Part 4:

Insulator, Cross Arm or Pole Change Procedures

Part 4A:
60 kV Wood Arm Construction

Pin Type Armless Construction TP 60 kV

Insulator, Cross Arm or Pole Change Procedure

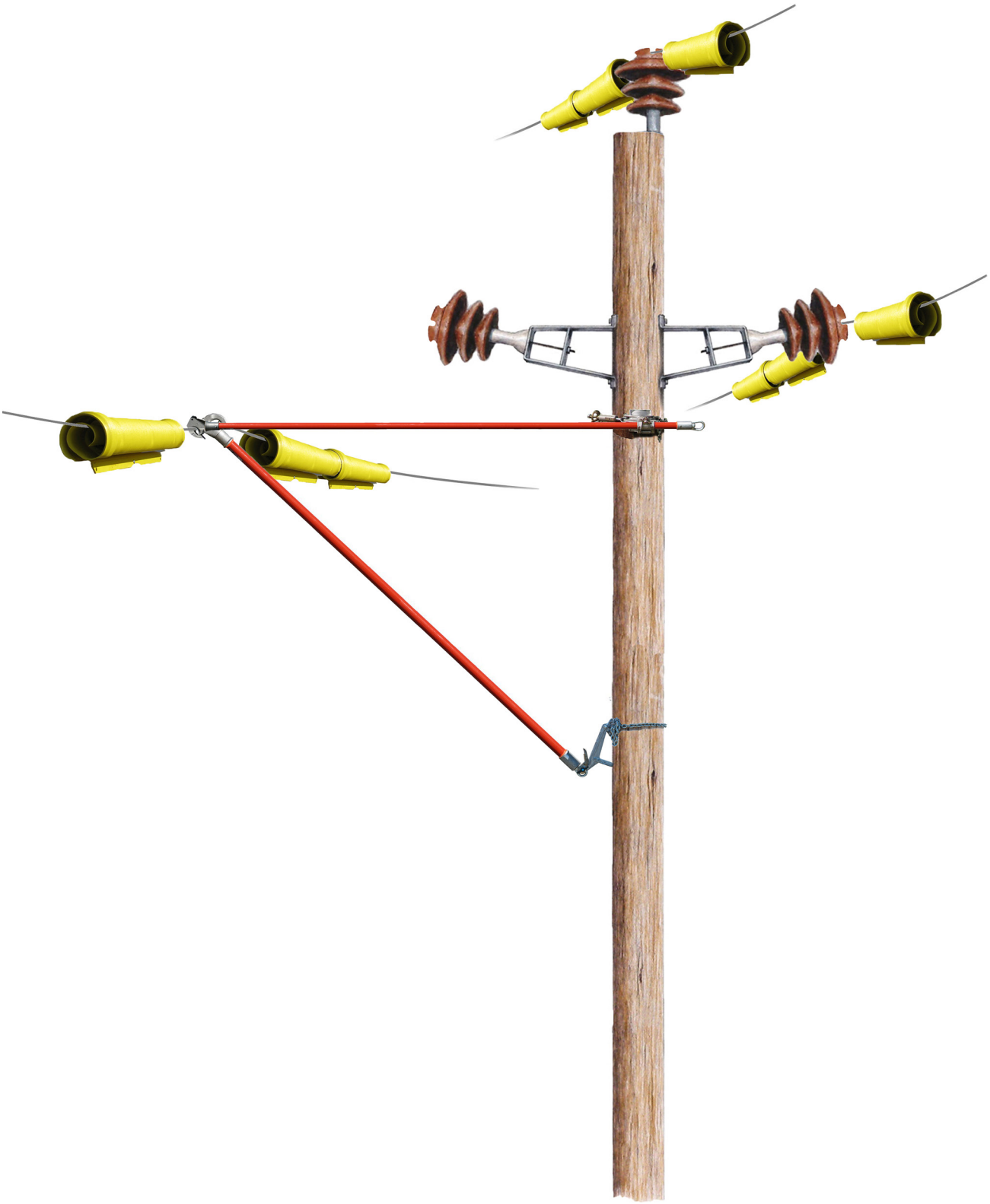
Before removing any conductors from an existing pole, the condition of the adjacent poles, conductors and tie wires must be visually inspected and determined to be in good condition before starting this procedure.

The condition of all involved poles must be determined safe to rig on or climb, if required.

Procedure

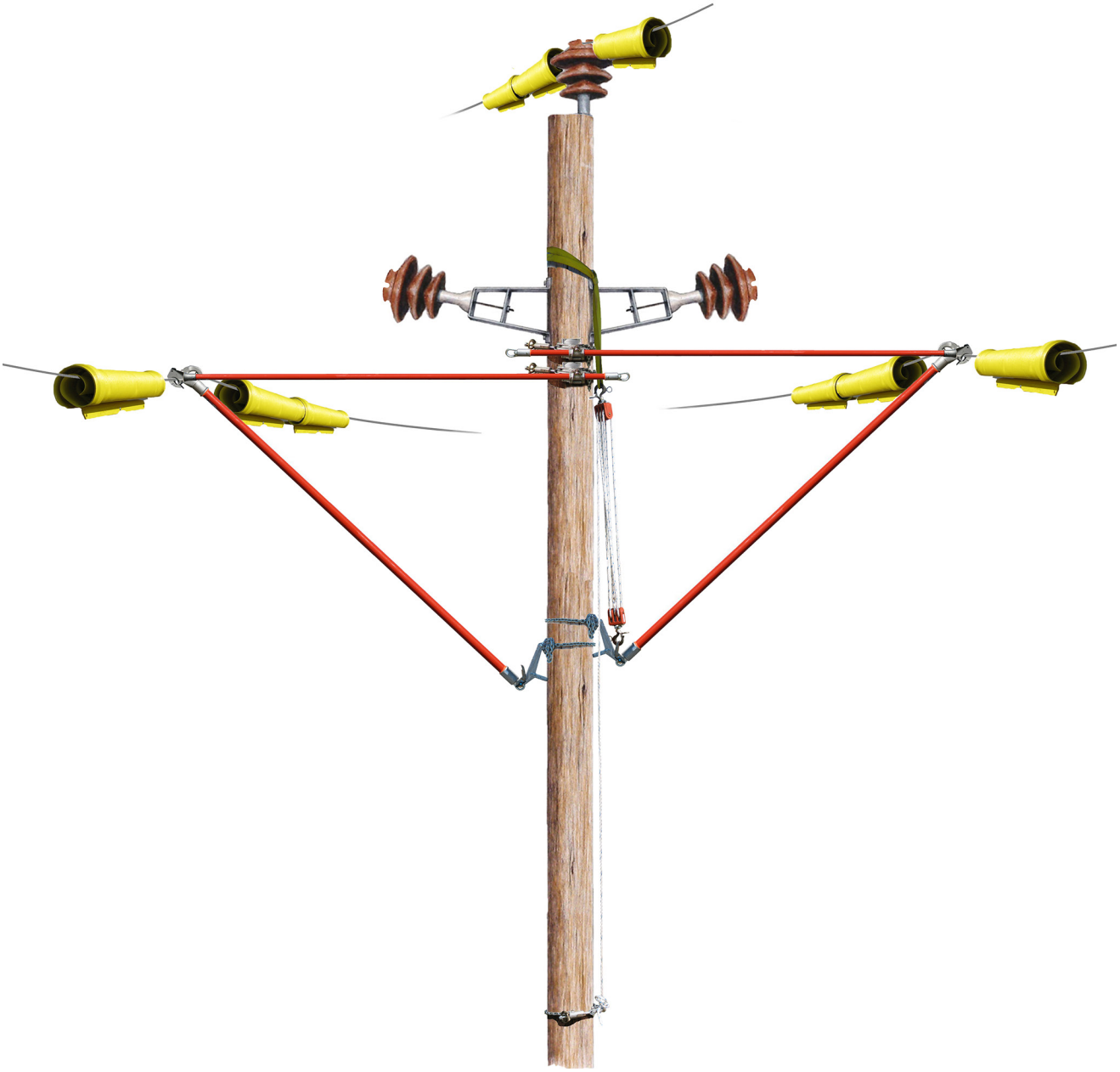
1. If a distribution circuit or conductors are located on the pole, they must be covered and then relocated onto extension arms or completely removed from the existing cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. On the working side of the pole, on the first outside transmission phase to be moved, untie the tie wire. If the tie wire is broken or damaged, the lifting tong and holding tong should be installed before untying the conductor. Protect the arm if necessary with insulated cover.

   While untying the conductor, any excess tie wire or preform tie should be cut off to prevent it from making contact with the insulator mounting bracket, pole top, tools or other equipment.
3. Attach the head of a 2-1/2" x 10-foot lifting tong to the conductor with the jaw opening facing the pole.
4. Attach a lever lift to the swivel ring on the lifting tong. Swing the lever lift and lifting tong butt to the pole and attach the lever lift to the pole in line with the wire tong attached to the conductor.



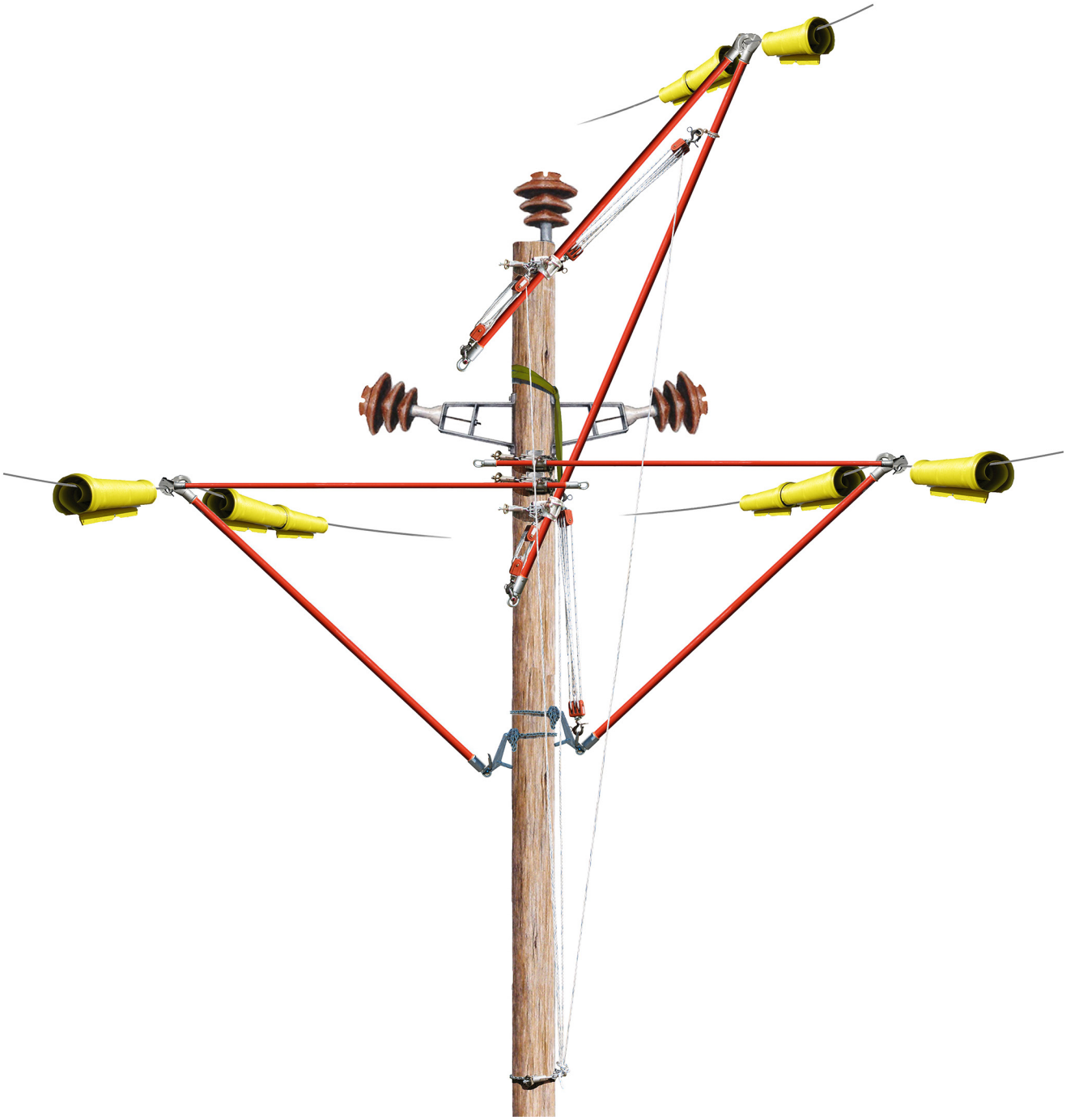
Pin Type Armless Construction — TP 60 kV

