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McCONNEL

SWIPES

SW1600 & SW2000

Operator & Parts Manual

IMPORTANT

VERIFICATION OF WARRANTY REGISTRATION

Dealer Warranty Information & Registration Verification

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

To register machines; log onto https://my.mcconnel.com and select 'Machine Registration' which can be found in the 'Warranty' section of the site. **Confirm to the customer that the machine has been registered by completing the verification form below.**

Registration Verification Serial No.

Dealer Name: ……..……..

Dealer Address: ……..……..

Customer Name: ……..……

Date of Warranty Registration: ……/……/..…. Dealer Signature: ……..……

Note to Customer / Owner

Please ensure the section above has been completed and signed by the dealer to verify your machine has been registered with McConnel 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 machine's general maintenance procedure.

CAUTION: DO NOT OVER TORQUE HYDRAULIC FITTINGS AND HOSES

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 McConnel 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 mounted machines supplied by McConnel 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.
All Self Propelled Machines supplied by McConnel 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 or 1500 hours. Engine warranty will be specific to the Manufacturer of that unit.

1.02. All spare parts supplied by McConnel 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 McConnel 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 McConnel Ltd's serial number plate has been removed or altered.

1.05. The warranty policy is valid for machines registered in line with the terms and conditions detailed and on the basis that the machines do not extend a period of 24 months or greater since their original purchase date, that is the original invoice date from McConnel Limited.
Machines that are held in stock for more than 24 months cannot be registered for warranty.

1.06. 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.

1.07. Temporary repairs and consequential loss - i.e. oil, downtime and associated parts are specifically excluded from the warranty.

1.08. 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.

1.09. 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 McConnel Ltd cannot be held liable, and may have safety implications.

1.10. If in exceptional circumstances a non McConnel Ltd part is used to effect a repair, warranty reimbursement will be at no more than McConnel Ltd's standard dealer cost for the genuine part.

1.11. Except as provided herein, no employee, agent, dealer or other person is authorised to give any warranties of any nature on behalf of McConnel Ltd.

1.12. For machine warranty periods in excess of 12 months the following additional exclusions shall apply:

1.12.1. Hoses, exposed pipes and hydraulic tank breathers.

1.12.2. Filters.

1.12.3. Rubber mountings.

1.12.4. External electric wiring.

1.12.5. Bearings and seals

1.12.6. External Cables, Linkages

1.12.7. Loose/Corroded Connections, Light Units, LED's

1.12.8. Comfort items such as Operator Seat, Ventilation, Audio Equipment

1.13. 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.

1.14. 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. McConnel 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 McConnel 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 McConnel 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 McConnel 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 McConnel 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 McConnel Ltd Service Dealer, within 30 days of the date of repair.

2.05. Following examination of the claim and parts, McConnel Ltd will pay, at their discretion, for any valid claim the invoiced cost of any parts supplied by McConnel 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 McConnel Ltd. is final.

3. LIMITATION OF LIABILITY

3.01. McConnel 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. McConnel Ltd makes no warranty as to the design, capability, capacity or suitability for use of the goods.

3.03. Except as provided herein, McConnel 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

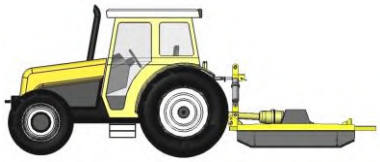
4.01. McConnel Ltd may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.

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.

McConnel Limited

ROTARY MOWER & TRACTOR PRE-OPERATION INSPECTION

A daily equipment inspection of machine and tractor should be conducted before the equipment is used.

Use the inspection sheets on the following pages to assist with these daily inspections. Damaged or missing guards should be repaired or replaced before operating the mower. Failure to repair or replace damaged guards can result in objects being thrown from the mower and possibly hitting the operator and/or bystanders.

Inspect the Mower for Safe Operating Condition

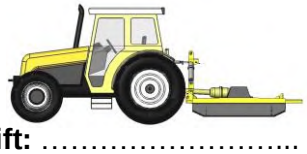
- Make sure the driveline guards and shielding are in place and in good repair.
- Inspect the chain guards, flexible and/or solid defector thrown object shielding to assure that they are in place on the front and rear of the mower deck and in good repair. Repair or replace any damaged or missing thrown object shields.
- Remove all debris and cut material from the deck and around the gearboxes.
- Ensure the mower cutting height is set high enough to reduce the possibility of the mower blades contacting the ground. Actual height will be dependent on the ground conditions. Increase the height when working in rough or undulating conditions.
- Inspect for broken, chipped, bent, missing, or severely worn blades. Replace damaged blades before operating the mower. Ensure the blade retaining bolts and fasteners are secure and tight.
- Lubricate the driveline universal joints and telescoping members daily.
- Inspect the wheel lug bolt/nuts to assure that they are tight.
- If mower is equipped with pneumatic tyres, make sure they have the required air pressure.
- Inspect for worn or damaged decals and safety instructions. Replace any unreadable, damaged or missing safety decals.
- Follow the operator's manual(s) inspection and maintenance instructions for lubricating parts, and keeping thrown object shielding, driveline guards, rotating parts shields, mower blades and decals in good repair.

Inspect the Tractor for Safe Operating Condition

- Inspect the controls, lights, SMV's (Slow Moving Vehicle sign), seat belts, and ROPS to ensure they are in place and in good working order.
- Ensure tyres, wheels, lug bolts/nuts are in good condition.
- Make sure the tractor brakes and steering are in proper operating condition.
- Follow the operator's manual(s) inspection and maintenance procedures for keeping the tractor in good and safe condition before operating.

Copies of the inspection sheets on the following pages should be retained in this manual for reference; two sets are included to allow removal of one set for photocopying purposes. Alternatively, these inspection sheets can be download from our website via the QR code or using the link below;
https://my.mcconnel.com/service/pre-operation-inspection-documents/

MOUNTED ROTARY MOWER PRE-OPERATION INSPECTION



Mower ID …….. **Date:** …….. **Shift:** ……..

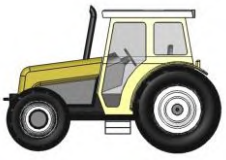
WARNING: Before conducting the inspection, make sure the tractor engine is off, the key removed, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the mower is resting on the ground or securely blocked up.

Item	Condition at start of shift	Specific Comments if not O.K.
The operator's manual is in the canister on the mower.		
All warning decals are in place, clean and legible.		
The mower decks are clear of cut grass and debris.		
Chain guards/deflectors are in place and in good condition.		
Driveline/gearbox shields/guards are in good condition.		
Driveline clutches are in good condition, not frozen.		
Driveline telescoping members and u-joints are lubricated.		
Driveline yokes are securely attached to tractor and mower.		
Gearbox mounting bolts are tight.		
Blade carrier retaining nut is tight.		
Blades are not chipped, cracked, bent or worn out.		
Blade bolts are tight.		
Side skirts and skids are in good condition.		
There are no holes or cracks in the machine deck.		
Wheel nuts are tight.		
All linkage mounting pins are securely fastened.		
Lift height is restricted to prevent pto hitting the deck.		

Operators Signature: ……

DO NOT OPERATE AN UNSAFE TRACTOR OR MACHINE

TRACTOR PRE-OPERATION INSPECTION



Power Arm ID …… **Date:** …… **Shift:** ……

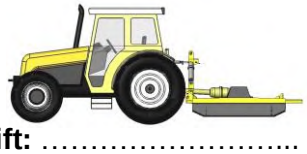
WARNING: Before conducting the inspection, make sure the tractor engine is off, the key removed, all rotation has stopped and the tractor is in park with the parking brake engaged. Ensure any implement attached to the tractor is firmly on the ground.

Item	Condition at start of shift	Specific Comments if not O.K.
The flashing lights function properly.		
All lights are clean and working correctly.		
All cab windows are clean and wipers working correctly.		
The SMV sign, where required, is clean and visible.		
The tyres are in good condition with correct pressure.		
The wheel nuts are tight.		
The tractor brakes are in good condition.		
The steering linkage is in good condition.		
There are no visible oil leaks.		
The hydraulic controls function properly.		
The ROPS or ROPS cab is in good condition.		
The seatbelt is in place and in good condition.		
The 3-point hitch is in good condition.		
The drawbar/pick up hook is secure and in good condition.		
The PTO master shield is in place.		
The engine oil level is full.		
The brake fluid level is full.		
The power steering fluid level is full.		
The fuel level is adequate.		
The engine coolant fluid level is full.		
The radiator and oil cooler are free of debris.		
The air filter is in good condition.		

Operators Signature: ……

DO NOT OPERATE AN UNSAFE TRACTOR OR MACHINE

MOUNTED ROTARY MOWER PRE-OPERATION INSPECTION



Mower ID …….. **Date:** …….. **Shift:** ……..

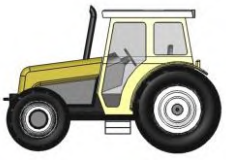
WARNING: Before conducting the inspection, make sure the tractor engine is off, the key removed, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the mower is resting on the ground or securely blocked up.

