



**Manoeuvrable.**

**Compact.**

**Powerful.**

**Cleanmeleon 2 XL**

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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**

**D – 49716 Meppen**

hereby declares that the following product

**Product name:** Cleanmeleon 2 *XL*  
**Make:** Westermann GmbH & Co. KG  
**Serial number:** 51. \_ \_ \_ \_  
**Model / type description:** **CM2 *XL***  
**Description:**

The Cleanmeleon 2 *XL* is a self-propelled compact work machine that does not fully comply with road traffic regulations. 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:**

Name and address of the person authorised to compile the technical documentation:

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Date: 10.12.2015



(Unterschrift)

**Alfons Westermann** Managing Director

## 2 Legal information

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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 your attention to the handling and impact of safety information.



Draws your attention to a dangerous situation that **will** result in serious injury or death if not avoided.



Draws your attention to a dangerous situation that **can** result in serious injury or death if not avoided.










Draws your attention to a dangerous situation that may result in minor or moderate injury if not avoided.



Alerts you to possible property damage 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	Importance
	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 **XL** has a nameplate that contains all basic data.  
Components and accessories from suppliers have their own nameplates.

Type:	<b>Cleanmeleon 2</b>	
Serial number:	51. _ _ _ _	
Year of construction:	2015	
Tare weight: Hoist	405 kg	
load capacity:	300 kg	
	10.8 kW	
		<b>Westermann GmbH &amp; Co. KG</b> Schützenhof 23 49716 Meppen

### 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 *XL* 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 hard surfaces such as courtyards, paths, car parks, silo plates and stables, clearing snow, breaking up fodder, littering stables or similar work.

The Cleanmeleon 2 *XL* 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 *XL* is referred to below simply as a machine or CM2

*XL*.

## 4.4 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.

## 4.6 Danger zone



**⚠️ WARNUNG**

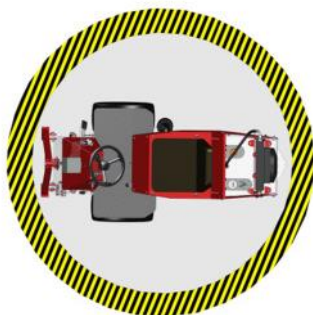
### **Danger while within the danger zone!**

*Being in the danger zone involves risks that unauthorised persons cannot 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 meter is declared a danger zone. This area must be free of unauthorised persons during the work process in order not to affect the work process. Attachments can increase the danger zone of the machine depending on their size.



**Fig. 1 - Danger zone**

## 4.7 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

## 4.8 Behaviour in case of emergency



### 4.8.1 Personal injury

**▲VORSICHT** If during use an event occurs from which personal injury results, the measures taken depend on the severity of the injury.

### 4.8.2 Case of fire



Feuerlöscher

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

- Protect people
- Fight the fire
- Repair damage

### 4.8.3 Technical complications

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

## 4.9 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.

### 4.9.1 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.  $-10^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$
- ✓ Suitable area of use which guarantees safe usage of the CM2

*XL.*

### 4.9.2 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.

## 4.10 Responsibility of the operator

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



#### 4.10.1 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.

## 4.11 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.

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

### Instructed operating personnel for operation

## 4.12 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. We point out that we accept no liability 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.

## 4.13 Residual hazards and protective measures

The knowledge and technical implementation of the safety instructions contained in this documentation is a prerequisite for a faultless product. However, this documentation cannot 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.

## 4.14 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.

## 4.15 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. **NEVER** use indoors 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 read in 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

**CM2 XL**

**Basic dimensions**

	<b>Value</b>	<b>Unit</b>
Machine length	1.78	meters [m]
Machine width	0.85	meters [m]
Machine height	1.26	meters [m]
Speed	10	km/h
Dry weight	405	kilograms [kg]

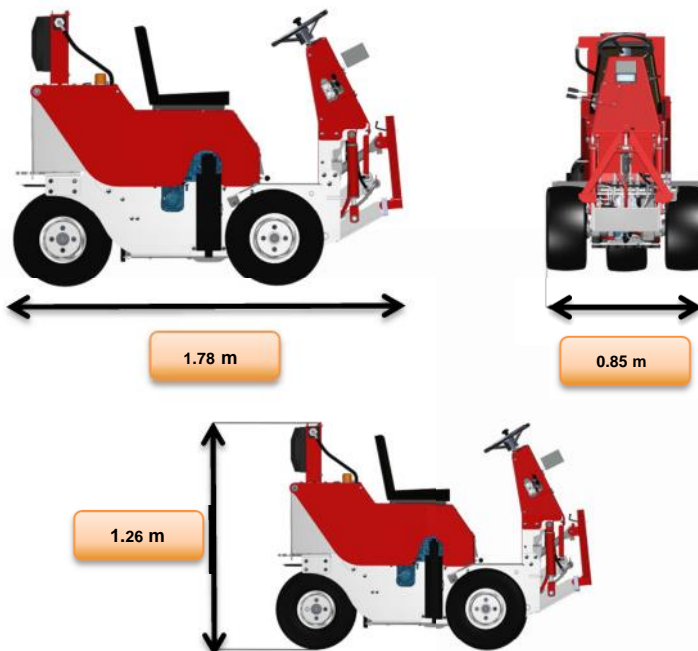


Fig. 2 - Dimensions

## 6.2 Variant CM2 *XL*

### Specifications

Engine variant	Kubota Z602	
Engine type	2-cylinder standing, <i>water-cooled</i>	
Number of cylinders	2	
Combustion system	swirl chamber	
Intake system	naturally aspirated	
Engine power:	10.8   <b>14.7</b>	kW   <b>PS</b>
Revs.	3200	rpm
Fuel	diesel	
Starter	electric starter	