5. Attach a 1-1/2" wire tong saddle to the pole face on the working side of the pole approximately 3 feet below the bottom bolt of the arm attachment location.
6. Attach a 1-1/2" x 10-foot holding tong to the conductor alongside the lifting tong with the jaw opening facing down. Put the holding tong in the wire tong saddle clamp. Close the clamp, slide the holding tong out slightly and tighten the wire tong saddle clamp.
7. Install a nylon sling on the pole about 1 foot below the saddle. Place a set of rope blocks in the sling and attach the other end of the rope blocks to the clevis on the lever lift. Have the ground help install a rope snubbing bracket on the pole approximately 4 feet above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the line in the rope snubbing bracket.
8. If setting a new pole, the conductor should be covered before removal from the insulator. The cover should be placed on the conductor on the side of the old pole where the new pole will be located.
9. While one lineman is using a universal stick to steady the conductor, another lineman can finish untying the conductor from the insulator. Any excess tie wire or preform tie should be cut off to prevent it from making contact with the mounting bracket, pole top, tools or other equipment.
10. When the conductor is completely untied, loosen the wire tong saddle clamp on the holding tong and have the ground help pull the rope blocks fall line attached to the lever lift. Push the holding tong out away from the pole slowly while the ground help raises the conductor approximately 12 inches. Continue guiding the conductor away from the pole until adequate working clearance is achieved. The holding tong can be pushed through the wire tong saddle until it can travel no further due to the butt ring casting.
11. The holding wire tong saddle clamp should then be securely tightened. The strain on the rope blocks can be removed and the rope blocks slacked to facilitate their removal.
12. On the opposite outside conductor, untie and remove the tie wire or preform tie on the working side of the pole. Install a lifting tong and lever lift on this phase. Remove the rope blocks from the opposite phase sling. Rotate the sling for use on the conductor being moved and attach the rope blocks to the sling and to the newly installed lever lift clevis.



13. Install a second 1-1/2" wire tong saddle just below the first wire tong saddle on the pole face. Attach a holding tong to the conductor and place it in the wire tong saddle clamp. Close the clamp and slide the holding tong out slightly and tighten the wire tong saddle clamp.

14. Install a conductor cover if required and completely untie the conductor from the insulator and move the phase out to a safe working location. Securely tighten the wire tong saddle clamp and slack the rope blocks.
15. Install a pole cover on the top of the pole. On the center phase, untie and cut the tie wire or preform tie from the conductor on the working side of the pole. Remove excess tie material.
16. Attach a 2-1/2" wire tong saddle with a 4-inch clamp extension on the working side of the pole just above the insulator brackets. Install a 2-1/2" x 12-foot holding tong on the center conductor. Put the holding tong in the wire tong saddle clamp and tighten the clamp. Install a chain hoist between the holding tong saddle clevis and the holding tong swivel butt ring.
17. Attach a second 2-1/2" wire tong saddle on the pole just above the lever lifts. Install a 2-1/2" x 14-foot lifting tong with a wire tong band to the center conductor and then slide the lifting tong into the wire tong saddle clamp. Tighten the clamp.
18. Hang a set of rope blocks between the top 2-1/2" wire tong saddle clevis and the lifting tong band. Install another set of rope blocks between the lifting tong saddle clevis and the swivel ring on the butt of the lifting tong.
19. Have the ground help remove all slack from the fall line of the rope blocks and secure it in a rope snubbing bracket. While the ground help is holding the strain on the fall line, both saddle clamps can be loosened just enough to allow the holding and lifting tongs to slide through them. Install at least one piece of cover on the conductor if a new pole will be set. Have the ground help put slight upward pressure on the lifting tong.
20. While one lineman is using a universal stick to steady the conductor, another lineman can finish untying the conductor from the insulator. Any excess tie wire or preform tie should be cut off to prevent it from making contact with the mounting bracket, pole top, tools or other equipment.
21. The conductor can now be lifted free of the insulator by pulling on the fall line of the rope blocks and taking up on the chain hoist. Have the ground help raise the conductor off of the insulator while taking up on the chain hoist until adequate working clearance is achieved. Have the ground help secure the rope blocks fall line to the rope snubbing bracket. Tighten the two wire tong saddle clamps securely.



22. With all three conductors removed from the pole and securely supported, the insulators and brackets can be removed safely. A new pole can now be installed if required.
23. When all replacement work is complete, move the conductors back into position or on to a new pole by reversing the above procedure.

Triangular Pin Type Construction TPA 60 kV

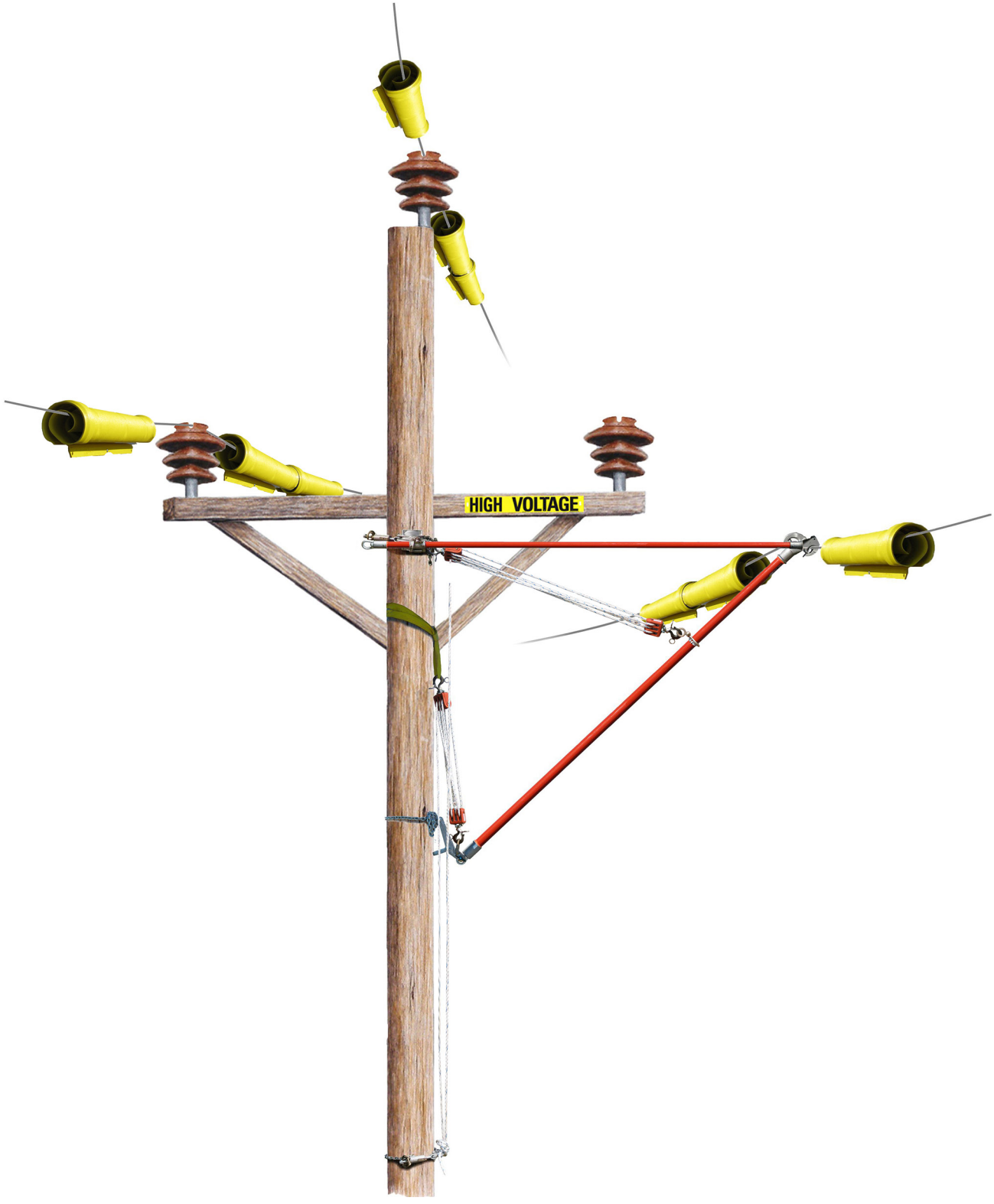
Insulator, Cross Arm or Pole Change Procedure

Before removing any conductors from an existing pole, the condition of the adjacent poles, conductors and tie wires must be visually inspected and determined to be in good condition before starting this procedure.

The condition of all involved poles must be determined safe to rig on or climb, if required.

