# OPERATORS MANUAL

# For the

# HEAT PUMP MOVER

| | |
|---|---|
| **Product:** | **HEAT PUMP MOVER with Accessories** |
| **UK/EU Product Code:** | 8716800000 |
| **Supplier:** | **Lite Work Designs Ltd.**<br>Unit 7 Dares Farm Business Park,<br>Farnham Road,<br>Farnham<br>England<br>GU10 5BB |
| **Email:** | sales@heatpumpmover.co.uk |
| **Telephone:** | (+44) 01252 926487 |
| **EU Authorised Representative:** | **24hour-AR,**<br>Van Nelleweg 13044 BC<br>Rotterdam<br>The Netherlands |
| **Email:** | compliance@24hour-ar.com |
| **Author:** | Steve Wright - Operations Director |
| **Intended Audience:** | Heat Pump Installation Engineers |

# Contents

# 1. The Challenge.

Due to their size, weight and uneven weight distribution, heat pumps are notoriously tricky to move around building or customer sites without either damaging the pump or picking up a personal injury. Heat pumps can be moved with 2-3-4+ people with significant physical effort which can affect the rest of the working day. Moving pumps with people or a forklift can be very disruptive, time consuming and expensive to arrange.

The Heat Pump Mover (Mover) is designed to enable a lone worker with minimal support, to safely and easily move a pump from the point of delivery to its final location, no matter what the terrain.

The Mover is temporally fitted to the compressor end of the heat pump, where the rubber foot is normally attached, with the securing straps provided,  making the Mover a physical extension of the heat pump. The Pull Strap is fed to the front, under the fan rubber foot with the pull handle attached and adjusted to comply with H&S Manual Handling Guidelines.

Once attached, simply lift and maneuver the pump to its final destination, remove the Mover and fit the normal rubber foot to complete the job.

# 2. Overview

The Mover is designed to move 200kg heat pumps, the Mover can also be used for any payload up to 600mm wide, including boxed pumps, integrated units and water cylinders.

The Mover only weighs 8kg and is small enough to be stored with other tools in the back of your van. The baseboard and arches are made from 100% recycled household plastic, strong enough to carry loads of up to 200kg for 2km at walking speed (5 km/h). The Mover has a safe working tilt angle of 5 DEG and is provided with a 3 year warranty, excluding wheels and tyres as these are operator environment specific.

The Mover is designed to be used in some of the most challenging environments including combinations of narrow arches or gates, steep inclines or declines, mud, grass, puddles, gravel and sites littered with building debris.

In the Box, the Mover is good to go, supplied with a Quick Start Guide and QR code for access to this online Operators Manual. An accessories bag contains securing ratchet and pull straps, pull handle and carabiner with two Allen keys for monthly maintenance.

| | | | |
|---|---|---|---|
|  |  |  |  |
| Heat Pump Mover | Axle and Axle Saddle | Wheel, Tyre and Hub | Mover Underside |

**Accessories**

| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Wheels & Tyres | Accessories Bag | Allen Keys | Pump Ratchet Strap | Pull Handles | Pull Strap |

## 3. UK/EU Safety & Regulations

Safe use of the Heat Pump Mover is critical and supports the following UK/EU regulations.

**EU Harmonisation Legislation**

- **EU GPSR (General Product Safety Regulation)** Approved 29th August 2024**.**


Signature Certificate

Document name:
171 Lite Work Designs Ltd. - Approved Product List - 29.08.2024

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IP number: 217.208.124.41

Trusted timestamp:
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This document was completed by all parties on:
2024-08-30 19:32:59 UTC

- **International Shipping Code:**
    - Other vehicles, not mechanically propelled- **8716800000**
- The Heat Pump Mover conforms to the following UK/EU harmonisation standards.

**Directive 2006/42/EC** of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) (Text with EEA relevance)Text with EEA relevance.

