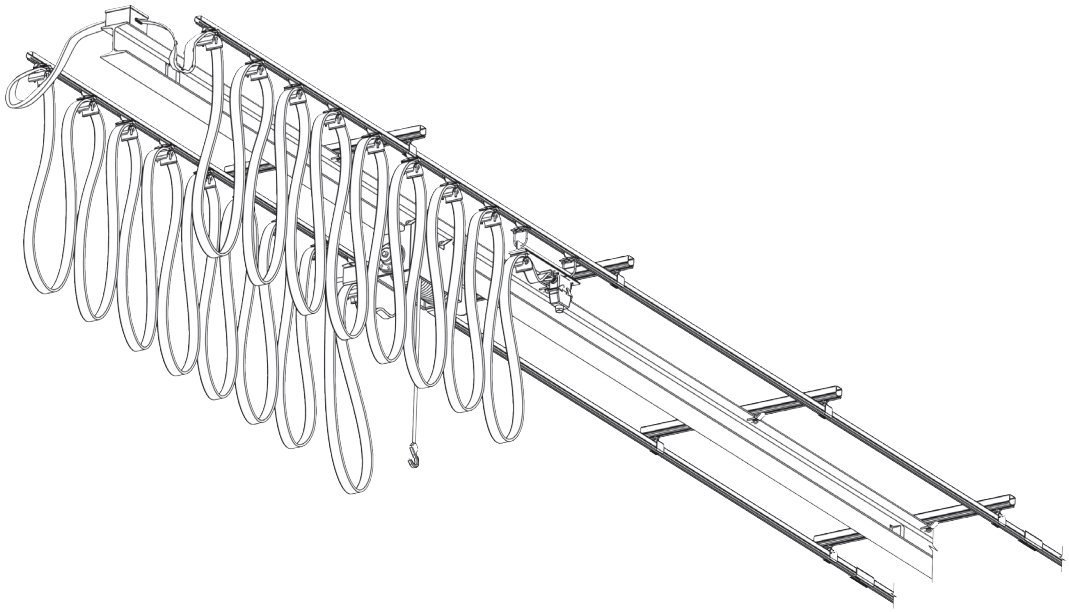
Festoon Manual
Standard Duty C-Track



CONDUCTIX INCORPORATED

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SECTION 1 - SAFETY

Safety Information Responsibility

All owner, operator, and maintenance personnel must read and understand all manuals associated with this product before installation, operation, or maintenance.

The manual provides information on the recommended installation, operation, and maintenance of this product. Failure to read and follow the information provided could cause harm to yourself or others and/or cause product damage. No one should install, operate, or attempt maintenance of this product prior to familiarizing themselves with the information in this manual.

Safety Messages

The following safety messages are used in this manual to alert you to specific and important safety related information.

CAUTION

- CAUTION indicates unsafe actions or situations that have the potential to cause injury, and/or minor equipment or property damage.

DANGER

- DANGER indicates hazards that have the potential to cause severe personal injury or death.

WARNING

- WARNING indicates unsafe actions or situations that have the potential to cause severe injury, death, and/or major equipment or property damage.

NOTE

- NOTE is used to alert you to installation, operation, programming, or maintenance information that is important, but not hazard related.

Electrical Warnings

Properly ground all electrical connectors in accordance with the National Electric Code, local codes, and ordinances.

Disconnect and LOCK OUT / TAG OUT the electrical power from the system before any service is performed.

Do not use cable for loads greater than the voltage and current rating. The capacity rating of the cable should be in accordance with the National Electric Code.

Operational Warnings

Exercise care when handling the festoon system during normal operation.

