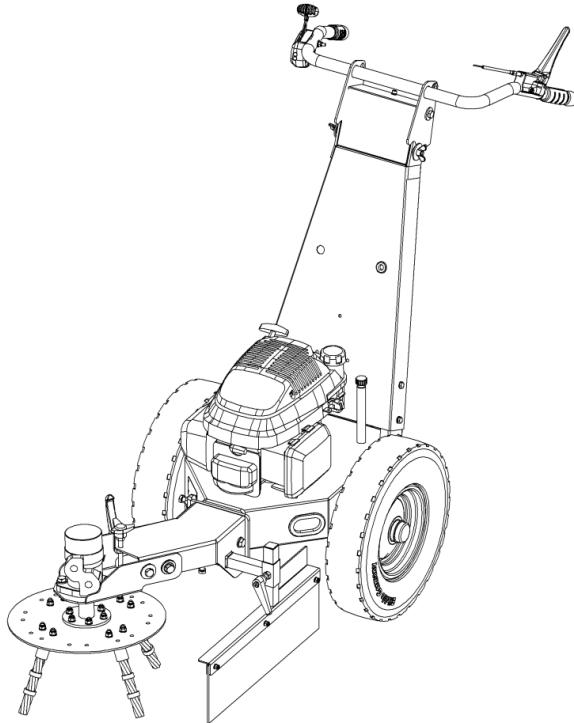




Operating Instructions for WeeDo



Order Number: B00066

From Machine.- Nr.: 55732

Rev.: R00 From: 30.07.2015



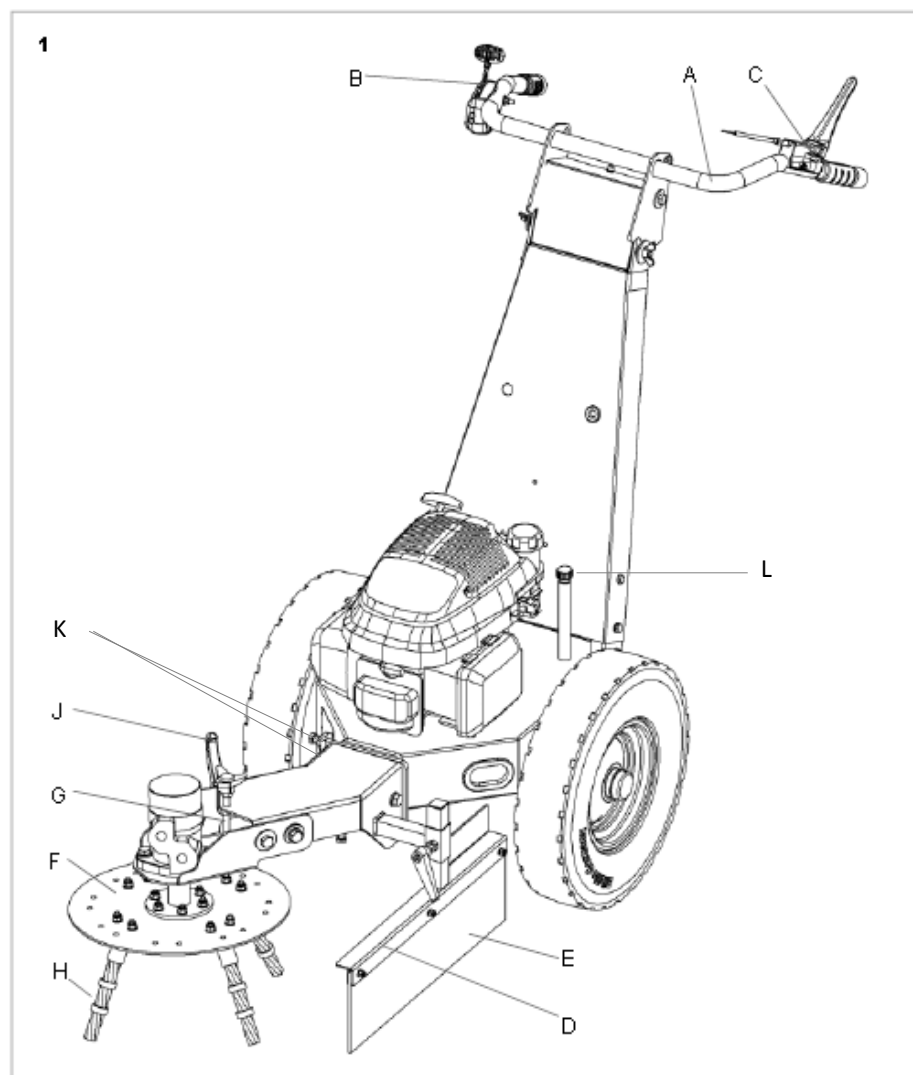
Manufactures by
Kersten Arealmaschinen GmbH
Empeler Straße 95
D - 46459 Rees
www.kersten-maschinen.de

