StoneHook™ Manual

Contents:

1. 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.

1.1. Lifting specification

The vacuum lifting device in combination with the supplied suction pads is only specified for lifting of the materials specified below. The lifter is not suitable for use within hazardous/explosive atmospheres.

1.1.1 load specification

A max 2200 lb capacity vacuum lifter system to lift concrete/stone slabs or steel plates / sections with crane or mini-digger:

Length : 4 in. (length and width) larger than vacuum pad
Thickness: variable
Max weight: 2200 lb
Surface : free from debris that could impede effective sealing, no extreme irregularities, grease oil or any contaminants.
Operating temperature : 0 to 130 deg. F
Max. Lift inclination: to 30 deg. from horizontal

1.1.2 conditions

Ambient temp.: Up to 100 deg. F.
Hoist acceleration : max 3 ft/sec^2 lifting or lowering

1.2 operating safety guidelines

1.2.1 Training
Ensure that the machine is only operated by personnel who have been satisfactorily trained in the use of the machine and fully understand the operating safety guidelines presented below.
1.2.2 alarm system
The machine is equipped with an audible and visual alarm indication system which comprises:
1 red indicator lamp - visual indication of vacuum level below 60%
1 audible alarm - audible indication of vacuum level below 60%
With the machine switched on the alarm system will signal a low vacuum alarm condition if the vacuum level is initially below 60% or should drop below 60%
To test the alarm system, ensure that the stored vacuum reservoir is reduced to zero - switch on the machine, the alarm system will operate until the vacuum level achieved is above 60% - at this point the Alarm annunciation will stop and the systems green OK indicator lamp will illuminate. If the alarm system does not operate as described do not use the machine and report the defect immediately.
The alarm system is to be tested on a daily basis before the commencement of lifting operations.
Do not attempt to lift a load without the machine switched on. It is dangerous to attempt to lift a load using residual vacuum held within the vacuum reservoir.
1.2.4 Vacuum gauge
The machine is fitted with a vacuum gauge which indicated the level of vacuum achieved, the gauge is calibrated from 0-100%. The scaling on the gauge has a sector colored green from 60 - 70%, this indicates the vacuum level required to lift a maximum permissible load of 2200 lb. When operating the vacuum unit the operator must have a clear view of the vacuum gauge as this will give an early indication in the event of an abnormal decrease in the vacuum level.
1.2.5 Lifting operations
During normal operation the machine may be used to lift loads of up to 2200 lb when the machine has achieved a vacuum level of 60% or above as indicated by the vacuum gauge. The operator must have clear unobstructed view of the vacuum gauge together with the red and green lamps.
Do not attempt to lift a maximum load of 2200 lb if the vacuum gauge indicates less than 60%, or if an alarm condition is signaled. If, while lifting load the vacuum level drops below 60% or an alarm condition is signaled , lower the load to a safe position immediately.
1.2.6 Safe Working Load
The maximum lifting capacity is indicated on the the attached suction pad.
1.2.7 Sound level
The a-weighted time averaged emission sound pressure measured at a horizontal distance of 1 m from the center of the unit does not exceed 70 db(a)

Never allow anyone to be under or in proximity of the load!
Please ensure that lifted load is not carried over personnel!

2. Installation instructions
See illustration of lifter
2.1 fitting vacuum lifter
The unit is equipped with sling centering ears. A polyester flat or round sling should be fastened around the top arch in a choker configuration between the centering ears. The sling and all lifting gear should be sufficient for the sum loading of lifter (100 lb) and load. If the capacity of the lifting gear is much higher than lifter capacity of the lifter then care should be taken that acceleration time does not exceed 3 ft/sec^2.
2.2. Suction pads
The device is equipped with a 12x35 inch steel suction pad - with a capacity of 1400 lbs @ max

vacuum 60%.

