**TIMES SQUARE LIGHTING INC.**

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# SPECIFICATION GRADE TRACK INSTALLATION INSTRUCTIONS - SAVE THESE INSTRUCTIONS

## TABLE OF CONTENTS

## IMPORTANT SAFETY INSTRUCTIONS - READ FIRST!

**CAUTION:** Read and understand these entire instructions before proceeding.

**CAUTION:** Do not expose the track system to any lubricants, solvents or cleaning solutions, as they may impair the strength of the product. To clean, use a damp cloth only.

**CAUTION:** Do not slide any adapter down the track to change its location. The adapter must be properly removed from the track and re-inserted into its desired location.

**CAUTION:** The Times Square track system is intended for use only with Times Square components and lighting fixtures. To reduce risk of fire or personal injury, do not use other components as part of this system.

**CAUTION:** The track system is to be installed by qualified electricians only, and in accordance with the National Electrical Code and all local codes and ordinances.

**CAUTION:** Do not install the track system in damp or wet locations, where likely to be subjected to physical damage, in hazardous (classified) locations, where subject to corrosive vapors, in storage battery rooms, where concealed or extended through walls or partitions, or within a zone measured 3ft horizontally and 8ft vertically from the top of a bathtub rim or shower threshold.

**CAUTION:** Do not install any parts of the track system less than 5 ft above the finished floor without prior approval of the Authority Having Jurisdiction (AHJ).

**CAUTION:** Do not install any fixtures closer than 6 inches from combustible materials.

**CAUTION:** Do not use the track system with a power supply cord or convenience receptacle adapter.

**CAUTION:** Do not install the track system with the track energized. Similarly, disconnect power to track when installing or removing components or changing the layout of the track.

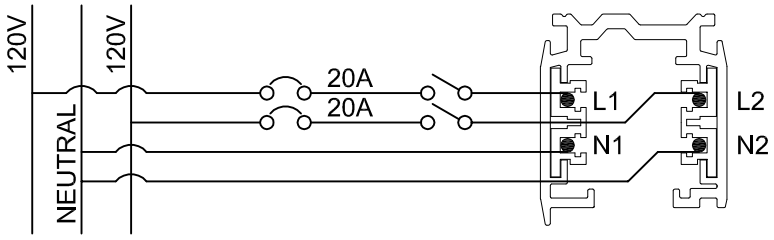
**CAUTION:** Do not attempt to hang, drape over, or install anything other than lighting fixtures to the track. To reduce the risk of fire or personal injury, do not attempt to connect power cords, extension cords, appliances, and the like to the track.

## 1) ELECTRICAL CONNECTIONS

### Two Circuit 120Volt Track with Independent Neutrals

NOTE: This track is designed to be fed by two branch circuits rated 120V, 20A max. Each circuit is provided with its own line (hot) and neutral, and care must be taken to keep the two circuits separate.

**WIRING ILLUSTRATION**



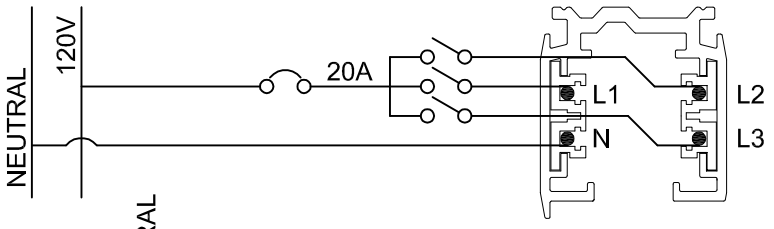

MAXIMUM LOAD: 4800 Watts
EVENLY DIVIDED BETWEEN CIRCUITS

NOTE: A common neutral may be used providing the two hot circuits are connected to *different phases*. **CAUTION:** When using a common neutral, the two hot circuits MUST be connected to a DOUBLE (2) POLE CIRCUIT BREAKER. Not doing so can result in a shock or fire hazard!

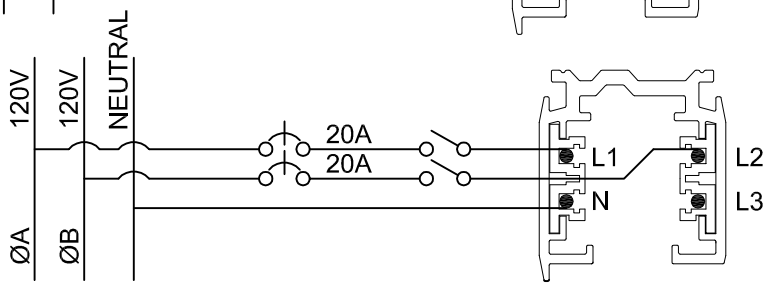
## Three Circuit Track with Common Neutral

NOTE: This track is designed to be fed by up to three branch circuits rated 120V, 20A max. Each circuit shares a common neutral and should be wired as shown below. CAUTION: This track should not be used with dimmers unless the dimmers are specifically rated to work with circuits that have a common neutral.

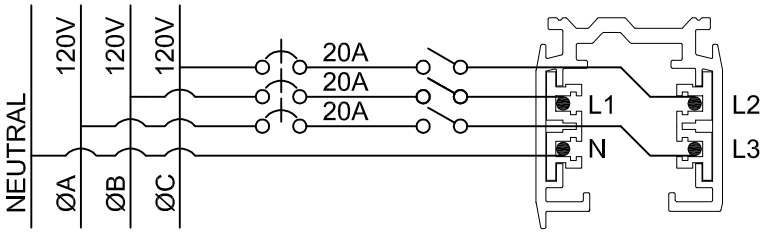
**WIRING ILLUSTRATIONS**




MAXIMUM LOAD: 2400 Watts
**Caution:** Dimmers should not be used unless the dimmers are rated to work with circuits that have a common neutral, or, unless a *single* dimmer is installed *after* the circuit breaker & *ahead* of the switches.




MAXIMUM LOAD: 4800 Watts
EVENLY DIVIDED BETWEEN CIRCUITS
**Caution:** Dimmers should not be used unless the dimmers are rated to work with circuits that have a common neutral.



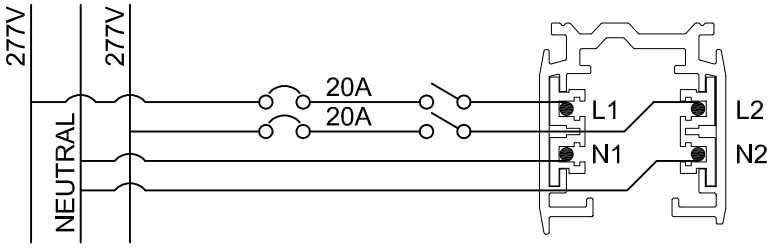

MAXIMUM LOAD: 7200 Watts
EVENLY DIVIDED AMONG CIRCUITS
**Caution:** Dimmers should not be used unless the dimmers are rated to work with circuits that have a common neutral.

**CAUTION:** Since a common neutral is used, the two or three hot circuits MUST be connected to *different phases,* and they must be connected to a DOUBLE (2) POLE or TRIPLE (3) POLE CIRCUIT BREAKER respectively. Not doing so can result in a shock or fire hazard!

## Two Circuit 277Volt Track with Independent Neutrals

NOTE: This track is designed to be fed by two branch circuits rated 277V, 20A max. Each circuit is provided with its own line (hot) and neutral, and care must be taken to keep the two circuits separate.

**WIRING ILLUSTRATION**

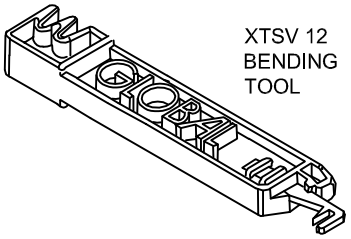



MAXIMUM LOAD: 4800 Watts
EVENLY DIVIDED BETWEEN CIRCUITS

NOTE: A common neutral may be used providing the two hot circuits are connected to *different phases*. **CAUTION:** When using a common neutral, the two hot circuits MUST be connected to a DOUBLE (2) POLE CIRCUIT BREAKER. Not doing so can result in a shock or fire hazard!

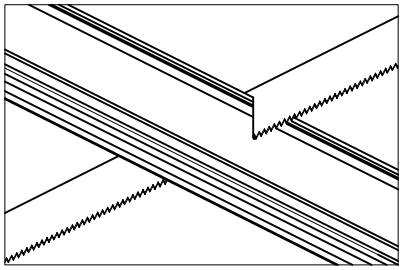
## 2) FIELD CUTTING THE TRACK AND PREPARING THE CONDUCTOR ENDS

The standard lengths of track come supplied from the factory with the conductor ends bent to allow the proper installation of Connectors, Joiners, Dead Ends and Current Limiters (these items are discussed in detail in later Sections). However, the track can be easily field cut to different lengths with a saw designed for use with aluminum. After cutting, the conductor ends must be bent in the field using the XTSV 12 Bending Tool. NOTE: CT Series Curved Track is cut and prepared in the same way as straight track.



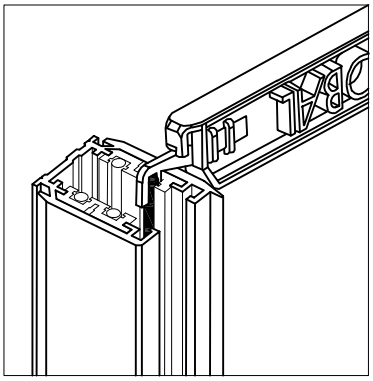

### Cutting the Track

With a hack saw, band saw or chop saw, carefully cut the track to the desired length. Make certain that the cut is clean, straight, and perpendicular to all sides. Use only saw blades that are designed to cut aluminum. (See diagram to right)

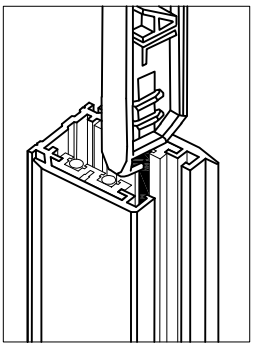


### Preparing the Conductor Ends

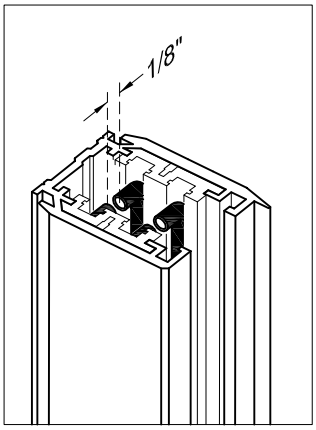
1) Beginning with any conductor end, insert the Bending Tool tip such that the track conductor fits snugly and fully into the slot at the end of the tool. NOTE: Use the wedge side of the slot to assist in the insertion process by working it between the track conductor and the plastic insulator. (See diagram to right)



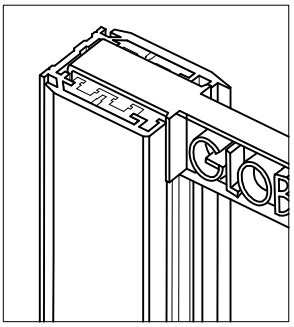
2) Carefully rotate the Bending Tool 90° upward such that the conductor has the sharpest bend possible. Make certain that the vertical length of the conductor does not pull out from its plastic insulator. (See diagram to right)



3) Repeat steps 1 and 2 for the remaining conductor ends. NOTE: There should be about 1/8" gap between opposing conductor ends after they are bent. (See diagram to right)




4) Confirm correct bending by inserting the opposite end of the Bending Tool into the end of the track. If the conductors are properly bent, the tool will extend from the end of the track approximately 3/16" - 1/4". (See diagram to right)



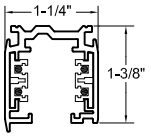
## 3) FEEDING THE TRACK AND TRACK LAYOUT

Track can be fed electrical power via Live End Connectors (sometimes referred to as End Feeds), Current Limiters*, or via X, T, L, or Middle Feed type Connectors (collectively referred to as *Connectors*). When creating layouts with track, it is important to keep the polarity consistent throughout the design. The track has a ridge along its edge to indicate polarity. T and L Connectors can be physically bent in the field, changing their polarity as shown in the following diagrams. Dimensions are provided below and on the next page to assist in layout design. NOTE: The factory made wiring connections within X, T, L, and Middle Feed Connectors as well as Surface/Pendant Mount Current Limiters may be changed in the field to accommodate different layout designs and circuiting schemes. See Guidelines for Layouts further in this section for more detail. **CAUTION:** To prevent electrical shock or fire hazard, care must be taken to prevent the crossing or combining of phase wires and neutrals!

