



Part 4C:

115 kV Framing

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Post Type Armless Construction T1 115 kV

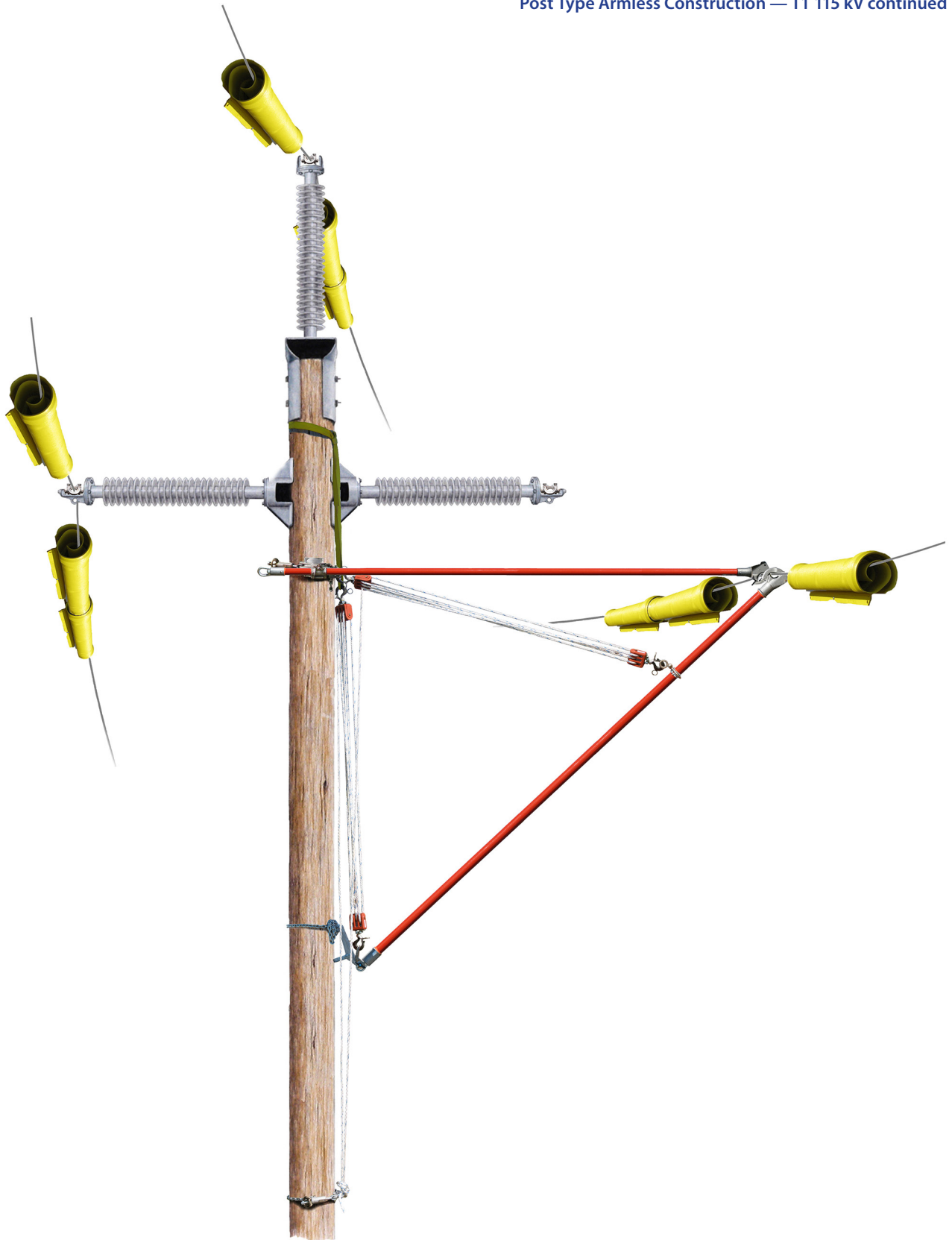
Insulator, Cross Arm or Pole Change Procedure

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

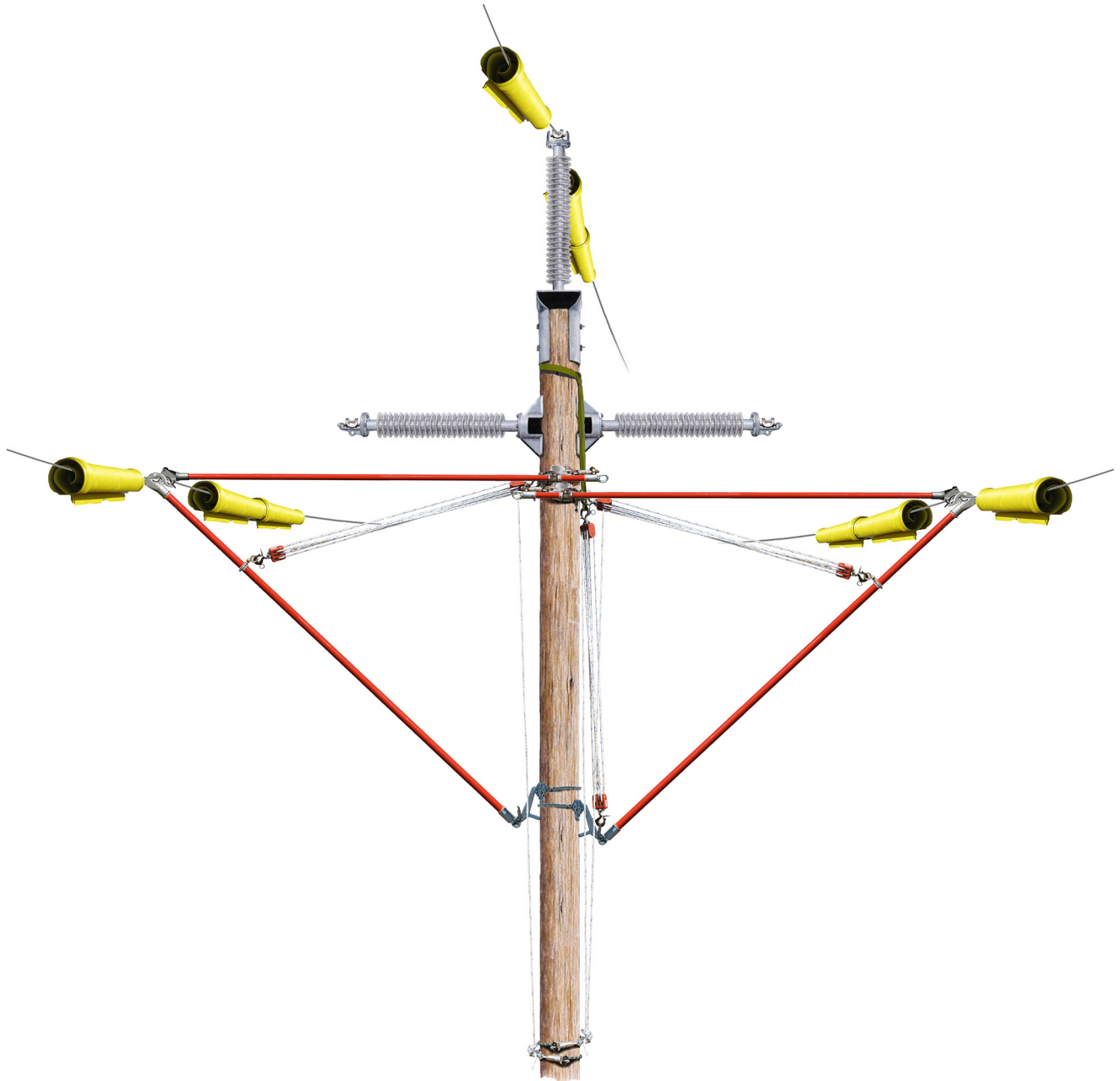
1. If a distribution circuit or conductors are located on the pole, they must be covered and then relocated onto extension arms or completely removed from the cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. Attach wire tong bands to two 2-1/2" x 10', one 2-1/2" x 14', and one 2-1/2" x 16' wire tong, 40" from the head of each wire tong.
3. On the first bottom transmission phase to be moved, attach the head of a 2-1/2" x 10' 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 approximately 18" below the bottom of the insulator bracket.
6. Attach a 1-1/2" x 10' 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.



Post Type Armless Construction — T1 115 kV

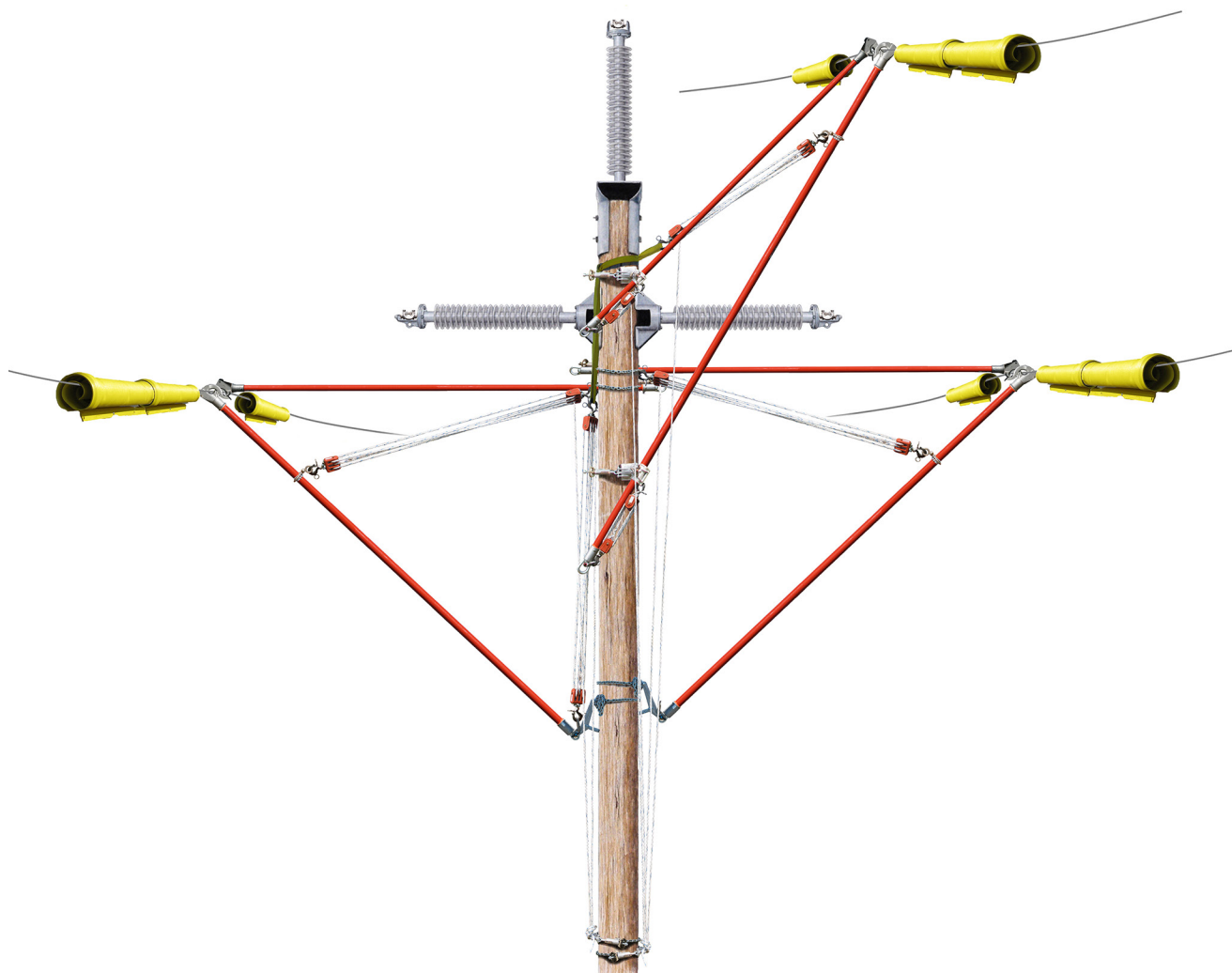


7. Install a nylon sling on the pole about 1' below the saddle. Place a set of rope blocks in the sling and attach the other end of the rope blocks to the clevis on the lever lift. Have the ground help install a rope snubbing bracket on the pole approximately 4' above the ground. Have the ground help 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. Cover the insulator bracket with pole guard.
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 universal 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 6".
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, on the working side of the pole, install a 2-1/2" x 10' lifting tong on the conductor. Attach a lever lift to the lifting tong and attach the lever lift to the pole. 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.
14. Install a second 1-1/2" wire tong saddle just below the first saddle on the pole face. Attach a 1-1/2" x 10' 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. Utilizing a shotgun stick, install a set of rope blocks between the new wire tong 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, work with the ground help to lift the conductor out of the conductor clamp and move the phase out away from the pole. Use a universal pole to help guide the conductor away from the pole. When adequate working clearance has been achieved, securely tighten the wire tong saddle clamp and slack both sets of rope blocks.
17. Prepare to move the top conductor. Install a pole top cover on the top of the pole. Attach a 2-1/2" wire tong saddle on the opposite side of the pole just below the center phase insulator mounting bracket.
18. Attach a 2-1/2" x 14' wire tong to the top conductor and slide it into the wire tong saddle clamp and hand tighten the clamp.
19. Take a second 2-1/2" wire tong saddle and attach it to the same side of the pole approximately 6' below the top wire tong saddle. Attach a 2-1/2" x 16' lifting tong to the conductor alongside the first wire tong. Put the lifting tong in the wire tong saddle clamp and hand tighten the clamp.
20. Install a set of rope blocks between the holding tong saddle clevis and the swivel ring on the butt of the holding tong. Install a second set of rope blocks between the lifting tong saddle clevis and the swivel ring on the butt of the lifting tong.
21. Install a nylon sling on the pole just below the top wire tong saddle. Hang a set of rope blocks in the nylon sling. Attach the other end of the rope blocks to the wire tong band mounted on the lifting tong. Have the ground help remove the slack from all the rope blocks fall lines and secure them in rope snubbing brackets.
22. Install at least one piece of cover on the conductor if a new pole will be set. Loosen the bolts on the conductor clamp and rotate the keeper piece to free the conductor.
23. Loosen both saddle clamps and have the ground help pull the fall line of the rope blocks attached to the lifting tong and raise the conductor. The conductor can now be moved away from the pole by pulling the fall line of the rope blocks attached to the holding wire tong. Working all three sets of rope blocks, the conductor can be moved up and out away from the pole until adequate working clearance is achieved. Have



the ground help secure all the rope blocks fall lines to rope snubbing brackets and then tighten the two wire tong saddle clamps.

