



Operation Manual

Sweeper



Models		Machine no.
Sweeper	KM domus 82 V	

Contents

1	Important General Information.....	3
1.1	General.....	3
1.2	Symbols.....	3
1.3	Limitation of liability	3
1.4	Copyright.....	3
1.5	Warranty.....	3
2	Safety.....	4
2.1	Use in compliance with intended purpose	4
2.2	Possible misuse	4
2.3	General sources of risks.....	4
2.3.1	Use and operation	4
2.3.2	Product-specific risks.....	4
2.3.3	Risks from motor operation.....	4
2.3.4	Danger by accu and charger	4
2.3.5	Traction risks	4
2.3.6	Risks for persons, children and pets.....	4
2.4	Maintenance	4
2.5	Staff and operator qualification	4
2.6	Safety instructions	4
2.7	Required protection equipment for operation	5
2.8	Safety devices	5
2.9	Behaviour in case of danger.....	5
2.10	Environmental protection.....	5
3	Design and function.....	5
3.1	Brief description.....	5
3.2	Overview KM domus 82V	5
3.3	Operating elements for all models.....	6
4	Operation.....	9
4.1	Safety	9
4.2	Activities prior to use	9
4.3	Charging the battery system.....	9
4.4	Start and stop	9
4.5	Normal operation	9
4.6	Activities after use	10
4.7	Energy-saving tips for longer accu performance	10
4.8	Motor cover	10
5	Transport, storage	10
5.1	Transport.....	10
5.2	Storage.....	10
6	Maintenance.....	11
6.1	Safety when performing maintenance work.....	11
6.2	Maintenance plan	11
6.3	Maintenance work	11
6.3.1	Check safeguards.....	11
6.4	Maintenance work on the electric motor.....	11
6.5	Cleaning work.....	11
6.5.1	Machine cleaning.....	11
7	Troubleshooting.....	12
7.1	Safety	12
7.2	Service address.....	12
7.3	First action for troubleshooting	12
8	Declaration of conformity.....	12
9	Technical data	13
10	Sweeping brush installation, side cover installation.....	14

1 Important General Information

We are pleased that you have selected a machine from Cramer GmbH in Germany.

Please read this Operation Manual before you use the machine for the first time and observe the notes and safety instructions.

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1.1 General

Information on this Manual

- Observing the instructions in this manual allows for the safe and efficient handling of the machine.
- The operator must have read this manual carefully and understood it before starting working with the machine.
- Compliance with the safety instructions contained is a prerequisite for using the machine without any risk.

Keeping the Operation Manual

- The Operation Manual is an integral part of the machine and shall be kept in its immediate vicinity.
- The operator must have access to this Manual at any time.

Traffic regulations

- Any applicable traffic regulations have to be complied with in regard to manoeuvring and transporting the machine on public roads.

Accident prevention regulations

- General safety and local accident prevention regulations must also be observed.
- National occupational safety regulations shall be complied with.

Other applicable documents

Assembly instructions, declaration of conformity

1.2 Symbols

	DANGER ! This symbol cautions against an immediate threat resulting in serious injuries or death if not avoided.
	WARNING ! This symbol cautions against a potentially dangerous source of risk which may result in death or serious injury if not avoided.
	ATTENTION ! Indication of a potential risk which may result in minor injuries if not avoided.
NOTE ! This symbol indicates a potential risk source which may result in damage to property.	

1.3 Limitation of liability

Liability on part of the manufacturer is excluded in the following cases:

- Non-compliance with the Operation Manual
- Use of the machine and accessory equipment not in compliance with intended purpose
- Assignment of untrained staff.
- Use of unauthorised spare parts. Only original components may be used.
- Unauthorized modifications on the machine and the accessory equipment.

1.4 Copyright

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Copying of the Operation Manual is only permissible for internal training purposes.

1.5 Warranty

The General Terms and Conditions of Business as issued by us in every country shall be applicable. Failures within the statutory warranty period will be remedied by us free of charge if they are caused by a material or manufacturing defect in our responsibility. Please contact your authorised dealer in case of a failure and submit the proof of purchase.

2 Safety

2.1 Use in compliance with intended purpose

The machine is suitable as a sweeper for sweeping leaves, waste and snow. With the sweepings container attached, the sweeper can also be used for collecting leaves and litter.

Any use exceeding this is considered not in compliance with the intended purpose. The manufacturer shall not be liable for damage resulting from use not in compliance with the intended purpose; the risk for this shall be in the sole responsibility of the user.

Use in compliance with the intended purpose shall also include compliance with the operation and maintenance provisions specified by the manufacturer.

2.2 Possible misuse

It is particularly prohibited:

- To sweep up any wires, cables or heavy stones. (Risk of injury and damage to the machine!)
- To use a foot to push items under the sweeper. (Risk of injuries!)
- To sweep any materials which may block the sweeping brushes. (Machine damage!)
- to charge the KM domus Akku with a non-original charger (charging damage at the accumulator)
- to leave the accumulator in the machine in direct sunlight.
- to pull the machine backwards, except it is absolutely necessary.