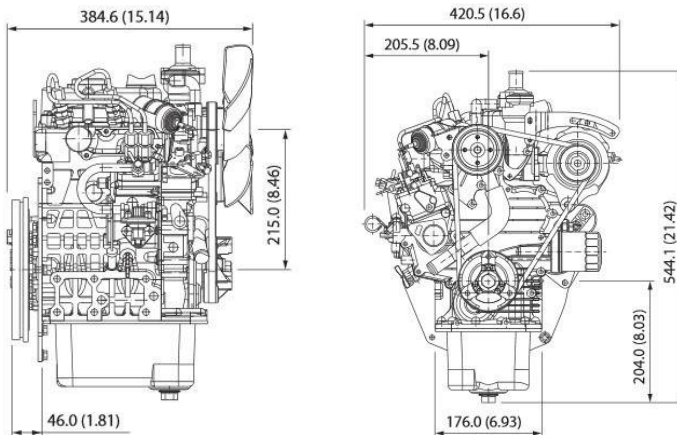


Fig. 3 - Engine dimensions

Tyre pressure front <b>min   max</b>	2.2   2.5	bar
Tyre pressure rear <b>min   max</b>	2.2   2.5	bar
Hydraulic oil	HLP 46	
Oil pressure in bar	~ 210	bar
Drive pump (at maximum engine speed)	~ 45	l/min
Work hydraulics (at maximum engine speed)	~ 24	l/min
Hydraulic oil tank	~ 17	litres
Diesel tank	~ 17	litres
Maximum inclination <b>right   left</b>	15	°
Maximum inclination <b>front   behind</b>	15	°
Emission sound pressure level	82	dB/A

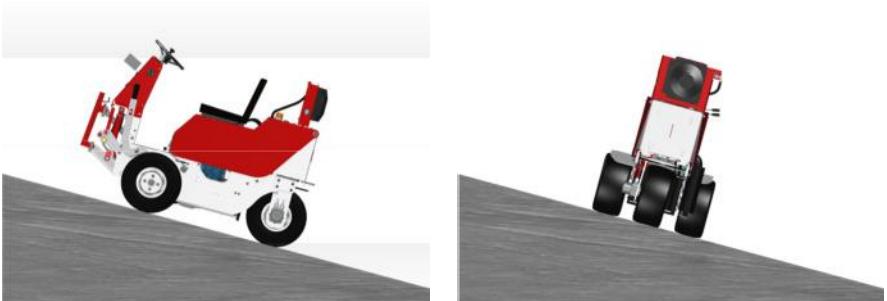


Fig. 4 - Inclination



## 7 Assembly, first start-up

### 7.1 Safety

**HINWEIS** To ensure the safety of man and machine, easy and risk-minimised assembly/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 *XL* is designed and implemented for the discerning farmer. It serves as a carrier vehicle for wide-ranging applications.

It is possible to sweep hard surfaces 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 diesel engine ensures effortless working with various accessories and attachments while being always ready for operation.

The CM2 *XL* can be moved forwards or backwards via the right foot pedal. Furthermore, it is possible due to the arrangement of the three wheels to rotate the CM2 *XL* 360 degrees on the spot. 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 structure, making the CM2 *XL* ideal for use in the agricultural sector.

## 9 Control

The machine is operated exclusively via the control units on the steering column. The hoist is operated via an integrated valve block 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. 5 - Controls

Position	Description	Function
1	Speed regulation	Regulation of diesel engine speed
2	Way valve	Hydraulic control for the power lift including control circuit
3	Work lights	Work lights for front lighting
4	Engine control	Operating instrument for engine control/monitoring
5	Main power supply	Interruption of the battery voltage
6	Accelerator	Foot pedal for continuous speed regulation

## 10 Start-up

### 10.1 Checking the engine before start-up

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

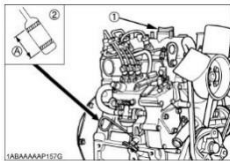


Fig. 6 - Oil level

- (1) Oil filler neck
- (2) Dipstick
- (A) The engine oil level within this range is correct.

#### Checking the engine oil level

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

**Oil quantity must be in the area of the corrugated marking (A)!**

#### HINWEIS

*The oil dipstick is located on the left side of the engine in the direction of travel at frame recess level.*



Fig. 7 - Hydraulic oil level

#### Checking the hydraulic oil level

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

**Oil quantity must be in the marked area!**

#### HINWEIS

*The oil dipstick is behind the driver's seat on the right side of the combination tank in the direction of travel.*



Fig. 8 - Fuel supply

#### Checking fuel tank contents

The amount of fuel is checked at the tank! Open the cap. In addition, the machine has a reserve tank display.

#### HINWEIS

*The fuel tank is behind the driver's seat on the left of the combination tank in the direction of travel.*

# 11 Operation

## 11.1 Starting | Stopping the CM2 XL

### General description

The CM2 XL has a BARTH STG-125 diesel engine governor. The STG-125 combines the ignition switch and built-in display lights in one unit. The controlled preheating and engine start procedure, combined with the automatic engine stop function in the event of a fault, ensure the longest possible service life of the engine.



Fig. 9 - STG-125

### Control

By pressing the START/STOP button for a short time (<1s) the ignition of the relay output is changed, which turns on all ignition loads without starting the engine.

