HIRD GLASS

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OPERATOR MANUAL

KAPPEL

DSKZL2

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Contents

Foreword

These operating instructions are intended to help you become familiar with the DSKZL2-12V and to use it as intended.

These operating instructions contain important instructions about operating the DSKZL2-12V safely, effectively, and economically. Observing them helps to avoid repair costs and down time and to increase the reliability and working life of the DSKZL2-12V.

These operating instructions must be supplemented by additional instructions due to existing national accident prevention regulations.

These operating instructions must always be available at the site of use of the DSKZL2-12V

These operating instructions must be read and observed by every person responsible for doing work on the DSKZL2-12V, for example:

- operation, including equipping, troubleshooting during operation, removal of production waste, care
- maintenance (servicing, inspection, repair) and/or
- transport.

In addition to the operating instructions and binding accident prevention regulations applicable for the country of use and the application case, the recognised technical rules for safe and professional work must also be observed.

If you discover errors when reading these operating instructions, or if you have further comments or suggestions, please contact:

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The management appreciates your cooperation.

Technical Description

The DSKZL2-12V is a combination of two vacuum pumps with power supply (battery or mains, including charger) and a vacuum cross arm with two vacuum circuits working independently from each other. This vacuum cross arm is intended for flexible use on construction sites, anywhere where no 220 to 240 volt connection is available. Using the DSKZL2-12V, the transported goods can be rotated 360 degrees and also be swivelled 90 degrees hydraulically.
The DSKZL2-12V is hung on a crane hook and is supplied with energy via the installed battery. In addition to easy installation on a crane or similar device, the DSKZL2-12V also offers the safety advantage that in general no vacuum supply hose or voltage supply line is required as is the case with separated devices (cross arm, vacuum pump). In addition, it is also possible to lower transported goods during a power outage with this type of device as long as both vacuum circuits are perfectly sealed, because the vacuum reserve tanks are located on the vacuum cross arm.

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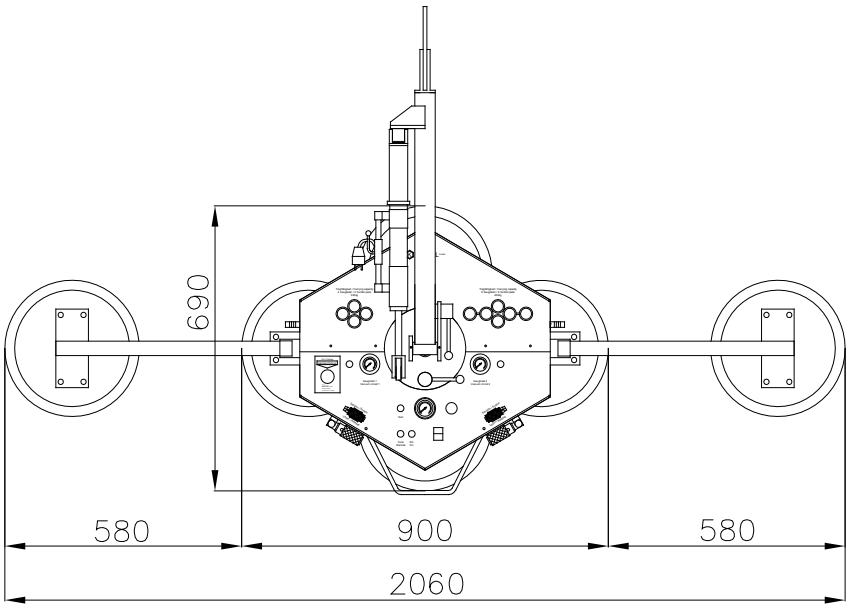


In detail, the device consists of a rectangular pipe frame with a suspension eye, the basic frame. A second rectangular pipe frame is connected to this basic frame first via a swivelling joint and then via a rotating joint. This frame is the carrier frame and holds the two vacuum reserve tanks and the vacuum pumps, the battery charging device and the battery. The suckers are also mounted on this frame. The sucker connections are supplied with a vacuum (suction) or normal compressed air (release) by means of the manual valves of the two vacuum circuits. Two inspection vacuum meters provide information on the exact pressure ratios in the vacuum lines to the individual suckers. A voltage display indicates the battery charge level.

The charging circuit voltage for the charger is 220-240 volt AC (50/60 Hz).

Two vacuum pumps are used to generate the vacuum (one vacuum pump per vacuum circuit). The vacuum pumps work without oil lubrication and are therefore maintenance-free.

In order to avoid draining the batteries unnecessarily, the pump switch has a two-point controller that switches off the vacuum when the pressure reaches -0.72 bar in the vessel, switches the pumps off and switches the pumps back on when the pressure falls below approx. -0.68 vacuum. This avoids premature draining of the batteries due to the pumps being allowed to run unnecessarily. The battery is maintenance-free and enclosed; they are totally discharge-safe.

Mode of operation

Switch the machine to On using the ON/OFF switch. Then set the manually operated suction/release valves to RELEASE. The vacuum cross arm must be positioned on the load to be transported in such a way that all suckers are flat on the smooth clean surface so that the sucker lips can seal completely. Set both suction/release valves to SUCTION one after the other and wait until the pumps of both vacuum circuits switch off. You can check the vacuum using the vacuum meters 1 and 2 on the device. If there is a vacuum of –0.72 bar in each vacuum circuit, the load can be transported. To release the suckers from the load, set both suction/release valves to RELEASE:

Caution
The DSKZL2-12V must **NEVER** be commissioned with only **one** functional vacuum circuit.

Basic safety information

Warning instructions and symbols

The following terms and symbols are used in the operator's manual for especially important information:

Note Special information regarding the economical use of the device

Caution Special information regarding requirements and prohibitions for preventing damage.

Danger Information or requirements or prohibitions for protecting people or preventing extensive damage.

Authorised use

The DSKZL2-12V has been constructed in accordance with the state of the art and recognised safety regulations. Nevertheless, its use may result in danger to life and limb of the operator or third parties and impairment of the machine or other property may occur.

The machine may only be used when in technically perfect condition, as authorised. The user must be conscious of safety and risks and act in accordance with the instructions. Failures which can interfere with safety must be eliminated immediately.

The DSKZL2-12V is exclusively for transporting gas-tight, dry materials with firm, flat surfaces. Other use or use going beyond this, for example transporting gas-permeable materials, film-covered materials, wet materials, or rotating or swivelling large or heavy transported goods is not authorised. The manufacturer/supplier is not liable for the damages resulting from this. The risk is carried by the user.

