

ROTARY TOPPERS  
-INLINE MODELS-

RT/7 & RT/9

Edition No: 6902-9-98



# IMPORTANT VERIFICATION OF WARRANTY REGISTRATION



## DEALER WARRANTY INFORMATION & REGISTRATION VERIFICATION

It is imperative that the selling dealer registers this machine with Twose of Tiverton Limited before delivery to the end user – failure to do so may affect the validity of the machine warranty.

To register machines go to the Twose web site at [www.twose.com](http://www.twose.com), log onto 'Dealer Inside' and select the 'Machine Registration button' which can be found in the Service Section of the site. Confirm to the customer that the machine has been registered in the section below.

Should you experience any problems registering a machine in this manner please contact the Twose Office on 01884 253691.

### Registration Verification

Dealer Name: .....
Dealer Address: .....
Customer Name: .....
Date of Warranty Registration: ...../...../..... Dealer Signature: .....

### NOTE TO CUSTOMER / OWNER

*Please ensure that the above section above has been completed and signed by the selling dealer to verify that your machine has been registered with Twose of Tiverton Limited.*

**IMPORTANT:** During the initial 'bedding in' period of a new machine it is the customer's responsibility to regularly inspect all nuts, bolts and hose connections for tightness and re-tighten if required. New hydraulic connections occasionally weep small amounts of oil as the seals and joints settle in – where this occurs it can be cured by re-tightening the connection – *refer to torque settings chart below*. The tasks stated above should be performed on an hourly basis during the first day of work and at least daily thereafter as part of the machines general maintenance procedure.

### TORQUE SETTINGS FOR HYDRAULIC FITTINGS

HYDRAULIC HOSE ENDS		
BSP	Setting	Metric
1/4"	18 Nm	19 mm
3/8"	31 Nm	22 mm
1/2"	49 Nm	27 mm
5/8"	60 Nm	30 mm
3/4"	80 Nm	32 mm
1"	125 Nm	41 mm
1.1/4"	190 Nm	50 mm
1.1/2"	250 Nm	55 mm
2"	420 Nm	70 mm

PORT ADAPTORS WITH BONDED SEALS		
BSP	Setting	Metric
1/4"	34 Nm	19 mm
3/8"	47 Nm	22 mm
1/2"	102 Nm	27 mm
5/8"	122 Nm	30 mm
3/4"	149 Nm	32 mm
1"	203 Nm	41 mm
1.1/4"	305 Nm	50 mm
1.1/2"	305 Nm	55 mm
2"	400 Nm	70 mm

# WARRANTY POLICY

## WARRANTY REGISTRATION

All machines must be registered, by the selling dealer with Twose of Tiverton Ltd, before delivery to the end user. On receipt of the goods it is the buyer's responsibility to check that the Verification of Warranty Registration in the Operator's Manual has been completed by the selling dealer.

### 1. LIMITED WARRANTIES

- 1.01. *All machines supplied by Twose of Tiverton Ltd are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 12 months, unless a different period is specified.*
- 1.02. *All spare parts supplied by Twose of Tiverton Ltd and purchased by the end user are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 6 months. All parts warranty claims must be supported by a copy of the failed part invoice to the end user. We cannot consider claims for which sales invoices are not available.*
- 1.03. *The warranty offered by Twose of Tiverton Ltd is limited to the making good by repair or replacement for the purchaser any part or parts found, upon examination at its factory, to be defective under normal use and service due to defects in material or workmanship. Returned parts must be complete and unexamined. Pack the component(s) carefully so that any transit damage is avoided. All ports on hydraulic items should be drained of oil and securely plugged to prevent seepage and foreign body ingress. Certain other components, electrical items for example, may require particular care when packing to avoid damage in transit.*
- 1.04. *This warranty does not extend to any product from which Twose of Tiverton Ltd's serial number plate has been removed or altered.*
- 1.05. *This warranty does not apply to any part of the goods, which has been subjected to improper or abnormal use, negligence, alteration, modification, fitment of non-genuine parts, accident damage, or damage resulting from contact with overhead power lines, damage caused by foreign objects (e.g. stones, iron, material other than vegetation), failure due to lack of maintenance, use of incorrect oil or lubricants, contamination of the oil, or which has served its normal life. This warranty does not apply to any expendable items such as blades, belts, clutch linings, filter elements, flails, flap kits, skids, soil engaging parts, shields, guards, wear pads, pneumatic tyres or tracks.*
- 1.06. *Temporary repairs and consequential loss - i.e. oil, downtime and associated parts are specifically excluded from the warranty.*
- 1.07. *Warranty on hoses is limited to 12 months and does not include hoses which have suffered external damage. Only complete hoses may be returned under warranty, any which have been cut or repaired will be rejected.*
- 1.08. *Machines must be repaired immediately a problem arises. Continued use of the machine after a problem has occurred can result in further component failures, for which Twose of Tiverton Ltd cannot be held liable, and may have safety implications.*
- 1.09. *If in exceptional circumstances a non Twose of Tiverton Ltd part is used to effect a repair, warranty reimbursement will be at no more than Twose of Tiverton Ltd's standard dealer cost for the genuine part.*
- 1.10. *Except as provided herein, no employee, agent, dealer or other person is authorised to give any warranties of any nature on behalf of Twose of Tiverton Ltd.*
- 1.11. *For machine warranty periods in excess of 12 months the following additional exclusions shall apply:*
  - 1.11.1. *Hoses, exposed pipes and hydraulic tank breathers.*
  - 1.11.2. *Filters.*
  - 1.11.3. *Rubber mountings.*
  - 1.11.4. *External electric wiring.*
  - 1.11.5. *Bearings and seals.*



- 1.12. All service work, particularly filter changes, must be carried out in accordance with the manufacturer's service schedule. Failure to comply will invalidate the warranty. In the event of a claim, proof of the service work being carried out may be required.
- 1.13. Repeat or additional repairs resulting from incorrect diagnosis or poor quality previous repair work are excluded from warranty.

**NB Warranty cover will be invalid if any non-genuine parts have been fitted or used. Use of non-genuine parts may seriously affect the machine's performance and safety. Twose of Tiverton Ltd cannot be held responsible for any failures or safety implications that arise due to the use of non-genuine parts.**

## **2. REMEDIES AND PROCEDURES**

- 2.01. The warranty is not effective unless the Selling Dealer registers the machine, via the Twose of Tiverton Ltd web site and confirms the registration to the purchaser by completing the confirmation form in the operator's manual.
- 2.02. Any fault must be reported to an authorised Twose of Tiverton Ltd dealer as soon as it occurs. Continued use of a machine, after a fault has occurred, can result in further component failure for which Twose of Tiverton Ltd cannot be held liable.
- 2.03. Repairs should be undertaken within two days of the failure. Claims submitted for repairs undertaken more than 2 weeks after a failure has occurred, or 2 days after the parts were supplied will be rejected, unless the delay has been authorised by Twose of Tiverton Ltd. Please note that failure by the customer to release the machine for repair will not be accepted as a reason for delay in repair or submitting warranty claims.
- 2.04. All claims must be submitted, by an authorised Twose of Tiverton Ltd Service Dealer, within 30 days of the date of repair.
- 2.05. Following examination of the claim and parts, Twose of Tiverton Ltd will pay, at their discretion, for any valid claim the invoiced cost of any parts supplied by Twose of Tiverton Ltd and appropriate labour and mileage allowances if applicable.
- 2.06. The submission of a claim is not a guarantee of payment.
- 2.07. Any decision reached by Twose of Tiverton Ltd is final.

## **3. LIMITATION OF LIABILITY**

- 3.01. Twose of Tiverton Ltd disclaims any express (except as set forth herein) and implied warranties with respect to the goods including, but not limited to, merchantability and fitness for a particular purpose.
- 3.02. Twose of Tiverton Ltd makes no warranty as to the design, capability, capacity or suitability for use of the goods.
- 3.03. Except as provided herein, Twose of Tiverton Ltd shall have no liability or responsibility to the purchaser or any other person or entity with respect to any liability, loss, or damage caused or alleged to be caused directly or indirectly by the goods including, but not limited to, any indirect, special, consequential, or incidental damages resulting from the use or operation of the goods or any breach of this warranty. Notwithstanding the above limitations and warranties, the manufacturer's liability hereunder for damages incurred by the purchaser or others shall not exceed the price of the goods.
- 3.04. No action arising out of any claimed breach of this warranty or transactions under this warranty may be brought more than one (1) year after the cause of the action has occurred.