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



Post Type Armless Construction T1-A 115 kV

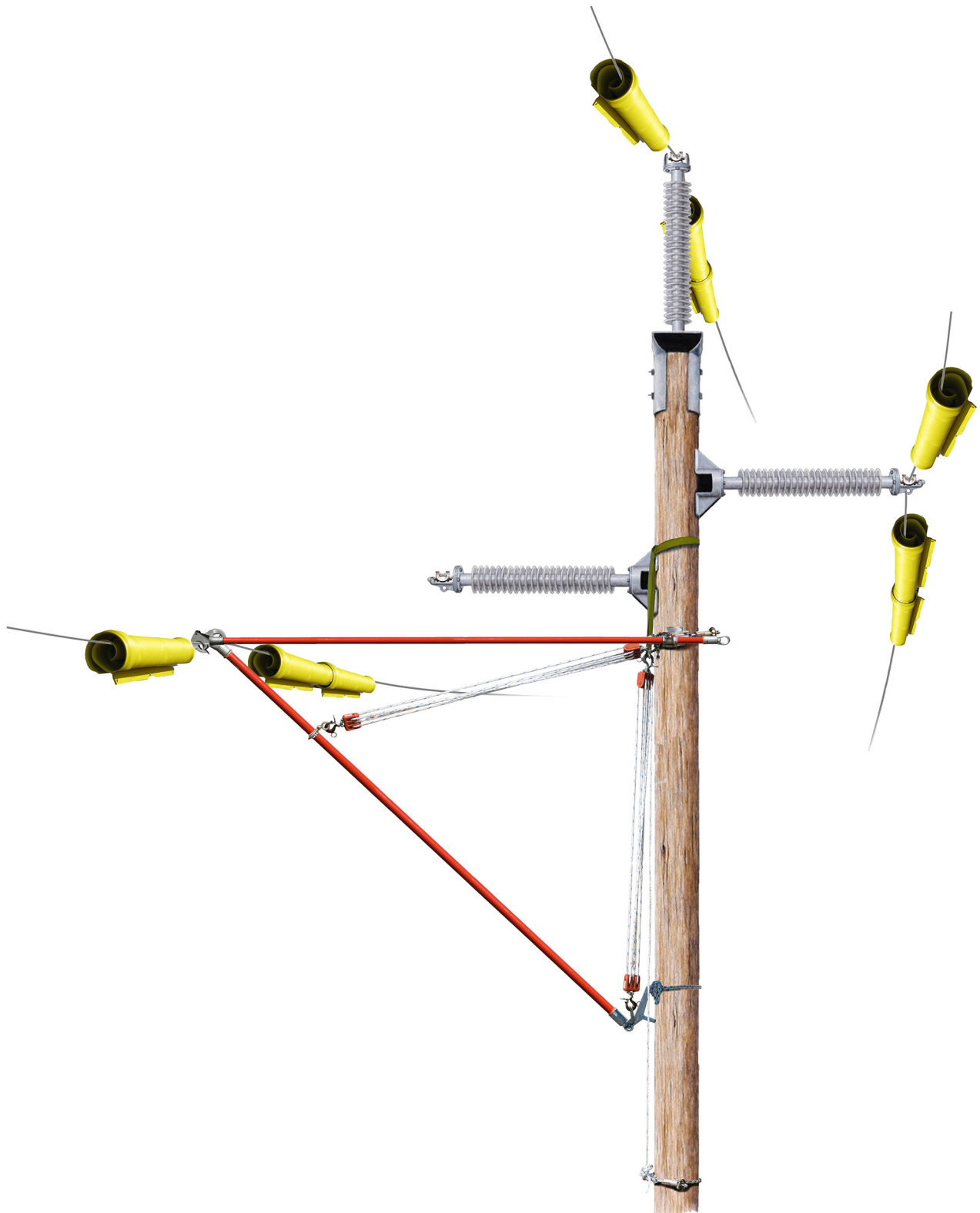
Insulator, Cross Arm or Pole Change Procedure

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

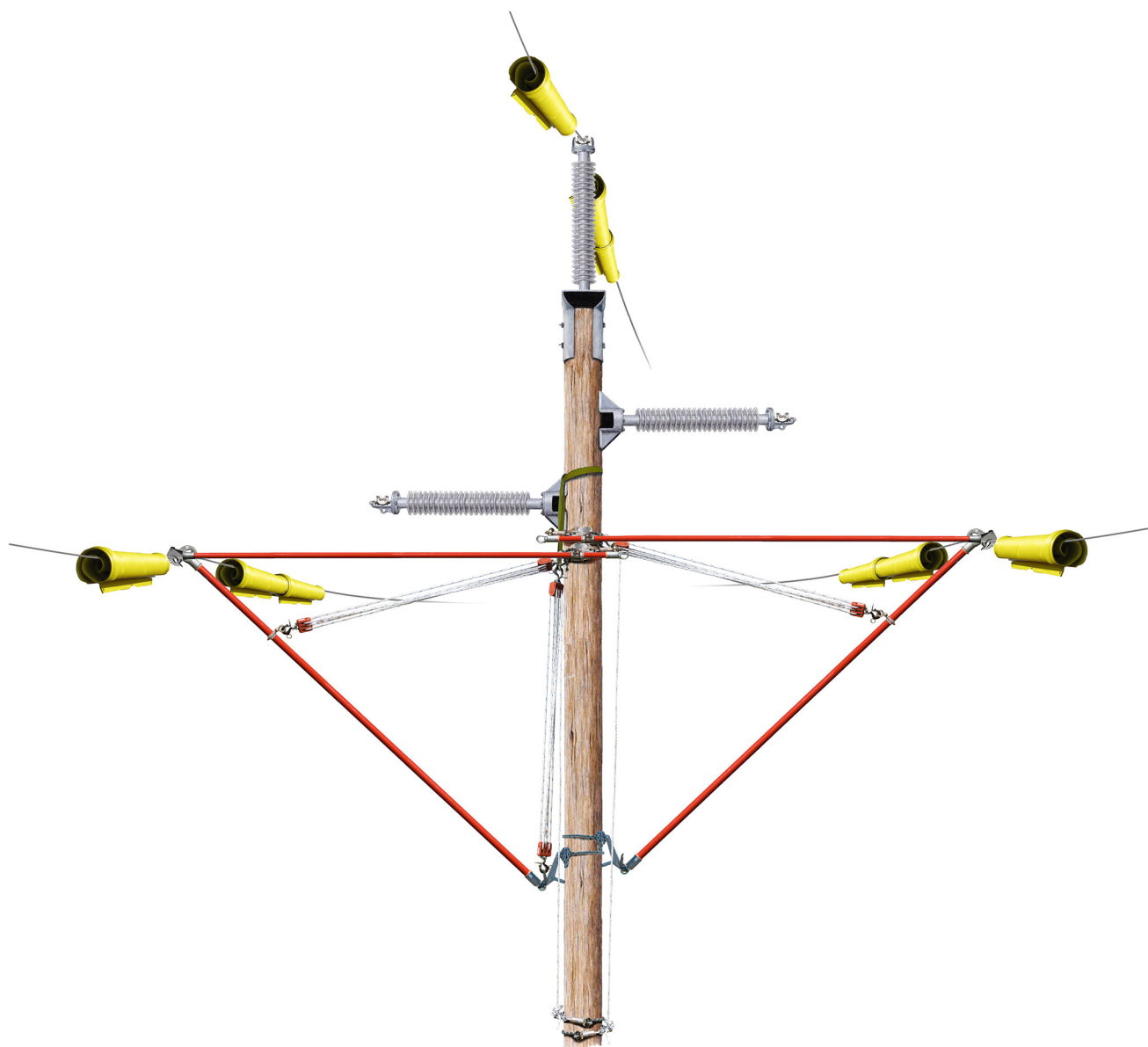
1. If a distribution circuit or conductors are located on the pole, they must be covered and then relocated onto extension arms or completely removed from the cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. Attach wire tong bands to two 2-1/2" x 10', one 2-1/2" x 14', and one 2-1/2" x 16' wire tong, 40" from the head of each wire tong.
3. On the bottom transmission phase, attach the head of a 2-1/2" x 10' 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 approximately 18" below the bottom of the insulator mounting bracket.
6. Attach a 1-1/2" x 10' 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.



Post Type Armless Construction — T1-A 115 kV



7. Install a nylon sling on the pole about 1' 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' 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. Cover the insulator with pole guard.
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 universal 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 6".
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 center phase conductor, on the working side of the pole, install a 2-1/2" x 10' lifting tong on the conductor. Attach a lever lift to the lifting tong and attach the lever lift to the pole. 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.
14. Install a second 1-1/2" wire tong saddle just below the first saddle on the pole face. Attach a 1-1/2" x 10' 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.

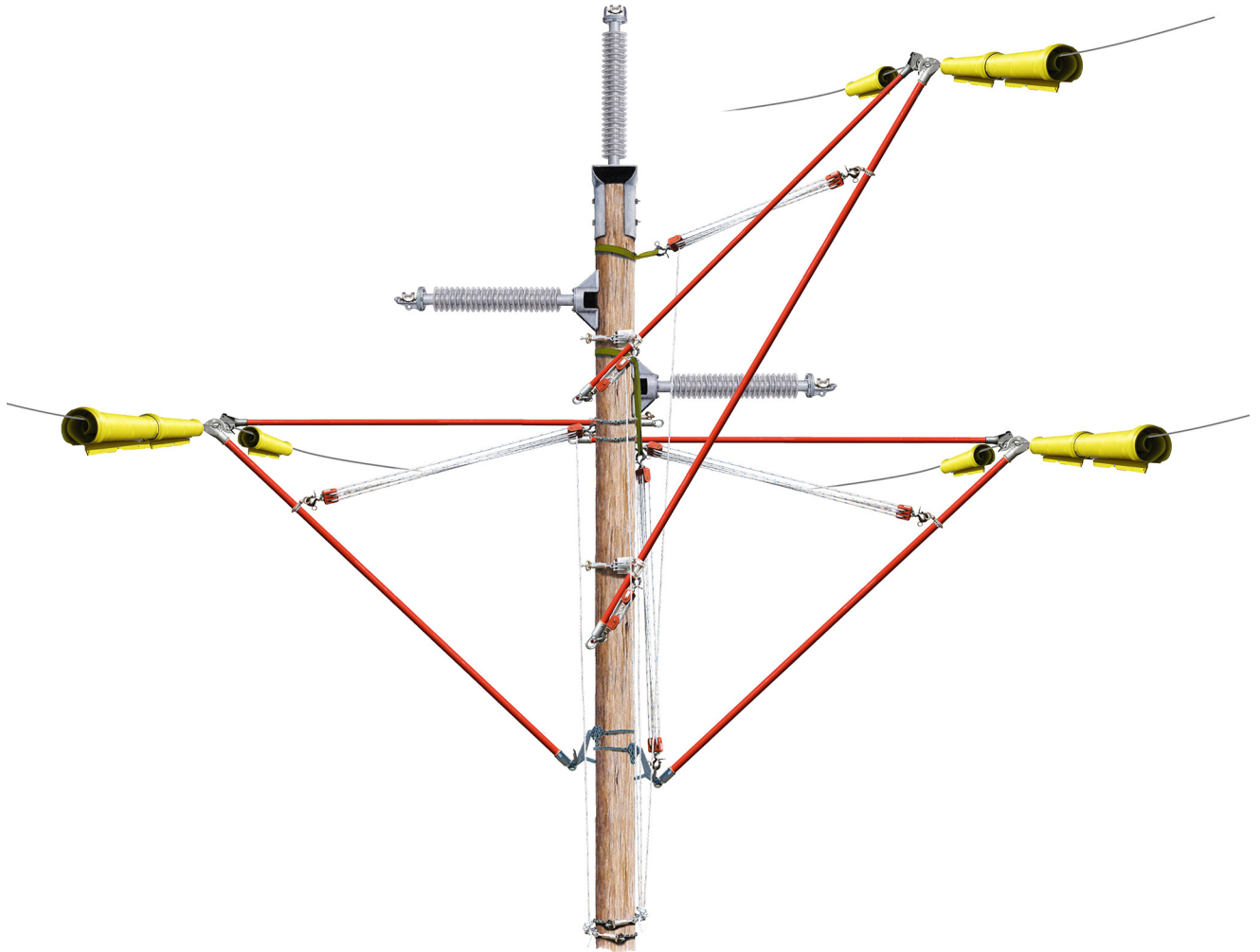


15. Use a shotgun stick to install a set of rope blocks between the new wire tong saddle and the lifting tong band. Have the ground help remove the slack from both sets of rope blocks and secure the fall lines in a rope snubbing bracket.
16. Install a conductor cover if needed and loosen the bolts on the conductor clamp. When the keeper piece can be rotated, work with the ground help to lift the conductor out of the conductor clamp and move the phase out away from the pole.



Use a universal pole to help guide the conductor away from the pole. When adequate working clearance has been achieved, securely tighten the wire tong saddle clamp and slack both sets of rope blocks.

17. Prepare to move the top conductor. Install a pole guard on the top of the pole. Attach a 2-1/2" wire tong saddle on the opposite side of the pole just below the center phase insulator mounting bracket.
18. Attach a 2-1/2" x 14' wire tong to the top conductor and slide it into the wire tong saddle clamp and hand tighten the clamp.
19. Take a second 2-1/2" wire tong saddle and attach it to the same side of the pole approximately 6' below the top wire tong saddle. Attach a 2-1/2" x 16' lifting tong to the conductor alongside the first wire tong. Put the lifting tong in the wire tong saddle clamp and hand tighten the clamp.
20. Install a set of rope blocks between the holding tong saddle clevis and the swivel ring on the butt of the holding tong. Install a second set of rope blocks between the lifting tong saddle clevis and the swivel ring on the butt of the lifting tong.
21. Install a nylon sling on the pole just above the center insulator mounting bracket. Hang a set of rope blocks in the nylon sling. Attach the other end of the rope blocks to the wire tong band mounted on the lifting tong. Have the ground help remove the slack from all the rope blocks fall lines and secure them in rope snubbing brackets.
22. Install at least one piece of cover on the conductor if a new pole will be set. Loosen the bolts on the conductor clamp and rotate the keeper piece to free the conductor.
23. Loosen both saddle clamps and have the ground help pull the fall line of the rope blocks attached to the lifting tong and raise the conductor. The conductor can now be moved away from the pole by pulling the fall line of the rope blocks attached to the holding wire tong. Working all three sets of rope blocks, the conductor can be moved up and out away from the pole until adequate working clearance is achieved. Have the ground help secure all the rope blocks fall lines to rope snubbing brackets and then tighten the two wire tong saddle clamps.
24. With all three conductors removed from the insulators and securely supported, the insulators and brackets can be removed safely. A new pole can now be installed if required.
25. When all replacement work is complete, move the conductors back into position or on to a new pole by reversing the removal procedure.