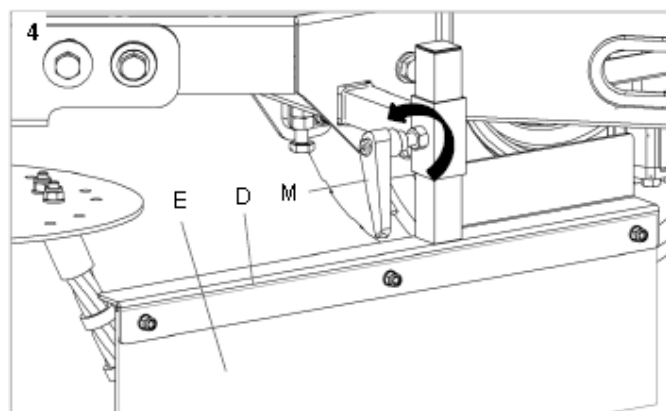
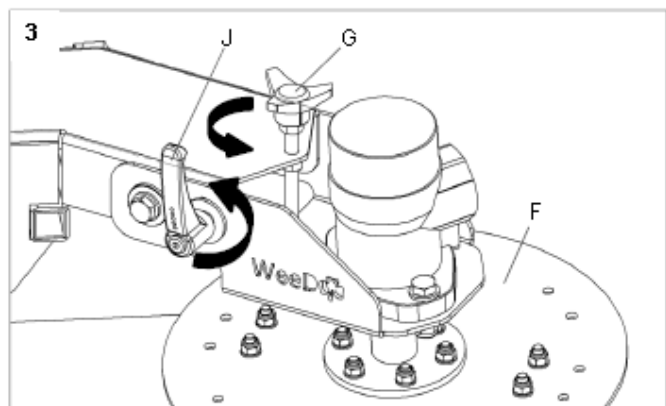
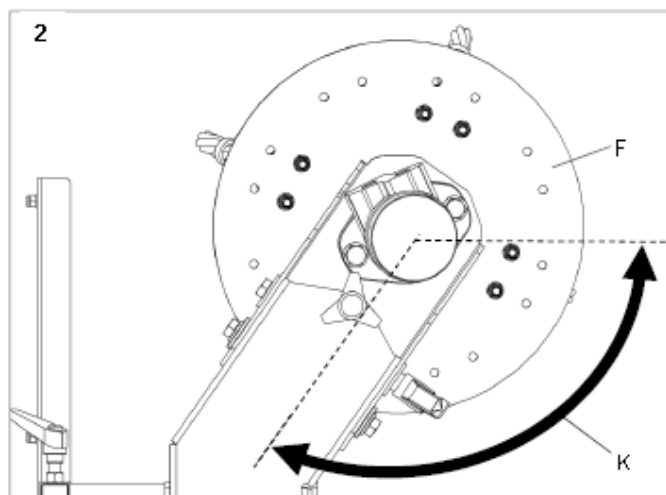


Distributed in UK by
Kersten (UK) Ltd Tel. 0118 986 9253
Progres House 39 Boulton Road
Reading, RG2 0NH
www.kerstenuk.com - info@kerstenuk.com

