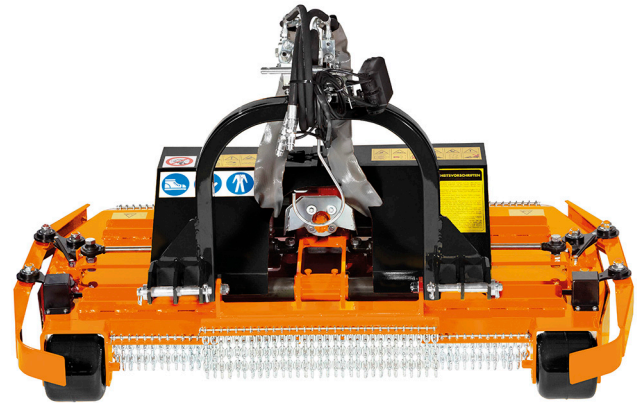




BERTI[®]
MACCHINE AGRICOLE



Mod. FLEXY - FLEXY/T - Instructions Manual

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1 Accident prevention and safety standards

1.1 Introduction

1.1.1 Declaration of EC Conformity

1.1.2 Introduction to safety standards

This instruction manual is an integral part of the hereafter called **70 CE MOWER** and provides the machine operator and maintenance man with the necessary information for being able to use the machine correctly. The machine user must only carry out the operations described in this Manual; for other operations, contact the manufacturer. The manufacturer does not accept any liability if operations not described in this Manual are carried out on the machine.



IMPORTANT

- This manual must be carefully read and understood before transport, installation, using and carrying out any maintenance on the machine.
- The manual must be carefully kept for the entire life of the machine and must be transferred to any other user or subsequent owner.
- It must be kept in a place near the machine and available for consultation by the users.
- Users are understood to mean machine operators and maintenance personnel.
- Make sure that all users have thoroughly understood the instructions for use and any symbols given on the machine.
- The manual must be consulted taking care not to damage it; do not remove any pages, replace and cancel information or modify its contents.
- It must be kept in a place protected from heat, damp and corrosive agents.
- Possible accidents can be prevented by following the technical instructions given in the manual.
- In any case, always comply with the national safety regulations.



CAREFULLY READ THE MANUAL

In accordance with our policy of constant improvement, the Manufacturer reserve the right to make any modification deemed opportune, at any time and without any prior notice. This does not imply an obligation to transform the machinery produced earlier.

Do not carry any operations whose correct procedures are not fully understood.

Unauthorised tampering/replacement of one or more machine parts or units, or use of accessories, tools or consumable materials other than those recommended by the Manufacturer can represent an accident risk and relieve the Manufacturer of civil and penal responsibility.

 BERCI BERTI MACCHINE AGRICOLE S.p.A. Via Masti 1/a - 3 - 37042 CALDIERO (Verona) - ITALY Tel. +39 045 6130711 - Fax +39 045 6190251 info@bertima.it - www.bertima.it	
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declare in sole responsibility, in quality of Manufacturer, that the product to which this certificate applies, conforms to the basic safety and health requirements of Directive 2006/42/CE , and according to the European harmonized standards:	
erklären in alleiniger Verantwortung, als Hersteller, dass das Produkt auf das sich diese Erklärung bezieht, mit den grundlegenden Sicherheits- und Gesundheitsschutzanforderungen der EU-Richtlinie 2006/42/CE , und mit den Anforderungen der gemeinsamen EU-Richtlinien konform ist:	
déclarons sous notre seule responsabilité, comme Fabricante, que le produit faisant l'objet de la déclaration est conforme aux prescriptions fondamentales en matière de sécurité et de santé stipulées dans la Directive de la 2006/42/CE . Nos déclarations que les normes harmonisées suivantes ont été appliquées:	
UNI EN 13524:2003+A1:2009 UNI EN ISO 13857:2009 UNI EN ISO 3767-1:2:1998 UNI EN ISO 12100:2010	
Nonché le seguenti specifiche tecniche: And the following technical specifications: Und die folgende technische Ausstellungen: Et les spécifications techniques suivantes:	
ISO 11684:1995	
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La presente certificazione è parte integrante della macchina This EC certificate is an integral part of the unit Die hier beigelegte Erklärung ist wesentlicher Bestandteil der Maschine Cette déclaration de conformité est partie intégrative de l'appareil	
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1.1.3 Warranty Conditions

1.1.4 Warranty certificate

Requisite for lodging an application, is the submission of the delivery certificate indicating the end customer. The delivery certificate must be sent to " -ku@customer service within two weeks of the purchase date, including customer data, signature, and indication of use (private/commercial/business).

Instructions for the submission of the warranty request:

- Fill on our
- Send the delivery certificate directly to " -ku@by mail
- Fax the delivery certificate to " -ku@number +39 04 6 0

THE MACHINES WILL ONLY BE REPAIRED UNDER WARRANTY IF BERTI RECEIVES THE DELIVERY CERTIFICATE WITHIN THE PREDETERMINED PERIOD, COMPLETED IN ITS ENTIRETY. IN CASE OF REPAIR NEEDS, ANY DELAY IN FORWARDING THIS APPLICATION AND/OR FAILURE TO COMPLETE IT WILL RELIEVE BERTI FROM ANY LIABILITY AND OBLIGATION!

1.1.5 Testing

Premise:

- The machine has been built under the close supervision of qualified personnel and has been inspected and tested with the aim of eliminating any possible "carelessness" during the course of its construction.
- The testing operations were carried by simulating normal machine work cycles and situations of machine use such as internal procedures.
- The machine has been designed and built in accordance with current safety standards and has been created on this basis!

NB: The machine is provided with warning pictograms that must be scrupulously followed in order to prevent injury to persons and damages to the surrounding area.

1.2 Safety – pictograms and their key

1.2.1 Safety – pictograms and their meaning and location



This pictogram means **PAY ATTENTION! BE CAREFUL, YOU COULD BE IN DANGER!!**

This pictogram can be found on stickers located on the machine, and in the user manual. When you see this pictogram, be on guard and aware that there is still a high risk of accident and death!

Safety has top priority!! Why?

- Accidents can cause serious injury or even death!
- Accidents increase financial loss
- Accidents can be avoided

Descriptions

The warnings labelled with this pictogram, as well as any other **DANGER**, **WARNING** and **ATTENTION** indication, must be given great attention.

The descriptions **DANGER**, **WARNING** and **ATTENTION** are all safety symbols. Learning and understanding the meaning of each symbol, and of course, the precautions and safety measures to be adopted in case of danger, is a top priority.



DANGER

This pictogram together with the term **DANGER** means an imminent danger that must be avoided not to risk **DEATH OR VERY SERIOUS INJURIES**.



WARNING

This pictogram together with the term **WARNING** means a potential danger that must be avoided not to risk **DEATH OR SERIOUS INJURIES**.



IMPORTANT

ATTENTION

This pictogram together with the term **ATTENTION** means a potential danger that must be avoided not to risk **MINOR INJURIES**.

- Read the instruction for use before using this machine, and get to know all controls and operating devices and their functions before starting work. This also applies to the instructions of tools supplied by the manufacturer.
- Comply with all requirements for use and maintenance. They are pre-requisites for a long-term, cost-effective, and satisfactory machine use. The maintenance sheet in the instruction manual contains a summary of the maintenance operations to carry out.
- Only refer to an authorised workshop for maintenance work and repairs. Please carefully read the important instructions for maintenance given by " - ku@

The observations and **IMPORTANT WARNINGS** are not directly related to your personal safety, but they are further information and useful advice to use your machine with great care.



IMPORTANT

They are instructions that, if not followed, can damage mowers, their accessories, or the surrounding area!

ATTENTION

Very useful information, for a more effective use of the unit or even maintenance tips!

The failure to comply with a pictogram and the related safety warnings, divided into three danger categories, can also lead to significant damage to the tractor, the equipment installed therein or to other property. The compliance with these safety pictograms is therefore necessary to prevent this type of damage.

1.3 Safety pictograms and directions

1.3.1 Check and replace the safety stickers and directions

ATTENTION

Safety pictograms must never be removed or damaged!! The pictograms on safety on the machine must be replaced if damaged or lost! Stickers of all kinds are available from your dealer. Even when purchasing a used machine, it is necessary to check the machine and its parts and make sure that the pictograms are readable and properly positioned. Check in the table below for the proper location of each pictogram!

1.3.2 Safety pictograms information and location

Pictogram 1: „Greasing point“

Pictogram 2: „ Check belt tension “

Pictogram 3: „ Lifting hook “

Pictogram 4: „ Danger of crushing and shearing “

Pictogram 5: „ Instructions and user manuals “

Pictogram 6: „ Safety instructions “

Pictogram 7: „ Danger: tractor and machine in motion “

Pictogram 8: „ sticker “

Pictogram 9: „ sticker “

Pictogram 10: „ Personal safety devices “

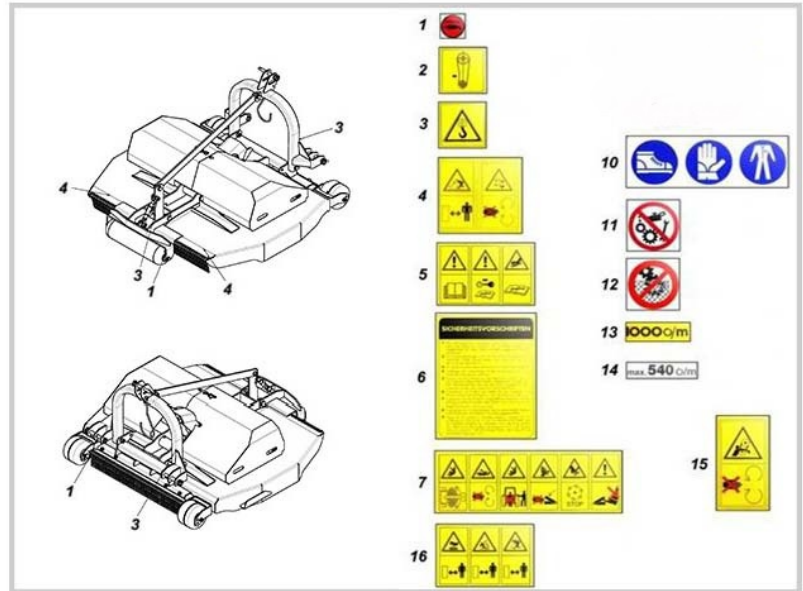
Pictogram 11: „ It is forbidden to oil moving parts & to work on moving parts “

