



Rotary Crusher GT 135 + 155

HANDBOOK



Rotary Crusher GT 135 + 155

Handbook 4th Edition – May 2016

Please ensure that this manual is handed to the operator before using the machine for the first time. The operator must fully understand the contents of this manual before using this machine.
(If the machine is resold the Manual must be given to the new owner!)

The information contained in this manual is correct at the time of publication. However, in the course of constant development, changes in specifications are inevitable. Should you find the information given in this book different to the machine it relates to please contact the "After Sales Department" for advice

GreenTec A/S

Merkurvej 25
DK 6000 Kolding
Danmark
Tlf: +45 75553644
Email: info@greentec.eu
http: www.greentec.eu

© Greentec Machinery Limited 2016

Contents

Contents	3
Introduction	4
Useful information	5
General Information	6
EU Declaration of Conformity	7
Vehicle / Tractor Preparation	8
Vehicle Ballast	8
Front weights	8
Rear weights	8
Factors that affect stability	9
Suggestions to increase stability	9
Safety	10
Safety Recommendations	11
Always	11
Never	12
Introduction	13
Important	13
Safety first	13
Setting up and adjusting	14
Machine Protection	14
Operation	15
Transportation	15
Service & Maintenance	16
Blades	18
Storage	19
GreenTec Warranty	20

Introduction

Dear customer!

Your new GreenTec machine is constructed with background in more than 20 years experience with tractor mounted machines to maintenance of green areas. This machine is produced by the latest technology and recognized safety regulations, standards and regulations.

We want to make a product available in such a way, that neither the use of the machine during transportation or maintenance of the machine causes any damage or misunderstandings.

This manual contains information and instructions that are important and useful for maintaining your GreenTec machine's reliability, dependability and value. Please read this manual carefully as it will familiarize you with the installation, use, care and maintenance. Pay particular attention to the instructions regarding safety.

You are welcome to visit our website www.greentec.eu - where the login via the dealer's access gives you the latest updates on instructional and part books on our entire product range. The password for dealer log-in: PUBLISHER

We hope, you will be pleased with your new GreenTec machine.

Best regards,



John Christensen
Sales Director GreenTec A/S



GreenTec's vision is to develop and sell quality machines for the maintenance of green areas, including in agriculture, in industry, at airports and in the local sector. Through innovative product development, we will strive to become a leader in our field.

All machines are developed in a simple and functional design in close cooperation with dealers and end users. It is our goal to cover every need in the market segment with preferably 2 different solutions. In-depth analysis of requirements and serious advice to the customer is offered the best solution, where individual needs can be met through the modularity of the product program. Our goal is also to offer the best possible after sales service, and a quick and efficient spare parts supply.

Useful information

Before using the machine for the first time, it's the seller's responsibility that the buyer is given this manual, and the seller is sure, that the buyer fully understands the manual's contents. If the machine is resold, the manual must be transferred to the new owner.

Please fill out the list below to ensure that the necessary information is at hand when ordering spare parts etc.

Serial No

Delivery date

Dealer

E-mail

GreenTec A/S

Merkurvej 25

DK 6000 Kolding

Denmark

Tel: +45 75553644

E-mail: info@greentec.eu

http: www.greentec.eu

Opening hours: Mon-Fri 8-16

General Information

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

Only use 'Genuine GreenTec Parts' on GreenTec machinery and equipment.

DEFINITIONS: *The following definitions apply throughout this manual;*

DANGER

DANGER: *Alerts to a hazardous situation which will result in death or serious injury if not observed carefully.*

WARNING

WARNING: *Alerts to a hazardous situation which could result in death or serious injury if not observed carefully.*

CAUTION

CAUTION: *Alerts to a hazardous situation which could result in damage to the machine and/or equipment if not observed carefully.*

NOTICE

NOTICE: *Specific or general information considered important or useful to emphasize.*

LEFT HAND (LH) & RIGHT HAND (RH): These terms are applicable to the machine when fitted to the tractor and viewed from the rear; these terms also apply to tractor references.

SERIAL PLATE

All machines are equipped with a serial number plate containing important information relating to the machine including a unique serial number used for identification purposes.

Note: Images in this manual are provided for instruction and informational purposes only and may not show components in their entirety. In certain instances images may appear different to the actual machine; where this occurs the general procedure will be basically the same.



Merkurvej 25, DK-6000 Kolding, Denmark

EU Declaration of Conformity

Adapted EEC directive
EG Guideline 2006/42/EF, 89/392/EEC & 98/37/EC

We, GreenTec A/S, Merkurvej 25, 6000 Kolding, hereby declare that in terms of its design, method of construction and our execution thereof, the item of machinery described below complies with the basic health and safety regulations of the respective EU Directives.