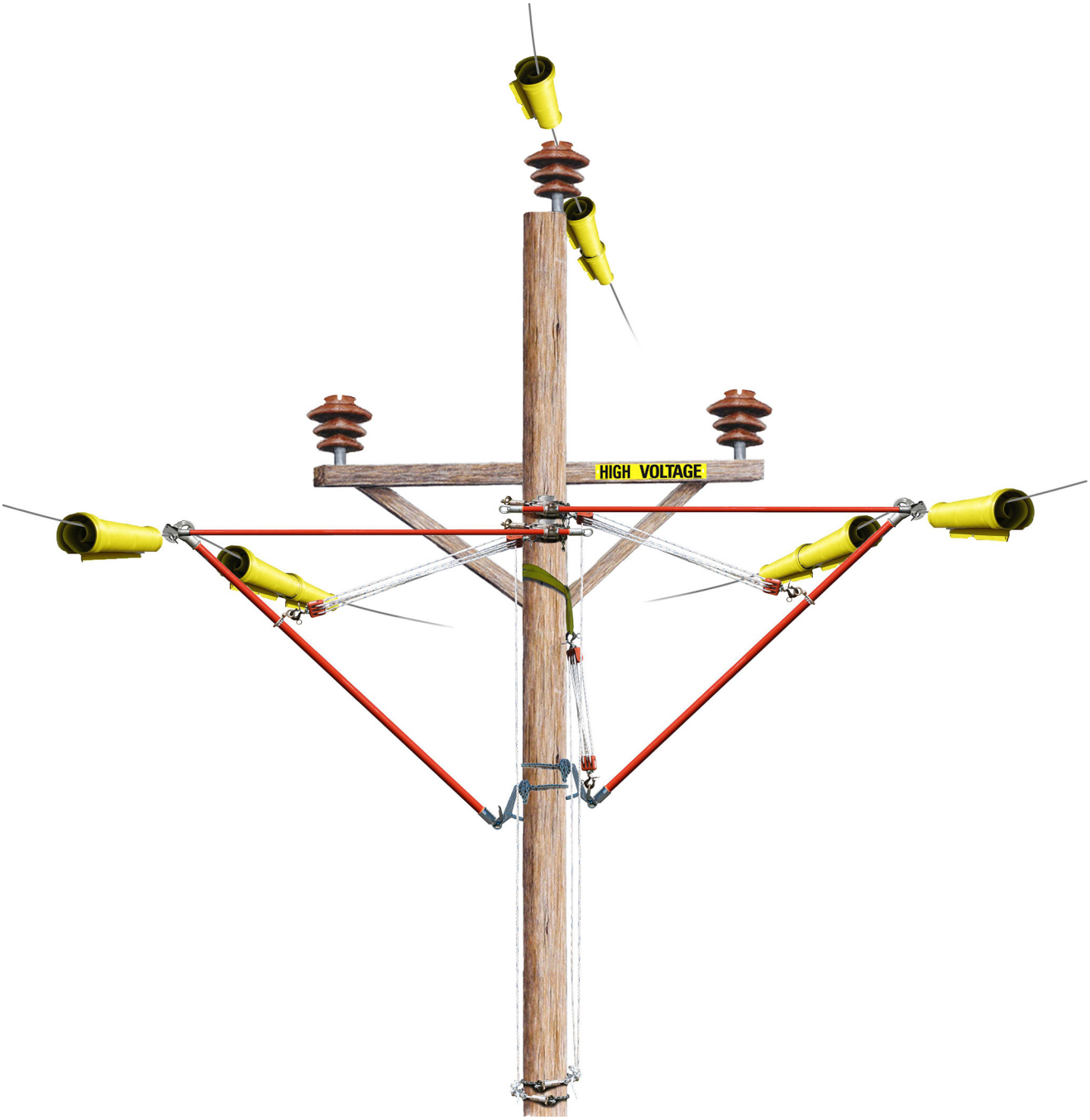
Procedure

1. If a distribution circuit or conductors are located on the pole, they must covered and then relocated onto extension arms or completely removed from the cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. On the working side of the pole, on the first outside transmission phase to be moved, untie the tie wire. If the tie wire is broken or damaged, the lifting tong and holding tong should be installed before untying the conductor. Protect the arm if necessary with insulated cover. While untying the conductor, any excess tie wire or preform should be cut off to prevent it from making contact with the cross arm, pole top, tools or equipment.
3. Attach a wire tong band to the 2-1/2" x 10-foot lifting tong 36 inches from the head of the tong.
4. Attach the head of the lifting tong to the conductor with the jaw opening facing the pole.
5. Attach a lever lift to the swivel ring on the wire tong. Swing the lever lift and lifting tong butt to the pole and attach to the pole in line with the conductor.



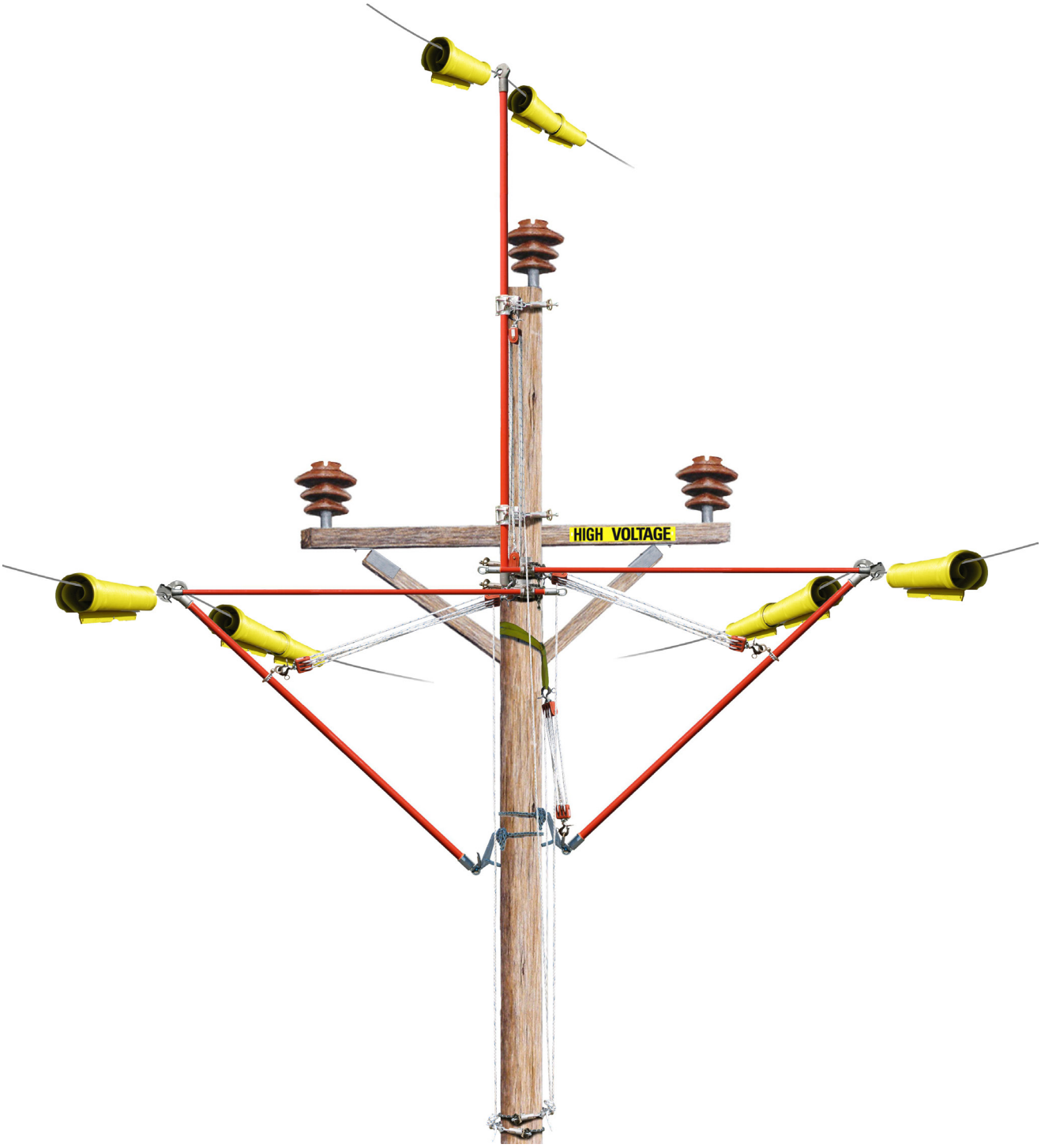
Triangular Pin Type Construction — TPA 60 kV

6. Attach a 1-1/2" wire tong saddle to the pole face opposite the cross arm just above where the arm braces are attached to the pole.
7. Attach a 1-1/2" x 10-foot holding tong to the conductor alongside the lifting tong with the jaw opening facing down. Put the holding tong in the wire tong saddle clamp. Close the clamp, slide the holding tong out slightly and tighten the wire tong saddle clamp.
8. Install a nylon sling on the pole about 3 feet below the saddle. Place a set of rope blocks in the sling and attach the other end of the rope blocks to the clevis on the lever lift. Have the ground help install a rope snubbing bracket on the pole approximately 4 feet above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the line in the rope snubbing bracket.
9. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band attached to the lifting tong. Have the ground help remove the slack from the fall line and secure the line in the rope snubbing bracket.
10. If setting a new pole, the conductor should be covered before removal from the insulator. The cover should be placed on the conductor on the side of the old pole where the new pole will be located.
11. While one lineman is using a universal stick to put downward pressure on the conductor to hold it in the insulator groove, another lineman can finish untying the conductor from the insulator. Any excess tie wire or preform should be cut off to prevent it from making contact with the cross arm, tools or equipment.
12. When the conductor is completely untied, loosen the wire tong saddle clamp on the holding tong and have the ground help pull the rope blocks fall line attached to the lever lift and raise the conductor approximately 12 inches.
13. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong and guide the conductor away from the pole until adequate working clearance is achieved. The holding tong can be pushed through the saddle until it can travel no further due to the butt ring casting. The holding wire tong saddle clamp should then be securely tightened. Both sets of rope blocks can be slacked.



14. On the opposite outside conductor, untie and remove the tie wire or preform tie on the working side of the pole. Install a lifting tong and lever lift on this phase. Remove the rope blocks from the opposite phase sling. Rotate the sling for use on the conductor being moved and attach the rope blocks to the sling and to the newly installed lever lift clevis.

15. Install a second 1-1/2" wire tong saddle just below the saddle on the pole face. Attach a holding tong to the conductor and place it in the wire tong saddle clamp. Close the clamp and slide the holding tong out slightly and tighten the wire tong saddle clamp. Install a set of rope blocks between the new saddle and the new lifting tong band. Install a conductor cover if needed and completely untie the conductor from the insulator and move the phase out to a safe working location. Securely tighten the saddle clamp and slack both sets of blocks.
16. Install a pole cover on the top of the pole. On the center phase, untie and cut the tie wire or preform tie from the conductor on the working side of the pole. Remove excess tie material.
17. Attach a 2-1/2" wire tong saddle with a 4-inch clamp extension on the working side of the pole just above the cross arm. Attach a 2-1/2" x 16-foot lifting tong to the center conductor and then slide the lifting tong into the wire tong saddle clamp. Tighten the wire tong clamp.
18. Take a second 2-1/2" wire tong saddle with 4-inch extension clamp and clamp it loosely on the lifting tong at least 6 feet below the first saddle. Now attach the wire tong saddle to the pole face so that the wire tong is plumb and parallel with the pole. Tighten the wire tong clamp.
19. Install a set of rope blocks between the wire tong saddle clamp clevis on the top saddle and the swivel ring on the bottom of the wire tong. Have the ground help remove all slack from the fall line of the rope blocks and secure it in a rope snubbing bracket. While the ground help is holding the strain on the fall line, both saddle clamps can be loosened just enough to allow the lifting tong to slide through them. Install at least one piece of cover on the conductor if a new pole will be set.
20. While one lineman is using a universal stick to put downward pressure on the conductor to hold it in the insulator groove, another lineman can untie the conductor from the insulator. While untying the conductor, any excess tie wire or preform tie should be cut off to prevent it from making contact with the mounting bracket or pole top.
21. The conductor can now be lifted free of the insulator from the ground by pulling on the fall line of the rope blocks. Have the ground help raise conductor off the insulator until adequate working clearance is achieved. Have the ground help secure the rope blocks fall line to the rope snubbing bracket and tighten the two wire tong saddle clamps securely.



