



---

## RM Series Rotary Mowers



## Original Instructions

Chapman Machinery Ltd, Hele Barton, Week St. Mary, Holsworthy, Devon EX22 6XR

Tel: 01288 308149

Email: [sales@chapman.co.uk](mailto:sales@chapman.co.uk)

# Contents

HSE Information.....	3
Important Safety Information .....	4
DEFINITIONS.....	4
Safety Information .....	4
Transportation Safety .....	5
Operating Safety .....	5
Description .....	5
Noise Levels .....	5
Technical Information.....	6
Component Identification.....	6
Identification.....	7
Implement Decals .....	7
Attachment.....	8
Before Attaching the Machine.....	8
Attaching the Machine.....	8
Operation.....	8
Operating Limits.....	9
Daily Checks .....	9
Storage .....	9
Grease Points.....	9
Offsetting .....	10
Drive Belts & Power Transmission.....	11
Fitment/Replacement.....	11
Throttle Adjustment .....	12
Maintenance.....	13
Blade Condition & Replacement.....	13
Troubleshooting.....	14
Warranty.....	15
EC DECLARATION OF CONFORMITY .....	16

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/>

© Crown copyright This publication may be freely reproduced, except for advertising, endorsement or commercial purposes. First published 05/99. Please acknowledge the source as HSE.



# 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, foreign objects such as stones may be thrown a considerable distance. It is imperative that nobody stand within the danger area. If working near roads, buildings children or animals provision must be made for containment of ejected material and sufficient warning signs / notices placed around the working area
- The condition of blades and of machine guards must be checked before beginning the day's work. Worn or damaged blades must be replaced before you use the machine.
- During checks or repairs, ensure the machine cannot be started by other persons by mistake
- Never wear loose clothing which could get caught in rotating equipment
- Never carry passengers on the towing vehicle
- Never approach the machine until the rotor has stopped rotating
- Do not stand near the machine when operating
- Damaged or missing safety decals must be replaced immediately
- Before leaving the machine unattended, remove the starting key (if applicable)
- **ENSURE emergency stop switch is SECURELY attached to the towing vehicle and within reach of the operator at all times**

# Transportation Safety

- When transporting, especially over rough ground, reduce speed to prevent damage to machine.
- Ensure ignition keys are removed
- This machine is not road legal. DO NOT tow on public highways
- Never transport the machine with the rotor running, even for small distances.

# Operating Safety

- If wires, ropes or chains should become entangled in the rotor stop immediately to prevent damage or dangerous situations; stop the rotor and the towing machine, take out the starting key or safety cut-out. Put working gloves on; clear the rotor with the aid of pliers or shears. Do not try to disentangle.
- Pay special attention when working with the machine not to touch fixed objects such as road-drain, walls, shafts, kerbs, guard rails, tracks etc. This could cause breakage of the blades, which could be thrown out of the machine at very high speed.
- Do not use the machine when excessive vibration is experienced, as this may cause breakage and serious damage - find the cause of the vibration and eliminate it before using the machine again.

# Description

The RM Series of rotary mowers are designed as self-powered units to be towed behind a suitable, ATV, UTV, 4X4, compact tractor or lawn-mower.

Designed for general paddock topping and maintenance, with the ability to tackle light reeds and rushes if required, the RM range is perfect for liveries, estates and farms alike.

The RM120 has a 1.2m (4') cut, and is available with one engine - a Honda GXV390 13hp. The RM150 has a 1.5m (5') cut and is available with a choice of two engines; either a Honda GXV390 13hp or a B&S 18hp Vanguard V Twin.

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 in breach of applicable safety regulations.

