Instruction manual



PASTURELAND MAINTENANCE

HarroFlex 250-300
rigid

HarroFlex 600-750
hydraulically folding

As at: April 2020

GÜTTLER®

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EC Declaration of Conformity

Manufacturer: GÜTTLER® GmbH, Karl-Arnold-Straße 10, D-73230 Kirchheim unter Teck

Product: **HarroFlex**

We hereby declare that the above mentioned product complies with all of the relevant provisions, in particular the fundamental health and safety requirements set out in the Machinery Directive 2006/42/EC

To properly implement the Directive, the following standards were used:

EN ISO 12100 Safety of machinery
General principles for design - Risk assessment and risk reduction.

Person responsible for this document:
Managing Director
Hans Güttler

73230 Kirchheim unter Teck, 1. March, 2012

Technical changes and errors excepted! Illustrations not binding!

Safety regulations

Foreword

These instructions will help you in getting to know your machine and in using it optimally for its intended purpose.

Read through the instruction manual carefully before starting up the machine and observe all operating rules listed in the manual, including all working, safety and maintenance instructions. By doing so, you will avoid hazards, reduce repair costs and downtime, and increase the reliability and service life of your machine.

Every person who is going to work with or on the machine should read the instruction manual and pay attention to it. In particular, this concerns all activities during:

- Operation (including preparation, remedying of faults in the operating sequence and servicing)
- Maintenance (maintenance and inspection)
- Transportation

GÜTTLER® will not accept any liability for any damage or malfunctions resulting from failure to comply with the operating instructions.

The manual includes a replacement parts list and a machine registration form. Our sales representatives or distributors will instruct you in operation and servicing of your machine. Following this, the machine registration form must be completed and returned to GÜTTLER®. This confirms your formal acceptance of the machine. The warranty period begins on the date of delivery, irrespective of when the machine registration form is sent.

Illustrations and information on technical data, dimensions and weights in this instruction manual are subject to change.

Handling material defects

Although the greatest care is exercised during production and assembly of this machine, damage to the material or material defects can never be ruled out entirely. In the event that material damage or material defects arise on your machines, warranty claims must be submitted via your GÜTTLER® sales representative to GÜTTLER® in Kirchheim unter Teck. It is only possible to process claims which have been correctly completed and submitted during the first 4 weeks after the occurrence of the damage.

Repairs which are going to be made by third-party firms or which are expected to require more than 2 hours of repair time must be discussed with GÜTTLER® in advance.

In the case of repairs made under the warranty where a request is made for return of the old parts, these must be cleaned, emptied and returned to GÜTTLER® within 4 weeks, accompanied by a warranty claim and a precise description of the fault. If no request is made for return of the old parts, these parts must be kept for a further period of 12 weeks until a final decision is reached.

Original GÜTTLER® replacement parts and accessories are specially designed for this machine. Replacement parts and accessories that are not supplied by us have not been checked or approved by us. Under certain circumstances, the installation or use of non-GÜTTLER® products may therefore cause a change for the worse in the predetermined structural properties of the machine and therefore have a negative impact on the safety of people and the machine itself. Consequently, only original replacement parts should be used for any repairs (reference for evidence).

If replacement parts that have not been approved by GÜTTLER® are used, the warranty entitlement for the whole machine lapses. GÜTTLER® will not accept any liability for damage or malfunctions arising from the use of non-original replacement parts.

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Safety regulations

Intended use

The machine is constructed using the latest technologies and in accordance with the relevant recognised safety regulations. However, risks of injury for the user or other persons and impairment of the machine or other property may arise during use.

The machine is only to be operated when it is in a technically perfect condition, in line with the intended purpose, taking into consideration safety and risks and following the instruction manual. Faults or damage that may endanger the safety of people or the machine must be rectified immediately. Only persons who are familiar with the machine and who have been briefed on the dangers should use, maintain, repair or transport the machine.

The machine is designed for normal use for soil cultivation in the agricultural sector. Any other or additional use is contrary to the regulations.

GÜTTLER® will not accept any liability for damage or malfunctions resulting from the machine being used contrary to the regulations.