22. With all three conductors removed from the pole and securely supported, the insulators, pole top bracket and cross arm can be removed safely. A new pole can now be installed if required.

23. When all replacement work is complete, move the conductors back into position or on to a new pole by reversing the above procedure.

Triangular Post Type Construction TAP 60 kV

Insulator, Cross Arm or Pole Change Procedure

Before removing any conductors from an existing pole, the condition of the adjacent poles, conductors and attachments must be visually inspected and determined to be in good condition before starting this procedure.

The condition of all involved poles must be determined safe to rig on or climb, if required.

Procedure

1. If a distribution circuit or conductors are located on the pole, they must be covered and then relocated onto extension arms or completely removed from the cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, the new pole location should be determined and properly located armor rod should be installed on all transmission phase conductors before removing them from the old pole.
2. Attach a wire tong band to a 2-1/2" x 10-foot lifting tong 36 inches from the head of the tong.
3. On the working side of the pole, on the first bottom transmission phase to be moved, attach the head of the lifting tong to the conductor with the jaw opening facing the pole.
4. Attach a lever lift to the swivel ring on the wire tong. Swing the lever lift and lifting tong butt to the pole and attach the lever lift to the pole in line with the wire tong attached to the conductor.
5. Attach a 1-1/2" wire tong saddle to the pole face on the working side of the pole between the cross arm and the cross arm brace attachment point.

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Triangular Post Type Construction — TAP 60 kV

6. Attach a 1-1/2" x 10-foot holding tong to the conductor alongside the lifting tong with the jaw opening facing down. Put the holding tong in the wire tong saddle clamp. Close the clamp, slide the holding tong out slightly and tighten the wire tong saddle clamp.
7. Install a nylon sling on the pole just below the saddle. Place a set of rope blocks in the sling and attach the other end of the rope blocks to the clevis on the lever lift. Have the ground help install a rope snubbing bracket on the pole approximately 4 feet above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the line in the rope snubbing bracket.
8. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band attached to the lifting tong. Use a shotgun stick to hang the rope blocks on the wire tong band. Have the ground help remove the slack from the fall line and secure the line in the rope snubbing bracket.
9. If setting a new pole, the conductor should be covered before removal from the insulator. The cover should be placed on the conductor on the side of the old pole where the new pole will be located.
10. While one lineman is using a universal stick mounted ratchet wrench with a deep well socket to loosen the bolts on the conductor clamp, the other lineman utilizing another stick can rotate the keeper piece and free the conductor.
11. When the conductor is free, loosen the wire tong saddle clamp on the holding tong and have the ground help pull the rope blocks fall line attached to the lever lift and raise the conductor approximately 12 inches.
12. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong and guide the conductor away from the pole until adequate working clearance is achieved. The holding tong can be pushed through the saddle until it can travel no further due to the butt ring casting. The holding wire tong clamp should then be securely tightened. Both sets of rope blocks can be slacked.
13. On the opposite bottom phase conductor install a lifting tong with wire tong band and lever lift on the conductor. Remove the rope blocks from the opposite phase sling. Rotate the sling for use on the conductor being moved and attach the rope blocks to the sling and to the newly installed lever lift clevis.

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14. Install a second 1-1/2" wire tong saddle with 4-inch extension just below the cross arm on the pole face. Attach a 1-1/2" x 10-foot holding tong to the conductor alongside the lifting tong. Put the holding tong in the wire tong saddle clamp. Close the clamp, slide the holding tong out slightly and tighten the wire tong saddle clamp.

15. Install another set of rope blocks between the new saddle and the lifting tong band. Have the ground help remove the slack from both sets of rope blocks and secure the fall lines in a rope snubbing bracket.
16. Install a conductor cover if needed and loosen the bolts on the conductor clamp. When the keeper piece can be rotated, working with the ground help, remove the conductor from the insulator and move the phase out away from the pole until adequate working clearance is achieved. Securely tighten the wire tong saddle clamp and slack both sets of rope blocks.
17. Install a pole top cover on the top of the pole.
18. Attach a 2-1/2" wire tong saddle on the opposite side of the pole about 1 foot below the center phase insulator mounting bracket.
19. Install a 2-1/2" x 14-foot wire tong on the center conductor and slide it into the wire tong saddle clamp and hand tighten the clamp.
20. Install a chain hoist between the wire tong saddle clevis and the swivel ring on the butt of the wire tong. Remove all slack from the hoist.
21. Install a second 2-1/2" wire tong saddle on this pole face just below the cross arm. Install a 16-foot wire tong with a wire tong band mounted 36 inches from the head on the conductor. Put the lifting tong pole in the wire tong saddle clamp and close. Hand tighten the wire tong saddle clamp.
22. Install a set of rope blocks between the saddle clamp clevis and the swivel ring on the bottom of the lifting tong.
23. Install a nylon sling on the pole just above the top wire tong saddle. Hang a set of rope blocks from the sling and attach the other end to the wire tong band mounted on the lifting tong. Have the ground help remove all slack from the fall lines of both sets of rope blocks and secure them in a rope snubbing bracket. Install at least one piece of cover on the conductor if a new pole will be set.
24. Loosen the bolts on the conductor clamp and rotate the keeper piece to free the conductor.
25. Loosen both 2-1/2" saddle clamps slightly.
26. The conductor can now be lifted free of the insulator by pulling on the fall line of the lifting tong rope blocks and taking up on the hoist. By working both sets of rope blocks and the chain hoist, the conductor can be moved up and out away from the

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pole until adequate working clearance from the pole is achieved. Have the ground help secure the rope blocks fall lines to the rope snubbing bracket and then tighten the two wire tong saddle clamps.

27. With all three conductors removed from the pole and securely supported, the insulators and brackets can be removed safely. A new pole can now be installed if required.

28. When all replacement work is complete, move the conductors back into position or on to a new pole by reversing the above procedure.

Flat Pin Type Construction TPAF 60 kV

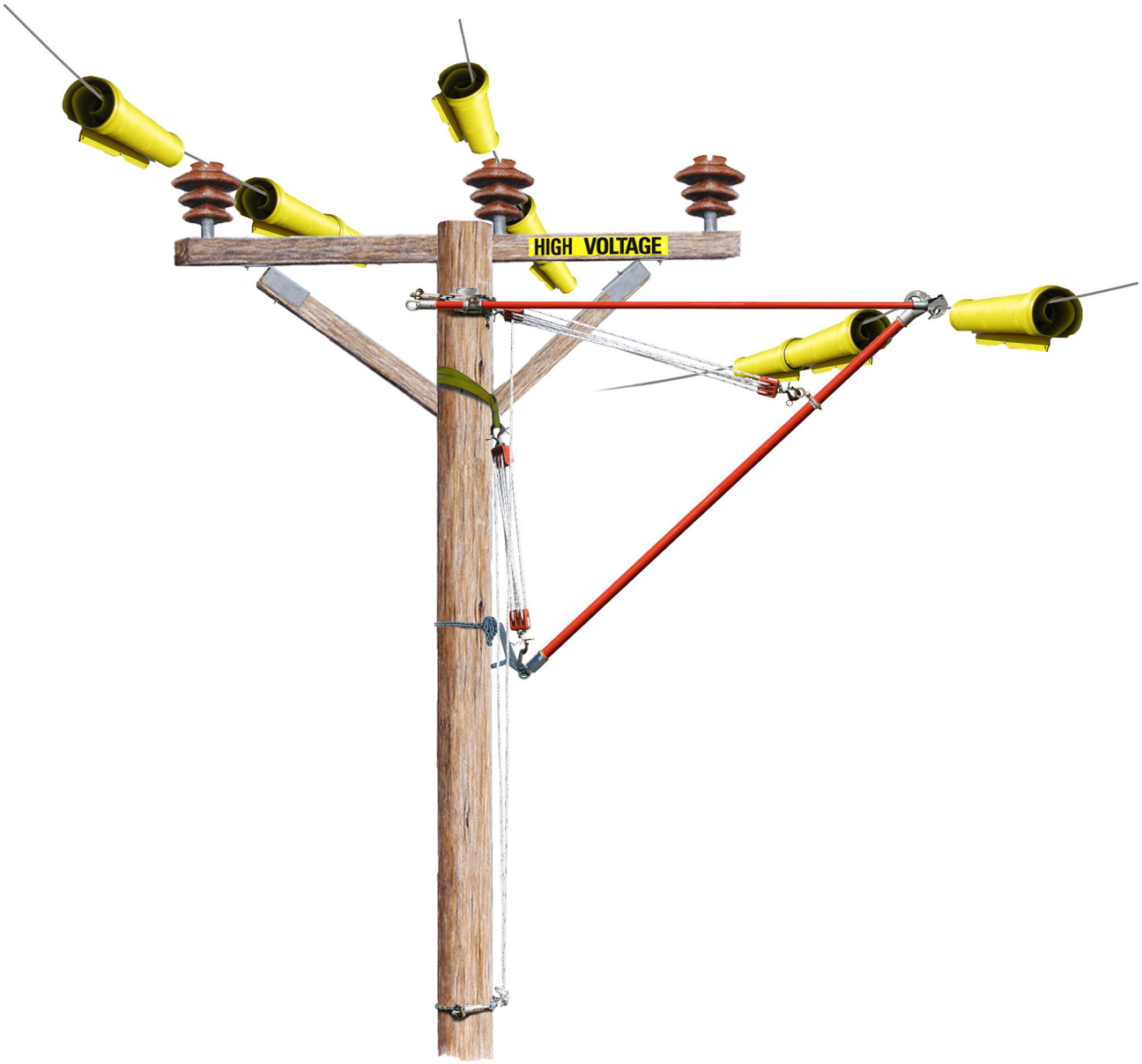
Insulator, Cross Arm or Pole Change Procedure

Before removing any conductors from an existing pole, the condition of the adjacent poles, conductors and tie wires must be visually inspected and determined to be in good condition before starting this procedure.

The condition of all involved poles must be determined safe to rig on or climb, if required.

