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## MG250 Manège Grader



## Original Instructions

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THIS MANUAL MUST BE HANDED TO THE OPERATOR BEFORE USE. THE OPERATOR MUST UNDERSTAND FULLY THE CONTENT OF THIS HANDBOOK BEFORE USING THE MACHINE FOR THE FIRST TIME. OF THE IMPLEMENT IS RESOLD, THIS MANUAL MUST ACCOMPANY THE MACHINE.

## NOTE:

The information contained in this manual is correct at the time of going to press. However, in the course of development, changes in specification are inevitable. Should you find the information given differs from your machine, please contact Chapman Machinery Ltd direct for advice. **Use only Chapman Genuine Service Parts on Chapman Machinery and Machines.**

# HSE Information

## Safe use of all-terrain vehicles (ATVs) in agriculture and forestry – AIS Sheet 33

### Introduction

This information sheet gives advice on the safe use of ATVs. It covers the two main types used in off-road working in agriculture and forestry, which are:

- sit-astride ATV / sit-in machines
- side-by-side mini-utility vehicles,

The Full HSE information sheet can be found here or using the QR Code at the bottom of the article: <https://www.hse.gov.uk/pubns/ais33.pdf> and must be read prior to any ATV/UTV use. Below are related extracts to trailed machinery.

### REMEMBER - GET PROPERLY TRAINED AND ALWAYS WEAR HEAD PROTECTION

#### Training

Under the Provision and Use of Work Equipment Regulations 1998 (PUWER), there is a legal requirement for employers to provide adequate training, and to ensure that only employees who have received appropriate training in their safe use, including the use of any towed equipment or attachments, are permitted to ride ATVs. The same requirements apply to the self-employed. HSE regards training provided by recognised training providers as being adequate for the purposes of PUWER.

#### Protective clothing

More than half of all ATV riders have been thrown off at some time. As these machines are not fitted with either a cab or roll bar, your only protection is what you wear.

- **Head protection is vital.** The majority of ATV fatalities in the UK in the last ten years have been caused by head injuries. Nobody who died from head injuries was wearing a helmet. Helmets would certainly have prevented most, if not all, the deaths. **You should always wear a helmet when riding an ATV.** All helmets should have a chinstrap and be capable of being used with suitable eye protection. The type of helmet chosen should be based on an assessment of the circumstances in which the ATV will be used, eg the types of surface travelled over and anticipated speeds. The harder the surface and higher the speed the greater the degree of protection needed. **NB: Forestry helmets and industrial hard hats are not acceptable for any ATV operations.**
- Wear clothing that is strong and covers your arms and legs. Gloves are useful for protection and to keep hands warm in cold weather for good control of the ATV. Wear sturdy, ankle-covering footwear, eg boots or wellingtons that are strong, supportive and have good wet grip.
- Protect your eyes from insects and branches with either a visor or goggles.

#### Trailed equipment and loads

Ensure all riders know the manufacturers recommended towing capacity and drawbar loading limit. Always operate within these requirements.

Remember that your ability to control the ATV by your body movements will be considerably reduced when carrying a load or towing a trailer.

- When selecting trailed equipment look for:
  - over-run brakes;
  - a swivel hitch drawbar;
  - bead lock rims on wheels;
  - a low centre of gravity and a wide wheel track;
  - a long drawbar; and
  - attachment points for securing a load.
- Check the weight ratio between your ATV and its trailed load. This needs to be assessed for each operation. As a general guide, on level ground, braked trailed equipment can be a maximum of four times the unladen weight of the ATV. For unbraked trailed equipment the maximum should be twice the unladen weight. These loads should be reduced when working on slopes, uneven ground or poor surface conditions. Follow the manufacturers advice for your particular machine.
- Weight transfer is also important. Stability and resistance to jack-knifing is improved if some load is transferred onto the ATV's drawbar. Approximately 10% of the gross weight of the loaded trailer is recommended, but this should not exceed the manufacturers drawbar loading limit. Remember that weight transfer can change dramatically when you start going up or down hill.
- When selecting mounted equipment, make sure it is within the manufacturers approved weight limit, with a low centre of gravity, and controls which are easy to operate but do not create a hazard. Where equipment is added to one end of the machine, add ballast at the other end to maintain stability.
- Loads carried on racks must be well secured, e.g. with ratchet straps, and be evenly balanced between the front and rear, except where they are deliberately altered to aid stability when going up or down a slope.
- Only tow a load from the hitch point. Loads towed from other points such as the rear rack have caused sudden rear overturning even on slight slopes or with slight acceleration. Ropes or chains should not be used to drag a load where they can become caught on a wheel. This may lead to entanglement with the brake cable, causing unexpected braking.