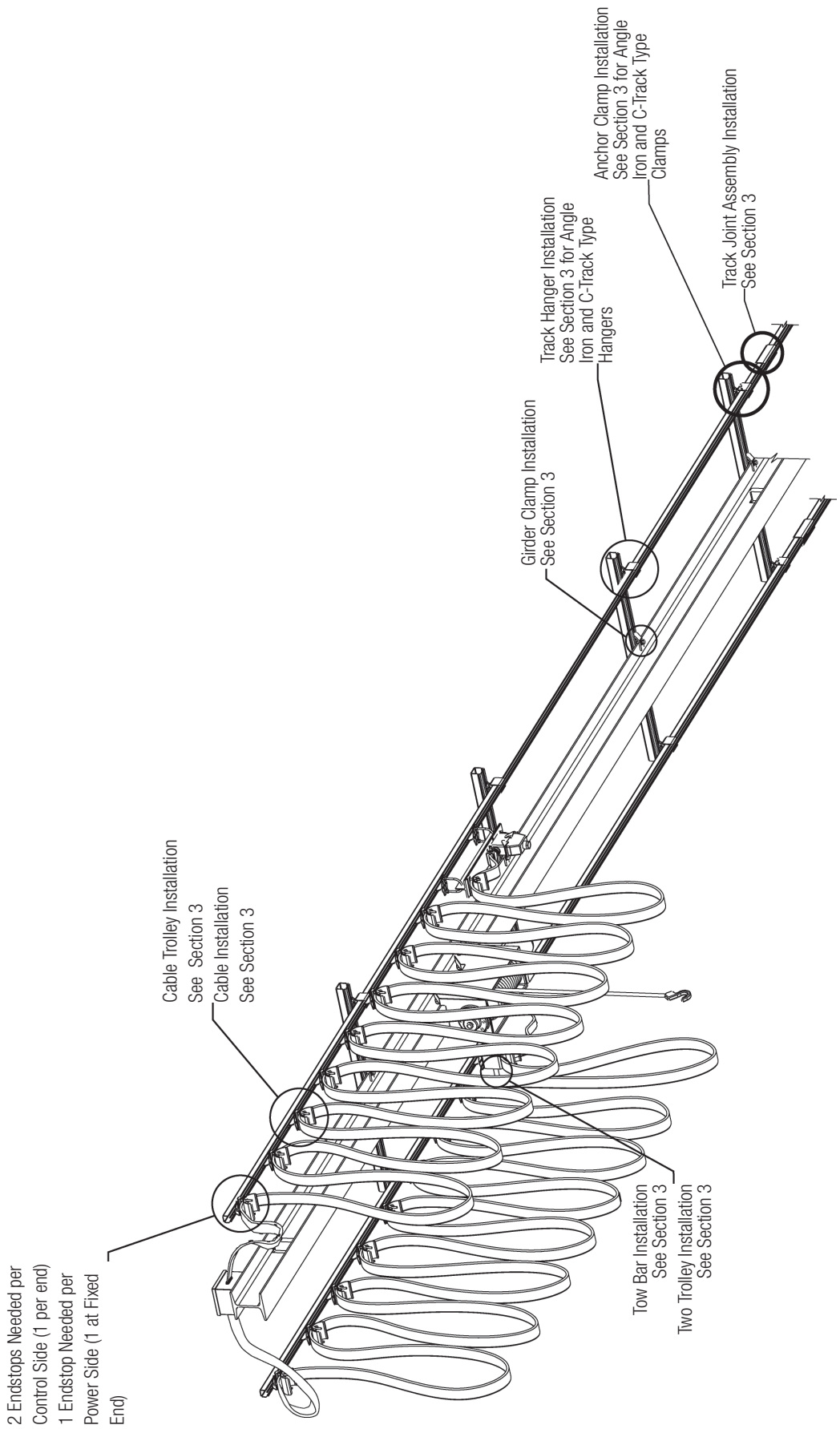
Do not use cable different for which the system is intended. Change in diameter, weight per foot, length or flexibility of cable will affect the operation of the system.

Mounting hardware and fasteners should be installed to maintain tightness under vibration and checked periodically to insure tightness.

Maintenance Warning

WARNING: Modification of this equipment may cause excessive wear and will void the warranty. Contact CONDUCTIX INC. regarding changes or modifications to this equipment.