## **4. MISCELLANEOUS**

- 4.01. Twose of Tiverton Ltd may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.
- 4.02. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.
- 4.03. Applicable law may provide rights and benefits to the purchaser in addition to those provided herein.



THIS MANUAL IS TO BE HANDED TO THE CUSTOMER  
BEFORE THE MACHINE IS TO BE USED  
FOR THE FIRST TIME



TWOSE OF TIVERTON LIMITED  
6 Chinon Court  
Lower Moor Way  
Tiverton Business Park  
Tiverton  
Devon  
EX16 6SS

TEL: (01884) 253691  
FAX: (01884) 255189

All dimensions and capacities mentioned in this book are approximate. In pursuance of the Companies policy of constant development, the right is reserved to depart, without notice, from any detail illustrated or specified in this book, without incurring the obligation to provide such modifications on machines previously delivered.

No responsibility will be accepted by Twose of Tiverton Limited for any injury, damage or loss arising from the improper use or lack of maintenance of any machinery supplied by them or from any failure of the user to comply with all instructions published by Tractor or Loader manufacturers, particularly with regard to maximum load capacities, tyre pressures and stability, or with instructions and regulations pertaining to Tractor Cabs.



# DECLARATION OF CONFORMITY

*Conforming to EU Machinery Directive 2006/42/EC*

We,

**TWOSE of TIVERTON LIMITED,**  
6 Chinon Court, Lower Moor Way,  
Tiverton Business Park, Tiverton, Devon, EX16 6SS, UK

*Hereby declare that:*

The Product; *Tractor Mounted Rotary Pasture Topper*

Product Code; *TWRS*

Serial No. & Date ..... Type .....

Manufactured in; *United Kingdom*

Complies with the required provisions of the Machinery Directive 2006/42/EC  
The machinery directive is supported by the following harmonized standards;

- BS EN ISO 12100 (2010) Safety of machinery – General principles for design – Risk assessment and risk reduction.
- BS EN 349 (1993) + A1 (2008) Safety of machinery - Minimum distances to avoid the entrapment with human body parts.
- BS EN 953 (1997) + A1 (2009) Safety of machinery - Guards general requirements for the design and construction of fixed and movable guards.
- BS EN 4413 (2010) Hydraulic fluid power. Safety requirements for systems and their components.

Signed ..... *Responsible Person*  
*CHRISTIAN DAVIES on behalf of TWOSE OF TIVERTON LIMITED*

Status: *General Manager*

Date: *September 2015*

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## TOPPER SPECIFICATION

### 2.1M (7FT) TOPPER

Height (Inc. Headstock)	1.15m (1ft 7")
Width of Cut	2.1m (7ft)
Depth	1.7m (5ft 6")
Weight	330 Kgs (728 lbs)
Power required (Min-Max)	25-60 kW (35-80 HP)
P.T.O Input Speed (RPM)	540
Drives - 1 Primary Drive - 1 Secondary Drive	

### 2.72M (9FT) TOPPER

Height (Inc. Headstock)	1.15m (1ft 7")
Width of Cut	2.72m (9ft)
Depth	1.7m (5ft 6")
Weight	480 Kgs (1058 lbs)
Power required (Min-Max)	30-60 kW (40-80 HP)
P.T.O Input Speed (RPM)	540
Drives - 1 Primary Drive - 2 Secondary Drive	

### AIRBORNE NOISE EMISSIONS

The equivalent continuous A weighted sound pressure level at the workstation (tractor seat) is 74 dB(A). This value was achieved cutting grass using a Dawe 1405C sound meter (BS3489) on a 3090 Massey Ferguson Tractor complete with safety cab.

NOTE:-      DIMENSIONS APPROX. ONLY

## GENERAL INFORMATION

NOTE:- The provision of this information is a requirement of the Health & Safety at Work Act 1974.

NOTE:- This handbook has been designed to help the operator and service/mechanic to use and understand the machine fully, safely and efficiently, bearing in mind the Health & Safety requirements and the new CE requirements which come into force from January 1st 1995.

NOTE:- The handbook/manual will be supplied in a waterproof plastic outer cover to prevent damage from rain, condensation etc. The cover of the handbook will include its own part number, which includes information as to machine type and issue date of manual in question.

### DANGER

NOTE:- It is very important that the handbook/manual has been read thoroughly - throughout, and is completely understood before attempting to attach or use machine in any way.

CAUTION: When ordering spares, please state clearly:-

- (a) Machine type and model No.
- (b) Part No. of component.
- (c) Description of component.
- (d) Quantity required.
- (e) Full address to which spares are to be sent.
- (f) Method of delivery required.

CAUTION:- Always insist on genuine and correct spare parts.

NOTE:- Further copies of this handbook/manual can be obtained from:-

TWOSE OF TIVERTON LIMITED  
6 CHINON COURT  
LOWER MOOR WAY  
TIVERTON BUSINESS PARK  
DEVON  
EX16 6SS

TEL: 01884 253691  
FAX: 01884 255189



## SAFETY NOTES AND WARNINGS

Throughout the handbook the following sub headings are used to draw attention to various points of importance.



DANGER  
WARNING

This is to draw attention to very important instructions which MUST be followed precisely to avoid injury or death.

### CAUTION

This is used to draw attention to instructions which MUST be followed to avoid damage to operator, machine, process or the environment.

### NOTE:-

This is used to highlight points used for supplementary information.

## ABOUT THIS MACHINE

This machine is known as the Rotary Topper.

It is intended to be attached to an agricultural vehicle by means of the "three-point-linkage" couple-up system. There are two models of Rotary Topper, the 7ft and the 9ft model.

The purpose for its production and its sole intention is to cut/clear - grass, thistles, nettles, bracken and stubble.

AT NO TIME must this machine be used for anything other than, or to do any job - other than that for which it has been designed (see note above).

## HEALTH AND SAFETY



DANGER  
WARNING

Never attempt to assemble, couple up, or operate machinery until you understand fully the functions, controls and safety precautions required, as shown in the operators manual.



DANGER  
WARNING

Always follow tractor safety operations and instructions VERY carefully.  
NEVER TAKE RISKS

### CAUTION

Be aware of warning stickers and instruction stickers on machine as care must be taken and instructions obeyed.

### CAUTION

Contact your dealer should you need advice, assistance, or if you do not understand the manual or machine. "NEVER ASSUME" - if not sure - ASK.

### CAUTION

Machine MUST NOT be altered or modified in any way - without permission - No liability will be accepted in respect of a machine that has been modified without manufacturers permission.



DANGER  
WARNING

Never drive machinery at speeds that could cause danger to other persons or properties, or in a manner that may cause accidents.



DANGER  
WARNING

Never attempt to Service/adjust or work on any machinery in an unsupported state.

For Example:- Any three point linkage mounted machinery  
Front Loaders  
Digger Booms  
Hedgetrimmer booms etc. etc.

Always ensure that machinery is safely supported and propped in position.

### CAUTION

Always "SWITCH-OFF" tractor engine before attempting to carry out adjustment or service repairs and inspections, on machinery.



DANGER  
WARNING

Always be aware of your surroundings - and operate machinery accordingly. Beware of confined-tight areas, low height restrictions, buildings and overhangs etc. Also drive and operate bearing in mind weather conditions such as sun, rain, ice, snow, wind etc. [Make allowances in all situations].

### CAUTION

Never carry "passengers" on machinery or on tractor.  
Ensure bystanders/onlookers are kept well away from operational area of apparatus.

### CAUTION

#### 'PARKING UP' MACHINE

When machine is being removed from tractor linkage and being 'parked up' it is essential that a good firm base and level site be found.

Always chock and prop machine to ensure a good firm position to leave parked. Ensure that stand legs of machine are correctly locked into position.

CAUTION

Never allow children to play on, or around, parked machinery.

CAUTION

Never wear loose fitting or ragged clothing which could get caught in machinery or controls.

CAUTION

Ensure visibility is clear through cab-screens at all times.

CAUTION

Always dispose of discarded or worn out parts thoughtfully - by disposing of them in an approved and specified legal scrap site, bin or skip.