- **NOT APPLICABLE** - Article 2 Definition of ‘machinery’ as *“an assembly, fitted with or intended to be fitted with a drive system* ***other than directly applied human*** *or animal effort…”*

**Provision and Use of Work Equipment Regulations 1998 (PUWER) / EU Directive 2009/104/EC**

**(https://osha.europa.eu/en/legislation/directives/3)**
(https://www.hse.gov.uk/work-equipment-machinery/puwer.htm)

Lite Work Designs Ltd. supports this regulation for EMPLOYERS, by enabling work equipment specifically designed for moving Heat Pumps that they can own, operate, and have control over its safe use at all times.

**EU/UK Health & Safety Law**

The Heat Pump Mover complies with the following -

**The Health and Safety at Work etc. Act 1974: / EU Directive 89/391/EEC**

**(**https://osha.europa.eu/en/legislation/directives/the-osh-framework-directive/1**)**
( https://www.hse.gov.uk/legislation/hswa.htm)

The Heat Pump Mover Supports Installation Engineers to -

- Avoid manual handling where possible
- Use correct tools and equipment to reduce risks
- Have appropriate training
- Support Manual Handling Guidance and Operations
- Reporting of any concerns / accidents to Lite Work Designs Ltd.

The Installation Engineer must -

- Complete a Risk Assessment for each installation
- Use appropriate PPE (Boots and Gloves) for the operational environment

**Manual Handling Guidelines at Work / EU Directive 90/269/EEC**
**(** https://osha.europa.eu/en/legislation/directives/6**)**
(https://www.hse.gov.uk/pubns/indg143.PDF)

The objectives of these regulations are to reduce the risk of injury from manual handling tasks in the workplace.

- The Heat Pump Mover minimises the need for physically lifting pumps, by providing a specifically designed tool to safely and easily move pumps.
- Lite Work Designs Ltd. continuously monitor Installation engineer feedback to review designs and procedures ensuring ongoing improvements, compliance and safety.
- Installation Engineers / Employers can use a device specifically designed to move pumps, aiding the redesign of current procedures and workflow to work safer, easier and look more professional.
- Enable all Installation Engineers receive appropriate training in safe use of the Mover and improve manual handling techniques.
- Lite Work Designs Ltd. conduct regular risk reviews from Installer feedback updating the Operators Manual to reflect best practices.

**Heat Pump Mover Lost Testing** - In December 2023, the team carried out two testes site to ensure a 200kg SWL over 2km demonstrated capability and durability for safe use.

- TEST1 Static load of **250kg** on the Mover passed without any deformation.
- TEST2 Moving 206kg load across a “typical building site” for 2km of mud, stones, grass, obstacles and a cattle grid without any deformation, demonstrated load durability.

Lite Work Designs Ltd. employed Professional Lifting Service Ltd. Unit 7, Park View Works, 870 Penistone Road, Sheffield, S6 2DL UK ( https://www.plsltd.co.uk ) to formally test the Heat Pump Mover and complete a Report of Thorough Examination which showed no defects loaded with 540kg, giving a Safe Working Load (SWL) of 270kg. Lite Work Designs Ltd. has limited the SWL of the Heat Pump Mover to 200kg to enable enhanced maneuverability.

REPORT OF THOROUGH EXAMINATION

Lite Work Designs Ltd
Unit 7 Dares Farm Business Park
Farnham Road
Farnham
Surrey
GU10 5BB

Report No. 91157.1
Customer Order No: N/A
Date of Examination: 18.07.2024

Latest date by which next thorough examination must be carried out: N/A UNDER LOLER

| Qty | Serial No | Description & Identification of the Equipment | Working Load Limit (s) | Date of Last Thorough Examination |
|---|---|---|---|---|
| 1 | HPM 1 | HEAT PUMP MOVER | 270KG | N/A |

| Is this equipment: | YES | NO | Was the examination carried out: | YES | NO |
|---|---|---|---|---|---|
| Supplied new | | ✓ | Before being issued for the first time? | | ✓ |
| Supplied reconditioned | | ✓ | Within an interval of 6 months? | | ✓ |
| Examined only | | ✓ | Within an interval of 12 months? | | ✓ |
| Examined & tested only | ✓ | | As part of an examination scheme? | ✓ | |
| Examined, repaired & tested | | ✓ | After exceptional circumstances? | | ✓ |