SECTION 2 - OVERVIEW



SECTION 2 - OVERVIEW

Specifications

- Maximum trolley speed is 250 fpm.
- Maximum load per trolley is 40 lbs.
- C-Track material is 16 gauge galvanized or stainless steel. Loop depth of 3 ft. is typical unless otherwise specified.
- The loop depth is the distance from the top of the track to bottom of the cable loop.
- The minimum curve radius is 4 ft. Consult our Sales Team for loop depth requirements on curves.
- Maximum cable thickness is 1.38”
- Usable saddle width on cable carrier is 2.13”

Recommended Tools

- Socket Wrench
- Torque Wrench
- 1/4” Open / Box End Wrench
- 10 mm Open / Box End Wrench
- 7/16” Open / Box End Wrench
- 1/2” Open / Box End Wrench
- 13 mm Open / Box End Wrench
- 9/16” Open / Box End Wrench
- 1/8” Allen Wrench
- Flat Srewdriver
- Drill and Drill Bit Set

SECTION 3 - INSTALLATION

Standard Duty C-Track festoon systems are light duty systems suited for cranes and hoists usually with lighter duty cycles.

Located longitudinal center line of runway where channel is to be installed.

If the C-Track is to be attached under a beam or stud, the hanger locations should be marked and drilled, or cross arm support installed.

Track Hanger Installation

10mm or 13mm Open / Box End Wrench required.

The track hanger is designed to be mounted on angle iron brackets with one mounting hole as well as mounted on C-Track cross-arm support or other suitable structures.

One track hanger is required for each cross arm support bracket for each track run at 5 ft. spacing. Extra track hanger and cross arm support bracket is required in storage area.

1. Slip the appropriate number of hangers on each section of C-Track (2) for a 10' section and (4) for a 20' section of C-Track. Torque nuts to 30 ft/lbs. See **Figure 7-1 and Figure 7-2.**
2. Bolt the section loosely in place, joining the ends of the channels with splice joints as you progress. See **Figure 7-3.**

Track Joint Assemblies Installation

10mm Open / Box End Wrench required.

1. Track joints clamp for secure attachment and proper alignment of track section. Each kit includes four set screws and nuts. See **Figure 7-4.**
2. Install the joints and tighten fasteners using a 10mm Open / Box End Wrench.
3. Starting with top two first, be sure that the locking screws are tightened equally to avoid any displacement of the track in the coupler area.

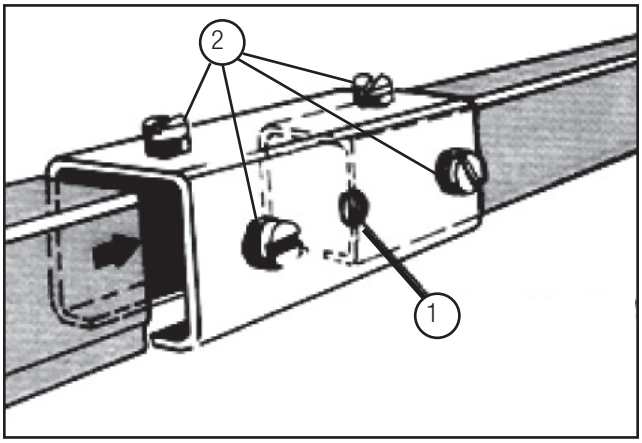


Figure 7-4 1. Location Hole
2. Set Screws (Torque to 10 ft/lbs.)

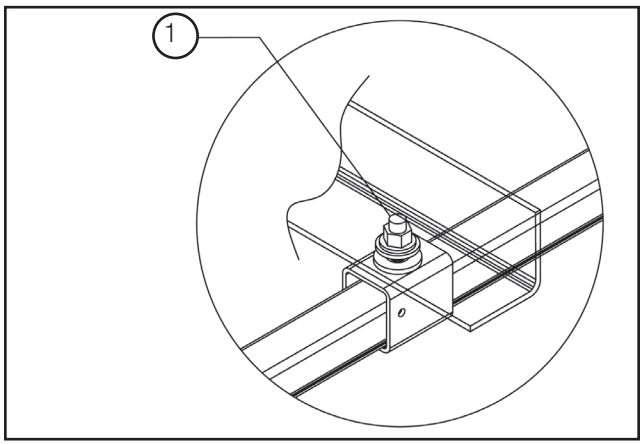


Figure 7-1 1. Nut (Torque to 28 ft/lbs.)

