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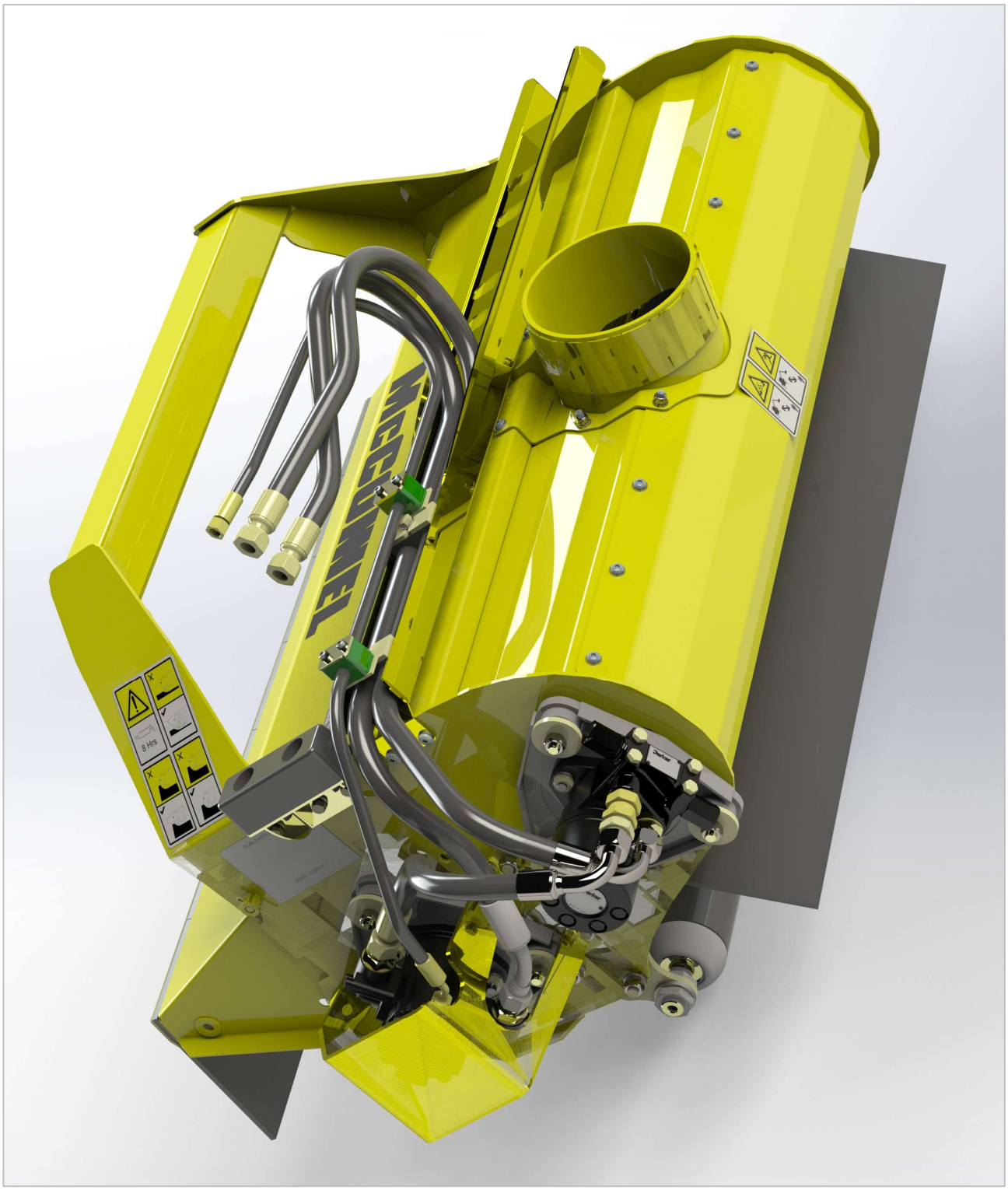
1.0M SUCTION FLAILHEAD

SLIDING MOUNT MOWING HEAD

Operator 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 go to the McConnel Limited web site at **www.mcconnel.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 McConnel Service Department on 01584 875848.

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 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 machines 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

DECLARATION OF CONFORMITY

Conforming to EU Machinery Directive 2006/42/EC

We,

McCONNEL LIMITED, Temeside Works, Ludlow, Shropshire SY8 1JL, UK

Hereby declare that:

The Product; *Hydraulic Arm Mounted Flailhead*

Product Code; *BD12, BD16, F110, F112, F115, F012, F016*

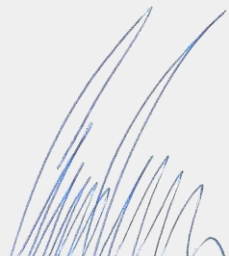
Serial No. & Date …… Type ……

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 ISO 14120 (2015) 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.

McCONNEL LIMITED operates an ISO 9001:2008 quality management system, certificate number: FM25970.
This system is continually assessed by the;
British Standards Institution (BSI), Beech House, Milton Keynes, MK14 6ES, UK
BSI is accredited by UK Accreditation Service, accreditation number: UKAS 003.
The EC declaration only applies if the machine stated above is used in accordance with the operating instructions.



Signed …….. *Responsible Person*
CHRISTIAN DAVIES on behalf of McCONNEL LIMITED

Status: *General Manager* Date: *January 2018*

For Safety and Performance…

ALWAYS READ THE BOOK FIRST

McCONNEL LIMITED

Temeside Works
Ludlow
Shropshire
England

Telephone: +44 (0)1584 873131
www.mcconnel.com

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.

