

# **PROSERIES<sup>®</sup>**

## **UNI-Tugger Battery Handling Equipment**



# **OWNER'S MANUAL**

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# INTRODUCTION

## **PROSERIES**<sup>®</sup>

The information contained in this document is critical for safe handling and proper use of the UNI-Tugger battery handling equipment. It contains a global system specification as well as related safety measures, codes of behavior, a guideline for commissioning and recommended maintenance. This document must be retained and available for users working with and responsible for the battery handling equipment. All users are responsible for ensuring that all applications of the system are appropriate and safe, based on conditions anticipated or encountered during operation.

This owner's manual contains important safety instructions. Read and understand the sections on safety and operation of the battery handling equipment before operating it and the equipment into which it is installed.

It is the owner's responsibility to ensure the use of this documentation and all related activities comply with applicable legal requirements in their respective countries.

This owner's manual is not intended to substitute for any training on handling and operating the UNI-Tugger battery handling equipment that may be required by local laws and/or industry standards. Proper instruction and training of all users must be ensured prior to any contact with the battery system.

### **For service, contact your sales representative or call:**

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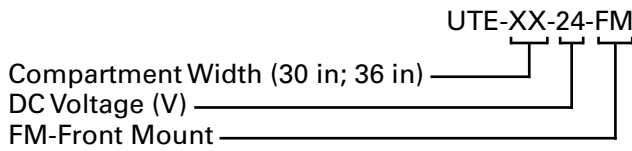
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### **Your Safety and the Safety of others is Very Important**

**⚠ WARNING** You can be killed or seriously injured if you don't follow these instructions.

# SYMBOL IDENTIFICATION



## Symbol Identification Chart

	Refer to accompanying documentation		Refer to Manual
	Do not operate without all guards and covers in place		Crush Hazard – Keep Hands Clear
	Entanglement Hazard – From chain, gear, or pulley		Pinch Point Hazard
	Crush Hazard From Falling Load		Crush Hazard – Keep Feet Clear
	Eye Protection Required		Safety Shoes Required
	Slip Hazard		Heavy Object – Do not exceed the recommended load weight
	Protective Clothing Required		Rubber Gloves Required
			Face Shield Required

This manual contains important information to help you properly operate and maintain your **Battery Tugger** for maximum performance, economy, and safety. By practicing correct operating procedures and by carrying out the recommended preventive maintenance suggestions, you will experience long, dependable, and safe service.




# LABELS

## Danger, Warning, Caution Labels

Labels, languages, and symbols shown below may be different than the ones on the unit.


Check the unit for actual labels.


DANGER	GEFAHR	DANGER
 <p>ONLY CERTIFIED OPERATORS SHOULD USE THIS UNIT. WHEN OPERATING: KEEP AREA UNDER LOAD CLEAR.</p>	<p>BETRIEB NUR DURCH AUTORISIERTES PERSONAL. NICHT UNTER DIE LAST TRETEN.</p>	<p>SEULS LES OPERATEURS CERTIFIES PEUVENT UTILISER CET EQUIPEMENT. MAINTENIR LES ESPACES SOUS LA CHARGE DEGAGES.</p>
 <p>DO NOT PULL LOADS IN EXCESS OF 2,300LBS. IT MAY CAUSE INJURY. USE CARE WHEN OPERATING ON AN INCLINE.</p>	<p>DAS ZIEHEN VON LASTEN VON MEHR ALS 1,134 KG (2,500LBS) KANN RÜCKEN- ODER MUSKELVERLETZUNGEN VERURSACHEN, INBESONDERE BEI STEIGUNGEN.</p>	<p>NE TIREZ PAS DES CHARGES EN EXCES DE 2,300 LB / 1,044 KG. DES BLESSURES SONT POSSIBLES. ATTENTION AU TRAVAIL SUR DES INCLINAISONS.</p>
 <p>DO NOT OPERATE IF YOU ARE IMPAIRED (ILL OR UNDER THE INFLUENCE OF ALCOHOL OR MEDICATION). ERRORS WHEN OPERATING CAN CAUSE HAZARDOUS AND POTENTIALLY LETHAL CONDITIONS.</p>	<p>VERSUCHEN SIE NICHT, DIESES GERÄT ZU BEDIENEN, WENN SIE DURCH KRANKHEIT, MEDIKAMENTE, ALKOHOL ETC BEEINTRÄCHTIGT SIND. FEHLER IM BETRIEB KÖNNEN GEFÄHRLICHE UND POTENZIELL TÖDLICHE FOLGEN HABEN.</p>	<p>N'UTILISEZ AUCUN EQUIPEMENT SI VOUS ETES MALADE OU SOUS L'INFLUENCE DE DROGUES OU DE L'ALCOOL. LES ERREURS DE JUGEMENT PEUVENT ETRE EXTREMEMENT DANGEREUSES ET MEME FATALES.</p> <p>LBL-T60-EGF</p>