2.3 General sources of risks

2.3.1 Use and operation

- Prior to starting the machine, the machine including accessories shall be checked for their proper condition and operational safety.
- The operator shall use the machine in compliance with its intended purpose.
- Indoor machine operation is prohibited.
- The machine is only approved for floorings as indicated in the Operation Manual.
- The machine may only be operated by staff who have been instructed in its use or have provided evidence of their operating capability, and who have explicitly been instructed to operate the machine.
- When starting the motor, no other persons may be in the vicinity of the machine.
- Any protection equipment must be properly attached and in functional order.
- Never leave the machine unattended.
- When leaving the machine, stop the motor and secure the machine against unintended movement.
- The operator shall be responsible for accidents involving other persons or their property.
- Do not operate the machine with force. It will do the work with the speed for which it was designed better and safer.

2.3.2 Product-specific risks

- Do not sweep up any highly flammable materials or hot objects (e.g. barbecue coal) - danger to life by burns!
- The accu packs used contain lithium ions which are a toxic and corrosive material.
- Do not operate the machine in an explosive atmosphere, such as burning liquids, gases or dust. The machine may produce sparks that could ignite.

2.3.3 Risks from motor operation

- Do not touch any parts of the motor during or after operation. Significant risk of burning by hot surfaces.
- Stop the motor and let it cool down before working on the machine as well as before performing maintenance, cleaning and repair work.
- Do not expose the machine to rain or wet conditions. During snow, operation is allowed with a splash protection cover only. (risk of electric shock)
- The battery must always be removed during repairs and maintenance. Risk of electric shocks.

2.3.4 Danger by accu and charger

When using accu-driven devices, basic precautions must be taken at all times to reduce the risk of fire, leaking accu, and personal injury.

- To charge the battery system, only use the supplied battery charger.
- Do not use the supplied charger to charge other batteries.
- The battery system and battery charger must be kept dry. Neither must be subjected to rain or dampness.
- Do not expose the accu to high temperatures such as fire, radiators, etc.
- When disconnecting the charger, pull the plug and not the cable. This avoids damaging the plug and cable.
- Do not use the charger if it is damaged. A damaged charger must always be replaced completely.
- Do not dismantle the charger or attempt to repair it. Do not bump or hit the accu and do not step on it.
- Before cleaning the machine, remove the accu from the machine.
- Keep accu away from other metal objects, such as paper clips, coins, keys, nails, etc., when not in use.
- If liquid leaks from the accu, avoid contact and do not use the accu any longer. In case of accidental contact, rinse the liquid with water and seek medical attention.
- In addition, observe the operating instructions of the accu and charger manufacturer.

2.3.5 Traction risks

- Without any accessories mounted, only use the machine on slopes of up to 12 %.
- With accessories mounted, only use the machine on slopes of up to 2 %.
- When using the machine transverse to the direction of travel, this is only possible on slopes up to 12 %.
- When operating the machines on slopes: → be careful when lifting off mounted accessories

2.3.6 Risks for persons, children and pets

- The operator shall take account of surrounding conditions, e.g. the effects of noise on persons and animals.
- The machine must never be left on a slope.
- Children and pets/livestock must not stay near the machine.
- Children must not play with/on the machine.

2.4 Maintenance

- Servicing, maintenance and repair work as well as troubleshooting shall only be carried out when the machine is switched off and the motor is at a standstill. As required, the spark plug connectors shall be disconnected.
- The machine must not be cleaned with spray water (risk of short circuits or other damage).
- Safety checks pursuant to local regulations for non-stationary commercially used machines shall be complied with.
- Always use appropriate tools when working on the machine.
- Only use the manufacturer's original spare parts.

2.5 Staff and operator qualification

- Persons with physical, sensory or mental handicaps or persons with insufficient experience or knowledge must not operate the machine unless a person in charge for their safety acts as operation or instruction supervisor.
- People under the age of 16 must not operate the machine.
- The operator's responsiveness must not be affected, e.g. by drugs, alcohol or medications.
- The operator must have been instructed on how to use the machine or be familiar with the information in the operation manual. Safety instructions

2.6 Safety instructions

These warning labels on the machine warn you of possible dangers and thus help you to avoid serious injuries and damage to property. If labels have become detached or illegible, please contact your Cramer dealer to have the labels replaced.

	The assembly and safety instructions must be read and observed prior to starting the machine.
	Risk by flinging parts with running motor. Keep a safety distance of 3m.

2.7 Required protection equipment for operation

- Rugged footwear
- Close-fitting clothing
- Ear protection
- Safety gloves
- Protection goggles

The information on accident prevention regulations must also be observed.

2.8 Safety devices

- Do not remove any covers during operation.
- Immediately remedy any damage to safety devices.