Item	Condition at start of shift	Specific Comments if not O.K.
The operator's manual is in the canister on the mower.		
All warning decals are in place, clean and legible.		
The mower decks are clear of cut grass and debris.		
Chain guards/deflectors are in place and in good condition.		
Driveline/gearbox shields/guards are in good condition.		
Driveline clutches are in good condition, not frozen.		
Driveline telescoping members and u-joints are lubricated.		
Driveline yokes are securely attached to tractor and mower.		
Gearbox mounting bolts are tight.		
Blade carrier retaining nut is tight.		
Blades are not chipped, cracked, bent or worn out.		
Blade bolts are tight.		
Side skirts and skids are in good condition.		
There are no holes or cracks in the machine deck.		
Wheel nuts are tight.		
All linkage mounting pins are securely fastened.		
Lift height is restricted to prevent pto hitting the deck.		

Operators Signature: ……

DO NOT OPERATE AN UNSAFE TRACTOR OR MACHINE

TRACTOR PRE-OPERATION INSPECTION



Power Arm ID …… **Date:** …… **Shift:** ……

WARNING: Before conducting the inspection, make sure the tractor engine is off, the key removed, all rotation has stopped and the tractor is in park with the parking brake engaged. Ensure any implement attached to the tractor is firmly on the ground.

Item	Condition at start of shift	Specific Comments if not O.K.
The flashing lights function properly.		
All lights are clean and working correctly.		
All cab windows are clean and wipers working correctly.		
The SMV sign, where required, is clean and visible.		
The tyres are in good condition with correct pressure.		
The wheel nuts are tight.		
The tractor brakes are in good condition.		
The steering linkage is in good condition.		
There are no visible oil leaks.		
The hydraulic controls function properly.		
The ROPS or ROPS cab is in good condition.		
The seatbelt is in place and in good condition.		
The 3-point hitch is in good condition.		
The drawbar/pick up hook is secure and in good condition.		
The PTO master shield is in place.		
The engine oil level is full.		
The brake fluid level is full.		
The power steering fluid level is full.		
The fuel level is adequate.		
The engine coolant fluid level is full.		
The radiator and oil cooler are free of debris.		
The air filter is in good condition.		

Operators Signature: ……

DO NOT OPERATE AN UNSAFE TRACTOR OR MACHINE

LIST OF CONTENTS

GENERAL INFORMATION

Read this manual before fitting or operating the machine or accessory. Whenever any doubt exists contact your local dealer or the McConnel Service Department for assistance.

Only use 'Genuine McConnel Parts' on McConnel machinery and equipment.

DEFINITIONS: *The following definitions apply throughout this manual;*

⚠ DANGER

DANGER: *Alerts to a hazardous situation which will result in death or serious injury if not observed carefully.*

⚠ WARNING

WARNING: *Alerts to a hazardous situation which could result in death or serious injury if not observed carefully.*

⚠ CAUTION

CAUTION: *Alerts to a hazardous situation which could result in damage to the machine and/or equipment if not observed carefully.*

NOTICE

NOTICE: *Specific or general information considered important or useful to emphasise.*

LEFT HAND (LH) & RIGHT HAND (RH): *These terms are applicable to the machine when fitted to the tractor and viewed from the rear; these terms also apply to tractor references.*

SERIAL PLATE
All machines are equipped with a serial number plate containing important information relating to the machine including a unique serial number used for identification purposes.

Note: Images in this manual are provided for instruction and informational purposes only and may not show components in their entirety. In certain instances images may appear different to the actual machine; where this occurs the general procedure will be basically the same. E&OE.

Machine & Dealer Information

Record the serial number of your machine on this page and always quote it when ordering parts. Whenever information concerning the machine is requested remember to also state the make and model of tractor to which the machine is fitted.	
Machine Serial Number:	Installation Date:
Machine Model Details:	
Dealer Name & Branch:	
Dealer Address:	
Dealer Telephone No:	
Dealer Email Address:	

MACHINE DESCRIPTION & PURPOSE OF USE

McConnel Rotary Swipes are '3-point linkage' tractor mounted rotary mowers ideal for the cutting and mulching of grass, reeds, bracken, gorse and general pasture materials. The flexible 3-point hitch design allows the machine to follow the contours of the ground for optimum cutting performance with minimum stress on the machine and tractor. Each machine is equipped with a massive triple blade holder and robust 13mm thick spring steel blades that are capable of cutting and mulching scrub of up to 75mm (3") thick. Unique high lift fins lifts materials, including fine grass, to provide a clean uniform cut. Rear tail wheel with puncture proof tyre is fitted as standard for control of cutting height.
Machines are available in 1.6m and 2.0m cutting widths and are suitable for tractors over 75HP with 540RPM PTO as standard. 1000RPM versions are available as an option.

These machines should only be used to perform tasks for which they were designed – use of the machine for any other function may be both dangerous to persons and damaging to components and is therefore not advisable.

MACHINE IDENTIFICATION

Each machine is fitted with an identification plate which includes the following information:

1. Machine Code (Part Number)
2. Machine Serial No.
3. Machine Weight

When ordering spares or replacement parts from your local dealer it is important to quote both the Part Number and the Serial Number as stated on the identification plate so the machine and model can be quickly and correctly identified.

Machine Identification Plate

TECHNICAL SPECIFICATIONS

Specifications	1600 Model	2000 Model
Working Width	*1.60m*	*2.00m*
Transport Width	*1.75m*	*2.12m*
Weight	*520kg*	*700kg*
Cutting Height	*50mm – 250mm*	*50mm – 250mm*
Tractor Size	*75-120bhp*	*75-120bhp*
PTO Speed	*540rpm (1000rpm Optional)*	*540rpm (1000rpm Optional)*
Gearbox Protection	*Slip Clutch*	*Slip Clutch*
Gearbox Rating	*95hp*	*95hp*
Optional Extras	*'Stump Jump' Pan Chain Kit*	*'Stump Jump' Pan Chain Kit*

COMPONENT IDENTIFICATION

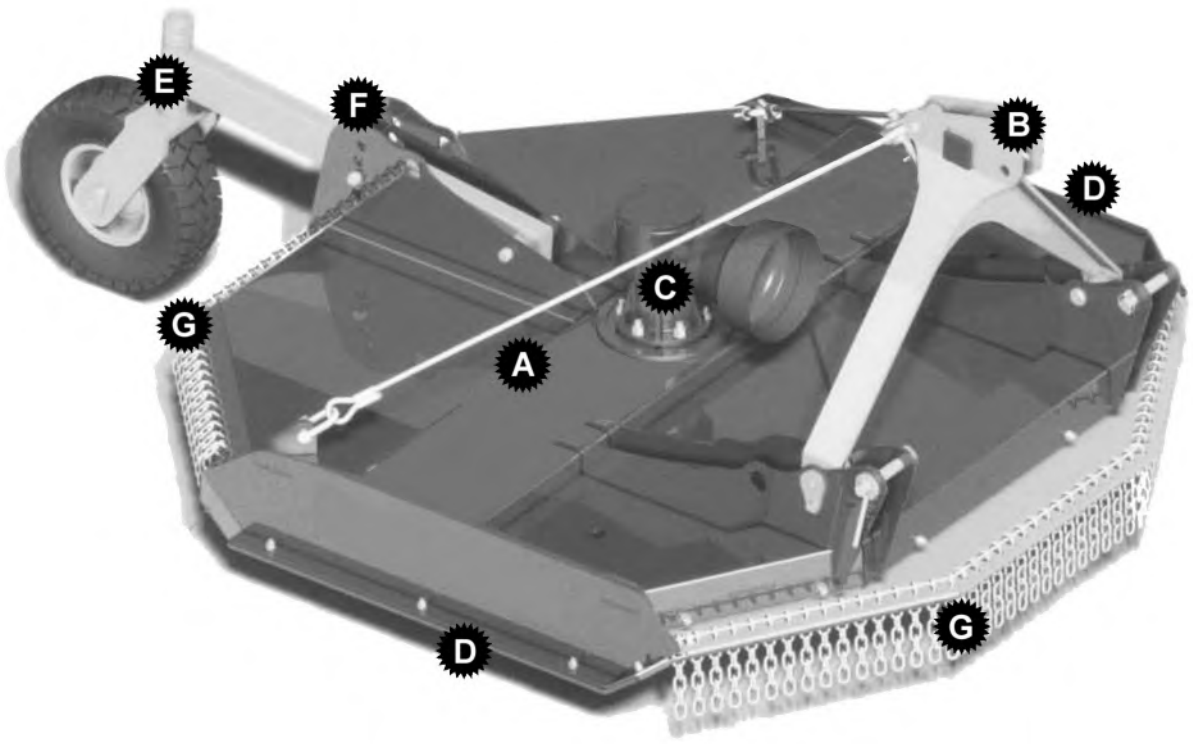


Figure 1

A) DECK
B) 3-POINT LINKAGE
C) GEARBOX
D) REPLACEABLE SKIDS
E) WHEEL & BOOM
F) SPANNERLESS HEIGHT ADJUSTMENT
G) CHAIN SAFETY GUARDS