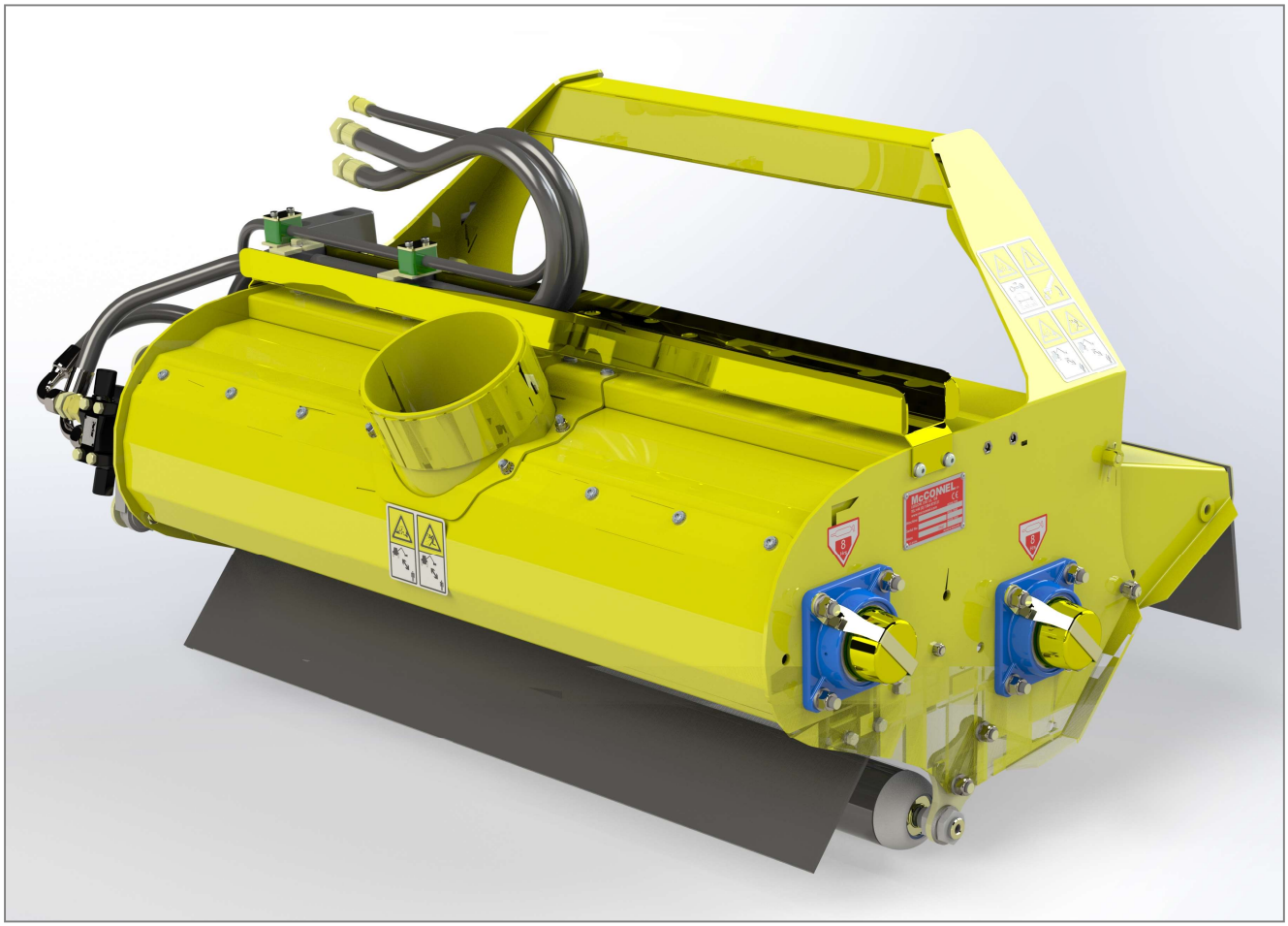
MACHINE & DEALER INFORMATION

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

The McConnel 1.0 metre Suction Head is a boom-mounted flail mower collection head with built-in helical auger that will cut, collect, and eject the vegetation cuttings. The head has been designed for use in conjunction with dedicated suction and collection units to provide an all-in-one 'cut and collect' mowing system suitable for verge mowing and general mowing duties in green areas.

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.

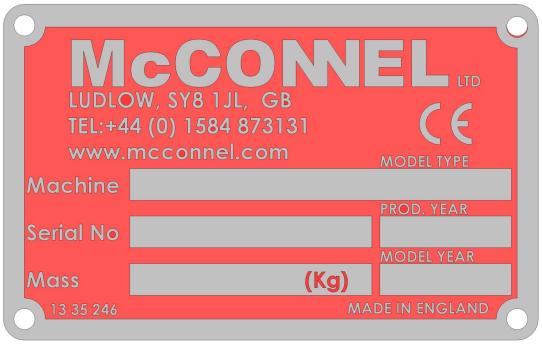


MACHINE IDENTIFICATION

The machine is fitted with an identification plate with the following information:

1. Machine (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 serial number as stated on the identification plate so machine and model can be quickly and correctly identified.

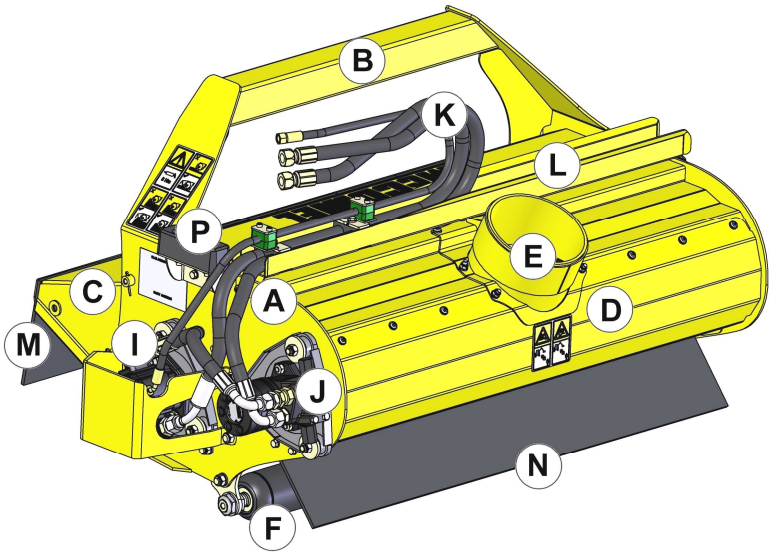


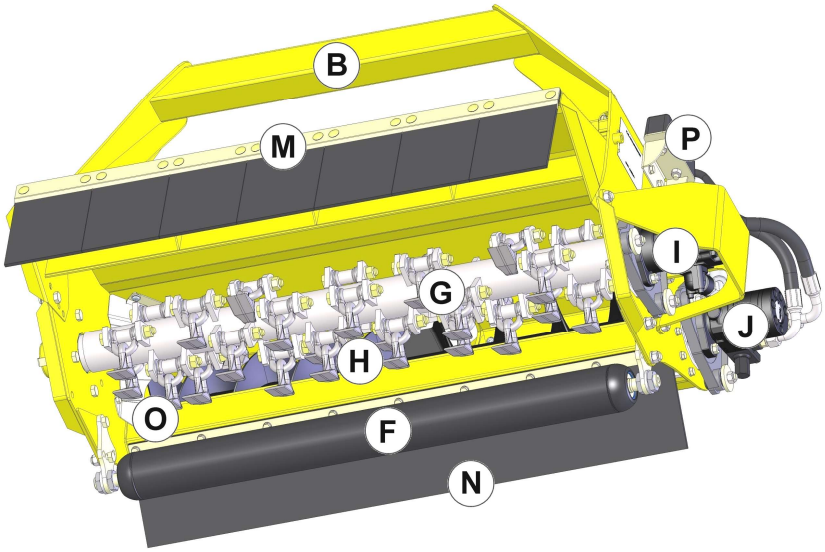
Machine Identification Plate

COMPONENT IDENTIFICATION

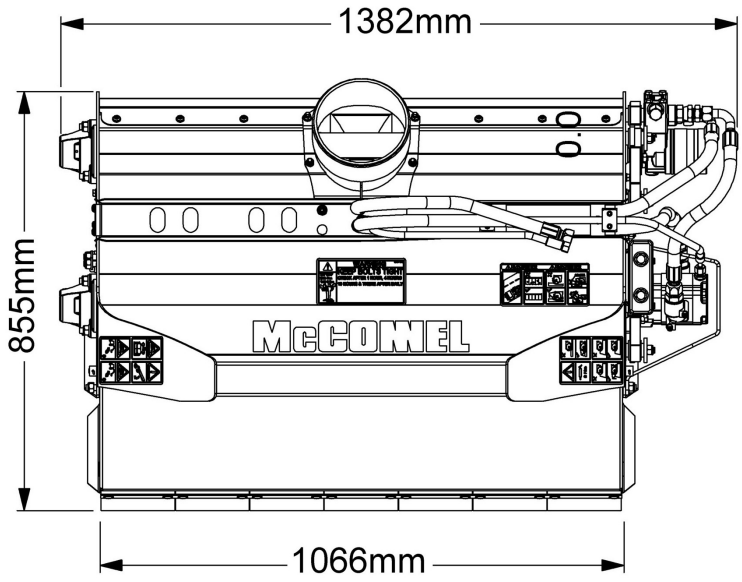
Components

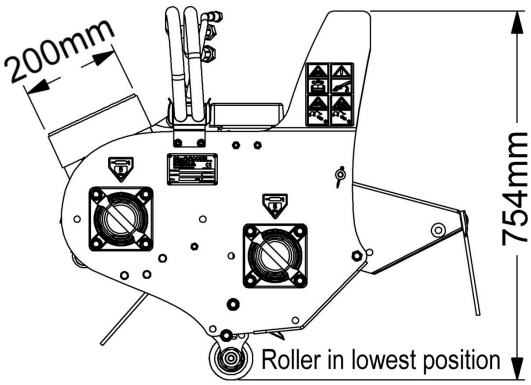
A) Head Casing
B) Mounting Frame
C) Front Hood
D) Auger Casing
E) Suction Tube
F) Rear Roller
G) Rotor
H) Auger
I) Motor (Rotor)
J) Motor (Auger)
K) Hydraulic Hoses
L) Hose Tray
M) Front Flaps
N) Rear Flap
O) Baffle
P) Bump Stop