The relevant accident prevention regulations and the other generally recognised regulations pertaining to safety, occupational health and road traffic legislation must be observed.

Consequential damage

The machine has been manufactured by GÜTTLER® with the greatest care. Nevertheless, problems may still occur when it is used for the intended purpose, due to:

- External influences
- Incorrect or inappropriate rotational, working or travel speeds
- Incorrect installation or adjustment of the machine
- Failure to follow the instruction manual
- Lack of or improper maintenance and care
- Missing, worn or broken working tools

Therefore always check your machine before and during each use to ensure it is functioning properly and correctly adjusted.

Authorised users

Only persons who have been commissioned and briefed by the operator are permitted to work on the machine. The minimum age for users is 16 years. Users must be in possession of a valid driving license. Users are responsible for third parties within the working area.

The operator must:

- Make the instruction manual accessible to the user.
- Make sure that the user has read and understood the manual.

The instruction manual forms part of the machine.

Safety equipment

For operation and maintenance of the machine you require the following protective equipment:

- Tight-fitting clothing
- Protective gloves and goggles.
- Safety shoes

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Safety regulations

Operational safety

Read all safety instructions contained in this instruction manual and all warning labels attached to the machine. Keep the warning labels in a legible condition and replace all damaged or missing labels immediately.

The machine may only be used if all protective and safety equipment, such as removable protective equipment, is in place and functioning reliably.

Check nuts and screws regularly for tightness and tighten if necessary. Check tyre pressure regularly and/or before starting work.

In the case of malfunction, stop the machine immediately and secure it.

Accident prevention

In addition to the instruction manual, the accident prevention regulations of the agricultural employers' liability insurance associations must be observed!

Road traffic safety

When driving on public roads, tracks and in public areas, it is important to observe the relevant road traffic laws.

Observe the permitted transport widths and attach the lighting, warning and protective devices. If the outside edge of the implement is more than 40 cm away from the light-emitting surfaces of the tractor's marker lights and rear lights, it is necessary to install additional marker lights to the front and to the rear. If official license plates are covered by implements, the license plates must be repeated on the machine.

Observe the transport height.

Pay attention to the permitted axle loads, tyre carrying capacities and total weights. The front axle must be loaded with at least 20% of the tractor empty weight in order to maintain adequate steerability and braking.

The handling is influenced by implements. Pay particular attention when driving around corners, consider the large overhang and the centrifugal mass of the implement.

Clean the entire machine of soil that has been picked up before driving on the public road.

Riding on the machine is strictly forbidden.

Exemption for excess width

For machines with more than 3 m transport width a certificate of exemption is required in order to drive on public roads and tracks. The conditions of the exemption certificate must be strictly observed.

Prior to use

Before each use, always check that all the screw and plug connections are tight, for example:

- Attachment of the wheels and tyres
- Attachment of the hydraulic cylinders
- The pins, forks and locking screws
- The clamp connections
- The hitch on the tractor

Pay attention to the "floating" mount of the levelling bar!

During operation

- Check the area around the machine before start-up (children). Ensure that there is sufficient visibility.
- None of the prescribed and provided protective devices may be removed.
- No one is allowed within the swing range of hydraulically-operated parts.
- Use ladders and platforms only while the machine is at a standstill. Riding on the machine during operation is strictly forbidden!

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Safety regulations

Hydraulics

The hydraulic system is under high pressure. Any damage must be rectified without delay.

Oil spurting out may lead to injuries and fires. If someone is injured, seek medical assistance immediately!

- Check all hydraulic lines for damage before first use
- Check all hydraulic lines at least once a year
- After 6 years, all hydraulic hoses must be replaced

Coupling and uncoupling

While connecting and disconnecting the machine from the hitch of the tractor there is a risk of injury. It is forbidden to stand in the area between the tractor and the machine during coupling and uncoupling!