Product: GreenTec GT 135/GT155

Product code: 99952135

Serial no: _____

Type: Rotary Crusher



The EC Declaration only applies if the machine stated above is used in accordance with the operating instructions.

on behalf of GreenTec A/S

Date: 26.10.2014

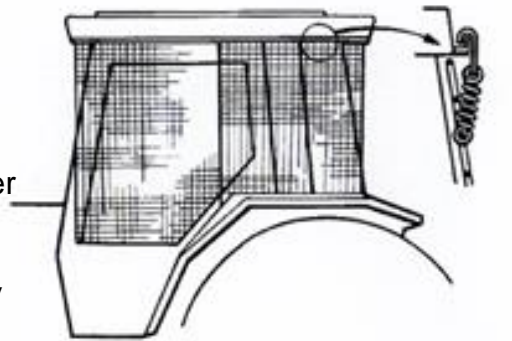
Signature: _____

John Christensen Sales Director

Vehicle / Tractor Preparation

We recommend vehicles are fitted with cabs using 'safety glass' windows and protective guarding when used with our machines.

Fit Operator Guard (See drawing) using the hooks provided. Shape the mesh to cover all vulnerable areas. The driver must be looking through mesh and/or polycarbonate glazing when viewing the working tool in any working position - unless the vehicle/ cab



manufacturer can demonstrate that the penetration resistance is equivalent to, or higher than, that provided by mesh/polycarbonate glazing. If the tractor has a roll bar only, a frame must be made to carry both mesh and polycarbonate glazing. The operator should also use personal protective equipment to reduce the risk of serious injury such as; eye protection (mesh visor to EN1731 or safety glasses to EN166), hearing protection to EN352, safety helmet to EN297, gloves and high visibility clothing.

Vehicle Ballast

It is imperative when attaching 'third-party' equipment to a vehicle that the maximum possible stability of the machine and vehicle combination is achieved – this can be accomplished by the utilisation of 'ballast' in order to counter-balance the additional equipment added.

Front weights

May be required for rear mounted machines to place 15% of total outfit weight on the front axle for stable transport on the road and to reduce 'crabbing' due to the drag of the cutting unit when working on the ground.

Rear weights

May be required to maintain a reasonable amount of rear axle load on the opposite wheel from the arms when in work; for normal off-ground work i.e. hedge cutting this should be 20% of rear axle weight or more for adequate control, and for ground work i.e. verge mowing with experienced operators, this can be reduced to 10%.

All factors must be addressed in order to match the type and nature of the equipment added to the circumstances under which it will be used – in the instance of Power Arm hedge cutters it must be remembered that the machines centre of gravity during work will be constantly moving and will differ from that during transport mode, therefore balance becomes critical.

Factors that affect stability

- Centre of gravity of the vehicle/machine combination.
- Geometric conditions, e.g. position of the cutting head and ballast.
- Weight, track width and wheelbase of the tractor.
- Acceleration, braking, turning and the relative position of the cutting head during these operations.
- Ground conditions, e.g. slope, grip, load capability of the soil/surface.
- Rigidity of implement mounting.

Suggestions to increase stability

- Increasing rear wheel track; a vehicle with a wider wheel track is more stable.
- Ballasting the wheel; it is preferable to use external weights but liquid can be added to around 75% of the tyre volume – water with anti-freeze or the heavier Calcium Chloride alternative can be used.
- Addition of weights – care should be taken in selecting the location of the weights to ensure they are added to a position that offers the greatest advantage.
- Front axle locking (check with tractor manufacturer).

NOTE: The advice above is offered as a guide for stability only and is not a guide to vehicle strength. It is recommended that you consult your vehicle manufacturer or local dealer to obtain specific advice on this subject, additionally advice should be sought from a tyre specialist with regard to tyre pressures and ratings suitable for the type and nature of the machine you intend to fit.

Safety



Warning

Avoid fluid escaping under pressure. Consult technical manual for service procedures.



Warning

Danger – flying objects. Keep safe distance from the machine as long as the engine is running.



Warning

Stay clear of mower sawblades when running. Never remove the safety protection.



Warning

Stay out of gears swing area.



Warning

Shut off engine and remove key before performing maintenance or repair work.



Warning

Check every 8 hours that all bolts are tightened



Warning

Carefully read operator's manual before handling this machine. Observe instructions and safety rules when operating.

