TUNDRA® INDUSTRIAL

# USER MANUAL

TUNMAGL0100 • TUNMAGL0300 • TUNMAGL0600

TUNMAGL1000 • TUNMAGL2000 • TUNMAGL3000 • TUNMAGL5000

v1.3

# MAGNETIC LIFTER

## 100kg-5000kg SERIES


TUNDRA® INDUSTRIAL

***Disclaimer:***
*The information in this document is to the best of our knowledge true and accurate, but all recommendations or suggestions are made without guarantee. Since the conditions of use are beyond their control, Tundra Industrial ® disclaim any liability for loss or damage suffered from the use of this data or suggestions. Tundra Industrial ® reserve the right to change product specifications and warranty statements without further notification. All images are for illustration purposes only.*

# 1. SAFETY GUIDELINES

**Important:** *Read and understand all safety instructions before use. Keep instructions safe for future reference. Ensure that this equipment is in sound, clean condition and good working order before use.*

## General Safety:

- Always inspect equipment for damage before use.
- Ensure any damaged parts are replaced before use - use only Tundra Industrial recommended parts - contact your dealer for advice.
- Do not use this equipment if damage or weakness is detected during inspection.
- Do not modify this equipment for any use other than that which it has been designed and tested for.
- Never exceed the rated capacity.
- Keep the equipment clean and well maintained for optimal, safe performance.
- Ensure that the working environment is well lit and kept clean and free from clutter, keep children and animals away.
- Ensure that the floor is level and strong enough (preferably concrete) to take the weight of the lift and the bike.
- This equipment should only be used by fully-trained and competent individuals (never under the influence of drugs or alcohol).
- Unauthorised parts may be dangerous and will invalidate the warranty.

## Personal Safety:

- Safety glasses must be worn at all times in work areas.
- Long and loose hair must be tied back and contained.
- Appropriate footwear must be worn at all times.
- Close fitting/protective clothing must be worn.
- Safety gloves should be worn at all times and jewellery must not be worn.

**WARNING:** Do not use this equipment if any damage or wear is detected - remove from service immediately and seek advice for repair.

## Equipment Safety:

- Examine the body of the device and inspect for damage or defects.
- Ensure that the on/off handle is correctly attached to the device.
- Make certain the on/off handle is in the off position.
- Keep body parts, clothing & power cords clear of the work area.
- Stay alert and use common since when using this device.
- Do not make adjustments to the device while the equipment is lifting.
- Do not use this equipment in water or any type of liquid substance.
- Do not leave the load on lift for extended periods, for longer than necessary or when unattended.
- Never walk under a load or allow the load to be lifted over any person.
- Do not remove the device panel - this should only be removed by a qualified engineer.
- Magnets inside are extremely strong and adjustments without proper equipment can result in serious injury.
- Do not operate this device on the same work surface where welding is being performed. This could result in severe damage to the device or personal injury to the user.

**WARNING:**

No responsibility is accepted for incorrect use of this equipment. Incorrect use can result in damage to the equipment and danger to the user. Warranty will be void in the event of incorrect use. The warnings, cautions and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

### Lifting Safety

- Do not use this device in the rain or a wet environment. If using outdoors, make sure the surface is clean and dry.
- Do not engage the handle to the "on" position without magnetic material under the lifter.
- Do not drop, heat or shock the lifter as it could cause permanent damage to the lifter.
- Do not use on a work area that may contain a live electrical wire /circuit
- Enure that the surface of the load is free of rust, dirt, debris, grease or moisture obstructions
- Do not carry material over or near people.
- Do not allow people to stand on materials during the lift.
- Do not allow the magnet of the lifted material to come into contact with any obstructions while lifting
- Do not use multiple magnets without a proper spreader bar.
- Ensure the load is equally distributed on the lifter
- Not suitable for shear lifting (the load must be lifted in its horizontal position below the magnet)

## 2. DESCRIPTION

This magnetic lifter is designed to lift a variety of loads including: steel, iron, round and other magnetic materials. The equipment eliminates the need for clamps, slings and chains allowing for increased working efficiency in busy garages and workshops. This equipment does not require a power source.