CAUTION	ACHTUNG	ATTENTION
 <p>TO REDUCE THE RISK OF COLLISION: ENSURE UNIT IS POSITIONED FOR OPTIMAL VISIBILITY.</p>	<p>UM DAS KOLLISIONSRISIKO ZU REDUZIEREN, STELLEN SIE EINE OPTIMALE SICHTBARKEIT SICHER.</p>	<p>AFIN DE REDUIRE LES RISQUES DE COLLISION, ASSUREZ UNE BONNE VISIBILITE.</p>
 <p>USE CARE WHEN TRANSPORTING LOAD OVER WET FLOOR/SURFACE.</p>	<p>TRANSPORT VON LASTEN AUF NASSEN BODEN FLÄCHEN VORSICHTIG VORGEHEN.</p>	<p>SOYEZ PRUDENT LORSQUE LES PLANCHERS SONT MOUILLES.</p>
 <p>EYE PROTECTION, SAFETY SHOES AND PROTECTIVE CLOTHING ARE REQUIRED WHEN OPERATING THIS EQUIPMENT.</p>	<p>BEIM BETRIEB DIESES GERÄT, AUGENSCHUTZ, SICHERHEITSSCHUHE UND SCHUTZKLEIDUNG IST ERFORDERLICH.</p>	<p>LUNETTES, CHAUSSURES DE SECURITE, ET VETEMENT DE PROTECTION REQUISES POUR L'OPERATION DE CET EQUIPEMENT.</p> <p>LBL-T60-EGF</p>

	WARNING	WARNUNG	ATTENTION
	<p>KEEP CLEAR OF MOVING PARTS.</p>	<p>BEWEGLICHE TEILE. ACHTEN SIE AUF HÄNDE UND FINGER.</p>	<p>ÉCRASEMENT! ATTENTION AUX DOIGTS.</p> <p>LBL-T05-EGF</p>

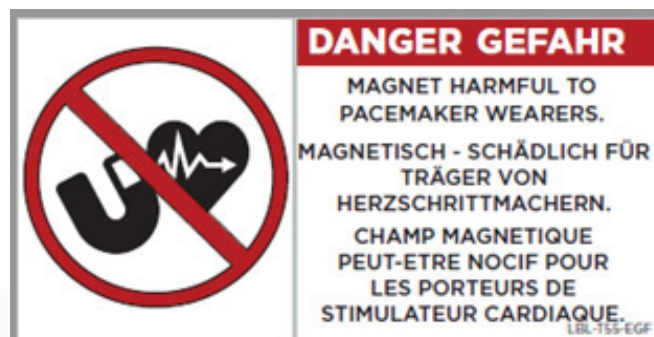
	WARNING	WARNUNG	ATTENTION
	<p>PINCH POINT, WATCH YOUR HANDS.</p>	<p>QUETSCHGEFAHR HÄNDE FERN HALTEN.</p>	<p>POINT DE PINCEMENT! ATTENTION AUX MAINS.</p> <p>LBL-T20-EGF</p>

	DANGER	GEFAHR	ATTENTION
	<p>CRUSH HAZARD. KEEP FEET CLEAR.</p>	<p>QUETSCHGEFAHR FÜßE FERN HALTEN.</p>	<p>ÉCRASEMENT! ATTENTION AUX PIEDS.</p> <p>LBL-T10-EGF</p>

	DANGER	GEFAHR	ATTENTION
	<p>DO NOT OPERATE WITHOUT ALL GUARDS, COVERS AND PANELS IN PLACE.</p>	<p>NUR BETREIBEN, WENN ALLE SCHUTZVORRICHTUNGEN, ABDECKUNGEN UND HAUBEN ANGEBRACHT SIND.</p>	<p>NE PAS UTILISER SANS AVOIR TOUS LES GARDES, COUVERTURES, ET PANNEAUX EN PLACE.</p> <p>LBL-T15-EGF</p>

