



# VACUUM BLOCK LIFTERS

## AVBL- SERIES

**PRODUCT CODE: AVBL380/AVBL1000**

### OWNER'S MANUAL

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## 1. INTRODUCTION

The Aardwolf Vacuum Block Lifters (AVBLs) are specially designed to handle marble, granite slabs and concrete. Though the devices are compact, they have a powerful structure and innovative features. The AVBLs are suitable for use with a crane or hoist to lift or transport materials. Additionally, these lifters can be combined with all types of lifting equipment such as load hooks, chains and cables.



# 1. SPECIFICATIONS & FEATURES

## 2.1 SPECIFICATIONS

| SECTION            | PRODUCT CODE | PAD SIZE (MM)   | METRIC (MM-KG) | IMPERIAL (INCH-LBS) | VACUUM PUMP (QUANTITY) |
|--------------------|--------------|-----------------|----------------|---------------------|------------------------|
| WORKING LOAD LIMIT | AVBL380      | 520 x 125       | 120            | 265                 | 01                     |
|                    |              | 520 x 160       | 150            | 331                 |                        |
|                    |              | 520 x 220       | 240            | 529                 |                        |
|                    |              | 520 x 320       | 380            | 838                 |                        |
|                    | AVBL1000     | 800 x 500       | 1000           | 2205                | 02                     |
| NET WEIGHT         | AVBL380      | N/A             | 54             | 119                 | N/A                    |
|                    | AVBL1000     |                 | 100            | 221                 |                        |
| GROSS WEIGHT       | AVBL380      |                 | 67             | 148                 |                        |
|                    | AVBL1000     |                 | 130            | 287                 |                        |
| PACKING DIMENSIONS |              | 585 x 385 x 530 |                | 23”x 15”x 20.9”     |                        |

|                     |   |
|---------------------|---|
| BATTERY INFORMATION | <ul style="list-style-type: none"><li>- Battery capacity: 12V-24A</li><li>- Adapter: DC 12V-3A</li><li>- Standby time: 720 hours</li><li>- Charging cycle: 1000 times</li><li>- Charging time: 8 hours</li><li>- Non-stop working time: 5 hours</li></ul> |
| MOTOR INFORMATION   | <ul style="list-style-type: none"><li>- Vacuum flow rate: 32.5l/min</li><li>- Two motor: 12V-4A</li></ul>   |

## 2.2 FEATURES

- Equipped with battery-operated vacuum pumps.
- Different suction pads are available for alternative usages.
- ON/OFF slide valve.
- Vacuum leakage sensor and warning alarm system.
- Automatic vacuum pumping system.
- Long working hours.
- Battery charge indicator.
- Manually operated valve for vacuum.
- Replacement vacuum pads.



Read and understand the operator's manual and all the instructions before operating this lifter. Failure to follow the operating instructions and all safety procedures could result in serious injury to personnel and damage to products.