## 3. SPECIFICATIONS

| Model | | TUNMAGL0100 | TUNMAGL0300 | TUNMAGL0600 | TUNMAGL1000 | TUNMAGL2000 | TUNMAGL3000 | TUNMAGL5000 |
|---|---|---|---|---|---|---|---|---|
| **Capacity** | | **100kg** | **300kg** | **600kg** | **1000kg** | **2000kg** | **3000kg** | **5000kg** |
| Max rated load for **Round Steel** | | **50kg** | **150kg** | **300kg** | **500kg** | **1000kg** | **/** | **/** |
| Max rated load for **Flat Steel** | | **100kg** | **300kg** | **600kg** | **1000kg** | **2000kg** | **3000kg** | **5000kg** |
| Max breakaway force | | **350kg** | **1050kg** | **2100kg** | **3500kg** | **7000kg** | **10500kg** | **15000kg** |
| **Dimensions:** *(Refer to Fig.1 below:)* | **L** | **92mm** | **166mm** | **228mm** | **266mm** | **394mm** | **431mm** | **595mm** |
| | **B** | **64mm** | **99mm** | **118mm** | **150mm** | **196mm** | **234mm** | **294mm** |
| | **H** | **72mm** | **108mm** | **126mm** | **158mm** | **204mm** | **232mm** | **289mm** |
| | **R** | **148mm** | **223mm** | **257mm** | **303mm** | **470mm** | **576mm** | **728mm** |
| **Net weight** | | **3.2kg** | **12.4kg** | **23.6kg** | **42.8kg** | **69kg** | **105kg** | **160.4kg** |

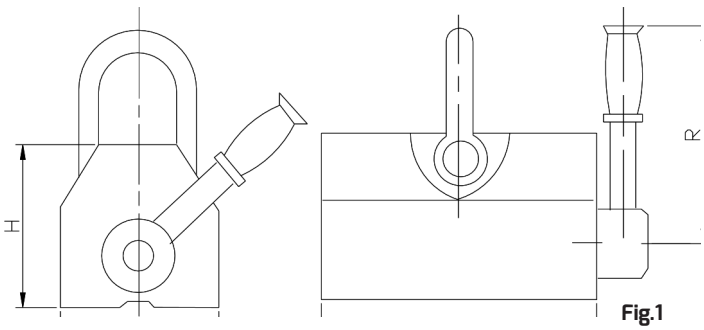


Fig.1

### 3.1 Important Definitions:

**Breakaway Force:**
*This can be defined as the force required to separate the magnet from the material load This is the force when the magnet is being pulled in a direction perpendicular to the magnet's face. The breakaway force is directly proportional to the material qualities of the load. The lifter's "breakaway force" increases until the material being lifted exceeds the saturation thickness of the material.*

**Air Gap:**
*This can be defined as anything that prevents the magnet from making full contact with the material being lifted. Examples of an air gap include: paint, rust, ice, water, machine grooves, holes, oil, rust and other loose debris. It is always recommended that there is a minimal air gap so the device can make the required contact with the load material.*

## 3.2 Lifting Guide

**The actual lifting capacity of the magnet is affected by the following factors:**

- **Material Thickness:** The thickness of the steel plate (see steel thickness graph below: **Fig.2** below and detailled in **Fig.3** page 6).
- **Air Gap:** A gap between the lifting magnet and the steel load produced by paint, dirt, roughness, or uneven surface of material (see air gap graph **Fig.4** page 6).
- **Carbon Composition:** When lifting high carbon steel, the lifting capacity will be **30% less**. If lifting cast iron, the lift value will be **50% less.**
- **Round Bar or Pipe:** A round bar must contact the V shape slot at the bottom of the lifting magnet. The actual capacity value will be approximately 40% of that plate. When lifting pipes, its thickness should also be taken into account. The actual capacity value is also affected by the diameter of the material.
- **Sheet:** A large thin steel sheet can be bent in an arc profile and then peeled off when lifted, even though it is light. When lifting a sheet from a stack, the magnetic flux may penetrate through the sheet and adhere to lower pieces. This is an extremely unsafe lift.