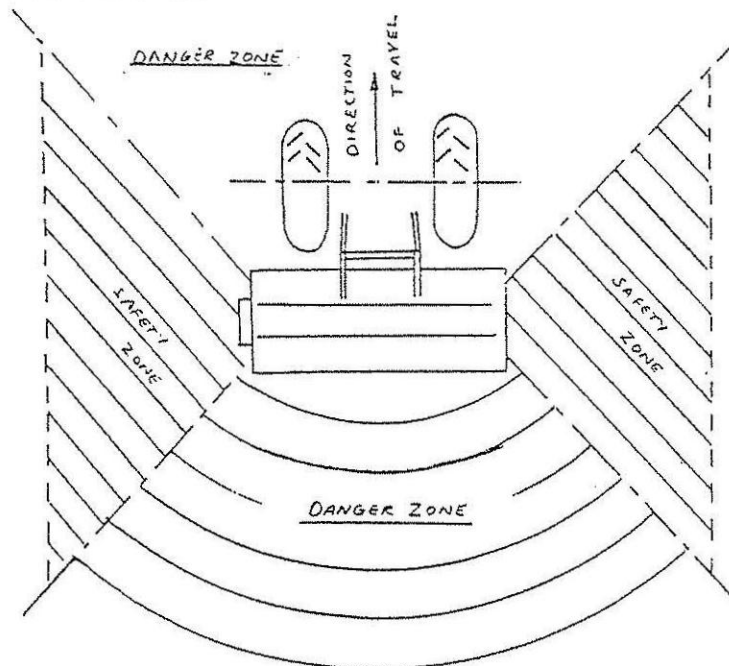
CAUTION

Worn out and spent waste oil, grease and other obnoxious substances must always be disposed of in suitable and legally approved dumping containers suitable for the waste in question.



DANGER  
WARNING

Never allow onlookers/bystanders to stand in front or behind the machine. The danger zones are marked on the sketch below.





DANGER  
WARNING

For tractors fitted with hydraulic clutch, an over-run coupling must be fitted to the P.T.O. shaft. The manufacturer cannot accept responsibility for any damage or injury caused by failure to apply this precaution.



DANGER  
WARNING

Do not operate along highways and use extra caution on rough terrain or where rocks and debris are present.



DANGER  
WARNING

Stop P.T.O before dismounting tractor and always keep P.T.O and Topper guards secure and in position.



DANGER  
WARNING

Maximum tractor P.T.O operating speed 540 rpm.



DANGER  
WARNING

When fitting P.T.O shaft over-run clutch, make sure it is on the Topper side.

NOTES

AMENDMENT

DATE

DETAILS

## GENERAL INSTRUCTIONS



DANGER  
WARNING

1. Before attaching any machine to a tractor or loader make sure that implement is still standing firmly on good solid - level site as it will be, providing unit was previously parked correctly.  
-Check that any wheels are 'chocked' correctly and that supports/props are in position where necessary to prevent booms etc. dropping.
  
2. Before and during the manoeuvring of the tractor or vehicle in order to attach machinery/implements, - make sure that No other persons are in the vicinity. Keep other persons well clear and make known your intentions, all the while keeping a sharp lookout whilst reversing and aligning machines for coupling up.
  
3. Always secure tractor into selected position by ensuring that brakes are applied correctly in order to prevent vehicle moving off on its own to cause injury and damage.
  
4. Make sure that the lift arms and top link ball ends of the tractor are properly fitted to the machine/implement by using correct adaptor sleeves where necessary, and that retaining pins of the correct type are used on all three point linkage points. Secure pins with relevant pin and ring assembly.
  
5. If the machine is of the drawbar type - check that the hitch on the tractor is in good condition and that the hitch pin used is of the correct size and type, and is properly secured when fitted.
  
6. Should it become necessary to make any adjustments or service on machine while raised on the tractor linkage, or raised on a front end loader - trestles or suitable supports MUST be positioned to support machine to prevent accidental dropping of lift arms, loader arms or mechanical failure.  
[MACHINE MUST ALWAYS BE PROPPED AND CHOCKED]



7. Never attempt to work on, adjust or service repair machinery of any kind whilst it is still running or working. Always stop the machine and STOP THE TRACTOR ENGINE - before any service/repairs begin.  
(SWITCH OFF TRACTOR ENGINE BEFORE LEAVING TRACTOR SEAT)
8. In transit always use transport stays or locking devices where provided.  
If, as in the case of some longer machines, the unit is transported lengthways - make sure that the front of the tractor is suitably ballasted to maintain stability. A method of achieving this would be to add suitable weights to a correctly specified and fitted front weight frame.
9. Always use machines in a sensible and reasonable manner and do not attempt to use them in work for which they are not intended. Avoid overloading and abusing them as this can cause damage to machine and tractor and can be very dangerous.
10. When unhitching/detaching a machine from a tractor three point linkage or from a front end loader ensure that any stands or legs are securely positioned and that the machine is parked where it will not be a safety hazard or cause annoyance to others.  
Make sure that chose 'parking site' is a firm and level site.
11. Carry out regular periodic maintenance. - Always with safety in mind.
12. Ensure regular maintenance procedures are maintained for the lifetime of the machine.
13. HEALTH AND SAFETY RULES AND REGULATIONS MUST BE ADHERED TO IN ALL AGRICULTURAL RESPECTS.

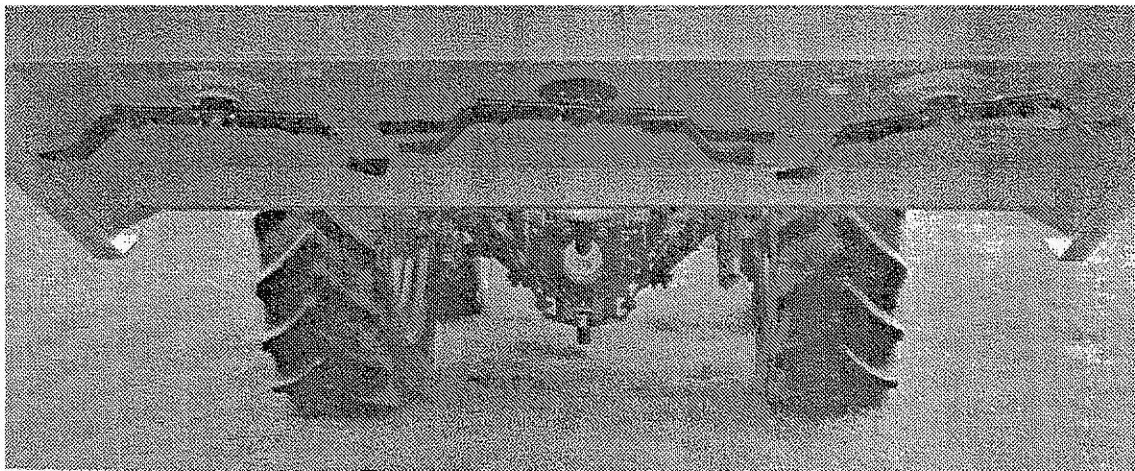
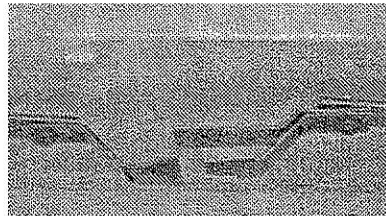
## INTRODUCTION

### NOTE

The Rotary Topper is a robust versatile tractor mounted machine suitable for all types of ground clearance, eg grass, thistle, nettles, bracken, rushes, stubble, etc. Two widths are available 2.13m (7ft) and 2.72m (9ft), all are P.T.O powered and operate at 540 rpm (max tractor P.T.O speed).

### CAUTION

Overlapping rotary, flail swingback blades are fitted to all models to prevent 'stripping' during use. Shear bolts are fitted in blade carriers to protect the carriers and blades against major damage caused by stones etc. The cutting height is adjustable to suit various applications.



2.72m (9ft) Illustrated

## OPERATING INSTRUCTIONS

CAUTION: Pre-set height of lift on the tractor three point linkage to ensure that the chain and top link attachment of Rotary Topper does not foul tractor cab.

### P.T.O SHAFT LENGTH

- (a) The P.T.O Shaft length may be altered to suit individual tractor models. During operation the P.T.O shaft should have 1/3 engagement as shown below.
- (b) The P.T.O shaft is equipped with a shear bolt facility and must be fitted at the Topper end on shaft, NOT at tractor end.