Use as authorised use also includes complying with the operating instructions and the inspection and maintenance conditions.

Organisational measures

Always keep the operating instructions within reach at the site of use.

In addition to the operating instructions please observe and teach any other generally applicable statutory regulations concerning accident prevention.

Such obligations can also include providing and wearing personal protective equipment.

Please supplement the operating instructions with instructions including supervision and reporting obligations taking into consideration operational corporate circumstances, e.g. relating to work organisation, work processes, personnel used.

The personnel authorised to operate the device must read the operating instructions, particularly the chapter about safety instructions before starting work. It is too late to read the instructions if work has already been started. This applies in particular to personnel who only work on the machine occasionally, e.g. for equipping it and carrying out maintenance work.

Occasional checks should be carried out to ensure that the members of personnel follow the instructions and work in a safety-conscious manner and are aware of risks.

If necessary or if required by regulations, personal protective equipment should be used. Glass should only be transported with the appropriate protective equipment (safety shoes, protective gloves, wrist protectors, helmet etc.) A helmet should be worn at all times when transporting goods above head height.

All safety and danger instructions on the device should be complied with.

All safety and danger instructions on the device should be kept complete and in legible condition.

If there are any safety-related changes to the device or its operation, the device should be stopped immediately and the malfunction should be reported to the relevant office or person.

No changes, attachments or upgrading work that could possibly impair safety should be carried out on the machine without the consent of the suppplier. This also applies to the installation and setting of safety equipment and valves as well as to welding on load-bearing parts.

Spare parts must fulfill the technical requirements specified by the manufacturer. This is always guaranteed with original replacement parts.

Vacuum hose lines should be replaced at the specified intervals or at appropriate intervals, even if there are no recognisable safety defects.

Compulsory deadlines or those specified in the instructions for recurring tests / inspections should be complied with

Appropriate workshop equipment is absolutely necessary for performing the maintenance measures.

Personnel selection and qualification

Work on/with the machine may only be performed by reliable personnel. The legal minimum working age should be observed.

Use only trained or instructed personnel; responsibilities among personnel should be clearly established for operation, equipping, maintenance, and repair.

Ensure that only authorised personnel works on the machine.

Specify a person who is responsible for operating the machine and give him/her the opportunity to refuse to comply with the safety instructions of third parties.

Personnel being trained or instructed, or who are taking part in a general training programme, may only work on the machine when under the constant supervision of an experienced person who is familiar with this situation.

Work on the electrical equipment of the machine may only be performed by an electrician or by trained personnel under the direction and supervision of an electrician in accordance with the rules of electrical engineering.

Safety instructions on particular operating phases

Normal operation

Avoid all unsafe work practices.

Before starting work, become familiar with the working environment at the site of use. The working environment includes impediments in the work and traffic area, the load bearing capacity of the floor, and cordoning off the worksite from public traffic areas.

Take measures to ensure that the machine is only operated when safe and functional.

Check the machine for externally recognisable damages and flaws at least once per shift. Report any changes that occur (including those to the operating behaviour) immediately to the responsible office/person. If necessary, stop the machine immediately and secure it!

During malfunctions, the machine should be stopped immediately and secured. Malfunctions should be corrected immediately.

The switching on and off procedures should be complied with, and the inspection displays should correspond to the operating instructions.

Always stop work if it becomes dark or if visibility is poor!

Special work

The setting, maintenance, inspection activities and deadlines, including information on replacement of parts and modules stipulated in these operating instructions must be observed. These activities may only be performed by authorised specialists.

Only perform maintenance and repair work when the machine is positioned on flat ground with sufficient bearing capacity and is secured so that it cannot roll away or collapse.

Clean machines, particularly connections and screw connections at the beginning of maintenance/repair work. Do not use aggressive cleaning agents! Use lint-free cloths for cleaning.

Never clean the machine with water or steam jet (high-pressure cleaner).

After cleaning, inspect all vacuum lines for leaks, loosened connections, abrasion and damage. Repair any flaws immediately!

Always tighten screw connections loosened during maintenance and repair work.

Safety instructions for special types of danger

Electrical power

Use only original fuses with the specified current strengths. Switch off the machine immediately during malfunctions to the electrical energy supply.

Work on electrical equipment or operating materials may only be performed by an electrician or by trained personnel under the direction and supervision of an electrician in accordance with the rules and regulations of electrical engineering.

Machine and system parts on which inspection, maintenance, or repair work must be performed, must be switched free of current if required. First check the switched off parts to ensure that they are free of voltage, then ground and short-circuit them, and insulate neighbouring live parts.

The electrical equipment of the machine must be checked regularly. Flaws such as loose connections and melted cables must be repaired immediately.

Oils, greases, and other chemical substances

Observe the safety regulations applicable for the product when using oils, greases, and other chemical substances!

Commissioning

Note

- Do not store the DSKZL2-12V in a damp or very cold (frost) environment. Otherwise there is no guarantee that the installed pumps will function properly.

Caution

- Always ensure that the suckers are not placed on sharp edges because this could damage the sucker lips. This would lead to leaks in the suction circuit, impairing the functioning of the device.
- Never place the machine with mounted suckers with the rubber surfaces of the suckers on sandy or similar ground. This could damage the sealing lips of the suckers. This would lead to leaks in the suction circuit, impairing the functioning of the device. Or the grains of sand or similar substances could be pressed into the rubber surfaces, leading to damage to the upper surface of the transported goods.

Danger

- Do not allow heavy rain to fall on the DSKZL2-12V.
- Do not place the DSKZL2-12V in water.
- Do not convey loads over persons or machines. Cordon off the area under hanging transported goods with wide clearance.

Charging the battery

Check the DSKZL2-12V for any externally recognisable damages or flaws.

Compare the connection on the power supply network and check the voltage, current and mechanical connection (plug connection) with the necessary data for the vacuum pumps. If they do not correspond, the machine may not be operated.

Connect the DSKZL2-12V to the supply network using an extension cable.

The charging procedure can be checked in the voltage display after pressing the test button.

After the charging procedure is completed, a value of 100% must be visible in the voltage display when Test button is pushed.

The battery is charged after a maximum of 24 hours.

Remove the extension cable from the supply network.

This completes the charging procedure.