MACHINE DIMENSIONS





This machine has the potential to be extremely dangerous, in the wrong hands it can kill or maim. It is therefore imperative that both owner, and operator of this machine, read and understand the following section to ensure that they are fully aware of the dangers that do, or may exist, and their responsibilities surrounding the use and operation of the machine.
The operator of this machine is responsible not only for their own safety but equally for the safety of others who may come into the close proximity of the machine, as the owner you are responsible for both.
When the machine is not in use the cutting head should be lowered to rest on the ground. In the event of a fault being detected with the machine's operation it should be stopped immediately and not used again until the fault has been corrected by a qualified technician.

POTENTIAL SIGNIFICANT DANGERS ASSOCIATED WITH THE USE OF THIS MACHINE:

- *Being hit by debris thrown by rotating components.*
- *Being hit by machine parts ejected through damage during use.*
- *Being caught on a rotating power take-off (PTO) shaft.*
- *Being caught in other moving parts i.e.: belts, pulleys and cutting heads.*
- *Electrocution from Overhead Power Lines (by contact with or 'flashover' from).*
- *Being hit by cutting heads or machine arms as they move.*
- *Becoming trapped between tractor and machine when hitching or unhitching.*
- *Tractor overbalancing when machine arm is extended.*
- *Injection of high-pressure oil from hydraulic hoses or couplings.*
- *Machine overbalancing when freestanding (out of use).*
- *Road traffic accidents due to collision or debris on the road.*
- *Burn risk from hot components.*

BEFORE USING THIS MACHINE, YOU MUST:

- *Ensure you read all sections of the operator handbook.*
- *Ensure the operator is, or has been, properly trained to use the machine.*
- *Ensure the operator has been issued with and reads the operator handbook.*
- *Ensure the operator understands and follows the instructions in operator handbook.*
- *Ensure the tractor front, rear and side(s) are fitted with metal mesh or polycarbonate guards of suitable size and strength to protect the operator against thrown debris or parts.*
- *Ensure tractor guards are fitted correctly, are undamaged and kept properly maintained.*
- *Ensure that all machine guards are in position, are undamaged, and are kept maintained in accordance with the manufacturer's recommendations.*
- *Ensure flails and their fixings are of a type recommended by the manufacturer, are securely attached and that none are missing or damaged.*
- *Ensure hydraulic pipes are carefully and correctly routed to avoid damage by chaffing, stretching or pinching and that they are held in place with the correct fittings.*
- *Always follow the manufacturer's instructions for attachment and removal of the machine from the tractor.*
- *Check that the machine fittings and couplings are in good condition.*
- *Ensure the tractor meets the minimum weight recommendations of the machine's manufacturer and that ballast is used as necessary.*
- *Always inspect the work area thoroughly before starting to note obstacles and remove wire, bottles, cans and other debris.*
- *Use clear suitably sized warning signs to alert others to the nature of the machine working within that area. Signs should be placed at both ends of the work site. (It is recommended that signs used are of a size and type specified by the Department of Transport and positioned in accordance with their, and the Local Highways Authority, guidelines).*
- *Ensure the operator is protected from noise. Ear defenders should be worn and tractor cab doors and windows must be kept closed. Machine controls should be routed through proprietary openings in the cab to enable all windows to be shut fully.*
- *Always work at a safe speed taking account of the conditions i.e.: terrain, highway proximity and obstacles around and above the machine. Extra special attention should be applied to Overhead Power Lines. Some of our machines are capable of reach in excess of 8 metres (26 feet) this means they have the potential to well exceed, by possibly 3 metres (9' 9"), the lowest legal minimum height of 5.2 metres from the ground for 11,000 and 33,000 volt power lines. It cannot be stressed enough the dangers that surround this capability, it is therefore vital that the operator is fully aware of the maximum height and reach of the machine, and that they are fully conversant with all aspects regarding the safe minimum distances that apply when working with machines in close proximity to Power Lines. (Further information on this subject can be obtained from the Health & Safety Executive or your Local Power Company).*
- *Always disengage the machine, kill the tractor engine, remove and pocket the key before dismounting for any reason.*
- *Always clear up all debris left at the work area; it may cause hazard to others.*
- *Always ensure when you remove your machine from the tractor that it is left in a safe and stable position using the stands and props provided and secured if necessary.*

WHEN NOT TO USE THIS MACHINE:

- *Never attempt to use this machine if you have not been trained to do so.*
- *Never use a machine until you have read and understood the operator handbook, are familiar with it, and practiced the controls.*
- *Never use a machine that is poorly maintained.*
- *Never use a machine if guards are missing or damaged.*
- *Never use a machine on which the hydraulic system shows signs of wear or damage.*
- *Never fit, or use, a machine on a tractor that does not meet the manufacturer's minimum specification level.*
- *Never use a machine fitted to a tractor that does not have suitable front, rear and side(s) cab guarding made of metal mesh or polycarbonate.*
- *Never use the machine if the tractor cab guarding is damaged, deteriorating or badly fitted.*
- *Never turn a machine cutting head to an angle that causes debris to be ejected towards the cab.*
- *Never start or continue to work a machine if people are nearby or approaching - Stop and wait until they are at a safe distance before continuing. WARNING: Some Cutting Heads may continue to 'freewheel' for up to 40 seconds after being stopped.*
- *Never attempt to use a machine on materials in excess of its capability.*
- *Never use a machine to perform a task it has not been designed to do.*
- *Never operate the tractor or machine controls from any position other than from the driving seat, especially whilst hitching or unhitching the machine.*
- *Never carry out maintenance of a machine or a tractor whilst the engine is running – the engine should be switched off, the key removed and pocketed.*
- *Never leave a machine unattended in a raised position – it should be lowered to the ground in a safe position on a level firm site.*
- *Never leave a tractor with the key in or the engine running.*
- *Never carry out maintenance on any part or component of a machine that is raised unless that part or component has been properly substantially braced or supported.*
- *Never attempt to detect a hydraulic leak with your hand – use a piece of cardboard.*
- *Never allow children near to, or play on, a tractor or machine under any circumstances.*

ADDITIONAL SAFETY ADVICE

Training

Operators need to be competent and fully capable of operating this machine in a safe and efficient way prior to attempting to use it in any public place. We advise therefore that the prospective operator make use of relevant training courses available such as those run by the Agricultural Training Board, Agricultural Colleges, Dealers and McConnel.

Working in Public Places

When working in public places such as roadsides, consideration should be paid to others in the vicinity. Stop the machine immediately when pedestrians, cyclists and horse riders etc. pass. Restart only when they are at a distance that causes no risk to their safety.