Contents

1	Forwards.....	5
2	About this Instruction Manual.....	6
	2.1 Before Operating.....	6
	2.2 Notes on Using this Instruction Manual.....	6
3	Safety Instructions.....	7
	3.1 General.....	7
	3.2 Intended Use.....	7
	3.3 General Safety and Accident Prevention Procedures.....	7
	3.4 Used Pictograms.....	12
4	Disposal.....	13
5	Guarantee.....	13
6	Description.....	14
	6.1 General Description.....	14
7	Initial Assembly.....	14
8	Operation.....	14
	8.1 Combustion Engine Starting.....	14
	8.2 Starting Off.....	14
	8.3 Adjusting the Brush Head.....	15
	8.4 Adjusting the Guard.....	15
9	Maintenance.....	16
	9.1 General.....	16
	9.2 Daily Maintenance.....	16
	9.3 Maintenance after 20 hours or longer Idle Time.....	16
	9.4 Changing Brush Sections.....	16
	9.5 Maintenance after 100 Hours of Operation.....	17
	9.6 Storage.....	17
10	Technical Data.....	18
11	EC Certificate of Conformity.....	19
12	Diagram and Replacement Brush Parts.....	20





1 Introduction

Dear Customer,

Thank you for choosing a quality product from the company Kersten.
This product is designed and produced using the most modern manufacturing techniques and extensive quality assurance measures.

It is only when you are satisfied with your product that our goal is achieved.

Before the first use of this machine or attachment, please read this manual fully and conscientiously. Please ensure all operators of this machine and any attachments also read this information.

Keep this document handy for future reference.

Only by referring to this manual can you operate this machine safely and effectively.

We wish you every success with your Kersten Machine.

Dipl.-Ing. (FH) Robert Bosch

A handwritten signature in black ink that reads "R. Bosch". The letters are cursive and fluid, with a prominent "R" and "B".

Managing Director

2 About This Manual

The machines described in this manual are subject continual to technical proress. All information/pictures and technical data in this manual correspond to the latest specifications at the time of publication. The manufacturers reserve the right to make alterations at any time. Please ensure the technical information

2.1 Before Operating



Before you start the engine or attempt to attach or operate any machine, we ask that you urgently to make yourself familiar with the manual and the operation of the machine.

If you are in any doubt over any operation or require further details, you should contact the supplier, importer or manufacturer of this product.

It is mandatory that all users of this product are familiar with this manual and the product.

You should first make yourself familiar with the machine at a slow speed and on a flat, even surface.

- Read all safety references on the following pages!
- Read the operating instructions before attaching or start-up!
- Use this manual in conjunction with the power unit manual if applicable!
- Pass all safety instructions onto other users!

2.2 Notes on using this manual

All points to be considered are indicated as follows: Example

- Text
- Text

Procedural instructions are indicated as follows: Example

1. Text
2. Text

In this manual images and their components are referenced in various sections . The images are labelled with numbers 1 , 2 , 3, etc. the components A, B , C , etc. Example: A reference to component C in figure 2 is Indicated by(2: C .) .

3.0 Safety Instructions

It is important to note that not all possibilities can be covered within this manual. The manual assumes that the operator has a general awareness for Health and Safety to have been appointed an operator in the first place.

This machine has been designed, so far as is reasonably practical, so that it will not endanger the safety of the operator or anyone else if the machine is used and maintained according to the instructions stated in this manual which have been compiled following research and experience of the manufacturers. In order to minimise the risk of accidents please consider the following information.

3.1 General



- This symbol indicates WARNING. Failure to follow the instructions could result in personal injury and/or damage to property.
- Before starting or using this machine or attachment carefully read these operating instructions and safety regulations in this instruction manual.



3.2 Intended use



- This is a single axle machine incorporates a Weedbrush for the loosening or removal of weeds and debris and detritus from hard surfaces commonly found in agriculture , horticulture, amenity, facilities management. All other uses will be considered improper use of the machine
- Use going beyond that described is not considered as intended. Therefore the manufacturer is not responsible for any resulting damage or harm and the operator alone is responsible for the risk.
- Compliance with and adherence to the operating, maintenance and repair as prescribed by the manufacturer in this manual must be considered essential elements of intended use.
- The machine may only be operated, repaired and serviced by persons familiar with the machine, this manual and all relevant safety features and dangers.
- The relevant rules for the prevention of accidents as well as other safety relevant rules according to the health and safety at work act must be considered as part of the operating procedure.
- The manufacturer is not liable for any accidents or damage resulting from modifications or alterations carried out on the machine without the express written permission of the manufacturer.
- Unauthorised modifications to the machine will void the manufacturers warranty