Double Circuit Post Type Construction DC Post 115 kV

Insulator, Cross Arm or Pole Change Procedure

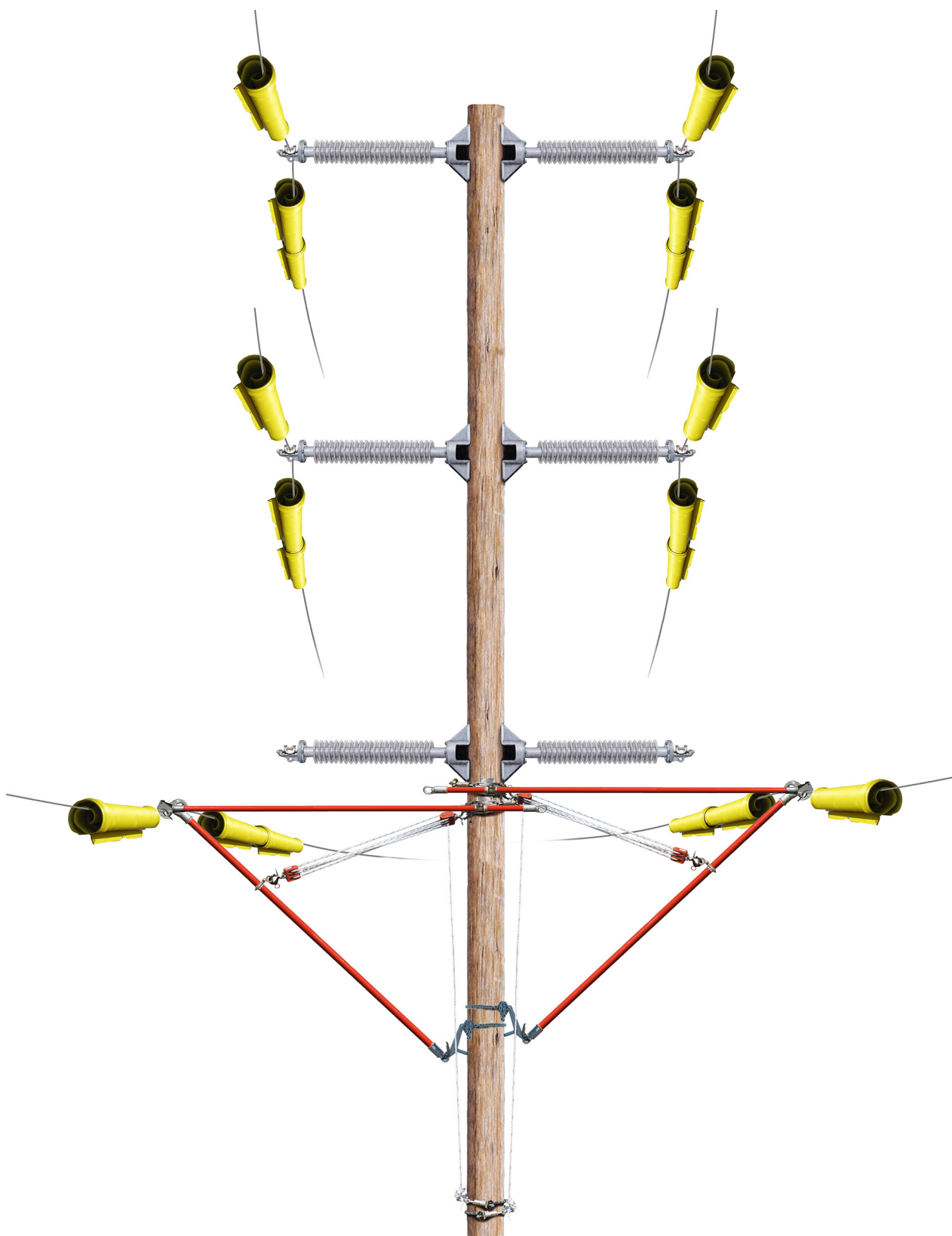
Before removing any conductors from an existing pole, the condition of the adjacent poles, conductors and attachments must be visually inspected and determined to be in good condition before starting this procedure. The condition of all involved poles must be determined safe to rig on or climb, if required.

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 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. Attach wire tong bands to six 2-1/2" x 10' wire tongs 40" from the head of each wire tong.
3. Attach the head of a lifting tong to the conductor on the first bottom transmission phase to be moved 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 on the working side of the pole approximately 18" below the bottom of the insulator bracket.
6. Attach a 1-1/2" x 10' 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.



Double Circuit Post Type Construction — DC Post 115 kV continued



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Insulator, Cross Arm or Pole Change Procedure

Double Circuit Post Type Construction — DC Post 115 kV

continued



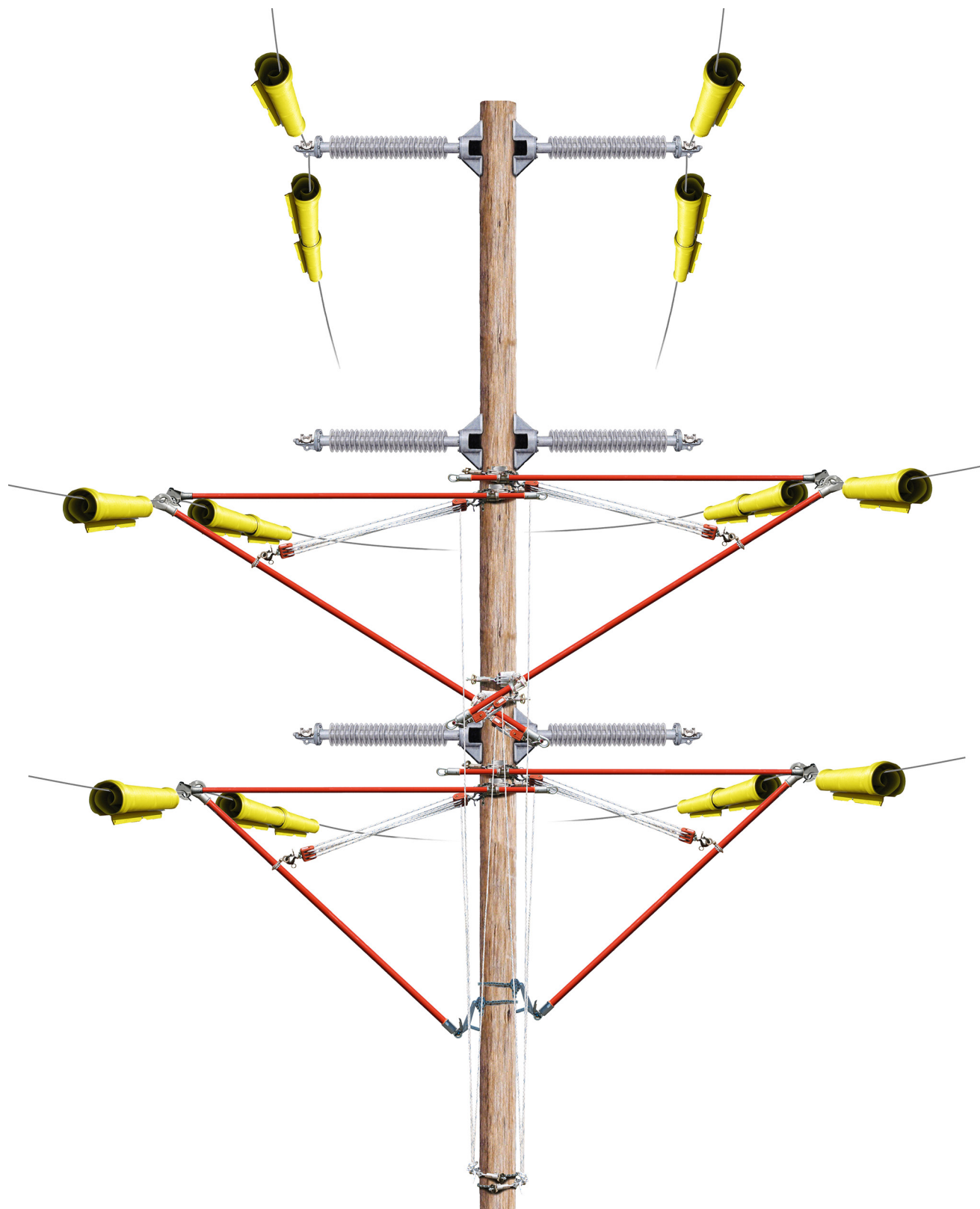
Live-Line Procedures Manual

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 in the clevis on the lever lift. Have the ground help remove the slack from blocks fall line and secure the line in a rope snubbing bracket mounted on the pole about 4' above the ground.
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 rope blocks 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 universal 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 6".
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 clamp 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 lower conductor, on the working side of the pole, install a second 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.
14. Install a second 1-1/2" saddle with 4" extension just below the first saddle on the pole face. Install the holding tong and install the other set of rope blocks between the new saddle and the new lifting tong band. Install a conductor cover if needed and loosen the bolts on the conductor clamp. When the keeper piece can be rotated, remove the



Insulator, Cross Arm or Pole Change Procedure

Double Circuit Post Type Construction — DC Post 115 kV continued

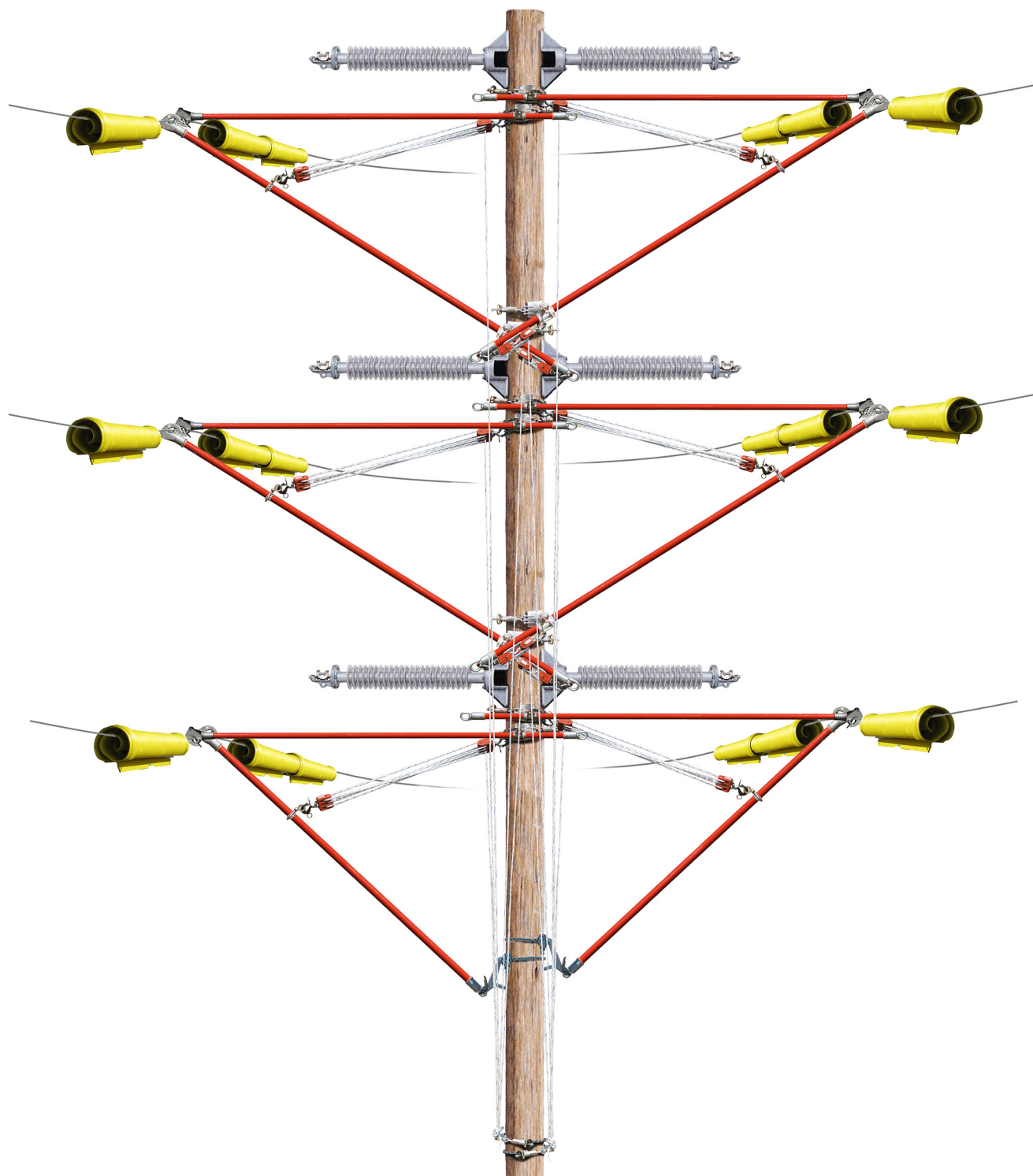




conductor from the insulator and move the phase out to a safe working location.

Securely tighten the saddle clamp and slack both sets of blocks.

15. Moving up to the center phase conductors, install a lifting tong on each conductor. Attach a 1-1/2" wire tong saddle and nylon sling on the pole for each conductor. Install a 2-1/2" wire tong saddle on the pole for each conductor just above the bottom insulator mounting brackets.
16. Swing the lifting tongs to the pole and place them in the 2-1/2" wire tong saddle clamps and tighten. Attach a set of rope blocks or a chain hoist between the 2-1/2" wire tong saddle clamp clevis and the swivel ring on the butt of the lifting tong on the first conductor to be moved. Slightly loosen the saddle clamp and take up on the hoist or rope blocks.
17. Attach a 1-1/2" holding tong to each conductor and install a set of rope blocks between each 1-1/2" wire tong saddle clamp clevis and the wire tong band mounted on each lifting tong.
18. Working on one phase at a time, loosen the bolts on the conductor clamps and guide each conductor away from the pole until adequate working clearance is achieved.
19. Repeat previous steps on the top two phases. When all six phases have been safely removed from the pole and are securely supported, the insulators and brackets can be removed safely. A new pole can be installed if required.
20. When all replacement work is complete, move the conductors back into position by reversing the removal procedure.