Warning Signs

It is advisable that any working area be covered by suitable warning signs and statutory in public places. Signs should be highly visible and well placed in order to give clear advanced warning of the hazard. Contact the Department of Transport or your Local Highways Authority to obtain detailed information on this subject. The latter should be contacted prior to working on the public highway advising them of the time and location of the intended work asking what is required by way of signs and procedure. – '*Non-authorised placement of road signs may create offences under the Highways Act'.*

Suggested Warning Signs Required

"Road works ahead" *warning sign with a supplementary* ***"Hedge cutting"*** *plate.* ***"For 1 mile"*** *or appropriate shorter distance may be added to the plate.*

"Road narrows" *warning sign with supplementary* ***"Single file traffic"*** *plate.*

White on blue ***"Keep right"*** *(*) arrow sign on rear of machine.*
** Note – this applies to UK Market machines where traffic passes to the right of a machine working in the same direction as the traffic flow. The direction, use and colour of the arrow sign will depend on the country of use and the Local Highway Authorities regulations in the locality.*

Use of Warning Signs

- *On two-way roads one set of signs is needed facing traffic in each direction.*
- *Work should be within 1 mile of the signs.*
- *Work only when visibility is good and at times of low risk e.g.: NOT during 'rush-hour'.*
- *Vehicles should have an amber-flashing beacon.*
- *Ideally, vehicles should be conspicuously coloured.*
- *Debris should be removed from the road and path as soon as practicable, and at regular intervals, wearing high visibility clothing and before removing the hazard warning signs.*
- *Collect all road signs promptly when the job is completed.*

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 & INFORMATION DECALS

1 2

3 4

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5 6

7 8

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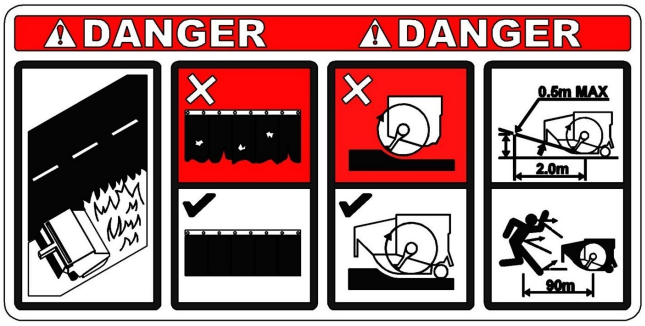

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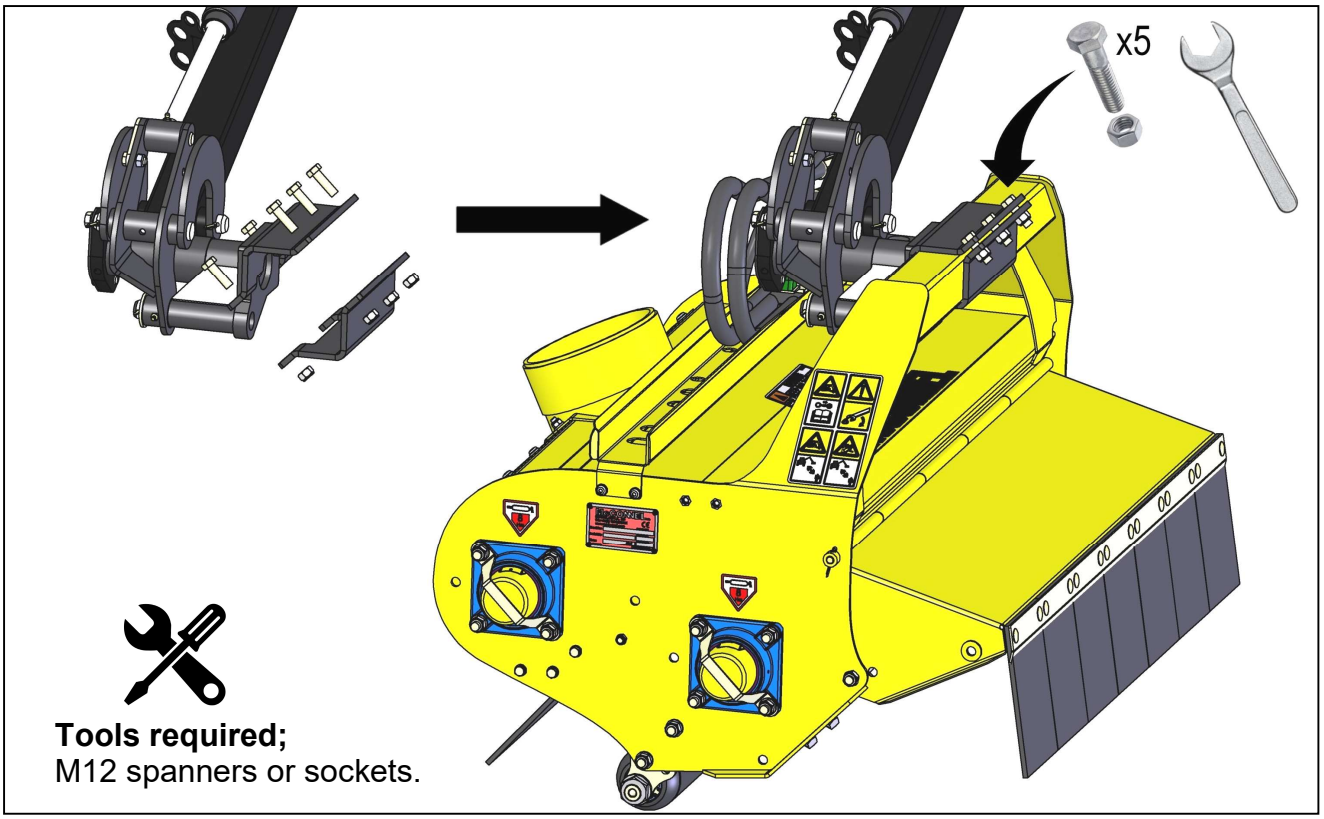
1. **Caution!** Rotating blades; keep clear of machine, stop machine (wait for rotor to stop), remove starting key, read the book first before performing any service or maintenance.
2. **Caution!** Ensure all nuts and bolts are kept tight at all times.
3. **Caution!** Lubricate greasing points on a daily basis prior to work.
4. **Caution!** Grass/Verge Mowing; front hood, front flap, rear roller and rear flap must be fitted and correctly adjusted when using the machine for grass and verge mowing. Flaps must be in good condition.
5. **Caution!** Rotating components; keep clear of working machine at all times.
6. **Caution!** Thrown objects risk; keep all persons at a safe distance from working machine at all times.
7. **Caution!** Hedging (Uphill cutting); front hood, front flap and rear flap must always be fitted and correctly adjusted. Rear roller should be placed into the raised position. Flaps must be in good condition.
8. **Caution!** Hedging (Downhill cutting); front hood may be removed, rear flap must be fitted and rear roller placed into the raised position. Flap must be in good condition.
9. **Important!** Parts information; for safety and performance only use 'Genuine McConnel Service Parts'.
10. **Information!** Grease point location and frequency decal.
11. **Warning!** Flail bolt tightness and check frequency information.
12. **Danger!** Verge Mowing; front hood, front flaps, rear roller and rear flaps must be fitted. Adjust front hood to the correct height position for verge mowing, front and rear flaps must be in good condition. *Refer to front hood height setting section for details.*

⚠WARNING **Attaching head to machine must be performed on a firm level site. Ensure bystanders are kept at a safe distance from the machinery.**

