

## 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.

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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](mailto: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"



# USER GUIDE

## Temporary Crossarm LV

### Four or Five Wire

ELECTRICAL • INDUSTRIAL | TOOLS • TECHNOLOGIES  
**TMAC**<sup>TM</sup>  
THEW & McCANN GROUP

ACTIVE INNOVATION



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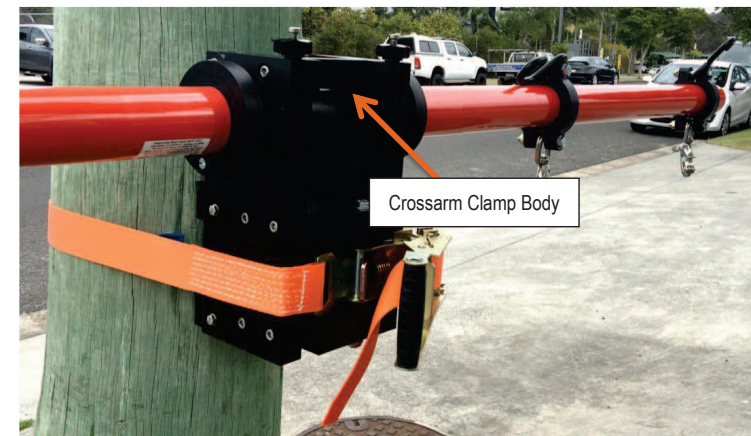
- Check the condition of conductor securing fittings. Bolts should be evenly tightened to 25Nm. Snap shackles and hooks should be free-moving and undamaged.
- If applicable - Check condition of heatshrink coverings and locating rings. All should be undamaged and tight-fitting onto the fibreglass.
- In the workshop, clean off excessive dirt and grease with acetone, and allow to dry thoroughly. Then wipe over with a silicone cloth to reinstate a water-repellent surface. Check all fitting points for condition and fit on the crossarm.

## POLE BRACKET

- Check the Ertalon 6 pole bracket for any damage or distortion.
- Check the four points on the pole side are undamaged.
- Check that the hinge on the clamps swings freely, but is tight without excessive play in the hinge pin.
- Check the ratchet mechanism for firm, positive movement. Lubrication of the ratchet is not necessary, and is not recommended.
- Check the webbing strap for fraying or other damage. If in poor condition, replace the webbing strap.



Ertalon Temporary Crossarm Bracket



Temporary Crossarm with Bracket Attached

10. Transfer all other crossarm attachments, house services, bridging cables etc, to a temporary support, ensuring loads on the temporary crossarm remain balanced;
11. Replace the damaged crossarm, keeping all conductors covered and necessary clearances;
12. Fit the new permanent crossarm with insulators as necessary;
13. Reinstate conductors and other fittings onto the new permanent crossarm. Ensure conductor loads are transferred in pairs to balance loads;
14. Recover the TMAC LV Temporary Crossarm and Pole Bracket, and remove all line covers.

## CROSSARM REPLACEMENT – TERMINATION / STRAIN POLES

### GENERAL NOTES

It is difficult for field workers to accurately estimate the forces on conductors in a long heavy span or a large, tight-strung conductor. Always ensure -

- conductor weights are not excessive;
- conductor tensions are not excessive (particularly for termination poles);
- if at a strain pole, tensions in adjacent spans are known (they may be different)
- there is **no line deviation angle** – not recommended at a strain pole;
- conductor loads are as balanced as possible at all times;
- any imbalance due to the 5<sup>th</sup> wire is controlled at all times; and
- conductors are covered and under control at all times.

### REPLACEMENT OF LV TERMINATION OR STRAIN CROSSARM

1. Set up the work site at the termination pole, either for Elevated Work Platform (cherry picker) or using ladder and platform;
2. Cover all LV conductors with approved line covers;
3. Attach the pole bracket to the pole below and on the opposite side to the line conductors (normally this is on the same side as the arm to be replaced);
4. Using the ratchet tensioner firmly strap the pole bracket against the pole;
5. Place the fibreglass crossarm into the hinged clamp on the pole bracket;
6. Rotate the crossarm to align the snap shackles towards the conductors;
7. Secure the crossarm tightly in the pole bracket hinged clamps;
8. Fit ratchet hoists to each pair of snap shackles (inner pair first is easier) and secure to comealongs;
9. Take conductor tensions evenly on each pair of hoists until the permanent crossarm attachments are slack but securely held to prevent movement (most important on steel crossarms and/or concrete poles);
10. Repeat steps 8 and 9 for the outer pair of conductors, and for the streetlight switchwire;
11. Transfer all other crossarm attachments, house services, bridging cables etc. to a temporary support, ensuring loads remain balanced on the TMAC LV temporary crossarm;
12. Replace the damaged crossarm, keeping all conductors covered and necessary clearances;
13. Reinstate conductors and other fittings onto the new permanent crossarm, ensuring conductor tensions are transferred in pairs to balance loads;
14. Recover the TMAC LV temporary crossarm and pole bracket, and remove all line covers.

## USER MAINTANENCE OF THE TMAC LV TEMPORARY CROSSARM

### FIBREGLASS CROSSARM

- Check for surface damage to fibreglass temporary crossarm. Clean off loose dirt or grease with a clean dry cloth.
- Rub the fibreglass surfaces over with a silicone-impregnated cloth (available from TMAC).

## BEFORE YOU START

### GENERAL PRECAUTIONS



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

The TMAC LV Temporary Crossarm is to be used only by qualified personnel and must be used in conjunction with the user's own working and safety procedures, without compromising the integrity of the TMAC product supplied.

Follow all safety instructions contained within this guide.