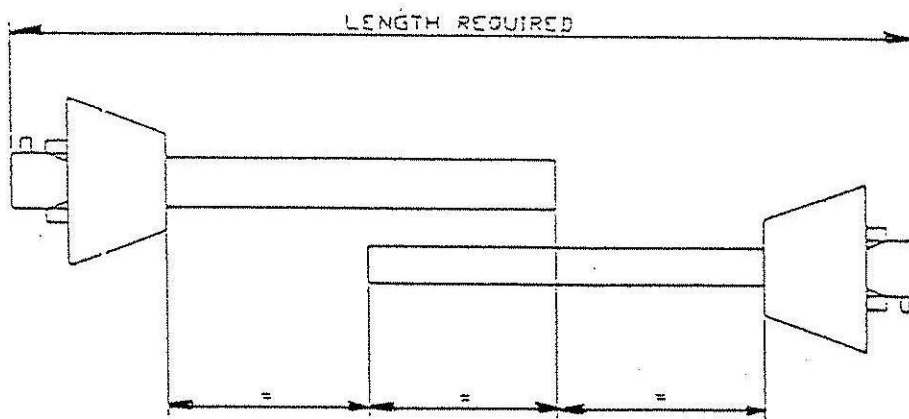


Fig. 3 Correct Engagement



DANGER  
WARNING

- (c) When lifting Rotary Topper, ensure that P.T.O shaft does not foul, see Fig. 4. To prevent this, set the hydraulic stop to a safe height or shorten top link. Manufacturers cannot be held responsible for damage to the P.T.O. caused by failure to apply these precautions.

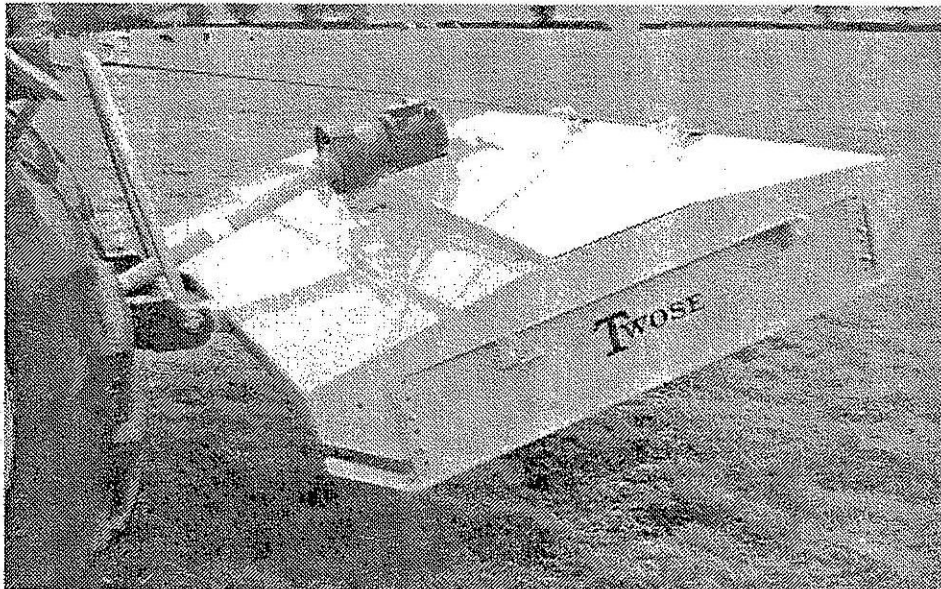


Fig. 4 P.T.O Shaft Setting Height

## ATTACHING TO TRACTOR

- (a) Fit Rotary Topper to the tractor's hydraulic three point linkage in the normal way. If possible use right hand and left hand stay bars or check chains. While in operating position, adjust top link until rear support straps are slack as illustrated in Fig. 5.

### IMPORTANT NOTE:-

P.T.O Shaft to have shear bolt at Topper end.

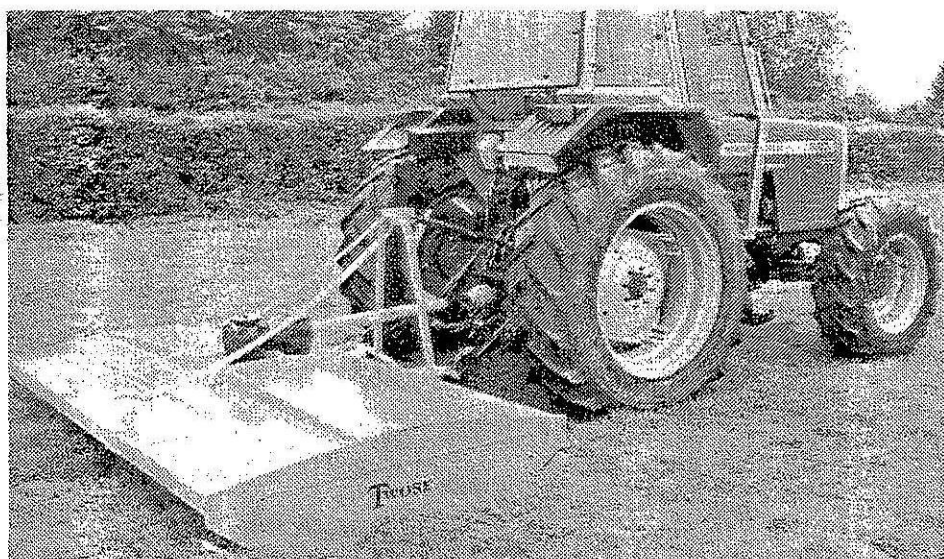


FIG. 5 Support Chains

- CAUTION** (b) Cutting height should be set as required by adjusting the side skids. These are held in place by four bolts on each side to the Rotary Topper main frame assembly. After adjusting, ensure that all bolts are replaced and secured.

Ensure the skids are not set too low as stone etc. could damage blades. See Fig. 6.

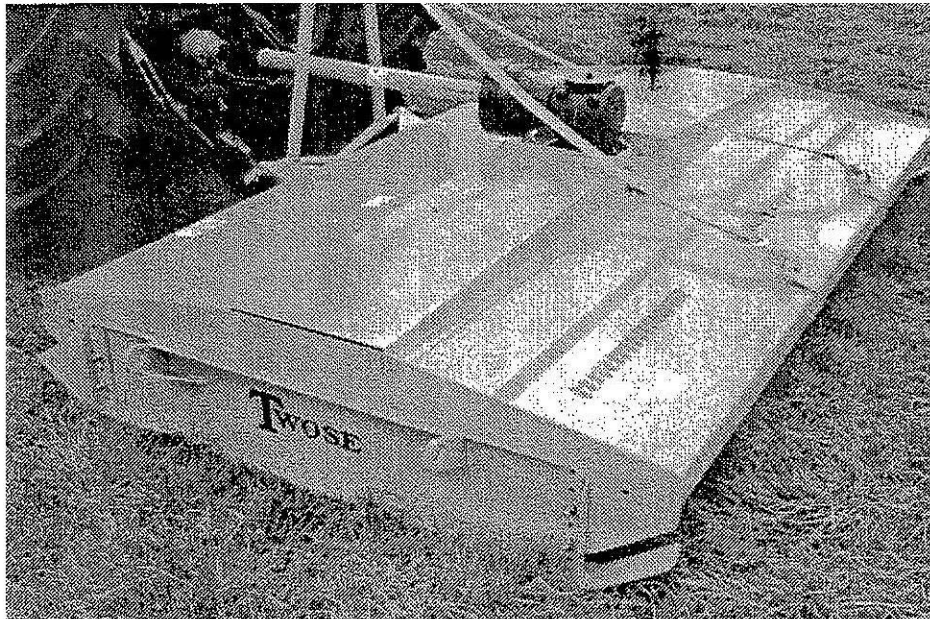


FIG. 6 Adjustable Side Skids

CAUTION

NOTE:

When replacing skid adjustment bolts, ensure threaded portion is on the outside. If bolts are placed with threaded portion facing the blades damage to the thread may result and hinder future adjustment and interrupt crop flow.

CAUTION

Belt Drive from the P.T.O shaft/gearbox on the offset model can be tightened by moving the gearbox and its pulley forward. The gearbox retaining screws and adjuster are located on top of the gearbox snout.

CAUTION

To remove the belts, release tension on main pulleys and if necessary take out the idler pulley and belt retainer. Access is obtained by first removing the top covers.

WARNING

BEFORE ADJUSTING BELTS DISCONNECT P.T.O

## BELT TENSIONERS

CAUTION Drive from the centre pulley or main drive pulley to the outside rotary blades pulley can be tightened by removing the top cover/s, slackening the idler pulley adjuster bolt, then retighten to selected position.

CAUTION NOTE The belts should not be slack enough to touch the trough 63. mm (2 1/2") and the angle section belt guide situated over the idler pulley MUST be free of belt by minimum of 2mm.

## MOWING HINTS

CAUTION (a) ROUGH STUBBLE : Sharpen blades, cut lower if possible.

CAUTION (b) VERY UNDULATING  
GROUND : Lengthen top link giving support straps more slack. Also increase cutting height. (See Fig. 6).

CAUTION (c) RUSHES : For 'Old Man' rushes etc, use high rotary cutter speed or 540 rpm and 3-6 mph tractor speed (Forward).