#### Further information

For information about health and safety go to <https://www.hse.gov.uk/>

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# Important Safety Information

Always read this manual before fitting or operating the machine – whenever any doubt exists contact your dealer or the Chapman Machinery Service Department for advice and assistance.

## DEFINITIONS

The following definitions apply throughout this manual:

**WARNING** - An operating procedure, technique etc., which can result in personal injury or loss of life if not observed carefully.

**CAUTION** - An operating procedure, technique etc., which can result in damage to either machine or equipment if not observed carefully.

**NOTE** - An operating procedure, technique etc, which is considered essential to emphasis.

**LEFT & RIGHT HAND** - This term is applicable to the machine when attached to the towing vehicle and is viewed from the rear – this also applies to tractor references.

## Safety Information

- Do not operate this equipment unless you have studied this manual in full
- Only use this machine for its designated task - improper use is both highly dangerous and damaging to machine components
- Both operators & maintenance fitters should be familiar with the machine and fully aware of dangers surrounding improper use or incorrect repairs
- Before starting, carry out a visual check on both machine & towing vehicle as regards functionality, road safety & accident prevention rules
- Even when using the machine correctly, accidents can occur. It is imperative that nobody stand within the danger area. If working near roads, buildings or animals, special attention must be taken to ensure safety.
- Never wear loose clothing which could get caught in rotating equipment
- Never carry passengers on the towing vehicle
- Do not stand near the machine when operating
- Damaged or missing safety decals must be replaced immediately
- Exceed maximum towing speed of 10mph

## Transportation Safety

- When transporting, especially over rough ground, reduce speed to prevent damage to machine.
- This machine is not road legal in its standard form. DO NOT tow on public highways.

## Operating Safety

- Pay special attention when working not to harm livestock if crowding around the machine occurs.
- If anything should become entangled in the mechanism, or blocked in the chute, stop the machine and disconnect the power before attempting to clear the blockage.

# Description

The MG range of equipment are non-powered machines designed to be towed by a suitable vehicle such as a 4x4, UTV or ideally an ATV.

Designed around a base machine suitable for simple pure sand areas, options and accessories can be added quickly and easily to enable the MG250 to tackle almost any arena surface type.

With a 2.3m working width, you can spend less time maintaining your arena and more time actually using it. Built from heavy duty box section steel, with easily replaceable wearing parts, and top quality galvanised finish, the MG250 will withstand years of use.

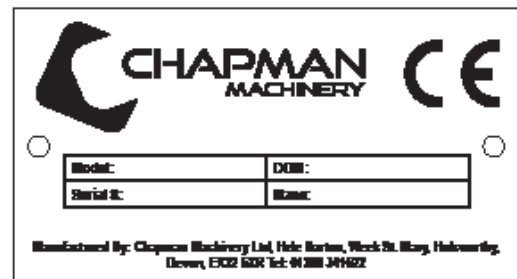
These machines should however only be used to perform tasks for which they were designed - use of the machine for any other function may be both dangerous to persons, and potentially damaging to components. Use of the machine beyond the stated usage may invalidate any applicable warranty, as well as being potential in breach of applicable safety regulations.

## Identification

Each machine is fitted with a serial plate (shown below) which details the following:

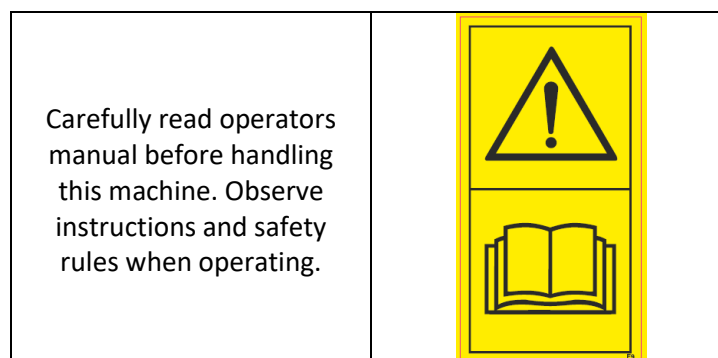
1. Model
2. Date of Manufacture (DOM)
3. Serial Number
4. Mass

When enquiring regarding spares or additional equipment, ensure you have this information to hand.