Pictogram 12: „ It is forbidden to remove protection devices and guards “

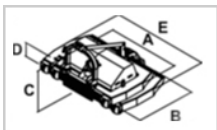
Pictogram 13 & 14: „ Maximum rpm on PTO “

Pictogram 15: „ Danger of belt winding “

Pictogram 16: „ Danger of burns, crushing, and projectiles “



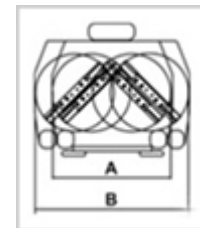
1.3.3 Technical data of the machine



Type	Minimum external width A [cm]	Maximum depth B [cm]	Maximum height C [cm]	Maximum height of the arm D [cm]	Maximum external width E [cm]
70 ☒ 110-145	112	129	107	24	144
70 ☒ 125-175	130	139	107	24	174
70 ☒ 140-195	141	149	107	24	197
70 ☒ 160-230	165	170	101	22	226
70 ☒ 190-260	192	189	101	22	262
70 ☒ 220-300	223	210	101	22	203

Type	Rotors	Blades	Power [cv / kW]	Weight [kg]
110-145	2	4	40-100cv / 29-74kW	430
125-175	2	4	40-100cv / 29-74kW	470
140-195	2	4	40-100cv / 29-74kW	510
160-230	2	4	40-100cv / 29-74kW	580
190-260	2	4	40-100cv / 29-74kW	690
220-300	2	4	40-100cv / 29-74kW	790

Type	Minimum cut width A [cm]	Maximum cut width B [cm]
FLEXY 110-145	109	141
FLEXY 125-175	126	170
FLEXY 140-195	137	193
FLEXY160-230	162	223
FLEXY 190-260	189	259
FLEXY 220-300	220	299



1.4 General safety instructions

1.4.1 Summary of the symbols and general safety standards

Never forget that you are solely responsible for your safety and the safety of others. Complying with the listed safety standards is a priority not only for your safety but for the safety and protection of the environment as well! Read the instructions for use and safety symbols descriptions carefully before using the machine, and be aware of all controls and operating devices, and their functions, before starting work.

Make sure that the following instructions are thoroughly read and understood, and that they become standard practice in the use and maintenance of the machine. Failure to comply with safety standards in the machine use and maintenance will result in accidents. This also applies to the instructions of the tools supplied by the manufacturer.

Furthermore, do not forget that:

You are responsible for safety. Accidents that can cause serious injuries or death can be avoided!



WARNING

In some pictures of this manual, protections have intentionally been removed to better explain the internal parts of the equipment. **NEVER** use the equipment without these protections. Even if they have been removed for cleaning or repair work, it is compulsory to replace the protections before using the equipment again, in order to avoid serious accidents.

1.4.2 Familiarity of the operator with the machine functions



IMPORTANT

Concentration and coordination can be compromised if drugs, medicines, or alcohol have been consumed. For this reason, the use of these substances and alcohol is strictly forbidden when operating any farm equipment. An operator who takes prescription medication for their health must be ensured by their doctor that they are capable of operating farm equipment.

To be able to use a machine, it is absolutely necessary that the driver or user must ensure the following criteria:

- Dexterity with agricultural equipment
- Driving lessons with a newly purchased tractor
- Learning the complete user manual of the equipment purchased
- Being aware of the safety laws and standards for each type of work to be carried out. It is solely the users responsibility to be informed on these safety laws and standards to guarantee maximum safety during work
- And obviously adequate experience and common sense, which guarantee dexterity with the equipment.

1.4.3 Connection and disconnection of the machine from the tractor

- The machine must be positioned on stable ground and fixed with a wedge to avoid sudden rolling
- The connection must only be carried out on level ground and not on a slant
- Make sure that apart from you there are no other people or property on the spot causing the connection to be unsafe and ineffective
- Make sure the tractor is off, the key is removed from the lock, and the cardan shaft is in operation
- Never stand or pass over the drawbar and in the space between the machine and the tractor; do not ever do this, in no case and for no reason!

1.4.4 Measures to take before leaving the tractor with the machine connected

Before leaving the tractor, you have to comply with certain rules also dependant on the time of day:

- Never let the tractor with the motor still running out of your sight
- Engage the neutral gear and block the tractor with the hand brake to avoid sudden and uncontrolled movement before leaving the tractor
- Deactivate the cardan shaft
- Lower the equipment attached to the rear or front
- Turn the motor off
- Remove the key from the lock
- After having left the tractor cab, make sure no other people are locked in the cab that could accidentally set the tractor in motion!



DANGER

IT IS FORBIDDEN for people who are not entitled to drive, especially children, to operate the tractor controls and equipment.

1.4.5 Machine transportation

Transport advice



DANGER

During transport, handling and positioning of the machine be careful to:

- Danger of the machine and also lifting means overturning (for example: forklift, forklift tractor, transpallet etc.)
- Danger of blows and crushing of persons.

Until the machine is not entirely lifted, check its correct balancing. Lifting must be carried out smoothly (without any pulling and jerking). Make sure no one is standing in the danger zone.



DURING LIFTING THE ENTIRE AREA AROUND THE COMPONENT MUST BE CONSIDERED A DANGER ZONE.

Instructions for handling

Loading and unloading must be carried out with lifting cables to standards. Also:

Make sure that the straps or cables are made in accordance with current standards and that they have the relative data plates certifying compliance with the standards. Check that the straps or cables are in good condition.

Pay maximum attention during all handling operations, in order not to damage the machine.



DANGER

MAKE SURE THAT THE MAXIMUM LOAD CAPACITY OF EACH STRAP OR CABLE IS GREATER THAN THE TOTAL WEIGHT OF THE MACHINE.
DO NOT APPROACH OR PASS UNDER SUSPENDED LOADS.

1.5 Safety standards before using the machine

1.5.1 Personal protection

The clothing of machine operators and maintenance personnel must comply with the safety requirements established European Community directives and by current laws in the user's country.

In order to avoid risks of a mechanical nature, such as dragging, getting caught up, etc., do not wear articles such as bracelets, watches, rings and chains.

- Always wear a protective suit or garment provided with elasticised cuffs on wrists, ankles and neck.
- Use suitable personal protection means for accident-prevention purposes: working gloves (cut proof) and footwear with reinforced toes.
- Operators must pay attention to the risks of clothes and/or long hair getting caught up or tangled in the moving parts.
- Do not wear clothing with loose sleeves, ties, scarves, rings, bracelets, chains or similar garments and objects that could get caught up in the moving parts and cause serious injuries.

Personal protection devices

The appraisal of risks for the safety and health of workers, carried out in the workplace and on possible equipment used, as well as appraisal of the residual risks present in the machine as indicated, enables the EMPLOYER to assess the need to adopt more suitable and appropriate Personal Protection Devices (PPD) to be supplied to workers:

- Foot protection devices: footwear with toe protection
- Hand protection devices: protective gloves
- Protective glasses
- Overalls tight-fitting at the wrists, ankles and neck
- Protective earmuffs to protect hearing

In accordance with current legal provisions, the worker is obliged to:

Comply with the provisions and instructions of the EMPLOYER. Correctly use the machinery, equipment and protection devices.

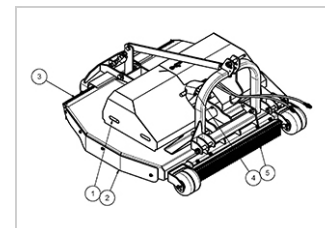


IMPORTANT

In order to avoid the risk of entrapment and entanglement it is prohibited to clothing with loose sleeves, ties, scarves, rings, bracelets, chains or similar garments and objects that could get caught up in the moving parts and cause serious injuries.

1.5.2 Safety devices

1. Gears protection guards
2. Side blades protection devices
3. Rear chain protection
4. Cardan shaft protection guards
5. Front chain protection



1.5.3 Check the machine before use

- Pay attention to broken and/ruined spring screws and missing or faulty small components!
- Replace pieces and/or protective casings if they are faulty, ruined, and no longer meet safety standards.
- Make sure the machine always undergoes professional maintenance work, and it is in excellent safety condition.
- Make sure all pieces and/or mobile components of the machine, such as wheels, rollers, swing arms, mobile discs, etc., can move easily without blocking, and are not rusty!
- Check that hydraulic tubes and all other lubrication system components do not leak oil and/or grease.
- Check the hydraulic pipes for wear, replace those that are damaged; in any case, these must be replaced at least once every 10 years, or check the expiry date (in some cases) imprinted on the pipe!
- Check that the cardan shaft and its protective casing are in good order, and are always assembled correctly.
- Check the oil quantity in the reducers, and that each rotating part of the machine is suitably greased.

1.5.4 Safety of people

Listed below are the safety rules to be complied with before and during machine use.

INSTRUCTIONS

- The operator or any person interacting with the machine must carefully read the manual before any intervention
- Make sure that the following instructions are read and understood and that they become routine procedure in machine use and maintenance.
- Failure to comply with or carelessness in following the safety rules for machine use and maintenance are the cause of accidents.
- Unauthorized persons must not be allowed to approach the machine (even when it is stopped).
- Before using the machine make sure that any conditions dangerous to safety have been opportunely eliminated.
- Notify the persons in charge in case of any possible modification made on the machine or irregularity in its operation that could jeopardize safety.
- In case of the presence of third parties (unauthorized persons or colleagues) near the machine, the operator must control their safety and warn them of the dangers, if necessary, stop the machine and wait for them to move away, before resuming work.
- Make sure that the protectors, guards and all the safety devices are in place and are in good working condition.
- Machine installation, starting up and extraordinary maintenance must be carried out by qualified persons.

The Manufacturer is relieved of any responsibility for possible damage to persons or property caused by carelessness in reading and implementing the procedures and/or instructions given in the manual.

Qualifications and duties of personnel

The professional characteristics of operating personnel are described below.



WARNING

the machine must only be used by suitably trained operating personnel who are in conditions of health enabling the regular carrying out of their activities.



Operator:

An operator who carries out the duties of ordinary operations required for machine operation: operating the controls, supervision of the production cycle, cleaning of surfaces and intervention in case of jamming. In normal production, the operator must operate with all the protectors enabled.



