



OPERATORS MANUAL FOR THE
Sportster & Parkster
gang mowers

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Thank you for buying the Sportster or Parkster gang mower, we hope that it will serve you well for many years to come. R T Machinery Ltd. are a family firm who strive to supply good quality machinery, if you have any comments or suggestions regarding our machinery we are always pleased to hear them.

Yours Faithfully

Richard Taylor

Mr. Richard Taylor
Managing Director

1.0 General Information

The R T Machinery Ltd. (RTM Ltd abbreviation) Sportster & Parkster gang mower has been manufactured to give cost effective and reliable service. The products have been designed in conjunction with professional groundsman, contractors and governing bodies to give the professional user the features that are needed in order to produce the required results.

This manual covers the following products:-

Sportster & Parkster - A trailed, ground wheel driven, cylinder mowing machine, comprising of one, three or five 30" (762mm) mowing units. Multiple mowing units are closely linked together by an articulated frame to allow turning and undulating contours to be followed.

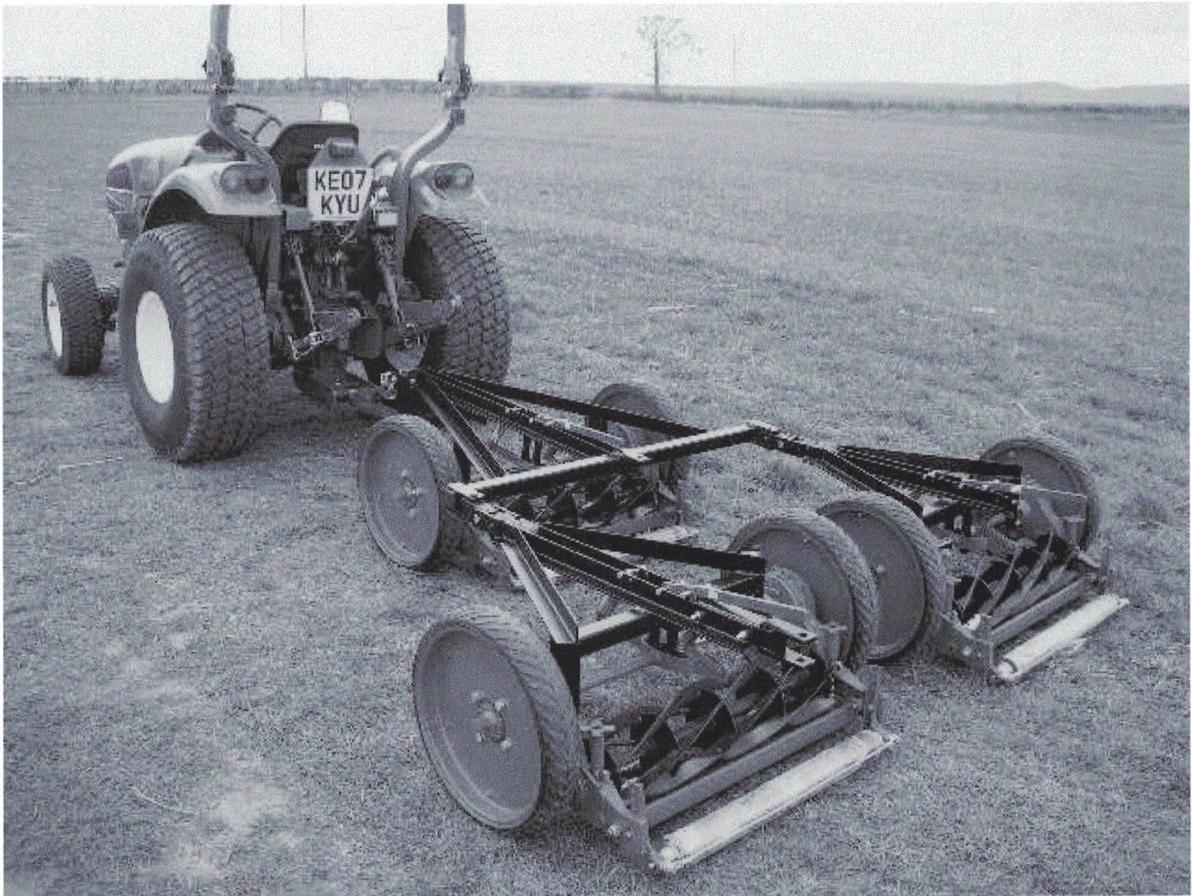


Fig.1. Sportster & Parkster.

2.0 Intended Use for the Product

This product is only intended for horticultural grass cutting. The equipment may only be used on horticultural green grass foliage, grown on lawn, park or playing surfaces. Use with any other substance / medium or for any other purpose is prohibited, and may injure the operator, bystanders and could damage the machine and will invalidate the warranty. Liability will not, under any circumstances, be accepted for misuse, abuse or neglect of or in connection with the product.

3.0 Safety

Throughout these instructions additional safety reminders are made for the added benefit of all, however the following points must always be adhered to.

ATTENTION



THIS SYMBOL MEANS THINK SAFETY.



THIS SYMBOL MEANS BE ALERT !



THIS SYMBOL MEANS PROHIBITED (DON'T DO IT).



THIS SYMBOL MEANS NO SMOKING OR NAKED FLAMES.

YOUR SAFETY IS INVOLVED

3.1 When working with the equipment, the first and most important consideration of the operator, mechanic or any other person must be SAFETY of ones self and others . Safe working practice must be implemented at all times.



3.2 The area of operation must be clear of all obstructions, hazards, bystanders and animals. Bystanders and animals must be kept at a 10 meter distance when the machine is working.

3.3 Operation of this equipment may represent a Health & Safety Risk, implement a safety risk assessment prior to use, see section 12.0 Risk Assessment . Do not allow young people under 18 or people who are unfamiliar with these instructions to use this equipment. Local regulations can restrict the age of the operator. Do not ride on this machine.



3.4 Left and Right hand sides are as viewed when sitting on the towing tractors seat. For the purpose of these instructions all machines or vehicles that could be used to pull the gang mowers shall be referred to as the “tractor”, this includes 4 wheel drive vehicles, quad bikes and municipal vehicles of



3.5 For best results it is important that this equipment is maintained correctly. Neglecting to service and maintain the equipment is a safety risk.

3.6 Do not cut grass with this machine until all bystanders are at least 10 meters clear of the machine. If bystanders come within 10 meters of the machine stop the tractor immediately to render the cutting mechanism inoperative.



3.6 Always stop the tractor, remove the ignition key and apply the parking brake before conducting any maintenance procedure to this machine. The machine must be made safe before any adjustment or repair is made, without exceptions.

3.8 Never use this machine unless you are wholly satisfied it is safe to do so. Only use this machine in daylight or under good artificial light.



3.9 To make the equipment safe to work on :-

- Place the machinery in a safe environment.
- Stop the tractor, remove the ignition key and apply the parking brake.
- Use safe working practice (implement a risk assessment before commencing work).
- Find out how to carry out a repair before starting.
- Ensure the machine is adequately propped up, ensure it cannot fall on anyone.

3.10 Do not lift this equipment or large parts of it on you own, it is too heavy.

3.11 When handling fuel or refuelling a tractor always follow national standards in safe working practice, do not smoke or run the engine. WARNING - fuel is highly flammable. Store fuel in containers designed for the purpose, re-fuel outdoors, do not re-fuel a hot engine, and never remove the fuel cap from a hot or running engine.



3.12 Never attempt to un-block or clear debris from the equipment with the tractor engine running. Always ensure the machine is made safe before removing any guarding from the machine. Never run the machine without safety guarding fitted in place.

3.13 Always ensure that the operator has read and understands these instructions before use of the machine and is wearing the appropriate Personal Protective Equipment (PPE) i.e. gloves, sturdy close fitting work clothes and safety footwear. Do not use this equipment without the correct PPE.



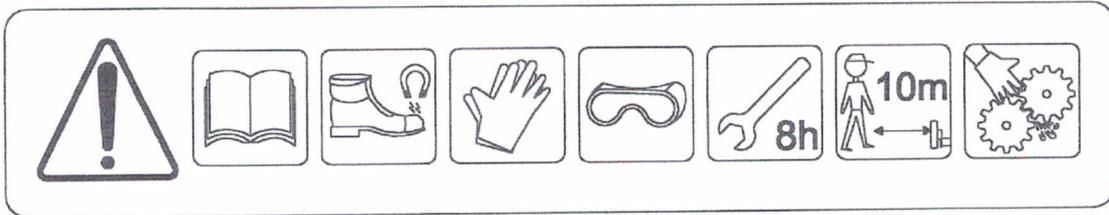
3.14 Caution - do not touch rotating parts when the machine is running or in operation.

