

Niko
more than solutions

Rapid

Operating instructions

RoboFlail One



Read through the operating instructions before commissioning!!

Operating Instructions Version 2.81
(Sept. 2021)

Device no.: _____

Engine no.: _____

Pump no.: _____

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1. Foreword

Dear Customer,

We thank you for your trust, which you have shown us by purchasing a NIKO product.

Together with our cooperation partner Rapid Technic GmbH, we have made every effort to provide you with a powerful and reliable product.

We ask you to read these operating instructions carefully before operating the machine and to observe the instructions. The operating instructions explain the operation in detail and give you valuable information on commissioning, maintenance and care.

You are sure that warranty claims cannot be accepted for damages resulting from operating errors or improper use.

Technical improvements:

We strive to continuously improve NIKO products. Therefore, we reserve the right to make any improvements or changes we deem necessary to our equipment without prior notice, but without committing ourselves to transferring such improvements or changes to machines already sold.

We would be happy to answer any further questions and hope you enjoy your new NIKO product.

Best regards,



NIKO Maschinen- & Fahrzeugbau GmbH
Dieter Serr, Managing Director

1.1 General warranty terms

All RoboFlail devices that are delivered by Rapid have a guarantee for material defects and processing errors within the first 12 months after delivery of the device to the original purchaser.

Therefore, NIKO provides a 12-month warranty if the devices are not used for more than 300 working hours a year and if the following conditions are met:

The warranty begins on the date of purchase.

All spare parts supplied by Rapid have a guarantee for material defects or processing errors within the first 12 months after delivery to the original purchaser.

This warranty does not apply if parts of the goods have been overused improperly or negligently, the machine has been independently converted or modified or if genuine NIKO spare parts have not been used during installation.

Likewise, any claims for replacement caused by objects (e.g. stones, iron, other material than vegetation) errors, or errors due to lack of maintenance, use of false lubricants that were used too long or due to missed maintenance work will be rejected.

The warranty service is provided exclusively by authorised workshops.

Warranty claims must be asserted at the factory within 30 days of the occurrence of the damage at the latest. Indicate date of purchase and machine number using our warranty application forms.

Repairs for which the warranty is to be provided may only be carried out by the authorised workshop after consultation with the company Rapid or company Niko, please inform your dealer.

The guarantee on hoses is limited to 12 months and excludes hoses damaged by external/exterior damage.

Machines must be repaired immediately after a fault has occurred.

If you continue working with the machine after a fault has occurred, this can lead to even more defective parts and damage to the machine and have an impact on the safety of people and the machine, for which Niko GmbH accepts no responsibility.

Rapid reserves the right to either repair or replace a defective part. In the case of a warranty, Rapid will only bear the costs for the defective part, but not the resulting costs such as travel costs of a technician, transport & recovery costs, loss of wages, periods out of operation, environmental damage, etc.

Transport damage is not a factory fault and therefore does not fall under the manufacturer's warranty obligation.

Rubber tracks are wearing parts and are not covered by the warranty conditions.

If you wish to submit a warranty claim, it should be sent directly to Rapid Technic GmbH. After the warranty application has been received and checked, the affected machine part can be requested from you for inspection by Rapid or the supplier.

The submission of an application is not a guarantee for a replacement or repair. This can only be decided upon after examination of the application and inspection of the defective part by the company Rapid or by the supplier and their warranty conditions.

Any decision made by Rapid regarding warranty is final.

All repairs or service work must be carried out in accordance with the operating and maintenance instructions. If repairs occur that are not in the manual Rapid must be contacted.

In case of delayed interventions or incorrect operation, the company Rapid does not assume any responsibility.

In addition, Rapid does not assume any warranty services if untrained or unauthorised personnel cause damage to the machine.

Any error must be reported to an authorised RoboFlail dealer as soon as it occurs. If the machine is used after a fault has occurred, further components can be damaged, for which Rapid does not assume any liability.



Please note!

The warranty protection expires as soon as non-genuine components are installed or used. Non-genuine parts can seriously affect both the safety of the machine and the operator. Niko GmbH accepts no liability for any resulting machine failures or personal injury caused by non-genuine parts.

1.2 Liability:

Niko GmbH and Rapid do not accept any liability in the event of accidents in which persons or material damage have occurred, which have been caused by the following circumstances:

- failure to comply with the standards described in the operating and maintenance instructions.
- behaviour prohibited by law and the operating and maintenance instructions.
- if self-mounted components that have not been approved by Niko GmbH and Rapid lead to an accident.
- in the event of exceptional events (natural disasters), even when operating the machine correctly.
- If a technical defect leads to an accident, the owner must prove that the part was defective before the accident.

1.3 Information about the device:

The type plate of the machine is located on the cover of the drive engine (battery side).

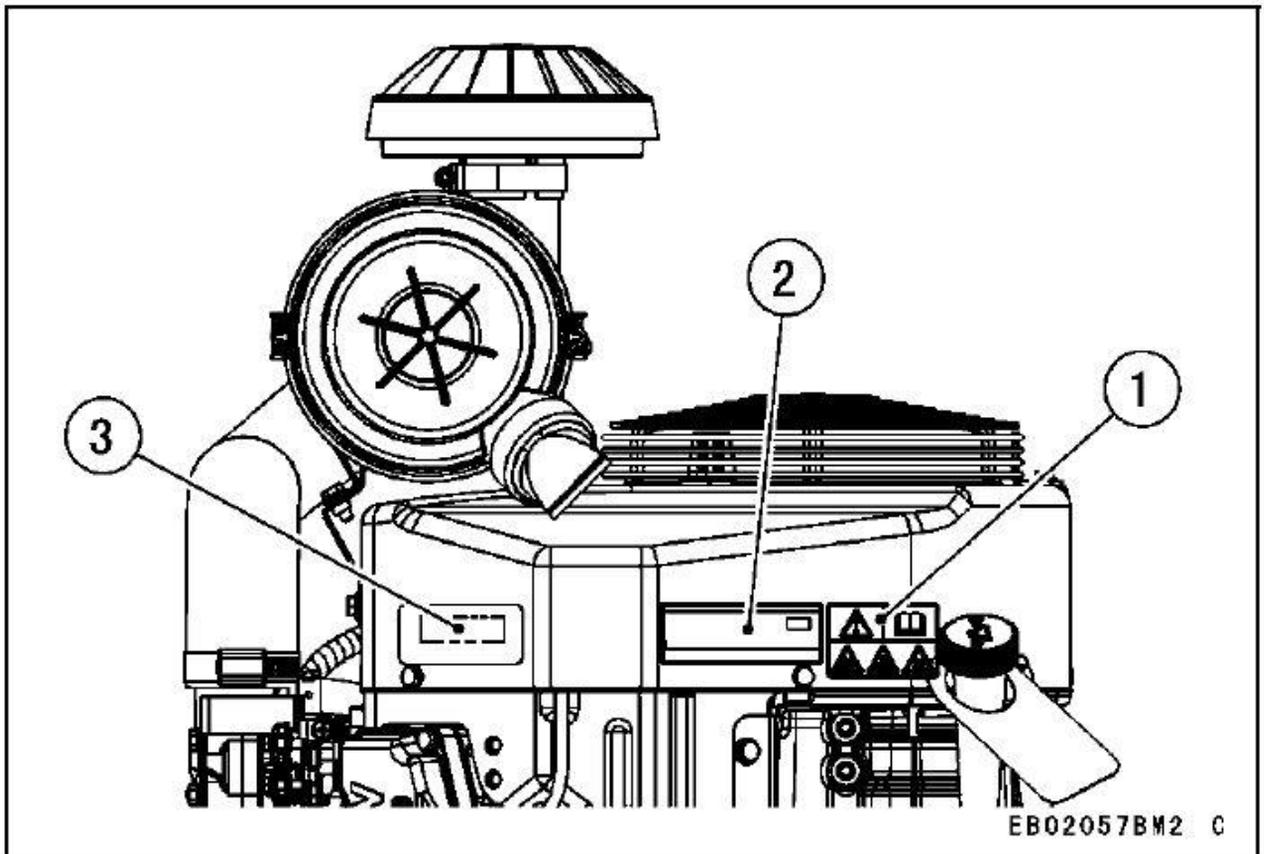


Important:

When ordering spare parts or if there are any questions about the unit, please note the unit type + manufacturer number as well as the operational hours.



1.4 Information about the engine:



1. **Warning labels**
2. **Engine type plate**
3. **Engine serial number**

The information on the serial number plate can be used to distinguish the engine from other engines of the same model.

You will need the engine serial number to order engine-related spare parts.

1.5 Operational hour counter (MOTO TIMER)

The operational hour counter installed on the RoboFlail One gives you information about the machine's running time.

The operational hour counter helps you to observe the maintenance intervals and can give you information about operating times for rental equipment.



Function:

- Permanent display of the entire operational hours – cannot be reset.
- Engine speed
- Display area: 0.1 – 99.9999 h
- Resolution: 1/10h=6min
- Integrated battery (3V-Li-MnO₂), Service life approx. 8 years. Battery cannot be replaced.



2. Area of application of the machine:

The RoboFlail is an equipment designed for professional personnel and intended primarily for tillage, cutting natural materials such as branches, undergrowth and grass. Any other use is improper and the manufacturer excludes any liability for possible damage to persons, property or the machine that may result from it. The equipment is suitable for machine cutting at a speed of 4-5 km/h and depends on the soil conditions which is being worked upon and the type and condition of the material (length, wet or dry, density, etc.). The RoboFlail was developed for use in the care of the slopes (steep slopes). The machine is normally used during the day; if in exceptional cases it is necessary to use it at night or in conditions with limited visibility, it must be used in conjunction with an auxiliary lighting system. Operate in daylight or in good artificial lighting, which ensures a minimum visibility of 100 m.

This equipment may only be used for the usual agricultural, forestry and municipal cutting operations as well as for extensive landscape maintenance.

Any use beyond this is not intended and the manufacturer is not liable for any damage resulting from it. The intended use also includes compliance with the safety regulations of the manufacturers and marketing providers. Installing/removing, commissioning, operating and maintenance conditions!

The operator of the RoboFlail models must have attended a driver training course from Rapid or a dealer. If the future driver of the RoboFlail has not done so, all claims will become invalid.

2.1 Categorically avoid the following Types of use:

In any case, the following applications must be avoided under all circumstances:

Use of the machine by unauthorised or untrained personnel or by persons under 18 years of age.

Use of the machine to lift and move various objects.

- The machine should not be used on loose stones, glass, metal pieces or other surfaces contaminated with foreign bodies that could be thrown into the air by the blades/knives of the mowing units or damage the mowing units.
- Switching on the machine if the physical or chemical properties are classified as dangerous (e.g. highly flammable, explosive, toxic substances, etc.)



Hazard warning:

If the machine is used incorrectly, there is a risk of tipping or failure of the same, which can lead to a danger for the operator due to injury or death.

2.2 Operation

Passenger transport, Passenger, Operating personnel:

Do not carry people on board.

Driving mode:

The speed level must always be adjusted to the ambient conditions and the attachments.

When driving round bends with trailed or mounted equipments, take into consideration the wide protrusion and the dynamic forces of the equipment.

Attachments

Do not switch on the equipment/attachment on elevated vegetation (earth, grass, etc.). Only switch the attachment on outside of the mowing material to ensure a free start of the mulcher.

Only secure the devices with the prescribed devices.

Do not operate the track unless all guards are in place and in the protective position.



Only Rapid/NIKO attachments may be used, NIKO does not assume any liability for third-party installations.

Remote control

The RoboFlail control is designed in such a way that the control is clear when you are standing behind the machine.

With the control lever right/left, the RoboFlail moves to the right/left.

Please remember that when you stand in front of the RoboFlail, the control is reversed! (right and left are reversed!)

Operator workstations

The operator's workstation of the RoboFlail is operated exclusively via the remote control.

Please observe the information on the working and danger area described in section 10.2!