### Track, Connector, Joiner**, Dead End** and Current Limiter Specifications

NOTE: ALL DIMENSIONS +/- 1/32"

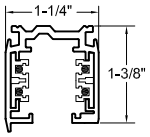
Two Circuit 120Volt Track
with Independent Neutrals




TS-4 = 4FT
TS-8 = 8FT
TS-12 =12FT

APPROX. .50 LB/FT

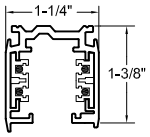
Three Circuit Track
with Common Neutral




XTS44 = 4FT
XTS48 = 8FT
XTS412 =12FT

APPROX. .50 LB/FT

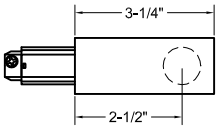
Two Circuit 277Volt Track
with Independent Neutrals




HTEK44 = 4FT
HTEK48 = 8FT
HTEK412 =12FT

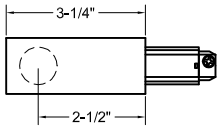
APPROX. .50 LB/FT

Live End Connector



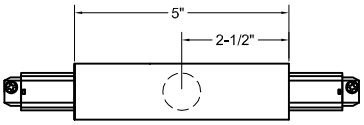

TEK11, XTSA11, HTEK11

Mirror Live End Connector



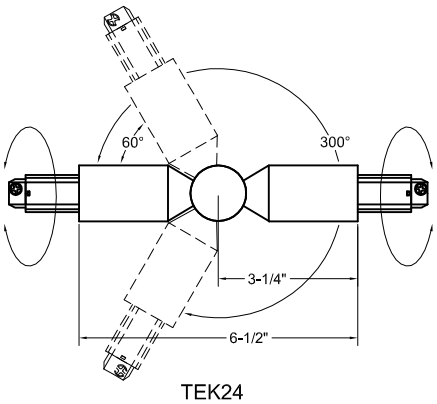

TEK12, XTSA12, HTEK12

Middle Feed Connector




TEK14, XTSA14, HTEK14

Adjustable Joiner
(used to connect 2 sections of track together and may be
bent/rotated to change angle and direction) - NO FEED CAPABILITY




TEK24

Joiner
(used to connect 2 sections of track together - adds nothing
to overall length in a layout) - NO FEED CAPABILITY

XTSA21

Dead End
(used to cap off track ends)
- NO FEED CAPABILITY


XTSA41

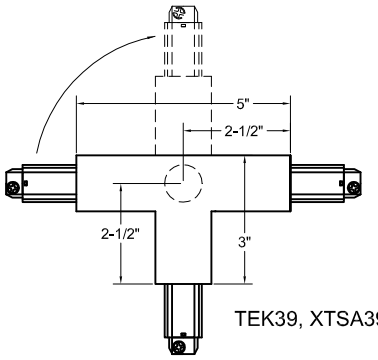
Specifications continued on next page

* Current Limiters are described in more detail in Section 7: CURRENT LIMITERS.

** Joiners and Dead Ends are described in more detail in Section 5: INSTALLING CONNECTORS, JOINERS, & DEAD ENDS TO THE TRACK.

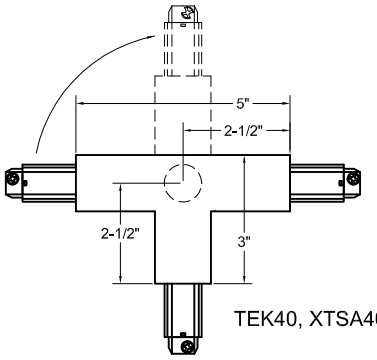
## Track, Connector, Joiner, Dead End and Current Limiter Specifications (Continued)

Right T Connector
(may be bent to change polarity)



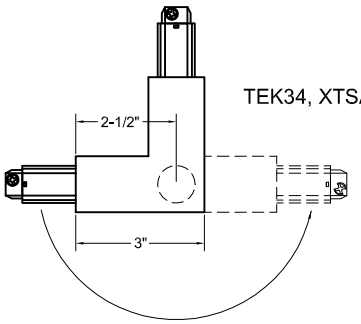

TEK39, XTSA39, HTEK39

Left T Connector
(may be bent to change polarity)



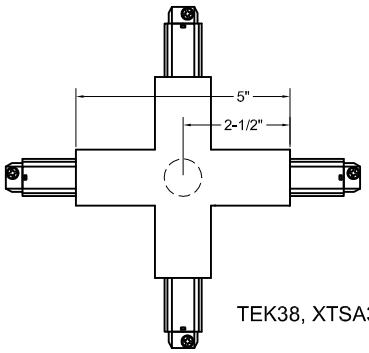

TEK40, XTSA40, HTEK40

L Connector
(may be bent to change polarity)



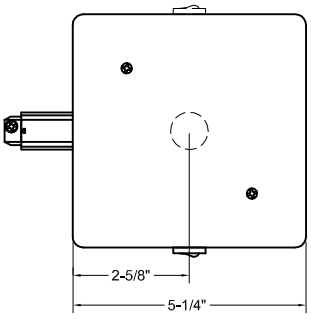

TEK34, XTSA34, HTEK34

X Connector



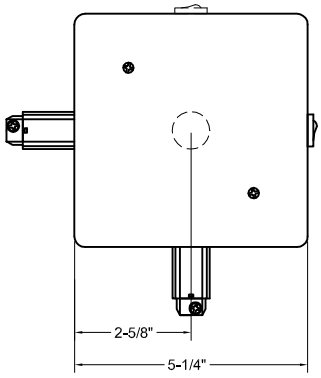

TEK38, XTSA38, HTEK38

Surface/Pendant Mount Current Limiter
with Live End Connector



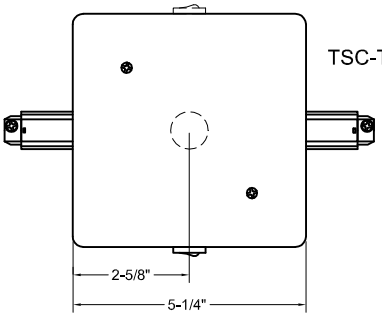

TSC-T-E

Surface/Pendant Mount Current Limiter
with feed through Live End Connectors in a 90° configuration



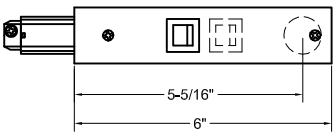

TSC-T-N

Surface/Pendant Mount Current Limiter
with feed through Live End Connectors




TSC-T-F

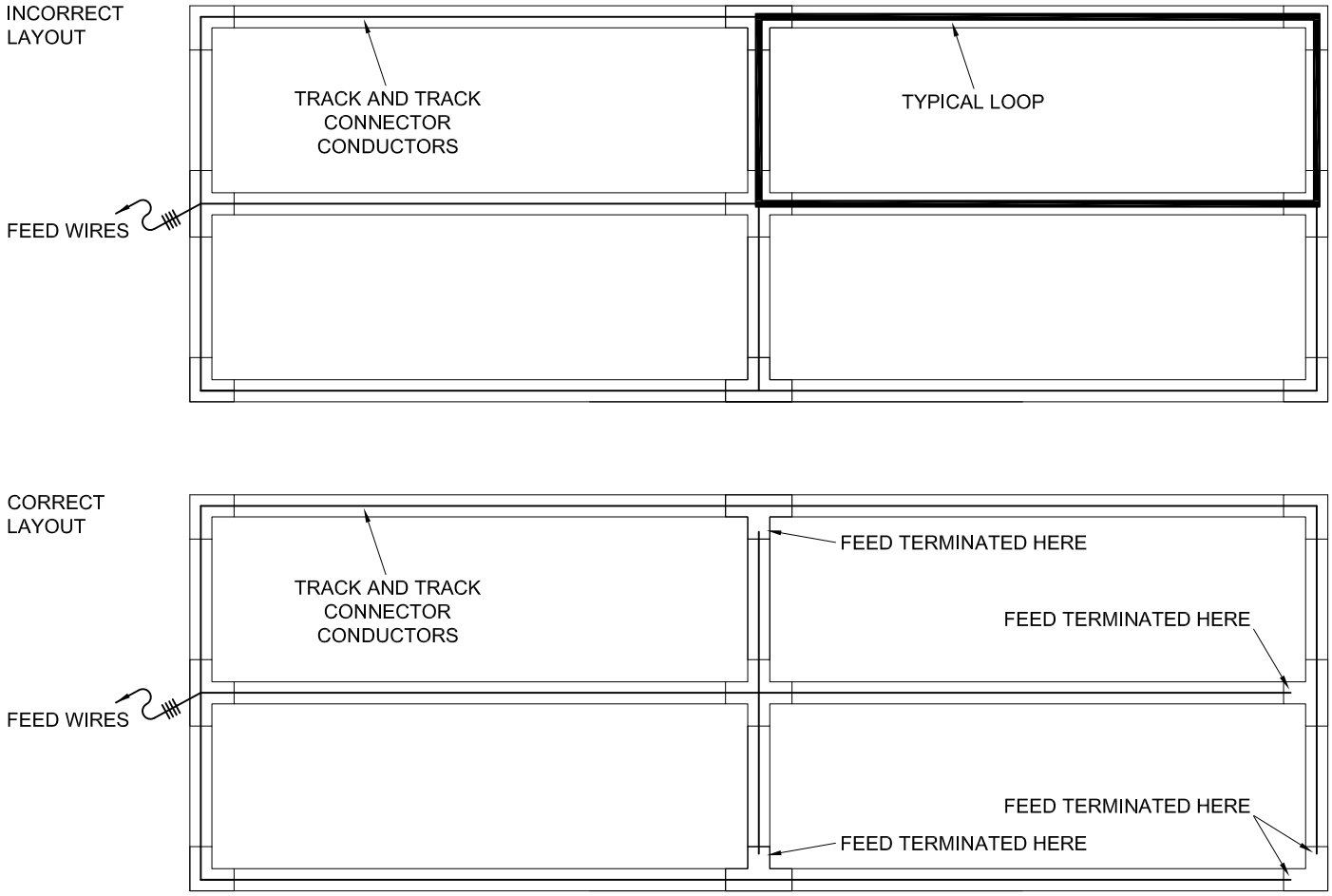
Linear (Recessed Mount) Current Limiter
with Live End Connector



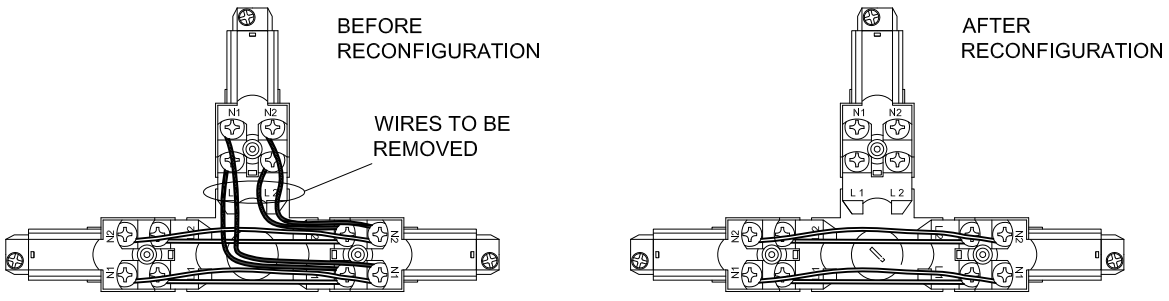

TSC-T-R

## Guidelines for Layouts

It is good practice to eliminate wiring loops on complex layouts. The first diagram below shows how loops are created. The second diagram below illustrates how loops can be avoided.