## Implement Decals

If your implement does not contain all of the decals shown below, please contact Chapman Machinery for replacement decals before use. **Note:** All decals must be present and visible. It is imperative that these are replaced if damaged to prevent potential harm to users.



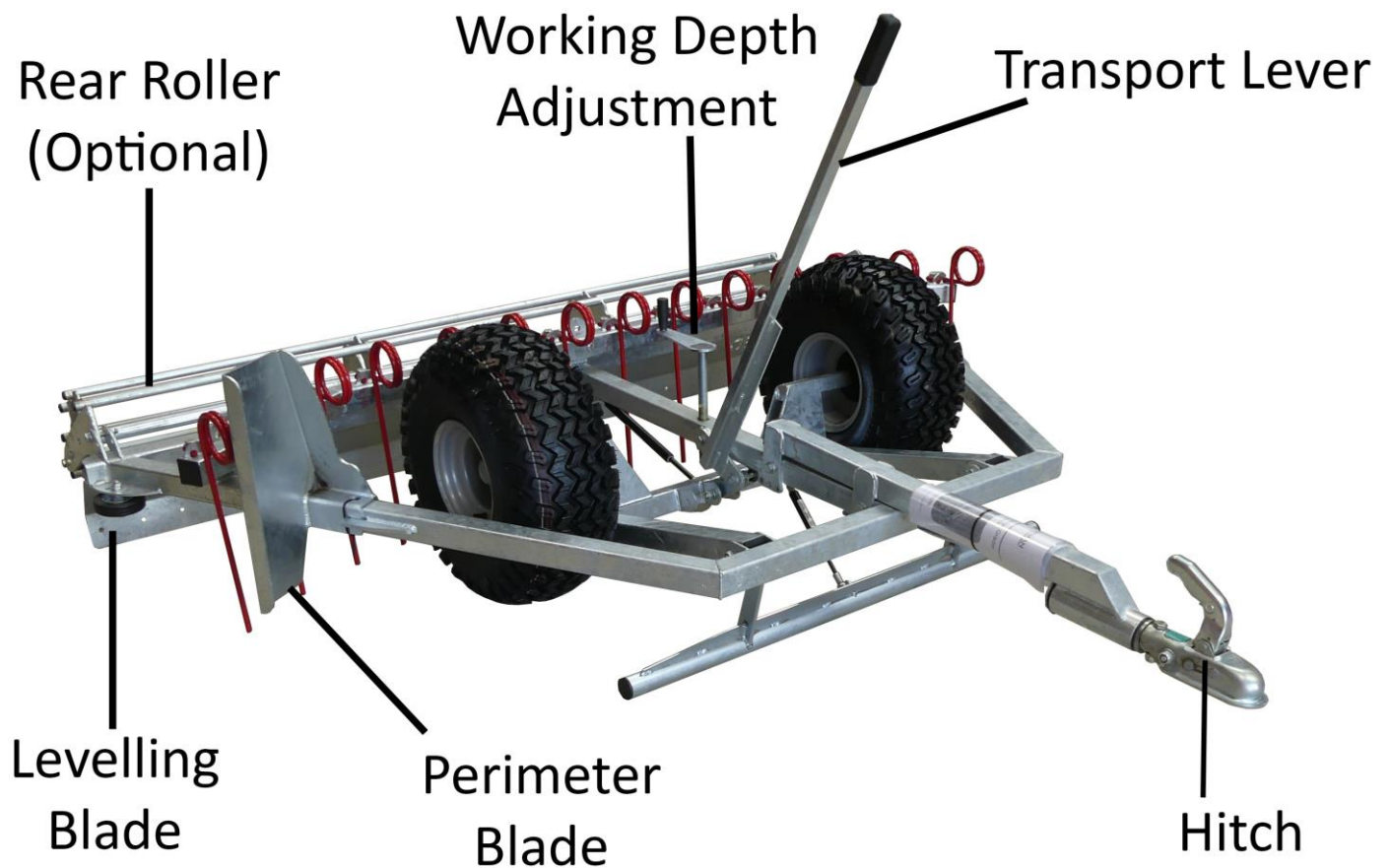
# Transporting & Lifting

Ensure that the vehicle used to transport or operate the Manège Grader has adequate lifting and towing capacity. Follow towing vehicle manufacturer capacity guidelines.