3. Directions for use

3.1 general
The unit is supplied with a manually operated control valve. See unit illustration.
3.2 operating the unit switch unit on by pressing the green off/on switch as illustrated – the unit will start immediately and the power switch will illuminate– ensure the valve is in off position as shown(valve slid up to top position) and allow vacuum to build up until the alarm stops and the green lamp illuminates. Safe lifting is only possible when the load is correctly divided over the suction pad - the unit should be centered on the load to be lifted. Unit is then lowered onto load ensuring that the pad does not overlap material being lifted and that it is pressed against load.
Before lifting a load please note the following:
A) is the unit capacity adequate for the load?
B) is the edge of the pad at least 2 inches from the edge of the load?
C) is the surface of the load free from dirt/debris that could affect sealing?
D) is the surface free from flaws/holes etc that could prevent the pad from sealing?
Important – only lift a load which is less that the maximum load marked on the vacuum pad and the vacuum is above 60%.
Make sure that the vacuum is not decreasing while lifting - watch the vacuum gauge.
To activate control valve, move blue slide valve down, Evacuation of pad takes place within a few seconds.
To release load, move blue slide valve up. When releasing load operator must ensure that it is adequately supported and he is well clear of any possible material shift after deactivating the suction pad.
3.3 disconnecting
3.3.1. Switching off
Turn the power switch to off.
3.3.2
Charging
Ensure that the unit is switched off. Plug in the supplied charger. The unit is equipped with an automatic charging system which is timed to provide the correct charge period. Note: We accept no liability for damage to gel batteries or charging system through misuse or under charging. Gel batteries should be treated as a consumable item and are not covered by guarantee.
3.3.3. Storage
When unit is not being used you are advised to keep the suction pads off the floor when wet. For long term storage the batteries should be charged once a week with on-board charging system and the unit should be stored in a dry room.

4. Maintenance

4.1 Daily checks

Check rubber seals for localized damage & wear. Badly worn & damaged seals should be replaced prior to use. New seals can be inserted into seal profile using insert bar at an angle of 45 deg.
Check that alarm system is operating correctly – warning beep should stop after 60% reached in reservoir(vacuum gauge). If alarm is not working it should be repaired immediately. Check the suspension points for damage.

4.2 weekly checks

Check filter element on filter between reservoir & valve is clean - if fitted -if necessary clean or renew. Particularly moist or dusty atmospheres will require more frequent attention.
Check integrity of air filter housing.
Check legibility of all warning & information labels.
Check vacuum reservoir for water - remove gauge and turn upside down.
Check filter element on vacuum pump(if fitted) - if dirty, clean or exchange.
Check integrity of air filter housing
Check legibility of all warning & information labels.

4.3. Monthly maintenance

Inspect shackles & suspension points every month. When the cross section is reduced by over 10% - the parts should be replaced immediately