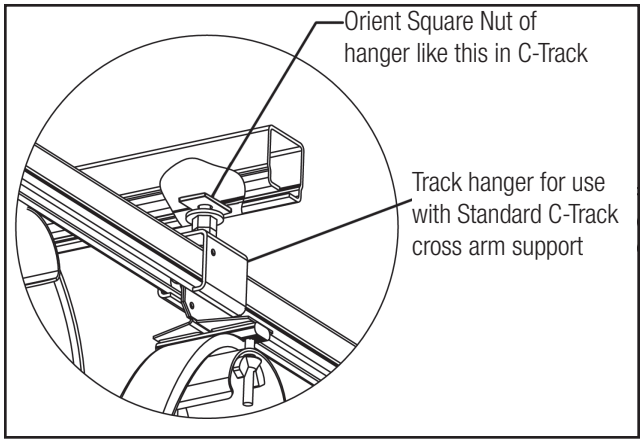


Figure 7-2

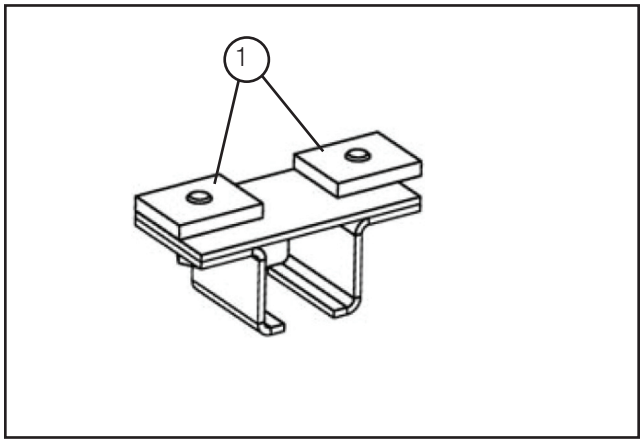


Figure 7-3 1. Square Nuts (Torque to 18 ft/lbs.)

SECTION 3 - INSTALLATION

Anchor Clamp Installation

9/16" & 7/16" 10mm & 13mm Open / Box End Wrench Required.

Anchor clamps are designed to hold the track in place while allowing free expansion of the system due to temperature changes. One anchor clamp is required per run and should be placed as close to the center of the system as possible.

1. Tighten screw until it contacts C-Track then turn 1/4 past to ensure clamping. Tighten nut down to 12 ft/lbs. to lock bolt into place. See **Figure 8-1.**

   Overtightening screw will cause clamp to spread apart and cause C-Track to lose support and possibly fall out.

2. In the center of the system, place an Anchor Clamp instead of a Track Hanger Clamp to anchor the system. The C-Track is now positioned into place. See **Figure 8-1.**

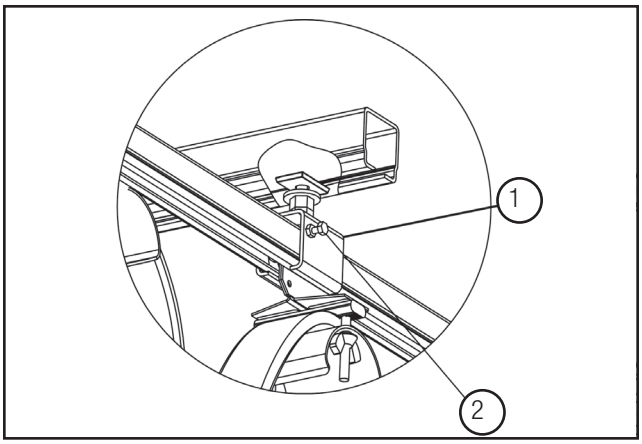


Figure 8-1
1. Anchor Clamp
2. Screw

Girder Clamp Installation

1/2" & 13mm Open / Box End Wrench Required.

Girder clamps are designed to hold the cross-arm supports to the I-beam. Two girder clamps required per cross-arm support.

