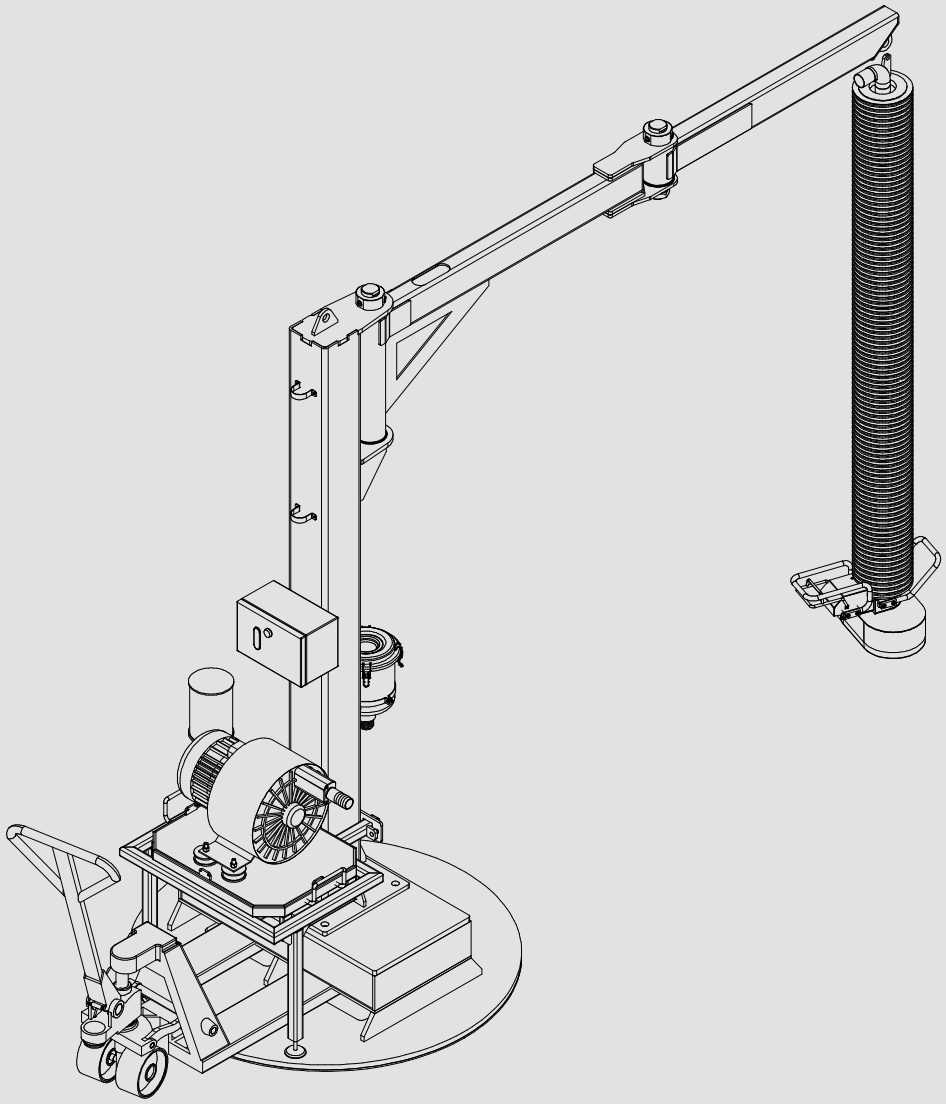
AARDWOLF INDUSTRIES

OWNER'S MANUAL

# VACUUM TUBE LIFTER

**AVTL-CF3**



## CREATED BY


**AARDWOLF INDUSTRIES**
*Marketing Department*



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## Dear Customer,

Thank you for choosing the **Vacuum Tube Lifter AVTL-CF3.**

Please read the manual carefully before use and keep it readily accessible beside the vacuum lifter at all times.

If you have any questions, require spare parts, or need to report any issues, please contact the Aardwolf distributor at your location, provide the product code and serial number, and send them to ***info@aardwolf.com.au*** for assistance.

We hope this advanced tool meets your needs and exceeds your expectations.

Best regards,

## Aarwolf Industries

info@aardwolf.com.au www.aardwolf.com.au

# 01 OVERVIEW

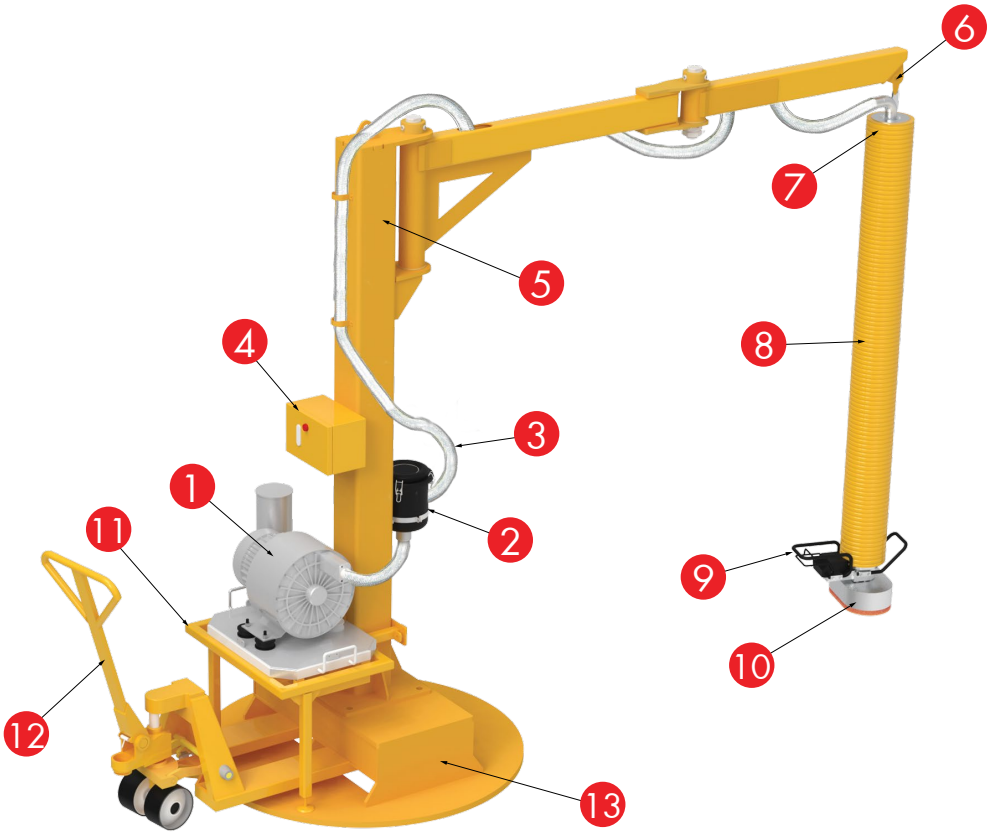
## INTRODUCTION

The new Aardwolf Vacuum Tube Lifter AVTL-CF3 enhances lifting operations with exceptional flexibility and efficiency. Designed to handle various materials like carton boxes, packs, and slabs weighing up to 60 kg (132 lb), it boosts productivity and safety in industrial settings.

## Key features

- **High-Performance Vacuum Pump**
  Ensures high-speed, energy-efficient performance to enhance operational efficiency.
- **Versatile Operation Modes**
  Offers manual and remote operation modes for effortless adaptation to different needs.
- **Comfort Control Head**
  Features an ergonomic Control Hand and top gate valve for precise control during lifting and releasing operations.
- **Foldable Two-Joint Crane**
  Designed for easy storage and maneuverability, optimizing space when not in use.
- **Movable Counter Base**
  Facilitates easy positioning and stability, ensuring uninterrupted workflow during lifting operations.
- **Flexible Pad Options**
  Plunger knobs allow quick switching between pads, accommodating various lifting requirements seamlessly.

