UK CA CE

autem vacuum lifters

ELEVATING EXPECTATIONS

HR 3000/5000

The Half Round has no installation requirements as it is easily attached/detached from your crane and has a lifting capacity of 3000/5000kgs.
Battery powered with no other power source required, makes the HR very flexible whether on-site, off-site or in a factory setting.
Audio and Visual safety gauges are installed on the unit to help meet your safety needs.
Pads are hard wearing and easily replaced.
Recommended Use: Steel, Stone, concrete

General

Please note that the manufacturer disclaims any responsibility for material damage or personal injury caused by improper use of this vacuum lifter. The operator must read this manual before using the device.

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ELEVATING EXPECTATIONS

Contents:

Safety First

PERSONAL PROTECTIVE EQUIPMENT SHOULD BE WORN WHEN CONDUCTING ANY LIFTS

Caution Training:

The Vacuum Lifting equipment should be operated only by competent persons who have been adequately trained in the safe use of the equipment and the findings of any risk assessment.

Training should cover:

- potential dangers from use of vacuum lifting equipment
- factors which may cause equipment or lifting operation failure and how to avoid them
- limitations on the use of the equipment
- instructions on planning and carrying out safe lifting operations, including safe systems of work
- specific instructions on safe use issued by the manufacturer/supplier
- location and operation of the equipment controls
- scheme examination, maintenance requirements and system for reporting defects
- emergency arrangements

Caution Lift Plan:

The responsible person/operator is required to conduct a lift plan which must address the foreseeable risks involved in the lifting of the load and identify the appropriate resources (including people) necessary for safe completion to the lift.

Factors to include may be any or all of the following:

- working under suspended loads (note; loads should not be lifted above personnel)
- visibility
- attaching/detaching and securing loads
- environment
- location
- overturning
- proximity hazards
- derating
- lifting people
- overload
- pre-use checking
- continuing integrity of the equipment

The plan should set out clearly the actions involved at each step of the operation and identify the responsibilities of those involved. The degree of planning and complexity of the plan will vary and should be proportionate to the foreseeable risks involved in the work.

The position of mobile lifting equipment or the location of fixed installations can have a dramatic effect on the risks involved in a lifting operation. It is vital to take all practical steps to avoid people being struck by loads or the equipment itself during use.

Warning Temperature Range:

The Vacuum Lifting devices should operate in a temperature range of -40°C to +60°C.

Warning Alarm Activation:

Measures to be taken as soon as the warnings are actuated

- stop and lower the load to the floor where safe to do so.
- check vacuum level visually for any noticeable decrease.
- check battery connections.
- check condition of the vacuum connections and hoses.
- check the condition of the suction pads.

In the event of damage to any item it must be replaced before commencing another lift.

Warning LOLER Inspections:

The Vacuum Lifting device should be thoroughly examined by a competent person at appropriate intervals, where the vacuum lifting attachment is permanently fixed to a crane, gantry or similar, it must be thoroughly examined at 12 monthly in accordance with a written scheme of examination. Where it is used in the same manner as a sling or other lifting tackle, i.e. moved between different lifting machines, it is therefore considered as a lifting accessory and must be thoroughly examined at 6 monthly intervals in accordance with the Lifting Operations and Lifting Regulations 1998 (LOLER) https://www.hse.gov.uk/work-equipment-machine/loler.htm.

Warning Construction Sites:

Where vacuum lifting equipment is used on construction sites, LOLER applies requiring the load to be adequately secured to prevent danger from slipping or displacement. In applications such as the lifting of industrialised building components which have to be raised above the ground there is a risk that if the vacuum pump fails and there is significant or rapid leakage, there may not be time to lower the load after the alarm rings. Therefore, for high lift applications, ie above 10metres, safety arms should be used. These arms should be engaged while the load is being lifted or some other effective means should be provided of preventing the load from falling in the event of loss of vacuum.

Stability During Storage

When not required for use it should be possible to set down the attachment so that it is stable during storage. To be regarded as stable it shall not tip over when tilted to an angle of 10° in any direction. This shall be achieved either by the shape of the attachment or by means of additional equipment such as a stand.

Machines kept in particularly moist/wet or dusty conditions may require frequent attention, so a dry atmosphere is preferable.

Operating Procedures

The HR should only be operated by staff who have been trained in the use of the vacuum lifting attachment and who fully understand the safe operating systems.