3.15 Carefully inspect this machine for mechanical faults prior to each work period. Repair or rectify a fault before using the machine.

3.16 Never roll the equipment by hand on sloping ground; it must always be manoeuvred once securely coupled to towing tractor of greater weight than the equipment.



What the safety symbols mean



Read the operator instructions before using this machine.



Wear steel toe cap boots when using this machine.
Warning - debris can be lifted during operation.



Wear stong work gloves when working on this machine.



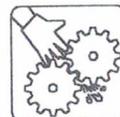
Wear protective eye wear when using this machine.
Warning - debris can be lifted during operation.



Check the whole machine for mechanical faults every 8 hours of use and prior to each work period.



Do not allow anyone within 10 meters of this machine when in work. STOP the tractor immediately if children or animals come too close.



DANGER - rotating and sharp parts, take extra care.

4.0 Specifications

WEIGHT	420kg (924lbs)
LENGTH (in work, short drawbar)	2.7m (107")
LENGTH (in transport, short drawbar)	4.1m (162")
HEIGHT	0.5m (20") approximately
CUTTING WIDTH	2.18m (86")
WIDTH (in work)	2.54m (100")
WIDTH (In transport)	1.4m (56")
GEARBOX GREASE	Fuchs – Renolit Eplith 00
or	Texaco – Multifak HD 00
TOWING SPEED (Maximum)	8kmh (5mph)

We reserve the right to change specification without prior notification.

5.0 Build Up Instructions

R T Machinery Ltd. equipment is shipped in a semi-assembled condition and will require a Pre Delivery Inspection (PDI) to ensure the mowers are in a fully functional and safe condition.

The Sportster & Parkster gang units will require attaching to the towing frame sections. It is the responsibility of the PDI technician to ensure that all hardware and towing hitches are tight and secured correctly. Take care when handling components and ensure your use gloved hands at all times.

Ensure that each cutting unit has both gearbox's (left hand and right hand) filled to the level (500cc or 1 pint) with the correct grade of semi-fluid grease Fig.2, failures resulting from incorrect or no lubrication in the gearbox's are not the responsibility of R T Machinery Ltd.

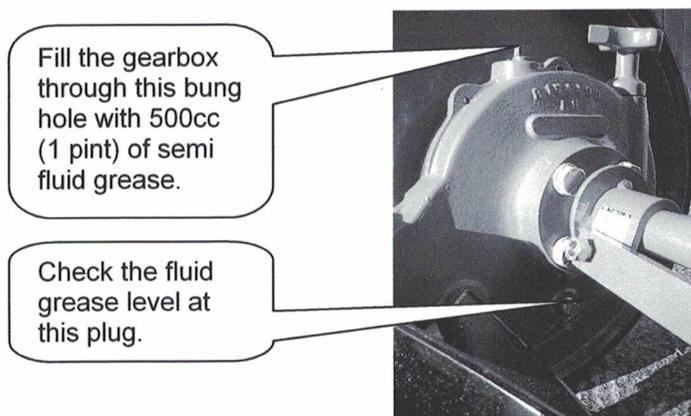


Fig.2

It is recommended that Fuchs Renolit Eplith 00 semi fluid grease or equivalent is used in the gearboxes. Carefully warming the grease to a more fluid consistency will help it “flow” into the gearbox.

All the hard wear and securing bolts will require checking to ensure they are tight. Ensure all pins and clips are correctly installed, and that the cylinders and rear rollers turn freely by hand before using the mowers.

The main towing point that connects to the tractor is bolted by four M12 bolts to the front chassis frame and can be adjustable for length by a further two 150mm (6”) positions.

To present the cutting cylinder and bottom blade assembly at the correct angle to cut the grass at the chosen height of cut it is important that the gang mower frames are set as near to horizontal as possible. A tolerance of + or – 50mm (2”) is permissible, see Fig. 3.



If the towing bar height cannot be adjusted within the limits, a linkage drawbar of the appropriate size for the tractor lift arms could be used. Take care to implement a risk assessment prior to use, and when in use do not knock the position control lever of the tractor and upset the drawbar height.

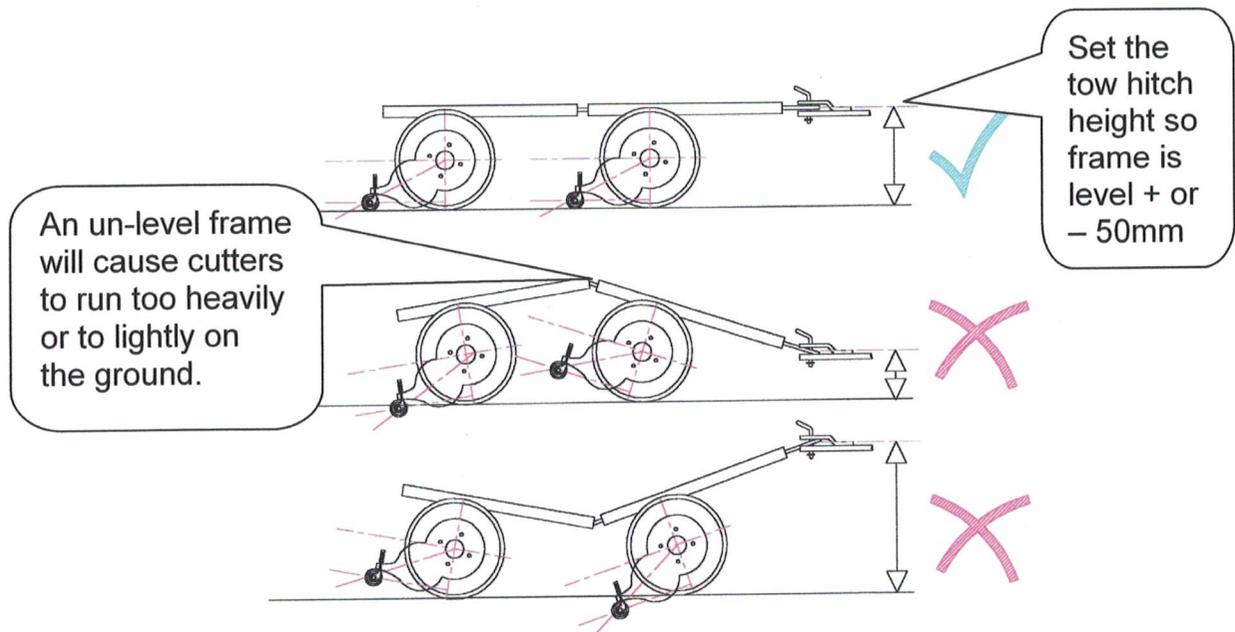


Fig.3



Follow the tractor manufacturers procedures to set the tractors tow bar to the correct working height.

The cylinders must be set to cut and the height of cut must be set to the desired setting for all units. See 8.0 Maintenance in this manual.

6.0 Operation

The Sportster & Parkster gang mowers have been designed to give simple and effective operation. It is important to remember that the mowers will work at their best if they are kept well adjusted and properly maintained.



NOTE Prior to operation, it is essential to check that the equipment is safe to use. That the hardware is tight, the wheel nuts are tight and frame linkages and towing hitches are secure.

Move the machine to site with all the cutters raised up in the transport position. The maximum permitted towing speed is 8kph (5 mph).



Once the mower is positioned on the grass surface to be cut make the tractor safe and inspect the grass land for dangers and hazards, remove all debris from the mowers path. Implement a Health and Safety Risk Assessment of the area to be cut, see Section 12.0 Risk Assessment in this manual.

The mowers are classified as “ground wheel” driven, in other words the forward motion of the mower wheels is used to drive the grass cutting cylinders through a gear system located in the gearbox beside each wheel. To engage the ground wheels to the cutting cylinder turn the “four lobed pointer” knob located on top of each gearbox, see Fig. 4.