Identification of any part found to have a defect which is or could become a danger to persons and a description of the defect. (If none state NONE.)
NONE

Is the above a defect which is of immediate danger to persons? Yes / No ✓
If not an immediate danger when might it become dangerous to persons without rectification?
N/A
Particulars of any repair, renewal or alteration required to remedy the defect identified above:
N/A
Particulars of any tests carried out as part of the examination (If none state NONE):
PROOF LOAD TEST APPLIED TO 540KG – NO DEFECTS FOUND

IS THIS EQUIPMENT SAFE TO OPERATE? Yes ✓ / No

Person making this report: D BURKINSHAW
Company Approved Examiner
Name of person authenticating this report: G COLLIN – WORKS MANAGER
Signature:

This report complies with the requirements of the Lifting Operations & Lifting Equipment Regulations 1998

SPECIALISTS IN THE DESIGN, MANUFACTURE AND INSTALLATION OF LIFTING EQUIPMENT

Unit 7, Park View Works, 870 Penistone Road, Sheffield S6 2DL United Kingdom t. +44 (0)114 285 5488 w. plsltd.co.uk

REPORT OF LOAD TEST

This document is not required by LOLER.
All tests carried out are to LEEA guidelines.

Customer: Lite Work Designs Ltd
Unit 7 Dares Farm Business Park
Farnham Road
Farnham
Surrey
GU10 5BB

Report No: 91157.2
Customer Order No: N/A
Date of Report: 18.07.2024

TEST REPORT
This document should be supported by a Report of Thorough Examination.

| ID NO. | DESCRIPTION OF ITEM | QUANTITY | TEST LOAD | RESULT/SWL |
|---|---|---|---|---|
| HPM 1 | HEAT PUMP MOVER | 1 | 540kg | PASS/270kg |

Any part found to have a defect:
PROOF LOAD TEST APPLIED TO
SWL x 2
NO DEFECTS FOUND

Test Engineer ..... D. Burkinshaw

Authorised Signature

G. Collin - Works Manager

SPECIALISTS IN THE DESIGN, MANUFACTURE AND INSTALLATION OF LIFTING EQUIPMENT

Unit 7, Park View Works, 870 Penistone Road, Sheffield S6 2DL United Kingdom t. +44 (0)114 285 5488 w. plsltd.co.uk

**Max Designs Loads -** The Heat Pump Mover was tested by PLS to establish maximum design loads.

- With wheels and tyres fitted the Mover successfully supported **830kg** load without any deformation.
- Without wheels and tyres the Mover successfully supported **1500kg** load without any deformation. At **1700Kg** load, the axle did show 3mm permanent deformation.

## 4. Use / Method Statements

This Method Statement defines safe operation of the Heat Pump Mover for two or more operators.

### STEP 1 - CHECK THE MOVER BEFORE USE.

- Check that all bolts are tight
- Check the Mover and straps are not damaged and remain fit for purpose.
- Check tyres are at 30psi.

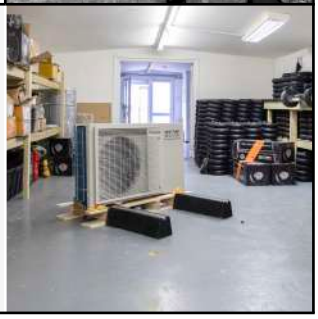
### STEP 2 - PUMP DELIVERED, UNPACK THE HEAT PUMP

- Remove and recycle pump all packing materials.

### STEP 3 - PREPARE THE PUMP TO MOVE

- Unbolt the pump from the pallet

### STEP 4 - POSITION RUBBER FEET



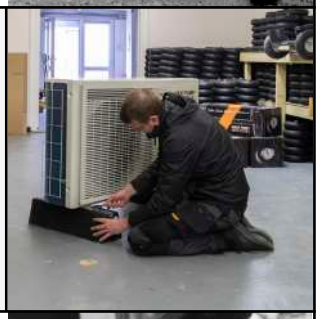
- Position the rubber feet next to the pump -
- Bolt the rubber foot to the fan end
- Rest the pump on the compressor end.

