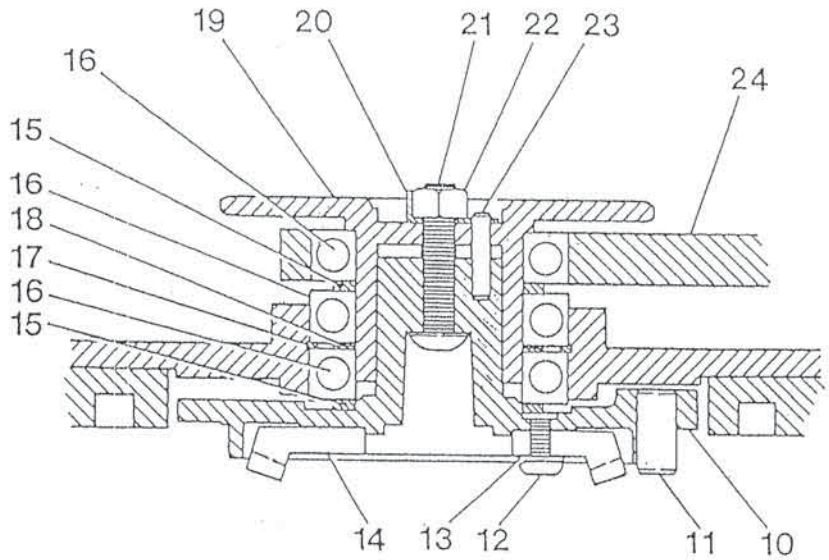
SINGULAIRE 780

METERING UNIT - HOPPER SIDE

Item No:	Part No.	Description
40	8002647	2 litre Hopper Lid Kit (c/w items 41-45)
	8002648	1 litre Hopper Lid Kit (c/w items 41-45)
41	6903011	2 litre Hopper Hinge Pin
	2306009	Hexagon Bolt
42	2311132	Flat Washer - Form C
43	2211366	Nyloc Hexagon Nut
44	2212562	POP Rivet
45	2705009	Hopper Lid Clip
46	7402812	2 litre Hopper
	7402811	1 litre Hopper
	7403975	2 litre High Density Hopper (use 1 litre hopper lid)
47	2357022	Taptite Pozidriv Pan Head Screw
48	2810206	Unit Plug
49	2705008	Plug Clip
50	6902586	Cover Plate

KITS

8010047	Seed Splitter Kit (items 19,29,30,31)
8002508	Hopper Kit - 2 litre
8002507	Hopper Kit - 1 litre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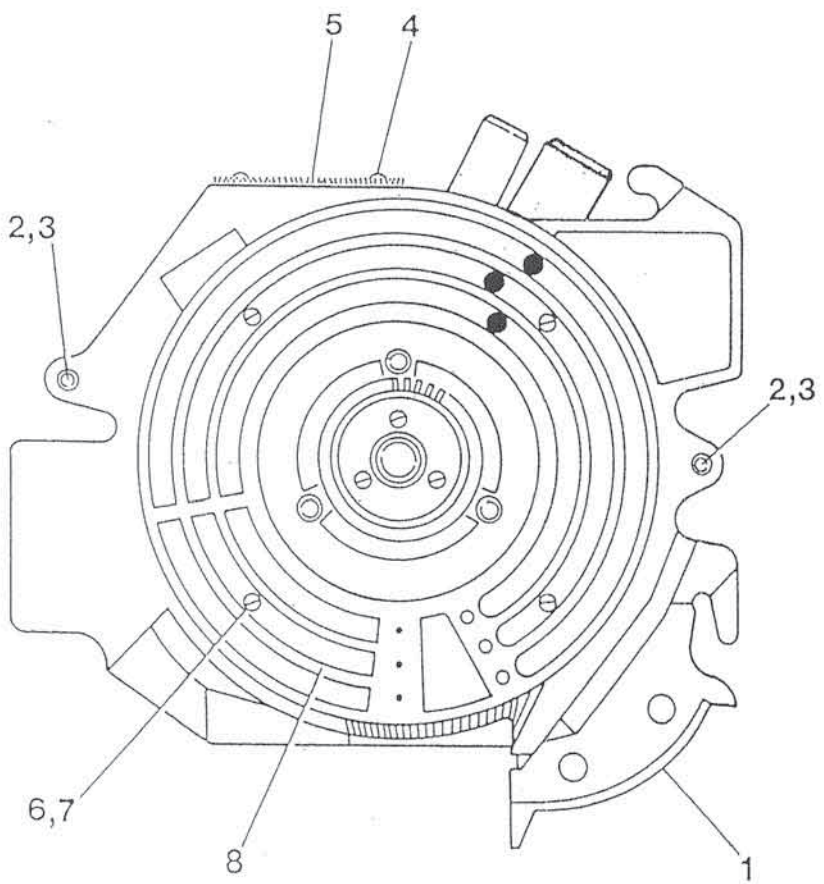
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SINGULAIRE 780

METERING UNIT - DRIVE SIDE

Item No:	Part No:	Description:
1	7703248	Body - Drive Side
2	2309053	Hexagon Screw
3	6902514	Unit Conical Nut
4	2357002	Taptite Pozidriv Pan Head Screw
5	7702898	Singulator Brush - Drive Side
6	2332105	Slotted Cheese Head Screw
7	2309090	Nyloc Hexagon Nut
8	2810205	Air Gallery Block - Grey
9	2810224	Air Gallery Block - Red

BODY/TURNTABLE/KNEE JOINT ASSEMBLY

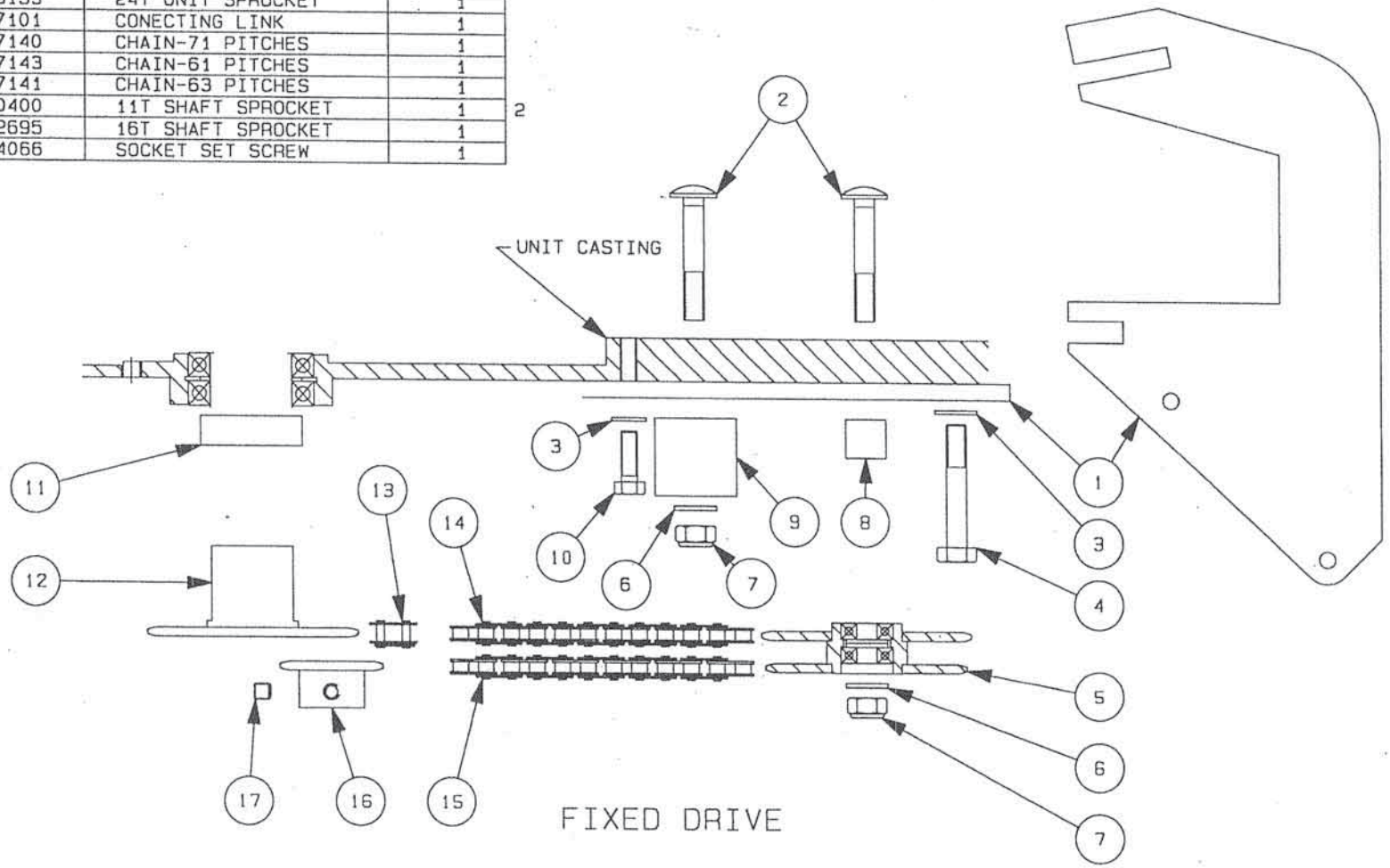
10	7702829	Turntable c/w items 11, 23
11	6409339	Dowel
12	2357022	Taptite Pozidriv Pan Head Screw
13	2311132	Flat Washer - Form C
14	1502001	45T Crownwheel
15	6409402	Support Washer
16	1909029	Ball Bearing
17	2217215	Circlip
18	6409401	Support Shim (2 per unit)
19	7403153	24T Unit Sprocket
20	6902757	Unit Tab Washer
21	2377084	Socket Button Head Screw
22	2303007	Hexagon Nut
23	2215253	Tension Pin
24	6902858	Knee Joint Arm

1	6903871	UNIT DRIVE PALTE	1	
2	2306493	M10 X 60 COACH BOLT	2	
3	2311089	M8 PLN F/W	2	
4	2309055	M8 X 60 SET SCREW	1	
5	7703991	K. JOINT SPRKT. ASSY	1	1
6	2311090	M10 PLN F/W	2	
7	2303109	M10 NYLOC THIN	2	
8	6903873	DOUBLE SPRKT SPCR	1	
9	6903872	JOCKEY	1	
10	2309048	M8 X 25 SET SCREW	1	
11	6903054	UNIT SPROCKET SPACER	1	
12	7403153	24T UNIT SPROCKET	1	
13	1807101	CONECTING LINK	1	
14	1807140	CHAIN-71 PITCHES	1	
15	1807143	CHAIN-61 PITCHES	1	
	1807141	CHAIN-63 PITCHES	1	
16	7700400	11T SHAFT SPROCKET	1	2
	7702695	16T SHAFT SPROCKET	1	
17	2374066	SOCKET SET SCREW	1	

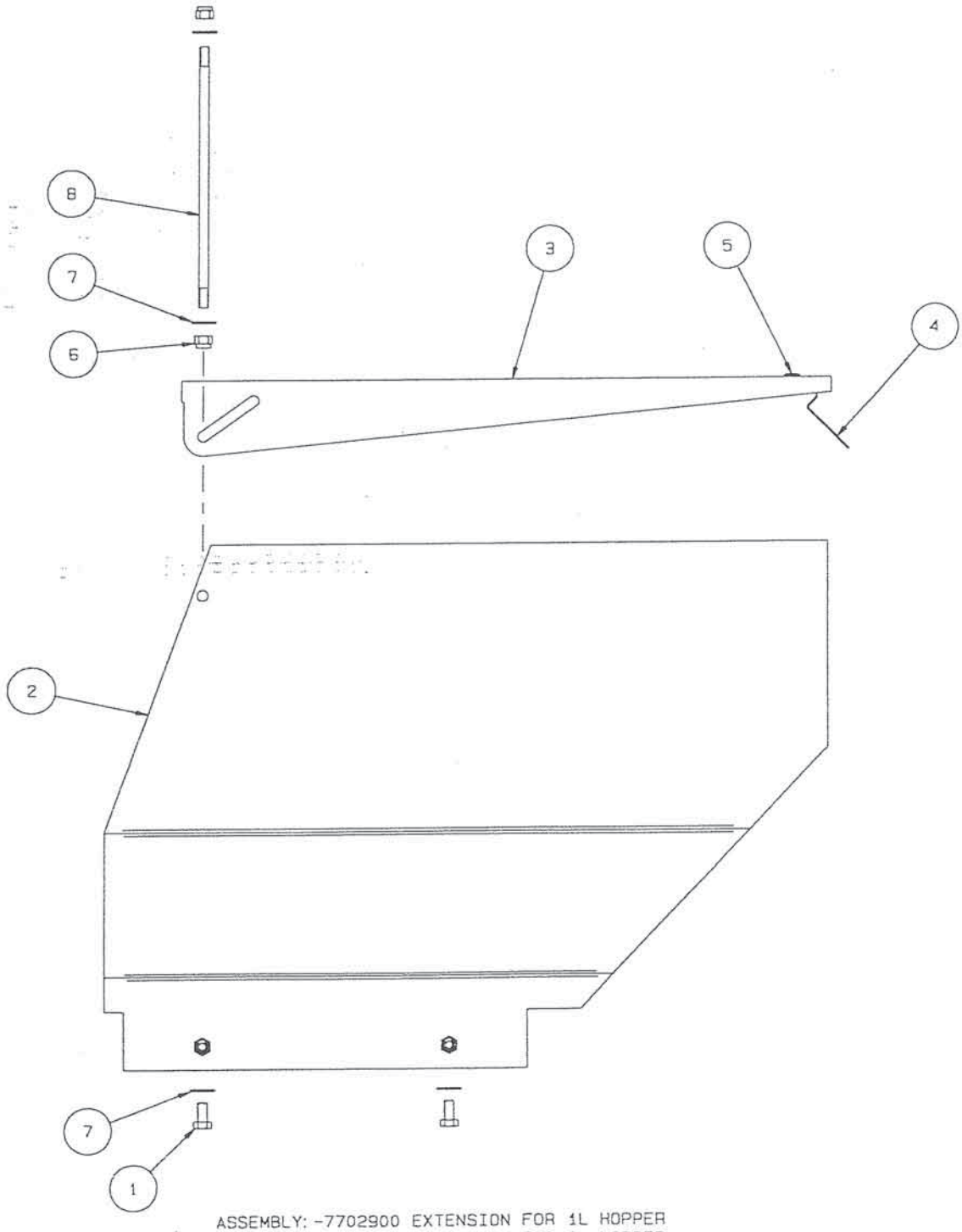
1: - INCLUDES- 2 X 2311090 (M10 F'WASHER)
2 X 1901045 (6000-2RS BEARING)
1 X 7404249 (KJ HUB (BB) -W/A)

2: - INCLUDES-ITEM 17 (2374066 SOCKET SET SCREW)

KIT FOR 11/16T SPROCKET + 61/63P CHAIN - 8003673

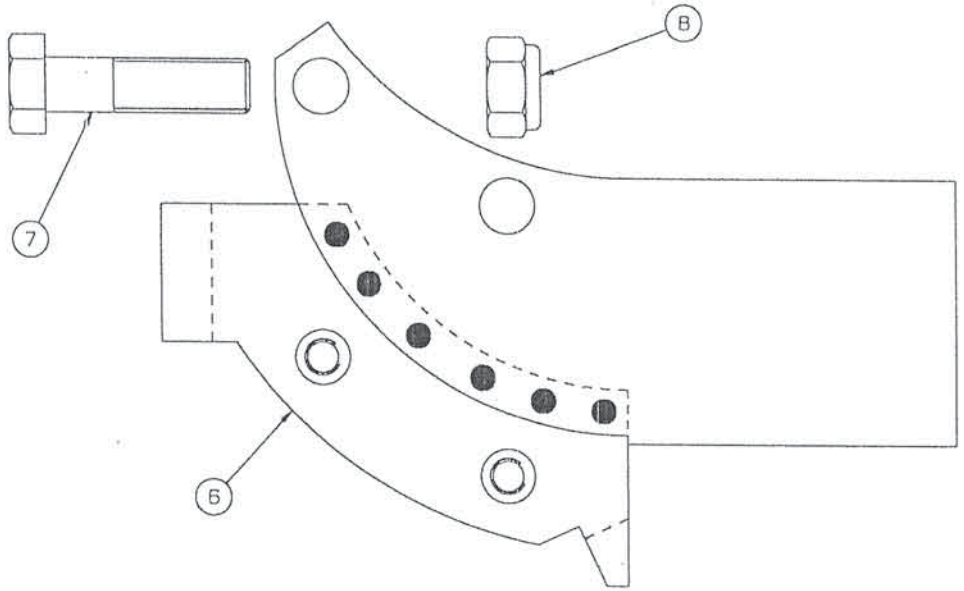


1	2309021	HEXAGON SCREW	4
2	7402995	EXTENSION FOR 1L HOPP.	1
	7402996	EXTENSION FOR 2L HOPP.	1
3	7702519	LID C/W ITEMS 4, 5	1
4	2705003	LID CLIP	1
5	2212562	POP RIVET	2
6	2303090	NYLOC NUT-FULL	2
7	2311132	FLAT WASHER-FORM C	6
8	6903012	HINGE PIN	1



ASSEMBLY: -7702900 EXTENSION FOR 1L HOPPER
7702901 EXTENSION FOR 2L HOPPER

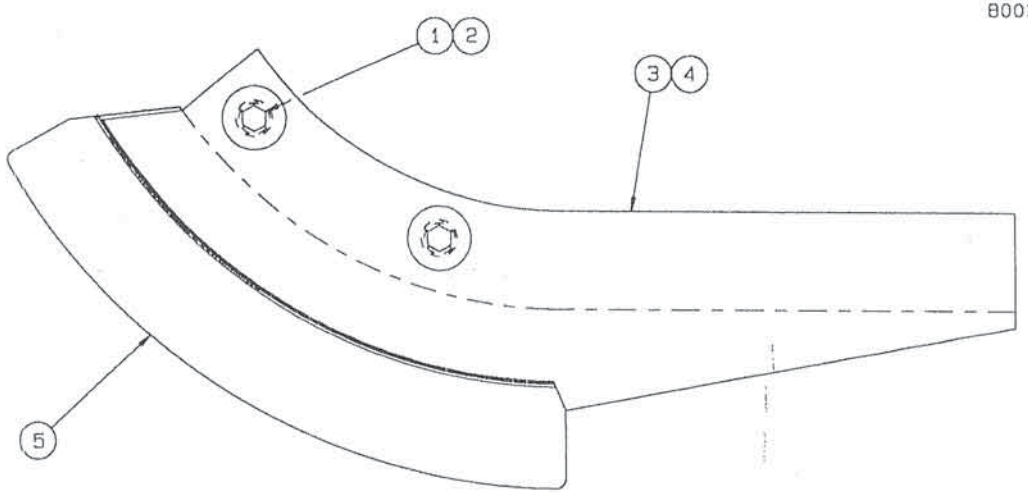
HOPPER EXTENSIONS



1	2377079	SOCKET BUTTON SCREW	2
2	6902351	COULTER SCREW BOSS	2
3	3210176	COULTER SIDE RH	1
4	3210177	COULTER SIDE LH	1
5	3000495	COULT.INSERT-CAST IRON	1
	8010030	COULT.INSERT-CERAMIC	1
	8010079	COULT.INSERT-TEK TIP	1
6	7404003	SINGLE LINE ADAPTOR	1
7	2306097	HEXAGON BOLT	2
8	2303110	NYLOC NUT-THIN	2

KITS: -

8002617 COULTER KIT-CAST IRON (ITEMS 1-5)
8002550 COULTER KIT-CERAMIC (ITEMS 1-5)
8003407 COULTER KIT-TEK TIP (ITEMS 1-5)
8003510 HYLINE SINGLE LINE ADAPTOR (ITEMS 6-8)



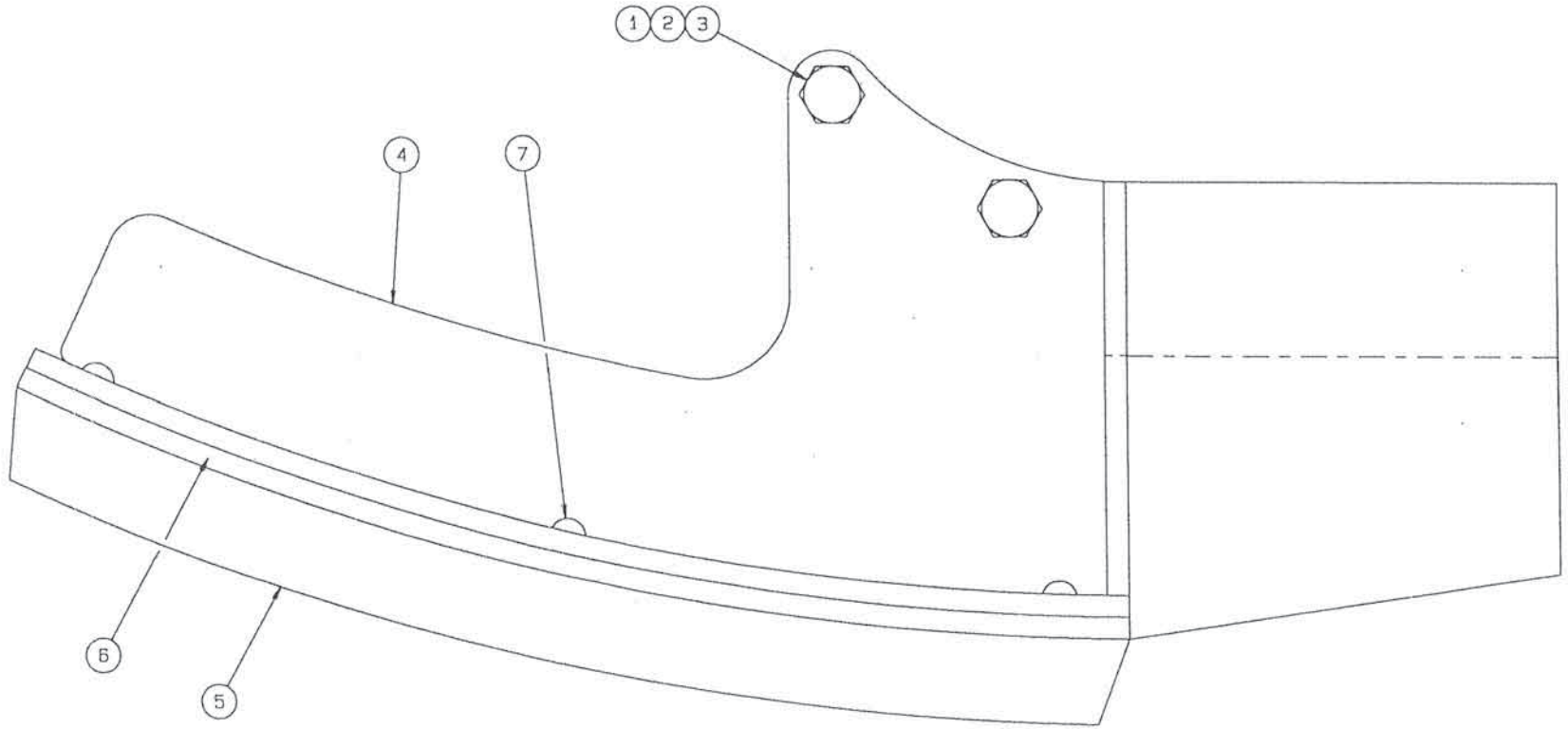
SINGLE LINE COULTER

ASSEMBLY: -

7703504 NON-STICK COULTER ASSEMBLY-PLASTIC (ITEMS 1-7)

	1	2306038	HEXAGON BOLT	2
	2	2303007	HEXAGON NUT	2
	3	6902652	COULTER SCREW SPACER	2
	4	7403663	SL NS COULTER BODY	1
*	5	8010075	NS SHOE RIB-PLASTIC	1
	6	6903186	SL NS SHOE BASE	1
	7	2286008	SLOTTED HEAD SCREW	3

*: -COMPLETE WITH ITEM 7



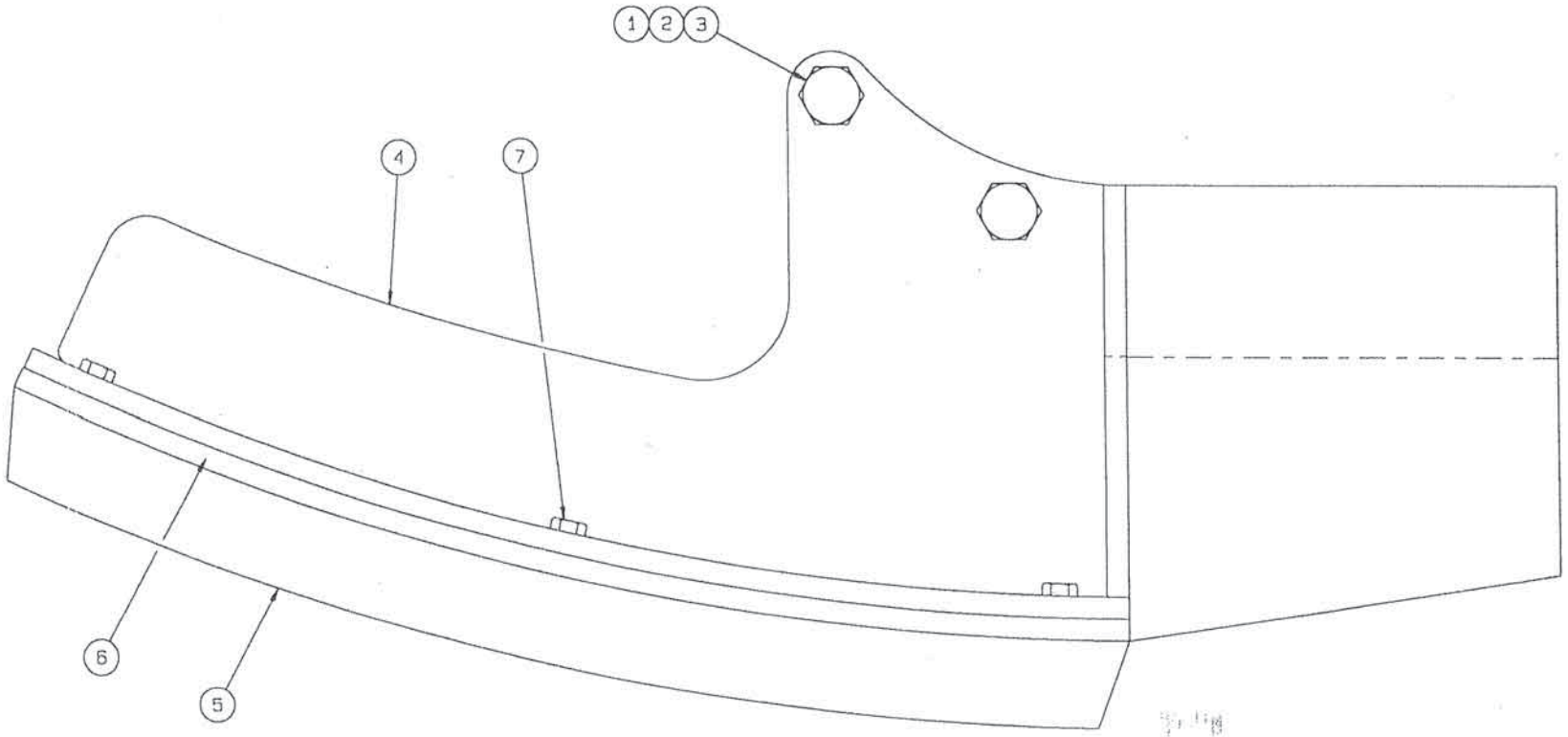
SINGLE LINE HYLINE NON-STICK COULTER-PLASTIC

ASSEMBLY: -

7703505 NON-STICK COULTER ASSEMBLY-CAST IRON (ITEMS 1-7)

	1	2306038	HEXAGON BOLT	2
	2	2303007	HEXAGON NUT	2
	3	6902652	COULTER SCREW SPACER	2
	4	7403663	SL NS COULTER BODY	1
*	5	8010076	NS SHOE RIB-CAST IRON	1
	6	6903186	SL NS SHOE BASE	1
	7	2309015	HEXAGON SCREW	3

*: -COMPLETE WITH ITEM 7



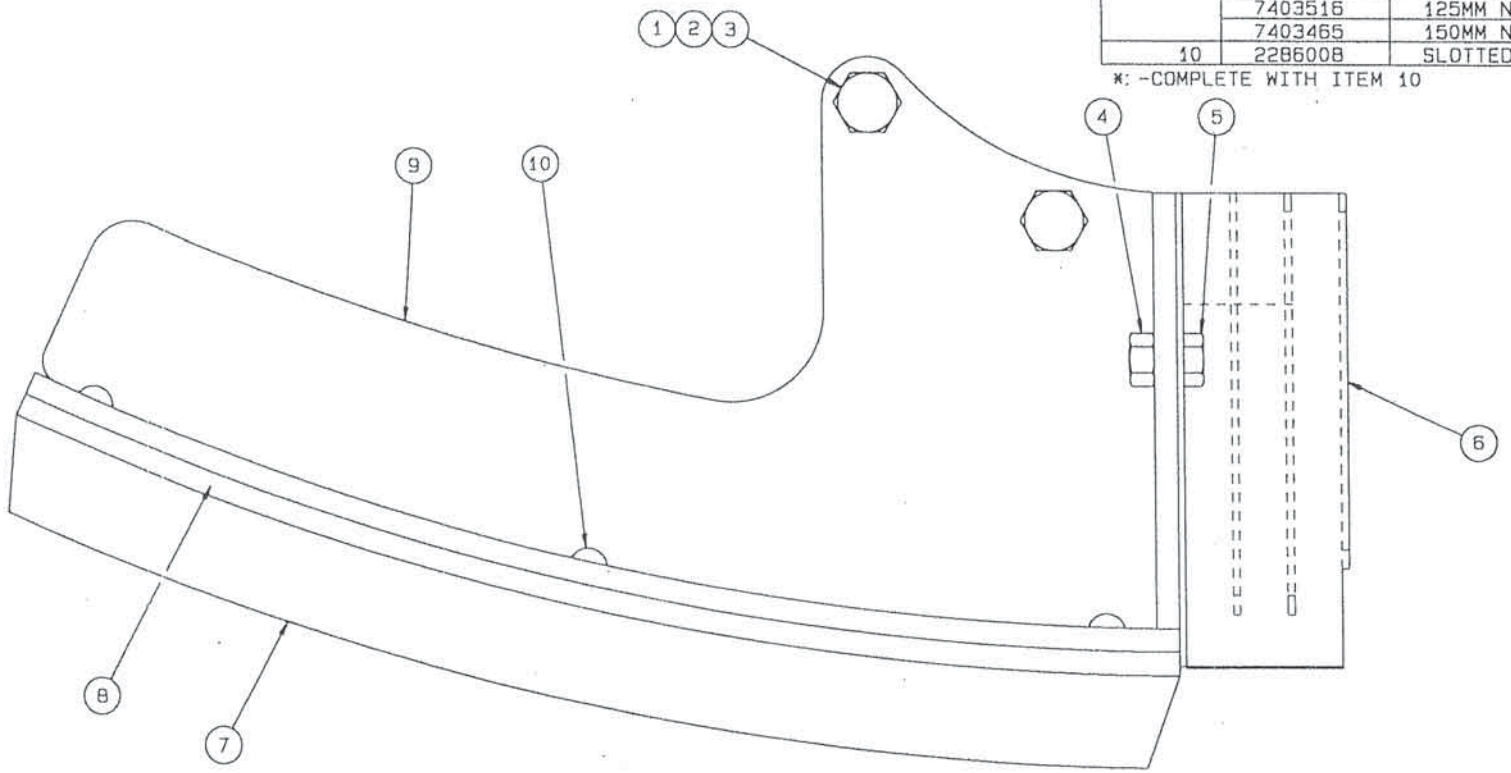
SINGLE LINE HYLINE NON-STICK COULTER-CAST IRON

ASSEMBLIES: -

7703308 65MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703310 75MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703312 100MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703377 125MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703314 150MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)

