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Robust. Powerful.
Flexible use.

Cleanmeleon 2 PRO

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1 EC Declaration of Conformity

EC declaration of conformity in accordance with
Machinery Directive 2006/42/EC Annex II 1.A

The manufacturer / distributor:

Westermann GmbH & Co. KG

Schützenhof 23

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hereby declares that the following product

Product name: Cleanmeleon 2 *PRO*
Make: Westermann GmbH & Co. KG
Serial number: 59 _ _ _ _
Model / type description: Cleanmeleon 2 *PRO*

description:

The Cleanmeleon 2 *PRO* is a self-propelled compact work machine.
The machine allows the attachment and use of various hydraulic implements.

The following additional EU directives have been applied:

The protection objectives of the EC Directive

Machinery Directive 2006/42/EC

EMC Directive 2004/108/EC

Low Voltage Directive 2006/95/EC

have been complied with.

The following harmonised standards were applied:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)
-------------------	---

The following other technical specifications were applied:

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3 Important basic information

3.1 Scope of supply

The operating manual is part of the working equipment and must be kept accessible in the immediate vicinity of the machine at all times.

The operating manual contains important information for safe and effective operation of the machine. Therefore, the operator must read and understand this operating manual carefully.

The basic requirement for safe working is compliance with all safety instructions and operating procedures given in this operating manual.

The local accident prevention regulations and general safety regulations for the specific application must also be observed.

The provided supplier documentation for the installed components must also be observed.

The illustrations are provided for basic understanding and may deviate from the actual design.

The manufacturer assumes no liability for damage due to non-observance of the operating manual, improper use, improperly performed maintenance or repairs, unauthorised modifications, technical modifications and use of unauthorised spare parts.

3.2 Conventions












3.2.1 Symbols and signal words

Symbol / Signal word	Importance
	Draws attention to the handling and impact of safety information.
	Draws attention to a dangerous situation that will result in serious injury or death if not avoided.
	Draws attention to a dangerous situation that can result in serious injury or death if not avoided.
	Draws attention to a dangerous situation that may result in minor to moderate injury if not avoided.
	Draws attention to possible damage to property and other important information.



3.2.2 Pictogram overview

The safety instructions contained in this operating manual, which can cause danger to persons and the machine if ignored, are specially marked with the following pictograms.

Pictogram	Meaning
	General warning sign
	Falling hazard
	Automatic start-up hazard
	Opposing rollers hazard (Entanglement risk)
	Harmful or irritating substances hazard
	Toxic substances hazard Hand injuries hazard
	Hot surface hazard
	Crushing hazard
	Slip hazard
	Electrical voltage hazard
	Obstacles on the ground hazard

3.3 Marking on the machine

The Cleanmeleon 2 **PRO** has a nameplate that contains all basic data.
Components and accessories from suppliers have their own nameplates.



3.4 Ordering spare parts

HINWEIS

When ordering spare parts or accessories, state the type designation, machine number and year of manufacture. The use of accessories and spare parts from other manufacturers is only permitted after consultation with the manufacturer. Original accessories and manufacturer-authorized accessories help to ensure safe use. Use of other accessories may void liability for consequential damages.

4 Safety

4.1 Intended use of the machine

The Westermann Cleanmeleon 2 *PRO* is to be used exclusively for the intended use described here. Areas of application of the working machine are the cleaning of slatted floors, sweeping of paved areas such as courtyards, paths, car parks, silo plates and stables, clearing snow, breaking up fodder, littering stables or similar work.

The Cleanmeleon 2 *PRO* has **no** attachment in its basic version. The approved implements can be found under the accessories chapter.

Any use over and above this is considered improper. The manufacturer is not liable for damage resulting therefrom. The risk is borne by the user alone. Proper use also includes compliance with the operating, maintenance and service conditions prescribed by the manufacturer.

4.2 Machine naming information

The Cleanmeleon 2 *PRO* is referred to below simply as machine or CM2 *PRO*.



4.3 Requirements for the operator

⚠️ WARNUNG**Danger due to misuse!**

Misuse can lead to dangerous situations.

Therefore:

- ✓ Refrain from any use beyond the intended use or different use.
- ✓ Strictly comply with all information in this operating manual and, where applicable, the associated documents.
- ✓ Switching operations on the controls can only be carried out by instructed persons.
- ✓ Maintenance and servicing must be carried out exclusively by trained maintenance personnel.
- ✓ Refrain from modifying, converting or altering the design or individual pieces of equipment with the aim of changing the area of application or usability.
- ✓ Only use the equipment with the aids specified in the operating manual.
- ✓ Only use the equipment in a technically perfect condition.
- ✓ Use in areas with an explosive atmosphere is prohibited.
- ✓ Do not exceed the carrying capacity of the equipment.
- ✓ Avoid transporting persons with the equipment.

HINWEIS**Maintenance and repair**

Maintenance and repair work is part of the intended use and must be carried out in compliance with the maintenance intervals.

4.5 Danger zone



⚠️ WARNUNG

Danger while within the danger zone!

Being in the danger zone involves risks that unauthorised persons can not assess.

Therefore:

- ✓ Always monitor the danger zone during the work process and ensure that no persons are present there.
- ✓ If an unauthorised person enters the danger zone, warn the person and stop operating immediately.

The area surrounding the machine with a safety distance of 1.5 meter is declared a danger zone. This area must be free of unauthorised persons during the work process in order to protect them and not to affect the work process. Attachments can increase the danger zone of the machine depending on their size.



Fig. 1 - Danger zone

4.6 Foreseeable misuse | Reasonably foreseeable misuse

All use deviating from the intended use is considered misuse and is not permitted.

These include, for example

- ✓ Transport of humans and animals
- ✓ Use as a climbing aid
- ✓ Use outside the permissible operating limits

4.7 Behaviour in case of emergency



4.7.1 Personal injury



If an event occurs during use which results in personal injury, measures must be taken depending on the severity of the injury.

4.7.2 Case of fire



Feuerlöscher

In the event of a fire, immediate action must be taken.

- ✓ Protect people
- ✓ Fight the fire
- ✓ Repair damage

4.7.3 Technical complications

If technical complications occur during use, they must be remedied by a specialist before further use of the machine.

4.8 Application

The area of application includes all locations worldwide that allow safe use of the machine. Use must be in accordance with the specified intended use.

4.8.1 Local requirements

The area of application includes all locations worldwide that allow safe use of the machine. To this end, the following criteria must be met.

- ✓ Safe assembly of the machine
- ✓ Temperature range of max. -10°C to $+40^{\circ}\text{C}$
- ✓ Suitable area of use which guarantees safe usage of the CM2 *PRO*

4.8.2 Disposal

For environmentally sound disposal, the hazardous substances must be disposed of separately. All other materials must be sorted according to their material quality and disposed of accordingly.

