



FLAIL TOPPER MK2

Machines from Serial No. FT2500

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EU & UKCA Declaration of Conformity

According to the Machinery Directive 2006 / 42 / EC
& The Supply of Machinery (Safety) Regulations 2008

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We declare that the product, described below, meets the requirements of the above mentioned directive and has been assessed against and complies with the essential safety requirements application as specified in the Standards listed here.

Model	Flail Topper
Serial No.	FT2.....

British Standards used in the implementation of this certificate

BS EN ISO 12100-1
BS EN ISO 12100-2
BS EN ISO 13857

Place of Issue: Standen Engineering Limited, Station Road, Ely,
Cambridgeshire, UK



M R Gammon - Technical Manager
For Standen Engineering Limited

IMPORTANT

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

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

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

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

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Introduction to the Handbook

This handbook provides the information for the operation, adjustment and maintenance of your Standen Flail Topper Mk2. To enable you to achieve the best results from the machine, the manufacturer recommends that you read the handbook thoroughly prior to using the machine for the first time.

Record below the details of your machine.

Dealers name.....

Address.....

.....

Telephone number.....

Machine serial number.....

Date purchased.....

Date started work.....



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

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

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

Recommended lubrication and maintenance instructions are included in this handbook and if followed will help to keep the machine in a safe working condition.

Warranty

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

Replacement Parts

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

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

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

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

Safety

The Standen Flail Topper Mk2 has been designed to comply with current Safety Regulations. However, as with all machinery there will be inherent dangers whilst operating and carrying out maintenance on the machine. The following list of precautions should therefore be brought to the attention of all persons operating and working on the machine. The list is not exhaustive. All machinery is potentially dangerous and great care must be exercised by the operators at all times. Standen Engineering Limited will not accept liability for damage or injury caused by their products except when such liability is specifically imposed by English statute.



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

The tractor must be of a suitable size to lift the implement safely. This may entail the fitting of front weights to counterbalance the machine when in the raised position.

Always check that the machine has been correctly mounted to the tractor before setting off on operations and the stabilizers are correctly set.

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

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

In dry, dusty conditions it is prudent to use a tractor with an enclosed cab.

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

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

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

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

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



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

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

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

Never reverse or turn unless the machine is in the raised position.

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

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

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

Never operate the machine in a state of disrepair.

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

Never work on or pass under the machine when it is raised on the tractor hydraulics. Always lower the machine onto solid supports to avoid the implement dropping suddenly.

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

Regularly lubricate the machine as per the operator's handbook and check the tightness of all nuts and bolts, particularly those securing the rotor blades/tines.

Always use mechanical or additional help when lifting heavy parts.

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

Flail Topper Mk2

The Standen Flail Topper Mk2 is a heavy-duty topper for use with green desiccated tops. It can be used to top potatoes, onions, bulbs, carrots and beet. The topper can be front mounted (on tractors with front PTO shaft) or rear mounted.

A bank of contoured flails cut and sweep up whatever top is present, including material lying between the ridges. From the flails the tops are transferred onto a cross conveyor which delivers the tops into a windrow beside the topper. An extension belt can be fitted to deliver the tops two rows over for use with a two-stage system.



Before operating the machine, check that all nuts and bolts are tight, particularly those securing the rotor blades.



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



Always disengage the flail topper drive before lifting the machine out of work and never operate the machine when fully raised on the tractor 3-point linkage.

Tractor Suitability

The power requirement for the Flail Topper is 20hp minimum at the tractor PTO.



The tractor must be of a suitable size to lift the implement safely. This may entail the fitting of front weights to counterbalance the machine when in the raised position.

Tractor Wheel Setting

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



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

Attaching the Topper to the Tractor

The Flail Topper is designed to be mounted onto the tractor 3-point linkage using category 2 pins. The tractor lower link arms should be set to ensure the machine runs central to the tractor. The top link should be adjusted so that the topper runs parallel to the ground while in work. The support legs on the rear of the topper should be raised into their working position before putting the machine into work.



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



Before setting off on operations, ensure the machine has been correctly mounted to the tractor and the stabilizers correctly set.

