# CRANE LIFT TEMPORARY CROSS-ARM ASSEMBLY

ELECTRICAL+INDUSTRIAL | TOOLS+TECHNOLOGIES

TMAC™ THEW & McCANN GROUP

ACTIVE INNOVATION

TQCSI ISO 9001:2015
Quality Certified
AU1313-QC-EC-SC

# CONTENTS

# BEFORE YOU START

## GENERAL PRECAUTIONS

**Read and understand this guide before operating this equipment.**

This guide must be kept for future reference with the product supplied.

The TMAC Crane Lift LV Temporary Cross-arm and associated equipment is to be used only by Qualified Personnel and must be used in conjunction with the user's own working and safety procedures, any applicable OH&S regulations or Energy Networks Association procedures or requirements and without compromising the integrity of the TMAC product supplied.

The Model Work Health and Safety Act 2011 and Work Health and Safety Regulations 2011 require that a written Safe Work Method Statement (SWMS) is produced for work which is determined to be High-risk Construction Work (as defined within s291 of the WHS Regulations 2011).

A Person Conducting a Business or Undertaking (PCBU) must ensure that SWMS are prepared for all High-risk construction work before work is commenced.

Follow all safety instructions contained within this guide.

## QUALIFIED PERSON

A Qualified Person is one who is familiar with the installation, construction, operation and maintenance of the equipment and understands the hazards involved. In addition this person is trained, competent and authorized to undertake the work involved, in accordance with established safety and working procedures including any requirements of OH&S and Energy Networks Association guidelines.

## SAFETY SYMBOLS USED IN THE GUIDE

***Mandatory Action*** **-** This symbol indicates the action must be taken to avoid a hazard. Any information that follows this symbol must be obeyed to avoid possible harm.

***Hazard Identification*** - This is a general warning sign. It is used to alert the user to potential hazards. Any information that follows this symbol must be obeyed to avoid possible harm.

***Prohibition*** **-** This symbol indicates an action that must not be taken or must be stopped. Any information that follows this symbol must be obeyed to avoid possible harm.

# GENERAL INFORMATION

## DESCRIPTION

The TMAC CRANE LIFT LV TEMPORARY CROSS-ARM ASSEMBLY is designed to temporarily support energized/de-energized low voltage conductors and de-energized HV conductors at their points of attachment while a damaged pole, permanent cross-arm or insulators are replaced.

The TMAC CRANE LIFT LV TEMPORARY CROSS-ARM ASSEMBLY incorporates all of the features of the well-known temporary cross-arm assembly together with additional features and equipment. In addition, it incorporates a capability to lift all LV mains conductors simultaneously in order to allow the mains to be raised and held clear of the LV insulators and cross-arm.

## PRODUCT INFORMATION

### 1) Temporary Cross-arm

### 2) Cross-arm Conductor Supports…. (Nylon Conductor Hook – XAS-Insulator)

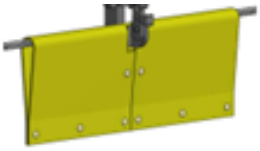
There are four or more such Nylon Conductor Hooks mounted on the cross arm at distances to match conductor spacing of the job to support the conductor.

### 3) Cross-arm Lifting sling attachments (XALC-Clamp)

There are two such supports, one for each sling attachment point.

### 4) Cross-arm lifting sling, 2 metre

### 5) LV Crane Lift Insulating Kit (optional extra)

| | |
|---|---|
|  | **Fastening Clamp**<br>Quantity 8 |
|  | **Overhead Cross-arm Cover**<br>Quantity 4 |
|  | **Overhead Conductor Cover** for use with TMAC Nylon Conductor Hooks<br>Quantity 4 |
|  | **Carry Case**, PVC Yellow with zipper<br>Quantity 1 |

# SAFETY

## WORKING LOAD LIMITS

The TMAC LV Crane Lift Temporary Cross-arm and accessories are designed to;

- support and raise conductors at straight-through poles within the Working Load Limits of the arm
- support conductors at straight-through poles with line deviation angles within the Working Load Limits of the arm and as determined by the SWMS issued for the particular job.

*The Working Load Limit of the TMAC LV Temporary Cross-arm & brackets depends on the number of conductor attachments, and is expressed as a "Working Load Limit per insulator":*

**Cross-arm Crane Lift attachment point WLL;**

- WLL 400kg

**Yellow self-locking lifting hook;**

- WLL 1.1 tonne

**Purple 2 metre Cross-arm lifting sling;**

- WLL 1000kg

**Cross-arm WLL for various configurations;**

| *ARM LENGTH mm* | *NUMBER OF ATTACHMENTS* | *WLL PER ATTACHMENT kgf (kN)* |
|---|---|---|
| 2100 | 4 | 265 (2.6) |
| 2400 | 4 | 225 (2.2) |
| 2700 | 4 | 195 (1.9) |
| 2100 | 5 | 195 (1.9) |
| 2400 | 5 | 180 (1.75) |
| 2700 | 5 | 137 (1.35) |

TMAC rates the CRANE LIFT LV Temporary Cross-arm and accessories for the working load limits as specified. However the user must determine in each case whether the loads applied in the field fall within the working load limits.

