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# McCONEL

## ROBO-BLADE

ROBOCUT ACCESSORY

Operation 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.**

<b>Registration Verification</b>	Serial No. <input type="text"/>
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 McConnell 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. McConnell 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 McConnell 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 McConnell 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 McConnell 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 McConnell 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 McConnell Ltd Service Dealer, within 30 days of the date of repair.*
- 2.05. *Following examination of the claim and parts, McConnell Ltd will pay, at their discretion, for any valid claim the invoiced cost of any parts supplied by McConnell 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 McConnell Ltd. is final.*

## **3. LIMITATION OF LIABILITY**

- 3.01. *McConnell 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. *McConnell Ltd makes no warranty as to the design, capability, capacity or suitability for use of the goods.*
- 3.03. *Except as provided herein, McConnell 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.*

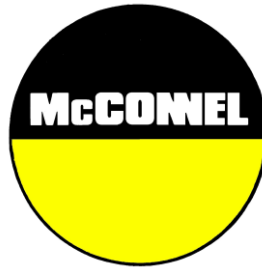
#### **4. MISCELLANEOUS**

- 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.*

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*McConnel Limited*





*For Safety and Performance...*

**ALWAYS READ THE BOOK FIRST**

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**▲ WARNING**

**Cancer and Reproductive Harm**  
www.P65Warnings.ca.gov

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Operating, servicing and maintaining this equipment can expose you to chemicals including gasoline, diesel fuel, lubricants, petroleum products, engine exhaust, carbon monoxide, and phthalates, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle. Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov). This website, operated by California's Office of Environmental Health Hazard Assessment, provides information about these chemicals and how individuals may be exposed to them.





# CONTENTS

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General Information	1
Introduction	2
Machine Identification	3
Identification of Components	3
Specifications	4
Safety Information	5
Attachment & Operation	6
Height Adjustment	7
Maintenance	8



## GENERAL INFORMATION

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

**Only use 'Genuine McConnell Parts' on McConnell 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:	

## INTRODUCTION

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The McConnel 'ROBO-BLADE' is a universal blade attachment for use on McConnel Robocut Mowers. The attachment has been designed for use as a professional tool for clearing snow or grading soil and features a hydraulically adjustable blade angle and replaceable steel blade face.

*This machine must only be used to perform the duties for which it was designed; use of the machine for any other tasks will risk injury to persons and/or damage to the machine.*



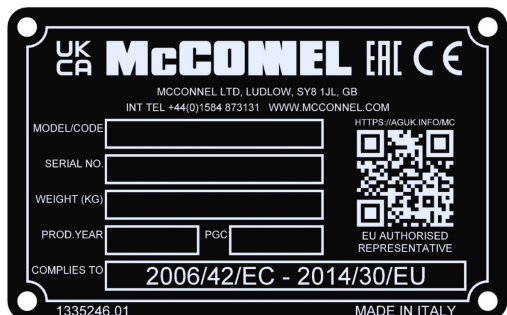
## TECHNICAL SPECIFICATIONS

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- 1.7m working width
- Hydraulically adjustable blade angle
- Choice of standard plastic blade or optional steel blade
- 0.6m blade height
- +/- 20 degree blade oscillation
- +/- 14 degree head angling and floatation
- Replaceable blade edge

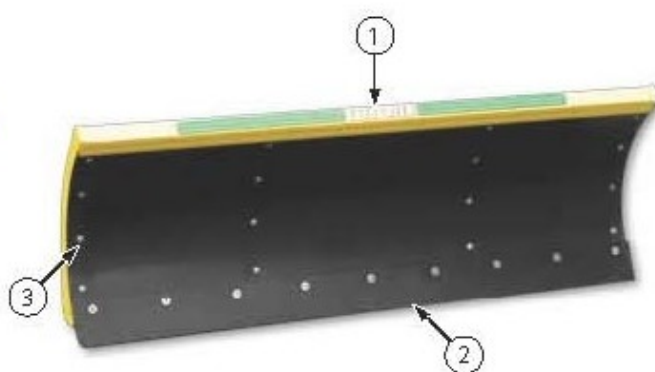
## MACHINE IDENTIFICATION

A machine identification plate is fitted to the machine in the location indicated below.