2.9 Behaviour in case of danger

1. Stop immediately.
2. Stop the motor
3. Leave the machine.
4. Remedy the risk situation.

2.10 Environmental protection

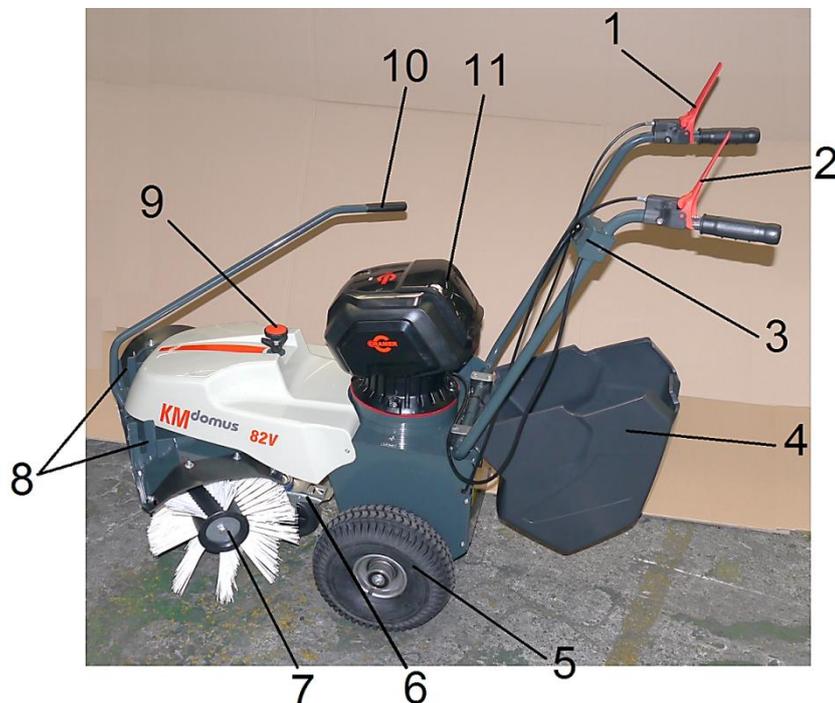
- Oils, fuels, greases and filters shall be disposed of properly and separately in accordance with legal regulations. Please do not dispose of any wastes in the environment.
- Packaging materials are recyclable. Please make sure that they are collected for reuse.
- Legacy devices contain valuable recyclable materials which should be collected for reuse. These devices may be disposed of through appropriate collection systems.
- All toxic materials (lithium-ion accus) must be disposed of in accordance with the instructions of the local waste management authority or environmental protection agency.

3 Design and function

3.1 Brief description

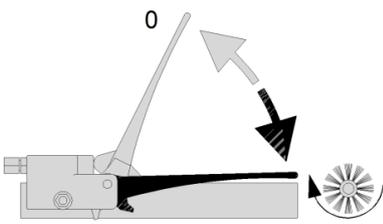
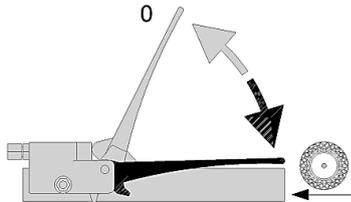
The sweeper may be used for sweeping and collecting (if a sweepings container is mounted) loose dirt or snow. The machine is fitted with a drive and is driven by means of a petrol motor with electric starter. The sweeping function can be activated using an actuation lever. The sweeping brushes can be adjusted by an angle of 45° in both directions. The KM domus 82V is equipped with a motor and battery connection which enables sweeping at the press of a button.

3.2 Overview KM domus 82V



1	Clutch lever for operation drive
2	Brush drive lever
3	E-Starter
4	Splash protection for motor cover
5	Drive wheel
6	Parking brake
7	Sweeper brushes
8	Attachment points for accessories
9	Height adjustment of sweeping brush
10	Swivel bracket to adjust sweeping brush
11	Motor

3.3 Operating elements for all models

Lever for brush drive	
	<p>The left-hand lever is used to operate the sweeper brush mechanism.</p> <p><u>Operate the lever as follows:</u></p> <p>Lever activated: Brush turns</p> <p>Lever released (O): Brush deactivated</p>
Lever for drive operation	
	<p>The right-hand lever is used to operate the sweeper drive mechanism.</p> <p><u>Operate the lever as follows:</u></p> <p>Lever pulled: Machine moves forward</p> <p>Lever released (O): Drive operation deactivated</p>
Brush height adjustment	
	<p>The crank handle is used to set the height of the sweeper brushes by adjusting the support wheel. The bristles of the brushes should only just touch the floor to be set optimally. An excessively deep setting results in an overload of the drives and in inappropriate wear of the brushes. A brush that is not optimally adjusted also leads to a faster consumption of the accu capacity.</p> <p><u>Height setting:</u></p> <p>Release the knurled nut and then turn the screw to the desired setting.</p> <p>Turn right = sweeper brush is lifted Turn to the left = lower the sweeping brush</p> <p>Tighten the star grip nut in this position.</p>
Electric motor 82V	
 <p>1 Accu cover 2 Electric motor 82 volts</p>	<p>The KM domus Akku 82 V is equipped with a battery-powered electric motor. The motor is started and switched off via a toggle switch on the steering bracket only.</p> <p><u>Starting the motor:</u></p> <ol style="list-style-type: none"> 1. Lift the accu cover for the battery compartment 2. Push the charged accu into the battery compartment via the accu holder until the accu release button clicks into place. 3. Close the accu cover 4. Press ON/OFF toggle switch <p><u>Switching off the motor:</u></p> <ol style="list-style-type: none"> 1. Press ON/OFF toggle switch <p>Do not leave the accu in the machine after operation.</p> <p><u>Remove accu:</u></p> <p><i>Important! Before the accu is removed, the machine must always be out of operation and the motor must have come to a standstill.</i></p> <ol style="list-style-type: none"> 1. Open the battery compartment 2. Press the accu release button to remove the accu. 3. Through this release, the accu is slightly pushed out of the battery compartment.
ON/OFF toggle switch	
	<p>Toggle switch for starting and stopping the motor</p> <p>O = switch off I = switch on</p>