5. Trouble shooting

5.1. Vacuum system

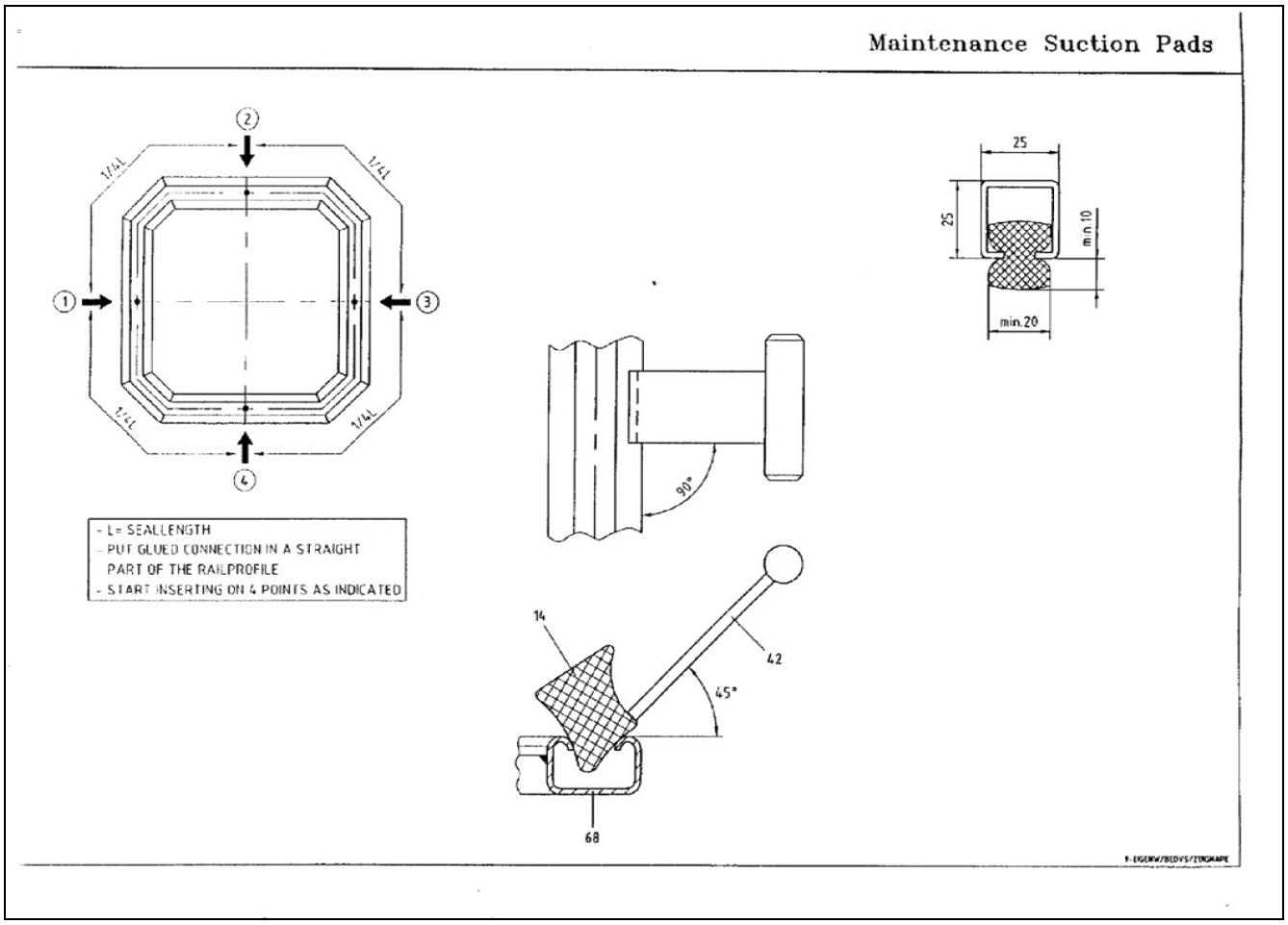
A. Vacuum percentage is below 60% cause:
leakage in the vacuum hoses or badly applied hose clamps;
The seals in the suction pads have been damaged; the filter is dirty:
The three-way valve does not seal properly:
Remedy: change the vacuum hoses or clamps:
Change the seal in the suction pads:
Clean the filters:
Dismount the three-way valve, clean, grease, and then remount it;

B. The vacuum pumps are too hot over 120° C
Cause: dirty cooling fins in vacuum pump:
Remedy: clean the cooling fins:

5.2. Electrical system

A. The electric motor cannot be started
Cause: the fuse has blown:
Remedy: find short circuit and change fuse:

B. The alarm system is not switched off and the green system OK Lamp is not illuminated if the vacuum percentage is over 60%
Cause: the vacuum switch requires adjustment or has been damaged:
Remedy: adjust or change the vacuum switch.



Standard suction pad
Type : vk90/30
Dimensions : 35x12 in
Seal type : 40 x 25 mm code 088005
Seal length : 2240 mm
Lifting capacity : 1400 lbs @ 60%

For more information or replacement parts, contact:
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9-5-2019 cm