Manufacturer's technician:

The Manufacturer's personnel or other personnel authorized by the Manufacturer to carry out complex activities of installation, preparation, repair and, by request, training of machine operating personnel.



Mechanical maintenance man:

He is directly employed by the user or the Manufacturer, and is in any case adequately trained to carry out ordinary and extraordinary maintenance on the machine, and records the results in special registers.



Handling and transport personnel:

Personnel that have received adequate training on use of the lifting and handling devices.



Disposal personnel:

Skilled persons able to correctly carry out their specific duties and who are suitably trained by the Employer in matters of safety and health.

1.5.5 Start of safe work

- The machine must be commanded and controlled by a qualified person in order to avoid dangerous conditions for his safety and that of other persons.
- Before and after work, scrupulously comply with the signs and/or labels placed on the machine; the meaning is described in this Manual.
- For maintenance, always make sure your machine is on the ground and disconnected from the tractor.
- Do not test the machine in closed spaces, as the blades may come in contact with objects present throwing them about violently (there is also the risk of inhaling the exhaust from the tractor).
- The machine must only be used for carrying out work for which it is designed.
- Do not use parts of the machine separated from the unit or from the configuration provided for by the Manufacturer.

1.5.6 Checks after start up

- During machine operation make sure that no unauthorized persons incautiously approach it or the controls.
- Always limit the tractor speed for making any kind of movement. The speed must always be suitable for the job to be done and the ground conditions.
- Never use your machine when the visibility is poor or if there is a glare (minimum recommended visibility 100 metres).
- Do not use the machine before dawn or after dusk, or in poor light, since it is not provided with any lighting.
- Check all the pins and cotter pins are properly in place as described in this manual, so that the machine is properly connected and/or fixed to the tractor!
- Check the cardan shaft rotates uniformly and without abnormal movements.
- Make sure that the cardan shaft protection is undamaged and attached with a chain to the tractor.
- Make sure all parts of the transmissions, gears and belts work smoothly and without any loud vibrating noise, and abnormal movement. Stop the machine immediately if loud noises and abnormal movements occur!

- Make sure the blade rotors rotate in a manner not unusual and without irregular strange noises.
- Operate all the tractor hydraulic controls to make sure all machine parts are working properly.

1.6 Safety standards during use

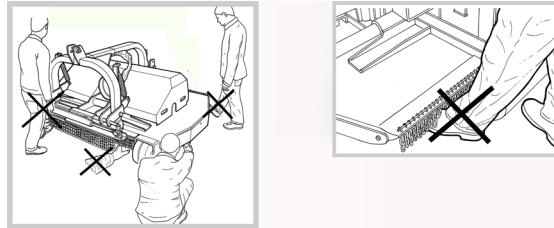
1.6.1 Instructions

- Make sure that no unauthorised people are near the operating range.
- Do not place parts of the body in the machine when it is working, and where prohibited.
- Do not climb on the machine or introduce objects through the feed openings when the machine is working.
- After use or during work stops do not leave the machine on (even if idle) and unattended. Failure to comply with this rule can cause serious accidents.
- Use your machine only on firm ground, where there is no risk of it sinking. Also avoid holes and obstacles since (in the absence of suspensions) the impact can directly affect the structure and the tow hook.
- Never leave the machine with the blades rotating.
- Make sure that both the machine and the tractor have adequate space to move in all directions.



DANGER

Take great care to avoid inserting the hands and feet under the machine at the points indicated in Fig. 1 for any reason whatsoever, especially when it is working. Stop the machine and switch the tractor off, since the person working in the area will be exposed to a serious risk of cutting and shearing, gripping and dragging, with serious



- Take care to make sure no one outsider inserts a foot accidentally under the front wheels (A) especially when it is moving forwards, as lowering of the machine for any reason, even unexpected (for example, yielding of the ground) can result in crushing, leading to very serious and irreversible injuries.
- The rotating blades can throw off objects with serious risk for the safety of persons; therefore no one must be allowed in the vicinity of the machine while it is in operation or is only moving. It is the tractor driver's responsibility to make sure no one comes near the machine while it is in motion, and to switch it off.
- Take care while opening the inter-row arms (B) making sure there is no one in the vicinity of the tooling, as this operation can cause contusion to the limbs resulting in injury.
- Do not stand between the machine and the tractor, especially when it is switched on; any movement, even accidental, will expose the person to serious risk of being dragged and crushed, with even mortal consequences.
- The machine must only be used in open farmland far away from people, roads, buildings, etc.
- During operations with the machine connected to the tractor, never bring the hands or feet close to the machine for any reason whatsoever.
- When parking the machine for any reason, ensure the following:

- The ground where the machine is parked is level, stable, and should not give under its weight.
- And that the machine is blocked to avoid it rolling, knocking down and seriously wounding people or damaging property!

1.6.2 Transport of people

- In order to avoid a high risk of accidents and injuries caused by lack of concentration and/or incorrect operation of handles during transport, it is STRICTLY FORBIDDEN to have other people than the driver on the tractor to which the machine is connected.
- It is strictly prohibited to transport people and/or property on the machine. IT IS FORBIDDEN for people not entitled to drive, especially children, to operate the tractor controls and equipment.

1.6.3 Safety standards during use

- Strangers access near the operating machine is strictly forbidden.
- Make sure there are no people between the tractor and machine!
- Make sure there are no people and/or property in front, behind or on the sides of the tractor and machine.
- The presence of people near the machine operating range is strictly forbidden.
- Strictly comply with safety distance during work, namely 20 metres from the side, and 50 metres from the rear!

1.6.3.1 Noise level



We can assure customers that the noise level produced by the machine, which is measured in dB (A), does not exceed the tractor noise level. However, it is advised to always wear suitable hearing protection!

1.6.4 Tractor stability

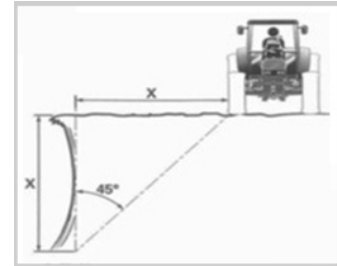
- Strictly comply with the safety standards of the tractor manufacturer.
- Never exceed the towing and/or lifting weight allowed by the tractor manufacturer.
- Make sure the tractor field of use and its centre of gravity varies from the type of connections of the various equipment that can be front or rear.



DANGER

An improperly loaded tractor can overturn and can cause serious injuries and even the death of the driver or third parties that do not comply with safety distance! Please make sure that any additional front weight, wheel weight, and also the wheels recommended load comply with the manufacturer's requirements. Do not unnecessarily load the tractor, but reduce the load to avoid overloading the tractor!

- While driving the tractor we advise you should avoid dangerous movements such as sudden starting and stopping manoeuvres.
- Do not drive the tractor on steep fields.
- Adapt the speed conscientiously at all times to visibility, weather conditions, bends, slopes, and terrain that can be rocky, slippery and muddy.
- The tractor load must be kept as low as possible, so as to keep the tractor centre of gravity equally low too.
- Warning: The machine, however, must be kept high enough to avoid dragging and damaging the machine itself, due to terrain slopes, or rocky and uneven terrain.
- Go into the bends with a suitable operating range and adequate speed.
- It is forbidden to cause swinging and swaying that could destabilize a tractor with equipment attached while driving. This is a highly dangerous situation because the driver can lose control of the vehicle and risk compromising his/her safety and also the safety of others.
- The tractor total prescribed weight must never be exceeded!
- Brake gradually and avoid sudden braking.
- Do not go downhill keeping the clutch of the tractor detached.
- The " - KU@machine has been designed and constructed for mowing on typical farmland where the slope does not exceed 60% and where the lateral slope is not more than 15% since there is risk of tilting over.
- Avoid idling near quays or ditches.
- Do not work quays or ditches as the ground could be unstable. To be extra safe, remember that the distance from the tractor to the ditch must at least exceed the height of the ditch or quay.
- The work of cutting grass in fields of high slopes should be carried out with idling on a vertical section and not transversely. If this is not possible, please follow the following tips:
 - Avoid holes when driving downhill.
 - Avoid stones, old roots, bumps, etc., when driving upwards.
 - Do not steer suddenly when manoeuvring - slow down and make a wide bend.
 - Remember to place the heaviest side of the tractor upwards.
- Please take extra care when working on only one side of the row in a sloping field:
 - The work equipment must always be facing upwards.
 - Never lift the equipment.
 - Keep the equipment as close to the ground as possible.

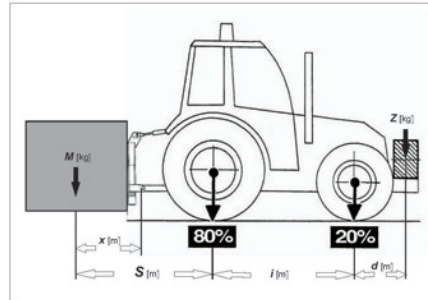


1.6.5 The correct tractor idling with a tool attached

As a tractor with an agricultural tool attached substantially increases in size, which can require a greater operating range and even greater safety distance, we wish to list the following recommendations:

- When changing lanes or manoeuvring, remember to keep an adequate safety distance not to injure people or damage property.
- All people must keep a safety distance, and no one can enter the operating range.
- If the tool is lifted during lane change, remember to stop the cardan shaft, so as to stop the cutting blades, which can causes irreversible damage to people and property, because they throw stones and other objects present in the fields in all directions.
- Make sure that the tool does not knock down people or property during work and transportation. Remember that the tools sizes can easily exceed the width of the tractor on both sides.
- Check a tool sizes before putting it in use. This way you are aware of its total size and can adapt the operating range during work as well as the transport space.

1.6.6 Longitudinal stability and ballast



When apparatus is applied to a tractor, in most cases, the apparatus, for a number of reasons, such as: load dimensions, irregular overhangs, unbalanced weight distribution, etc., may cause the vehicle to lose its balance. Hence it is necessary to apply a ballast.