## USE ON ENERGIZED LV – ELECTRICAL SAFETEY RULES

For use on live low voltage the TMAC LV Crane Lift Temporary Cross-arm must be used in conjunction with appropriate insulating barriers. During insulator, permanent cross-arm or pole replacement all exposed conductors being immediately worked on must be appropriately insulated prior to commencement of work. The insulating barriers will be individually fitted and adjusted on each exposed conductor and must not be removed until all work on the exposed live LV conductor has been completed.

- **LV Crane Lift Insulating kit is available separately from TMAC**

## LIMITATIONS OF USE

This device together with its accessories are designed to be used for lifting conductors from a straight through intermediate pole, to facilitate the replacement of a pole or conventional cross-arm.

It is not intended for use on other types of construction.

**DO NOT USE ON ENERGIZED HIGH VOLTAGE LINES** – the temporary cross-arm is primarily designed for *use on energized LV (415/240V) lines* (It may be used on de-energized HV lines providing the WLL is not exceeded)

**DO NOT USE ON UNBALANCED LOADS** – this can cause the arm to deviate from the horizontal plane;

**DO NOT USE ON HIGH LOADS** exceeding the WLL.

## BEFORE USE

**DO NOT** use the Crane Lift LV Temporary Cross-arm or accessories if any component is faulty or damaged.

**ALWAYS** Inspect the Crane Lift LV Temporary Cross-arm and accessories for faulty components or damage before use.

## TEMPORARY CROSS-ARM

- Check for surface damage to fiberglass. Clean off loose dirt or grease with a clean dry cloth
- Check condition of the 2 x Plastic Cross-arm bracket stops and black mastic liner. Both should be undamaged and tight-fitting onto the fiberglass
- Check condition of WLL label and ensure it is legible.

## CROSS-ARM NYLON HOOK CONDUCTOR SUPPORTS.

- Check for surface damage to nylon body
- Clean off any loose dirt or grease with a clean dry cloth
- Check there is no damage or distortion to the complete assembly
- Check that the wing nuts turn freely and that there is no damage to the threads
- Check that the conductor capturing device both opens and closes freely.

## CRANE LIFT SLINGS (TWO) AND ATTACHMENTS

- Check the nylon clamp for signs of damage or distortion
- Check the yellow self-locking lifting hook for signs of damage or distortion
- Check that the hinge on the lifting hook only opens when the trigger is depressed
- Check the webbing slings for fraying or other damage
- Check the slings are in lift test date.

# OPERATION

## PRODUCE A SAFE WORK METHOD STATEMENT (SWMS) FOR THE JOB

The Model Work Health and Safety Act 2011 and Work Health and Safety Regulations 2011 require that a written Safe Work Method Statement (SWMS) is produced for work which is determined to be **High-Risk Construction Work** (as defined within s291 of the WHS Regulations 2011).

A Person Conducting a Business or Undertaking (PCBU) must ensure that a SWMS is prepared for all High-risk construction work before work is commenced.

**NEVER** disengage the trigger on the yellow lifting hook while under load as this will allow the hook to come open.

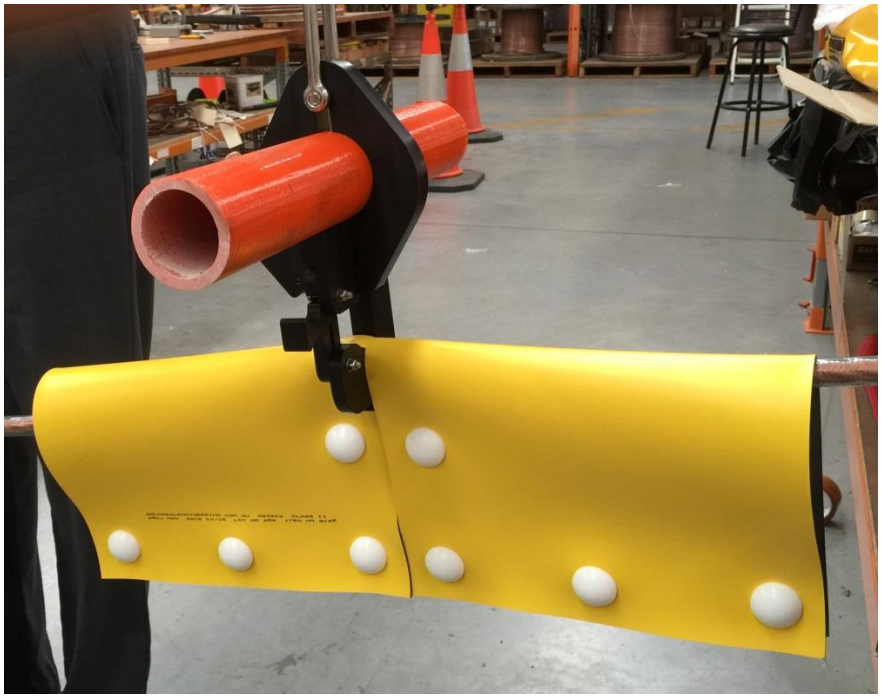
## ASSEMBLE COMPONENTS ONTO THE CROSS-ARM AND ATTACH ASSEMBLY TO CRANE HOOK

1) Check all components are available, and are in serviceable condition; Check the condition of all locking devices, wing nuts, bolts and slings
2) Carry out worksite risk assessment and determine conductor loads to be taken by the LV Temporary Crane Lift Cross-arm
3) Check that the loads are within the capability of the LV Temporary Cross-arm according to the table below. Assemble the Nylon Conductor Hooks and the Nylon Sling Support Attachments together with the Slings onto the cross-arm as shown in the photograph below;