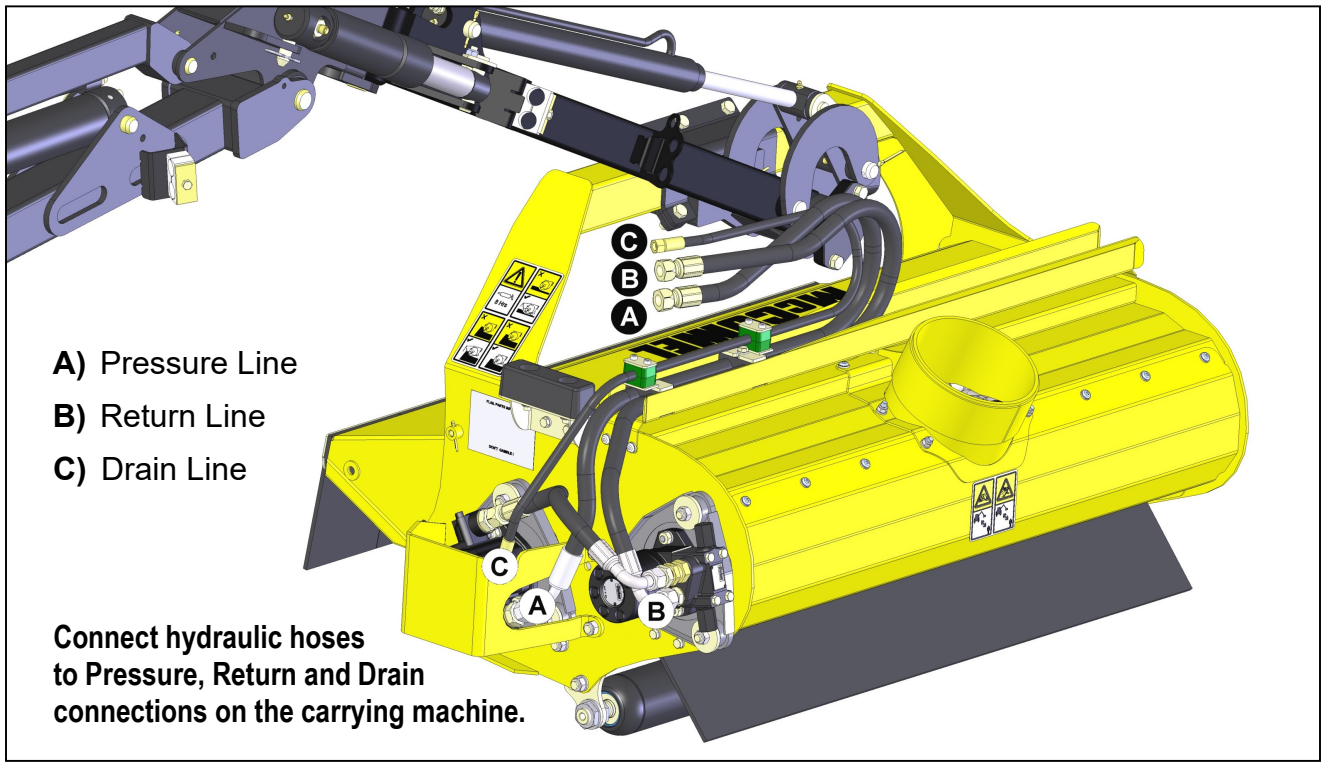
Attachment Procedure

With the tractor and machine parked adjacent to the head, carefully operate the arm-set to locate the upper mounting bracket on the mounting frame of the head; with the upper bracket correctly in position, fit and secure the lower bracket using the 5 bracket bolts and lock nuts.



Tools required;
M12 spanners or sockets.

Hydraulic Connections



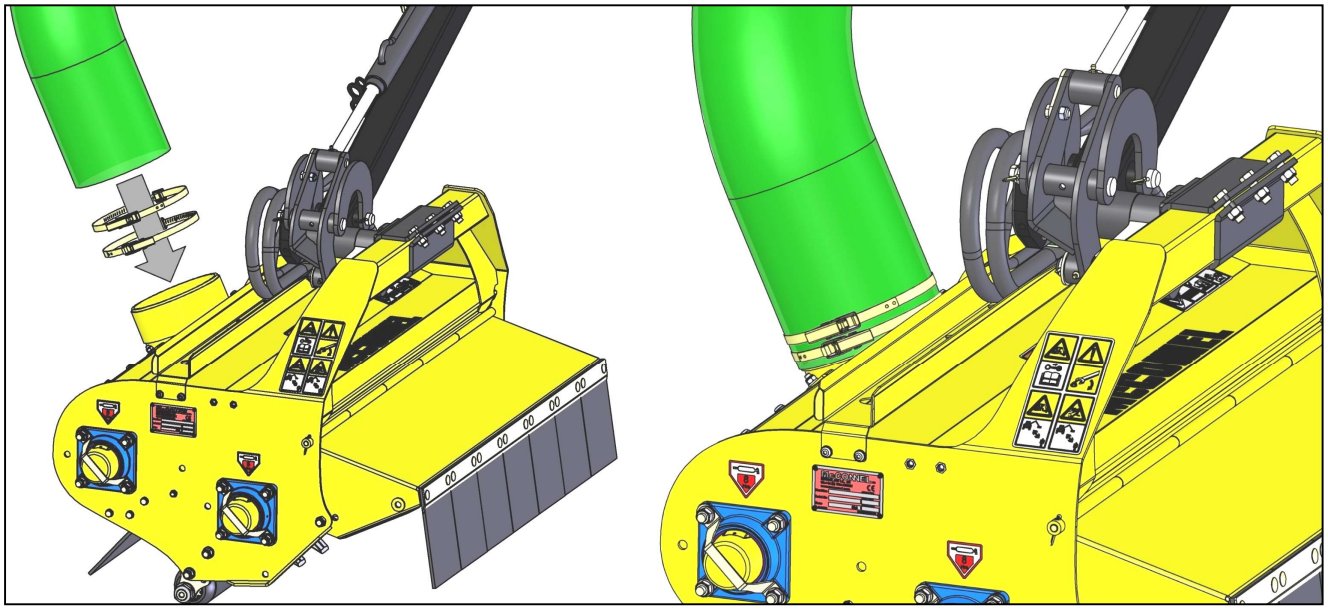
A) Pressure Line

B) Return Line

C) Drain Line

Connect hydraulic hoses to Pressure, Return and Drain connections on the carrying machine.

Suction Hose Attachment
Attach and secure suction pipe to suction tube on the rear of the head.



‘Third Party’ Suction System
This head is designed for use in conjunction with a third-party suction system; for installation and operation of that unit refer to documentation and manuals supplied by the manufacturer.

Suction Hose Routing
The suction hose should be routed and mounted in a manner that will provide full freedom of movement in all operating positions.

⚠WARNING

In addition to this manual, all users must read the operation manuals for the machinery onto which this machine is attached; users should be fully conversant with all aspects relating to the safe use of all machinery they are operating.

Rotor & Auger Operation

The separate motors for the rotor and the auger operate within the same hydraulic circuit; therefore, when power to the rotor is activated, the rotor and auger will run in unison.

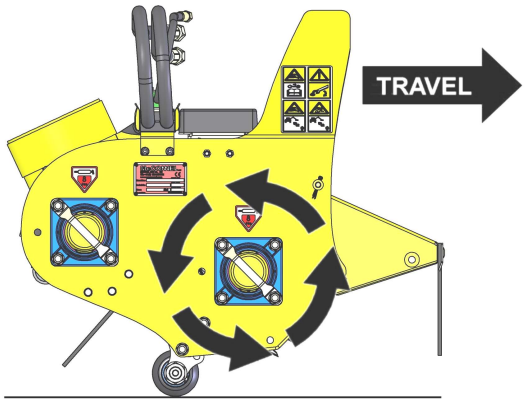
Rotor Control

Control of the rotor will be via the operator controls of the machine onto which the head is mounted; *refer to the operator manual for that machine for specific details of rotor operation.*

Rotor Operating Direction

The rotor on this head must only be operated in an 'upward' cutting direction; in this direction the auger will rotate in the direction required to expel mulched cuttings into the suction tube.

The rotor must never be operated in the 'downward' direction, this is dangerous and may risk damaging machine components.