## STRUCTURE AND FUNCTION DESCRIPTION



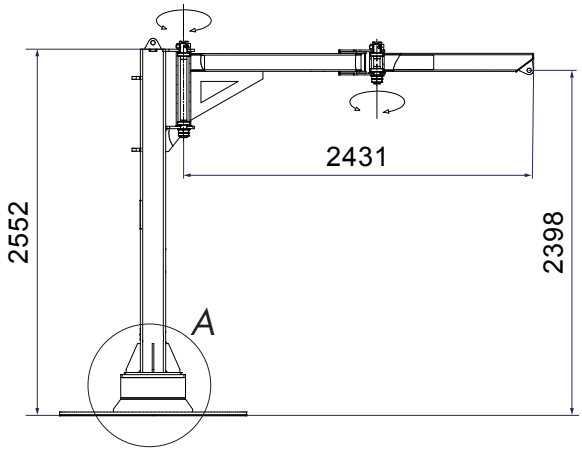

MOBILE WORKSTATION

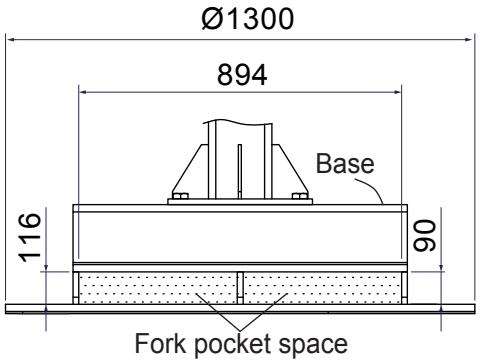
# AVTL-CF3

1. Blower vacuum pump
2. Vacuum filter
3. Vacuum supply hose
4. Electric control box
5. Mobile crane (Steel arm two joint)
6. Pin Ø20
7. Clamp for fastening
8. Lifting tube
9. Comfort control head
10. Oval foam pad
11. Support stand
12. Hand pallet truck
13. Balance base

*Product image for illustration purposes only. Actual product may vary.*

### MOBILE CRANE - STEEL ARM TWO JOINT



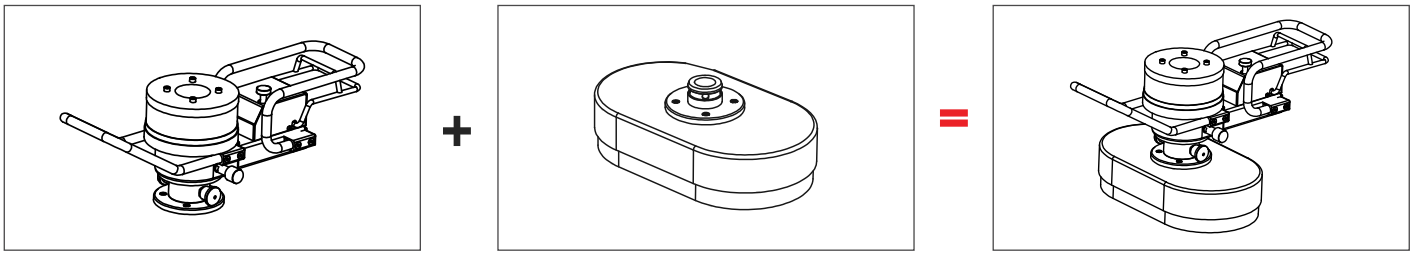




*DETAIL A: Balance base*

The mobile crane, which includes a column crane and a fordable two-joint arm, is designed to bear loads, mount components, and reduce vibrations.

| MOBILE CRANE | Arm length (mm/ in) | Arm height (mm/ in) | Crane height (mm/ in) | Balance base (kg/ lb) | Capacity (kg/ lb) |
|---|---|---|---|---|---|
| STEEL ARM TWO JOINT | 2431/ 91.8 | 2398/ 94.4 | 2552 - 100.5 | 500/ 1102 | 100/ 221 |

## COMFORTABLE HAND

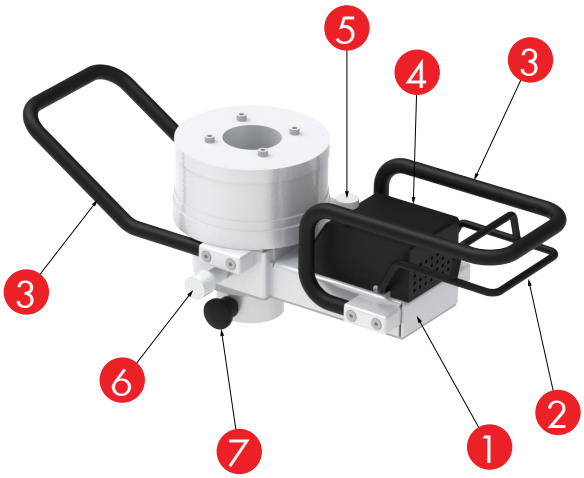


| COMFORT CONTROL HEAD | OVAL FOAM PAD | COMFORTABLE HAND |
|---|---|---|

The Comfortable Hand features a Comfort Control Head and an Oval Foam Pad attached to a Ø 160 mm vacuum tube, handling loads up to 60 kg (132 lb).

## COMFORT CONTROL HEAD

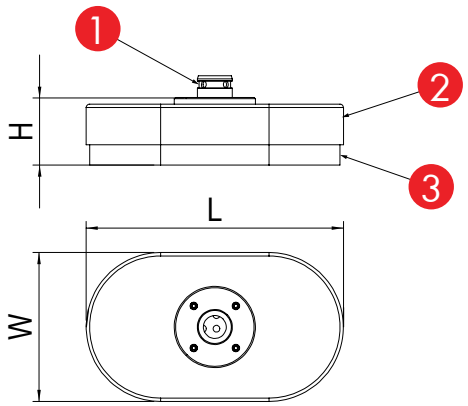
The Comfort Control Head is equipped with U and L handlebars, allowing easy load lifting and releasing control.




1. Control box
2. Control hand
3. Handle bars
4. Valve cover
5. Balancing knob load
6. Balancing knob no load
7. Plunger knob

## OVAL FOAM PAD

The Oval Pad is specially designed to handle unstable items like packs, cartons, slabs, and goods with uneven surfaces.




1. Connector
2. Covering block
3. Foam seal

| OVAL FOAM | Dimension (mm/ in) | Non-porous Load (kg/ lb) | Porous Load (kg/ lb) | Vertical Load (kg/ lb) |
|---|---|---|---|---|
| OVAL FOAM 380*220 | L380 x W220 x H110<br>15 x 8.6 x 4.3 | 60/ 132 | 30/ 66 | 30/66 |

## SUCTION PAD TYPE OPTIONS

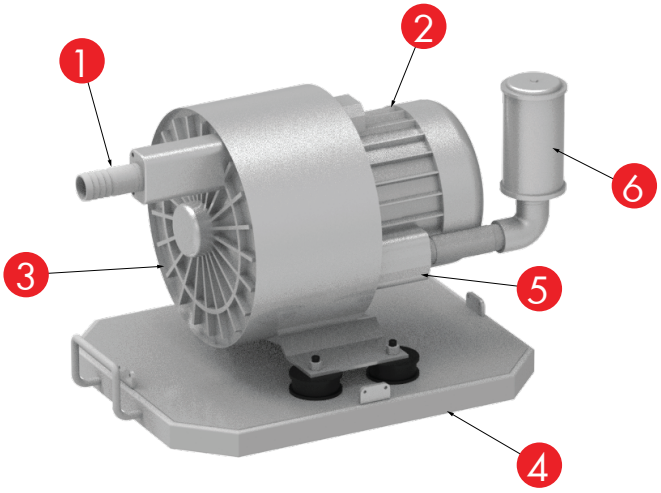
Additionally, we offer three optional types of suction pads, each suited for various applications.

| NAME | Image | Working load limit (kg/ lb) | Description |
|---|---|---|---|
| SINGLE BELLOW |  | Non-porous load: 78/ 172<br>Porous load: 39/ 86<br>*(With largest pad size)* | The Single Bellow is a suction foot designed for lifting boxes, barrels, slabs and other smooth-surfaced transport loads. |
| DOUBLE BELLOW |  | Non-porous load: 27/ 60<br>Porous load: 14/ 31<br>*(With largest pad size)* | The Double Bellow, with two suction cups attached to an aluminum frame, is ideal for lifting small carton boxes, suitcases, and smooth loads. |
| QUADRUPLE BELLOW |  | Non-porous load: 54/ 119<br>Porous load: 27/ 60<br>*(With largest pad size)* | The Quadruple Bellow, featuring four suction cups on an aluminum frame, is perfect for lifting large or long carton boxes and flat, light loads. |

## BLOWER VACUUM PUMP

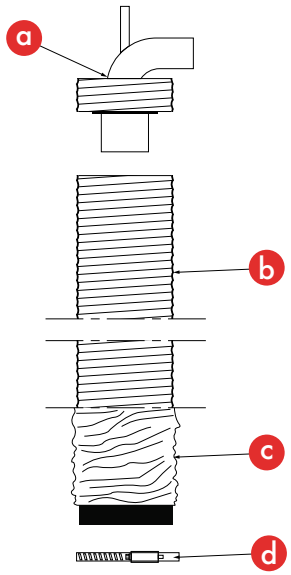
A blower vacuum pump is a mechanical device that serves dual purposes: generating airflow and creating vacuum. The pump includes:

1. Inlet port
2. Pump motor
3. Pump chamber
4. Pump base
5. Exhaust port
6. Silencer




| STORM | | Out put (kV) | Voltage (V) | Rated airflow ($m^3/h$) | Rated vacuum/ Rated pressure (kPa) |
|---|---|---|---|---|---|
| **STORM 3**<br>4HB 420 H56 | **50 Hz** | 3.3 | 200 - 240△/345 - 415Y | 87 | -50/ 75 |
| | **60 Hz** | 3.8 | 220 - 275△/380 - 480Y | 105 | -51/ 85 |

## LIFTING TUBE



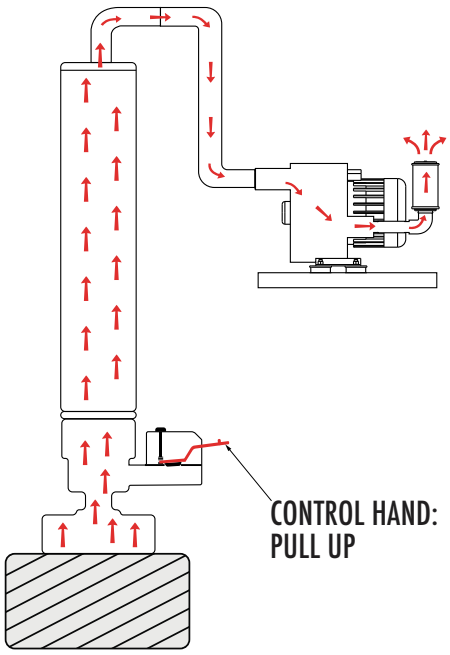

The Aardwolf lifting tube, connected to a crane via a swivel joint and secured to the control head with a bottom clamp, is designed for lifting, holding, and lowering products by adjusting the vacuum pressure.

