Instruction manual



CULTIVATED LAND ROLLER

Matador 420-610

Self-cleaning roller ø 45/50 cm with hydraulic folding

As at: August 2015

GÜTTLER®
Leading in Soil Structure

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EC Declaration of Conformity

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

Product: **Matador 420-610**

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:

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

Person responsible for this document:

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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General information

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!

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!

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General information

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

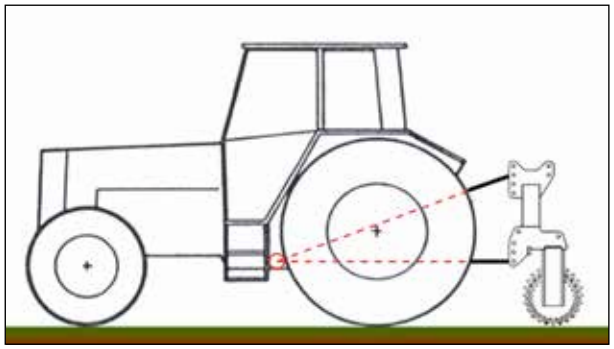
When climbing up on the machine, do not step on the tyres, the roller or other rotating parts. These could spin and you could fall and be very seriously injured.

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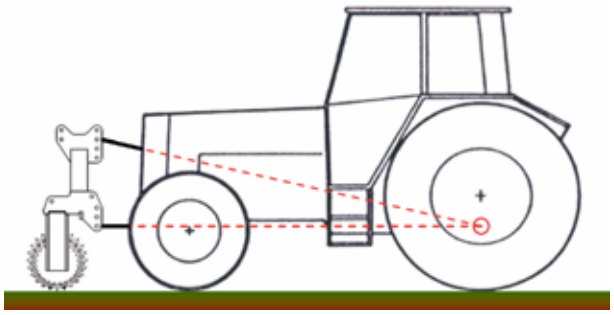
General information

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.

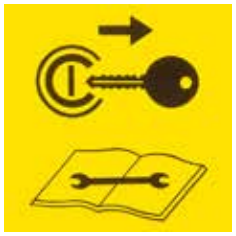
Place the machine on dry, level, solid ground and protect it from the weather. Secure the machine to prevent it rolling away or falling over.

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.

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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 and if necessary re-tightened after every use of the machine, at the latest after 50 operating hours.		

Damaged or missing stickers must be replaced immediately!

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Operation of the machine

Function of the Güttler® prism star

The prism star consists of two different sized star halves which work together. In the ground both halves work with the same pressure and on the same level side by side. While rolling the bigger prism star goes up for 5 cm and the little prism star turns faster. Thus the unsurpassed self-cleaning process is achieved.

Selection effect

- solid underground - friable an the top
- fine earth below - best embedding of the seeds
- large soil particles on the top - protection against capping

The prism cone ends engage in the ground and thereby they cause the well known "selection effect".

Re-compaction

The prism cone ends send out the pressure in all directions, forward and backward, left and right, and that causes a great re-compaction with a high effect of depth and the seeds will get a good connection to the capillaries.

Stimulate the tillering

During the rolling of grassland and winter crops in the spring leaf and nodes of the plants ate intensively injured and the tillering is extremely stimulated because wounded rhizomes are sprouting. At the same time frozen crops are pressed on and the connection to the soil is secured.

Breaking crusts

In case of crusting after heavy rain, flood or in spring the prism roller can break them and creates the desired fine crumbly surface in existing cultures or seeding.

Through that the seedling is establishing itself, precipitation moves faster into the soil and the gas exchanges starts.

Massages crops

The prism cone ends are massaging the grassland and catch crops perfectly into the soil. Thus guarantees a very good soil contact.

Also under sown crops in existing cultures can be seeded.

Fighting against the corn borer

The corn stubbles are getting steamrolled without a previous cultivation after the harvest. The prism roller breaks and crushes the corn stubbles with 305 cone ends per square meter into the roots and the stems are splicing.

Because of the intense violations the soil-based bacteria reach into the corn stubbles and they are decomposing them. The corn borer has no chance to survive.