Post Type Armless Construction 3-HPD 115 kV

DWG. 045707

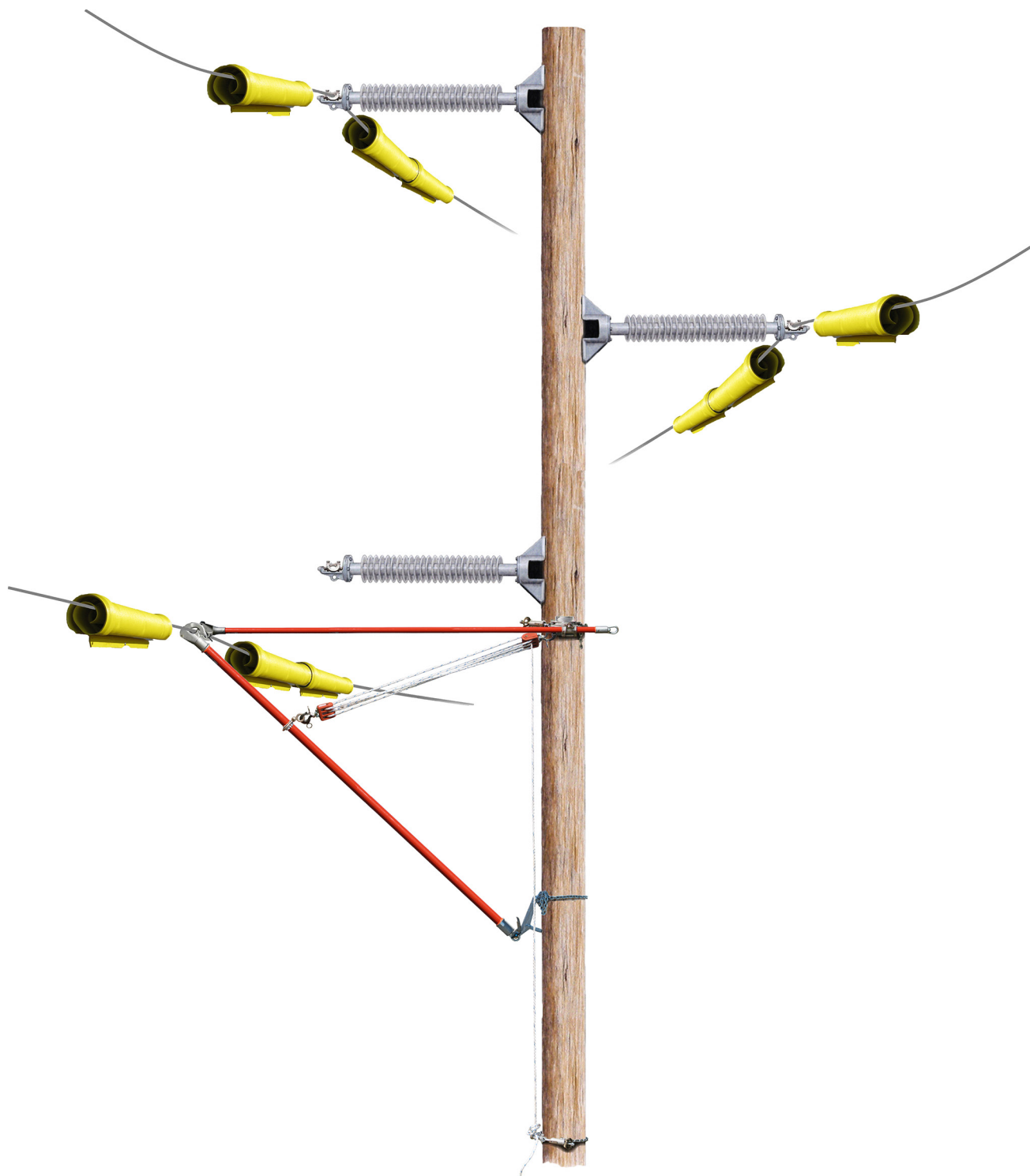
Insulator, Cross Arm or Pole Change

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

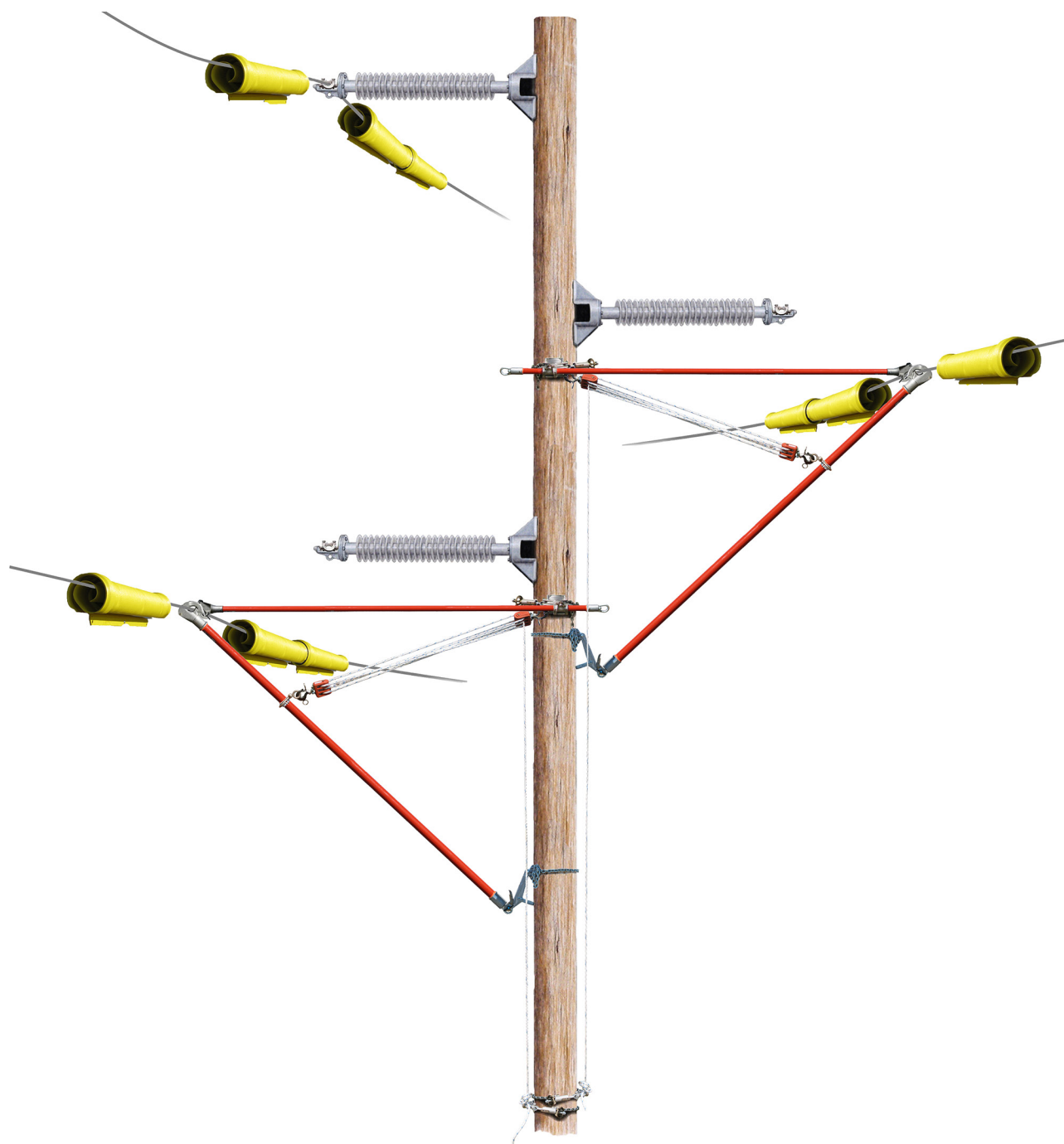
1. If a distribution circuit or conductors are located on the pole, they must be covered and then relocated onto extension arms or completely removed from the existing cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. Attach wire tong bands to two 2-1/2" x 10' and one 2-1/2" x 12' wire tong 40" from the head of each wire tong.
3. Attach the head of a 10' lifting tong to the conductor on the bottom transmission phase 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 on the working side of the pole approximately 18" below the bottom of the insulator bracket.
6. Attach a 1-1/2" x 10' 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.



Post Type Armless Construction — 3-HPD 115 kV



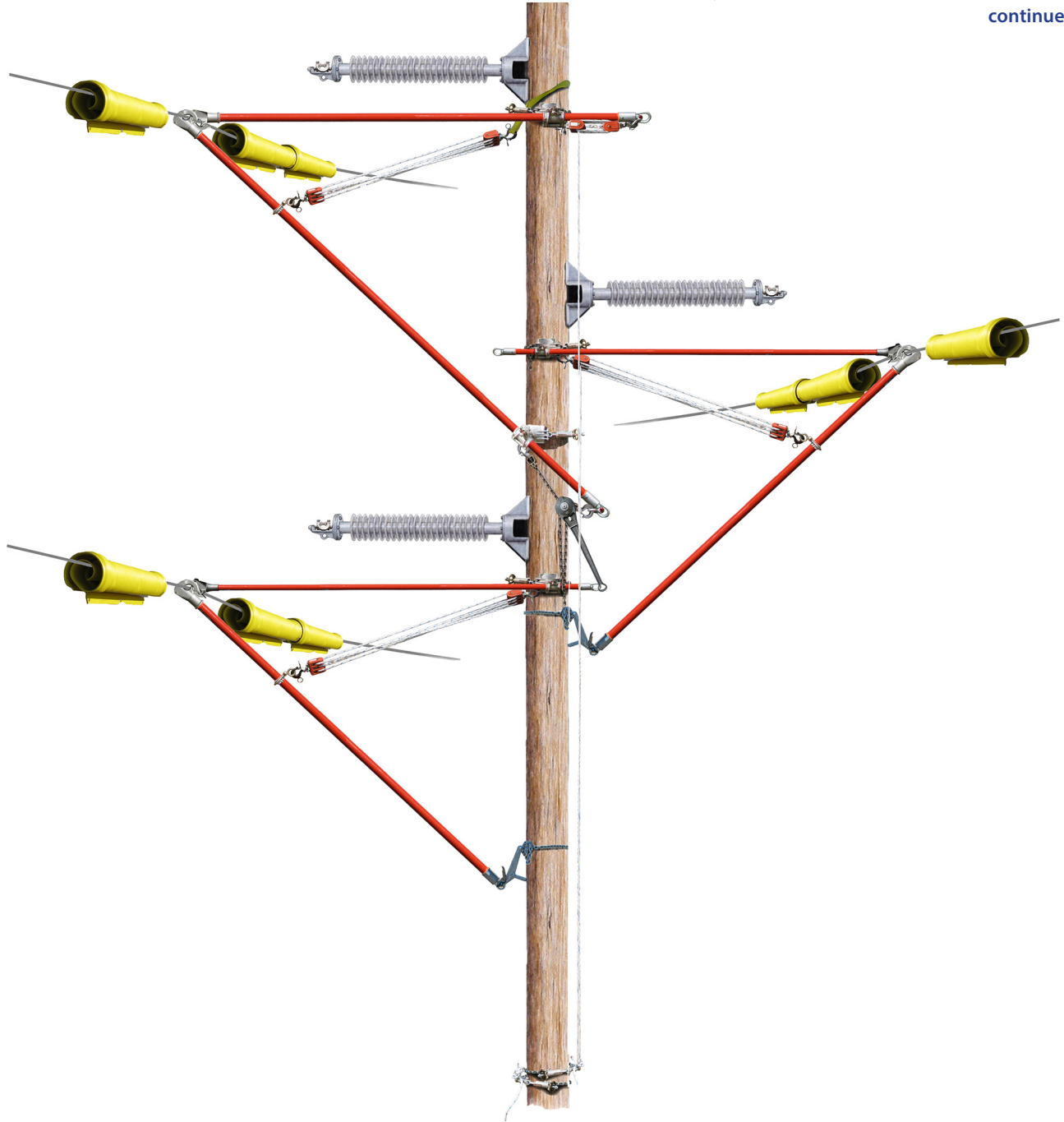
7. Install a nylon sling on the pole just below the saddle. Place a set of rope blocks in the sling and attach the other end in the clevis on the lever lift. Have the ground help install two rope snubbing brackets on the pole approximately 4' above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the fall line in a rope snubbing bracket.
8. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band mounted on 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 fall line in a 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 universal 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 6".
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. Moving up to the center conductor, on the working side of the pole, install a lifting tong on the conductor. Attach a lever lift to the lifting tong and attach the lever lift to the pole. Attach a 1-1/2" wire tong saddle on the working side of the pole approximately 18" below the bottom of the insulator bracket.
14. Attach a 1-1/2" x 10' 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.
15. Install a nylon sling on the pole just below the wire tong saddle. Place a set of rope blocks in the sling and attach the other end in the clevis on the lever lift. Have the ground help remove the slack from the rope blocks fall line and secure the fall line in a rope snubbing bracket.



16. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band mounted on 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. 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.



17. 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 universal stick can rotate the keeper piece and free the conductor.
18. 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 6".
19. 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.
20. Prepare to move the top conductor. Attach a 2-1/2" wire tong saddle with a 4" extension on the working side of the pole about 2' above the bottom insulator bracket. Attach a 2-1/2" x 12' lifting tong with a wire tong band to the top conductor. Put the lifting tong in the wire tong saddle clamp and tighten the clamp.
21. Install a second 2-1/2" wire tong saddle with 4" extension on the working side of the pole approximately 12" below the top phase insulator mounting bracket. Install a 2-1/2" x 12' holding tong on the conductor alongside the lifting tong head. Put the holding tong in the wire tong saddle clamp. Close the clamp and tighten.
22. Install a set of rope blocks between the holding tong saddle clevis and the swivel ring on the butt of the holding tong. Install a chain hoist between the lifting tong saddle clevis and the swivel ring on the butt 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 in the sling. Attach the other end of the rope blocks to the wire tong band mounted on the lifting tong. Have the ground help remove the slack from the fall lines of the rope blocks and secure them in a rope snubbing bracket. Install a least one piece of cover if a new pole will be set.
24. While one lineman is using a stick mounted ratchet wrench with a deep well socket to loosen the bolts on the conductor clamp, the other lineman utilizing another universal stick can rotate the keeper piece to free the conductor.
25. When the conductor is free, loosen both wire tong saddle clamps. Take up on the chain hoist attached to the lifting tong until the conductor is lifted from the insulator approximately 6".



26. The conductor can now be moved away from the pole by pulling the fall line of the rope blocks attached to the holding tong. Working both sets of rope blocks and the hoist, the conductor can be moved up and out away from the pole until adequate working clearance is achieved.
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 removal procedure.