General safety rules:

- ▲ Always read and follow the instructions for the use and maintenance of the machine before carrying out any work operations or servicing tasks.
- ▲ Improper use of the machine is both highly dangerous to persons and damaging to the machine components – only use the machine for its designated task.
- ▲ Both operators and the maintenance fitters should be familiar with the machine and fully aware of dangers surrounding improper use or incorrect repairs.
- ▲ Before starting, checks to both tractor and machine must be carried out as regards: functionality, road safety, accident prevention rules.
- ▲ Even when using the machine correctly, stones or other objects may be thrown a long distance. Therefore nobody must stand within the danger area. Special attention must be paid when working near roads or buildings.
- ▲ Use tractor's fitted with safety cabs.
- ▲ The condition of blades and of machine guards must be checked before beginning the daily work - they must be replaced if damaged or missing before you use the machine.
- ▲ During checks or repairs, make sure nobody could start the machine by mistake.
- ▲ Never wear loose or fluttering clothes.
- ▲ Never carry passengers on the tractor.
- ▲ Never carry passengers on the machine.
- ▲ Never connect the power takeoff with the engine running.
- ▲ Never approach the machine until the rotor has completely stopped.
- ▲ Do not enter the working zone of the PTO shaft. It is dangerous to approach the rotating parts of a machine.
- ▲ Keep the PTO shaft guard in good condition.
- ▲ Before starting, check the surrounding area for the likely presence of children and/or animals.
- ▲ Do not stand near the machine when it is operating.
- ▲ The PTO shaft must be assembled and disassembled only with the engine stopped and the starting key removed.
- ▲ Before connecting the power takeoff, check that the speed and the rotational direction correspond to those of the machine.
- ▲ Immediately replace missing or damaged safety decals.
- ▲ Before leaving the tractor with the machine attached, proceed as follows:

1. Disconnect the power takeoff,
2. Put the machine steadily on the ground using the tractor's hydraulic lift.
3. Apply the hand brake and, if the ground is steeply sloping, wedge the tractor.
4. Remove the starting key.

Transportation Safety

- ▲ In transport, reduce speed, especially on bumpy roads, the weight of the machine may render driving difficult and damage the machine itself.
- ▲ Ensure the levers that operate the hydraulic lift are locked, to avoid the lowering of the machine during transport.
- ▲ When driving on public roads, respect all road rules in force.
- ▲ Never transport the machine with the rotor running, even for short distances.

Operating Safety

- ▲ Pay special attention when working with the machine not to touch fixed objects as this could cause damage to machine components resulting in parts or debris being thrown out of the machine at very high speed.
- ▲ If wires, ropes or chains should become entangled in the rotor stop immediately to prevent damage or dangerous situations; stop the rotor and the tractor, take out the starting key. Put working gloves on; clear the rotor with the aid of pliers or shears. Do not try to disentangle by inverting the rotational direction of the rotor.
- ▲ Do not use the machine when excessive vibration is experienced, as this may cause breakage and serious damage - find the cause of the vibration and eliminate it before using the machine again.

Although the information given here covers a wide range of safety subjects, it is impossible to predict every eventuality that can occur under differing circumstances whilst operating this machine. No advice given here can replace 'good common sense' and 'total awareness' at all times, but will go a long way towards the safe use of your McConnel machine.

SAFETY DECAL IDENTIFICATION

Safety decals are located on various points of the machine. They can be identified by the yellow upper panel depicting the hazard, and the lower white panel indicating means of avoidance or precautions to be taken. These decals have no text. It is essential that all operators and personnel associated with the machine fully understand their meanings, which are shown below. Any safety decals which are found missing should be replaced.

1.

2.

3.

4.

5.

6.

7.

8.

1. **Warning -** Read operator's manual before operating or handling this machine. Observe all instructions and safety rules during operation.

2. **Warning -** Keep all persons at a safe distance when the machine is running.

3. **Warning -** Beware of escaping fluid.

4. **Warning -** Beware of overhead electrical power lines.

5. **Warning -** Do not open or remove guarding.

6. **Warning -** Stay clear of mower blades.

7. **Warning -** Remove the ignition key and read the instructions before working on or getting close to the machine, as the blades may still be rotating.

8. **Warning -** Check tightness of all nuts and bolts every 8 hours.

TRACTOR REQUIREMENTS

Tractor must be minimum 75HP equipped with Cat.2 rear linkage.

Independent ‘live drive’ PTO to allow continuous PTO operation even when the tractor’s clutch is operated.

Sufficient weight or fitted ballast over the front wheels of the tractor to ensure complete stability at all times during operation and transport of the machine.

Check chains or stabilizers must be fitted and correctly tightened.

Tractor linkage lift rods must be set to an equal length.

Before attachment of the machine ensure position control is set – **do not** attempt to hitch in draft control.

⚠WARNING

Attachment of the machine to the tractor should always be performed on a firm level site. Keep bystanders at a safe distance from the machinery at all times.

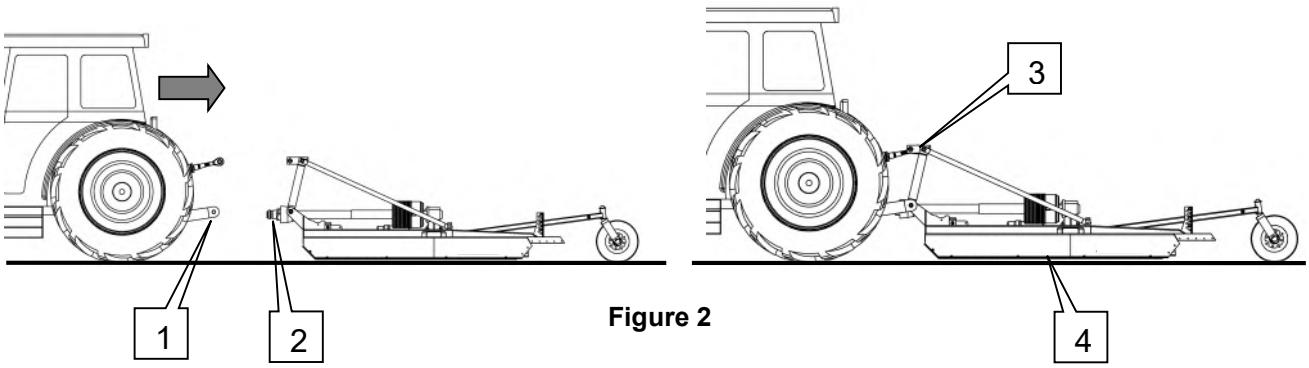


Figure 2

Note: Images used may differ from the actual machine but the general procedure will be the same.

Attaching the Machine

The procedure for fitting the machine to the tractor is as follows:

- Disengage the PTO drive.
- Reverse tractor squarely to the machine *(Fig.2).*
- Gradually reverse tractor until lift arm holes (**1**) are level with mounting pins (**2**).
- Attach left-hand lift arm to mounting pin and lock with lynch pin
- *Adjust height of right-hand lift arm if necessary*.
- Attach right-hand lift arm to mounting pin and lock with lynch pin.
- Fit top stay of machine to top link on tractor (**3**), adjusting the length with the machine level on the skids (**4**)
- Secure with pins provided with tractor.
- Adjust lift arm check chains to prevent machine from ‘swaying’ when raised.
- Fit PTO shaft - *on initial attachment, refer to following page for PTO shaft measurement and cutting procedure.*

PTO Shaft Measurement

Measure the PTO shaft and cut to the dimension shown *(Fig.3);* the finished length of the PTO shaft should be 75mm (3”) less than measured distance ‘**A**’ between tractor shaft and gearbox stub shaft to enable fitting.

NOTICE

For subsequent use with different tractors measure again, there must be a minimum shaft overlap of 150mm (6”).

Fit PTO in position and attach the torque chains to a convenient location to prevent the shaft guards from rotating.

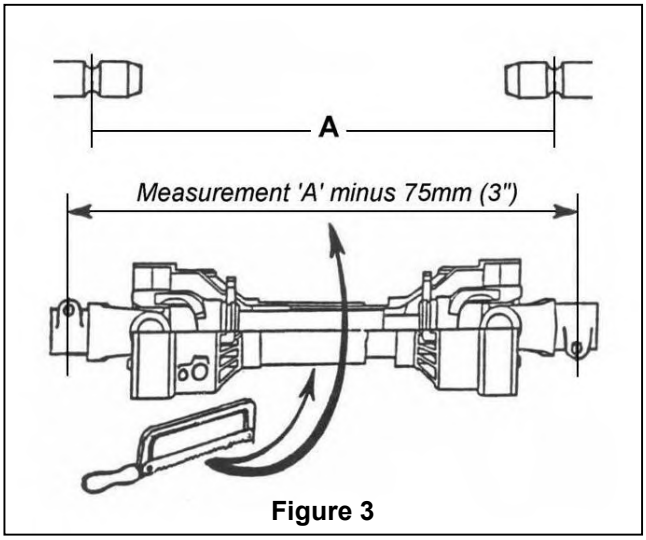


Figure 3

PTO Shaft Length Adjustment

1. Shorten outer plastic tube to 40mm less than the shortest envisaged shaft length as illustrated *(Fig.4)*.
2. Remove the marked tube.
3. Remove same length from inner plastic tube and metal shaft profiles (inner and outer).
4. De-burr all edges and remove ‘swarf’ to ensure smooth operation.