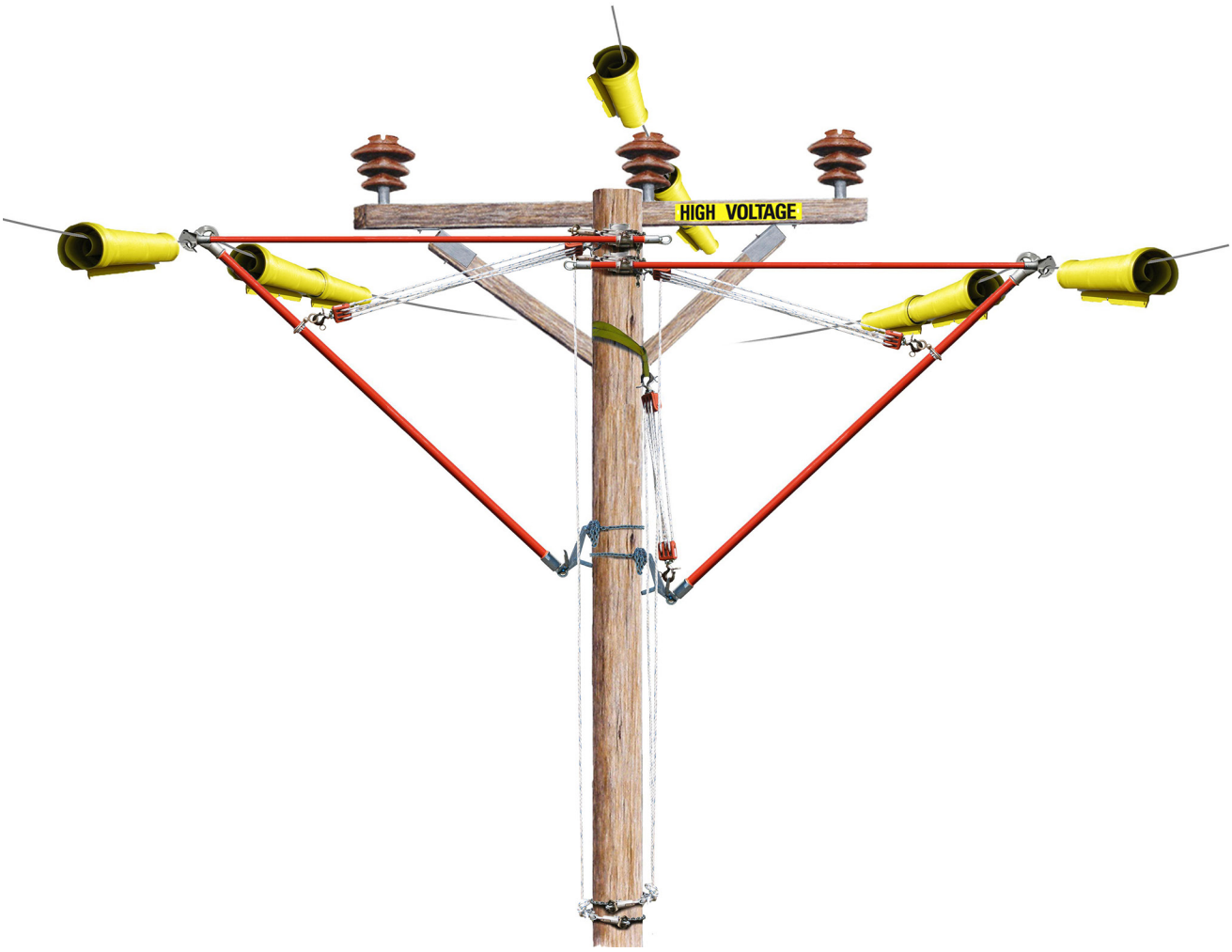
Procedure

1. If a distribution circuit or conductors are located on the pole, they must covered and then relocated onto extension arms or completely removed from the cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. On the working side of the pole, on the first outside transmission phase to be moved, untie the tie wire. If the tie wire is broken or damaged, the lifting tong and holding tong should be installed before untying the conductor. Protect the arm if necessary with insulated cover. While untying the conductor, any excess tie wire or preform tie should be cut off to prevent it from making contact with the cross arm, pole top, tools or equipment.
3. Attach a wire tong band to a 2-1/2" x 10-foot lifting tong, 36 inches from the head of the tong.
4. Attach the head of the lifting tong to the conductor with the jaw opening facing the pole.
5. Attach a lever lift to the swivel ring on the lifting tong. Swing the lever lift and lifting tong butt to the pole and attach the lever lift to the pole in line with the wire tong attached to the conductor.



Flat Pin Type Construction — TPAF 60 kV

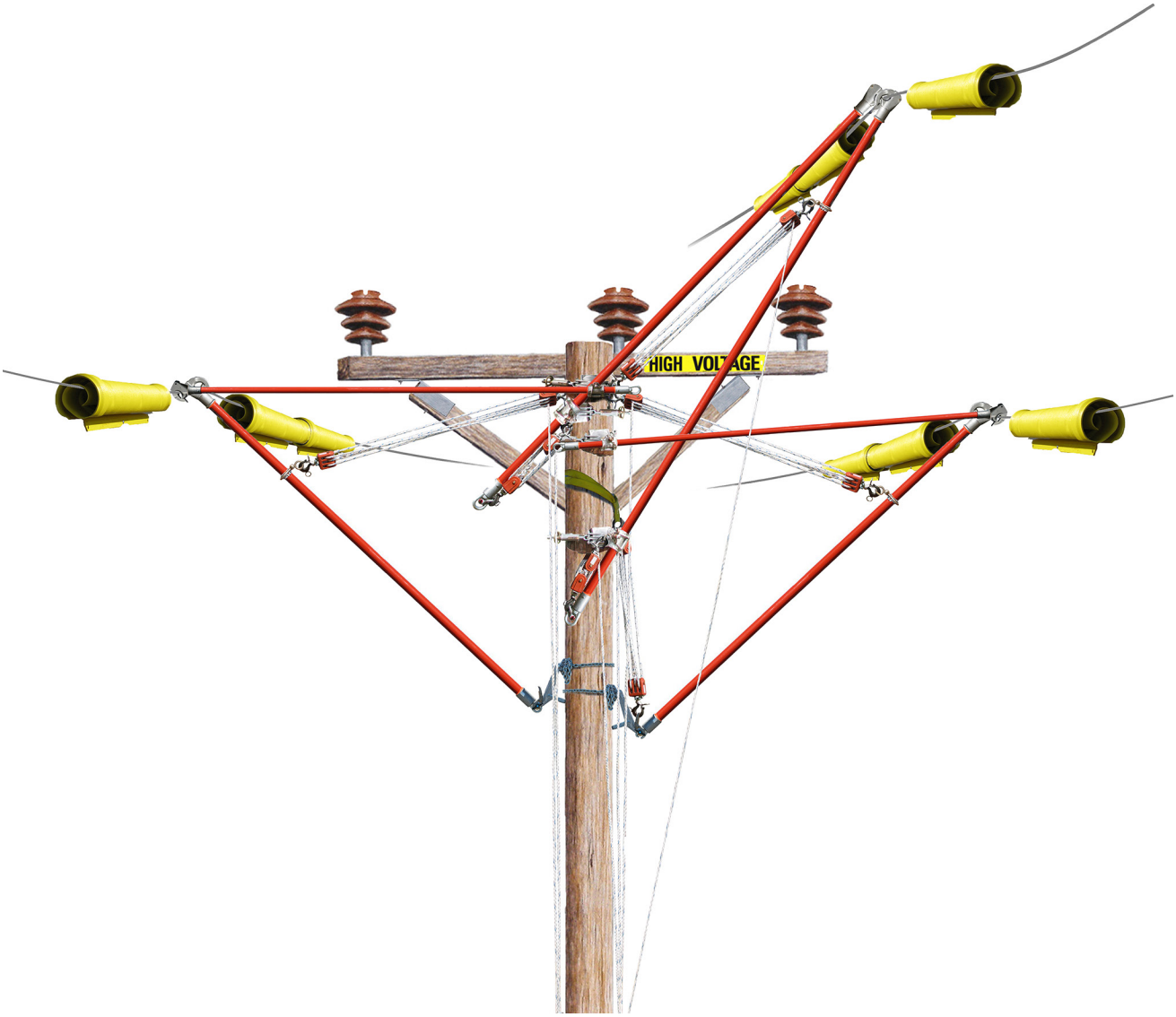
6. Attach a 1-1/2" wire tong saddle to the pole face opposite the cross arm just above where the arm braces are attached to the pole.
7. Attach a 1-1/2" x 10-foot holding tong to the conductor alongside the lifting tong with the jaw opening facing down. Put the holding tong in the wire tong saddle clamp. Close the clamp, slide the holding tong out slightly and tighten the wire tong saddle clamp.
8. Install a nylon sling on the pole just above the wire tong saddle. Place a set of rope blocks in the sling and attach the other end of the rope blocks to the clevis on the lever lift. Have the ground help install a rope snubbing bracket on the pole approximately 4 feet above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the line in the rope snubbing bracket.
9. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band attached to the lifting tong. Have the ground help remove the slack from the fall line and secure the line in the rope snubbing bracket.
10. If setting a new pole, the conductor should be covered before removal from the insulator. The cover should be placed on the conductor on the side of the pole where the new pole will be located.
11. While one lineman is using a universal stick to put downward pressure on the conductor to hold it in the insulator groove, another lineman can finish untying the conductor from the insulator. Any excess tie wire or preform should be cut off to prevent it from making contact with the cross arm, tools or equipment.
12. When the conductor is completely untied, loosen the saddle clamp on the holding tong and have the ground help pull the rope blocks fall line attached to the lever lift and raise the conductor approximately 12 inches.
13. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong and guide the conductor away from the pole until adequate working clearance is achieved. The holding tong can be pushed through the wire tong saddle until it can travel no further due to the butt ring casting. The holding wire tong clamp should then be securely tightened. Both sets of rope blocks can then be slacked.
14. On the opposite outside conductor, untie and remove the tie wire or preform tie on the working side of the pole. Install a lifting tong and lever lift on this phase. Remove the rope blocks from the opposite phase sling. Rotate the sling for use on



the conductor being moved and attach the rope blocks to the sling and to the newly installed lever lift clevis.

15. Install a second 1-1/2" wire tong saddle just below the first wire tong saddle on the pole. Attach the holding tong to the conductor and install a set of rope blocks between the new saddle and the lifting tong band. Install a conductor cover if needed and completely untie the conductor from the insulator and move the phase out to a safe working location. Securely tighten the saddle clamp and slack both sets of blocks.