Charger with battery system

This battery system has a diagnostic charger. The lithium-ion accu does not develop a memory effect and can be recharged at any time.



Attention!

The battery system and battery charger must be kept dry. The battery system must not be subjected to rain or dampness.

To prevent electric shocks, it must be ensured that no water can get inside the plug, the battery compartment or the accu.

When not in use, always store the accu at room temperature to ensure accu performance.



More detailed information on safety and dangers of use can be found in the enclosed operation manual for accu and charger. Please read in advance.

Overview



- 1 Charger
- 2 Accu connector
- 3 Accu
- 4 Green LED lamps charging capacity
- 5 Button display accu capacity
- 6 CHARGING LED lamp charging status
- 7 Explanation temperature display

Regarding 4: Normal charging

The number of lamps lighting up in green display the level of charging capacity.

Regarding 5: Accu capacity

By pressing the button (5) for the accu indicator (BCI) the lamps (4) will lighten up according to the charging level of the accu.

Lamps	Capacity
4 green LEDs	More than 80 %
3 green LEDs	between 80 % and 60 %
2 green LEDs	between 60% and 40%
1 green LEDs	between 40% and 25%
LEDs turn off	below 25 %

Regarding 6: CHARGING LED lamp

The LED lamp (6) may light up as follows when inserting the accu:

LED status	Description	Item
blinking green	charging	a
green	fully charged	b
red	overheating	c
blinking red	charging error	d

Regarding 7: Explanation charging LED lamp

- a) **BLINKING GREEN:**
The accu is ok and is charging
- b) **LIGHTING UP GREEN:**
The accu is fully charged
- c) **LIGHTING UP RED:**
When the warm or hot accu is inserted into the charger, the CHARGING LED on the charger shows RED. Allow the accu to cool down separately from the charger for about 30 minutes.
- d) **BLINKING RED:**
If LED blinks RED, remove the accu from the charger and reinsert it into the charger within 2 hours.
If the LED blinks RED again, the accu is defective and must be replaced.
If the control lights display a normal charging process, the accu is OK. To check, remove the accu after 2 hours and disconnect the power cord for one minute. Insert the accu and connect the power cord again. If a normal charging process is displayed, the accu is OK.

Charging the battery system

Connect the battery charger to a socket.

Slide the accu firmly into the charger. When the LED blinks green, the accu is being charged. If the LED shows green, the accu is fully charged. The accu can now be removed from the charger. Then always unplug the charger from the socket.

Power button



This LED lamp indicates the power increase to 3300 revolutions. If more power is required for the sweeping work, the motor automatically switches to the power setting.

Note!

If the speed is increased, the accu power will be consumed faster and the accu will have to be charged more frequently.

Swivel bracket for brush adjustment



In order to sweep dirt to a specific side, the sweeper brush may be set to the left or right side.

Change brush setting:

1. Lift swivel bracket (disengage)
2. Choose desired setting (centre, left, right)
3. Lower swivel bracket (engage)



Parking brake on support wheel



- Brake on: Push the lower lever down with your foot
- Brake off: Push the upper lever down with your foot

Attachment points for accessories



Cramer front-mounted devices (such as snow-clearing plate, sweepings container, etc.) can be mounted at the attachment points on the sweeping brushes. For a complete list of Cramer accessories, please refer to our catalogue or our homepage.

Mounting accessories:

Mount accessories in the provided elongated hole guide and secure them using the included R-clips. For more details regarding accessory mounting, please refer to the installation instructions of the relevant accessory.



R-clip

Releasing, folding and adjusting the height of the steering bar



The steering arm may be folded for transport and space-saving storage. In addition, its height may be adjusted for a convenient working position.

Folding down the steering bar:



Position the swivel bracket for the sweeping brushes in the centre of the machine. Unscrew the cross-headed screw. Now slowly fold down the steering bar towards the motor cover. While doing so, hold the Bowden cables at the right and left of the motor block.

Setting the steering bar height:



Unscrew the cross-headed screw. The desired height can be chosen using the three bore holes provided. Screw in the cross-headed screw at the desired height.

4 Operation

Before starting the machine, please read the safety information on pages 4 and 5 as well as the "Activities prior to use" section on this page.

4.1 Safety

Unauthorised restart

- It is prohibited to start the machine while another person is working on it.