Engage Drive

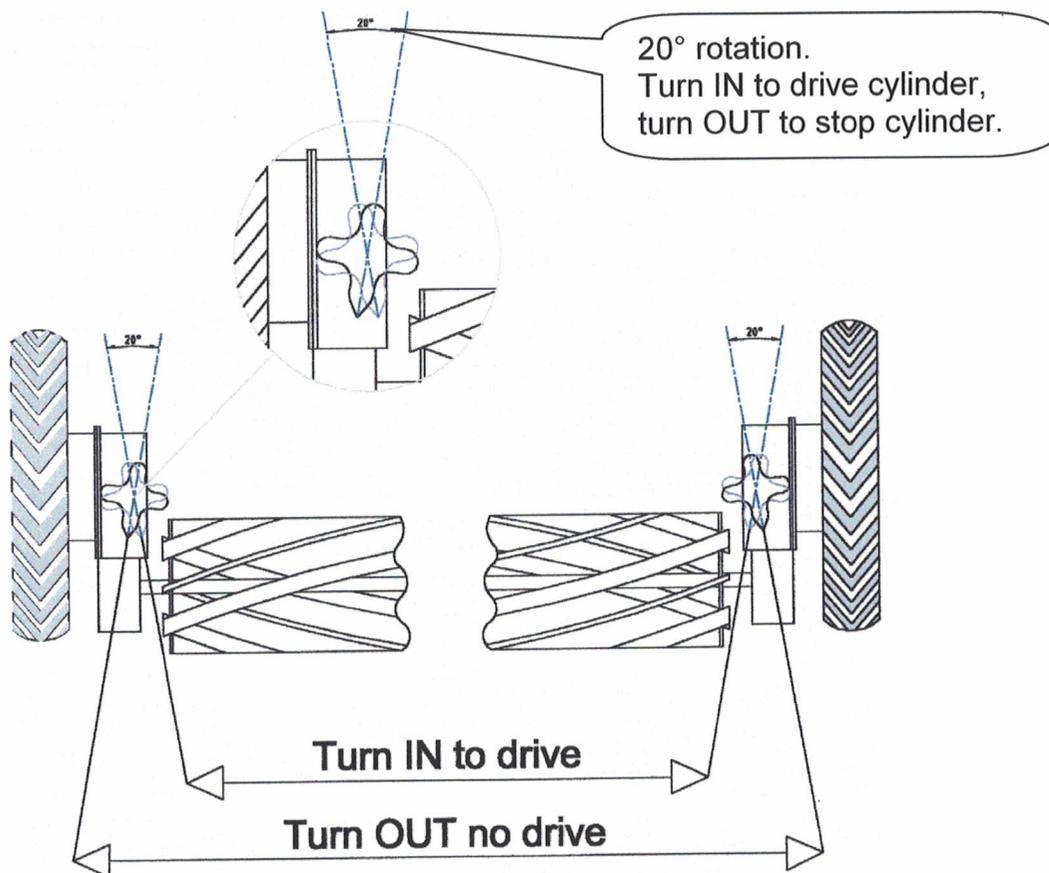


Fig.4

The four lobed pointer knob only rotates through 20° or so, turn the pointed lobe in towards the cutters to engage drive. It may be necessary to rock the wheel forwards and backwards to ensure that the mechanism inside the gearbox correctly locates into the drive position.

Disengage Drive

Rotate the pointed lobe of the four lobed knob towards the wheel to disengage drive for transport. Fig.5.

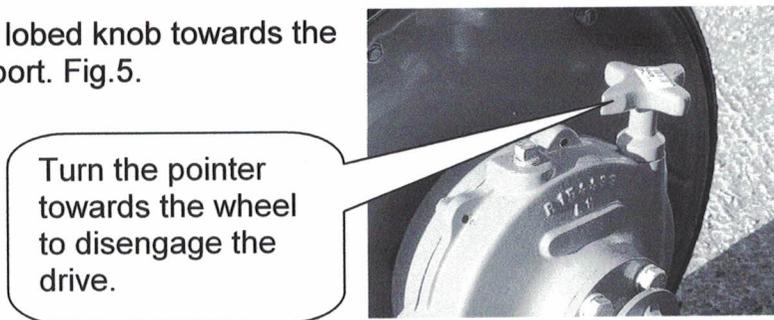


Fig.5.



DANGER Never manoeuvre this machine, by hand over uneven or sloping ground. It could run away with its own weight. To move the machine over slopes or uneven ground use a towing vehicle of greater weight than the machine.

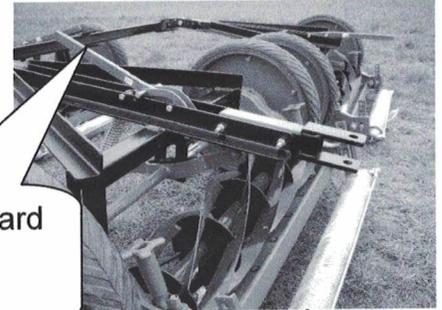


Place the machine in to the working area, ensuring the ground is flat and suitable for the operation of the machine, ensure there are no trip hazards that could cause the operator to fall onto the machine.

Always engage both gearboxes on each unit, the gear drives share the load of driving the cylinder between them. When turning the wheel on the outside of the turn drives the cylinder causing it to speed up and clear the cylinder of grass ready for the return pass. Running on one gearbox only will cause premature wear in that gearbox, it may cause the unit to slew at an angle while being towed straight ahead and the cylinder may slow or stop rotating on some tight turns causing blockages.

To set the mowers to “work” position

The mowers are transported with the cylinder and rear roller raised in the air to prevent damage to them. The over centre lever will point towards the operator’s seat when in transport mode. Fig.6.



Lever points forward with cutters and roller lifted up.

Fig.6

To lower the cutters into work, move the handle up and back. Take care to brace you self as the weight of the unit is acting on this lever and it is heavy to operate. Fig.7.

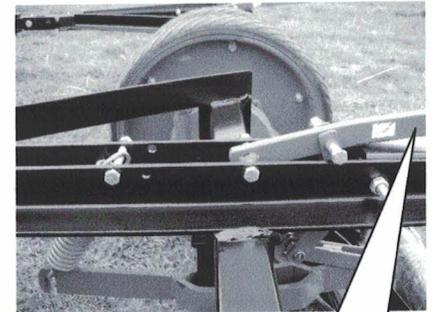


Fig.7



NEVER allow the unit to drop to the ground. It will put the cylinder “off cut” and damage the roller bearings.



NOTE Take great care not to lower or drop the unit on your own foot.



NOTE The spring tension and weight of the unit could trap your fingers, take great care.

Lever points backwards when cutter is in work.

To use the equipment

The mower requires a certain amount of forward speed to ensure the cylinders have enough momentum to cut the grass. This speed is typically between 2 and 4 mph, it is important to note that the grass sap lubricates the cutting cylinders and therefore in dry conditions a slower work speed will be required.

The quality of cut and the appearance of the cut grass are affected by the forward speed, cylinder “cut” adjustment, the “sharpness” and the height of cut. If the grass is a little too long to cut in one pass, set the mower to cut say 1/3rd of the grass’s length off on the first pass and then reduce the height of cut again for a second pass of the grass land to obtain the desired finish. Attempting to cut off too much in one pass of the mower may jam up the cylinders with the shear volume of grass being cut off.

To obtain the best long term results, vary the pattern and direction of cut to reduce the “laying” of the grass in once specific direction and to reduce the “tram lining” effect of the wheels on the ground.



Check all hardware and wheel nuts after the first 4 hours use to ensure they are all tight.



Do not over tighten the cylinder to bottom blade adjustment. See section 8.0 Maintenance of this manual for the correct cylinder adjustment.



NOTE If bystanders come within 10 meters of the gang mowers when in use stop the tractor immediately. Do not proceed with the gang mowers until the area is clear of bystanders and it is safe to proceed. Implement a Safety Risk assessment prior to using these gang mowers.

Turn the engine off



Turn the tractor engine off, remove the ignition key and apply the parking brake, making the tractor safe before attending to the gang mowers in any way.

After using the equipment :-

- Once the work is completed always clean off excess grass from the mower.
- Lower all units to the ground in storage.
- If the mowers are left outdoors cover them over to reduce water ingress and corrosion to the bare metal cutting surfaces.
- Lock the mowers away to prevent unauthorised people and children gaining access to them.
- If the mowers cannot be locked away we strongly advise the cutter cylinders are covered over to prevent people falling onto the sharp edges.



NOTE Operation of equipment may represent a Health and Safety risk - it is the responsibility of the site manager to implement a risk assessment prior to use see section 12.0 of this manual.



NOTE When operating this equipment the area must be cleared of all obstructions and bystanders. RTM Ltd. will not accept claims for damage or liability associated to the use of the Sportster & Parkster, it is the responsibility of the operator / site manager to ensure that all hazards and dangerous hazards are identified and avoided.



NOTE If people or animals approach the gang mower during use, the operator must stop the tractor immediately to reduce the danger of thrown objects and moving part causing injury. A 10 meter exclusion zone should be applied around the gang mower.

7.0 Adjustments and Settings

The correct adjustment of the gang mower is essential to produce good results. The settings are straight forward and most will only require attention when changes to the cut are required.

Setting the cylinder and bottom blade to cut.