## STEP 5 - LIFT THE PUMP ON RUBBER FEET

- Lift the compressor / heavy end of the pump, remove the rubber foot and slide the Mover into place. Lowering the pump metal foot into Mover baseboard recess.
- Use the pump lift straps provided with the pump, carefully lift the pump onto the rubber feet.

## STEP 6 - BOLT THE RUBBER FOOT TO THE FAN END.

- Using the bolts provided with the pump, secure the rubber foot to the pump.



## STEP7 - PREPARE THE MOVER - ATTACH THE PULL STRAP.

- Attach the Pump Pull Strap to the Mover Carry Handle with a Honda Knot.

**HONDA KNOT**

## STEP 8 - LIFT THE PUMP ONTO THE RUBBER FEET

- Lift the compressor / heavy end of the pump, remove the rubber foot and slide the Mover into place. Lowering the pump metal foot into Mover baseboard recess.
- Use the pump lift straps provided with the pump, carefully lift the pump onto the rubber feet.

## STEP 9 - SECURE THE PUMP TO THE MOVER

- Use the Pump Securing Straps provided, ratchet to tighten the pump so it cant lift / move.

## STEP 10 - PREPARE THE PULL STRAP

- Using the pump lift straps provided, lift the pump fan / light end - slide Pump Pull Strap to the front of the pump, under the rubber foot.

## STEP 11 - PREPARE TO PULL THE PUMP

- Attach the Pull Handle to the correct Pull Strap loop to ensure, with a straight arm, you can lift the weight of the pump with your legs.

## HEALTH & SAFETY NOTE.

If pump lift weight exceeds HSE Guidelines (25Kg) two operators should pull the pump. This is achieved by fitting two Pull Handles to the Pull Strap - ensuring the height of each pull handle is correct for both operators (as above).

The pull handles are attached to the pump pull strap to facilitate easy movement

## STEP 12 - FINGUARD (OPTIONAL)

- We provide a Heat Pump FinGuard that is attached to your wrist / pull strap, preventing any damage to the pump fins during the pull.

## STEP 13 - PREPARE TO LIFT THE PUMP

- When lifting the pump - you must create a triangle by using your free hand to hold the top of the pump. This will give you the best control over the pump when moving.

## STEP 14 - PULL THE PUMP

- Pull or Push the pump to its final location.
-

## STEP 15 - PULL COMPLETE

- Maneuver the pump along side the final location.

## STEP 16 - REMOVING THE MOVER

- Unstrap the Pump Securing Straps
- Lift the Pump with the straps provided with the pump.
- Slide the Mover out from under the pump.
- Slide and secure the rubber foot.

**Potential Hazards**

**Weight and Distribution:** Pumps are heavy with an uneven weight distribution. The compressor end of the pump is significantly heavier than the fan end. The high centre of gravity can also make the pump top heavy. These factors make lifting and moving pumps extremely difficult with a high risk of personal injury or damage to the pump. The Mover is designed to minimise these risks by securing the compressor to a stable and highly maneuverable platform, designed to enable safe and easy movement of pumps across difficult terrains.

**Curbs and Steps:** Reasonable care must be taken when using the Heat Pump Mover over curbs (limited to 50mm high). The Heat Pump Mover can also be used over garden steps with additional care and assistance.

**Emergency Procedures:** If during a maneuver the pump becomes unstable, stop and lower the pump to the ground. Re-assess the situation and risks, seeking additional resources where necessary.

**Heat Exchanger Fin Damage:** All effort should be made to avoid knocking or touching any Fan Cooling Fins during Installation as these are easily damaged and may affect the performance of the pump. You may want to consider using our Heat Pump FinGuard or a similar protective shield.

**Fan End Foot:** The Fan End Foot can be damaged if the foot impacts the ground or an obstacle while the pump is being moved. Some pump foot brackets are attached with a light spot-weld or aluminum rivet which can easily be snapped if impacted.



**Emergency Procedures:** If during a maneuver the pump becomes unstable, stop and lower the pump to the ground. Re-assess the situation and risks, seeking additional resources where necessary.

## 5. Technical Specification

The Mover is designed to move 200kg pumps, the Mover can also be used for any payload up to 600mm wide, including boxed pumps, integrated units and water cylinders.