4.9 Responsibility of the operator

The machine is used commercially. Therefore, the operator is subject to the statutory provisions on occupational safety.

4.9.1 Obligations of the operator

The operator is responsible for ensuring the machine is good working order.

- ✓ The operator must regularly check all safety equipment for functionality and completeness.
- ✓ The operator must ensure that prescribed maintenance is carried out as scheduled.
- ✓ The operator must inform the manufacturer immediately of any damage detected.
- ✓ The operator must provide the personnel with the necessary protective equipment and check, maintain and replace defective parts in accordance with regulations.
- ✓ The operator must request a new copy of the instruction manual if it is in poor condition or parts are missing.
- ✓ The operator must immediately replace all labels, signs or stickers that are in poorly readable condition or have been lost.
- ✓ The operator must keep the workrooms and escape routes free and in good condition.

4.10 Personal responsibility

Basic requirements

- ✓ Only persons who are expected to observe the safety regulations and perform their work reliably may enter the danger zone.
- ✓ Persons whose ability to act is influenced by drugs, alcohol, medicines or the like are not permitted.
- ✓ When selecting personnel, the age and occupation-specific regulations applicable at the place of work must be observed.
- ✓ **The user must be at least 16 years old!**

Qualifications

In general, persons may only perform the activities for which they have the necessary qualifications.

Specialists for installation and start-up

Able to carry out the work entrusted and to independently recognize and avoid dangerous situations due to professional training, knowledge and experience as well as knowledge of the relevant provisions.

Service staff for maintenance and start-up

Able to carry out the work entrusted and to independently recognize and avoid possible danger due to professional training, knowledge and experience as well as knowledge of the relevant provisions.

Electrical specialist for maintenance, installation and start-up

Able to carry out the work and to independently recognize and avoid possible danger due to professional training, knowledge and experience as well as knowledge of the relevant standards and provisions. The electrical specialist is trained for the specific location in which he works and knows the relevant standards and regulations.

Instructed operating personnel for operation

Is informed of the tasks entrusted and possible dangers of improper conduct after instruction given by the operating company.

4.11 Observance of the operating manual



The operating manual is provided by the manufacturer or supplier of the product in order to provide the user with essential knowledge for the proper and safe use and to point out dangers in handling the machine.

Before starting up the machine, the operating manual must be worked through; it must be observed carefully during start-up. The manufacturer points out that no liability is assumed for damage and malfunctions resulting from non-compliance with the operating manual.

The illustrations and information contained in the operating manual are subject to technical modifications necessary for the improvement of the machine.

4.12 Residual hazards and protective measures

The knowledge and technical implementation of the safety instructions contained in this documentation are a prerequisite for a faultless product. However, this documentation can not cover all the details of every conceivable case of machine use. Therefore, as in any other case, especially due to human error, there is a residual risk. This residual risk should be kept to a minimum by this documentation.

4.13 Safety marking on the machine

HINWEIS

Danger and information points, as well as important information must be marked on the machine and, if necessary, due to dirt or if unrecognisable, cleaned or renewed.

4.14 Personal protection

The Personal Protective Equipment (PPE) is not included in the scope of delivery. Responsibility for the availability, testing and proper use of PPE therefore lies with the operator.

- ✓ Wear PPE according to the instructions below.
- ✓ Do not enter the danger zone without PPE.
- ✓ On the equipment follow the attached instructions for PPE.



Wear foot protection

Protection of the feet from heavy falling parts, slip prevention, piercing of footwear by sharp-edged parts.



Wear protective clothing

Close-fitting workwear with low tear resistance, with tight sleeves and no protruding parts. Predominantly serves as protection from being drawn into rotating machine parts. When working on the electrical system, wear work clothing with arc protection.



Use hand protection

Protection of hands from friction, abrasions, punctures and cuts, as well as from contact with hot surfaces. When working on live parts, use insulated gloves.



Use hearing protection

Protection of hearing from damaging sound frequencies.

5 Safety instructions for the operator/user



Only operate the machine in well-ventilated areas and **NEVER** use in enclosed spaces as fuel combustion produces toxic carbon monoxide.

If other people are to operate the vehicle, they must be instructed in the operation of the vehicle and have read and understood the operating manual in order to avoid accidents.

Before removing any safety devices, such as a safety cover, make sure all moving parts of the vehicle have come to a standstill. Removed parts must be re-attached after maintenance.

Never refuel with a running or hot engine. Keep away from flames and under no circumstances smoke near the tank or while refuelling. When refuelling in the dark, never use naked flames as a light source.

Pay attention to people, animals, obstacles etc. in the area of the vehicle before starting to avoid personal injury or property damage.

Drive carefully and slowly on unsafe ground such as unpaved roads, downhill, on banks or embankments or off-road.

Never transport people on the machine or on attachments.

6 Technical specifications

6.1 General technical data of CM2 *PRO*

Basic dimensions	Value	Unit
Machine length	1.50	meters [m]
Machine width	0.85	meters [m]
Machine height	1.13	meters [m]
Speed	10	km/h
Dry weight	270	kilograms [kg]

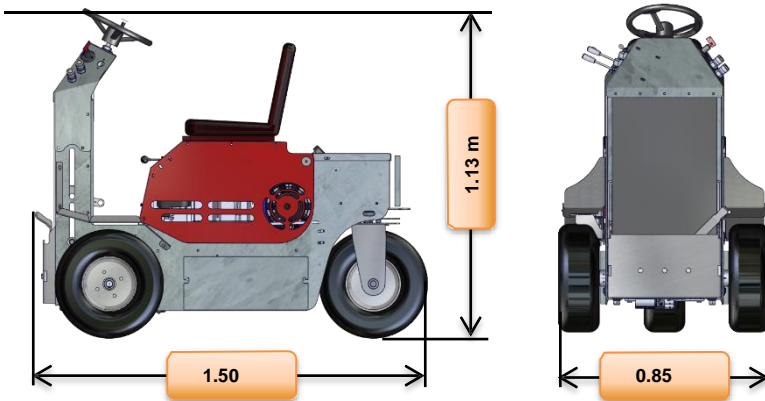


Fig. 2 - Dimensions

6.2 Design variant of CM2 *PRO*

6.2.1 Machine type GXV 340

Characteristics

Engine variant: GXV 340 Honda

Engine type: air-cooled 1-cylinder 4-stroke OHV petrol engine,
vertical crankshaft, cast iron bushing

Number of
cylinders: 1

Displacement: 340 cm³

Engine power: 6.6 kW

Speed: 3000 rpm

Fuel: petrol

Ignition system: electric starter

Length: 430 mm

Width: 385 mm

Height: 410 mm

6.2.2 Machine type Vanguard 2-cylinder

Characteristics

Engine variant: Briggs & Stratton Vanguard

Engine type: air-cooled 2-cylinder 4-stroke OHV petrol engine,
horizontal crankshaft, grey cast iron bushing