CAUTION (d) TOPPING : Forward speed up to 15 mph max. depending on file conditions. Low P.T.O speed, 300-400 rpm. Adjust skid height to suit application.



## GENERAL MAINTENANCE

### BLADES, SHEAR BOLTS AND CENTRE SHEAR STUDS

- (a) Check blades for sharpness daily.  
Renew damaged blades and damaged or broken shear bolts and centre bolt.

- (b) To remove Carrier:-

Remove P.T.O Drive Shaft from Tractor, wedge the faulty blade carrier securely with a piece of timber and undo the main centre nut and the 4 - M8 Shear Bolts.  
(Ref. Fig.9.)



- (c) Bolts:-

To renew Blades and Bolts, loosen the blade retaining bolt/nut remove blade and spacer, re-assemble new blade and spacer. Tighten blade centre bolts and blade.

Check tightness of blade bolts after first and second hours of use then every 40 hours.



(e) Fitting New Blades

CAUTION (i) Locate new blade to appropriate hardened steel pivot bush and position onto blade carrier, - secure with nut and bolt.

CAUTION (ii) Rotate the new blade by hand and if it makes contact with another blade, remove excess from the new blade using a grindstone until blades rotate without touching. See Fig. 10.

NOTE Space between blade ends should be 25mm

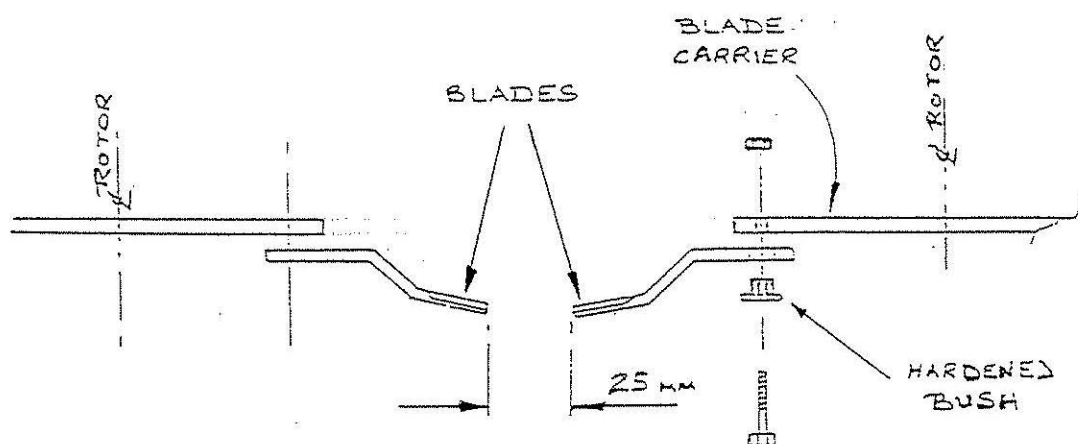


FIG. 10.

NOTE After assembly of new blades check all nuts and bolts for tightness after first and second hours of use, then at intervals of 40 hours.

NOTE Always use correct size spanners for appropriate nuts etc.

ROUTINE MAINTENANCE  
AND LAYING-UP

DAILY

CAUTION

Check level of oil in the gearbox (also on delivery) Use EP90 Oil.

CAUTION

Check the V Belt for tightness (see section 4 and 6).



DANGER  
WARNING

Check P.T.O Shaft guard nuts and secure.

NOTE All bearing housings are fitted with double seal bearings (top and bottom) and are non-greaseable. The centre being packed with grease on initial build at factory, purely to prevent centre shaft rusting.

CAUTION

Check blades for sharpness. Sharpen with a grindstone if necessary.

CAUTION

P.T.O shaft joints, tubes and guard should be greased every 40 hours.

CAUTION

Oil all pivot and support pins every 10 hours.

WEEKLY

CAUTION

Check all nuts and bolts for tightness, ensure blades are kept in a sharpened condition and are free to rotate without fouling.

CAUTION

Check V Belts for wear.

LAYING-UP

NOTE

Clean the machine and note any damage or repairs needed.

NOTE

Remove tension from drive belts.

NOTE

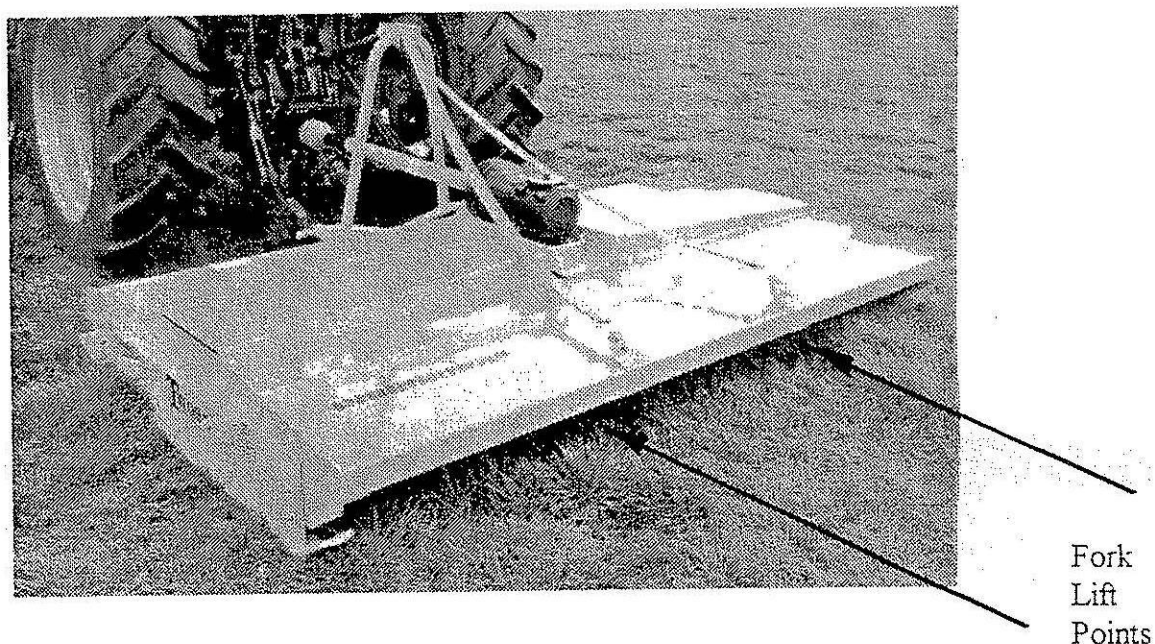
Fully lubricate the machine.

NOTE

Store the machine in dry conditions under cover.

## HANDLING AND TRANSPORTATION OF MACHINERY

The picture highlighted below indicates safe lifting points for the machinery.



The unladen weight of each Topper is given in the specification sheet of this book.

A form of lifting gear is required in order to move or handle this machinery safely. The lifting should be at points indicated.

Once the machinery has been moved, ensure that it comes to rest in a safe position. Supports or stay bars may be necessary to ensure stability of the machinery. Make sure the supports/stay bars are used whenever the machinery is transported.

## PARTS LIST

Always order Two genuine spares for your machine. They are correctly designed to give the best operational results.

When ordering spare parts, please specify:-

Type and Serial Number of machine

Part number, description and quantity of spares required.

Always make sure that you have ordered a sufficient quantity to complete the job.

Always make sure that you have ordered the correct parts. In some instances (eg Hydraulic Rams) parts or assemblies are, in the course of time, modified due to introduction of new materials, or improved design.

Always state by what means you wish the goods to be sent. In the absence of specific instructions consignments will be sent by post or railways goods service, if it is not possible to deliver by our own transport.

Always State the number of our Invoice or Sales Slip, and the reason for return should it become necessary to return any items for exchange or credit.