PTO Shaft



It is essential that the PTO shaft is matched to the tractor to give the correct driveline and to ensure that it is safe in work. An incorrectly fitted or badly guarded PTO shaft can be lethal. Do not take chances.

The PTO shaft supplied with the machine may require cutting to the correct length to suit individual tractors but should be kept as long as possible in all cases. To do this:

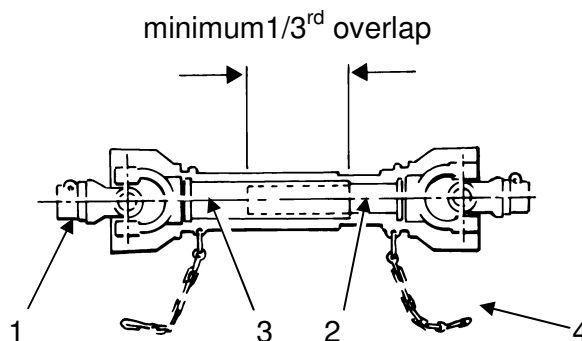


Figure 1

Part the two ends of the shaft and fit the end with the over-run clutch (item 1, figure 1) to the Flail Topper gearbox. Attach the other end to the tractor. The male shaft (item 2 figure 1) and female shaft (item 3, figure 1) can now be measured alongside each other. Cut the surplus length equally from both male and female drive tubes and guards.



Ensure a minimum of 1/3rd overlap and check that there is no possibility of the shafts butting up when the tractor linkage is raised.

Grease the shafts to enable them to move correctly when in work. Reassemble the shaft and check the PTO shaft does not foul any part of the machine or tractor. Inspect all guards to make sure they are fitted correctly and are not damaged. Finally, attach the safety chains (item 4, figure 1) to secure points on the tractor and machine ensuring that the chains will not overtighten when the machine is raised.

Refer to the manufacturer's instructions; these are fitted to all PTO shafts when the machine is delivered.

Flails

The flails are contoured to match the ridges for the cleanest results. The contoured effect is achieved by using different length flails (short flails being used over the ridge). Setting the topper for different rows will require the flails to be repositioned. When repositioning or replacing flails always ensure they are securely fitted. The nuts are fitted with nylon locking material and for this reason it is recommended that the nuts be renewed after they have been removed or fitted twice.



Never set the topper such that the flails touch the soil as damage to the flails will ensue.



When repositioning the flails always ensure the flails match each other on either side of the flail shaft. Failure to do so will result in the machine being out of balance.

The drive for the flail shaft is transmitted by the centrally mounted gearbox via four V' belts. Besides providing a drive the belts also act as a slip clutch. It is therefore important that the belt tension is sufficient to drive normally without slip but not so great that the belt cannot slip when the flails are obstructed. To adjust the V' belt tension reposition the adjuster (item 1, figure 2). The correct adjustment should allow 10-12mm of deflection of the belts at appoint mid way between the pulleys.

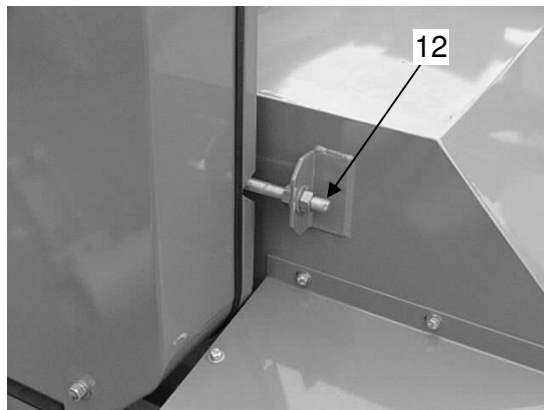


Figure 2

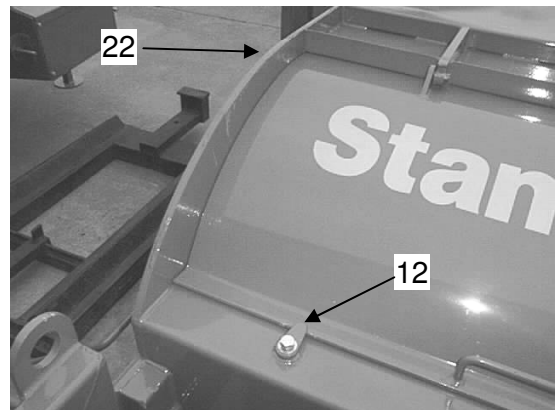


Figure 3

Flail Shaft Access Doors

Each access door is locked by two catch plates (item 1, figure 3). Ensure the doors are closed and locked before operating the machine. For maintenance reasons the doors can be locked in the open position by opening the door and then lifting the door lock handle (item 2, figure 3) and rotating it through 90°.