3.3 General Health and Safety and Accident Prevention Regulations

3.3.1 Basic Principles



- Follow general operating instructions and all other generally applicable health and safety regulations!
- This machine should not be operated by any person under the age of 16, not even under adult supervision. Minors must not be allowed to play with the machine. Only trained adults may use this machine.
- This machine may be subject to regulations when used on or near the public highway. This machine is not approved for public transport .
- Beware of rotating parts. Keep a safe distance . Placing hands or other parts of your body in rotating parts may result in severe injuries
- Beware of trailing machines and machines with inertia. Ensure they stop completely before making any adjustments.
- Operators are advised to wear suitable clothing that is close fitting with stout footwear– safety boots. Loose fitted clothes or casual footwear increase risk of accident.
- Do not leave the engine running in an enclosed area.
- Be aware that the handling, steering and braking ability of power units machine may be affected by different attachments, when loading/unloading and when using on gradients.
- Do not change manufacturers fast idle speed. Too high speed increases the risk of accidents.
- Unauthorized alterations, which compromise the reliability, safety or operation of the machine are prohibited!
- Always inspect the machine prior to use.

3.3.2 Operating and Danger Area



- The operator is responsible and liable for 3rd parties within the working area.
- Standing in the danger area of the machine is forbidden! Exclude all persons from the danger area before and during use. Danger is a 10 metre radius of the machine.

- Unauthorized alterations, which compromise the reliability, safety or operation of the machine are prohibited!
- Always inspect the machine prior to use.

3.3.2 Operating and Danger Area



- The operator is responsible and liable for 3rd parties within the working area.
- Standing in the danger area of the machine is forbidden! Exclude all persons from the danger area before and during use. Danger is a 10 metre radius of the machine. Pay particular attention to children and animals which may enter the working area without warning.
- Before starting or restarting the machines ensure the working area has been cleared of any foreign bodies which could be damaged or cause damage if hit or thrown by the machine.
- When working in public areas the working area should be isolated with a barrier and indicated with hazard labels to draw 3rd parties attention to the potential hazard. Furthermore the machine should be operated in such a way that it minimises risks to 3rd parties.



- Due to the risks associated with thrown objects from this machine the wearing of goggles is required during operation. The approved protective goggles for this case must meet the following standards. ANSI Z87.1 for use in USA and EN 166 for use in European countries.

3.3.3 Before Starting Work



- Before starting operating this machine you should be familiar with all controls and their functions. Familiarization should not be carried out during operation. It is too late!
- Before starting check the machine for safe operation.
- Check hydraulic connections and hoses for leaks and replace them if necessary.
- Never operate the machine with defective or missing safety devices.
- Learn how to stop the engine quickly and safely in the event of an emergency.

3.3.4 Starting the Machine



- When starting the machine ensure all drives are switched off
- Do not run the engine in enclosed spaces.
- Ensure the machine is fully assembled with attachments before starting engine.
- Do not use battery jumper leads and starting assist fluid at the same time as this could result in explosion.

3.3.5 During Operation



- When people, animals, vehicles etc approach the danger area stop the machine immediately.
- Never leave the operating position while engine is running.
- Only leave the operating position once the machine has fully come to rest.
- Never attempt to make adjustments to the machine during operation.
- The transporting of objects and persons on the machine is forbidden.
- Should the machine encounter an obstacle which causes a blockage, switch the machine off and isolate the engine before attempting to clear the blockage. Take care when removing foreign objects from the machine as components may become lodged and could possibly be freed abruptly.
- Should the machine become damaged during operation stop the engine immediately and repair the damage before further use.
- In the event of the machine vibrating extraordinarily stop the machine immediately. Under no circumstances continue to work until the cause is identified and resolved.