16. On the center phase, untie and cut the tie wire or preform tie from the conductor on the working side of the pole. Remove excess tie material.
17. Attach a 2-1/2" wire tong saddle with 4-inch extension on the working side of the pole approximately 2 feet above the lever lifts. Attach a 2-1/2" x 14-foot lifting tong to the center conductor and then put the lifting tong in the wire tong saddle clamp. Pull down on the lifting tong slightly to hold the conductor in the insulator groove. Tighten the wire tong clamp.
18. Install a second 2-1/2" wire tong saddle with 4-inch extension on the pole just above the other two saddles. Install a 2 1/2" x 12-foot holding tong on the conductor alongside the lifting tong head. Put the holding tong pole in the wire tong saddle clamp and tighten.
19. Hang a set of rope blocks between the top 2-1/2" wire tong saddle clamp and the lifting tong swivel ring. Attach a second set of rope blocks between the lifting tong saddle and the swivel ring on the butt of the lifting tong.
20. Install a conductor cover on the center phase. Install a pole top cover on the pole. Install arm protection if needed.
21. Have the ground help put slight tension on the rope blocks fall line in preparation for moving the conductor.
22. While one lineman is using a universal stick to put downward pressure on the conductor to hold it in the insulator groove, another lineman can untie the conductor from the insulator. While untying the conductor, any excess tie wire or preform should be cut off to prevent it from making contact with the pole top, cross arm, tools or equipment.
23. The conductor can now be lifted free of the insulator by pulling on the fall line of the rope blocks. Working both sets of blocks, the conductor can be moved up and out away from the pole until adequate working clearance is achieved.
24. With all three conductors removed from the pole and securely supported, the insulators, cross arm or pole can be replaced.
25. When all replacement work is complete, move the conductors back into position by reversing the above procedure.


HIGH VOLTAGE

Flat Pin Type Construction
TPAT 60 kV

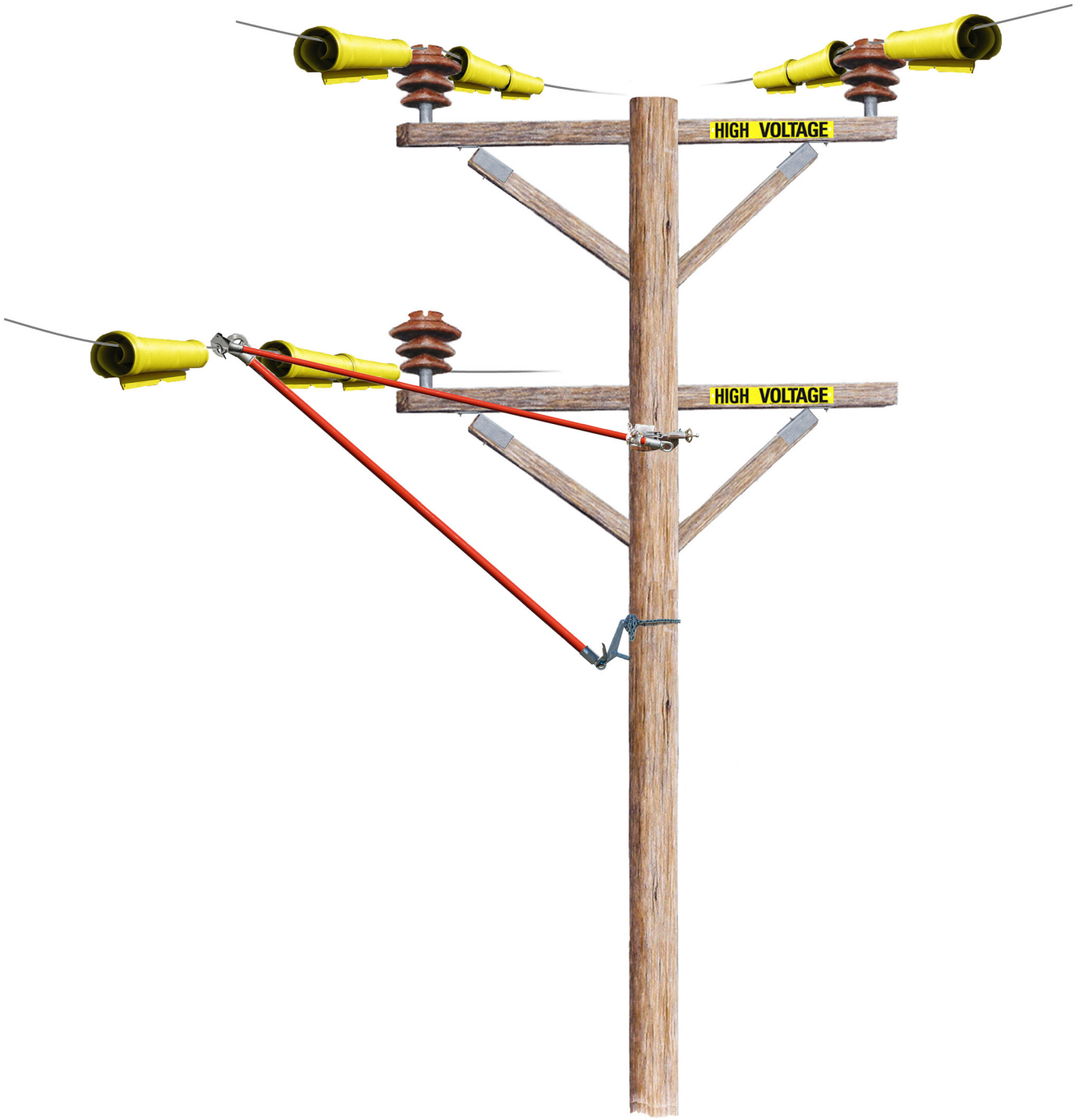
Insulator, Cross Arm or Pole Change Procedure

Before removing any conductors from an existing pole, the condition of the adjacent poles, conductors and tie wires must be visually inspected and determined to be in good condition before starting this procedure.

The condition of all involved poles must be determined safe to rig on or climb, if required.

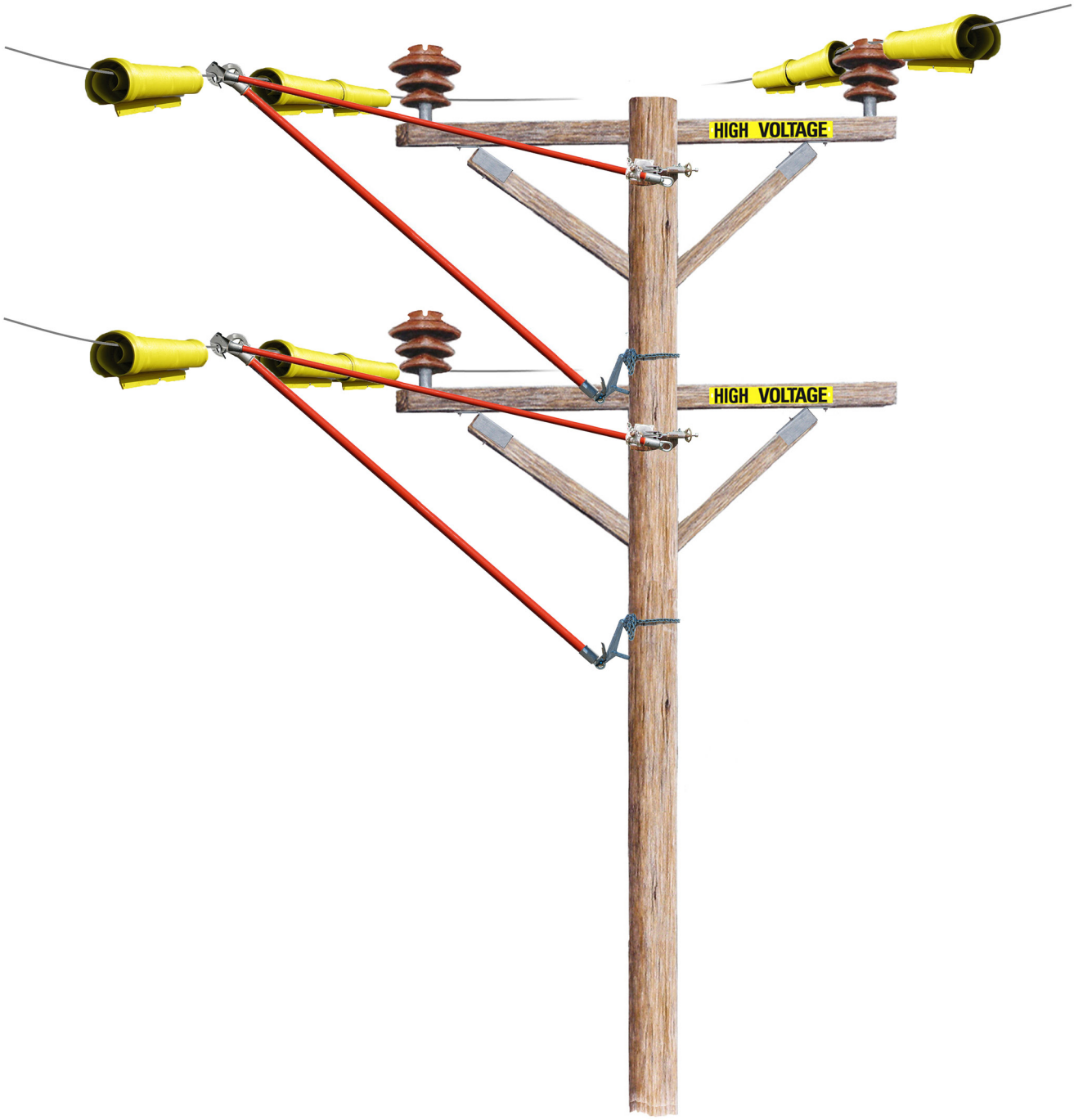
Procedure

1. If a distribution circuit or conductors are located on the pole, they must covered and then relocated onto extension arms or completely removed from the cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. On the working side of the pole, on the lower transmission phase, untie the tie wire. If the tie wire is broken or damaged, the lifting tong and holding tong should be installed before untying the conductor. Protect the arm if necessary with insulated cover. While untying the conductor, any excess tie wire or preform tie should be cut off to prevent it from making contact with the cross arm, pole top, tools or equipment.
3. Attach a wire tong band to a 2-1/2" x 10-foot lifting tong, 36 inches from the head of the tong.
4. Attach the head of the lifting tong to the conductor with the jaw opening facing the pole.
5. Attach a lever lift to the swivel ring on the lifting tong. Swing the lever lift and lifting tong butt to the pole and attach the lever lift to the pole in line with the wire tong attached to the conductor.



