

**Purpose:**

The following guide will provide details and installation procedures for both the AWG 6 and AWG 8 sizes of TECK90 cable and connectors which are available for use with the Flash Technology Vanguard FTS 370 system.

**Important:**

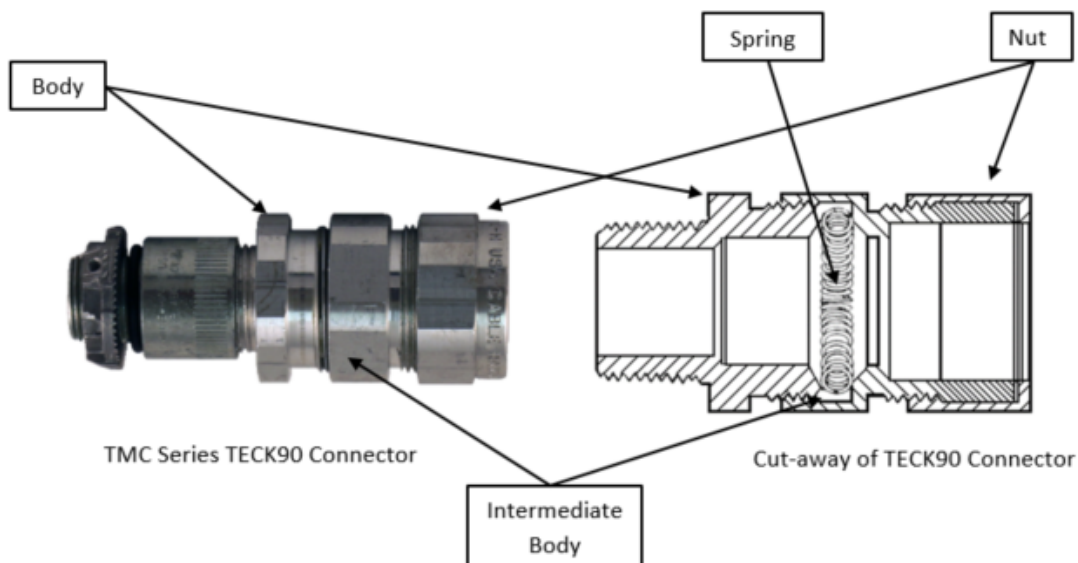
Due to safety concerns during vertical installation of TECK 90, the AWG 6 will only be provided in spools up to 350ft (max.) and AWG 8 will only be provided in spools up to 500ft (max.). You will also receive Splice Box kit(s), depending on the length of cable purchased (*F1905420 – Splice Box AWG6 or F1905421 – Splice Box AWG8*).

**TMC Series Connectors:**

Ensure that only the factory supplied Crouse-Hinds TMC285 (3/4”) or TMC3112 (1”) connectors are used and that the installation procedure included below is followed to ensure proper system operation and good immunity to RF interference and lightning surge issues. The key feature of the TMC series connectors is an integral copper-coated spring which compresses around the armor when connector is tightened to ensure good continuity of cable armor to connector body. Locknuts are provided with the TMC connectors.

TECK90 Cable	TECK90 Connector
2/c AWG 8 + 1/c AWG 10 Ground	TMC285
2/c AWG 6 + 1/c AWG 8 Ground	TMC3112 & reducer (1” to 3/4”) REA23

As shown in the figure below, the connector has (3) main parts, the Nut, Intermediate Body and Body. The Nut tightens onto the Intermediate Body, compressing the Bushing onto the cable jacket to provide an environmental seal. The Intermediate Body tightens onto the Body, compressing the copper-coated spring onto the cable armor to provide electrical continuity of cable armor to connector body. The Body tightens onto the enclosure or Flashhead base to provide environmental seal and electrical continuity.



### Cable Considerations/Planning:

The following considerations should be taken to ensure the TECK90 cable is not damaged during storage or installation. Planning is an important step in the installation of any wiring. Proper planning will enable a safe and efficient cable installation.