Before commissioning, ensure that the machine is in a safe position and that eye contact with the machine is ensured at all times.

Danger:



Do not use drugs or alcohol before or during operation of the machine.

The use of alcohol or drugs may impair your ability to concentrate and coordinate, which may affect the safe use of the device.

When taking medication, the authorisation to operate the device must be clarified with the doctor.

3.0. Safety information

3.1. General safety information

The following information applies for your safety. Follow all the instructions and always keep these documents in direct access for all operators! If you do not understand any information contained in this safety data sheet or the product-specific assembly or operating instructions, please contact your seller or contact Rapid directly!

3.2 Warning and information signs

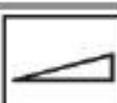
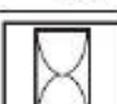
The warning and information signs attached to the device provide important information for safe operation. Make sure that the signs are not removed and that they are always easy to read. If necessary, signs must be replaced!

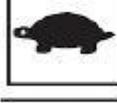
The attention is for your safety!

	<p>Read the operating instructions and warnings. Read and observe the operating instructions and warnings before operating the machine. The operating instructions explain the operation in detail and provide valuable information for handling, maintenance and care.</p>
	<p>Before cleaning, maintenance and repair work, switch off the engine.</p>
	<p>Maintain sufficient distance during operation to the mulching blade.</p>

	<p>Do not touch machine parts unless they have come to a complete standstill.</p>
	<p>Danger from moving parts when engine is running keep a safe distance.</p>
	<p>Never open or remove protective devices while the engine is running.</p>
	<p>Before parking, secure the machine with a chock to prevent unintentional rolling away.</p>
	<p>Keep enough distance from hot surfaces.</p>

	Measures to avoid danger
	Passenger transport prohibited
	Wear head protection
	Wear ear protection
	Wear safety shoes.
	Wear protective gloves
	Wear tight-fitting clothing
	Wear face protection

	Parking brake
	On/Start
	Off/Stop
	Risk of falling
	Fast
	Infinitely adjustable
	Pinch point
	Hours counter
	Discharge side Danger to people present Objects thrown Around.

	Gearbox
	Rotating blades
	Spring tension of V-belt tension roller
	Oil
	Danger due to flying objects
	Slow
	Mower blades
	Mower blades Switching on
	Mower blades Switching off
	CE symbol

4.0 General information on maintenance and care:

To avoid machine damage or life-threatening injury when servicing the machine, the following points must be observed:

- All work steps for the maintenance of the machine must be carried out in the specific order.
- First, secure the area for the maintenance work over a wide area.
- Switch off all power sources and secure the power sources against unintended re-switching.
- Depressurise all pressure units.
- Use only the specified operating materials.
- Use only genuine spare parts, which are listed in our spare parts lists.

Many incidents of damage and accidents are caused by maintenance errors, such as:

- Lack of oil, grease and frost protection in the device
- Lack of cleaning
- Emergency stop, function stop not checked daily
- Wear of the hydraulic system (damaged hoses, loose fittings, etc.)
- Carry out the maintenance work precisely for your own safety.
- Never delay repair work.
- Only transfer the repair work to specialised or authorised personnel.
- Always check all safety standards, even if you know all the elements and manoeuvres very well.

- Before starting work, check that all movements, the stop and the protective elements work and are not impaired in their function.
- Keep hands, feet, clothes, jewellery and long hair away from all moving parts to prevent them from being seized.
- Never leave a running machine unattended. Always switch off the blades of the mowing units, stop the RoboFlail engine.
- It is easy to lose control on slopes, resulting in accidents caused by tipping over which can cause serious injury or death. Operation on slopes requires additional attention!!
- Watch out for traffic when working near roads or on at road junctions. Stop the attachment before crossing roads or pavements.
- **ATTENTION:** If you bump against an object or if an abnormal vibration occurs, stop the machine and inspect it. Perform repairs before operating the machine.
- If you encounter a foreign object, stop and inspect the machine. If necessary, perform a repair before continuing.
- When using, especially in harsh weather conditions such as strong wind, carefully select your location to avoid exposure to fumes, dust or cut grass.
- Do not use the machine when it is hidden (hills, buildings, long grass, etc.). Complete visual contact with the device must always be ensured.

4.1 Running-in and maintenance of the machine in the first 50 hours

Every machine that leaves the Niko GmbH plant is checked again in a categorical manner before it is delivered. Similar to other motorised vehicles, the RoboFlail must be used carefully during the first 50 hours to ensure a good running-in of the various components.

If the machine is subjected to excessive work load during the first phase of use, its maximum performance may be impaired at an early stage and may therefore reduce or impair its later functionality.

Please note the following points:

- After starting, run the engine at low engine speed for approximately 5 minutes
- Avoid fully breaking the power limit in the first 50 hours
- Also avoid sudden acceleration of the machine and abrupt deceleration of the machine.

In addition, after the first 50 hours of operation, perform the following maintenance operations:

- Change filter (engine)
- Change primary fuel filter
- Change engine oil
- Check all hoses and their connections and tighten if necessary
- Check rubber tracks several times in the first few hours and tighten
- Check screw connections and tighten if necessary

Further maintenance intervals can be found in the attached interval table!!

4.2 Maintenance intervals – Engine

Tabelle für regelmäßige Wartung

⚠️ ACHTUNG									
Zur Wartung immer die Stecker von den Zündkerzen abnehmen, um ein ungewolltes Starten zu vermeiden.									

ANMERKUNG

○ Die Wartungsintervalle können als Richtwerte herangezogen werden. Je nach Einsatzbedingungen können Wartungsarbeiten in kürzeren Abständen durchgeführt werden.

- : Bei staubigen Bedingungen öfter warten.
- K: Vom Kawasaki-Vertragshändler zu warten.

WARTUNG	INTERVALL								
	Täglich	Nach ersten 8 Stdn.	Alle 25 Stdn.	Alle 50 Stdn.	Alle 100 Stdn.	Alle 200 Stdn.	Alle 250 Stdn.	Alle 300 Stdn.	Alle 500 Stdn.
Ölstand prüfen und nachfüllen.	•								
Auf lockere oder fehlende Muttern und Schrauben prüfen.	•								
Auf Austreten von Kraftstoff und Öl prüfen.	•								
Batteriesäurestand überprüfen.	•								
○ Lufteintrittsgitter überprüfen oder reinigen.	•								

WARTUNG	INTERVALL								
	Täglich	Nach ersten 8 Stdn.	Alle 25 Stdn.	Alle 50 Stdn.	Alle 100 Stdn.	Alle 200 Stdn.	Alle 250 Stdn.	Alle 300 Stdn.	Alle 500 Stdn.
○ Staub und Schmutz vom Zylinder und von den Zylinderkopfripen entfernen. K					•				
Muttern und Schrauben festziehen.					•				
Motoröl wechseln.		•			•				
Zündkerzen reinigen und Elektrodenabstände neu einstellen.					•				
Ölfilter wechseln.						•			
○ Luftfilter-Primärelement (Hochleistungsluftfilter) wechseln							•		
○ Luftfilter-Sekundärelement (Hochleistungsluftfilter) überprüfen							•		
K Brennkammer reinigen.								•	
K Ventilspiel prüfen und einstellen.								•	
K Ventilsitz reinigen und läppen.								•	
○ Luftfilter-Sekundärelement (Hochleistungsluftfilter) wechseln									•



Attention:

When replacing the oil filters, the oil should be checked for wear. If you notice any abrasion in the oil, you must first find the cause and then correct the damage before you can put the machine back into service.

4.2 Maintenance intervals

Kontrollpunkte	Täglich	regelmäßiger Wartungsintervall						
		Alle 8h/ wöchentlich	Alle 50 Stunden	Alle 250 Stunden	Alle 500 Stunden	Alle 1000 Stunden	Alle 1500 Stunden	Alle 2000 Stunden
Luftfilter prüfen ggf. reinigen		X						
Kettenspannung prüfen und ggf. nachspannen		X						
Sichtkontrolle auf Undichtigkeit		X						
Verbindungen auf Festigkeit prüfen			X					
Keirliemenspannung prüfen			X					
Hydraulikölstand prüfen	X							
Abschmieren		X						
elektromagnetische Kupplung Spaltmaß prüfen ggf. nachstellen				X				
Ketten vollständig entspannen und auf Funktion prüfen.					X			
Hydrauliköl wechseln					X oder jährlich			
Kraftstofffilter wechseln					X oder jährlich			
Motorlüftungskanäle reinigen			X		X oder jährlich			

4.3 Maintenance



Attention:

The maintenance operations must only be carried out by qualified personnel. Always put on protective equipment before working on the machine.



Augenschutz benutzen

Gehörschutz benutzen

Handschutz benutzen

Fußschutz benutzen

Schutzhelm benutzen

Pre-requisites

In order to achieve a maximum service life of all components of the machine, it is necessary that the maintenance intervals are strictly adhered to by the persons responsible for the machine.

As the machine usually comes into contact with water, sand, soil, etc., regular lubrication of certain components is required. This is necessary not only for a long service life of the RoboFlail, but also to minimise its operating costs.

4.4 Engine oil

The choice of the right engine oil is a decisive factor in the service life of your device.

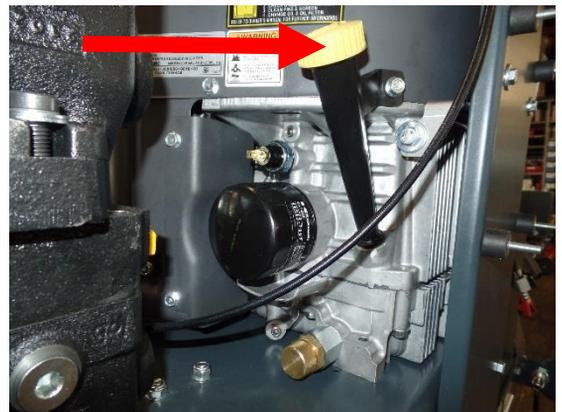
Therefore, only use the lubricants approved by Niko GmbH or by the manufacturer of the affected component.

(refer to the engine oil selection according to the attached table in section 4.5)

The main measures relating to the engine oil are:

- Daily level check
- Regular oil change

(see maintenance interval – Table 4.2)



4.5 Recommended oils and lubricants

	Lubricant
Engine	Agrifarm Stou SAE10W30MC
Hydraulic oil	Agrifarm Stou SAE10W30MC
Lubrication points	Multi-purpose grease



Attention:

The warranty will be invalidated if incorrect oil types are filled in or used!!

4.6 Fuel

Only use clean, fresh normal petrol. The octane number is a measure of "knock safety" of petrol. A fuel with a minimum number of ROZ 91 is recommended. Make sure the machine is always refuelled with the appropriate fuel. Other fuels with different specifications can damage the engine or reduce performance.



Attention:

Fuel and its fuel vapours are extremely flammable and explosive. Fire or explosion can cause serious burns or death. When adding fuel, stop the engine and allow to cool down for at least 2 minutes before removing the fuel cap. Only fill the fuel outdoors or in a well-ventilated area. Do not overfill the fuel tank. To allow space for the fuel to expand, do not fill beyond the bottom edge of the fuel tank neck. Keep fuel away from sparks, naked flames, permanent flames, heat sources and other ignition sources. Fuel lines, tank, covers and their connections must be regularly inspected for cracks and leaks and replaced if necessary. If fuel is spilled, wait for the vapours to evaporate before starting the engine.

4.7 Hydraulic circuit

The following maintenance procedures should be carried out regularly.

Please also observe the regular maintenance intervals to be performed according to the table in section 4.2

- Daily checking of the oil level in the tank at operating temperature.
(Level – Centre – Sight glass)
- Regular replacement of the oil filter cartridge (see maintenance table in section 4.2, if the filter is clogged)
- Regular replacement of the complete hydraulic oil (see maintenance table in section 4.2)



Always check the condition of all hydraulic lines and O-rings for leaks. For this purpose, a cardboard box can be placed underneath to detect any leaks. If leaks occur, replace the component to be replaced if it is defective or damaged.