Depth Wheels

The amount of tops removed from the crop is determined by the setting of the depth wheels (item 1, figure 4). The amount of tops removed depends upon the crop being topped. To adjust the depth wheels raise the depth handle (item 2, figure 4) and turn it in the required direction.

The wheels are also adjustable for different row settings. The wheels are designed to run between the rows and should be positioned to straddle two rows of the crop. To adjust, slacken the U' bolts (item 3, figure 4) and slide the wheel assembly to the required position.

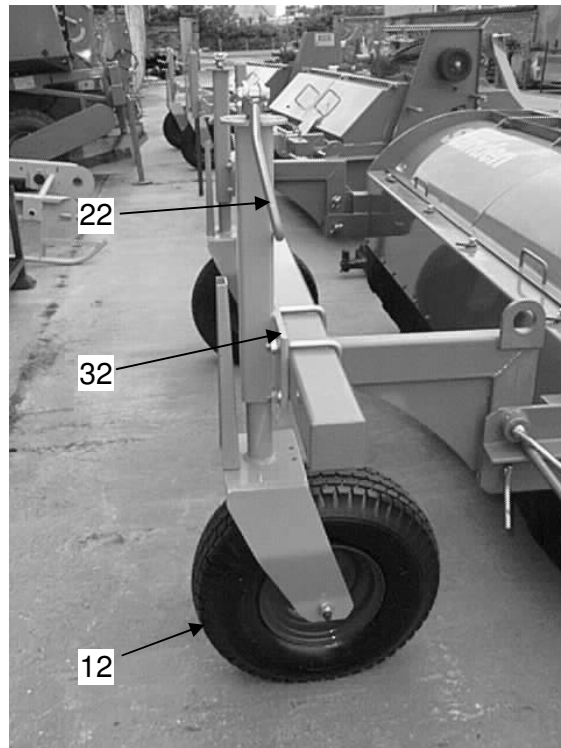


Figure 4

Cross Conveyor

The cross conveyor belt is adjustable for tension. To adjust reposition the roller adjusters (item 1, figure 5). Always adjust both sides equally. This adjustment can also be used if the conveyor belt is running to one side. To track the conveyor, tighten the side of the belt that the belt is running towards.

The cross conveyor is driven via two V' belts and a gearbox. To adjust the belt tension, loosen the gearbox mounting nuts (item 1, figure 6) and the shaft locknut (item 2, figure 6) and turn the adjusting nut (item 3, figure 6) until the required tension is achieved. Finally, retighten all nuts and replace the safety guard.



Figure 5

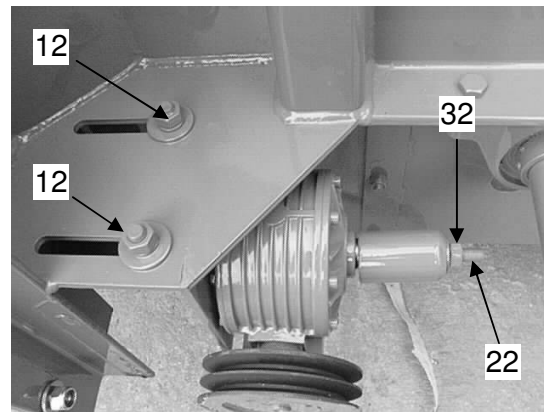


Figure 6

Lubrication

Regular maintenance will ensure the Standen Flail Topper Mk2 provides a long and efficient service life. Depending on soil and weather conditions, the service schedule can vary.