3.3.6 Leaving the Machine



- When parking the machine, close the fuel tap (if available).
- Isolate the engine to prevent unauthorised use by removing the key or removing the sparkplug lead.
- Apply the parking brake (if applicable). Alternatively use wedges to prevent machine from rolling away.
- Never leave the machine unattended with engine running.

3.3.7 Fastenings and Tyres




- Before working on the machine ensure it is on level surface with the wheels chocked to prevent the machine from rolling.
- Check wheel nuts regularly for tightness. Retighten when required.
- Regularly check tyre pressure. **Caution over inflation may cause explosion.**
- Repair work on tyres may only be carried out by specially trained personnel with the appropriate tools and equipment.

3.3.8 Maintenance, Cleaning and Repair Work



- Never attempt to perform maintenance or cleaning on the machine until has stopped completely.
- Before working on the machine ensure it is on level surface with the wheels chocked to prevent the machine from rolling and the motor has been isolated by removing the key or removing sparkplug cap.
- Check brush condition and safety devices regularly.

- Damaged brushes must be replaced.
- When changing brushes always use appropriate tools and personal protective equipment. eg. gloves and goggles.
- Only by using original parts from the manufacturer of the equipment can you be certain the correct specification of the parts is met thus the risk of accidents is minimised.
- Keep machine clean to reduce the risk of fire.
- Caution should be used when cleaning the machine with high pressure water to avoid directing the jet at vulnerable parts such as turned parts, grease points, oil seals, wheel hubs etc.
- After cleaning always grease lubrication points.
- Check moving points for ease of movement. If necessary re-grease.
- Following maintenance, ensure all safety equipment is returned to the correct position and tested before use.
-  Before carrying out service to the hydraulic system always ensure the hydraulic system is not pressurised. Liquids under pressure can penetrate the skin - Risk of Infection. In the event of an accident of this type seek medical advice immediately.
- Repairs should only be performed by a specialist.
- Check hydraulic lines regularly for damage and aging. Replace if necessary.
- All flexible hydraulic hoses should be changed every 6 years. The date of manufacture is stamped on the hose line.

3.3.9

Engine, Fuel and Oil



- Never attempt to refuel the machine until it has stopped completely.
- Never refuel in a confined area.
- Always take precautions to avoid spillage of fuel by using a suitable device.
- Always take care to dispose of waste oils, fuels and filters correctly.

3.4 Advice and Warning Pictograms

The following pictograms may be found on the machine to indicate use, service, maintenance and safety advice regarding due care and attention.

Explanation of symbols used.



Warning, Before Starting Read the Operating Instructions and Conform to Safety Instructions



Warning, Danger of Crushing Injury

Never remove or open protection devices whilst engine is running



Refer to Technical notes in the Operators Manual

Lubrication Point



Warning, Danger of Cutting Injury

Only touch machine parts once they have fully come to a standstill



Warning, Danger of air bourn objects traveling at speed.

Powered Machinery - Keep a Safe Distance



Only Operate this Machine when Wearing Eye Protection

4 Disposal

This device must be disposed of according to the regulation of the municipality or the country. All possible parts should be recycled and the remainder disposed of in a satisfactory manner.

The company Kersten Maschinenvertriebs GmbH or Kersten (UK) Ltd does not take responsibility of disposal.

5 Warranty

The manufacturer guarantees its products for 24 months from the date of delivery. Parts characterised by faults in materials, mechanical and production processes will be replaced free of charge by the manufacturer through its sales and technical servicing network.

The fault found must be reported to manufacturer and, should the circumstances require, be appropriately documented with a written technical report and/or photographic material.

The faulty part must be returned to the manufacturer who, after inspecting it and verifying that the warranty is applicable, will repair or replace it, taking the necessary time to do so, without charging for either material or labour.

The cost of transport of the parts covered by warranty shall be borne by the customer, who may organise it personally or authorise the manufacturer to take care of transport and charge all expenses to the customer.