Below you can find the required data to calculate the mass of the ballast Z:

M: Mass of mower/machine in kilogram [kg]

s: distance between gravity centre of the machine/mower to the centre of the rear tractor wheel in meters [m]

T: mass of the tractor in kilogram [kg] (without ballast)

i: distance between the two axles of the tractor in meters [m]

Z: mass of ballast which has to be installed in front of the tractor in kilogram [kg]

d: distance between centre of front wheel and gravity centre of ballast in meters [m]

With the mathematic formula shown below it's possible to define the necessity and the weight of the ballast to install in front of the tractor:

$$Z \geq ((M \cdot s) - (0,2 \cdot T \cdot i)) / (d + i)$$

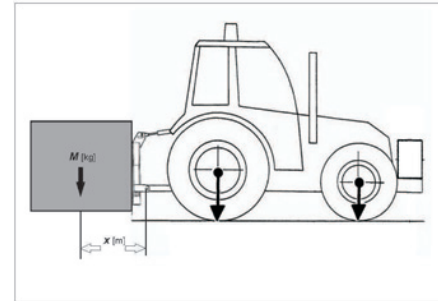
** „M“ must be $\leq 0,3 \cdot T$

*** This ratio must be respected for farm tractors registered and type approved before 6th May 1997

At least 20% of the laden weight of the tractor and apparatus combination must rest on the front axle.

Horizontal position of gravity centre of mower

Type	Distance x [m]
FLEXY 110-145	0,52
FLEXY 125-175	0,56
FLEXY 140-195	0,60
FLEXY 160-230	0,68
FLEXY 190-260	0,76
FLEXY 220-300	0,84



1.6.7 Cardan shaft



DANGER

The cardan shaft applied to a tractor is a mechanical part that, when operating, can cause high danger risks for the physical integrity of persons operating in its context. Therefore particular attention in operations involving that part. Carefully read the cardan shaft instruction booklet provided with the shaft. In case of any doubts regarding its functionality, or if it is without guards, worn or damaged, replace it with a new CE-marked cardan shaft. Do not make modifications or various adaptations to cardan shaft. If this is necessary, contact the Manufacturer's Assistance Centre.

Possible subsequent interventions that can cause imbalance which can negatively affect machine operation as well as the integrity of the cardan shaft.

The connection and disconnection of the machine cardan shaft is only allowed after the motor is off – the power take-off must not be in operation under any circumstances. It must not run!!

Make sure that no people are nearby when the shaft is in operation. Even after the power take-off is switched off certain cardan shaft parts can still run before stopping completely. NEVER APPROACH THE CARDAN SHAFT UNTIL EACH ROTATING PIECE HAS STOPPED!!!!

Make sure no people are in the tractor cab during connection and disconnection of the cardan shaft! Remember that only one person must prepare and operate the tool to be used, to avoid confusion and serious injuries. This person is responsible for their safety and the safety of others!



Make sure the tractor is off, the key has been removed from its lock, and the cardan shaft is disconnected before any maintenance on a tool.

1.6.8 Additional equipment

1.6.8.1 Weeding kit (OPTIONAL)

- Comply with all the safety standards described in the user manual of the weeding kit.
- The additional weight of the weeding kit increases the machine centre of gravity depending on the tank volume.
- During work this volume (with the exception of a full tank) leads to a lateral movement of the centre of gravity on the tractor. These situations are to be avoided given that they can lead to the tractor overturning!
- Stick rigorously to the instructions and safety standards described in chapter 1.7.4 to avoid serious danger.

1.6.8.2 Atomiser (OPTIONAL)

- The vertical load on the atomiser's foreseen connection must not exceed that listed.
- Never exceed the maximum tensile loading that is sent by the atomiser's towing hook to the machine. Exceeding this can cause structural damage to the machine and create very dangerous situations for the operator.
- Strictly follow the instructions contained in the atomiser user manual.



DANGER

The atomiser connection point has been designed for an atomiser with a maximum volume of 2000 litres. Atomisers with greater volumes can cause vertical stresses and unacceptable strain on the predisposed connection point and on the drawbar of the machine.

It is forbidden to couple atomisers with a volume greater than 2000 litres to the machine. Non compliance with this rule may be life threatening for the operator.

1.7 Particular safety regulations during maintenance

1.7.1 Disposal instructions after maintenance

The discharging of production products or scraps or in any case pollutant substances in drains (sinks, WC, tubs, etc.) and in streams and rivers, on the ground or in the environment is strictly prohibited. These products must be collected in special containers, stored or recycled before being disposed off in conformity with the legislation applicable; do not dump these in the environment in any case whatsoever.

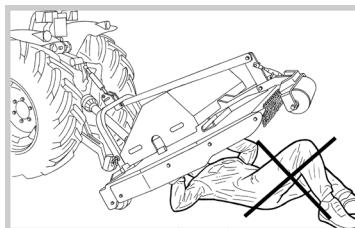
1.7.2 General guidelines for maintenance and support

- At the end of every work shift, maintenance or other operation, restore your " -ku@machine to the initial conditions. Remember to refit each and every piece that was dismantled earlier and restore the original conditions of each object on which any action was carried out. For problems that have not been solved, contact an authorized workshop or the manufacturers directly.
- Do not carry out any repair or adjustment operation on moving parts.



IMPORTANT

It is absolutely forbidden to lie down under the machinery as indicated in Fig. 2, as unexpected yielding of the ground, sudden lowering of the lift due to oil leakage from a pipe, mechanical yielding or accidental activation by an outside person can result in an extremely hazardous situation; in other words, anyone lying down under the blades will be exposed to serious risk of crushing, shearing and cutting with serious risk to personal safety.



IMPORTANT

Ordinary maintenance operations must be carried out by authorized personnel.

Extraordinary maintenance operations (repairs) must be carried out by the manufacturer's personnel at the seat of construction or by specialized and suitably trained personnel duly authorized by the manufacturer.

Maintenance activities must be carried out on flat, level firm ground, with the tractor engine stopped and the ignition key removed.

1.7.3 Directions for machine cleaning

It is a good rule to carry out periodical cleaning of the machine in order to remove foreign bodies (e.g. dust, foreign and dirtying substances, etc.) that could excessively wear all the mobile parts of the machine.

ALL CLEANING OPERATIONS MUST BE CARRIED OUT WITH THE ENGINE STOPPED AND THE IGNITION KEY REMOVED.

Use suitable personal protection means for accident-prevention purposes: working gloves (cut-proof for operations which involve contact with the blades) and footwear with reinforced toes.

It is strictly forbidden to stand under the equipment for any reason. There is a high risk of injury and even death!

1.7.4 Storage of lubricants

LUBRICANTS: GENERAL INDICATIONS FOR SAFE USE

It is extremely important to read these instructions and the documents mentioned here carefully; special attention must be paid to the technical safety sheets which normally accompany the products.

Make sure all personnel involved in lubrication operations are aware of their contents and use the PPD indicated therein.



WARNING

Keep lubricants out of reach of children and persons not qualified and authorized to handle lubricants.

NEVER STORE LUBRICANTS IN OPEN CONTAINERS OR CONTAINERS NOT MARKED.

1.7.5 Disposal

All waste products must be disposed of in accordance with the relative regulations.

Collection of disposal of old oil must be carried out in compliance with local regulations. Never pour oil in drains, gutters or on the ground!

Also, remember that in the machine and its components there are materials necessary for correct functioning which if dispersed in the environment can cause environmental damage.

Given below is a list of materials and liquids to be taken to the authorized Collection Centres:

- Depleted lubricant oils
- Filters
- Lubrication grease
- Ancillary material for cleaning (e.g. greasy or fuel-soaked rags)

The relative laws in force in each country where the machine is used provide for severe penalties for offenders.

Remember that the collection and disposal of depleted oils and the components listed above is regulated in accordance with the Law. Therefore always take the abovementioned residuals to the special Collection Centres.

The disposal of residuals and oils in unauthorized dumps or in streams and rivers or in the drainage system is strictly prohibited!

The Manufacturer declines any responsibility in the event the instructions for safety and use are not strictly complied with.

1.7.6 Ambient conditions and atmospheric temperatures

The machine does not contain any substances or components harmful to the health of man or the environment, since it is made from completely recyclable or normally disposable materials. The workplace where the machine is used must be suitable and in compliance with current health/hygiene provisions. The " - KU@company does not recommend to use the machine over the limits indicated (Outside temperature -10° to +40° Max.).

Outside these values there could be problems in the hydraulic system.

2 Instructions of use

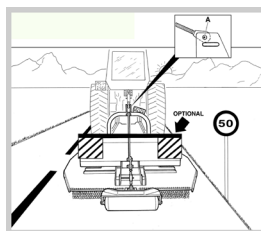
2.1 Start-up

2.1.1 General

Before starting up the machine, please remember that you must strictly follow the instructions and comply with the safety standards highlighted in chapter 1.4.3!

2.1.2 Transport

2.1.2.1 Transport on roads



- Connect the third point on hole (A) of the tooling for better stability while moving on roads.
- While travelling on public roads, the relative warning signals regarding projecting loads must be used (see Figure).
- Limit the tractor speed.
- The speed must always be suitable for the conditions of the ground, its slope and any other factor that can affect stability.
- For information that is not included in this Manual, refer to the legislation and standards applicable in the country in which the " -ku@machine is used.



IMPORTANT

For transport, the inter-row arms (A) must be retracted completely and ensure that the cardan shaft is stopped. This is to make sure the mower fits within the tractor, to avoid the machine jutting out and creating hazardous situations because of lateral impact. During transport, do not carry any load on your " -ku@machine.

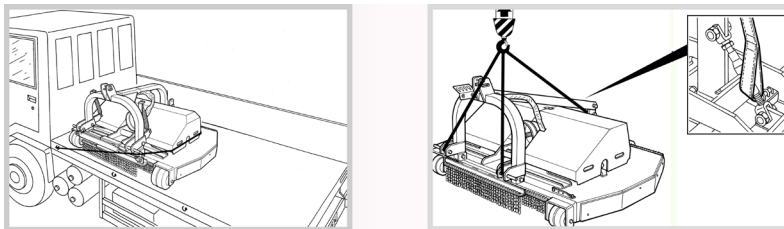
2.1.2.2 Transporting the machine as a load

- The machine can then be transported using other means (truck, van, trailer, etc.) (Fig. 1) as long as the load limits and transport rules applicable for using the machine in the country of use are respected.
- The machine must be fixed in such a manner as to prevent any possible kind of impact during transport.
- With reference to what has been written above, remember to respect the safety regulations and take extreme care while raising, loading and positioning your machine (always use appropriate means, never use your hands or other precarious methods for raising the machine). Hook your machine to the points indicated in Fig. 2-3 using devices to secure it correctly.