Attention:



Always take care when servicing the hydraulic system, as the oil may be very hot immediately after work is carried out! The pressure in the circuit is high, not only while working with the device, but also after the work is complete. Protect hands and body from high pressure fluids.

4.8 Electrical maintenance

Check the gap dimension of the electromagnetic clutch, adjust if necessary.

The electromagnetic clutch should be adjusted every 250 hours or, if necessary.

Setting the brake

Readjusting the brake



Adjusting the brake (Electromagnetic clutch)

Feeler gauge
Settings: 0.4 mm
(For 25 - 31 hp engines)



Explanation of the setting:

Push the feeler gauge between the two jaws (metal+black). Gradually tighten the screws until the feeler gauge slightly jammed at all 3 adjustment slots.

This can take some time, as the adjustment on all adjustment slots has to be adjusted and checked again and again with the 3 nuts!!



4.9 Air filter cartridge

The air filter consists of a main high capacity cartridge and a safety cartridge. The main element can be blown out for cleaning with air, the safety cartridge must be replaced after contamination. Replace the cartridge after 6 to 8 cleanings of the main cartridge or after 12 months.

When replacing the safety cartridge, the main cartridge must also be replaced.



Main cartridge

Safety cartridge



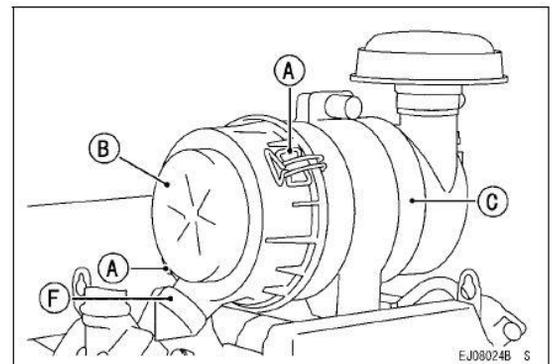
Attention:

Do not remove the air filter until the machine is stopped and the engine is off. Wear protective gloves when cleaning.

To eject dust and/or water build-up from the air filter, open the cap (F) by pressing on the housing.

Remove cartridge:

Release the two retaining clips (A) and remove the housing (B) from the air filter (C).

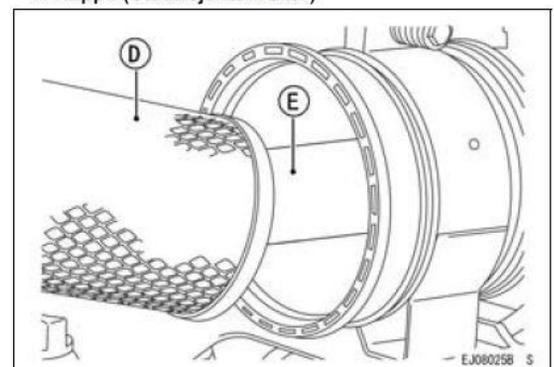


A. Halteklammern
B. Gehäuse
C. Luftfilter
F. Kappe (Staubejektorventil)

Pull the main cartridge (D) and the safety element (E) out of the air filter.

Now install the new air filter elements into the air filter.

Reinstall the housing and cap (F) and secure the two retaining clips.



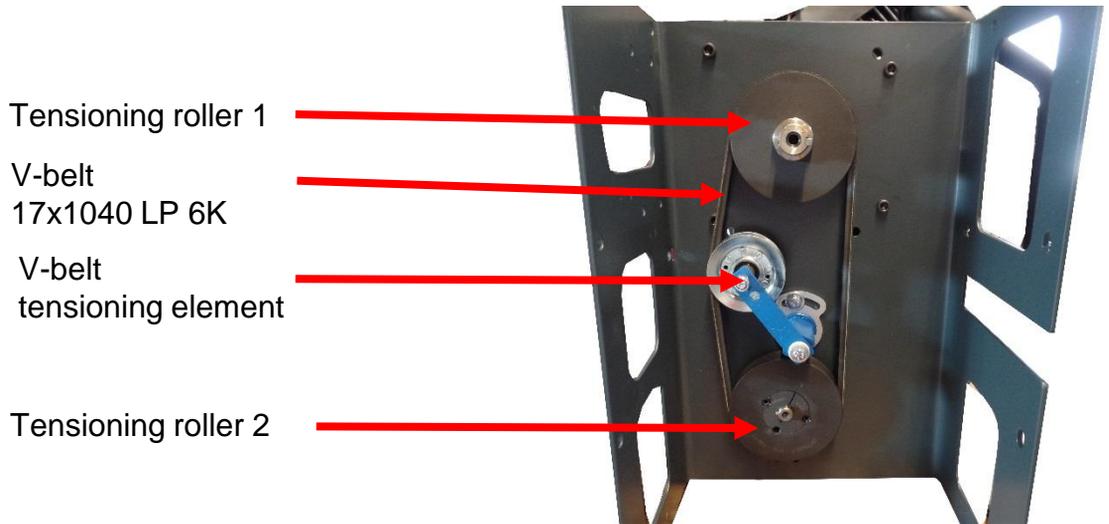
D. Primärelement
E. Sekundärelement



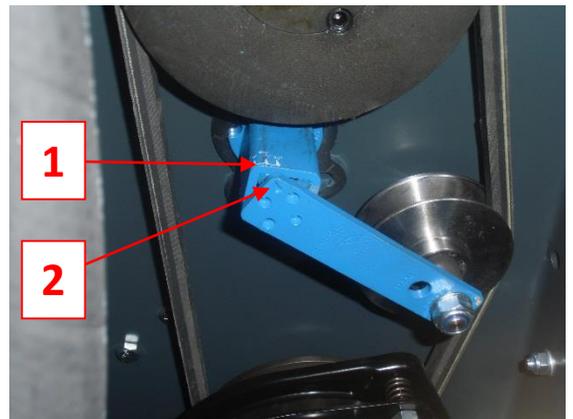
Attention:

Do not wash out air elements with water. Do not use solvents for cleaning. The compressed air could damage the elements. Do not apply oil to the filter elements.

4.10 V-belt tensioner



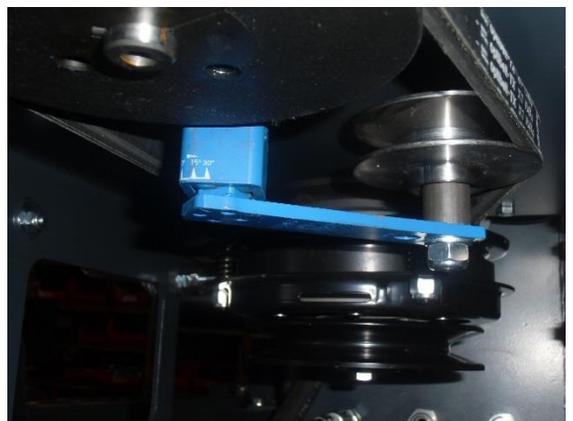
The V-belt tensioner must be adjusted and checked after a short running time.



1 Scale

2 Setting marker

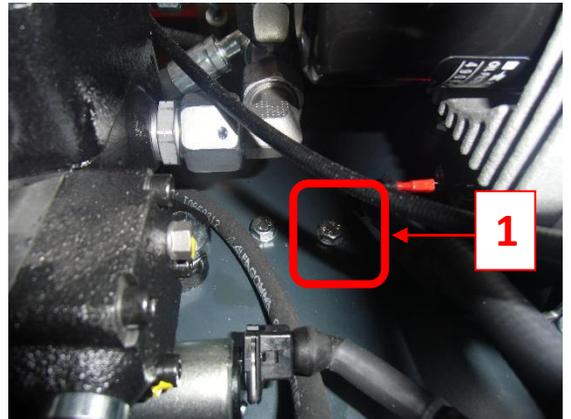
When the V-belt tensioner is in the correct position, the lever position should be between 15° and 30° (see picture).



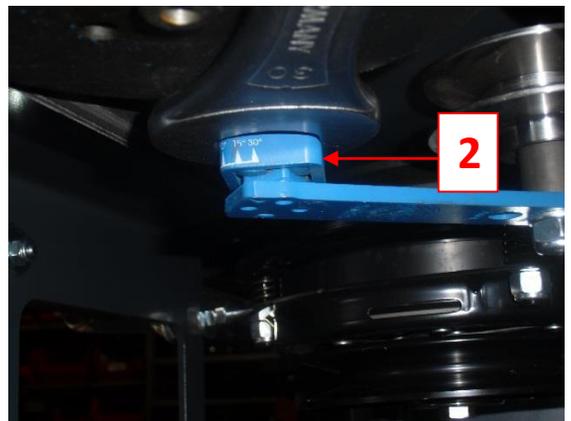
4.10 Adjusting the V-belt tensioner

The V-belt tension screw (1) for readjustment is located at the cover inside, near the pump. (see picture)

Slightly loosen the marked screw (1) on the right, not completely, so that a small amount of resistance is maintained.



After slightly loosening the screw (1), return the tension arm (2) by turning it left to the default setting between 15° and 30°. Then tighten the screw (1).



To tension the arm, a 30 mm open-ended spanner is required.

Set marking between 15° and 30°

4.11 Maintenance of the primary fuel filter

Regular visual inspection of the fuel filter for contamination.

The fuel filter cannot be disassembled. Replace a clogged fuel filter by a new one.



Fuel filter

4.12 Maintenance of the fuel filling sieve

Regular visual inspection of the fuel filling sieves. The fuel filling sieve, which is located in the inside of the tank neck, catches possible impurities in the fuel, before they enter the tank.

The sieve, should be checked regularly and be cleaned.



Fuel filling sieve



Warning notices:

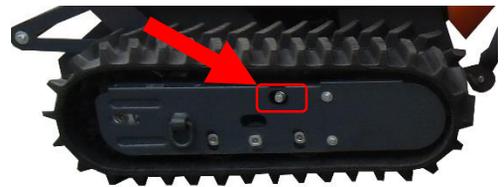
Petrol is toxic. Dispose of petrol properly.
The approved disposal methods can be found at the local authorities.

4.13 Replacing rubber

A track change must be carried out if only a profile depth of > 10mm is available, the track has cuts, breaks or other damage.

To change the tracks, the machine must be raised and parked on a stable platform.

Use a 27 mm ring spanner to loosen the nut on the grease nipple.
If it has been loosened, grease will come out of the threaded hole.
Continue to loosen until no more grease escapes and the nut is loose.
It is not necessary to remove the nut completely.



Once the track has been loosened over the tension unit, using a suitable pry bar or lever arm, push the guide rollers toward the drive wheel until there is sufficient slack in the track to allow it to be removed.
Pull the drive wheel teeth out of the track guide.
The track is heavier than it appears.
Do not try to carry their weight and it is better to let them fall to the ground.



Place the new track to be installed on the guide rollers, then on the track wheel (pinion) while pushing in the top of the track.



Re-tighten the 27 mm grease nipple, if necessary, replace the seal underneath and use the special grease gun supplied to pressurise the track tension cylinder.
The pressure gauge on the grease gun must read 120 bar to ensure correct track tension.

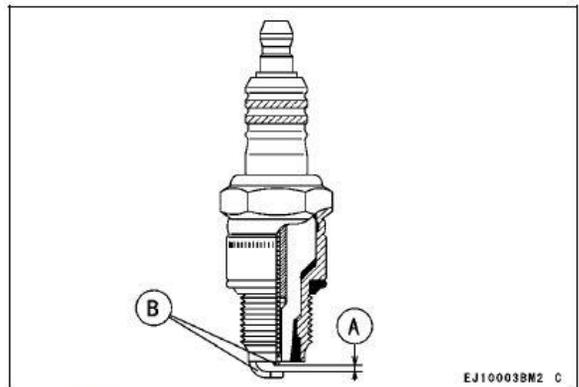
4.14 Maintenance of the spark plug

Clean or replace the spark plugs and set the electrode gap (A) every 100 operational hours.