1	2306038	HEXAGON BOLT	2
2	2303007	HEXAGON NUT	2
3	6902652	COULTER SCREW SPACER	2
4	2303006	HEXAGON NUT	2
5	2309032	HEXAGON SCREW	2
6	7403420	65MM X 2 LINE CHUTE	1
	7403418	75MM X 2 LINE CHUTE	1
	7403414	100MM X 2 LINE CHUTE	1
	7403513	125MM X 2 LINE CHUTE	1
	7403469	150MM X 2 LINE CHUTE	1
* 7	8010075	NS SHOE RIB-PLASTIC	2
8	6903187	65MM X 2 LINE NS BASE	1
	6903189	75MM X 2 LINE NS BASE	1
	6903191	100MM X 2 LINE NS BASE	1
	6903192	125MM X 2 LINE NS BASE	1
	6903194	150MM X 2 LINE NS BASE	1
9	7403462	65MM NS COULTER BODY	1
	7403463	75MM NS COULTER BODY	1
	7403464	100MM NS COULTER BODY	1
	7403516	125MM NS COULTER BODY	1
	7403465	150MM NS COULTER BODY	1
10	2286008	SLOTTED HEAD SCREW	6

*: -COMPLETE WITH ITEM 10



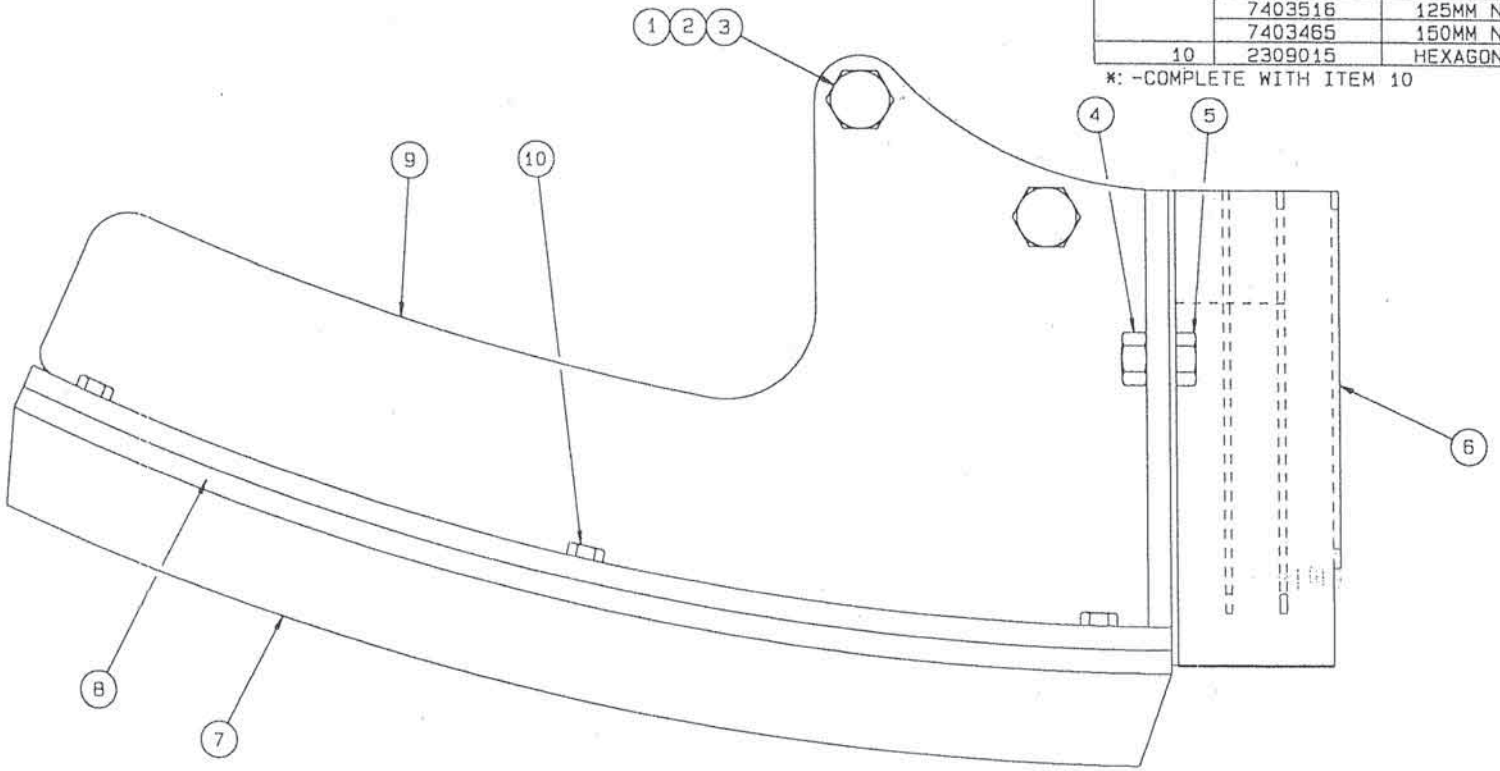
TWO LINE HYLINE NON-STICK COULTER-PLASTIC

ASSEMBLIES: -

7703514 65MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703516 75MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703518 100MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703520 125MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703522 150MM X 2 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)

1	2306038	HEXAGON BOLT	2
2	2303007	HEXAGON NUT	2
3	6902652	COULTER SCREW SPACER	2
4	2303006	HEXAGON NUT	2
5	2309032	HEXAGON SCREW	2
6	7403420	65MM X 2 LINE CHUTE	1
	7403418	75MM X 2 LINE CHUTE	1
	7403414	100MM X 2 LINE CHUTE	1
	7403513	125MM X 2 LINE CHUTE	1
	7403469	150MM X 2 LINE CHUTE	1
* 7	8010076	NS SHOE RIB-CAST IRON	2
8	6903187	65MM X 2 LINE NS BASE	1
	6903189	75MM X 2 LINE NS BASE	1
	6903191	100MM X 2 LINE NS BASE	1
	6903192	125MM X 2 LINE NS BASE	1
	6903194	150MM X 2 LINE NS BASE	1
9	7403462	65MM NS COULTER BODY	1
	7403463	75MM NS COULTER BODY	1
	7403464	100MM NS COULTER BODY	1
	7403516	125MM NS COULTER BODY	1
	7403465	150MM NS COULTER BODY	1
10	2309015	HEXAGON SCREW	6

*: -COMPLETE WITH ITEM 10



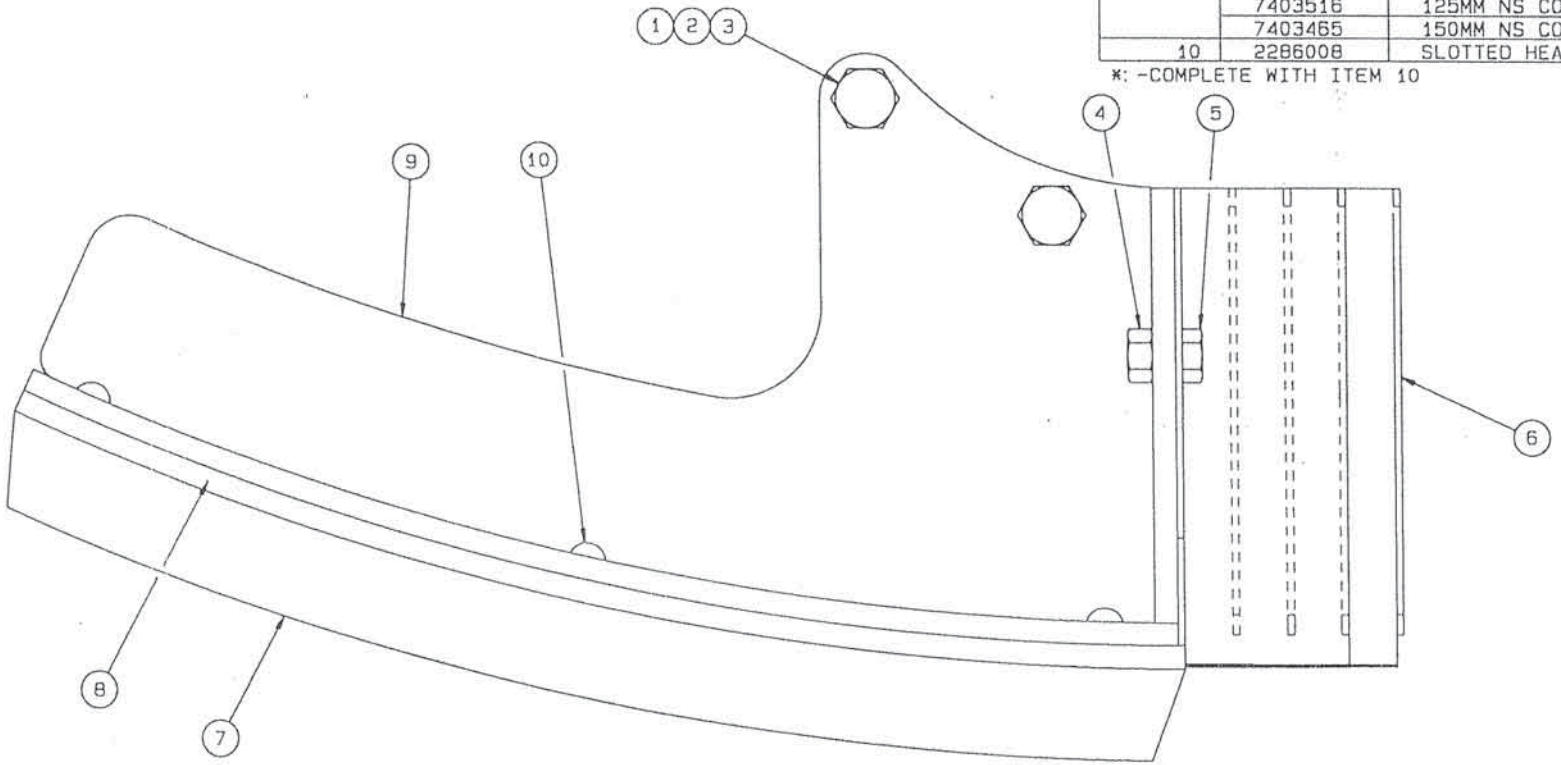
TWO LINE HYLINE NON-STICK COULTER-CAST IRON

ASSEMBLIES: -

7703309 65MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703311 75MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703715 100MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703379 125MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703315 150MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)

1	2306038	HEXAGON BOLT	2
2	2303007	HEXAGON NUT	2
3	6902652	COULTER SCREW SPACER	2
4	2303006	HEXAGON NUT	2
5	2309032	HEXAGON SCREW	2
6	7403419	65MM X 3 LINE CHUTE	1
	7403417	75MM X 3 LINE CHUTE	1
	7403413	100MM X 3 LINE CHUTE	1
	7403514	125MM X 3 LINE CHUTE	1
	7403428	150MM X 3 LINE CHUTE	1
* 7	8010075	NS SHOE RIB-PLASTIC	3
8	6903188	65MM X 3 LINE NS BASE	1
	6903190	75MM X 3 LINE NS BASE	1
	6903548	100MM X 3 LINE NS BASE	1
	6903193	125MM X 3 LINE NS BASE	1
	6903195	150MM X 3 LINE NS BASE	1
9	7403462	65MM NS COULTER BODY	1
	7403463	75MM NS COULTER BODY	1
	7403897	100MM NS COULTER BODY	1
	7403516	125MM NS COULTER BODY	1
	7403465	150MM NS COULTER BODY	1
10	2286008	SLOTTED HEAD SCREW	9

*: -COMPLETE WITH ITEM 10



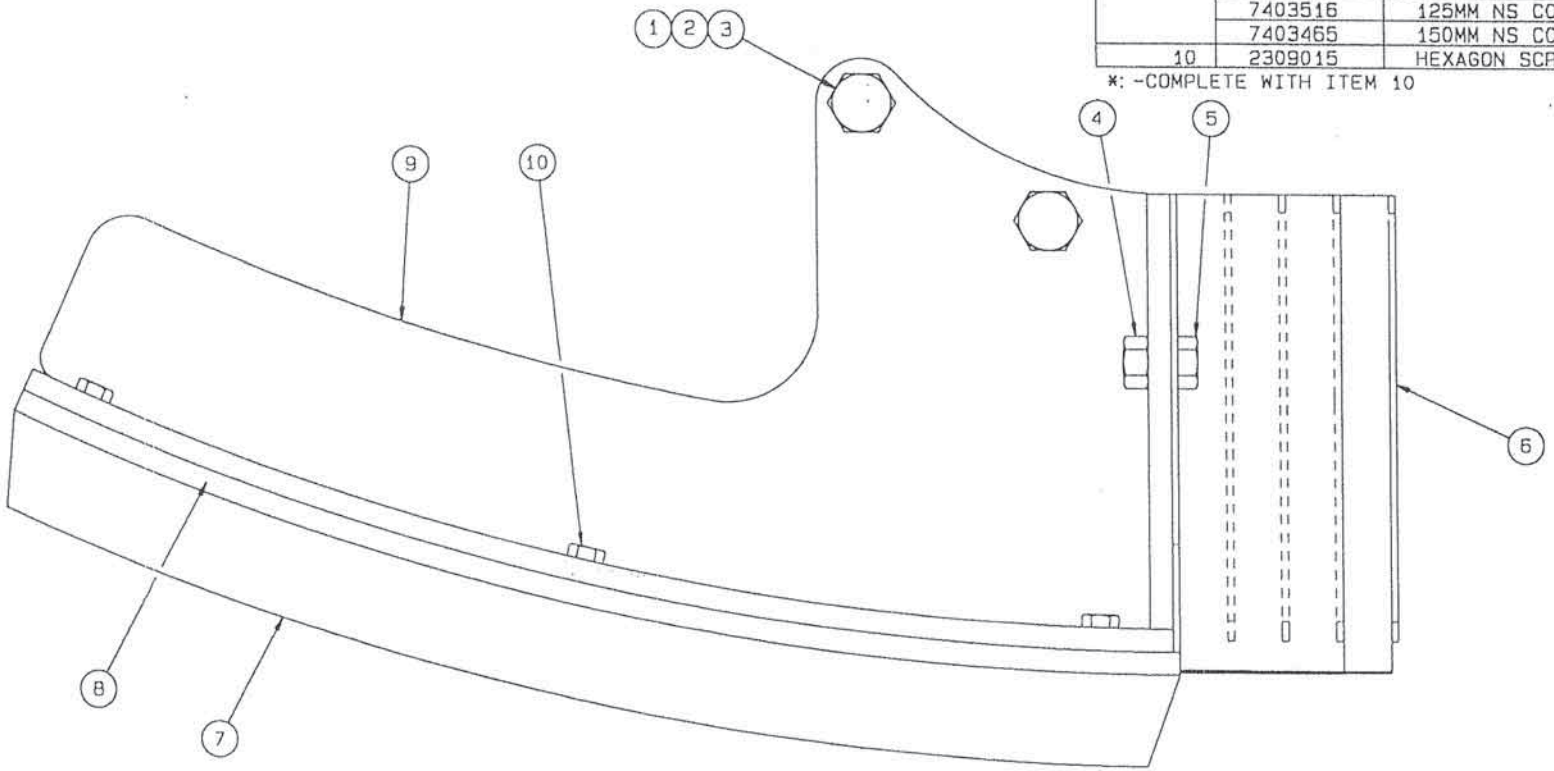
THREE LINE HYLINE NON-STICK COULTER-PLASTIC

ASSEMBLIES: -

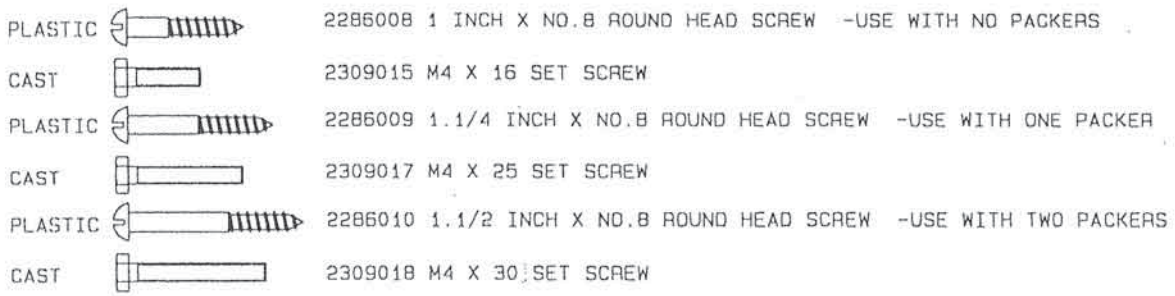
7703515 65MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703517 75MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703917 100MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703521 125MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)
7703523 150MM X 3 LINE NON STICK COULTER ASSEMBLY (ITEMS 1-10)

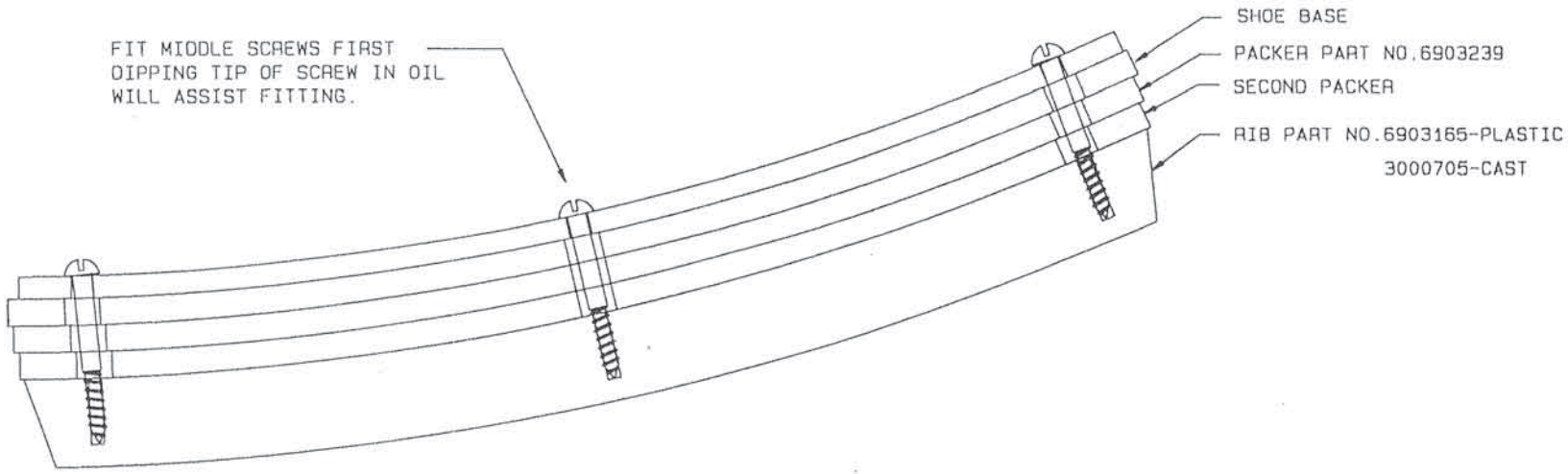
	1	2306038	HEXAGON BOLT	2
	2	2303007	HEXAGON NUT	2
	3	6902652	COULTER SCREW SPACER	2
	4	2303006	HEXAGON NUT	2
	5	2309032	HEXAGON SCREW	2
	6	7403419	65MM X 3 LINE CHUTE	1
		7403417	75MM X 3 LINE CHUTE	1
		7403413	100MM X 3 LINE CHUTE	1
		7403514	125MM X 3 LINE CHUTE	1
		7403428	150MM X 3 LINE CHUTE	1
*	7	8010076	NS SHOE RIB-CAST IRON	3
	8	6903188	65MM X 3 LINE NS BASE	1
		6903190	75MM X 3 LINE NS BASE	1
		6903548	100MM X 3 LINE NS BASE	1
		6903193	125MM X 3 LINE NS BASE	1
		6903195	150MM X 3 LINE NS BASE	1
	9	7403462	65MM NS COULTER BODY	1
		7403463	75MM NS COULTER BODY	1
		7403897	100MM NS COULTER BODY	1
		7403516	125MM NS COULTER BODY	1
		7403465	150MM NS COULTER BODY	1
	10	2309015	HEXAGON SCREW	9

*: -COMPLETE WITH ITEM 10



THREE LINE HYLINE NON-STICK COULTER-CAST IRON

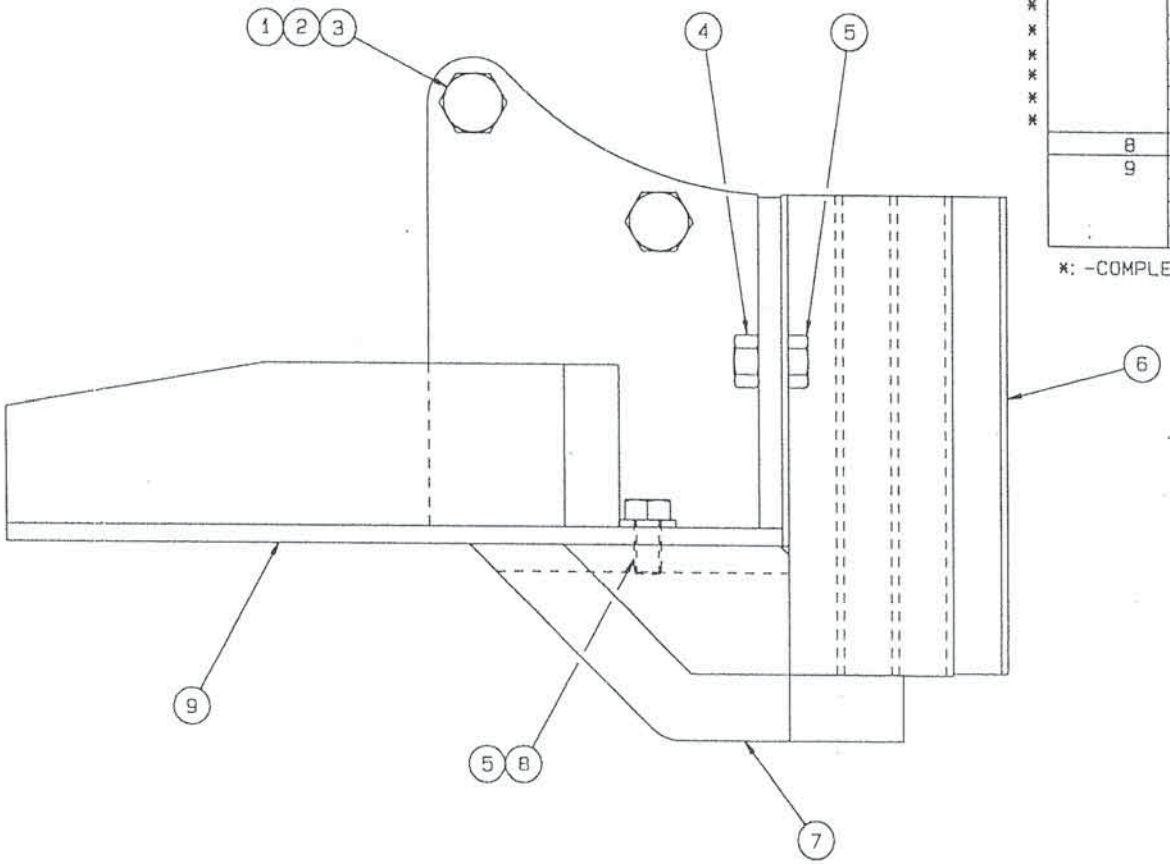




COULTER RIB PACKERS

ASSEMBLIES: -

7703263 75MM X 2 LINE DEEP FIN COULTER ASSEMBLY (ITEMS 1-9)
7703264 75MM X 3 LINE DEEP FIN COULTER ASSEMBLY (ITEMS 1-9)
7703267 100MM X 2 LINE DEEP FIN COULTER ASSEMBLY (ITEMS 1-9)
7703213 100MM X 3 LINE DEEP FIN COULTER ASSEMBLY (ITEMS 1-9)
7703381 125MM X 2 LINE DEEP FIN COULTER ASSEMBLY (ITEMS 1-9)
7703382 125MM X 3 LINE DEEP FIN COULTER ASSEMBLY (ITEMS 1-9)
7703216 150MM X 3 LINE DEEP FIN COULTER ASSEMBLY (ITEMS 1-9)



1	2306038	HEXAGON BOLT	2
2	2303007	HEXAGON NUT	2
3	6902652	COULTER SCREW SPACER	2
4	2303006	HEXAGON NUT	2
5	2309032	HEXAGON SCREW	2
6	7403418	75MM X 2 LINE CHUTE	1
	7403417	75MM X 3 LINE CHUTE	1
	7403414	100MM X 2 LINE CHUTE	1
	7403413	100MM X 3 LINE CHUTE	1
	7403513	125MM X 2 LINE CHUTE	1
	7403514	125MM X 3 LINE CHUTE	1
	7403428	150MM X 3 LINE CHUTE	1
* 7	8010063	75MM X 2 LINE BASE	1
*	8010062	75MM X 3 LINE BASE	1
*	8010055	100MM X 2 LINE BASE	1
*	8010054	100MM X 3 LINE BASE	1
*	8010057	125MM X 2 LINE BASE	1
*	8010056	125MM X 3 LINE BASE	1
*	8010067	150MM X 3 LINE BASE	1
8	2311133	FLAT WASHER-FORM C	2
9	7403421	75MM COULTER BODY	1
	7403344	100MM COULTER BODY	1
	7403515	125MM COULTER BODY	1
	7403350	150MM COULTER BODY	1

*: -COMPLETE WITH ITEMS 5 & 8

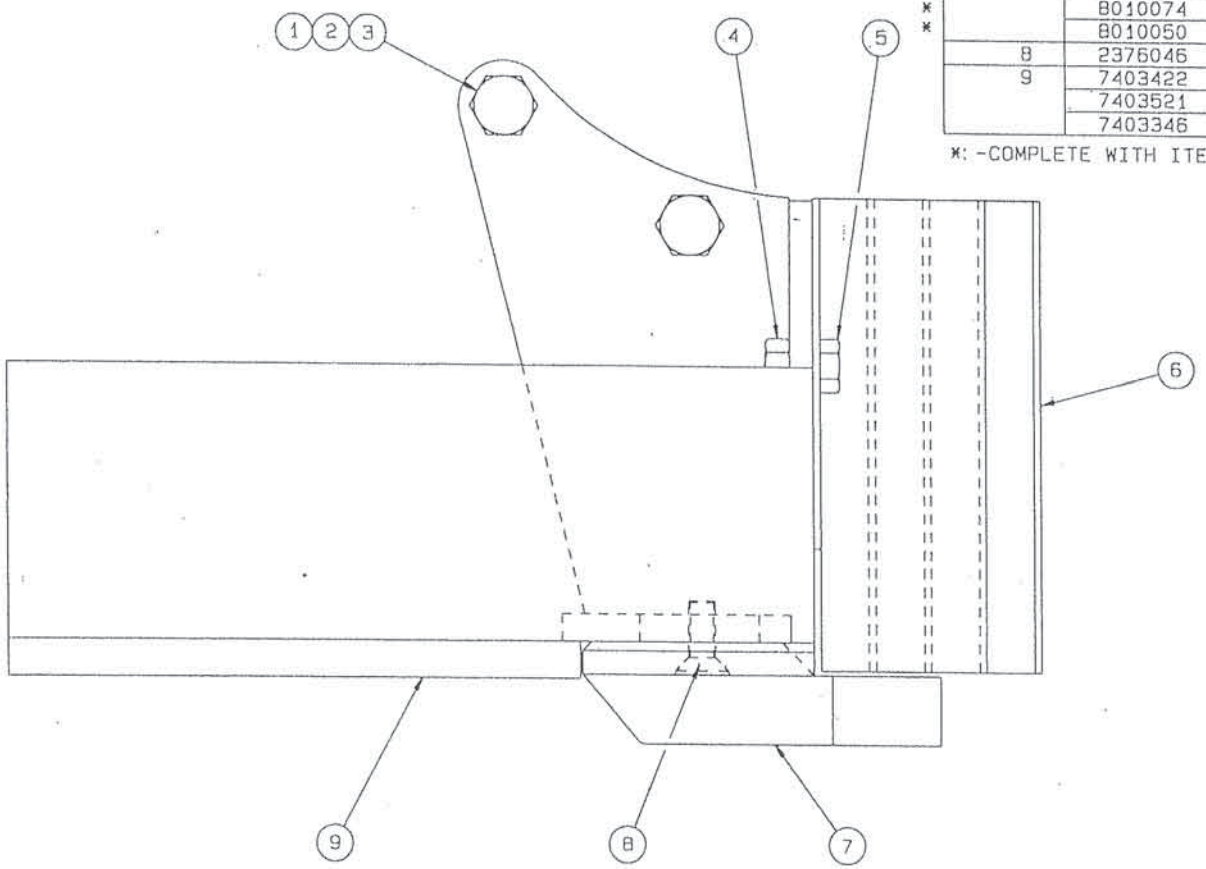
HYLINE DEEP FIN COULTERS

ASSEMBLIES: -

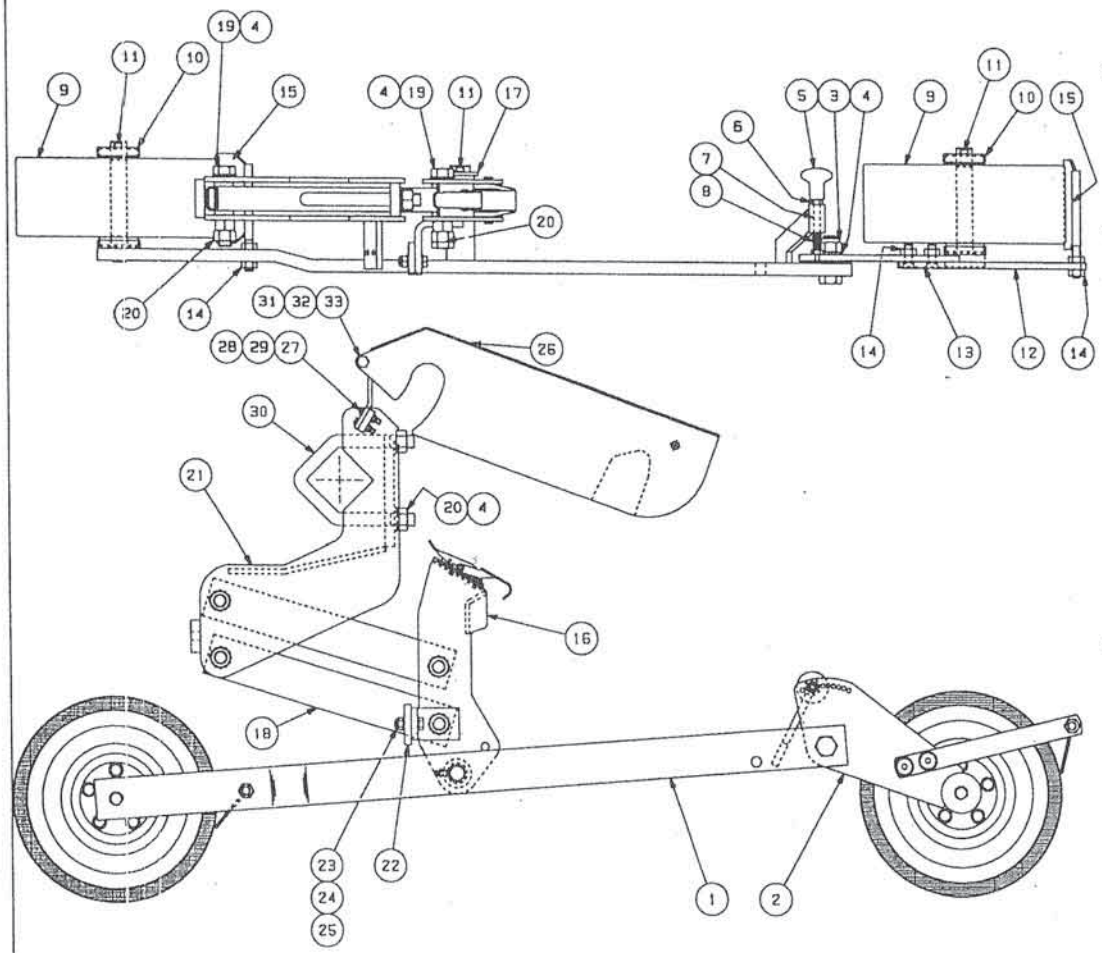
7703271 65MM X 2 LINE SHALLOW FIN COULTER ASSEMBLY (ITEMS 1-9)
7703272 65MM X 3 LINE SHALLOW FIN COULTER ASSEMBLY (ITEMS 1-9)
7703384 75MM X 2 LINE SHALLOW FIN COULTER ASSEMBLY (ITEMS 1-9)
7703387 75MM X 3 LINE SHALLOW FIN COULTER ASSEMBLY (ITEMS 1-9)
7703214 100MM X 3 LINE SHALLOW FIN COULTER ASSEMBLY (ITEMS 1-9)