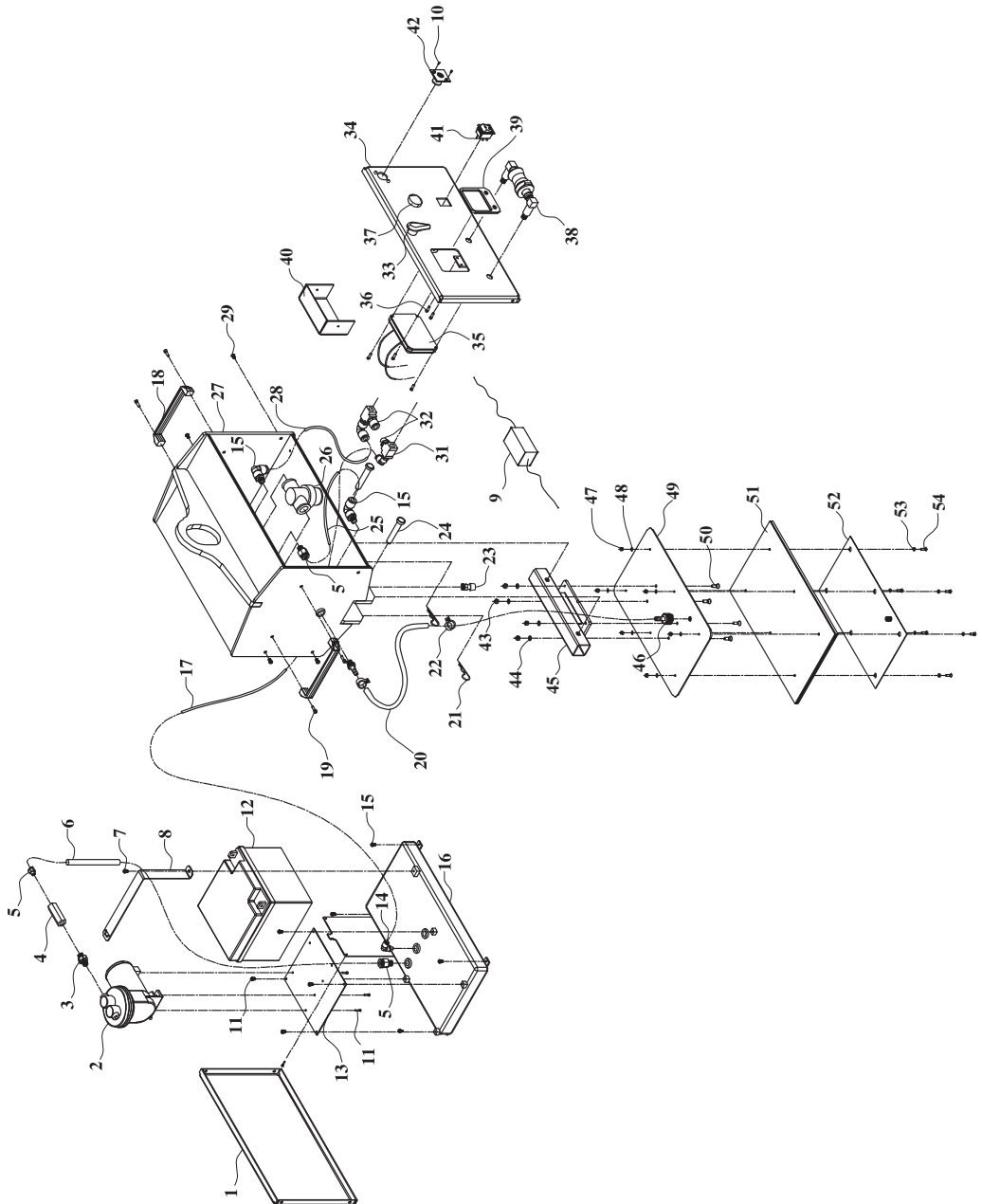
- Determine whether the capacity of a crane or hoist is suitable for use with the AVBL

**CAUTION** Some hoisting equipment hooks could interfere with an upright load that loads beyond the lifter's pad frame. The operator must prevent the load coming in contact with the hook during lifting by attaching a sling, (or other rigging that does not interfere with the load) between the hook and the lift bail.

- Ensure that the manual is available during operation.
- The load must not exceed the maximum allowable weight specified.
- The load must be a single sheet with a smooth and non-porous surface.
- The load's contact surface must be suitable for obtaining a safety factor of 1:2 with the lifter's vacuum pads.
- Perform the load test, vacuum test and pumping test to ensure the lifter is safe before using.
- Carefully read the lifter manual before operating.
- Carefully check the maximum/minimum length and width as well as the thickness of the load.
- Make sure that the vacuum pad surface is clean and free from dirt and oil.
- Make sure that there are no obstructions during the working process
- Operate only by competent and authorised personnel.
- Always wear appropriate protective equipment.
- Always place the vacuum pad correctly on the load.
- Always check battery levels before lifting the load.
- Avoid operating the device in the rain.
- The lifter should not be used or operated if the vacuum level is lower than 53 kPa (40Cm Hg) and the red light is turned on.
- To avoid injury, no one is allowed to be right under the load.
- Disconnect the power source when not in use.
- Never operate a lifter that is damaged, malfunctioning or missing parts.
- Never operate a lifter if the edges of the vacuum pad are cut or damaged.
- Never operate a lifter if the labels for load capacity or any other warnings are missing or obscure and unclear.
- Never turn the slide valve to OFF position during the lifting process.
- Never lift a load over people.
- Never use the lifter in dangerous environments