Risks of non-applied safety devices

	WARNING !
	Danger of injuries due to missing protective covers!
Lack of covers may cause serious injuries by flinging materials. Parts of the body may be seized if you reach into the brushes or V-belts.	
<ul style="list-style-type: none"> ✓ Do not reach into the brushes during operation. ✓ Do not open or remove any covers during operation. 	

Risks of insufficient order and cleanliness

- Clean the machine regularly.
- Check the machine for blocking objects.

Requirements at location of use

- Only leave the machine on plane surfaces and solid ground.

4.2 Activities prior to use

To ensure your safety and the maximum service life of the machine, please check the following before switching on the machine:

- Observe the safety information in this manual at all times.
- **Check the sweeping brushes for any foreign objects.**
- Check the machine for damage and repair as required
- Check the condition of the safety devices. The machine must not be started if safety devices are missing or defective.
- Remove any objects from the area to be treated.
- Read the operating instructions of the electric motor and the battery system.

4.3 Charging the battery system

	WARNING!
	Risk of short circuit and fire!
Incorrect use of the battery and charger can lead to a short circuit and/or fire.	
<ul style="list-style-type: none"> ✓ Check the condition of the charger before every charging process. ✓ The battery system and charger must be kept dry 	

Charging for the first time

The accu will be shipped partially charged only. It is recommended to fully charge the accu before use to achieve maximum runtime. Read more in the operating instructions of the accu.

Charge accu

Charge the accu according to the enclosed operating instructions and the description under section 3. A completely discharged accu will need around one hour to become fully charged.

4.4 Start and stop

	WARNING !
	Danger of life due to toxic gases and corrosive liquids!
A torn or broken accu, with or without leakage, must not be charged or used. DO NOT TRY TO REPAIR IT! Dispose of and replace with a new accu.	
To avoid fire, explosion or electric shock and environmental damage: <ul style="list-style-type: none"> ✓ Cover the contacts with thick adhesive tape. ✓ NEVER TRY to remove or destroy parts of the accu pack. ✓ NEVER TRY to open the accu pack. 	

Switching on the motor

Switching on with the accu start button

1. Insert accu
2. Press ON/OFF toggle switch, set to (I)

When using for the first time, please observe the information in sections 4.3 and 3.3 (on page 7).

Switching off the motor

Press ON/OFF toggle switch. Set to (O)

Emergency stop
Stop machine.
Restart after an EMERGENCY STOP
Remove blockage Start the machine again

4.5 Normal operation

	WARNING !
	Risk of injuries by highly flammable materials and heat!
Materials coming into contact with a hot surface may result in serious burns on the body when they inflame; e.g. hot or burning materials such as coal.	
<ul style="list-style-type: none"> ✓ Keep highly flammable materials away from the machine. ✓ Do not sweep any spilled fuel or similar substances. 	

1. Basic setting:

- Park machine on an even surface
- Insert the charged accu
- Close the motor cover
- Set brush height

2. Switch on the machine

3. Move machine across the area to be swept

- Operate lever for brush mechanism
- Check areas swept for sweeping quality regularly and adjust brush height if required.
- Adjust brush on the left or right in order to sweep dirt aside.

4. Switch off the machine

- Release the drive lever, release the brush drive lever.

Should functional failures occur, please contact your authorized Cramer dealer.

4.6 Activities after use

Switch off the machine after use. Put the machine in a clean and dry place and remove the accu from the battery compartment. Check the machine condition; remedy damage to paint coating, if any.

4.7 Energy-saving tips for longer accu performance

In order to provide you with a longer accu capacity for machine usage, the following machine settings are recommended:

- adjust the sweeping brushes to a wear-resistant working height.
- always remove the accu from the machine when not in use and store it at room temperature.
- use fully charged accus only
- Cold storage of the accu significantly reduces the accu's running performance.

4.8 Motor cover

Use a splash protection cover for the electric motor. This will protect the motor from moisture and the resulting damages. In order to get to the battery compartment, the swivel bracket must first be shifted aside, so that the motor cover can be opened.



5 Transport, storage

5.1 Transport

Transport without packaging

- Switch off the machine before loading it. Always remove the accu.
- Always secure the machine to the transporter using tensioning straps.
- Tilt the machine as little as possible.

5.2 Storage

The following recommendations will help to ensure the long-standing functionality of your Cramer machines:

- Do not store the machine outdoors.
- Disconnect the machine after use and before storing it from the accu and check for damages.
- Do not expose the battery system to rain or dampness. Keep the battery system and the charger in a dry, frost-free and weather-proof indoor place (room temperature).
- Do not leave the accumulator in the machine and do not expose it to direct sunlight
- There must be no aggressive materials in the vicinity of the machine.
- The machine must always be stored out of reach of equipment that has a pilot flame or source of ignition. For example: Furnaces, heating stoves, water boilers or similar appliances. Fuel gases could be ignited by such appliances.
- Clean the machine and check for damages, if necessary, repair damages to the paint coating.

Important!

For notes on the operation and care of the motor, please refer to separate operation manual for the respective motor!