Correct Rotor Direction

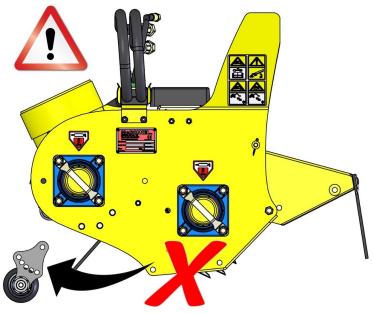
⚠CAUTION

On initial installation the hydraulic connections should be double-checked to confirm that the rotor will operate in the correct 'upwards' cutting direction.

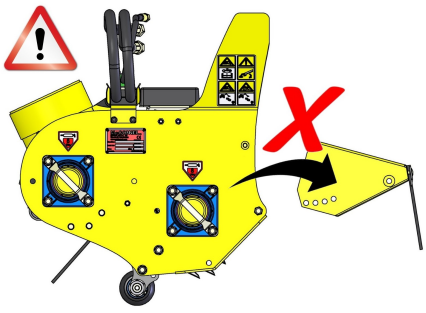
Tractor Forward Speed

The material being cut determines tractor forward speed. Forward speed can be as fast as that which allows the flail head sufficient time to cut the vegetation properly. Too fast a speed will be indicated by over frequent operation of a breakaway system, a fall-off in tractor engine revs and a poor finish to the work leaving ragged uncut tufts and poorly mulched cuttings.

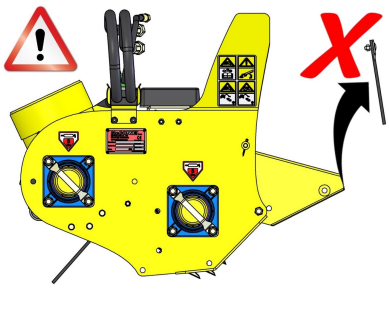
⚠WARNING **Never operate the machine in any of the following conditions;**



…with Roller removed.



…with Front Hood removed.



…with Front Flaps removed.

Cutting Height
The cutting height of the machine is determined by the position of the rear roller; the roller can be manually raised or lowered by altering the position of the roller mounting brackets, the brackets provide 5 different height positions.

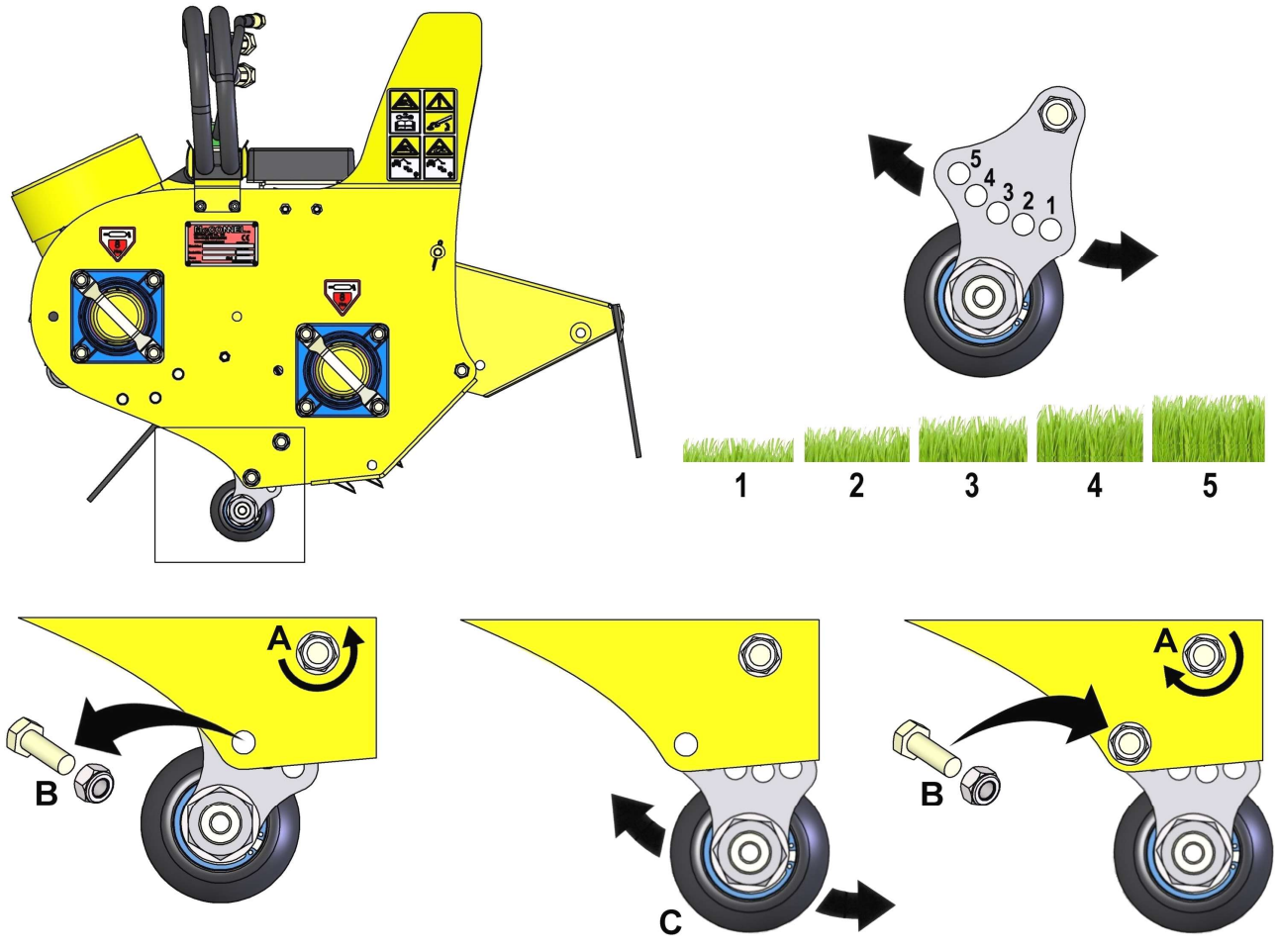
Roller Height Adjustment

Tools required; M12 spanners or sockets.

For adjustment of the rear roller the head should be raised clear of the ground in a suitable position that provides safe access to both roller brackets. Never attempt to work under a raised machine that is not suitably supported.

WARNING **All machinery must be switched off and the tractor's starting key removed before attempting to access or adjust the roller.**

Adjustment Procedure
The procedure for setting the height of the rear roller is shown below, when adjusting the roller ensure identical hole positions are selected on both brackets.

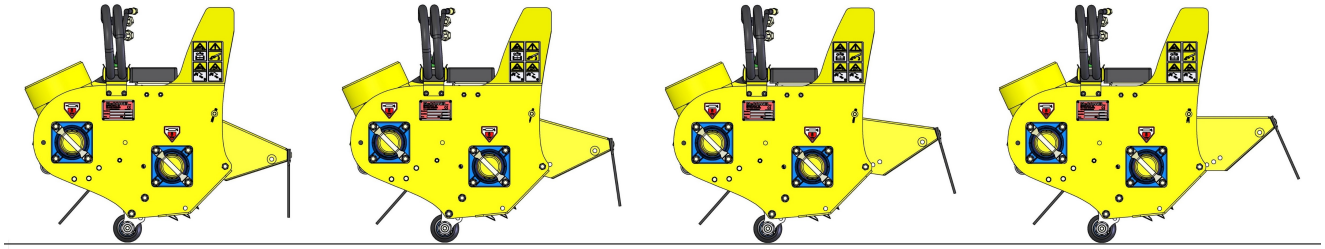


- 'Slacken off' the upper bracket mounting nuts (A) on both sides of the head.
- Remove lower bracket mounting nuts and bolts (B) on both sides of the head.
- Move roller (C) forwards or backwards to place it at the required height position.
- Replace and fully tighten nuts and bolts (B) on both sides of the head.
- Re-tighten nuts (A) on both sides of the head.