The shearing action of the rotating cylinder against the fixed bottom blade cuts the grass to produce the finished result. The bottom blade is adjusted up to the cylinder by turning the adjuster handles at each side of the cylinder. Adjust them equally to prevent "lop-sided" cylinder wear. Always set the cylinder on the up stroke of the adjuster, if you over tighten the adjustment, back it right off and bring the adjustment up to the cylinder again. See Fig.8.

The optimum setting between the cylinder and bottom blade is 0.05mm (0.002").



Running the cylinder with an interference (rubbing) setting will cause friction and overheating of the cutting components and in the worst cases will cause premature drive gear wear and failures.

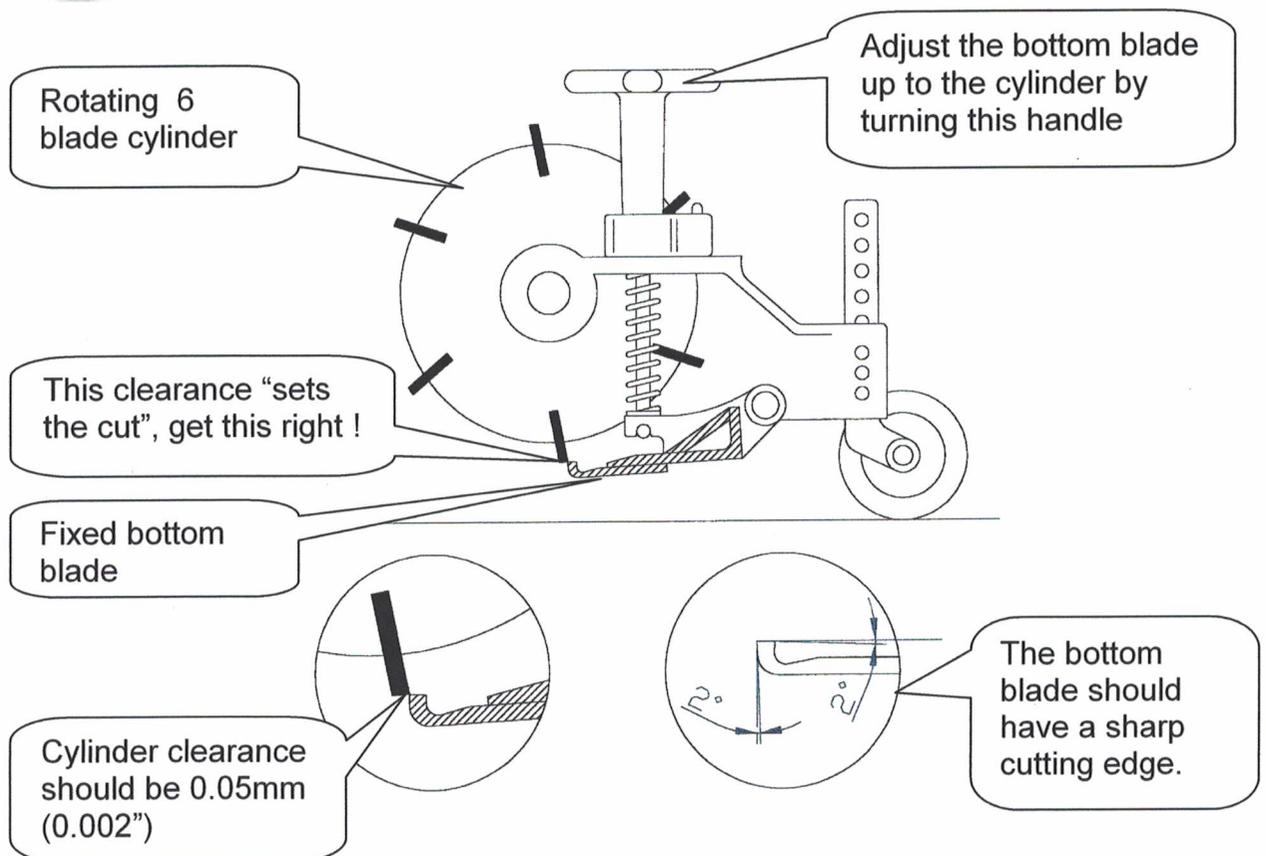


Fig.8



The cutting components should be regularly back lapped during the cutting season and re-ground annually or more often depending on use. Sharp cutting components produce a better quality of cut, use less power and fuel to drive them and prevent premature repair costs.

Setting the height of cut.

Raise the cutter unit roller off the ground and remove the roller bracket retaining nuts & bolts.



NOTE The roller is heavy, support it's weight as the bolts are removed. Do not allow the weight of the roller to hang on one bracket only.

Select the desired cutting height form the chart bellow and re-position the retaining bolts in the correct hole sets. Also see Fig.9.

Adjust all rollers equally to ensure an even cutting height between all cutters.

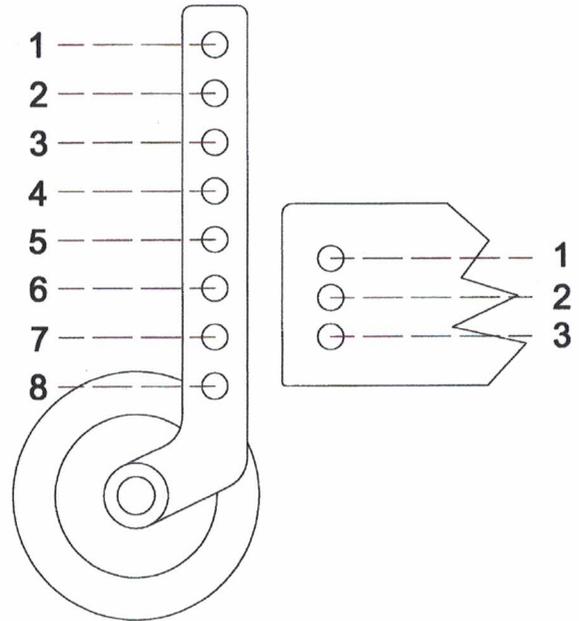


Fig.9



NOTE the heights of cut in this chart are nominal and as the cutting cylinders wear down over time the height of cut will in effect go up by that amount of cylinder wear.

Height of cut chart

Roller bracket hole	Housing hole	4.00 X 12" Pneumatic	4 x 17" Semi-pneumatic
8	1	17 mm (11/16")	
8	2	22 mm (7/8")	
7	1	24 mm (15/16")	
8	3	27 mm (1-1/16")	
7	2	30 mm (1-3/16")	11 mm (7/16")
6	1	33 mm (1-5/16")	13 mm (1/2")
7	3	36 mm (1-7/16")	17 mm (11/16")
6	2	40 mm (1-9/16")	20 mm (13/16")
5	1	43 mm (1-11/16")	24 mm (15/16")
6	3	46 mm (1-13/16")	27 mm (1-1/16")
5	2	49 mm (1-15/16")	30 mm (1-3/16")
4	1	52 mm (2-1/16")	33 mm (1-5/16")
5	3	55 mm (2-3/16")	36 mm (1-7/16")
4	2	58 mm (2-5/16")	39 mm (1-9/16")
3	1	60 mm (2-3/8")	41 mm (1-5/8")
4	3	65 mm (2-9/16")	46 mm (1-13/16")
3	2	68 mm (2-11/16")	49 mm (1-15/16")
2	1	71 mm (2-13/16")	51 mm (2")
3	3	74 mm (2-15/16")	55 mm (2-3/16")
2	2	77 mm (3-1/16")	57 mm (2-1/4")
1	1	79 mm (3-1/8")	60 mm (2-3/8")
2	3	82 mm (3-1/4")	63 mm (2-1/2")
1	2	84 mm (3-15/16")	65 mm (2-9/16")
1	3	89 mm (3-1/2")	69 mm (2-3/4")

Setting the down force.

At the front of each cutting unit is a counter balance spring that works between the cutting unit and the main chassis. This spring reduces the tendency for the unit to “fly” over bumps by keeping some down pressure on the rear roller. There are two settings for this down force, medium and firm. Medium is good for most conditions and firm for bumpy terrain. See Fig.10.