- Remove the connectors from the spark plugs and unscrew the spark plugs.
- With a wire brush remove soot deposits from the electrodes (B).
- Check for cracks in the ceramic parts and other wear or damage. Replace the spark plug if necessary.
- Check the electrode gap and, if necessary, set it back properly.
The electrode gap must be 0.75 mm. Only bend the side electrode using an electrode bending tool.
- Screw in the spark plugs and tighten to 22 Nm Fit the spark plug connector.



A. Zündkerzenbohrung



A. Elektrodenabstand
B. Elektroden

**Recommended spark plug:
NGK BPR4ES**



Warning notices:

Hot engine parts can cause severe burns.
Stop engine and allow to cool before testing spark plug.

5.0 General tests before each working day

Before each working day with the RoboFlail One, a detailed visual inspection of the following described parts should be carried out to carry out repairs if any abnormalities occur.

- Check the operation of the visual warning devices and their safety-related parts, such as: Emergency STOP button, sticker, brake, etc.
- Check protection/safety devices
- Wear of the machine components
- Check for oil, fuel and coolant loss
- Check for loose bolts and nuts
- Check the air filter

5.1 Fuel level

The fuel level in the tank is visually checked when the engine is switched off and on a flat surface.

To refuel, loosen the fuel tank cap and refuel. Do not fill the tank to the top edge, but allow some space for the fuel to expand. Then close the lid again.



Hazard warning:



ATTENTION fuel and fuel vapours are extremely flammable and explosive. Fire or explosion can cause serious burns or death. Keep fuel away from sparks, naked flames, permanent flames, heat sources and other ignition sources. Check fuel lines, tank, cap and connections regularly for cracks and leaks and replace if necessary. Before cleaning or replacing the fuel filter, drain the fuel tank or close the fuel tap. If fuel is spilled, wait for the vapours to evaporate before starting the engine.

Hazard warning:



This operation must be carried out with the engine switched off. Keep away from sparks, naked flames, heat sources, and other ignition sources during the process. Wear protective clothing during this procedure.

5.2 Cleaning the cooling system

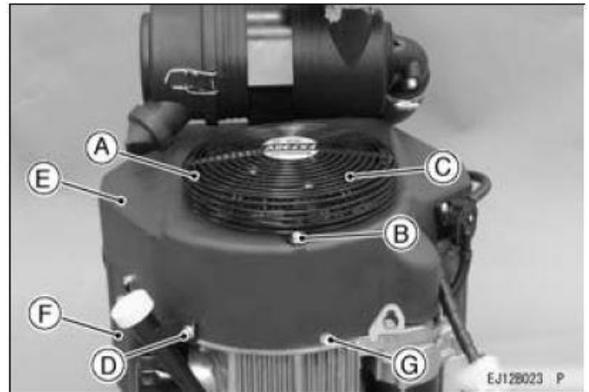
Before each operation, make sure that there is no grass or debris trapped in the air intake grille (rotary screen) (C: Under (A)).

Clean the grille if necessary.

To clean the air intake grille, loosen the screws (B) and remove the protective cover (A).

After every 100 operational hours, inspect and clean the cooling fins and the area under engine cover (F) to remove grass, chop and dirt that can clog the cooling system causing overheating.

To clean, remove the protective cover (A) and the air intake grille (C), then remove the fan housing (E) and, if necessary, the engine cover (F) (including the air filter, fuel pump, and parts of the voltage regulator).



[Größe und Anzugsmoment der Schrauben]

Schrauben	Größe	Länge	Anzugsmoment
B	M6	12 mm	5,9 N·m (0,6 kgf·m)
C*	M6	12 mm	5,9 N·m (0,6 kgf·m)
D	M6	16 mm	5,9 N·m (0,6 kgf·m)
G	M6	12 mm	5,9 N·m (0,6 kgf·m)

* Torx-Schrauben (C: unter Schutzabdeckung (A))



Hazard warning:

Do not run the engine to ensure proper cooling and gasification before reinstalling cooling system parts.

5.3 Engine oil

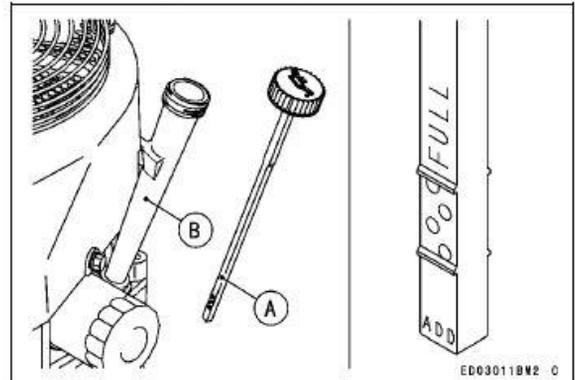
To check the engine oil level, open the hood.

- Stop the RoboFlail on a flat surface. The engine oil level must be checked while the machine with a cold engine is off on a horizontal surface.
- Clean the area around the dipstick before pulling out.
- Pull out the dipstick (A) and wipe with a clean cloth.
- Fill in oil up to the maximum level mark "FULL" on the oil dipstick.

Wait a moment to check the level again using the dipstick.

- Insert the dipstick into the tube (B), WITHOUT TURNING IT.
- Pull out the dipstick (A) to check the oil level. The oil level should be between the "ADD" and "FULL" marks. Do not overfill.
- Insert and tighten dipstick (A).

FX651V FX691V FX730V	1,8 l [ohne Ölfilterwechsel]
	2,1 l [mit Ölfilterwechsel]



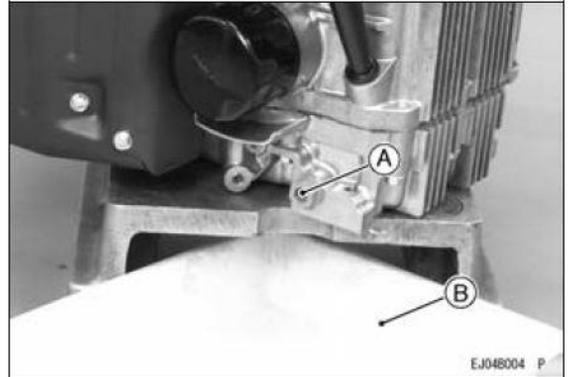
Warning notices:

The engine is very hot after the device is switched off. Do not test the engine oil until the engine has cooled down. Wear protective gloves when checking and refilling oil.

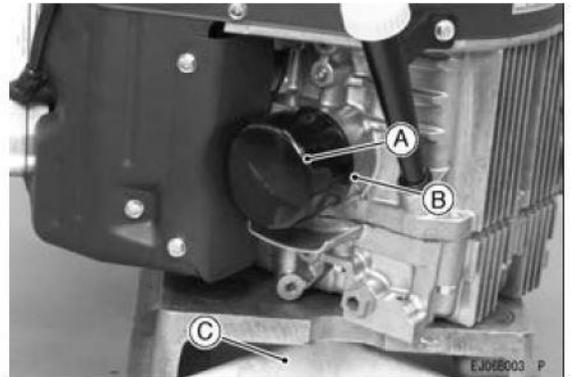
5.4 Changing engine oil + filter

To change the oil, proceed as follows:

- Place the RoboFlail One on a solid and level surface.
- Remove the drain plug on the engine (A) and drain the oil into a suitable container (B).
- After all the oil has drained, replace the drain plug and tighten it to xx Nm.
- Unscrew in a counter-clockwise direction and remove the engine oil filter (A).
- Coat the seal of the new filter with clean engine oil.
- Rotate the new filter in a clockwise direction until the new filter flushes with the mounting surface (B). Then rotate the filter in another $\frac{3}{4}$ turn by hand.
- Then remove the cap from the oil filler neck (B) and fill carefully **approx. 2.1 litres** of the combination oil Fuchs Agrifarm STOUE MC SAE 10W-30.
- Then put the cap of the filler neck back in.
- Now let the engine run for 5 minutes until the oil has spread in the circuit.
- Then check the oil level using the dipstick. If necessary, add oil.

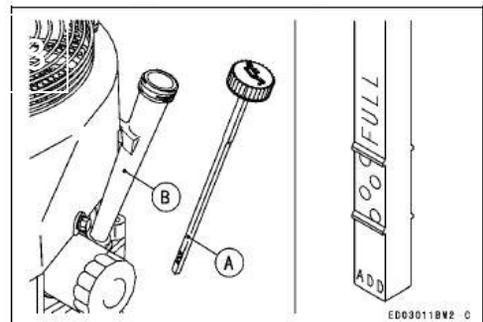


A. Ölablassschraube
B. Geeigneter Behälter



A. Ölfilter
B. Einbaufäche
C. Geeigneter Behälter

FX651V FX691V FX730V	1,8 l [ohne Ölfilterwechsel] 2,1 l [mit Ölfilterwechsel]
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ED030119W2 0

Warning notices:



Do not change the oil immediately after using the device. Wait until the engine is lukewarm (40°C maximum). Oils and filters are considered hazardous waste and must be disposed of in accordance with the applicable environmental protection standards.

5.5 Test – Pressure – Track tension

For optimum maintenance of the track and to avoid pressure loss or the like, the test must be carried out regularly. As before, check the track tension after ten hours, then every 50 hours or as needed. Note that the rubber tracks must be checked and tightened several times during the first hours.



To check the track, place the sleeve coupling ③ of the grease gun on the flat grease nipple. The specified pressure should be 120 bar. To re-tension the track, close the screw ① and press the grease into the cylinder with 120 bar. At 120 bar on the display ②, open the screw 1 again. The pressure in the system is released and you can remove the grease gun again. After clamping, it is necessary to check the track manually again (tight fit of the track), as there is the possibility of jamming the clamping device.



To relax, the grease nipple must be loosened until the necessary relaxation of the track becomes apparent.



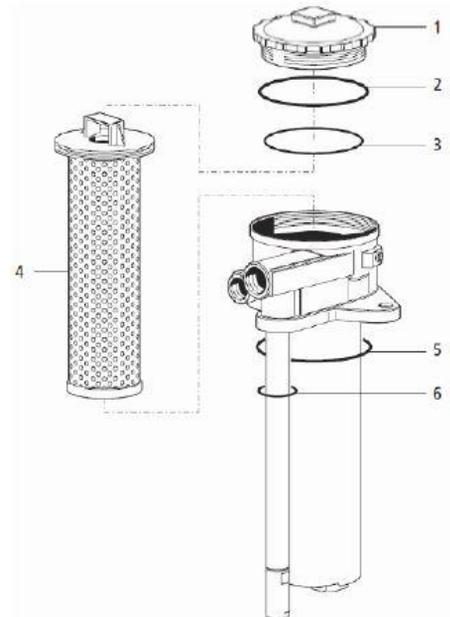
Warning notices:

Please note: **Never apply more than 120 bar of pressure** to the cylinder.
!!Danger of bursting!!!

5.6 Changing hydraulic filter

To change the hydraulic filter, proceed as follows:

- Unscrew the black cap on the hydraulic filter using a 32 mm open-ended spanner.
- Remove the inner filter element by pulling out the handle.
- The filter should be replaced before it is completely clogged.
- Then reinstall the new filter element.
- Close the black cap to a torque of 20 Nm.



Warning notices:



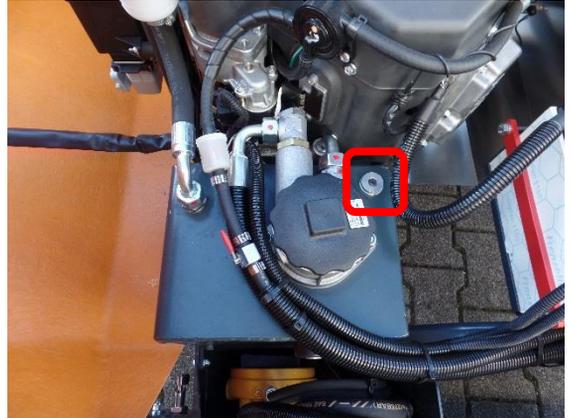
Do not change the hydraulic filter immediately after using the device. Wait until the engine is lukewarm (40°C maximum). Oil contamination may occur during this process. If necessary, clean the dirty area immediately to avoid the risk of fire or slipping. Hydraulic filters are considered hazardous waste and must be disposed of in accordance with environmental protection standards. Wear protective clothing.