This mode has a battery monitor, which blocks the entire ignition load, in case of low battery voltage. Pressing this button for longer (> 1s) initiates the engine start. At the beginning the STG-125 checks if a preheating start procedure is necessary. Then the starter is driven until it reaches idling speed. Pressing

START/STOP again causes the engine to stop immediately.



### Ignition/Engine ON

Status display of the STG-125 engine governor



### Battery

Control/monitoring of the generator voltage. Faults are indicated by the red LED light.



### Engine faults

Failed engine start, sensor or cable break are indicated by the yellow LED light.



### Oil pressure gauge

Low oil pressure leads to an immediate engine stop. Malfunctions prevent the engine from starting and are indicated by the red LED light.



### Temperature gauge

Indicates engine overheating that results in an immediate engine stop.


ON					STATUS
...	OFF	OFF	OFF	OFF	Regulator in Standby Mode
—	—	OFF	OFF	OFF	Ignition On
—	OFF	OFF	OFF	OFF	Engine is running without problems
...	—	OFF	OFF	OFF	Engine starting process
OFF	OFF	—	OFF	OFF	Engine malfunction Start procedure
OFF	OFF	—	—	OFF	Low oil pressure engine malfunction
OFF	OFF	—	OFF	—	Engine malfunction Temperature error

## 11.2 Running-in period

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

The following considerations should be taken into account to ensure you enjoy your CM2 *XL* for a long time.

- 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 DIESEL fuel

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

### 11.3 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 petrol 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.



### 11.4 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 - Handbrake

#### Handbrake

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

*To operate the handbrake, push the brake lever on the steering column outwards and pull towards the operator.*



Fig. 12 - Gearbox release

#### Gearbox release

If the machine is to be moved manually, the gearbox release must be used.

*To actuate the gearbox release, move the ball valve left in the direction of travel.*



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



Fig. 13 - Accelerator pedal

## Accelerator

The CM2 *XL* 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 pulling the pedal backwards with the foot. The speed is regulated depending on the pull intensity on the pedal.*

## Steering



Fig. 14 - Steering

The CM2 *XL* 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.

*Throttle lever pulled out: high speed ↑*

*Throttle pushed in: low speed ↓*

## Hydraulic controls

### Upper hand lever:

Hand lever pushed forward

- Hydraulic pressure on the **red connector**

Hand lever pulled backwards

- Hydraulic pressure on the **yellow connector**

### Lower hand lever:

Hand lever pushed forward: *Raises the hoist*

Hand lever pulled backwards: *Lowers the hoist*



Fig. 16 - Controls



## 12 Attachments

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

### Attachments with Accord triangle adapter

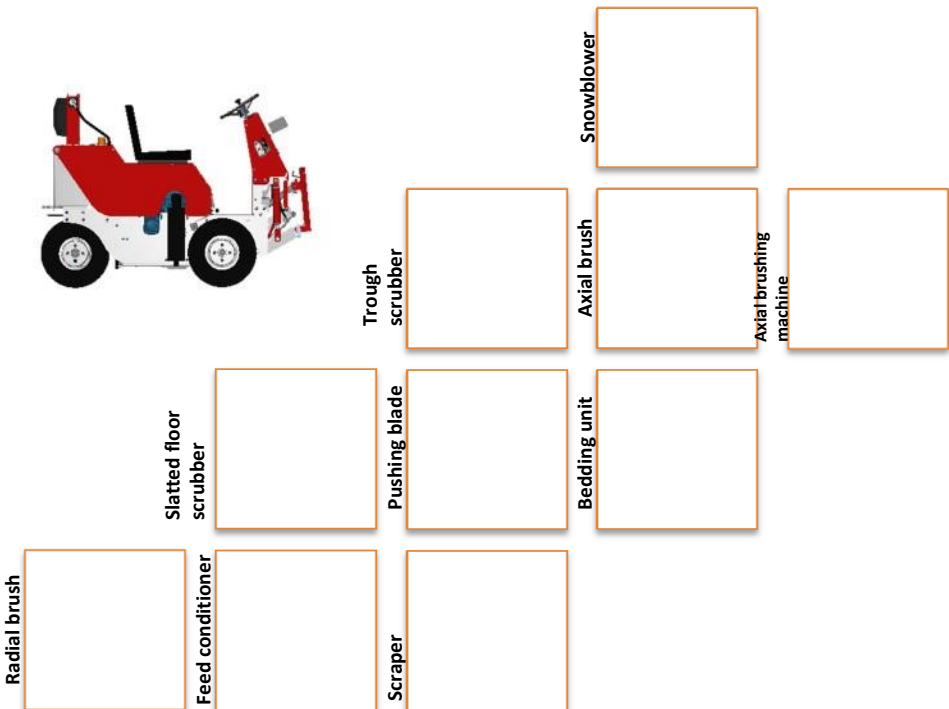


Fig. 17 - Attachments



- The attachments themselves must not be changed!
- The safety regulations in chapter 4 apply.
- The conversion or modification of the attachments by the operator or a third person, causes liability for any resulting damage to expire.

## 12.1 Attachment of the equipment

The three-point 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 *XL*.