The warranty shall be voided in the following cases:

- Obvious absence of maintenance
- Improper use of equipment or interference
- Use of non-original spare parts or unsuitable lubricants
- Operations carried out by unauthorised personnel
- The manufacturer excludes consumable materials and parts subject to normal wear and tear from the warranty.
- Any damages caused during transport must be reported immediately to the transporter; otherwise the warranty shall be voided.
- The warranty does not cover direct or indirect damages caused to persons or objects by failure of equipment or due to enforced prolonged suspension of its use.
- When applying for repairs under warranty, please indicate:

1-serial and model number of the equipment

2-registration number

3-date of purchase

4-dealer name

IMPORTANT! Please complete the warranty registration form enclosed and send it to address below within 14 days.

Kersten (UK) Ltd,
Progress House
39 Boulton Road
Reading
RG2 0NH or info@kerstenuk.com

6 Description

6.1 General description of WEEDO

The WEEDO consists of a non self propelled power unit with a petrol engine which powers a hydraulic driven brush for weed and debris removal from hard surfaces.

The WEEDO is composed of a steel structure supporting control handles, wheels, a petrol engine and the rotary tool holder (1 : F) to which wire brushes (1 : H) are attached. The rotation of the brush propels the unit forwards and scrapes weeds from the surface towards a laterally mounted splash guard (1: D)

7 Assembly

8 Operation

8.1 Starting the Engine

- Open Fuel valve (Set to on)
- To start engine from cold, slide the throttle lever (1 : B) fully forwards away from the stop position. this is known as the choke position where the engine receives an enriched fuel mixture. Pull the starter cord. When the engine starts return the throttle lever slightly towards the stop position until it locates in the first detented position. In this position the engine rotates at its maximum operating RPM and also the position where the engine may be started when warm. During the starting process the lever for the PTO (1 : C) must not be actuated. Further information regarding starting the engine may be found in the engine manufacturers instruction manual.



8.2 Driving Off

- The single axle machine does not have a facility to be self propelled and must be moved by hand.
- It is possible to raise the brushes clear of the ground by pushing down on the handlebar (1 : A). This will help manoeuvring the machine to the correct location. and enable the brush to be engaged prior to contact with the surface.
- The brush rotor is power driven and engaged by the operation of pressing down the actuation lever (1 : C). This should be done carefully with the brush in the slightly raised position so that it is just clear of the ground to avoid any unwanted reactions as the brush starts to rotate.
- Gently lower the brush in to work and rest on the surface. There will be some jerky movements as the brushes bite in to the debris on the surface. Hold the handle bar firmly at all times. The rotation of the brush we pull the wheels to provide forwards travel. The operator must remain alert during this operation to guide the machine in the desired direction and speed.

8.3 Setting the Brush Rotor

8.3.1 General

- The angle of the WeedBrush head is adjustable on 2 axis. Figure (2 : K) shows the favoured working area of the brush to provide the best performance in most cases. Generally speaking it is with the brush to the right and slightly to the rear.
- It has been noticed that particularly good results may be obtained after rainfall and damp weather.
- The forwards speed is generally determined by the strength of the vegetation.

8.3.2 Adjusting the Angle of the Brush

- The fore/aft incline adjustment of the brush plate is via the adjustment screw (3: G). Before the adjustment may be made the clamping lever (3: J) must be loosened. Once the desired setting is achieved the clamping lever must be re-tightened to lock the position.
- The left an right rotation of the brush is made by adjusting the screws located on the right hand side of the brush head unit (1 : K). By loosening the top and tightening the bottom more pressure is applied to the preferred working area of the brush. By loosening the bottom and tightening to top less pressure is applied to the preferred working area of the brush. This adjustment will also have an impact on the forward progression of the unit.

8.4 Adjusting the Debris Guard

- Following any adjustments to the brush angles and in the normal event of brush wear the height of the debris guard must be checked as it is directly linked. The guard reduces the possibility of material being thrown from the machine working area during operation. Its correct use and setting is therefore very important.



Under no circumstances should the machine be operated without the guard in its correct position.

- By loosening clamping lever (4: M), the splash guard (4: D) is adjustable in height. The rubber flap (4: E) from the splash guard must be in working position lightly resting on the floor.