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

Shafts and bearings fitted with grease nipples should be lubricated using a good quality general-purpose grease. Bearings must not be allowed to run dry. When greasing it is better to give a little frequently than a lot a long intervals. Care should be taken not to flood the bearings with grease or the seals may burst allowing grease to escape and dirt to get in. Two strokes of the grease gun should be sufficient.

The cross conveyor gearbox should be filled with 0.25 litres of ISO VG320 synthetic long life oil.

The centrally mounted gearbox oil level should be checked every 50 hours of work and topped up with EP 90 gear oil as necessary.

The PTO shaft should be dismantled periodically and the shafts smeared with grease.

Apply grease to all pivot points and exposed threads etc. to ensure they move easily and remain free of corrosion.

Particular care must be taken to ensure that grease or oil does not come into contact with the V' belts.

Nut/Bolt Tightening Torque

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

Dimensions

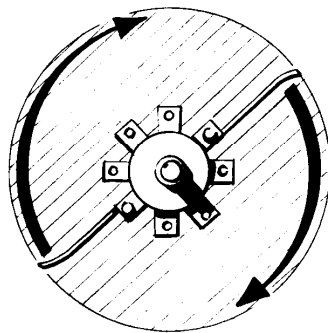
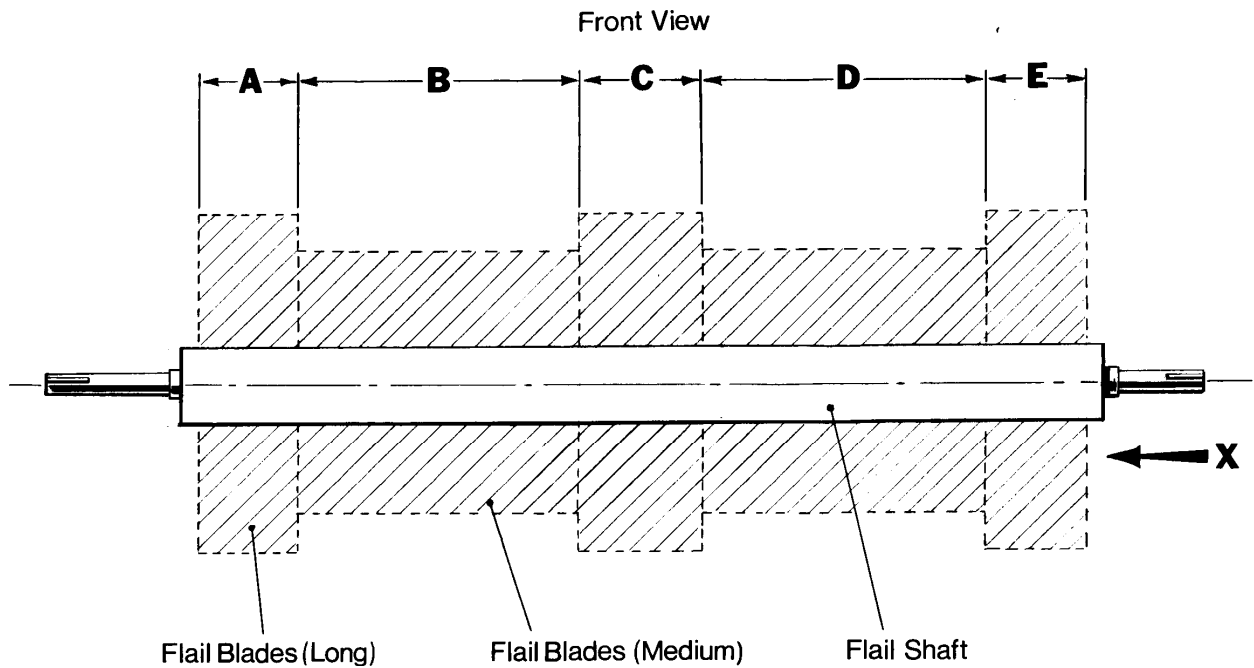
Length (without depth wheels)	2.07 m
Width (without extension elevator)	2.60 m
Height (in work)	1.21 m

Technical Data

Weight	0.70 t
Power requirement at tractor PTO	20 hp
Row widths	30" - 36" (76 cm - 91 cm)
Tyre pressure	40 psi