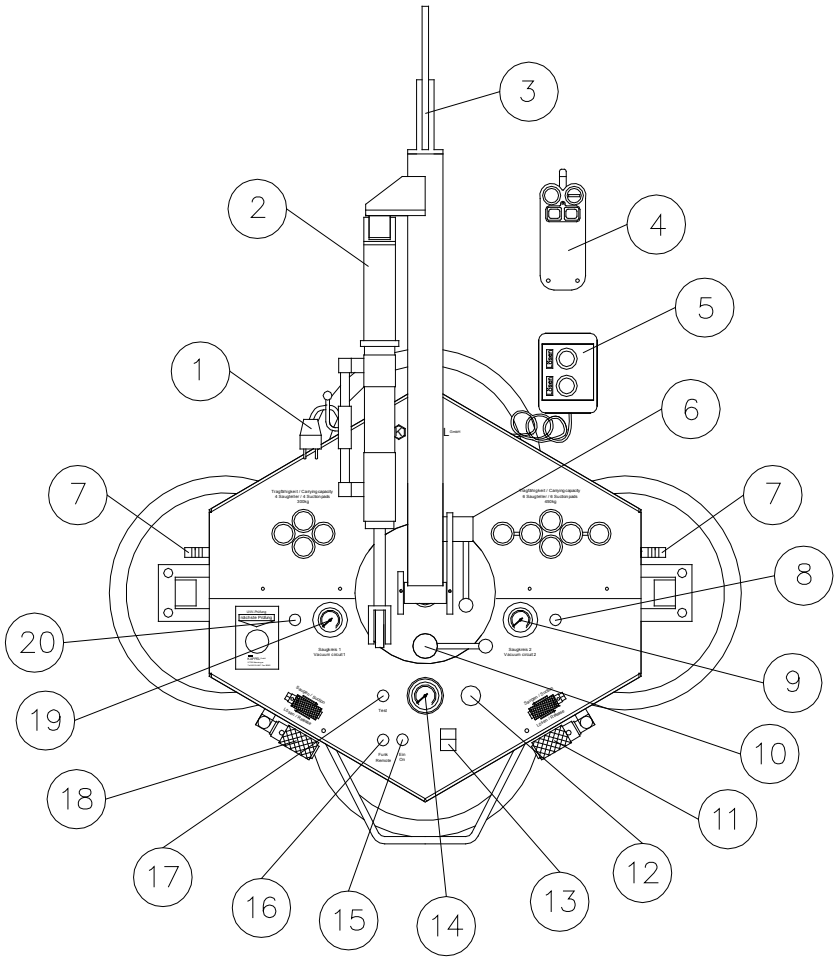
Note

After the transporting work is completed, switch the device off with the switch in order not to drain the batteries unnecessarily.

If the battery is not charged, the DSKZL2-12V cannot be used in mains operation.

During the charging procedure, the DSKZL2-12V must be switched off. This means that you should not work with it as the charging device or the battery will be damaged.

The control elements

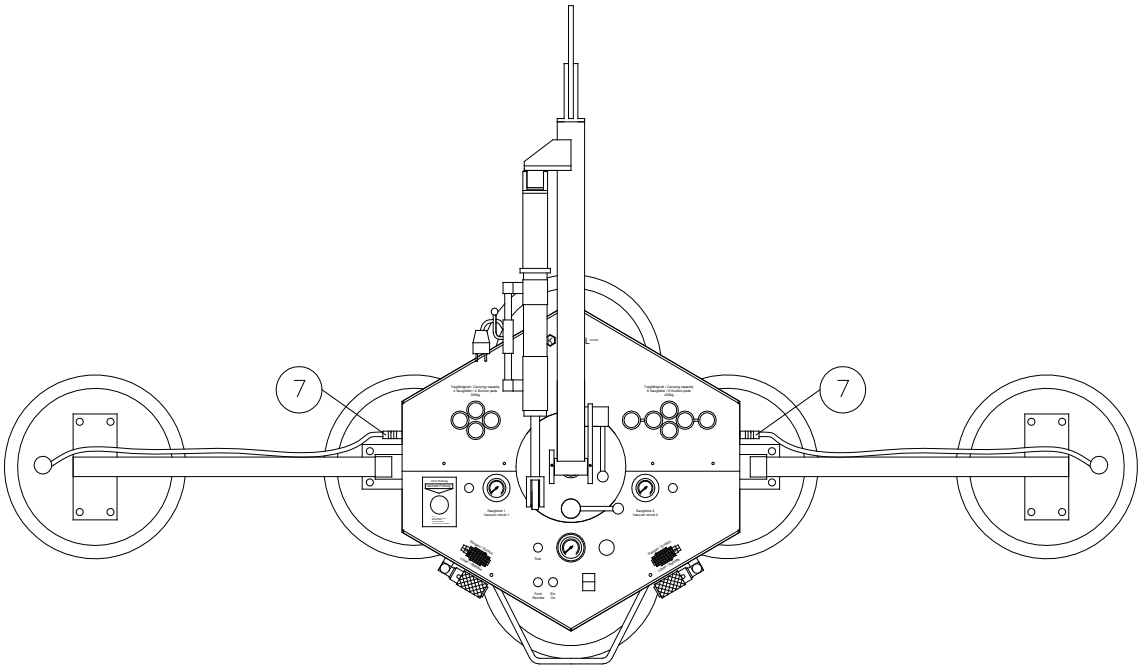


1. Mains plug
2. Option lowering cylinder
3. Adjustable bayonets
4. Option remote control with radio control
5. Option remote control with cable
6. Locking mechanism pivoting
7. Vacuum couplings
8. Control lamp vacuum suction circuit 2
9. Vacuum meter suction circuit 2
10. Locking mechanism rotation
11. Manual valve suction circuit 2
12. Buzzer
13. Main swtich
14. Voltage display
15. Control lamp ON
16. Option Control lamp radio remote control
17. Button Test for voltage display
18. Manual valve suction circuit 1
19. Vacuum meter suction circuit 1
20. Control lamp suction circuit 1

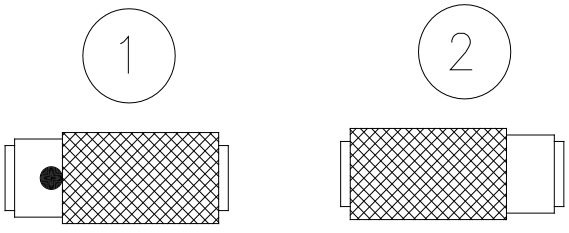
Assembly of the extensions with the support suckers

Plug the extensions with the support suckers onto the mounts on the frame and secure with the ball lock pins.

The vacuum connection is produced via the quick-lock couplings (7).



The manual valve (suction/release valve)



1. Slide valve, position for suction
2. Slide valve, position for release

Before transporting

Check the DSKZL2-12V for any externally recognisable damage or flaws.