Coupling

- Secure the machine to prevent it from rolling away.
- Make certain that the retaining latches on the folding mechanism are closed and secured against being opened unintentionally.
- Pay special attention when reversing the tractor. Standing between the tractor and the machine is forbidden.
- First attach the lower links, then the top link, and close the locks.
- Connect the machine's lighting system with the tractor's on-board electrics and check that the lights operate correctly.
- Connect the hydraulic lines.
- Lift up the machine and put the stands all the way up. Secure the stands.
- Check that the transport lock is functioning correctly. Engage the transport lock and secure it.

Uncoupling

- The machine may only be placed on flat and solid ground. Before uncoupling the attached machine, place it on the ground.
- Pull out the stands and lock them in place.
- Secure the machine to prevent it from rolling away.
- Check that the transport lock is functioning correctly. Engage the transport lock and secure it. Disconnect the hydraulic lines.
- Disconnect the plug for the lights.
- Firstly unlock and uncouple the top link, and after that the lower links.

Hydraulic connection

- The hydraulic hoses must not be connected to the tractor until the hydraulic system has been depressurised in the tractor and in the machine.
- The hydraulic system is under high pressure. Inspect all pipes, hoses and screw fittings regularly for damage and leaks.
- Repair any damage without delay. Oil spurting out may lead to injuries and fires.
- If someone is injured, seek medical assistance immediately.
- To avoid accidents caused by unauthorised persons or third parties (children, co-drivers) who may activate the hydraulics, the control units on the tractor must be secured or locked when they are not in use or in the transport position.

Operation of the hydraulic system required particular care. Incorrect operation may cause injuries to people and damage to the machine!

Climbing up on the machine

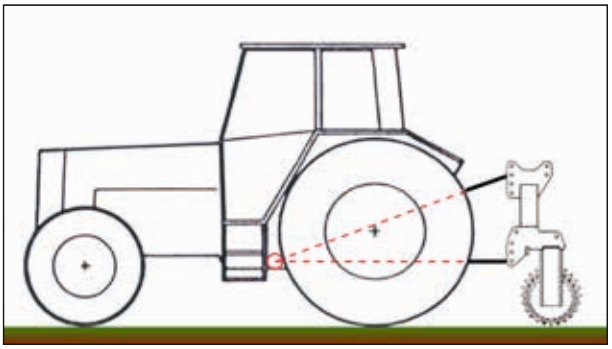
When climbing up on the machine, do not step on the tyres, the roller or other rotating parts. These could spin and you could fall and be very seriously injured.

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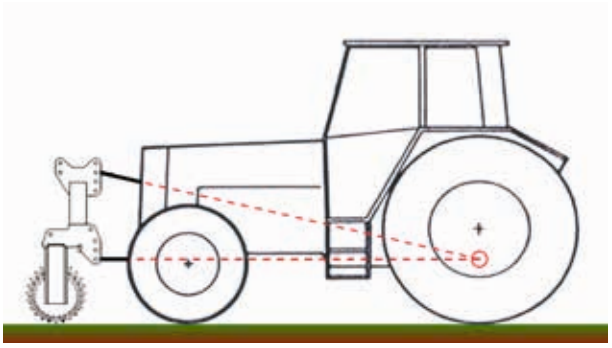
General information

Three-point kinematics

When coupling machines with a three-point hitch, you need to pay attention to the ideal pull point, the imaginary intersection point of the top link and the lower links. When the machine is in working position, the lower links must be horizontal and the top link, in the case of rear mounting, must rise up 20 to 25 cm towards the machine, or 5 to 10 cm in the case of front mounting. This means that the ideal pull point is under the rear axle.



Rear mounting in work position



Front mounting in working position

This guarantees that no tractor weight is transferred to the machine and avoids damage caused by overloading. Thus the tractor can work with full traction and minimum fuel consumption, while the steerability is maintained.

Maintenance and servicing

For maintenance and servicing work, place the machine on solid, level ground and secure it to prevent it rolling away or falling over.

Inspect the machine regularly for abrasion marks and damage, and rectify any defects that are found without delay.

Check the lighting system regularly so as not to endanger other road uses through negligence. Before working on the electrical system, the machine must be isolated from the power supply.

After cleaning the machine, check each hydraulic line for leaks and loose connections and also lubricate all the lubrication points so that no rust can form in the moving parts.

Re-tighten any screw connections that have been loosened during the servicing and maintenance work.