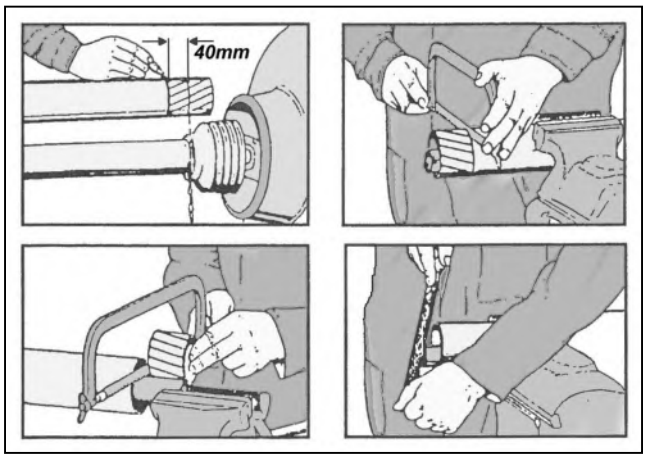


Figure 4

PTO Fitment

- Before fitting PTO shaft to tractor, grease the sliding drive shafts and bearing units.
- Fit PTO to tractor ensuring locking peg on the splined coupling is fully engaged.
- Attach PTO guard torque chains to tractor and machine.

Pre-Operational Checks

Before commencing work with the machine the following checks should be performed:

- Make a visual inspection of the machine to ensure it is in good operational condition.
- Check all safety guarding is in position and in full working order.
- Check for missing or damaged components and replace if required.
- Check all greasing points are well lubricated.
- Check gearbox oil level.
- Check PTO speed and direction match that of the machine.

Height

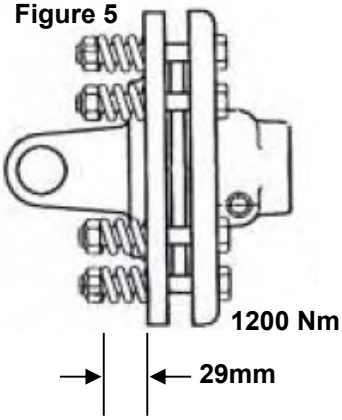
Cutting height adjustment is achieved by raising or lowering the wheel. Lowering the wheel produces a longer cut, raising the wheel leaves a shorter cut. Always set machine level front to rear and side to side.
The rear wheel acts a 'middle skid' and should be set to take equal weight to the side skids, when set correctly this should prevent scalping.

⚠CAUTION **Machine Protection**

To prevent gearbox damage the PTO is fitted with a slip clutch. When cutting in conditions where solid objects are likely to be found it is recommended that the operator reduces the engine revs to allow the blades to pivot more easily when striking solid objects, and proceed with caution.

Slip Clutch Settings

Figure 5



The clutch settings should not be altered from that stated without first seeking specialist advice from your local dealer or the manufacturer's service department.

⚠CAUTION

Never over-tighten the pressure springs on the slip clutches as this could result in severe damage to the gearbox and drive lines, as well as infringing the machines warranty.
The correct length of the spring is **29mm** *(Fig.5)*.

Important: If the machine has been laid up for any length of time there is a risk of the clutch plates rusting and seizing together. **Never operate the machine in this condition** as there will be no protection to the drive line and gearboxes against shock loading. Refer to 'after storage' in the maintenance section of this manual for details of freeing a 'frozen' clutch.

⚠WARNING **Safety Guards**

It is vital in the interests of safety that all guarding be kept in position on both the machine and the tractor whenever the machine is running or operating.

The manufacturer disclaims all responsibility for damage or injury arising as a result of machine guards being removed, altered, or the use of guards other than those provided by the manufacturer being fitted to the machine.

ALWAYS: Check that all guards are fitted correctly and are in good working condition.

ALWAYS: Inspect guards frequently and replace any guards that have wear or damage which is likely to impair their operation.

- Raise the machine off ground using tractor hydraulics *(Fig.6).*

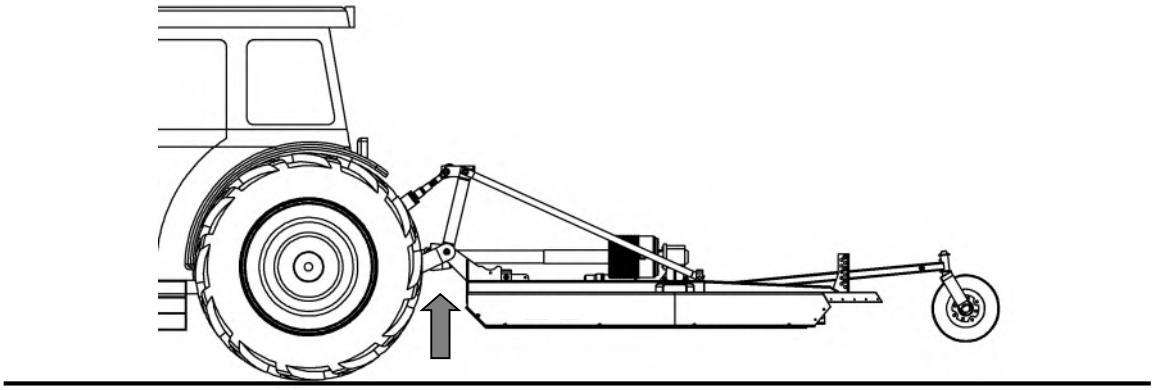


Figure 6

- Ensure nobody is standing near to the machine.
- Run tractor engine at idle speed and engage PTO drive.
- When rotor starts increase PTO speed gradually to 540 rev/min.
- If rotor fails to start stop tractor engine and check PTO drive.
- Allow the machine to run for approximately ten minutes.

Stop the machine immediately if excessive noise is heard or vibration is felt – check the machine over to determine the cause, do not use the machine until the problem has been eliminated.

Pre-Work Lubrication Checks

Gearbox: The gearbox is filled with semi-fluid grease prior to leaving the factory, but it is advisable to check the level before putting the machine to work, this is performed by removal of the level plug situated on the rear of the gearbox. Warm the gearbox up before filling to the correct level with **EP90** lubricant.

Grease Points: All grease points should be greased before operating the machine.

Parking

When parking or storing the machine it should always be placed on firm level ground for protection of the machine and safety to persons *(Fig.7).*

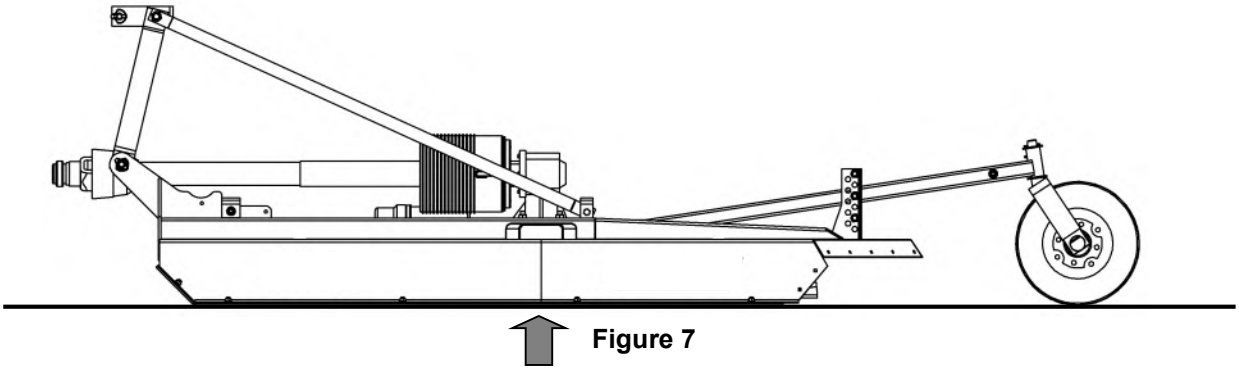


Figure 7

Engage the PTO only when the tractor engine is at low revs to prevent shock damage to the machine. Slowly increase the engine revs to achieve the standard 540rpm PTO speed. *If at any time serious vibration occurs, stop the engine immediately and check that no blades are missing* - following all safety precautions. The cause must be found and rectified immediately or other components may be affected.

When in work, lower the machine to the ground carrying all its weight on the skids/wheel, allowing the machine to follow the contours of the ground and ensuring there is sufficient slack in the wire ropes. Select a sensible forward speed bearing in mind the density of growth, the terrain, and the available horsepower, taking extra care when turning, particularly on slopes.