The vacuum lifting attachment utilises the creation of a vacuum via suction pads for attaching itself to the load being lifted. The attached suction pads fit directly onto the surface of the load thus enabling a vacuum to be created between the suction pads and the load. The suction pads are an integral part of the lifting attachment. The electric-powered suction pump is an independent unit that is connected to the lifting attachment forming a complete detachable lifting accessory. The lifting attachment is generally suspended from lifting equipment (e.g. hoist/crane/excavator/forklift truck) and can be attached by means of a hook arrangement, accessories or other mechanical means. The vacuum attachment can also be an integral part of the lifting equipment.

The power source is a battery power pack which drives a vacuum pump which evacuates a reservoir tank fitted with a vacuum guage. This reservoir is connected to the suction pads. A control valve is located in the vacuum line between the reservoir and the lifting pads. For maximum efficiency the power pack is located as close as possible to the lifting pads which are mounted on a metal frame. The suction is formed utilising flexible pipe connection to the reservoir and fitted with a control valve.

The A weighted time averaged emission sound pressure (LEQ) measured at a horizontal distance of 1m from the centre of the unit does not exceed 70DB (A)

The vacuum lifting attachment is fitted with Audio/Visual status and alarm system

- a green vacuum conformation light
- warning siren for low vacuum
- red xenon flashlight for low vacuum

The warning siren red flashing light will be in multiples so the operator can have clear visibility when a low vacuum occurs.

Caution

The unit should be centred on material to be lifted then lowered ensuring that the pad/pad's do not overlap material being lifted.

Caution

The material being lifted must be free from dust and debris.

To activate control, push valve up as indicated, full vacuum will be achieved in seconds. To release, pull valve down as indicated whilst assuring material is supported and that the operator is clear of the load. Before lifting, make sure:

- the unit capacity is adequate for the load.
- the surface of load is free from dirt/detritus that could affect effective sealing.
- the surface of load has no holes/flaws which may prevent the pad from sealing.

Caution

Before lifting any material ensure the load to be lifted is within the safe working load of the vacuum lifting attachment which is indicated on the equipment

Pad Dimensions	SWL
300 x 300	187kg
200 x 800	480kg
400 x 400	480kg
500 x 300	450kg
500 x 500	625kg
600 x 300	540kg
900 x 450	1 tonne

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LIFTING

The machine may be used to lift loads of up to indicated safe working load when it has achieved a vacuum level of 40% or above as indicated by the vacuum guage. The operator must have a clear view of the vacuum guage and warning lights.

Warning

Do not attempt to lift load if the vacuum guage is not in the green zone or if alarm sounds and/or red light is flashing.

In the event of the vacuum dropping below 40% whilst lifting a load, or if an alarm sounds, lower the load to a safe position immediately.

Hoist Acceleration:

- Max 1MS-2 Lifting and Lowering.

MAINTENANCE INSTRUCTIONS

All checks should be carried out by competent personnel only.

Daily Checks:

- check vacuum level reaches the minimum suction pressure of 40% each time before use (note; a green vacuum light gives confirmation of pressure).
- check the battery is fully charged.
- at the beginning of each shift/day, all suction pads should be inspected for damage and/or wear.
- check all warning labels are clearly visible.
- test alarm systems.

Weekly Checks:

- examine all hoses and fittings for damage and/or wear.
- check valve is clean and moving freely.
- check all suspension points/pins for damage.

Please note that conditions in which machine is stored will affect the amount of attention the unit will require.

Monthly Checks:

- inspect shackles and suspension points if applicable (when the cross section is reduced by over 10% replace immediately).
- check filter element on filter between reservoir and valve is clean.

Annual or Bi-Annual Checks

A full inspection and re-certification at 12 monthly intervals or 6 monthly checks dependent on application in accordance with the Lifting Operations and Lifting equipment Regulations 1998 (LOLER) by a competent person.

TROUBLESHOOTING

Vacuum System:

Vacuum percentage is below 40%, cause:

- leakage in the vacuum hoses or badly applied hose clips.
- the seals in the suction pads have been damaged.

- the filter is blocked.

Remedy:

- change the vacuum hoses or clips.
- change the seal in the suction pads.
- clean the filters.
- demount the in-line valve, clean blast with air and remount.

Electrical System:

The vacuum pumps cannot be started, cause:

- the MCB fuse has tripped off.
- low battery level – check the battery level on the voltmeter.