The tube rises when the vacuum pressure increases and descends when it decreases. In case of a vacuum supply failure or blower malfunction, the tube and its load descend slowly, ensuring safe transport.

**In AVTL-CF3 version, we use Ø160 mm tube.**

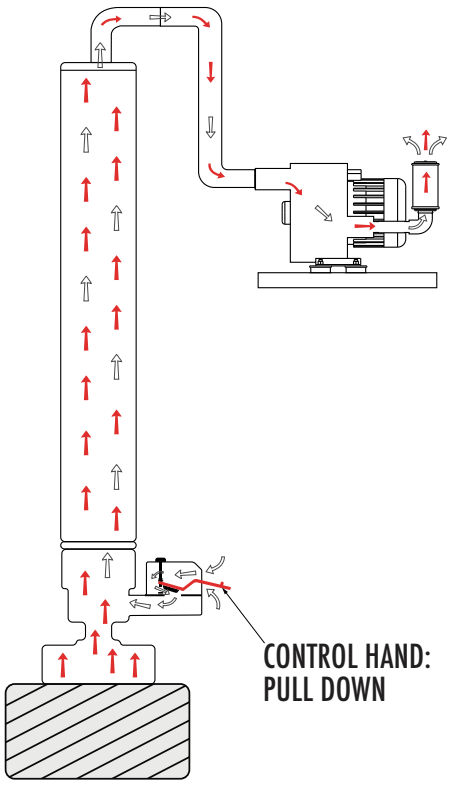
a. Top swivel
b. Lifting tube
c. Cover socks
d. Clamp for fastening

### LOWERING AND RELEASING THE LOAD




Pull the Control Hand up to contract the tube and lift the load.

### PICKING UP AND LIFTING THE LOAD



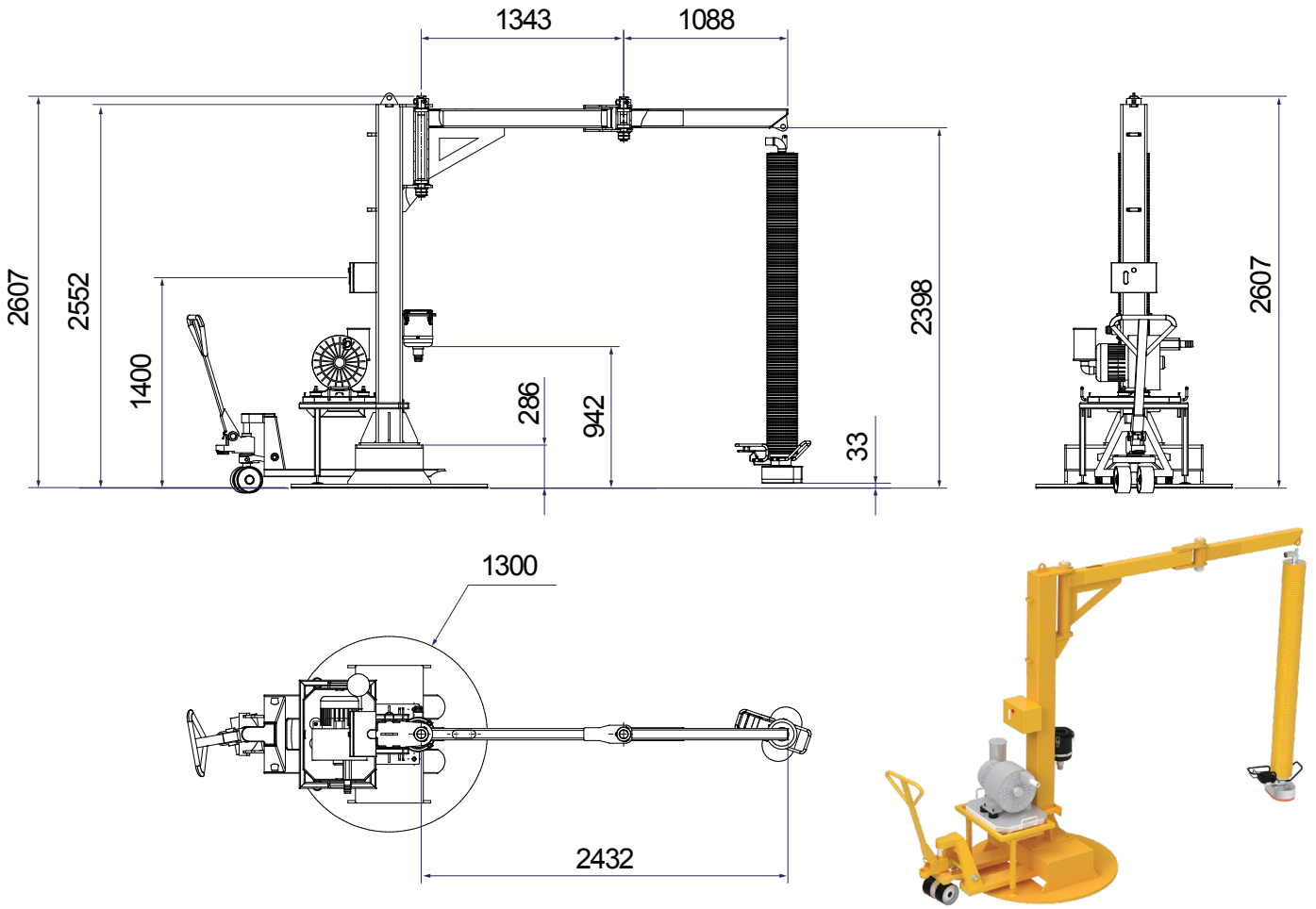

Pull the Control Hand down to expand the tube and release the load.