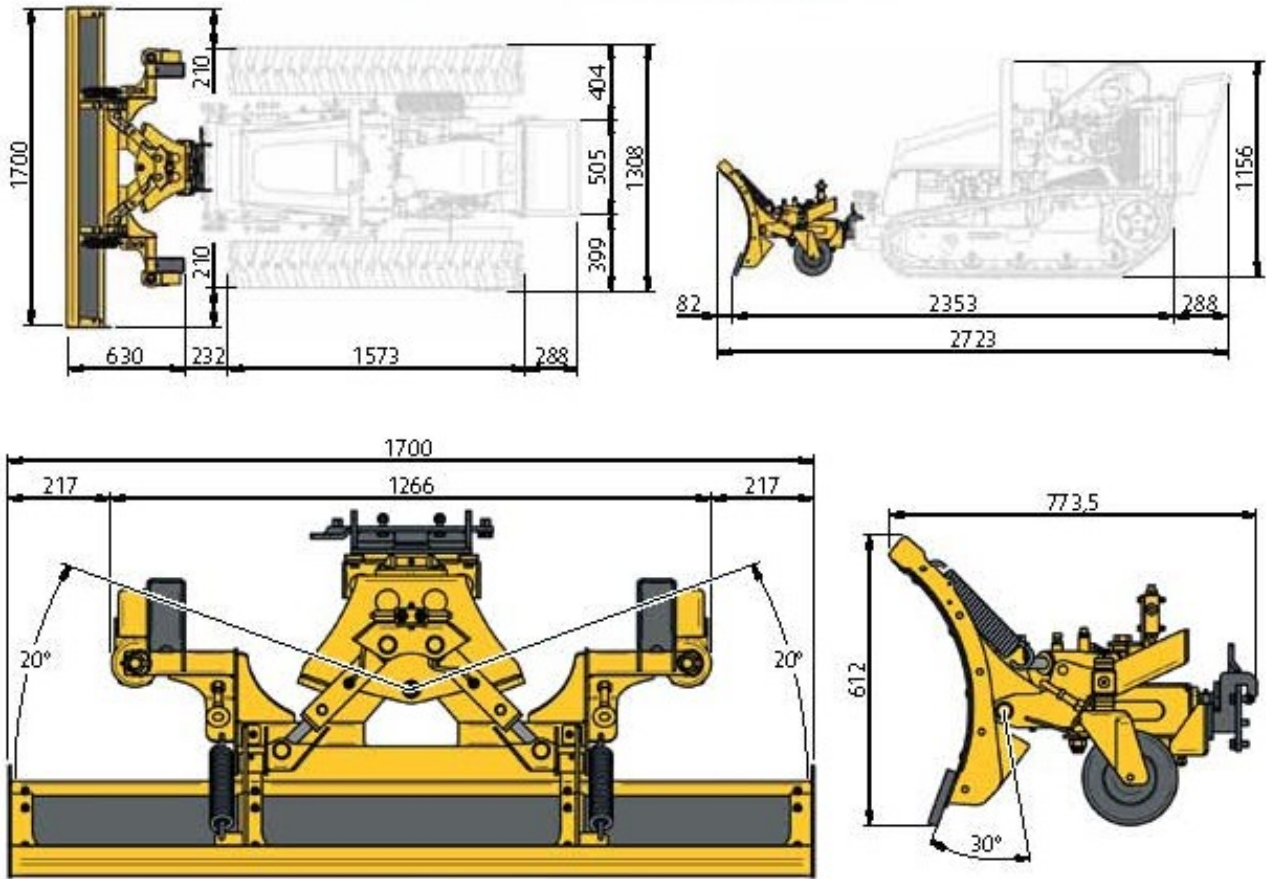
Always quote the machine type and serial number as stated on the identification plate when ordering replacement parts or requesting assistance.

