Wire Tongs and Accessories

TRAINING MANUAL
OBJECTIVE:
Given a distribution hotstick trailer, you will be able to identify wire tongs and their accessories and also explain their function.

WHY?
Because wire tongs and the associated accessories are required to perform most hotstick procedures, it is important that we understand their uses and capabilities.

LEARNING OBJECTIVES:
1. Identify and explain the function of wire tongs.
2. Identify and explain the function of wire tong accessories.
**IN THIS MODULE:**

1. Wire Tongs  
3. Wire Tong Accessories

**RESOURCES:**

- Distribution hotstick trailer

**ESTIMATED TIME:**

2 hours

**PREREQUISITES:**

- *Use and Care of Hotsticks* module

**LEARNING STEPS:**

1. Watch the training video.  
2. Cover the module.  
4. Clarify any questions you may have.  
5. Complete the Knowledge Check.
Introduction

Supporting conductors during live line work is a critical part of the job. In addition to calculating conductor weights and tensions, you must be aware of the limits and capabilities of wire tongs and their accessories.

No matter what tool you are using, remember that your safety and that of your co-workers are prime considerations in all work activities.
Wire tongs are versatile tools which can be used in conjunction with lever lifts, rope blocks, pole saddles and clamps, as well as a variety of other attachments, to complete various tasks such as:

• moving and holding conductors clear of the work area.
• supporting and positioning insulated ladders and insulator cradles.
• functioning as auxiliary arms and braces.

Rotating the wire tong handle will clamp the wire tong jaws securely to the conductor.

The length of the wire tong handle determines the maximum voltage the stick may be applied to — the longer the handle, the higher the voltage range.

Wire tongs are available in four diameters. The larger diameter wire tongs are designed for heavier conductors and larger working loads. The tensile strength values for the different wire tong diameters are as follows:

• the 1-1/2 inch wire tong has a tensile strength of 1,500 pounds
• 2 inch — 2,000 pounds

Always adhere to minimum working clearances when applying wire tongs and wire tong accessories to energized conductors.
The safe working loads in the cantilever position for various wire tongs are:

- 2-1/2 inch — 2,500 pounds
- 3 inch — 3,000 pounds

When additional strength is required, wire tongs may be doubled up or a larger diameter wire tong may be used.

The correct size of wire tong accessory must be used with the corresponding wire tong diameter.
Wire Tong Accessories

There are twelve wire tong accessories which are designed to perform various functions. These accessories will assist you in performing many different tasks while working in conjunction with wire tongs.

Lever Lift Wire Tong Support

Lever lift supports are required when working space on the structure is limited, and for raising or lowering conductors with heavy suspension insulator construction. For example, the lever lift should be used in place of wire tong saddles when the load exceeds 500 pounds. The working load for the single lever lift is 1,000 pounds, and the double-type lever lift is 750 pounds per wire tong.
The lever lift provides a total conductor lift of 20-3/4 inches, and will support a variety of wire tong sizes. These supports can be adapted easily for use on either single or double wire tongs.

In addition, rope blocks may be attached to the clevis mounted on the lever lift to provide a mechanical lifting advantage.

**Wire Tong Saddles**

Wire tong saddles are used to secure wire tongs to a structure. Each type of wire tong saddle has a clevis bolted through the pivot lug. Rope blocks may be attached to the clevis to assist in lifting a heavy conductor while pivoting with the wire tong.

Wire tong saddles are made of lightweight, heat-treated aluminum, and will support a maximum weight of 1,000 pounds.
Crossarm Wire Tong Saddle

Use a crossarm-type wire tong saddle on under-built arms where space is limited.

Tower Wire Tong Saddle

The tower wire tong saddle is fastened securely to an angle steel tower leg with four hooks tightened by wing nuts.
Wire Tong Saddle Extension

A wire tong saddle extension may be bolted to the saddle when additional clearance from the pole is required. The extension is 4 inches in length, and reduces the maximum working load of the wire tong saddle to 800 pounds.

Wire Tong Saddle Clevis

The wire tong saddle clevis is also utilized, when using a wire tong as a brace, for an auxiliary crossarm. The wire tong saddle clevis is used to attach the wire tong butt ring to the wire tong saddle.
Chain Tightener and Chain Tightener Extension

Chain tighteners and chain tightener extensions are used for building wire tong holding assemblies or for replacing unsafe tighteners and extensions. Both the chain tightener and chain tightener extension have a maximum working load of 2,500 pounds.

Wire Tong Swivel

The wire tong swivel is designed to prevent kinking and damage to the conductor which may occur when two wire tongs are attached side by side.