→ VACUUM FLOW DIRECTION
⇨ AIR FLOW DIRECTION

# DIMENSIONS, DRAWING AND PARTS LIST

## DIMENSIONS - AVTL-CF3

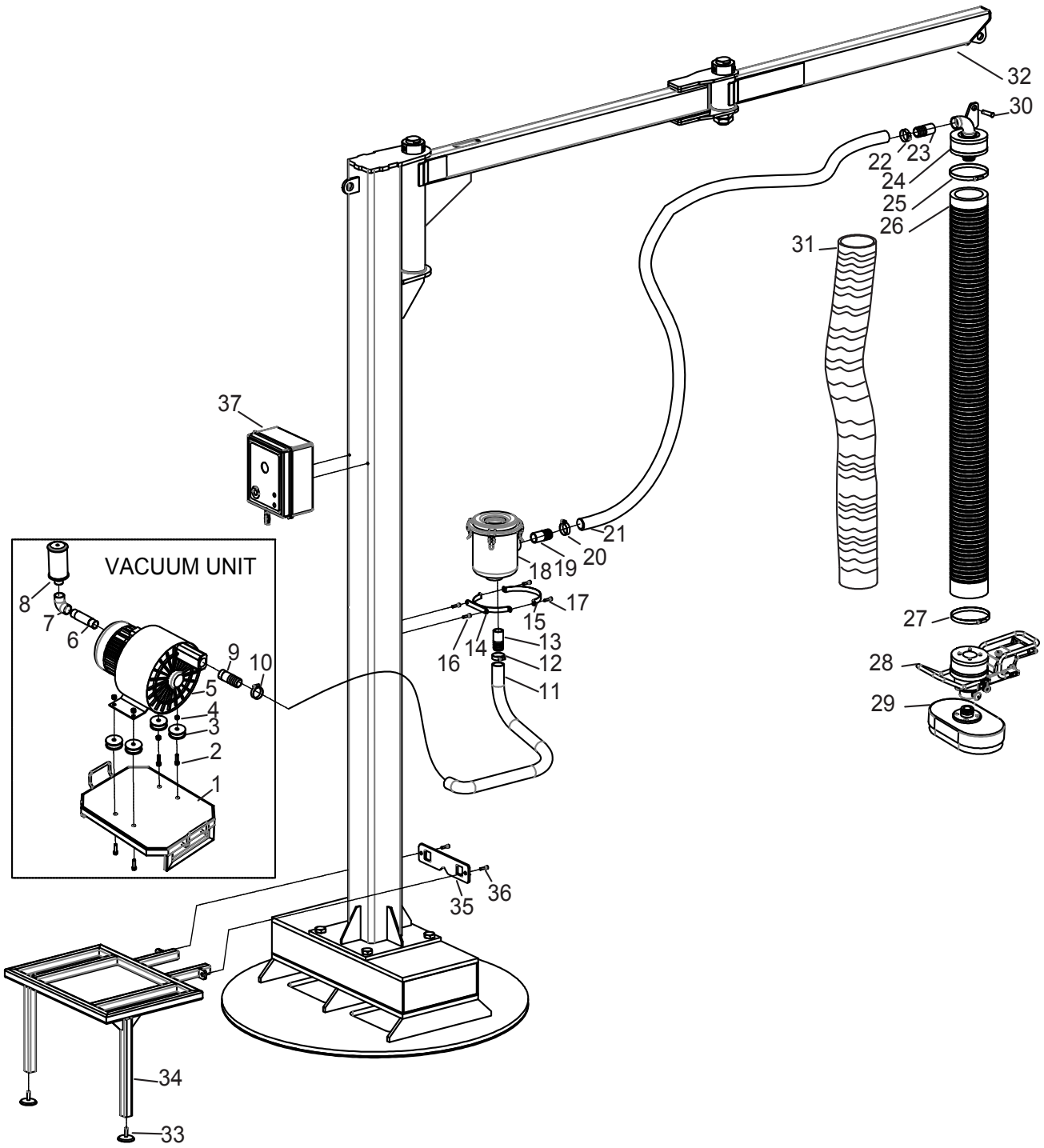
### DIMENSIONS




### SPECIFICATIONS

| AVTL-CF3 | |
|---|---|
| Mobile crane capacity | 100 kg/ 220 lb |
| Crane height | 2552 mm/ 100.5 in |
| Arm length | 2431 mm/ 91.8 in |
| Tube size | 160 mm/ 6.3 in |
| Lifting capacity of the vacuum head | 60 kg/ 132 lb |
| Vacuum pump flow | 120 $m^3$/ hour |

# DRAWING - AVTL-CF3

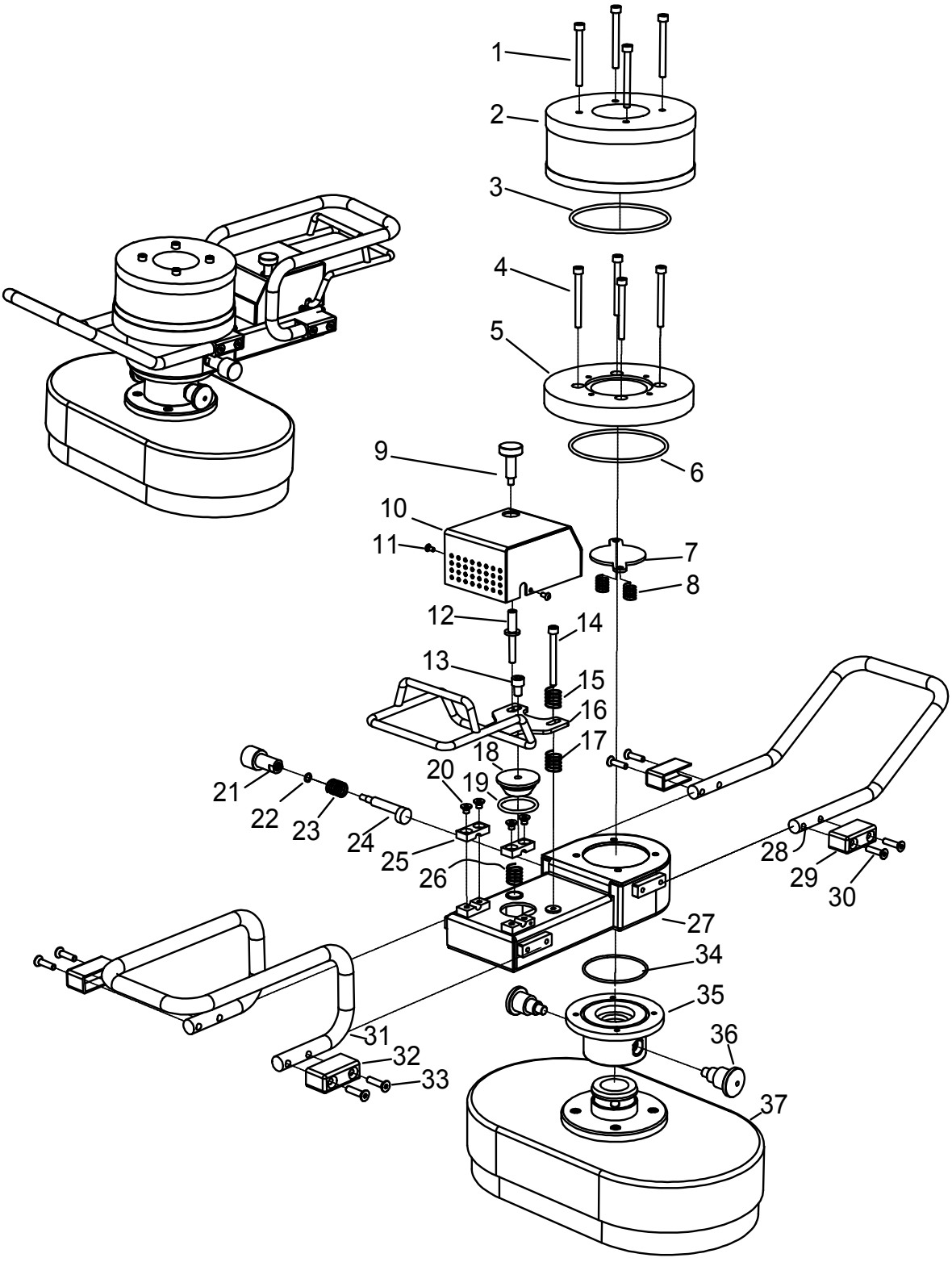


## PARTS LIST - AVTL-CF3

| POS. | DESCRIPTION | Q'TY |
|---|---|---|
| 1 | Pump base | 1 |
| 2 | Bolt M12 x 80 | 4 |
| 3 | Damping rubber | 4 |
| 4 | Nut M12 | 4 |
| 5 | Vacuum pump | 1 |
| 6 | Threaded pipe1-1/4" | 1 |
| 7 | Elbow 1-1/4" | 1 |
| 8 | Silencer 1-1/4" | 1 |
| 9 | Tail1-1/4"Tail-OD 42 | 1 |
| 10 | Hose ring - ID50 | 1 |
| 11 | Vacuum hose OD 49-L2 | 1 |
| 12 | Hose ring - ID50 | 1 |
| 13 | Tail1-1/4"Tail-OD 42 | 1 |
| 14 | Filter bracket 120 | 1 |
| 15 | Filter ring 120 | 1 |
| 16 | Socket head cap M8 x 20 | 2 |
| 17 | Socket head cap M8 x 30 | 2 |
| 18 | Vacuum filter ZFP 120 | 1 |
| 19 | Tail 1-1/4"-OD 42 | 1 |
| 20 | Hose ring - ID 50 | 1 |
| 21 | Vacuum hose OD 49-L8 | 1 |
| 22 | Hose ring - ID 50 | 1 |
| 23 | Tail 1-1/4"-OD 42 | 1 |
| 24 | Adaptor top 160 | 1 |
| 25 | Hose ring - ID 160 | 1 |

| POS. | DESCRIPTION | Q'TY |
|---|---|---|
| 26 | Tube lift 160 | 1 |
| 27 | Hose ring - ID 160 | 1 |
| 28 | Comport Control Head | 1 |
| 29 | Suction pad 380*220 | 1 |
| 30 | Pin Ø20 | 1 |
| 31 | Cloth cover | 1 |
| 32 | Two joint crane | 1 |
| 33 | Adjust bolt M12 | 1 |
| 34 | Stand support | 1 |
| 35 | Bracket support | 1 |
| 36 | Socket head cap M12 x 60 | 2 |
| 37 | Electric box | 1 |