## IDENTIFICATION OF COMPONENTS



- |   |                                 |    |                      |
|---|---------------------------------|----|----------------------|
| 1 | Frame                           | 6  | Control Valve        |
| 2 | Scraper                         | 7  | Hydraulic Ram (Tilt) |
| 3 | Rubber Covering                 | 8  | Mounting Plate       |
| 4 | Head Lift Springs               | 9  | Caster Wheel         |
| 5 | Hydraulic Hoses (Tilt Function) | 10 | Spring Tension Screw |

# SPECIFICATIONS



Machine Weight: 123kg.



## SAFETY INFORMATION

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In addition to the general advice stated below, the main safety implications surrounding the use of this machine relate to the safe use of the Robocut machine; it is therefore vital that all users have read and understood all safety information in the operation manual provided with that machine.

**Ensure that all users of this machine are trained in its safe use and have read the operation manual for both this machine and the Robocut Mower.**

### General Safety

- ▲ Never run or attempt to operate the machine with safety devices missing or removed.
- ▲ Never attempt to approach the machine whilst it is running or working.
- ▲ Never attempt to use the machine to perform any duties it is not designed for.
- ▲ Never allow persons to ride on the machine.
- ▲ Never attempt to use a machine with damaged or missing components; repair or replace the parts immediately.
- ▲ Read and abide by all safety message decals displayed on the machine; they are there for your safety and the safety of others.
- ▲ Keep all persons and animal at a safe distance from the working machine.
- ▲ Stop the machine immediately if persons or animals enter into the working zone of the machine, do not restart operations until they are at a safe distance.
- ▲ Before performing any work on the machine, including cleaning and maintenance operations, stop the Robocut, turn off the engine and remove the security key from the radio control.
- ▲ Be aware of all safety decals on the machine; know their meaning and abide by the warnings stated.



## ATTACHMENT & OPERATION

Attachment and removal of the machine must always be performed on a firm level site. Ensure bystanders are kept at a safe distance from the machines during the attachment process. The procedure for attaching the machine to a Robocut is as follows;

Align the Robocut until its mounting plate **(a)** is centred and parallel to the universal blade's mounting plate **(b)**.

Lower mounting plate **(a)** and move forwards slowly until the two plates are in contact with each other.

Raise the mounting plate **(a)** until the universal blade's mounting plate is fully connected.