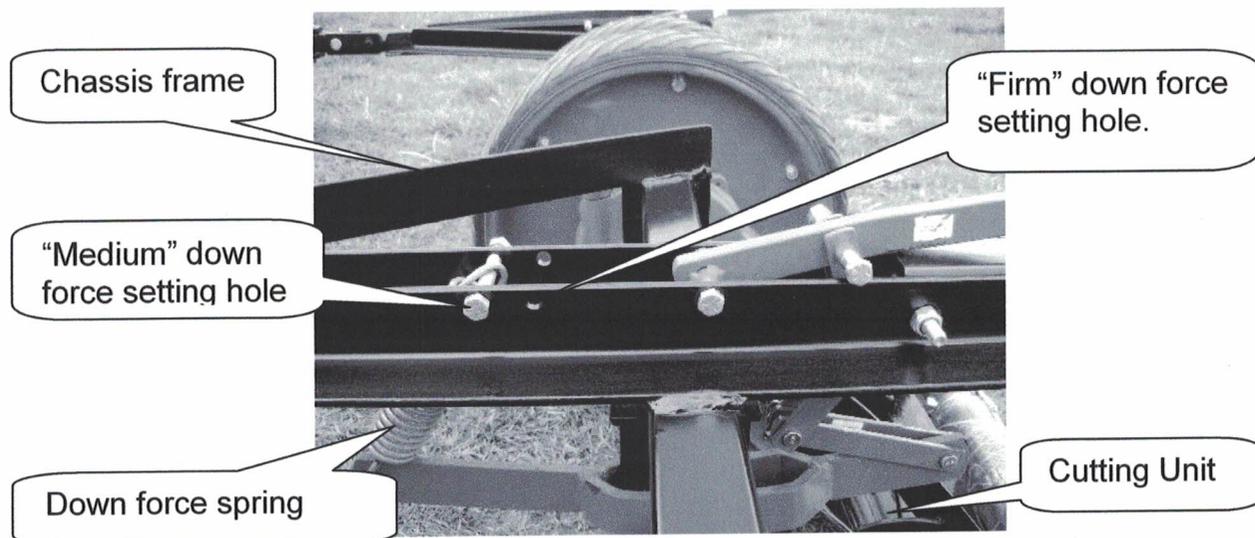


Fig.10



NOTE When carrying out any adjustment observe the current national standards for safe working practice and ensure there are no bystanders within 2 meters (6'6") of the equipment.

8.0 Maintenance

The RTM Ltd. product range has been designed for ease of maintenance, however it is not maintenance free.

Daily Maintenance

The equipment must be inspected prior to each work period i.e. AM and PM for signs of damage or deterioration, check for :-

- Check the cylinders and rear rollers are free turning.
- Check that the rear rollers are free of soil and grass build up.
- Check all towing connections are secure.
- Check the frames and linkages for damage or wear, repair or renew if damaged bent or missing.
- Check the wheel nuts are tight.
- Check all hardware is tight.

Weekly Maintenance (also complete the daily checks)

- Grease the rear rollers, 1 pump of grease per bearing only, do not over grease.
- Grease all tow bar pivot points with one pump of grease, taking care to wipe away excess from around the pivot points. There are 3 grease points on each tow frame.
- Set the cylinder cutting clearance.
- Back lap the cylinder to the bottom blade if the bottom blade edge is starting to look rounded.
- Check the cylinder, rear roller and wheel bearing free play and adjust if required.
- Place a drop of oil on adjuster threads and pivot points.
- Clean off and re-grease ball towing hitches.
- Check the wheel bearing free play and tighten if required.
- Check pneumatic tyre pressures.

Annual Maintenance (also conduct daily and weekly checks)

- Strip down, clean and inspect all gearboxes.
- Check all bearings for wear, renew if in doubt.
- Examine the gears and drive pawls for damage, we recommend pawls are renewed each year.
- Fill all gearboxes with new grease to the correct level.
- Re-grind all cylinders and bottom blades, replace any worn out items.
- Check the frames and linkages for damage or wear and repair or renew if damaged bent or missing.
- Ensure all safety / warning decals are fitted, fit new if damaged or missing.
- Tighten all hard wear.
- Lubricate all pivot points and adjustment threads with good quality grease.
- Ensure all controls work correctly, renew or repair all defective parts.
- Check all tyres for deterioration or perishing and replace as required.



NOTE Safe working practice must be applied whenever any maintenance is carried out on this equipment. See section 3.0 Safety of this manual.

Setting the cylinder to bottom blade clearance

Position the cylinder so that the front edge of the bottom blade can be accessed. Assess the condition of the cylinder and bottom blade, and once satisfied they are in serviceable condition set the cylinder to bottom blade clearance. This is achieved by turning the adjuster knobs clockwise. Place a piece of thick paper vertically between the cylinder and the bottom blade to simulate grass. Carefully rotate the cylinder until it cuts the paper off. See Fig.11.

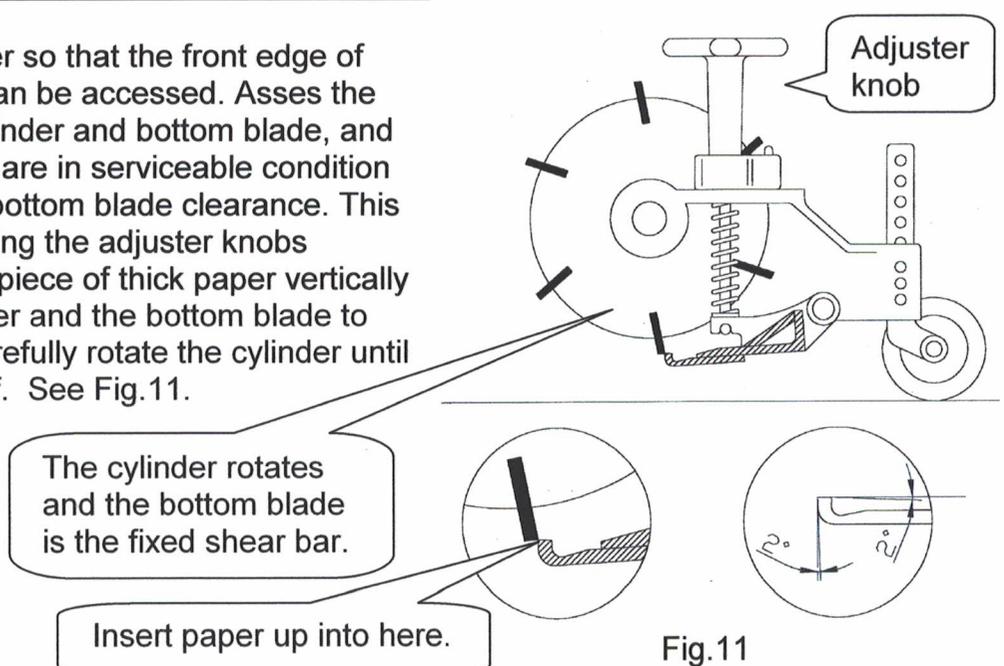


Fig.11



NOTE Safe working practice must be applied whenever any maintenance is carried out on this equipment, wear strong leather gloves when setting the cut.

Back lapping

Back lapping is an important part of routine maintenance and should be done regularly to keep the cutting performance at an acceptable standard. Sharp cutting edges not only cut the grass with a “cleaner” cut, but they also reduce fuel consumption of the tractor and increases the life of the gearbox drive components.

To back lap these cylinders, support the cutting unit and remove the left hand wheel. Behind the wheel is a round access hatch. Remove the three retaining screws and the hatch. Inside the gearbox is the cylinder drive nut, see Fig.12. Following your back lapping machine instructions, connect to this nut and slowly rotate the cutting cylinder backwards introducing back lapping paste as required. Ensure the cutter drives are out of gear. Always clean off all back lapping paste residue.



Fig.12



NOTE Safe working practice must be applied whenever any maintenance is carried out on this equipment, wear suitable Personal Protective Equipment.

Cylinder grinding

The cylinder and bottom blade should be reground at least once a year and more often with heavy use. Your supplying dealer will be able to arrange for this maintenance work to be done.

The bottom blade should be ground with 2° rake on both the top and front faces, Fig.13.