## DRAWING - COMFORTABLE HAND



## PARTS LIST - COMFORTABLE HAND

| POS. | DESCRIPTION | Q'TY |
|---|---|---|
| 1 | Socket head cap M6x80 | 4 |
| 2 | Bellow adapter 160 | 1 |
| 3 | Oring 100*3.5 | 1 |
| 4 | Socket head cap M6 x 90 | 4 |
| 5 | Adapter connect | 1 |
| 6 | Oring 100*3.5 | 1 |
| 7 | Bellow gate valve | 1 |
| 8 | Spring | 2 |
| 9 | Balancing Knob Load | 1 |
| 10 | Valve cover | 1 |
| 11 | Bolt button M4 x 8 | 2 |
| 12 | Pitong Pin | 1 |
| 13 | Socket head cap M8 x 20 | 1 |
| 14 | Socket head cap M6 x 60 | 1 |
| 15 | Spring | 1 |
| 16 | Control hand | 1 |
| 17 | Spring | 2 |
| 18 | Top gate valve | 1 |
| 19 | Oring 34*3.5 | 1 |
| 20 | Socket counter sunk M4x12 | 1 |
| 21 | Balancing Knob No Load | 1 |
| 22 | Oring 7*1.5 | 1 |
| 23 | Spring | 1 |
| 24 | Cam pin | 1 |
| 25 | Valve bracket | 1 |

| POS. | DESCRIPTION | Q'TY |
|---|---|---|
| 26 | Spring | 1 |
| 27 | Body head | 1 |
| 28 | L handle | 1 |
| 29 | Bracket handle | 1 |
| 30 | Socket counter sunk M6x20 | 1 |
| 31 | U handle | 1 |
| 32 | Bracket handle | 2 |
| 33 | Socket counter sunk M6x20 | 4 |
| 34 | Oring 70*3.5 | 1 |
| 35 | Female conect ID 50 | 1 |
| 36 | Plunger knob M16 | 2 |
| 37 | Suction pad 380*220 | 1 |

# 02 SAFETY INSTRUCTIONS

## GENERAL

### PREPARATION

- **Manual Availability**
  Ensure the operator's manual is available and understood by all operators.
- **Material Suitability**
  Only lift materials suitable for vacuum handling, considering internal stability and porosity.
- **Surface Safety**
  Do not attach the suction pad to slippery surfaces where the load could slide off.

### PRE-USE CHECKS

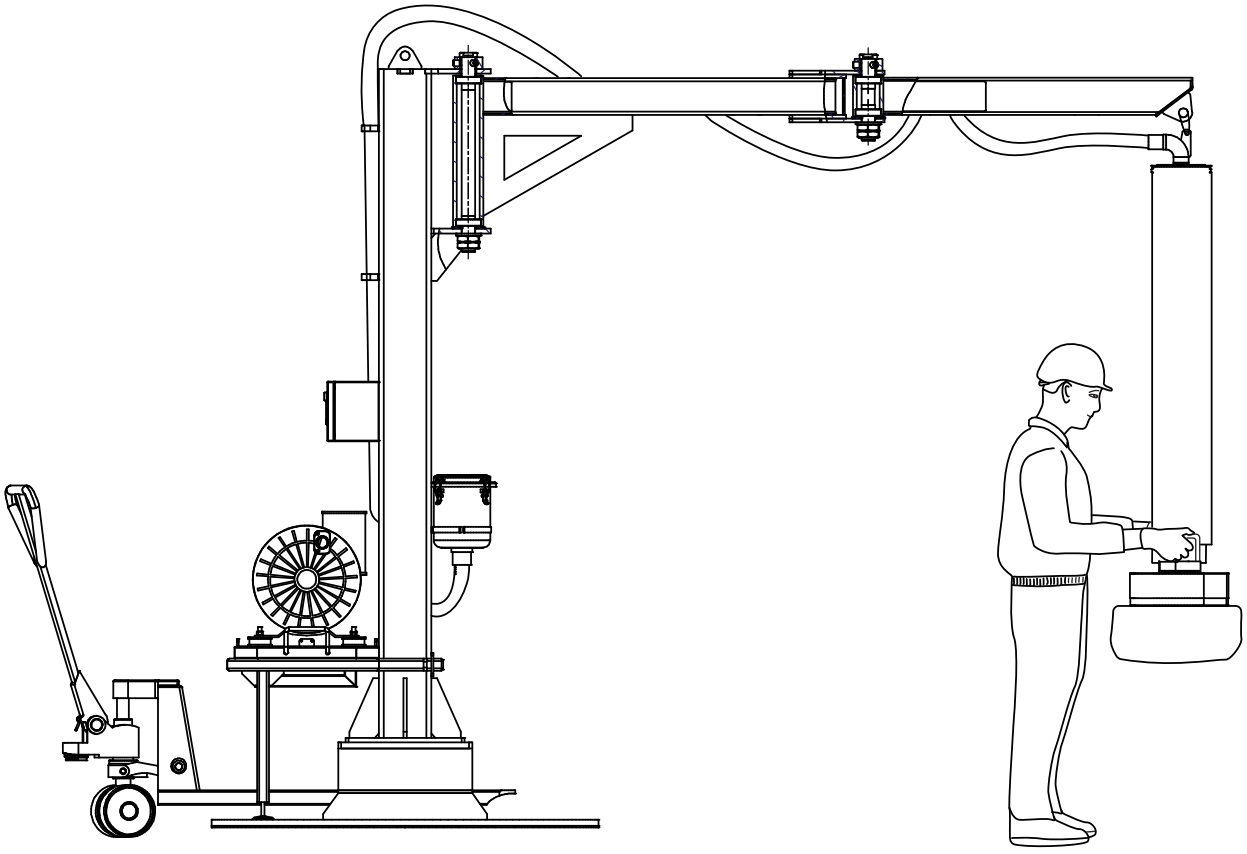
- **Tests**
  Perform load, vacuum, and pumping tests to ensure the Lifter works well.
- **Vacuum Pad**
  Check that the vacuum pad surface is clean and free from dirt and oil.
- **Obstructions**
  Ensure there are no obstructions during operation.
- **Vertical Positioning**
  Ensure the lifter and the crane are positioned vertically over the load before lifting.
- **Crane System**
  Ensure all connections are secure before operating.

### OPERATING INSTRUCTIONS

- **Placement**
  Center vacuum pad on the load.
- **Personnel**
  Only competent and authorized personnel should operate the Lifter.
- **Protective Equipment**
  Operators must always wear appropriate protective equipment.
- **Operation**
  Operate the lifter with light force on the L-handle to avoid jerky movements. Switch off the lifter during service and cleaning. Handle the vacuum unit carefully.

## SAFETY PRECAUTIONS

- **Load Handling**
  Never lift a load over people. Ensure no one is under the load during lifting.
- **Power Source**
  Switch off the Lifter when not in use.
- **Damaged Equipment**
  Do not operate a Lifter that is damaged, malfunctioning, or missing parts.
- **Operation**
  The state of suspension without a load must be set before initial operation.



# WARNINGS

## Always

**Wear** personal protective equipment.

**Use one load** per operation.

**Check for Damage:** Always inspect the lifter for damage, malfunctioning parts, or missing components before each use.

**Maintain Clean Surfaces:** Always ensure that the contact surfaces of the load and all vacuum pads are clean before applying the pads.

**Power Source:** Always ensure the power source is available throughout the entire lifting operation.

**Use Appropriate Load Characteristics:** Always ensure the load is within the specified W.L.L.

**Conduct Regular Maintenance:** Always perform regular inspections and maintenance as outlined in the manual to ensure the Lifter is in good working condition.

**Follow Operating Procedures:** Always follow the specified operating procedures when lifting, rotating, or tilting loads.

## Never

**Operate a Damaged Lifter:** Never operate a Lifter that is damaged, malfunctioning, or missing parts.

**Never** use the Lifter as a forklift truck attachment.

**Exceed W.L.L:** Never exceed the lifter's W.L.L or attempt to lift loads it is not designed for.

**Lift Unstable Loads:** Never attempt to lift a cracked or broken load.

**Operate Without Clean Pads:** Never use the Lifter if any vacuum pad's sealing edge foam seal is cut, damaged, or contaminated.

**Remove Warning Labels:** Never remove or obscure any warning labels on the lifter.

**Touch Vacuum Release Button:** Never touch the vacuum button during a lift, as this may result in the release of the load.

**Lift Over People:** Never lift a load over people or allow people to ride on the Lifter or the load.

**Leave Suspended Loads Unattended:** Never leave a suspended load unattended or lift it higher than necessary.

**Modify the Lifter:** Never modify the lifter, as modifications may compromise its safety and performance.

**Use in Dangerous Environments:** Never use the Lifter in inherently dangerous environments or likely to compromise its ability to function, such as areas containing explosives or caustic chemicals.