# Noise Levels

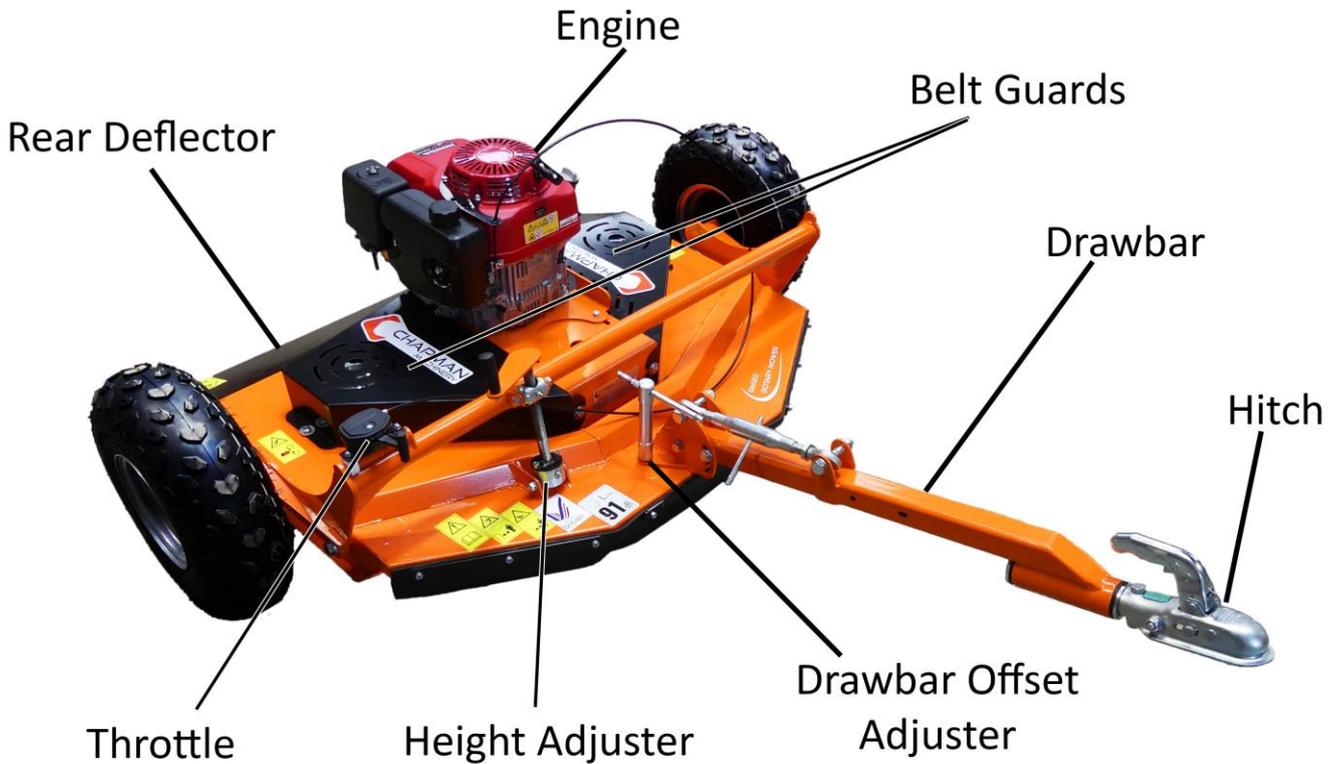
The sound of this machine, as measured at the typical operator location under normal operating conditions, is 91db. If being towed by an open-cab vehicle, it is **essential** that ear defenders or a suitable helmet is worn at all times. If being towed behind an closed-cab UTV, 4x4 or similar, then the cab should remain closed to reduce noise.



**Ear defenders or other suitable protection should be worn at all times when operating**

# Technical Information

## Component Identification



**NOTE: RM Models are fitted with a combined throttle / choke / stop cable. This provides the emergency stop function should it be required.**



**COMBINED THROTTLE / CHOKE / STOP CONTROL MUST BE WITHIN REACH OF THE OPERATOR  
DURING NORMAL OPERATION!**

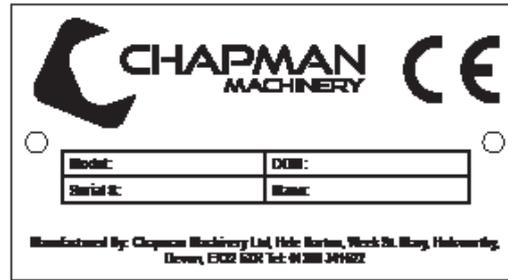
**ENSURE CONTROL EQUIPMENT IS SECURELY ATTACHED TO THE TOWING VEHICLE BEFORE USE  
CHECK OPERATION OF EMERGENCY STOP CONTROL BEFORE COMMENCING WORK**

# 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 your equipment supplier 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.