As the need arises, all Connector types and all Surface/Pendant Mount Current Limiters can be opened and reconfigured. The connector shown in the diagram below would be typical of a T Connector used in 3 places in the diagram above, after it has been reconfigured. It is representative of all connector types to be used in any layout.

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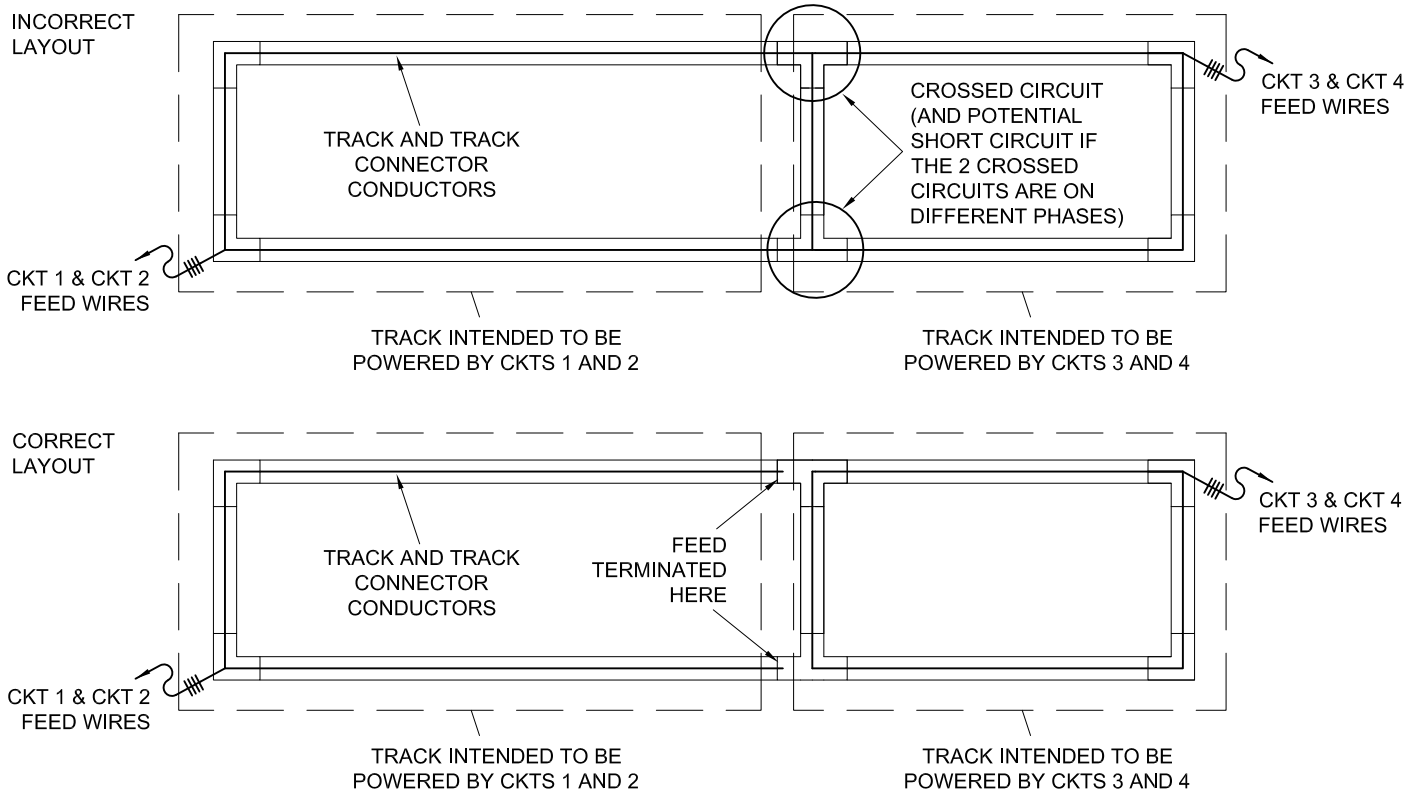
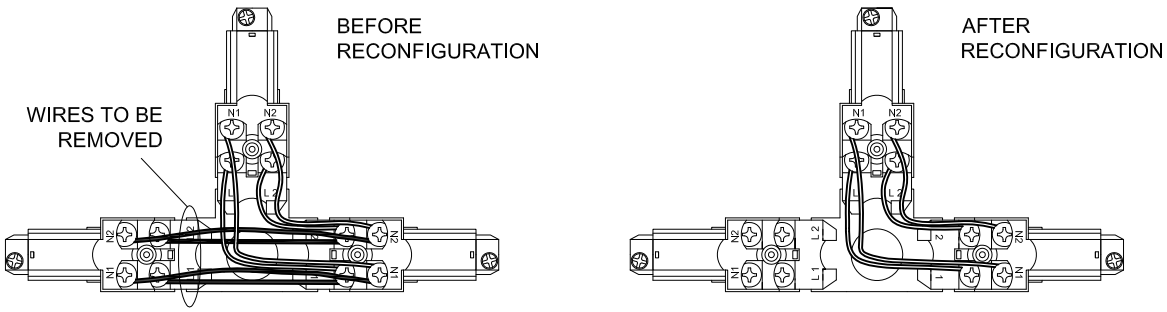
## Guidelines for Layouts (Continued)

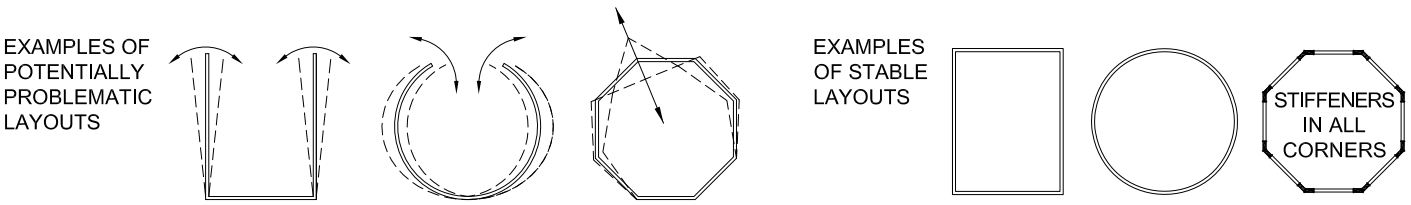
Complex layouts often have more than one feed point, and the potential exists for short or crossed circuits. The first diagram below shows how short or crossed circuits can be created. The second diagram below illustrates how short circuits can be avoided.



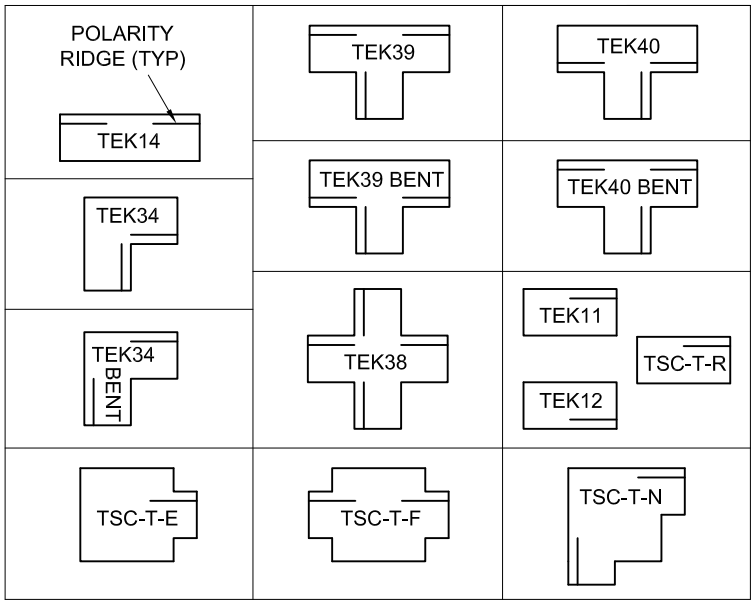

As previously stated, all Connector types and all Surface/Pendant Mount Current Limiters can be opened and reconfigured. The connector shown in the diagram below would be typical of a T Connector used in 2 places in the diagram above, after it has been reconfigured. It is representative of all connector types to be used in any layout.

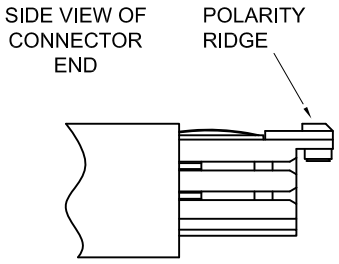



Certain *suspended* layouts of track, employing long lengths of Pendants, Wire Cable, or 1/4"-20 Threaded Rod, may deform, twist or splay. This condition sometimes worsens with the additional weight of fixtures. Arcs suspended with Wire Cable being especially problematic. Track layouts of closed loops are more stable, and less apt to deform. Also, layouts using Adjustable Joiners (hexagons, oxtagons, etc.) may deform without custom stiffeners. Consult factory for guidance.



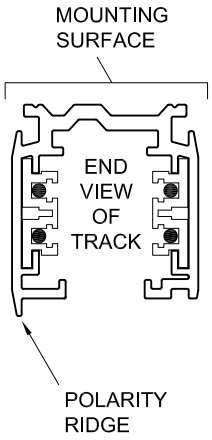
## Two Circuit 120Volt Track with Independent Neutrals - POLARITY ILLUSTRATIONS AND SAMPLE LAYOUT