### HINWEIS

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

**When attaching or coupling the attachments particular caution is necessary.**

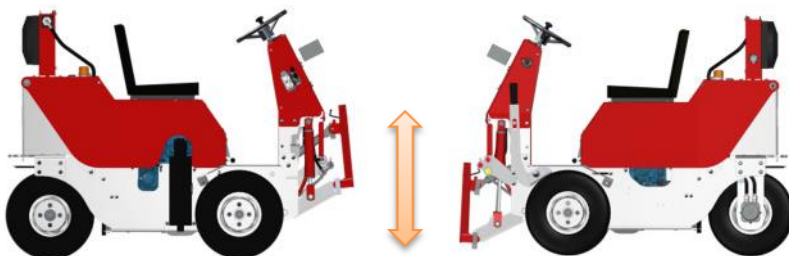


Fig. 18 - Fitting attachments

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 270 mm lift height.

### HINWEIS

#### Floating position

The floating position of the hydraulic system is made possible by pulling the control lever to the rearmost locking position.

## 13 Maintenance and servicing

### 13.1 General



All maintenance, repair and modification work is to be done on the CM2 *XL* only at standstill and when the engine is switched off. The procedure described in the operating manual for stopping the machine must be strictly adhered to.



The CM2 *XL* 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 maximum, 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	First inspection	100 Hrs.	200 Hrs.	300 Hrs.	400 Hrs.	500 Hrs.	Per month	Per year	Remarks	
<b>Engine</b>	1	Engine oil	X								Change every 100 hours	
	2	Engine oil filter		X	X	X	X	X			Change every 100 hours	
	3	Air filter	C						X		Change every 500 hours	
	4	Radiator	C							X	Flush out once a year	
	5	Radiator hose								X	Change every 2 years	
	6	Fuel filter	C	X							Change every 500 hours	
	7	Fuel hose	C								Change every 2 years	
	8	Electrolyte level			X						Check every 100 hours	
	9	Engine valve clearance							W		Check every 500 hours	
<b>CM2 XL</b>	10	Hydraulic oil						X			Change every 500 hours	
	11	Hydraulic oil filter						X			Change every 500 hours	
	12	Lock chain	C		X	X	X	X	X		Check every 100 hours	
	13	Accelerator pedal play	C		X	X	X	X	X		Check every 100 hours	
	14	Throttle cable	C		X	X	X	X	X		Check every 100 hours	
	15	Tyre pressure	C		X	X	X	X	X		Check every 50 hours	
	16	Wheel nuts			X	X	X	X	X		Check every 100 hours	
	17	Elec. wiring								X	Check once a year	
	18	Lubricate lubrication points	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

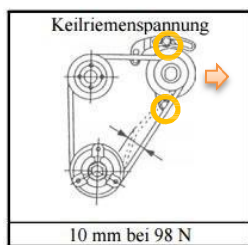
Check bolts and nuts for the first time after five hours of operation and then tighten them regularly (every 50 hours of operation).

- All torques  $M_A$  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. We cannot assume liability for use.
- 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 the V-belt



#### Engine V-belt

When the engine cover is raised, the engine V-belt is on the right in the direction of travel. To adjust and tension the belt, the screw connections of the alternator must be loosened. The belt can be adjusted via the curved guide. When finished, tighten the screws properly.

Fig. 19 - Tensioning V-belt

## 13.5 Replacing the V-belt

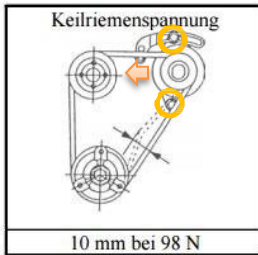


Fig. 20 - Replacing V-belt

### Engine V-belt

When the engine cover is raised, the engine V-belt is on the right in the direction of travel. To replace the belt, the screw connections of the alternator must be loosened. Then swivel the alternator all the way to the middle of the vehicle. The loosened belt can now be removed from the V-belt pulleys and guided past the fan propeller. Install the new belt in reverse order.

## 13.6 Tensioning the lock chain



Fig. 21 - Tensioning the lock chain

### Lock chain

When the engine cover is raised, the chain tension for the lock chain is on the left in the direction of travel. To tighten the lock chain, the screw connections of the tensioner must be loosened. The long holes in the vehicle frame allow the chain to be loosened and tensioned accordingly. When finished, tighten the screws properly.

## 13.7 Cleaning/replacing the air filter

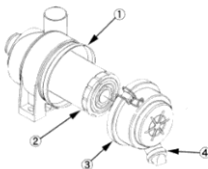


Fig. 22 - Cleaning the air filter

### Air filter

When the engine cover is raised, the air filter is located in the centre of the vehicle immediately in front of the engine. Loosen the hooking clips of the cover. Remove the air filter element and clean or replace it. During assembly, it is essential to ensure proper fastening of the clips. If loose, dust and dirt can be sucked in and cause damage.

- (1) Air filter body
- (2) Element
- (3) Filter cover
- (4) Evacuation valve

## 13.8 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.

## 13.9 Notes regarding maintenance work

### HINWEIS

For maintenance work and the associated replacement of components only the use of original spare parts is allowed.

## 13.10 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



Warnung vor  
Rutschgefahr

### 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!



### Hot surfaces

**▲GEFAHR**

*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 the operating manual.
- ✓ Do not operate the machine without safety devices. Install all safety devices securely before starting.

## 15 Storage conditions

Park the Westermann CM2 *XL* in a dry and clean place and secure against unplanned start-up.