Crane lift temporary cross-arm, complete assembly suspended from crane and ready for attachment of conductors

4) The Crane Lift Temporary Cross-arm assembly is now ready to be hoisted by the crane to the work position and to have the conductors placed in the Nylon Conductor Hooks and the latches closed
5) Carry out the work according to the Safety Work Method Statement (SWMS) developed for the Job and authorized by the PCBU ( Person conducting a Business or Undertaking)
6) A guide rope may be attached to the shackles on the outer insulators to control / minimize the swing of the cross-arm caused by wind or crane movement.

7) All exposed LV live conductors must be insulated prior to commencement of work.
**(LV Crane Lift Insulating Kit is available separately from TMAC)**



TMAC Overhead Conductor Cover shown fitted with Nylon Conductor Hook

**WARNING** - When lifting the Crane Lift Temporary Cross-arm to the work position fully assembled, ensure all wing nuts are fully tightened.

**NEVER** use the Crane Lift Temporary Cross-arm and Accessories in a position where the conductors place mechanical load on the latches of the Nylon Conductor Hook. Ensure the Nylon Conductor Hooks are positioned in such a manner that any side load is supported by the body of the Nylon Conductor Hook.

**NEVER** use the Crane Lift Temporary Cross-arm and accessories in any situation for which they are not intended.

# STORAGE

### Crane lift Temporary Cross-arm

When not in use the Crane Lift Temporary Cross-arm and its Accessories must be stored in the bags supplied.

### Cross-arm Nylon Insulator Hooks and Sling attachments

- When not in use the Nylon Conductor Hooks and Sling Attachments must be stored in the bag supplied. *In storage they must be kept dry at all times*
- Ensure that all items are completely dry before placing them into the bag.

If the Nylon devices are subject to prolonged moisture absorption, this will reduce the overall strength and increase the part dimensions.

# ROUTINE MAINTENANCE & INSPECTIONS

Routine Workshop Maintenance Inspection must be conducted at intervals of no more than 6 months.

## CRANE LIFT TEMPORARY CROSS-ARM

- Check for surface damage to fiberglass. Clean off loose dirt or grease with a clean dry cloth
- Check condition of plastic Crossarm Bracket Stops and black mastic liner. All should be undamaged and tight-fitting onto the fiberglass
- Check condition of WLL label and ensure it is legible
- Clean off excessive dirt and grease with acetone, and allow drying time. Then wipe over with a silicone cloth to reinstate a water-repellent surface
- To ensure the electrical integrity of the cross-arm, tests including wet dielectric tests should be conducted in accordance with the appropriate safety regulations and/or Standards.

## CROSS-ARM ACCESSORIES

- Check for surface damage to Nylon Conductor Hooks and attachments
- Check that the wing nuts turn freely and that there is no damage to the threads
- Check that the conductor capturing device moves freely open and closed
- Clean off excessive dirt and grease with acetone, and allow to dry. Then wipe over with a silicone cloth
- Check the webbing straps for fraying or other damage
- Clean off loose dirt or grease with a clean dry cloth.

# REPAIR

The end user must not repair or modify any component associated with this device without written permission from TMAC.

If repair is required contact TMAC.

**TMAC**

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# DEFECTS / WARRANTY

## DEFECTS

Goods are warranted to be free from defects. Provided they have been used strictly as recommended and subjected only to fair wear and tear, Goods (including parts within) which are found to be defective within 90 days after delivery to the Buyer will be repaired or replaced at the option of the Seller and at its expense. Repair or replacement by the Seller is the exclusive remedies of the Buyer.

## WARRANTY

To the maximum extent permitted by law, the Seller makes no warranties, either express or implied, as to merchantability, fitness for purpose or otherwise with respect to the Goods other than in paragraph above and as required by statute. The Seller is not liable for any prospective profits or special, indirect or consequential damages or any general loss or damage, or for any expense resulting from use by the Buyer or others of defective Goods. The Seller's liability is limited to no more than the sale price of the Goods plus replacement delivery charges. Prior authority for the return of goods is required by the seller.

Please contact the seller by email sales@tmacgroup.com.au, phone 07 3826 6000 or fax 07 3826 6066 for claims related to defective / warranty of goods provided.

FOR THE FULL TERMS AND CONDITIONS PLEASE REFER TO TMAC "STANDARD TERMS OF TRADE"