9 Maintenance

9.1 General

- The general safety rules found in section 3.3.5 must be followed
- Engine oil changes must take place at the recommended intervals according to the manufacturers recommendations.
- Waste oils, fuels and filters must be disposed of separately and properly.
- The WeedBrush must be regularly maintained. Failure to comply may result in damage to the machine , persons or property.
- Check all safety devices and parts for correct operation before every use.
- When carrying out repairs, maintenance, cleaning as well as rectification of a malfunction ensure the PTO drive is disengaged and the engine has be isolated by removing the key or sparkplug cap.
- Following any work carried out on the machine , replace all guards and safety features entirely before testing and using.
- Check all hydraulic connections following the first 5 hours of operation. Tighten as required. Should a leak still remain then the following course of action should be tried. Ensure the system is depressurised. Loosen the pipe securing nut around 1 turn, twist the pipe clockwise and anticlockwise around 1/2 turn around 3 times and then retighten the lock nut. If this fails to fix the leak the seek further help from the supplier. Always use protective gloves and goggles when working on the hydraulic system.



9.2 Daily Maintenance

- Before each use check the hydraulic oil level. To carry out this procedure; Ensure the machine is on level ground and engine isolated. Remove oil filler cap (1 : L), check the level on the dipstick. The oil should be showing on the lower level on the dip stick shaft. To confirm reading wipe the dipstick clean and retest.
- Check engine air intake filter for cleanliness. Clean or replace if required. See engine manufacturers operator manual for further details.
- Check engine oil level. Adjust as required. See engine manufacturers operator manual for further details.
- When cleaning do not use water on the engine. A brush and/or high pressure air is desirable.
- Check hydraulic fittings and hoses.
- Check brush sections are mounted securely. Damaged brushes should be replaced and any debris eg wire attached to the brush head must be removed.
- Check all moving parts for correct operation and carry out trial run.
- Check wheels for correct air pressure.

9.3 Maintenance after 20 hours or period of storage

- Periodically and always at the start and end of seasonal use all moving parts including cables should be greased or oiled.
- Hydraulic oil and oil filter should be changed after the first 20 hours and then after every 100 hours of use.

9.4 Changing the Brush Sections

- Changing of brushes must be carried out by a competent person.

9.5 Maintenance after 100 hours

- Clean out air intake screen and cooling fins on the engine by dismantling the engine housing and ensuring all debris is removed.
- Hydraulic oil and oil filter should be changed after the first 20 hours and then after every 100 hours of use.
- Clean spark plug of carbon deposits and check electrode gap is 1.00mm

9.6 Storage

When the machine is not used for a long time, the following measures are recommended:

- Perform cleaning
- Engine preservation (Instructions of the motor manufacturer)!
Completely drain the fuel or add fuel stabiliser to a full tank.
Run the engine for 1 minute.
Put a teaspoon of engine oil in the plug hole and crank the engine slowly.
Reinstall the spark plug, but do not put the cap back on. While pulling on the starter handle compression resistance is felt, which indicates the valves are closed.
Pull the engine over three times, feeling that there is compression resistance.
- Put away the machine
- Lift the wheels. Jack up the machine with the help of wooden blocks, so that the drive wheels are not on the floor. Ensure the machine is stable!
- To prevent corrosion, protect the machine from the elements. Do not store the machine in damp rooms where fertilizer is stored or in stables.
- Cover the machine with a cloth or similar

10 Technical Data

Technical Data	
Type	WeeDo
Engine	Honda GCV 160 Petrol Engine
Power	4.1kw (5.5hp)
Max Torque	11.4 Nm/2500 rpm
Cubic Capacity	160 cc
Max Speed	3000 rpm
Sparkplug	NGK BPR 5 ES
Engine Oil	Approx. 0,55 l Multigrade SAE 10W-30 API SJ (or higher)
Fuel	Petrol Unleaded 95
Fuel Tank Capacity	0.9 Litre
Fuel Usage	313 g/kWh
Air Filter	Paper Element
Starting System	Recoil Start
Hydraulic Oil Capacity	Approx 4.5 Litre
Hydraulic Oil Type	Bio - hydraulic oil Synthetic ester base Avia Syntofluid N46 (recommended)
Oil Viscosity Grade ISO	VG 46 BIO
Hydraulic Pump Output	Approx 15 litre/min at 165 PSI
Working Width	Approx 50cm
Number of Brushes	4 or 8
PTO Drive	Hydraulic
Length - Width - Height	160 - 65 - 110 cm
Tyres 4.00 x 8 BL	Working Pressure 1.4 Bar Max Pressure 2.5 Bar (Risk of Explosion)

Manufacturer reserves right to change technical specification at any time.