1. Orient square nut to nest flush against inside bottom surface of C-Track cross arm support. See **Figure 8-3.**
2. Center girder clamp tab with opening in C-Track cross arm support. See **Figure 8-3.**
3. Tighten until clamp is flush with i-beam and crossarm is secured. See **Figure 8-3.**
4. Weld on suspension support bracket.

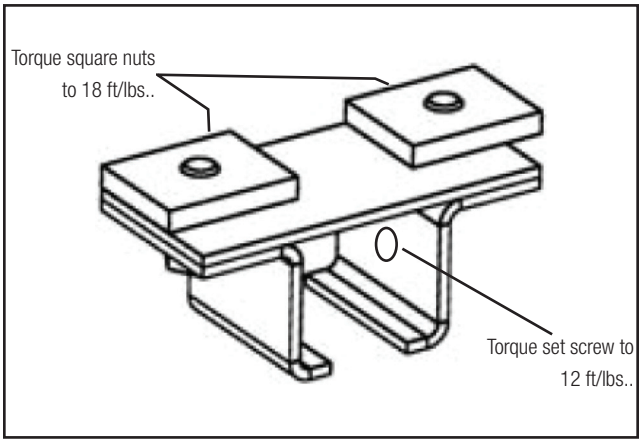


Figure 8-2

End Clamp Installation

1/2" 10mm Open / Box End Wrench Required.

The End Clamp is the first cable carrier at the fixed end of the festoon system. The "End Clamp" will always be the stationary component of the festoon system and does not have wheels. Typically only one is required per system.

1. Install the end clamp assembly at the far end of the fixed end of the C-Track and tighten fasteners to 11 ft/lbs..

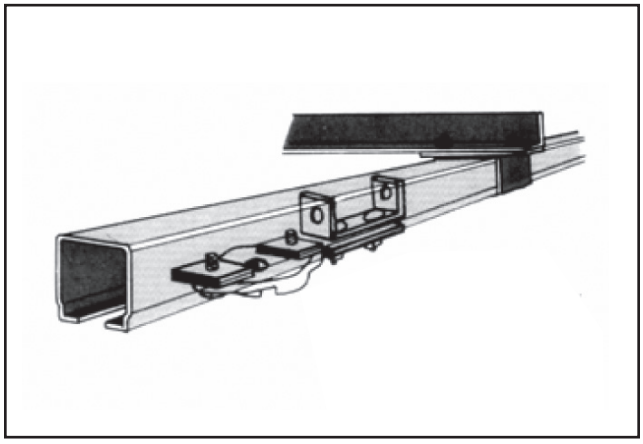


Figure 8-3

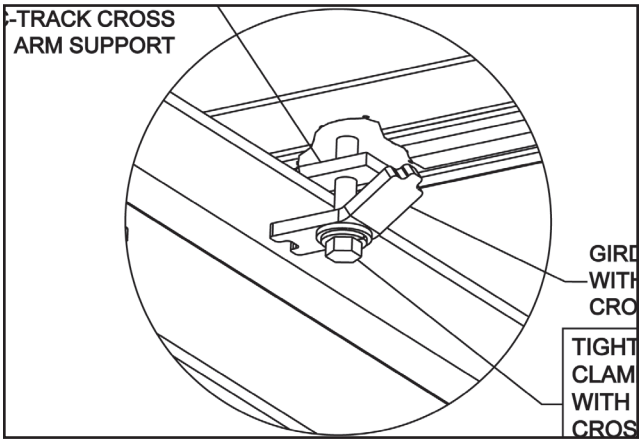


Figure 8-3

SECTION 3 - INSTALLATION

Cable Trolley Installation

WARNING

- Do not install trolleys in the c-track until all hangers and splices are securely fastened to the recommended torque.

The cable Trolley is the device with rollers that rolls inside the C-Track and carries the electrical cable down the track.

1. With the channel securely located, install the carriers into the slot of the C-Track. See **Figure 9-1.**
2. Place all trolleys into the track.