When lifting or moving the Manège Grader for transport or delivery purposes, ensure to locate the lifting straps evenly across the frame to take the implement weight safely. When transporting the product in assembled form ensure it is adequately strapped down to prevent movement during transportation, and ensure the transportation complies with all applicable highway laws.

Under no circumstances should the machine be towed on public highways.

## Implement Layout



# Operating Principles

The grader has three main operating principles, depending on optional accessories fitted:

## Spring Tines

The spring tines agitate the surface, causing stirring and flicking of the arena material, which fills in divots and levels surface lumps. This is an essential component of good surface maintenance for rubber crumb and fibre-stabilised sand surfaces, but is also highly useful for plain sand surfaces.

The working depth of the tines is recommended to be 45mm for most surfaces (the middle bolt holes). Greater tine depth will mean greater surface lift, giving a 'softer' resulting ride, however, a greater static load is placed on the towing machine, so only large towing machines (large ATVs, UTVs etc.) will have adequate traction to work to design spec.

The tines are attached by an elegant single-bolt mechanism, to facilitate quick and easy replacement should one fail, or when the tines wear out. Replacement tines are easy to fit and are available for a very reasonable price direct from Chapman Engineering.

## Levelling Blade

The rear levelling blades smooth the surface and move material forwards to fill in divots and give a level arena. The effect of the blades passing over the material then firms the surface lightly to give a consistent surface. The blades feature a special angled profile to effectively draw more material forward and level it.

## Rear Roller (Optional)

The rear is an optional fitment specifically designed for use with advanced surfaces such as CLOPF, Turf float and other fibre-stabilised surfaces. The roller works well on any arena type, consolidating and 'firming' the surface, to give a true one-pass finish for busy liveries & riding schools. A useful attachment which save you the expense of a separate roller & the hassle of changing implements regularly.

There are three operating modes:



## No roller

This mode is used when drawing material in from the edge boards, or when a firmed surface is not desired. The machine locks in this position with the use of two clips, for transportation & storage.

\*Note: This places a considerable negative load on the ball hitch. TAKE CARE when unhitching the machine in this configuration.



## Following roller

This mode is used so that the roller is following both the spring tines & blades. This is the primary mode of use, giving an agitated, level and firmed surface in one pass.



## Rear Roller Notice:

The rear roller is, by the very essence of its purpose for rolling & consolidating the surface, HEAVY. The design of the roller mounting arrangement is such that the roller automatically lifts off the surface when the machine is changed from “work mode” to “transport mode”.

A gas strut is fitted as standard to ease lifting of the roller, however a reasonable amount of force is still required in order to do so. An optional electric lift and depth control system can be fitted, please contact your Distributor for details.

It is recommended NOT to attempt to lift the machine out of work mode with the roller set in the upright position, as shown by the image below, and to instead raise the roller to this position after lifting the machine out of work.

The gas strut does a lot of work when lifting the roller, and therefore it is essential that this is maintained. If the gas strut becomes worn, or the roller becomes heavy to lift, replacement is quick and simple.



# Assembly

## Tine Depth Adjustment

It is recommended that the middle tine setting is used for the initial fitment, giving a tine working depth of approximately 45mm below the surface.

Adjust the depth of the tines by moving the main bar up or down on the mounting brackets. Ensure the mounting bolts are suitably tight after adjusting.

## Rear Roller Fitment & Adjustment

### Safety Notice

CAUTION - REAR ROLLER IS HEAVY

Lower the machine to the ground by engaging 'work' mode. maneuver the roller at the rear of the machine so that the mounting holes align. Attach the roller using the two supplied M12 x 60mm bolts, washers and nuts utilizing the rearmost holes, as shown below.