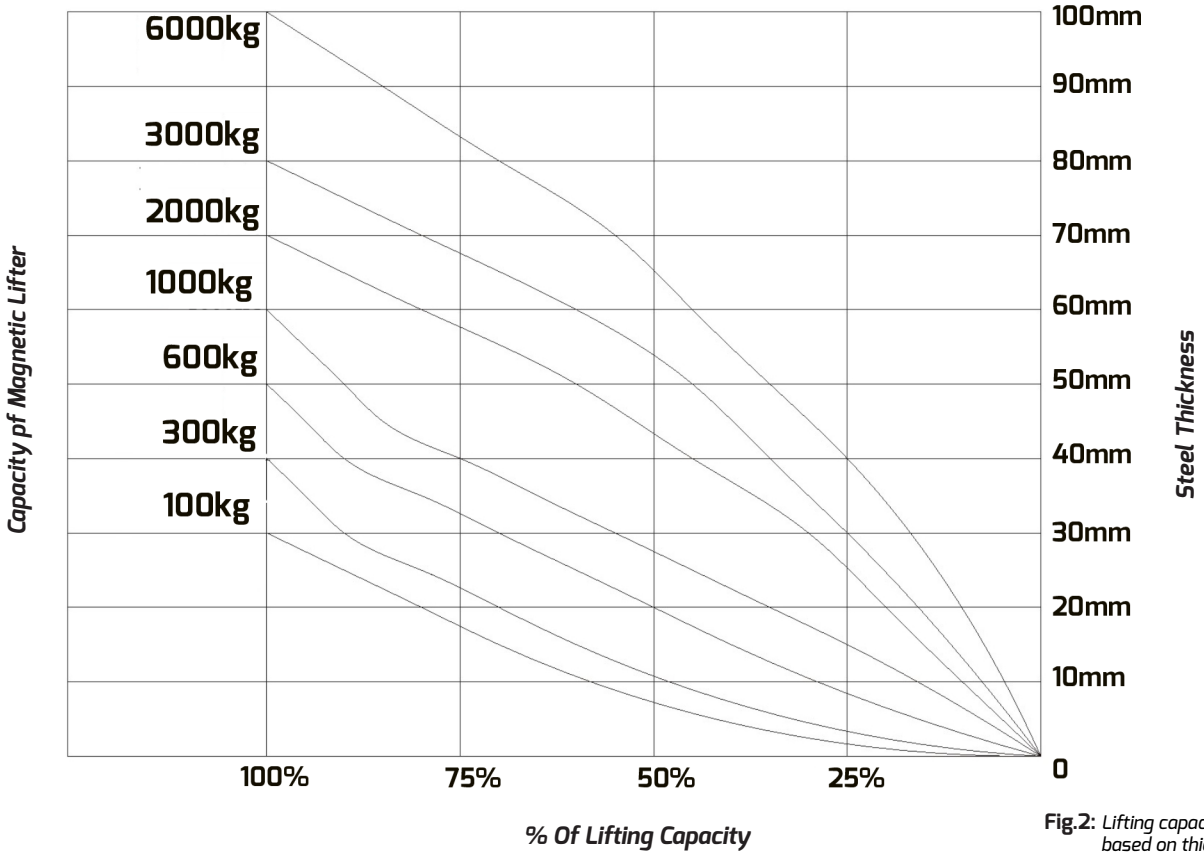



**Fig.2:** *Lifting capacity adjustment based on thickness of steel*

### 3.3 Lifting Range Calculation Formulas:

- **Actual Capacity** = Nominal Capacity (kg) x T Factor (%) x A Factor (%)
- **T Factor** = Thickness Holding Power (%) A Factor = Air Gap Holding Power (%)