Safety Recommendations

Beware of the following Potential Dangers associated with the use of this machine:

- Becoming trapped when hitching or unhitching
- Vehicle overbalancing when arm is extended
- Electrocutation due to hitting overhead power lines
- Getting caught on rotating power take off (PTO)
- Being hit or caught by any moving part, e.g. belts, pulleys, arms, cutting head
- Being hit by flying debris or machine parts due to machine damage
- Injection of high pressure oil from damaged couplings or hydraulic hoses

Always

- Ensure the operator has read this handbook and has been trained to use the machine.
- Ensure all cab safety guards are in place and all vehicle windows closed.
- Before leaving the vehicle cab always ensure that the flail head is firmly on the ground, no weight is on the machine's hydraulics and the rotor has stopped spinning.
- Check that all guards are properly fitted and there are no damaged or loose parts. Particular attention should be given to the flails to ensure they are not damaged, cracked or missing.
- Inspect work area for wire, steel posts, large stones and other dangerous materials and remove before starting work.
- Beware of the danger of overhead power cables. The operator must be aware of the maximum height and reach of the machine when working under power cables. The minimum legal height for 11,000 and 22,000-volt cables is 5.2 meters from the ground. When fully extended, the machine may well exceed this height so extreme caution should be practiced. For more information contact the Health and Safety Executive or your local power company.
- Ensure that all warning labels are always visible and that they are not damaged, defaced or missing.
- Lower the head to the ground when parking up
- Fit locking pins to slew and height before transport and before unhitching when applicable.
- Wear ear defenders if operating without a quiet cab or with the cab windows open.
- Ensure vehicle guards are fitted correctly and are undamaged
- Work at a safe speed, taking into account terrain, passing vehicles and obstacles
- Ensure that the vehicle meets the minimum weight recommendations of the machine manufacturer and that ballast is used if necessary
- Check that machine fittings and couplings are in good condition
- Follow the manufacturer's instructions for attachment and removal of machine from the vehicle are warning signs to alert others to the type of machine working in the vicinity. Signs should be placed at both ends of the work site and should be in accordance with Department of Transport recommendations.
- Ensure flails are of the type recommended by the manufacturer, are securely fitted and are undamaged.
- Ensure hydraulic pipes are correctly routed to avoid damage from chafing, stretching, pinching or kinking.
- Disengage the machine, stop the engine and remove the key before leaving the vehicle cab for any reason.
- Clean up any debris left at the work site.
- Ensure that when you remove the machine from the vehicle it is secured in a safe position using the stands provided.

Never

- Never operate the machine with other people present, as it is possible for debris, including stones, to be discharged from the front and rear of the flail head.
- Never operate the machine until you have read and understood the relevant Handbook and are familiar with the controls.
- Never use a machine that is poorly maintained or has guards that are damaged or missing
- Never allow an inexperienced person to operate the machine without supervision.
- Never use or fit a machine onto a vehicle if it doesn't meet the manufacturer's specification.
- Never use a machine if the hydraulic system shows signs of damage.
- Never attempt to detect a hydraulic leak with your hand, use a piece of card.
- Never allow children to play on or around the machine at any time.
- Never attempt any maintenance or adjustment without first disengaging the PTO, lowering the head to the ground, stopping the vehicle engine and applying the parking brake.
- Never leave the cab without removing the ignition key.
- Never operate the vehicle or any controls from any position other than from the driving seat.
- Never stop the engine with the PTO engaged.
- Never operate with flails missing.
- Never operate PTO **above** recommended speed, 540 / 1000 R.P.M.
- Never operate with wire around the rotor. Stop immediately.
- Never use the head at an angle, which may throw debris towards the cab.
- Never attempt to use the machine for any purpose other than that it was designed for.
- Never transport with the PTO engaged
- Never enter the working area of the machine (risk of injury!)
- Never transport with the controls live, always turn off electrical isolator switch (red) and disconnect supply.

Introduction

The GreenTec Crusher is a very robust high capacity Rotary Crusher that is easy to operate and maintain. To ensure trouble-free operation this manual should be carefully studied



Important

On delivery of your machine check that the Dealer has completed the P.D.I. form, ensure the warranty registration form is completed and returned



Safety first

Do not start the machine until you fully understand the operation and safety precaution requirements. Always ensure the operator is proficient with the operation of this type of machine

Attaching to an Arm system

Fit the machine to the vehicle in the standard way, ensuring the correct match of linkage (*category 2 linkage pins*). Check that the top link is in good order and threads are well lubricated. Use stabilizers to take any free movement out of the lower link arms.