Attach the DSKZL2-12V to the crane hook or similar.

Set the two manually operated suction/release valves to the RELEASE position.

Switch the device on using the main switch.
The yellow control lamp ON signalises that the pumps are ready for operation.
The pumps must start up if the vacuum in the vacuum tank is insufficient. After a short time, a vacuum of -0.65 bar should have formed in each tank. When approx. 0.72 vacuum is reached, the vacuum pumps switch off. This should happen after a short time.

Caution
As long as no transport goods are sucked on, the signal tone signalises insufficient vacuum in the lines to the suckers, the vacuum control lamps are off and there is no way of inspecting via the vacuum obtained on the two vacuum control meters.

In order to check the vacuum, either a larger plate or several smaller plates of a gas-impermeable material must be present. These are held onto the individual suckers and are then sucked on. In order to do so, the two suction/release valves must be set to SUCTION one after the other. When approx. 0.72 bar vacuum has been obtained, the vacuum pumps switch off. It is possible to check via the two control vacuum meters. The signal tone goes out and the vacuum control lamps are lit.

Once this has happened, the main switch must be switched off.

Then switch the device switch off and wait ten minutes. During this time the indicators of the inspection vacuum meters may not move. If only one indicator changes, the device is leaking and may no longer be used until the error has been corrected.

Connect the vacuum lines to the suckers via the vacuum couplings.

Read the achieved vacuum from the two inspection vacuum meters and compare it with a reading taken from the control vacuum meters about 15 minutes later.
If there is no discrepancy, the device is leak-tight and safe to operate. If a discrepancy of more than 5% occurs, the DSKZL2-12V is not in working order and must not be commissioned. The leak must be eliminated immediately and/or the porous material must be replaced.

Commissioning is complete once the machine switch has been switched back on.

Caution

The attached support suckers must be checked to see whether they are leak-tight.

Caution
The DSKZL2-12V must **NEVER** be commissioned with only **one** functional vacuum circuit.

Operation

Note

- Do not store the DSKZL2-12V unit in a damp or very cold (frost) environment. Otherwise there is no guarantee that the installed pumps will function properly.

Caution

- Always ensure that the suckers are not placed on sharp edges because this could damage the sucker lips. This would lead to leaks in the suction circuit, impairing the functioning of the device.
- Never place the machine with mounted suckers with the rubber surfaces of the suckers on sandy or similar ground. This could damage the sealing lips of the suckers. This would lead to leaks in the suction circuit, impairing the functioning of the device. Or the grains of sand or similar substances could be pressed into the rubber surfaces, leading to damage to the upper surface of the transported goods.

Danger

- Do not allow heavy rain to fall on the DSKZL2-12V
- Do not place the DSKZL2-12V in water.
- Do not convey loads over persons or machines. Cordon off the area under hanging transported goods with wide clearance.

Switching on

Set the two manually operated suction/release valves to the RELEASE position.

Switch the device on using the main switch.
The yellow control lamp ON signalises that the pumps are ready for operation.
The pumps must start up if the vacuum in the vacuum tank is insufficient. After a short time, a vacuum of -0.65 bar should have formed in each tank. When approx. 0.72 vacuum is reached, the vacuum pumps switch off. This should happen after a short time.

Caution

As long as no transport goods are sucked on, the signal tone signalises insufficient vacuum in the lines to the suckers, the vacuum control lamps are off and there is no way of inspecting via the vacuum obtained on the two vacuum control meters.

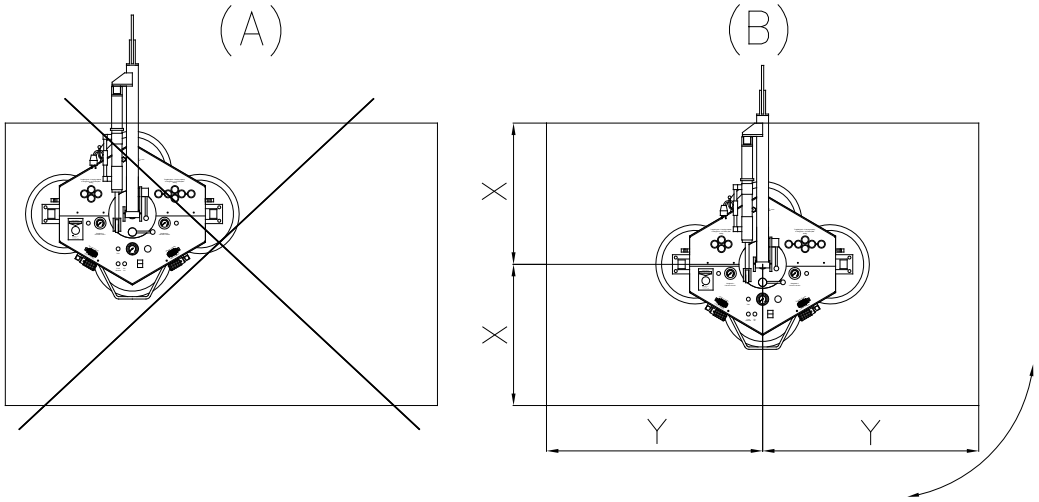
Working Cycle

The surface must be absolutely free of dust, rust particles, water and similar
Clean the surface with glass-cleaner, detergent or similar.
If it is necessary to clean the goods to be transported, use a fat solvent that evaporates without any residue, such as Nitro or brake-cleaner.
The suction pads must not be covered by the protective hood when the goods to be transported are sucked on.

Use the rotation and/or swivelling device to determine the position of the carrier into which the transported goods are to be sucked on.
Position the DSKZL2-12V on the respective goods to be transported

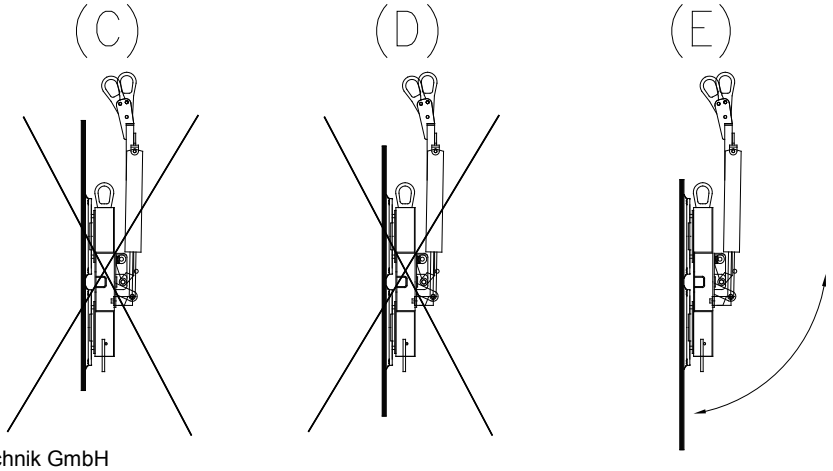
Caution

- An uneven (A) load distribution is not permitted during rotation!
- Ensure an even (B) load distribution during rotation.