| Steel plate thickness | | | Effective percentage of rated capacity | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | mm | inch | 5000kg | 3000kg | 2000kg | 1000kg | 600kg | 300kg | 100kg |
| T1 | Up65 | Up2.56 | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| T2 | 60 | 2.36 | 95% | | | | | | |
| T3 | 55 | 2.16” | 90% | 95% | | | | | |
| T4 | 50 | 1.97” | 85% | 90% | 95% | | | | |
| T5 | 45 | 1.77” | 80% | 85% | 90% | | | | |
| T6 | 40 | 1.57” | 70% | 80% | 85% | | | | |
| T7 | 35 | 1.38” | 60% | 70% | 75% | 90% | | | |
| T8 | 30 | 1.18” | 50% | 60% | 65% | 80% | | | |
| T9 | 25 | 0.98” | 40% | 50% | 55% | 70% | 90% | | |
| T10 | 20 | 0.79” | 30% | 40% | 45% | 60% | 75% | 90% | |
| T11 | 15 | 0.59” | / | 30% | 35% | 50% | 60% | 70% | |
| T12 | 10 | 0.39” | / | / | 25% | 35% | 45% | 50% | 70% |
| T13 | 5 | 0.20” | / | / | / | / | 25% | 30% | 40% |

**Fig.3:** *Lifting capacity adjustments based on thickness of steel*

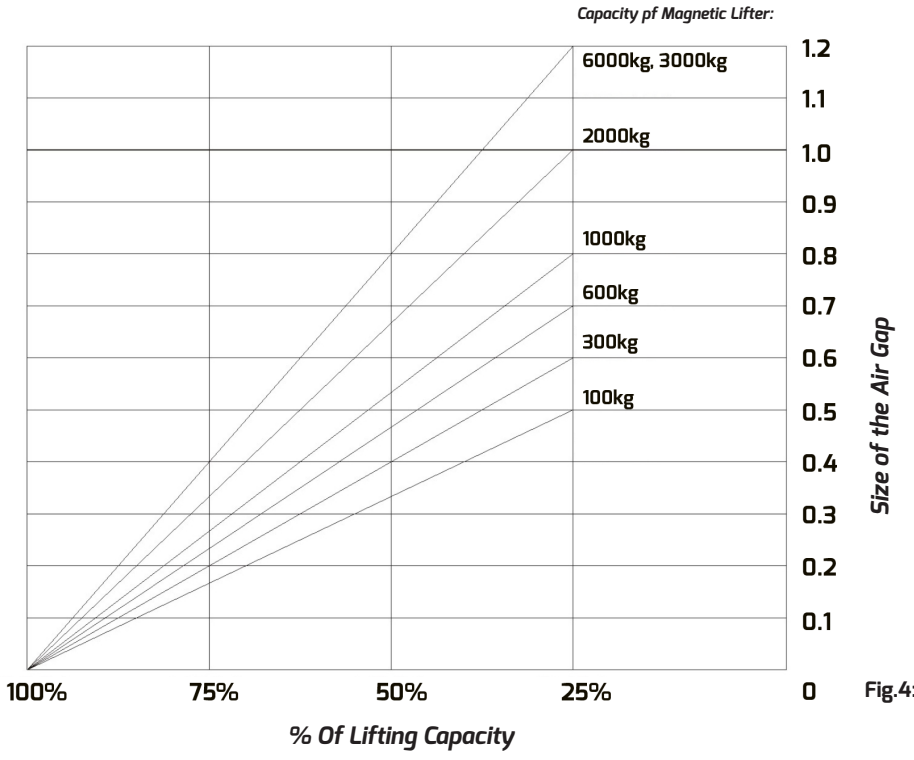



**Fig.4:** *Lifting capacity adjustments based on the air gap*

## 4. OPERATION GUIDE

Ensure that you have read all the safety instructions and checked the equipment for damage before use.

Check that the working environment is suitable for operating the equipment.

**REMEMBER:** The magnetic adhesion is highly affected by the composition of the material being lifted. Consider the material type, weight, condition, strength, density and rigidity of the load that will be lifted. These factors will have an important impact on the effectiveness of the lifting capacity of the this equipment and user safety.