11 EG - Konformitätserklärung

CE Déclaration de conformité
EC Declaration Conformity
EG conformiteitsverklaring



D

Wir

F

Nous

GB

We

NL

Wij

Kersten Arealmaschinen GmbH
Empeler Straße 95
D- 46459 Rees

erklären, dass das
Produkt

déclarons que le
produit

herewith declare
that the product

verklaren dat het
produkt

Wildkrautbürste

Brosse déherbante

Weed brush

Kruidborstel

WeeDo

mit allen einschlägigen
Bestimmungen der
EG-Maschinenricht-
linie 2006/42/EG in
Übereinstimmung ist.

satisfait à l'ensemble
de la directive machines
2006/42/CE.

fulfies all relevant
provisions of Directive
2006/42/EC.

voldoet aan alle
toepasselijke be-
paligen van EG-
Machinerichtlijn
2006/42/EG.

Die Maschine ist auch
in Übereinstimmung
mit allen einschlägigen
Bestimmungen der fol-
genden EG-Richtlinien:

Cette machine satisfait
également à toutes les
dispositions pertinentes
des directives CE
suivantes:

The machinery is also
in compliance with all
relevant provisions of
the following EC
directives:

De machine is ook
in overeenstemming
met alle toepasselijke
bepalingen van de vol-
gende EG-richtlijnen:

Weiterhin wurden fol-
gende Normen ange-
wendet:

En outre, les normes et
spécifications techniques
suivantes ont été utilisées:

The following
harmonised standards
apply:

Volgende geharmoni-
seerde normen werden
gehanteerd:

EN ISO 12100 : 2010

Herr

Monsieur

Mr.

De heer

Dipl.-Ing. (FH) Robert Bosch
Empeler Straße 95
D- 46459 Rees

ist bevollmächtigt
die technischen Unter-
lagen zusammenzu-
stellen.

est autorisé à constituer
la documentation
technique conformément
à l'annexe VII A.

is authorised to
compile the technical
file according to Annex
VII A.

is gemachtigd het
technische dossier
samen te stellen.

Rees, 04.08.2015

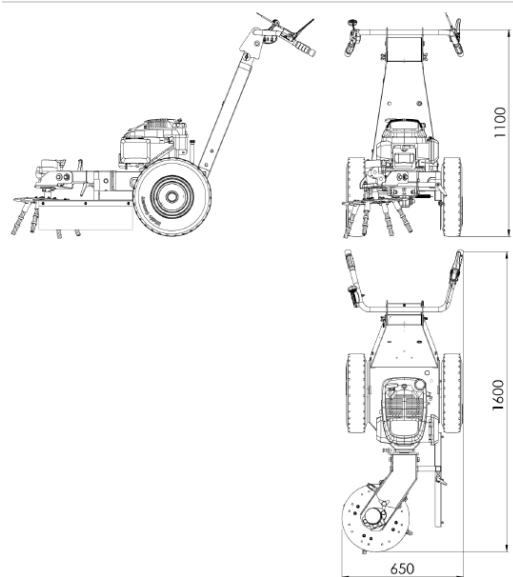
Geschäftsführer





Directeur

Managing Director

Bedrijfsleider

12 Diagram and Replacement Brush Parts



Nr.	Art.-Nr.	Foto	Benennung
1	700 000 136		Hausa Brush
2	700 000 135		Versa Brush
3	700 000 137		Pozi Brush
4	700 000 132		Clamp for WeedBrush Outer
5	700 001 133		Clamp for WeedBrush Inner

Kersten

SITE MAINTENANCE EQUIPMENT

Distributed in UK by
Kersten (UK) Ltd Tel. 0118 986 9253

Progress House
39 Boulton Road Reading, RG2 0NH
www.kerstenuk.com - info@kerstenuk.com