# LABELS

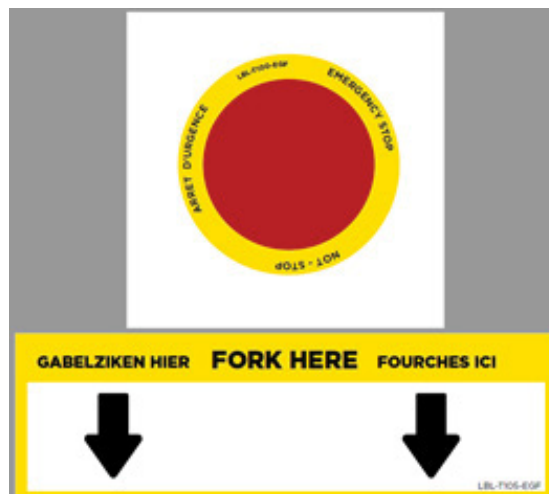
## Danger, Warning, Caution Labels (cont.)



# LABELS

## Danger, Warning, Caution Labels (cont.)

	<b>DANGER</b> CRUSH HAZARD! KEEP BODY CLEAR. <small>LBL-T75-EGF</small>	<b>GEFAHR</b> VORSICHT! NICHT UNTER DIE LAST TRETEN.	<b>DANGER</b> ÉCRASEMENT! GARDER LE CORPS ÉLOIGNE. <small>LBL-T75-EGF</small>
	<b>WARNING</b> CRUSH HAZARD! KEEP HANDS CLEAR.	<b>WARNUNG</b> QUETSCHGEFAHR! HÄNDE FERN HALTEN.	<b>ADVERTISSEMENT</b> RISQUE D'ÉCRASEMENT! GARDEZ LES MAINS CLAIRES. <small>LBL-T80-EGF</small>
	<b>DANGER</b> HIGH VOLTAGE. QUALIFIED PERSONNEL ONLY.	<b>GEFAHR</b> HOCHSPANNUNG. NUR QUALIFIZIERTES PERSONAL.	<b>ATTENTION</b> HAUTE TENSION UNIQUEMENT AU PERSONNEL QUALIFIE. <small>LBL-T85-EGF</small>