1	2306038	HEXAGON BOLT	2
2	2303007	HEXAGON NUT	2
3	6902652	COULTER SCREW, SPACER	2
4	2303006	HEXAGON NUT	2
5	2309032	HEXAGON SCREW	2
6	7403420	65MM X 2 LINE CHUTE	1
	7403419	65MM X 3 LINE CHUTE	1
	7403418	75MM X 2 LINE CHUTE	1
	7403417	75MM X 3 LINE CHUTE	1
	7403415	100MM X 3 LINE CHUTE	1
7	8010048	65MM X 2 LINE BASE	1
	8010049	65MM X 3 LINE BASE	1
	8010073	75MM X 2 LINE BASE	1
	8010074	75MM X 3 LINE BASE	1
	8010050	100MM X 3 LINE BASE	1
8	2376046	SOCKET C'SUNK SCREW	2
9	7403422	65MM COULTER BODY	1
	7403521	75MM COULTER BODY	1
	7403346	100MM COULTER BODY	1

*: -COMPLETE WITH ITEM 8



HYLINE SHALLOW FIN COULTERS

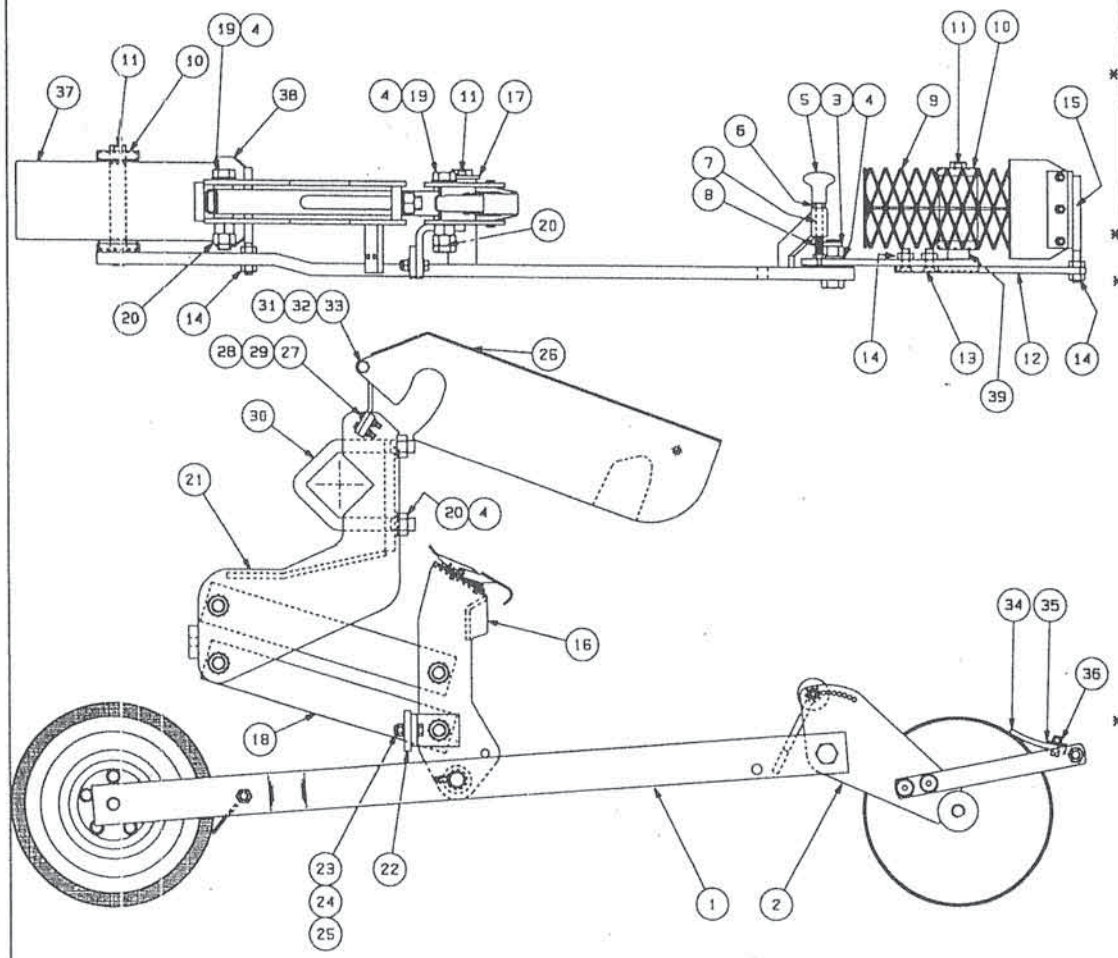


1	7703746	ZP WHEEL ARM-ASSY	1
2	7703749	ZP R'WHEEL BRKT-ASSY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
* 9	5700390	230 X 100 ZP WHEEL	2
10	5700391	DUST CAP	4
11	2215613	SPLIT PIN	3
12	6903540	SCRAPER ARM	1
13	2376079	SOCKET C'SUNK SCREW	2
14	2303008	HEXAGON NUT	6
15	7403961	ZPW SCRAPER-WA	2
* 16	7703704	DEPTH ADJ.BRKT-ASSY	1
17	2311094	FLAT WASHER-FORM A	1
* 18	7703541	PARALLEL LINK-ASSY	2
19	2306135	HEXAGON BOLT	4
20	2303010	HEXAGON NUT	6
21	7404382	RU HEADSTOCK-W/A	1
22	6903532	ARM STOP PLATE	1
23	2309049	HEXAGON SCREW	1
24	2303092	NYLOC NUT-FULL	1
25	2311089	FLAT WASHER-FORM A	2
26	7404370	FD CHAIN GUARD	1
27	2303090	M5 NYLOC NUT	2
28	7404371	CHAIN GUARD BRKT.	1
29	2303090	M5 PLN FLAT WASHER	2
30	8002125	U-BOLT C/W ITEMS 4, 20	1
31	2306041	M8 X 55 BOLT	1
32	2311089	M8 FLAT WASHER	1
33	2303092	M8 NYLOC NUT-FULL	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - ZP+S-ZP+S

ASSEMBLY: - 7704030 (ITEMS 1-33)

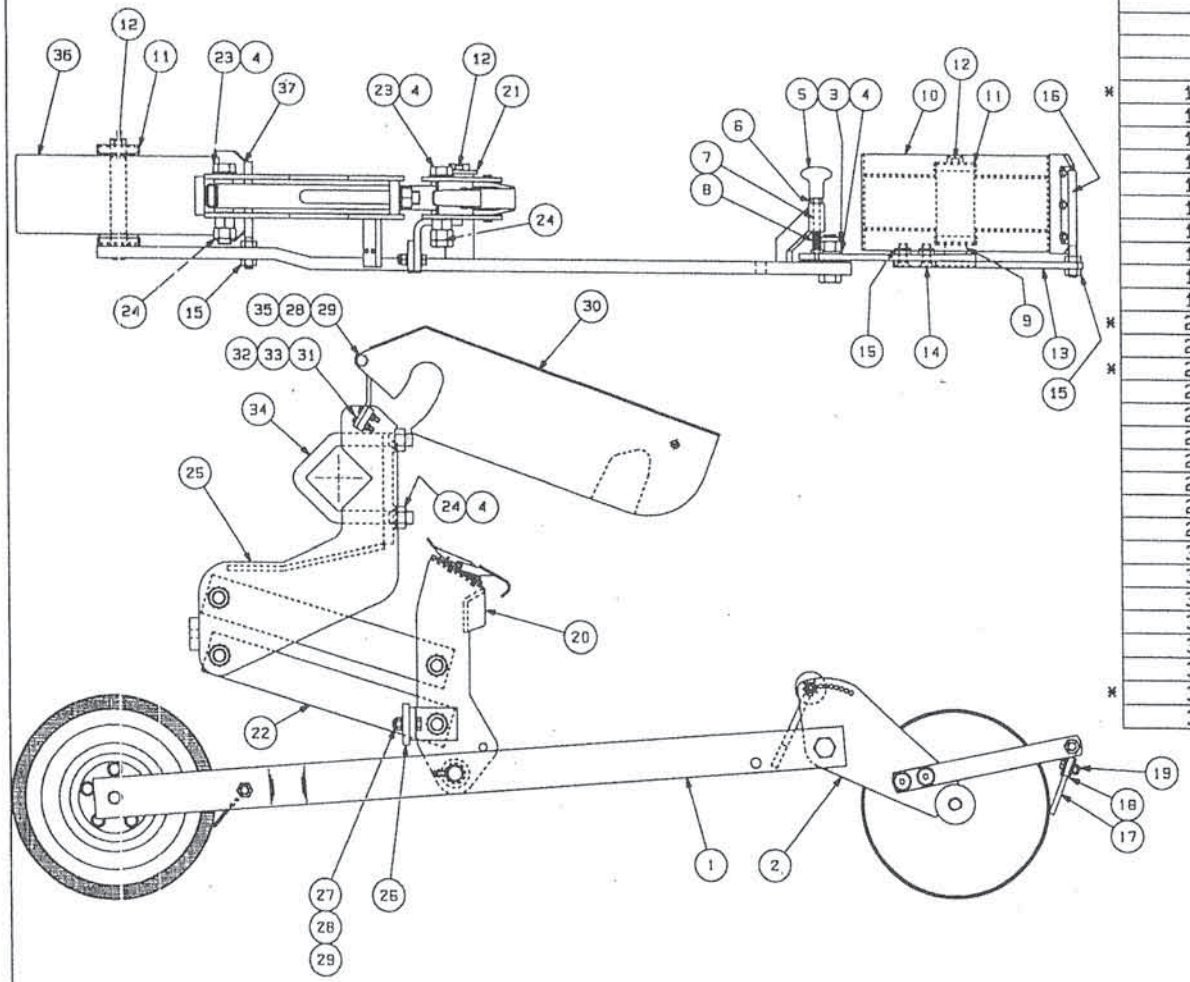


1	7703746	ZP WHEEL ARM-ASSY	1
2	7703750	120 R'WHEEL BRKT-ASY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
* 9	7703728	100 CAGE WHEEL-ASSY	1
10	5700391	DUST CAP	4
11	2215613	SPLIT PIN	3
12	6903540	SCRAPER ARM	1
13	2376079	SOCKET C'SUNK SCREW	2
14	2303008	HEXAGON NUT	6
15	7403893	120 SCRAPER PLATE-WA	1
* 16	7703704	DEPTH ADJ.BRKT-ASSY	1
17	2311094	FLAT WASHER-FORM A	1
* 18	7703541	PARALLEL LINK-ASSY	2
19	2306135	HEXAGON BOLT	4
20	2303010	HEXAGON NUT	6
21	7404382	RU HEADSTOCK-W/A	1
22	6903532	ARM STOP PLATE	1
23	2309049	HEXAGON SCREW	1
24	2303092	NYLOC NUT-FULL	1
25	2311089	FLAT WASHER-FORM A	2
26	7404370	FD CHAIN GUARD	1
27	2303090	M5 NYLOC NUT	2
28	7404371	CHAIN GUARD BRKT.	1
29	2303090	M5 PLN FLAT WASHER	2
30	8002125	U-BOLT C/W ITEMS 4, 20	1
31	2306041	M8 X 55 BOLT	1
32	2311089	M8 FLAT WASHER	1
33	2303092	M8 NYLOC NUT-FULL	1
34	6903541	120 SCRAPER BLADE	1
35	6903542	120 SCRAPER CLAMP	1
36	2303091	M6 NYLOC NUT-FULL	3
* 37	5700390	230 X 100 ZP WHEEL	1
38	7403961	ZPW SCRAPER-WA	1
39	6903599	WHEEL SPACER-12	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - ZP+S-100C

ASSEMBLY: - 7704031 (ITEMS 1-39)

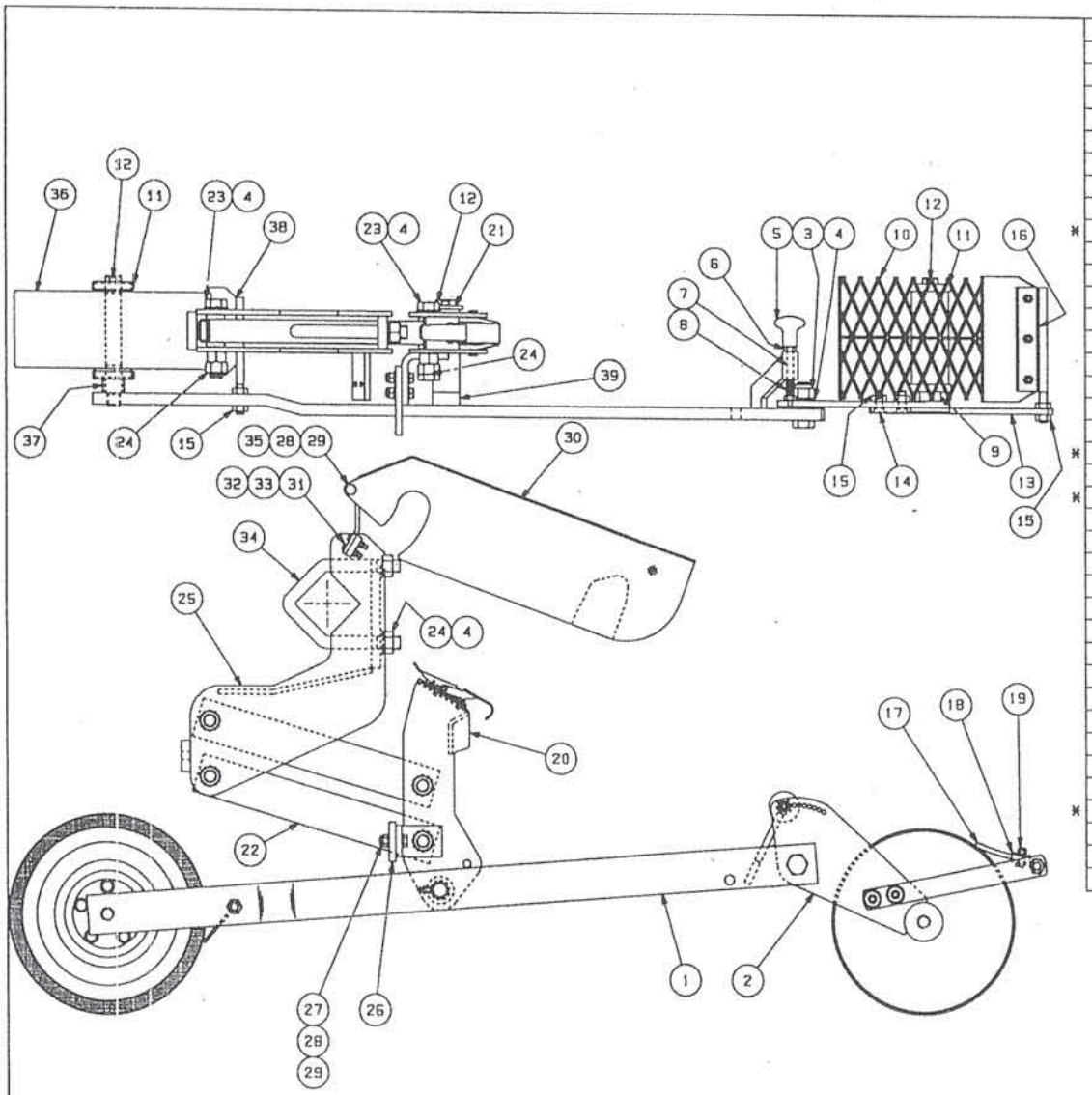


1	7703746	ZP WHEEL ARM-ASSY	1
2	7703750	120 A'WHEEL BRKT-ASY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
9	6903599	WHEEL SPACER-12	1
10	7703705	120S WHEEL-ASSY	1
11	5700391	DUST CAP	4
12	2215613	SPLIT PIN	3
13	6903540	SCRAPER ARM	1
14	2376079	SOCKET C'SUNK SCREW	2
15	2303008	HEXAGON NUT	6
16	7403893	120 SCRAPER PLATE WA	1
17	6903541	120 SCRAPER BLADE	1
18	6903542	120 SCRAPER CLAMP	1
19	2303091	NYLOC NUT-FULL	6
20	7703704	DEPTH ADJ.BRKT-ASSY	1
21	2311094	FLAT WASHER-FORM A	1
22	7703541	PARALLEL LINK-ASSY	2
23	2306135	HEXAGON BOLT	4
24	2303010	HEXAGON NUT	6
25	7404382	RU HEADSTOCK- W/A	1
26	6903532	ARM STOP PLATE	1
27	2309049	HEXAGON SCREW	1
28	2311089	M8 FLAT WAHSER	3
29	2303092	M8 NYLOC NUT -FULL	2
30	7404370	FD CHAIN GUARD	1
31	2303090	M5 NYLOC NUT-FULL	2
32	7404371	CHAIN GUARD BRKT.	1
33	2311132	M5 PLN FLAT WASHER	2
34	8002125	U-BOLT C/W ITEMS 4, 24	1
35	2306041	M8 X 55 BOLT	1
* 36	5700390	230 X 100 ZP WHEEL	1
37	7403961	ZPW SCRAPER-WA	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - ZP+S-120S

ASSEMBLY: - 7704032 (ITEMS 1-37)

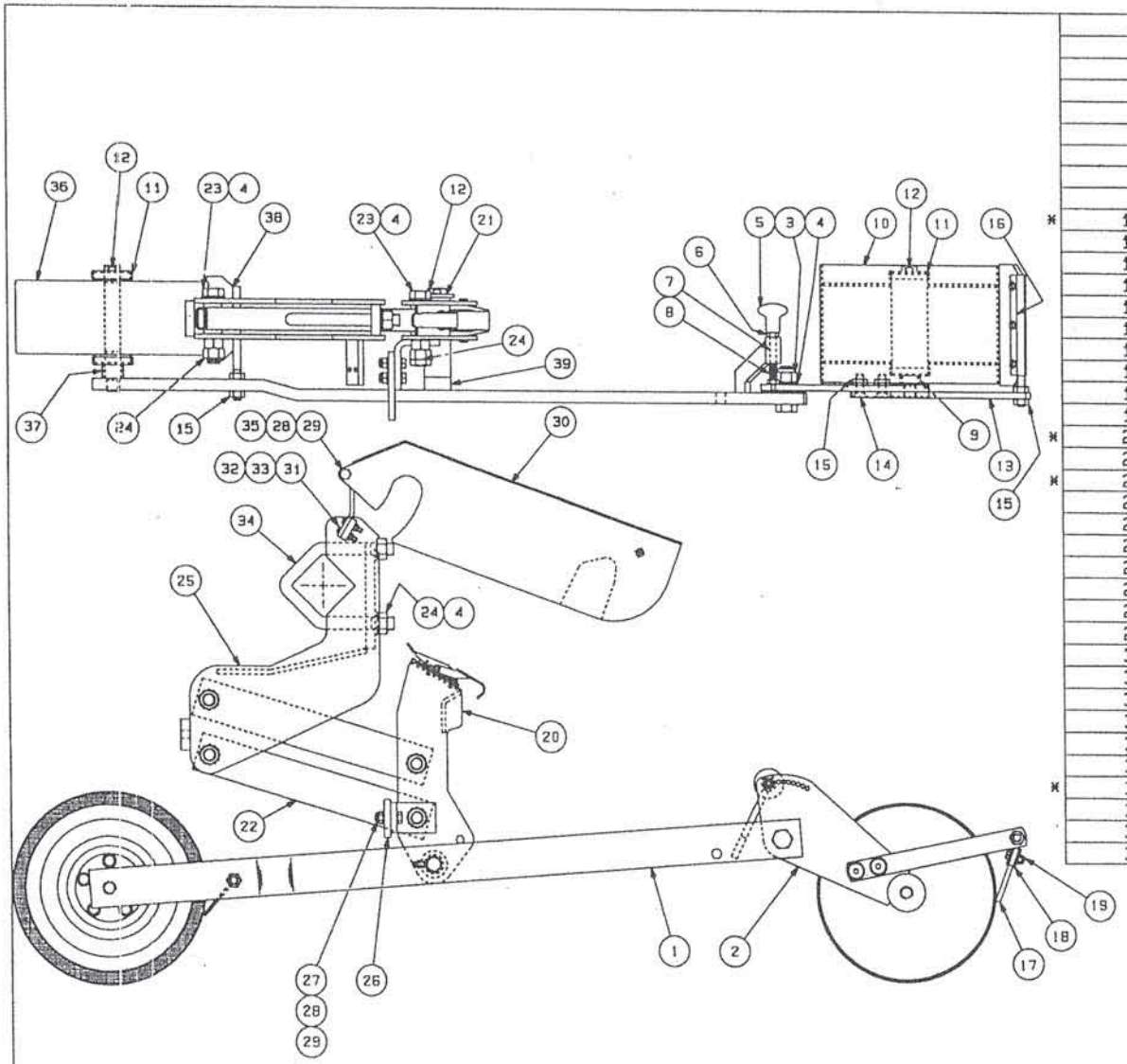


1	7703843	ZP WHEEL ARM-ASSY	1
2	7703844	160 A'WHEEL BRKT-ASSY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
9	6903599	WHEEL SPACER-12	1
10	7703846	160C WHEEL-ASSY	1
11	5700391	DUST CAP	4
12	2215613	SPLIT PIN	3
13	6903540	SCRAPER ARM	1
14	2376079	SOCKET C'SUNK SCREW	2
15	2303008	HEXAGON NUT	6
16	7404091	160 SCRAPER PLATE-WA	1
17	6903720	160 SCRAPER BLADE	1
18	6903721	160 SCRAPER CLAMP	1
19	2303091	NYLOC NUT-FULL	6
* 20	7703704	DEPTH ADJ.BRKT-ASSY	1
21	2311094	FLAT WASHER-FORM A	1
* 22	7703541	PARALLEL LINK-ASSY	2
23	2306135	HEXAGON BOLT	4
24	2303010	HEXAGON NUT	6
25	7404382	RU HEADSTOCK- W/A	1
26	6903551	WHEEL ARM STOP PLATE	1
27	2309049	HEXAGON SCREW	2
28	2311089	M8 FLAT WASHER	5
29	2303092	M8 NYLOC NUT-FULL	3
30	7404370	FD CHAIN GUARD	1
31	2303090	M5 NYLOC NUT-FULL	2
32	7404371	CHAIN GUARD BRKT.	1
33	2311132	M5 PLN FLAT WASHER	2
34	8002125	U-BOLT C/W ITEMS 4, 24	1
35	2306041	M8 X 55 BOLT	1
* 36	5700390	230 X 100 ZP WHEEL	1
37	6903719	WHEEL SPACER-18	1
38	7404092	ZP WHEEL SCRAPER-WA	1
39	6903718	WHL.ARM PIV. SPACER-17	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - ZP+S-160C

ASSEMBLY : - 7704033 (ITEMS 1-39)

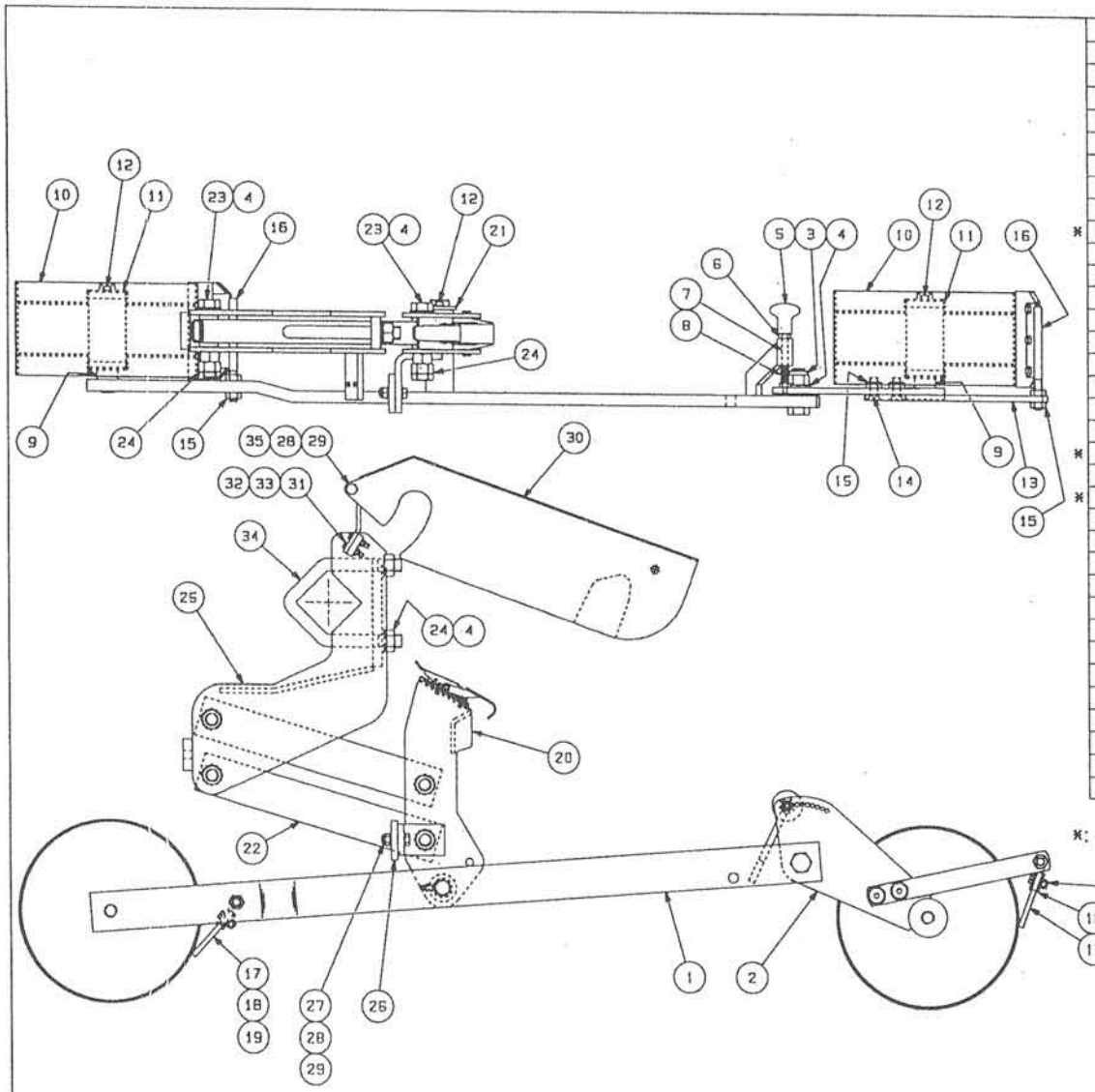


1	7703843	ZP WHEEL ARM-ASSY	1
2	7703844	160 R'WHEEL BRKT-ASSY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
9	6903599	WHEEL SPACER-12	1
10	7703845	160S WHEEL ASSY	1
11	5700391	DUST CAP	4
12	2215613	SPLIT PIN	3
13	6903540	SCRAPER ARM	1
14	2376079	SOCKET C'SUNK SCREW	2
15	2303008	HEXAGON NUT	6
16	7404091	160 SCRAPER PLATE-WA	1
17	6903720	160 SCRAPER BLADE	1
18	6903721	160 SCRAPER CLAMP	1
19	2303091	NYLOC NUT-FULL	6
* 20	7703704	DEPTH ADJ.BRKT-ASSY	1
21	2311094	FLAT WASHER-FORM A	1
* 22	7703541	PARALLEL LINK-ASSY	2
23	2306135	HEXAGON BOLT	4
24	2303010	HEXAGON NUT	6
25	7404382	RU HEADSTOCK- W/A	1
26	6903551	WHEEL ARM STOP PLATE	1
27	2309049	HEXAGON SCREW	2
28	2311089	M8 FLAT WAHSER	5
29	2303092	M8 NYLOC NUT-FULL	3
30	7404370	FD CHAIN GUARD	1
31	2303090	M5 NYLOC NUT-FULL	2
32	7404371	CHAIN GUARD BRKT.	1
33	2311132	M5 PLN FLAT WASHER	2
34	8002125	U-BOLT C/W ITEMS 4, 24	1
35	2306041	M8 X 55 BOLT	1
* 36	5700390	230 X 100 ZP WHEEL	1
37	6903719	WHEEL SPACER-18	1
38	7404092	ZP WHEEL SCRAPER-WA	1
39	6903718	WHL.ARM PIV. SPACER-17	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - ZP+S-160S

ASSEMBLY: - 7704034 (ITEMS 1-39)

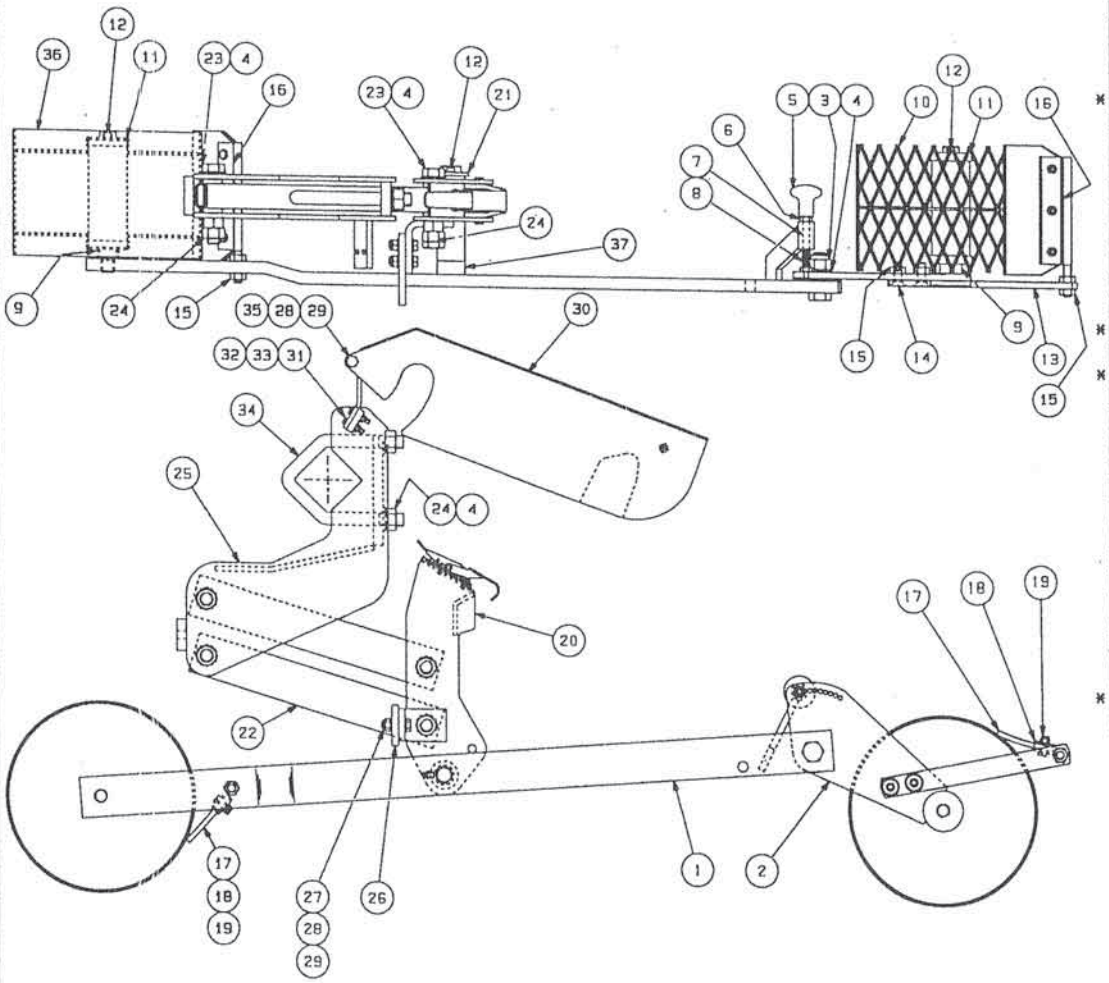


1	7703747	120 WHEEL ARM-ASSY	1
2	7703750	120 R'WHEEL BRKT-ASY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
9	6903599	WHEEL SPACER-12	2
10	7703705	120S WHEEL-ASSY	2
11	5700391	DUST CAP	4
12	2215613	SPLIT PIN	3
13	6903540	SCRAPER ARM	1
14	2376079	SOCKET C'SUNK SCREW	2
15	2303008	HEXAGON NUT	6
16	7403893	120 SCRAPER PLATE-WA	2
17	6903541	120 SCRAPER BLADE	2
18	6903542	120 SCRAPER CLAMP	2
19	2303091	NYLOC NUT-FULL	6
20	7703704	DEPTH ADJ.BRKT-ASSY	1
21	2311094	FLAT WASHER-FORM A	1
22	7703541	PARALLEL LINK-ASSY	2
23	2306135	HEXAGON BOLT	4
24	2303010	HEXAGON NUT	6
25	7404382	RU HEADSTOCK- W/A	1
26	6903532	ARM STOP PLATE	1
27	2309049	HEXAGON SCREW	1
28	2311089	M8 FLAT WAHSER	3
29	2303092	M8 NYLOC NUT -FULL	2
30	7404370	FD CHAIN GUARD	1
31	2303090	M5 NYLOC NUT-FULL	2
32	7404371	CHAIN GUARD BRKT.	1
33	2311132	M5 PLN FLAT WASHER	2
34	8002125	U-BOLT C/W ITEMS 4, 24	1
35	2306041	M8 X 55 BOLT	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - 120S-120S