Before fitting the machine to the vehicle linkage you should ensure there is sufficient front weight to ensure the front wheels are always in contact with the ground. This is most important for safe transport and stability when turning on slopes.



Before fitting the PTO for the first time it may be necessary to adjust the length. There should be maximum engagement of the sliding tubes without bottoming at the shortest operation position. To check, first connect the mower to the vehicle.

Pull the PTO shaft apart and connect to the vehicle PTO output shaft and the gearbox input shaft. Hold the half shafts next to each other in the shortest working position. If necessary shorten the inner and outer guard tubes equally.

Shorten the inner and outer sliding profiles by the same length as the guard tubes. File all sharp edges and remove burrs. Grease sliding profiles

Setting up and adjusting

Height

Cutting height adjustment is achieved by your operating system, when you work with the machine.

Machine Protection

A flotation system can be used in the connection between the GT 135-155 and the armsystem, also a skid is mounted on each side of the head



Important

If the machine has been laid up for any length of time, there is a risk of risk of moving parts is stuck. They must be lubricated and loosened before using the machine.

Start the motor up at idle speed and allow it to "warm" up. If imbalance is observed, stop the machine immediately. Check that there are no tangled cords, plastic, grass or other debris around the rotor shaft or tools..

If in any doubt, consult your local GreenTec dealer or GreenTec Service Department for further advice

Operation

Engage the PTO only when the engine is at low revs to prevent shock damage to the machine. Slowly increase the engine revs to achieve the standard PTO speed.

If at any time serious vibration occurs, stop the engine immediately and check that no tools are missing - following all safety precautions.

The cause must be found and rectified immediately or other components may be affected

When in work, lower the machine to the ground carrying its weight on the skids and as option on floatingsystem, allowing the machine to follow the contours of the ground and ensuring there is sufficient slack in the mounting bracket. Select a sensible forward speed bearing in mind the density of growth, the terrain, and the available horsepower, taking extra care when turning, particularly on slopes.

When turning, it is not necessary to lift the machine off the ground but instead allow sufficient room to turn in a large radius. The machine only needs to be raised when turning in a tight corner or reversing over dense undergrowth, or when operating on the front linkage

Quality of finish is determined by the forward speed, i.e. a slow speed will produce a high quality of cut, whereas faster forward speeds are used when high output is first priority

Transportation

Please observe Public Highway Regulations concerning the towing of implements, and securely attach a registration and lighting board.

Take care to slow when travelling over rough ground and avoid bouncing the machine on linkage, causing unnecessary strain

Service & Maintenance

Safety First



Warning

Never carry out any servicing or maintenance work without first disengaging the PTO and stopping the tractor engine

- Never leave the vehicle seat without first disengaging the PTO and stopping the engine
- Ensure all rotating parts have stopped turning
- Never attempt any repairs, maintenance, service or any other checks with the machine carried on the vehicle hydraulics.
- Always fully lower to the ground, or securely prop the machine on substantial servicing stands.
- Always refit all guards and retaining chains after servicing/maintenance is completed

Important

Never carry out any servicing or maintenance work without first disengaging the PTO and stopping the tractor engine

It is imperative that the following checks are carried out in order not to invalidate your warranty. These are carried out before the first operation, after the first hour, then after 4 hours. The checks are

- Hydr. Motor bolts
- Blade bolts are fully tightened, in particular the castle headed nut on the blade rotor
- Retaining bolts on the drive shaft

It is your responsibility to maintain the machine to ensure a long reliable working life

Torque Settings

The Torque figures given below are recommended maximum settings only.

Size:	Tensile strength:	Description:	Torque setting: Nm.
M16	8.8	Motor bolts	240
M24	8.8	Blade bolts	810
#	#	Easy-Lock on rotor	42

Delivery & Start up

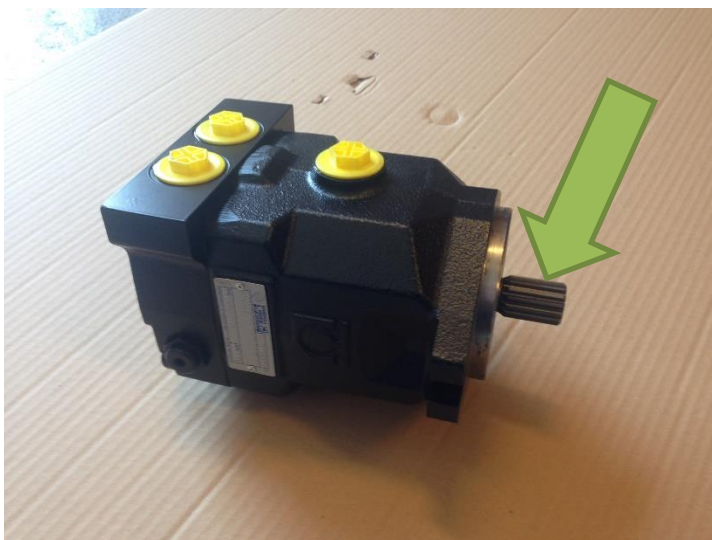
- Retighten motor bolts, blade bolts and the Easy lock after 2 hours work.