# Attachment to Towing Vehicle

Any vehicle with a 50mm ball hitch can tow the machine. Ensure the hitch is securely fastened, and the machine is in transportation mode (transport lever raised) before moving off.

The recommended towing vehicle for this grader is either an ATV or UTV or 4x4 due to the optimum balance between weight, maneuverability and traction.

## Safety Notice

ATVs 250cc or under are not recommended for machines with tine kits and/or rear rollers fitted due to tractive limitations. Some small ATV's may be ok, depending on tyre condition and towing capacity. Four-wheel drive (if applicable) should be engaged at all times.

# Adjustment

## Working Depth

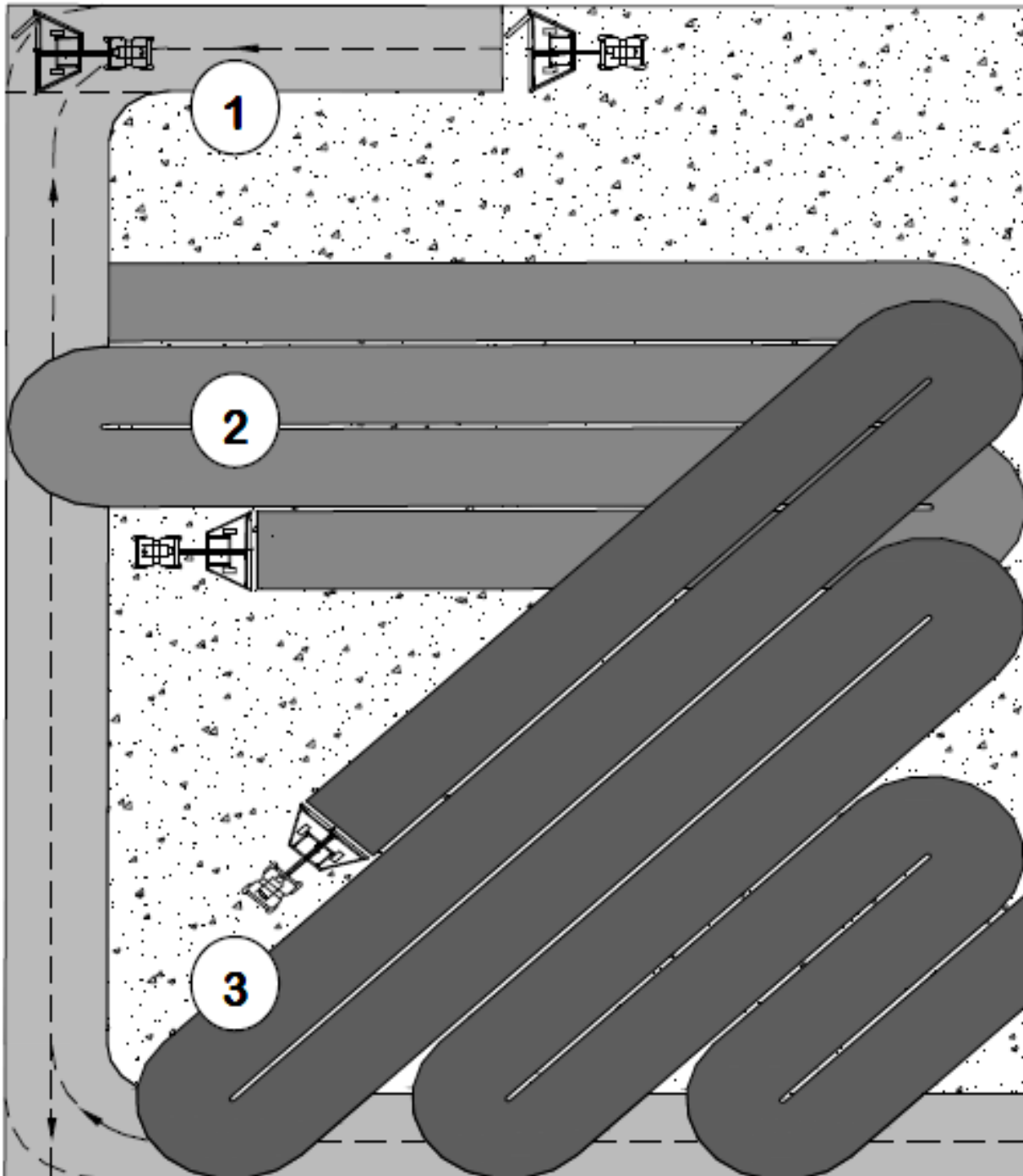
**Note:** Ensure both tyres operate under the same working pressure (Recommended 4-6psi, 8psi for graders equipped with rear roller)