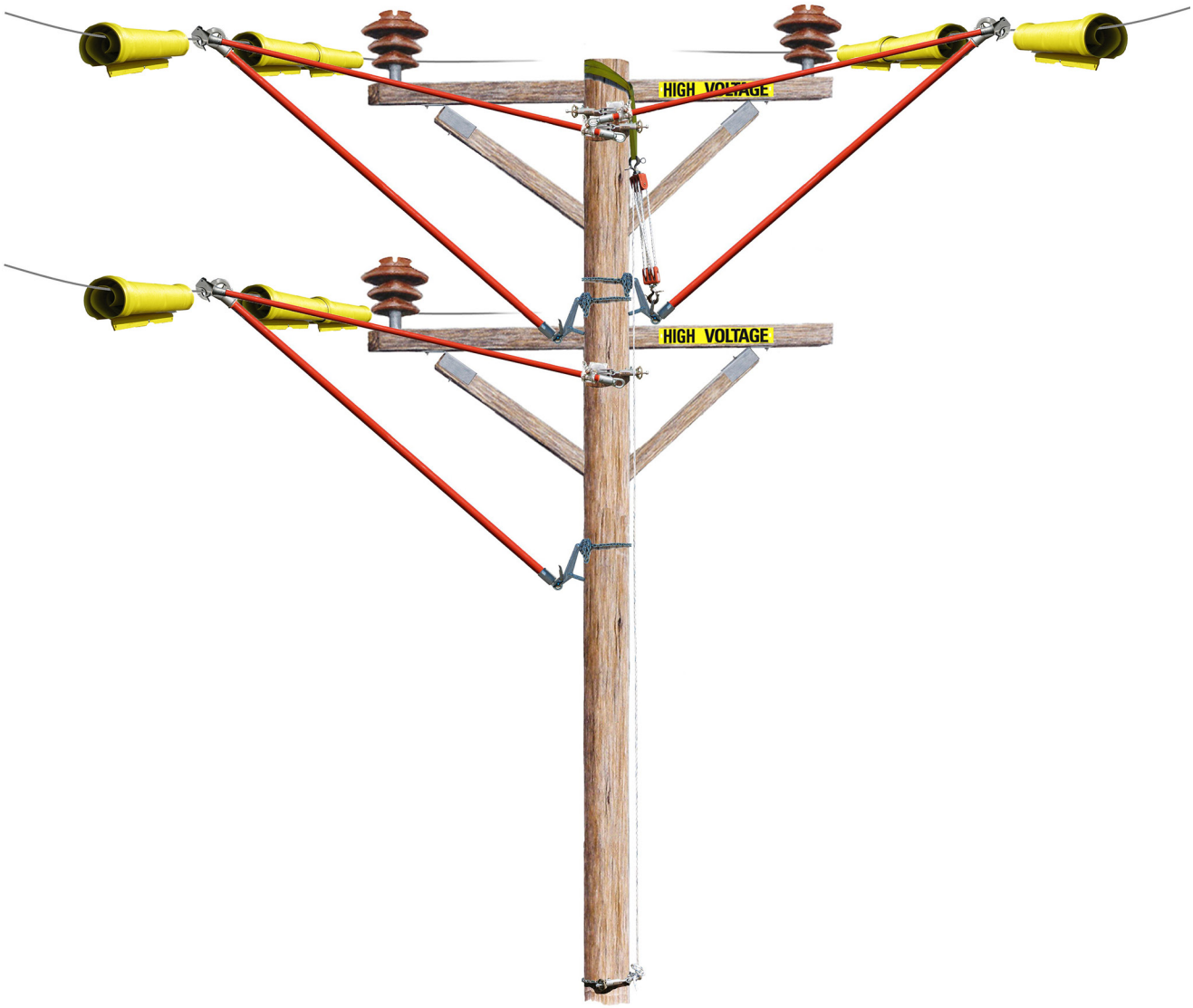
Flat Pin Type Construction: TPAT 60 kV

6. Attach a 1-1/2" wire tong saddle to the pole face opposite the cross arm just above the cross arm.
7. Attach a 1-1/2" x 10-foot holding tong to the conductor alongside the lifting tong with the jaw opening facing down. Put the holding tong in the wire tong saddle clamp. Close the clamp, slide the holding tong out slightly and tighten the wire tong saddle clamp.
8. Install a nylon sling on the pole just below the cross arm. Place a set of rope blocks in the sling and attach the other end of the rope blocks to the clevis on the lever lift. Have the ground help install a rope snubbing bracket on the pole approximately 4 feet above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the line in the rope snubbing bracket.
9. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band attached to the lifting tong. Use a shotgun stick to hang the rope blocks on the wire tong band. Have the ground help remove the slack from the fall line and secure the line in the rope snubbing bracket.
10. If setting a new pole, the conductor should be covered before removal from the insulator. The cover should be placed on the conductor on the side of the pole where the new pole will be located.
11. While one lineman is using a universal stick to put downward pressure on the conductor to hold it in the insulator groove, another lineman can finish untying the conductor from the insulator. Any excess tie wire or preform should be cut off to prevent it from making contact with the cross arm, tools or equipment.
12. When the conductor is completely untied, loosen the saddle clamp on the holding tong and have the ground help pull the rope blocks fall line attached to the lever lift and raise the conductor approximately 6 inches.
13. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong and guide the conductor away from the pole until adequate working clearance is achieved. The holding tong can be pushed through the wire tong saddle until it can travel no further due to the butt ring casting. The holding wire tong clamp should then be securely tightened. Both sets of rope blocks can then be slacked.



14. Moving up to an upper phase conductor untie and remove the tie wire or preform tie on the working side of the pole. Install a lifting tong and lever lift on this phase. Install a nylon sling just below the cross arm. Hang a set of rope blocks from the sling. Attach the other end of the rope blocks to the lever lift clevis. Have the ground help remove the slack from the rope blocks fall line and secure the line in a rope snubbing bracket.

15. Install a 1-1/2" wire tong saddle just below the cross arm on the pole. Attach the holding tong to the conductor and install a set of rope blocks between the new wire tong saddle clevis and the lifting tong band. Install a conductor cover if needed and completely untie the conductor from the insulator and move the phase out to a safe working location. Securely tighten the saddle clamp and slack both sets of blocks.
16. On the opposite top phase conductor, untie and cut the tie wire or preform tie from the conductor on the working side of the pole. Remove excess tie material.
17. Install a lifting tong and lever lift on this phase. Remove the rope blocks from the nylon sling and rotate the sling for use on the conductor being moved. Hang the rope blocks in the sling and attach the rope blocks to the lever lift clevis. Tighten the wire tong clamp.
18. Install a 1-1/2" wire tong saddle with 4-inch extension on the pole below the other saddle. Install the holding tong on the conductor alongside the lifting tong head. Put the holding tong pole in the saddle clamp and tighten.
19. Hang a set of rope blocks between the 1-1/2" saddle clamp and the lifting tong swivel ring. Attach a second set of rope blocks between the holding tong saddle clevis and the swivel ring on the butt of the lifting tong.
20. Install a conductor cover on the phase conductor.
21. Have the ground help put slight tension on the rope blocks fall line in preparation for moving the conductor.
22. While one lineman is using a universal stick to put downward pressure on the conductor to hold it in the insulator groove, another lineman can untie the conductor from the insulator. While untying the conductor, any excess tie wire or preform tie should be cut off to prevent it from making contact with the pole top, cross arm, tools or equipment.
23. The conductor can now be lifted free of the insulator by pulling on the fall line of the rope blocks and guiding the holding tong. Working both sets of blocks, the conductor can be moved up and away from the pole until adequate working clearance is achieved.



24. With all three conductors removed from the insulators and securely supported, the insulators, cross arms or pole can be replaced.

25. When all replacement work is complete, move the conductors back into position by reversing the above procedure.

Twin Circuit Pin Construction TCP 60 kV

DWG 015086

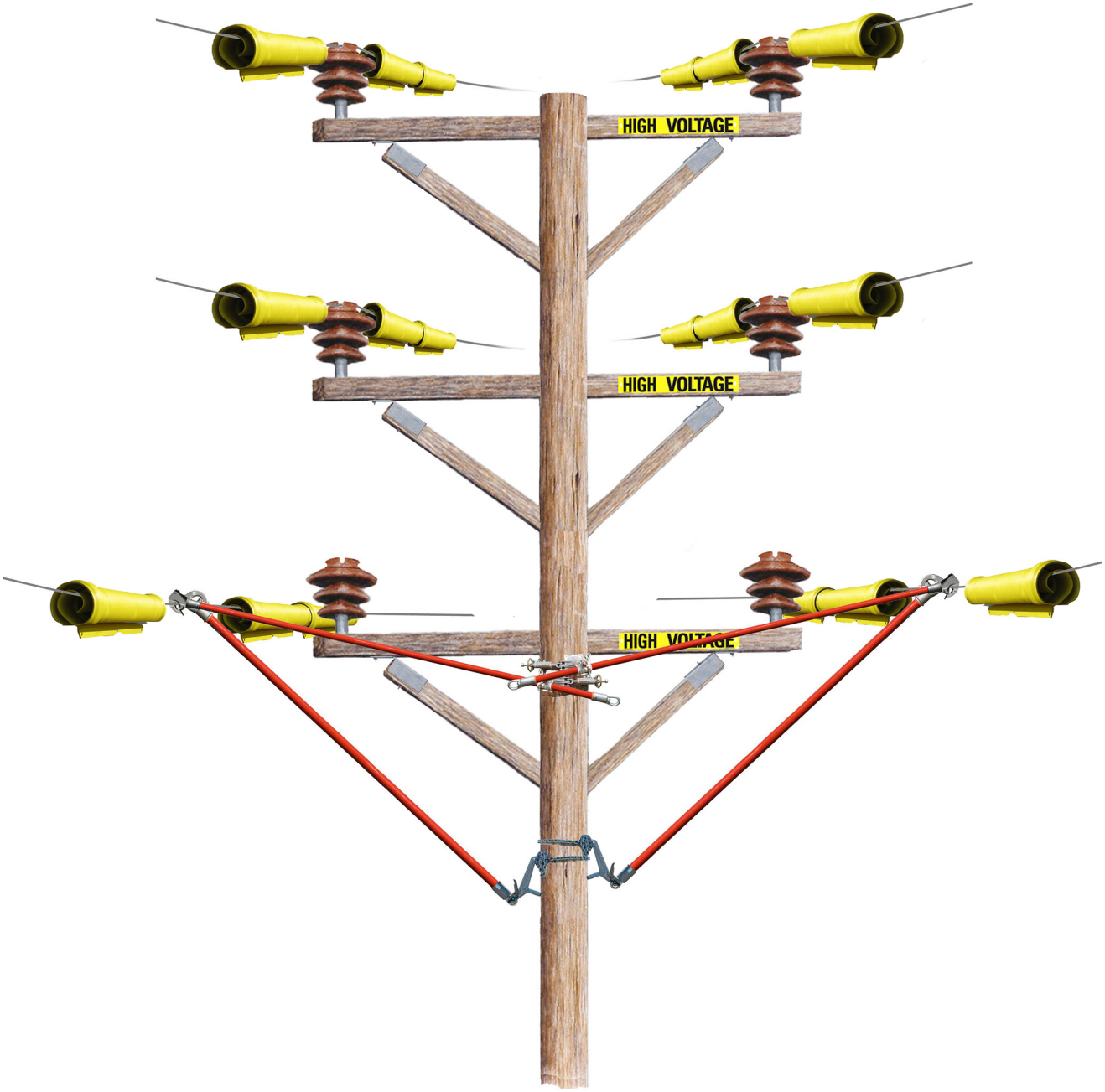
Insulator, Cross Arm or Pole change Procedure

Before removing any conductors from an existing pole, the condition of the adjacent poles, conductors and tie wires must be visually inspected and determined to be in good condition before starting this procedure. The condition of all involved poles must be determined safe to rig on or climb, if required.

Procedure

1. If a distribution circuit or conductors are located on the pole, they must covered and then relocated onto extension arms or completely removed from the cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. On the non-cross arm side of the pole, on the first lower outside transmission phase to be moved, untie the tie wire. If the tie wire is broken or damaged, the lifting tong and holding tong should be installed before untying the conductor. Protect the arm if necessary with insulated cover.