ASSEMBLY: - 7704035 (ITEMS 1-32)

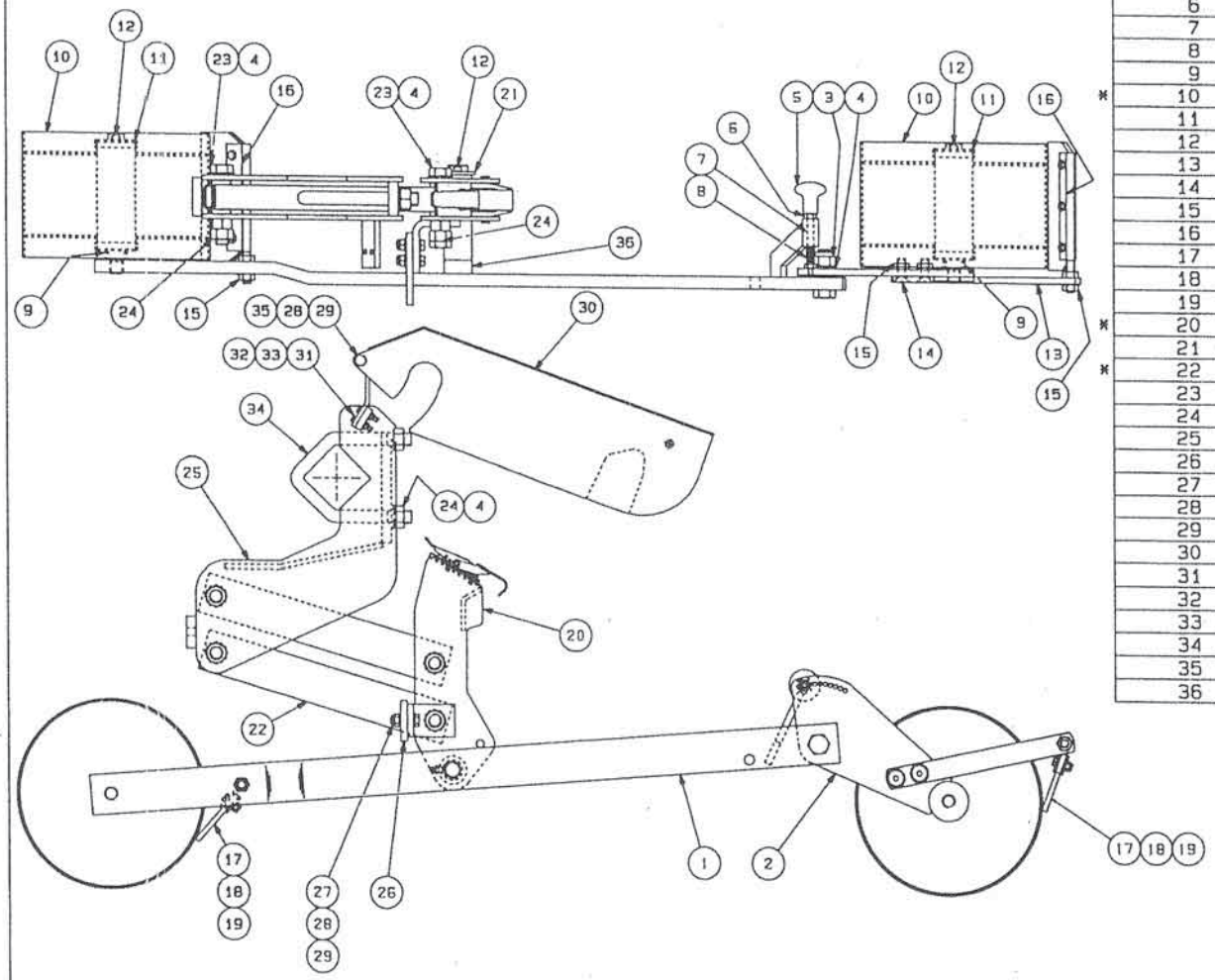


1	7703842	160 WHEEL ARM-ASSY	1
2	7703844	160 R'WHEEL BRKT-ASSY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
9	6903599	WHEEL SPACER-12	1
10	7703846	160C WHEEL-ASSY	1
11	5700391	DUST CAP	4
12	2215613	SPLIT PIN	3
13	6903540	SCRAPER ARM	1
14	2376079	SOCKET C'SUNK SCREW	2
15	2303008	HEXAGON NUT	6
16	7404091	160 SCRAPER PLATE-WA	2
17	6903720	160 SCRAPER BLADE	2
18	6903721	160 SCRAPER CLAMP	2
19	2303091	NYLOC NUT-FULL	6
20	7703704	DEPTH ADJ.BRKT-ASSY	1
21	2311094	FLAT WASHER-FORM A	1
22	7703541	PARALLEL LINK-ASSY	2
23	2306135	HEXAGON BOLT	4
24	2303010	HEXAGON NUT	6
25	7404382	RU HEADSTOCK- W/A	1
26	6903551	WHEEL ARM STOP PLATE	1
27	2309049	HEXAGON SCREW	2
28	2311089	M8 FLAT WASHER	5
29	2303092	M8 NYLOC NUT-FULL	3
30	7404370	FD CHAIN GUARD	1
31	2303090	M5 NYLOC NUT-FULL	2
32	7404371	CHAIN GUARD BRKT.	1
33	2311132	M5 PLN FLAT WASHER	2
34	8002125	U-BOLT C/W ITEMS 4, 24	1
35	2306041	M8 X 55 BOLT	1
36	7703845	160S WHEEL-ASSY	1
37	6903718	WHL.ARM PIV. SPACER-17	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - 160S-160C

ASSEMBLY :- 7704037 (ITEMS 1-37)

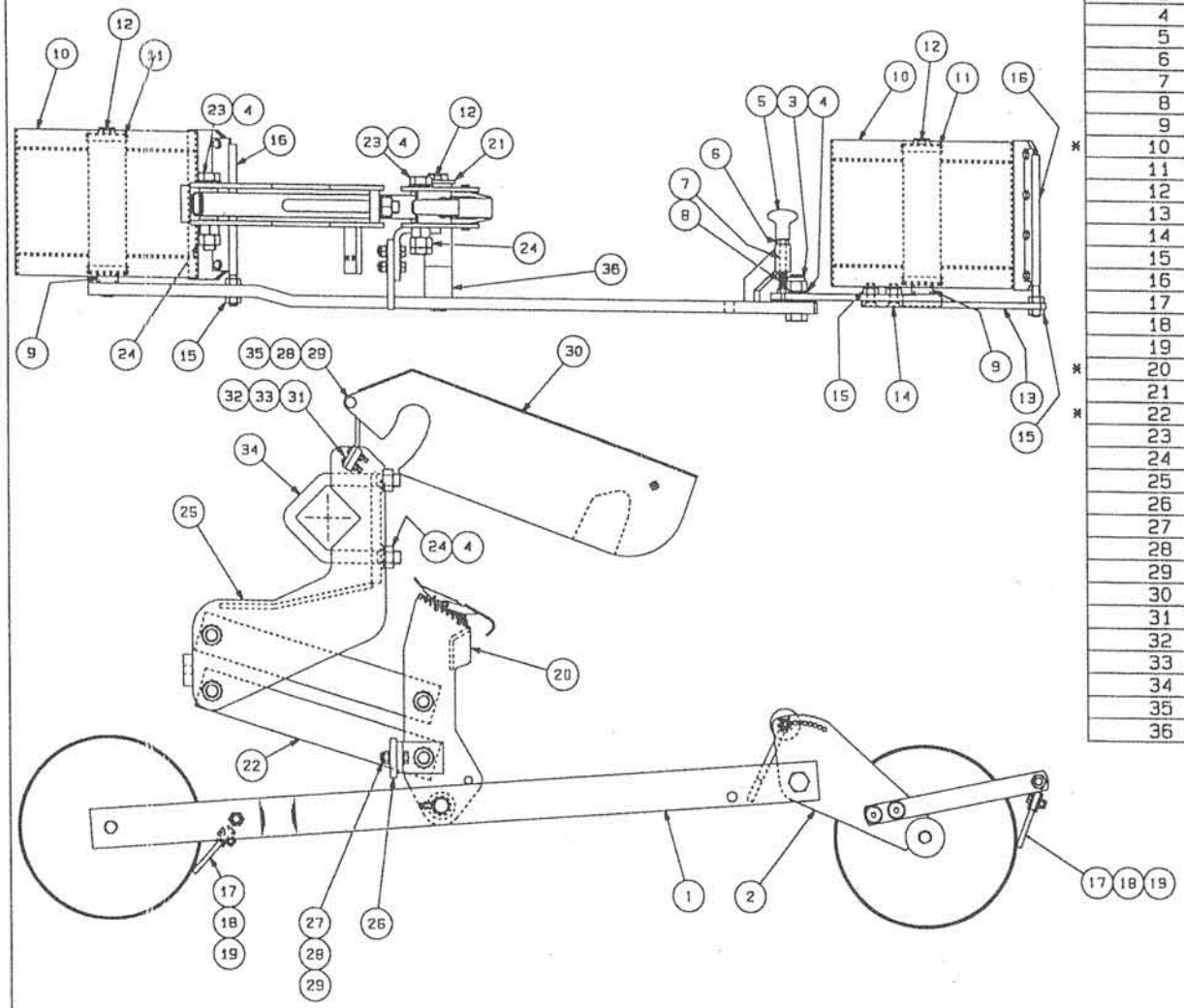


1	7703842	160 WHEEL ARM-ASSY	1
2	7703844	160 R'WHEEL BRKT-ASSY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
9	6903599	WHEEL SPACER-12	2
10	7703845	160S WHEEL ASSY.	2
11	5700391	DUST CAP	4
12	2215613	SPLIT PIN	3
13	6903540	SCRAPER ARM	1
14	2376079	SOCKET C'SUNK SCREW	2
15	2303008	HEXAGON NUT	6
16	7404091	160 SCRAPER PLATE-WA	2
17	6903720	160 SCRAPER BLADE	2
18	6903721	160 SCRAPER CLAMP	2
19	2303091	NYLOC NUT-FULL	6
20	7703704	DEPTH ADJ.BRKT-ASSY	1
21	2311094	FLAT WASHER-FORM A	1
22	7703541	PARALLEL LINK-ASSY	2
23	2306135	HEXAGON BOLT	4
24	2303010	HEXAGON NUT	6
25	7404382	RU HEADSTOCK- W/A	1
26	6903551	WHEEL ARM STOP PLATE	1
27	2309049	HEXAGON SCREW	2
28	2311089	M8 FLAT WASHER	5
29	2303092	M8 NYLOC NUT-FULL	3
30	7404370	FD CHAIN GUARD	1
31	2303090	M5 NYLOC NUT-FULL	2
32	7404371	CHAIN GUARD BRKT.	1
33	2311132	M5 PLN FLAT WASHER	2
34	8002125	U-BOLT C/W ITEMS 4, 24	1
35	2306041	M8 X 55 BOLT	1
36	6903718	WHL.ARM PIV. SPACER-17	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS - 160S-160S

ASSEMBLY : - 7704038 (ITEMS 1-36)

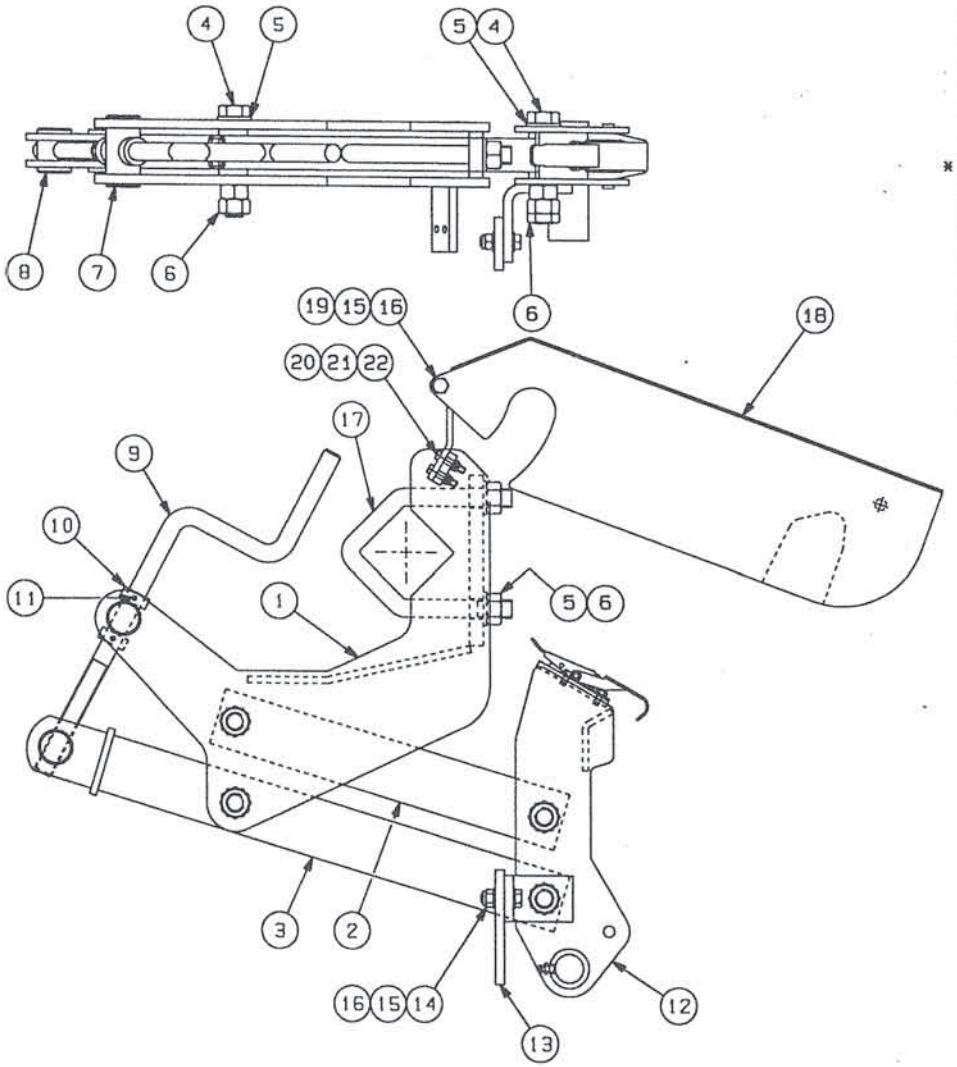


1	7703748	200 WHEEL ARM-ASSY	1
2	7703751	200 R'WHEEL BRKT-ASY	1
3	2303095	NYLOC NUT-FULL	1
4	2311092	FLAT WASHER-FORM A	8
5	6404032	PUSH/PULL KNOB	1
6	2303007	HEXAGON NUT	1
7	7703542	DEPTH ADJUSTMENT BOLT	1
8	2701048	ROCKER SPRING	1
9	6903599	WHEEL SPACER-12	2
* 10	7703718	200S WHEEL-ASSY	2
11	5700391	DUST CAP	4
12	2215613	SPLIT PIN	3
13	6903540	SCRAPER ARM	1
14	2376079	SOCKET C'SUNK SCREW	2
15	2303008	HEXAGON NUT	6
16	7403902	200 SCRAPER PLATE-WA	2
17	6903647	200 SCRAPER BLADE	2
18	6903648	200 SCRAPER CLAMP	2
19	2303091	NYLOC NUT-FULL	8
* 20	7703704	DEPTH ADJ.BRKT-ASSY	1
21	2311094	FLAT WASHER-FORM A	1
* 22	7703541	PARALLEL LINK-ASSY	2
23	2306135	HEXAGON BOLT	4
24	2303010	HEXAGON NUT	6
25	7404382	RU HEADSTOCK- W/A	1
26	6903551	WHEEL ARM STOP PLATE	1
27	2309049	HEXAGON SCREW	2
28	2311089	M8 FLAT WASHER	5
29	2303092	M8 NYLOC NUT-FULL	3
30	7404370	FD CHAIN GUARD	1
31	2303090	M5 NYLOC NUT-FULL	2
32	7404371	CHAIN GUARD BRKT.	1
33	2311132	M5 PLN FLAT WASHER	2
34	8002125	U-BOLT C/W ITEMS 4, 24	1
35	2306041	M8 X 55 BOLT	1
36	6903550	WHL.ARM PIV.SPACER-40	1

*: -SEE OTHER PAGES FOR PARTS

CHASSIS -200S-200S

ASSEMBLY : -7704039 (ITEMS 1-36)



1	7404086	RU H'STOCK(DC)-WA	1
* 2	7703541	PARALLEL LINK-ASSY	1
* 3	7703836	PAR.LINK-EXTEND.-ASY	1
4	2306135	HEXAGON BOLT	4
5	2311092	FLAT WASHER-FORM A	6
6	2303010	HEXAGON NUT	6
7	6903710	UPPER TRUNNION	1
8	6903711	LOWER TRUNNION	1
9	6903708	DEPTH HANDLE	1
10	6903709	DEPTH HANDLE COLLAR	2
11	2215256	TENSION PIN	2
* 12	7703704	DEPTH ADJ.BRKT-ASSY	1
13	6904012	ARM STOP PLATE-SLED	1
14	2309049	HEXAGON SCREW	1
15	2311089	M8 FLAT WASHER	3
16	2303092	M8 NYLOC NUT-FULL	2
17	8002125	U-BOLT C/W ITEMS 5, 6	1
18	7404370	FD CHAIN GUARD	1
19	2306041	M8 X 55 BOLT	1
20	2303090	M5 NYLOC NUT-FULL	2
21	7404371	CHAIN GUARD BRACKET	1
22	2311132	M5 PLN FLAT WASHER	2

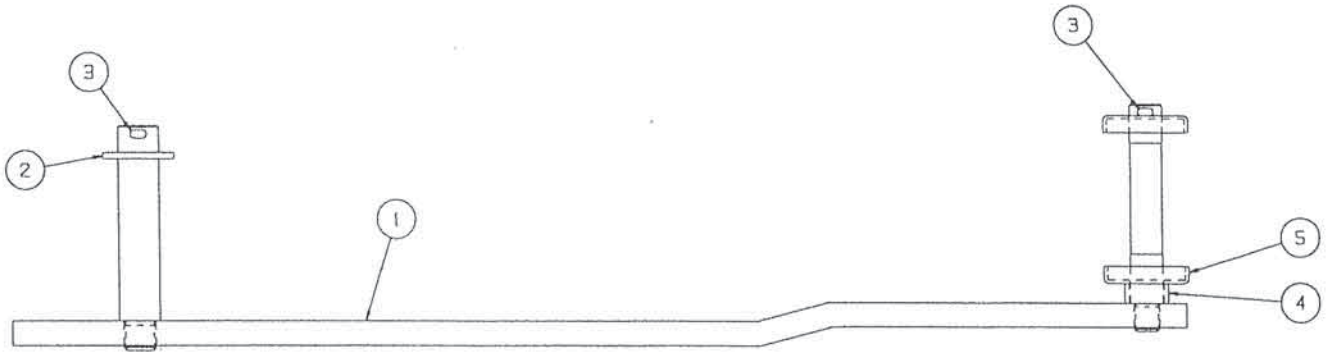
*: -SEE OTHER PAGES FOR PARTS

CHASSIS - SLED MOUNTED

ASSEMBLY: -7703872 (ALL ITEMS)

*				
	1	7703873	120 REAR WHEEL ARM	1
	2	2311094	FLAT WASHER-FORM A	1
	3	2215613	SPLIT PIN	2
	4	6903599	WHEEL SPACER-12	1
	5	5700391	DUST CAP	2

*: -INCLUDES ITEMS 2-5

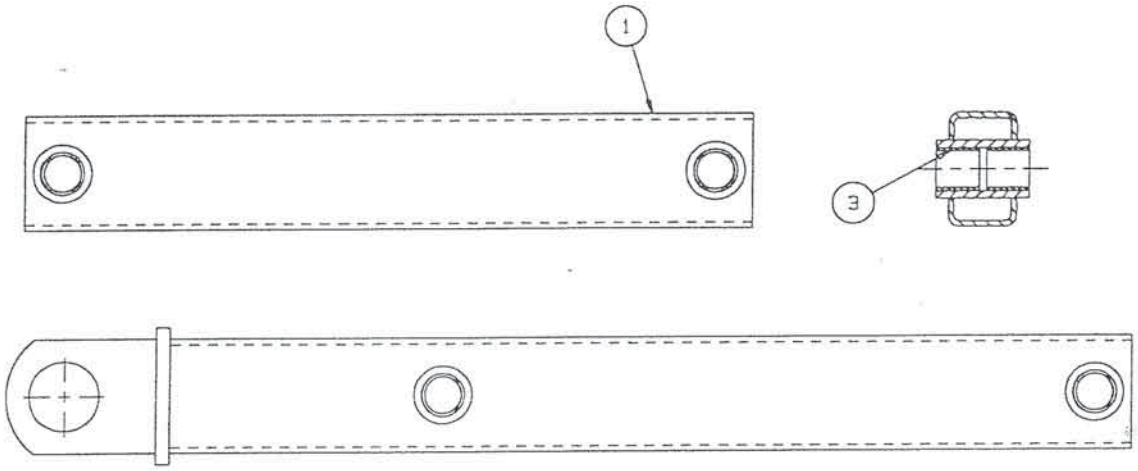


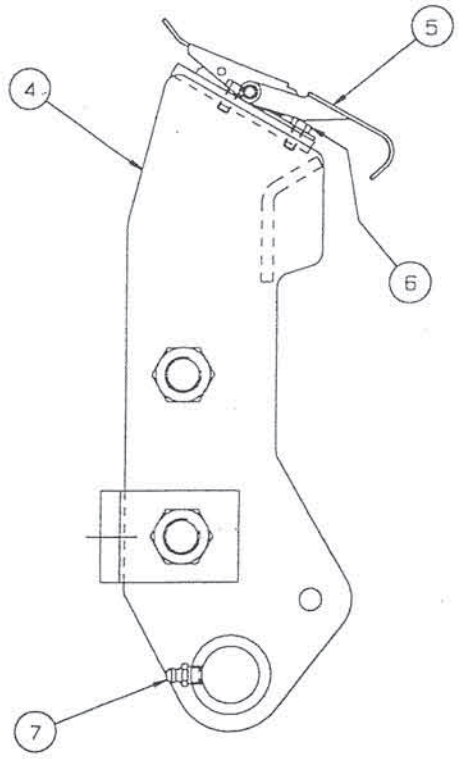
120 REAR WHEEL ARM

FOR USE WITH 7703872

*	1	7703541	PARALLEL LINK-ASSY	1
*	2	7703836	PARA.LINK-EXTEN.-ASSY	1
	3	2001002	OILITE BEARING	4
	4	7403883	DEPTH ADJUST.BRKT-WA	1
	5	6903246	TOGGLE CLIP	1
	6	2309021	HEXAGON SCREW	2
	7	6401006	STRAIGHT GREASER	1

*: -INCLUDES ITEM 3





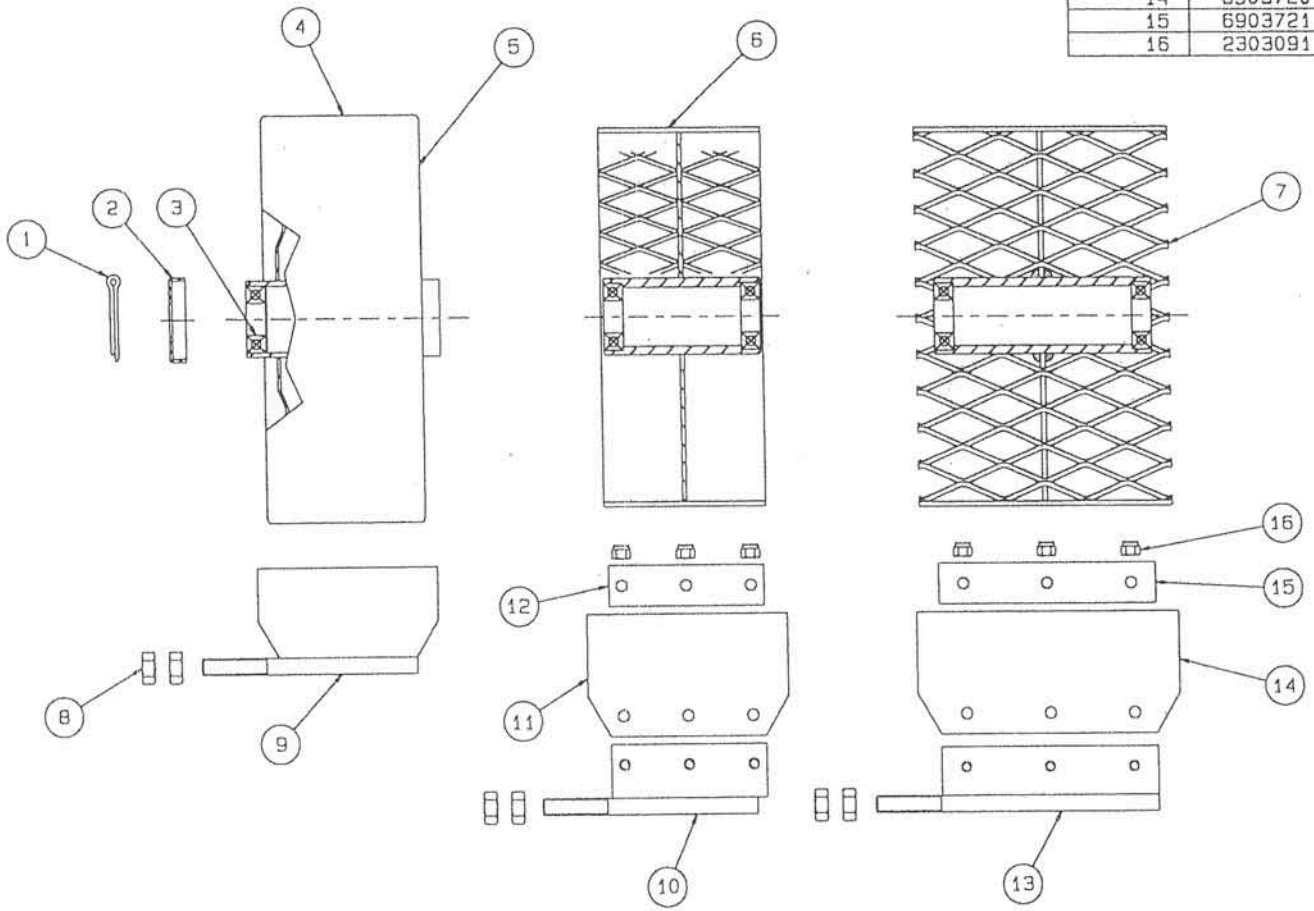
CHASSIS COMPONENTS

7703704 DEPTH ADJUSTMENT BRACKET (ITEMS 4-7)

KITS: -

8003566 ZERO PRESSURE WHEEL (ITEMS 1, 2, 5)
8003466 100 CAGE WHEEL (ITEMS 1, 2, 6)
8003541 160 CAGE WHEEL (ITEMS 1, 2, 7)
8003469 ZP WHEEL SCRAPER (ITEMS 8, 9)
8003470 120 WHEEL SCRAPER (ITEMS 8, 10, 11, 12, 16)
8003542 160 WHEEL SCRAPER (ITEMS 8, 13, 14, 15, 16)

1	2215613	SPLIT PIN	1
2	5700391	DUST CAP	2
3	1901049	BALL BEARING	2
4	5700397	ZERO PRESSURE TYRE	1
5	5700390	ZP WHEEL -COMP ASSY	1
6	7703728	100C WHEEL-COMP ASSY	1
7	7703846	160C WHEEL-COMP ASSY	1
8	2303008	HEXAGON NUT	2
9	7403961	ZP WHEEL SCRAPER-WA	1
10	7403893	120 SCRAPER PLATE-WA	1
11	6903541	120 SCRAPER BLADE	1
12	6903542	120 SCRAPER CLAMP	1
13	7404091	160 SCRAPER PLATE-WA	1
14	6903720	160 SCRAPER BLADE	1
15	6903721	160 SCRAPER CLAMP	1
16	2303091	NYLOC NUT-FULL	AS REQ.