# MOUNTING & POSITIONING

## Truck Front Mounting & Positioning

Figure 1: Pallet Truck Front Mounting

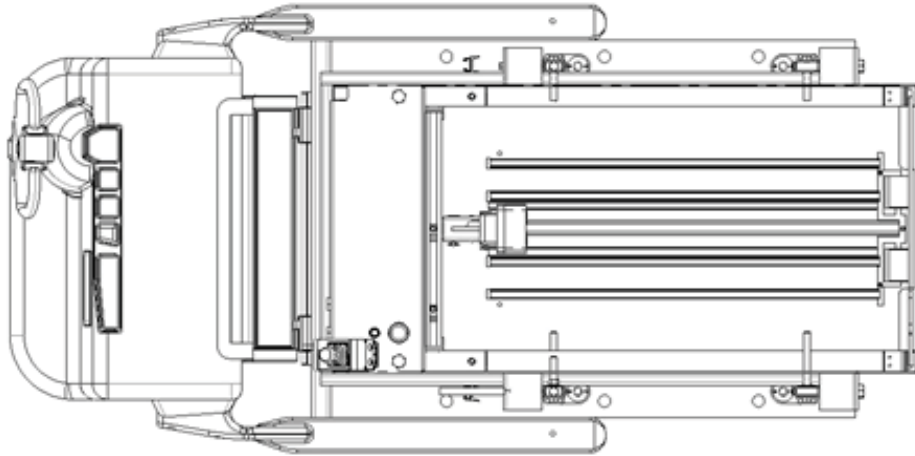


Figure 2: Fork Truck Front Mounting

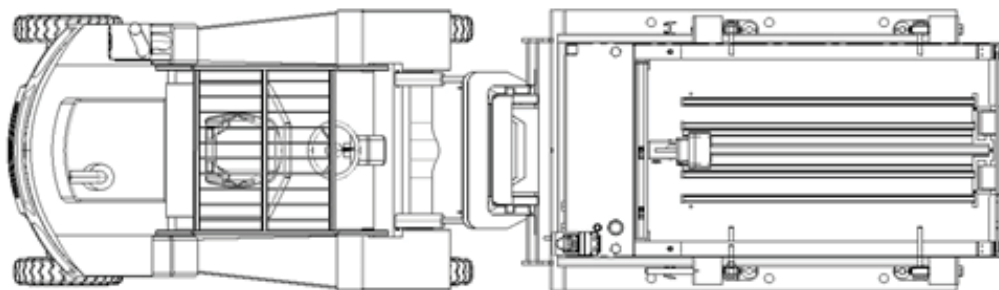
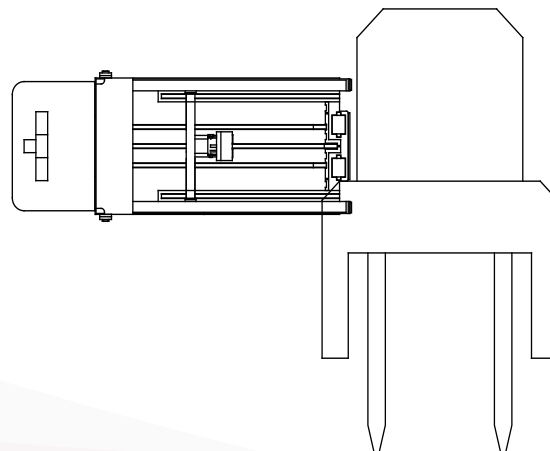


Figure 3: UNI-Tugger/Lift Truck positioning  
Example Showing Extraction Using Pallet Truck





# OPERATING INSTRUCTIONS

## Operating Instructions

### Description:

The UNI-Tugger is a non-propelled, electrically powered battery changer that is designed for medium-volume applications and all sizes of batteries, such as those found in reach trucks, pallet trucks, and 3 and 4-wheel counter-balance trucks.

Before operating the UNI-Tugger it must be mounted onto a mobile lift truck or fork truck as shown in **Figure 1 or 2**, page 8. It is important that the operator thoroughly review and understand the proper Safety Procedures and Instructions as outlined in this Owner's Manual and the Owner's Manual for the mobile truck. It is also important that the UNI-Tugger be secured to the mobile lifting truck, either bolted permanently or use Quick Clamp (see Battery Tugger Quick Clamp illustration on page 11). Fastening is recommended, however fastening can be quick-release to allow the host truck to be used in regular operations.

All operators must be trained or certified (if required) in the use of the UNI-Tugger.



Safety shoes, safety glasses, and protective clothing are mandatory in battery rooms. Be sure to wear them at all times. Rubber gloves, rubber aprons, and full face shields are required when washing and servicing forklift batteries. Always use **caution** and **common sense**.

### Preparation:

1. Park the lift truck in a perpendicular position adjacent to the UNI-Tugger battery handling equipment (**Figure 3**, page 8).
2. Prepare the lift truck for battery removal as follows:
  - Lower the forks until they sit flat on the floor.
  - Engage the parking brake.
  - Remove any protective covers.
  - Unplug the battery and position the connector plug and cable to prevent snagging or pinching during the battery removal process.
  - Remove the battery retaining gate.

# EXTRACTION

## Extraction from the Lift Truck



1. Position the UNI-Tugger in front of the battery compartment and lower the unit so the front rollers are approximately 1/2" below the bottom of the battery to be removed.



2. Power the magnet out until it contacts the battery to be removed. Then turn on the magnet toggle switch. Power the magnet back to pull the battery out, until it is just over the large black entry rollers on the UNI-Tugger battery handling equipment.



3. Raise the UNI-Tugger using the forklift controls until the rollers support the weight of the battery and continue to pull the battery all the way into the UNI-Tugger.



4. Drive the forklift to an appropriate empty roller stand.



5. Raise or lower the UNI-Tugger to the roller stand height, then power the magnet to push the battery out onto the roller stand.

### Insertion into the Lift Truck:

1. Raise the UNI-Tugger using the mobile lifting truck controls and/or using linear actuator controls to the roller stand level and retrieve the charged battery.
2. Position the UNI-Tugger in front of the lift truck battery compartment, and then raise or lower the battery to be **just slightly above** (approx. 1/2") the level of the lift truck's roller or slider bed.
3. Power the magnet and battery as far as it will go into the lift truck. If using a powered pallet truck, make sure the pallet jack handle is in the vertical position, i.e. brakes are on.