5.7 Changing hydraulic oil

The hydraulic oil must be replaced at regular intervals to ensure permanent lubrication of the relevant components.

- The hydraulic oil can be sucked out via the upper plug on the hydraulic tank. Provide a suitable container for collecting the used oil (25 litres).
- When the oil has been completely drained, close the hydraulic tank by inserting the hydraulic plug.
- Refill the system with the specified hydraulic oil to its ideal level.
- Visually check that the level is correct using the oil sight glass installed on the hydraulic tank.
(Oil level – Centre – Sight glass at operating temperature / 80°C)
- Start the engine and wait for about 10 to 20 seconds.
- Stop the engine and repeat 3 times. Then check the level again via the oil sight glass and top up if necessary if the oil level has fallen.
- Also, after the first 20 minutes of operation, check the oil level again after the oil has expanded by heating.
- Then check all the screw connections opened for these applications again.



Warning notices:



The use of an oil other than the one approved by Niko GmbH can lead to significant damage to the hydraulic system. The use of another oil or mixing of the manufacturer's approved oil (see table section 4.5) with other oils can also cause damage to the hydraulic system. Always keep in mind that if you use other oils that are not approved by the manufacturer, you jeopardise your warranty claim.

5.8 Lubrication points (grease gun)



All specified lubrication points must be lubricated regularly, see specification, with the enclosed grease gun:

1. Track suspension weekly



2. Right/left and front/rear hitch weekly



5.9 Cleaning

- During normal daily maintenance, it is not allowed to perform a high pressure cleaning of the electrical parts with water (high pressure cleaner), such as:
 - Receiver and remote control
 - Drive (engine)
 - Fuse and relay box

6.0 Technical data – Characteristics

Weight:

Total weight (with tracks) = 650kg

Engine:

Brand: = Kawasaki
 Model: = FX730V
 Number of cylinders: = 2
 Max. power (KW/HP) = 19 KW/25 HP
 Cooling = Air-cooled
 Displacement = 726 ml
 Air filter = dry

Dimensions:

Length = 1.70 m
 Width = 1.80 m
 Height = 1.10 m

Operating noise:

Noise level = approx. 95 dBA

Main machine:

Fuel tank = 30 litres, swivel-mounted
 Speed = 0-10 km/h, VMAX continuously adjustable
 Device drive = V-belt via electromagnetic clutch
 Travel drive = hydrostatic via two pumps with two wheel motors with accumulator brakes (zero turning radius)
 Drive = self-aligning rollers
 Control = remote control forward/reverse, right/left, speed, differential speed right/left (tilt assist), engine start/stop, engine speed, cruise control (for export outside the EU only)

Remote control:

Manufacturer	= NBB Germany
Frequency band	= 434.050 – 434.750 MHz
Transmit power	= 10 mW
Range	= max. 300m
Gain	= approx. 1 dB
EIRP	= < 10 mW

Electrical equipment

Voltage	= 12V
Alternator	= 40A
Battery	= 30A

Hydraulic system

Transmission	= axial piston pump
Mowing unit	= mechanical

Tracks/Models

Rubber track 200x72x34	= approx. 50kg
------------------------	----------------

Capacities - Liquids

Hydraulic oil	= 26 litres
Engine oil	= 2.1 litres
Fuel	= 30 Litres

6.1 Structure of the machine

Choke



Notaus (li), Zentraler An-/Ausschalter (re)
Warning light / Device activation



elektrisch kippbarer Benzintank



Haltegriff



Mähdeck
(optional wählbar, siehe Seite 10)

Gummikette

Zurrösen

Schutzbügel



Klappbare Kunststoffhaube

Fahrwerk

Motorhaubenklemme

Geöffnet

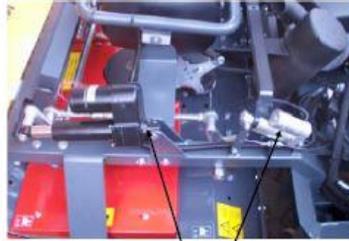
Geschlossen



Vollhydrostatischer Antrieb durch Tandempumpe 11,5 cm³



Elektro-Stellzylinder 12V
Vergaserstellung (re) Anbaugerät (li)



Platinenkasten



Antrieb (Kawasaki
- Motor)
mit Luftfilter



Sender/Empfänger

Hydraulikfilter

Hydrauliköltank

Stellzylinder Tankverstellung



Important:

When driving on a slope, use the protective bar as often as possible. It is especially useful for protection against rolling over on steep slopes.

To lower the protective bar the indexing plunger on the right and left hand must be



passed



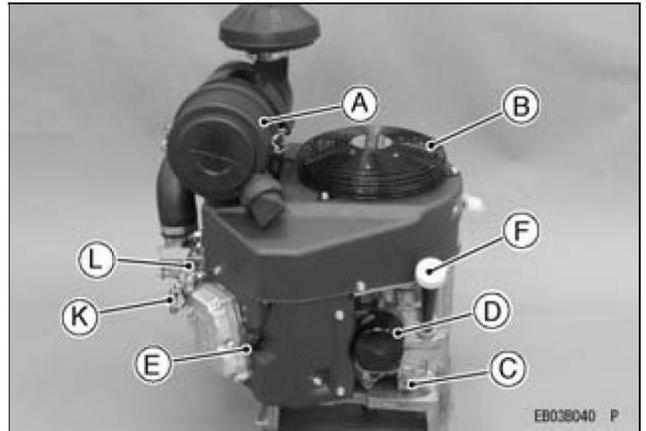
Protective bar lifted



Protective bar lowered

6.2 Structure of the engine

- A. Air filter
- B. Safety cover
- C. Oil drain screw
- D. Oil filter
- E. Spark plugs/
Spark plug connector
- F. Oil dip stick
- K. Control board
- L. Carburettor



- G. Fuel pump
- H. Fuel filter
- I. Electric starter
- J. Voltage regulator



Engine setting data

POSTEN	Technische Daten
Zündzeitpunkt	Nicht einstellbar
Zündkerzen: Elektrodenabstand	NGK BPR4ES 0,75 mm
Niedrige Leerlaufdrehzahl	1.550 U/min
Hohe Leerlaufdrehzahl	3.600 U/min
Ventilspiel	Innen 0,10 ~ 0,15 mm Außen 0,10 ~ 0,15 mm
Sonstige technische Daten	Keine weiteren Einstellungen erforderlich

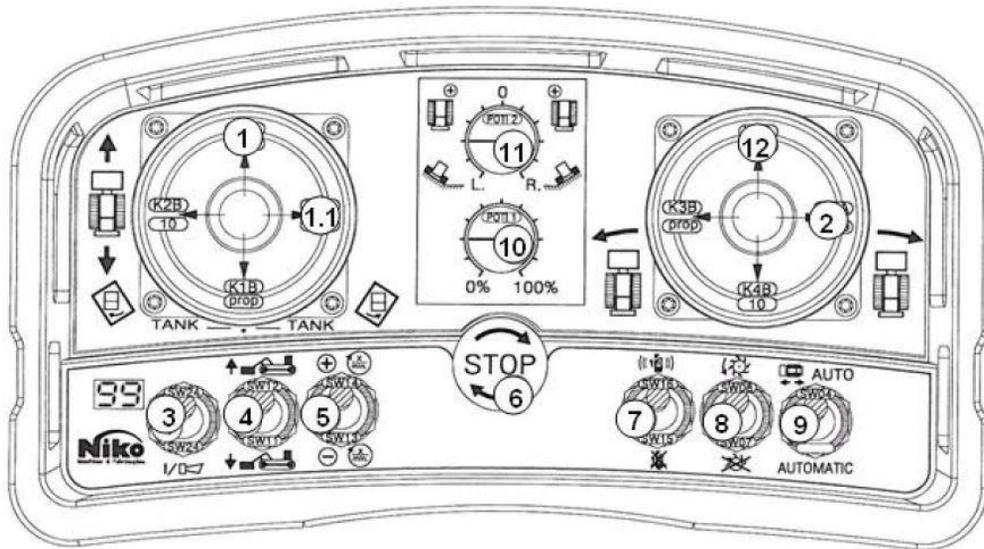
ANMERKUNG

- Die hohe und niedrige Leerlaufdrehzahl kann in Abhängigkeit von der angetriebenen Ausrüstung unterschiedlich sein. Siehe die technischen Daten der Ausrüstung.

6.3 Working with the machine

1. Be sure to wear the right work clothes. Wear approved safety shoes, no sandals or tennis shoes.
2. Check the blades of the mowing units. Bent blades, blades with cracks or other damage must be replaced with spare parts from the manufacturer.
3. Fill the tank outdoors. Clean up any spilled fuel.
4. Check that the oil level is within the acceptable limit.
5. Read the manufacturer's operating instructions and follow all engine and accessory instructions. These instructions are for your own safety and the safety of others.
6. Exhaust gases are dangerous. Therefore, start the engine outdoors.
7. Make sure that all safety devices are in place and correctly functioning.
8. This device may only be operated by people who have experience and routine with it and who have received training/instruction from Rapid or its partners. Persons under 18 years of age are prohibited from using the RoboFlail.
9. Wet grass can be dangerous. Wait for the grass to dry.
Caution: danger of slipping.
10. Instruct children and others to stay away from the area to be mowed
11. Never mow without good lighting conditions and poor visibility into mowing terrain.
12. Pick up any objects lying around from the ground and remove them from the surface to be mowed.
13. Look for obstacles and fixed objects. These can damage the machine or cause injury.
13. A hot engine, silencer, or exhaust can cause burns.
Do not touch these parts.
14. Check that the installed safety devices are correctly functioning.
 - Emergency stop button on the machine
 - Stop button on the remote control

7.0 Description of the radio remote control



1. Forward, neutral, back
- 1.1 Tank swivel right/left
2. Turn right, turn left
3. Signal configuration
4. Mowing deck UP/DOWN
5. Engine speed +/-
6. Emergency stop switch on/off remote control
7. Engine start/Engine stop
8. Mowing deck ON/OFF
9. Cruise control ON/OFF (outside the EU only)
10. Speed range fast/slow, continuous 0-100%
11. Lateral slope function, run the chain on the right or left faster
12. Without function (FREE)

**Please also read the operating instructions
of the manufacturer of the radio remote control before
commissioning!**

Attention:



Before starting the engine, read the instructions thoroughly again and check your knowledge of the commands.

From the time the engine is started, the operator is immediately responsible for any damage that may occur as a result of improper manoeuvres and non-compliance with safety and traffic laws.

7.1 Starting the engine

1.) Turn the battery cut-off switch (1) on the RoboFlail (basic appliance) to 1. Then press the ON/OFF switch (2) by pressing the black button and simultaneously pulling out the yellow button.

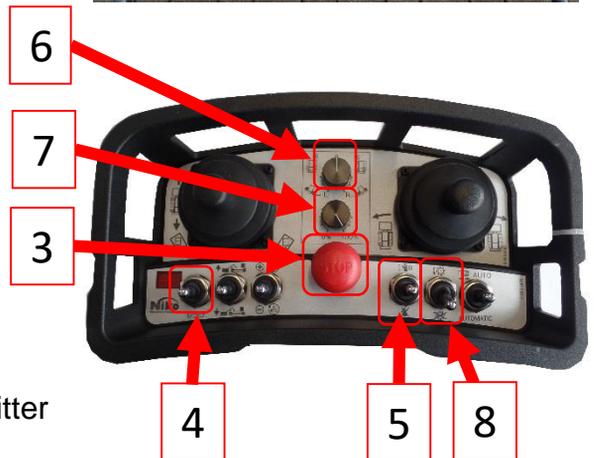
2.) **Before switching on the transmitter (remote control) the following settings on the remote control must be checked:**

- **Lateral tilt rotary knob (6) potentiometer set to 0**
- **Speed potentiometer rotary knob (7) set to 100%**
- **Equipment power on toggle switch (8) set to OFF**

3.) Release the stop button (3) on the transmitter by turning clockwise

4.) **TURN ON/Light up the device by tilting the switch (4) forwards** (longer or more times if necessary)
→ The warning light (10) on the hood lights up!
Tuning transmitter – Receiver

5.) Pull the choke (9) and then press the switch (5) forward. When the engine is running, press the choke on the RoboFlail down again.