## WARRANTY AND SPARE PARTS

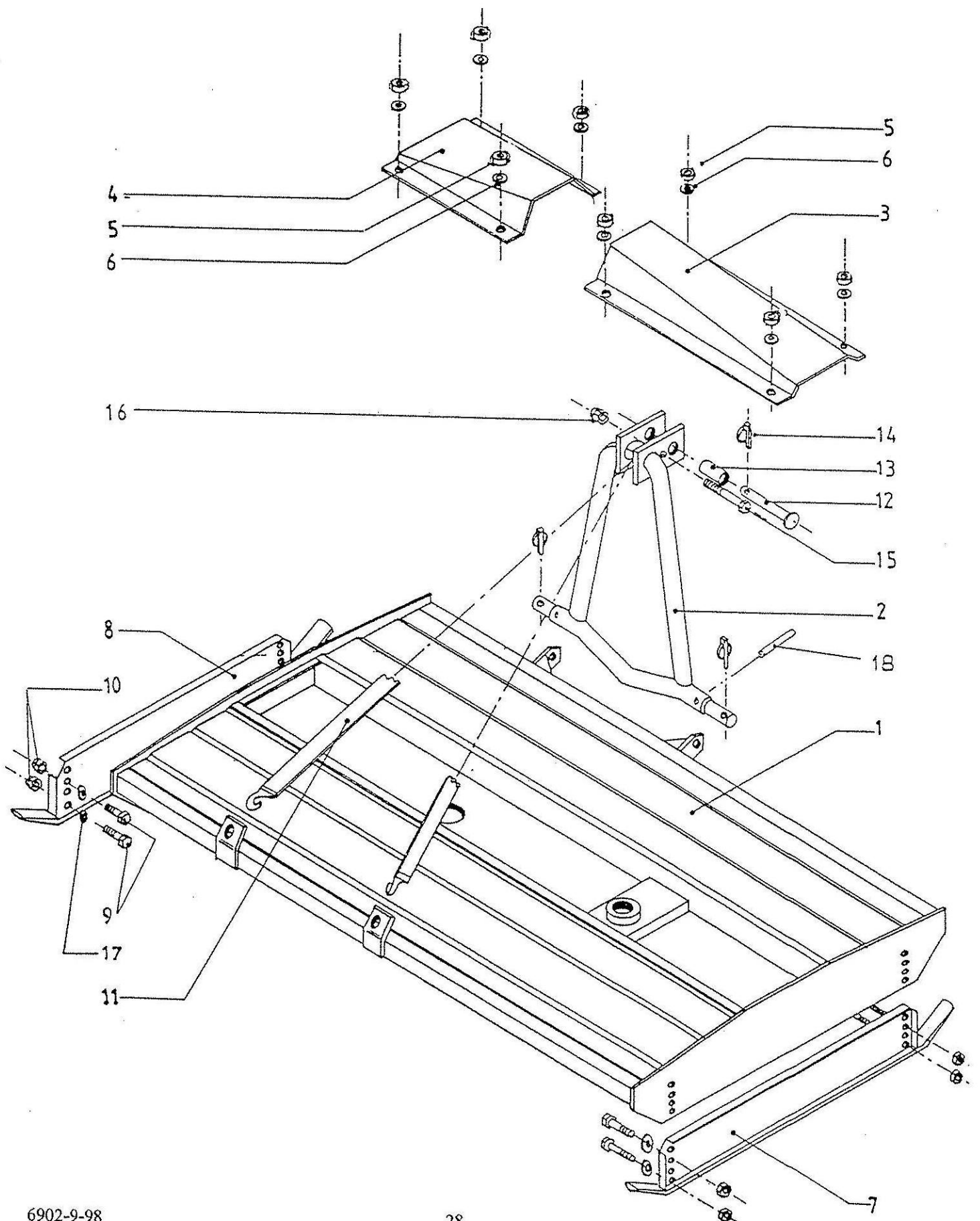
all enquiries regarding these machines and orders for spare parts must be addressed to:-

TWOSE OF TIVERTON LIMITED  
6 CHINON COURT  
LOWER MOOR WAY  
TIVERTON BUSINESS PARK  
TIVERTON  
DEVON  
EX16 6SS

TELEPHONE (01884) 253691  
FAX (01884) 255189

MAIN FRAME ASSEMBLY FOR 2.13M (7'0) MODEL

<u>ITEM</u>	<u>PART NO</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	172.291A	Body Assembly	1
2	172.204A	Headstock Assembly	1
3	172.037	Cover - Long	1
4	172.036	Cover - Short	1
5	4421	Stiff Nut	8
6	3332	Flat Washer	8
7	172.203	Skid	1
8	172.203	Skid	1
9	2748	Bolt	8
10	3082	Stiffnut	8
11	7033	Webbing Strap c/w Hooks	1
12	1657	Top Link Pin	1
13	190050	Conversion Bush	1
14	0832	Linch Pin & Ring	3
15	3856	Bolt	1
16	3182	Stiffnut (Nyloc)	1
17	3192	Flat Washer	8
18	3713	Spring Pin	2

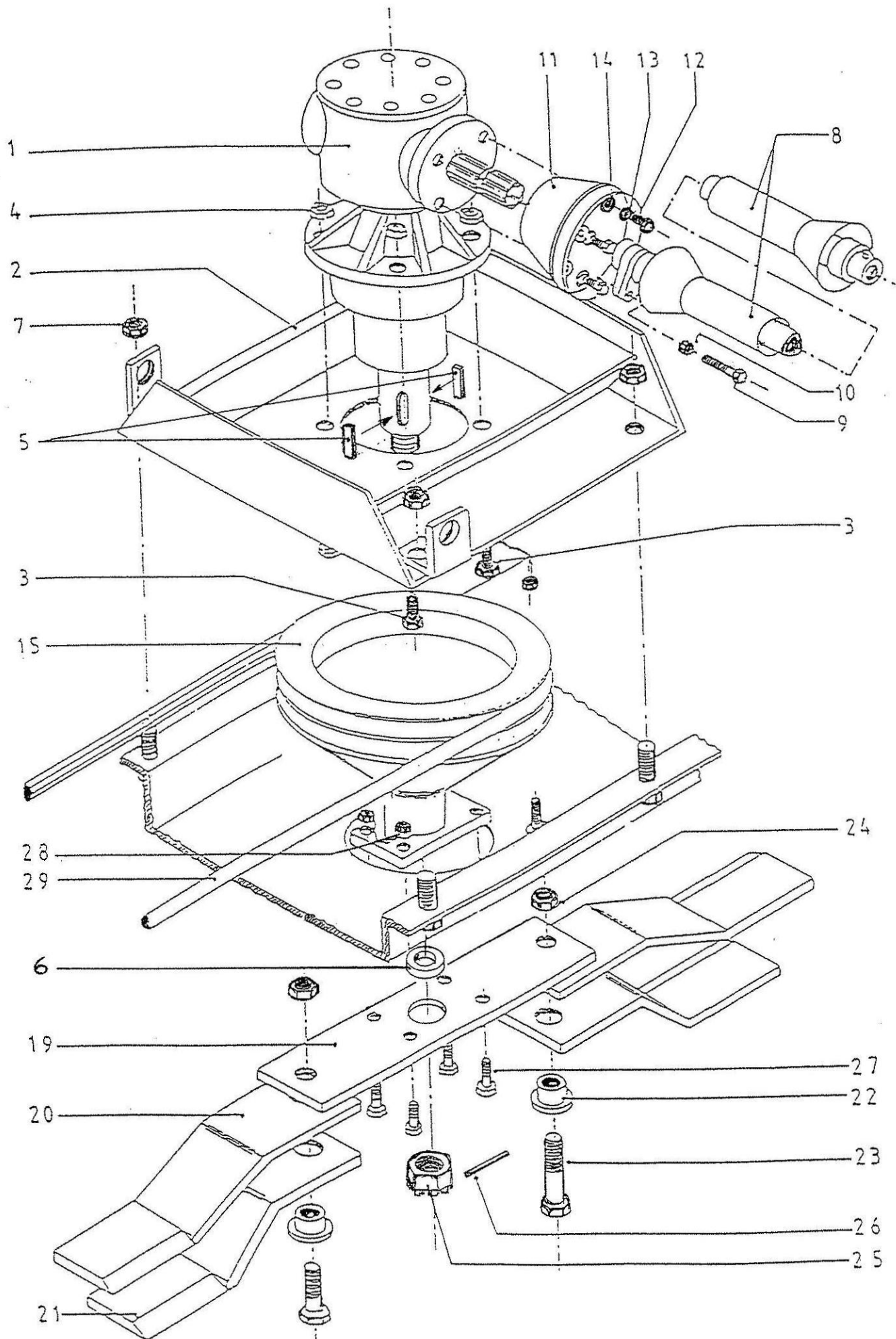


PRIMARY DRIVE

PRIMARY DRIVE FOR 2.13M (7'0) MODEL

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	8100	Gearbox	1
2	172.232	Gearbox Platform	1
3	2929	Bolt	4
4	3747	Stiffnut	4
5	05.960.22	Key	1
6	172.332	Spacer for carrier	1
7	3082	Stiffnut	4
8	7063	PTO Shaft c/w Shear Bolt	1
9	7092	Shear Bolt	1
10	2719	Stiffnut	1
11	6385	PTO Guard	1
12	4923	Setscrew	4
13	3001	Spring Washer	4
14	3111	Plain Washer	4
15	1720334	Pulley	1
16			
17			
18			
19	1720216	Blade Carrier (7'0)	1
20	1720219	Overlapping Blade	2
21	1720218A	Standard Blade	2
22	172.230	Spacer (Long)	2
23	2878	Bolt	2
24	3747	Stiffnut	2
25	8121	Castellated Nut	1
26	6351	Tension Pin	1
27	6393	Bolt	4
28	3182	Stiffnut	4
29	T7768	Drive Belt	1