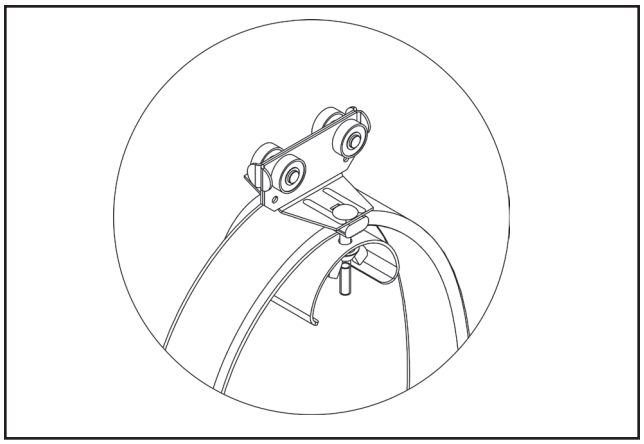


Figure 9-1

Tow Trolley / Control Box Trolley Installation

The Tow Trolley is the first cable carrier at the mobile end of a power festoon system. The Tow Trolley attaches to the crane power consumer usually with a tow arm.

The Control Box Trolley is the first mobile carrier at the mobile end of a control festoon system. The Control Box Trolley consists of a mobile junction box or a quick disconnect connector to which a push button pendant may be wired.

1. Place the Tow Trolley / Control Box Trolley into C-Track the same as the Cable Trolley's cross-arm support. See **Figure 9-2.**

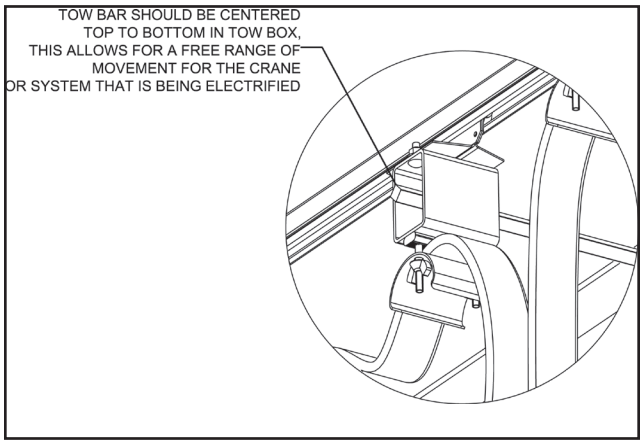


Figure 9-2

End Stop Installation

1/2" & 13mm Open / Box End Wrench required.

One end stop is required for power systems, two are required for control systems with a control trolley to stop the trolley from rolling out of the C-Track.

1. Install and tighten the end clamp and end stop(s) firmly in place. Torque fasteners for 11 ft/lbs. See **Figure 9-3.**

On pendant control lines and / or systems where the active travel is near the end of the channel. It is advisable to install a second stop.

It is recommended to additionally secure the end stop with a screw crosswise to the rail.

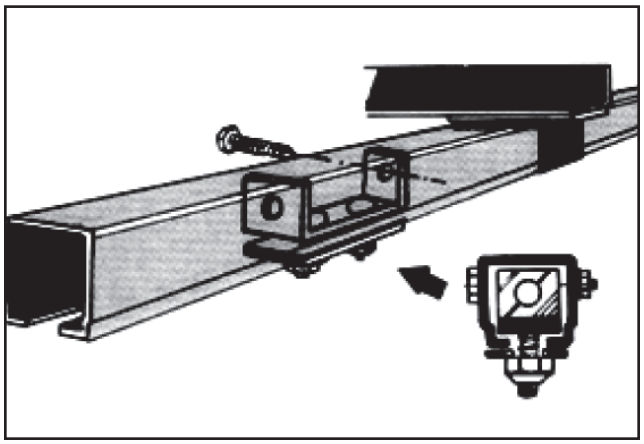


Figure 9-3

SECTION 3 - INSTALLATION

Installation of Cables

Before beginning the installation of cables, remove the cable clamping pad assemblies from the tow trolley, trolleys, and end clamp.

Install cables on the equipment per the pre-designed arrangement or the following rules: See **Figure 10-1.**

1. Arrange cables with the larger cables (power cables) on top of stack.

   This provides a larger bending radius as well as improved heat dissipation. Since the top cable also takes more pulling force during operation, the larger conductor is better suited to handle this force. Note the specified cable loop depth and allowance for hookup.