Important!

If the starter motor is actuated once and the engine does not start or if the engine stalls unexpectedly, its function is disabled. For a second start attempt, first set the switch to the engine stop position (2x tilting the switch (5) backwards and then back forward), then the starter can be operated again. Equipment switch-on (8) must be set to OFF

Attention:



Avoid unnecessary damage! The starter motor can be affected if it is operated at a time for more than 15 seconds. If necessary, wait 1 to 2 minutes before attempting to start the machine again.

Burned-out starters are not a guarantee!!

7.2 Forward and reverse movement

To operate the forward and reverse movement of the machine, use the left joystick on the remote control; push the lever forward to move the machine forward and pull the lever back to move the machine backwards. The joystick works proportionally, so the more the lever moves, the faster the machine moves. The maximum speed available depends on the throttle and potentiometer settings.



7.3 Changing direction R/L

The direction of the RoboFlail One is controlled by moving the right joystick sideways; by pushing the lever to the right the machine steers to the right and by pushing the lever to the left the machine steers to the left.



7.4 Potentiometer

The control of the basic speed (rotary switch) determines the maximum moving speed capacity of the machine from 0-100% when the joystick is operated. It is an adjustable speed control. The adjustment is made by turning the switch to the desired speed position (%); the selected setting depends on a number of factors, but should always be within a range where the operator has optimal control over the machine. When starting the engine, the potentiometer setting should be set to 100%.

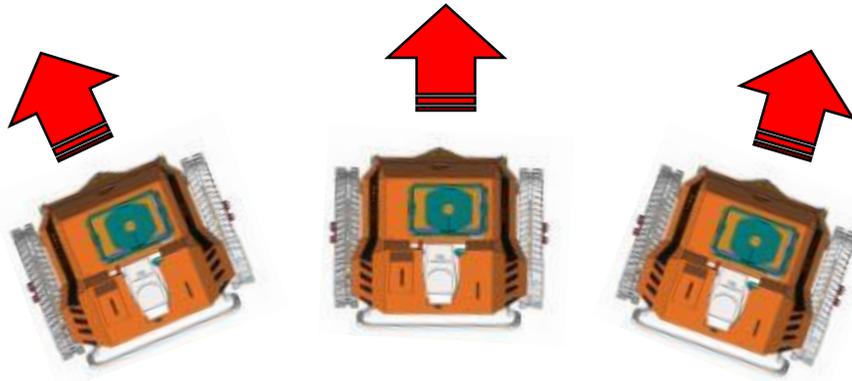


Important:

The RoboFlail One control is designed in such a way that the control is clear when you are standing behind the machine.

7.5 Steering potentiometer

The steering potentiometer function allows a gradual pre-setting of the steering for the use of the machine on slopes or on steep slopes. The adjustment is done by means of the rotary switch marked in red. Turn the switch clockwise or counter-clockwise for right or left. The further it is turned, the greater the speed difference between the upper and lower track will be to ensure a straight line. Although the steering must continue to be monitored and operated normally, it operates to a much lower degree.



7.6 Lifting and lowering the mowing unit

The lifting of the mowing unit is controlled by an electric cylinder and can be adjusted continuously in height. By moving the switch up and down, the mowing unit used can be adapted to different materials and conditions.

To ensure a constant cutting height even after lifting and lowering the mowing unit, this can be preset by inserting a locking pin.



7.7 Controlling the engine speed

The engine speed can be manually adjusted by pressing the red-marked toggle switch. By pushing it upwards, the engine speed increases and by pushing it downwards it decreases.



7.8 Turning the mowing unit ON/OFF

The mowing unit can BE SWITCHED ON/OFF via the remote control after starting the device. Pushing the rocker lever forward will turn the mowing unit on. By tilting the switch downwards, it is switched off again. Important: When starting the RoboFlail, the mowing unit must be switched off, otherwise the engine cannot be started.

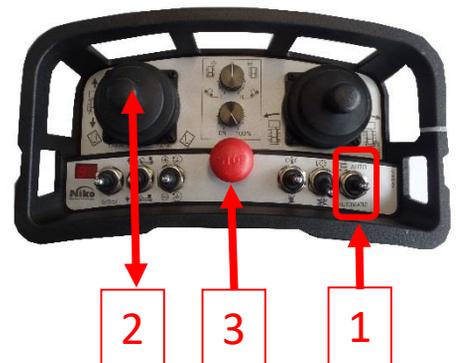


7.9 Cruise control

The cruise control function is only permitted outside the EU.

The cruise control can be activated with the device via the switch (1) while driving. The subsequent speed level can now be increased or decreased by operating the lever (2). Releasing the lever automatically keeps the current speed level constant. The cruise control is deactivated by pressing the switch (1) in the reverse direction of switching it on.

Deactivation of the cruise control function can also be performed by pressing the emergency stop switch (3).

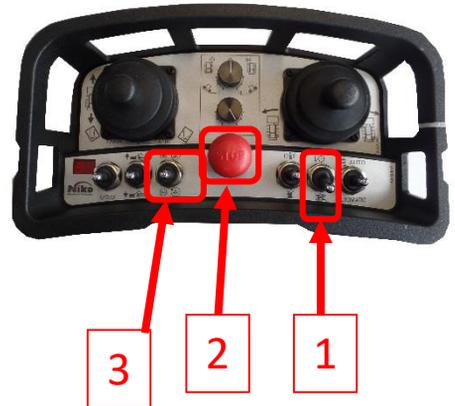


7.10 Stopping the engine

Before the engine is switched off, all machine movements must be stopped, switch (1) (mowing unit) is set to "off" and the engine speed switch (3) must be reduced to the minimum value. Allow the machine to run at this level for approximately one minute to stabilise the pressures and temperatures.

The machine is then switched off by pressing the emergency STOP BUTTON switch (2), which stops the engine.

When the engine is stopped, the process is completed by additionally pressing the ON/OFF switch and the battery cut-off switch position to 0 on the RoboFlail One.



Important:

Also refer to the enclosed operating instructions of the radio remote control manufacturer.

8.0 Troubleshooting

A large part of the functional defects can be attributed to improper use of the machine. The following table lists malfunctions and the actions that can be taken to prevent them.

Important note:

If you have any problems or doubts, always contact our sales representative Rapid or your RoboFlail dealer. In this case, please note down your equipment type, serial number and operating hours of your equipment.

If the error you are having is not shown in the table below, contact Rapid or your RoboFlail dealer for the necessary repair.

Technical support

Rapid Technic GmbH
Industriepark 7
D-74706 Osterburken

Tel. +49 6291 415 9590
Email info@rapid-technic.de
Home page: www.rapid-technic.de

8.0 Troubleshooting

8.1 Engine

Symptom		Mögliche Ursache	Abhilfe	
Motor startet nicht oder Leistung ist schwach	Unzureichende Komprimierung	Kolben, Zylinder, Kolbenringe oder Kopfdichtungen defekt	K	
		Ventile defekt		
		Zündkerzen locker		Gut festziehen
		Zylinderkopfschrauben locker		
	Keine Kraftstoffzufuhr zur Brennkammer	Kein Kraftstoff im Kraftstofftank	Kraftstofftank füllen	
		Kraftstoffventil steht nicht auf "ON"	Kraftstoffventilhebel öffnen.	
		Kraftstofffilter oder -leitung verstopft	Kraftstofffilter oder -leitung ersetzen	
		Kraftstofftankdeckelbelüftung verstopft	Kraftstofftankdeckel reinigen	
		Vergaser defekt	K	
	Zündkerzen durch Kraftstoff verschmutzt	Zu fettes Luft-Kraftstoff-Gemisch	Choke öffnen. Den Motor bei ausgeschraubten Zündkerzen drehen, um überschüssigen Kraftstoff zu entleeren. Zündkerzen reinigen.	
		Luftfilter verstopft	Reinigen	
		Vergaser defekt	K	
		Falsche Kraftstoffklasse/-sorte	Kraftstoff wechseln	
		Kraftstoff enthält Wasser		
	Symptom		Mögliche Ursache	Abhilfe
	Kein oder schwacher Zündfunke	Zündkerzen defekt	Zündkerzen ersetzen	
		Zündspule defekt	K	
		Motorschalter steht noch auf "OFF"	Motorschalter auf "START" drehen (siehe M)	
Niedrige Leistung	Motor überhitzt	Luftfilter verstopft	Reinigen	
		Luft Eintrittsgitter oder Kühlluftweg durch Schmutz verstopft		
		Mangel an Motoröl	Öl auffüllen oder wechseln	
		Rußablagerungen in der Brennkammer	K	
	Bereich um den Motor schlecht belüftet	Bessere Arbeitsstelle wählen		
	Motordrehzahl steigt nicht an	Drehzahlregler defekt	K	

K: Vom Kawasaki-Vertragshändler zu warten.

M: Bei der Ausführung mit Schalter auf der Steuertafel den Gashebel an der Ausrüstung vom Ende des niedrigen Drehzahlbereichs wegschieben, bevor der Motorschalter auf "START" gestellt wird.

8.2 Hydraulic system

The pump makes a strange noise.

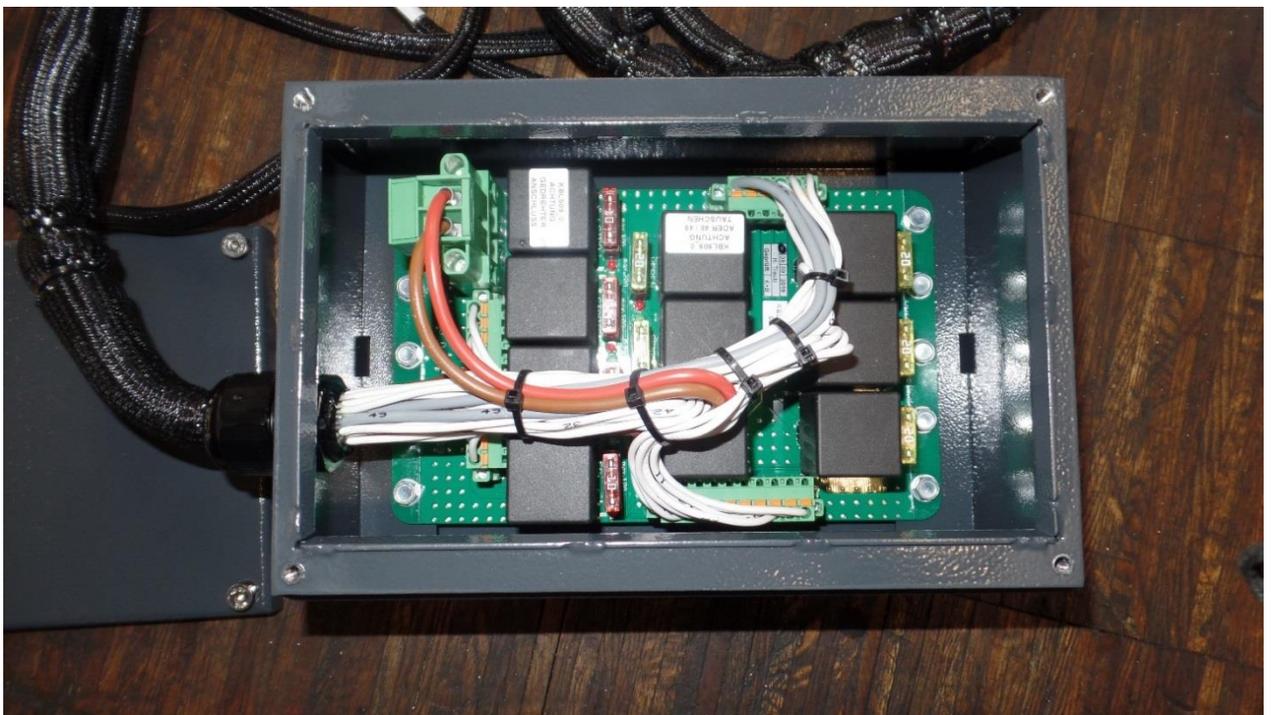
- no oil in the tank
- Defective pump
- The hydraulic oil is not suitable for this temperature