<p>Carefully read operators manual before handling this machine. Observe in structions and safety rules when operating</p>		<p>Caution - Entanglement Hazard. Keep hands away from rotating components</p>	
<p>Caution - Rotating blades. Maintain sensible working distance from machine and keep hands and feet clear of blades</p>		<p>Caution - risk of flying objects. Keep a safe distance from machine at all times</p>	

# Attachment

## Before Attaching the Machine

*Before attachment, ALWAYS ensure the following:*

- All safety guards & decals are in good working order and correctly fitted
- All blades are correctly fitted, undamaged, and not worn to excess
- Lubrication points have been lubricated as per scheduled maintenance period
- The engine oil level is correct & has been maintained as per the handbook
- Drive belt(s) are in good working order
- The tyres are free of damage and inflated to the correct pressure

## Attaching the Machine

NOTE: This machine is designed to attach to the towing vehicle through a 50mm diameter ball hitch or pin hitch.

1. Reverse the towing vehicle up to the machine.
2. Attach the machine onto the towing vehicle's coupling using either the auto-lock coupling or suitable pin hitch. Ensure the hitch is securely attached to the towing vehicle
3. Attach the emergency stop control box to the towing vehicle, in a secure location within easy reach by the operator.
4. With the engine OFF, adjust the working height to a suitable level by turning the height adjuster at the front left of the machine.
5. Level the machine to suit the drawbar & cutting height. This is achieved by twisting the link connector fitted to the drawbar. When on level ground, the top face of the mower deck (where the engine is mounted) should be approximately parallel to the ground.

# Operation

**NOTE:** Ensure that the operator is suitably qualified to use a machine of this nature and that they have fully read and understood this manual - they should be aware of all safety aspects relating to the safe use of the machine.

Prior to starting work the area to be cut should be checked for dangerous objects such as large stones, wood, wire, glass etc. – hazardous objects should be removed from the area prior to operation with the machine. The location of unmovable or natural hazards such as drain covers should be noted, or if necessary 'marked', to indicate to the operator that the area should either be avoided or additional caution adopted whilst working around the hazard.



**DO NOT OPERATE BEYOND OPERATING LIMITS, DAMAGE TO MACHINERY OR INJURY TO OPERATOR MAY OCCUR.**

# Operating Limits

Minimum / Maximum Ambient Temperature: -15°C / 40°C

Minimum / Maximum Altitude: 0 meters / 1500 meters \*

Maximum Inclination: 20° in any direction

\*Adjustment to carburetor jet size above 1500m will allow operation above this level, please call for advice.

# Daily Checks

Before use each day, and with the engine switched off and keys removed, the following checks should be undertaken;

- **Blades** - With the engine switched off and keys removed, the condition of the blades should be checked. Any damaged or missing blades should be replaced immediately.
- **Engine** - Fluid levels should be checked daily before use and topped-up as necessary. Ensure the air intake and screen grid are clear of debris. Ensure engine is in good order and maintained as per engine manufacturer schedule.
- **Bearings** - Ensure bearings are in good order and greased as per the maintenance schedule.
- **Belts** - Ensure belts are in good order, free of debris, dirt and grease and do not have signs of damage e.g. cracking, frayed edges, uneven wear.
- **Fuel** - Ensure fuel is clean and free of dirt / debris. If necessary, check condition of fuel filter.
- **Hitch** - Check condition of swivel hitch, and ensure this is attached securely to towing vehicle.
- **Tyres** - Ensure tyres are free from damage and inflated to the correct working pressure for the conditions at hand

# Storage

For extended periods of storage, it is advisable that the machine be first cleaned thoroughly and fully lubricated. Any servicing and maintenance should be undertaken prior to storage, and any worn components replaced.