Caution

- Top-heavy (C) load distribution is not permitted during swivelling.
- (D) load distribution near the ground is not permitted during swivelling.
- Ensure bottom-heavy (E) load distribution during swivelling.



Check that all suckers on the surface are clean and have full contact and, if necessary, press on or align a sucker that is not making contact until it is in the correct position. If this is not done, a vacuum cannot build up and the DSKZL2-12V can therefore not lift the material. Set the two suction/release valves to the suction position one after the other.
Read the achieved vacuum from the two inspection vacuum meters.
If 0.72 bar vacuum has been obtained in each of the two vacuum circuits, the pumps switch off, the signal tone goes out and the vacuum control lamps are lit. The transport procedure can now be carried out.

Caution

If the extensions have been attached, the support suckers must be connected to the vacuum reserve tanks by the vacuum couplings.

Danger

- Do not convey loads over persons or machines.

- If the vacuum sinks below -0.65 bar in one of the vacuum circuits during transport work, a signal tone sounds. In this case, try to set down the load as soon as possible so that it does not fall down

The transported goods are guided from the side, which means that the operator stands as far as possible from the transported goods in order to guide them.

To rotate or swivel the transported goods with the remote control see page 3-3, the transported goods must always be positioned according to the drawing (B) or (E). It must also be ensured that the rotation or swivelling motion can be performed without danger and that no damage occurs to the transported goods. Larger panes should be additionally held.

If you want to release the transported goods, both suction/release valves must be set to the RELEASE position.

The vacuum drops and the cross arm releases itself from the transported goods. If the two inspection vacuum meters indicate 0, the procedure is completed. It can occur that the DSKZL2-12V remains stuck to the transported goods, but they are released again by the DSKZL2-12V, which can lead to a small shock that shakes the transported goods. Therefore, hold on tightly to the transported goods during the release procedure.

Switching off

After completing the transport work, switch the device off in order not to drain the battery unnecessarily.

Charging the battery

Check the DSKZL2-12V for any externally recognisable damage or flaws.

Compare the connection on the power supply network with regard to voltage, current, and mechanical connection (plug connection) with the necessary data for the vacuum pumps: If they do not correspond, the machine may not be operated.

Connect the DSKZL2-12V to the mains power supply at the plug using an extension cable.

The charging procedure can be checked in voltage display after the Test button has been pressed.

After the charging procedure is completed, a value of 100% must be visible in the voltage display when Test button is pushed.

The battery is charged after a maximum of 24 hours.

Remove the extension cable from the mains power supply

This completes the charging.

Note

If the battery is not charged, the DSKZL2-12V cannot be used in mains operation.

During the charging procedure, the DSKZL2-12V must be switched off. This means that you should not work with it as the charging device or the battery will be damaged.

Troubleshooting

Pumps no longer perform correctly

The machine no longer reaches -0.72 bar vacuum.

Please check whether all suckers contact the transported goods cleanly; align them if necessary.

Check the suckers and hose lines for possible damage and replace them if necessary.

Check hose clamps for firm fit and tighten them if necessary.

Leak check for the entire system

You can perform a leak check of the two independently functioning vacuum circuits to find the leak as follows.

First of all, you should check the entire vacuum circuits with all suckers and the hose lines to both vacuum circuits. To do so, it is necessary to set all suckers on a gas-impermeable, flat material (for example, a metal or glass sheet) that can be sucked up. Then switch the device on and set the two suction/release valves to Suction one after the other. When the maximum achievable vacuum, as a rule approx. -0.72 bar in each vacuum circuit is achieved, set the main switch to OFF. Read the achieved vacuum from the vacuum meters and record the value in writing. The indicators of the vacuum meters should only change slightly within the next fifteen minutes, not more than 5%. If the result of this test is positive, the vacuum lifting device is tight and you can work with it without risk. If a leak is detected even in only one vacuum circuit, the device is not in working order and must not be commissioned. The leak must be corrected immediately or the porous material replaced.

Caution

The attached support suckers must be checked to see whether they are leak-tight.

Caution
The DSKZL2-12V must **NEVER** be commissioned with only **one** functional vacuum circuit.

Electrical malfunction

Vacuum pumps do not start when the device switch is actuated

- Vacuum supply sufficient. Device running correctly.
- Battery flat? Press button Test to check voltage display. Run machine in mains operation or charge battery.
- Check safety cutout.
- Have motor cable on pumps checked by an expert for any possible cable breakage.
- Vacuum monitor for switching point P2 defective? Replace

Vacuum pumps do not switch off when -0.72 bar vacuum is reached.

- Vacuum monitor P2 defect. Replace.

No warning signals

- Vacuum above -0.65 bar? Device OK.
- Vacuum monitor P1 defective? Replace.
- Signal buzzer defective? Replace.

Maintenance

Note

Please note that the trades association requires an annual inspection of vacuum lifting devices by a specialist, in accordance with the accident prevent regulations (VbG 9a-prEN 13155:1998). If you do not have a suitable staff member, we offer a maintenance contract for our vacuum lifting devices which includes annual maintenance including testing and certification. Please contact us for details.

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Internet : www.vakuumlifter-kappel.de

The suckers

The suckers must be cleaned occasionally with fat solvent that evaporates without any residue, such as Nitro or brake-cleaner.

Please do not use a solvent (such as gasoline or similar substances). Never treat the suckers with talc, lubricants, or smoothing agents, as this impairs the adhesion of the suckers, causing the transported goods to slip from them.

The vacuum lines

The hoses must be inspected occasionally for visible cracks, etc. Replace defective hoses immediately!

Leak check

A leak test of the two independently functioning vacuum circuits must be performed at least once a week. You should check the entire vacuum circuit with all suckers and the hose lines.

To do this, it is necessary to set all suckers of the vacuum cross bar on a gas-impermeable, flat material (for example, a metal or glass sheet) that can be sucked up. Switch the device to On using the On/Off switch and set the suction switch to On. When the maximum achievable vacuum, as a rule approx. -0.72 bar in each vacuum circuit, has been achieved, set the suction switch to Off and switch off the device.