Front Hood Positions

The front hood offers 4 different height positions.

To reduce the distance that objects can be ejected from the machine during work, the front hood should be set at the lowest possible setting that will still allow the material being cut to efficiently enter the head.



Hood position 1. (Lowest Position) | **Hood position 2.** | **Hood position 3.** | **Hood position 4. (Highest Position)**

Front Hood Position for Verge Mowing

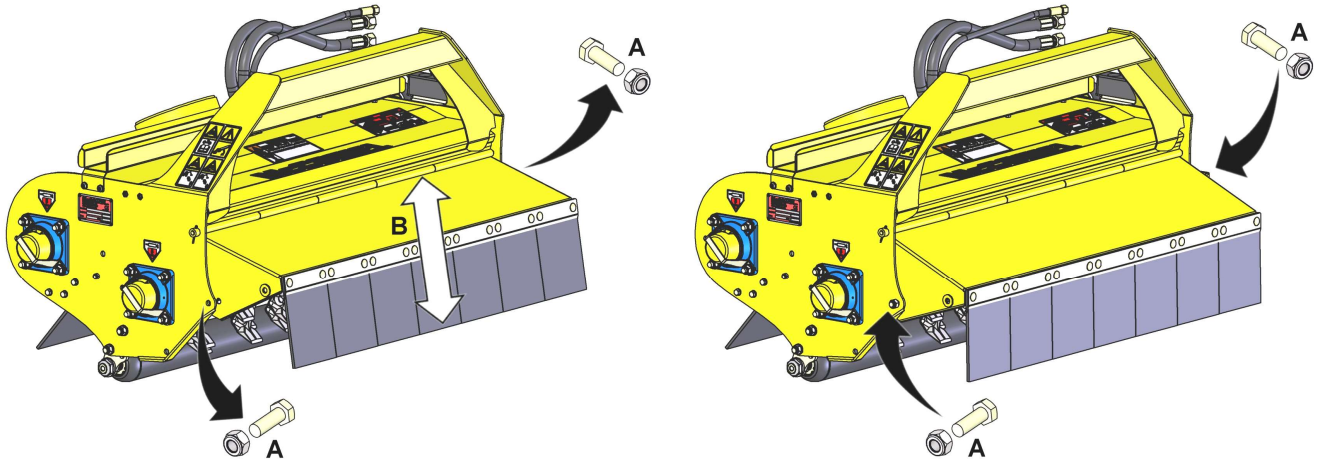
For verge mowing and/or working in public areas, the front hood should be used in its lowest position to minimise the distance materials and/or unspecified objects can be accidentally ejected.

When working in these areas, if persons or animals come within 100m of the working machine, forward travel must be halted immediately, and the rotor switched off; operations must not be resumed until they are clear of the danger zone. Caution must always be adopted when working in these types of areas as the operator's vision of the danger zone can be interrupted by corners and obstacles.

Front Hood Height Adjustment

Tools required; M12 spanners or sockets.

WARNING **All machinery must be switched off and the tractor's starting key removed before attempting to adjust position of the front hood.**

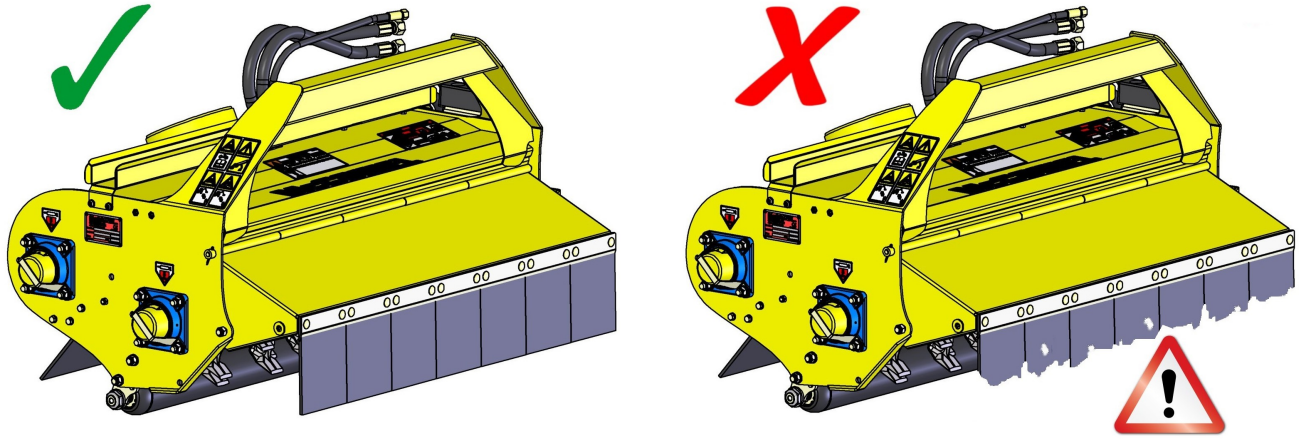


- Release and remove hood fixing nuts and bolts (A) from both sides of the head.
- Raise or lower the hood (B) to the required height setting.
- Replace hood fixing nuts and bolts (A) and fully tighten.

Front Protection Flaps

Rubber flaps are fitted on the front of the hood to provide increased protection from ejected objects; these must always be fitted to the machine.

If flaps are excessively worn or become damaged to the point where they no longer provide adequate protection they must be replaced immediately.



Ensure front flaps are in good condition; excessively worn or damaged flaps must be replaced immediately before use.

Inspection, maintenance and cleaning of the head should be performed with the unit parked on a firm level site and suitably supported. Care must be adopted at all times when working with, or under, a raised machine.
When checking, repairing or maintaining any machinery that is attached to a tractor, the starting key must be removed and pocketed to ensure machines cannot be accidentally or inadvertently started by other persons.

Maintenance Tasks – New Machine
The following general maintenance tasks should be performed at the timescales stated;

After the first 1 hour of work with a new machine

- Check all nuts and bolts for tightness – *retighten if required.*

After the first 4 hours of work with a new machine

- Check all nuts and bolts for tightness – *retighten if required.*

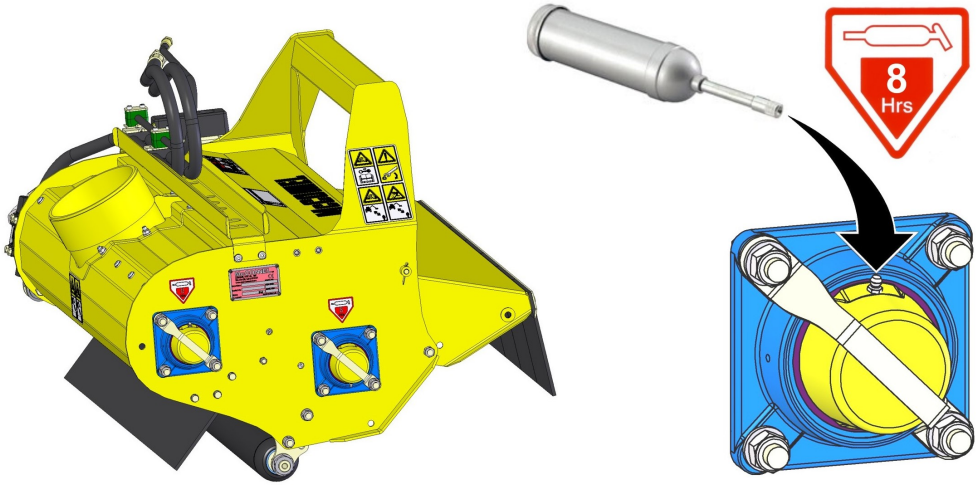
After the first 10 hours of work with a new machine

- Check all nuts and bolts for tightness – *retighten if required.*

Daily Maintenance Tasks

- Check all nuts and bolts for tightness – *retighten if required.*
- Check wear and condition of flails – *replacing missing, or damaged flails immediately.*
- Check rotor – *remove any objects or vegetation that may be lodged in the rotor.*
- Grease rotor shaft and auger shaft end bearings – *refer to grease point locations below.*
- Clean dust and cutting debris from the machine after use.