#### Storage:

Cable reels should not be stored on their sides if possible. Ensure the factory applied end caps have not been removed. If the caps are not present, then the exposed cable ends **MUST** be re-sealed using properly applied weatherproof end caps or by taping the ends with a tape designed to prevent moisture.

It is recommended to store the cable reels indoors on a hard, dry surface to prevent deterioration of the reels and moisture seeping into the cables.

If cable reels are stored outdoors they should be supported off the ground and protected with a suitable weatherproof material. The reel supports should be long enough to provide a sufficient load-bearing surface to prevent sinking.

#### Temperature:

Most cables can be safely handled if not subjected to temperatures lower than 14°F (-10°C) in the twenty-four (24) hour period prior to pulling and bending the cable.

#### Cable Security when Hoisting:

Grips will be provided from the factory and should be installed prior to cable hoisting. Check the entire path that the cable will follow during pulling to make sure that the cable will have a smooth ride, free of all barriers or sharp edges. If the cable will be exposed to moisture during the pull, ensure the cable ends are sealed with sealing mastic and vinyl tape, or heat-shrinkable cap(s).

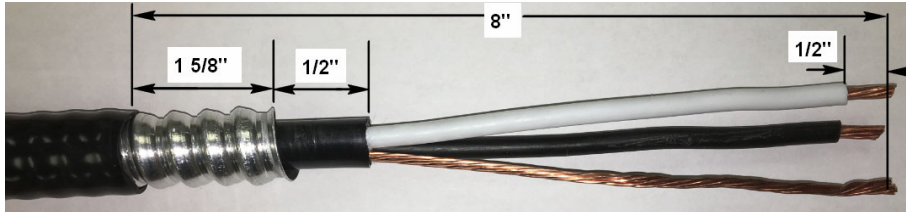
#### Supporting the Cable:

The cables must be supported so that no damaging strain is imposed on the terminal ends of the conductors where they terminate into the lighting equipment.

Flash Technology will provide tape to secure the cable to the structure (2" Scotchrap and 1" Filament tape). Ensure you follow the recommended 2-3-4 tape method. (Full written method and instructional video can be found on [flashtechnology.com](http://flashtechnology.com)).

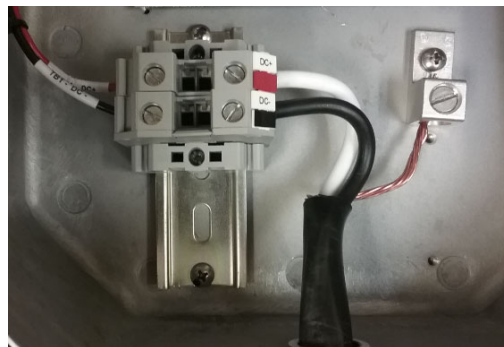
TECK90 AWG 8 Cable Installation Procedure:

1. Prepare the cable as shown in the photograph below:
  - a. Remove 8" of the cable jacket from the armor.
  - b. Using the supplied Armored Cable Stripper, remove the armor from the cable to leave approximately 1-5/8" of armor exposed. See the Roto-Flex RF-170 Instructions in this document for details on the use of this tool.
  - c. Inspect the armor and use a file to remove any burrs.
  - d. Remove the inner jacket to leave approximately 1/2" of jacket exposed.
  - e. Remove 1/2" insulation from each conductor.