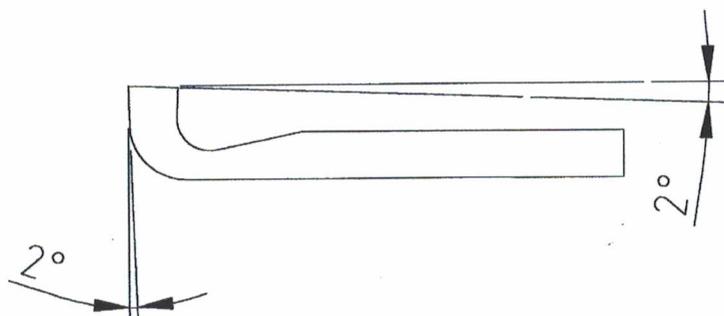
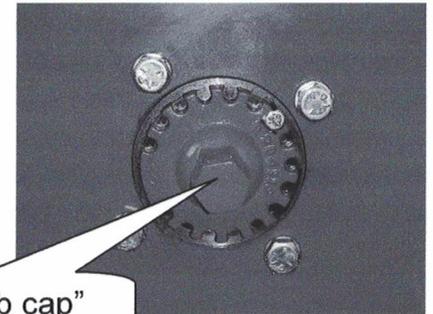


Fig.13

Adjusting the wheel bearings

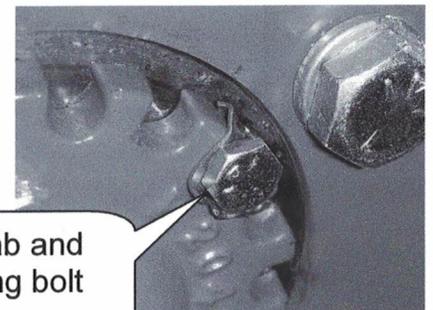
Wheel bearing play can be adjusted quite simply from the outside of the gang unit. In the centre of each wheel as a adjusting "hub cap", see Fig.14. Simply support the wheel off the ground and ensure the cutter drive is out of gear, this will allow the wheel to be rocked and rotated to establish the true extent of the free play and that the bearing has not been over tightened.



Adjusting "hub cap"

Fig.14

Bend the locking tab back and remove the small bolt, see Fig.15. Turn the centre "hub cap" nut clockwise to tighten the bearing. Only "just" drive out the free play, then check the wheel turns freely, adjusting the play to ensure free rotation. Refit the bolt in the nearest cut away and re-lock the tab.



Lock tab and retaining bolt

Fig.15

Adjusting the roller bearings

The rear rollers are mounted on taper roller bearings that can be adjusted without dismantling the roller. Raise the roller off the ground, slacken the locking screw to allow the roller end cap to turn and slowly turn it clockwise to tighten roller free play. Fig.16.

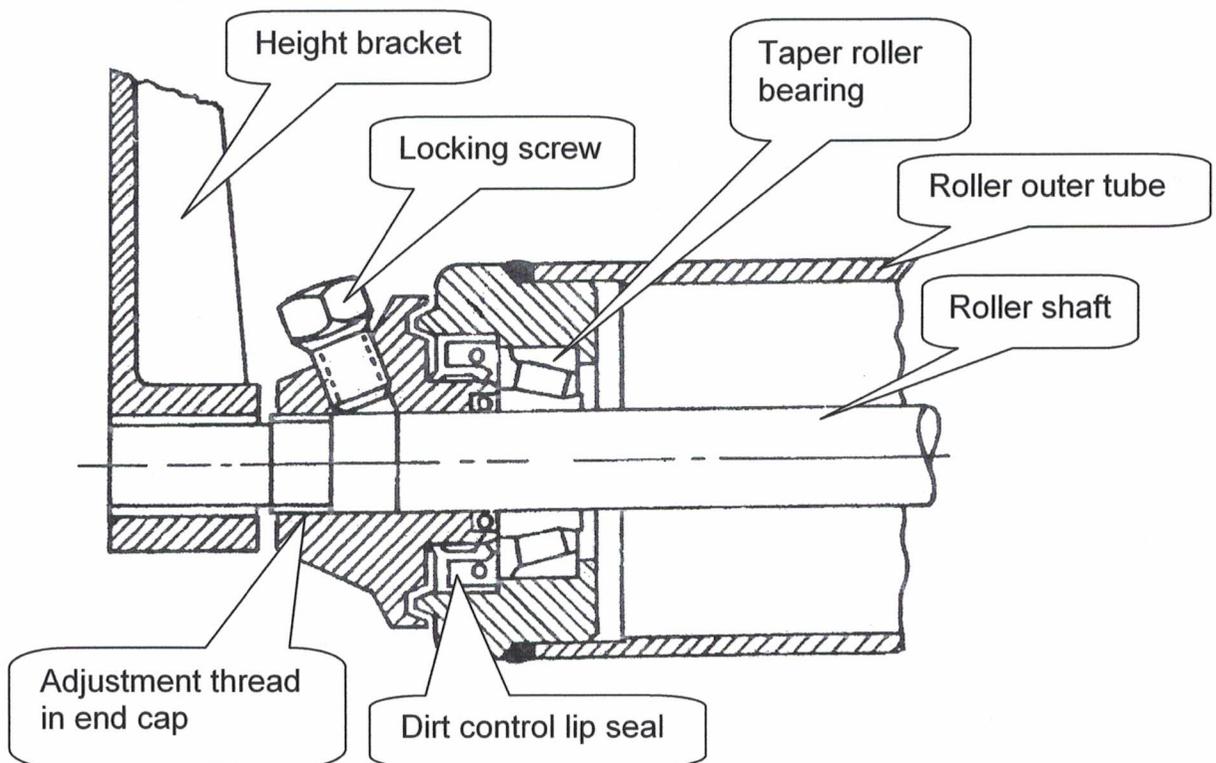


Fig.16

Always ensure the roller will turn freely and runs smoothly before re-locking the screw. Once completed pump 2 shots of grease into the bearings to purge the bearing.

Adjusting the cutting cylinder bearings

With the cutting unit safely supported off the ground on blocks, remove the bottom blade adjusting knobs and the control springs to allow the bottom blade carrier to swing down and hang straight down on it's main pivot points, see Fig.17.

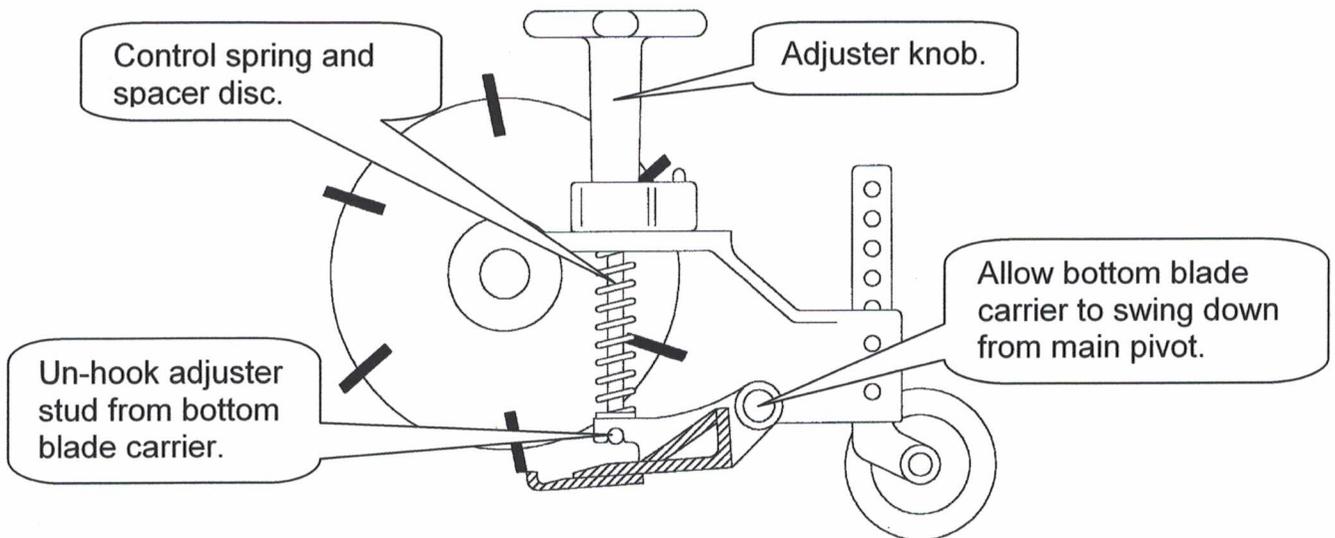


Fig.17

Remove the left hand wheel and then remove the small round cover located on the gearbox case. Behind this cover is located the cutting cylinder shaft and the nut that tightens the cylinder bearing. Place a stout piece of wood into the cutting cylinder to prevent it from turning and tighten the cylinder shaft nut to eliminate free play. Take care not to over tighten the nut as it will not prevent the cylinder from turning freely, and it will also pull the gearbox cases together jamming the bottom blade carrier between them.



NOTE Safe working practice must be applied whenever any maintenance is carried out on this equipment, wear strong leather gloves when working with the cutting edges.

Once the adjustment is made, re-assemble all items, taking care to keep dirt out of the gearbox. Set the cylinder to bottom blade adjustment as previously described.

Gearbox lubrication

Ensure that each cutting unit has both gearbox's (left hand and right hand) filled to the level with the correct grade of semi-fluid grease Fig.18, failures resulting from incorrect or no lubrication in the gearbox's are not the responsibility of RTM Ltd.