The Mover only weighs 8kg and is small enough to be stored with other tools in the back of your van. The baseboard and arches are made from 100% recycled household plastic, strong enough to carry loads of up to 200kg for 2km at walking speed (5 km/h). The Mover has a safe working tilt angle of 5 DEG and is provided with 3 years warranty, excluding wheels and tyres as these are operator environment specific.

| | | | |
|---|---|---|---|
|  |  |  |  |
| Heat Pump Mover | Axle and Axle Saddle | Wheel, Tyre and Hub | Mover Underside |

## Accessories

| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Wheels & Tyres | Accessories Bag | Allen Keys | Pump Ratchet Strap | Pull Handles | Pull Strap |

The Mover is designed to be used in some of the most challenging environments including combinations of narrow arches or gates, steep inclines or declines, mud, grass, puddles, gravel and sites littered with building debris.

Specification:

| | |
|---|---|
| Length: | 835mm |
| Payload Width: | 600mm |
| Payload Width: | 150mm |
| Height: | 260mm |
| Weight: | 8Kg |
| Tyre Pressure: | 30 psi |
| Safe Working Load: | 200kg |
| Max Tilt Angle | 5 DEG |

## 6. In The Box

The Mover is built and ready to go, supplied with a Quick Start Guide and QR code for this Operators Manual. The accessories bag contains securing ratchet and pull straps, pull handle and carabiner with two Allen keys for monthly maintenance.

Initial Inspection should include -

| | |
|---|---|
| 1x Assembled Mover | YES |
| 1x Accessories Bag | YES |
| 1x Pump Ratchet Securing Straps | YES |
| 1x Pull Strap | YES |
| 2x Pull Handles | YES |
| 2x Carabiner | YES |
| 2x Allen Keys | YES |
| 1x Quick Start Guide | YES |
| Tyre at c.30 psi | YES |
| Wheel Arch Bolts Tight | YES |
| Axle Saddle Bolts Tight | YES |
| Wheels - Slight Sideways Movement | YES |

## 7. Operating Modes

The Mover has been designed to be used by one or more operators in a typical building or customer site which may contain -

- Difficult Terrains -
  - Arches / Gates / Restricted Access
  - Mud, Grass, Stones, Obstacles
  - Inclines / Declines
  - Puddles
  - Slippery Surfaces

- Operating Modes
  - Single Operator
  - Dual Operators
  - Multiple Operators

## 8. Operational Constraints

| Description | Safe Operational Conditions |
|---|---|
| Max Load | The maximum load for the Mover is 250Kg while standing. |
| Max Moving Load | The maximum load for the Mover is 200Kg whilst being moved across typical building site. |
| Max Distance | Max distance for a single movement across a typical building site is 2000m in a single movement. |
| Max Tilt | The maximum tilt angle our Mover can work at is 5DEG for an obstacle while moving across a typical building site. If the site is particularly rough, you must stop after each major obstacle to prevent a side swing momentum from building up. |
| Max Pull Load | Whilst pulling the Mover and Pump across a typical building site the maximum pull load on the handle provided is 50Kg pull to prevent the Heat Pump from being damaged. |
| Max Securing Strap Load | Straps should be tightened to prevent the Heat Pump from moving on the Mover. The straps must not be tightened over 50Kg to prevent the Heat Pump from being damaged. |
| Max Speed | For your safety, the Mover is designed for walking speed only you must not exceed 5 km/h |
| Max Tyre Pressure | The optimum type pressure for Heat Pump stability is 30 psi for pumps weighing over 100 Kg. |

## 9. Maintenance and Troubleshooting

**Monthly checks:**

- All bolts remain tight
- Tyre pressures are 30 psi
- Securing and pull straps are not damaged

Any damaged item can be replaced or purchased from our website.

**Cleaning:** The Mover and all its components can be washed in warm soapy water to remove mud and debris. It is advisable to apply a light oil to the wheel bearings.