### Conclusion:

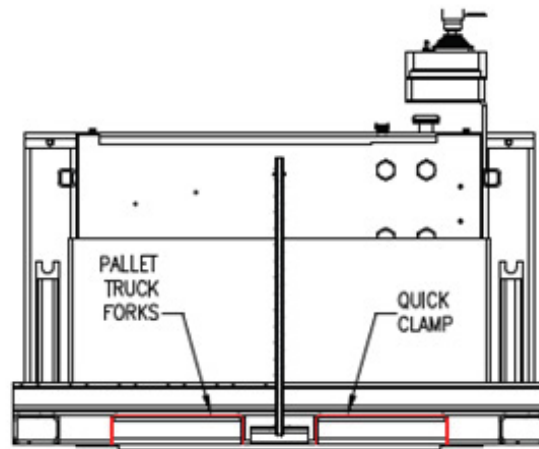
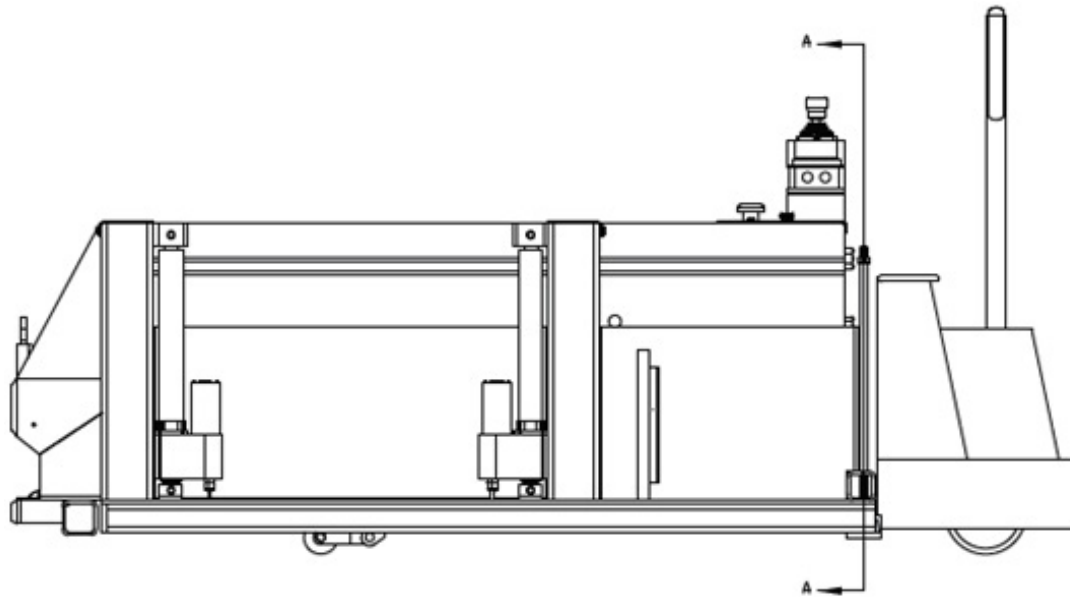
1. Drive the UNI-Tugger away from the lift truck and park it in a safe location.
2. Check the discharged battery, connect the cables, and turn on the charger.
3. Prepare the lift truck for operation as follows:
  - Install the battery retaining gate
  - Plug in the battery
  - Install the protective covers
  - Check the battery indicator gauge



**NOTE:** The activation of the controls for the magnet bridge arm (forward/reverse) and the lift up/down can only occur with the simultaneous activation of the two-handed operation button that is mounted next to the emergency stop. The magnet on/off control does not require the activation of the two-handed operation button.