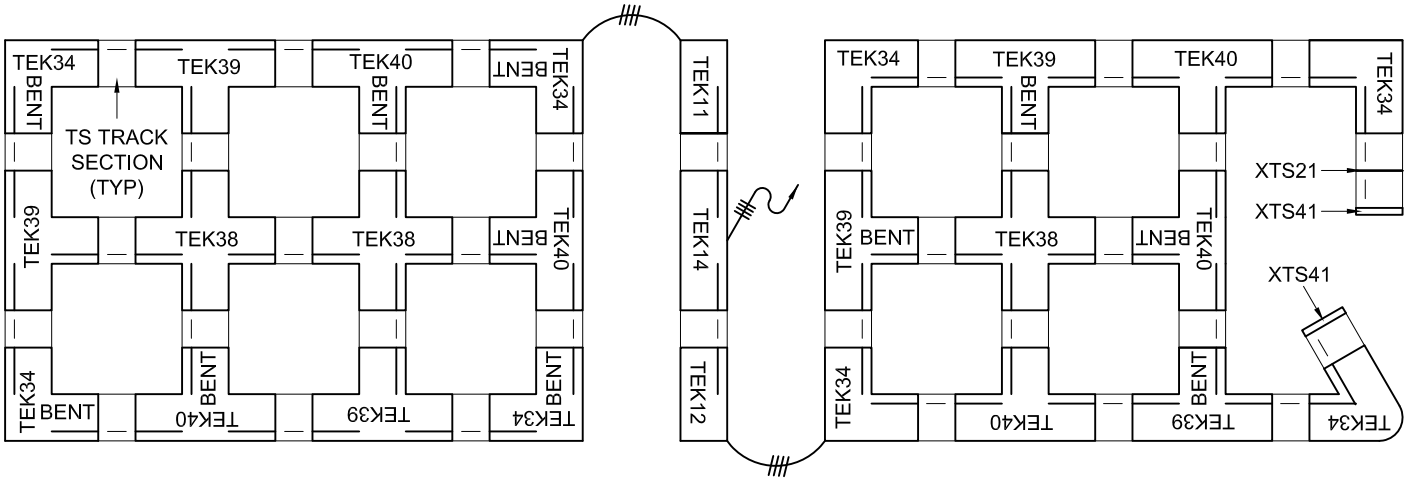


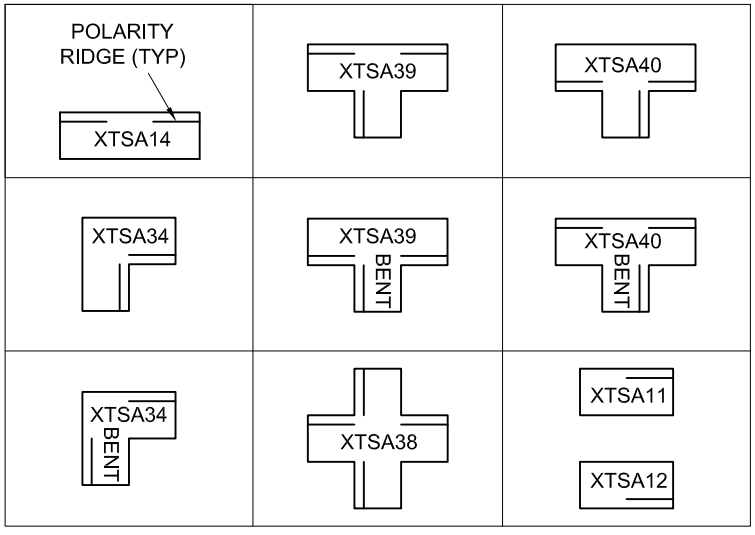

The views to the left and below of the various connectors and track are as if you are looking down onto the mounting surfaces of the system after installation. This is often referred to the "Reflected Ceiling View."

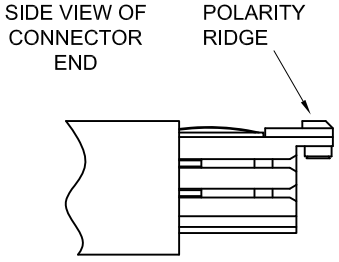
TS-4 = 4FT
TS-8 = 8FT
TS-12 =12FT



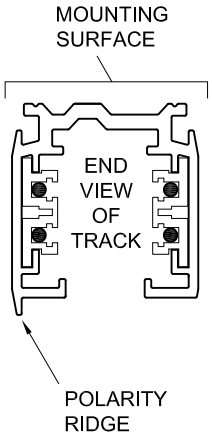

## Three Circuit Track with Common Neutral - POLARITY ILLUSTRATIONS AND SAMPLE LAYOUT




The views to the left and below of the various connectors and track are as if you are looking down onto the mounting surfaces of the system after installation. This is often referred to the "Reflected Ceiling View."

XTS44 = 4FT
XTS48 = 8FT
XTS412 =12FT

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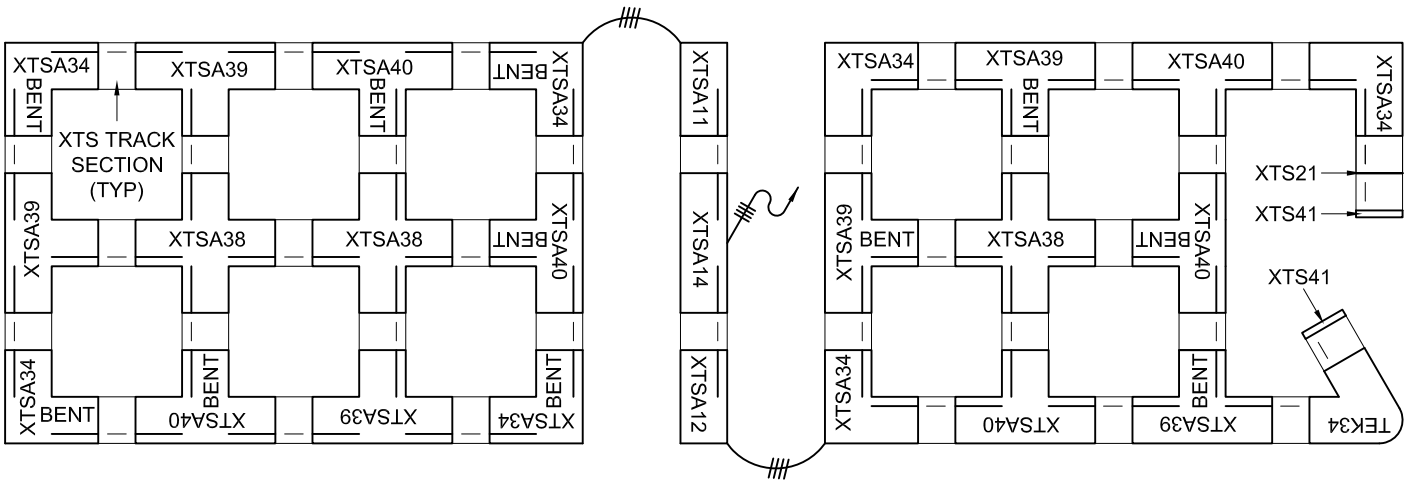
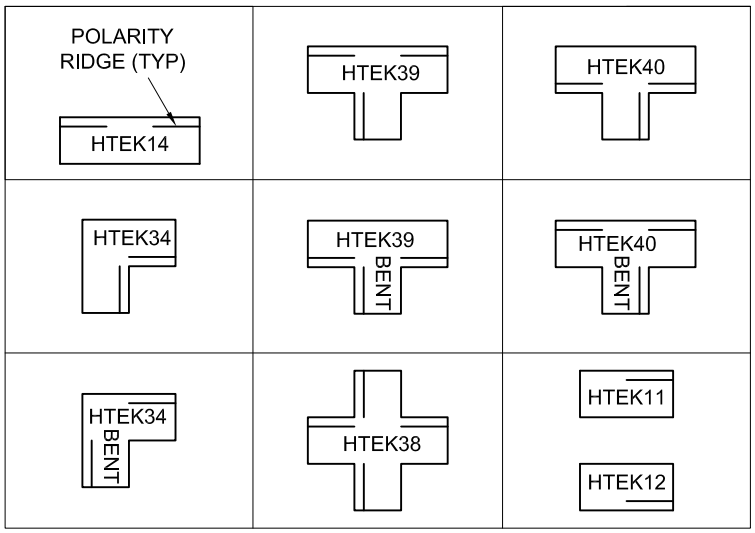
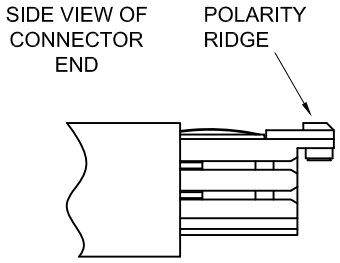
## Three Circuit Track with Common Neutral - POLARITY ILLUSTRATIONS AND SAMPLE LAYOUT (Continued)

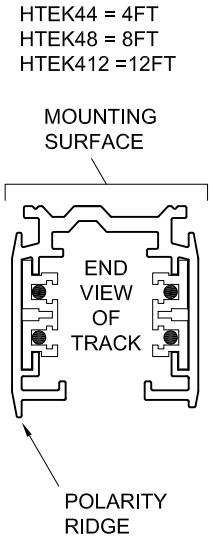


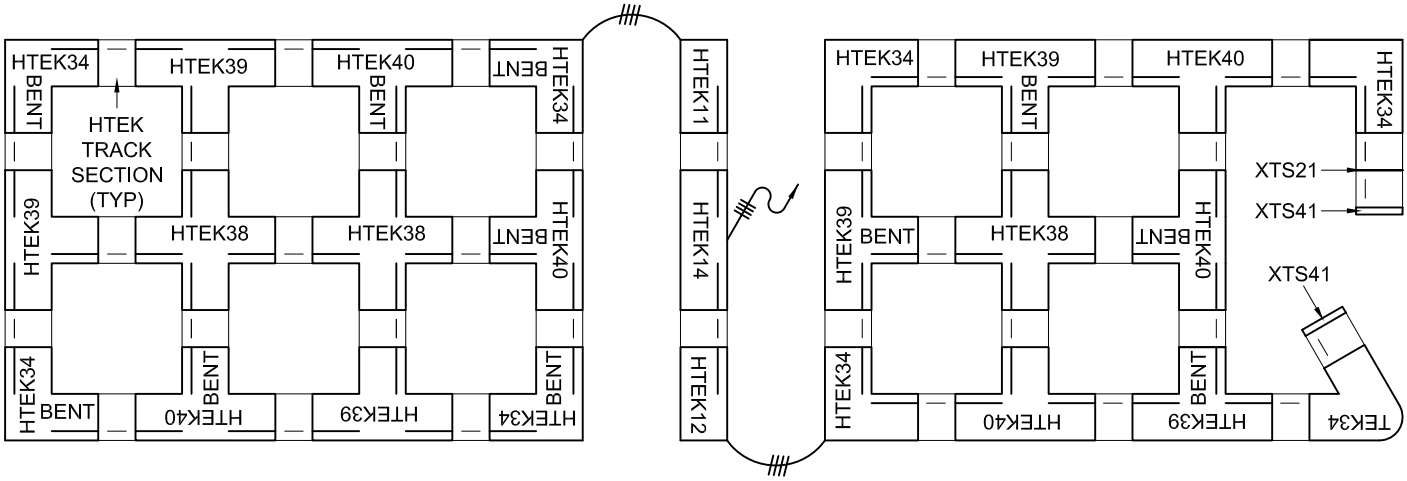

## Two Circuit 277Volt Track with Independent Neutrals - POLARITY ILLUSTRATIONS AND SAMPLE LAYOUT




The views to the left and below of the various connectors and track are as if you are looking down onto the mounting surfaces of the system after installation. This is often referred to the "Reflected Ceiling View."

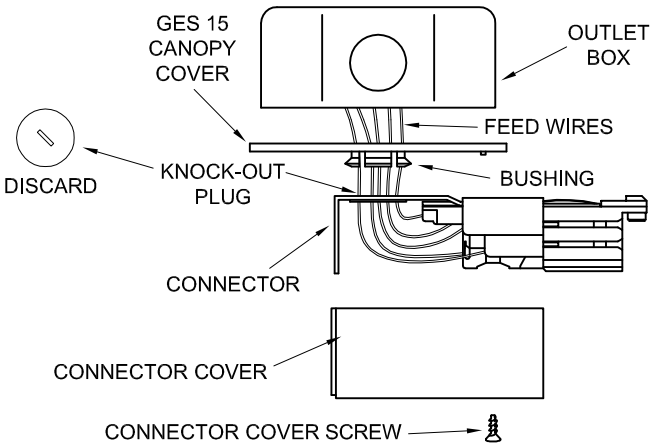



## Curved Track (Using CT Series Curved Track)

All track types are available in curved sections, custom ordered from the factory. The *minimum* bending radius is 8 ft. Curved Track accepts all Connector types and all mounting options except: Recessed, Lite Truss, Lite Ladder, Monotube and Lite Channel. Maximum section lengths vary depending on radius, but multiple sections can be connected together with Joiners.

## 4) INSTALLING FEED WIRES TO CONNECTORS




### Outlet Boxes

Follow the steps below to install all Connector types to standard outlet boxes.

1) Remove Connector cover and cover screw(s) and set aside.

2) Remove the knock-out plug and discard.