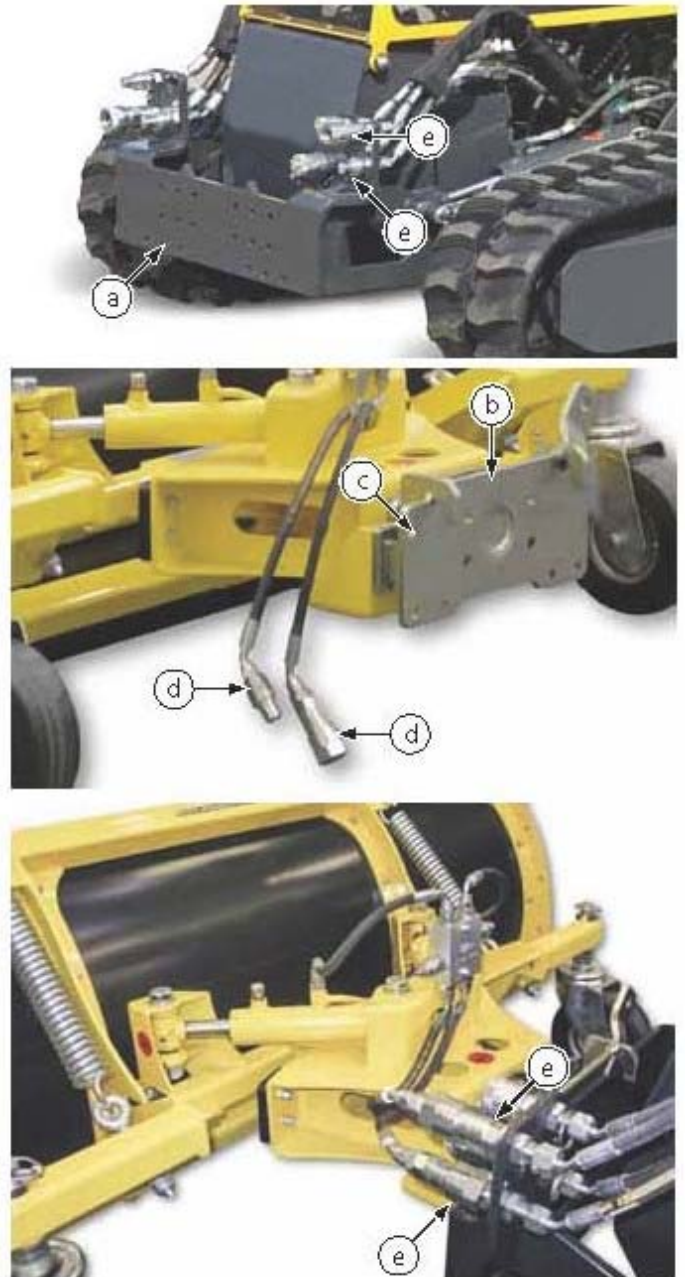
Turn off the Robocut and remove the security key from the controls.

Fix mounting plate **(a)** to mounting plate **(b)** using the 6 screws in the location holes **(c)**; secure in place with self-locking nuts.

Connect the machines 2 'quick release' hoses **(d)** to the Robocut's external connection points **(e)**.

Ensure that all connections are connected correctly.

Start the Robocut and carefully operate the controls to verify they correspond to their correct functions.



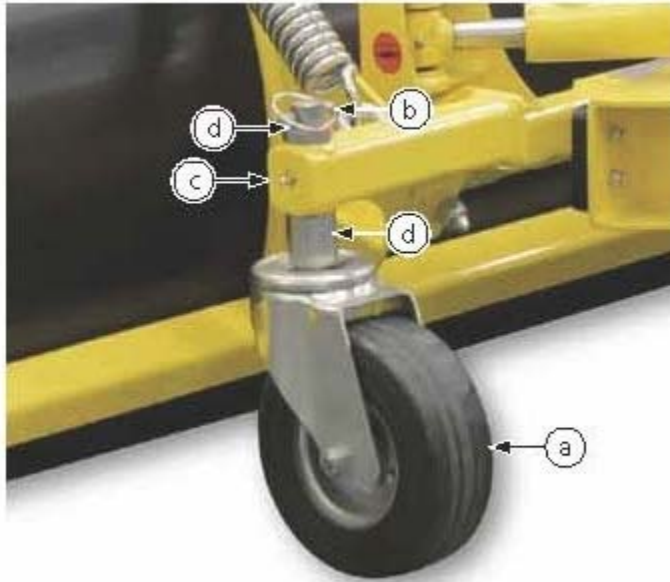
### Operating the Machine



◀ Angling of the blade to the left or to the right is controlled by the use of switch 'f' indicated.

## Height Adjustment

The blade height is determined by the height position of the caster wheels **(a)**, adjustment of which is controlled by spacer washers **(d)**; washers are placed on the wheel pin either above or below the support beam **(c)** to give the desired height. The wheel units are secured in place with safety pins **(b)**. Always make sure that the washers are placed in the same positions on each of the two wheels to ensure the blade works parallel to the ground. See *illustrations below*.



### **⚠ WARNING**

This procedure must only be performed with the blade supported and secured to ensure it cannot fall during adjustment operations on the wheels. Failure to observe this can result in personal injury and/or damage to the machine.

## MAINTENANCE

### **⚠ WARNING**

All maintenance, cleaning and repairing operations must be carried out with the engine turned off and the starting key removed.