Read the vacuum obtained from the vacuum meters and record the value in writing. The indicator of the vacuum meters should only change slightly within the next 15 minutes, not more than 5%. If the result of this test is positive, the vacuum lifting device is tight, and you can work with it without risk.

If the test of only one of the vacuum circuits is negative, you can repair the leak and seal it or replace the leaking material, as described in the Troubleshooting chapter. The leak must be corrected immediately or the porous material replaced.

Caution

Always check the operational safety of the pump and the other elements before starting work / commissioning.

Caution

The DSMH2-12V must **NEVER** be commissioned with only **one** functional vacuum circuit.

Technical data

Manufacturer:	Kappel Flachglastechnik GmbH
Designation:	Vacuum lifting device (battery operated)
Type:	DSKZL2-12V
Serial number:	_____
Year of manufacture:	_____
Operating instructions:	Art. no: KA-DSKZL2-12V-27.5.16
Manufacturer's address:	Kappel Flachglastechnik GmbH Schlachthofstraße 3-5 D-87700 Memmingen Phone: 08331/4487 Fax: 08331/82962 E-mail: info@vakuumlifter-kappel.de Internet: www.vakuumlifter-kappel.de

Temperature range

Operating temperature	-1 to +40°C (ambient)
Storage temperature	room temperature, not under 0 degrees

Dead weight

DSKZL2-12V	without extensions 45 kg / with extensions 55 kg

Frame size

Height:	1181 mm
Width:	760mm
Depth:	211 mm

Vacuum tank	1st vacuum circuit 0.4 litre / 2nd vacuum circuit 0.4 litre
Hose connection	6 mm

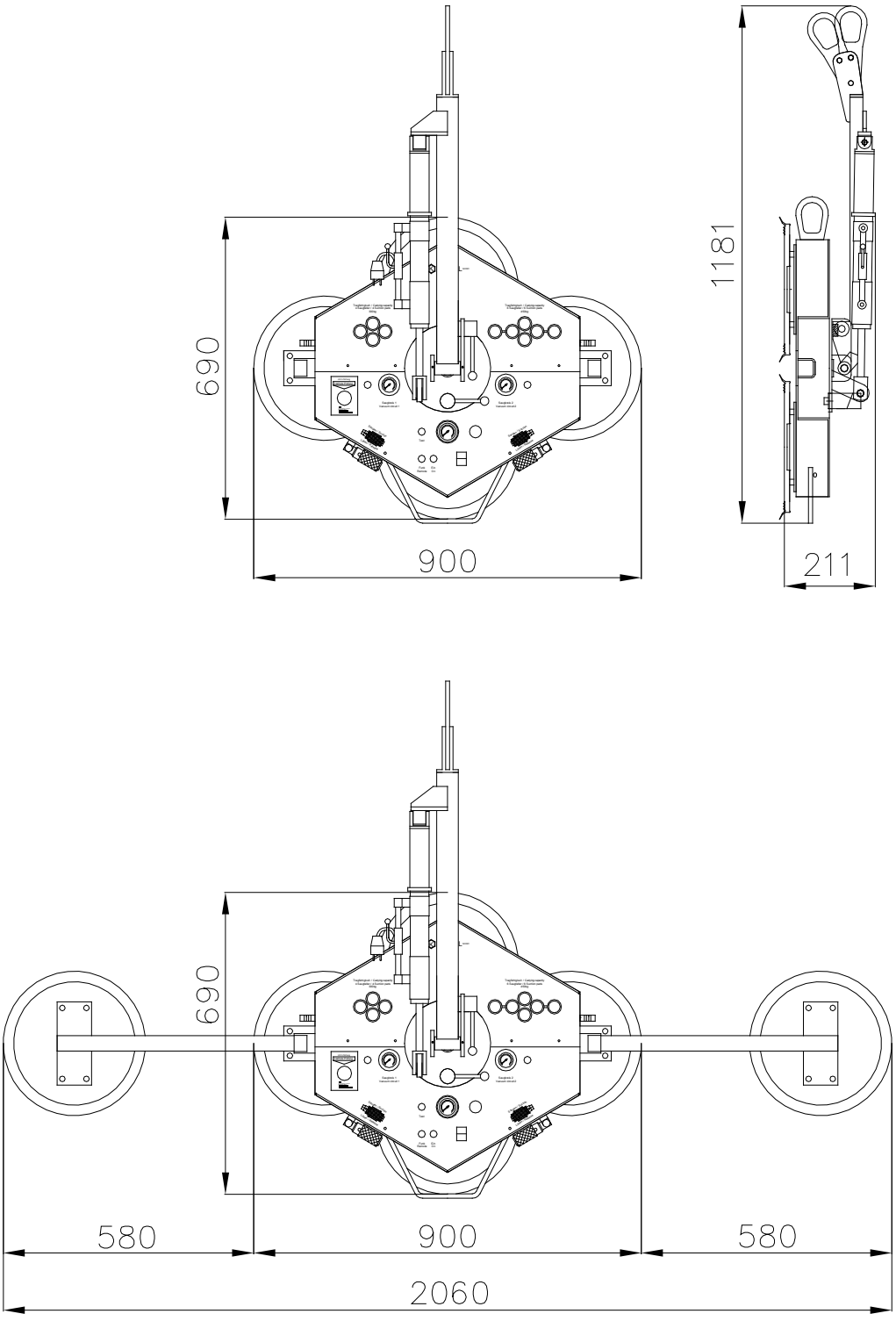
One vacuum pump / vacuum circuit

Supply voltage:	12 V, DC
Nominal current:	approx. 8A

One battery

Supply voltage:	12V, DC
Nominal capacity:	approx. 7 Ah

Dimensioning outer edge suction plate, overall depth



Load capacity of the DSKZL2-12V

All specifications regarding load capacity are based on an evenly distributed load.

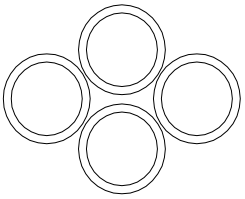
Furthermore, all suckers must also have sucked on to the transport goods.