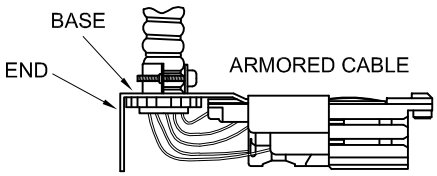
3) Pass the feed wires through the GES 15 Canopy Cover with integral bushing (or standard outlet box cover) and attach to Connector. NOTE: When using a metal outlet box cover, use a proper bushing or nipple-locknut combination to secure Connector to cover.

4) Connect green screw terminal to system ground.

5) Connect the hot and neutral feed wires to the gold and silver screw terminals respectively using the instructions in Section 1: ELECTRICAL CONNECTIONS. Make certain that the electrical feed matches the track type according to those instructions. Also, see the NOTE and CAUTION in the first paragraph of Section 3: FEEDING THE TRACK AND TRACK LAYOUT.

6) Reattach the Connector cover.

ILLUSTRATIONS OF LIVE ENDS BEING FED BY ASSORTED METHODS

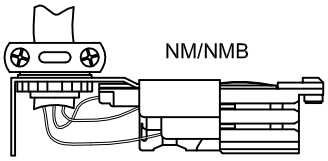



### Conduit, Armored Cable, Etc.

Follow the steps below to install all Connector types to conduit, armored cable, etc.

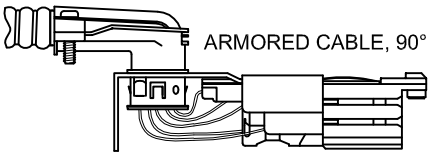
1) Remove Connector cover, cover screw(s), and set aside.

2) Attach the appropriate electrical fitting to the Connector. If the feed is to be connected to the base of the Connector, remove the knock-out plug first.

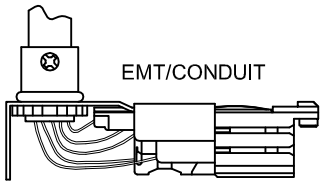



3) Attach conduit, armored cable, etc. to the electrical fitting.

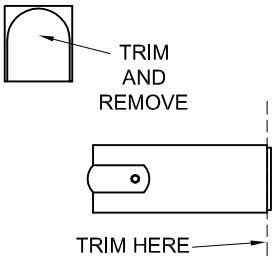
4) Connect green screw terminal to system ground.

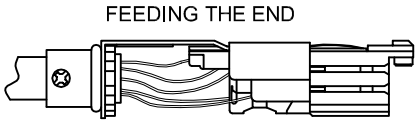



5) Connect the hot and neutral feed wires to the gold and silver screw terminals respectively using the instructions in Section 1: ELECTRICAL CONNECTIONS. Make certain that the electrical feed matches the track type according to those instructions. Also, see the NOTE and CAUTION in the first paragraph of Section 3: FEEDING THE TRACK AND TRACK LAYOUT.




6) If the feed is attached to the base of the Connector, reattach the Connector cover. If the feed is connected to the end of the Connector, carefully trim and discard the raised portion of the connector cover with a razor knife or band saw, then reattach the Connector cover. (See diagrams to right)



## 5) INSTALLING CONNECTORS, JOINERS AND DEAD ENDS TO THE TRACK

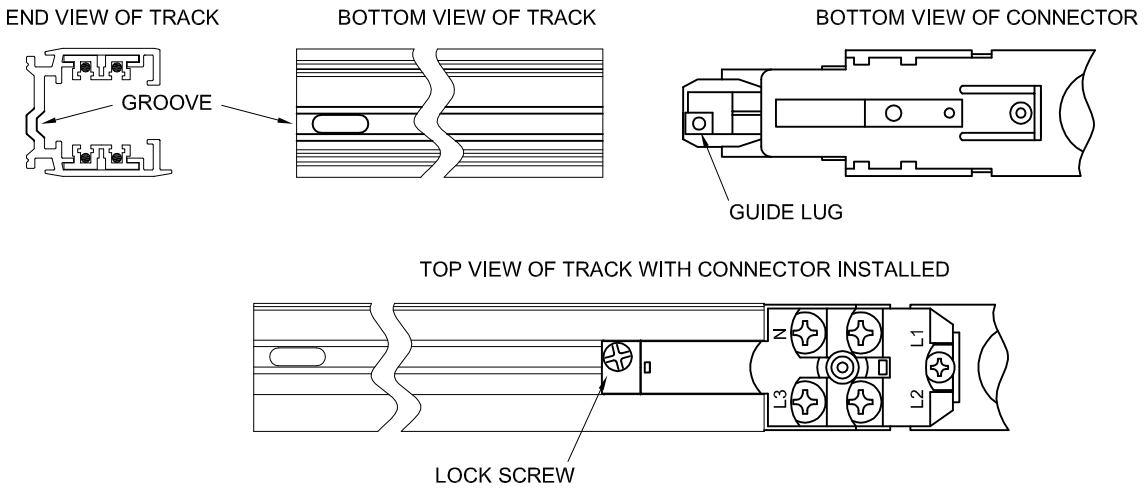
### Connectors (Used to create layouts and feed electrical power to the track)

Follow the steps below to install all Connector types to the track. NOTE: Before installing Connectors, make certain that the conductor ends have been properly prepared according to the instructions in Section 2: FIELD CUTTING THE TRACK AND PREPARING THE CONDUCTOR ENDS.

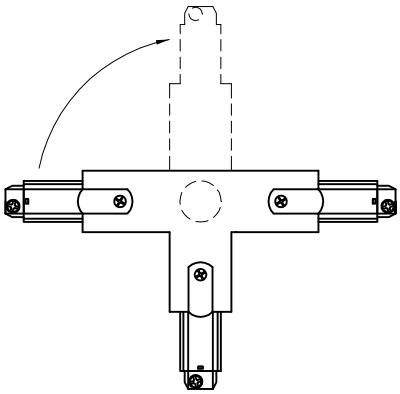
1) Align the guide lug of the Connector with the groove on the track.

2) Insert the Connector into the end of the track. Make certain that the guide lug enters the groove in the base of the track. NOTE: If the insertion is too tight, do NOT force it. Loosen the lock screw until the Connector slides in easily.

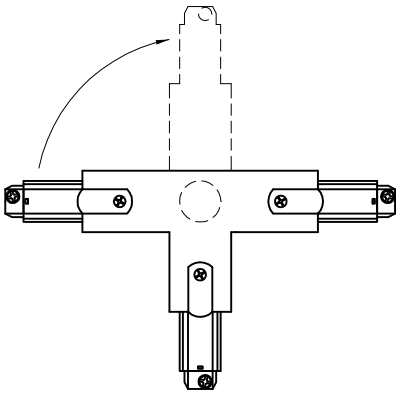
3) Make certain that the Connector is fully inserted and tighten the lock screw.



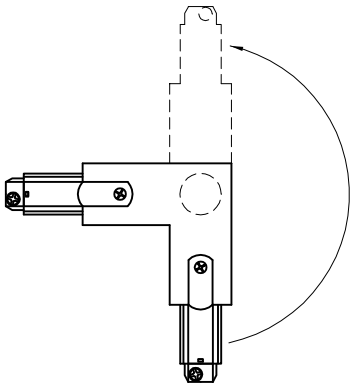

NOTE: T and L Connectors have a leg that can be bent to change polarity, depending on the layout. To do so, remove the Connector cover, swing the rotatable leg 90° for T Connectors and 180° for L Connectors and reattach the Connector cover. The leg with the knock-out plug is the leg that rotates for all three Connectors.



TEK39, XTSA39, HTEK39



TEK40, XTSA40, HTEK40



TEK34, XTS34, HTEK34

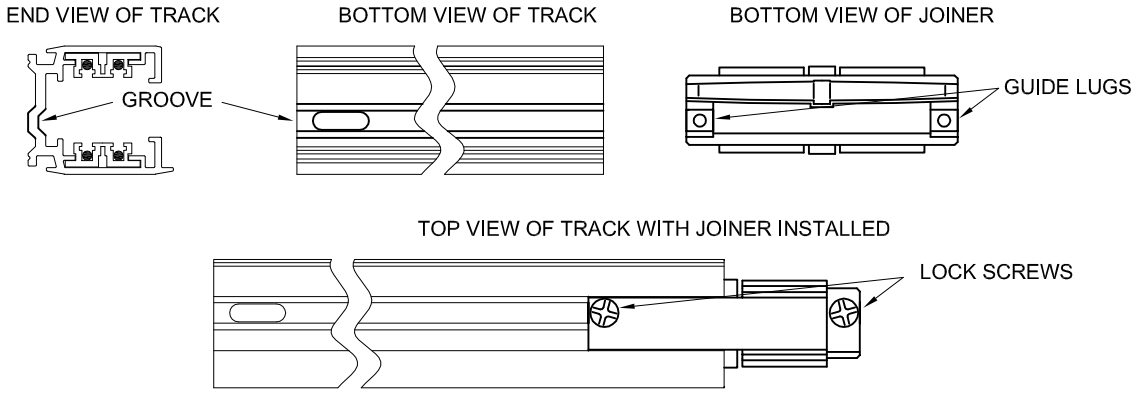
## Joiners (Used only to connect track sections together for layouts)

Follow the steps below to install both Joiner types to the track. NOTE: Before installing Joiners, make certain that the conductor ends have been properly prepared according to the instructions in Section 2: FIELD CUTTING THE TRACK AND PREPARING THE CONDUCTOR ENDS.

1) Align the guide lug of the Joiner with the groove on the track. (See diagram below)

2) Insert the Joiner into the end of the track. Make certain that the guide lug enters the groove in the base of the track. NOTE: If the insertion is too tight, do NOT force it. Loosen the lock screw until the Joiner slides in easily.

3) Make certain that the Joiner is fully inserted and tighten the lock screw. Repeat steps 1 through 3 for the other side of the Joiner.

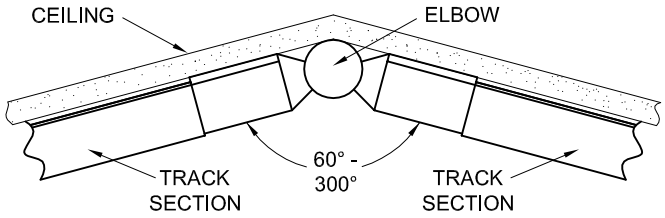



NOTE: Adjustable Joiners may be used to change track direction for a particular layout (see diagram below). Follow the steps below to change the orientation of the Adjustable Joiner connectors.

1) Remove Joiner cover(s), cover screw(s), and set aside.

2) Remove Joiner end(s) from the elbow (they slide off), rotate to desired angle (90°, 180°, or 270°), and reattach Joiner end(s).

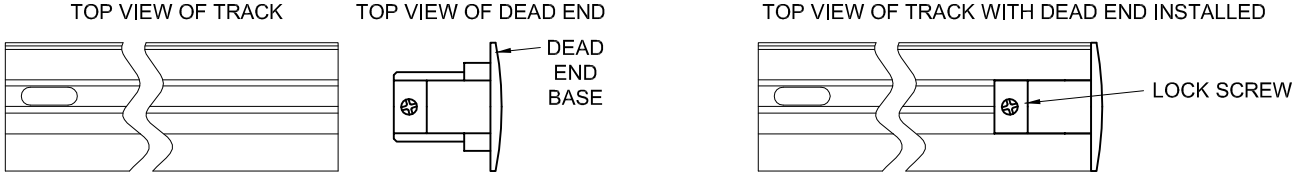
3) Reattach the Joiner cover(s).




## Dead Ends (Used only to cap off track ends without Connectors or Joiners)

**CAUTION:** To prevent electrical shock or fire hazard, Dead Ends *must* be used when a track end has no Connector or Joiner installed. NOTE: Before installing Dead Ends, make certain that the conductor ends have been properly prepared according to the instructions in Section 2: FIELD CUTTING THE TRACK AND PREPARING THE CONDUCTOR ENDS.