Alloys with higher iron content are typically more susceptible to magnetic fields than those with lower iron content. Research and familiarise yourself with the material you are lifting.

**IMPORTANT:** Consult the information shown in the manual to make sure the capacity of the equipment is suitable for the load. If you are unsure - contact your dealer for advice.

- Ensure the handle is securely attached.
- Ensure the load surface is clean and free of debris, oil, rust, paint, dirt and other loose debris.
- Position the lifter on the steel gently so as not to cause damage to the magnetic lifter or the load surface.
- Ensure that you place the magnetic lifter on the center point of the mass on the material load so that the weight is distributed evenly on all remaining sides and load is balanced evenly.
- Press the button at the top of the handle and turn the handle from the "**OFF**" position to the "**ON**" position.
- Ensure the safety lock is engaged towards the machine to keep the device in the "**ON**" position.
- Move or lift the load a short distance to ensure the load is balanced.
- Do not proceed with the lift until the load is balanced correctly - lower and readjust the magnetic lifter as required.
- To disengage the magnet when in the "**ON**" position, simply press the button at the top of the handle to disengage the lock and slowly move the handle to the "**OFF**" position.
- When transporting the device, always carry with both hands.
- If transporting inside a vehicle, it is recommended to transport it flat so as to avoid the item falling over.
- Never carry the device by the handle.

## 5. MAINTENANCE

- **WARNING:** Do not remove the device panel - this should only be removed by a qualified engineer.
- **IMPORTANT:** Magnets inside are extremely strong and adjustments without proper equipment can result in serious injury.
- Check for any misalignment, damage or loose connections on all moving parts.
- Protect the magnet from rusting by oiling the bottom base after use.
- Store equipment in a dry, clean environment.
- Check the handle before each use to ensure the safety button moves freely.
- We recommend that an annual calibration check is carried out on this equipment - contact your dealer for advice.

## LIMITED WARRANTY STATEMENT

Tundra Industrial warrants its customers that its products will be free of defects in workmanship or material.

Tundra Industrial shall, upon suitable notification, correct any defects, by repair or replacement, of any parts or components of this product that are determined by Tundra Industrial to be faulty or defective.

This warranty is void if the equipment has been subjected to improper installation, storage, alteration, abnormal operations, improper care, unauthorised service or repair.

**Warranty Period**

Tundra Industrial will assume both the parts and labour expense of correcting defects during the stated warranty periods below. All warranty periods start from the date of purchase from an authorised Tundra Industrial dealer. If proof of purchase is not available from the end user, then the date of purchase will be deemed to be 3 months after the initial sale to the distributor.

1 Year
- TUNMAGL0100 · TUNMAGL0300 · TUNMAGL0600 · TUNMAGL1000 · TUNMAGL2000 · TUNMAGL3000 · TUNMAGL5000

90 Days
- All replacement parts purchased outside of the warranty period

**Important:** All parts used in the repair or replacement of warranty covered equipment will be subject to a minimum of 90 days cover or the remaining duration of the warranty period from the original date of purchase.

**Warranty Registration / Activation**

You can register and activate your warranty by visiting the Jefferson Tools website using the following address: www.jeffersontools.com/warranty and completing the online form. Online warranty registration is recommended as it eliminates the need to provide proof of purchase should a warranty claim be necessary.

**Warranty Repair**

Should Tundra Industrial confirm the existence of any defect covered by this warranty the defect will be corrected by repair or replacement at an authorized Tundra Industrial dealer or repair centre.

**Packaging & Freight Costs**

The customer is responsible for the packaging of the equipment and making it ready for collection. Tundra Industrial will arrange collection and transportation of any equipment returned under warranty. Upon inspection of the equipment, if no defect can be found or the equipment is not covered under the terms of the Tundra Industrial warranty, the customer will be liable for any labour and return transportation costs incurred. These costs will be agreed with the customer before the equipment is returned.