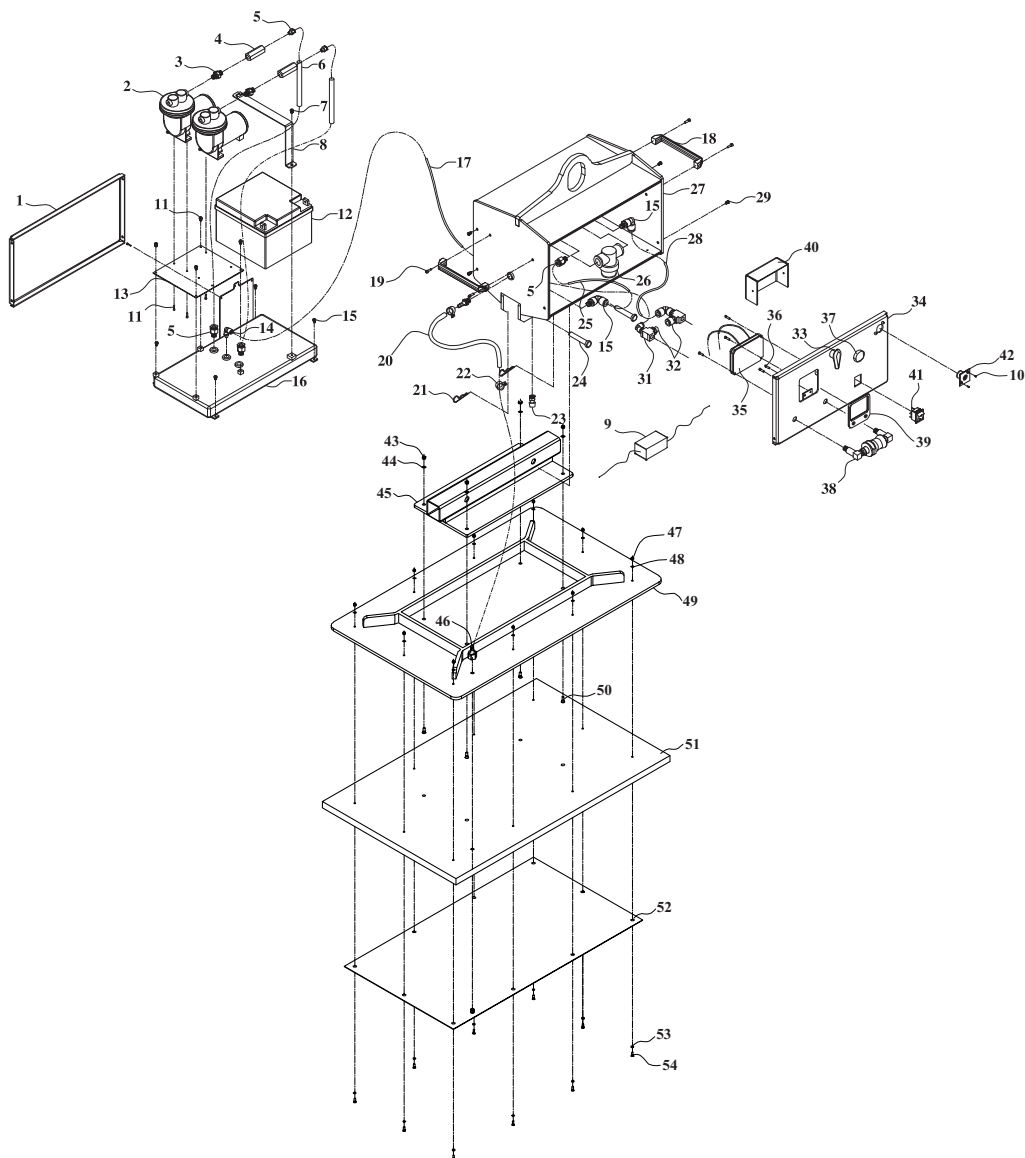


## VACUUM BLOCK LIFTER - AVBL-380KG ASSEMBLY DIAGRAM





## VACUUM BLOCK LIFTER - AVBL-1000KG ASSEMBLY DIAGRAM



## 4. PARTS LIST

### VACUUM BLOCK LIFTER - AVBL-380KG PART LIST

| CODE          | POSITION | DESCRIPTION                                  | QTY |
|---------------|----------|--|-----|
| AVBL380 - 001 | 1        | Back Cover                                   | 01  |
| AVBL380 - 002 | 2        | Vacuum Pump                                  | 01  |
| AVBL380 - 003 | 3        | Nipples Hexagon long brass tubefit 1/8"x1/4" | 01  |
| AVBL380 - 004 | 4        | Check Valve 1/4"                             | 01  |
| AVBL380 - 005 | 5        | Connector Male Tube Ø10 x 1/4                | 03  |
| AVBL380 - 006 | 6        | Air Hose Ø10x160                             | 01  |
| AVBL380 - 007 | 7        | Hexagon Bolt M6x10                           | 01  |
| AVBL380 - 008 | 8        | Battery Bracket                              | 01  |
| AVBL380 - 009 | 9        | Adaptor                                      | 01  |
| AVBL380 - 010 | 10       | Recessed Pan Head Screw M3x10                | 02  |
| AVBL380 - 011 | 11       | Countersunk screw M4x10                      | 07  |
| AVBL380 - 012 | 12       | Battery 12V-24Ah                             | 01  |
| AVBL380 - 013 | 13       | Vacuum Pump Base                             | 01  |
| AVBL380 - 014 | 14       | Elbow male tube Ø10 x 1/4                    | 04  |
| AVBL380 - 015 | 15       | Recessed Pan Head Screw M4x10                | 02  |
| AVBL380 - 016 | 16       | Vacuum Tank                                  | 02  |
| AVBL380 - 017 | 17       | Air Hose Ø10x220                             | 01  |
| AVBL380 - 018 | 18       | Handle                                       | 02  |
| AVBL380 - 019 | 19       | Countersunk screw M6x20                      | 04  |
| AVBL380 - 020 | 20       | Air Hose Ø16 ( 3/8 )                         | 01  |
| AVBL380 - 021 | 21       | Cotter Pin                                   | 02  |
| AVBL380 - 022 | 22       | Collar Ø16 ( 3/8 )                           | 02  |
| AVBL380 - 023 | 23       | Air Outlet valve 1/4                         | 01  |
| AVBL380 - 024 | 24       | Pin  | 02  |
| AVBL380 - 025 | 25       | Air Hose Ø10x240                             | 01  |