2. Arrange the cable package with a width to height ratio of 3 or 4 to 1. Tall narrow cable stacks can be unstable during operation.
3. Arrange cables with a minimum of 50% of each cable surface under clamp pressure (See diagram below).
4. Install tow webbing if required.
5. After setting the cables to the proper loop depth and arranging the cables as designed, re-install the cable clamping pad assemblies. Be sure the smallest cables do not move when pulled.

- As an alternative method, cable may be clamped in the saddles prior to installing the carriers on the channel.

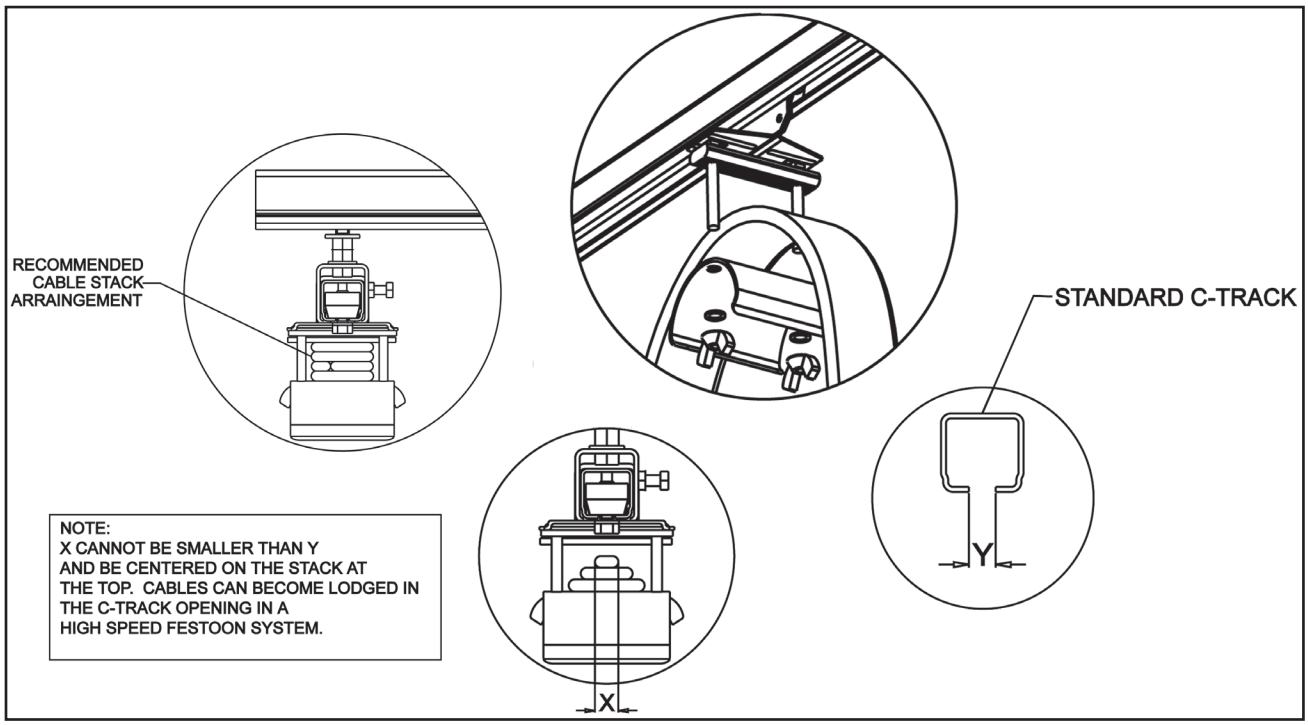


Figure 10-1

SECTION 3 - INSTALLATION

Tow Webbing Installation

Tow webbing is used in both High Speed and Outdoor applications to reduce the shock and pulling tension on the electrical cable.