When turning, it is not necessary to lift the machine off the ground but instead allow sufficient room to turn in a large radius. The machine only needs to be raised when turning in a tight corner or reversing over dense undergrowth or when operating on the front linkage.

The machine is equipped as standard with three high-lift blades complete with fins to aid spreading/mulching.

Normal Pre-Start Checks

- Check that the rotor is free from obstructions, especially pieces of wire.
- Check that all blades are in good condition and securely attached.
- Check that all guards are in position and that they are in good condition.
- Examine the job to be cut. It is very important that the work site is inspected before cutting and all hidden obstructions removed or their positions marked so that they can be avoided.
- Check for wire, hidden stakes, drain pipes, large stones, etc. and remove or mark their location.

Normal Run Up

- With a new machine never start cutting in arduous conditions, allow for at least one day of light-duty work for ‘running-in’.
- **Never** attempt to start the machine while it is under load at any time. Always free rotor shaft from any obstructions.
- **Never** increase or decrease PTO speed rapidly as this can lead to gearbox damage.
- **Never** engage PTO at full 540 PTO speed.

⚠CAUTION

Stop the machine immediately if excessive noise is detected from the rotor or gearbox and investigate the cause – ensure the machine has stopped fully, the tractor engine switched off and the key removed before approaching the machine. Do not use the machine again until the problem has been rectified.

Operating Hints

- Keep PTO speed at 540-550 rev/min to maintain rotor shaft speed.
- AVOID wire. **Stop the tractor engine immediately** if an unusual noise is heard from the machine. On no account raise or move the cutting unit until the rotor has stopped. **Never under any circumstances** run the rotor 'to clear' itself.
- AVOID stumps and pipes etc. Stalling in heavy growth may cause damage to the rotor.
- DO NOT allow personnel near the machine while it is operating.
- AVOID rushing into material when operating.
- AVOID taking in too much material by selecting an appropriate forward speed.

Stalling the Rotor

If the rotor does become choked the tractor will stall or the PTO clutch will slip. If this should occur follow the instructions below:

- Stop forward motion, disengage PTO drive immediately and place PTO drive lever in neutral.
- Lift the machine using tractor hydraulics.
- Stop the tractor engine.
- Remove any obstructions that may be present on the rotor. If working under the raised machine ensure that it is safely supported.
- **Never under any circumstances** run the rotor 'to clear' itself.

⚠WARNING **Safety First**

- Never leave the tractor seat without first disengaging the PTO and stopping the engine.
- Ensure all rotating parts have stopped turning.
- Never attempt any repairs, maintenance, service or any other checks with the machine raised on the tractor hydraulics.
- Always fully lower to the ground, or securely prop the machine on substantial servicing stands.
- Always replace all guards and retaining chains after servicing/maintenance is completed.

TRANSPORT

Normally the machine will need to be driven to the work site. To put the machine into the transport position follow the instructions stated below:

- Raise machine from the ground using tractor hydraulics.
- Lock in raised position.
- Do not transport with PTO speed drive engaged.

Always observe Public Highway Regulations concerning the towing of implements, and securely attach a registration and lighting board. Take care to slow down when travelling over rough ground to avoid 'bouncing' of the machine on the linkage causing unnecessary strain.

MACHINE REMOVAL & STORAGE

In the parking position the machine rests on the skids at both sides. To put the machine into this position follow the procedure below:

- Remove the bolt from the height adjusting clevis on the main deck to allow the castor arm to swing up.
- Lower the machine to the ground using the tractor hydraulics.
- Stop tractor engine and disengage PTO drive.
- Slacken lift arm and check chains.
- Remove top link.
- Remove lynch pin and rings securing lift arms to mounting pins.
- Remove mounting pins from mounting clevis and lift arms.
- Grease mounting pins.
- Replace lynch pins.
- Release tractor end of PTO shaft and pull back along splines.
- Start tractor engine and drive carefully forward.
- Grease spline and tubes of PTO and store with the machine or keep in a safe dry place.

Machine Storage
Before removing the machine from the tractor a thorough check of the machine and its components should be made. Follow instructions below.

- Thoroughly clean all moving parts, particularly the rotors.
- Check that all blades are in place and that they are in good condition.
- Smear all unpainted metal parts with grease and lubricate all grease nipples.
- Make a note of any item(s) that need replacing so that parts can be ordered.

Initial Maintenance Tasks

The following checks should be performed **before the first operation**, **after the first hour,** then **after 4 hours.**

- Check wheel nuts and tyre pressure *(50psi)*.
- Check gearbox bolts.
- Check blade bolts are fully tightened and in particular the castle headed nut on the blade rotor.
- Check retaining bolts on the drive shaft.
- Grease all lubrication points.
- After the **first 50 hours** drain and replace the gearbox oil. Replace with **EP90** gear oil

It is your responsibility to maintain your machine to ensure a long reliable working life.

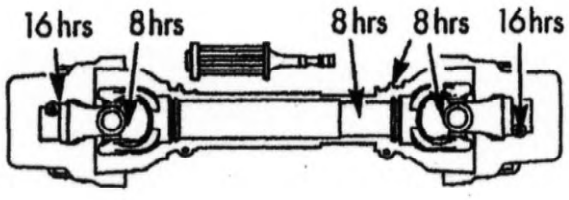
Torque Settings

The figures stated below are recommended **maximum** settings only.

Size:	Tensile strength:	Description:	Torque Setting
M16	8.8	Gearbox bolts	280 Nm.
M16	8.8	Blade carriers	280 Nm.
M24	8.8	Blade bolts	950 Nm.

Daily (8 Hourly) Maintenance Tasks

- Grease all lubrication points on the PTO.
- Check condition of blades and blade bushes and ensure all retaining bolts are fully tight.
- Check gearbox oil, replenish with **EP90** gear oil as necessary to the correct level line on the dipstick provided with each gearbox.
- Dismantle and clean PTO sliding surfaces and re-grease. Grease universal joints.



Every 16 Hours

- Grease PTO inner tube and push pins

Regular Maintenance Tasks

- Check there is no wrapping of string, plastic, grass or other debris between rotor boss and blades.
- Inspect gearbox seals for leaks.
- Regularly check the rotor boss retaining castle nut for tightness (Part No.5771409). *First remove the split pin, select the correct size socket in 3/4" drive and fully tighten the nut. When replacing the split pin do not slacken the nut to align the hole, always tighten.*

⚠CAUTION **Failure to regularly check this nut will result in serious wear to the hub which is expensive to repair.**

⚠CAUTION

It is vital that gearbox and blade bolts are regularly checked to be 'very tight'. When the machine is new there is a 'bedding in' period where very frequent checking is important.

Power Take-off Shaft (PTO) Maintenance

The PTO shaft used is of the normal agricultural type. Spares kits, comprising the spider, needle bearings, circlips etc., are generally available from most agricultural dealers.
For correct part numbers refer to the parts manual for the specific machine.

Some routine maintenance is needed to ensure a trouble free life for the PTO shaft. For best results follow instructions below:

- Regularly grease the PTO shaft sliding tubes.
- Grease both ends of PTO shaft on a daily basis during use.
- Ensure PTO guard torque chains are securely attached and in good condition.
- Check that PTO guard is in good condition – replace immediately if damaged.
- Check universal joint bearing journals for roughness or slack - replace if necessary.

PTO Lubrication

The lubrication chart below states the frequency at which grease points should be lubricated:

Grease Point	Frequency
PTO Shaft Bearings	Weekly
PTO Shaft Tubes	Weekly
Castor Wheel	Weekly

⚠CAUTION **Do not over grease**;
this can cause overheating and damage bearing seals.

Blades

⚠WARNING

When performing maintenance work on or near the blades, be careful of free-swinging blades over-centring and falling. It is recommended that protective headgear, gloves and goggles are worn.

The blades can be re-sharpened by grinding the cutting edges - care must be taken that the blades are of the same weight and length after grinding. Do not over heat when grinding, as this will affect the hardness of the blades.

All the blades are free swinging and swivel on hardened steel bushes, which are easily replaced. When replacing blades, it is important that blades are replaced in sets, in order to retain balance of the rotor. Bushes must also be replaced when new blades are fitted.

If the blades are showing any signs of severe wear, damage or cracking, they must be replaced immediately. Never attempt to weld the blades; this will make them very brittle and thus extremely dangerous. **Do not take risks with the cutting blades - if in doubt, replace.**

Chain Kit (Optional Extra)

Chain kits are available as an optional extra for scrub clearance work in stoney conditions. These are not suitable for work in thick material.

Skids

When operating on abrasive soils, particularly in stubbles and similar conditions with thin ground cover, excessive skid wear may be experienced. To provide extra protection, and to prolong the life of the skids, special hard facing rods are available.

If working in wet and muddy conditions, ensure that debris is not allowed to build up on the deck.