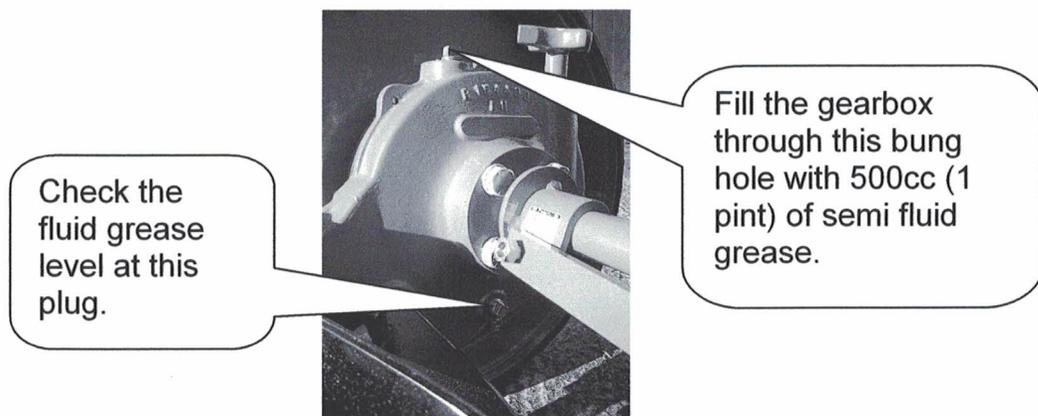


Fig.18

It is recommended that 500cc (1 pint) Fuchs Renolit Eplith 00 semi fluid grease or equivalent is used in each gearbox. Carefully warming the grease to a more fluid consistency will help it “flow” into the gearbox.



NOTE Safe working practice must be applied whenever any maintenance is carried out on this equipment. Implement a Health & Safety Risk Assessment before carrying out any maintenance work on these gang mowers.



NOTE Safe working practice must be applied whenever any maintenance is carried out on this equipment, select and wear the appropriate Personal Protective Equipment.

Wheel and Tyre equipment

The semi-pneumatic tyres should be examined and replaced if unserviceable. The pneumatic tyres should have their pressures adjusted to 2.4bar (35psi). Incorrect or under-inflated tyre pressures could cause the unit to run low on one side giving a “crooked” cut from that unit.



DO NOT change the tyres on this machine unless you are qualified to do so and have the correct equipment. Take the wheel to a specialist tyre fitter as there is a risk of explosion when inflating a badly fitted tyre.

9.0 Help - Contacts

For service or technical information please contact :-



RTM Ltd.
BRACKWELL FARM
Nether Winchendon
Aylesbury
Buckinghamshire
HP18 0DS

Phone 01844 299037

Fax 01844 299102

E Mail : info@rtmachinery.co.uk

World Wide Web : www.rtmachinery.co.uk

OR

Your supplying Dealer (Dealer please stamp here) :-

10.0 Environment

This machinery has been designed with the environment in mind. Where ever possible R T Machinery Ltd has used the minimum amount of materials to the best effect. Quality has not been compromised and yet effectiveness has been enhanced by this policy.

It is the responsibility of the owner/operator to ensure that all components are disposed of in an environmentally conscientious manner. Approved disposal sites must be used at all times, your local authority can advise you in this matter. If a recommended site is not available please return the item, carriage paid, to R T Machinery Ltd. by a safe and clean method, for disposal.

Suggested disposal methods :-

Card board	:	paper mill collection point, local authority disposal point.
Timber	:	reuse for other applications, local authority disposal point.
Plastic	:	local authority disposal point.
Metal	:	scrap collection service for recycling, local authority disposal point.

11.0 Warranty

E and OE conditions apply to this publication. All products are supplied subject to the R T Machinery Ltd. Trading Terms and Conditions.

The warranty only applies to items of RTM Ltd. manufacture that fail due to faulty workmanship or materials within the warranty period of 1 years from the date of purchase.

Failure to register the machine with RTM Ltd. will invalidate the warranty.

The decision of RTM Ltd. is final in all warranty matters. Issues of litigation will only be accepted under English Law.

THE WARRANTY COVER

- 11.1 Manufacturing or assembly defects in wholegoods which become apparent during the acknowledged warranty period, provided a completed warranty registration has been returned to RTM Ltd. within 14 days of sale.
- 11.2 Manufacturing defects in genuine service parts apparent within three months of purchase, provided they are fitted to a standard RTM machine by a competent mechanic.
- 11.3 Claims must be submitted within 30 days of repair. Claims outside this time will be rejected.



Note warranty authorisation number is required for all claims. Fax on (44)(0) 1296 738888 for authorisation - RTM Ltd. may be able to provide additional information to aid your repair, and it will for-warn us of any problems. Please provide a brief description of the failure and the machines serial number.

WARRANTY DOES NOT COVER

- 11.4 Cutting cylinders, bottom blades, bottom blade screws, bearings, wheels & tyres are considered to be wearing parts and are the responsibility of the customer in all cases.
- 11.5 Oils and lubricants are the responsibility of the customer in all cases.
- 11.6 The warranty does not cover abuse, misuse, accidental or unintended damage to the equipment. Nor does it cover fire, theft or vandalism. Claims that result from a lack of maintenance or incorrect application or adjustment of the equipment will not be accepted.
- 11.7 Failure due to freezing, frost damage or unfair wear and tear are not covered by this warranty. Failure or discolouration of the powder coating, painting or electro-plating are not covered by this warranty.
- 11.8 Liability for consequential or third party losses or any other costs or claims will not be accepted by RTM Ltd. under this warranty. This does not affect your statutory rights.
- 11.9 Failure where the equipment has been modified or changed in any way from the RTM Ltd. specification or where non genuine parts of an inadequate quality have been fitted will not be covered by this warranty.
- 11.10 The warranty does not cover un-approved accessories, nor for failures resulting from the fitment or use of these accessories.
- 11.11 Costs incurred in transportation or travelling expenses incurred as a result of any failure.
- 11.12 Parts or third party repairs for which an RTM Ltd. part number or a copy invoice cannot be produced, will not be accepted.
- 11.13 The warranty will not apply if the type or serial numbers have been altered, removed or made illegible in any way.
- 11.14 Failure due to fair wear and tear is not warranted.
- 11.15 Damage caused to the machine as a result of the incorrect operation, maintenance or cleaning procedures being applied to the machine.
- 11.16 The decision of RTM Ltd. is overriding and final in all matters of warranty.

12.0 Risk Assessment

Without prejudice

To help you ensure your own safety and well being, we recommend you conduct a Safety Risk Assessment. A copy of our own evaluation form can be found in this manual, see Appendix I. It is suggested that you take a few copies of the form and use them to help review the health and safety issues that you may face in your working area.

- Using the form, note down the machine you are evaluating.
- Identify the hazards that exists for a given operation i.e. handling petrol, exhaust emissions from the engine, moving mechanical parts, trip hazards, entanglement of clothing etc.
- Use one form for each risk identified.
- Weigh up, in your estimation, the probability of an accident or incident relating to the individual issue identified, and score that against the list provided.
- Weigh up what, in your estimation, the potential outcome of such an accident or incident could be, then score this potential against the list provided.
- With the two scores plot the position of the intersection between them, then follow the “using the score” instruction on the assessment form to evaluate the degree of the risk.
- It is then your responsibility to evaluate the risk and reduce the risk to an acceptable level as you see fit.

The aforementioned procedure 12.0 Risk Assessment has been given to aid safety and is made without prejudice.

APPENDIX I
Health and Safety Risk Assessment Form



Health & Safety Risk assessment form N°. _____.

What is being assessed :	Date :
---------------------------------	---------------

Mark "X" on the grid below as you see the hazard you are assessing, 1 is low and 10 is high on these scales. Remember to think about different types of hazards i.e. getting caught up, fire, falling, consequences of things going wrong etc.

How likely is an accident.
Be realistic !

Probability of an accident					Potential outcome							
1 Improbable	3	4	5	6	10 Fatalities	9 Fatality	8 Incapacity or	7 Long term absence	6 Reportable injury	5 3 Day injury	4 Minor injury	
	Less than even chance (Less than likely)											
	Evan chance (Likely)											
	Probable											
	Almost certain											
	2											
	1											
	High risk - take action											
	Medium risk - take precautions											
	Low risk Could you improve the risk ?											
Medium risk - take precautions												
High risk - take action												

How bad could it be if it went wrong ?

Mark your X on the grid.

Take the right action to sort the problem.

Once action has been taken to make the item safer, do another risk assessment. Keep this form as your record of the assessment made.