Do not clean new machines with a steam cleaner or high-pressure cleaner. The paintwork needs around 3 months to harden and may be damaged before this point.

Lubrication

The ball bearings and folding hinges must be greased every 10 operating hours with high pressure grease. In order to enable this, grease nipples on the ball bearings are accessible from below.

All joints and moving parts must be oiled regularly.

Re-tightening of screw connections

All screw connections must be controlled and if necessary re-tightened after every use of the machine, at the latest after 50 operating hours.

After the season

When the season comes to an end, clean the machine completely and thoroughly, and then grease all the lubrication points.

Carry out a full inspection of the machine for wear and damage. Replace missing or worn parts immediately and repair damage to the paintwork without delay.

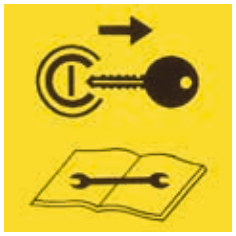
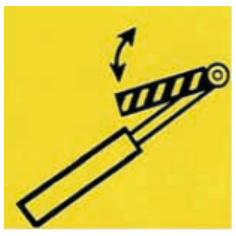
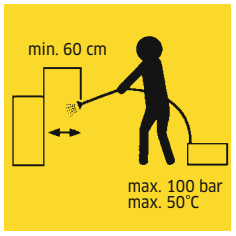
Place the machine on dry, level, solid ground and protect it from the weather. Secure the machine to prevent it rolling away or falling over.

Protect the machine against rust, particularly the piston rods of the hydraulic cylinders. Use only biological oils for spraying, such as rapeseed oil.

Do not spray oil or corrosion inhibitors on plastic or rubber parts. These parts may become brittle and break.

Technical changes and errors excepted! Illustrations not binding!

Safety symbols

Symbol	Meaning	Symbol	Meaning
	Turn off the tractor before carrying out any repairs or maintenance. Before operating the machine, read and take account of the instruction manual and safety instructions!		During operation and while coupling and uncoupling the tractor, no one is permitted in the area between the tractor and the machine!
	Cutting tools! Caution: risk of cuts!!		Pay attention to leaks: hydraulic hoses are under high pressure!
	Caution: risk of crushing! Never reach into the crushing danger area while parts may move there!		Marking of lubrication points.
	Loading hook. Clip the lifting device for loading work here!		It is forbidden to remain within the swing range of the machine during operation!
	Persons are only permitted within the danger zone if a lifting cylinder safety device is engaged.		It is forbidden to remain in the danger zone of the machine during operation.
	All screw connections must be controlled every 50 operating hours and if necessary re-tightened.		Important! Do not clean this implement with a Pressure Washer during the first 3 months!

Damaged or missing stickers must be replaced immediately!

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Operation of the machine

Operation of the machine

The HarroFlex harrow is ideally suited to the modern maintenance of pastureland. It combs through the turf with its tines, not only increasing yields and nutritional value, but also reducing weed density, as it prevents the development of holes in which weeds can grow.

Attachments can be used to level out molehills and cattle manure, and the harrow tines ensure that the organic material is distributed. In addition, they aerate the turf, break up old thatch and create holes through comb weeding, which can be overseeded with useful crops.

Unfolding the machine



1. Fully raise the machine.
2. Remove the securing pins from the catch hooks and pull the catch hooks upwards. Secure the catch hooks using the securing pins (see image).
3. Fully unfold the cantilevers with the help of the tractor's hydraulic system.

Folding the machine

1. Fully raise the machine.
2. Fully fold the cantilevers with the help of the tractor's hydraulic system.
3. Remove the securing pins from the catch hooks and push the catch hooks downwards. Secure the catch hooks. This will prevent the cantilevers from unfolding unexpectedly.

Hydraulic connection

Connect the (blue) hydraulic lines of the folding mechanism to the tractor's hydraulic system.

To enable a Master or Mayor towed roller to be mounted, the HarroFlex harrow has a separate hydraulic line for the roller's chassis (red hydraulic lines on the roller). This means that the hydraulics of the roller can be connected directly to the harrow rather than to the tractor.