The swivel is attached to the lifting tong nearest the conductor end, while the holding tong is hooked into the clevis attachment on the swivel. This configuration places only one wire tong on the conductor, while the clevis pivot allows the tongs to assume the correct positions.
Wire Tong Pole Clevis

The wire tong pole clevis is used with a vertical wire tong which supports an auxiliary crossarm. The wire tong pole clevis clamps around the vertical wire tong and engages the butt rings of the two wire tongs being used as side braces.

Wire Tong Band

The wire tong band allows rope blocks to be attached anywhere along the length of the wire tong handle. The band is clamped with two screws around the fiberglass pole being used as the lifting tong. The hinge ring slides on the band, allowing the wire tong to rotate when supported by rope blocks.
Wire Tong Blocks Clamp

The wire tong blocks clamp is secured to the handle of the wire tong being used as a holding tong under tension. Rope blocks are secured to the ring of the clamp and the clevis of the wire tong saddle to assist in pulling conductors back into position. This aligns the force of the pull with the wire tong, and eliminates most of the bending strain normally placed on the wire tong.

Wire Tong Clamp

Wire tong clamps pivot on the saddle, and secure the wire tongs. These clamps can be tightened to grip the wire tong securely without damaging the surface finish, or they may be loosened to permit the wire tong to slide while the conductor is being positioned.
Summary

To summarize this module, you have learned:

- The identity and function of the wire tongs.
- The identity and function of the wire tong accessories.

Now...

- Complete the Review Questions.
- Clarify any questions or concerns you may have.
- Complete the Knowledge Check.
Identify and explain the function of wire tongs.

T / F 1. Wire tongs are tools used to support live conductors. This tool can be used in conjunction with other apparatus to move a conductor out of a work location.

T / F 2. The diameter of the wire tong handle determines the maximum voltage rating of the stick.

T / F 3. Never double up wire tongs to handle heavier loads — rather, use other means of support.

4. The 2-1/2 inch wire tong is rated for __________ pounds tensile strength.

5. The safe working load of a 2-1/2 inch wire tong in the cantilever position is __________ foot pounds.

T / F 6. Always adhere to minimum working clearances when using wire tongs.

T / F 7. The lever lift support should only be used when there is plenty of working space available on the structure.

T / F 8. When loads exceed 500 pounds, the wire tong saddle must be used in place of the lever lift.

9. The lever lift provides a total conductor lift of __________ inches.
Rope blocks, in conjunction with a lever lift, may be used to gain mechanical advantage when lifting conductors.

**Identify and explain the function of wire tong accessories.**

11. The wire tong pole clevis is used to:
   (a) clamp around a wooden pole to provide a means of attachment for a wire tong.
   (b) clamp around a wooden pole to provide an anchor point for rope blocks being used.
   (c) attach a lever lift to the pole.
   (d) clamp around the vertical wire tong supporting an auxiliary crossarm, and engage the butt rings of two wire tongs used as side braces.

12. The wire tong saddle clevis can be used to attach the butt ring of a wire tong (used as a brace for an auxiliary crossarm) to a wire tong saddle.

13. The wire tong band provides an attachment point for __________ _________ anywhere along the length of the wire tong handle.

14. The wire tong blocks clamp is used to: (You may choose more than one answer.)
   (a) provide a point of attachment for a set of rope blocks to a wire tong saddle.
   (b) provide a point of attachment for a set of rope blocks to a wire tong under tension.
   (c) provide a point of attachment, for a wire tong used as a brace, onto an auxiliary arm.
   (d) align the force of the pull with the wire tong, when used in conjunction with a set of rope blocks.
15. The wire tong swivel is designed to: (You may choose more than one answer.)
   (a) prevent kinking which may occur when two wire tongs are attached to the same conductor side by side.
   (b) attach to a lifting tong nearest the conductor end, with the holding tong attached to the clevis of the swivel.
   (c) provide a pivot point at the base of a wire tong attached to a wire tong saddle.
   (d) all of the above

T / F 16. Rope blocks should never be attached to the clevis of a wire tong saddle.

17. Wire tong saddles will:
   (a) support loads up to 1,000 pounds.
   (b) secure wire tongs to a structure.
   (c) assist in lifting a heavy load while pivoting with the wire tong.
   (d) all of the above

T./F 18. A wire tong saddle extension may support loads up to 1,000 pounds.

T./F 19. The wire tong clamp is used to grip the wire tong securely without damaging the surface finish, or it may be loosened to permit the wire tong to slide.

T./F 20. The crossarm wire tong saddle is used on under-built arms where space is limited.

21. The chain tightener and chain tightener extension both have a maximum working load of __________ pounds.
### Wire Tongs and Accessories

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