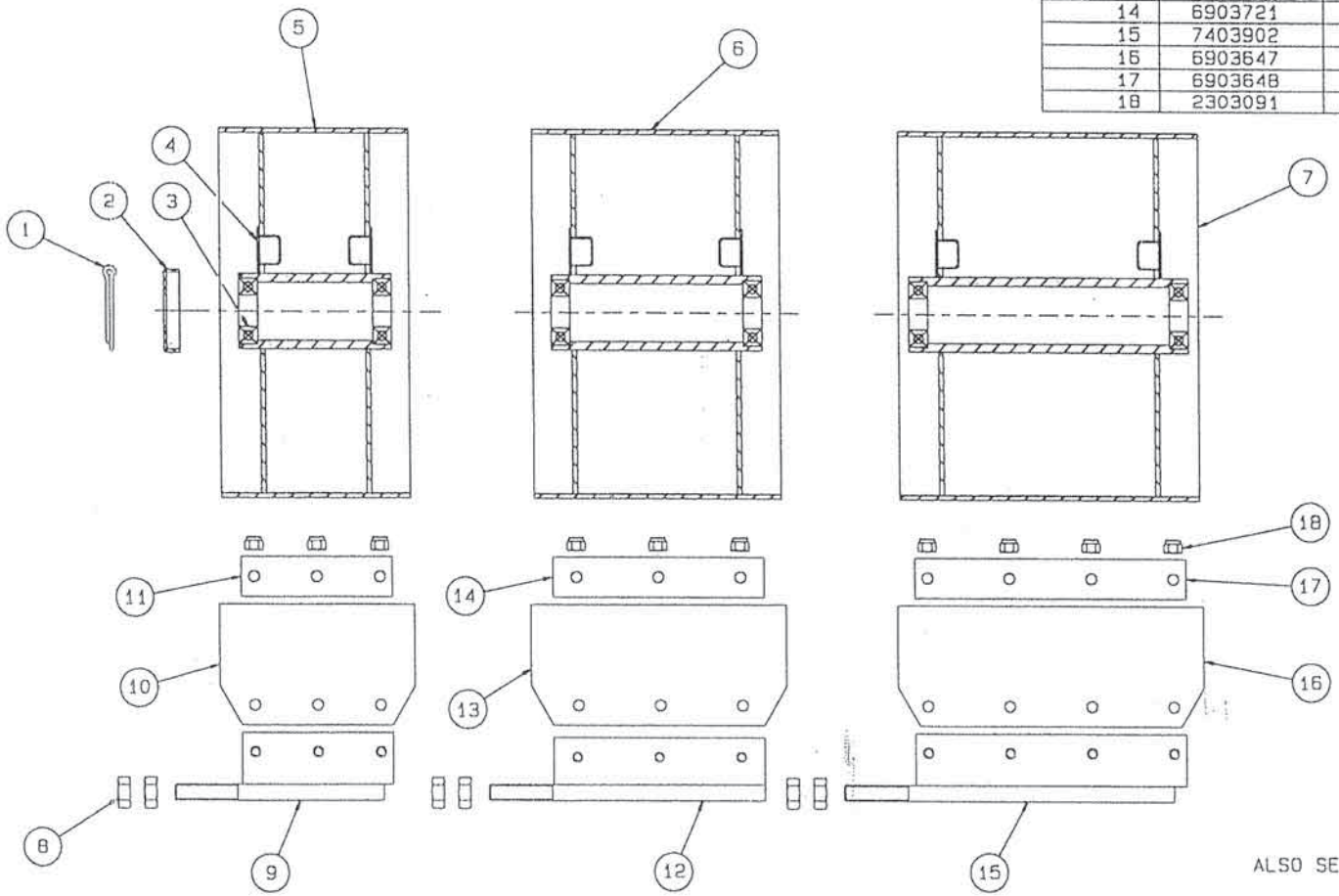
ALSO SEE NEXT PAGE

ROW UNIT WHEELS & SCRAPERS

KITS: -

8003467 120 STAINLESS WHEEL (ITEMS 1, 2, 5)
8003540 160 STAINLESS WHEEL (ITEMS 1, 2, 6)
8003468 200 STAINLESS WHEEL (ITEMS 1, 2, 7)
8003470 120 WHEEL SCRAPER (ITEMS 8, 9, 10, 11, 18)
8003542 160 WHEEL SCRAPER (ITEMS 8, 12, 13, 14, 18)
8003471 200 WHEEL SCRAPER (ITEMS 8, 15, 16, 17, 18)

1	2215613	SPLIT PIN	1
2	5700391	DUST CAP	2
3	1901049	BALL BEARING	2
4	2830001	RUBBER BUNG	2
5	7703705	120S WHEEL-COMP ASSY	1
6	7703845	160S WHEEL-COMP ASSY	1
7	7703718	200S WHEEL-COMP ASSY	1
8	2303008	HEXAGON NUT	2
9	7403893	120 SCRAPER PLATE	1
10	6903541	120 SCRAPER BLADE	1
11	6903542	120 SCRAPER CLAMP	1
12	7404091	160 SCRAPER PLATE	1
13	6903720	160 SCRAPER BLADE	1
14	6903721	160 SCRAPER CLAMP	1
15	7403902	200 SCRAPER PLATE	1
16	6903647	200 SCRAPER BLADE	1
17	6903648	200 SCRAPER CLAMP	1
18	2303091	NYLOC NUT-FULL	AS REQ.



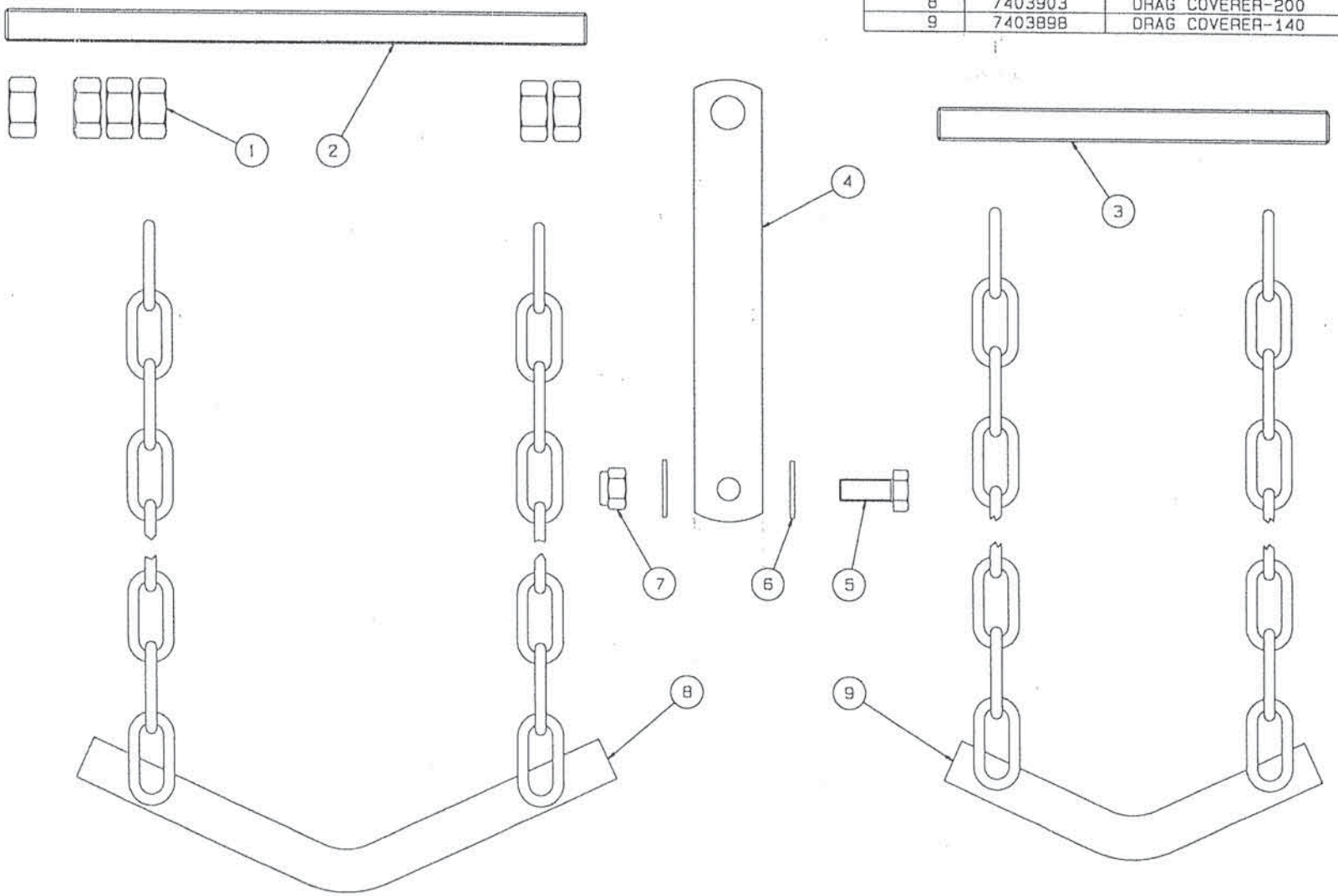
ALSO SEE PREVIOUS PAGE

ROW UNIT WHEELS & SCRAPERS

KITS: -

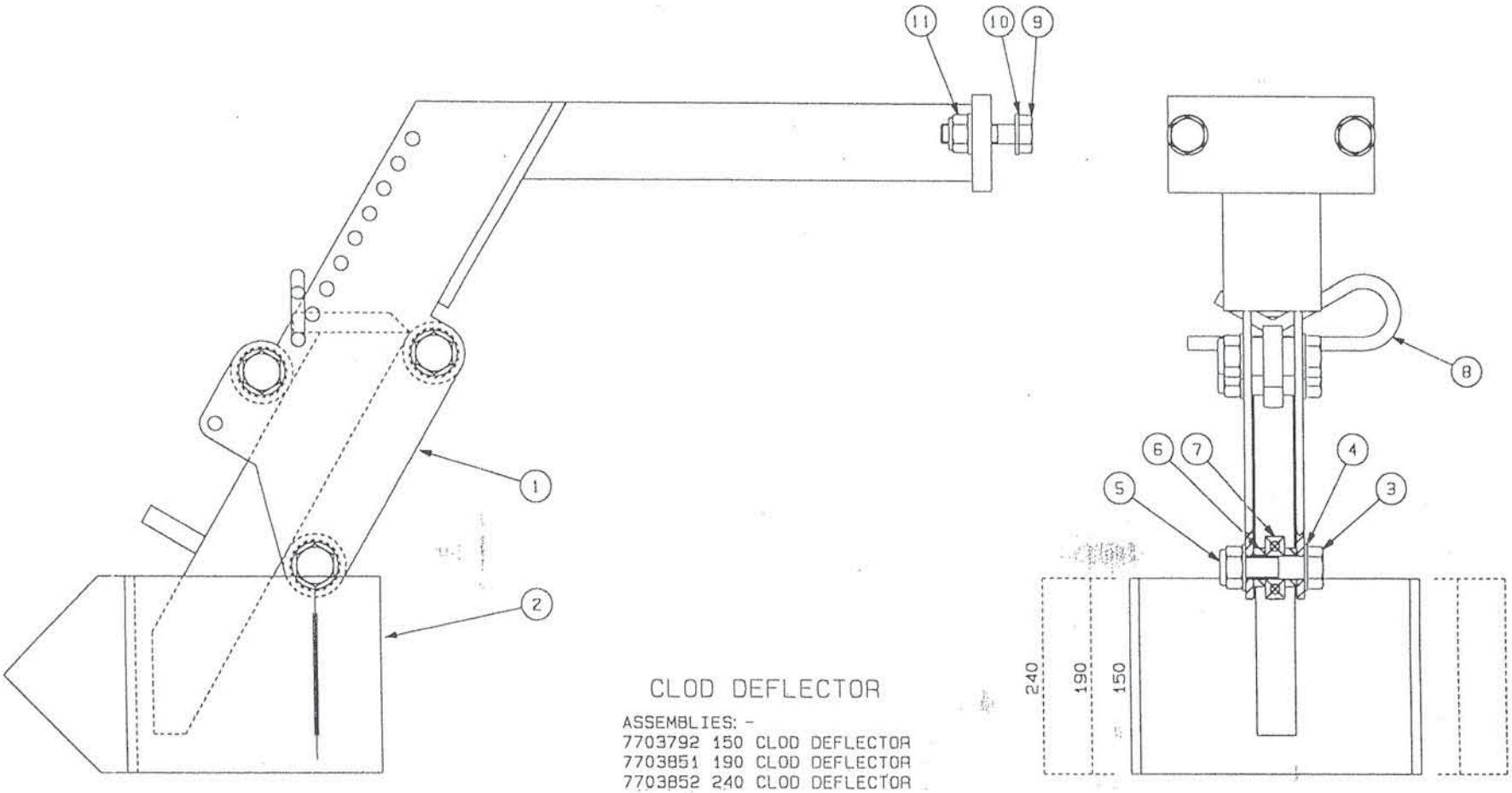
8003480 140 DRAG COVERER (ITEMS 1, 3, 4-7, 9)
8003481 200 DRAG COVERER (ITEMS 1, 2, 4-8)

1	2303009	HEXAGON NUT	6
2	6903608	COVERER STUD-215	1
3	6903607	COVERER STUD-145	1
4	6903606	COVERER PLATE	2
5	2309047	HEXAGON SCREW	2
6	2311134	FLAT WASHER-FORM C	4
7	2303092	M8 NYLOC NUT-FULL	2
8	7403903	DRAG COVERER-200	1
9	7403898	DRAG COVERER-140	1



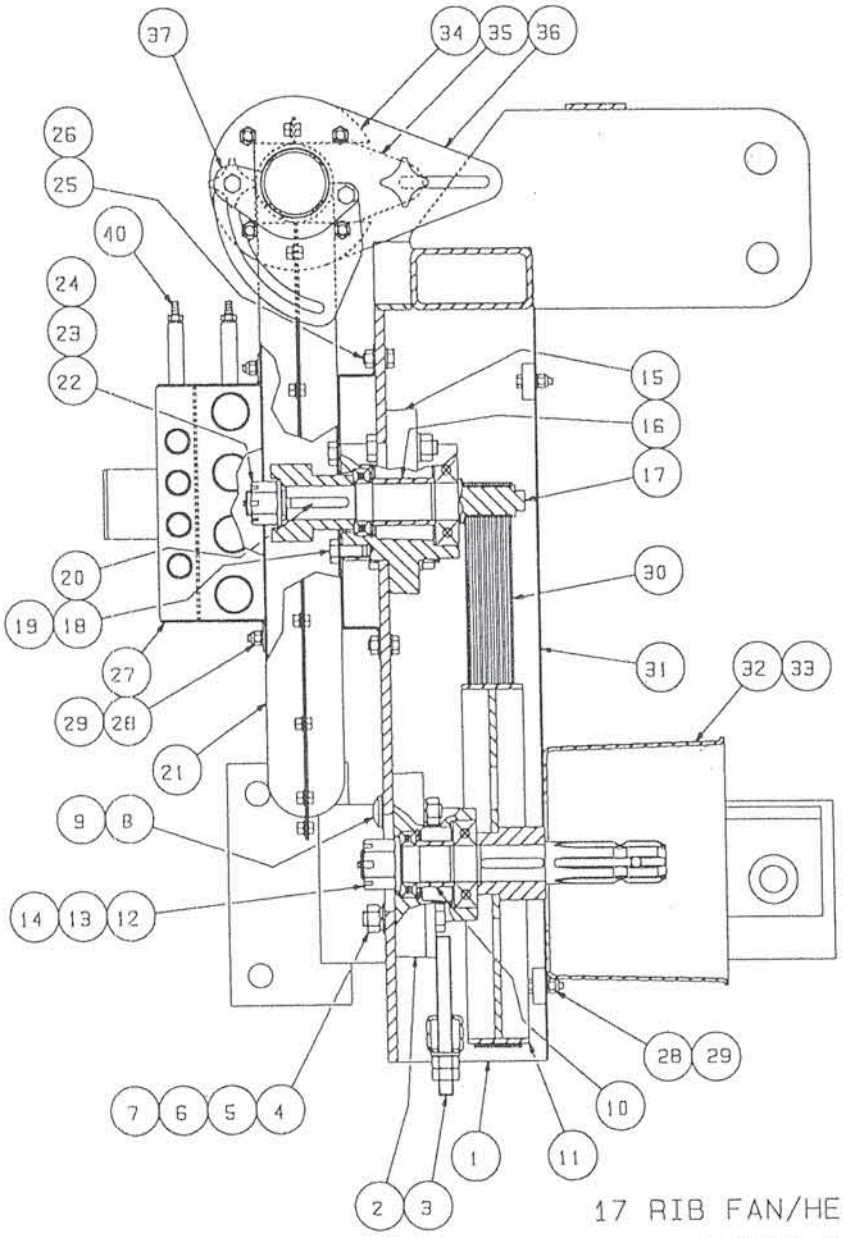
DRAG COVERERS

1	7403995	CLOD DEF.TRACK-WA	1
2	7403996	150 CLOD DEF.-WA	1
	7404094	190 CLOD DEF.-WA	1
	7404095	240 CLOD DEF.-WA	1
3	2306097	HEXAGON BOLT	3
4	2311113	FLAT WASHER-FORM B	6
5	2303110	NYLOC NUT-THIN	3
6	6902885	BEARING SPACER	6
7	1901101	BALL BEARING	3
8	2705010	LOCKING CLIP	1
9	2306066	HEXAGON BOLT	2
10	2311090	FLAT WASHER-FORM A	4
11	2303109	NYLOC NUT-THIN	2



CLOD DEFLECTOR

ASSEMBLIES: -
7703792 150 CLOD DEFLECTOR
7703851 190 CLOD DEFLECTOR
7703852 240 CLOD DEFLECTOR



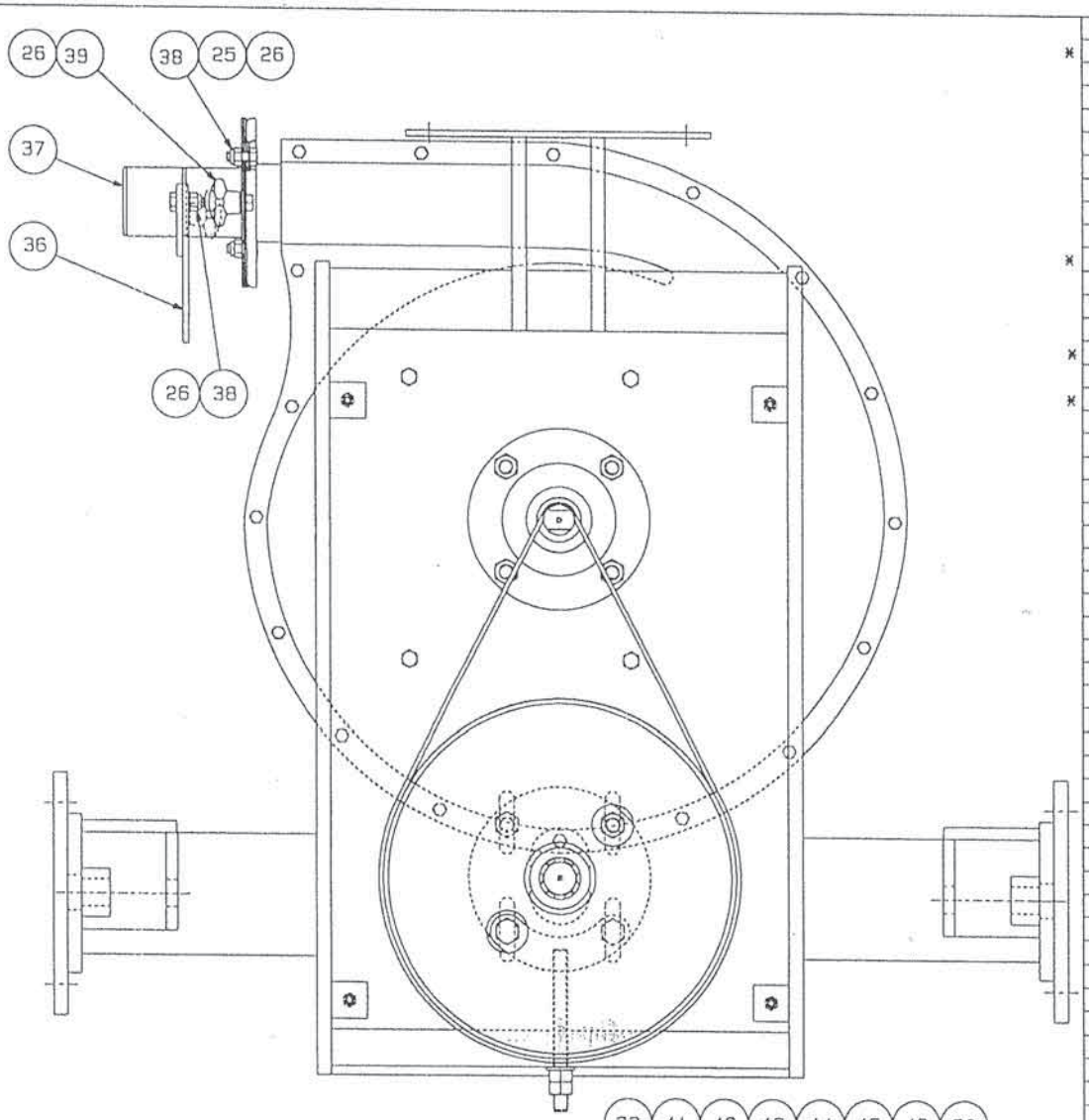
	1	7403687	CAT 2.HEADSTOCK-WA	1
*	2	7703500	BOTTOM BRG.HOUS'G-AS	1
	3	7403441	BELT TENSIONER-WA	1
	4	2309084	HEXAGON SCREW	2
	5	2303009	HEXAGON NUT	10
	6	2311091	FLAT WASHER-FORM A	7
	7	2311217	SPRING WASHER	4
	8	2306515	COACH BOLT	2
	9	2311114	FLAT WASHER-FORM B	2
	10	6903049	PTO SHAFT BRG'SPACER	1
*	11	7703545	PTO SHAFT/PULL.-ASSY	1
	12	2303079	SLOTTED NUT	1
	13	2311094	FLAT WASHER-FORM A	1
	14	2215613	SPLIT PIN	1
*	15	7703499	TOP BRG.HOUS'G-ASSY	1
	16	6903048	IMP.SHAFT SPACER	1
*	17	7703544	IMP.SHAFT-ASSY 17R	1
	18	2309061	HEXAGON SCREW	4
	19	2311112	FLAT WASHER-FORM B	4
	20	6413057	IMP./DRIVE SHAFT KEY	1
	21	4801008	FAN	1
	22	2303078	SLOTTED NUT	1
	23	2311093	FLAT WASHER-FORM A	1
	24	2215587	SPLIT PIN	1
	25	2309047	HEXAGON SCREW	8
	26	2311089	FLAT WASHER-FORM A	10
	27	7403688	AIR MANIFOLD-WA	1
	28	2303091	NYLOC NUT-FULL	10
	29	2311088	FLAT WASHER-FORM A	10
	30	1323005	17 RIB POLY-V BELT	1
	31	7403944	DR.C/PLATE-780/650	1
	32	6903491	PTO GUARD SHIELD	1
	33	2390083	ROOFING BOLT	2
	34	6902526	VACUUM BAFFLE GUIDE	1
	35	7403439	VAC.BAFFLE PLATE-WA	1
	36	7403438	PRESSURE OUTLET-WA	1
	37	7403440	PRESSURE ADJUSTER-WA	1
	38	2303092	NYLOC NUT-FULL	5
	39	6404026	HANDWHEEL 302	2
	40	4107124	FIRTREE HOSE CONNECTOR	2
	41	6402007	PLASTIC PLUG 1020	8
	42	6402041	PLASTIC PLUG 10154	8
	43	6406307	LABEL-540 RPM MAX	1
	44	6406325	LABEL-STANHAY LOGO	1
	45	6406328	LABEL-FORM SW101	1
	46	2314754	LINCH PIN	3
	47	2314810	CAT.1/2 LOWER LINK PIN	2
	48	2314811	CAT.1/2 TOP LINK CONV.	1
	49	6903705	PRESS.FEED HOSE-900L	1
	50	2316012	PRESS FEED HOSE CLIP	2

*: -SEE OTHER PAGES FOR PARTS DETAILS

17 RIB FAN/HEADSTOCK - 8 PORTS

ASSEMBLY: -7703546 (ALL ITEMS)
ALSO SEE NEXT PAGE

33 41 42 43 44 45 49 50
NOT ILLUSTRATED

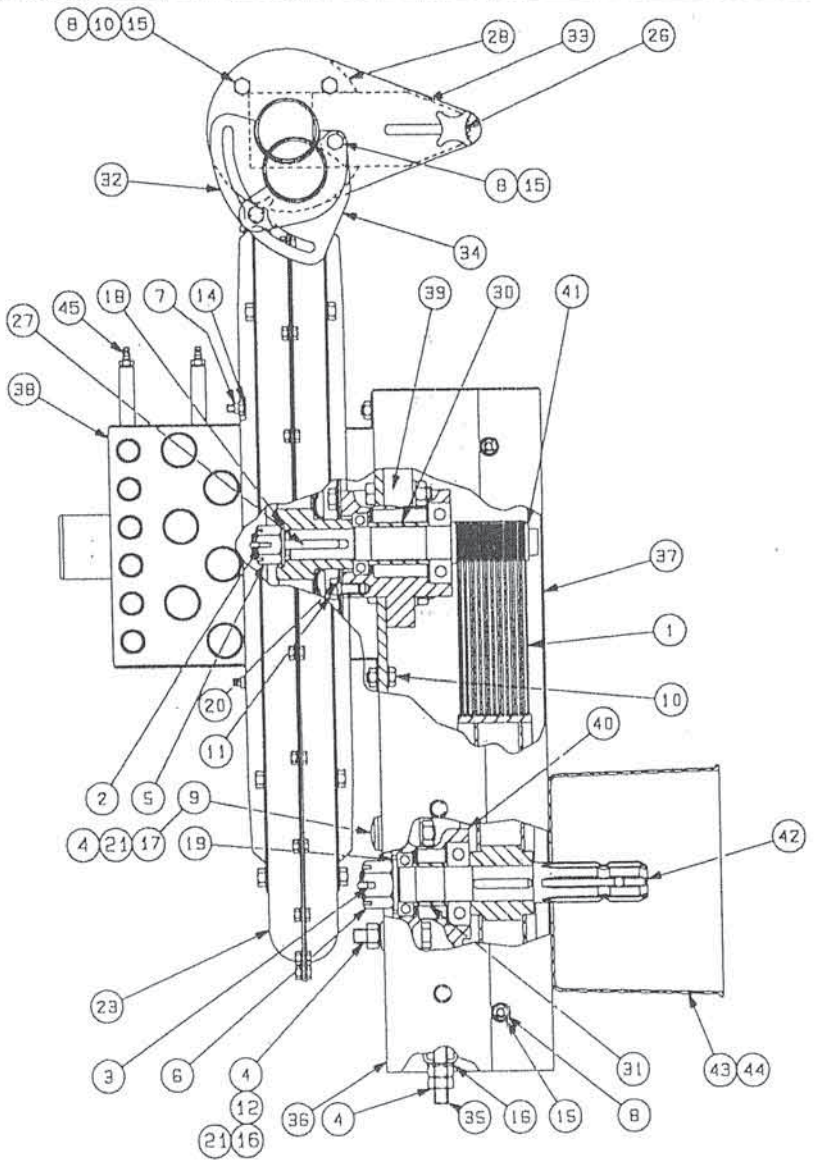


	1	7403687	CAT 2.HEADSTOCK-WA	1
*	2	7703500	BOTTOM BRG.HOUS'G-AS	1
	3	7403441	BELT TENSIONER-WA	1
	4	2309084	HEXAGON SCREW	2
	5	2303009	HEXAGON NUT	10
	6	2311091	FLAT WASHER-FORM A	7
	7	2311217	SPRING WASHER	4
	8	2306515	COACH BOLT	2
	9	2311114	FLAT WASHER-FORM B	2
	10	6903049	PTO SHAFT BRG'SPACER	1
*	11	7703545	PTO SHAFT/PULL.-ASSY	1
	12	2303079	SLOTTED NUT	1
	13	2311094	FLAT WASHER-FORM A	1
	14	2215613	SPLIT PIN	1
*	15	7703499	TOP BRG.HOUS'G-ASSY	1
	16	6903048	IMP.SHAFT SPACER	1
*	17	7703544	IMP.SHAFT-ASSY 17R	1
	18	2309061	HEXAGON SCREW	4
	19	2311112	FLAT WASHER-FORM B	4
	20	6413057	IMP./DRIVE SHAFT KEY	1
	21	4801008	FAN	1
	22	2303078	SLOTTED NUT	1
	23	2311093	FLAT WASHER-FORM A	1
	24	2215587	SPLIT PIN	1
	25	2309047	HEXAGON SCREW	8
	26	2311089	FLAT WASHER-FORM A	10
	27	7403688	AIR MANIFOLD-WA	1
	28	2303091	NYLOC NUT-FULL	10
	29	2311088	FLAT WASHER-FORM A	10
	30	1323005	17 RIB POLY-V BELT	1
	31	7403944	DR.C/PLATE-780/650	1
	32	6903491	PTO GUARD SHIELD	1
	33	2390063	ROOFING BOLT	2
	34	6902526	VACUUM BAFFLE GUIDE	1
	35	7403439	VAC.BAFFLE PLATE-WA	1
	36	7403438	PRESSURE OUTLET-WA	1
	37	7403440	PRESSURE ADJUSTER-WA	1
	38	2303092	NYLOC NUT-FULL	5
	39	6404026	HANDWHEEL 302	2
	40	4107124	FIRTREE HOSE CONNECTOR	2
	41	6402007	PLASTIC PLUG 1020	8
	42	6402041	PLASTIC PLUG 10154	8
	43	6406307	LABEL-540 RPM MAX	1
	44	6406325	LABEL-STANHAY LOGO	1
	45	6406328	LABEL-FORM SW101	1
	46	2314754	LINCH PIN	3
	47	2314810	CAT.1/2 LOWER LINK PIN	2
	48	2314811	CAT.1/2 TOP LINK CONV.	1
	49	6903705	PESSURE FEED HOSE-900L	1
	50	2316012	PRESS.FEED HOSE CLIP	2

*: -SEE OTHER PAGES FOR PARTS DETAILS

17 RIB FAN/HEADSTOCK - 8 PORTS

ASSEMBLY: -7703546 (ALL ITEMS)
ALSO SEE PREVIOUS PAGE



26 RIB FAN - 12 PORTS

18 PORTS

**	1	1323003	26 RIB POLY-V BELT	1
***		1323004	26 RIB POLY-V BELT	1
	2	2215587	SPLIT PIN	1
	3	2215613	SPLIT PIN	1
	4	2303009	HEXAGON NUT	10
	5	2303078	SLOTTED NUT	1
	6	2303079	SLOTTED NUT	1
	7	2303091	NYLOC NUT-FULL	6
	8	2303092	NYLOC NUT-FULL	9
	9	2306515	COACH BOLT	2
	10	2309047	HEXAGON SCREW	8
	11	2309061	HEXAGON SCREW	4
	12	2309084	HEXAGON SCREW	2
	13	2309094	HEXAGON SCREW	4
	14	2311088	FLAT WASHER-FORM A	6
	15	2311089	FLAT WASHER-FORM A	15
	16	1211091	FLAT WASHER-FORM A	7
	17	2311092	FLAT WASHER-FORM A	6
	18	2311093	FLAT WASHER-FORM A	1
	19	2311094	FLAT WASHER-FORM A	1
	20	2311112	FLAT WASHER-FORM B	4
	21	2311217	SPRING WASHER	4
	22	2316012	HOSE CLIP	2
	23	4801007	FAN	1
	24	6402007	PLASTIC PLUG 1020 (P)	12
	25	6402041	PLASTIC PLUG 10154 (V)	12
	26	6404026	HANDWHEEL 302	2
	27	6413057	IMP./DRIVE SHAFT KEY	1
	28	6902526	VACUUM BAFFLE GUIDE	1
	29	6902592	PRESS.FEED HOSE-1200L	1
	30	6903048	IMP.SHAFT BRG. SPACER	1
	31	6903049	PTO SHAFT BRG. SPACER	1
	32	7403438	PRESSURE OUTLET-WA	1
	33	7403439	VAC.BAFFLE PLATE-WA	1
	34	7403440	PRESSURE ADJUSTER-WA	1
	35	7403441	BELT TENSIONER-WA	1
	36	7403442	FAN DRIVE CASE-WA	1
	37	7403943	DRIVE COVER PLATE-WA	1
	38	7403444	12 PORT AIR MANIFOLD	1
		7403628	18 PORT AIR MANIFOLD	1
*	39	7703293	TOP BRG.HOUS'G-ASSY	1
*	40	7703294	BOTTOM BRG.HOUS'G-ASSY	1
*	41	7703294	IMP.SHAFT-26A-540 PTO	1
		7703410	IMP.SHAFT-26A-1000 PTO	1
*	42	7703296	540 PTO SHAFT/PULLEY	1
		7703394	1000 PTO SHAFT/PULLEY	1
	43	6903491	PTO GUARD SHIELD	1
	44	2390083	ROOFING BOLT	2
	45	4107124	FIRTREE HOSE CONNECTOR	2