DSKZL2-12V delivered with suckers type 150 K

Sucker type 150 K

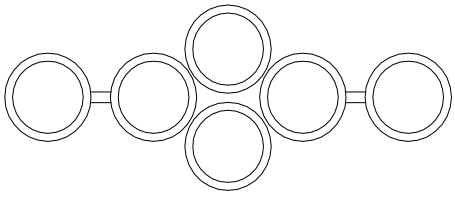
Diameter:	320 mm
Load capacity on smooth, clean, dry Surface with 60% vacuum	
vertical:	150 kg
horizontal:	150 kg
vacuum connection:	9 mm

Tragfähigkeit / Carrying capacity
4 Saugteller / 4 Suction pads
300kg



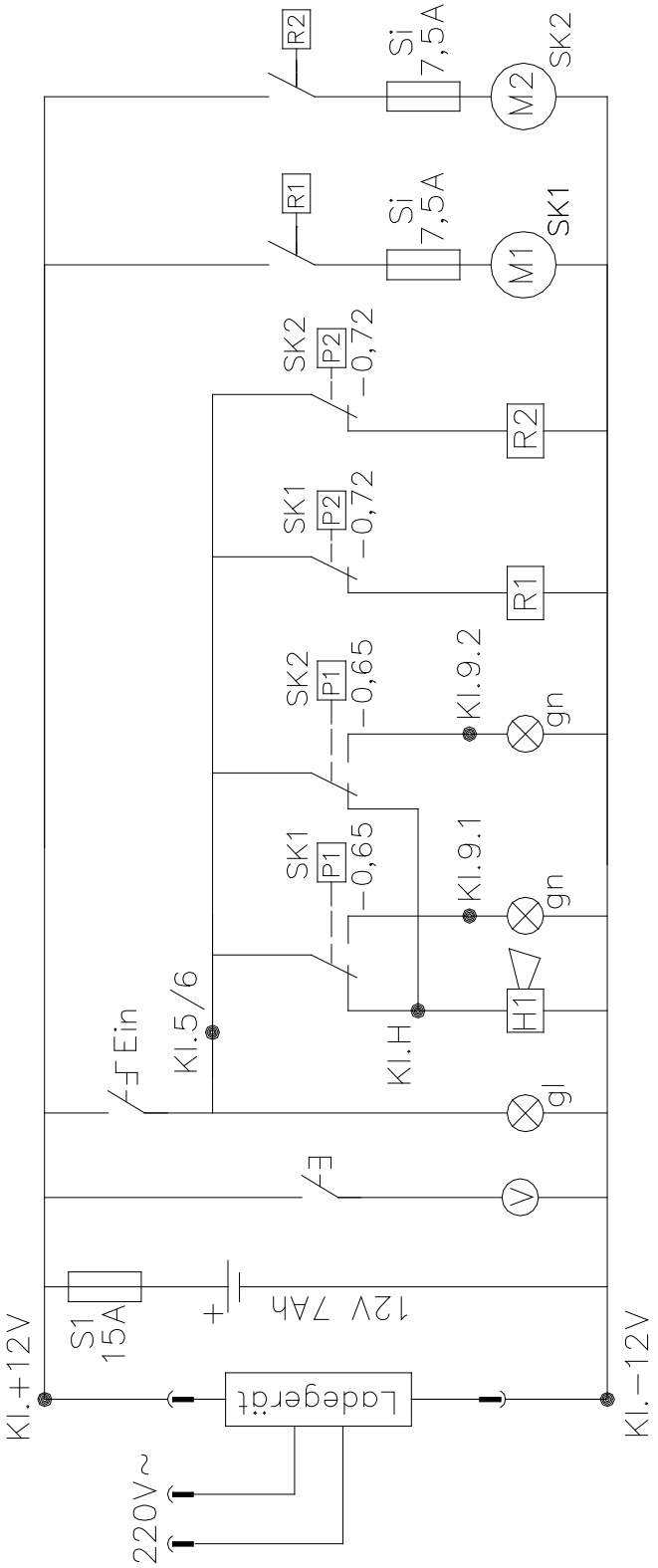
Maximal size of the sheet material to be transported
height: 1700 mm
width: 1900 mm

Tragfähigkeit / Carrying capacity
6 Saugteller / 6 Suction pads
450kg

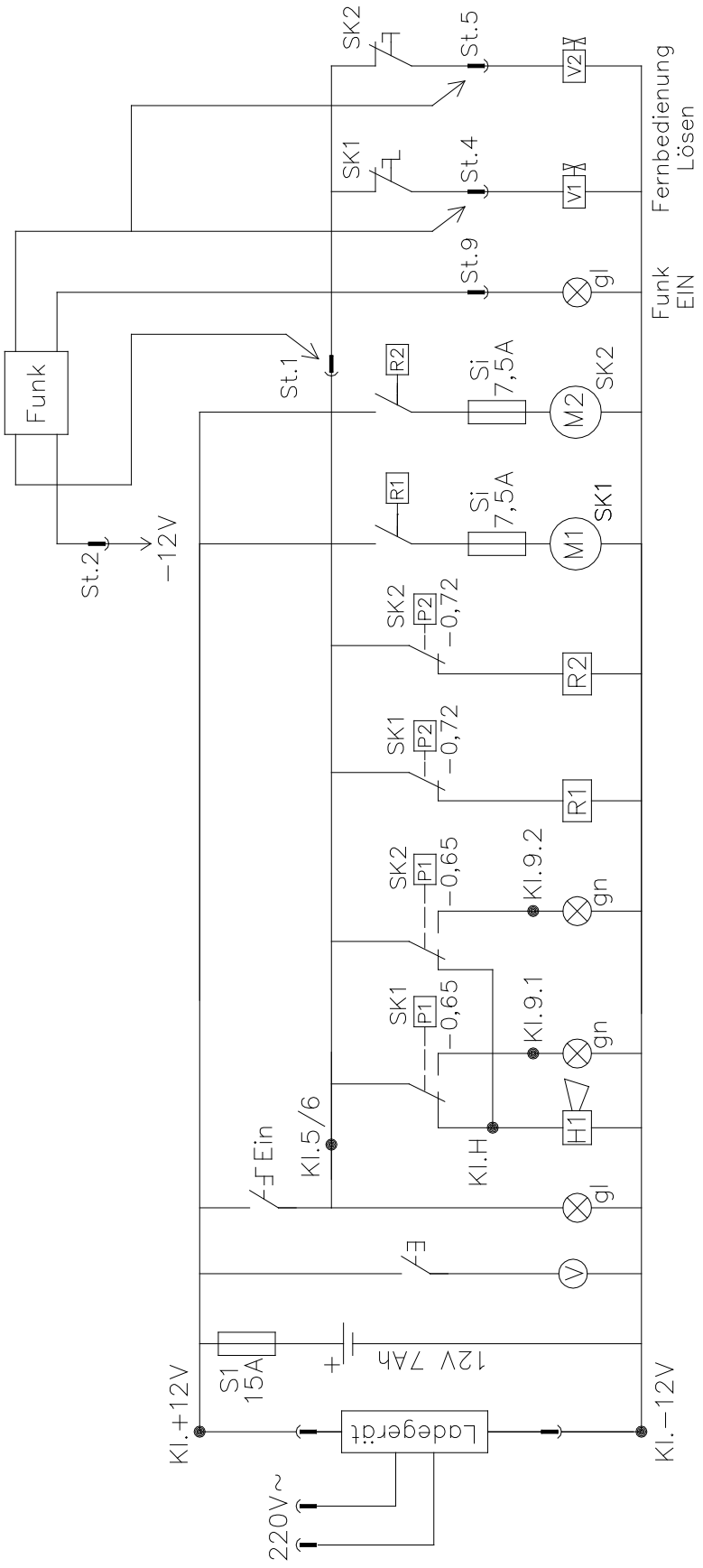


Maximal size of the sheet material to be transported with extensions
height:1700 mm
width: 3060 mm