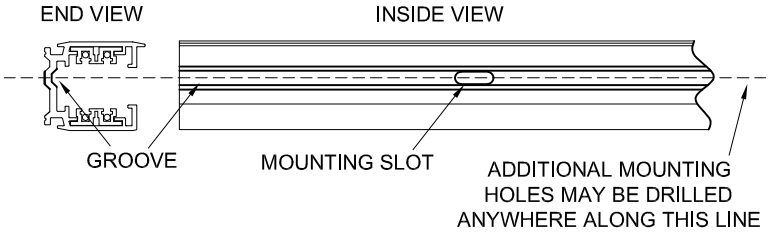
To install Dead Ends, insert the Dead End into the end of the track until the base is flush with the end of the track. Tighten the lock screw. NOTE: If the insertion is too tight, do NOT force it. Loosen the lock screw until the Dead End slides in easily. (See diagram below)

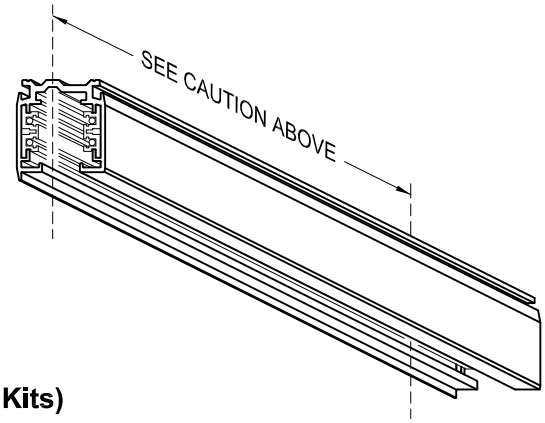


## 6) INSTALLING THE TRACK

### Flush with Flat Mounting Surfaces

Using the factory provided mounting slots, the track can be mounted directly to the ceiling or other allowed flat surface using toggle bolts or appropriate screws (not provided). It may become necessary to drill additional mounting holes. The drill bit should be sized no larger than 3/16". The holes should be centered in the groove in the base of the track. (See diagram below, left) Remove burrs after drilling. **CAUTION:** A single track section that is 4 feet or less in length must have one mounting hole spaced a maximum of 6 inches from each end of the track section. A single track section that is greater than 4 feet in length must have one mounting hole spaced a maximum of 12 inches from each end of the track section with additional mounting holes provided a minimum of every 4 feet along the length of the track section. (See diagram below, right)




### Ceiling Grid Mounting (Using SKBT 12 and SKBX 12 Grid Clip Kits)

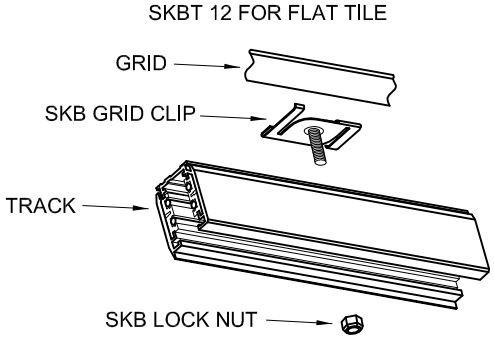
**CAUTION:** A single track section that is 4 feet or less in length must have one Grid Clip spaced a maximum of 6 inches from each end of the track section. A single track section that is greater than 4 feet in length must have one Grid Clip spaced a maximum of 12 inches from each end of the track section with additional Grid Clips provided a minimum of every 4 feet along the length of the track section.

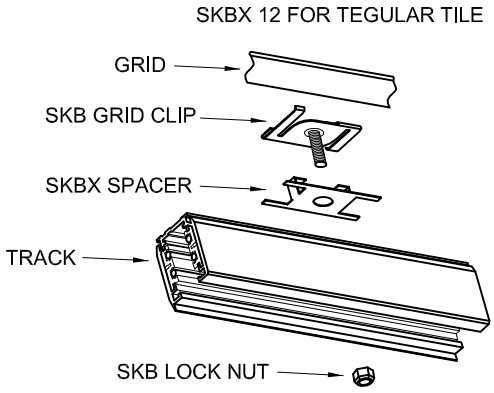
Follow the steps below to install track to standard ceiling grids. NOTE: For grids that are flush with the tile, use SKBT 12 Grid Clips Kits, and for grids that are recessed into the tiles (tegular), use SKBX 12 Grid Clip Kits. If additional mounting hole(s) are needed, follow the instructions in the section directly above for drilling holes.

1) Simply twist the SKB Grid Clips onto the grid at the desired locations. (See diagrams below)

2) For flush tile, slip the track over the Grid Clip studs. For tegular tile, apply an SKBX Spacer between the track and each Grid Clip stud.

3) With a spin wrench, install an SKB lock nut to each Grid Clip stud and tighten.



## Pendant Mounting

Two major phases are required to install Pendant Mounted Track. In all cases, pendants use 3/8" NPT stems. The first phase encompasses mounting the Pendant Suspension Brackets and Canopies. The second phase encompasses mounting the track to the Pendant Supports. There are two types of Pendant Supports: One is for wiring the feed to the track while providing mechanical support for the track, and the other to provide mechanical support only. Both Support instructions are detailed, beginning on Page 18.

**CAUTION:** A single track section that is 4 feet or less in length must have one Pendant Support spaced a maximum of 6 inches from each end of the track section. A single track section that is greater than 4 feet in length must have one Pendant Support spaced a maximum of 24 inches from each end of the track section with additional Pendant Supports provided a minimum of every 4 feet along the length of the track section.

For the first phase, there are two methods shown, the first method is for installing stems with pre-cut lengths and pre-threaded ends using SPUS Suspension Kits. The second method is for installing stems using adjustable SPUS-ADJ Susupension Kits. These kits allow for stems to be field cut to non-standard lengths, and/or for installations where the stem needs to swivel (when mounted to sloped ceilings for example).

**PENDANT SUSPENSION DETAIL (Using SPUS Suspension Kits)**

Use the diagrams below, right as a guide along with the instructions below.

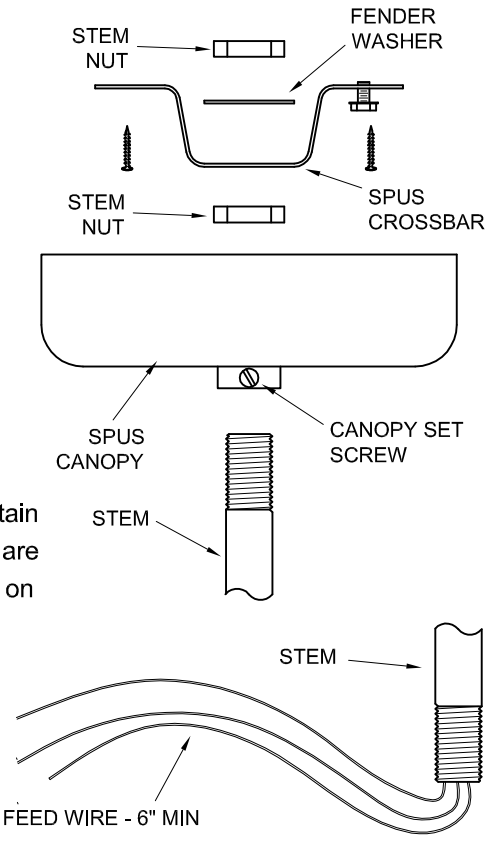
1) Using the factory provided mounting holes, secure the SPUS Crossbar directly to the ceiling, standard outlet box, or other allowed flat surface using toggle bolts or appropriate screws (not provided). **CAUTION:** When using screws (other than for a standard outlet box), make certain that there is adequate support blocking.

2) If mounting to a standard outlet box, connect the SPUS Crossbar to system ground using the green screw provided, otherwise remove the green screw and discard.

3) Attach a stem nut to the stem approximately 1/2" from the upper end.

4) Slip on the fender washer and add a second stem nut to the end of the stem. Do not tighten the nuts together, leave a gap of approximately 1/4".

5) Loosen the set screw on the SPUS Canopy and carefully slide the canopy half way onto the stem. Take care care not to scratch the finished surface of the stem with the canopy. Lightly secure the set screw to temporarily hold the canaopy in place.




6) If more than one stem section is to be coupled togther, do so now. Make certain that all threads are fully engaged within the coupling. **CAUTION:** If the stem(s) are to have feed wires snaked within, remove any sharp edges or burrs, if present, on the inside edges of all stem openings before coupling them together.

7) If the stem(s) is to have feed wires snaked within, install the wires now, otherwise skip this step. Leave at least 6" of wire exiting from each end of the stem or stem assembly.

Continued on next page

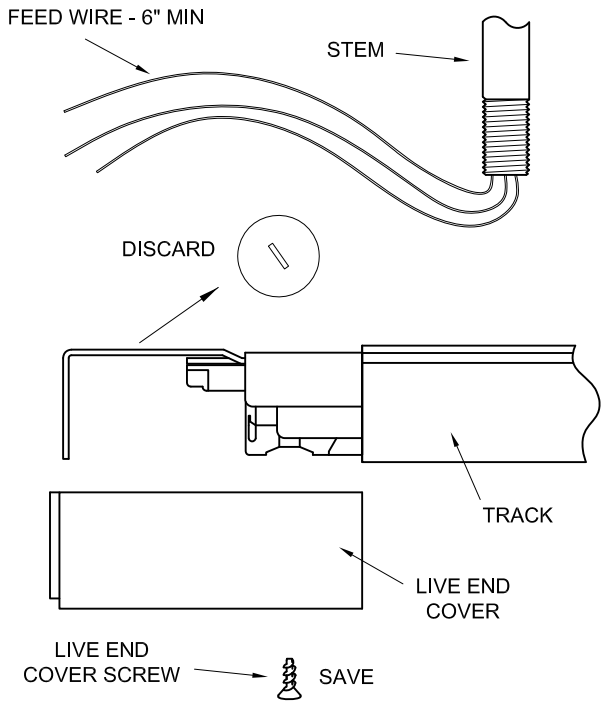
## Pendant Mounting (Continued)

**CAUTION:** A single track section that is 4 feet or less in length must have one Pendant Support spaced a maximum of 6 inches from each end of the track section. A single track section that is greater than 4 feet in length must have one Pendant Support spaced a maximum of 24 inches from each end of the track section with additional Pendant Supports provided a minimum of every 4 feet along the length of the track section. NOTE: To support Current Limiters with Pendants, see Section 7: CURRENT LIMITERS for those special mounting instructions. Current Limiters are designed for use with "Two Circuit 120Volt Track with Independent Neutrals" only.

**PENDANT WIRING DETAIL (Using SP 4E, SP 4I, SP 4L, SP 4T, or SP 4X Pendant Support Kit)**

Pendant supports that double as wireways are available for Live End, Middle Feed, L, T, and X Connectors. They are avaiable as complete kits by the numbers SP 4E, SP 4I, SP 4L, SP 4T and SP 4X respectively. The instructions below are for the SP 4E Pendant Support Kit in conjunction with the Live End Connector and are representative of the SP 4I, SP 4L, SP 4T and SP 4X Pendant Support Kits.