What is the danger :	
What needs to be done to make the risk acceptable :	
Who is responsible :	Sign:
	Date:

APPENDIX II CE Certificate

Declaration of Conformity

By :-
RTM Ltd.

BRACKWELL FARM

Nether Winchendon
Aylesbury
Buckinghamshire
HP18 0D[S]

We hereby certify that the machinery stipulated below complies with the relevant provisions of the EC Machinery Directive.

Machine description : **Ground wheel driven gang mowers.**

Make : **RTM Ltd.**

Type : **Sportster & Parkster**

Is in conformity with the following harmonised standards :

98/37/EC

Machinery Safety Directive

EN836

Machinery Safety

ISO 3767-1:1991

Tractors, machinery for agriculture and forestry, powered lawn and garden equipment – Symbols for operator controls and other displays.

Signed : *Richard Taylor*

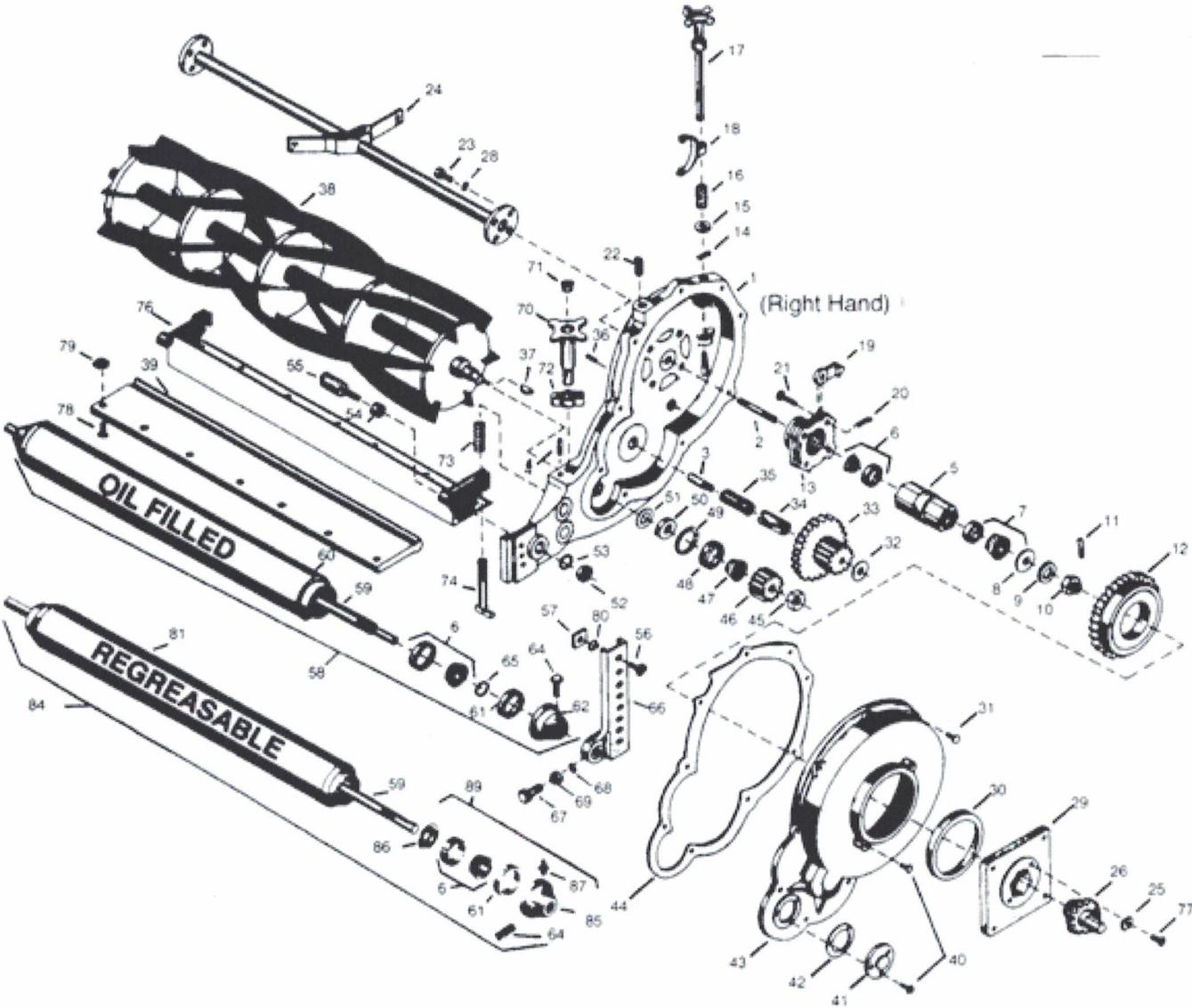
Date : 18th February 2008

Print : **Mr. R.Taylor**

Position : **Managing Director**

Being the responsible person.

APPENDIX III Parts Lists



APPENDIX IV

Recommended Lubricant

Product INFORMATION

FUCHS (UK) PLC.
New Century Street
Hanley
GB-Stoke-on-Trent,
Staffordshire, ST1 5HU



Typical Data: RENOLIT EPLITH 00

Characteristics	Unit	Test Method	
Colour		Translucent amber	
Texture		Tacky	
Thickening agent		Lithium soap	
Worked penetration	1/10 mm	400-430	ISO2137
DIN Classification		GP 00 K-10	DIN 51 825
ISO Classification		L-XBCEB 00	ISO 6743-9
NLGI grade		00	
Water content	%wt	0.1 max.	IP74
Acidity on base grease as oleic	%wt	0.5 max.	IP37
Oil separation 7 days @ 40°C	%wt	5	IP121
Oxidation stability maximum pressure drop 100 hours	bar	0.7	IP142
Timken OK load	N	196	IP326
4 ball wear test 15kg 1 hour	mm	0.3 max.	IP239 (Mod.)
4 ball initial seizure load	N	1373	IP239
4 ball mean hertz load	N	687	IP239
4 ball weld load	N	4513	IP239
Evaporation loss 22 hours @ 99°C	%wt	1.55	IP183
Sphere of use	°C	-10 to +120	

Fluid Component

Type	Highly refined mineral oil		
Kinematic viscosity @ 40°C	mm ² /s	393.5	ISO3104
@ 100°C	mm ² /s	27.4	

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The above information is supplied to the best of our knowledge and belief on the basis of the current state-of-the-art and our own development work. Subject to amendment.

FUCHS LUBRICANTS (UK) PLC.
New Century Street, Hanley
GB-Stoke-on-Trent, Staffordshire. ST1 5HU

Tel: +44-8701 -20 04 00
Fax: +44-1782 -20 20 73
contact-uk@fuchs-oil.com

Recommended Lubricant



TEXACO MULTIFAK[®] HD

00

CUSTOMER BENEFITS

Texaco Multifak HD delivers value through:

- **Semi-fluid grease properties** provide a thick film of lubricant to critical parts.
- **Low temperature lubrication**
- **Excellent rust and corrosion protection**
- **Tacky consistency** reduces the risk of water wash-out

FEATURES

Texaco Multifak HD is a lithium based semi-fluid grease specially formulated with a high viscosity base oil, and an additive package that contains inhibitors and tackifiers.

APPLICATIONS

Texaco Multifak HD is recommended for gear drives that specify an NLGI 00 grease. These include large mowing machines pulled behind tractors and gearboxes in large mixers.

Texaco Multifak HD is unsuitable for applications requiring an extreme pressure grease.

It is recommended for gear drives specifying a semi-fluid grease, including those manufactured by:

- Jacobsen Division of Textron
- NORD Gear Corporation

TYPICAL TEST DATA

NGLI Grade	00
<i>CPS Number</i>	221988
<i>MSDS Number</i>	9006
Operating Temperature, °C(°F)	
Minimum ¹	-29(-20)
Maximum ²	121(250)
Penetration, at 25°C(77°F)	
Worked	415
Worked (10,000X), % Change	4
Dropping Point, °C(°F)	166(331)
Rust Protection	Pass
Thickener, %	1.9
Type	Lithium
Viscosity, Kinematic [*]	
cSt at 40°C	680
cSt at 100°C	34.0
Viscosity, Saybolt [*]	
SUS at 100°F	3709
SUS at 210°F	167
Viscosity Index [*]	78
Texture	Tacky
Color	Brown

Typical test data are average values only. Minor variations which do not affect product performance are to be expected in normal manufacturing.

¹ Minimum operating temperature is the lowest temperature at which a grease, already in place, could be expected to provide lubrication. Most greases cannot be pumped at these minimum temperatures.

² Continuous service maximum.

^{*} Determined on mineral oil extracted by vacuum filtration.