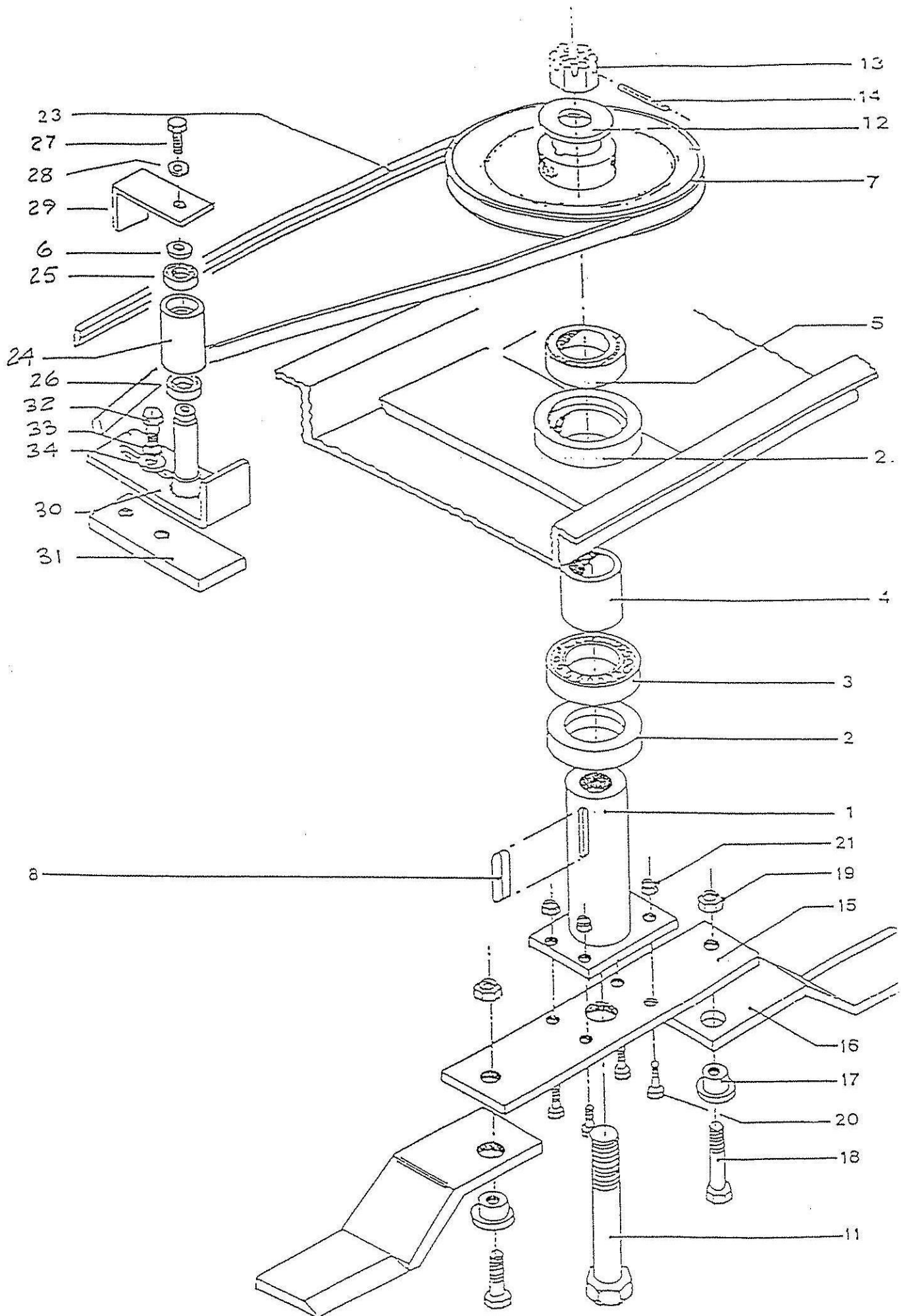


## SECONDARY DRIVE

### SECONDARY DRIVE FOR 2.13M (7'0) MODEL

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	172.224	Rotor Shaft	1
2	172.223	Spacer Ring	1
3	7010	Bearing	1
4	172.222	Bearing Spacer	1
5	7009	Bearing	1
6	3192	Flat Washer	1
7	172.290	Pulley	1
8	7062	Key	1
9			
10			
11	7036	Bolt	1
12	172.221	Washer - Special	1
13	3203	Slotted Nut	1
14	6351	Tension Pin	1
15	1720216	Blade Carrier (7'0)	1
16	1720218A	Standard Blade	2
17	172.229	Spacer (Short)	2
18	2704	Bolt	2
19	3747	Stiffnut (Nyloc)	2
20	6393	Bolt	4
21	3182	Stiffnut	4
22 *	1720201.9	Bearing Hub	1
23	7768	Drive Belt	1
24	172.287	Idler	1
25	7494	Bearing	1
26	2919	Bearing	1
27	2717	Setscrew	1
28	2729	Spring Washer	1
29	172.289	Belt Retaining Bracket	1
30	172.288	Idler Pulley Mounting Bracket	1
31	172.209	Clamp Plate	1
32	2901	Bolt	2
33	2730	Spring Washer	2
34	2867	Flat Washer	2

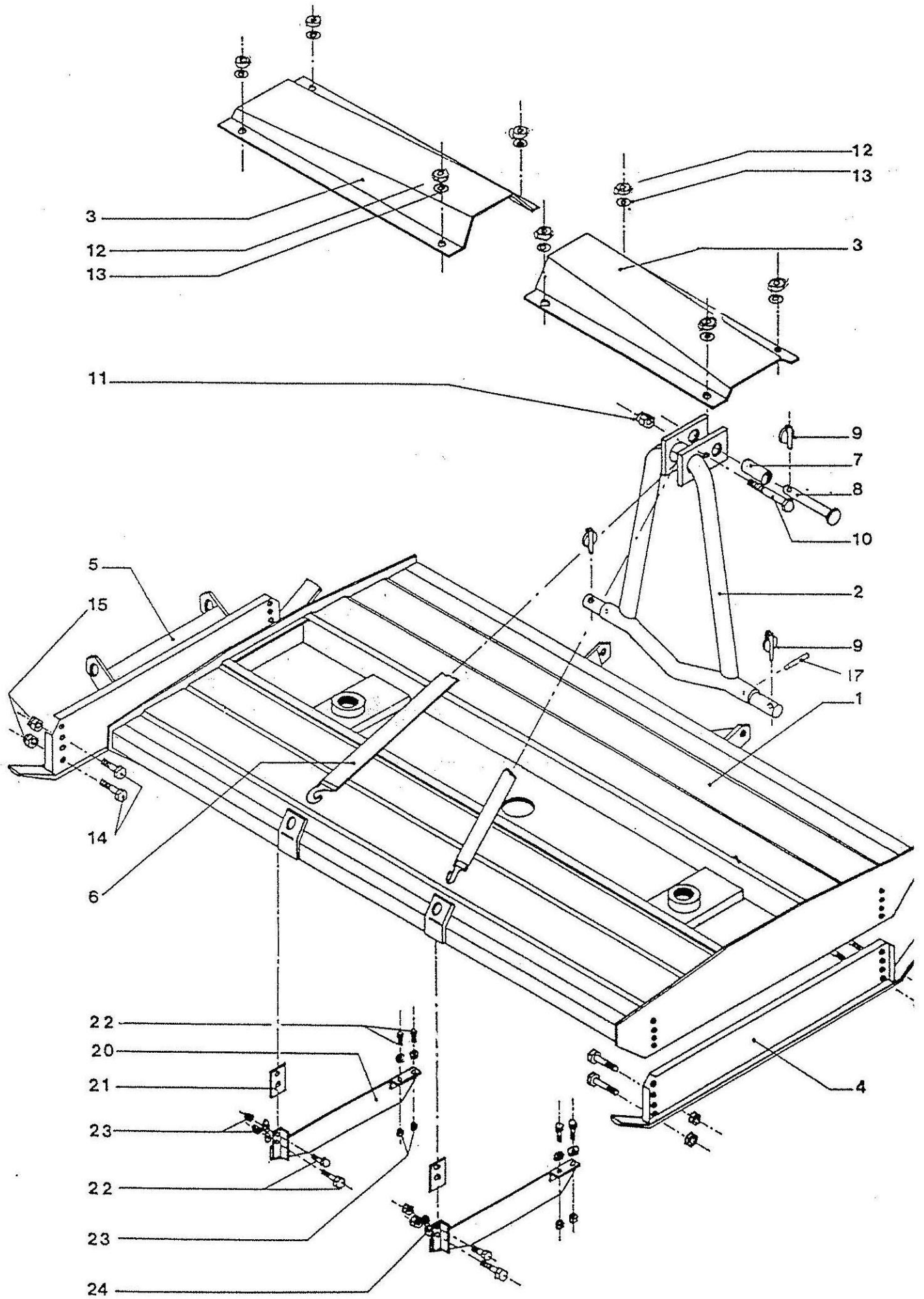
NOTE \* Bearing Hub - This item is welded onto the Main Frame Assembly and can only be replaced during a major overhaul/reconstruction of the Topper. It is not normally considered as a spare item.