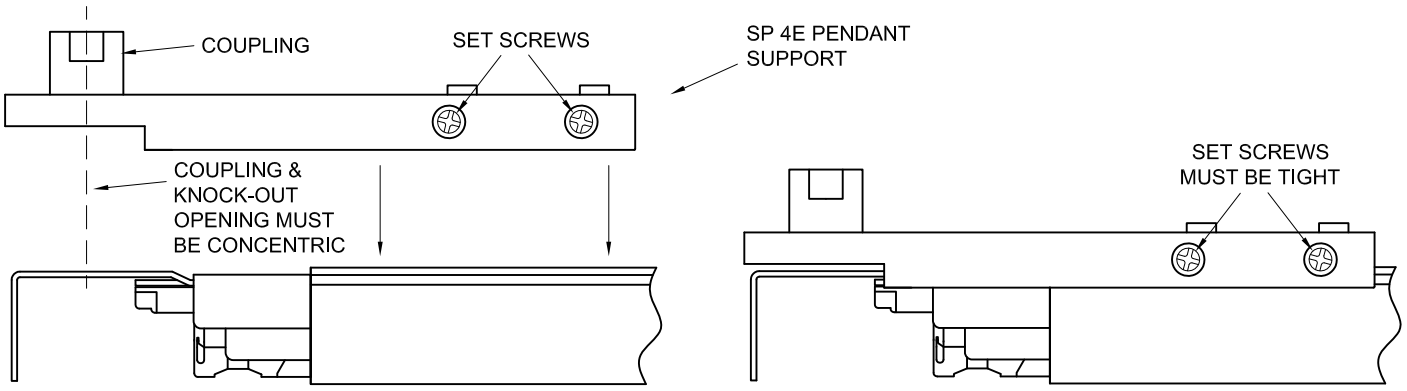
NOTE: Most likely, the feed wires have already been installed in the stem(s). If not, then feed wires can be pulled through the stem(s) at any time during this procedure. Leave at least 6" of wire exiting from each end the stem(s). (See diagram to right)




1) Remove Live End cover and cover screw and set aside. (See diagram to right)

2) Remove the knock-out plug from the base of the Live End and discard. (See diagram to right)

3) Loosen the 2 set screws on the side of the SP 4E Pendant Support and snap the SP 4E onto the track such that its coupling is aligned with the knock-out opening of the live end. Fully tighten both set screws. (See diagrams below)

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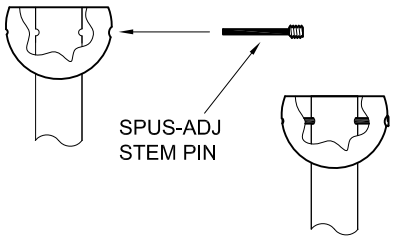
## Pendant Mounting (Continued)

9) Remove and discard the set screw.

10) Remove the stem from the casting and remove any burrs from the inside of the two drilled holes.

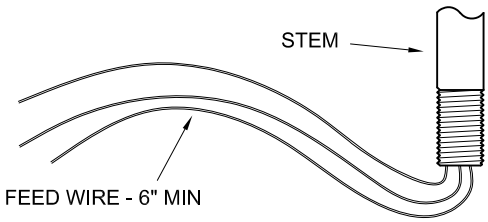
11) Reinsert the stem into the round end of the SPUS-ADJ Casting such that the casting holes and newly drilled stem holes are aligned. (See diagram, near right)

12) Install the SPUS-ADJ Stem Pin into the casting such that the end of the pin extends through both holes of the stem and into the opposite side of the casting. (See diagram, far right)



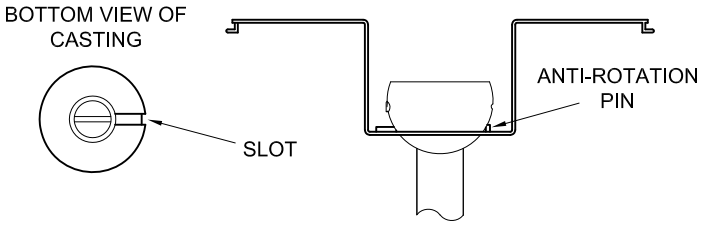

13) If more than one stem section is to be coupled togther, do so now, otherwise skip this step. Make certain that all threads are fully engaged within the coupling. **CAUTION:** If the stems are to have feed wires snaked within, remove any sharp edges or burrs, if present, on the inside edges of all stem openings before coupling them together.

14) If the stem(s) is to have feed wires snaked within, install the wires now, otherwise skip this step. Leave at least 6" of wire exiting from each end of the stem or stem assembly. **CAUTION:** Before snaking wires, remove any sharp edges or burrs, if present, on the inside edges of the stem openings. Do this on both ends of the stem. (See diagram to right)

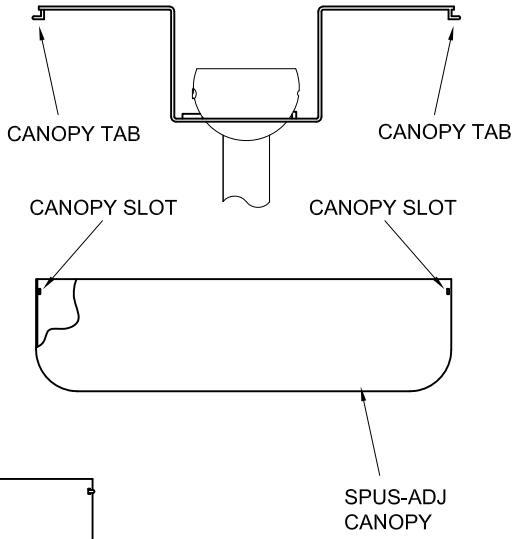


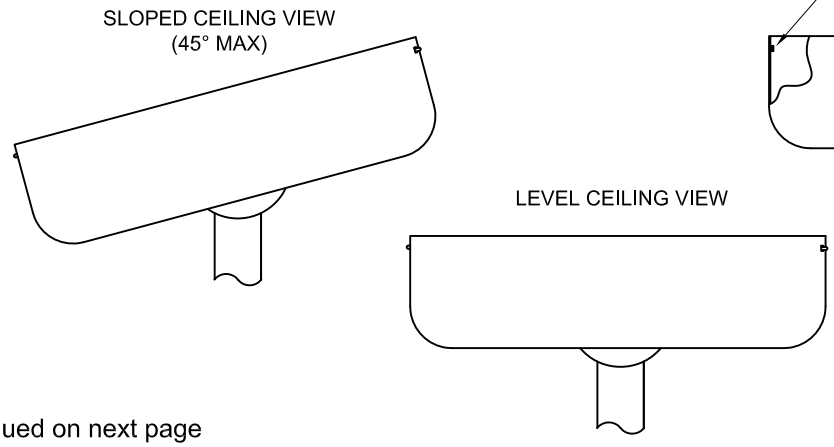

15) Slip the SPUS-ADJ Casting onto the SPUS-ADJ Crossbar such that anti-rotation pin of the crossbar rests within the slot in the casting. (See diagrams to right)

16) If the stem(s) has feed wires snaked within, make all electrical connections within the outlet box, otherwise skip this step.




17) Carefully slide the SPUS-ADJ Canopy up the stem, lightly squeeze the canopy between the two tab slots, and snap it in place such that both canopy tabs are fully engaged with the two canopy slots. NOTE: Take care care not to scratch the finished surface of the stem with the canopy. (See diagrams to right and below)

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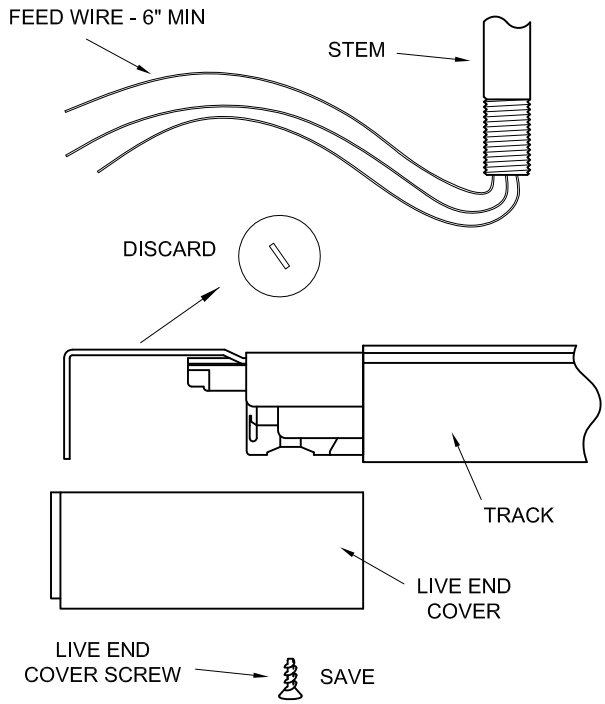
## Pendant Mounting (Continued)

**CAUTION:** A single track section that is 4 feet or less in length must have one Pendant Support spaced a maximum of 6 inches from each end of the track section. A single track section that is greater than 4 feet in length must have one Pendant Support spaced a maximum of 24 inches from each end of the track section with additional Pendant Supports provided a minimum of every 4 feet along the length of the track section. NOTE: To support Current Limiters with Pendants, see Section 7: CURRENT LIMITERS for those special mounting instructions. Current Limiters are designed for use with "Two Circuit 120Volt Track with Independent Neutrals" only.

**PENDANT WIRING DETAIL (Using SP 4E, SP 4I, SP 4L, SP 4T, or SP 4X Pendant Support Kit)**

Pendant supports that double as wireways are available for Live End, Middle Feed, L, T, and X Connectors. They are avaiable as complete kits by the numbers SP 4E, SP 4I, SP 4L, SP 4T and SP 4X respectively. The instructions below are for the SP 4E Pendant Support Kit in conjunction with the Live End Connector and are representative of the SP 4 I, SP 4L, SP 4T and SP 4X Pendant Support Kits.

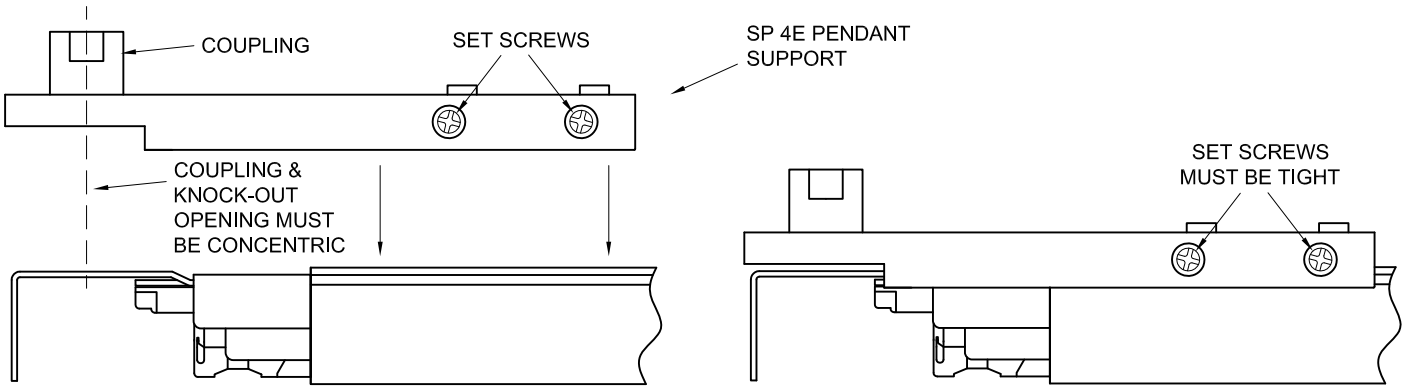
NOTE: Most likely, the feed wires have already been installed in the stem(s). If not, then feed wires can be pulled through the stem(s) at any time during this procedure. Leave at least 6" of wire exiting from each end the stem(s). (See diagram to right)




1) Remove Live End cover and cover screw and set aside. (See diagram to right)

2) Remove the knock-out plug from the base of the Live End and discard. (See diagram to right)

3) Loosen the 2 set screws on the side of the SP 4E Pendant Support and snap the SP 4E onto the track such that its coupling is aligned with the knock-out opening of the live end. Fully tighten both set screws. (See diagrams below)