Fig. 23 - T-handle switch

### Risk of accident!

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



Fig. 24 - Vehicle

- Park the vehicle level.
- Activate the parking brake

### HINWEIS

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

## 16 Troubleshooting

Fault	Cause	Remedy
Vehicle will not start.	<ul style="list-style-type: none"> <li>• No diesel in the tank.</li> <li>• Glow plug defective.</li> <li>• Air filter dirty</li> <li>• Accelerator pedal faulty</li> <li>• Engine control</li> </ul>	<ul style="list-style-type: none"> <li>• Fill the diesel tank.</li> <li>• Renew glow plug.</li> <li>• Clean/replace air filter</li> <li>• Check accelerator pedal</li> <li>• See chapter 11.1</li> </ul>
	Vehicle will not move	<ul style="list-style-type: none"> <li>• Handbrake activated</li> <li>• Gearbox in neutral</li> <li>• V-belt defective / loose</li> </ul>
Attachment does not turn		<ul style="list-style-type: none"> <li>• Hydraulic connections not working properly</li> <li>• Hydraulic oil level too low</li> <li>• Control valve defective</li> <li>• Too low pressure or volume flow</li> <li>• Hydraulic motor defective</li> </ul>
	Hydraulic hoist inoperable	<ul style="list-style-type: none"> <li>• Hydraulic oil level too low</li> <li>• Control valve defective</li> <li>• Cylinder defective</li> </ul>

## 17 After operation

### 17.1 After operation

After operation of the CM2 *XL*, it must be stored properly:

When storing the machine, the following points must be observed:

- The CM2 *XL* must be placed in such a way that it cannot 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.

### 17.2 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 *XL* 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 cannot 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 cannot 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 cannot 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 cannot 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**



## 19 Spare parts list

### 19.1 Cover plate

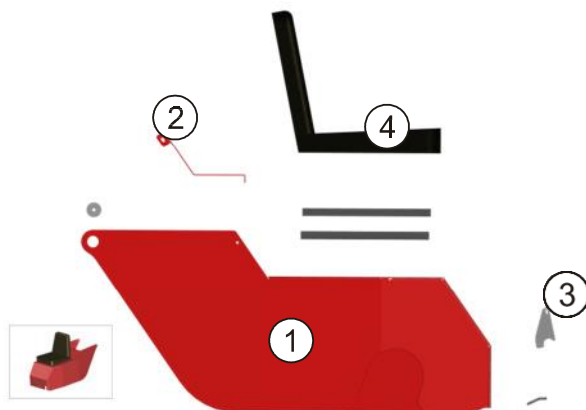


Fig. 25 - Cover

Pos.	Item no.	Description	DIN	Amount
1	LA-00-00457	Engine cover		1
2	LA-00-00458	Cover sheet		1
3	PE-00-00019	Cover holder		1
4	KT-00-00419	CM2 seat		1

## 19.2 Base frame

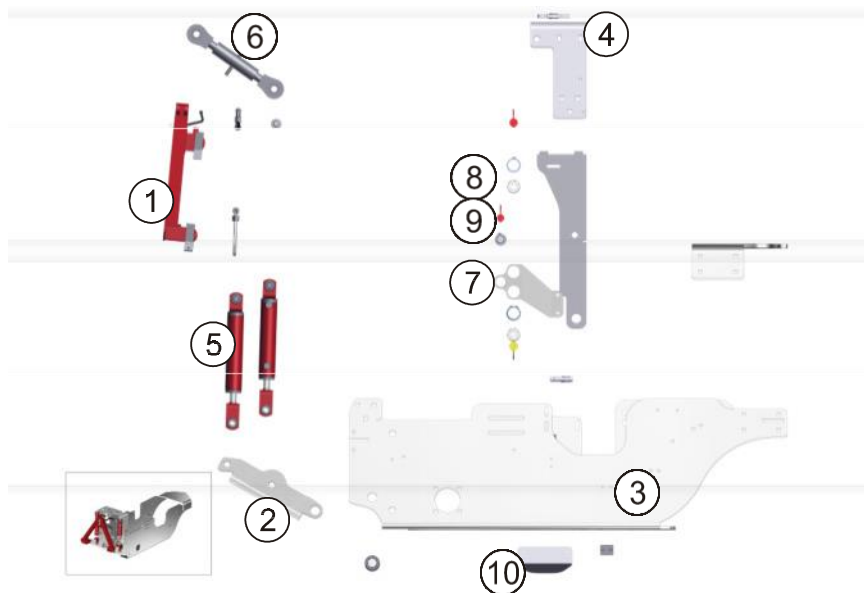


Fig. 26 - Base frame

Pos.	Item no.	Description	DIN	Amount
1	KT-00-00004	Triangle		1
2	LA-00-00010	Lower link		1
3	LA-00-00473	Chassis tub		1
4	LA-00-00470	Front crosspiece		1
5	KT-00-00035	Hydraulic cylinders		2
6	KT-00-00011	Top link		1
7	LA-00-00469	Angular plate connections		1
8	HY-00-00130	Plug-in coupling sleeve		2
9	HY-00-00131	Plug-in coupling		1
10	LA-00-00476	Exhaust deflection sheet		1