Post Type Armless Construction

3 HPD Tramp 115 kV

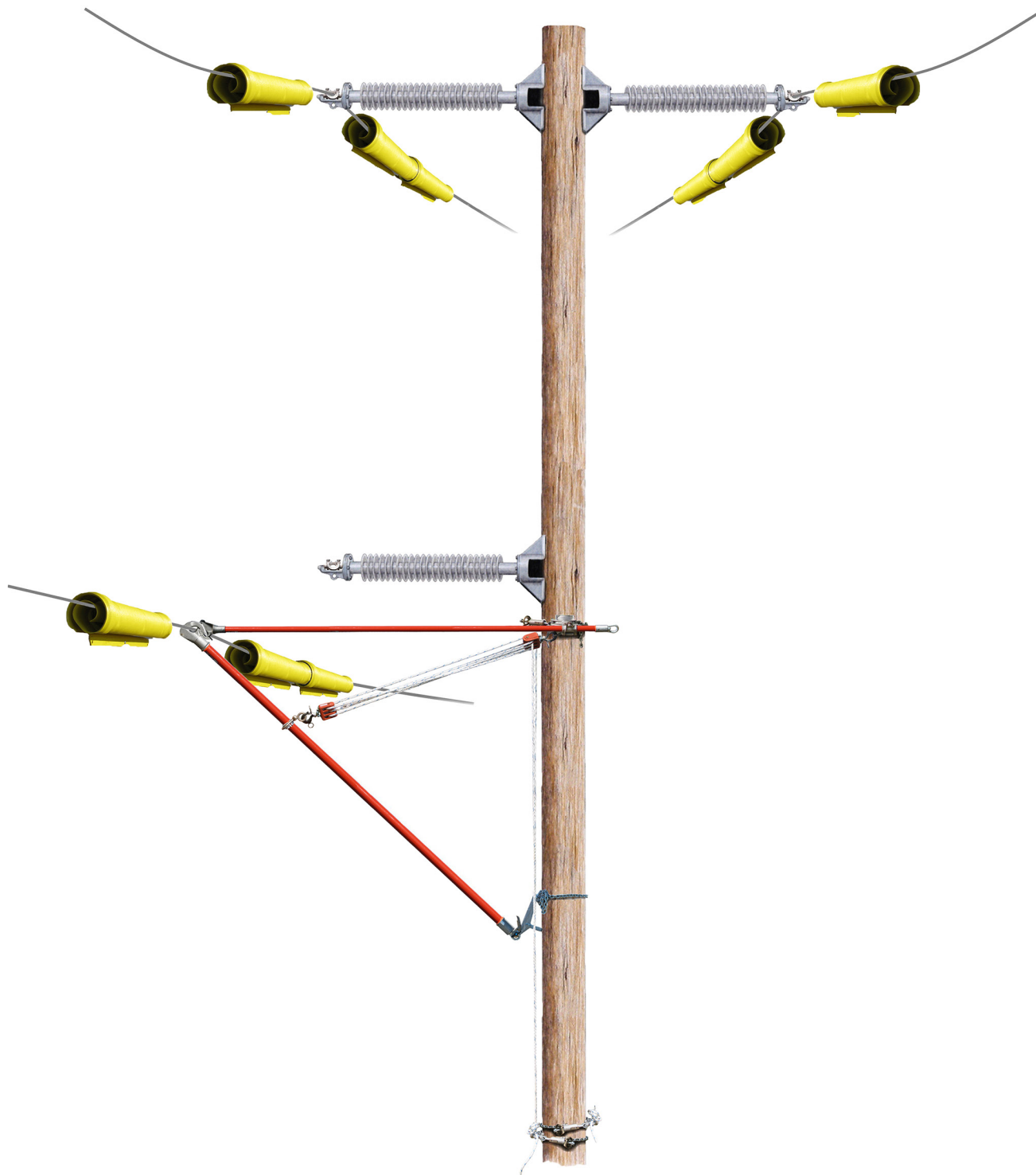
Insulator, Cross Arm or Pole Change Procedure

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 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. Attach wire tong bands to two 2-1/2" x 10' and one 2-1/2" x 14' wire tongs 40" from the head of each tong.
3. Attach the head of a lifting tong to the conductor on the bottom transmission phase 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 on the working side of the pole approximately 18" below the bottom of the insulator bracket.
6. Attach a 1-1/2" x 10' 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 in the clevis on the lever lift. Have the ground help install two rope snubbing brackets on the pole approximately 4' 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.



Post Type Armless Construction — 3 HPD TRAMP 115 kV

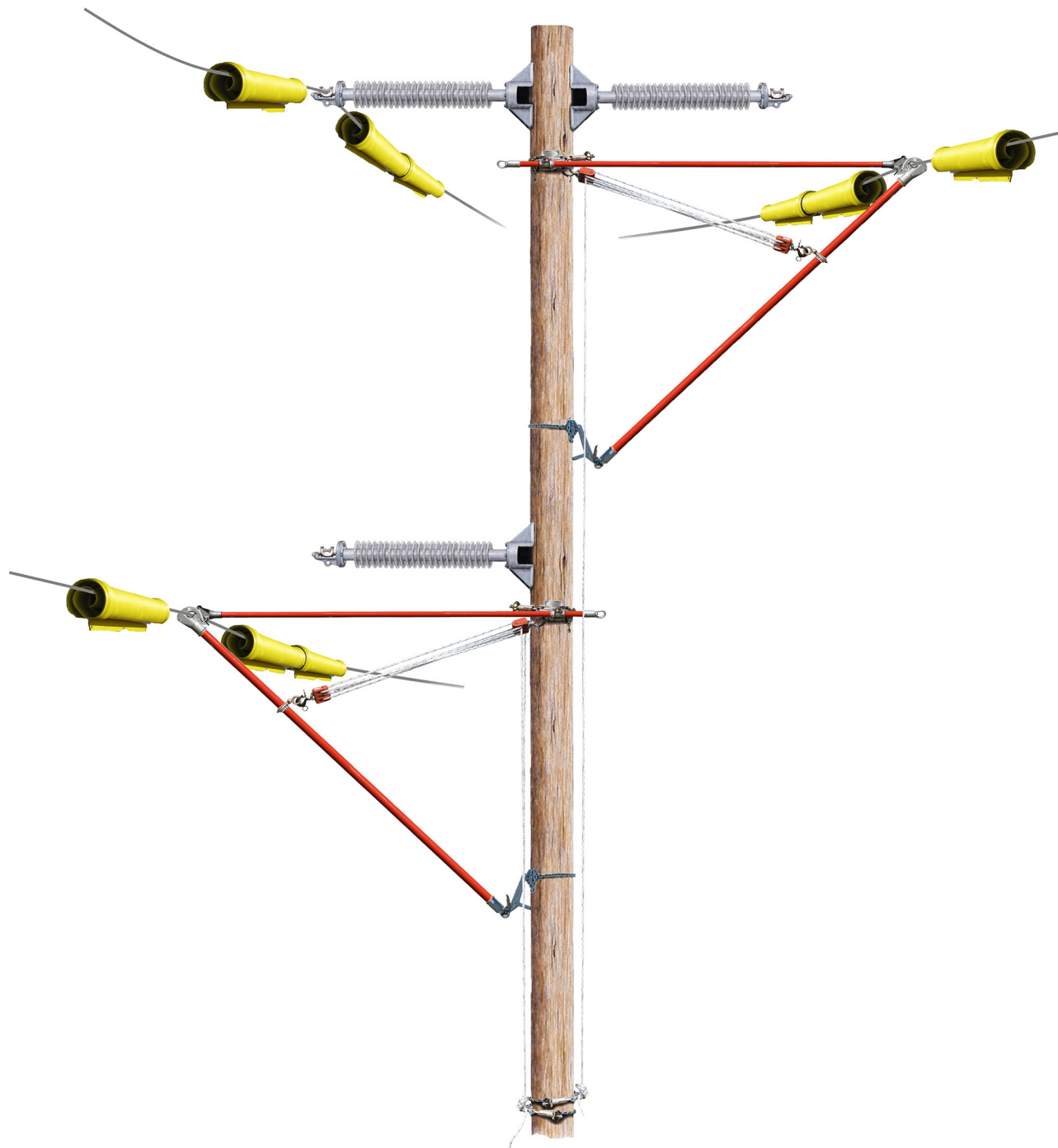


Insulator, Cross Arm or Pole Change Procedure

Post Type Armless Construction — 3 HPD Tramp 115 kV

continued

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 rope blocks fall line and secure the line in a 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 universal 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 6".
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 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 be slacked.
13. Moving up to the top single conductor, on the working side of the pole, install a lifting tong on the conductor. Attach a lever lift to the lifting tong and attach the lever lift to the pole. Attach a 1-1/2" wire tong saddle on the working side of the pole approximately 18" below the bottom of the top two insulator brackets.
14. Attach a 1-1/2" x 10' 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.
15. Install a nylon sling on the pole just below the wire tong saddle. Place a set of rope blocks in the sling and attach the other end to the clevis on the lever lift. Have the ground help remove the slack from the rope blocks fall line and secure the line in a rope snubbing bracket.
16. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band mounted on 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 a rope snubbing bracket. 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.

17. 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 universal stick can rotate the keeper piece and free the conductor.
18. 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 6".

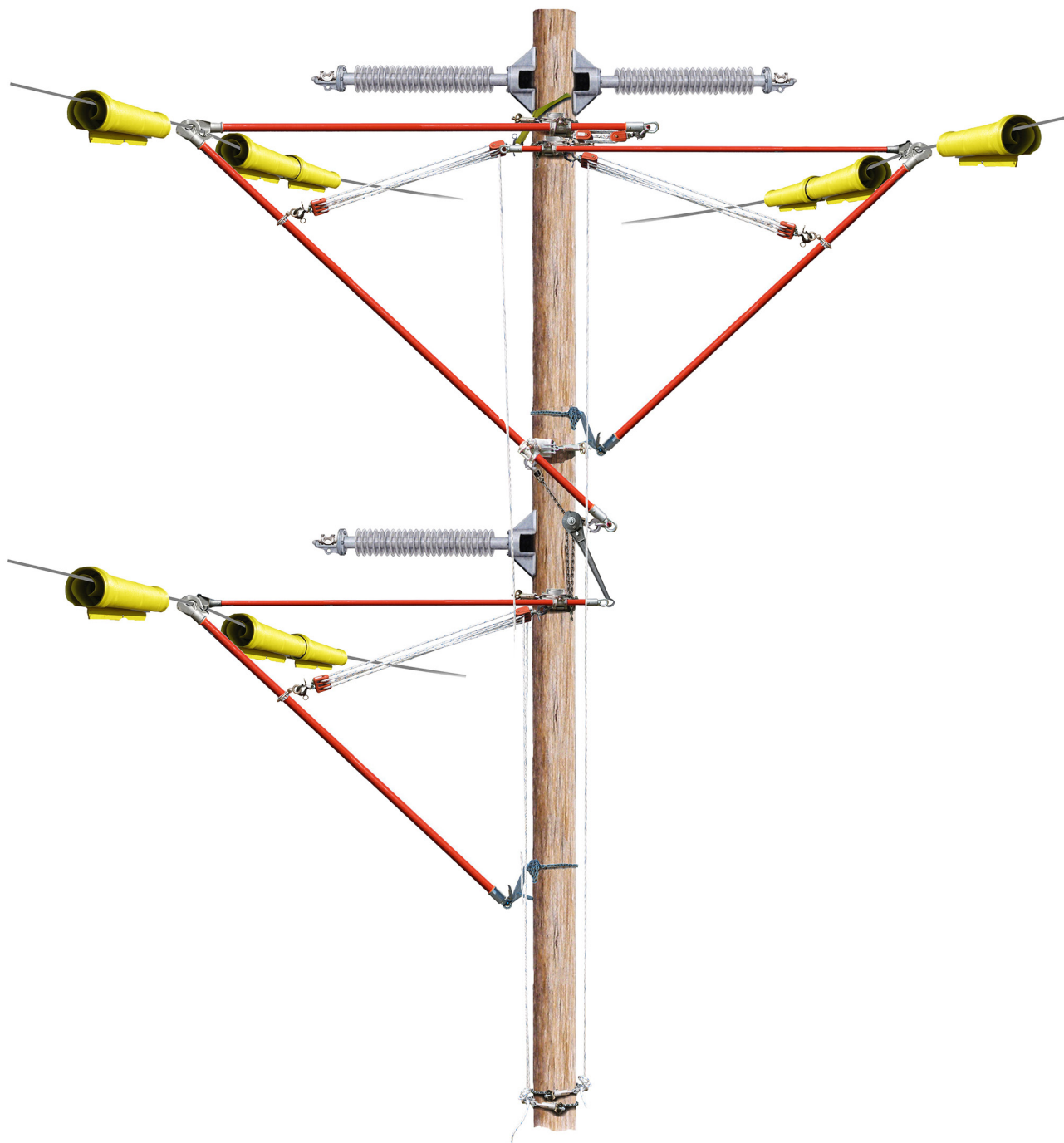


Insulator, Cross Arm or Pole Change Procedure

Post Type Armless Construction — 3 HPD Tramp 115 kV

continued

19. 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.
20. Prepare to move the opposite top conductor. Attach a 2-1/2" wire tong saddle with a 4" extension on the working side of the pole just above the bottom insulator bracket. Attach a 2-1/2" x 14' lifting tong with a wire tong band to the top conductor. Put the lifting tong in the wire tong saddle clamp and tighten.
21. Install a 2-1/2" wire tong saddle with 4" extension on the working side of the pole approximately 12" below the top phase insulator mounting bracket. Install a 2-1/2" x 12' holding tong on the conductor alongside the lifting tong head. Put the holding tong pole in the wire tong saddle clamp and tighten. Install a set of rope blocks between the wire tong saddle clevis and the swivel butt ring on the holding tong.
22. Attach a nylon sling on the pole just below the insulator mounting bracket. Hang a set rope blocks from the sling and attach the other end to the wire tong band mounted on the lifting tong. Install a chain hoist between the lifting tong saddle clevis and the swivel ring on the butt of the lifting tong. Remove all slack from the chain hoist.
23. Have the ground help remove the slack from the fall lines of the rope blocks and secure them in a rope snubbing bracket. Loosen the top 2-1/2" wire tong saddle clamp slightly. Install at least one piece of cover on the conductor if a new pole will be set.
24. 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 universal stick can rotate the keeper piece to free the conductor.
25. When the conductor is free, loosen the wire tong saddle clamp on the lifting tong and take up on the chain hoist until the conductor is lifted from the insulator approximately 6".
26. The conductor can now be moved away from the pole by pulling the fall line of the rope blocks attached to the holding wire tong. Working both sets of rope blocks and the chain hoist, the conductor can be moved up and out away from the pole until adequate working clearance is achieved. Have the ground help secure both of the rope blocks fall lines to a rope snubbing bracket. Tighten both 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 removal procedure.



Post Type Armless Construction

1 VP 115 kV

DWG. 045707

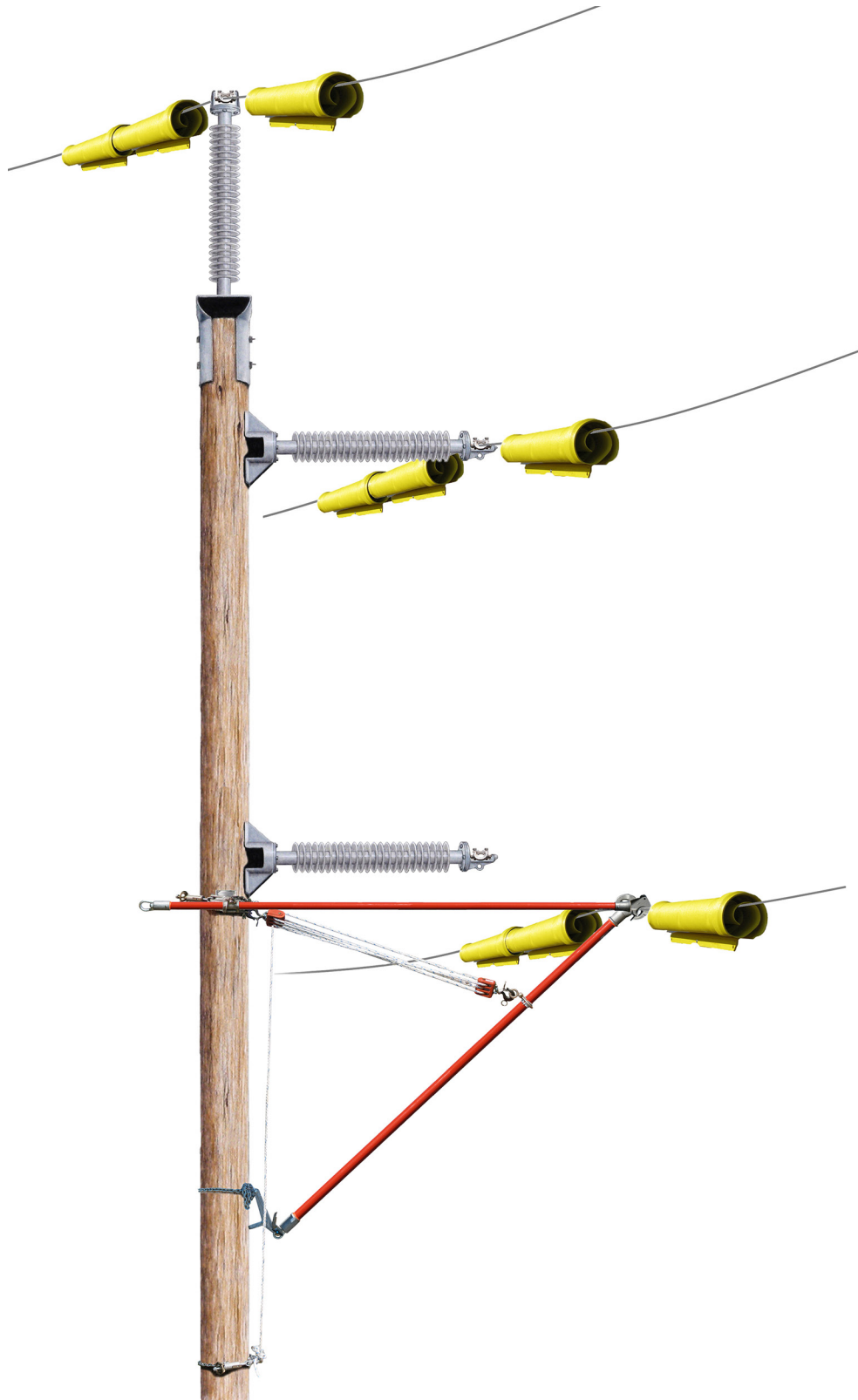
Insulator, Cross Arm or Pole Change Procedure

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, plan to set it as close to the old pole as possible.
2. Attach wire tong bands to two 2-1/2" x 10', one 2-1/2" x 12', and one 2-1/2" x 14' wire tong 40" from the head of each wire tong.
3. On the bottom transmission phase, attach the head of a 10' 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 approximately 18" below the bottom of the insulator bracket.
6. Attach a 1-1/2" x 10' 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.