Mounting a towed roller

It is possible to mount a Master or Mayor towed roller to the HarroFlex harrow.



To do this, attach the lower link connector of the towed roller to the HarroFlex's coupling frame.

Connect the hydraulic folding mechanism of the towed roller (blue) to the HarroFlex's hydraulic folding mechanism.

Connect the chassis hydraulics of the towed roller to the connections provided for this purpose on the HarroFlex. Ensure that these hydraulic connections are connected to the tractor.

Caution:
You must, under all circumstances, ensure that the hydraulic lines for the roller's folding mechanism (blue) are connected to the HarroFlex's folding mechanism (blue). Incorrect connections can result in damage to the machine!

Depth wheels

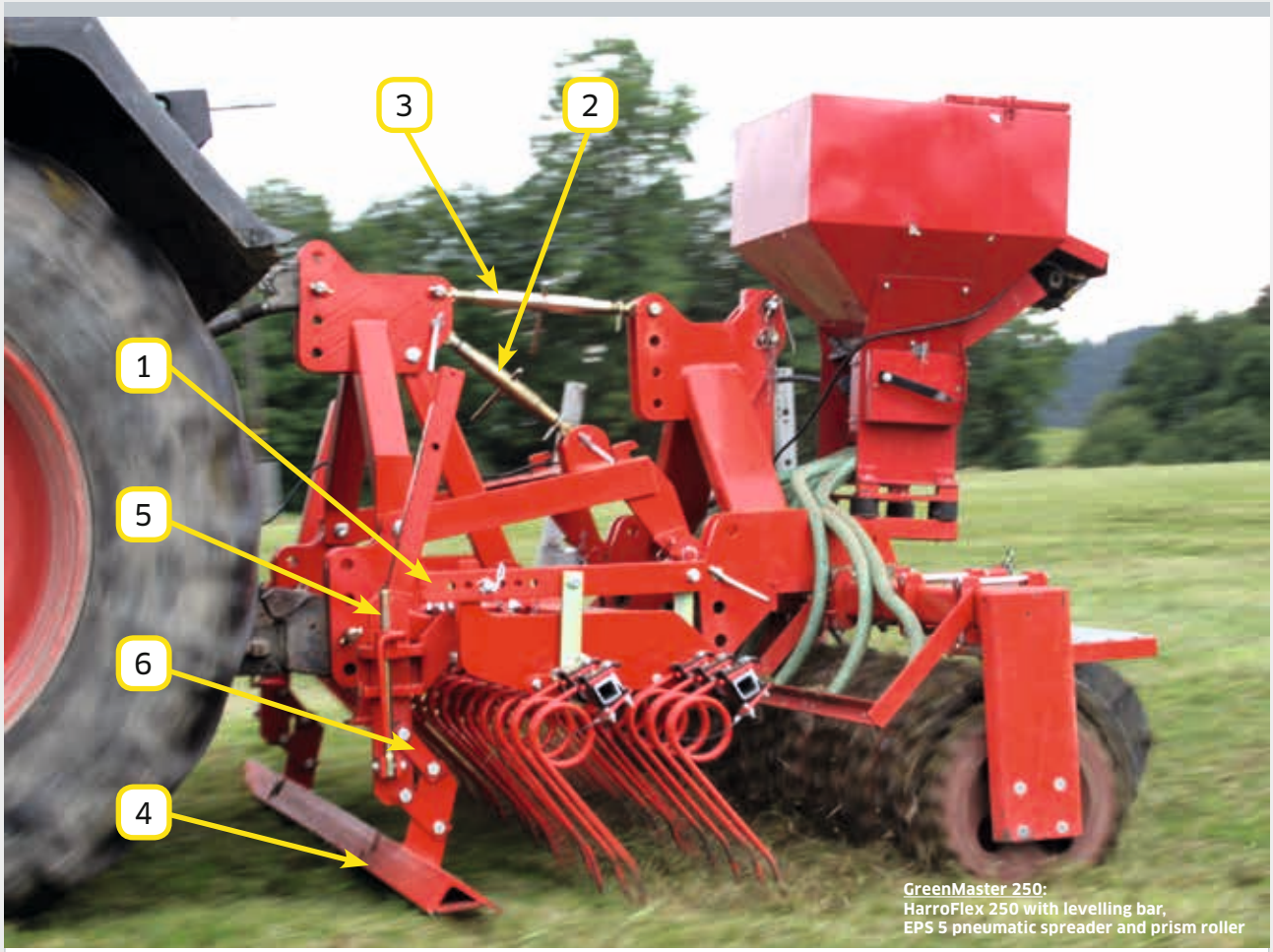
The depth wheels provide depth control across the entire working width of the HarroFlex and are available as accessories for both front (self-tracking depth wheels) and rear (rigid or self-tracking depth wheels) attachment.