After Storage

Disassemble the slip clutch and with an emery cloth remove all traces of rust on the metal clutch plates. Check condition of the friction plates, if there are any sign of over heating, wear or cracking, replace with new. Do not attempt to use the machine with damaged slip clutch plates.

Assemble the clutch and tighten the bolts to achieve a spring length of **29mm**. Do not ‘over tighten’ or the clutch will not work.

Check condition of the tyre and then follow the maintenance tasks stated previously in this manual. Pay particular attention to the condition of the guards and blades.

Disposal

At the end of the machines working life all parts that may cause risk or danger have to be made inert. Materials forming the machine must undergo a differentiated division, these materials are:

- Steel (Deck, A-Frame, Blades etc.)
- Mineral Oil (within gearbox)
- Plastic (PTO guarding)

These materials must be disposed of in accordance with local laws and regulations.

Troubleshooting Chart

Problem	Suggested Cause	Remedy
Irregular Cut	*Worn, bent or broken blades.* *Machine is not level with the ground.* *Material blockage due to speed.*	*Replace item(s).* *Level the machine.* *Reduce working speed.*
Machine Noise	*Loose bolts.* *Cracks or initiation of cracks in deck.*	*Tighten Bolts.* *Have it repaired in specialised workshop.*
Gearbox noise	*Lack of oil.* *Worn bearings.* *Worn gears.*	*Fill to level.* *Replace.* *Replace.*
Vibration	*Broken or worn blades.* *Unbalanced rotor.*	*Replace.* *Replace in authorised workshop.*
Premature blade wear	*Blades contacting the ground.*	*Adjust the height of cut.*
Excessive backlash in joints	*Worn pins*	*Replace*

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'Genuine Replacements' from the 'Original Equipment Manufacturer'

McCONNEL LIMITED

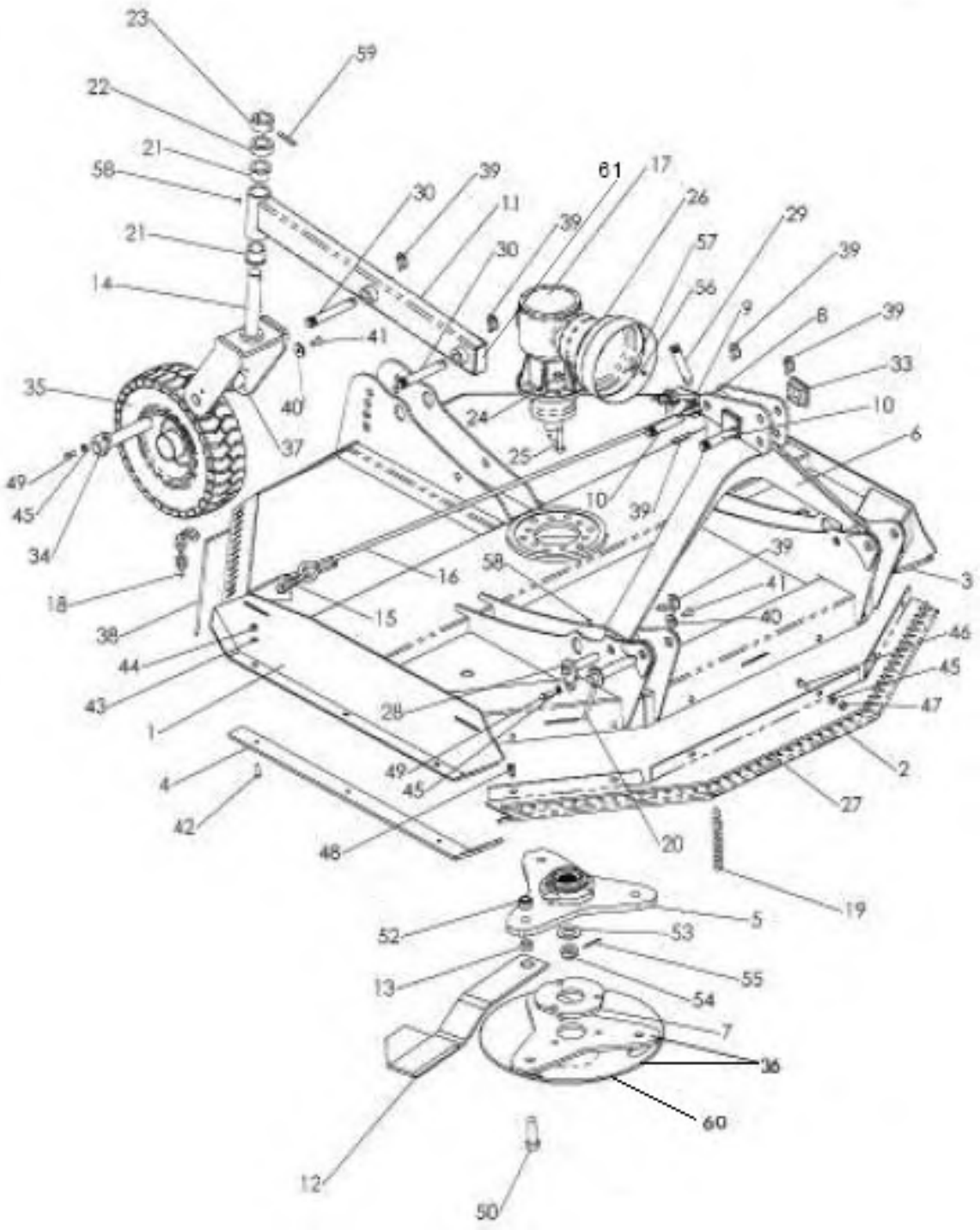
Through your local Dealer or Stockist

Always quote:

- ***Machine Type***
- ***Serial Number***
- ***Part Number***

Design improvements may alter some of the parts listed in this manual –
the latest part will always be supplied when it is interchangeable with an earlier one.

MAIN FRAME ASSEMBLY



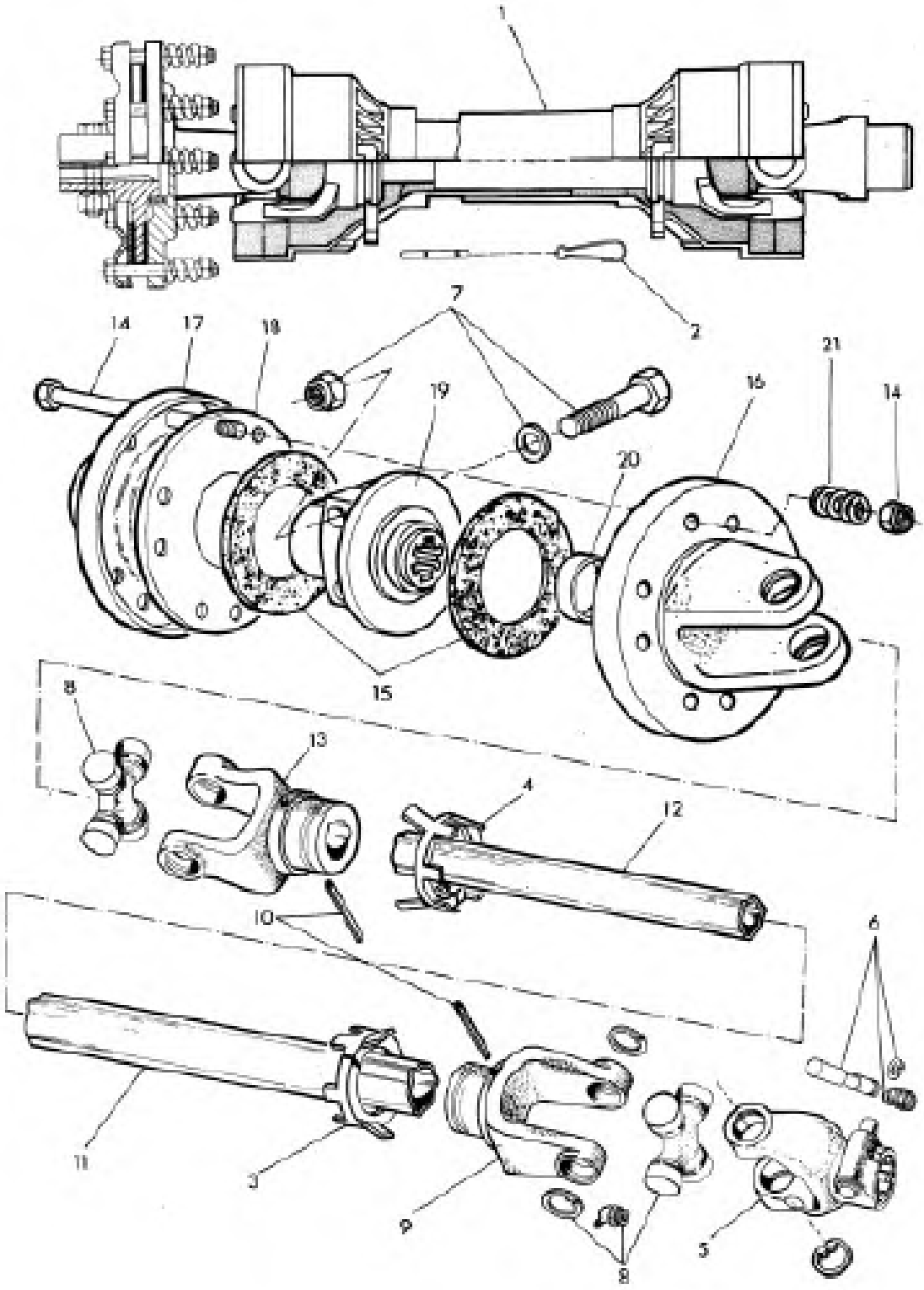
REF.	PART No.		ENGLISH	FRENCH	GERMAN	DANISH
	1600	2000	DESCRIPTION	DESCRIPTION	DESCRIPTION	DESCRIPTION
1	1560100B	1770202R	Body	Caisse	Korper	Krop
2	1560106A	1770227	Bracket	Support – Etrier	Konsole	Konsol
3	1770685A	1770204A	LH Skid	Patin	Stutzkufen	Glideskinne
4	1770685AR	1770204AR	RH Skid	Patin	Stutzkufen	Glideskinne
5	1770602-3	1770220	Holder	Support – Etrier	Konsole	Konsol
6	177613A		Headstock	Poupee	A-rahmen	A-ramme
7	1770604-3	1770222	Spacer	Entretoise	Distanzscheibe	Afstandsbosning
8	1560120		Bracket	Support – Etrier	Konsole	Konsol