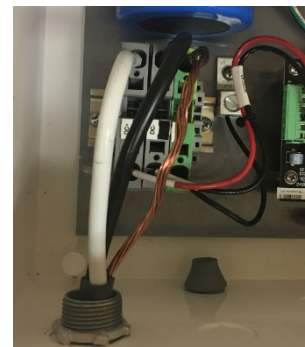


2. When AWG 8 TECK90 cable is used, the Crouse Hinds TMC285 connector is supplied which has a 3/4" fitting for installation on Vanguard equipment. When installing on a Flashhead (FH 370), install connector fitting into the threaded opening; a locknut is not required on the Flashhead. When installing on an Enclosure (SC 370 or MKR 370), install the connector fitting into the opening located below TB2 and install locknut. Use a wrench to tighten securely.
3. Examine the connector fitting to make sure that neither the spring nor the bushing is pre-compressed. If they are, loosen the Intermediate Body and the Body to allow the spring and bushing to return to their maximum diameter. **DO NOT DISASSEMBLE THE CONNECTOR.** It is not necessary to disassemble any of the components of the fittings.
4. Insert the cable into the TECK90 connector. Make sure the armor is not visible when the cable is fully inserted so that the bushing will tighten onto the cable jacket and provide an environmental seal.
5. Completely tighten the Connector Intermediate Body onto the Body.
6. Completely tighten the Connector Nut onto the Intermediate Body.
7. Connect TECK90 conductors as shown in the table.

Cable Conductor	FH 370 Connection	SC 370 or MKR 370
Black	DC- (Black)	DC- (Black)
White	DC+ (Red)	DC+ (Red)
Bare Ground	Ground Lug	Green Term Block



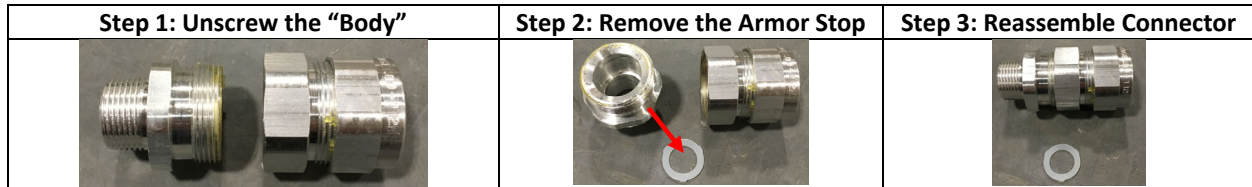
FH 370



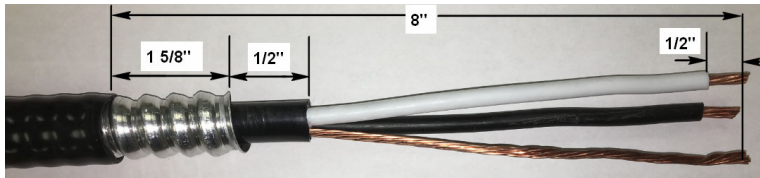
SC 370

TECK90 AWG 6 Cable Installation Procedure

Before installing the TMC connectors to the LED flashhead(s) and junction box(s), ensure you remove the plastic armor stop found in-between the “Body” and the “Intermediate Body” of the TMC connector.

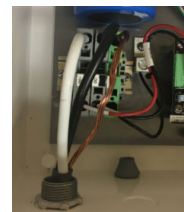


1. Prepare the cable as shown in the photograph below:
  - a. Remove 8” of the cable jacket from the armor.
  - b. Using the supplied Armored Cable Stripper, remove the armor from the cable to leave approximately 1-5/8” of armor exposed. See the Roto-Flex RF-170 Instructions in this document for details on the use of this tool.
  - c. Inspect the armor and use a file to remove any burrs.
  - d. Remove the inner jacket to leave approximately 1/2” of jacket exposed.
  - e. Remove 1/2” insulation from each conductor.