For more information, please contact your distribution partner or contact Güttler® directly in Kirchheim unter Teck.

Caution:
Self-tracking depth wheels can only be used in solo operation mode (without rollers) when attached to the rear end linkage. When combined with a towed roller (GreenMaster System), rigid tracking wheels must be used!

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Adjusting the machine (with levelling bar)



GreenMaster 250:
HarroFlex 250 with levelling bar,
EPS 5 pneumatic spreader and prism roller

1. Adjusting tine angels:

   Set the angle of the tines by shifting the adjustment lever towards the rear and lock it in place behind the vertical link.
   Lever towards rear = steeper tine angel = more aggressive

2. Adjusting working depth: HarroFlex only

   Adjust the working depth of the tines using your tractor's hydraulic control.

   Adjusting working depth: For GreenMaster (combined with sowing device and/or prism roller)

   Set the working depth of the tines by deploying or retracting the upper link.
   Retracted upper link = deeper tines = more aggressive

3. Headstock of the prism roller (GreenMaster only)

   Set the upper link in such a way that the headstock of the prism roller stands upright.

   Caution:
   The tines should never be allowed to bear the full weight of the roller while it is being lifted onto the coupling frame. Harrow tines broken as a result of overloading are not covered by the guarantee!

4. Levelling bar

   Base setting: floating around 1-2 cm above the turf. The levelling bar should only be in contact with the ground where molehills are present!

5. Levelling bar adjusting spindle

   Once the levelling bar has been adjusted, fully tighten the side locking screw.

6. Parallelogram link

   Thanks to its "floating" parallelogram, which also acts as a predetermined breaking point, the levelling bar is able to swing upwards in the event of ground contact.