6 Maintenance

6.1 Safety when performing maintenance work

Regular and correctly performed maintenance work is essential for the safe, economical and fault-free operation of the machine.

The information in the following sections helps you to ensure the correct maintenance of your machine. You can perform routine maintenance work yourself using basic hand tools. More complex maintenance work requiring special tools should be performed by qualified staff, e.g. at your Cramer dealer or by a qualified mechanic.

Some of the most important safety precautions and dangers are listed in the bottom box. However, it is not possible here to list all potential dangers that could arise during maintenance work and describe the associated precautions. You are solely responsible for deciding which maintenance work you wish to perform yourself.

	DANGER !
Risk of injury by inappropriately performed maintenance work!	
Defective work may result in serious bodily injuries and damage to property.	
<ul style="list-style-type: none"> ✓ Make sure that you have sufficient working space. ✓ Remove the accu from the battery compartment ✓ Place components separately. ✓ Remount all components. ✓ Remount all safety covers. ✓ Keep the risk area clear of persons. 	

6.2 Maintenance plan

For information on maintenance of the motor, refer to the separate operation manual of the motor.

Maintenance	Prior to each use	Annually	Intervals in hours
			200
Cleaning	X (Item 6.4)		
Check safety precautions	X (Item 6.3.1)		
Check all screws for tight fitting	O		
Clean or replace air filter	B		
Adjust tyre pressure	O		
Check sweeping brushes for tapes wrapped around	O		
Check sweeping brush height adjustment	X (Item 3.3)		
Check sweeping brush for wear		O	
Check and adjust Bowden cables			F
Grease rotating points and joints		O	
Grease Bowden cables			O
Check machine for corrosion on paint coating and remedy as appropriate		O	
Check machine for damage and remedy as appropriate	O		

- X = Described in this Operation Manual in the indicated section
- O = Not described in this operation manual
- F = Work may only be performed by a qualified expert in this field.
- B = Description is enclosed in attached motor operation instructions.

6.3 Maintenance work

Only original parts should be used during maintenance. The spare parts should only be replaced by an authorised service technician.

	ATTENTION!
Danger of injury motor and accu	
Cleaning and repair work must never be carried out with the accu inserted, as serious accidents could result from accidental starting.	
✓ Remove the accu and allow the machine to cool down.	

	WARNING !
Do not open the accu! Risk of explosion and injury!	
The accus are absolutely maintenance-free. Never try to open them.	
✓ Replace damaged accus with new ones. The old, defective accu may not be treated as household waste.	

6.3.1 Check safeguards

Safeguards are:

- Rubber side guard for stone chip protection
- Motor cover (splash protection)
- Cover plate

The machine must not be operated if the covers show any signs of damage or are removed. They are to be replaced by original spare parts in case of damage or loss. The machine must not be started without the safeguards.

6.4 Maintenance work on the electric motor

Service and maintenance of the motor require special protection and knowledge. These works should only be carried out by qualified personnel.

6.5 Cleaning work

WARNING !
To avoid fire or electric shock:
<ol style="list-style-type: none"> 1. <u>do not</u> use a damp cloth or detergent to clean the accus, battery compartment or charger. 2. <u>always</u> remove the accu when working on the machine.

The machine should be cleaned regularly so that any damage to the paint coating or plastic components can be detected. Please observe the notes listed for cleaning in order to avoid damage to the electronics.

6.5.1 Machine cleaning

Park the machine on an even surface before cleaning it. Switch off the machine and allow the motor to cool down. The machine can then be cleaned using a soft brush. Perhaps clean the machine (except accu or battery compartment) with a damp cloth. *Caution! The battery system must not be exposed to dampness.*

7 Troubleshooting

7.1 Safety

Procedure for failures and accidents

1. Start emergency stop (switch off machine)
2. Determine the failure cause.
3. Remedy failure or contact specialist dealer.

7.2 Service address

Please contact your sales consultant in case of failures, problems or otherwise. Please always indicate the machine serial no. in inquiries. (See type plate on the machine).

7.3 First action for troubleshooting

Failure / Error message	Possible cause / Remedy	Notes
LED blinking red on the charger -	- Wrong failure indication Remove the accu for one minute and then insert it again. If it continues blinking red, remove the accu and disconnect the power cord from the charger. Plug it in again and insert the accu after one minute. If the LED is still blinking, the battery is defective and must be replaced.	Notify authorised dealer if failure persists. Only use original spare parts!
LED on the charger shows red	- Overheating When the warm or hot accu is inserted into the charger, the LED will show red. Remove the accu and let it cool down for about 30 minutes.	
Motor does not start Low motor capacity	- Check throttle setting (START). - Check Bowden cable to motor.	
Motor is running, but machine does not move. Drive performance weak	- Adjust Bowden cable of operation drive. - Check tensioning of V-belt	
Sweeping brushes are not sweeping properly Rapid and heavy wear of brush	- Check sweeping brush for wear; replace if required. - Lower and/or lift sweeping brush by height adjustment.	
Significantly reduced brush speed	- V-belt slips → Tighten belt using adjustment screw on brush drive lever. - Re-adjust Bowden cable of sweeping drive.	
Brushes are rotating	- Adjust Bowden cable at set screws of belt tensioner. - Check coupling belt	
Snow is thrown under the machine	- Use snow plow when snow is too high. - Set brushes to the very left or right.	