Because of the fast decomposition of corn stubble the pressure of fusarium is in the succeeding crop important lower.

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Retensioning the prism stars

During casting, which is part of the manufacturing process, prism stars develop small ridges on the lateral faces of the points of the stars, which are ground down very quickly on new roller stars. This leads to excessive play on the axle and lateral tilting, which increases wear on the roller stars.

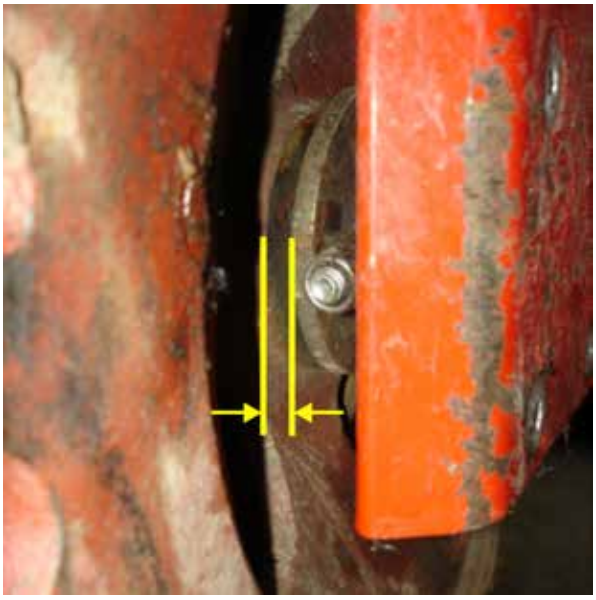
In order to reduce the lateral play of the roller stars, and therefore the amount of wear, to a minimum, the stars must be retensioned on the axle as soon as the lateral play exceeds 8 mm.

To do this, proceed as follows:

1. Raise the roller and push all of the roller stars to one side.



2. Check the gap between the last roller star and the limiting disc.



If the distance is greater than 8 mm, you should insert a shim.

3. Cut the shim in half.



<u>for prism rollers with diameter of Ø 45/50 cm:</u>
Order No. 7575 6000
(50 mm diameter axle)

4. Place the two halves of the shim into the gap and weld these to the limiting disc.



5. Check regularly for lateral play.

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Working with the machine

Folding the machine

The machine's cantilevers have two catch hooks to secure them against unexpected lowering in the event of a loss of pressure.



The catch hooks are operated automatically during folding of the machine.

Unfolding the machine

1. Fully raise the machine.
2. Fully fold the cantilevers. Only then will the catch hooks be released, meaning that the cantilevers can be unfolded.
3. Fully unfold the cantilevers.

Folding the machine

1. Fully raise the machine.
2. Fully fold the cantilevers and ensure that the catch hooks are engaged.

Caution:

Before the cantilevers can be unfolded, they must first be folded fully in order to release the catch hooks. If they are not released, the catch hooks will be unable to open, which can result in damage to the machine during unfolding.

Setting down the machine

When setting the machine down, the stands provided must be used to prevent the machine from tipping over.



1. Fully raise the machine.
2. Fully unfold the cantilevers.
3. Remove all four stands from their transport brackets and insert these sideways into the crossbars. Secure the stands using the securing pins.
4. Slowly place the machine on the ground.

Transporting the machine

1. Fully raise the machine.
2. Remove all four stands from the crossbars and insert these sideways into their transport brackets. Secure the stands using the securing pins.
3. Fully fold the cantilevers and ensure that the catch hooks are engaged

Technical data

Type	Working width	Frame width	Transport width	Weight
Matador 420	4,18 m	4,28 m	2,50 m	1.700 kg
Matador 460	4,63 m	4,72 m	2,50 m	1.880 kg
Matador 510	5,06 m	5,16 m	2,50 m	2.050 kg
Matador 560	5,63 m	6,29 m	2,50 m	2.230 kg
Matador 610	6,18 m		2,50 m	2.400 kg
Transport widths of over 3 metres require a special permit to travel on public roads and highways!				

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Long-term efficiency with maximum performance.

GÜTTLER®











Instruction manual: Matador 420-610

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