Post Type Armless Construction — 1 VP 115 kV

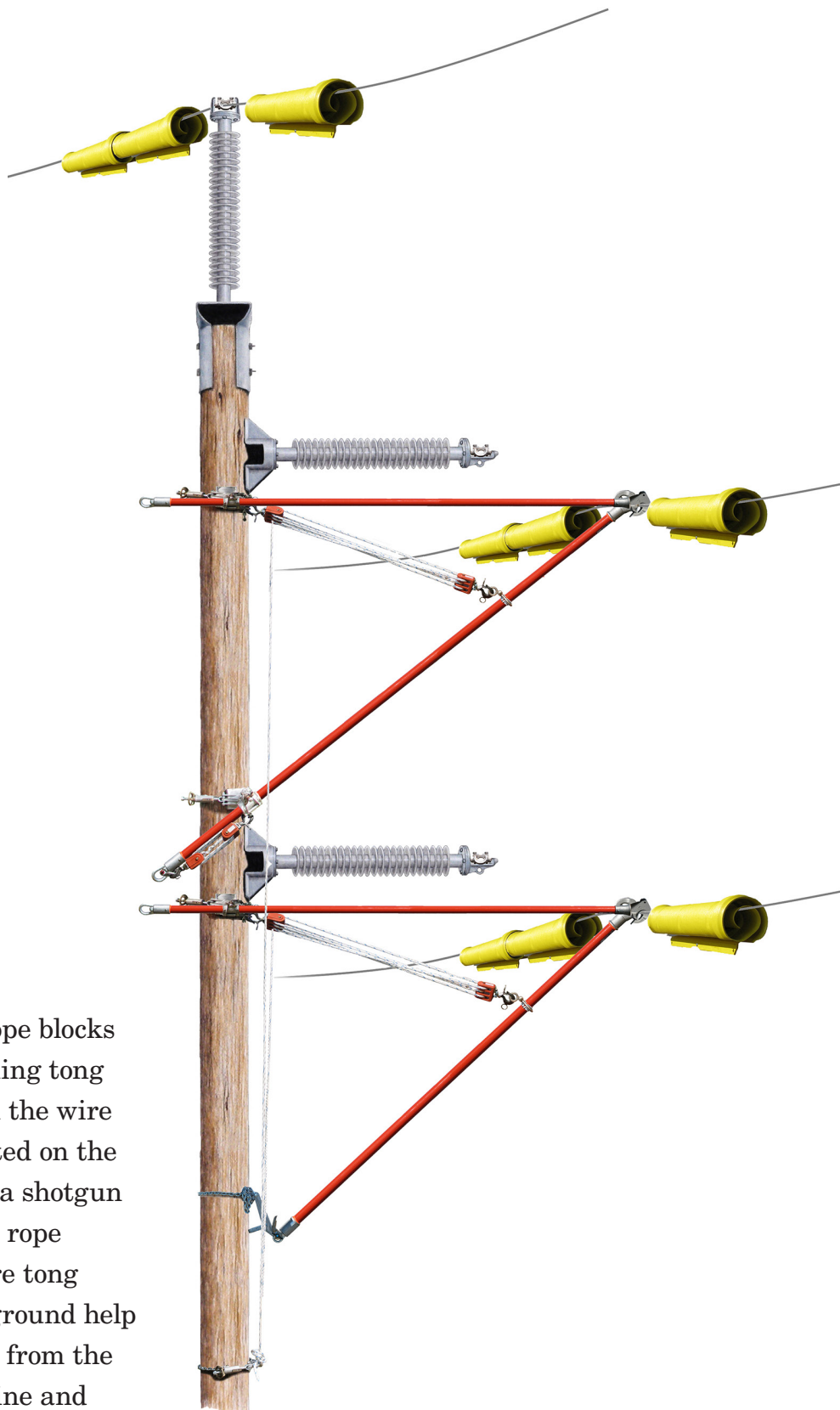


Have the ground help install two rope snubbing brackets on the pole approximately 4' above the ground. Have the ground help remove the slack from the rope blocks fall line and secure the line in a rope snubbing bracket.

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 rope blocks fall line and secure the fall line in a 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 universal 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 rope blocks attached to the lever lift and raise the conductor approximately 6".
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. Moving up to the center conductor, on the working side of the pole, install a 2-1/2" x 10' lifting tong with a wire tong band 40" from the head of the tong on the conductor. Attach a 2-1/2" wire tong saddle on the pole face on the working side of the pole just above the lower phase insulator bracket. Place the lifting tong into the wire tong saddle clamp and tighten. Hang a set of rope blocks between the 2 1/2" lifting tong saddle clevis and the swivel ring on the bottom of the lifting tong. Have the ground help remove the slack from the rope blocks fall line and secure the fall line in a rope snubbing bracket.
14. Attach a 1-1/2" wire tong saddle on the working side of the pole approximately 18" below the bottom of the center phase insulator bracket.
15. Attach a 1-1/2" x 10' wire 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.



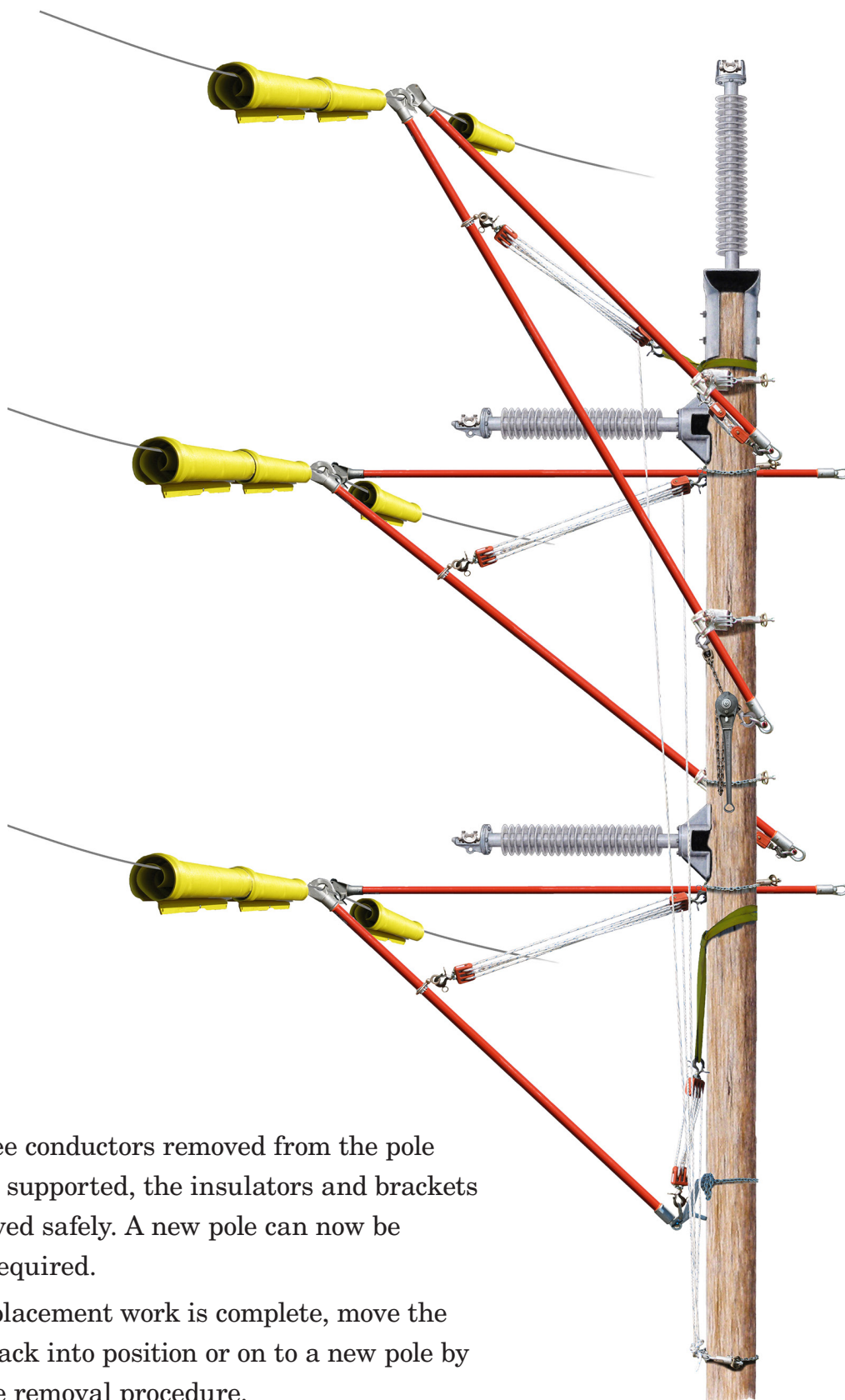
Post Type Armless Construction — 1 VP 115 kV continued



16. Install a set of rope blocks between the holding tong saddle clevis and the wire tong band mounted on 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.



17. Install a conductor cover if needed and loosen the bolts on the conductor clamp.
When the keeper piece can be rotated, loosen both wire tong saddle clamps and have the ground help pull the rope blocks fall line attached to the swivel butt ring on the lifting tong. Work with the ground help to lift the conductor out of the conductor clamp approximately 6".
18. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong until adequate working clearance from the pole 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. The lifting tong rope blocks fall line can now be securely tied to the rope snubbing bracket.
19. Prepare to move the top conductor. Attach a 2-1/2" wire tong saddle clamp on the opposite side of the pole just below the center phase insulator mounting bracket.
20. Install a 2-1/2" x 12' wire tong on the top conductor and slide it into the wire tong saddle clamp and hand tighten the clamp.
21. Take a second 2-1/2" wire tong saddle and attach it to the same side of the pole approximately 6' below the top wire tong saddle. Install a 2-1/2" x 14' lifting tong on the conductor alongside the first wire tong. Put the lifting tong in the wire tong saddle clamp and hand tighten the clamp.
22. Install a set of rope blocks between the holding tong saddle clevis and the swivel ring on the butt of the holding tong. Install a chain hoist between the lifting tong saddle clevis and the swivel ring on the butt 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 in the nylon sling. Attach the other end of the rope blocks to the wire tong band mounted on the lifting tong. Have the ground help remove the slack from both rope blocks fall lines and secure them in a rope snubbing bracket.
24. Install at least one piece of cover on the conductor if a new pole will be set. Loosen the bolts on the conductor clamp and rotate the keeper piece to free the conductor.
25. Loosen both saddle clamps and raise the conductor by taking up on the chain hoist.
The conductor can now be moved away from the pole by pulling the fall line of the rope blocks attached to the holding wire tong. Working both sets of rope blocks and the chain hoist, the conductor can be moved up and out away from the pole until adequate working clearance is achieved. Have the ground help secure both of the rope blocks fall lines to a rope snubbing bracket and then tighten the two wire tong saddle clamps.



26. 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.
27. When all replacement work is complete, move the conductors back into position or on to a new pole by reversing the removal procedure.