| AVBL380 - 026 | 26       | Filter                                       | 01  |
|               |          |  |     |

| CODE          | POSITION | DESCRIPTION                                | QTY |
|---------------|----------|--|-----|
| AVBL380 - 028 | 28       | Air Hose Ø10x150                           | 01  |
| AVBL380 - 029 | 29       | Recessed Pan Head Screw - M6x10            | 06  |
| AVBL380 - 030 | 30       | Air Hose Ø4x60                             | 01  |
| AVBL380 - 031 | 31       | Tees-Brass - 3 Female - Tubefit 1/4        | 02  |
| AVBL380 - 032 | 32       | Elbow male tube Ø4 x 1/4                   | 02  |
| AVBL380 - 033 | 33       | Handle Lock                                | 01  |
| AVBL380 - 034 | 34       | Front Cover                                | 01  |
| AVBL380 - 035 | 35       | Electric circuit                           | 01  |
| AVBL380 - 036 | 36       | Hexagon socket countersunk head screw M4x7 | 02  |
| AVBL380 - 037 | 37       | Warning Horn                               | 01  |
| AVBL380 - 038 | 38       | Slide Valve 1/4" (HSV-08)                  | 01  |
| AVBL380 - 039 | 39       | Screen                                     | 01  |
| AVBL380 - 040 | 40       | Electric box                               | 01  |
| AVBL380 - 041 | 41       | Switch On-Off                              | 01  |
| AVBL380 - 042 | 42       | Charger Connection                         | 01  |
| AVBL380 - 043 | 43       | Nylon Nut M8                               | 04  |
| AVBL380 - 044 | 44       | Washer Ø8                                  | 04  |
| AVBL380 - 045 | 45       | Bracket                                    | 01  |
| AVBL380 - 046 | 46       | Tailpiece - female 3/8 x 1/4               | 01  |
| AVBL380 - 047 | 47       | Nut M6                                     | 06  |
| AVBL380 - 048 | 48       | Washer Ø6                                  | 06  |
| AVBL380 - 049 | 49       | Vacuum Base                                | 01  |
| AVBL380 - 050 | 50       | Countersunk screw M8x16                    | 04  |
| AVBL380 - 051 | 51       | Vacuum Pad                                 | 01  |
| AVBL380 - 052 | 52       | Plate Limit                                | 01  |
| AVBL380 - 053 | 53       | O-ring Seal Ø6                             | 06  |
|               |          |  |     |