# QUICK CLAMP

## Battery Tugger Quick Clamp, BT-QC

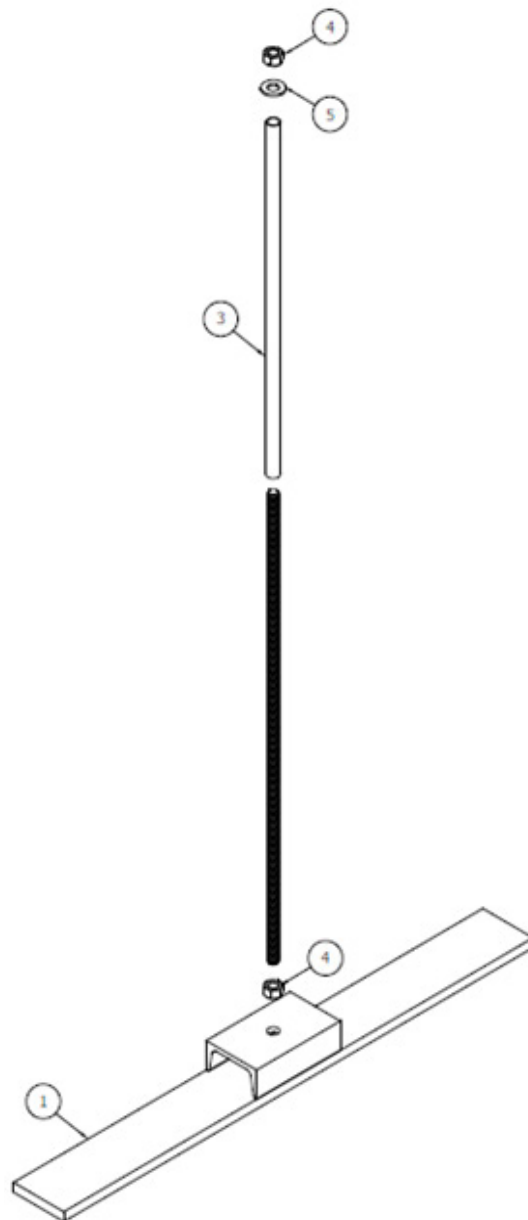


SECTION A-A  
SCALE 1:8

# QUICK CLAMP

## Battery Tugger Quick Clamp

Item	Qty.	Description	Part Number
1	1	QUICK CLAMP WELDMENT	BT-801-5
2	1	THREADED ROD	CBS-2470-24
3	1	SLEEVE	TBD
4	1	1/2-UNC HEX NUT	
5	1	1/2 WASHER	



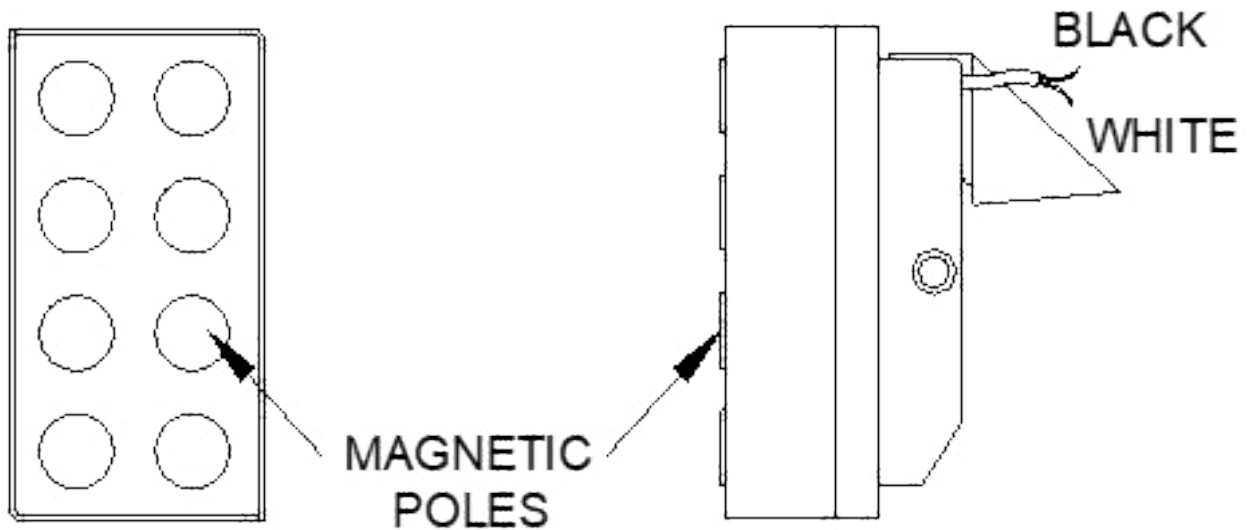
# MAINTENANCE

## Electromagnet Maintenance

Electromagnets require very little maintenance to provide a long useful life. Daily use of a shop towel to wipe the magnet face free of debris, grease, oil, or other foreign matter will ensure years of service life and thousands of safe operations.