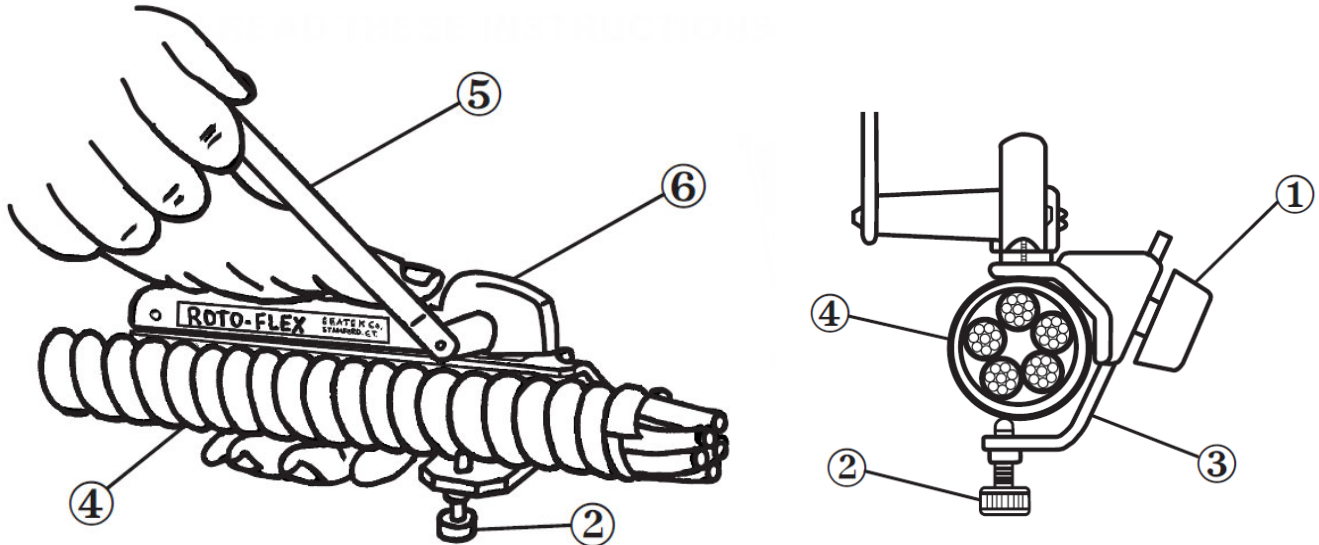
2. When AWG 6 TECK90 cable is used, the Crouse Hinds TMC3112 connector is supplied with a 1” to 3/4” reducer for installation on Vanguard equipment. When installing on a Flashhead (FH 370), install connector & reducer fitting into the threaded opening; a locknut is not required on the Flashhead. When installing on an Enclosure (SC 370), install the connector & reducer fitting into the opening located below TB2 and install locknut. Use a wrench to tighten securely.
3. Examine the connector fitting to make sure that neither the spring nor the bushing is pre-compressed. If they are, loosen the Intermediate Body and the Nut to allow the spring and bushing to return to their maximum diameter.
4. Insert the cable into the TECK90 connector. Make sure the armor is not visible when the cable is fully inserted so that the bushing will tighten onto the cable jacket and provide an environmental seal.
5. Completely tighten the Connector Intermediate Body onto the Body.
6. Completely tighten the Connector Nut onto the Intermediate Body.
7. Connect TECK90 conductors as shown in the table.

Cable Conductor	FH 370 Connection	SC 370 Connection
Black	DC- (Black)	DC- (Black)
White	DC+ (Red)	DC+ (Red)
Bare Ground	Ground Lug	Green Term Block



## Roto-Flex RF-170 Instructions:

The following guide will provide details and overview for the ROTO-FLEX™ RF-170 usage on both the AWG 6 and AWG 8 sizes of the TECK90 cable solution for the Flash Technology Vanguard FTS 370 system.



### Clamping TECK90 cable using the ROTO-FLEX:

Use the large black knob ① to loosen and tighten the clamping bracket ③. Ensure the bottom thumb screw tip ② extends about ¼" through the bracket before inserting the cable ④. Reposition the bracket ③ by loosening the knob ① ¼" of a turn, then slide the bracket ③ until the tip of the thumb screw contacts the cable jacket. Then tighten the knob ① and the thumb screw ② to securely hold the cable.