- Restore the oil level
- Repair or replace
- Replace

8.3 Fuses on the circuit board

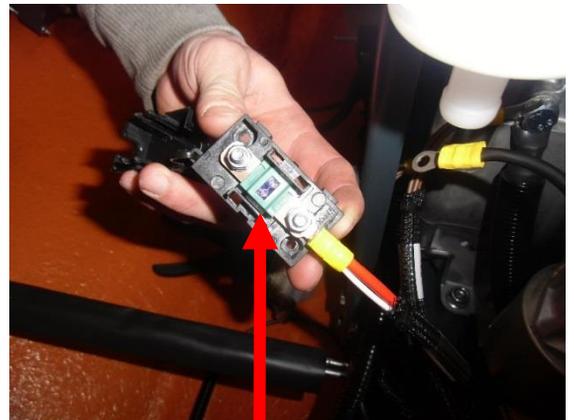
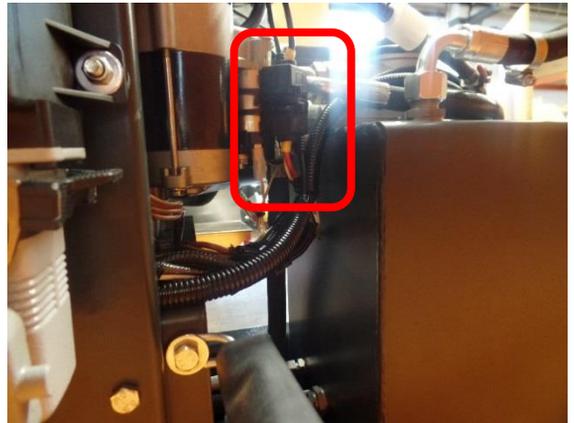
On the circuit board of the device, you will find additional fuses which can be defective in the event of an overvoltage. In case of malfunctions, please check the fuses on the board.

Refer to Chapter 9.1 for the board diagram



8.4 Fuse for the -cable harness

On the cable harness attached to the engine starter, is the fuse that protects the harness from overvoltage. (Fuse 40A)

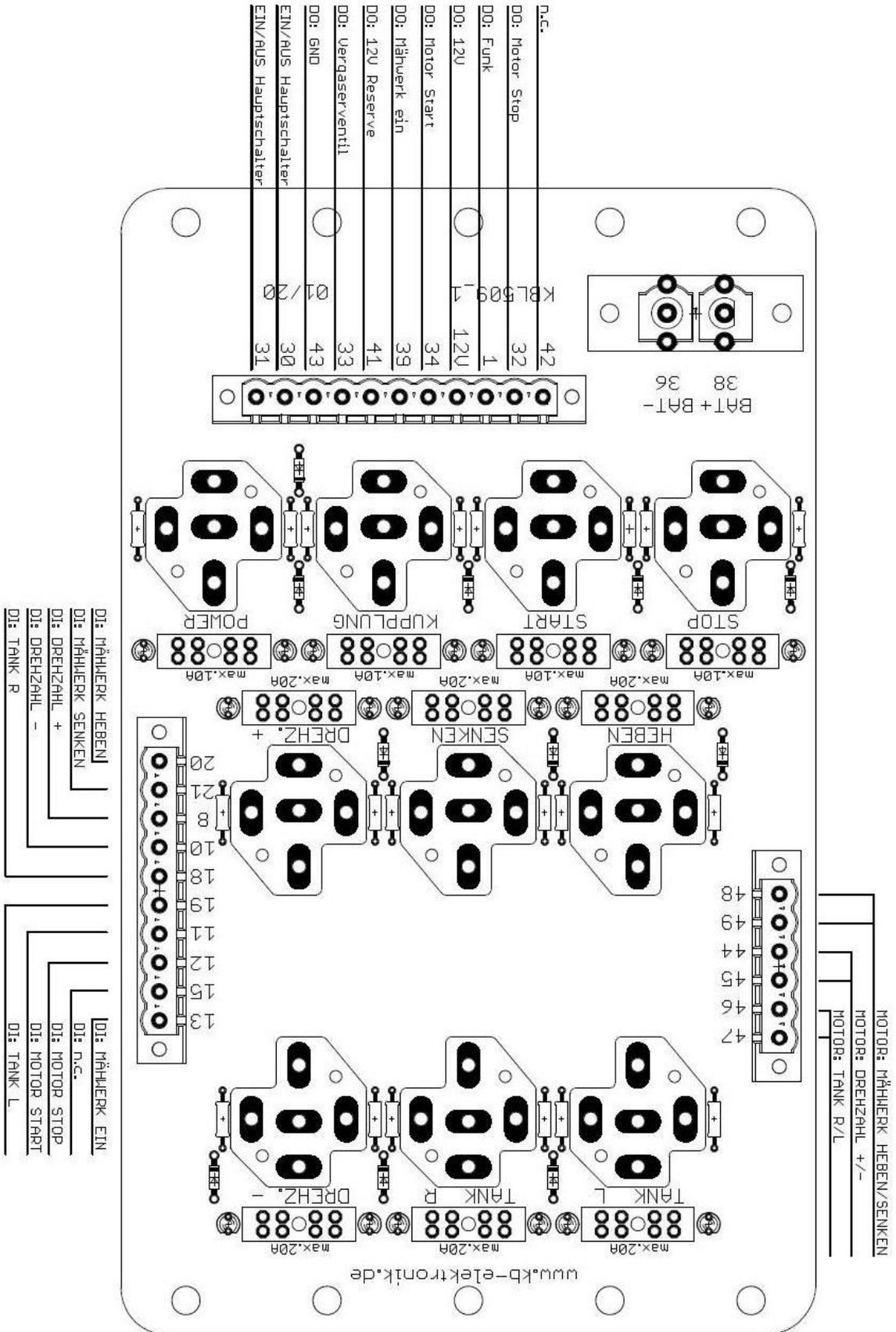


Fuse 40A:
Main supply voltage

9.1 Board KBL509 (relay board)



9.1 Board diagram KBL509 (relay board)



9.4 Cable harness list

Kabelliste RoboFlail one

von

nach

Ader	Funktion	Ziel 1	Kontakt	Ziel 2	Kontakt
1	Versorgung Fernbedienung +12V	Ilme-Stecker 24-pol.	1	Platine Stecker 6	1
4	Fahren links vor Leistung	Ilme-Stecker 24-pol.	4	Fahren links vor	2
5	Fahren links zurück Leistung	Ilme-Stecker 24-pol.	5	Fahren links zurück	2
6	Fahren rechts vor Leistung	Ilme-Stecker 24-pol.	6	Fahren rechts vor	2
7	Fahren rechts zurück Leistung	Ilme-Stecker 24-pol.	7	Fahren rechts zurück	2
8	Drehzahl + Signal	Ilme-Stecker 24-pol.	8	Platine Stecker 10	8
9	Versorgung Fernbedienung GND	Ilme-Stecker 24-pol.	9	BAT --	
10	Drehzahl - Signal	Ilme-Stecker 24-pol.	10	Platine Stecker 10	10
11	Motor START Signal	Ilme-Stecker 24-pol.	11	Platine Stecker 10	11
12	Motor STOP Signal	Ilme-Stecker 24-pol.	12	Platine Stecker 10	12
13	Mähwerk EIN Signal	Ilme-Stecker 24-pol.	13	Platine Stecker 10	13
14	Antriebe AUS	Ilme-Stecker 24-pol.	14	Ventilstecker-Freigabe Antrieb	2
15	Gerät AUS Signal	Ilme-Stecker 24-pol.	15	Platine Stecker 10	15
18	Tank verstellen rechts Signal	Ilme-Stecker 24-pol.	18	Platine Stecker 10	18
19	Tank verstellen links Signal	Ilme-Stecker 24-pol.	19	Platine Stecker 10	19
20	Mähwerk heben Signal	Ilme-Stecker 24-pol.	20	Platine Stecker 10	20
21	Mähwerk senken Signal	Ilme-Stecker 24-pol.	21	Platine Stecker 10	21
24	Hupe Leistung	Ilme-Stecker 24-pol.	24	Signal	
25	Fahren links vor Leistung	Masse		Fahren links vor	1
26	Fahren links zurück Leistung	Masse		Fahren links zurück	1
27	Fahren rechts vor Leistung	Masse		Fahren rechts vor	1
28	Fahren rechts zurück Leistung	Masse		Fahren rechts zurück	1
29	Mähwerk EIN Leistung	Masse		X1 - Mähwerk Ein	T-hoch
30	Gerät EIN/AUS Signal	Maschine Hauptschalter	1	Platine Stecker 5	30
31	Gerät EIN/AUS Signal	Maschine Hauptschalter	2	Platine Stecker 5	31
32	Motor STOP Öldruck Leistung	Anlasser Zündspule		Platine Stecker 6	32
33	Vergaser Leistung	Vergaser		Platine Stecker 5	33
34	Motor START Leistung	Anlasser Starterrelais		Platine Stecker 6	34
35	Zuleitung von Sicherung 40A	Lichtmaschine		Sicherung 40A	2
36	Zuleitung von Batterie	BAT --		Schraubanschluss M4	BAT-
37	Hupe Leistung (Masse)	BAT --		Signal	
38	Zuleitung von Sicherung 40A	Batterie / Sicherung 40A	2	Schraubanschluss M4	BAT+
39	Mähwerk EIN Leistung	X1 - Mähwerk Ein	T-quer	Platine Stecker 6	39
40		Anlasser Starterrelais	BAT+	Sicherung 40A	1
42	neu: Öldruck Signal Y3	Öldruckschalter (Öffner)		Platine Stecker 6	42
43	Bremse (Masse)	Ventilstecker-Freigabe Antrieb	1	Platine Stecker 5	43
44	Drehzahl - Leistung	Antrieb Drehzahlverstellung		Platine Stecker 2a	44
45	Drehzahl + Leistung	Antrieb Drehzahlverstellung		Platine Stecker 2a	45
46	Tank verstellen links Leistung	Antrieb M2 Tankverstellung		Platine Stecker 2b	46
47	Tank verstellen rechts Leistung	Antrieb M2 Tankverstellung		Platine Stecker 2b	47
48	Mähwerk verstellen Leistung	Antrieb Mähwerksverst. AUF/AB	T-hoch	Platine Stecker 2c	48
49	Mähwerk verstellen Leistung	Antrieb Mähwerksverst. AUF/AB	T-quer	Platine Stecker 2c	49

10.0 Guiding and manoeuvring the machine

Attention:



Before putting the machine into operation, make sure that you are perfectly familiar with the function and commands and the associated safety standards. The operator must be in the vicinity of the machine. Before moving the RoboFlail One, make sure that no one is within the operating radius of the machine (100m) and that the operating range is free of dangerous obstacles.

Prior to any operation of the mowing unit, complete inspection and maintenance is required to ensure that the mowing unit is in good and safe condition.

Damaged and/or defective parts must be repaired and/or replaced immediately.

Replace worn, defective, and missing parts immediately.

Check that all bolts and fittings on the attachment are tight. Also check the cutting blades and blade bolts for tightness and wear.

Never stand below the machine in the direct direction of fall!!!

Do not change the direction while moving the RoboFlail One over curbs, stones, or surfaces with large elevation differences.