Post Type Armless Construction

3 HP 115 kV

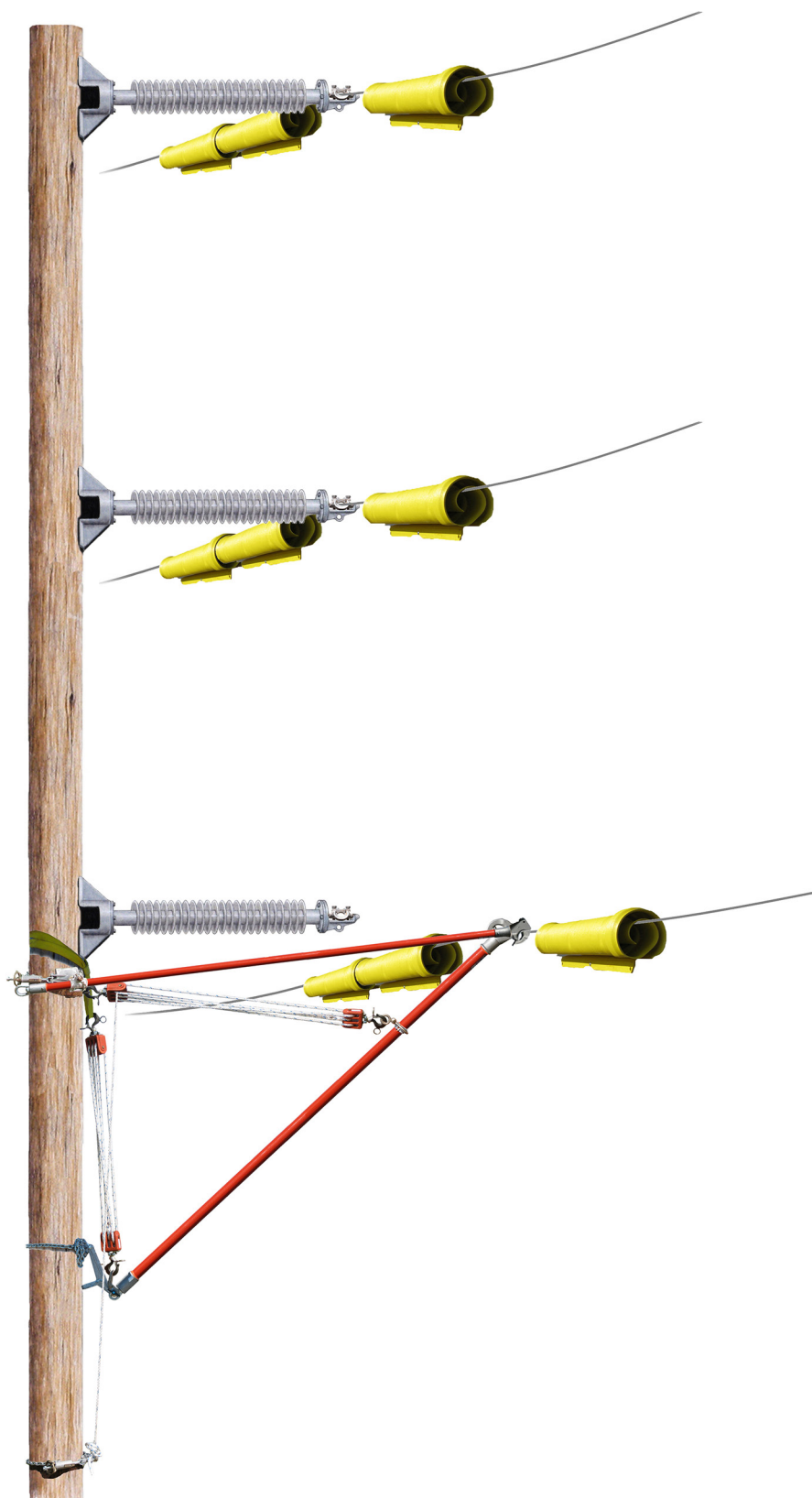
Insulator, Cross Arm or Pole Change Procedure

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

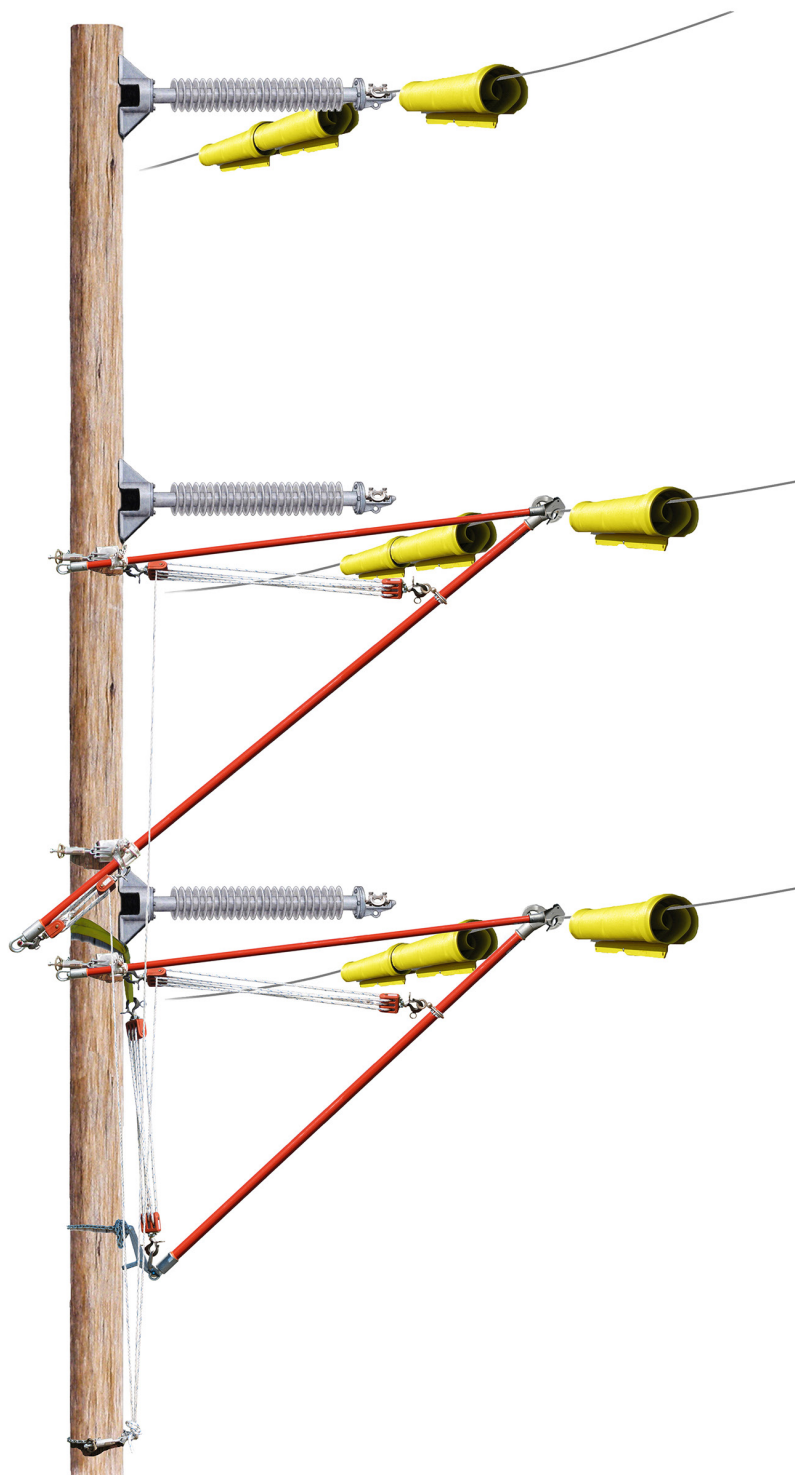
1. If a distribution circuit or conductors are located on the pole, they must be covered and then relocated onto extension arms or completely removed from the existing cross arm. A clear working space must be created in order to install rigging, climb through, or make room to set a new pole. If a new pole is to be installed, plan to set it as close to the old pole as possible.
2. Attach wire tong bands to one 2-1/2" x 10' wire tong and two 2-1/2" x 12' wire tongs, 40" from the head of each tong.
3. Attach the head of a 2-1/2" x 10' lifting tong to the conductor on the bottom transmission phase 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 on the working side of the pole approximately 18" below the bottom of the insulator bracket.
6. Attach a 1-1/2" x 10' 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.
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 in the clevis on the lever lift. Have the ground help remove the slack from the rope blocks fall line and secure the line in a rope snubbing bracket mounted on the pole about 4' above the ground.



Post Type Armless Construction — 3 HP 115 kV



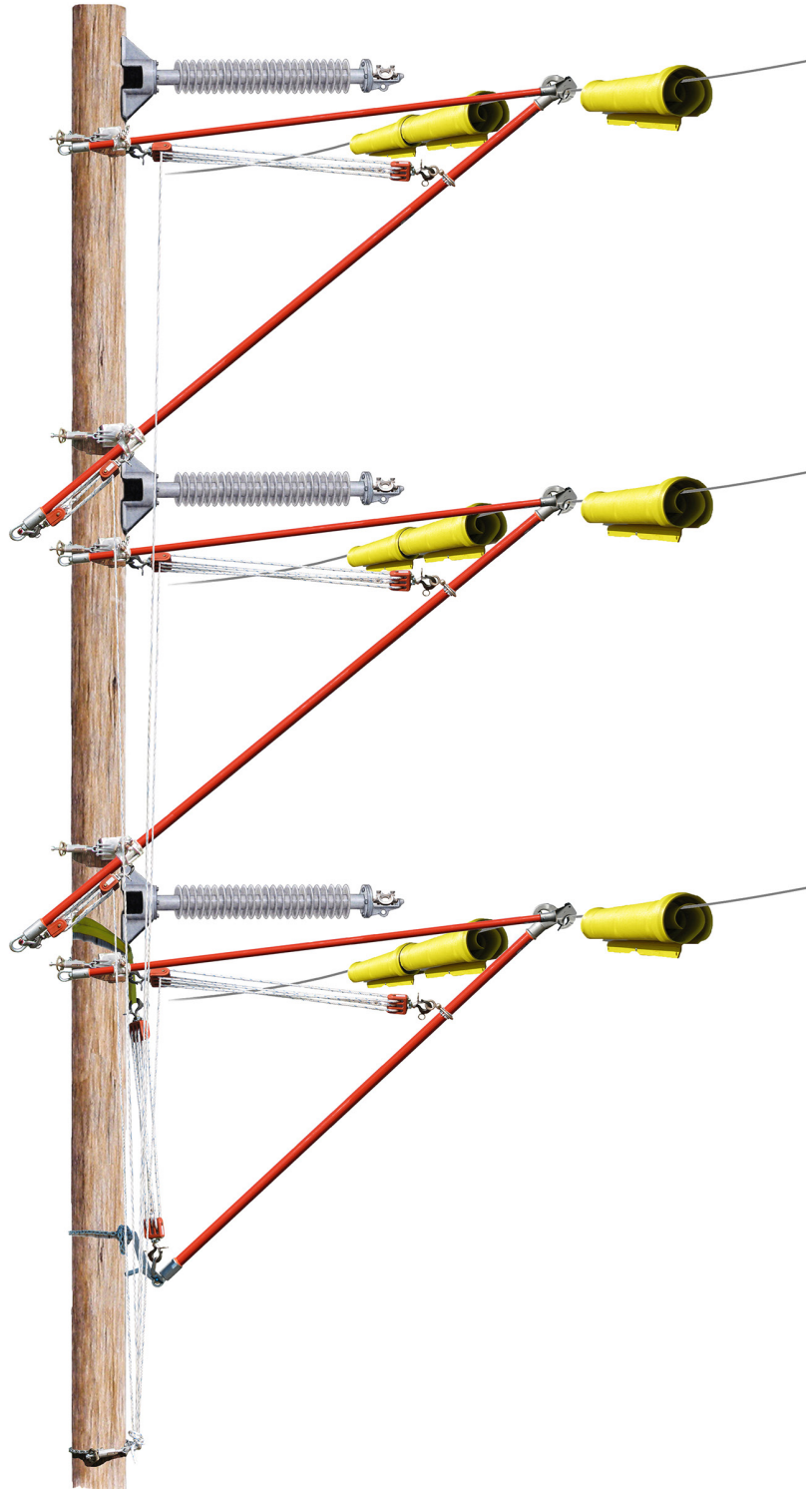
8. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band attached to the lifting tong. Use a shotgun stick to hang the rope blocks on the wire tong band. Have the ground help remove the slack from the rope blocks fall line and secure the fall line in the rope 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 universal 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 6".
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. Moving up to the center phase, attach a 2-1/2" wire tong saddle to the pole, just above the lower phase insulator mounting bracket. Attach the head of a 2-1/2" x 12' lifting tong to the conductor. Swing the lifting tong to the pole and place the tong into the wire tong saddle clamp and tighten. Hang a set of rope blocks between the 2-1/2" lifting tong saddle clevis and the swivel ring on the butt of the lifting tong. Have the ground help remove all slack from the rope blocks fall line and secure the fall line in a rope snubbing bracket.
14. Attach a 1-1/2" wire tong saddle on the working side of the pole approximately 18" below the bottom of the center phase insulator bracket.
15. Attach a 1-1/2" x 10' wire 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.
16. Install a set of rope blocks between the holding tong saddle clevis and the wire tong band mounted on the lifting tong. Have the ground help remove the slack from the rope blocks fall line and secure the line in a rope snubbing bracket.



17. If setting a new pole, the conductor should be covered before removal from the insulator.
18. 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 universal stick can rotate the keeper piece and free the conductor.



19. When the conductor is free, loosen the wire tong saddle clamp on the lifting tong and have the ground help pull the rope blocks fall line attached to the lifting tong and raise the conductor approximately 6". Loosen the wire tong saddle clamp on the holding tong and push out.
20. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong and take up on the rope blocks attached to the lifting tong. Guide the conductor away from the pole until adequate working clearance is achieved. The holding tong can be pushed through the wire tong saddle clamp until it can travel no further due to the butt ring casting. Both wire tong saddle clamps should then be securely tightened. Both sets of rope blocks can be slacked.
21. Prepare to move the top conductor. Attach a 2-1/2" wire tong saddle to the pole, just above the center phase insulator mounting bracket. Attach the head of a 2-1/2" x 12' lifting tong to the conductor. Swing the lifting tong to the pole and place the tong into the wire tong saddle clamp and tighten. Hang a set of rope blocks between the 2-1/2" lifting tong saddle clevis and the swivel ring on the butt of the lifting tong. Have the ground help remove all slack from the rope blocks fall line and secure the fall line in a rope snubbing bracket.
22. Attach a 1-1/2" wire tong saddle on the working side of the pole approximately 18" below the bottom of the top phase insulator bracket.
23. Attach a 1-1/2" x 10' wire 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.
24. Install a second set of rope blocks between the holding tong saddle clevis and the wire tong band mounted on the lifting tong. Have the ground help remove the slack from the rope blocks fall line and secure the line in the rope snubbing bracket. Install at least one piece of cover on the conductor if a new pole will be set.
25. 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 universal stick can rotate the keeper piece to free the conductor.
26. When the conductor is free, loosen both wire tong saddle clamps and have the ground help raise the conductor approximately 6" with the rope blocks attached to the lifting tong.
27. While guiding the holding tong, slowly release the rope blocks attached to the band on the lifting tong until adequate working clearance from the pole 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. Both wire tong clamps should then be securely tightened. Both sets of blocks should be secured in a rope snubbing bracket.