The pulling capacity is greatly reduced when the face of the magnet is dirty. Use care when handling the magnet so as not to nick or mar the pulling surface. If the face is heavily worn, lightly surface grind a few thousandths of an inch off the face to clean up the pulling surface.

Never try to remove the electrical wires mounted in the magnet. Should you do this, you will destroy the magnet, and it will require rebuilding or replacement.



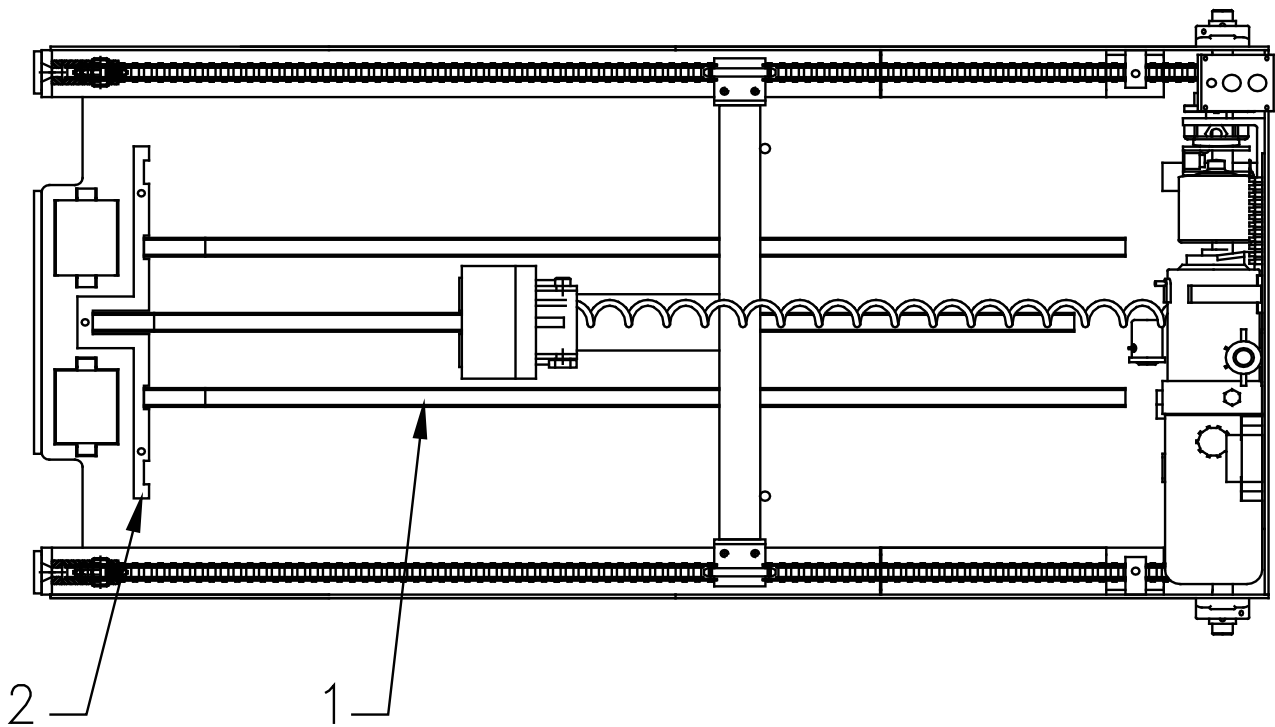
# MAINTENANCE

## Electromagnet Maintenance (cont.)

The three (3) slider strips (**Number 1**) on the floor of the UNI-Tugger will require regular maintenance to provide long and useful service (weekly).

Wipe the top of the slider strips to remove debris, grease, oil and any other foreign material. This will reduce the friction and ensure a long service life with thousands of safe operations.

If the slider strips are heavily worn, replace them. To do this, remove the front slider stop (**Number 2**) and slide the plastic slider strip out. Slide the new slider strip into the slider strip channel and replace front slider stop (**Number 2**).