**Never** release the handle while lifting.

**Never** transport live animals.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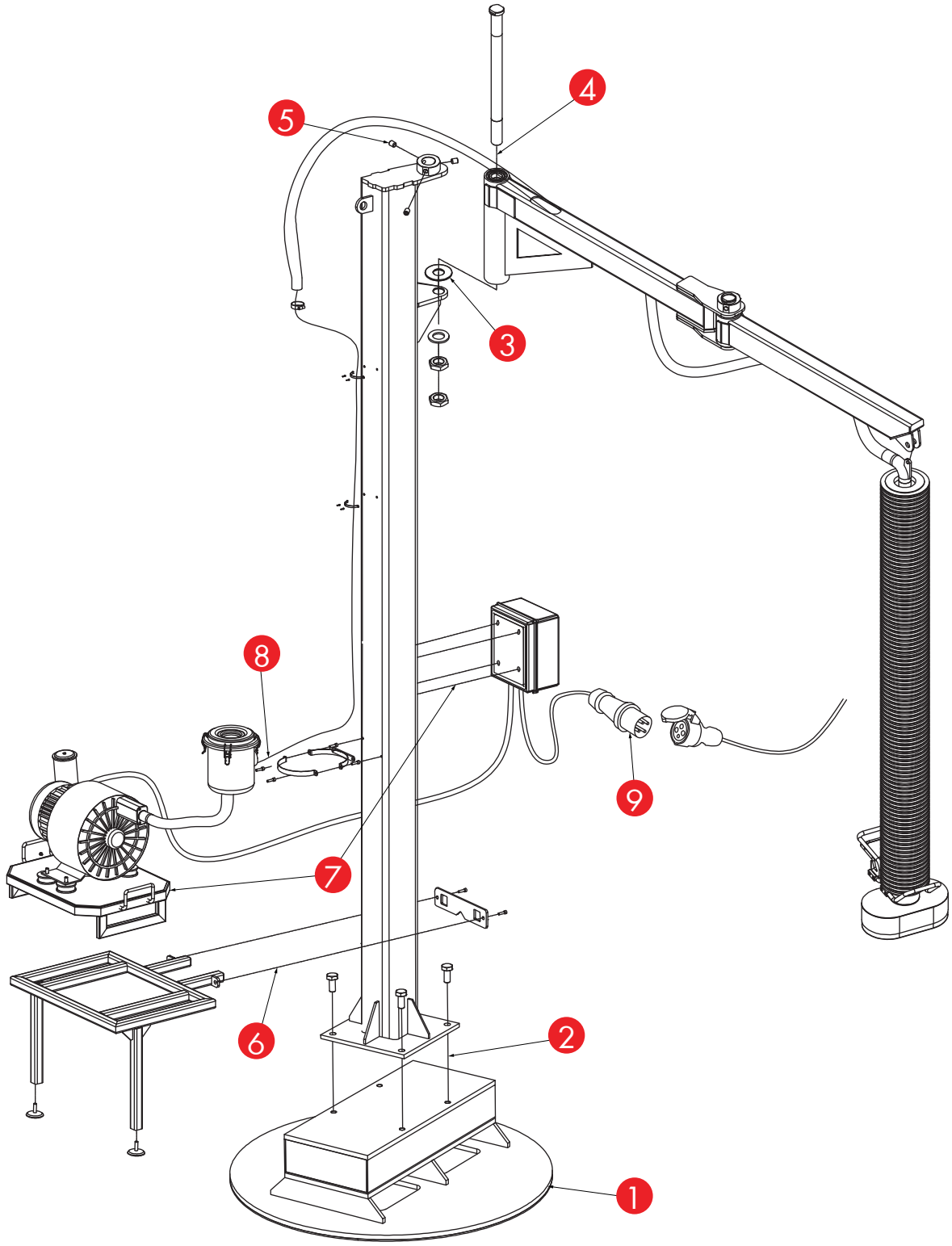
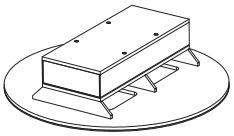
# 03 ASSEMBLY

## ASSEMBLY - OVERVIEW



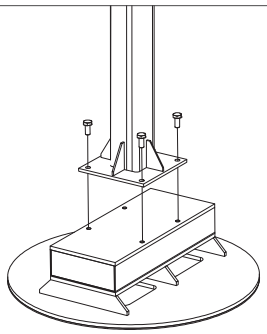
# ASSEMBLY - DETAILS

1



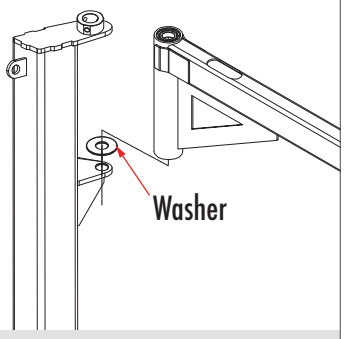
Place the Counter Base in a wide position.

2



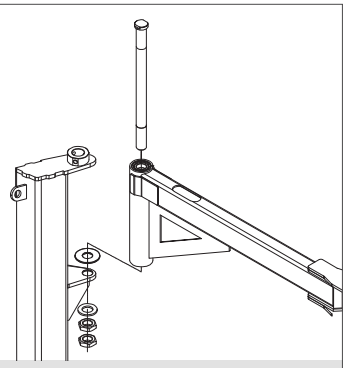
Mount the Crane Column on the counter base so the centers of 4 holes coincide. Secure with 4 bolts.

3



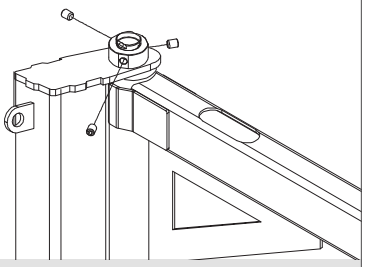

Place a 5mm thick Washer on the top of the crane's lower shoulder. Insert the crane arm swivel into the upper and lower shoulder holes.

4



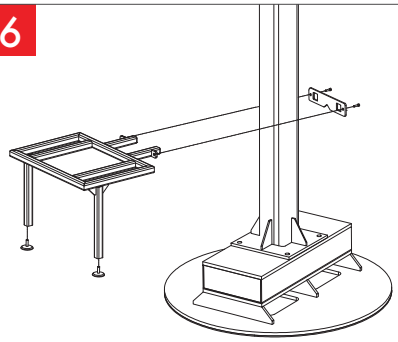
Insert the spindle from the top, then add a 2mm spacer and 2 nuts. Tighten securely.

5



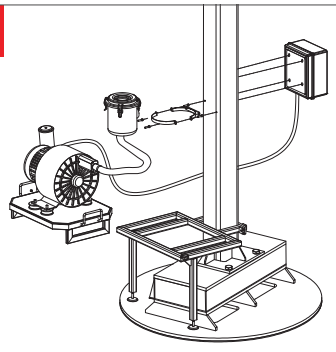
Adjust the balance of the Crane Arm using the 3 bolts on the top of the crane pole.

6



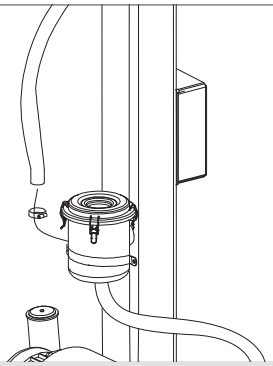
Secure the Pump Base with the bracket and 2 bolts.

7



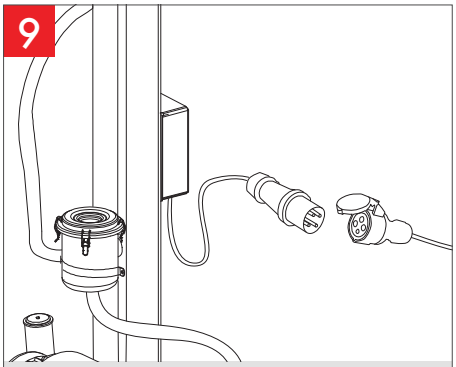
Position the pump on the Pump Base. Attach the Electrical Box to the Crane Column using the 4 holes in the back of the electrical box, then attach the Filter.

8



Connect the Air Hose to the Filter using a ring clamp.

9



Connect the power supply (3-phase 380V) to the Electric Box.

# 04 USER INSTRUCTIONS

## OPERATING THE LIFTER

**1** **Position the Comfortable Hand** directly above the load

**2** **Power ON the Lifter**

- Manual control: Press the Vacuum button.
- Remote control: Press the ON button.

**3** **Position the pad**

- Use both hands to hold the Comfortable Hand on the handlebars with your dominant hand on the U-handle bar and the Control Hand.
- Push the Control Hand downward to loosen the lifting tube, lower the Comfortable Hand, and place the pad in the load's center.

**4** **Lift and move the load**

- Slowly squeeze the Control Hand upward to apply suction to the load.
- Continuously squeeze the Control Hand to lift and move the load to the desired location.

**5** **Set the desired state of suspension for the load**

To balance the load and achieve the desired height when the Control Hand is not squeezed, adjust the Balancing Knob Load *(Position 9 in the parts list)*:

- Clockwise: The load is lowered.
- Anti-clockwise: The load is raised

*Note: Do not confuse this with the Balancing Knob No Load (Position 21 in the parts list), which adjusts the state of suspension without load.*

**6** **Release the load**

- Press the Control Hand down to release the load safely when moving to the desired location.
- Tilt the Comfort Control Head slightly, push the Control Hand down, and then release the load completely.