### 19.3 Power lift

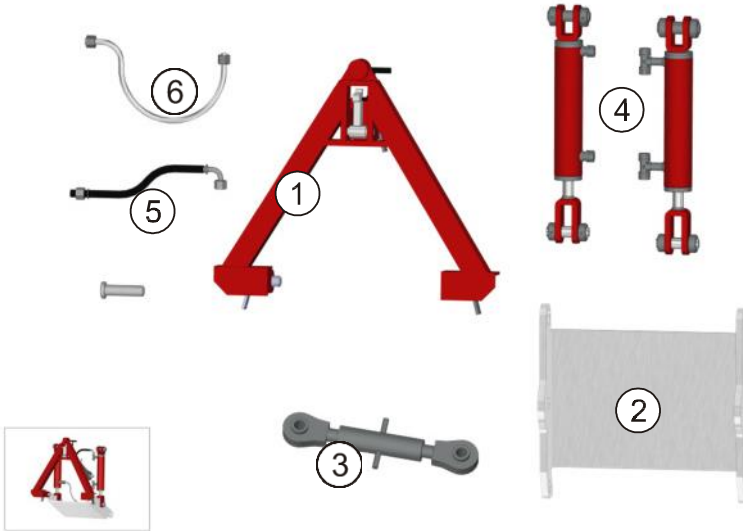


Fig. 27 - Power lifter

Pos.	Item no.	Description	DIN	Amount
1	KT-00-00004	Triangle		1
2	LA-00-00010	Lower link		1
3	KT-00-00011	Top link		1
4	KT-00-00035	Hydraulic cylinders		2
5		MBG_Hydr-Hose_Leak-Work-hydr.		1
6		MBG_HY. pipe		1

## 19.5 Hydraulic lines

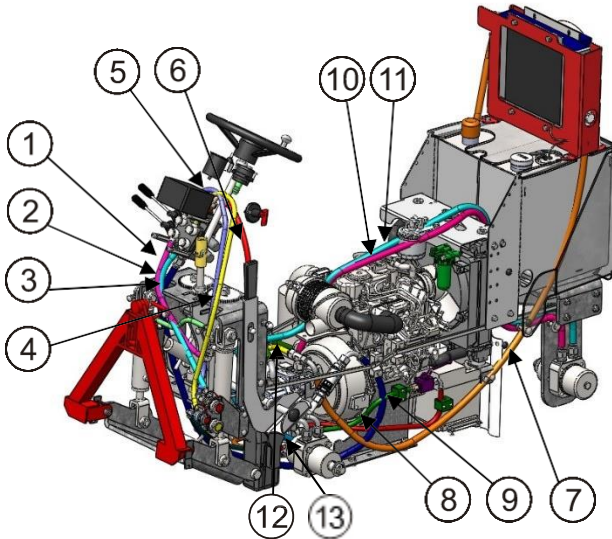


Fig. 28 - Hydraulic lines

Pos.	Item no.	Description	Feature	Amount
1	HYS-00-00062	MBG_Hydr-Hose_A-Valv_Hoist-piston		1
2	HYS-00-00066	G-Hydr-Hose_B-Valve_Hoist-bar		1
3	HYS-00-00073	MBG_Hydr-Hose_Filter_T-valve		1
4	HYS-00-00065	MBG_Hydr-Hose_B-Ventil_Work-Hydr_low		1
5	HYS-00-00064	MBG_Hydr-Hose_A-Valve-Work-hydr-upper		1
6	HYS-00-00063	MBG_Hydr-Hose_P valve/pump		1
7	HYS-00-00070	MBG_Hydr-Hose_D-Drivepump_Cooler-in		1
8	HYS-00-00074	MBG_Hydr-Hose_Ball-valve-2		1
9	HYS-00-00075	MBG_Hydr-Hose_Ball-valve-1		1
10	HYS-00-00081	MBG_Hydr-Hose_Drive-motor-bk		1
11	HYS-00-00080	MBG_Hydr-Hose_Drive-motor-bk		1
12	HYS-00-00067	MBG_Hydr-Hose_Tank-work-pump		1
13	HYS-00-00069	MBG_Hydr-Hose_HyMotor-T-St-drv-pump		1

## 19.6 Rear wheel bearing

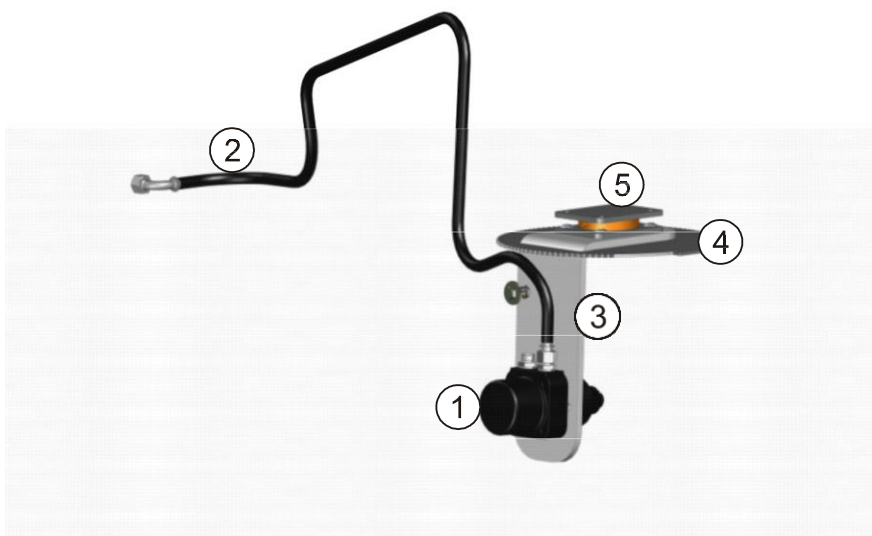


Fig. 29 - Rear wheel bearing

Pos.	Item no.	Description	DIN	Amount
1	MO-00-00023	Orbital engine rear		1
2	HYS-00-00080	MBG_Hydr-Hose_Drive-motor-bk		1
3	LA-00-00464	Rear wheel swingarm		1
4	LA-00-00465	Sprocket		1
5	KT-00-00113	Thrust bearings		1