Grease Point Locations

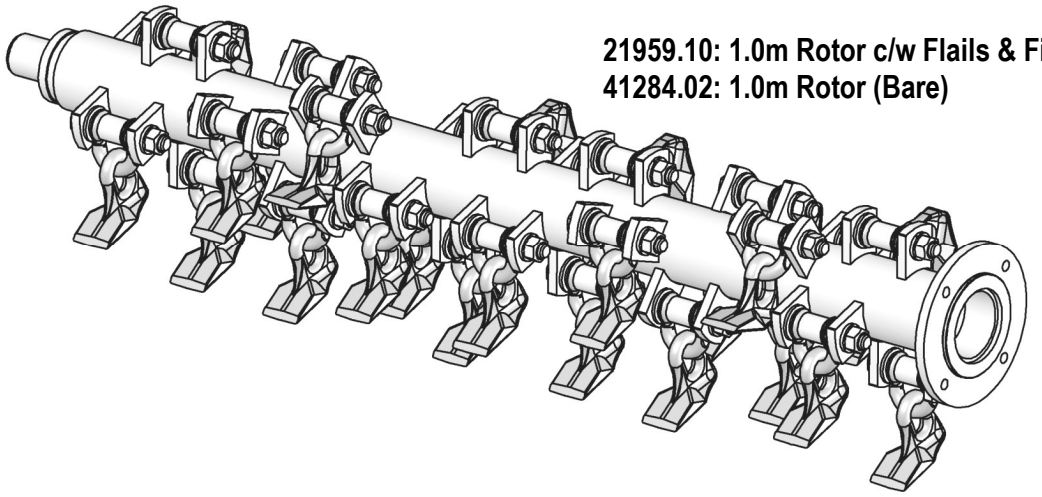


Grease the rotor shaft and auger shaft end bearings shown above on a daily basis.

Grease Type: EP Lithium Grease

Rotor, Flails & Fixings
Frequently inspect the rotor assembly for signs of damaged or missing flails. Do not operate or attempt to run the rotor with a missing flail; imbalance will cause severe vibration and can rapidly damage the rotor shaft bearings. If a flail is found to be broken or missing it must be replaced immediately. Check on a regular basis that flail bolts are tight and correctly torqued.

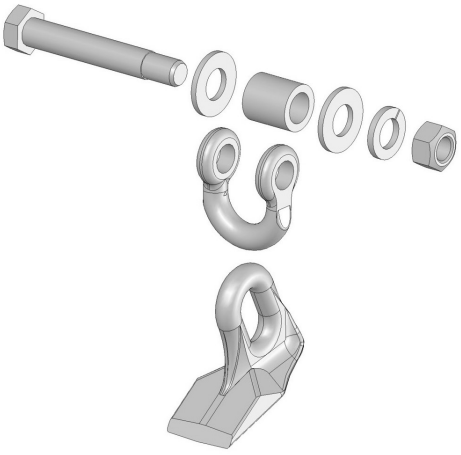
Rotor



21959.10: 1.0m Rotor c/w Flails & Fixings
41284.02: 1.0m Rotor (Bare)

Rotors are equipped with 28 set of flails; refer below for the part number of flails and fixings.

Flails & Fixings



7190463: Boot Flail
05.895.01: Shackle
02.807.01: Spacer
05.775.10: Special Bolt
05.968.06: Self-locking Nut
05.281.04: Flat Washer (2 per station)
9100207: Spring Washer

Flail Replacement

Tools required; M14 spanners, M14 socket, torque wrench.

When replacing flails, they must be mounted on the rotor in the ‘upward’ cutting direction; torque flail fixings to **70Nm**.

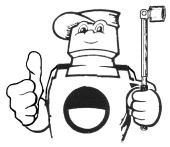
Machine Storage
For long-term storage the machine should parked up in a clean dry environment where it is protected from the elements. Prior to storage, the machine should be thoroughly cleaned, and any worn or damaged components replaced so that the machine is ready for the next seasons work.

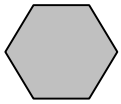
TORQUE SETTINGS FOR FASTENERS

The Chart below lists the correct tightening torque for fasteners. The Chart should be referred to when tightening or replacing bolts in order to determine the grade of bolt and the correct torque unless specific torque values are assigned in the text of the manual.

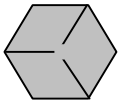
Recommended torque is quoted in Foot-Pounds and Newton-Metres within this manual. The equation for conversion is 1 Nm. = 0.7376 ft.lbs

TORQUE VALUES FOR IMPERIAL BOLTS

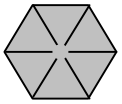




Head Marking
No Marks
Grade Two



Head Marking
Three Lines
Grade Five

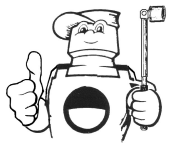


Head Marking
Six Lines
Grade Eight

Bolt Dia.	Value (Dry) ft.lb.	Nm.	Value (Dry) ft.lb.	Nm.	Value (Dry) ft.lb.	Nm.
1/4"	5.5	7.5	9	12.2	12.5	17.0
5/16"	11	15.0	18	25.0	26	35.2
3/8"	20	27.0	33	45.0	46	63.0
7/16"	32	43.0	52	70.0	75	100.0
1/2"	50	68.0	80	110.0	115	155.0
9/16"	70	95.0	115	155.0	160	220.0
5/8"	100	135.0	160	220.0	225	305.0
3/4"	175	240.0	280	380.0	400	540.0
7/8"	175	240.0	450	610.0	650	880.0
1"	270	360.0	675	915.0	975	1325.0
1-1/8"	375	510.0	850	115.0	1350	1830.0
1-1/4"	530	720.0	1200	1626.0	1950	2650.0
1-3/8"	700	950.0	1550	2100.0	2550	3460.0
1-1/2"	930	1250.0	2100	2850.0	3350	4550.0

NOTE:
The values in the chart apply to fasteners as received from the supplier, dry or when lubricated with normal engine oil. They DO NOT apply if special graphited, molydisulphide greases, or other extreme pressure lubricants are used. This applies to both UNF and UNC coarse threads.

TORQUE VALUES FOR METRIC BOLTS.



Head Marking
4.8

Head Marking
8.8

Head Marking
10.9

Head Marking
12.9

Bolt Dia.	Value (Dry) ft.lb.	Nm.	Value (Dry) ft.lb.	Nm.	Value (Dry) ft.lb.	Nm.	Value (Dry) ft.lb.	Nm.
6mm	4.5	6.1	8.5	11.5	12	16.3	14.5	20.0
8mm	11	14.9	20	27.1	30	40.1	35	47.5
10mm	21	28.5	40	54.2	60	81.4	70	95.0
12mm	37	50.2	70	95.0	105	140.0	120	160.0
14mm	60	81.4	110	150.0	165	225.0	190	260.0
16mm	92	125.0	175	240.0	255	350.0	300	400.0
18mm	125	170.0	250	340.0	350	475.0	410	550.0
20mm	180	245.0	350	475.0	500	675.0	580	790.0
22mm	250	340.0	475	645.0	675	915.0	800	1090.0
24mm	310	420.0	600	810.0	850	1150.0	1000	1350.0
27mm	450	610.0	875	1180.0	1250	1700.0	1500	2000.0
30mm	625	850.0	1200	1626.0	1700	2300.0	2000	2700.0

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