### QUALIFIED PERSON

A qualified person is one who is familiar with the installation, construction, operation or maintenance of the equipment and the hazards involved. In addition this person is competent, trained and authorized to undertake the work involved in accordance with established safety and working procedures.

### 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.

## GENERAL INFORMATION

### DESCRIPTION

The TMAC LV Temporary Crossarm is designed to temporarily support energised low voltage conductors at their points of attachment while a damaged permanent crossarm is replaced. The LV Temporary Crossarm can be used on Live LV Powerlines and de-energised HV Powerlines with strict observance to the WLL of the apparatus. It may be used on a wood or a round concrete pole.

## SAFETY

### WORKING LOAD LIMITS (WLL)

The TMAC LV Temporary Crossarm is designed to -

- support conductors at **straight-through poles with small line deviation angle**;
- hold conductor tensions at **termination poles with slack-strung mains** only.

The working load limit of the TMAC LV Temporary Crossarm depends on the length of the crossarm and the number of conductor attachment points, and is expressed as a **“working load limit per attachment point”**:

### WLL PER ATTACHMENT POINT (5-WIRE, BALANCED LOAD)

Description	Crossarm 2.1m – 5 Wire	Crossarm 2.4m – 5 Wire	Crossarm 2.7m – 5 Wire
Arm length	2100mm	2400mm	2700mm
Arm weight	14kg	15kg	15.5kg
Maximum line load (conductor weight / line tension)	195kg/1.9kN	180kg/1.75kN	137kg/1.35kN
Maximum deviation load (conductor pull-off force due to line angle)	40kg (0.39kN) per attachment	40kg (0.39kN) per attachment	40kg (0.39kN) per attachment

A 5-wire or 4-wire line with a smaller streetlight switch-wire may carry heavier loads at each conductor attachment point, but care must be taken to keep the loads as balanced as possible. There will be a small load unbalance always on a 5-wire crossarm, and care should be taken when using it in a strain application to avoid gross load imbalance.

### WLL PER ATTACHMENT POINT (4-WIRE LINE, BALANCED LOADS)

Description	Crossarm 2.1m – 4 Wire	Crossarm 2.4m – 4 Wire	Crossarm 2.7m – 4 Wire
Arm length	2100mm	2400mm	2700mm
Arm weight	13.5kg	14.5kg	15kg
Maximum line load (conductor weight / line tension)	265kg/2.6kN	225kg/2.2kN	195kg/1.9kN
Maximum deviation load (conductor pull-off force due to line angle)	50kg (0.49kN) per attachment	50kg (0.49kN) per attachment	50kg (0.49kN) per attachment

## LIMITATIONS OF USE



**Hazard Identification:- DO NOT** use the TMAC LV Temporary Crossarm on –

- **Energised High Voltage lines** – de-energised lines **ONLY**;
- **Very unbalanced loads**, causing the arm to twist around the pole or kick up & down;
- **High loads**, e.g. long spans, heavy/tight-strung conductors, high wind loads

The LV Temporary Crossarm has been designed to allow the attachment points to be moveable. The LV Temporary Crossarm will arrive pre-set to your configuration of 4 or 5 wires (depending on your order) but each attachment point can now be moved for onsite variances. The key however is that the Crossarm Clamp Body (See image below) once moved **MUST** be **tightened evenly** to a **torque of 25Nm** to prevent any slippage of the fitting. Small deviations are permitted with the improved Crossarm Clamp Body and the side loading is detailed in the WLL tables above. The older LV Temporary Crossarm with PVC bearing surfaces allows the crossarm to sustain loads under a small deviation angle in the line. Older pre-2003 models with heatshrink bearing surfaces should not be used on lines with a deviation angle.

**TMAC rates the LV Temporary Crossarm 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 of the crossarm.**

## CROSSARM REPLACEMENT – IN LINE POLES

### GENERAL NOTES

It is difficult for field workers to accurately estimate the forces on conductors in a long heavy span or a large, tight-strung conductor. The procedure below is the same for Live / De-energised LV or de-energised HV. Always ensure -

- conductor weights are not excessive (intermediate poles);
- conductor tensions are not excessive (termination poles);
- line deviation angle is acceptable;
- conductor loads are as balanced as possible at all times;
- any imbalance due to the 5<sup>th</sup> wire is controlled at all times; and
- conductors are covered and under control at all times.

### REPLACEMENT OF LV INTERMEDIATE (PIN) CROSSARM

1. Set up the work site at the intermediate pole, either for Elevated Work Platform (cherry picker) or using ladder and platform;
2. Cover all LV conductors with approved line covers;
3. Attach the pole bracket to the pole -
  - on the **opposite side** of the pole to the damaged crossarm;
  - if there is **uplift**, place the LV Temporary Crossarm **below** the damaged arm;
  - if **no uplift** (weight force only), place it **above** the damaged arm;
4. Using the ratchet tensioner, firmly strap the pole bracket against the pole;
5. Place the fibreglass crossarm into the hinged clamps on the pole bracket;
6. Rotate the crossarm to align the snap shackles and hooks vertically –
  - hooks hanging down towards the conductors for **weight only**;
  - snap-shackles up towards the conductors for **uplift**;
  - **if in doubt about possible uplift, hold the conductors (up or down) in the snap-shackles**;
7. Secure the crossarm into the pole bracket hinged clamps;
8. Ease each pair of conductors, (inner pair first is easier), away from the damaged crossarm, either by removing the insulator pins or removing the conductor ties, and transfer them into the hooks or shackles on the temporary crossarm;
9. Repeat step 8 for the other pair of conductors, and for the streetlight switch wire – if applicable;