## 19.7 Foot pedal

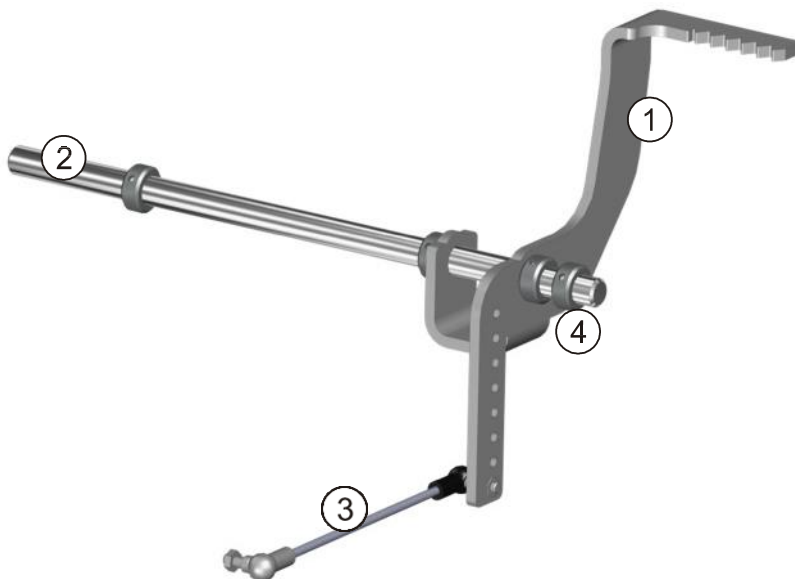


Fig. 30 - Foot pedal

Pos.	Item no.	Description	DIN	Amount
1	LA-00-00454	Accelerator		1
2	DR-00-00095	Accelerator shaft		1
3	VMBG-00-00012	Accelerator rod		1
4	KT-00-00167	Adjustment ring 20-32-14		4

## 19.8 Parts / components

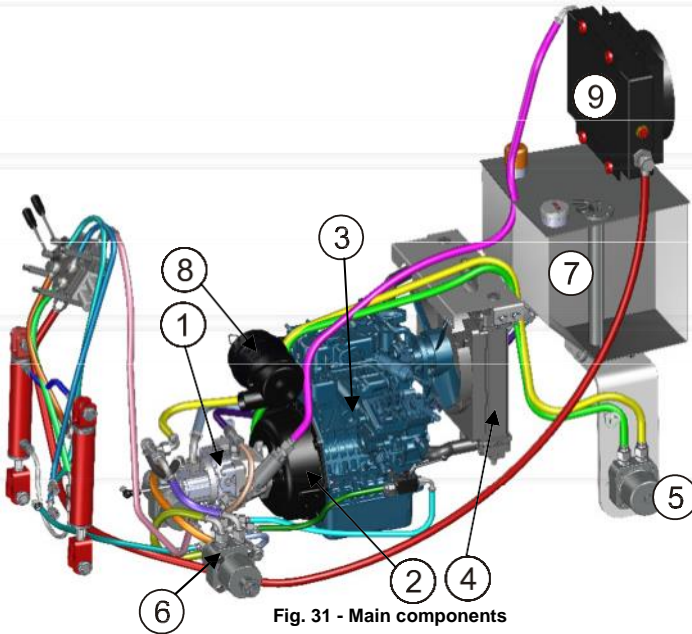


Fig. 31 - Main components

Pos.	Item no.	Description	DIN	Amount
1	KT-00-00618	Work pump		1
2	KT-00-00611 / 615	Flange coupling		1
3	MO-00-00022	Diesel engine		1
4	KT-00-00611	Fan		1
5	MO-00-00023	Orbital engine rear		1
6	MO-00-00024	Orbital engine front		2
7	SB-00-00029	Combination tank		1
8	KT-00-00002	Air filter KIT		1
9	KT-00-00016	Oil cooler		1