*: -SEE OTHER PAGES FOR PARTS DETAILS

**: -FOR 540 PTO SPEED

***: -FOR 1000 PTO SPEED

(13)(17)(22)(24)(25)(29)(44) NOT ILLUSTRATED

ASSEMBLIES: -

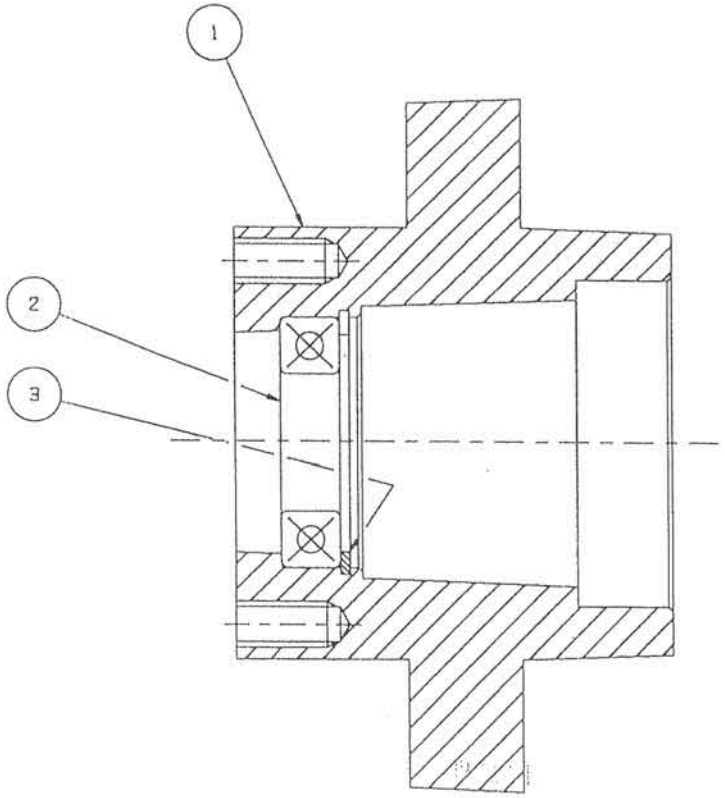
7703297 (TOOL BAR) (540 PTO SPEED) (ALL ITEMS)

7703388 (YOKE BAR) (540 PTO SPEED) (ALL ITEMS)

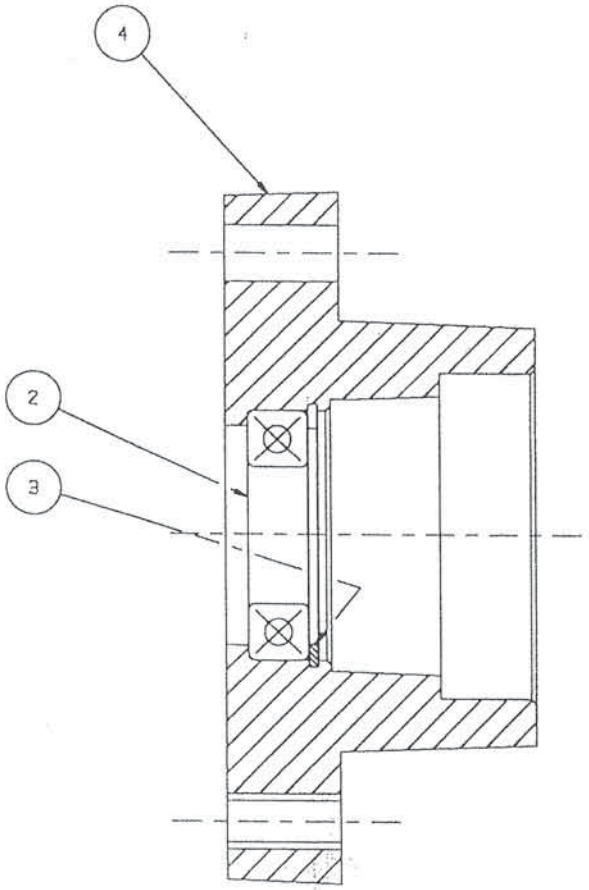
7703411 (TOOL BAR) (1000 PTO SPEED) (ALL ITEMS)

7703474 (YOKE BAR) (540 PTO SPEED) (ALL ITEMS)

1	3000709	IMP.SHAFT HOUSING	1
2	1901051	BALL BEARING	1
3	2217208	INTERNAL CIRCLIP	1
4	3000711	PTO SHAFT HOUSING	1



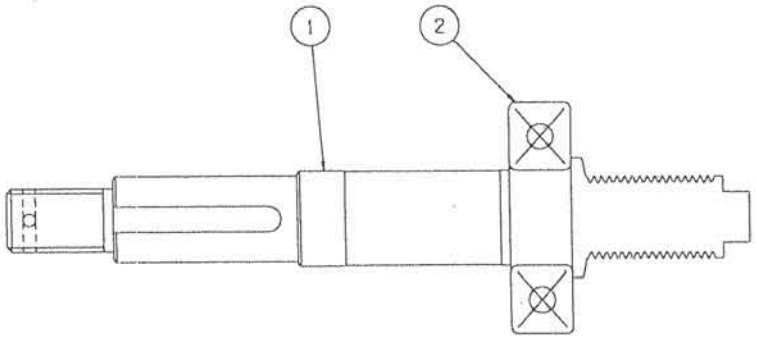
ASSEMBLY: -7703499 TOP BEARING HOUSING



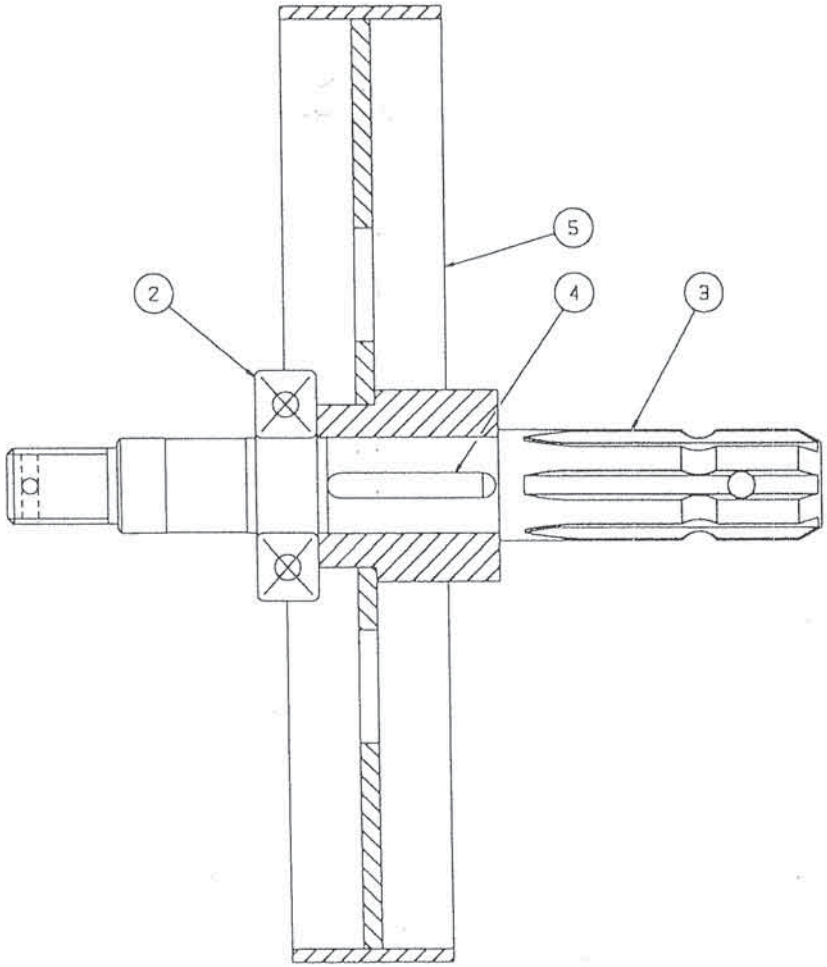
ASSEMBLY: -7703500 BOTTOM BEARING HOUSING

FAN SHAFT HOUSINGS

1	6903303	IMP.SHAFT-17 GROOVES	1
2	1901161	BALL BEARING	1
3	6903046	PTO DRIVE SHAFT	1
4	6413057	IMP./DRIVE SHAFT KEY	1
5	7403689	PTO PULLEY-WA	1

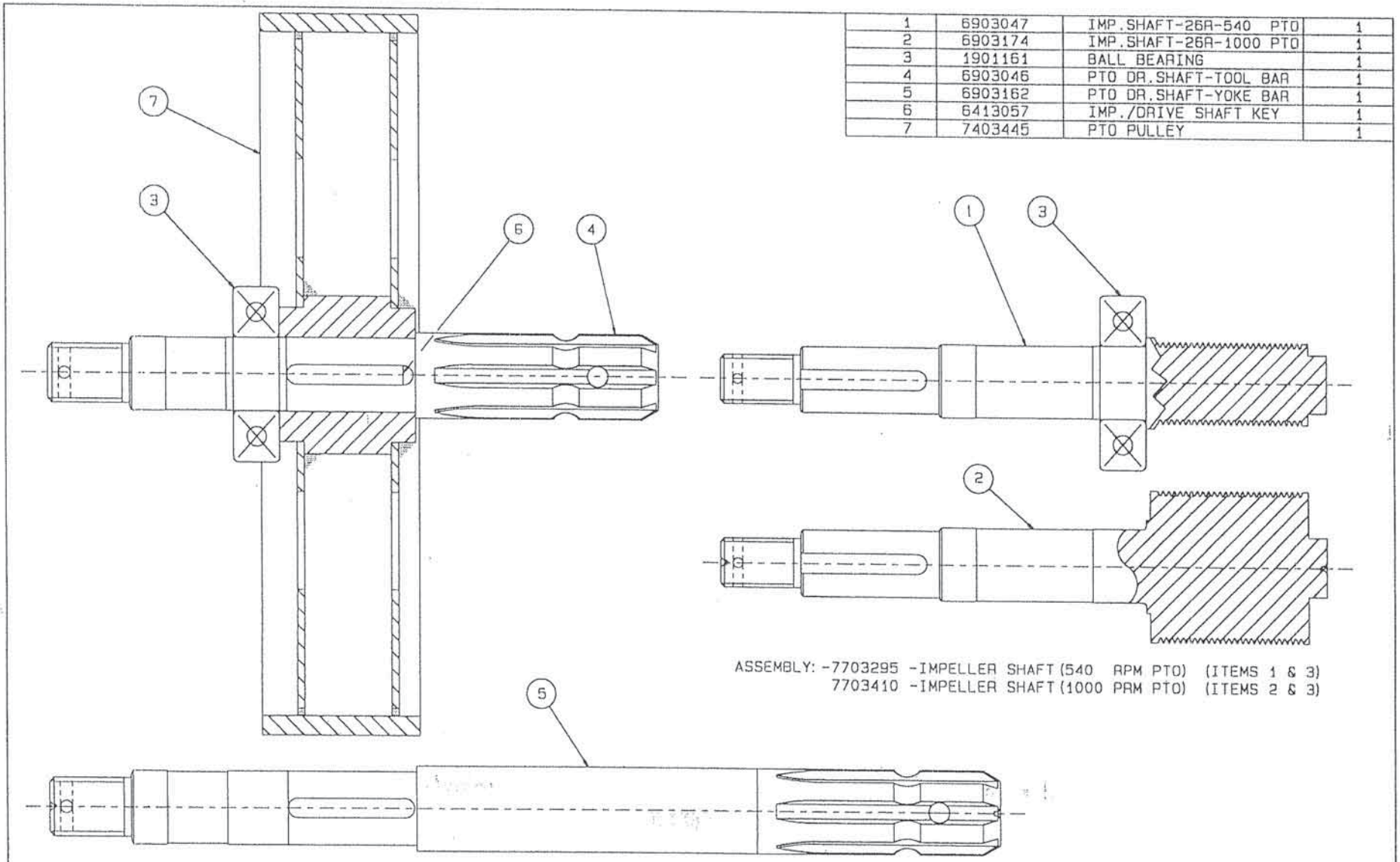


ASSEMBLY: -7703544 IMPELLER SHAFT



ASSEMBLY: -7703545 PTO SHAFT & PULLEY

17 RIB FAN SHAFT ASSEMBLIES



1	6903047	IMP.SHAFT-26R-540 PTO	1
2	6903174	IMP.SHAFT-26R-1000 PTO	1
3	1901161	BALL BEARING	1
4	6903046	PTO DR.SHAFT-TOOL BAR	1
5	6903162	PTO DR.SHAFT-YOKE BAR	1
6	6413057	IMP./DRIVE SHAFT KEY	1
7	7403445	PTO PULLEY	1

ASSEMBLY: -7703295 -IMPELLER SHAFT (540 RPM PTO) (ITEMS 1 & 3)
7703410 -IMPELLER SHAFT (1000 RPM PTO) (ITEMS 2 & 3)

ASSEMBLY: -7703296 -PTO SHAFT & PULLEY (TOOL BAR) (ITEMS 3, 4, 6, 7)
7703394 -PTO SHAFT & PULLEY (YOKE BAR) (ITEMS 3, 5, 6, 7)
NOTE-FOR HYDRAULIC DRIVE ON YOKE BAR, USE 7703296.

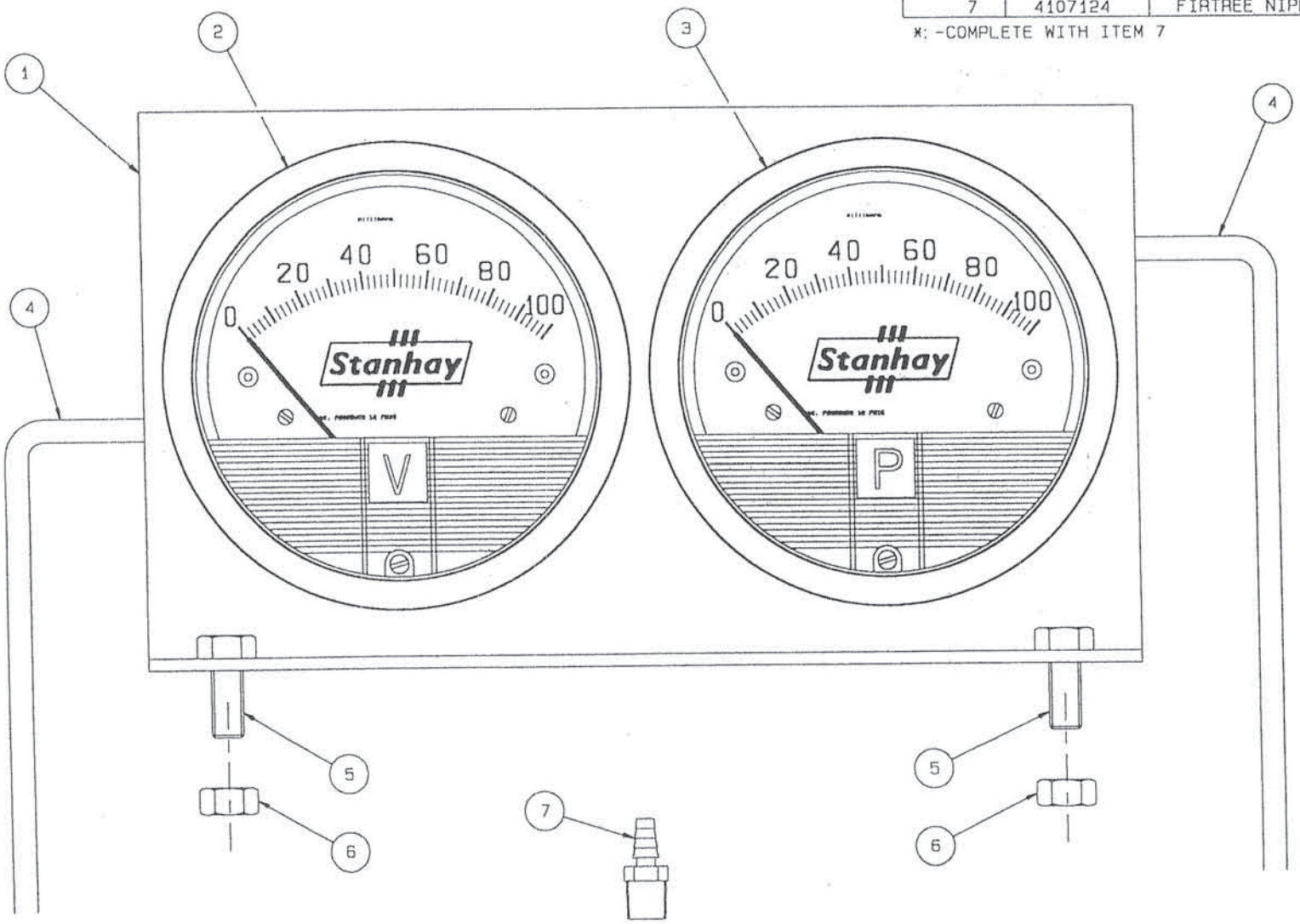
26 RIB FAN SHAFT ASSEMBLIES

KIT: -

8003157 VACUUM & PRESSURE GAUGE KIT (ITEMS 1-6)

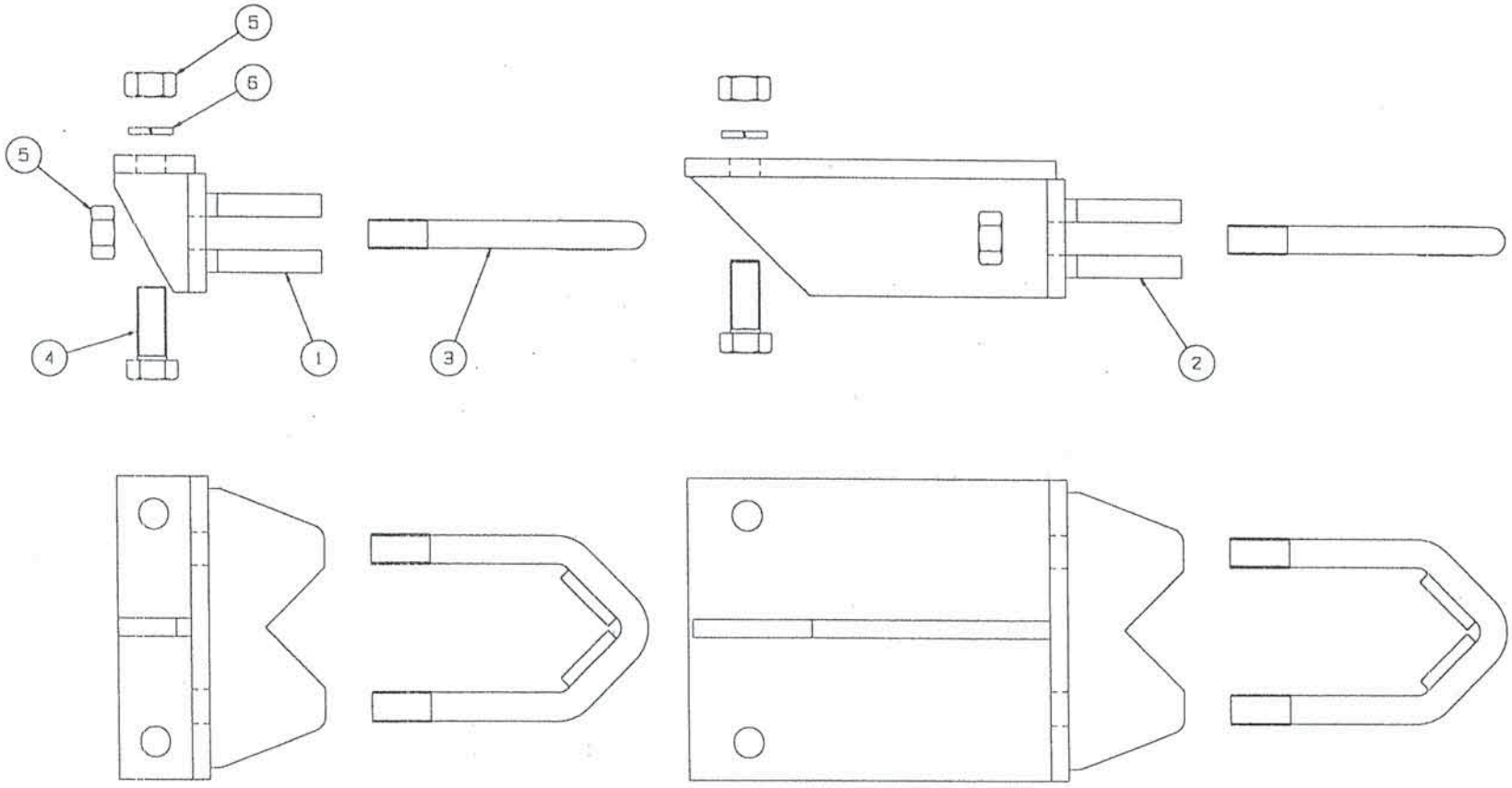
	1	6903204	GAUGE BRACKET	1
*	2	7703479	VACUUM GAUGE	1
*	3	7703480	PRESSURE GAUGE	1
	4	4300027	GAUGE PIPE	PER MET.
	5	2309047	HEXAGON SCREW	2
	6	2303007	HEXAGON NUT	2
	7	4107124	FIRTREE NIPPLE	AS REQ.

*: -COMPLETE WITH ITEM 7



VACUUM & PRESSURE GAUGES

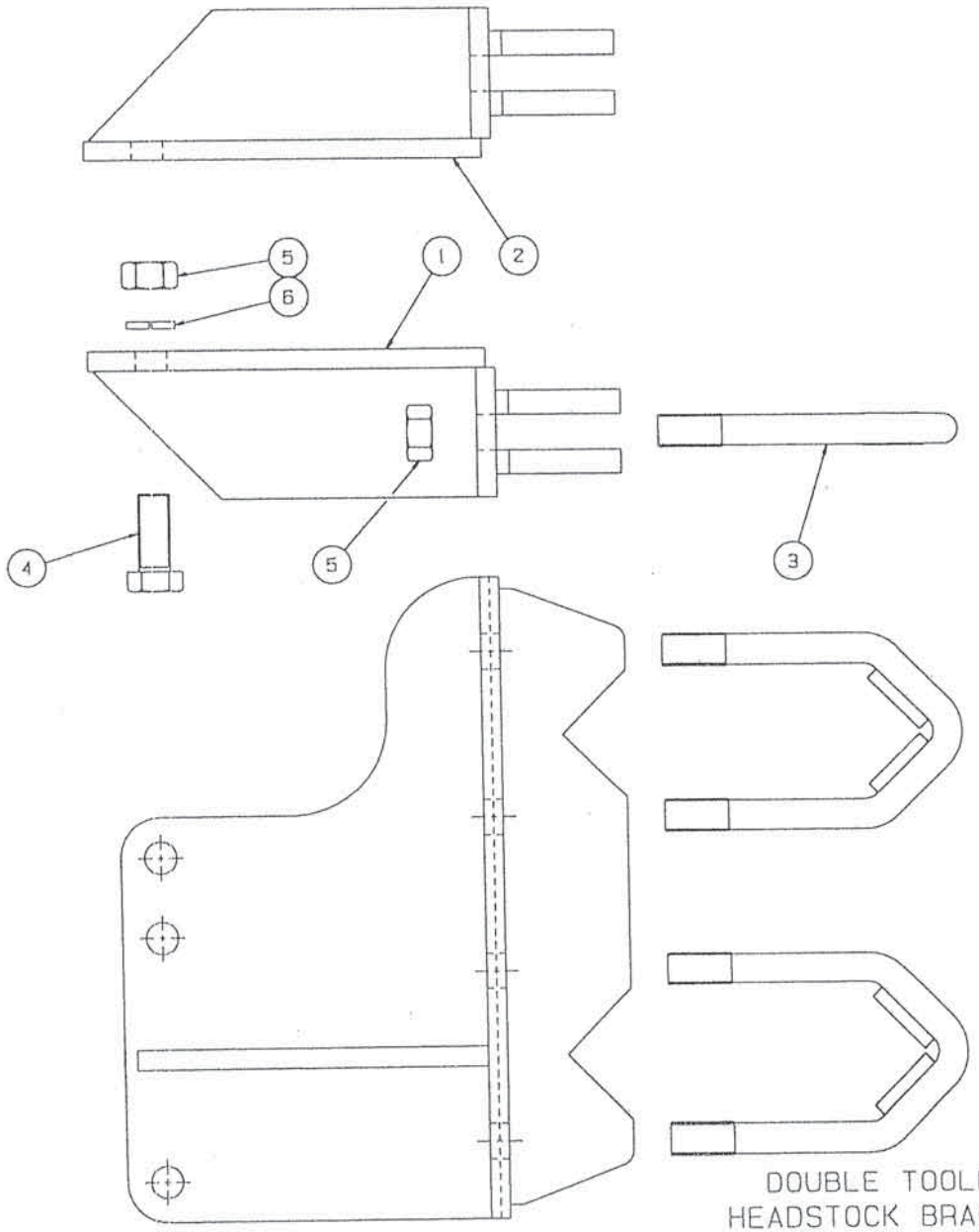
1	7403028	EXT./T'BAR BRACKET-WA	1
2	7403032	HEADSTOCK BRACKET-WA	1
3	7403029	HEADSTOCK U-BOLT-WA	1
4	2309108	HEXAGON SCREW	2
5	2303011	HEXAGON NUT	4
6	2311219	SPRING WASHER	2



STANDARD
KIT: -8002825 (ITEMS 1, 3-6)
PAIR OF BRACKETS

OPTIONAL
KIT: -8002677 (ITEMS 3-6)
PAIR OF BRACKETS

SINGLE TOOLBAR
HEADSTOCK BRACKETS

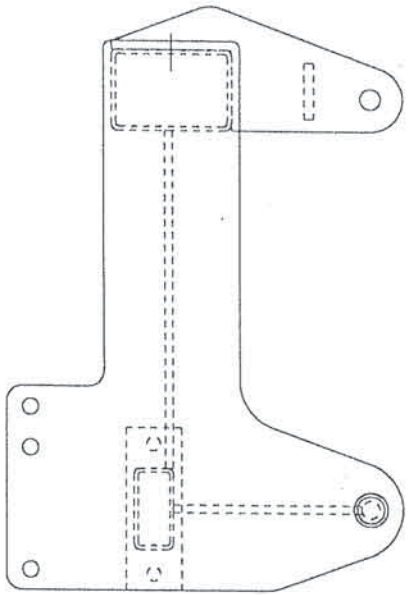


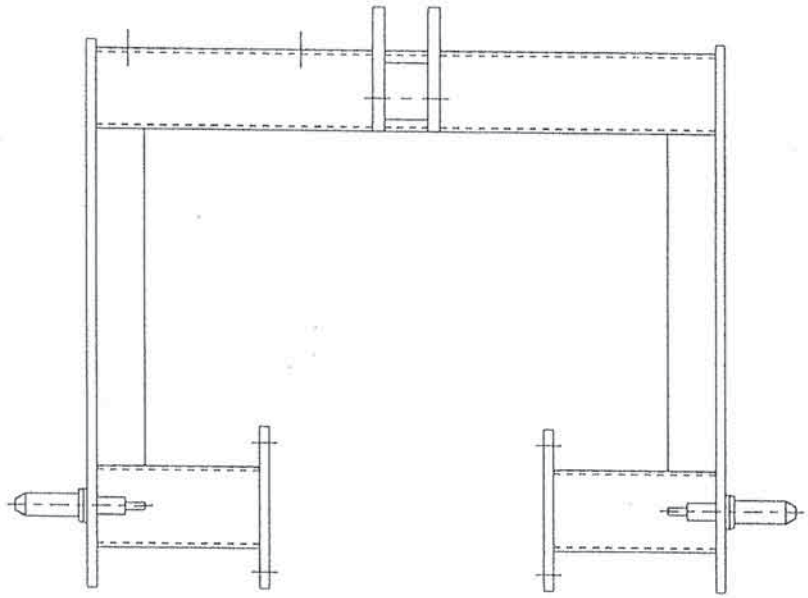
DOUBLE TOOLBAR
HEADSTOCK BRACKETS

1	7403547	H'STOCK.BRKT.DOUBLE LH	1
2	7403548	H'STOCK.BRKT.DOUBLE RH	1
3	7403029	HEADSTOCK U-BOLT-WA	4
4	2309108	HEXAGON SCREW	6
5	2303011	HEXAGON NUT	14
6	2311219	SPRING WASHER	6

KITS: -

B003142 PAIR OF DOUBLE BRACKETS (ITEMS 1-6)
B003176 TWO LEFT HAND BRACKETS (ITEMS 1, 3-6)
B003177 TWO RIGHT HAND BRACKETS (ITEMS 2-6)



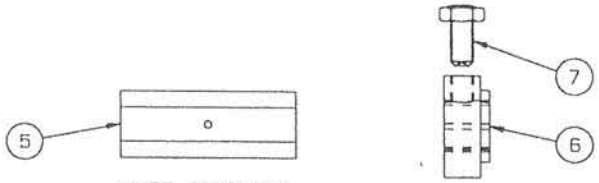


HEADSTOCK
7403446

1	6903439	1.30M SHAFT
	6903262	1.40M SHAFT
	6902102	1.50M SHAFT
	6903263	1.60M SHAFT
	6902374	1.72M SHAFT
	6902321	1.80M SHAFT
	6902469	2.00M SHAFT
	6902322	2.15M SHAFT
	6902357	2.50M SHAFT
	6902251	2.75M SHAFT
	6902920	3.00M SHAFT
	6902982	3.50M SHAFT
	7000070	3.75M SHAFT
	6902921	4.00M SHAFT
	6902252	4.50M SHAFT
5	7700089	MUFF COUPLING
6	7703757	LOCKING COLLAR+ITEM 7
7	7403965	LOCKING SCREW

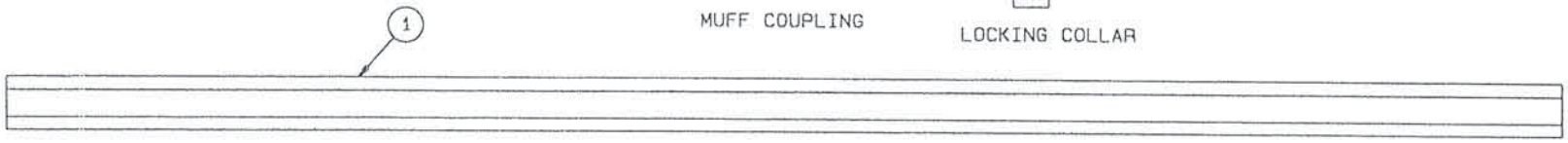
2	7702192	1.50M TOOLBAR
	7702668	2.00M TOOLBAR
	7702982	2.50M TOOLBAR
	7703412	3.00M TOOLBAR
	7703093	3.50M TOOLBAR
	7703413	4.00M TOOLBAR
	7701116	4.30M TOOLBAR
	7703414	4.50M TOOLBAR
	7703415	5.00M TOOLBAR
	7703416	5.50M TOOLBAR
	7703417	6.00M TOOLBAR
4	6402015	PLASTIC PLUG

3	6902984	1.50M HD TOOLBAR
	6902986	1.80M HD TOOLBAR
	6902987	2.00M HD TOOLBAR
	6902988	2.15M HD TOOLBAR
	6902990	2.50M HD TOOLBAR
	6902993	3.00M HD TOOLBAR
	6902995	3.50M HD TOOLBAR
	6902997	4.00M HD TOOLBAR
	6902999	4.50M HD TOOLBAR
	6903001	5.00M HD TOOLBAR
	6903003	5.50M HD TOOLBAR
	6903154	6.00M HD TOOLBAR