*Note: Turn the Balancing Knob Load (Position 9 in the parts list) clockwise to release the load faster.*

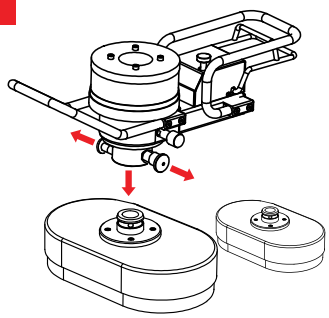
**7** Power OFF the Lifter

- Manual control: Press the Release button.
- Remote control: Press the OFF button.

## CHANGING THE SUCTION PAD

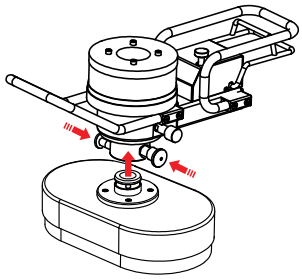
Depending on the application, the suction pad can be easily changed by removing and installing the Plunger Knobs.

**1**



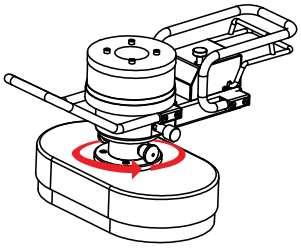
Pull and hold the two Plunger Knobs to detach the current suction pad.

**2**



Attach and secure a new Suction Pad to the Control Head.

**3**



Slightly rotate the Control Head to lock the knobs into the pad's joint.

# 05 MAINTENANCE

## MAINTENANCE SCHEDULE

A maintenance schedule is crucial for keeping equipment in optimal condition. It specifies routine tasks like inspections, cleaning, and part replacements at regular intervals. Following this schedule helps prevent breakdowns and extend equipment lifespan.

## VACUUM PUMP MAINTENANCE

### Inspect

↘ Check overall condition, motor, power cord, and belt, and look for leaks or damages. Replace as needed.

### Clean

- Clean filter, screen, blower parts, fan blades, and motor with mild soap and water; dry before reinstalling.
- Periodically clean the pump housing to remove debris and dust.

### Lubricate

- Lubricate shafts, bearings, and O-rings to reduce friction and wear.

### Replace filter

- Regularly replace filters to maintain clean fan blades, motors, coils, and heat exchangers.

### Ensure unblocked ports

- Keep inlet and exhaust ports clear to maintain efficiency.

## VACUUM FILTER MAINTENANCE

### Clean

- Use a soft brush or compressed air to remove debris.

### Inspect and replace

- Check for signs of damage, such as tears or holes, and replace the filter if it is significantly worn or damaged.

### Install

- Turn off the vacuum pump before performing any maintenance.
- Ensure the filter is dry and properly aligned before placing it back into the housing.

## VACUUM PAD MAINTENANCE

### Place

- Do not place suction pads on the floor or other surfaces when not in use to prevent the vacuum blower's uncontrolled movements and potential overheating.

### Clean

- Avoid using solvents, petroleum, gasoline or harsh chemicals. Stick to mild cleaning solutions.

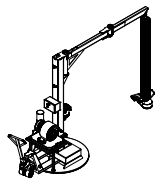
### Protect

- Use the pad cover when the lifter is not in use to protect the vacuum pad.

### Store

- Keep the pad in dry conditions to prevent damage from moisture.

# 06 PREVENTIVE MAINTENANCE CHECKLIST



By following maintenance checklists, you can help ensure that your vacuum lifter operates safely and effectively for a long time.

Note:

| DAILY CHECKS | | | WEEKLY CHECKS | | | MONTHLY CHECKS | | | ANNUAL CHECKS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Inspect suction pads for cracks or worn sealing lips. | Look for signs of wear, damage, or leaks in the pump and its components. | Ensure all air hoses and connections are secure and free of leaks. | Inspect the crane system for any signs of damage or wear, and ensure that all bolts and pins are tightened and in place. | Check the air filter elements for dust and contaminants that could impair performance, clean as needed | Check lifting tube clamps, ensure they are firmly fitted. | Inspect the lifting tube for cracks, slits, holes, etc. | Inspect the crane system for any signs of damage or wear, and ensure that all bolts, nuts, and pins are tightened and in place. | Inspect the lifter's structure for visual damage, such as cracks or corrosion. | Schedule a professional inspection and certification of the entire unit. | Perform a thorough load capacity test to ensure the lifter can safely handle maximum loads. | Replace any non-functional parts or those showing excessive wear. |

| DAY | DATE | CHECKED | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monday | | | | | | | | | | | | | |
| Tuesday | | | | | | | | | | | | | |
| Wednesday | | | | | | | | | | | | | |
| Thursday | | | | | | | | | | | | | |
| Friday | | | | | | | | | | | | | |
| Saturday | | | | | | | | | | | | | |
| Sunday | | | | | | | | | | | | | |
| Monday | | | | | | | | | | | | | |
| Tuesday | | | | | | | | | | | | | |
| Wednesday | | | | | | | | | | | | | |
| Thursday | | | | | | | | | | | | | |
| Friday | | | | | | | | | | | | | |
| Saturday | | | | | | | | | | | | | |
| Sunday | | | | | | | | | | | | | |

*Note: Always refer to the specific maintenance manual provided by the manufacturer for more detailed instructions and safety information related to your particular model.*

# 07 TROUBLESHOOT

| PROBLEM | LIKELY CAUSED BY | ACTION REQUIRE |
|---|---|---|
| Vacuum lifter does not lift or exhibits reduced functionality | Vacuum pump not started | Check the function of the vacuum pump. Ensure it is properly installed and powered on. |
| | Load too heavy | Reduce the load. Ensure it does not exceed the lifter's maximum lifting capacity. |
| | Air leakage | Inspect all connections, air hoses and tube lift for leaks, cracks, holes, or loose hose clamps. Check the filter unit for any leaks. |
| | Dirty vacuum pump filter | Clean the filter insert. Refer to the maintenance section on cleaning the vacuum pump filter. |
| | Dirty vacuum pad | Clean the vacuum pad. Refer to the maintenance section on cleaning the vacuum pad. |
| | Vacuum pad installed incorrectly | Reinstall the vacuum pad correctly, ensuring the butterfly nuts are neither over-tightened nor under-tightened. |
| | Operating handle too high or low | Adjust the load balance both with and without the load. Ensure the balance is set correctly for comfortable operation. |
| Suction pad connection is not tight | Air leakage | Check and replace the foam seal on the pad if necessary. |
| Load falls off when lowered | Low airflow | Increase the airflow by turning the Balancing Knob Load screw clockwise on the Control Head |

**Note:** *For serious issues or additional support, please get in touch with Aardwolf Technician Support at* **info@aardwolf.com.au.** *Our experts are ready to assist with any complex problems to ensure your equipment operates smoothly.*

# 08 WARRANTY

## PRODUCT CHECK AND REPORTING

Upon receiving the product, the buyer should verify, based on the spare parts list and attached spare drawings, that all spare parts are intact and not lost during shipment. Any damages or losses must be officially reported to Aardwolf Industries within eight days of purchase.

## WARRANTY INFORMATION

The Vacuum Tube Lifter comes with a 12-month warranty from the date of purchase, following Aardwolf Industries's warranty policy.

## WARRANTY EXCLUSIONS

**The warranty coverage does not apply if:**

- The Lifter is handled incorrectly during maneuvering.
- The user fails to comply with the instructions provided in the manual.
- The Lifter's maximum W.L.L is exceeded.
- The specifications for the load thickness are not followed.
- Damages result from inadequate maintenance and inspections.
- Damage is due to improper storage.
- Repairs are performed by the user without permission from Aardwolf Industries.
- Unofficial spare parts are used.