- Move the grader to the arena that is suitable for test grading
- Lower the machine to the ground by engaging working position. Screw the working height adjustment down so that it contacts the axle crossbar. Lift the machine off the ground by engaging transport mode and screw the adjuster down a further rotation. This provides a good basis to begin with.
- Move forward slowly to assess the grading depth and adjust as necessary.
- An element of trial-and-error is required to find the best settings for each arena, and the optimum working depth will change through the year due to variables such as surface temperature, water content etc.
- Once you find a good depth setting for your arena, the screw adjuster can be left in this position so that you can easily grade the arena next time with minimal adjustment.

**NOTE:** The transport lever should ALWAYS be raised away from the working position to adjust the working depth adjustment screw to prevent unnecessary cosmetic damage to the axle assembly

# Grading Procedure

There are three main parts to the grading process as shown below:



# 1 Perimeter Grading

The edge material of the arena should always be levelled first upon entering the site, and is extremely important in preventing the material becoming banked around the perimeter of the arena.

1. Your machine will have the perimeter blade attached to the main frame on the side as shown below.



2. With the machine in transport mode remove steel pin and turn the blade to a 90-degree angle (see below) making sure the pin holes are aligned. The perimeter blade can also be used on the left-hand side of the machine.



3. Slide the pin back into place, ensuring the blade is secure.



4. Once complete the blade will then be able to scrape the remaining surface in towards the machine and level accordingly, adjusting the depth stop if necessary – it is better to make two passes with the grader set to a lesser working depth, than one deep pass, and a more consistent surface will result.

Make one pass around the edge of the site and repeat as many times as necessary to draw material away from the edge boards – more passes will be required when a lot of circular schooling work has been going on. Ensure that the blade or running wheel does not contact the edge boards excessively in order to avoid any potential damage. Beware of obstructions such as gateposts which could damage the machine or vice-versa

The corners of the arena can be graded by raising the grader into transport position, reversing into the corners, and lowering. Again, it may be necessary to repeat this action to ensure level corners.

## 2 Primary Grading

Once perimeter grading is finished, place the perimeter blade back into its upright original position.

The first main grading operation should always be along the direction of the longest edge of the arena. Remove or move all obstacles before beginning to ensure the entire area is levelled consistently.

To work heavily used areas, for example where jumps have been placed, grading in circular or figure-of-eight patterns can aid quick grading, and restore a consistent surface finish.

## 3 Secondary Grading

It is recommended that, time permitting, a second grading pass is undertaken to ensure the desired surface finish and feel. This should be conducted in exactly the same manner as the primary grading operation, but in rows drawn at either 45° or 90°. The choice of secondary grading direction will in part be down to the design of the site being levelled, and may not in reality be practical. to grade at 45° or 90° In this case it is recommended to grade at 180° from the first grading direction (i.e. working from the opposite starting edge, to ensure complete coverage).



# Maintenance & Service

Service Schedule			
Task	Daily	Weekly	Monthly
Check tyre pressures	✓	✓	✓
Check tyre condition	✓	✓	✓
Visual check of bolts and fixings	✓	✓	✓
Visual check of wheel nuts		✓	✓
Grease the depth adjustment screw			✓
Check spring tine wear			✓
Check blade wear			✓

## Tyre Pressures

A working tyre pressure of 0.28-0.41 bar (4-6 psi) [0.55 bar (8psi) for machines equipped with rear roller] is recommended for most surfaces. Check the tyre pressures frequently.

## Depth Adjustment Screw

The depth adjustment screw should be lightly greased on a monthly basis, to ensure continued smooth operation through the machine life. A light coating of standard grease applied with an old rag or similar is ideal for this.

## Spring Tine Wear

The spring tines should be checked for signs of damage or excessive wear on a monthly basis. The spring tines should be replaced if excessive wear or damage is apparent – replacements are available through your dealer or direct from the manufacturer. Replace once wear exceeds 50mm.