Number of cylinders: 2

Displacement: 479 cm³

Engine power: 11.9 kW

Speed: 3600 rpm

Fuel: petrol

Ignition system: electric starter

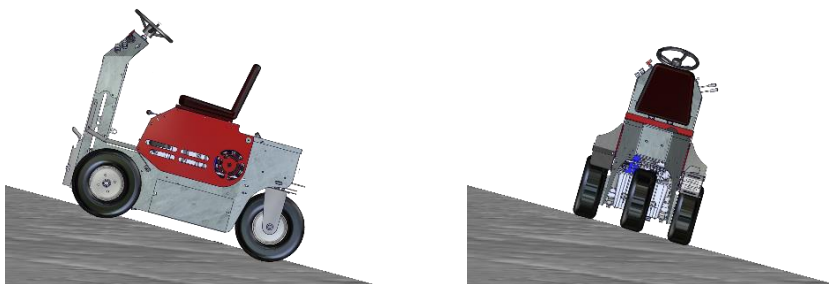
Length: 279 mm

Width: 410 mm

Height: 438 mm

6.2.3 Additional information

Front tyre pressure min max	2.2 2.5	bar
Rear tyre pressure min max	2.2 2.5	bar
Hydraulic oil	HLP 46 Tellus 46	
Oil pressure in bar	~ 180	bar
Work hydraulics (at max. engine speed)	~ 18	l/min
Hydraulic oil tank	~ 13	litres
Fuel tank	~ 6.5	litres
Maximum inclination right left	15	°
Maximum inclination front rear	15	°
Emission sound pressure level	82	dB/A


Fig. 3 - Inclination

7 Assembly, first start-up

7.1 Safety

HINWEIS

To ensure the safety of man and machine, easy and risk-minimised installation/handling was taken into consideration during construction. Thus, the handling unit is subject to all applicable DIN EN standards. Operator training and instruction are required and further reduce the safety risk.

7.2 Assembly

The complete assembly and first start-up is carried out exclusively by the manufacturer. The machines are subjected to a thorough test run and are supplied only after successful acceptance.

7.3 First start-up

HINWEIS

Before first start-up, check the entire vehicle for possible Damage.

8 Product description

The Westermann CM2 *PRO* is designed and implemented for the demanding user. It serves as a carrier vehicle for wide-ranging applications.

It is possible to sweep paved areas such as yards, paths, parking lots, silo slabs and stables, to clear snow, to loosen fodder, to litter stables or to push slatted floors.

The powerful engine ensures effortless working with various accessories and attachments while being always ready for operation.

The CM2 *PRO* can be moved forwards or backwards using the right foot pedal. Furthermore, it is possible to turn the CM2 *PRO* 360° on the spot by the arrangement of the three wheels. This is particularly advantageous on narrow slatted floors (passages).

The hydraulic lift for lowering and lifting attachments is controlled manually by a control valve.

The vehicle frame consists of a robust, hot-dip galvanised torsion-free steel construction, making the CM2 *PRO* ideal for use in demanding areas.

9 Control

The machine is operated exclusively via the control units on the steering column. The hoist is operated via a control block valve with hand lever control. Forward, reverse and handling operations are performed by the operator through a continuously adjustable foot pedal and steering wheel with a steering angle of 88 degrees.

9.1 Controls

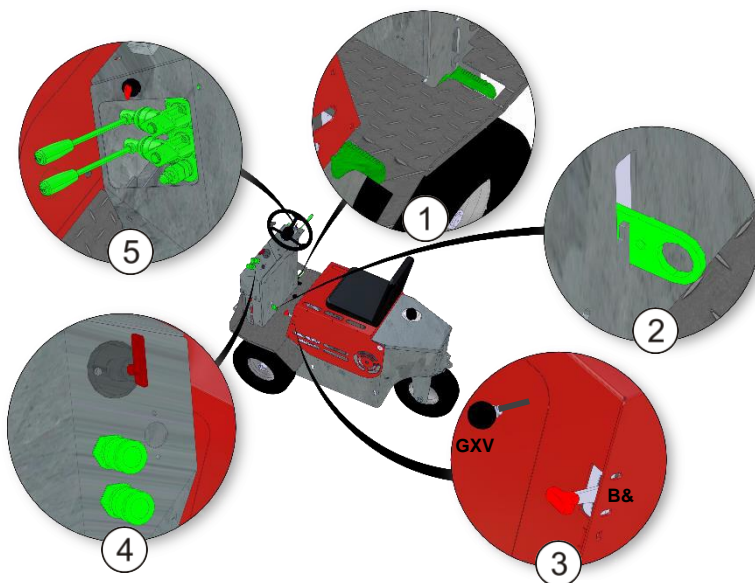


Fig. 4 - Controls

Position	Description	Function
①	Accelerator	Accelerator pedal for continuous speed regulation
②	Parking brake	Securing the machine against uncontrolled rolling away
③	Speed regulation	Engine speed regulation
④	Power supply for attachments	Power supply interruption for attachments
⑤	Hydraulic plug-in coupling	Plug-in couplings for hydraulic circuit of the attachment
⑥	Way valve	Hydraulic control for the power lift including control circuit
⑦	Ignition keys	Engine start/stop

10 Start-up

10.1 Checking the engine before start-up

The following steps are to be carried out regularly before each use.



Fig. 5 - Oil level

Checking the engine oil level

The oil quantity is checked with a dipstick! Pull dipstick out:

HINWEIS

Depending on the engine variant, the oil dipstick is located on the side of the engine.

*GXV 340 - dipstick direction of travel right
B&S - dipstick direction of travel right*

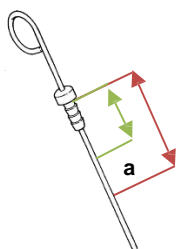


Fig. 6 - Sight glass

Checking the hydraulic oil level

The oil quantity is checked using a dipstick!

HINWEIS

*The filling quantity of the hydraulic oil tank should always be within the range shown **a** between 5 cm and 7 cm.*

Oil quantity must be in the marked area!

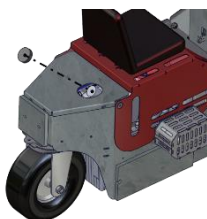


Fig. 7 - Fuel supply

Checking fuel tank contents

The amount of fuel is visually checked at the tank!

HINWEIS

The fuel tank is located behind the driver's seat on the right in the direction of travel.

Open the cover by turning it.