DANGER

Any form or mode of transport of your machine other than that described here is forbidden.



2.1.3 Check before use

Before using the machine, please remember to strictly follow the instruction and safety standards highlighted in chapter 1.5.3!

- Pay attention to broken and/ruined spring screws and missing or faulty small components!
- Replace pieces and/or protective casings if they are faulty, ruined and no longer meet safety standards requirements.
- Make sure the tool always undergoes professional maintenance, and it is in excellent safety standard condition.
- Make sure all pieces and/or mobile components of the tool, such as wheels, rollers, swing arms, mobile discs, etc., move easily without trappings and are not rusty!
- Check that hydraulic tubes and all other hydraulic circuit components do not leak oil and/or grease.
- Check the hydraulic pipes for wear, replace those that are damaged; in any case, these must be replaced at least once every two years, or check the expiry date (in some cases) imprinted on the pipe.
- Make sure the cardan shaft and its protective casing are in good order and are always properly assembled.
- Make sure all blade screws are properly tightened.
- Make sure the transmission belts are always properly tensioned as described in this manual, to avoid possible slippage or malfunctioning of the machine.
- Check the oil quantity in the reducers and make sure each rotating part of the machine is suitably greased.

2.1.4 Winter use



ATTENTION

It is strictly forbidden to use and/or transport the tool under following conditions:

- With an external temperature below -10°C
- With snow covered or iced roads
- When the ground cannot guarantee the road holding for a safe journey.

Even during winter, or when the tool remains unused for a long period of time, it is necessary to protect it from weather conditions and regularly check that there is no corrosive damage. It is recommended that it is stored away for long periods, wash and dry it before parking it indoors, in a dry place.

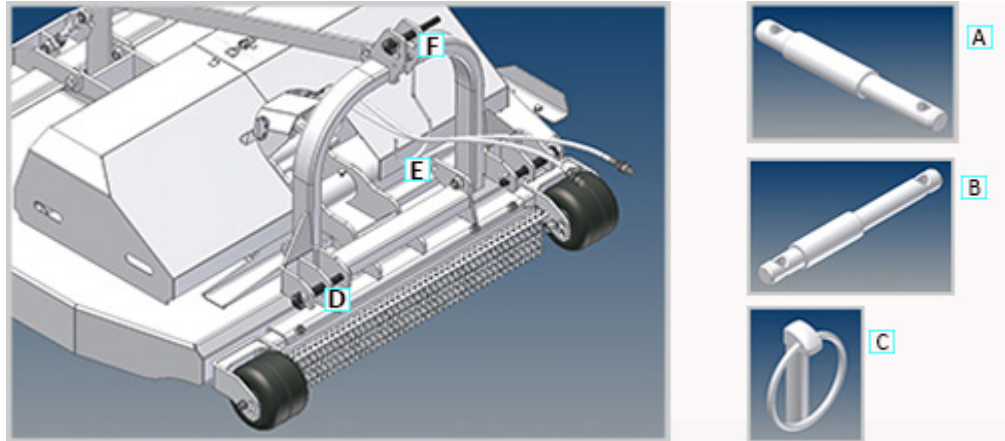
If it can only be left parked outdoors, park it on a concrete surface with efficient drainage and cover it with sheets; proceed as follows:

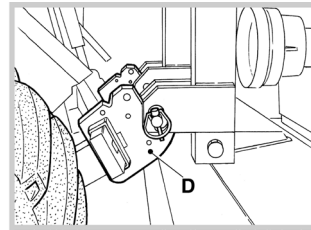
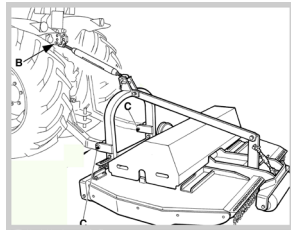
- Insert the caps on the quick-release couplings for protection
- Lubricate all the components
- Check for oil leakage
- Check to make sure the screws are tightened properly and that none is missing .

2.2 Commissioning

2.2.1 Connecting the machine to the tractor

- Remove safety pin **C** and extract pins **A** and **B**.
- Get close with the tractor lift arms to the two connection points **D** until they are centred.
- Pull the hand brake and switch off the tractor motor before getting off the tractor.
- Fix pins **A** and safety pins **C**.
- If the tractor is provided with a quick-release coupling system, just insert the two hooks **D** between the two brackets blocking them by means of shear pins.
- Adjust the lift tie-rods so that the machine cannot stagger laterally.
- Turn the cardan shaft support hook in the opposite direction.
- Adjust third point **F** tie-rod so that when the machine is in horizontal position the eye is central with pin **B** in eyelet **G**.
- It is advised to choose the lowest position on the tractor connection plate.
- Insert pins **B** and cotter pins **C**.
- Block the lift.
- Be sure that the pins and cotter pins have been assembled correctly and safely.





2.2.2 Cardan shaft

- Only use the cardan shaft supplied by " -ku@together with the machine.
- Pay attention to the instructions shown on the cardan itself (observe the arrows indicating the connection to the tractor, operating machine and rotation direction); finally, make sure to connect the headset safety chain to the machine and tractor structure.
- The friction the cardan shaft is equipped with must be connected to the infeed shaft of the central reducer.
- Therefore particular attention must be given in operations involving that part. Carefully read the cardan shaft instruction booklet provided with the shaft.
- Strictly follow the cardan shaft manufacturer's instructions.
- In case of any doubts regarding its functionality, or if it is without guards, worn or damaged, replace it with a new CE-marked cardan shaft and that corresponds to the power of the revs necessary for the machine.
- Check the distance between the cardan shaft connection on the tractor and the machine central reducer before use. Adjust the cardan shaft length if necessary. This operation must be repeated each time the machine is assembled on a different tractor!
- Carefully follow the manufacturer's instructions on maintenance.
- Never operate with a cardan shaft that is broken or damaged in any way, or with broken guards!
- Place the cardan shaft in its specific machine hook when disconnecting the machine from the tractor.



DANGER

Never work with a cardan shaft without protections and with damaged protection devices.

2.2.3 Coupling of the hydraulic pipes

- Connect the flow and return pipes of the hydraulic cylinders, of both the left hand and right hand side frame, to the double effect distributor of the tractor. Both cylinders are synchronised during the opening and closing stages.

The following movements may be performed hydraulically:

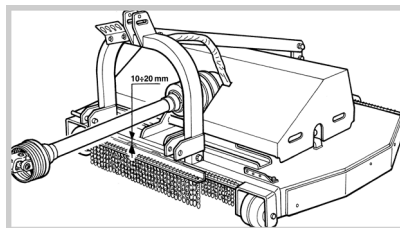
- Right hand side frame and left hand side frame opening
- Right hand side frame and left hand side frame closing



IMPORTANT

When the side frames are moving, make sure that the wheels do not get stuck in the ground, in order not to stress the cylinders and the frame guides.

2.2.4 Check of functions performed



- Make sure all the pins and safety pins are assembled correctly.
- Make sure the cardan shaft has been assembled and connected correctly to the tractor and the machine.
- Make sure the hydraulic tubes have been inserted correctly to the tractor and that the distributors levers are in neutral position. This avoids sudden movements when the tractor starts up.
- Make sure that there are no people within 20 metres.
- Start the motor and insert the rpm recommended by the manufacturing company and indicated on the machine serial number plate and on the machine itself.
- Try to lift the machine from the ground and check if the cardan shaft touches the front structure of the machine or any components. If it does, then lower the tractor lift device so that neither the cardan shaft nor the agricultural equipment is damaged during transportation! In any case make sure that there is a gap not lower than 1 to 2 cm between the cardan shaft and the machine!
- Lower the machine until it rests on the wheels and roller and do a test run without additional loads. Make manoeuvre simulations and also move the swing arms to ensure their correct operation.
- If an anomaly or a tractor manoeuvre problem, etc., occurs during these checks and tests, repeat the steps advised in chapters 2.3.1 and 2.3.2.

2.2.5 Commissioning and field of use

- Make sure that people are not near the operating range.
- Lift the machine approx 20 – 30 cm from the ground so that the blades can turn freely after operating the cardan shaft.
- Turn the blades by operating the cardan shaft.
- Lower the machine to the ground again so that it rests on the wheels and roller. Adjust the tractor lift in floating position.
- Widen the side frames using the hydraulic cylinders control until the desired work width is reached.
- During the changing of cutting width of the side frame it is essential to ensure that the wheels do not become wedged in the ground, to avoid overloading guides and hydraulic cylinders and not to damage - Avoid direct contact with the ground of the wheels during the changing of cutting width
- While working, make sure that the machine does not sink into holes or canals, because penetration of the blades into the ground will lead to excessive wear of the blades, bolts and belts.
- Completely stop the cardan shaft before lifting the machine from the ground once work is finished.

- Get off the tractor and only approach the machine after the blades have stopped, and the ignition key has been removed!
- Strictly comply with the distances listed when working near houses and roads:
 - 5 metres laterally
 - 10 metres from objects from the rear

Method of use

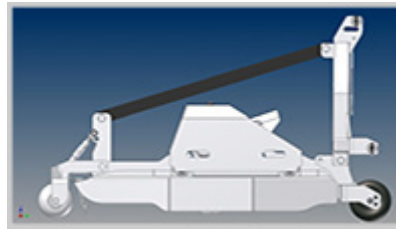
- The machine has been designed and constructed for mowing lawn approx. 50 cm high on typical farmland.
- It can also be used for mowing and cutting in the presence of small wooden fragments (for example, twigs from pruning with diameter not exceeding 20 mm).
- External temperature -10° up to +40° MAX. With temperatures above 40° and below -10° contact the manufacturing company " - ku@



WARNING

Other types of work must not be carried out with the " - ku@machine because they can cause serious injury to people and damage to property!

2.2.6 End of the job



- Stop the machine (stop the cardan shaft rotation remove the key).
- Get off the tractor, approach the machine, and lift it only when the blades have completely stopped!!
- Disconnect the third point from the tooling and insert it in hole (A) for better stability during movements in the field as well as on roads.
- Close the inter-row arms using the lever which controls the hydraulic pistons, on the tractor.
- Raise the tractor lift further for transporting the machine.
- Make sure there is a minimum space of 1 – 2 cm between the cardan shaft and the machine.