MAIN FRAME ASSEMBLY

McCONNEL

REF.	PART No. 1600	PART No. 2000	ENGLISH DESCRIPTION	FRENCH DESCRIPTION	GERMAN DESCRIPTION	DANISH DESCRIPTION
9	1560121		Pulley	Poulie	Riemenscheibe	Remskive
10	6310203		Pin	Goupille	Bolzen	Bolt
11	1770401A		Arm	Bras	Arm	Arm
12	7770700	7770718	Blade	Lame	Messer	Kniv
13	7770707		Bush	Bague	Buchse	Bosning
14	1770399A		Yoke	-	-	-
15	6777575		Shackle	Manille	Schakel	Sjaekel
16	6770922	6770928	Wire Rope	-	-	-
17	5770004	5770002	Gearbox	Multiplicateur	Getriebekasten	Gearkasse
18	8770621		Chain	Chaine – chainette	Kette	Kaede
20	6310208		Pin	Goupille	Bolzen	Bolt
21	4600127-A		Bush	Bague	Buchse	Bosning
22	1777524		Bush	Bague	Buchse	Bosning
23	1777700		Bush	Bague	Buchse	Bosning
24	2770447		Nut	Ecrou	Mutter	Motrik
25	2770423	2770423	Bolt	Boulon	Bolzen	Bolt
26	5770105	5770105	Guard/Cover	Protecteur	Schutz/Deckel	Beskyttelse
27	6770908	6770923	Wire Rope	-	-	-
28	1777761		Pin	Goupille	Bolzen	Bolt
29	6310203A		Pin	Goupille	Bolzen	Bolt
30	6310235		Pin	Goupille	Bolzen	Bolt
33	8777518		Guard/Cover	Protecteur	Schutz/Deckel	Beskyttelse
34	1560130		Pin	Goupille	Bolzen	Bolt
35	6770680		Wheel Assembly	Ensemble roue	Rader	Hjul
36	1770630	1770221	Blade Carrier	Porte-lames	Messerhalter	Knivholder
37	1560131		Bush	Bague	Buchse	Bosning
38	6770905	6770919	Wire Rope	-	-	-
39	6310206		Pin	Goupille	Bolzen	Bolt
40	1777209		Washer	Rondelle	Spannscheibe	Spaendeskive
41	2770506		Bolt	Boulon	Bolzen	Bolt
42	2770509		Bolt	Boulon	Bolzen	Bolt
43	2770434		Washer	Rondelle	Spannscheibe	Spaendeskive
44	2770412		Nut	Ecrou	Mutter	Motrik
45	2770436		Washer	Rondelle	Spannscheibe	Spaendeskive
46	2770420		Bolt	Boulon	Bolzen	Bolt
47	2770417		Nut	Ecrou	Mutter	Motrik
48	6770907		Clip	Attache	Spannstuck	Spaendeband
49	2770484		Bolt	Boulon	Bolzen	Bolt
50	2770413		Bolt	Boulon	Bolzen	Bolt
51	2770404		Bolt	Boulon	Bolzen	Bolt
52	2770414		Washer	Rondelle	Spannscheibe	Spaendeskive
53	5771410		Washer	Rondelle	Spannscheibe	Spaendeskive
54	5771409		Nut	Ecrou	Mutter	Motrik
55	2770512		Pin	Goupille	Bolzen	Bolt
56	2770431		Bolt	Boulon	Bolzen	Bolt
57	2770244		Nut	Ecrou	Mutter	Motrik
58	2770467		Grease Nipple	Graisseur	Schmiernippel	Smorenippel
59	2770479		Pin	Goupille	Bolzen	Bolt
60	7770726	7770728	Plate	Plaque	Platte	Plade
61	8777510		Plastic Insert (not illustrated)	-	-	-