Daily / Every 8 hours

- Check condition of blades and blade bushes and ensure all retaining bolts are fully tight.
- Check Hydraulic Motor
- Grease all greasing points

Year / Every 500 hours

- Take the motor of and grease the shaft and splinebush.
- Control of Rotor, Motor, Bearings and Bearinghousing.



Regularly

- Check there is no wrapping of string, plastic, grass or other debris between rotor boss and blades.
- Inspect motor seals for leaks.
- Regularly check the rotor and fully tighten the Castlenut.
- Regularly check the rubber protection.
- It is most important that all Hydraulic motor and blade bolts are regularly checked to be very tight. **When the machine is new there will be a 'bedding in' period where very frequent checking is important.**

Blades or chains



Caution!

When carrying out maintenance work on or near the blades, be careful of free-swinging blades over-centering and falling. It is recommended that protective headgear, gloves and goggles are worn

The blades can be re-sharpened by grinding the cutting edges and care must be taken that the blades are of the same weight and length after grinding. Do not over heat when grinding, as this will affect the hardness of the blades

All the blades are free swinging and swivel on hardened steel bushes, which are easily replaced. When replacing blades, it is important that blades are replaced in sets, in order to retain balance of the rotor. Bushes must be replaced when new blades are to be fitted.

If the blades are showing any signs of severe wear, damage or cracking, they must be replaced immediately. Never attempt to weld the blades, this will make them very brittle thus extremely dangerous. Do not take risks with the cutting blades - if in doubt, replace.

Skids

When operating on abrasive soils, particularly in stubbles and similar conditions with thin ground cover, excessive skid wear may be expected.

If working in wet and muddy conditions, ensure that debris is not allowed to build up on, or under, the deck.

Storage

Before storing away, thoroughly wash the machine, removing all traces of grass and dirt. Great care must be taken when washing with high-pressure hoses, do not hold the water jet close to the paintwork

Do not use steam cleaners and be sure to remove all detergents to avoid any discolouring or damage to paint. Grease all grease points until fresh grease shows. Store PTO shaft in a dry place

Remember, the GreenTec machine is designed to withstand the most rigorous conditions as bush and up to 60 mm thickness, and with a little care and attention will give many years of trouble free service. In order not to invalidate the warranty and to avoid problems use only genuine parts

GreenTec Warranty

Greentec warrants that the Greentec machine referred to in the Warranty Registration Form will be free from defects in materials and workmanship for a period of 12 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 12 months from the date of sale please contact your original Greentec dealer, or Greentec's Service Department. Any part found to be defective during this period will be replaced or repaired, at Greentec's discretion, by the dealer or a Greentec Service Engineer.

Greentec Warranty Conditions

1. The Warranty Registration Form (green page) must be completed and returned to Greentec within 7 days of the date of sale
2. This warranty does not cover defects arising from fair wear and tear, willful damage, negligence, misuse, abnormal working conditions, use in competition, failure to follow Greentec's instructions (oral or written, including all instructions and recommendation made in the Operator's Manual) or alteration or repair of the machinery without Greentec's 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, tires, 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 Greentec, for which the Buyer shall only be entitled to the benefit of any such warranty or guarantee given by the manufacturer to Greentec. Only genuine Greentec replacement parts will be allowable for warranty claims.
7. All parts replaced by Greentec under warranty become the property of Greentec and must be returned to Greentec if Greentec so request. Such parts may only be disposed of after a warranty claim has been accepted and processed by Greentec.
8. Greentec is not liable under this warranty for any repairs carried out without Greentec's written consent or without Greentec being afforded a reasonable opportunity to inspect the machinery the subject of the warranty claim. Greentec's written consent must, therefore, be obtained before any repairs are carried out or parts replaced. Use of non- Greentec parts automatically invalidates the Greentec Warranty. Failed components must not be dismantled except as specifically authorized by Greentec and dismantling of any components without authorization from Greentec will invalidate this warranty.
9. All warranty claims must be submitted to Greentec on Greentec 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.