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

Flail Blade Positions (2 Rows)



View in direction of Arrow X'

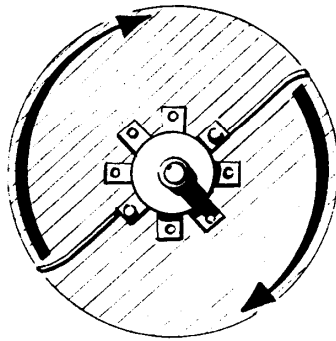
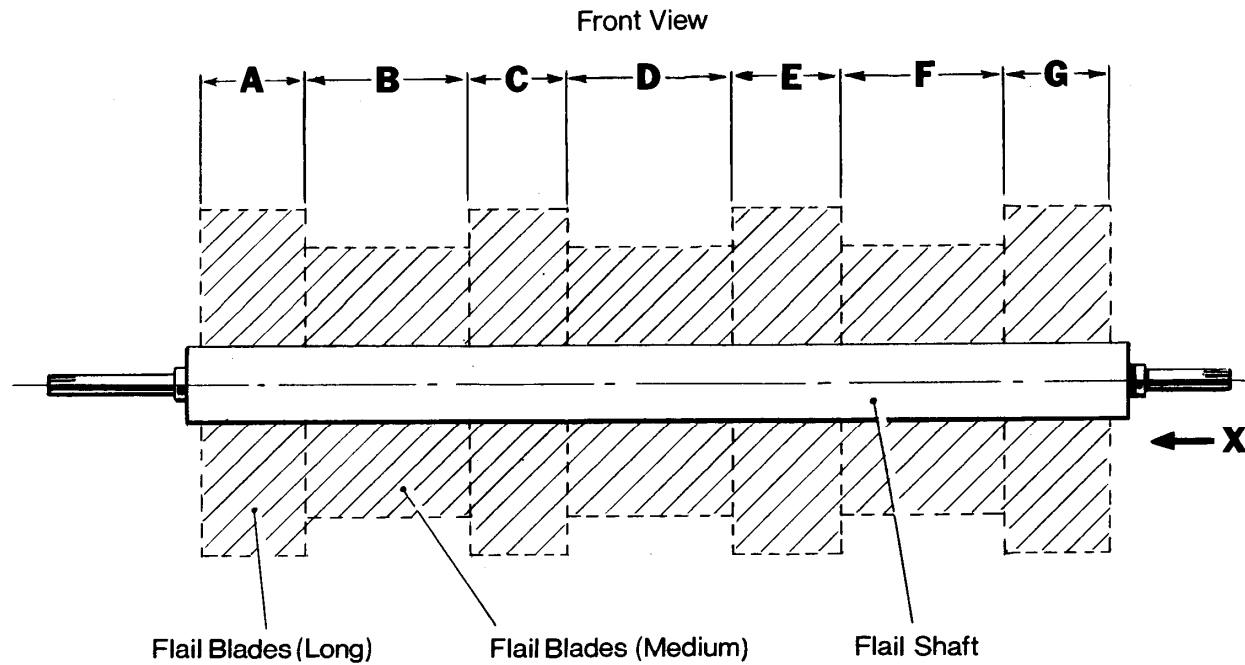
Ensure Flails are balanced equally on either side of Flail Shaft

ROW WIDTH	AREA A QTY. LONG BLADES	AREA B QTY. MED. BLADES	AREA C QTY. LONG BLADES	AREA D QTY. MED. BLADES	AREA E QTY. LONG BLADES
30"	10	24	6	24	10
32"	8	24	10	24	8
36"	6	24	14	24	6

LONG BLADE: PART No 27510

MEDIUM BLADE: PART No 27509

Flail Blade Positions (3 Rows – 500mm centres)



View in direction of Arrow X'