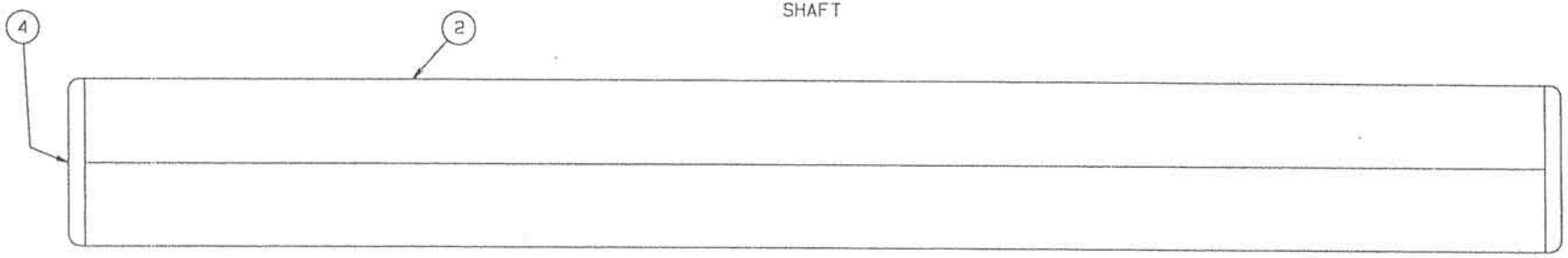


MUFF COUPLING

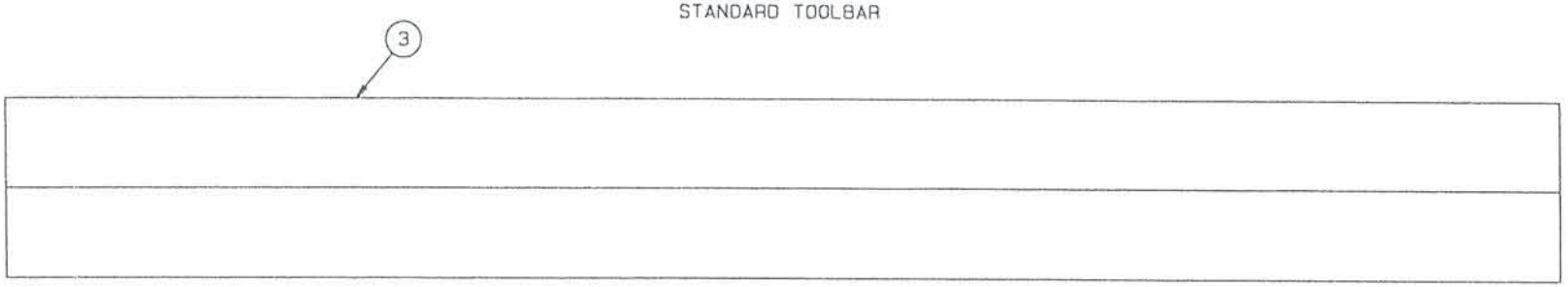
LOCKING COLLAR



SHAFT



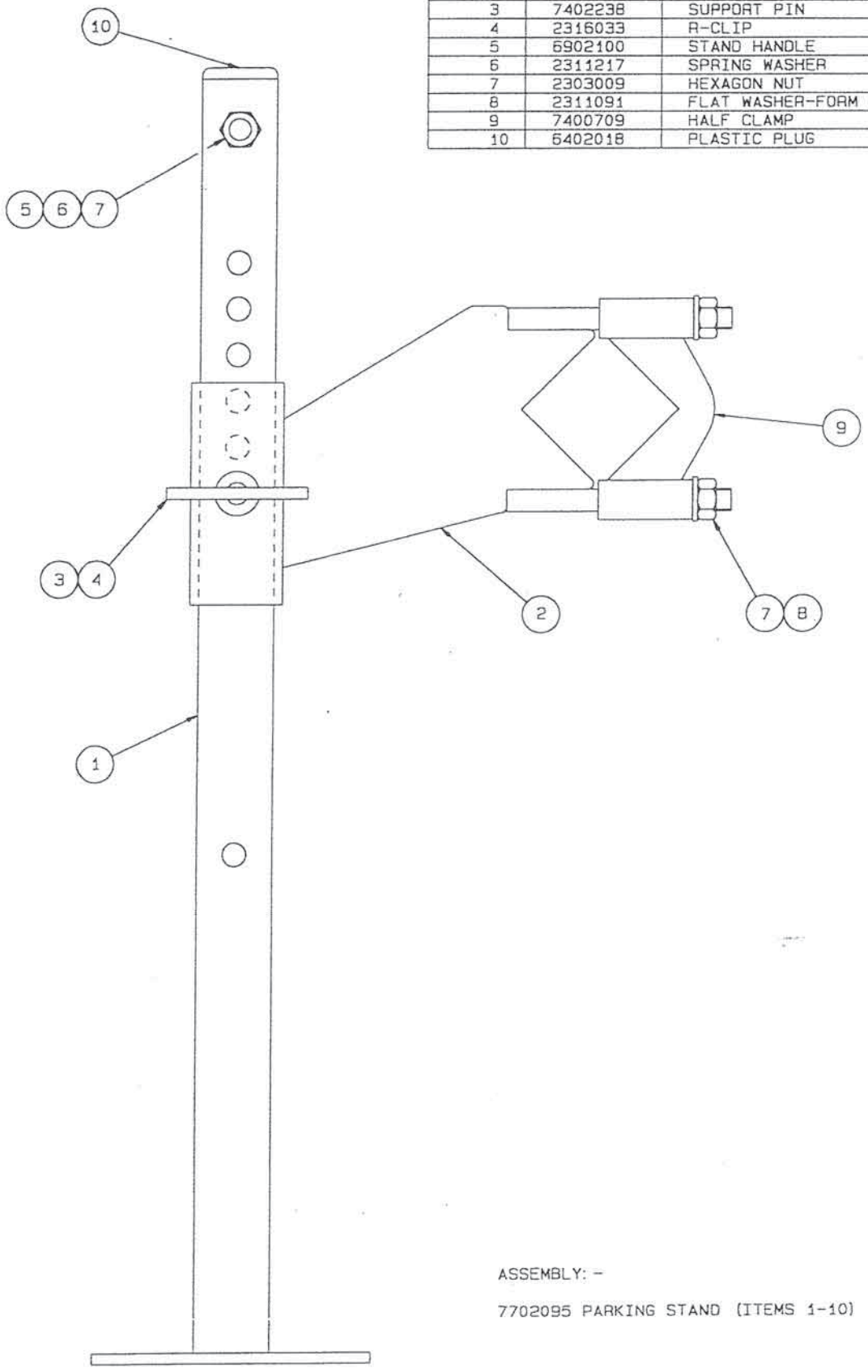
STANDARD TOOLBAR



HEAVY DUTY TOOLBAR

TOOLBARS & SHAFTS

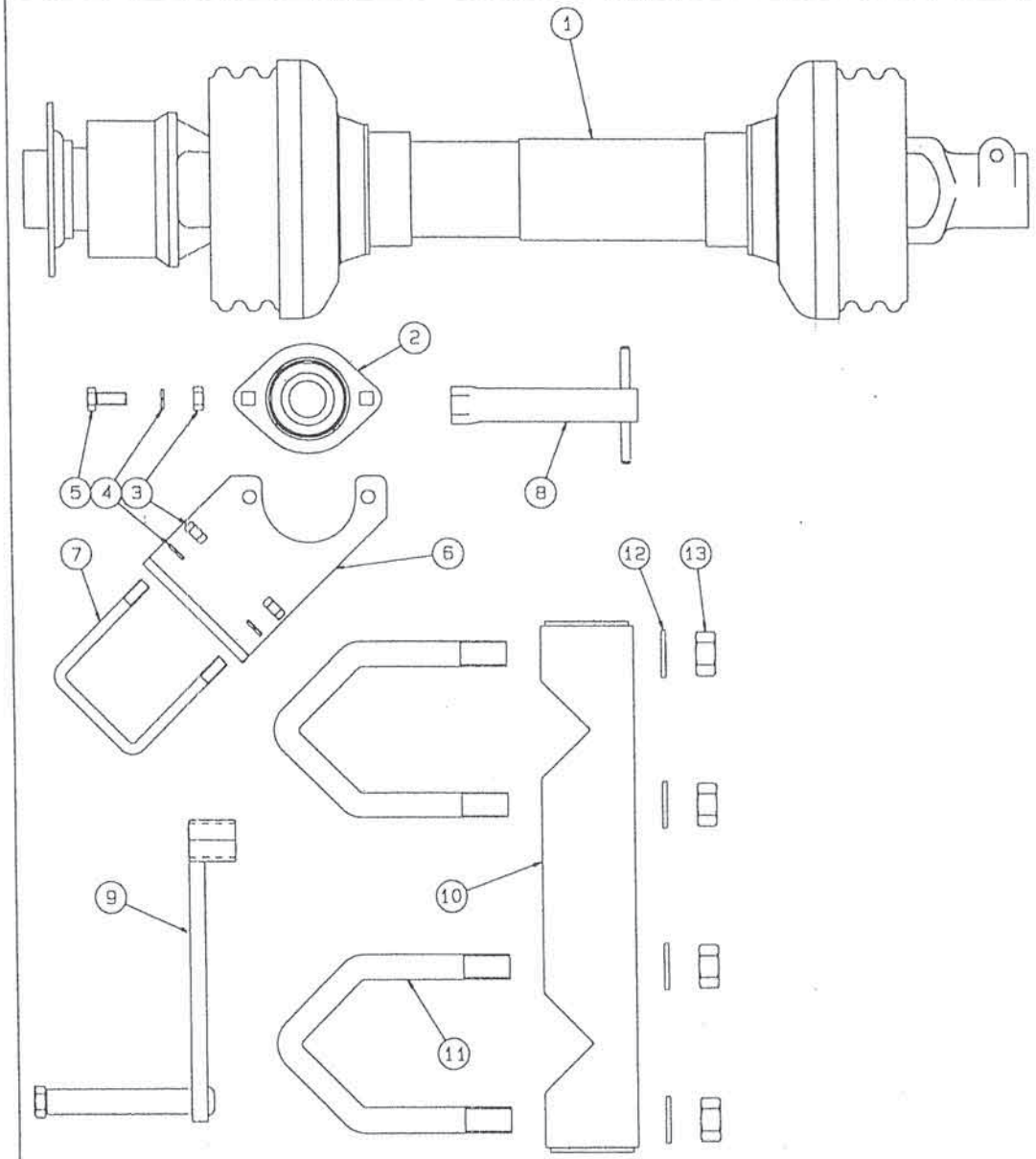
1	7402141	PARKING STAND	1
2	7402247	PARK.STAND BRACKET	1
3	7402238	SUPPORT PIN	1
4	2316033	R-CLIP	1
5	6902100	STAND HANDLE	1
6	2311217	SPRING WASHER	1
7	2303009	HEXAGON NUT	4
8	2311091	FLAT WASHER-FORM A	2
9	7400709	HALF CLAMP	1
10	5402018	PLASTIC PLUG	1



ASSEMBLY: -

7702095 PARKING STAND (ITEMS 1-10)

PARKING STAND



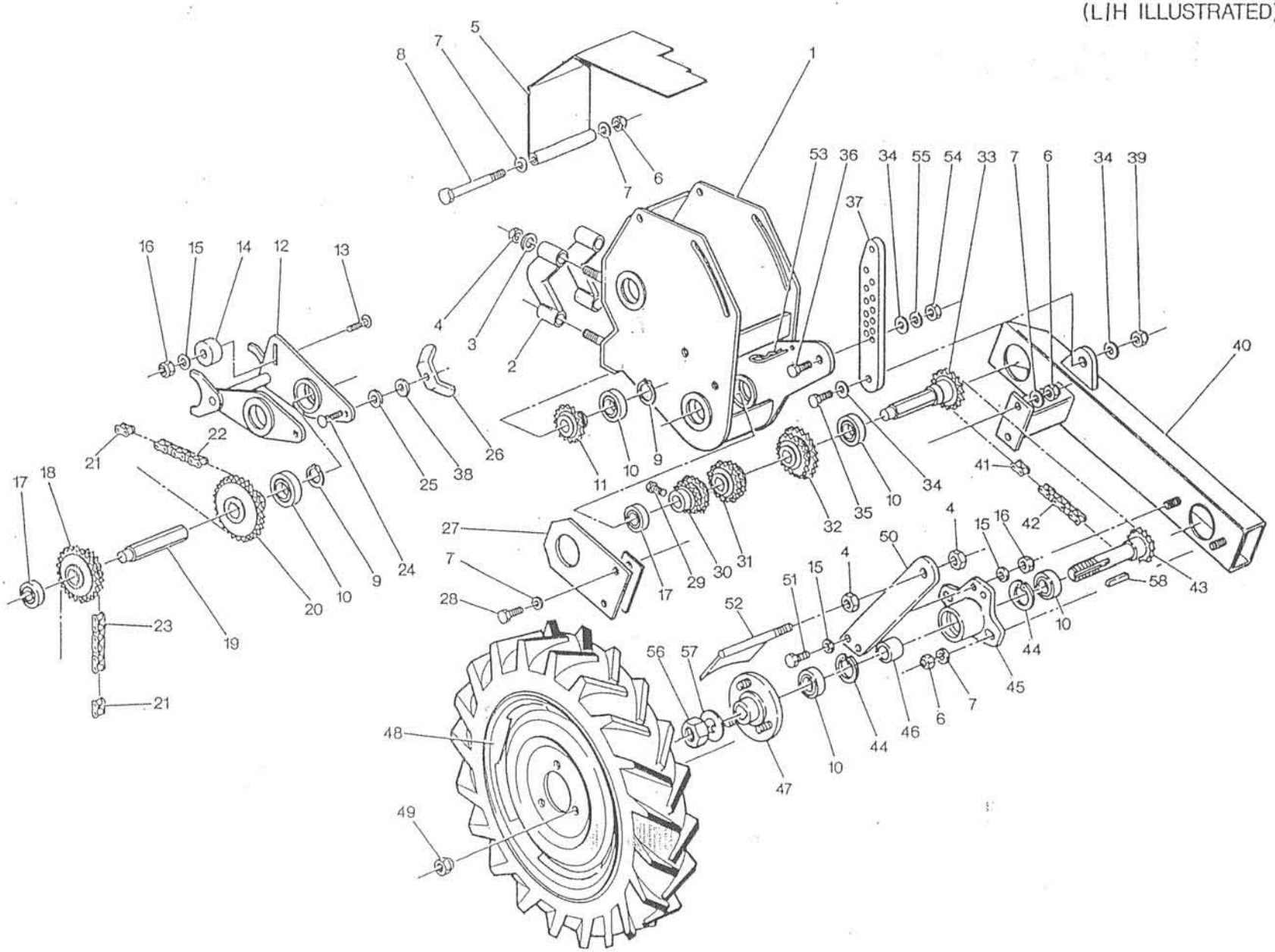
1	6416033	PTO SHAFT-610JC	1
2	8010027	BEARING + ITEMS 3, 4, 5	1
3	2303007	HEXAGON NUT	4
4	2311215	SPRING WASHER	4
5	2309048	HEXAGON SCREW	2
6	7400070	BEARING BRACKET	1
7	8002126	U-BOLT + ITEMS 3, 4	1
8	7402922	BOX SPANNER	1
9	7403037	CALIBRATION HANDLE	1
10	7403132	JOINING MEMBER-200 CRS	1
11	8002125	U-BOLT + ITEMS 12, 13	1
12	2311092	FLAT WASHER-FORM A	4
13	2303010	HEXAGON NUT	4

ASSEMBLIES & KITS: -

7700996 SHAFT BEARING ASSEMBLY (ITEMS 2-7)
8002781 JOINING MEMBER-200 CRS (ITEMS 10-13)

MISCELLANEOUS COMPONENTS

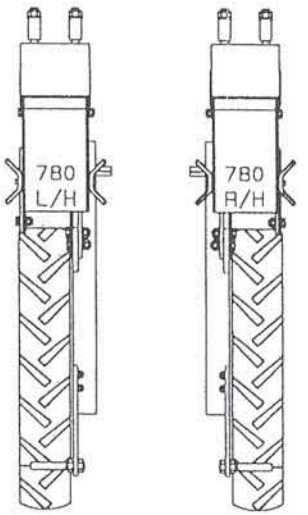
(L/H ILLUSTRATED)



4.00 – 16 TYRES

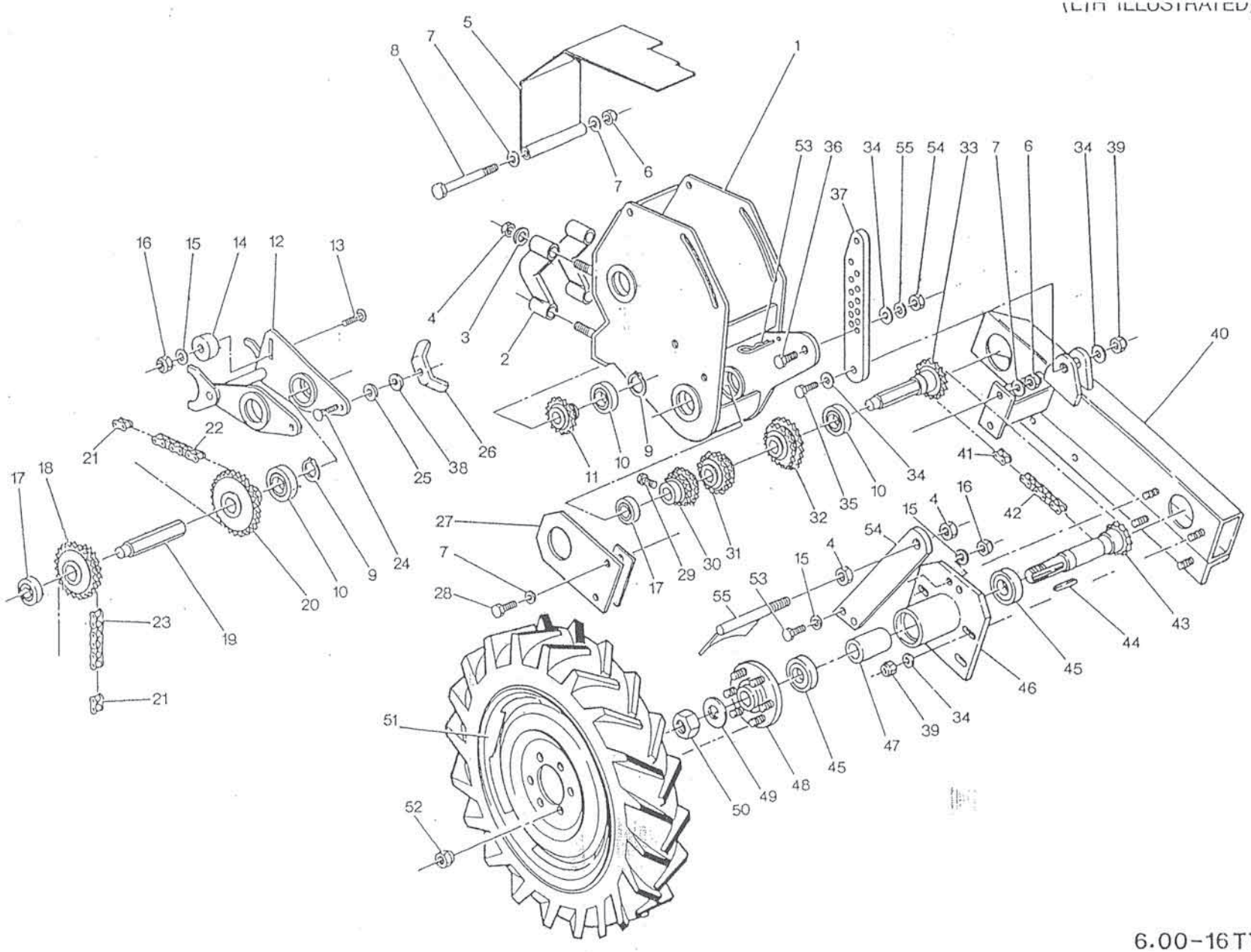
MASTER LANDWHEEL/GEARBOX - 60 X 60 TOOLBAR
4.00-16 TYRE

Item No:	Part No:	Description
1	7402719	Gearbox Body LH
	7402720	Gearbox Body RH
2	7402662	Clamp Half
3	2311092	Flat Washer-Form A
4	2303010	Hexagon Nut
5	7402445	Gearbox Lid LH
	7402840	Gearbox Lid RH
6	2303109	Nyloc Nut-Thin
7	2311090	Flat Washer-Form A
8	2306082	Hexagon Bolt
9	2217009	External Circlip
10	1901051	Ball Bearing
11	7402808	21T Driven Sprocket
	6902326	Shaft Support (non drill driving wheels only)
12	7402687	Adjuster Frame
13	2306466	Coach Bolt
14	6902235	Output Drive Jockey
15	2311089	Flat Washer-Form A
16	2303092	Nyloc Nut-Full
17	1901049	Ball Bearing
18	7703060	17/24T Sliding Sprocket
	1707090	13/30T Sliding Sprocket
	1707057	11T Sliding Sprocket
19	6902234	Output Shaft
20	7402807	19T Output Sprocket
21	1807101	Connecting Link (for items 22 & 23)
22	1807113	Chain-42 pitches
23	1807110	Chain-53 pitches
24	2306488	Coach Bolt
25	6902236	Quadrant Washer
26	6902742	Adjuster Frame Nut
27	6902229	Arm Pivot Plate
	6902325	Plate Packing (for adjustment)
28	2309063	Hexagon Screw
29	7403965	Locking Screw
30	1707083	16/17T Sprocket
31	1707084	18/19T Sprocket
32	1707085	20/21T Sprocket
33	7402467	16T Input Sprocket
34	2311091	Flat Washer-Form A
35	2306097	Hexagon Bolt
36	2306097	Hexagon Bolt
37	6902230	Wheel Stut
38	2311370	Flat Washer-form G
39	2303110	Nyloc Nut-Thin
40	7402434	Wheel Arm
41	1808065	Connecting Link
42	1808066	Chain-87 pitches
43	7403158	16T Wheel Spindle
44	2217208	Internal Circlip
45	3000657	Landwheel Hub
46	6902673	Bearing Spacer-Landwheel
47	7703048	Wheel Centre c/w Studs
	5700339	Wheel Stud
48	5700336	Landwheel LH
	5700335	Landwheel RH (c/w tyre & tube)
	5700333	Wheel
	5700334	Tyre
	5700335	Tube
49	5700340	Wheel Nut
50	6902239	Scraper Arm
51	2309049	Hexagon Screw
52	7402446	Landwheel Scraper
53	2316033	R-clip
54	2303009	Hexagon Nut
55	2311217	Spring Washer
56	2303013	Hexagon Nut
57	6902759	Tab Washer-Landwheel
58	6413059	Key-Wheel Spindle



ASSEMBLIES: -

7703053	Landwheel LH - 12 speed-Drill & Granyl drive
7703054	Landwheel RH - 12 speed-Drill & Granyl drive
7703155	Landwheel LH - 30 speed-Drill & Granyl drive
7703156	Landwheel RH - 30 speed-Drill & Granyl drive
7703049	Landwheel LH - Granyl drive
7703050	Landwheel RH - Granyl drive
7703396	Landwheel LH - Support-no drive
7703397	Landwheel RH - Support-no drive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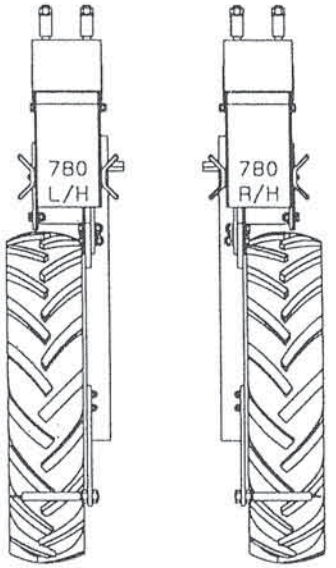
6.00-16 TYRES

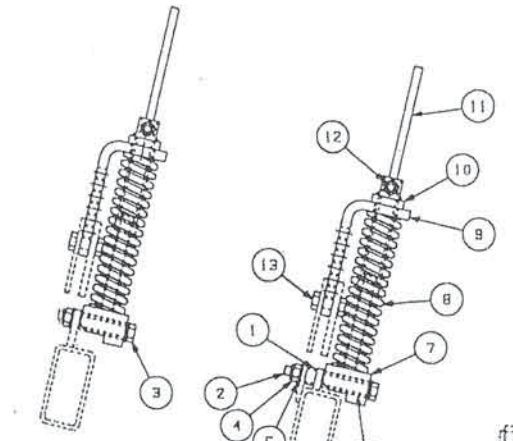
MASTER LANDWHEEL/GEARBOX - 60 X 60 TOOLBAR
6.00-16 TYRE

Item No:	Part No:	Description
1	7402719	Gearbox Body LH
	7402720	Gearbox Body RH
2	7402662	Clamp Half
3	2311092	Flat Washer-Form A
4	2303010	Hexagon Nut
5	7402445	Gearbox Lid LH
	7402840	Gearbox Lid RH
6	2303109	Nyloc Nut-Thin
7	2311090	Flat Washer-Form A
8	2306082	Hexagon Bolt
9	2217009	External Circlip
10	1901051	Ball Bearing
11	7402808	21T Driven Sprocket
	6902326	Shaft Support (non drill driving wheels only)
12	7402687	Adjuster Frame
13	2306466	Coach Bolt
14	6902235	Output Drive Jockey
15	2311089	Flat Washer-Form A
16	2303092	Nyloc Nut-Full
17	1901049	Ball Bearing
18	7703060	17/24T Sliding Sprocket
	1707090	13/30T Sliding Sprocket
	1707057	11T Sliding Sprocket
19	6902234	Output Shaft
20	7402807	19T Output Sprocket
21	1807101	Connecting Link (for items 22 & 23)
22	1807113	Chain-42 pitches
23	1807110	Chain-53 pitches
24	2306488	Coach Bolt
25	6902236	Quadrant Washer
26	6902742	Adjuster Frame Nut
27	6902229	Arm Pivot Plate
	6902325	Plate Packing (for adjustment)
28	2309063	Hexagon Screw
29	7403965	Locking Screw
30	1707083	16/17T Sprocket
31	1707084	18/19T Sprocket
32	1707085	20/21T Sprocket
33	7403044	14T Input Sprocket
34	2311091	Flat Washer-Form A
35	2306097	Hexagon Bolt
36	2306097	Hexagon Bolt
37	6902230	Wheel Stut
38	2311370	Flat Washer-form G
39	2303110	Nyloc Nut-Thin
40	7403042	Wheel Arm LH
	7403043	Wheel Arm RH
41	1808065	Connecting Link
42	1808071	Chain-95 pitches
43	7403217	16T Wheel Spindle
44	6413059	Key-Wheel Spindle
45	1901053	Ball Bearing
46	7403154	Wheel Hub
47	6902758	Bearing Spacer-LWHD
	5700339	Wheel Stud
48	7703133	Wheel Centre c/w Studs
	5700371	Wheel Stud
49	6902759	Tab Washer-Landwheel
50	2303013	Hexagon Nut
51	5700377	Landwheel LH
	5700378	Landwheel RH (c/w tyre & tube)
	5700379	Wheel - 6 stud
	5700356	Tyre 6.00-16
	5700357	Tube
52	5700372	Wheel Nut
53	2309049	Hexagon Screw
54	6902674	Scraper Arm
55	7403046	Landwheel Scraper

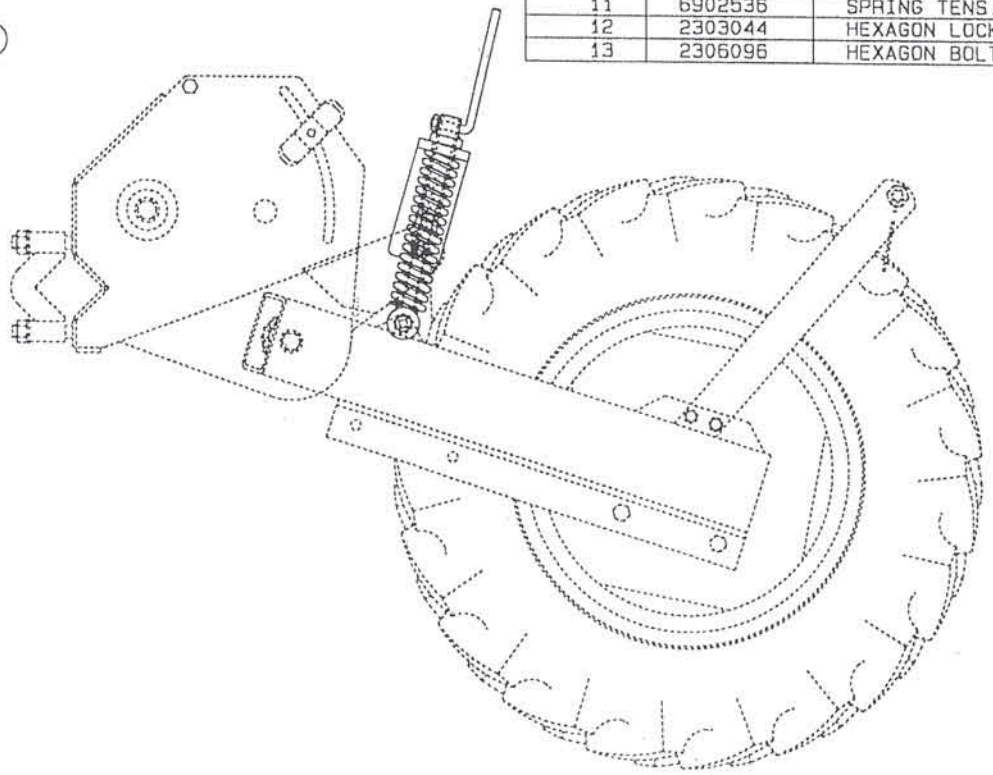


ASSEMBLIES: -

7702932	Landwheel LH - 30 speed-Drill & Granyl drive
7702933	Landwheel RH - 30 speed-Drill & Granyl drive
7702928	Landwheel LH - Granyl drive
7702929	Landwheel RH - Granyl drive
7703398	Landwheel LH - Support-no drive
7703399	Landwheel RH - Support-no drive



WILL FIT BOTH LEFT HAND
AND RIGHT HAND WHEEL



XL WHEEL	1	6903616	ARM LUG SPACER	1
XL WHEEL	2	2306107	HEXAGON BOLT	1
STD WHEEL	3	2306105	HEXAGON BOLT	1
	4	2303110	NYLOC NUT-THIN	2
	5	2311091	FLAT WASHER-FORM A	2
	6	6902537	PIVOT BUSH	1
	7	7402837	P.ARM & ADJUST.-WA	1
	8	2701056	COMPRESSION SPRING	1
	9	6902689	SPRING LOADING ARM	1
	10	7402838	SPRING LOCATOR-WA	1
	11	6902536	SPRING TENS.HANDLE	1
	12	2303044	HEXAGON LOCKNUT	1
	13	2306096	HEXAGON BOLT	1

MASTER LANDWHEEL/GEARBOX
SPRING LOADING CONVERSION

KIT: -8002538 (ALL ITEMS)

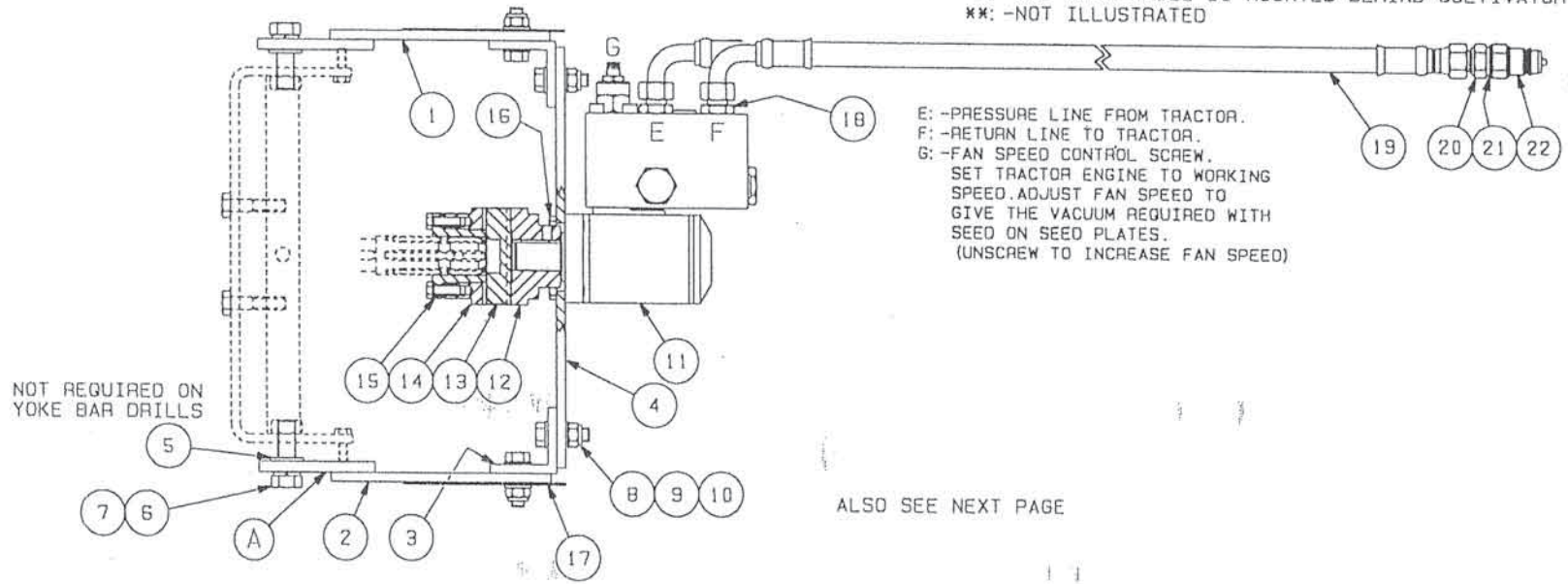
ASSEMBLY INSTRUCTIONS

1. FIT ARMS Ⓐ TO FAN UNIT AS SQUARELY AS POSSIBLE AND TIGHTEN BOLTS.
2. ASSEMBLE SPLINED HUB (ITEM 15, 8) AND COUPLING HALF (ITEM 14) AS BELOW. THOROUGHLY CLEAN COMPONENTS WITH A SOFT DRY CLOTH, UNDER NO CIRCUMSTANCES USING OIL OR ANY OTHER FORM OF LUBRICANT, AND TIGHTEN THE SCREWS FINGER-TIGHT.
3. SLIDE THE ASSEMBLY ONTO THE FAN DRIVE SHAFT AND POSITION THE END OF THE HUB FLUSH WITH THE END OF THE SHAFT AS SHOWN AT Ⓑ. DO NOT TIGHTEN SCREWS YET.
4. FIT THE HYDRAULIC MOTOR TO THE MOUNTING PLATE AND TIGHTEN THE 4 SCREWS.
5. SLIDE THE MOTOR COUPLING HALF Ⓒ ONTO THE MOTOR SHAFT AS FAR AS IT WILL GO AND TIGHTEN THE GRUB SCREW.
6. USING THE ANGLE CORNER BRACKETS, LOOSELY FIT ASSEMBLY BETWEEN THE ARMS Ⓐ WHILE POSITIONING THE RUBBER SPIDER (ITEM 13) BETWEEN THE COUPLING HALVES, WITH THE 35MM DIAMETER RECESS IN THE CENTRE OF THE SPIDER TOWARDS THE SPLINED SHAFT.
7. PUSH THE COMPLETE ASSEMBLY TOWARDS THE FAN UNIT, ENSURE THE COUPLING IS IN LINE, AND TIGHTEN BOLTS IN CORNER BRACKETS.
8. SLIDE THE SPLINED HUB AND COUPLING ASSEMBLY TOWARDS THE MOTOR HALF UNTIL THE END OF THE SPLINED HUB IS TIGHTLY AGAINST THE RUBBER SPIDER AND, HOLDING THE HUB IN POSITION, PROGRESSIVELY TIGHTEN THE 3 SCREWS TO TORQUE OF 16 FT.LBS. A GAP OF ABOUT 4MM BETWEEN THE RUBBER SPIDER AND THE FAN COUPLING WILL DEVELOP WHERE SHOWN AT Ⓓ.