11 Operation

11.1 Start | stop the CM2 *PRO* B&S engine

Before starting the engine, make sure that all controls are in their neutral positions to prevent uncontrolled starting of attachments. Then observe the following steps:



11.1.1 Cold start

- ✓ Slide the throttle to the uppermost position (choke).
- ✓ Press the ignition key
- ✓ **START**



11.1.2 After the cold start

- ✓ If the engine was started with the aid of the choke, set the throttle to the desired position as soon as the engine has warmed up and is running smoothly without the choke.
- ✓ **Optimal performance at full throttle.**



11.1.3 Starting at operating temperature

- ✓ Slide the throttle to the position just above idle.
- ✓ Middle position between MIN and MAX
- ✓ Press the ignition key
- ✓ **START**



11.1.4 Stopping the machine

- ✓ Turn the ignition key.
- ✓ Engine stops.

11.2 Start | stop the CM2 *PRO* GXV engine

Before starting the engine, make sure that all controls are in their neutral positions to prevent uncontrolled starting of attachments. Then observe the following steps:

11.2.1 Starting the engine

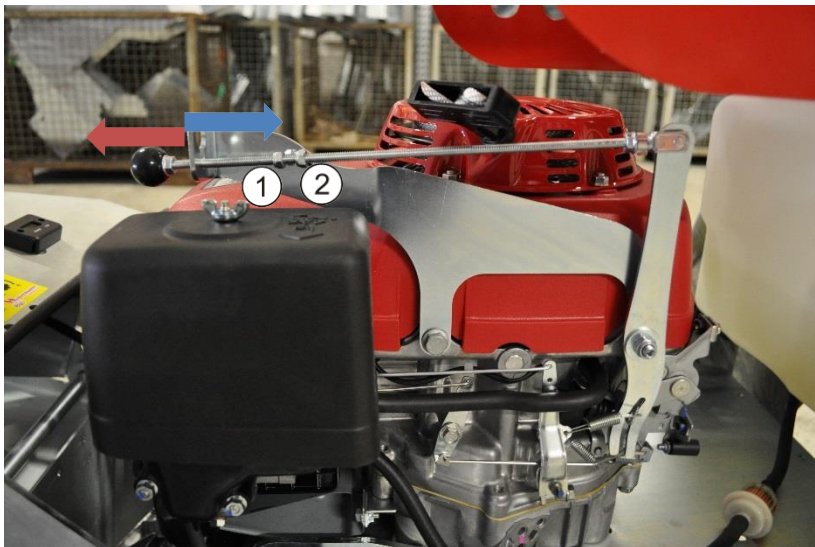


Fig. 8 - Starting the engine

← Start engine

- Lift the throttle rod and pull out to behind the guide nut **2** before securing over the keyhole plate (choke position).
- After the engine has warmed up, briefly raise the throttle lever again and insert between the two nuts **1** + **2**.

→ Stop engine

- Lift the throttle rod and push it back as far as it will go.

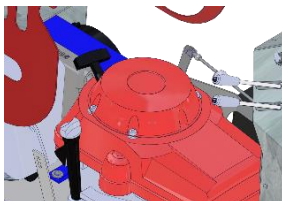


Fig. 9 - Starter cord

11.2.2 Starter cord

- ⇒ In case of failure of the electric start due, for example, to insufficient battery voltage.
- ✓ Lift the engine cover
 - ✓ Push the throttle lever into the foremost position.
 - ✓ Strongly pull the starter cord directly at the engine until the machine starts.

11.3 Running-in period

The first 50 hours of operation have a major impact on the performance and service life of the CM2 *PRO*.

The following aspects should be taken into account for a long service life of the machine:

- ✓ *The engine can be run from start to full speed, but heavy loads should be avoided.*
 - ✓ *Stalling the engine is to be avoided!*
 - ✓ *Check fluid levels (oil, ...) frequently during running-in and check for leaks.*
 - ✓ *Repeatedly inspect nuts, bolts and screws etc. and re-tighten if necessary. Pay particular attention to wheel bolts!*
 - ✓ *Use only clean fuel.*
-



Proper maintenance is of crucial importance for the operational safety of the vehicle.

11.4 Short engine running time

The oil level must be checked regularly when running the engine for only short periods of time (less than 15 minutes)! When run for short periods, water and fuel can quickly get into the oil

and thus the lubricating effect of the oil is largely lost. This has the consequence that parts wear out faster and thus creates a high risk of engine damage. Therefore, if the engine is often only run for short periods it is advisable to change the engine oil at regular intervals or to let the engine run once or twice a week for half an hour, so that it is not only operated in a cold condition.



11.5 Functional overview

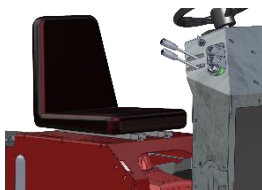


Fig. 10 - Seat adjustment

Seat adjustment

The lever for seat adjustment (to optimally position yourself on the machine) is located on the left hand side in the direction of travel under the seat.

Briefly pulling the locking bar outwards unlocks the track. Positioning takes place via body movement.



Fig. 11 - Parking brake

Parking brake

In order to prevent the machine from moving in idle state, the parking brake can be activated for safety reasons.

To operate the handbrake, pull the brake lever on the steering column upwards and place it in the notch.

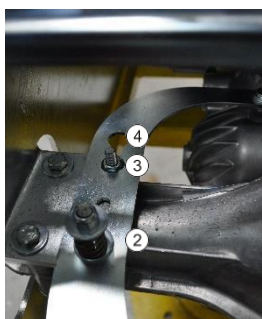


Fig. 12 - Gearbox release

Gearbox release

If the CM2 *PRO* is to be moved manually, the gearbox release must be used.

To activate the gearbox release, remove the rubber flap and turn the lever shown.

⚠ VORSICHT

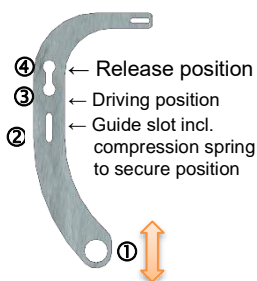
Only carry out the gearbox release with the engine switched off.

To activate the release

- Press the lever at the front tip **1** (approx. 2 - 5 cm) downwards to get over the nut.
- Pull lever forward and release above pos. **4**.
- Gearbox release is activated.

To deactivate the release

- Press lever **1** down and push it backwards.
- Then release the lever above pos. **3**.
- Gearbox release is deactivated.



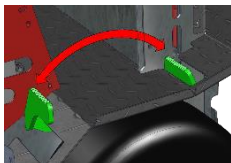


Fig. 13 - Accelerator pedal

Accelerator

The CM2 *PRO* has an accelerator pedal on the right side of the vehicle.

By pressing the pedal forward, the vehicle moves forward. The speed is regulated depending on the pressure intensity on the pedal.