## VACUUM BLOCK LIFTER - AVBL-1000KG

### PART LIST

| CODE         | POSITION | DESCRIPTION                                   | QTY |
|--------------|----------|---|-----|
| AVBL1000-001 | 1        | Back Cover                                    | 01  |
| AVBL1000-002 | 2        | Vacuum Pump                                   | 02  |
| AVBL1000-003 | 3        | Nipples Hexagon long brass tube fit 1/8"x1/4" | 02  |
| AVBL1000-004 | 4        | Check Valve 1/4"                              | 02  |
| AVBL1000-005 | 5        | Connector Male Tube Ø10 x 1/4                 | 04  |
| AVBL1000-006 | 6        | Air Hose Ø10x160                              | 02  |
| AVBL1000-007 | 7        | Hexagon Bolt M6x10                            | 01  |
| AVBL1000-008 | 8        | Battery Bracket                               | 01  |
| AVBL1000-009 | 9        | Adaptor                                       | 01  |
| AVBL1000-010 | 10       | Recessed Pan Head Screw M3x10                 | 02  |
| AVBL1000-011 | 11       | Countersunk screw M4x10                       | 07  |
| AVBL1000-012 | 12       | Battery 12V-24Ah                              | 01  |
| AVBL1000-013 | 13       | Vacuum Pump Base                              | 01  |
| AVBL1000-014 | 14       | Elbow male tube Ø10 x 1/4                     | 04  |
| AVBL1000-015 | 15       | Recessed Pan Head Screw M4x10                 | 02  |
| AVBL1000-016 | 16       | Vacuum Tank                                   | 02  |
| AVBL1000-017 | 17       | Air Hose Ø10x220                              | 01  |
| AVBL1000-018 | 18       | Handle  | 02  |
| AVBL1000-019 | 19       | Countersunk screw M6x20                       | 04  |
| AVBL1000-020 | 20       | Air Hose Ø16 ( 3/8 )                          | 01  |
| AVBL1000-021 | 21       | Cotter Pin                                    | 02  |
| AVBL1000-022 | 22       | Collar Ø16 ( 3/8 )                            | 02  |
| AVBL1000-023 | 23       | Air Outlet valve 1/4                          | 01  |
| AVBL1000-024 | 24       | Pin   | 02  |
| AVBL1000-025 | 25       | Air Hose Ø10x240                              | 01  |
| AVBL1000-026 | 26       | Filter  | 01  |
|              |          |   |     |