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



Tri Post & Suspension Construction

TPS-1 115 kV

DWG. 053804

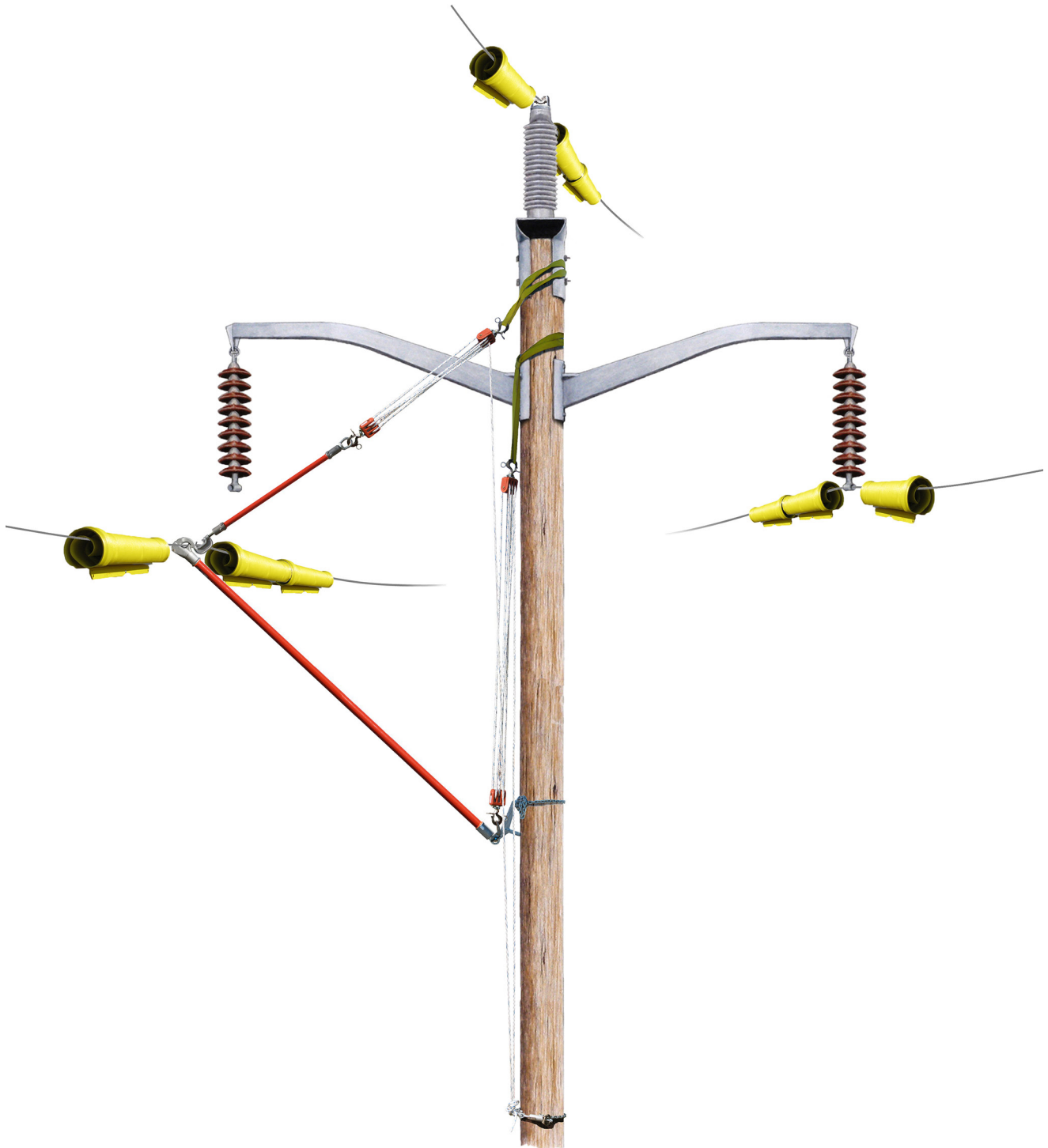
Insulator, Cross Arm or Pole Change Procedure

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 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 first lower transmission phase to be moved, attach a 2-1/2" x 12' lifting tong to the conductor with the jaw opening facing the pole.
3. 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.
4. Attach a second lifting tong to the opposite bottom phase conductor. Attach a lever lift to the lifting tong. Attach the lever lift to the pole just above or below the first lever lift.
5. Install a nylon sling on the pole just below the 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 remove the slack from the blocks fall line and secure the fall line in a rope snubbing bracket mounted on the pole about 4' above the ground.



Tri Post & Suspension Construction — TPS-1 115 kV

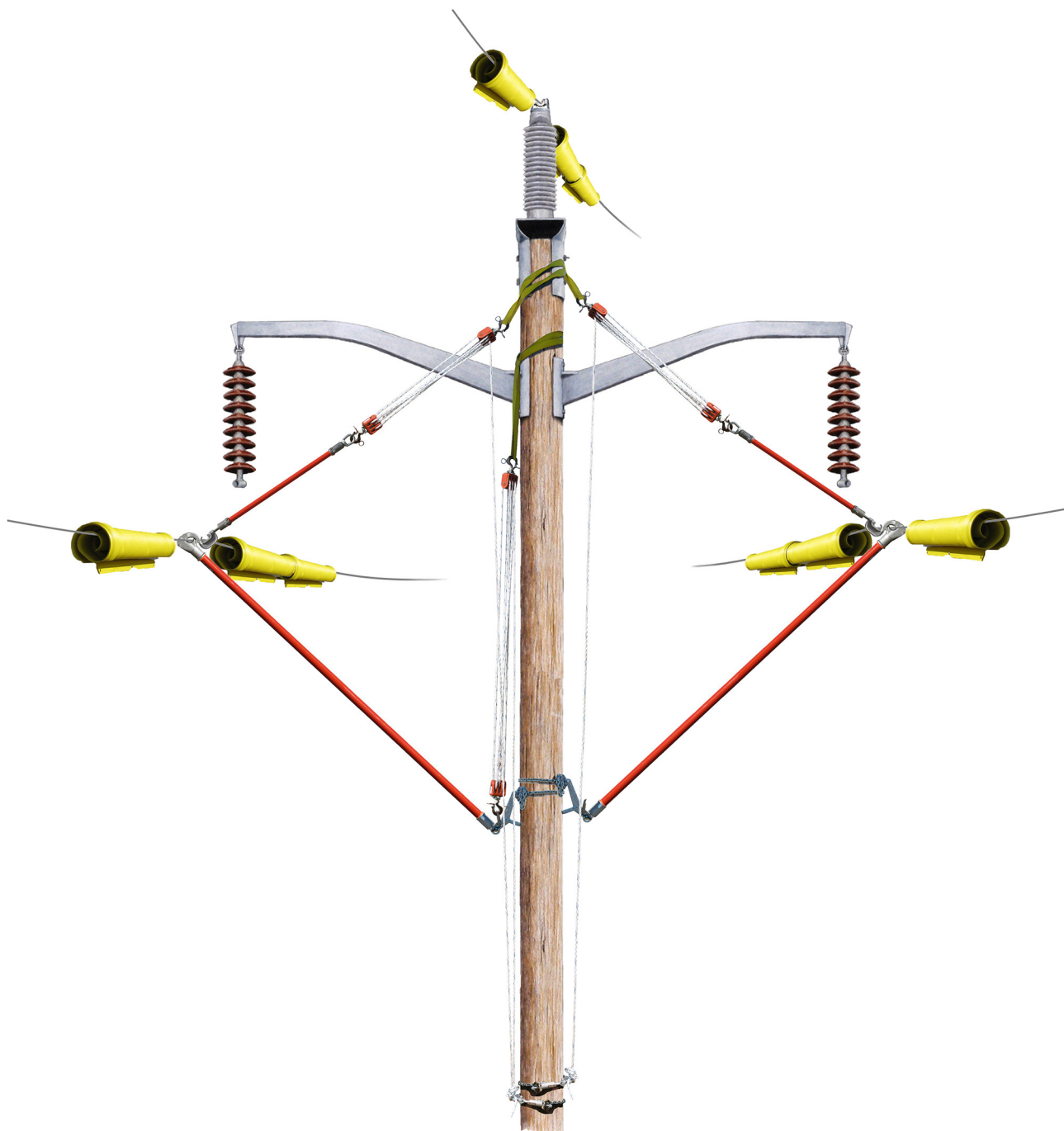


Insulator, Cross Arm or Pole Change Procedure

Tri Post & Suspension Construction — TPS-1 115 kV

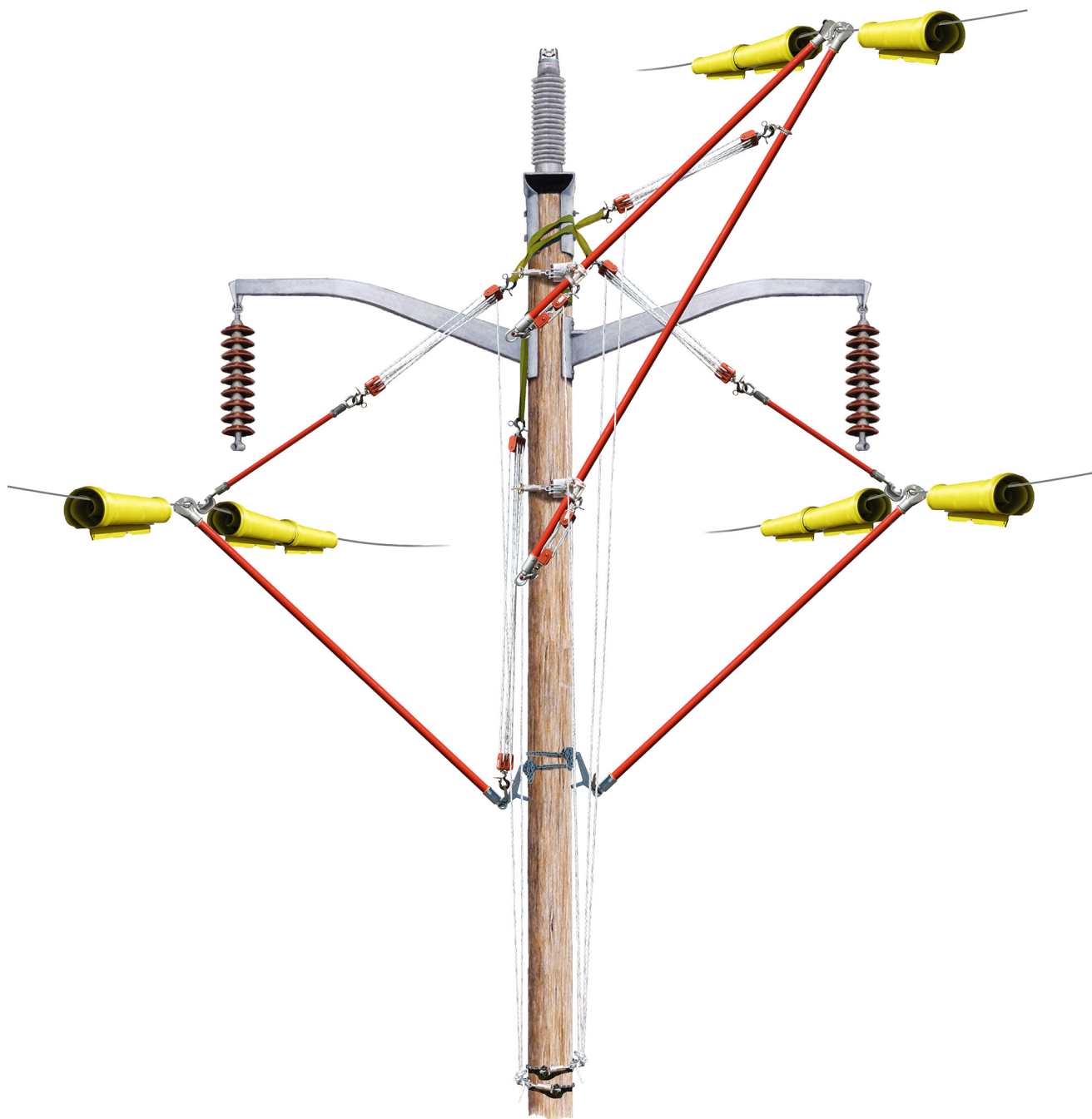
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6. Use a universal stick and shotgun stick to choke two nylon slings around the pole top bracket as high as possible with one sling eye facing each of the two bottom phase conductors. Make certain that the slings don't lay on any sharp edges or bolts on the pole top bracket. Hang a set of rope blocks in the sling facing the first conductor to be moved. Attach the rope blocks to the butt ring of a 1-1/2" x 6' strain link stick. Attach the strain link stick to the conductor alongside the wire tong. Have the ground help remove the slack from the rope blocks fall line and secure the fall line in the rope snubbing bracket. If setting a new pole or removing and replacing an arm the conductor should be covered before removal from the insulator string. The cover should be placed on the conductor on the side of the old pole where the new pole will be located, or both sides if removing and replacing an arm.
7. A lineman using a universal stick with a cotter key puller attachment can release the cotter key in the ball joint connected to the conductor clamp. This lineman can now clamp the bottom insulator in the string just above the bell with an adjustable insulator fork attached to the other end of the universal pole. Have the ground help pull the rope blocks fall line attached to the lever lift to raise the conductor slightly. A second lineman utilizing a ball and socket adjuster mounted on a universal pole can disengage the ball-socket joint.
8. When the conductor is free, the ground help can slowly release the tension on the strain link stick rope blocks. Use a universal stick to guide the conductor away from the pole. Working together, move the conductor out away from the pole until adequate working clearance is achieved. The rope blocks attached to the lever lift can be slacked to facilitate their removal.
9. Hang a second set of rope blocks from the other nylon sling choked on the pole top bracket. Attach a 1-1/2" x 6' strain link stick to the opposite lower phase conductor. Attach the rope blocks to the butt ring on the link stick. Have the ground help remove the slack from the rope blocks fall line and secure the fall line in the rope snubbing bracket.
10. Remove the rope blocks attached to the nylon sling below the arm and the lever lift clevis. Rotate the sling around to the other side of the pole and attach the rope blocks to the sling and the other lever lift clevis. Have the ground help remove the slack from the rope blocks fall line and secure the fall line in the rope snubbing bracket.
11. Release the cotter key. Have the ground help raise the conductor slightly, and then disengage the ball-socket joint.



**Insulator, Cross Arm or Pole Change Procedure****Tri Post & Suspension Construction — TPS-1 115 kV****continued**

12. If conductor cover is required, install it now. Working with the ground help, guide the conductor out and away from the pole until adequate working clearance is achieved. Slack the rope blocks attached to the lever lift to facilitate their removal.
13. Install a 24" pole cover on the top of the pole. Install conductor cover on the top phase conductor if required.
14. Attach a 2-1/2" wire tong saddle on the pole just above the arm mounting bracket.
15. Install a 2-1/2" x 14' wire tong on the center conductor and slide it into the wire tong saddle clamp. Tighten the saddle clamp.
16. Install a set of rope blocks between the wire tong saddle clamp clevis and the swivel ring on the bottom of the holding tong. Have the ground help remove all slack from the rope blocks fall line and secure the fall line in a rope snubbing bracket. Loosen the saddle clamp just enough so that the wire tong can slide through the clamp.
17. Install a second 2-1/2" wire tong saddle on the same pole face approximately 6' below the first wire tong saddle. Attach a 2-1/2" x 16' wire tong with a wire tong band mounted 40" from the head, to the conductor. Put the lifting tong pole in the wire tong saddle clamp and tighten the clamp.
18. Install a set of rope blocks between the wire tong saddle clevis and the swivel ring on the bottom of the lifting tong. Have the ground remove the slack from the rope blocks fall line and secure the fall line in a rope snubbing bracket. Loosen the saddle clamp so the wire tong can slide through the clamp.
19. Install a nylon sling on the pole just above the top wire tong saddle. Hang a set of rope blocks from the sling then attach the other end to the wire tong band mounted on lifting tong using a shotgun stick. Have the ground help remove the slack from the rope blocks and secure the rope blocks fall line in a rope snubbing bracket.
20. Use a universal stick mounted ratchet wrench to loosen the bolts on the conductor clamp and rotate the keeper piece to free the conductor.
21. The conductor can now be lifted free of the insulator by taking up on the lifting tong rope blocks. Have the ground help pull the holding tong rope blocks fall line to push the conductor away from the pole. By working all three sets of rope blocks the conductor can be moved up and out away from the pole until adequate working clearance from the pole is achieved. Have the ground help secure all rope blocks fall lines to a rope snubbing bracket. Tighten the two wire tong saddle clamps.



22. With all three conductors removed from the pole and securely supported, the insulators, arms 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 removal procedure.

Insulator, Cross Arm or Pole Change Procedure



Live-Line Procedures Manual