In these cases, always move the machine at a right angle to the obstacles.



Do not move along the edge of a slope or uneven surface while one rubber track is in horizontal position and the other is tilted or partially raised.

→ If the machine is at an angle of more than 10°!

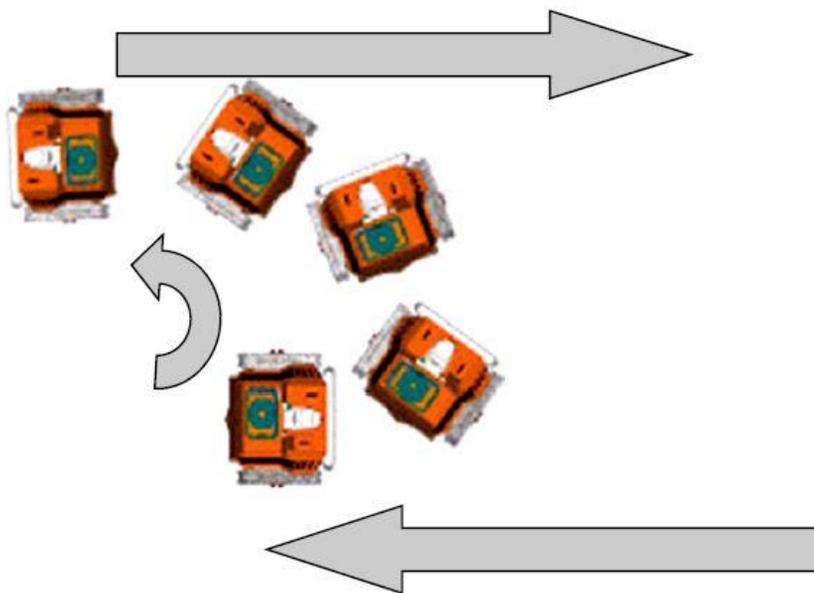
Always drive the machine so that both tracks move on the same horizontal surface to avoid the risk of track damage.



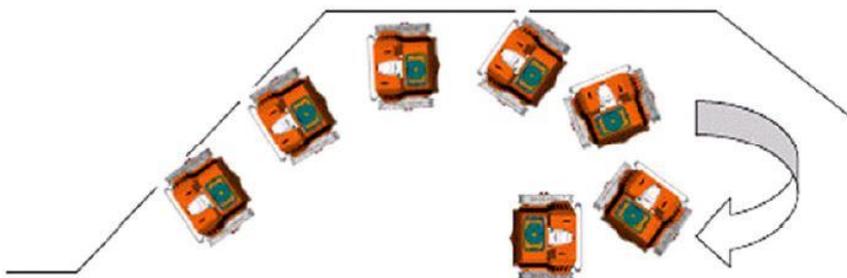
10.1 Driving on a slope

- Drive carefully
- Drive slowly
- Always drive up and down diagonally down the slope, if this is not possible, drive backwards up the slope, so you use the maximum climbing possibility
- When turning on a slope, the rear must always be at the top of the slope.
- Drive as constantly as possible and only change the direction if necessary.
- Use the cruise control on large surfaces (Outside the EU only) and the Side slope function
- Look out for stones, debris and tree stumps

Turning up on a slope



Turning down on a slope



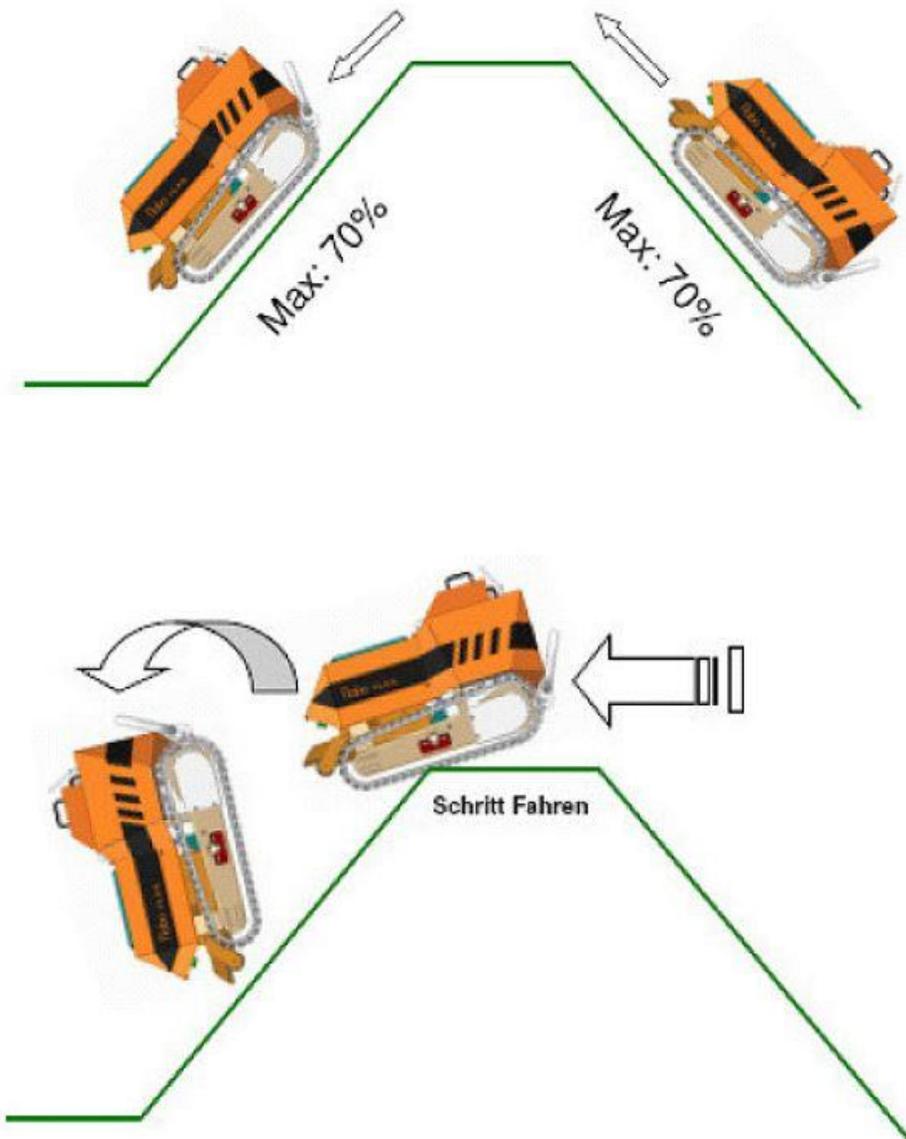


Attention!

The equipment is designed for a maximum gradient of 70%. Drive up a slope 70-100% in a reverse direction, drive up a slope > 100% in a diagonal reverse direction. Extreme caution should be exercised when driving over hilltops!

Only drive at walking speed and never stand below the equipment on steep slopes and hilltops!

Driving over hilltops



10.2 Working and danger zone

Please keep the following safety distances:

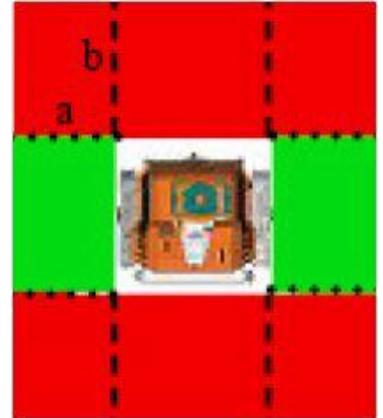
b= 20 m

a= 10m (only when the mowing unit is running)

Green area: When the knives are stopped, you can approach the stationary machine in this area safely.

Red zone:

Danger zone! Never step in this area closer when the engine is running than 20 m!



11.0 Transport (loading and unloading)

The RoboFlail is transported to its place of operation by a truck or trailer. Make sure that the means of transport you are using has sufficient load capacity.

For driving onto a trailer or commercial vehicle, we recommend the use of drive-on ramps. Before driving on the ramps, make sure that they are aligned with the tracks and that a lateral slip can be prevented.

To avoid machine damage or life-threatening injury when transporting the machine, it is essential to observe the following points:

Transport work may only be carried out by persons qualified for this purpose, observing the safety instructions.

The machine may only be lifted at the provided stops. Only the load-bearing and lifting equipment specified here may be used for transporting the machine.

Never stand under a suspended load!



1 lashing lug at the front



1 lashing at the rear (protective bar)



Attention!

Due to its purpose-oriented, constructive design and application, not all possible hazards can be eliminated.

The operator must ensure that these residual risks are handled responsibly!

11.1 Storage

When not mowing, the device must be stored in a safe place. It is recommended that the mowing unit be kept fully lowered to the ground.

Proper preparation and storage of the mowing unit at the end of the season is of the utmost importance in maintaining its appearance and ensuring years of reliable operation. The following storage procedures are recommended:

- Carefully remove any type of contamination from the mowing unit to prevent damage from rotting grass and standing water. Lubricate all grease points of the mowing unit.
- Tighten all screws and bolts.
- Check the mowing unit for worn or damaged parts. Immediately perform any pending repairs and replacement of components so that the mowing unit is ready for use at the beginning of next season.
- If necessary, use a sealing spray to prevent rust and preserve the appearance of the mower.
- Disconnect the battery when the machine is not used for an extended period of time.
- Do not leave the RoboFlail outdoors unprotected. (Cover etc.)

11.2 Use of an additional battery

If it is necessary to start the engine using an additional battery, proceed as follows:

Attention:



Powerpack/starting aids must not be used!!

Risk of overvoltage!!

Avoid damage! The electrical charge of the auxiliary battery can damage the electronic components.

1 – The battery is located next to the engine, in front of the side hydraulic tank.

2 - Connect the positive (+) auxiliary cable to the auxiliary battery and the other end to the battery on the RoboFlail.

3 - Connect the negative (-) auxiliary cable to the auxiliary battery and the other end to the ground of the battery.



Start the engine and run the machine at 1000 rpm for a few minutes.

Carefully disconnect the auxiliary cables in the exact reverse order: First the negative cable and then the positive cable.

Danger:



Never check the battery voltage by placing a piece of metal over the terminals. Use a voltmeter. Always remove the grounded battery terminal (-) first and replace it last. The sulphuric acid in battery electrolytes is toxic. It is strong enough to sever the skin, eat holes in clothing and cause blindness when it splashes into the eyes. The terminals and connectors and associated accessories of batteries contain lead and lead compounds and these compounds are known to cause cancer and genetic damage. Wash your hands after handling.

11.3 Disposal

In case of free delivery free of charge return of equipment by Rapid company.

11.4 Fire

In the event of a fire, use a co2fire extinguisher in accordance with the applicable standards.

In the event of a fire, keep sufficient distance from the object to be extinguished. If necessary, contact the fire department to extinguish the fire.

12.0 EC Declaration of Conformity

EC Declaration of Conformity

According to the Annex of the EC Machinery Directive
(2006/42/EC)

The Manufacturer:

NIKO GmbH
Maschinen- & Fahrzeugbau
Im Mühlgut 1a
D-77815 Bühl, Weitenung; Germany

Hereby declares that the machine
described below:

RoboFlail One tracked vehicle

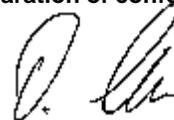
meets the safety and health
requirements of the following EC
directives:

**EC Machinery Directive 2006/42/EC and
EMC Directive**

Harmonised standards applied:

DIN EN 292	Safety of the machine
Part 1	Basic concepts, general design principles
Part 2	Technical principles and specifications
DIN EN 294	Safety distances against reaching danger points of the upper limbs
DIN EN 349	Minimum distances to avoid crushing of body parts
DIN EN 418	Safety of machines; Emergency stop device
DIN EN 60204	Safety of machines; Electrical equipment of machines, General requirements

Design changes that have an effect on the technical data specified in the operating instructions and the intended use, i.e. substantially alter the machine, invalidate this declaration of conformity!



Bühl, 09/07/2010

Serr Dieter, Managing Director