NOTE: TO REMOVE THE COUPLING FROM THE FAN DRIVE SHAFT, REMOVE THE THREE SCREWS AND INSERT THEM IN THE TWO TAPPED HOLES IN THE FLANGE OF THE SPLINED HUB. TIGHTEN PROGRESSIVELY UNTIL ASSEMBLY DISENGAGES.

	1	7403763	H.D SIDEPLATE-LH-WA	1
	2	7403767	H.D SIDEPLATE-RH-WA	1
	3	6903400	CORNER BRACKET	2
	4	6903401	MOTOR MOUNTING PLATE	1
	5	2311092	FLAT WASHER-FORM A	4
	6	2311218	SPRING WASHER	4
	7	2306128	HEXAGON BOLT	4
	8	2311091	FLAT WASHER-FORM A	16
	9	2306096	HEXAGON BOLT	8
	10	2303110	NYLOC NUT-THIN	8
	11	4102007	HYD.MOTOR & VAVLE	1
	12	6903402	MOTOR COUPLING	1
	13	6405037	COUPLING SPIDER	1
	14	6405038	SHAFT COUPLING-OUTER	1
	15	6405039	SHAFT COUPLING-INNER	1
	16	2308061	HEXAGON SCREW	4
	17	6903403	HYD.DRIVE GUARD	1
	18	4107121	MOTOR/HOSE ADAPTOR	2
	19	4106001	HYD.HOSE-1650 LONG	2
*		4106193	HYD.HOSE-5000 LONG	2
	20	4107003	MALE/MALE ADAPTOR	2
	21	4003007	DOWTY WASHER	2
	22	4107100	BREAK-AWAY COUPLING	2
**	23	6903404	FAN GUARD-HYD.DRIVE	1

*: -USE WHEN DRILL IS MOUNTED BEHIND CULTIVATOR
**: -NOT ILLUSTRATED

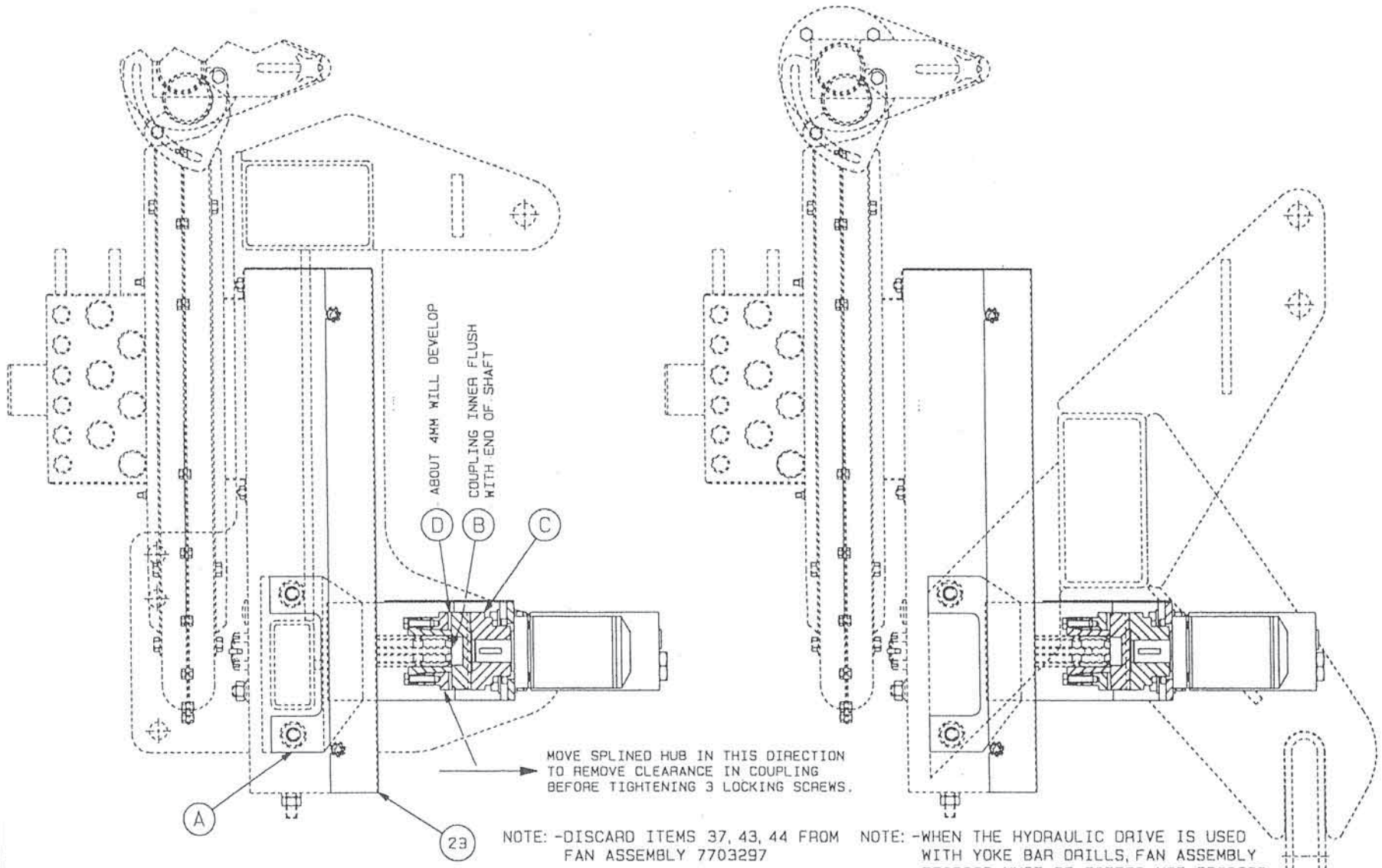


E: -PRESSURE LINE FROM TRACTOR.
F: -RETURN LINE TO TRACTOR.
G: -FAN SPEED CONTROL SCREW. SET TRACTOR ENGINE TO WORKING SPEED. ADJUST FAN SPEED TO GIVE THE VACUUM REQUIRED WITH SEED ON SEED PLATES. (UNSCREW TO INCREASE FAN SPEED)

ALSO SEE NEXT PAGE

HYDRAULIC DRIVE FOR 12 PORT FAN

KIT: -8003269 (ALL ITEMS) (TRACTOR MOUNTED)
8003459 (ALL ITEMS) (CULTIVATOR MOUNTED)

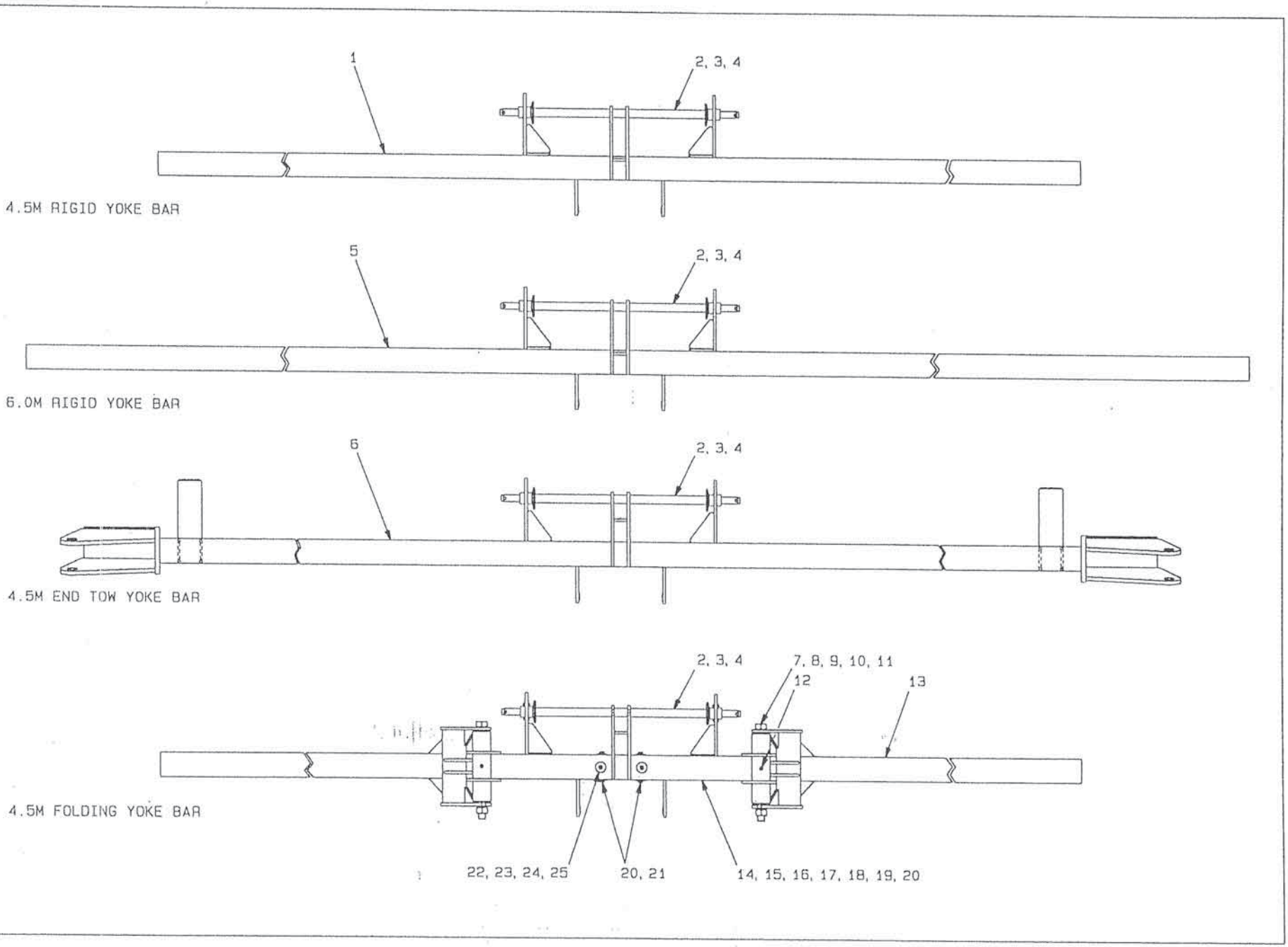


NOTE: -DISCARD ITEMS 37, 43, 44 FROM FAN ASSEMBLY 7703297

NOTE: -WHEN THE HYDRAULIC DRIVE IS USED WITH YOKE BAR DRILLS, FAN ASSEMBLY 7703297 MUST BE FITTED-NOT 7703388

HYDRAULIC DRIVE - SIDE VIEW

ALSO SEE PREVIOUS PAGE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2, 3, 4
4.5M RIGID YOKE BAR
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6.0M RIGID YOKE BAR
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2, 3, 4
4.5M END TOW YOKE BAR
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7, 8, 9, 10, 11
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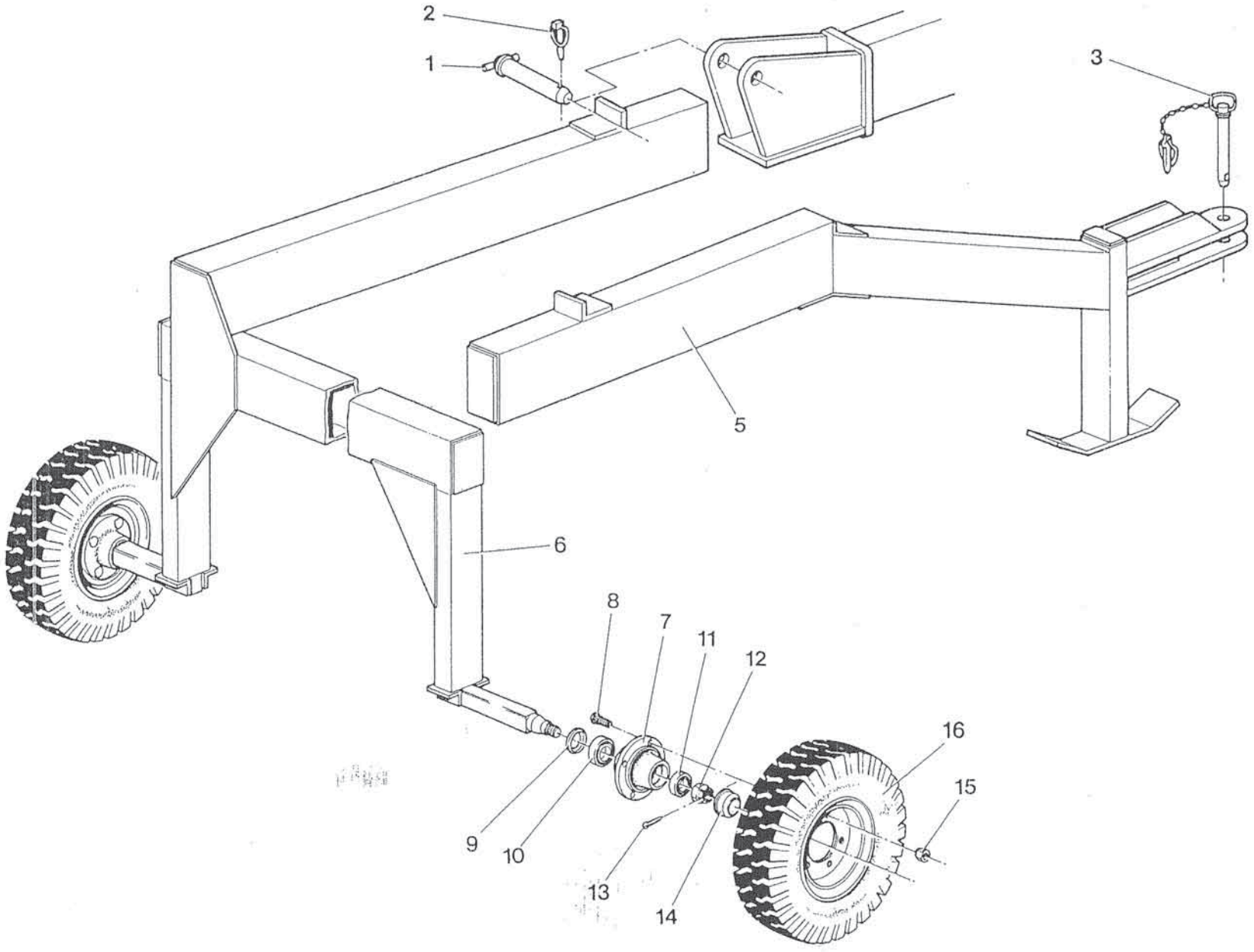
13
4.5M FOLDING YOKE BAR
22, 23, 24, 25
20, 21
14, 15, 16, 17, 18, 19, 20

YOKE BARS

Item No:	Part No:	Description	Item No:	Part No:	Description
1	7403527	4.5M Rigid Yoke Bar-WA	14	7403524	F.Yoke Bar Centre-WA
2	2303095	Nyloc Nut-full	15	4105065	Hydraulic Ram
3	2306131	Hexagon Bolt	16	4003004	Dowty Washer
4	7402581	Lower Hitch Pin-WA	17	7002016	Ram Pin-S
5	7403526	6.0M Rigid Yoke Bar-WA	18	4107122	Adaptor Restrictor
6	7403528	4.5M End Tow Yoke Bar-WA	19	2314801	Towing Pin
7	6902242	Hinge Bush	20	2215586	Split Pin
8	6902243	Hinge Spacer	21	7002015	Ram Pin-L
9	7402579	Hinge Bolt-WA	22	4003007	Dowty Washer
10	2303013	Hexagon Bolt	23	4107016	Male/Male Adaptor
11	2311221	Spring Washer	24	4107100	Break-Away Coupling
12	6401006	Straight Greaser	25	4106175	Hyd. Hose-1550 long
13	7402646	Folding Yoke Bar Wing-WA			

ASSEMBLIES AND KITS

7703392	4.5M Rigid Yoke Bar Assembly
7703391	6.0M Rigid Yoke Bar Assembly
7703393	4.5M End Tow Assembly (LH for UK)
7703879	4.5M Ens Tow Assembly (RH for Europe)
8003120	4.5M Folding Yoke Bar 3 Bar Kit (state tractor wheel track)
4004024	Seal Kit (For Item 15)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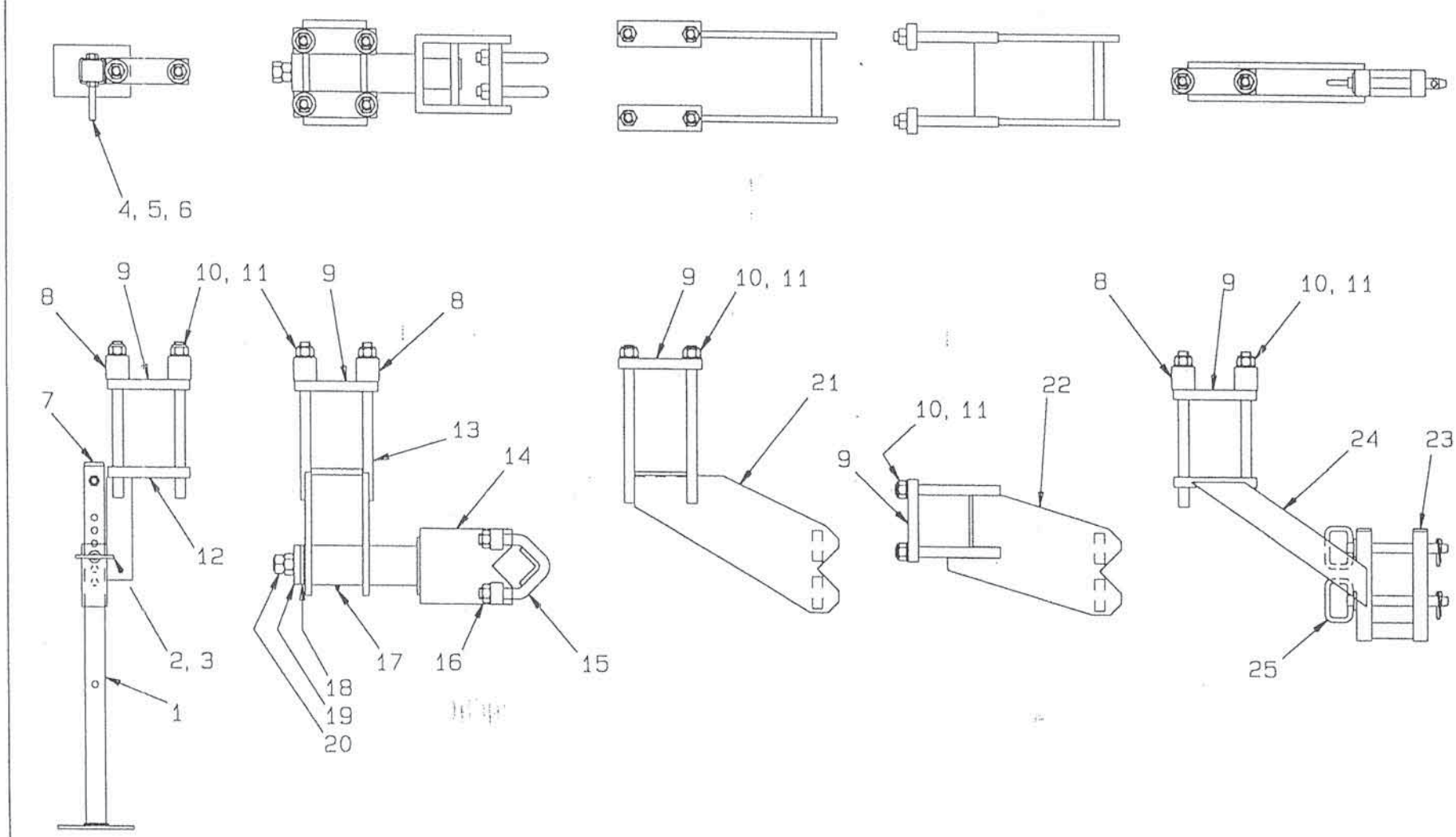
END TOW DRAWBAR AND WHEEL FRAME

Item No:	Part No:	Description
1	7402516	End Tow Pin-WA
2	2314756	Linch Pin
3	2314801	Towing Pin
4	7403528	4.5M End Tow Yoke Bar-WA
5	7402514	End Tow Drawbar-WA (LH for UK) (illustrated)
	7403717	End Tow Drawbar-WA (RH for Europe)
6	7402515	End Tow Wheel Frame-WA (LH for UK) (illustrated)
	7403716	End Tow Wheel Frame-WA (RH for Europe)
7	5700305	Wheel Hub (c/w 8)
8	5700193	Wheel Nut
9	5700304	Seal
10	1903006	Taper Bearing
11	1903004	Taper Bearing
12	5700306	Castle Stud
13	2215634	Split Pin
14	5700307	Dust Cover
15	5700194	Wheel Nut
16	5700229	Wheel, Tyre and Tube
	5700338	Wheel Only
	5700214	Tyre
	5700009	Tube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PARKING STAND, PIVOTS, FIXED BRACKETS AND PIVOT LIMITERS
60 X 60 TOOLBAR

Item No:	Part No:	Description	Item No:	Part No:	Description
1	7402141	Parking Stand-WA	14	7402863	Pivot Spindle-WA
2	7402238	Support Pin-WA	15	7402275	U Bolt-WA
3	2316033	R-Clip	16	2303011	Hexagon Nut
4	6902100	Stand Handle	17	6401006	Straight Greaser
5	2303009	Hexagon Nut	18	6902241	Thrust Washer
6	2311217	Spring Washer	19	7402453	Pivot Nut-WA
7	6402018	Plastic Insert	20	2303012	Hexagon Nut
8	6902579	Spacer	21	7402893	RYB Fixed Bracket-WA
9	6902555	Clasp Plate	22	7402892	FYB Fixed Bracket-WA
10	2303096	Nyloc Nut-full	23	6402036	Plastic Insert
11	2311093	Flat Washer-form A	24	7402902	Pivot Limiter-WA
12	7402923	Stand Bracket-WA	25	2314802	Towing Pin
13	7402862	Pivot Hub-WA			

FYB = Folding Yoke Bar
RYB = Rigid Yoke Bar
Item 8 not required on RYB machines

ASSEMBLIES: -

7702836	FYB Parking Stand Assembly (Items 1-12)
7702837	RYB Parking Stand Assembly (Items 1-7, 9-12)
7702739	FYB Pivot Assembly (Items 8-11, 13-20)
7702740	RYB Pivot Assembly (Items 9-11, 13-20)
7702803	RYB Fixed Bracket (3 bar machines) (Items 9-11, 21)
7702802	FYB Fixed Bracket (3 bar machines) (Items 9-11, 22)
7702813	FYB Pivot Limiter Assembly (Items 8-11, 23-25)
7702814	RYB Pivot Limiter Assembly (Items 9-11, 23-25)

STANHAY WEBB WARRANTY POLICY

STANHAY
PRECISION SEEDERS

LIMITATION OF LIABILITY

1. Stanhay Webb Ltd (the Company) does not give any Warranty in respect of its products except the limited Warranty contained in paragraphs 3-5 below which is expressly in lieu of all other warranties or conditions expressed or implied and of all other obligations or liabilities on its part. **The company supplies its products on the express condition that the purchaser is solely responsible for determining the suitability of the product for his requirements and conditions of use.** Stanhay Webb will in no event be liable for any incidental or consequential damages of any nature or source allegedly incurred through defects, incorrect operation, or loss of use of the product, whatsoever, nor for any sum in excess of the price received by the Company for the goods for which liability is claimed. **The Company is not responsible for the performance of its products: it is the purchaser's sole responsibility to ensure that any Stanhay Webb product is performing to his satisfaction at all times, and this responsibility overrides absolutely any suggestions or assistance offered in good faith by the Company or its agents.**

2. Stanhay Webb operates a policy of continuous improvement, and reserves the right to change specifications at any time without prior notice, and without incurring any obligations to make such changes to products previously purchased.

LIMITED WARRANTY

3. Stanhay Webb Ltd warrants to its authorised Distributor or Dealer all new products supplied of its manufacture, when correctly assembled, operated and serviced, to be free from defects in material and workmanship, for a period of nine (9) months (the warranty period) after the date of delivery by the Distributor or Dealer to the original retail purchaser. Its obligations under this Warranty are limited to making good on products for which payment to the Company is not overdue any part or parts (excluding normal wear) of its own manufacture which shall have been reported in writing to the Company within thirty (30) days from date of failure thereof, and which the Company's examination shall disclose to its satisfaction to have been defective. Stanhay Webb repair parts are warranted similarly to ninety (90) days from date of replacement or for the unexpired warranty period of the applicable Stanhay Webb machine, whichever is the longer.

4. Due to the particular nature of Stanhay Webb products, this Warranty is void absolutely if any part not supplied by the Company is used in assembly or repair, or if the product has been altered, assembled, repaired or used in any way, configuration or conditions differing from the written recommendations and instructions of the Company (whose decision is final).

5. In the event of components supplied by Stanhay Webb not of its own manufacture for which payment to the Company is not overdue being reported in writing as defective during the warranty period, Stanhay Webb will endeavour to claim against the manufacturer of such components and in the event of any claim being successful will pass the benefit on to the customer.

CONDITIONS OF SUPPLY

6. No warranties other than those expressly noted herein are given, and no one is authorized to alter, modify or enlarge this Warranty beyond the warranties expressed.

7. This product is supplied subject to the Terms of Trading of Stanhay Webb Ltd as reproduced on the inside covers of the Company's price list.

NOTE: WARRANTY REGISTRATION FORM MUST BE RETURNED TO STANHAY WEBB LIMITED. WARRANTY VOID IF MACHINE IS NOT REGISTERED.

EC DECLIRATION OF CONFORMITY

Type of machine	:	Precision Seed Planting Machine
Name of model	:	Singulaire 780
Serial Number:		
Number of rows	:	
Manufacturer	:	Stanhay Webb Ltd. Houghton Road, Grantham, Lincs, NG31 6JE

Tel: +44 (0)1476 515406
Fax: +44 (0)1476 515407

.....
Technical Director

We, the manufacturers, hereby declare that this machine, when assembled to our design, conforms with the Essential Health and Safety Requirements of the European Union.

Wij, de fabrikanten, verklaren hierbij dat deze uitrusting, indien opgebouwd volgens ons ontwerp, voldoet aan de gezondhieds an veiligheids voorschriften van de Eurpese Unie.

Assemblé conformement à nos ordres, nous, les fabricants, déclarons que cette machine répond aux normes d'Hygiene et Sécurité au Travail de la CE.

Noi, I fabbricanti, dichiariamo che questo maccinario, quando montato secondo il nostro disegno, si conforma ai requisiti essenzilai di salute e di sicurezza della Comunità Europea.

Wenn diese Maschine entsprechend unserer Konstruktion zussammengesetzt wird, eklären wir, daß sie den Arbeitsschutzvorschriftern der Europäischen Gemeinschaft entspricht.

Nosotros los fabricantes declaramos que este equipo, realizando el montaje segun nuestro diseño, se ajusta a las reglas esenciales de salud y seguridad de la Union Europea.

Vi, fabrikanten, erklærer hermed at denne maskine, når den er monteret ifølge vores konstruktion, er I overensstemmelse med de essentielle sundhed og sikkerhedskrav indefor EU.

Me valmistajana iloitamme täten, että ohjeittemme mukaisesti asennettuna tämä kone täyttää Euroopan Unionin olennaiset terveys- ja turvallisuusvaatimukset.

Nós os fabricantes declaramos que este equipamento, quando montado conforme nosso desenho, ajusta-se às regras essenciais de saúde e segurança da Comunidade Europeia.

Tillverkaren försäkrar härmed att denna maskin, efter sammansättning enligt vår konstruktion, uppfyller hälsooch säkerhetskrav inom EU.

PRECISION DRILL WARRANTY REGISTRATION FORM

Demonstration ☐ Installation ☐ Date .....

Conducted by (name)..... (dealer).....

for (grower's name)..... (address).....

.....

(contact) ..... (tel no.) .....

Conducted at (location)..... In barn/yard/field

Machine Model No:	Serial No:	No of rows:
Crop type:	Area drilled:	
Chosen disc:	selector wheel:	
seedbelt:	gear setting:	

ACKNOWLEDGEMENT BY PURCHASER

This acknowledgement is to be completed for every new drill to validate warranty.

1. The following checks and settings have been explained to me:

All drills		As appropriate	
Row spacing	☐	Pivots and limiters	☐
Setting charts	☐	Transport system	☐
Metering units	☐	Bout markers	☐
Drive system	☐	Clod deflectors	☐
Toolbar height	☐	Seedpress wheels	☐
Tractor top link	☐	Power take off	☐
Drilling depth	☐	Fan	☐
Field checks	☐	Gauges	☐
Maintenance	☐		

2. I acknowledge that the Stanhay Webb Warranty Policy applies to this drill and in particular I acknowledge that I (not Stanhay or my dealer) am responsible for ensuring that it is performing to my satisfaction.

Signed: .....

Date: .....

THANK YOU FOR YOUR CO-OPERATION

STANHAY PRECISION SEEDERS

Stanhay Webb Limited
Houghton Road, Grantham, Lincs, NG31 6JE
Tel: 01476 515406 Fax: 01476 515407

(After completion, this form to be retained by the selling dealer, and copied to Stanhay.)