# MAINTENANCE

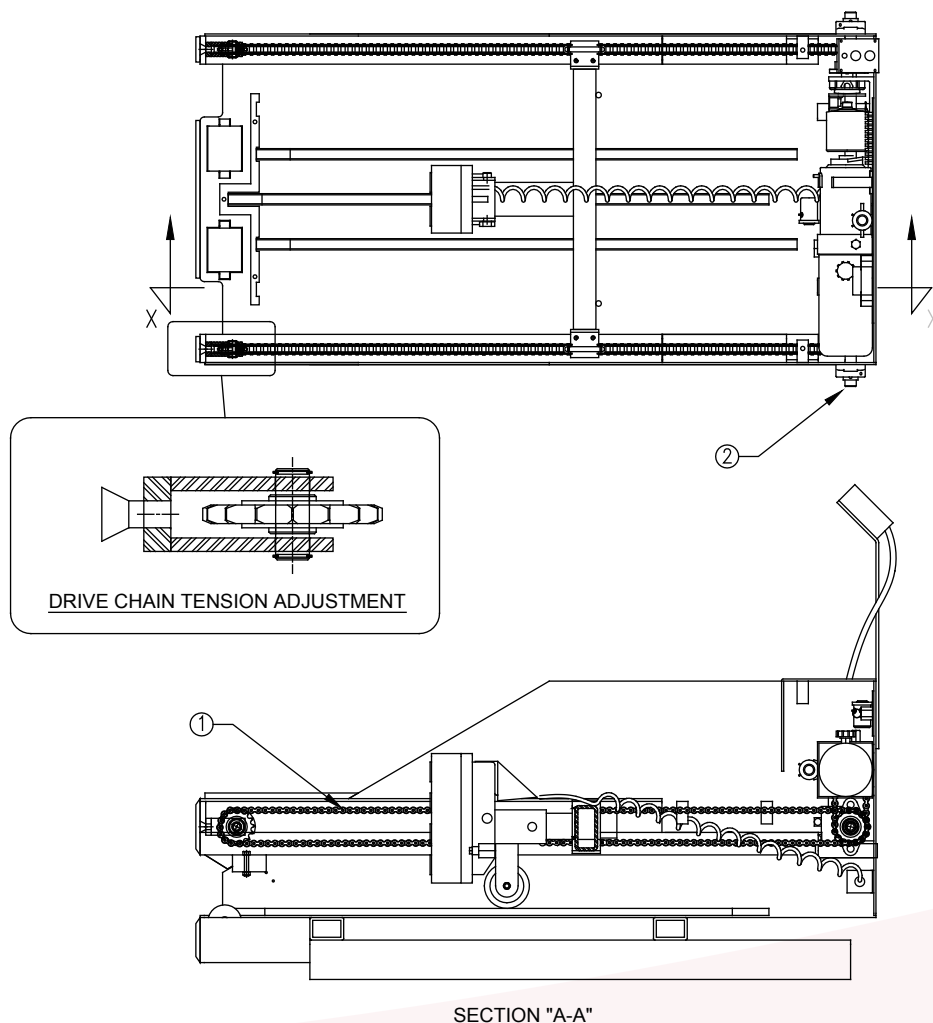
## Drive Mechanism Maintenance

Item	Grease Points	# Points	Lubricant	Part Number
1	Drive Chain	3	Spray into container use brush to apply monthly SCHAEFFERS 200	CBS-3597
2	Bearing	2	Rotanium/LOWSON Blue grease or equivalent 2 Months. P-35000	CBS-1208
	Cleaner		WD-40™ (Local purchase)	
	Antiseize		Loctite™ silver grade (76759)	CBS-4236

### ATTENTION:

- Check monthly and tighten any bolts that have become loose.
- Check the drive chain tension. There should be no more than 1/2" of deflection.
- See Drive Chain Tension Adjustment inset below.
- If excessively slack, remove one full link or 1/2 link and reset tension.

**If the chain is badly worn or stretched, replace it.**



# PACEMAKER & MAGNET

## Pacemaker and Magnet Information



To whom it may concern:

Please accept this letter in response to your request regarding the impact of the electromagnet technology used on all Carney's battery equipment on the proper functioning of a pacemaker. Based on our research, it is Carney Battery Handling's contention that if the Battery Handling Equipment is used as intended and under normal operating conditions, the risk of interference appears negligible, providing the device is using a bipolar sensing programming.

This takes into assumption that the medical device itself is operating as designed.

Based on these studies and the information as hand, we do not see any added risk created by the electromagnet technology used by Carney Battery Handling. However, it is the employee's responsibility to ensure that the pacemaker they have is a current model that is shielded and uses Bipolar leads. Please contact your Carney Battery Handling representative should you have any further questions.

Sincerely,

Roland Mark, P.Eng.

Engineering Manager, Carney Battery Handling



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