Remedy:

- reset MCB'S and retry.
- put unit on charge.

Here at Autem Vacuum Lifters, we pride ourselves on the quality of the products we supply, so you can rely on us to have the replacement parts as and when you need them. To maintain the certification of the product you can only use authorised parts supplied by Autem, any modifications will also null and void the certification without prior authorisation from the manufacturer.

ELEVATING EXPECTATIONS

HR Parts

Product	Code	Supplier	

Frame			
Fit Up			
Electric Box	Custom	Wallace McDowell	
Wiring Fit			
Powder Coating			
Vacuum Pump	DV1034231	Dynaflo Inc	
¼" BSP Male Blanking Plug Seal	VSR1/4WD	Pneumatics Direct	
	VG50-01C	Pneumatics Direct	
08mm OD Equal Tee Pushin x**5**	2019-8412	Pneumatics Direct	
Led Indicator with Sounder Red	9092553	RS Components	
Indicator LED Pilot Light 24v green	7637918	RS Components	
Vacuum Guage 63mm ¼ Bottom Entry		Pneutek Solutions	
½" Slide Valve		Pneutek Solutions	
M/Female Coupling		Dingbro	
½ Female Elbow		Pneutek Solutions	
8mm x 1/8bsp Straight Push in Fittings x 4		Pneutek Solutions	
Pad Tool			
Spiral Wrap sleeving	P00299-25	12 Volt Planet	
On/Off Rocker Switch	R13-112B8G12	Sinolec Components	
Voltmeter Digital Display	#0-534-10	Dingbro	
Cap for Trip Circuit Breakers	#0-381-99	Dingbro	
Circuit Breaker 12/24 Volt	#0-381-65	Dingbro	
Din ISO Plug	0-601-26	Dingbro	
Power Socket	JH-RS-5015	Sinolec Components	

HR Parts cont…

Product	Code	Supplier
Inline Filter	FF5079	Dingbro
Nameplate	WFB002	Mtm Products
Stickers		The Print Room
Battery Mobility 12v	BT06673	CPC

Paint Sample	MHP60	AL Paints

Additional Extra's Available

Product	Code	Supplier
Remote Control SYS	RF00914	CPC
Vacuum Valve	07 03 51	Vacuum Technologies
12v Coil for STD Plug x 2	00 07 03N	Vacuum Technologies
Coil DIN Plug	00 07 63	Vacuum Technologies
Fitting		

Only Replace Parts Using Components Sourced Directly from Autem Vacuum lifters Ltd
www.autemvacuumliftersltd.co.uk

Drawing Number: WFBOO2

Revision: 002

Autem Vacuum Lifters Ltd

Westacre, Fenwick, Kilmarnock KA3 6AS

Product	Vacuum Lifting Device
Model/Type	
Serial Number	
Un-Laden Weight	
Year of Construction	20
Minimum Load	
S.W.L	

"Warning – Lifting above 1.8 M is prohibited
Until a lifting plan is in place"