**Warranty Limitations**

Tundra Industrial will not accept responsibility or liability for repairs made by unauthorised technicians or engineers. Tundra Industrial's liability under this warranty will not exceed the cost of correcting the defect of the Tundra Industrial products. Tundra Industrial will not be liable for incidental or consequential damages (such as loss of business or hire of substitute equipment etc..) caused by the defect or the time involved to correct the defect. This written warranty is the only express warranty provided by Tundra Industrial with respect to its products.

Any warranties of merchantability are limited to the duration of this limited warranty for the equipment involved. Tundra Industrial is not responsible for cable wear due to flexing and abrasion. The end user is responsible for routine inspection of cables for possible wear and to correct any issues prior to cable failure.

**Claiming Warranty Coverage**

The end user must contact Tundra Industrial (Tel: **+44 (0) 1244 646 048**) or their nearest authorised Tundra Industrial dealer where final determination of the warranty coverage can be ascertained.

**Step 1 - Reporting the Defect**

***Online Method:***

- Visit the website www.jeffersontools.com/warranty and complete the Warranty Returns form. You can complete the form online and submit it to us directly or download the form to print out and return by post.

*Telephone Method:*

Contact your Tundra Industrial dealer or sales representative with the following information:

- Model number
- Serial number (usually located on the specification plate)
- Date of purchase

A Warranty Returns form will be sent to you for completion and return by post or fax, together with details of your nearest authorised Tundra Industrial repair centre. On receipt of this form Tundra Industrial will arrange to collect the equipment from you at the earliest convenience.

**Step 2 - Returning the Equipment**

It is the customer's responsibility to ensure that the equipment is appropriately and securely packaged for collection. Please ensure that you include a copy of your proof of purchase. Please note that Tundra Industrial cannot assume any responsibility for any damage incurred to equipment during transit. Any claims against a third party courier will be dealt with under the terms & conditions of their road haulage association directives.

**Step 3 - Assessment and Repair**

On receipt, the equipment will be assessed by an authorised Tundra Industrial engineer and it will be determined if the equipment is defective and in need of repair and any repairs needed are covered by the warranty policy. In order to qualify for warranty cover all equipment presented must have been used, serviced and maintained as instructed in the user manual.

Where repair is not covered by the warranty a quotation for repair, labour costs and return delivery will be sent to the customer (normally within 7 working days). **Note:** If the repair quotation is not accepted Tundra Industrial will invoice 1 hour labour time at £30 per hour plus return carriage costs (plus VAT).

In cases where no fault can be found with the equipment, or, if incorrect operation of the equipment is identified as the cause of the problem, a minimum of 1 hour labour at £30 per hour plus carriage costs will be required before the equipment will be despatched back to the customer.

Any equipment repaired or replaced under warranty will normally be ready for shipment back to the customer within 7 working days upon receipt of the equipment at an authorised Tundra Industrial Repair centre (subject to part availability). Where parts are not immediately available Tundra Industrial will contact you with a revised date for completion of the repair.

**General Warranty Enquiries**

For any further information relating to Tundra Industrial warranty cover please call **+44 (0) 1244 646 048**.

## EC DECLARATION OF CONFORMITY

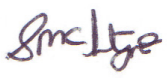
We, Tundra Industrial, as the authorised European Community representative of the manufacturer, declare that the following equipment conforms to the requirements of the following Directives:

| Directive: | Description: | Notified Body: |
|---|---|---|
| EN 60404-5:2008 (as amended) | Magnetic materials. Methods of measurement of D.C magnetic properties of magnetically soft materials. | BVCE Compliance Labratory |

**Equipment Category:** Magnetic Lifting Equipment

**Product Name/Model:** Magnetic Lifter
TUNMAGL0100
TUNMAGL0300
TUNMAGL0600
TUNMAGL1000
TUNMAGL2000
TUNMAGL3000
TUNMAGL5000

**Signed by:** Stephen McIntyre



**Position in the company:** Operations Director

**Date:** 01 August 2018

**Name and address of manufacturer or authorised representative:**

Tundra Industrial, Herons Way, Chester Business Park, Chester,
United Kingdom, CH4 9QR
Telephone: +44 (0)1244 646 048
Fax: +44 (0)1244 241 191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