| CODE         | POSITION | DESCRIPTION                                | QTY |
|--------------|----------|--|-----|
| AVBL1000-028 | 28       | Air Hose Ø10x150                           | 01  |
| AVBL1000-029 | 29       | Recessed Pan Head Screw - M6x10            | 06  |
| AVBL1000-030 | 30       | Air Hose Ø4x60                             | 01  |
| AVBL1000-031 | 31       | Tees-Brass - 3 Female - Tube fit 1/4       | 02  |
| AVBL1000-032 | 32       | Elbow male tube Ø4 x 1/4                   | 02  |
| AVBL1000-033 | 33       | Handle Lock                                | 01  |
| AVBL1000-034 | 34       | Front Cover                                | 01  |
| AVBL1000-035 | 35       | Electric circuit                           | 01  |
| AVBL1000-036 | 36       | Hexagon socket countersunk head screw M4x7 | 02  |
| AVBL1000-037 | 37       | Warning Horn                               | 01  |
| AVBL1000-038 | 38       | Slide Valve 1/4" (HSV-08)                  | 01  |
| AVBL1000-039 | 39       | Screen                                     | 01  |
| AVBL1000-040 | 40       | Electric box                               | 01  |
| AVBL1000-041 | 41       | Switch On-Off                              | 01  |
| AVBL1000-042 | 42       | Charger Connection                         | 01  |
| AVBL1000-043 | 43       | Nylon Nut M10                              | 04  |
| AVBL1000-044 | 44       | Washer Ø10                                 | 04  |
| AVBL1000-045 | 45       | Bracket                                    | 01  |
| AVBL1000-046 | 46       | Tailpiece - female 3/8 x 1/4               | 01  |
| AVBL1000-047 | 47       | Nylon Nut M8                               | 10  |
| AVBL1000-048 | 48       | Washer Ø8                                  | 10  |
| AVBL1000-049 | 49       | Vacuum Base                                | 01  |
| AVBL1000-050 | 50       | Countersunk screw M10x30                   | 04  |
| AVBL1000-051 | 51       | Vacuum Pad                                 | 01  |
| AVBL1000-052 | 52       | Plate Limit                                | 01  |
| AVBL1000-053 | 53       | O-ring Seal Ø8                             | 10  |
|              |          |  |     |



## 5. OPERATING INSTRUCTIONS

The lifter works perfectly and effectively for lifting and transporting marble, granite slabs and concrete. Before use and during the working process, the operator must adhere to the instructions below:

- **STEP 1:** Connect the Aardwolf Vacuum Block Lifter to a crane or other hoisting equipment to start.
- **STEP 2:** Place vacuum pad of the lifter on the sheet material so that it is balanced.
- **STEP 3:** Turn the power button on and the vacuum pump will activate pumping. The vacuum leakage sensor and warning alarm system will indicate:
  - The pressure is indicated at 0 kPa.
  - The battery level.
  - The vacuum level.
- **STEP 4:** Turn the slide valve to ON position and observe the vacuum leakage sensor and warning alarm system:
  - If pressure is not full, the screen of the vacuum leakage sensor and warning alarm system will indicate the red color. The alarm (black-circle button) will ring and activates automatic pumping. This means that the lifter is not safe to lift the material.  
**NOTE:** When the pressure reaches under 50 – 55 kPa (~ 37.5 – 41.2 Cm HG), it is dangerous stage and DO NOT lift the material.
  - When pressure reaches 70 – 75 kPa (~ 52.5 – 56.2 Cm Hg), the screen of vacuum leakage sensor and warning alarm system will indicate the green color, simultaneously the alarm will turn off and the vacuum pump will stop pumping, this indicates that the pressure is safe for lifting material and the lifter can be put to use.
- **STEP 5:** Lift and move the material slowly to the desired location.
- **STEP 6:** Place it down and then turn the slide valve to OFF position to exhale vacuum until vacuum pad is released the material.

If the lifter is employed in a construction area, CE Standard EN 13155 requires the use of a secondary positive holding device, such as a sling system, designed to support the load in case of a vacuum system failure

**WARNING:** Where CE Standard applies, a secondary positive holding device is required for lifting loads in construction zones.



## 6. CHANGING VACUUM PAD SIZES

The Aardwolf Block Lifter offers four standard sizes of pad frame depending on the customer's requirement (please see Specifications). Aardwolf Industries LLC denies any claims due to the failure of unexpected load release or human or material losses in the event of employing non-original pads.

To install a pad to the lifter, please comply with the following steps:

- Unplug the vacuum tube from the vacuum pad.
- Remove the cotter pin from the clevis pin.
- Lift the block lifter out of the pad base and position it on a stable stand.
- Take out all the screws to remove the vacuum pad from the base.
- Replace it with new pad for the lifter.

**CAUTION:** When re-plugging the vacuum tube of the pad vacuum hose, ensure it is firm and secure so that it does not unexpectedly open during operation, causing vacuum leakage.