**Troubleshooting:** Over time -

- Wheel nuts come loose - tightened with a 24mm socket (not provided)
- Ratchet Strap Mechanism becomes stiff - avoided by applying a light oil.
- Securing nuts come loose - rectified with the Allen keys provided

# 10. Service and Support

**Servicing:** The Mover can be serviced by any reputable mechanical engineer.

**Support:** For any help and support issues, please contact us at -

- sales@heatpumpmover.co.uk or
- call on 01252 926487

**Warranty Information:**

With proof of purchase, we provide a 3 year warranty on all original supplied parts excluding wheels and tyres as they can be damaged in your operational environment. In the event of a warranty claim, please contact us at -

- sales@heatpumpmover.co.uk or
- call on 01252 926487

**Service Contact:**

For technical and service support please email or call us at - .

sales@heatpumpmover.co.uk
Tel. 01252 926487

## Disposal and Recycling

As a renewable focused business we strive to reduce our environmental impact.

We have used on-line resources where possible, for example this User Manual is deliberately not printed, accessible only from a QR code.

The Mover baseboard and arches are made from 100% recycled household plastic.

When you have finished with the Mover, please return it to us and we will recycle all of its components.

# 11. Legal Notices

**Terms and Conditions**

Terms and Conditions, Privacy and Cookie Policies can be found on our website -

| | |
|---|---|
| Terms and Conditions: | https://www.heatpumpmover.co.uk/terms-and-conditions |
| Privacy Policy: | https://www.heatpumpmover.co.uk/new-page |
| Cookie Policy: | https://www.heatpumpmover.co.uk/cookie-policy |

**Intellectual Property:** October 2023 Patent-Pending.

**Trademarks:** Lite Work Design branding is protected by trademark to ensure the exclusive use of our name, logo, and distinctive elements, safeguarding our identity and reputation in the marketplace.

**Copyright:** This manual and all information contained within and on our website (heatpumpmover.co.uk) is protected by copyright, ensuring that our original works, including text, images, and other creative materials, are legally safeguarded against unauthorised use and reproduction.

**Regulatory Information:** Our products comply with all applicable regulatory standards and guidelines to ensure safety, quality, and legal adherence (below).

Report of Thorough Examination. XXXXXXXXXXXX

# 12. Other UK/EU Regulations.

**Lifting Operations and Lifting Equipment Regulations**
Lifting Operations and Lifting Equipment Regulations (LOLER) (hse.gov.uk)

Not applicable to the Mover as most forms of pallet trucks available to buy and use on the current market do not fall within LOLER regulations. The reason for this is that generally, LOLER covers equipment that experiences a higher “consequence” should its load happen to fall. As pallet trucks are only lifting pallets just a little way off the ground to help improve mobility, the associated risk level is deemed to be exceptionally low. As a result, standard pallet trucks do not come under LOLER.

The Supply of Machinery (Safety) (Amendment) Regulations 2011
https://www.legislation.gov.uk/uksi/2011/2157/made

**Not applicable to the Mover** as Section 3 SCOPE, para (i) defines ‘machinery’ as an assembly, fitted with or intended to be fitted with a drive system other than directly applied human or animal effort.

EU 53.060 INDUSTRIAL TRUCKS
53.060 Industrial trucks (en-standard.eu)

**Not applicable to the Mover** - no long reach arm or electric systems

**BS EN 1757-3**:
**Not Applicable to the Mover** as para 1.2 is for a manual industrial platform truck with at least 3 wheels and fitted with a non-lifting load-carrying platform and, should such be the case with one or several shelves. The Standards was withdrawn May 2022.

**BS EN 12182**:
**Not applicable to the Mover** as this is for persons with disability. We would happily work with installation engineers with disabilities.

**The Personal Protective Equipment at Work Regulations 1992**:
**Not applicable to the Mover but** Lite Work Designs Ltd will work with employers to provide the correct PPE for Installation Engineers.

# Appendices

**Glossary:**

- Mover. Heat Pump Mover
- Psi Pounds Per Square Inch - Tyre Pressure
- mm Millimeter - Measurements
- PPE. Personal Protective Equipment

**Large Format:**
A large Format Manual can be provided on request.

**Language Requirements:**

This Manual is provided in the following languages.

- English
- French (on request)
- German (on request)