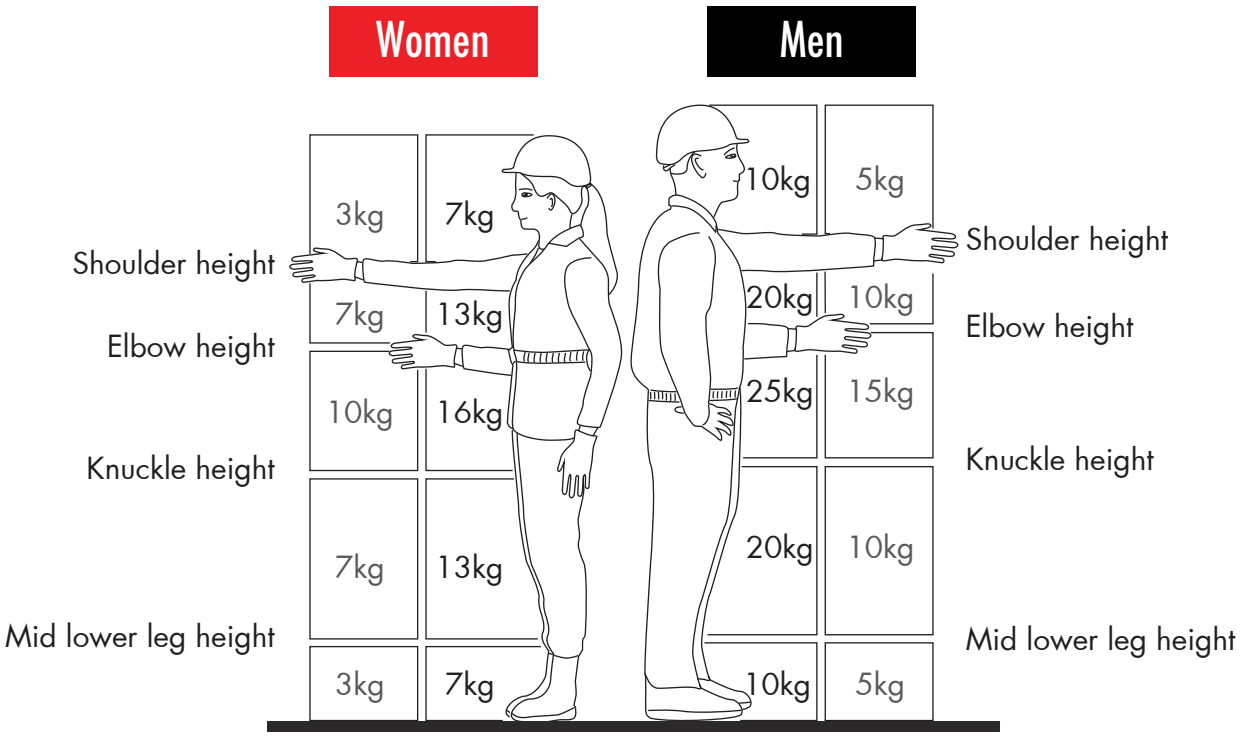
## DECLARATION OF CONFORMITY

**We declare that the Lifter conforms to the following standards:**

- The Machinery Directive 2006/42/EC
- Australian Standard 4991-2004

**Note:** *It is the user's responsibility to comply with state or local laws. The end user is responsible for using the equipment safely, in the manner it is designed for, and within the unit's rated capacity.*

# 09 LIFTING AND LOWERING GUIDELINES




## TWISTING

Reduce the guideline weights if the handler twists to the side during the operation. As a rough guide, reduce them by 10% if the handler twists beyond 45, and by 20% if the handler twists beyond 90.

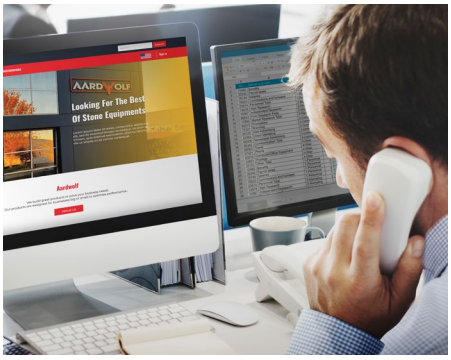
## FREQUENT LIFTING AND LOWERING

The guideline weights are for infrequent operations – up to about 30 operations per hour – where the pace of work is not forced, adequate pauses to rest or use different muscles are possible, and the load is not supported by the handler for any length of time. Reduce the weights if the operation is repeated more often. As a rough guide, reduce the weights by 30% if the operation is repeated once or twice a minute, by 50% if it is repeated 5–8 times a minute, and by 80% where it is repeated more than 12 times a minute.

## THE PALAMATIC SOLUTION

All our vacuum tube lifters are designed to exceed the HSE guidelines and reduce operator effort and fatigue which reduces the chance of manual handling injuries and repetitive strain injuries of the arms, hands and wrists.

# 10 AARDWOLF SERVICES




## GLOBAL CONTACT

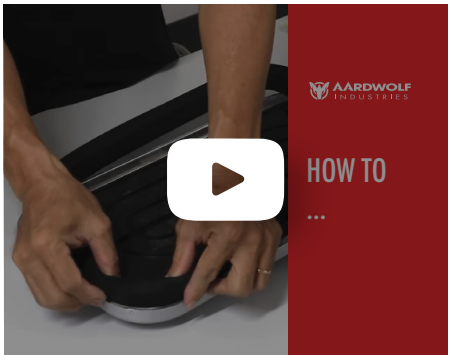
Our sales network of local field representatives, international subsidiaries and trade partners ensures quick and competent information and consultation in 6 countries worldwide.

*www.aardwolf.com.au*


## ONLINE DOCUMENTATION

Conveniently download catalogs and get comprehensive information about our products and services.

*www.aardwolf.com.au/catalog.php*




## AARDWOLF PRODUCT VIDEOS

In short, easy-to-understand videos we explain the comprehensive functions offered by our products on our Youtube Channel. Take a look, it's worth it!

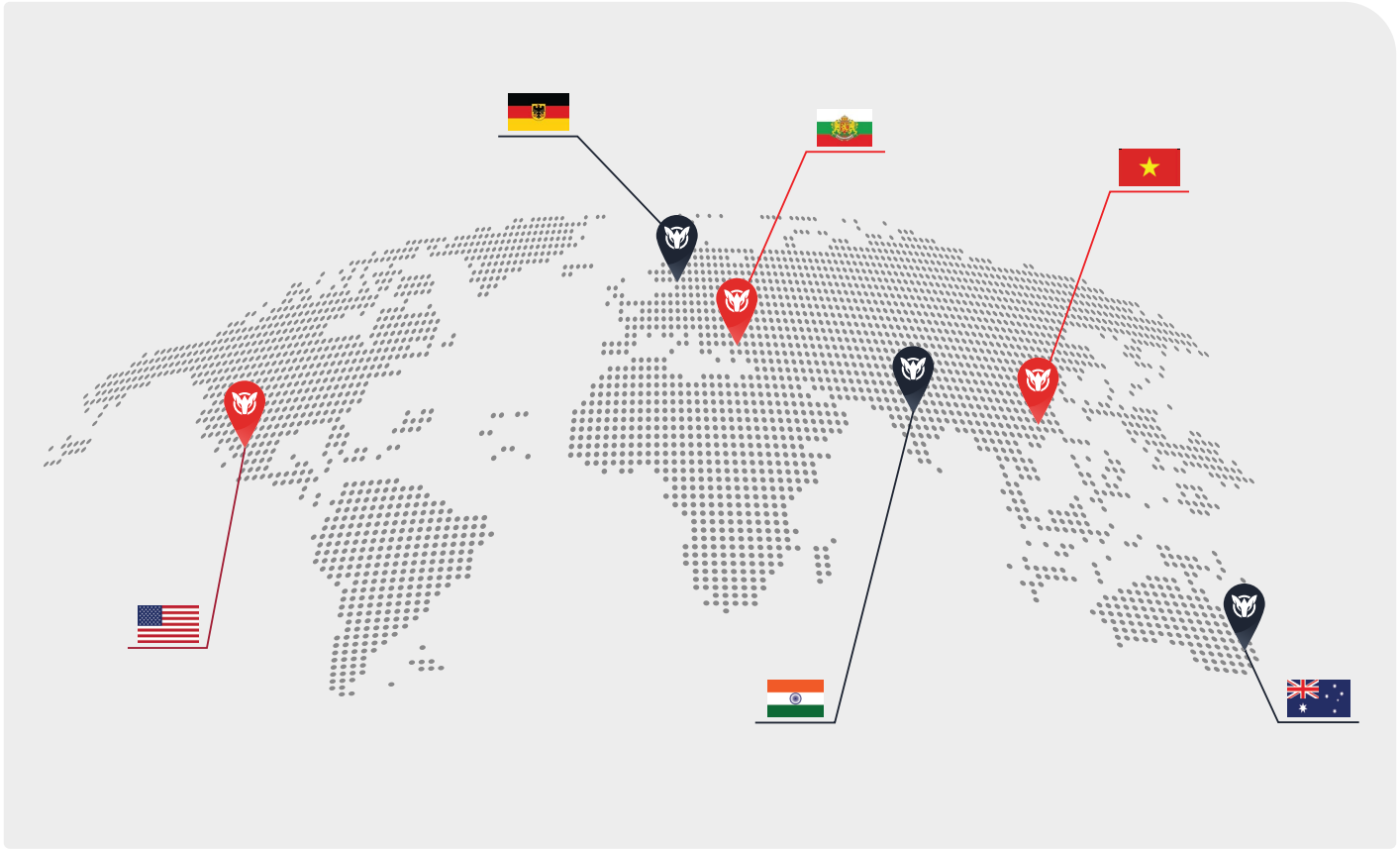
*www.youtube.com/@AardwolfGroup*

## OR SCAN HERE

To visit our Youtube Channel

# WE PROVIDE

Simple, Reliable, Cost Saving And Awesome Ideas For Your Business



## FIND THE NEAREST AARDWOLF SERVICE CENTER

### AUSTRALIA

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Email: enquiries@aardwolfaustralia.com
Web: www.aardwolfaustralia.com

### BULGARIA

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Tel: +359 887 933 754
Email: adrian@toolrange.com

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Tel: 05252 8382830
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