Wiring diagram DSKZL2-12V



Wiring diagram DSKZL2-12V with radio remote control and cable remote control



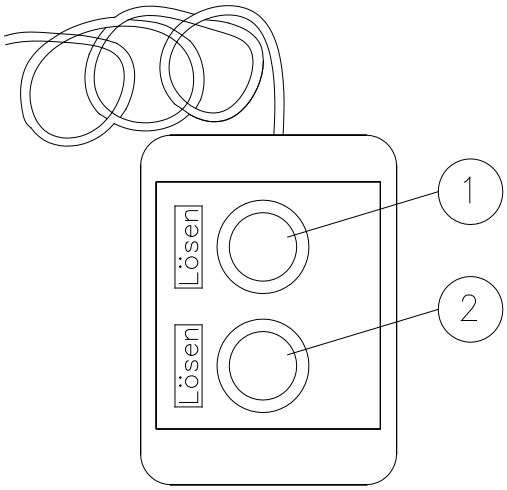
Options for the DSKZL2-12V

Lowering cylinder

A lowering cylinder with ball valve or throttle valve which makes lowering the transported goods easier during swivelling.

Remote control with cable

A remote control with a spiral cable for releasing the transported goods.



1. cord switch suction circuit 1
   Press=suction=pull=release
2. cord switch suction circuit 2
   Press=suction=pull=release

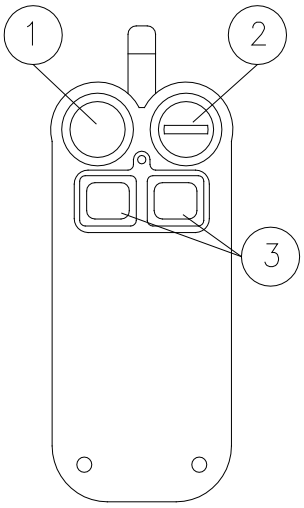
Caution

When operating the remote control, the manually operated suction/release valves must always be set to SUCTION.

After the transported goods have been released, the cord switch must be restored to the SUCTION setting.

Remote control with radio control

A remote control with radio control for releasing the transported goods.



1. Not allocated
2. Radio control ON / OFF

   Switching on
   Turn to the right to Start
   then back to ON

   Switching off
   Turn to the left to OFF

3. To release
   Press both buttons at the same time

Activating the radio remote control

Switch on the device and plug on the remote receivers.
Switch on the radio remote control. When the radio connection is active, the yellow control lamp on the device is lit.

Note

Every time the device is switched on, the radio connection has to be activated again.

Caution

When the radio remote control is in operation, the manually operated suction/release valves must always be in the SUCTION position.

To release the transported goods, both buttons have to be pressed at the same time.

Spare parts list for DSKZL2-12V

Quantity	Designation
1	Suspension eye
2	3/2 way sliding valve suction/release
2	Vacuum meter 50mm 1/8“
1	Chargert C-Tek 0.8A
6	Suction pad 150K
1	Push-button selector switch
1	Buzzer (horn) 12V DC
1	Test button, push button
1	Charge indicator 12 V DC
2	LED indicator lamp 12V green
1	LED indicator lamp 12V yellow
1	Main fuse 15A
2	Pump fuse 7,5A
2	Vacuum pump DC Kappel
1	Battery 12V DC 7Ah
1	One-way valve SMC
2	Vacuum monitor type 625 (P1)
2	Vacuum monitor type 625 (P2)
2	¼“ Vacuum S.S. couplings for extensions
Options	
1	Lowering cylinder
1	Remote control complete with spiral cable With 2 cord switches (suction/release)
2	3/2 magnetic valve 1/8“ 12V DC
1	Radio receiver
1	Radio remote control

Daily Pre-Use Checklist
Vacuum Lifter

Northern (Head Office) **Tel: +44 (0)1482 227333**
Central Tel: +44 (0)1302 341659
Western Tel: +44 (0)1384 900388
Southern Tel: +44 (0)203 174 0658
www.hird.co.uk

Machine Model: **Kappel DSKZL2**		Site Name:
Date Week Commencing:	Fleet No:	Address:
Inspected by:		

	Daily Pre-use Checks	M	T	W	T	F	S	S	COMMENTS
1	Are all operators manuals present and readable								
2	Is the Report of Thorough Examination (LOLER) in date								
3	Complete a visual walk around / Inspection for any noticeable defects								
4	Are all safety information decals present and readable								

Check the following components or areas for damage, or missing parts & unauthorised modifications:

5	Is the lifting attachment free from defects and safe to use								
6	Vacuum pads for rips, tears, quality and cleanliness								
7	Vacuum pipes and connections (in particular quick release fittings)								
8	All extension arms are present and free from defects (where applicable)								
9	Make sure all individual pad shut off valves are open (where applicable)								
10	Electrical components, wiring, connectors,								
11	Check input mains voltage corresponds with charger voltage (110v or 240v)								
12	Charger								
13	Check battery has sufficient charge								
14	Are rotation and tilting movements functional								
15	Check handles security								
16	Check remote for any damage or defects (where applicable)								
17	Check operation buttons / switches are working and free from defects								
18	Energise vacuum on non porus surface								
19	Are lights and audible alarms on during vacuum process								
20	Does the vacuum reach sufficient level, before switching off (see gauges)								
21	Does battery gauge illuminate when pump switches off **If NO - DO NOT USE**								
22	Check Safe Working load of vacuum - is it suitable for the proposed load								
23	Carry out full function test								

Is the machine safe to use? (please circle)	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	
Operator's Initials								

Result of Inspections: List defects or state "No Defects"

Signature:	**Name:**	**Date:**