The machine is reversed by pressing the rear of the pedal with the foot. The speed is regulated depending on the pressure intensity on the pedal.



Fig. 14 - Steering

Steering

The CM2 *PRO* has a very tight turning radius due to the wheel geometry. The chain-guided steering is translated via the steering wheel to the rear wheel. This allows turning in narrow passages and spaces on the spot.

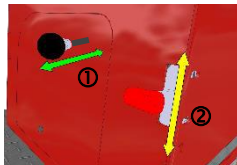


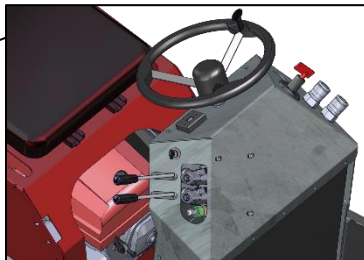
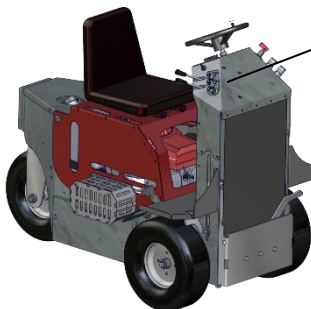
Fig. 15 - Speed control

Regulating engine speed

During operation, set the throttle position according to the desired engine speed.

	↔ GXV ①	↔ B&S ②	
<i>high speed</i>	<i>pulled out</i>	↑	
<i>low speed</i>	<i>pushed in</i>	↓	

Hydraulic controls



Upper hand lever - Attachment position

Hand lever pushed forward:

Lowers the hoist

Hand lever pulled backwards:

Raises the hoist

Hand lever pushed all the way forward:

Floating position

Lower hand lever - Attachment direction of rotation

Hand lever pushed forward:

Pressure on connector A

Hand lever pulled backwards:

Pressure on connector B



12 Attachments

The following attachments can be mounted on the CM2 *PRO*. This ensures a variety of uses.

Attachments in the hoist

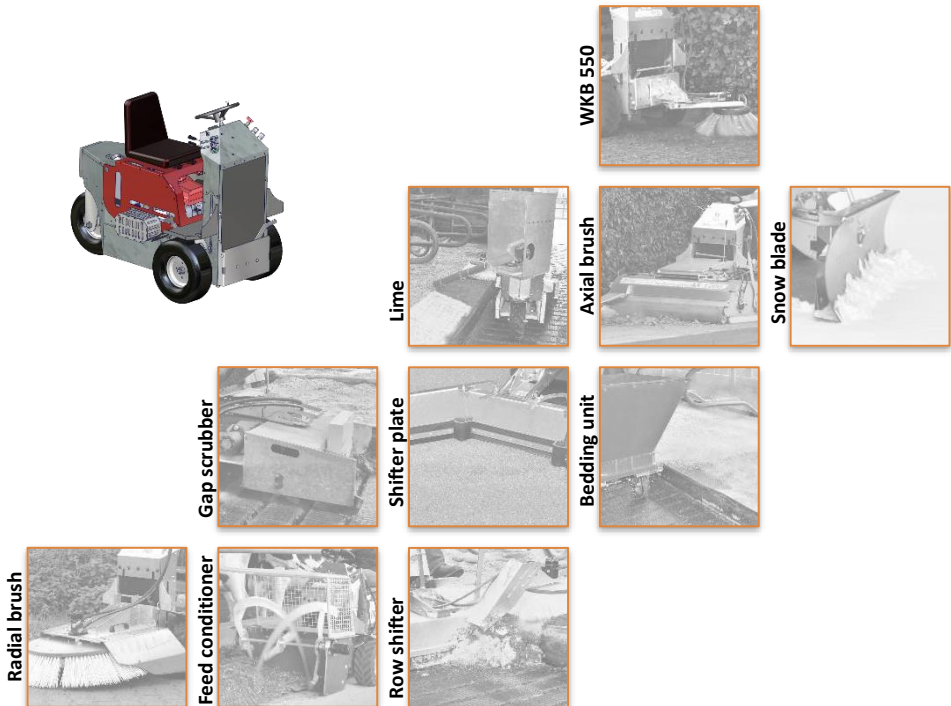


Fig. 16 - Attachments



- The attachments themselves must not be changed!
- The safety regulations in chapter 4 apply.
- Conversion or modification of the attachments by the operator or a third person will void the liability for any resulting damage.

12.1 Attachment of the equipment

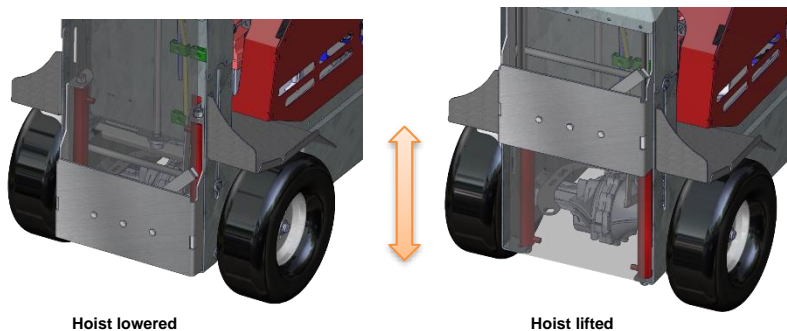
The hoist connects the machine and the attachment making it into one working unit. The position and lifting of the attachment are hydraulically controlled. In addition, the weight and load of the attachment exert pressure on the front axle to improve traction.

The selected attachment is to be attached or coupled onto the CM2 *PRO*.

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If ballast weights are required, they must be connected to the CM2 *PRO* at the designated attachment points according to the instructions.

When attaching or coupling the attachments particular caution is necessary.



Hoist lowered

Hoist lifted

Fig. 17 - Fitting attachments

Always lower the attachments to the ground, turn off the engine, and release the system pressure (by operating the control levers with the engine off) before attaching or detaching the attachments' hoses. The machine has a 350 mm lift height.

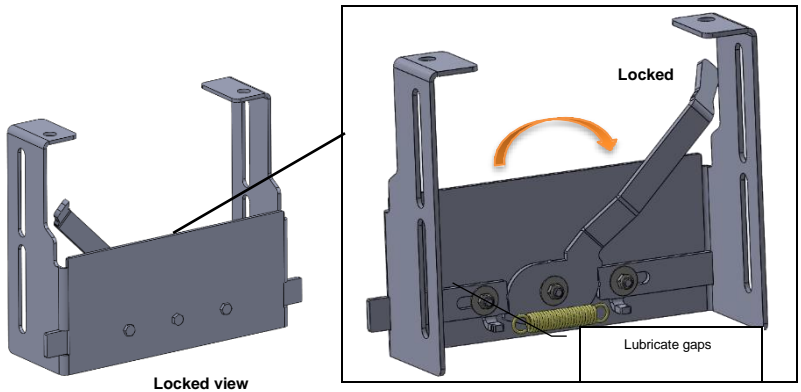


Fig. 18 - Equipment lock

The attachments are factory-equipped with a mounting bracket. The attachment is attached to the illustrated holder by approaching the CM2 *PRO* in a straight line. Once the attachment is correctly mounted in the bracket, the attachment is firmly connected to the machine by simply swinging the lock over. The two parallel locking bolts slide out. Depending on the attachment and application, further connections such as hydraulic lines or power supply must be made. The complete machine can then be used.