2.2.7 Dis-assembling the machine



WARNING

Demolition operations must be carried out by specialized and authorized persons. Before starting the dismantling phase, make sure that there is adequate space around the machine for comfortably carrying out the operations.

- Keep all people away from the danger area.
- Bring the machine to a stop, resting it on the ground by means of the tractor lift arms.
- Engage the handbrake and switch-off the motor of the tractor and remove the key.
- Only approach the machine when the blades have come to a complete stop! (as shown above)
- Block the wheels and rollers with safety blocks.
- When disconnecting the machine, first disconnect the hydraulic pipes, and place them in the specially marked seat, cover the quick couplings with caps to avoid getting them dirty.
- Remove the cardan shaft.
- Turn the cardan shaft holder hook downwards and position the shaft.
- Remove the towing pin of the third point and the two hooking pins, or release the two quick release couplings.

2.3 Wheels and rollers

2.3.1 Adjustment of the cutting height

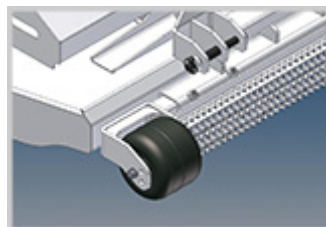
As regards adjustment of the cutting height, our machines are delivered with adjustment in the medium cutting position. In case of ground where stones are present, or for specific needs, the cutting height can be changed in the following way:



IMPORTANT

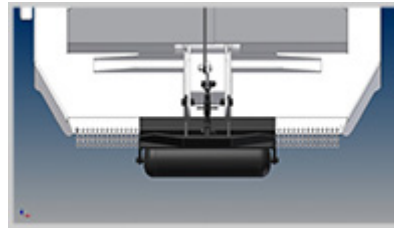
In any case, make sure that the blades do not ever enter into the ground and come in contact with rocks or other fixed obstacles – in order to always prevent the danger of projectiles and excessive wear of the blades

2.3.2 Front wheels



- Remove the security rose
- Remove the internal wheel pin and make sure not to ruin the thread
- Bring the wheel in the correct position
- Insert the pin in the wheel with great care and fasten all with the security rose

2.3.3 Rear roller



- Remove the self-locking nut
- Turn the tie-rod to adjust the roller desired height
- Block everything with the self-locking nut

2.4 Electric part

2.4.1 General directions

To commission the electric current power control units we recommend a power voltage of 12V! These units are connected to the tractor using the standard plug supplied with the tractor.

All electric components must be protected from water and any other type of weather. The presence of water and/or humidity accelerates their corrosion causing the control unit and all other electric operations to malfunction.

The electric components must be protected from dirt and impurities!

The electric system is equipped as a standard with a common 12V cigarette lighter connector – see picture below.

Protect the plug connection from rain and water splashing.



The standard power supply to the electronic system of the oil cooler has a three-pole plug (with maximum power consumption 25A) – according to ISO 12369. See picture below. Protect the plug connection from rain and water splashing.



2.5 Hydraulic system

2.5.1 Hydraulic system general instructions

Carefully follow the instructions given by the manufacturing company:

- Make sure the tractor motor is switched off, and the hand brake is engaged before inserting and connecting any hydraulic tubes.
- Make sure there are no people in the tractor driving seat, and between the tractor and the machine during the hydraulic tubes connection.
- The operating levers of the hydraulic distributors must be secured against inadvertent operation and be in a neutral position.
- Fasten the two hydraulic tubes having the same colour as the protection rubbers to the outlet and inlet lines of the hydraulic distributor.
- Only weigh down the hydraulic system if oil is hot. If necessary heat the oil leaving the motor running at low speed for a few minutes.
- Immediately stop the tractor, put all valves in a neutral position, and leave the motor running to ensure the hydraulic system cooling if it becomes overheated.
- In all cases you are required to comply with accident prevention, and to wear personal protective equipment.
- If oil leaks or losses from the hydraulic system are noticed, immediately switch off the machinery, and eliminate the problem.

2.5.2 Quick couplings

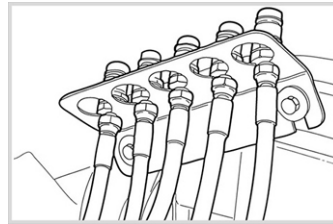
- The hydraulic tubes couplings are ALWAYS to be kept clean.
- Ensure that the specific protective caps are applied after use and disconnection.
- Also check the adjusted hydraulic pressure on the tractor.
- It is advised to remove the distributor pressure for easy disconnection before disconnecting the tubes.
- Reposition all tubes in the specific tube holder attached to the machine to keep them free from impurities.

2.5.3 Hydraulic cylinders

Follow the directions below:

- The hydraulic cylinders have been tested for constant pressure up to 250 bar. Exceeding this pressure will lead to very dangerous and life threatening situations.
- Clean the hydraulic cylinders after each operation from dirt and impurities to maintain them over time.

2.5.4 Hydraulic tubes tube holder



After disconnecting the hydraulic tubes place them in the specific tube holder to avoid them being stepped on and getting dirty unnecessarily.

2.5.5 Caps for quick coupler

Below you can find the colour of the caps for the quick couplers, which are defining the different hydraulic function on the machine:

Red cap

Pressure line/hose for precision sensor oil circuit or pressure line/hose for hydraulic motor.



Black cap

Return line/hose for precision sensor oil circuit or return line/hose for hydraulic motor.



Yellow cap

Hydraulic hoses for the first double acting function o cylinder on the machine (positioning of the swing arms, adjustment of cutting width of side frames, lifting and lowering of side frames, lifting and lowering of brushes, ecc...)



Blue cap

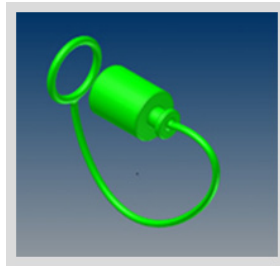
Hydraulic hoses for the second double acting function o cylinder on the machine (positioning of the swing arms, adjustment of cutting width of side frames, lifting and lowering of side frames, lifting and lowering of brushes, ecc...)



Green cap

The green caps are identifying exclusively the hydraulic hoses of the hydraulic side shift (linear or with parallelogram) of the mower.

If there is no side shift on the machine, the green caps are identifying an eventual additional third double acting hydraulic function or cylinder.



White cap

Hydraulic hoses for an eventual third double acting hydraulic function or cylinder on the machine (positioning of the swing arms, adjustment of cutting width of side frames, lifting and lowering of side frames, lifting and lowering of brushes, ecc...) or for an additional second simple acting hydraulic function.

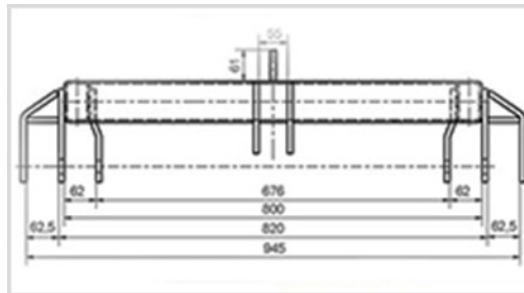


2.6 Third Point

2.6.1 General directions

Strictly adhere to the directions in chapters 1.4.3, 2.3.1 e 2.3.7 when connecting or disconnecting the machine from the tractor!!
Make sure to wear personal protective equipment during these manoeuvres (chapter 1.5.1)

2.6.2 Third point category I and category II



The third points and specific connections are manufactured based on standards Din Iso 730-1 and are therefore suitable for all types of front or rear connections.

2.7 Additional machine loads

2.7.1 Atomiser (OPTIONAL)

Strictly adhere to the following directions when connecting an atomiser to the machine:

- Never exceed the advised support load and/or load voltage (see chapter 1.6.7.2).
- Never exceed the speed to overload the machine. Drive carefully and try to avoid sudden manoeuvres such as sudden braking and/or accelerating.
- Decrease speed when near bends.
- Change lanes with care to avoid damages to people or property.
- Respect the atomiser load level as this affects the tractor stability. Carefully follow the directions in chapters 1.7.4!
- Carefully rest the machine on the ground and avoid sudden lowering.
- Strictly adhere to all the safety standards and directions described in the atomiser manual.

2.7.2 Weeding kit (OPTIONAL)

Carefully follow the directions when accessorising the machine with a " - KU@weeding kit:

- Never exceed the speed to overload the machine. Drive carefully and try to avoid sudden manoeuvres such as sudden braking and/or accelerating.
- Decrease speed when near bends.
- Change lanes with care to avoid damages to people or property.
- Respect the atomiser load level as this affects the tractor stability. Carefully follow the directions given in chapters 1.7.4!
- Carefully rest the machine on the ground and avoid sudden lowering.
- Strictly adhere to all the safety standards and directions described in the weeding kit manual.

2.8 Protective devices

2.8.1 Safety hooks

After having disconnected the cardan shaft place this in the specific hook attached on the third point.

2.8.2 Protective chains

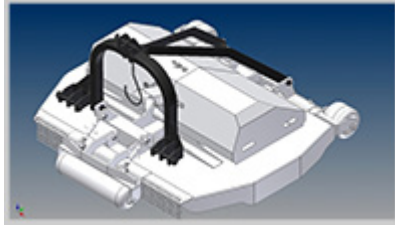
The protective chains, pins and safety pins must strictly be in perfect condition. Otherwise they must be replaced immediately.

3 Additional equipment and safety provisions

3.1 General information – additional equipment

This section lists all the additional equipment and notes the risks and requirements to allow working safely.

3.2 Front-mounting



Front mounting allows you to put the tool on the front of the tractor.

- Depending on the size of the tool, the bracket can be mounted in 3 or 4 different positions.
- The shredder should be put as near to the tractor as possible so as not to compromise the longitudinal stability of the tractor and not to move the centre of gravity too much to the rear.
- Before beginning work, carry out tests to identify the best coupling position.

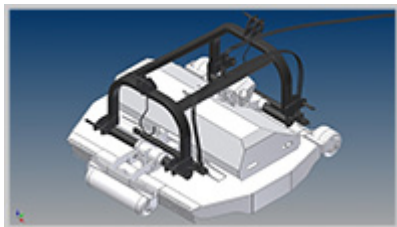


IMPORTANT

When turning curves, entering and exiting from thoroughfares and turning corners, be extremely careful because the tool can cross out of its lane.