### Cutting TECK90 cable using the ROTO-FLEX:

Once the cable is securely clamped (as described in the section above), squeeze the top and bottom housing together and start turning the crank ⑤ as you continue to squeeze the housing. As the blade begins to spin freely completely release the top housing and loosen the thumb screw ② to remove the cable ④.

### Important:

1. Ensure the cable is inserted straight. If a curve exists on the cable, then position the curved section towards the blade.
2. The cable has to be clamped securely to hold the cable in position against the shelf where the blade protrudes.
3. If the cut is not deep enough, insert the tip of a flat blade screwdriver into the cut position and turn the screwdriver handle to crack the outer casing open.
4. The ROTO-FLEX comes equipped with an adjustable top housing ⑥ which slides to one of three pre-indexed positions to cut large diameter cables.

## TECK90 Cable Installation to LED Flashhead\*

1. Install (1) of the included cable hoisting grips at the end of the TECK90 cable.



- a. Allow approximately 5-20ft of cable to protrude past the grip for headroom (*depending on mounting location of the lights*).
2. Using a “pipe hitch” or “timber hitch” (*see image below*), create several overhand knots with a rope or sling below the hoisting grip for proper weight distribution.



3. Secure the cable to the load rope before hoisting the cable.
  - a. Secure the cable above the grip, to the load rope, using tape to ensure it does not kink or tangle up in the tower or any other protruding objects.
4. Raise the cable up to the LED flash head mounting level.
5. Attach the double eye of the hoisting grip with a shackle to the tower.
6. Secure the cable to the structure just below the cable hoisting grip using the 2-3-4 tape method.
7. Once secured, remove the cable from the load rope.
8. Strip and terminate the cable to the inside of the LED flash head (**as found on page 3 and 4**).



9. Continue down to the junction box (j-box) and tape the cable to the structure using the 2-3-4-5 tape method (Full written method and instructional video can be found on [flashtechnology.com](http://flashtechnology.com)).
  - a. Ensure a 3-foot cable loop is placed every 90-100 feet to protect the core cable from slippage and subsequent damage.
  - b. Make sure there is no more than a 5-foot separation between taping sections.
  - c. Ensure you do not exceed a 12-inch bend radius when creating the loops.
10. Strip the cable and feed it into the j-box through the provided TECK90 cable grips.



\*Repeat these steps for each additional LED flashhead.



## TECK90 Cable Installation to Splice Box (splice j-box)\*

1. Install (1) of the included cable hoisting grips at the end of the TECK90 cable.



- a. Allow approximately 5-20ft of cable to protrude past the grip (*depending on mounting location of the j-box*).
2. Using a “pipe hitch” or “timber hitch” (*see image below*), create several overhand knots with a rope or sling below the hoisting grip for proper weight distribution.



- a. Secure the cable above the grip to the load rope, using tape, to ensure it does not kink or tangle up in the tower or any other protruding objects.
3. Secure the cable to the load rope before hoisting the cable.
  - a. Secure the cable above the grip to the load rope, using tape, to ensure it does not kink or tangle up in the tower or any other protruding objects.
4. Raise the cable up to the splice box mounting level.
5. Attach the double eye of the hoisting grip with a shackle to the tower.
6. Secure the cable to the structure just below the cable hoisting grip using the 2-3-4 tape method.
7. Once secured, remove the cable from the load rope.
8. Strip the cable and feed it into the j-box through the provided TECK90 cable grips.
9. After feeding both cables into the j-box, secure the connections to the internal terminal block (**Step 1 of page 3 and 4**).

Cable Conductor	Splice Box Connection
Black	DC- (Black)
White	DC+ (Red)
Bare Ground	GND



\*Repeat these steps for each additional j-box.

### Installation Drawing for Mid-Tier Splice Box(s):

Used for 6AWG cable runs over 350' and avian (no markers) configuration.