12.1.1 Regular lubrication of the equipment lock

The mobility of the equipment lock must be checked at regular intervals. If the function is impaired by dirt and/or stiffness, the equipment lock must be cleaned and the moving parts must be lubricated with grease.

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It is recommended to use a brush when applying grease.

12.1.2 Floating position

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The floating position of the hydraulic system is made possible by pushing the upper control lever away into the locking position.

13 Maintenance and servicing

13.1 General



All maintenance, repair and modification work on the CM2 *PRO* is only to be carried out at a standstill and with the engine switched-off. The procedure described in the operating manual for stopping the machine must be strictly adhered to.



The CM2 *PRO* is to be checked to ensure it is in a safe condition and secured to prevent it rolling away.



The safety regulations in chapter 4 apply.

Note before starting work:

- ✓ Check for externally visible damage and defects! Immediately report any changes (including those regarding operating behaviour) to the responsible service personnel! If necessary, take the machine out of service immediately!
- ✓ Check the completeness and functionality of all accessories. Worn parts, or those whose functionality has been impaired must be replaced. Replacement parts must be ordered from the manufacturer.
- ✓ Monitor the completeness and legibility of all type and information labels as well as the operating manual. Replace missing or illegible signs and documents.

Please note during regular maintenance:

- ✓ If necessary, electronically stored instructions for maintenance must be available in paper form during maintenance.
- ✓ For maintenance work involving components from third-party manufacturers, consult the documentation of the third-party manufacturer if necessary.
- ✓ Maintenance work requiring specialist knowledge can only be carried out by service personnel.
- ✓ The intervals specified in the maintenance schedule must be adhered to as a minimum, but they can also be shorter, depending on operator specifications and environmental conditions.
- ✓ **Correct safety-relevant defects immediately!**
- ✓ Only use original spare parts and manufacturer approved accessories/tools.
- ✓ Only use components that meet the required specifications.

13.2 Table of regular servicing

		Before starting	First service 20 hours	100 hours	200 hours	300 hours	400 hours	500 hours	Per month	Per year	Remarks	
Engine	1	Engine oil	X								Change every 100 hours	
	2	Engine oil filter		X	X	X	X	X	X		Change every 100 hours	
	3	Radiator	C							X	Flush out once a year	
	4	Radiator hose								X	Change every 2 years	
	5	Fuel filter	C	X							Change every 500 hours	
	6	Fuel hose	C								Change every 2 years	
	7	Engine valve clearance							W		Check every 500 hours	
Gearbox		Gear oil		X	X		X				Change every 400 hours	
		Gear oil filter		X	X		X				Change every 400 hours	
		Screw connections	X								Check before operation	
		Wear parts							W		Check every 100 hours	
		Gear brake		X	X	X	X	X	X		Check every 100 hours	
		Bearing clearance		X	X				W		Check every 100 hours	
		Tightness	C								Check before operation	
CM2 PRO		Hydraulic oil						X			Change every 500 hours	
	10	Hydraulic oil filter						X			Change every 500 hours	
	11	Lock chain	C		X	X	X	X	X		Check every 100 hours	
	12	Accelerator pedal play	C		X	X	X	X	X		Check every 100 hours	
	13	Throttle cable	C		X	X	X	X	X		Check every 100 hours	
	14	Tyre pressure	C		X	X	X	X	X		Check every 50 hours	
	15	Wheel nuts			X	X	X	X	X		Check every 100 hours	
	16	Elec. wiring								X	Check once a year	
	17	Lubricate lubrication	X	X	X	X	X	X	X	X	X	Check before operation
	18	Lubricate the equipment lock	X	X	X	X	X	X	X	X	X	Check before operation
	19	Check housing for cracking	X	X	X	X	X	X	X	X	X	Check before operation
20	Hydraulic hoses	X	X	X	X	X	X	X	X	X	Check prior to operation, change after 5 years	
21	Hydraulic cylinders	X	X	X	X	X	X	X	X	X	Check before operation	

X: Inspection instruction to be carried out

C: Check

W: Execution by specialist workshop

13.3 Screw connections

Check bolts and nuts for the first time after five hours of operation and then tighten them regularly (every 50 hours of operation).

- ✓ All torques are standard values for metric standard threads according to DIN. Friction coefficient 0.14 - new bolts - unlubricated. The values were recommended as guide values by different bolt manufacturers. The manufacturer does not assume any liability in case of application.
- ✓ Self-locking nuts must be replaced after each dismantling.

Thread	3.6	5.6	6.8	8.8	10.9	12.9
M6	3.43	4.51	8.73	10.3	14.71	17.65
M8	8.24	10.79	21.57	25.50	35.30	42.17
M10	16.67	21.57	42.17	50.01	70.61	85.32
M12	28.44	38.25	73.55	87.28	122.58	147.10
M14	45.11	60.80	116.70	135.27	194.17	235.36
M16	69.63	93.16	178.46	210.84	299.10	357.94
M18	95.13	127.40	245.17	289.30	411.88	490.34
M20	135.33	180.44	348.14	411.88	576.50	669.26
M22	162.40	245.17	470.72	558.98	784.45	941.44



13.4 Tensioning/loosening the steering roller chain

13.4.1 Version with turnbuckle



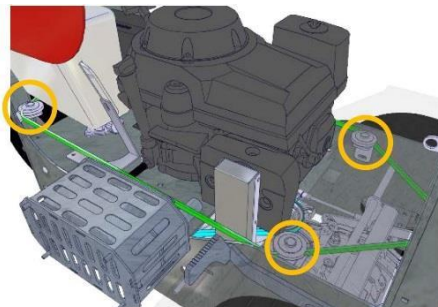
Fig. 19 - Tensioning/loosening the roller chain

Steering roller chain

When the engine cover is raised, the steering chain is located on the housing geometry as shown in the illustration.

For tensioning or loosening the chain, a turnbuckle is fitted between the chain links as shown in the illustration. The chain is tensioned or loosened by turning the turnbuckle.