With regard to safety provisions, check for correct coupling and decoupling and perform checks before and after work. Strictly observe the provisions and instructions in previous sections (especially sections 1.4.3, 1.6.3, 2.2.3, and 2.3)

3.3 Front/rear mounting with 2 three-point transmissions and gears



Front mounting allows you to put the tool on the front of the tractor.

- Depending on the size of the tool, the bracket can be mounted in 3 or 4 different positions.
- The shredder should be put as near to the tractor as possible so as not to compromise the longitudinal stability of the tractor and not to move the centre of gravity too much to the rear.
- Before beginning work, carry out tests to identify the best coupling position.

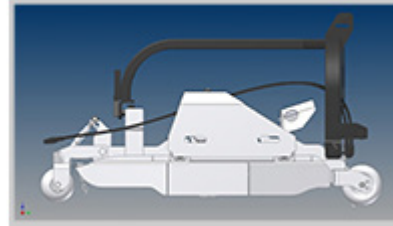
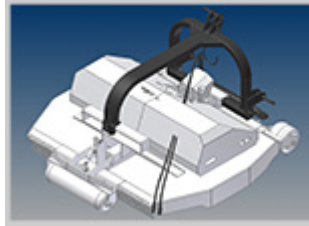


IMPORTANT

When turning curves, entering and exiting from thoroughfares and turning corners, be extremely careful because the tool can cross out of its lane.

With regard to safety provisions, check for correct coupling and decoupling and perform checks before and after work. Strictly observe the provisions and instructions in previous sections (especially sections 1.4.3, 1.6.3, 2.2.3, and 2.3)

3.4 Mounting with hydraulic arm tool



Mounting with a side arm tool provides an extension of 25 cm or 30 cm, depending on its size, via the hydraulic cylinders on the right and left.

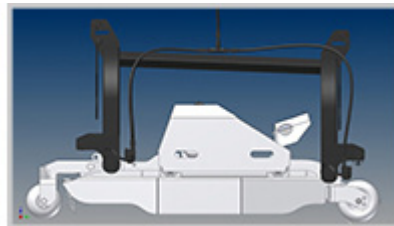
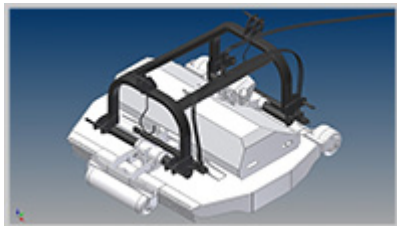
- If you are moving the tool sidewise, you should not have any direct contact with the floor to avoid excessively stressing the arm guides and roller bearings and wheels.
- Remove all persons from the danger zone – even during the tests using rotating blades for the extension of the tool.
- During transport, entering and exiting thoroughfares, the tool must be centred with respect to the tractor



IMPORTANT

Never enter the danger zone and keep body parts away from the side movement guides if the tool is connected to the tractor and the hoses are connected to the control devices. With regard to safety provisions, check for correct coupling and decoupling and perform checks before and after work. Strictly observe the provisions and instructions in previous sections (especially sections 1.4.3, 1.6.3, 2.2.3, and 2.3)

3.5 Front/rear mounting with 2 three-points and hydraulic side shift



Mounting with a side arm tool provides an extension of 25 cm or 30 cm, depending on its size, via the hydraulic cylinders on the right and left.

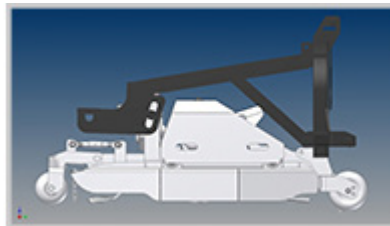
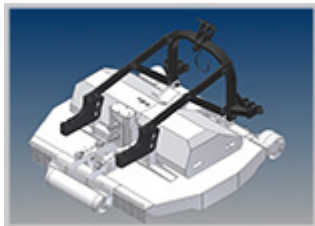
- If you are moving the tool sidewise, you should not have any direct contact with the floor to avoid excessively stressing the arm guides and roller bearings and wheels.
- Remove all persons from the danger zone – even during the tests using rotating blades for the extension of the tool.
- During transport, entering and exiting thoroughfares, the tool must be centred with respect to the tractor.



IMPORTANT

Never enter the danger zone and keep body parts away from the side movement guides if the tool is connected to the tractor and the hoses are connected to the control devices. During transport and all other operations, you must be extremely careful because the tractor-shredder-sprayer combination forms a long and voluminous unit. With regard to safety provisions, check for correct coupling and decoupling and perform checks before and after work. Strictly observe the provisions and instructions in previous sections (especially sections 1.4.3, 1.6.3, 2.2.3, and 2.3)

3.6 Attachment for sprayer with shutdown mechanism



Mounting an attachment for a sprayer also allows coupling a sprayer to the tool that will be operated via the central box. Using the rotating switch set on the central box, you can opt to turn the shredder off – the spray function is still ensured.

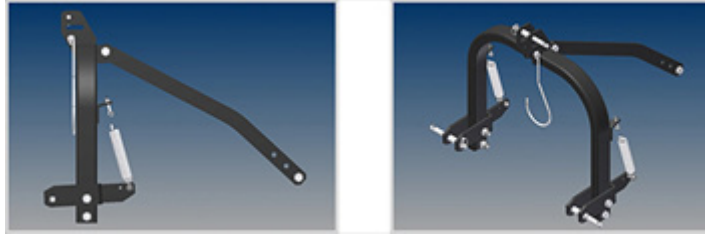
- Never enter the danger zone and keep body parts away from the guide of the sprayer attachment.
- With the tool decoupled, the bracket must always stop in the back guide and lower position to avoid the danger of crushing during maintenance or other work operations with the tool shut off or parked.
- Never exceed the vertical support load and the tensile load prescribed.



IMPORTANT

During transport and all other operations, you must be extremely careful because the tractor-shredder-sprayer combination forms a long and voluminous unit. With regard to safety provisions, check for correct coupling and decoupling and perform checks before and after work. Strictly observe the provisions and instructions in previous sections (especially sections 1.4.3, 1.6.3, 2.2.3, and 2.3)

3.7 Exhaust device for a three-point bracket



Mounting with an exhaust device allows reducing the pressure of the tool on the ground via the lever and traction springs mounted; it also ensures that it follows the profile of the terrain.

- Never enter the danger zone and keep body parts away from between the rocker levers.
- Depending on the size of the tool the bracket can be mounted in 3 or 4 different positions.
- The shredder should be put as near to the tractor as possible so as not to compromise the longitudinal stability of the tractor and not to move the centre of gravity too much to the rear.
- Before beginning work, carry out tests to identify the best coupling position.

With regard to safety provisions, check for correct coupling and decoupling and perform checks before and after work. Strictly observe the provisions and instructions in previous sections (especially sections 1.4.3, 1.6.3, 2.2.3, and 2.3)

3.8 Gearbox with two inputs for reversing rotation direction



This mechanism is used to reverse the rotation direction and can be used from the central box.

- When connecting the mechanism for reverse direction to the articulated shaft, make sure it is connected to the input shaft of the reverse mechanism that corresponds to the direction of rotation and the number of turns in the articulated shafts.
- The protection caps that are mounted on the reverse mechanism must be in perfect condition and protect the input shafts in accordance with regulations.
- Periodically, depending on the frequency of use of the shredder, check the gearbox oil level, and refill it if necessary.
- Periodically make sure all the screws are completely tightened.

3.9 Two rear swivel full rubber wheels



With the full rubber front swivel wheels, the tool is lifted and is more manoeuvrable when cornering and improves its ability with friction in soft and rough terrain. Operating height adjustment takes place via movement of wheels in the keyholes provided or by adjusting the roller spindle (see section 2.3).

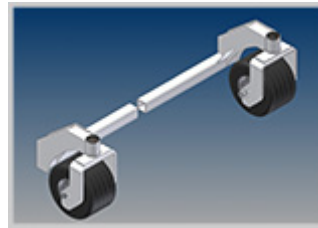


IMPORTANT

If you use this accessory, keep in mind the following:

- the lifting tool creates a major vacuum below it and thus increases the danger with stones.
- Remove all persons from the danger zone and absolutely meet the minimum safety distance of 50m(see section 1.7.3).
- Position the front swivel wheels so that they can never come into contact with the tyres of the tractor.

3.10 Two front swivel full rubber wheels



With the full rubber front swivel wheels, the tool is lifted and is more manoeuvrable when cornering and improves its ability with friction in soft and rough terrain. Operating height adjustment takes place via movement of wheels in the keyholes provided or by adjusting the roller spindle (see section 2.3).



IMPORTANT

If you use this accessory, keep in mind the following:

- the lifting tool creates a major vacuum below it and thus increases the danger with stones.
- Remove all persons from the danger zone and absolutely meet the minimum safety distance of 50m(see section 1.7.3).
- Position the front swivel wheels so that they can never come into contact with the tyres of the tractor.

3.11 Third central wheel



The third central wheel reduces the pressure of the machine on the soil and upgrades the runnability of the mulcher. Operating height adjustment takes place via movement of wheels in the keyholes provided or by adjusting the roller spindle (see section 2.3).

3.12 Twin wheels for front-rear combination



The twin wheels for front-rear combination improve the properties of the device, when a rear unit is pushed momentarily as the front device. The height adjustment of the impeller is like the normal standard wheels fitted (see section 2.3).

NOTE: Grass distribution and cut is not optimal because the knife during use front running in the wrong direction, ie the blades rotate from the outside in and the grass can be thrown in the middle together into a strand.

3.13 Bilateral hydraulic probe

With this accessory the following functions/operating modes are available:

- *Manual mode:* The working width of the machine can be set manually via solenoid valve-operated controls. The cutting width of both sides can be adjusted independently.

NOTE: The side probes are disabled and no operation is performed.

- *Automatic mode:* By activating the automatic probe mode via the relevant control, the side probes are activated and the working width is adjusted automatically. As soon as the side probe is activated due to contact with a plant or obstacle, the corresponding side frame diverts until there is no longer contact between the probe and plant or obstacle.

NOTE: The mode of the automatic probe can be activated and disabled independently both for the RH side and for the LH side.

- With the additional function "working width pre-setting", the maximum opening of the machine can be pre-set before entering the row.
1. Set the desired working width by adjusting the relevant stop on the central frame.
 2. When the linkage, connected to the stop on the central frame, reaches the end of stroke position, the side probe is activated and prevents additional opening of the relevant side frame.
 3. The cutting width can be pre-set on both sides independently.