**NOTE: Fuel should be treated with a suitable fuel stabilizer before extended storage!**

# Grease Points

Lubricate the following points using EP2 grease as the maintenance schedule:

(1-3. Rotor Grease Points)



per

## Offsetting

If required the drawbar on the RM Series can be offset to the left or right or folded for storage.

The machine is offset by unscrewing the T-bar as shown below. The drawbar can then be moved to the desired location, and the T-bar replaced in a suitable hole. The T-bar must be tightened firmly to prevent movement of the drawbar and should be checked periodically for tightness.



It is advisable to use the machine with the T-Bar (as shown centre of picture above) offset as above.



Changing the drawbar angle must be undertaken with the engine switched off & the ignition keys removed. Failure to do so could result in injury or damage to the machine.

## Starting Work

After ensuring all daily checks have been undertaken (see above), and with the engine throttle on idle setting start the engine by turning the ignition key. Depending on the ambient temperature and engine temperature, choke may be required. Once the engine is running and choke off, engage drive by increasing the engine throttle to maximum.



As the FM Series use a centrifugal clutch drive system, the engine must be run at maximum speed AT ALL TIMES when cutting.

## Forward Speed

The forward working speed will depend greatly on the working conditions and nature of the material being cut. Optimal speed will be in the region of 3-8 km/h (2-5 mph).

# Drive Belts & Power Transmission

## Fitment/Replacement

The RM Series are fitted with 2 x drive belts (RM120 BX55, RM150 BX63) driving all three rotors:

1. Remove Black belt covers & loosen 2 M8 bolts in front of engine with 13mm spanner



2. Loosen belt tension bolt behind engine with 17mm spanner anti-clockwise



3. Place belt over pulley 1 and 2 on lowest groove



4. Place second belt over pulleys 2 and 3 fitting on highest groove



5. Pull belts from between pulleys 2 and 3 and place over engine pulley on highest groove

6. Pull belts from between 1 and 2 and place over engine pulley on lowest groove.



7. Re-tension belts using 17mm spanner on tension bolt below engine



8. Tighten two M8 bolts in-front of engine using 13mm spanner



9. Refit black belt covers



Drive belts are a wearing part and must be replaced if showing signs of wear.

# Throttle Adjustment

Should you have trouble starting or stopping your mower, if, for example, the throttle cable has become bent or damaged, you may need to adjust the throttle as follows;

Required: 1 Philips head screwdriver.

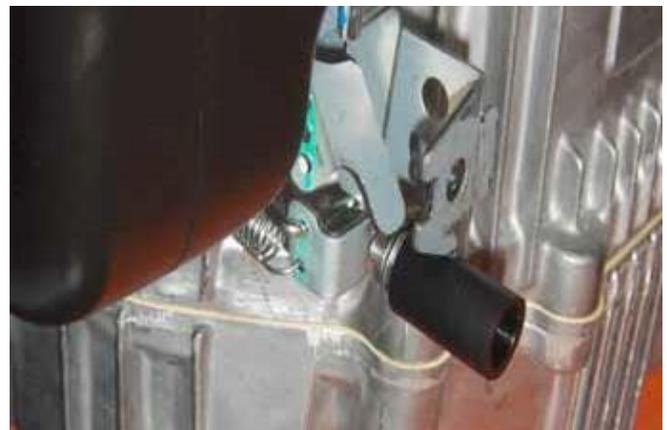
Locate the throttle cable retaining bracket at the front of the engine, loosen as shown using a Philips head screwdriver.



Set the throttle to FULL CHOKE, as shown below.



With the throttle at full choke, pull the plastic part of the cable upwards, and tighten the retaining bracket when the choke lever just touches the plastic topped adjuster screw. Test for correct start / stop operation.



# Maintenance

All maintenance, cleaning and repair operations must be performed with the machine suitably supported, the engine switched off (and cool), and the ignition keys removed.