8 Declaration of conformity

EU Declaration of conformity pursuant to machine directive 2006/42/EC Annex II 1-A

The authorised party with residence in the EU,

Cramer GmbH
Reimersstr. 36
26789 Leer

herewith declares, that the following product

Manufacturer: Cramer GmbH
Reimersstr. 36
26789 Leer

Product designation: Sweeper with electric starter

Make: Cramer GmbH

Serial number: see cover nameplate

Type(s): KM domus 82 V

complies with all relevant regulations of the above-stated Directive as well as all other applicable Directives - including their amendments applicable at the date of this declaration.

The following other EU Directives were applied:

EMC Directive 2004/108/EC
EU Directive 2000/14/EC

The following harmonised standards were applied:

EN 12733:2001+A1:2009
EN 349:1993+A1:2008
EN 55012:2007/A1:2009
DIN EN 60335-1:2012
EN ISO 12100:2010

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

Achim Peters
Cramer GmbH
Reimersstraße 36
26789 Leer

Site: Leer
Date: 14/12/2016



A. Bruns
Managing Director

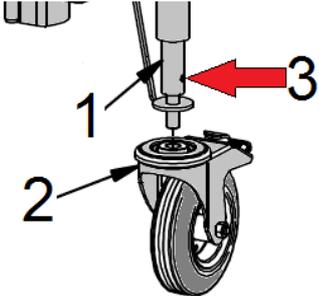
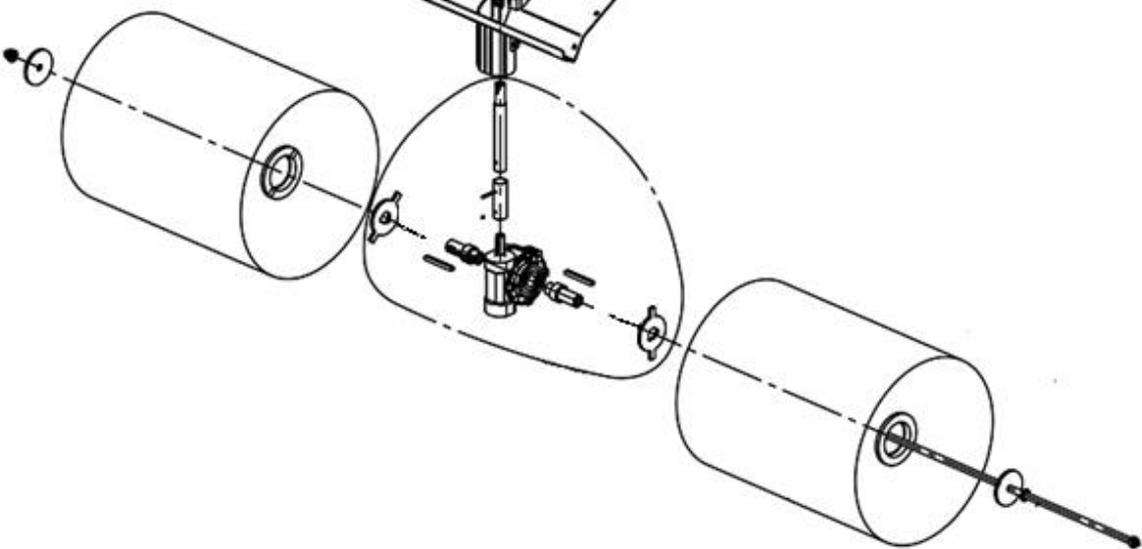
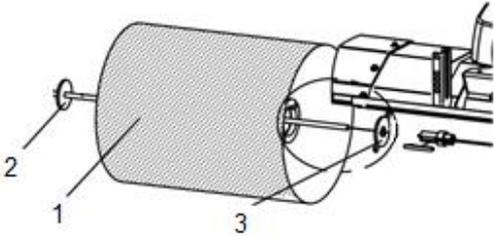