As mentioned in chapter 4.1 on periodic maintenance, before each use/starting work or at least every 8 hours of operation apply a generous amount of grease on the entire hexagonal bar to prevent it from seizing up.

Comply with the safety standards of chapter 1 and chapter 2, in order to work safely with the machine.

As soon as the hydraulic system of the tractor has been started with the machine, everyone must stay away from the danger zone.

Never put parts of the body between moving components - there is always a risk of cutting and trapping body parts.

When the job is complete clean the machine and especially the hexagonal bar, removing residues of grass or other dirt. Lubricate the points indicated in the manual.

The electric system is equipped as a standard with a common 12V cigarette lighter connector – see picture below.

Protect the plug connection from rain and water splashing.



3.14 Weed control kits



WARNING

Regarding the use of the herbicide kit and its provisions, carefully read the safety manual for the kit. The electric system is equipped as a standard with a common 12V cigarette lighter connector – see picture below. Protect the plug connection from rain and water splashing.



4 Maintenance

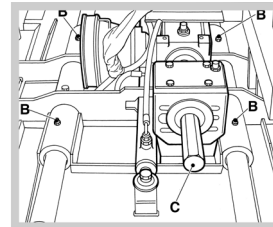
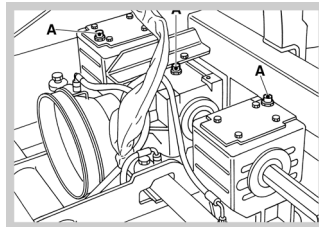
4.1 Periodic maintenance

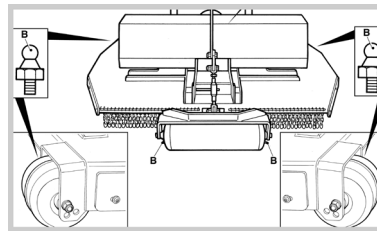


Cleaning the machine at the end of the day's work to remove cutting residues, earth and other materials will keep it in perfect working order and help prevent possible faults in future.

Before handling lubricants, consult the relevant technical safety sheet and follow the indications, especially as regards the PPD (personal protection devices) to be used.

- The machine supplied is greased and lubricated; so check the gear oil immediately on receipt for better safety by means of the threaded cap provided on the side.
- If the oil level requires topping up, fill with EP 90 gear oil through filler plug (A).
- Subsequently check the oil level approximately every 200 hours of service.
- After the initial 2-3 days of use, check all screws and bolts to make sure they are tightened properly, since they may have been slackened by the vibrations.
- Subsequently, check the screws more frequently, depending on how often the machine is used (at least once a year).
- At the end of the day's work with the " -ku@machine, clean it thoroughly and grease all the points.
- Greasing must be done for every grease nipple present, possibly always at the end of every work shift, using graphite or water-repellent grease. This will make it easier to remove dirt and old grease.
- The points to be greased (B-C) are shown in the Figures below.
- Clean and remove dry grass from the machine after each work day. Dry grass left on the machine could heat and catch fire, damaging the machine and all its components.





For all parts subject to heating as tubes, it is advisable to wait a few minutes (or more, depending on the zones) for them to cool down, and this especially in maintenance operations and any other intervention.

Remember that it is easier to detect faults or problems on the chassis or in the hydraulic circuits if the machine is clean.

Clean the machine regularly after the day's work, especially after working on wet or muddy terrain.

For cleaning the machine, use high pressure water jets and cold water.

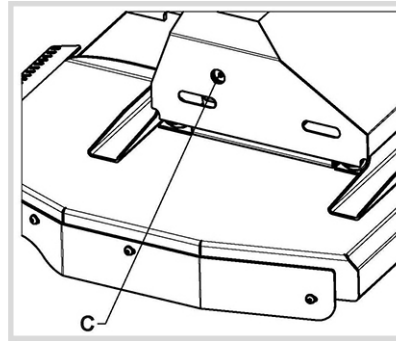
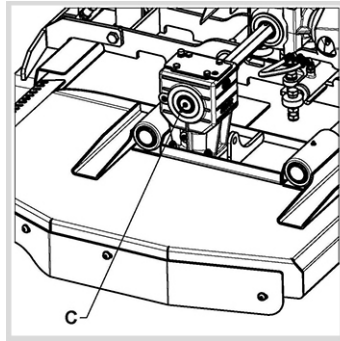
4.1.1 Hexagon shaft lubrication

To facilitate the hexagon shaft lubrication/greasing, the side plates of the gear covers feature specific lubrication holes (right picture below), through which the lubrication nipples (C) on the right and left hexagon shaft ends can be easily reached.

Lubrication should be performed as follows:

- Bring the device to its maximum working width (left picture below) so that the gears can be extended up to the hexagon shaft end.
- Inject grease into the corresponding lubrication nipple until it slightly leaks from the sides of the hexagon socket bushing of the gear box.
- The grease runs through the bore in the shaft directly into the cavity of the hexagon socket bushing of the gear box and is distributed on the hexagon shaft with each cutting width change.

Caution: Regularly, each working day, check the hexagon shaft for integrity and proper lubrication - remove dirt and dust build-up from the shaft.



4.2 Extraordinary Maintenance

For all parts subject to heating as tubes, it is advisable to wait a few minutes (or more, depending on the zones) for them to cool down, and this especially in maintenance operations and any other intervention.

It is advised to grease the machine at least every 12 months even if it is not used for a long period of time. Have it checked by an authorised " - ku@mechanic at least every two years.

For replacing spare parts, always use original spare parts. Even small incorrect details can lead to problems.



DANGER

Make absolutely sure that the following operations are carried out with the machine disconnected from the tractor.

4.2.1 Replacing the hexagonal bar

1.\
2. ...k
3. ...y
4. ...@
5.0
6. ...k

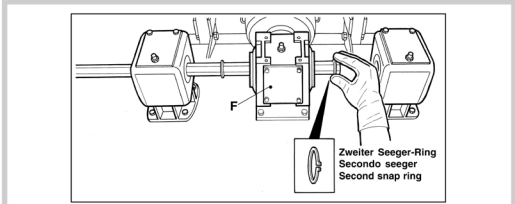
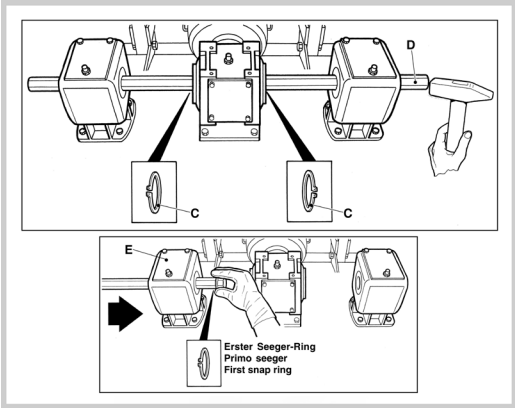
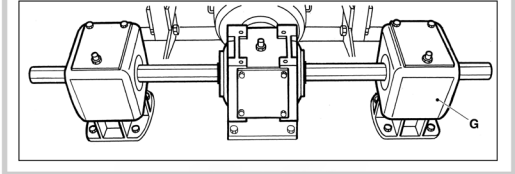
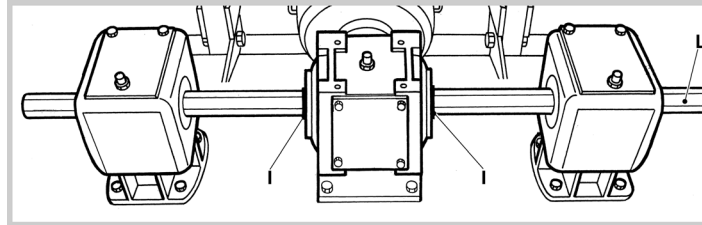


Abb./Fig. 2





In this phase, check to make sure the two bladeholders (H) are at 90° to one another; this can be done by bending down to the ground and looking through the front (Fig.5) or the rear opening; then insert the two snap rings in their seats (I).

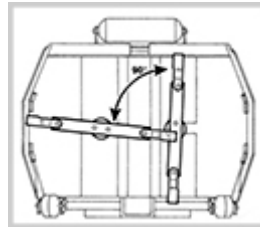


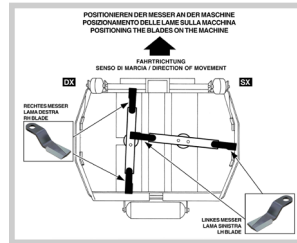
4.2.2 Replacing the blades



WARNING

The replacement of the cutting blades is only allowed by authorized mechanics and workshops!
Loss of cutting capacity means the machine has been used for many working hours, probably on difficult ground, and this also leads to play on the screws. When the blades are worn, do not sharpen and then refit them; replace the blades, checking the relative fixing bolts and replace those that are worn. Also check other components for wear (such as bushings, base plate (D), etc.).





IMPORTANT

Positioning of cutting blades:

It is advisable to check the screws on the machine periodically to make sure they are tightened; the frequency of this check depends on how intensely the machine is used by a " -ku@ authorised workshop!

5 Spare parts and troubleshooting

5.1 Spare parts

The " -ku@customer is obliged to purchase original " -ku@spare parts.



Do not hesitate to contact BERTI directly for any information!

5.2 Troubleshooting

PROBLEM	POSSIBLE CAUSES	REMEDY
One of the two bladeholders does not rotate.	<ul style="list-style-type: none">• Hexagonal bar (A) is broken.	<ul style="list-style-type: none">• Replace the hexagonal bar
The grass is not cut properly.	<ul style="list-style-type: none">• The blades do not cut.	<ul style="list-style-type: none">• Invert or change blades.
	<ul style="list-style-type: none">• Blades missing due to breakage.	<ul style="list-style-type: none">• Restore blades.
	<ul style="list-style-type: none">• The machine is too high above the ground.	<ul style="list-style-type: none">• Lower the machine by means of tie-rod or lower the two front wheels using the holes provided.
	<ul style="list-style-type: none">• Wet grass.	do not work
The machine emits vibrations	<ul style="list-style-type: none">• Blade missing or broken.	<ul style="list-style-type: none">• Refit the pair of blades.
	<ul style="list-style-type: none">• A blade is blocked.	<ul style="list-style-type: none">• Release the blade.



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