## 19.9 Steering console

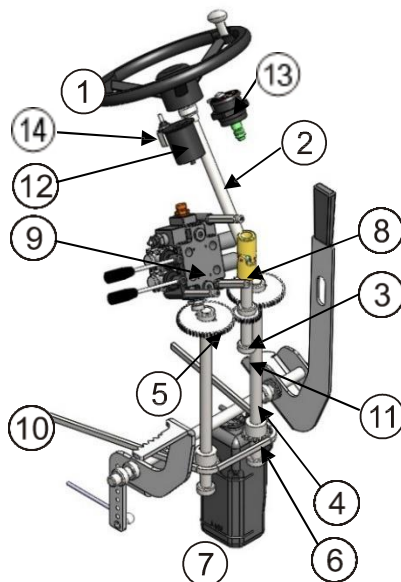


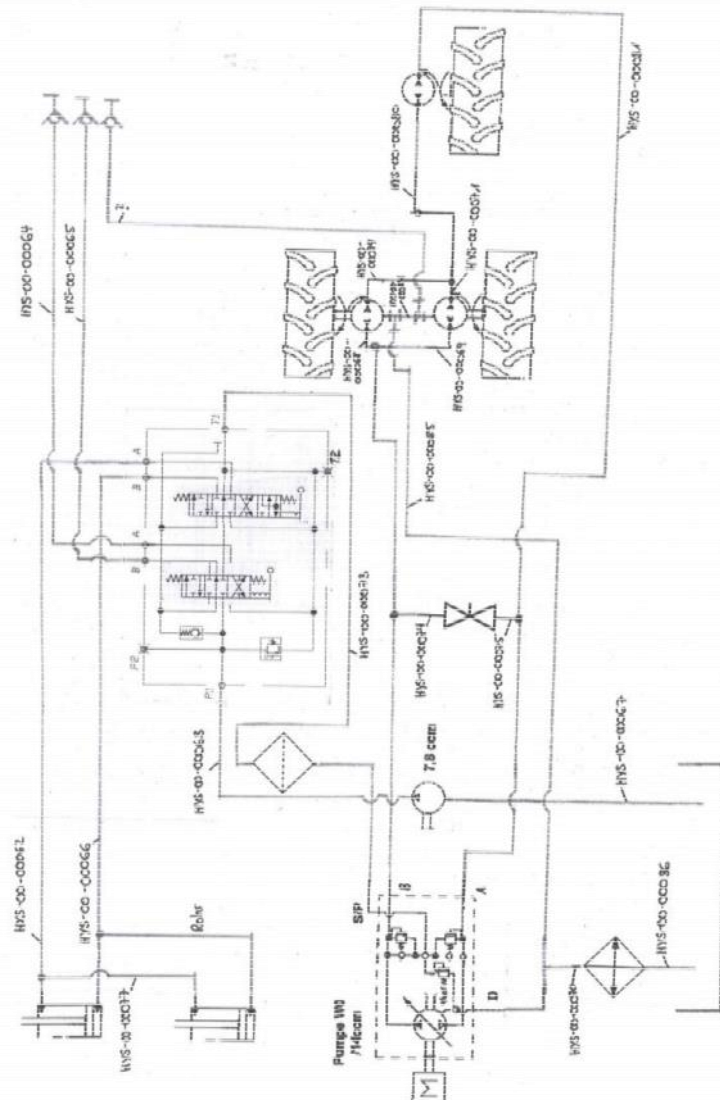
Fig. 32 - Steering console

Pos.	Item no.	Description	DIN	Amount
1	KT-00-00297	Steering wheel CM2		1
2	DR-00-00093	Steering rod - upper		1
3	DR-00-00102	Steering stub		1
4	DR-00-00096	Steering rod - lower		2
5	LA-00-00450	Gear wheel m2; z 50		2
6	HT-00-0046	Sprocket 06 B-1 (z=16)		2
7	KT-00-00042	Expansion tank		1
8	KT-00-00067	Universal joint		1
9	KT-00-00608	Integrated valve block		1
10		Lock chain		1
11	KT-00-00167	Adjusting ring		6
12	KT-00-00018	Operating hour meter		1
13	KS-00-00001	Starter button		1
14	KT-00-00184	Switch		1



## 20 Plans and other information

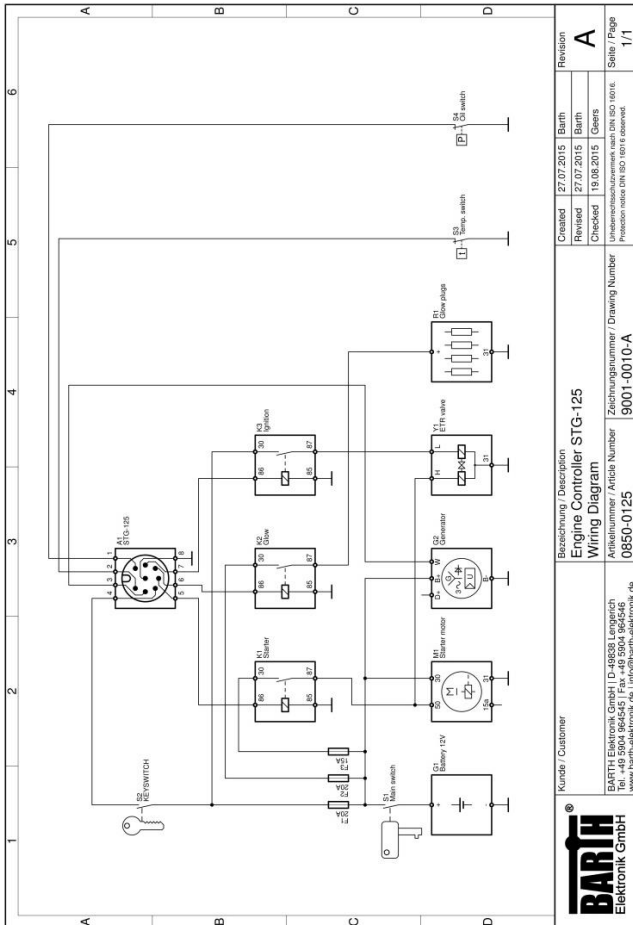
### 20.1 Hydraulic plan



## 20.2 Engine control circuit diagram

	<b>Engine Controller</b> <b>STG-125 12V Kubota®</b> <b>Art. No. 0850-0125</b>	<b>MANUAL</b>	Page: 5/7
			Document: 9021-0006-A
			Date: 16.11.2015
			Revision: A

### 5.3 Wiring Diagram



	<b>Engine Controller STG-125</b> <b>Wiring Diagram</b>	Revision: <b>A</b>
		Created: 27.07.2015   Bath Revised: 27.07.2015   Bath Checked: 19.06.2015   Geis (Information: den ISO 9001) (Information: den ISO 9001)
		Zeichnungsnummer / Drawing Number: 9001-0010-A Artikelnummer / Article Number: 0850-0125
		Seite / Page: 1/1



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