13.4.2 Version with rollers

**Fig. 20 - Tensioning/loosening the roller chain****Steering roller chain**

When the engine cover is raised, the steering chain is located on the housing geometry as shown in the illustration. The vehicle is fitted with four chain guide rollers for tensioning or loosening the chain. The slotted guide rollers allow the desired tensioning/loosening of the chain. When finished, tighten the screws properly.

13.5 Tensioning/loosening the engine V-belt

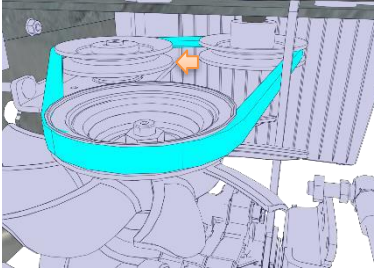
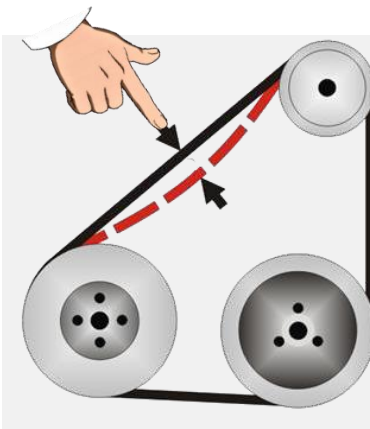


Fig. 21 - Tensioning/loosening the engine V-belt

Engine V-belt

When the engine cover is raised, the engine V-belt is centrally located in the machine. Access is provided by removing the tread plate. To tension/replace the belt, the screw connection of the tensioner must be loosened/tightened on the right in the direction of travel. The belt is placed or removed via the belt pulleys as shown in the illustration opposite. Install the new belt in the appropriate order.



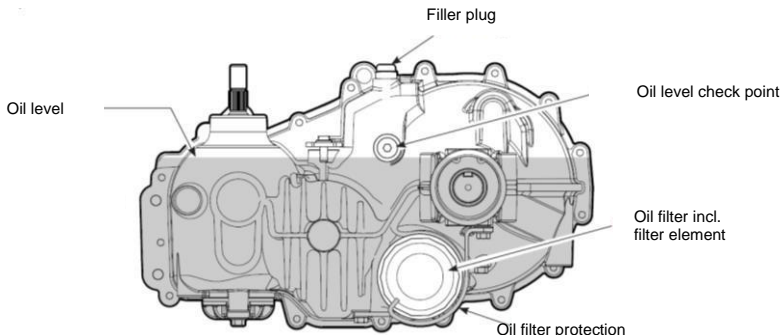
HINWEIS

Apply pressure to the V-belt with two fingers.

If the preload is correct, the belt can be pressed down by only 10 mm.

If the V-belt is new, then by only approx. 5 mm.

13.6 Changing the gear oil



Sequence of operations:

- ✓ Dismantle oil filter protection
- ✓ Dismantle oil filter
- ✓ Allow the oil to drain off completely
- ✓ Remove filler plug and oil level check point
- ✓ Replace filter element (Art. No.: KT-00-00797)
- ✓ Mount oil filter and oil filter protection properly
- ✓ Fill up gear oil to the oil level check point (quantity approx. 2.7l)
 - Oil grade 20W50 standard, 15W50 for colder regions.
- ✓ Close check point and filler plug again
 - If necessary, replace sealing ring

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Operate the vehicle for approx. 1 minute and check the oil level again

Cleaning procedures:

Due to the impact air has on efficiency in hydrostatic drive applications, it is important that it is flushed out of the system.

Air causes inefficiency because its compression and expansion rate is higher than that of oil approved for use in hydrostatic drive systems.

These flushing operations should always be performed when a hydrostatic system has been opened to facilitate maintenance or to change the oil.

The resulting symptoms in hydrostatic systems can be:

- ✓ Noisy operation
- ✓ Lack of power or drive after short-term operation.
- ✓ High operating temperature and excessive oil expansion.

Before starting, make sure that the oil level in the gearbox is correct.

The following procedures are best carried out with the vehicle wheels on the ground. Then repeat under normal operating conditions. If this is not possible, the procedure should be carried out in an open area free of objects or bystanders.

- ✓ Switch off the brake if it is activated.
- ✓ With the bypass valve open and the engine running,

slowly move the direction controller in the forward and reverse direction (5 to 6 times).

- ✓ With the bypass valve closed and the engine running,
slowly move the direction control forward and backward (5 to 6 times). Check the oil level and top up oil after switching off the engine.

It may be necessary to repeat the steps until all air is completely removed from the system. When the gearbox operates at normal noise level and moves smoothly forward and backward at normal speeds, the gearbox is considered cleaned.

13.7 Procedures after maintenance

After completing the maintenance, perform the following steps:

- ✓ Make sure that all previously loosened screw connections are tightened.
- ✓ Ensure all previously removed guards and covers are properly reinstalled.
- ✓ Ensure all tools, materials, and other equipment used have been removed from the work area.
- ✓ Clean work area and remove any leaked liquids. Remove cleaning material such as cloths, etc.
- ✓ Make sure all safety devices are working properly.

13.8 Notes regarding maintenance work

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For maintenance work and related replacement of components, only the use of original spare parts is permitted.

13.9 Documentary list

HINWEIS

Incidents and interference must be recorded in a documentary list. The documentary lists must be filed electronically and/or in paper form.

14 Residual risks



Slip hazards

▲VORSICHT

Risk of injury due to slip hazards!

Defective or improperly fastened hydraulic components can lead to the escape of lubricants in the event of damage.

Therefore:

- ✓ Operation may only be carried out by trained personnel.
- ✓ Perform all operating steps in accordance with the instructions in this operating manual.
- ✓ Before operation, make sure all fasteners are properly connected and undamaged.
- ✓ In case of visible oil loss, stop operation immediately and switch off the machine.
- ✓ Use the provided personal protection equipment!



▲GEFAHR

Hot surfaces

Risk of injury due to hot surfaces!

Parts and components of the machine may become very hot in the event of excessive use and may cause injury if they come into direct contact with the skin.

Therefore:

- ✓ Operation may only be carried out by trained personnel.
- ✓ Perform all operating steps in accordance with the instructions in this operating manual.
- ✓ Mark affected components with warning signs.



Improper operation

▲ GEFAHR



Risk of injury due to improper operation!

Improper operation can lead to personal injury or property damage.

Therefore:

- ✓ Operation may only be carried out by trained personnel.
- ✓ Perform all operating steps in accordance with the instructions in this operating manual.
- ✓ Before operation, make sure all fasteners are properly connected and undamaged.
- ✓ Pay attention to order and cleanliness! Loosely stacked or objects lying around, such as tools, cables and components are potential sources of accidents.



Operation movements

▲ GEFAHR



Risk of injury due to moving components!