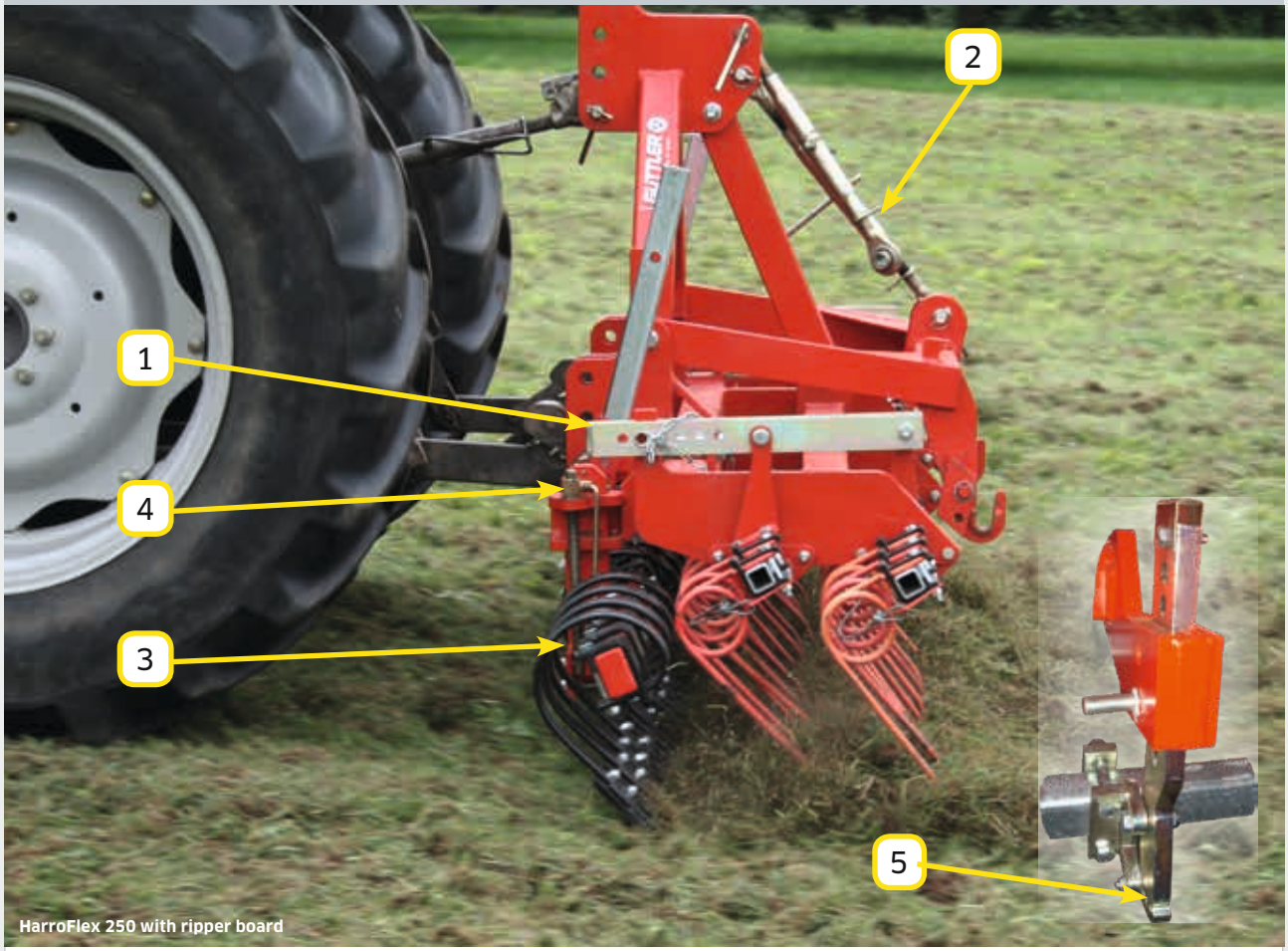
   For this reason, the upper parallelogram link should always be doubled, i.e. there should always be two for each adjusting spindle on the top left and top right respectively, and one on each side at the bottom.

Caution:
The harrow tines are in contact with the ground while working. For this reason, the machine must always be raised prior to reversing or rolling backwards.

When reversing with the machine lowered, the harrow tines may dig into the ground and break!

Technical changes and errors excepted! Illustrations not binding!

Adjusting the machine (with ripper board)



HarroFlex 250 with ripper board

1. Adjusting tine angels:

   Set the angle of the tines by shifting the adjustment lever towards the rear and lock it in place behind the vertical link.
   Lever towards rear = steeper tine angel = more aggressive

2. Adjusting working depth: HarroFlex only

   Adjust the working depth of the tines using your tractor's hydraulic control.

   Adjusting working depth: For GreenMaster (combined with sowing device and/or prism roller)

   Set the working depth of the tines by deploying or retracting the upper link.
   Retracted upper link = deeper tines = more aggressive

3. Ripper board

   Use the adjusting spindle to set the desired working depth for the ripper board.

4. Ripper board adjusting spindle

   Once the levelling bar has been adjusted, fully tighten the side locking screw.

5. Adjusting ripper board angle:

   The ripper board can be adjusted to a number of predetermined angles. To do this, loosen the screw at the bottom of the ripper board holder (left and right) and select the desired angle.

Caution:
Both the harrow tines and the ripper board tines are in contact with the ground while working. For this reason, the machine must always be raised prior to reversing or rolling backwards.

When reversing with the machine lowered, the tines may dig into the ground and break.

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Long-term efficiency with maximum performance.

GÜTTLER®



Instruction manual:

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HarroFlex 600-750 hydraulically folding



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GÜTTLER GmbH • D-73230 Kirchheim/Teck
www.guettler.de • service@guettler.de