



Fixed Bracket with Temporary Crossarm LV Four or Five Wire

ELECTRICAL+INDUSTRIAL | TOOLS+TECHNOLOGIES

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ACTIVE INNOVATION



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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 –

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**”:

- support conductors at **straight-through poles with small line deviation angle and restricted to load deviation loads as per the WLL table**;
- hold conductor tensions at **termination poles with slack-strung mains** only as per WLL table.

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 per attachment)	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 (2 / 4-WIRE LINE, BALANCED LOADS)

Description	Crossarm 1.2m 2 Wire	Crossarm 2.1m 4 Wire	Crossarm 2.4m 4 Wire	Crossarm 2.7m 4 Wire
Arm length	1200mm	2100mm	2400mm	2700mm
Arm weight	7.25kg	13.5kg	14.5kg	15kg
Maximum line load (conductor weight per attachment)	500kg / 4.9kN	265kg/2.6kN	225kg/2.2kN	195kg/1.9kN
Maximum deviation load (conductor pull-off force due to line angle)	100kg (0.98kN) Per Attachment	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**;
- Excessive unbalanced loads** may cause the arm to twist around the pole or kick up & down;
- High loads**, e.g. long spans, heavy/tight-strung conductors, high wind loads
- Deviation Lines** – Conductor must be placed so the line pulls against the solid part of the holder and not the gate.

The LV Temporary Crossarm has been designed to allow the attachment points to be moveable. The LV Temporary Crossarm will arrive with your configuration of 4 or 5 wires (depending on your order) but each attachment point can now be moved for onsite variances.

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.

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 do not exceed the WLL of the temporary crossarm (intermediate poles);
- conductor tensions do not exceed the WLL of the temporary crossarm (termination poles);
- line deviation load of the temporary crossarm is not exceeded;
- conductor loads are as balanced as possible at all times;
- any imbalance due to the 5th wire is controlled at all times; and
- if working live LV, follow your **Utilities Working Live Procedures**.

CROSSARM REPLACEMENT – IN LINE POLES

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 or platform;
2. If working live LV, follow your **Utilities Working Live Procedures**;
3. Attach all conductor holders onto the temporary crossarm (If being used for the first time);
4. 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;
5. Using the ratchet tensioner, firmly strap the pole bracket against the pole, ensure the ratchet strap is horizontal or angled up;
6. Place the fibreglass crossarm into the hinged clamps on the pole bracket;
7. Align the conductor holders in the desired positions and secure in position;
8. Secure the crossarm into the pole bracket hinged clamps;
9. 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 conductor holder;
10. Repeat step 8 for the other pair of conductors, and for the streetlight switch wire – if applicable;
11. Transfer all other crossarm attachments, house services, bridging cables etc, to a temporary support, ensuring loads on the temporary crossarm remain balanced;
12. Replace the damaged crossarm, keeping all conductors covered and necessary clearances;
13. Fit the new permanent crossarm with insulators as necessary;
14. Reinstate conductors and other fittings onto the new permanent crossarm. Ensure conductor loads are transferred in pairs to balance loads;
15. Recover the TMAC LV Temporary Crossarm and Pole Bracket, and remove all line covers.

CROSSARM REPLACEMENT – TERMINATION / STRAIN POLES

REPLACEMENT OF LV TERMINATION OR STRAIN CROSSARM

1. Set up the work site at the termination pole, either for Elevated Work Platform (EWP) or using ladder and platform;
2. If working live LV, follow your **Utilities Working Live Procedures**;
3. Attach all conductor holders onto the temporary crossarm (If being used for the first time);
4. 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);
5. Using the ratchet tensioner firmly strap the pole bracket against the pole, ensure the ratchet strap is horizontal or angled up;

6. Place the fibreglass crossarm into the hinged clamp on the pole bracket;
7. Align the conductor holders in the desired positions and secure in position;
8. Secure the crossarm tightly in the pole bracket hinged clamps;
9. Fit ratchet hoists to each pair of conductor holders (inner pair first is easier) and secure to comealongs;
10. 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);
11. Repeat steps 8 and 9 for the outer pair of conductors, and for the streetlight switchwire;
12. Transfer all other crossarm attachments, house services, bridging cables etc. to a temporary support, ensuring loads remain balanced on the TMAC LV temporary crossarm;
13. Replace the damaged crossarm, keeping all conductors covered and necessary clearances;
14. Reinstall conductors and other fittings onto the new permanent crossarm, ensuring conductor tensions are transferred in pairs to balance loads;
15. 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).
- Check the condition of conductor securing fittings. All securing knobs and moving part are free to move and securing knobs rotate smoothly with no thread damage.
- 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

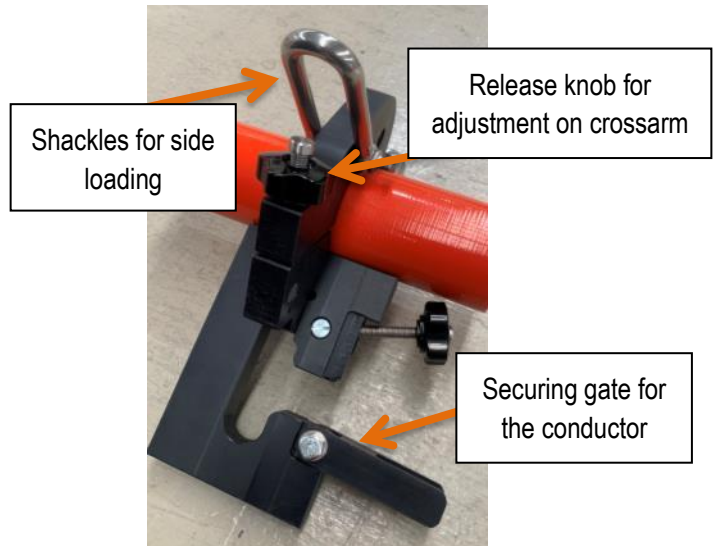
- Check the pole bracket for any damage or distortion.
- Check the four points on the pole side are undamaged.
- Check that the hinge on the clamps swings freely, but is tight without excessive play in the bolted connection.
- Check the ratchet mechanism for firm, positive movement. Lubrication of the 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.

CONDUCTOR HOLDER

- Check all the knobs move freely on the threads;
- Check that the clamp body has not been deformed and tightens onto the temporary crossarm;
- Check the conductor holder for damage to the gate or conductor area;
- Check the gate opens and shuts freely.



Temporary Crossarm Bracket



Conductor Holder



Temporary Crossarm with Bracket Attached



Placing Insulator on PVC Cover



Insulator Installed with Conductor Holder Open

The new insulator designed for the crossarm with PVC covers must be mounted on the PVC areas as it is not designed for mounting on the orange temporary crossarm section. To mount the insulator, loosen both Allen headed bolts and undo one fully. Place the lower section with the conductor holder in position and rotate the top section to match the lower cross dowels. Do the bolts up evenly until the insulator cannot rotate on the PVC cover. Ensure the gaps are even on each side.

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, 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"