Before performing any cleaning or maintenance operations, wait for the machine and equipment to cool down.

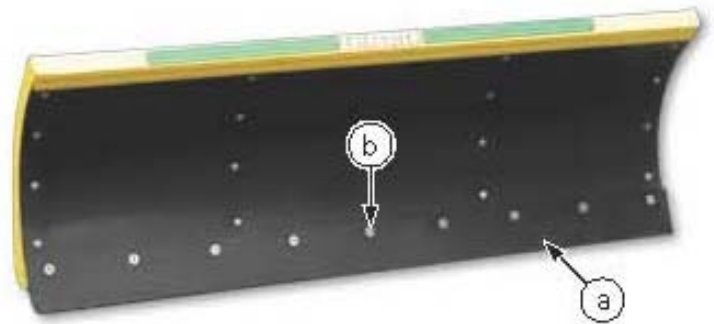
The machine should be inspected on a daily basis prior to work to ensure it is in good working condition, the following points should be addressed during routine inspections;

- Check tightness of nuts and bolts, retighten if required.
- Check scraper for signs of wear and tear, replace if excessive damage is observed.
- Check hydraulic hoses and hydraulic connections for signs of damage or leakage, replace any damaged components immediately.
- Check wheels and wheel components, replaced any worn or damaged items if required.
- Lubricate machine at the required intervals.

### **Scraper Blade Replacement**

To replace the scraper blade **(a)**;

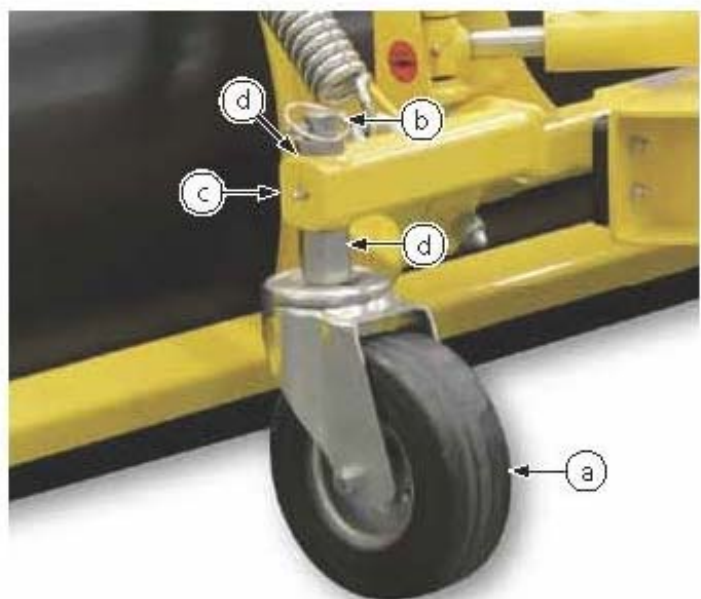
- Loosen and remove clamping screws **(b)**.
- Remove blade and fit replacement.
- Fix and secure in position by replacing the clamping screws **(b)**.



### **Wheel Replacement**

To replace a wheel **(a)**;

- Remove the safety pin **(b)**.
- Remove any spacer washers **(d)** above support **(c)**.
- Remove the wheel **(a)** from support **(c)**.
- Remove any spacers **(d)** from the wheel pin.
- Replace the damaged or worn wheel with a new one.
- Repeat the operations described above in reverse order. Ensure the safety pin has been inserted properly **(b)**.



### Replacing Hydraulic Hoses

Check condition of hoses (a) and connections for signs of damage or leakage on a regular basis.

Hydraulic hoses should be replaced periodically (every 2000 hours or on a yearly basis). Damaged hoses must be replaced immediately.



### Lubrication Points

The lubrication points indicated below should be greased every **50 hours**.



- 1 Ram Pivot Point
- 2 Wheel Support

- 3 Articulation Joint
- 4 Mounting Unit





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