**NOTE: For commercial use, log hours of operation in a maintenance booklet to ensure proper maintenance intervals and continued service.**

## Maintenance Schedule

### After first 1 hours of work

- Check all nuts and bolt for tightness – retighten if required.
- Check belt tension and taper lock tightness – adjust / tighten if required (refer to belt section for details of adjustment).

### Every 8 hours or daily

#### CHECK

- Check all nuts and bolt for tightness – retighten if required.
- Check belt condition and replace if necessary
- Check wear and condition of blades – replacing missing, or damaged blades immediately.
- Check condition of safety guards – repair or replace if not performing their function.
- Check operation of emergency stop control

#### LUBRICATE

- Lubricate rotor bearings
- Apply grease to the three main rotor bearings. See below for locations of the grease points.

### After every 100 hours (or annually, whichever occurs first), in addition to the above

#### CHECK

- Check belt condition - replace if required
- Check axle bearing condition - replace or lubricate as required
- Check main rotor bearings condition - replace as required
- Check condition of battery & connections
- Check condition of fuel lines & replace if damaged or perished
- Check condition of battery cables - replace if worn.
- Check clutch operation (disengage at idle, engage at approx. 30% throttle)

## Blade Condition & Replacement

Over time, the blades on your machine will wear, and performance will deteriorate. It is important that the blades are kept in good condition to ensure a long service life and to prevent premature wear.

Blades should be replaced when either; 2mm has worn off the end of the blade; the blade has become blunt or damaged; blades are missing.

When replacing blades visually inspect the mounting bolts and bushes, if applicable. These are all wearing part and will require replacement if they become worn to excess. Also perform a visual check of the blade carrier, and if damaged or twisted, replace.

# Troubleshooting

Problem	Possible Causes	Remedies
Irregular Cut	Worn, bent or broken blades	Inspect & replace damaged blades
	RPM too low	Increase engine revs
	Machine not level to the ground	Check & adjust tyre pressures
	Clogged material caused by excessive forward speed	Reduce forward speed
Excessive Machine Noise	Unbalanced Rotor(s)	Check blades & replace any damaged. If vibration persists, see "vibration" problem below
	Loose bolts	Check bolts & tighten as necessary
	Damaged components	Repair or replace
Excessive Engine Noise	Worn muffler	Repair or replace
	Engine problems	Consult authorised dealer or Chapman Machinery service centre
Excessive Belt Noise	Belts slipping	Adjust belt tensioner
	Belts worn	Replace belts
Vibration	Worn, bent or broken blades	Inspect and replace as necessary
	Rotor out of balance	Balance or replace rotor
	Worn rotor bearings	Replace rotor bearings
Excessive movement of drawbar	Worn drawbar pins	Replace drawbar pins
	Loose drawbar hand screws	Tighten hand screws
Bearings tight or overheating	Bearings dirty or ungreased	Clean & grease bearings
	Bearings worn to excess	Replace bearings
Belts Overheating	Belts slipping on pulleys	Tension belts
	Blades contacting the ground	Raise cutting height
	Working speed too high	Reduce forward speed

## Machine Disposal

Disposal of this machine and any of its component parts must be performed in a responsible and inoffensive manner respecting all current laws relating to this subject. Materials forming this machine that must undergo differentiated division and disposal are: Steel, Mineral Oil, Rubber & Plastic



Batteries fitted to Electric Start Option are sealed gel-type batteries. DO NOT attempt to open the batteries or to 'top-up' the acid.

# 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.**



## EC DECLARATION OF CONFORMITY

Machinery Directive 2006/42/EC

Chapman Machinery Ltd

Hele Barton Week  
St. Mary  
Holsworthy Devon  
EX22 6XR

The Products Covered by this Declaration

Product: RM Series Rotary Paddock Mowers & Options

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 Machinery Directive 2006/42/EC directives

The products described above comply with the essential requirements of the directives specified.

Signed:

Date: .....18/04/2012.....