## Blade wear

The blade working edges should be replaced when the blade thickness is reduced to 1mm, or if excessive damage is incurred. Replacement of the perimeter blade is quick and easy.

Contact your machinery supplier or Chapman Machinery direct for more details.

# Warranty

## The Chapman Warranty

Chapman Machinery Ltd (herein 'Chapman' or 'Chapman Machinery') warrants that the machine referred to in the Warranty Registration Form will be free from manufacturing defects for a period of 24 months from the date of sale. This warranty does not affect your statutory rights, but merely adds to them. Should you have a problem within 24 months from the date of sale please contact your original dealer, or Chapman Machinery's Service Department.

Any part found to be defective during this period will be replaced or repaired, at our discretion, by the dealer or a authorised Service Engineer.

### Warranty Conditions

1. The Warranty Registration Form must be completed and returned to Chapman Machinery Ltd within 30 days of the date of sale
2. This warranty does not cover defects arising from fair wear and tear, wilful damage, negligence, misuse, abnormal working conditions, use in competition, failure to follow Chapman Machinery's instructions (oral or written, including all instructions and recommendation made in the Operator's Manual) or alteration or repair of the machinery without prior approval.
3. The machinery must have been serviced in accordance with the Operator's Manual and the Service Log must have been kept up to date and made available to the dealer should service, repair or warranty work be undertaken.
4. This warranty does not cover claims in respect of wearing parts such as blades, flails, paintwork, tyres, belts, hydraulic hoses, bearings, bushes, linkage pins, top links, ball ends unless there is a manufacturing or material defect or the cost of normal servicing items such as oils and lubricants.
5. This warranty does not cover any expenses or losses incurred whilst the machinery is out of use for warranty repairs or parts replacement.
6. This warranty does not extend to parts, materials or equipment not manufactured by Chapman Machinery, for which the Buyer shall only be entitled to the benefit of any such warranty or guarantee given by the manufacturer to Chapman Machinery. Only genuine replacement parts will be allowable for warranty claims.
7. All parts replaced by Chapman Machinery under warranty become the property of Chapman Machinery and must be returned to Chapman Machinery if so requested. Such parts may only be disposed of after a warranty claim has been accepted and processed by Chapman Machinery.
8. Chapman Machinery is not liable under this warranty for any repairs carried out without Chapman Machinery's written consent or without Chapman Machinery being afforded a reasonable opportunity to inspect the machinery the subject of the warranty claim. Chapman Machinery's written consent must, therefore, be obtained before any repairs are carried out or parts replaced. Use of non- Chapman Machinery parts automatically invalidates the Chapman Warranty. Failed components must not be dismantled except as specifically authorised by Chapman Machinery and dismantling of any components without authorisation from Chapman Machinery will invalidate this warranty.
9. All warranty claims must be submitted to Chapman Machinery on Chapman Machinery Warranty Claim Forms within 30 days of completion of warranty work.  
Using the machine implies the knowledge and acceptance of these instructions and the limitations contained in this Manual.

### Transfer of Warranty

The Chapman warranty be transferred to a subsequent owner of the machinery (for use within the UK only) for the balance of the warranty period subject to all of the stated warranty conditions and provided that the Change of Owner form is completed and sent to Chapman Machinery within 14 days of change of owner- ship.

Chapman Machinery Ltd retain the right to refuse transfer of warranty.

**Chapman Machinery reserves the right to make alterations and improvements to any machinery without notification and without obligation to do so.**



EU DECLARATION OF CONFORMITY

93/44/ EEC

Chapman Machinery Ltd

Hele Barton  
Week St.Mary  
Holsworthy  
Devon  
EX22 6XR

The Products Covered by this Declaration

Product: MG250 Manége Grader & Attachments

Standards and Regulations used: Machinery Directive 2006/42/EC

Place of Issue: United Kingdom

Name of Representative: James Chapman

Position of representative: Director

The Basis on which Conformity is being Declared

I declare that as the authorised representative, the above information in relation to the supply / manufacture of this product, is in conformity with the stated standards and other related documents following the provisions of 93/44/EEC directives

The products described above comply with the essential requirements of the directives supplied

Signed

Date: .....12/07/2010.....