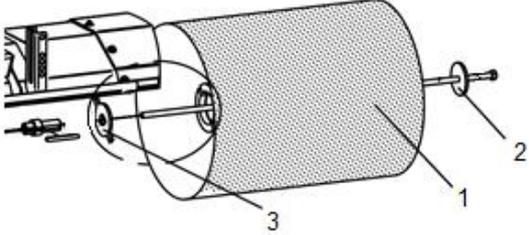
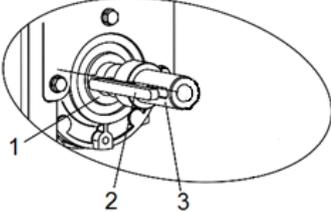
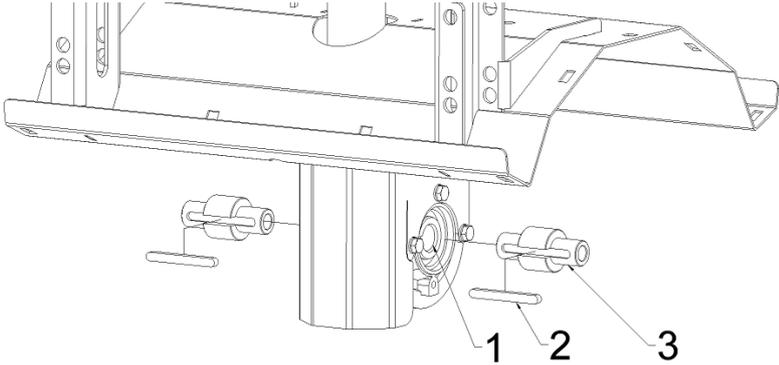
A. Peters
CE Officer

9 Technical data

	KM domus 82 V
Machine data	
Length x Width x Height, cm	135 x 71 x 110
Deadweight (transport weight), kg	66
Drive speed, forward km/h	2.4
Brush speed rpm	220
Climbing power, max %	12
Climbing power with accessories, max %	2
Working width, cm	70
Support wheel	360° freely rotatable
Brush is adjustable	Left Centre Right
Motor	
Model	Electric motor 82 volts
Max. motor speed, rpm	3100
Net capacity KW(HP) at 3100 rpm	1.5
Accu	
Type	Lithium-ion
Nominal voltage	82 V
Charger	
Charging time full, min.	60
Input	230V AC 50/60Hz 2.5A
Output	82V DC
Tyres	
Drive wheel	Ø 300 (4.00-4)
Air pressure, bar	1.8
Support wheel	Ø 125
Wheel drive	Worm gear
Ambient conditions	
Temperature, °C	-5 to +40, see also storage conditions for accu
Working ground	Asphalt, industrial flooring, floor screed, concrete, pavement
Application area	Normal use in facilities and landscaping maintenance
Noise emission	
Guaranteed acoustic power level, dB	92
Sound pressure level at operator ear, dB	74.5
Hand-arm vibration, m/s ²	<2.5
Responsibility limits for components:	(Motor)
Working position and areas of risk	
Working position	Behind the machine on the handles
Areas of risk	Catchment area of sweeping brushes Ejection area of sweeping brushes
Year of construction	See machine nameplate
Accessories and spare parts	
Original parts	Only original spare parts and original accessories may be used.

10 Sweeping brush installation, side cover installation

Safety		
Delivery, packaging, assembly		
	ATTENTION! Squeezing hazard during assembly	
Parts of the body may be squeezed when components are assembled.		
✓ Wear close-fitting clothing and protection gloves during assembly.		
Risk of high dead weight <ul style="list-style-type: none"> The machine must not be lifted manually. Pull the machine off the transporter by its handles. Remove machine parts separately from packaging. Perform transport inspection <ul style="list-style-type: none"> Check the machine for completeness and potential damage upon delivery. The machine shall be supplied to the specialist dealer in a partially assembled condition. Assembly and start-up have to be performed by a specialist dealer and/or an expert in this field. Packaging <ul style="list-style-type: none"> Please dispose of packaging materials separately. 		
Assembly of support wheel		
Assembly	The support wheel (2) must be fixed to the steering roller holder (1) with the supplied nut M12. The steering roller can be fixed to the hole (3) with a mandrel Ø5mm or something similar.	
		
		
Assembly of sweeping brushes		
Overview		
Right brush installation	1. Right brush overview	
	2. Press-fit the washer with nibs (no. 1) into the hollow body recess of the right brush. Lightly hit on it as needed. 3. Press-fit the washer (no. 2) in the recess on the outside of the right brush.	
		1. Right brush 2. Washer 3. Washer with nibs
		1. Washer with nibs 2. Washer 3. Recess

<p>Left brush installation</p>	<p>1. Left brush overview</p>		<p>1. Left brush 2. Washer 3. Washer with nibs</p>
	<p>2. Press-fit the washer with nibs (no. 1) into the hollow body recess of the left brush. Lightly hit on it as needed.</p>		<p>1. Washer with nibs 2. Washer 3. Recess</p>
<p>Assemble left and right brush shaft!</p>	<p>1. Plug feather key into brush shaft groove. 2. Plug brush shaft into gear boring on the left and right by using feather keys.</p>		
<p>Overview</p>		<p>1. Gear boring 2. Feather key 3. Brush shaft</p>	
<p>Attaching the brushes to the machine</p>	<p>1. Push pre-assembled brushes on brush shafts. 2. From one side, insert the threaded rod all the way through the entire brush unit 3. Finally, place one washer and the locking nut onto the end of the threaded rod and tighten.</p>		

Assembling the side covers

<p>Assemble side covers on the left and right</p>	<p>As to item 3:</p> <ol style="list-style-type: none"> 1. Position the rubber side covers over the cover plate holes as indicated in the drawing. 2. Push screws through holes from below. 3. Place punched disc over screw end on the other side and secure it by a locking nut. 	
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