The tow webbing is installed on top of the electrical cable and held in place by the saddle on the cable trolley. See **Figure 11-1.**

The webbing length is generally 3 inches less than cable per loop of the length of the cable between cable trolleys. Contact factory for high speed applications to determine webbing length. See **Figure 11-1.**

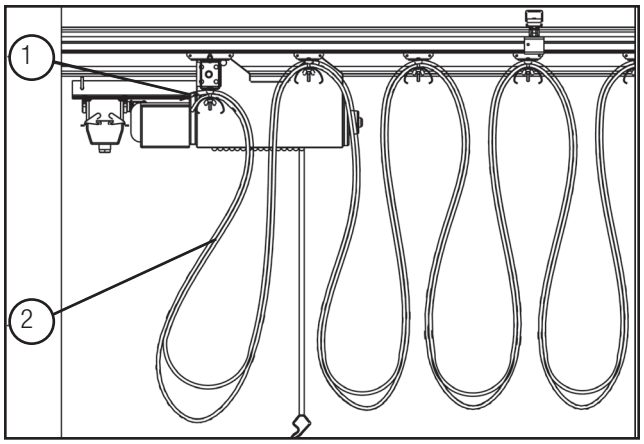


Figure 11-1
1. Trolley
2. Tow Webbing

Tow Bar

The tow bar is fixed to the crane and is designed to engage tow box to move festoon system.

1. Install the tow bar on the crane or system that is to be electrified. Center and align tow bar with the Tow Trolley. See **Figure 11-2.**

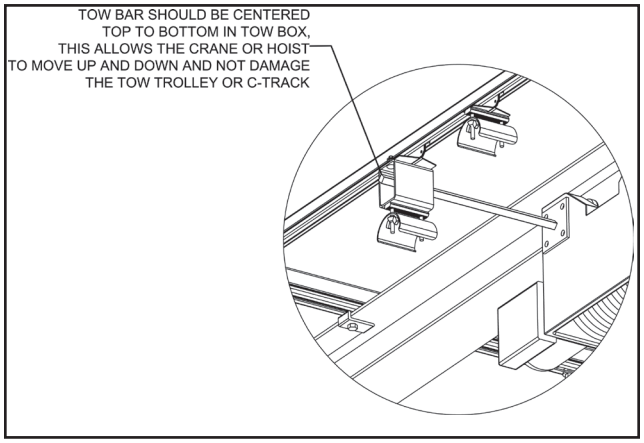


Figure 11-2

Pre-Assembled Festoon System Installation

Pre-assembled festoon systems are typically built and shipped installed on a C-Track Channel by Conductix Wampfler.

Upon arrival at the job-site, inspect the festoon system to insure electrical cables and festoon components have not been damaged during transit.

1. Attach hoisting cables at each end of the pre-assembled festoon C-Track and lift into position. The shipping C-Track mobile end must align with the permanent festoon C-Track.
2. Remove the end stop from the mobile end of temporary C-Track and roll the Tow / Control Box trolley and succeeding cable trolleys into the permanent C-Track.
3. Make mechanical connections of towing arm and insure all end stops are applied and tightened.
4. Make electrical connections as required.

SECTION 4 - OPERATION

Pre-Operation Inspection

1. The festoon system is now installed. Prior to hookup and application of power, the carrier should be cycled manually, if possible.
2. Check for proper mounting of end clamps.
3. Check for obstructions of channel joints.
4. Check cable for proper loop depth, freedom of travel, and stretch-out.
5. On pendant systems, check for proper spacing of the pendant to the floor, and connect this cable in the junction box.
6. The cable connections now can be made to the power unit and the source, using the appropriate cable strain relief bushing(s).

Operation Instructions

- Do not exceed the voltage or amperage rating of the cable. Overheating, fire, damages to equipment or personal injury could result.
- Operate the festoon system within the electrical and mechanical limits it was intended.

SECTION 5 - MAINTENANCE

Maintenance Instructions

All trolleys are lubricated and sealed for life, therefore no re-greasing is required. However, customers should conduct periodic inspections of the system. Determine the inspection intervals based on duty cycles and environment. The following checks are recommended during inspection:

1. Check all rollers for wear
2. Check tightness of all hardware. (See torque specifications)
3. Check cable clamps on all trolleys, making sure cables remain secure.
4. Inspect cable for any cuts or cracks.
5. Check channel for wear, and clear the running surface of any debris.

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