PTO SHAFT ASSEMBLY

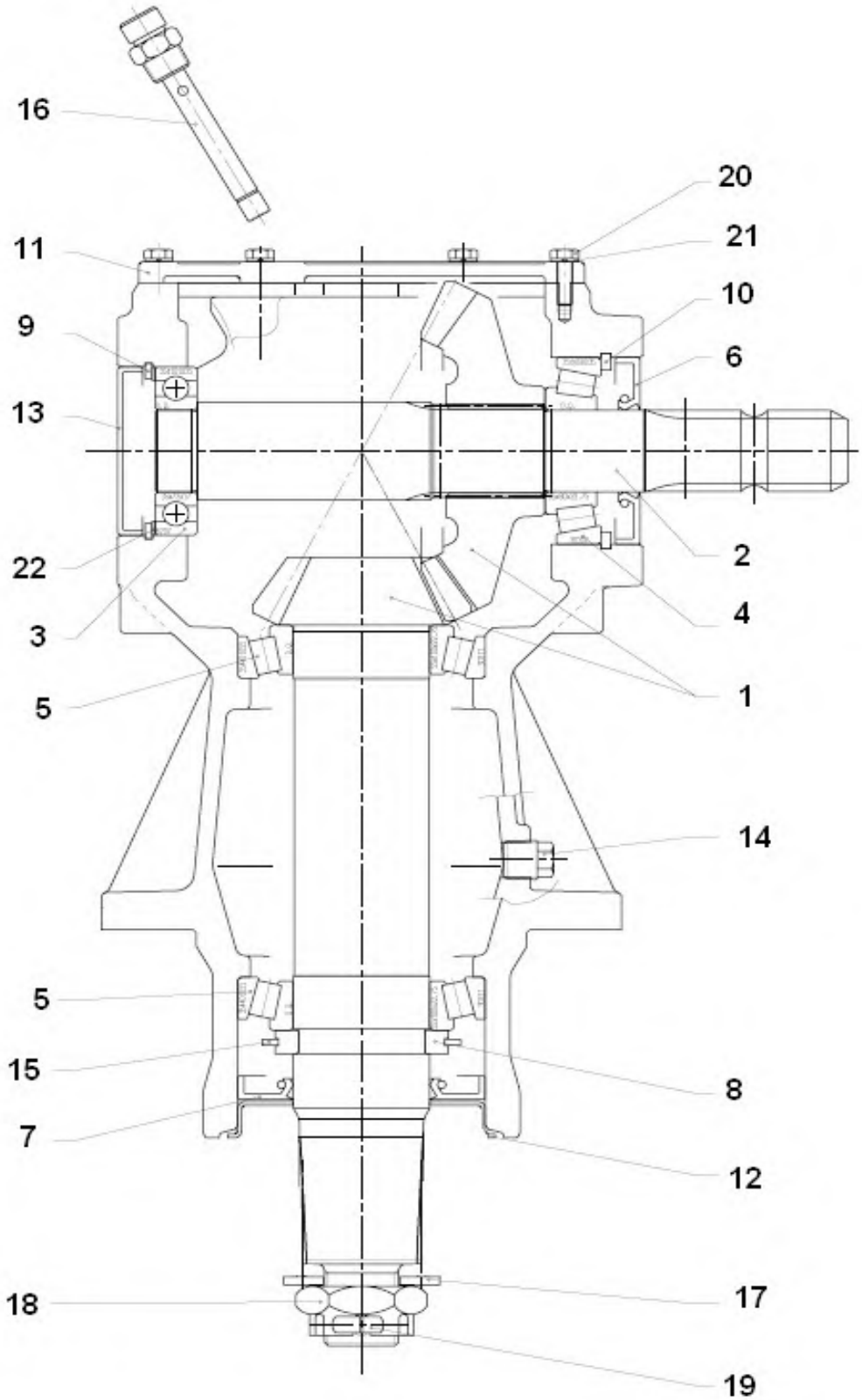


PTO SHAFT ASSEMBLY

McCONNEL

REF.	PART No. 1600 / 2000	ENGLISH DESCRIPTION	FRENCH DESCRIPTION	GERMAN DESCRIPTION	DANISH DESCRIPTION
	5770079	PTO Shaft	Ensemble arbre de	Gelenkwelle	Pto-aksei
1	5772262	Guard/Cover	Protecteur	Schutz/Deckel	Beskyttelse/Daeksel
2	5771020	Chain	Chaine – chainette	Kette	Kaede
3	5771308	Bearing	Palier – Roulement	Lager	Leje
4	5771313	Bearing	Palier – Roulement	Lager	Leje
5	5771299	Yoke	-	-	-
6	5771023	Plug	Bouchon	Schraube	Prop
7	5770091	Bolt Set	Boulon	Bolzen	Bolt
8	5771301	Cross Journal	Portee d'arbre	Kreuzgarnitur	Kardankryds
9	5770095	Yoke	-	-	-
10	2770542	Pin	Goupille	Bolzen	Bolt
11	5772277	Tube	Tube	Schlauch	Slange
12	5772278	Tube	Tube	Schlauch	Slange
13	5770096	Yoke	-	-	-
14	5771325	Nut & bolt	Ecrou	Mutter	Motrik
15	5771320	Plate	Plaque	Platte	Plade
16	5771318	Yoke	-	-	-
17	5771324	Plate	Plaque	Platte	Plade
18	5771323	Plate	Plaque	Platte	Plade
19	5770093	6 Spline	Cannelure	Nut	Not
20	5771319	Bush	Bague	Buchse	Bosning
21	5771317	Spring	Ressort	Feder	Fjeder
22	5771320	Plate	Plaque	Platte	Plade

GEARBOX ASSEMBLY

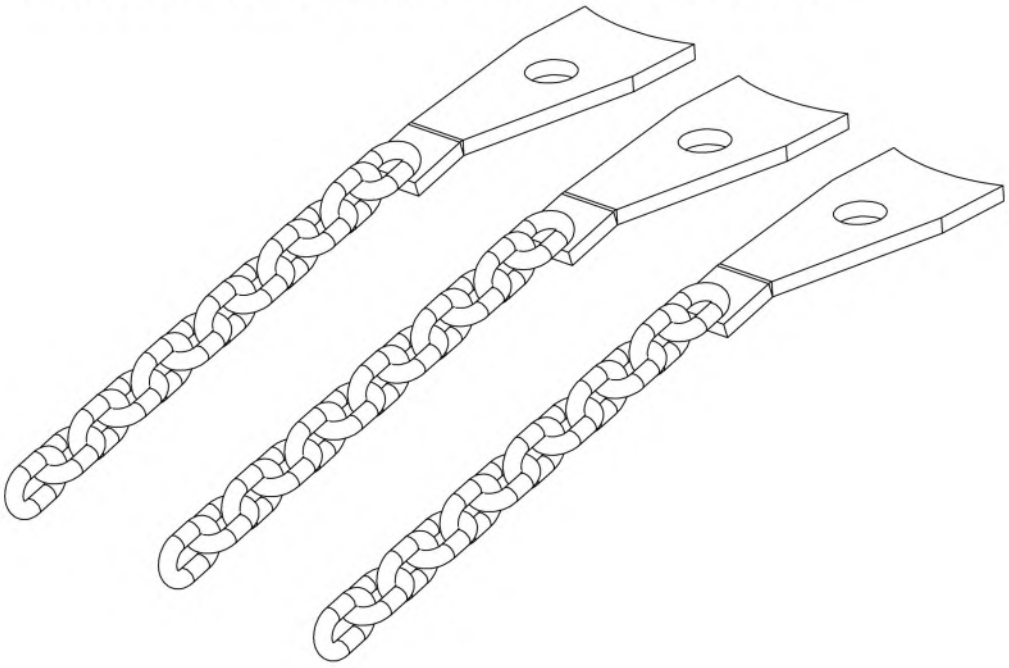


GEARBOX ASSEMBLY

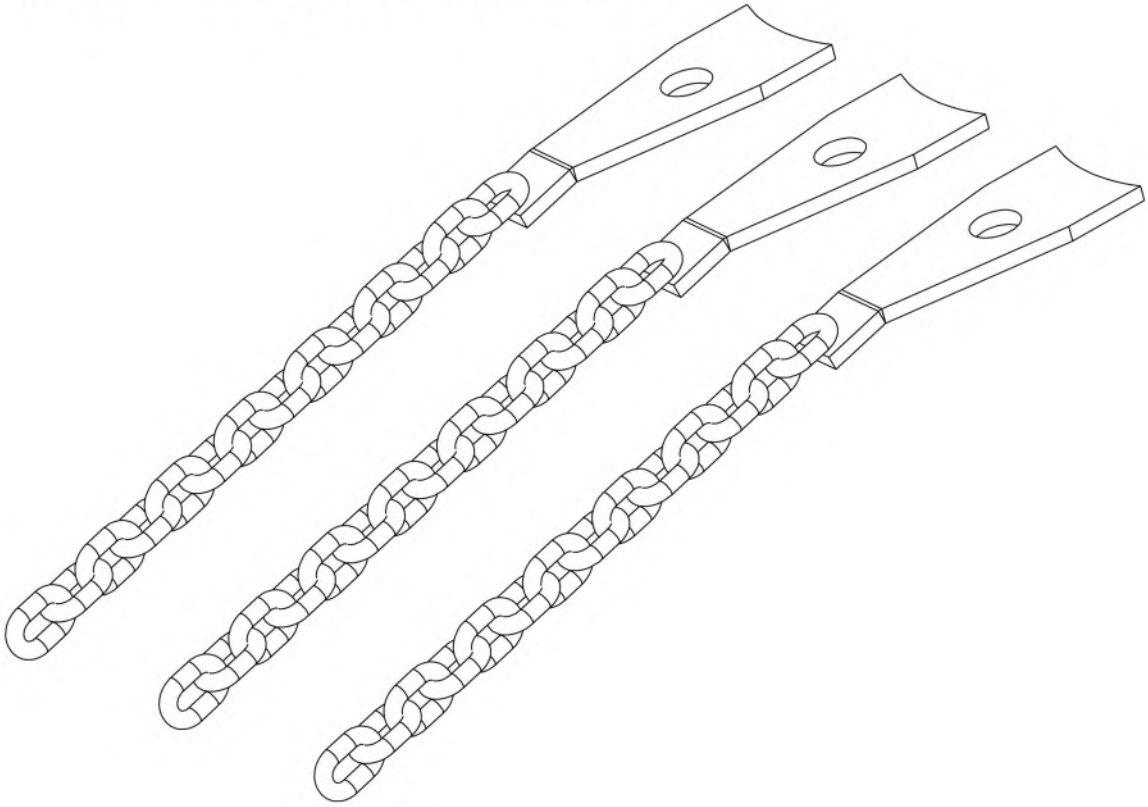
McCONNEL

REF.	PART No.		ENGLISH	FRENCH	GERMAN	DANISH
	1600	2000	DESCRIPTION	DESCRIPTION	DESCRIPTION	DESCRIPTION
1	5771418	5771419	Gear set	Vitesse	Getriebe	Gear
2	5771403R		Shaft	Arbre	Welle	Aksel
3	4771600		Bearing	Palier – Roulement	Lager	Leje
4	4771601		Bearing	Palier – Roulement	Lager	Leje
5	4771602		Bearing	Palier – Roulement	Lager	Leje
6	4771124		Seal	-	-	-
7	4771500		Seal	-	-	-
8	5771422		Collet	Douille	Klemmring	Klemring
9	2771600		Circlip	Circlip	Sicherungsring	Lasering
10	2771129		Circlip	Circlip	Sicherungsring	Lasering
11	5771401		Guard/Cover	Protecteur	Schutz/Deckel	Beskyttelse/Daeksel
12	5771406		Guard/Cover	Protecteur	Schutz/Deckel	Beskyttelse/Daeksel
13	4771503		Seal	-	-	-
14	5771415		Plug	Bouchon	Schraube	Prop
15	2771108		Circlip	Circlip	Sicherungsring	Lasering
16	5771416		Dipstick	Jauge	Messtab	Oliepind
17	5771410		Washer	Rondelle	Spannscheibe	Spaendeskive
18	5771409		Nut	EcrouRessort	Mutter	Motrik
19	2770477		Pin	Goupille	Bolzen	Bolt
20	5771407		Bolt	Boulon	Bolzen	Bolt
21	2771408		Washer	Rondelle	Spannscheibe	Spaendeskive
22	6771423		Shim set	-	-	-

OPT0004M - Cutting Chain Kit for SW1600 Models



OPT0011 - Cutting Chain Kit for SW2000 Models



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