MAIN FRAME ASSEMBLY FOR 2.72M (9'0) MODEL

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	172.291B	Body Assembly	1
2	172.204A	Headstock Assembly	1
3	172.172	Cover	2
4	172.203	Skid for topper	1
5	172.220	Skid Assembly L/H	1
6	7033	Webbing Strap c/w Hooks	1
7	190050	Top Link Sleeve (Cat 2)	1
8	1657	Top Link Pin	1
9	0832	Linch Pin	3
10	3856	Bolt	1
11	3182	Stiffnut	1
12	4421	Stiffnut	8
13	3332	Flat Washer	8
14	2748	Bolt	8
15	3082	Stiffnut	8
16	3192	Flat Washer	8
17	3713	Spring Pin	2
18			
19			
20 *	17200234	Baffle Plate Assembly	2
21 *	1720241	Securing Bracket	2
22 *	2987	Bolt	8
23 *	3182	Stiffnut	8
24 *	3111	Flat Washer	8

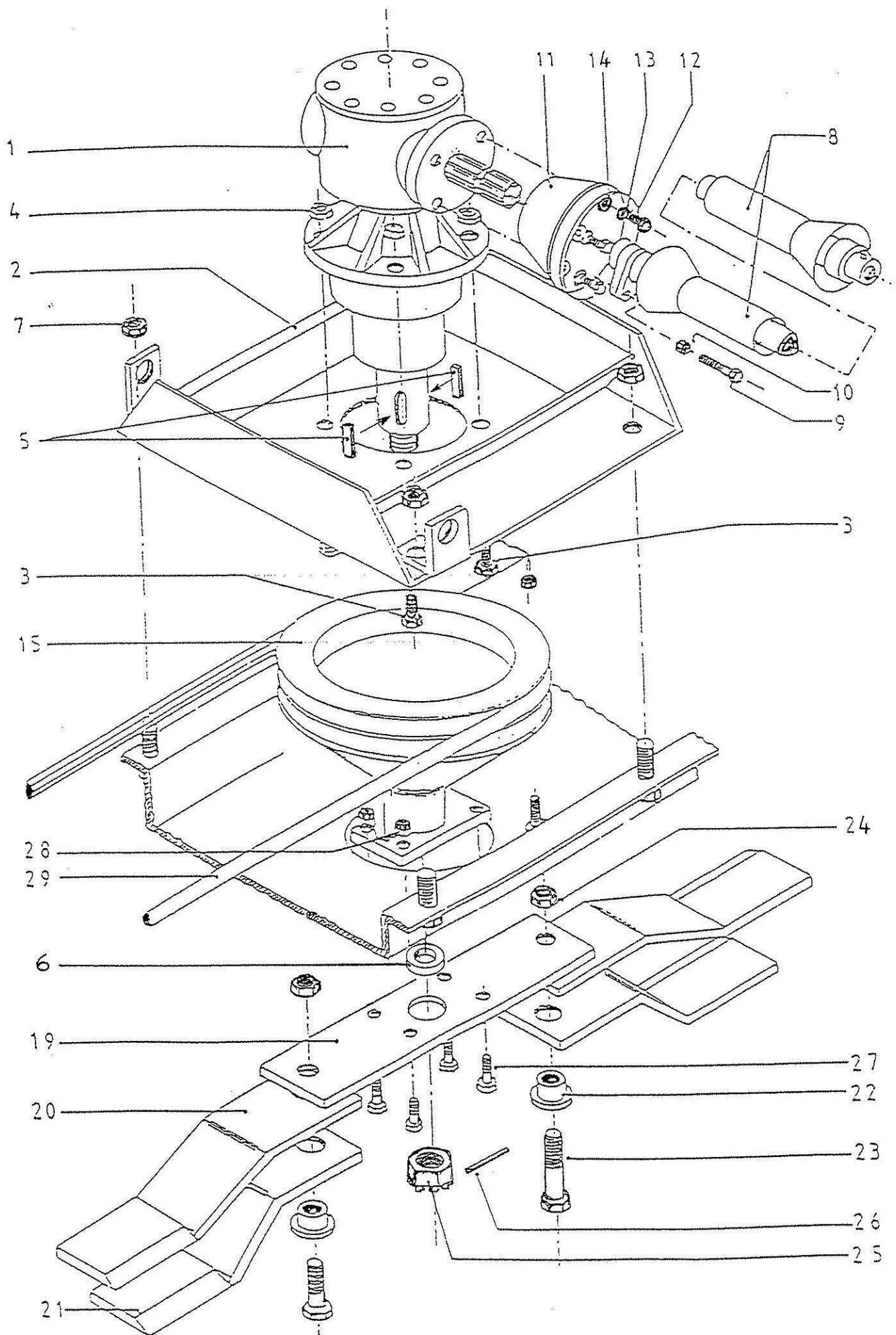
NOTE \* Baffle Plate Kit Optional Extra



## PRIMARY DRIVE

### PRIMARY DRIVE FOR 2.72M (9'0) MODEL

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	8100	Gearbox	1 <sup>a</sup>
2	172.232	Gearbox Platform	1
3	2929	Bolt	4
4	3747	Stiffnut	4
5	172.335	Key	1
6	172.332	Spacer for carrier	1
7	3082	Stiffnut	4
8	7063	PTO Shaft c/w Shearbolt	1
9	7092	Shear Bolt	1
10	2719	Stiffnut	1
11	6385	PTO Guard	1
12	4923	Setscrew	4
13	3001	Spring Washer	4
14	3111	Plain Washer	4
15	1720334	Pulley	1
16			
17			
18			
19	1720215	Blade Carrier (9'0)	1
20	1720219	Overlapping Blade	2
21	1720218A	Standard Blade	2
22	172.230	Spacer (Long)	2
23	2878	Bolt	2
24	3747	Stiffnut	2
25	8121	Castellated Nut	1
26	6351	Tension Pin	1
27	3183	Bolt	4
28	3182	Stiffnut	4
29	7767	Drive Belt	2



SECONDARY DRIVE

SECONDARY DRIVE FOR 2.72M (9'0) MODEL

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	172.224	Rotor Shaft	1
2	172.223	Spacer Ring	1
3	7010	Bearing	1
4	172.222	Bearing Spacer	1
5	7009	Bearing	1
6	3192	Flat Washer	1
7	172.290	Pulley	1
8	7062	Key	1
10			
11	7036	Bolt	1
12	172.221	Washer - Special	1
13	3203	Slotted Nut	1
14	6351	Tension Pin	1
15	1720215	Blade Carrier (9'0)	1
16	1720218A	Standard Blade	2
17	172.229	Spacer (Short)	2
18	2704	Bolt	2
19	3747	Stiffnut (Nyloc)	2
20	6393	Bolt	4
21	3182	Stiffnut	4
22 *	1720201.9	Bearing Hub	1
23	7767	Drive Belt	1
24	172.287	Idler	1
25	7494	Bearing	1
26	2919	Bearing	1
27	2717	Setscrew	1
28	2729	Spring Washer	1
29	172.289	Belt Retaining Bracket	1
30	172.288	Idler Pulley Mounting Bracket	1
31	172.209	Clamp Plate	1
32	2901	Bolt	2
33	2730	Spring Washer	2
34	2867	Flat Washer	2

NOTE: \* Bearing Hub - This item is welded onto the Main Frame Assembly and can only be replaced during a major overhaul/reconstruction of the Topper. It is not normally considered as a spare item.