   While untying the conductor, any excess tie wire or preform tie should be cut off to prevent it from making contact with the cross arm, tools or other equipment.
3. Attach wire tong bands to six 2-1/2" lifting tongs 36 inches from the head of the tong.
4. Attach a 2-1/2" x 10-foot lifting tong to the first conductor to be moved with the jaw opening facing the pole.



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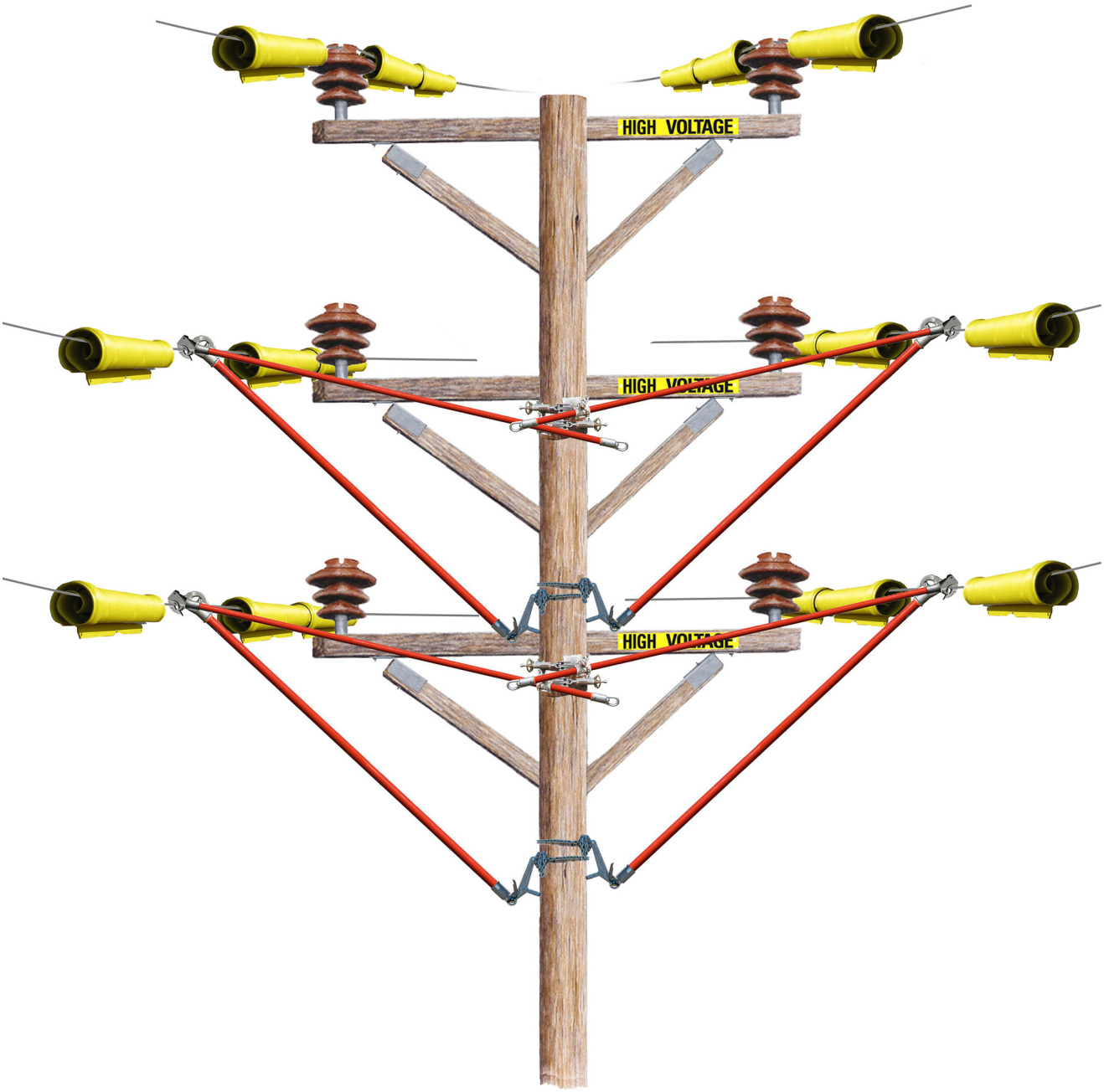
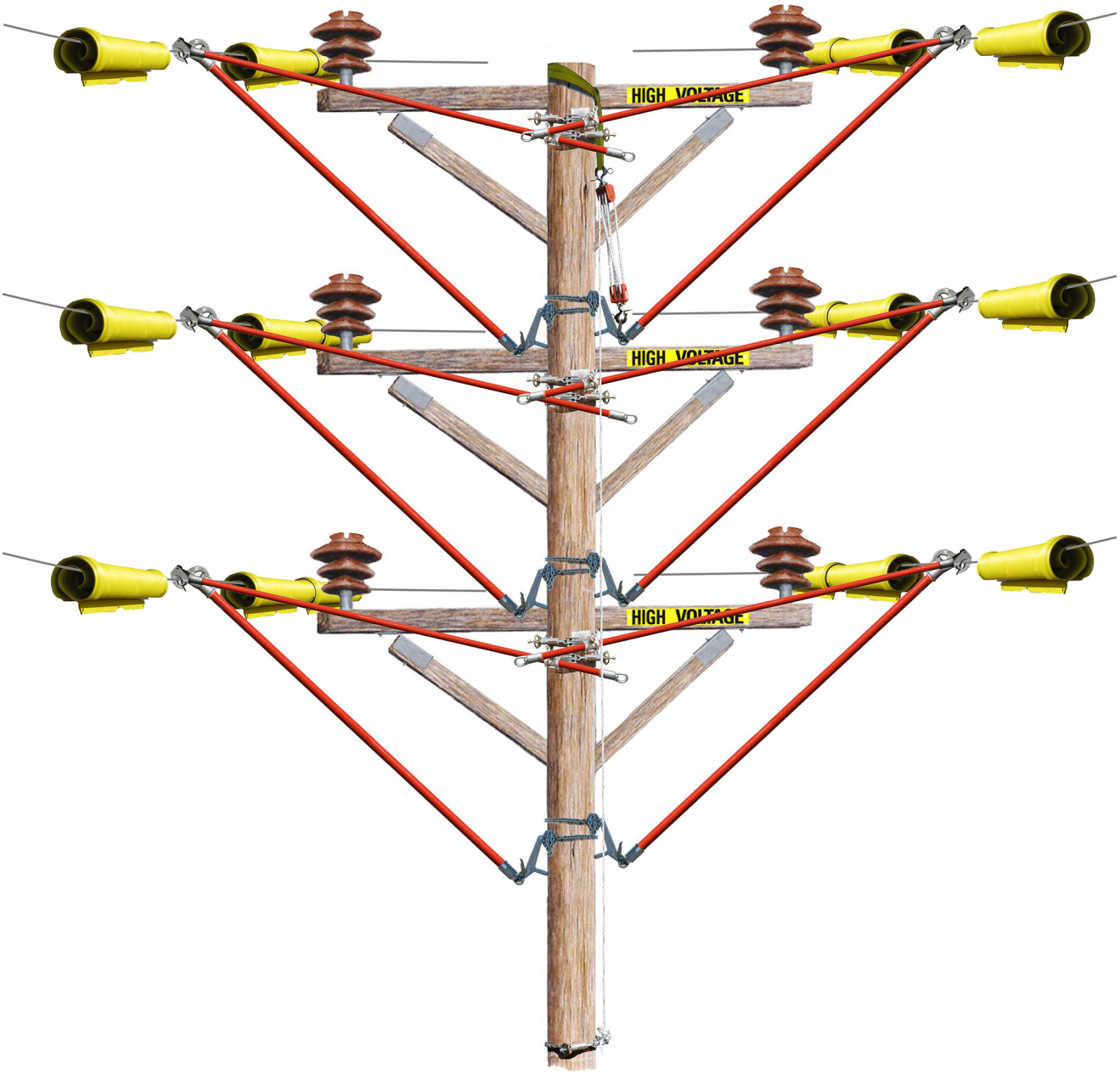
5. Attach a lever lift to the swivel ring on the wire tong. Swing the lever lift and lifting tong butt to the pole and attach the lever lift to the pole in line with the wire tong attached to the conductor.

6. Attach a 1-1/2" wire tong saddle on the pole face opposite the cross arm just below the cross arm.
7. Attach a 1-1/2" x 10-foot holding tong to the conductor alongside the lifting tong with the jaw opening facing down. Put the holding tong in the wire tong saddle clamp. Close the clamp, slide the holding tong out slightly and tighten.
8. Install a nylon sling on the pole about 2 feet below the saddle. Place a set of rope blocks in the sling and attach the other end of the rope blocks to the clevis on the lever lift. Have the ground help install three rope snubbing brackets on the pole approximately 4 feet above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the line in a rope snubbing bracket.
9. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band attached to the lifting tong. Use a shotgun stick to hang the rope blocks on the wire tong band. Have the ground help remove the slack from the rope blocks fall line and secure the line in a rope snubbing bracket.
10. If setting a new pole, the conductor should be covered before removal from the insulator. The cover should be placed on the conductor on the side of the old pole where the new pole will be located.
11. While one lineman is using a universal stick to put downward pressure on the conductor to hold it in the insulator groove, another lineman can finish untying the conductor from the insulator. Any excess tie wire or preform tie should be cut off to prevent it from making contact with the cross arm, tools or other equipment.
12. When the conductor is completely untied, loosen the wire tong saddle clamp on the holding tong and have the ground help pull the rope blocks fall line attached to the lever lift and raise the conductor approximately 12 inches.
13. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong and guide the conductor away from the pole until adequate working clearance is achieved. The holding tong can be pushed through the saddle until it can travel no further due to the butt ring casting. The holding wire tong saddle clamp should then be securely tightened. Both sets of rope blocks can be slacked.


HIGH VOLTAGE

14. On the opposite lower conductor, untie and remove the tie wire or preform tie on the working side of the pole. Install a lifting tong and lever lift on this phase. Remove the rope blocks from the opposite phase sling. Rotate the sling for use on the conductor being moved and attach the rope blocks to the sling and to the newly installed lever lift clevis.
15. Install a second 1-1/2" saddle with 4-inch extension just below the first saddle on the pole face. Attach a holding tong to the conductor and place it in the wire tong saddle clamp. Close the clamp and slide the holding tong out slightly and then tighten the wire tong saddle clamp. Utilizing a shotgun stick, install the other set of rope blocks between the new holding tong saddle clevis and the wire tong band attached to the lifting tong. Install a conductor cover if needed and completely untie the conductor from the insulator and move the phase out to a safe working location. Securely tighten the saddle clamp and slack both sets of blocks.
16. Repeat the previous steps on each cross arm until all six phases have been safely removed from the insulators and adequate working clearance is achieved.
17. With all six conductors removed from the insulators and securely supported the insulators and cross arms can now be removed safely. A new pole can be installed if required.
18. When all replacement work is complete, move the conductors back into position or on to a new pole by reversing the above procedure.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