During operation, individual components or components of the machine can move and lead to dangerous situations.

Therefore:



- ✓ Always monitor the danger zone during operation and ensure that no persons are present there.
- ✓ Switch off the equipment before carrying out work on the main switch and secure it against being switched on again.
- ✓ Perform all operating steps in accordance with the instructions in this operating manual.
- ✓ Do not operate the machine without safety devices. Install all safety devices securely before starting.

15 Storage conditions

For proper storage, park the CM2 *PRO* in a dry and clean place and secure against unplanned startup.

Risk of accident!

The CM2 *PRO* is to be checked to ensure it is in a safe condition and secured to prevent it rolling away.

- ✓ Park the vehicle level
- ✓ Activate the parking brake



Fig. 22 - Vehicle

HINWEIS

Check vehicle for possible damage!
Clean the CM2 *PRO* thoroughly, if necessary. Dirt attracts moisture and leads to corrosion. Repair paint damage if necessary.

16 Troubleshooting

Fault	Cause	Remedy
Vehicle will not start.	✓ No fuel in the tank	✓ Fill the fuel tank
	✓ Spark plug defective	✓ Replace spark plug
	✓ Accelerator pedal faulty	✓ Check throttle cable position
Vehicle does not drive	✓ Parking brake applied	✓ Release the parking brake
	✓ Gearbox in neutral	✓ Turn the lever
	✓ V-belt defective / loose	✓ Replace or tension the V-belt
Attachment does not turn	✓ Hydraulic connections not working properly	✓ Check the connections
	✓ Hydraulic oil level too low	✓ Top-up hydraulic oil
	✓ Control valve defective	✓ Consult specialist workshop
	✓ Too low pressure or volume flow	✓ Consult specialist workshop
	✓ Hydraulic motor defective	✓ Consult specialist workshop
Hydraulic lifting does not work	✓ Hydraulic oil level too low	✓ Top-up hydraulic oil
	✓ Control valve defective	✓ Consult specialist workshop
	✓ Cylinder defective	✓ Consult specialist workshop

17 After operation

After operation of the CM2 *PRO*, it must be stored properly: When storing the machine, the following points must be observed:

- ✓ The CM2 *PRO* must be placed in such a way that it can not tip over or fall down.
- ✓ At the storage site, the ambient conditions must meet the required conditions (see technical data).
- ✓ The machine, which does not have sufficient protection itself, must be protected against the effects of the weather and corrosive substances if these can impair safety.

If the machine is to be shut down for a long time, it may be necessary to take preservation measures to prevent corrosion and other damage.

17.1 Dismantling / Disposal

Disassembly/disposal should be carried out by a specialist. Using specialists in the recycling and waste management sectors ensures that waste is disposed of correctly and recycled. The raw materials of the CM2 *PRO* must be sorted according to disposal type and material. The copper-containing components such as cables can be recycled. Equipment such as fuses, capacitors, regulators, etc. must be disposed of as electronic waste, these must not be disposed of with household waste in order to prevent environmental damage. The support frame and the protective covers can be recycled as metal scrap.

18 Warranty policy

The following policy for the Westermann warranty is valid as of 01.01.2002.

1. When using Westermann products in the consumer goods sector (private use), which were sold through Westermann dealers, the warranty period from the date of sale to the end customer is 2 years. When using Westermann products in the capital goods sector (commercial/professional), which were sold through Westermann dealers, the warranty period from the date of sale to the end customer is 1 year.
2. The warranty covers defects that can be attributed to material and/or manufacturer errors. Any faults resulting from a Westermann product defect or production defect during the warranty period will be recognised and remedied by repair or replacement of parts via a Westermann dealer.
3. Exempted from this are wear parts such as Bowden cables, starter cord, V-belts, bearings, clutch plates, tires, air filters, spark plugs, glow plugs, fuel filters, oil filters, sweeping brushes, rubber lips, batteries as long as these do not exhibit obvious material defects.
4. Warranty claims are generally excluded in case of poor maintenance and care. Regular maintenance and cleaning of the product according to the instructions in the Westermann operating manual is imperative. Damage due to improperly performed maintenance and cleaning work can not be accepted as a valid guarantee claim.
5. The operating instructions for the respective product as well as safety instructions must be observed. Damage caused by operating errors, improper use or use of accessories not approved by Westermann GmbH & Co. KG can not be accepted as a valid warranty claim.

6. It must be ensured that only original Westermann spare parts and Westermann accessories are used, which can be obtained from the Westermann dealer. If original Westermann spare parts or Westermann accessories are not used, consequential damage and increased risk of accidents can not be ruled out. These consequential damages are not covered by the warranty.
7. From 01.01.2002 only the Westermann warranty claim process is to be used. The warranty claim information is mandatory. Exceptions cannot be made. Warranty claims without the required information can not be processed and will be returned for completion of the missing information.
8. The Westermann Machine and Warranty certificate (warranty document) is to be completed within 4 weeks of the date of sale of the product, including the data of the end customer, the end customer's signature as well as the indication of use (private | commercial | professional) to Westermann customer service.
9. The warranty period for original Westermann spare parts is 2 years if the installation is certified by a Westermann dealer (for wear parts the restriction under point 3 applies). For warranty claims relating to replacement parts or warranty repairs, we ask you to keep the parts in question for 2 months after receipt of the warranty claim. We will, if necessary, request the relevant part for examination.
10. The ordering of required spare parts for warranty purposes can only be made via Westermann customer service for logistical reasons as of 01.01.2002. From Monday to Friday between 08:00 and 16:30 telephone orders can be placed. Please state the item number, the serial number of the device in question and your customer no. Our telephone no. is: +49(0)5931 / 49690-0. In addition, there is the possibility to fax us your order for warranty replacement parts. Our fax no. is: +49(0)5931 / 49690-99.

11. Should your warranty claim be rejected, the ordered spare parts will be charged to you at their usual purchase conditions. Invoicing also occurs if no warranty claim has been received by Westermann Customer Service within 4 weeks. If a Westermann spare part for warranty repairs is not available at short notice (within 2 working days) and you use an original Westermann spare part from your stock to repair the damage, a free replacement delivery will be made by us when available or deliverable by Westermann customer service. If a replacement part is no longer available, the purchase price paid by you will be refunded.
12. The defective parts or machines are to be sent the Westermann factory in Meppen. Upon acceptance of the warranty, the freight charges will be reimbursed.
13. The warranty claim must be submitted to Westermann customer service no later than 5 working days after the repair has been completed, in order to ensure fast processing. Warranty claims received 3 months after the repair cannot be processed.
14. All previous warranty policies as well as the conditions in the General Terms and Conditions and point 7 hereby become invalid.



Westermann GmbH & Co. KG