## 7. VACUUM SETTING ADJUSTMENT INSTRUCTIONS

The vacuum setting is set to maintain the minimum vacuum level specified for the load capacity. However, shipping vibration, shocks and normal wear may affect the vacuum level. The “Low” indicates the pressure level for vacuum pump activates automatically pumping. The “High” indicates the pressure level for vacuum pump stops automatically pumping. Therefore, the operator may have to adjust the vacuum setting so that it works properly:

- Step 1: Use the screwdriver to open the black nuts.
- Step 2: Use your hands to adjust the vacuum level.
  - Adjust the Low vacuum level (Standard level is always set at 50 – 55 kPa):
    - Adjust the “Low” in the clockwise direction to increase the setting value for the low vacuum.
    - Adjust the “Low” in the anti-clockwise direction to decrease the setting value for the low vacuum.
  - Adjust the High vacuum level (Standard level is just set at 70 – 75 kPa):
    - Adjust the “High” in the clockwise direction to increase the setting value for the high vacuum.
    - Adjust the “High” in the anti-clockwise direction to decrease the setting value for the high vacuum.

**NOTE:** If the operator sets the vacuum to over 75 kPa, the vacuum pump will be pumping continuously which could result in damaging the pump. Therefore, the vacuum level reaching 70 – 75 kPa is maximum and allowable.



### 8.1 INSPECTIONS

Check the AVBL regularly to make sure it does not exhibit the following faults:

- The battery is disconnected before servicing the lifter.
- The vacuum pad and load surface for contamination or debris.
- The lifter's structure and vacuum system for visual damage.
- The air filter to ensure it is clean.
- Unusual vibrations or noise while operating the lifter.
- Inspect the entire lifter for cracks, cuts, corrosion or any deficiency.
- The lifter has no missing parts.
- The edges of the lifter are not cut or damaged while sealing.
- Repair all faults before using the lifter.

### 8.2 MAINTENANCE

A maintenance service must not be carried out if the lifter or battery is being connected to a power source. The lifter only operates well when it undergoes routine maintenance every day, every week, every month and whenever the lifter has indicated faults, damages and abnormalities. The operator must test the lifter to ensure safety during operation. Do not carry out any lifting operations if any issues are found. If the lifter is used for less than one day in two-week period, the inspection should be performed before use.

#### **Vacuum pad maintenance:**

The load capacity of most Aardwolf lifters is based on a safety factor of 1:2. However, the vacuum pad may be reduced by factors such as contamination, normal wear, aging and exposure to sunlight or the conditions of the load surface.

- Never use solvents, petroleum, gasoline or any harsh chemical to clean the pad.
- Use the pad cover to protect the vacuum pad when the lifter is not in use.
- Keep the pad in dry conditions to avoid damage.
- The pad should be replaced with a new original pad regularly every two years when the safety factor is reduced.

#### **Air filter maintenance:**

- Clean the elements for dust or contaminations which can harm for the air filter
- Replace with a new, original element when the vacuum drops approximately 0.02 MPA
- During disassembly or reassembly make sure the O-ring is not cut or damaged.



**Vacuum pump maintenance:**

Before proceeding with any maintenance, disconnect the power source. If the pump takes too long to attain full vacuum, you may replace the diaphragm to obtain acceptable pump performance as follows:

- Remove the four head screws and the head.
- Remove the four diaphragm hold-down screws and diaphragm hold-down plate.
- Replace the diaphragm and reverse the above procedure for reassembly.

After receiving the goods, it is strongly recommended that the buyer check for sure, based on the spare parts list and spare drawings attached to the goods, that the spare parts have not been damaged or lost during shipment. Any damages or losses must be officially reported to Aardwolf Industries LLC within eight days from the date of purchase.

This handler is granted a 12 month warranty based on Aardwolf Industries LLC's warranty policy from the date of purchase.

The warranty coverage is not applicable:

- The lifter is handled incorrectly during manoeuvring
- The operator fails to comply with the instructions in this manual.
- The lifter's maximum permissible capacity is exceeded.
- The specifications for slab thickness are not followed.
- Damages are due to inadequate maintenance and inspection.
- Damage is due to improper storage.
- Repairs were performed by the user without our permission.
- Non-original spare parts were used.

**DISCLAIMER:**

The Aardwolf Industries LLC's warranty does not cover the incorrect assembly and misuse of the lifter, the lack of maintenance and repair of the lifter as scheduled by the manufacturer, the operation carried out by non-competent or non-authorised operators or non-original spare parts being used or installed.





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