Size = 100mmX 70mm

Material= 1.0mm Satin Silver Aluminium

Colour = Black

Adhesive = Nitto D9605

Tolerance = ±0.5mm

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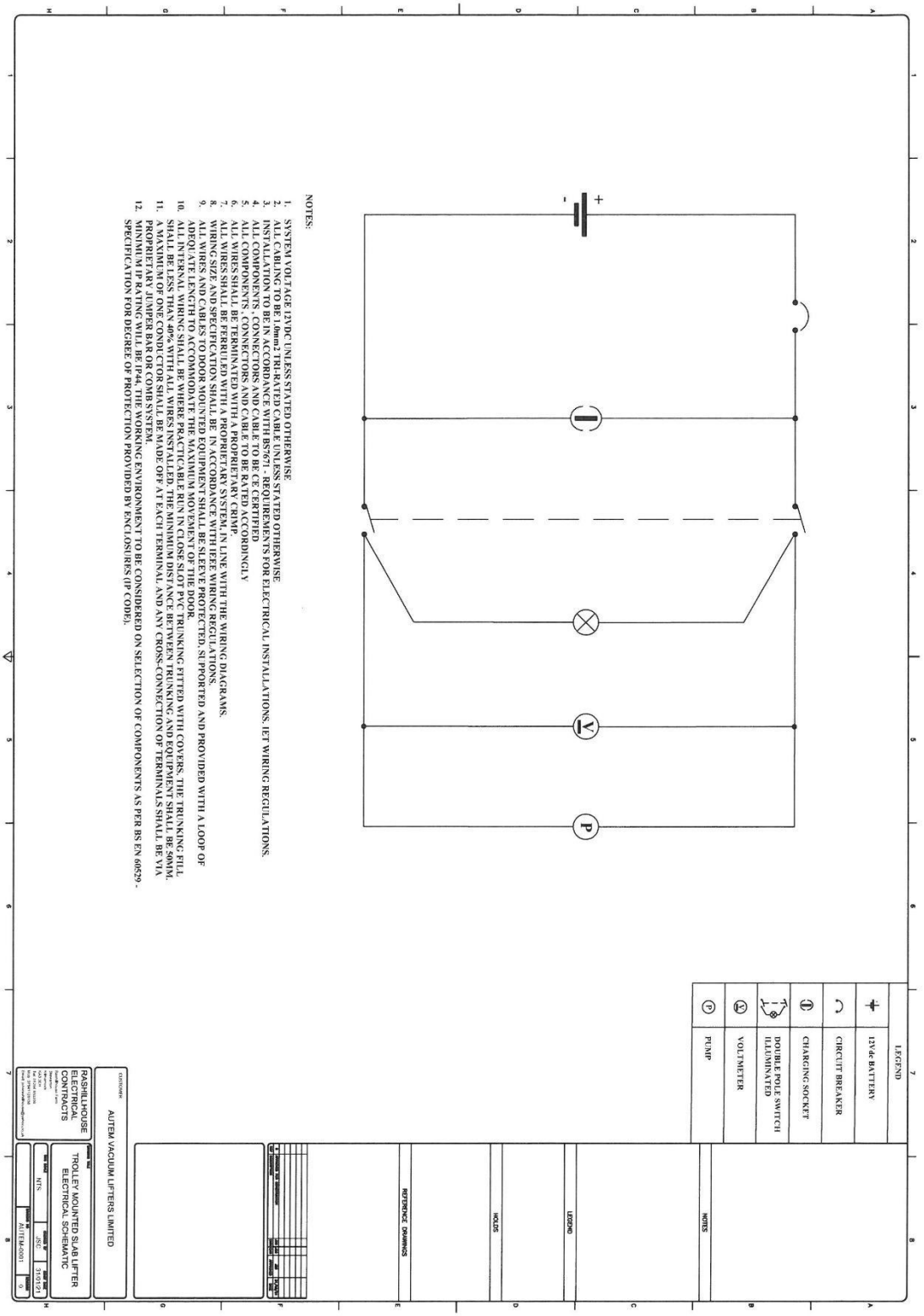
Wiring Diagram



GB Declaration of Conformity

In accordance with of European Parliament and Council Decision No 768/2008/EC Annex III

1. *Product model / product:*

Product	Vacuum Lifter
Model/type	*HR*
Batch/serial no.	

2. *Manufacturer*

Name	Autem Vacuum Lifters
Address	Westacre, Fenwick, Kilmarnock KA3 6AS

3. *This declaration is issued under the sole responsibility of the manufacturer.*
4. *Object of the declaration:* Vacuum Lifter

Product

5. *The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:*

SI 2008 No 1597	Supply of Machinery (Safety) Regulations 2008 (Amendment) Regulations 2011)
SI 2016 No 1091	Electromagnetic Compatibility (EMC) Regulations 2016
SI 2012 No 3032	The Restriction of Hazardous Substances Directive (Amendment) Regulations 2019

6. *References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:*

Reference & Date	Title
BS EN 12100:2010	*Safety of machinery General principles for design Risk assessment and risk reduction*
BS EN 13155:2003+ A2:2009	*Cranes — Safety — Non-fixed load lifting attachments*
BS EN 60204-1:2018	*Safety of machinery. Electrical equipment of machines. General requirements*
BS EN IEC 61000-6-2:2019	*Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments*
BS EN IEC 61000-6-4:2019	*Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments*

Signed for and on behalf of:	Autem Vacuum Lifters Ltd
Place of issue:	Westacre, Fenwick, Kilmarnock KA3 6AS
Date of issue:	*06.10.2022*
Name:	David Speirs
Function:	Director
Signature:	*d.speirs*