Ensure Flails are balanced equally on either side of Flail Shaft

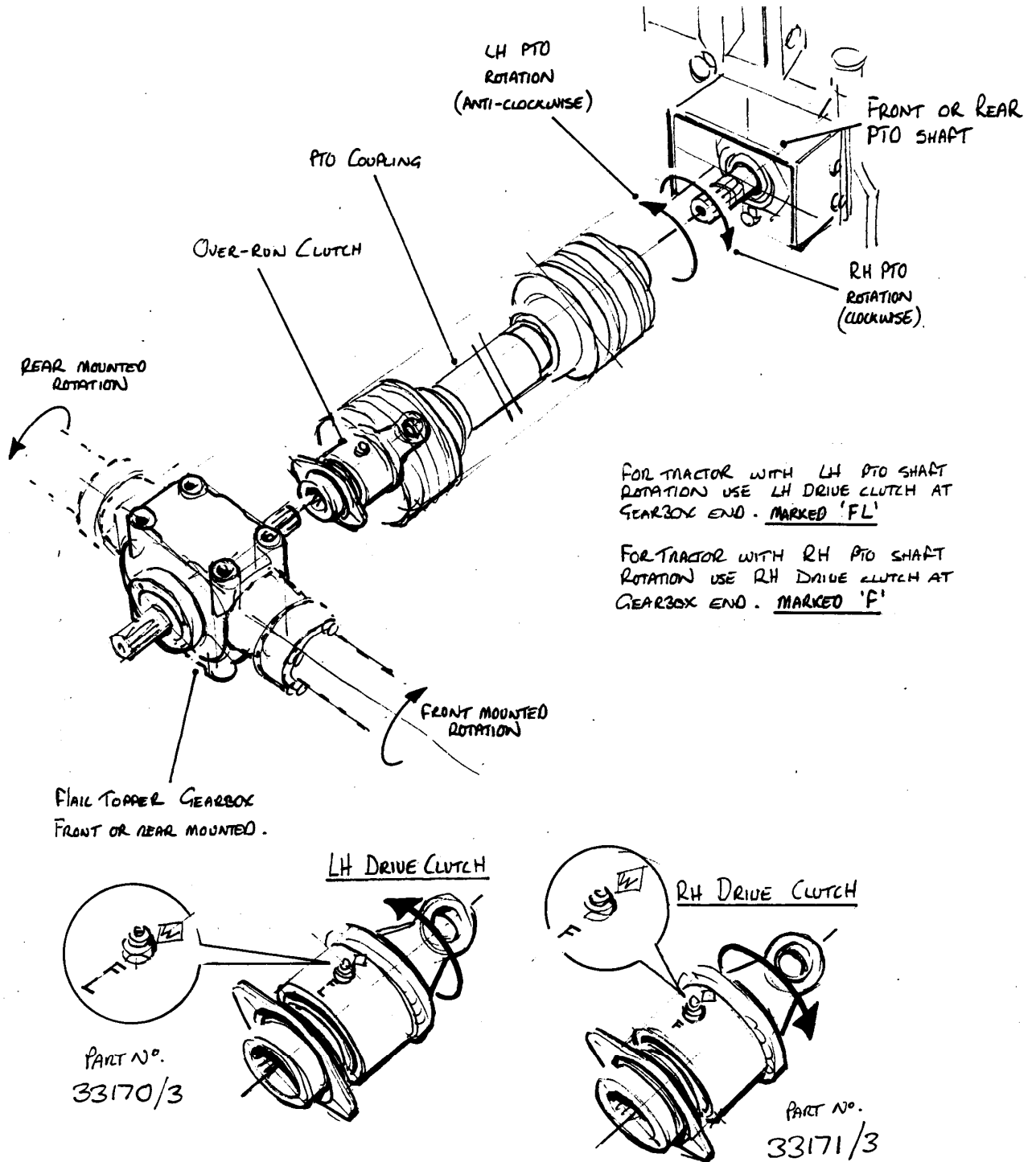
3 ROWS – 500mm CENTRES.

	AREA A LONG BLADES	AREA B MEDIUM BLADES	AREA C LONG BLADES	AREA D MEDIUM BLADES	AREA E LONG BLADES	AREA F MEDIUM BLADES	AREA G LONG BLADES
QTY	10	14	6	14	6	14	10

LONG BLADE: PART No 27510

MEDIUM BLADE: PART No 27509

Over-run Clutch Identification



NOTE: OVER-RUN CLUTCH IS ALWAYS FITTED TO FEMALE SECTION OF PTO COUPLING ASSEMBLY.