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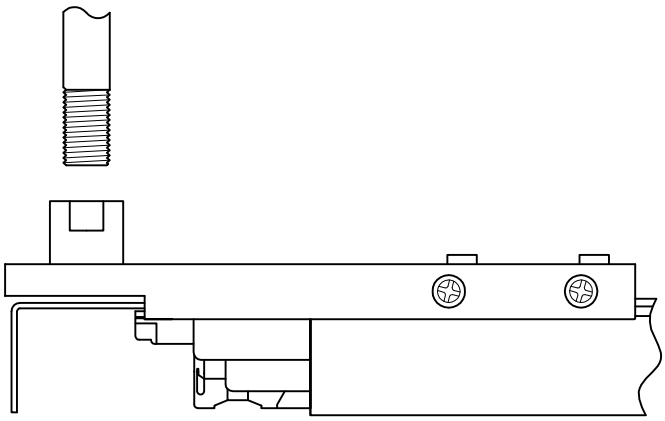
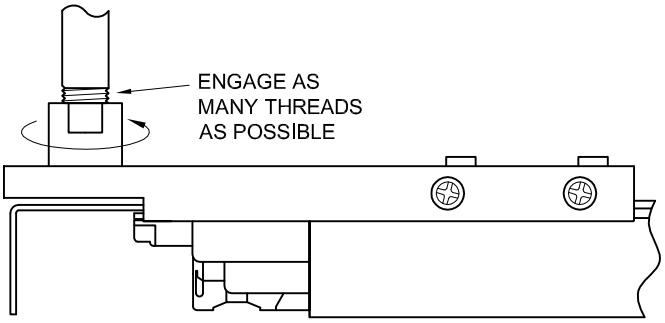
## Pendant Mounting (Continued)

4) Attach stem to the SP 4E Pendant Support coupling. Engage as many threads as possible. NOTE: Coupling rotates in place. (See diagrams below)

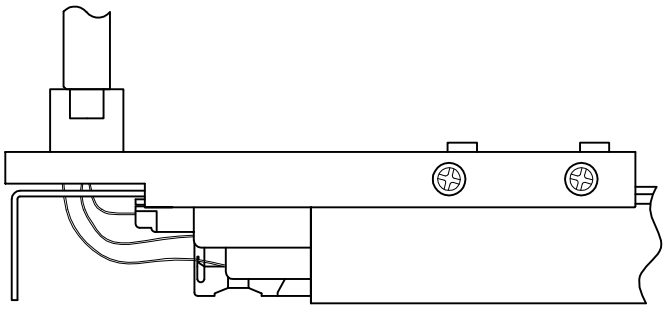





5) If the feed wires have not yet been fed through the stem, then do so now.

6) Connect green screw terminal to system ground.

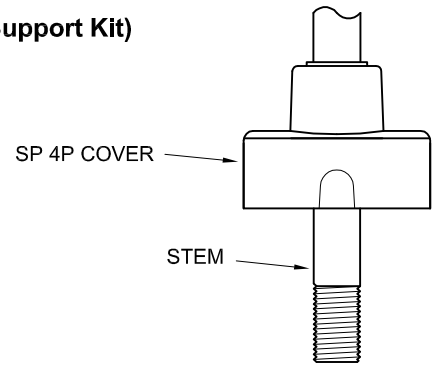
7) Connect the hot and neutral feed wires to the gold and silver screw terminals respectively using the instructions in Section 1: ELECTRICAL CONNECTIONS. Make certain that the electrical feed matches the track type according to those instructions. Also, see the NOTE and CAUTION in the first paragraph of Section 3: FEEDING THE TRACK AND TRACK LAYOUT. (See diagram to right)



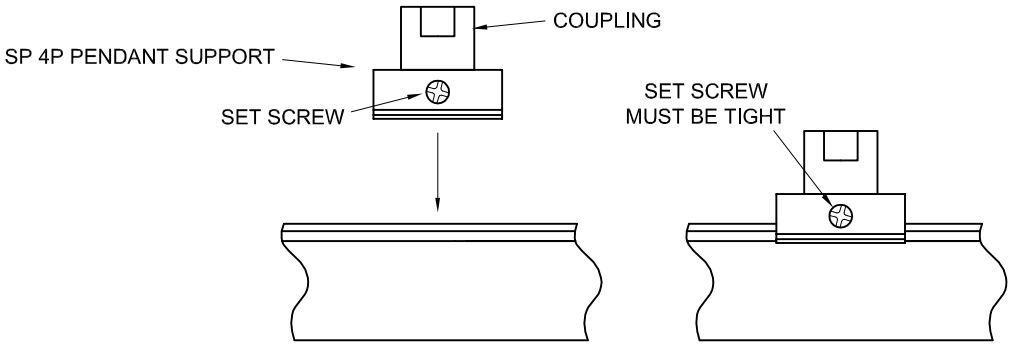
8) Reattach the live end cover.

**PENDANT MECHANICAL SUPPORT DETAIL (Using SP 4P Pendant Support Kit)**

1) Slip the SP 4P cover onto the stem. (See diagram to right)



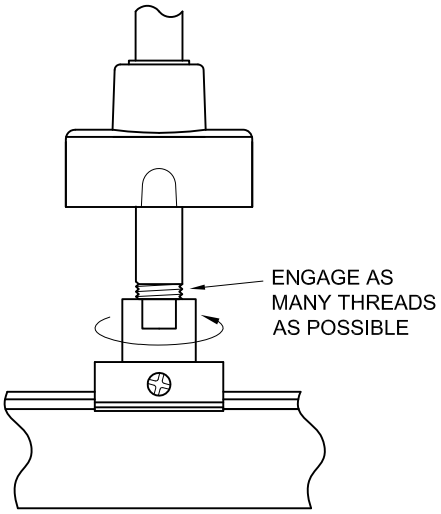

2) Loosen the set screw on the side of the SP 4P Pendant Support and snap the SP 4P onto the track. Fully tighten the set screw. (See diagrams below)

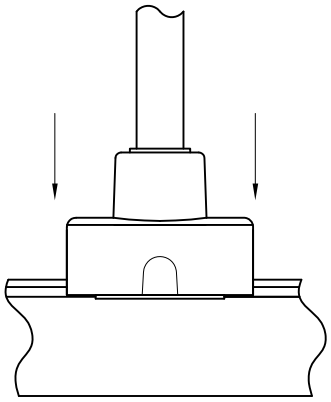



Continued on next page

## Pendant Mounting (Continued)

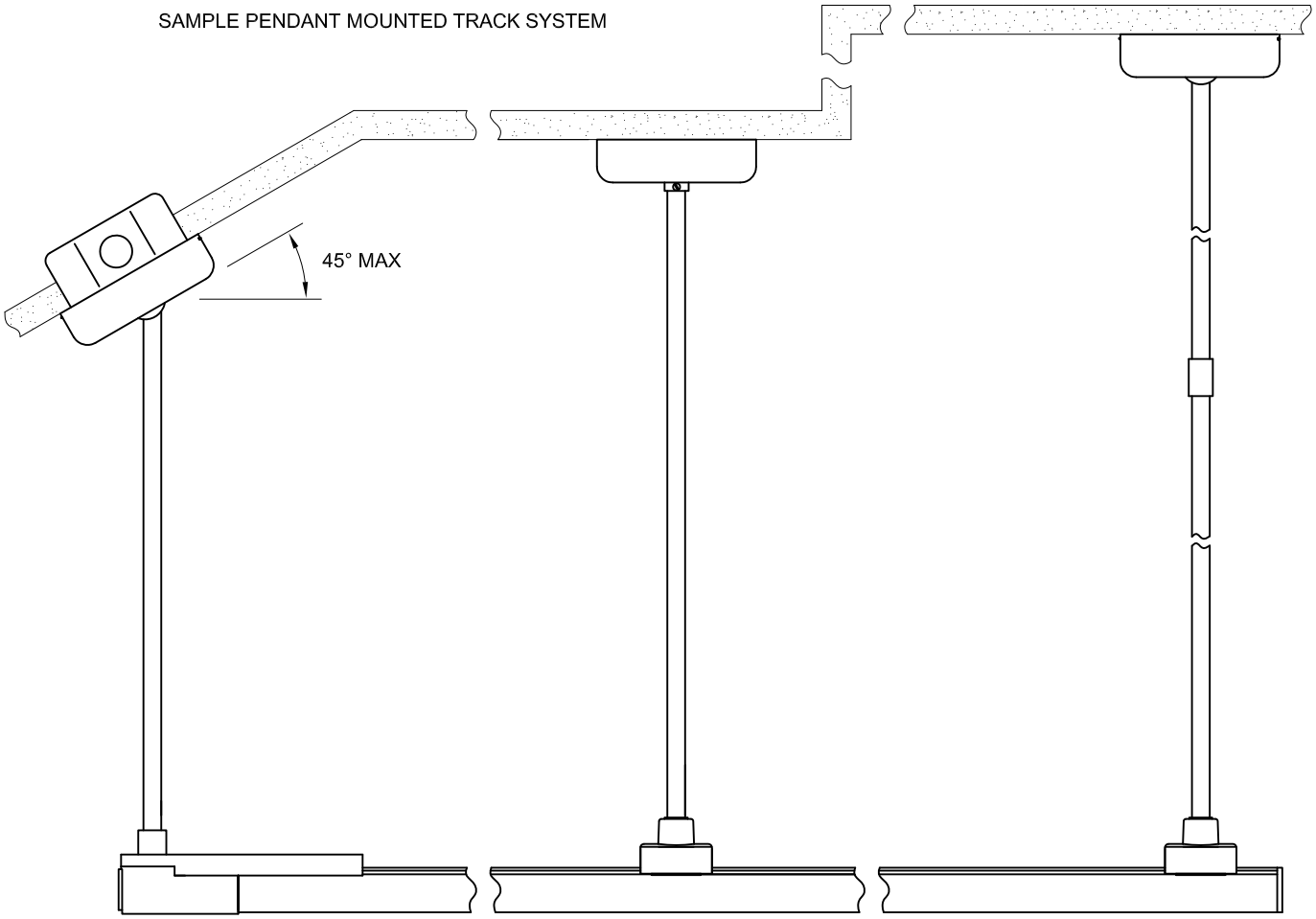
3) Attach stem to the SP 4P Pendant Support coupling. Engage as many threads as possible. NOTE: Coupling rotates in place. (See diagram to right)



4) Slip the SP 4P cover down stem and over the SP 4P clamp. (See diagram to left)

SAMPLE PENDANT MOUNTED TRACK SYSTEM



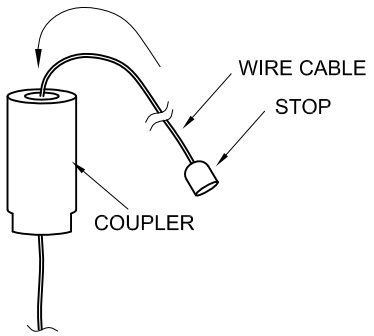
## Wire Cable Mounting (Using CG Series Wire Cable Support Kits with SKB 10 Clips)

**CAUTION:** A single track section that is 4 feet or less in length must have one Wire Cable Support spaced a maximum of 6 inches from each end of the track section. A single track section that is greater than 4 feet in length must have one Wire Cable Support spaced a maximum of 24 inches from each end of the track section with additional Wire Cable Supports provided a minimum of every 4 feet along the length of the track section.

1) Using the factory provided mounting holes, secure the crossbar directly to the ceiling, standard outlet box, or other allowed flat surface using toggle bolts or appropriate screws (not provided). (See diagram below, lower right) **CAUTION:** When using screws (other than for a standard outlet box), make certain that there is adequate support blocking. NOTE: Other specialty hardware is available in lieu of the crossbar for mounting to specific structures. Consult factory for details.

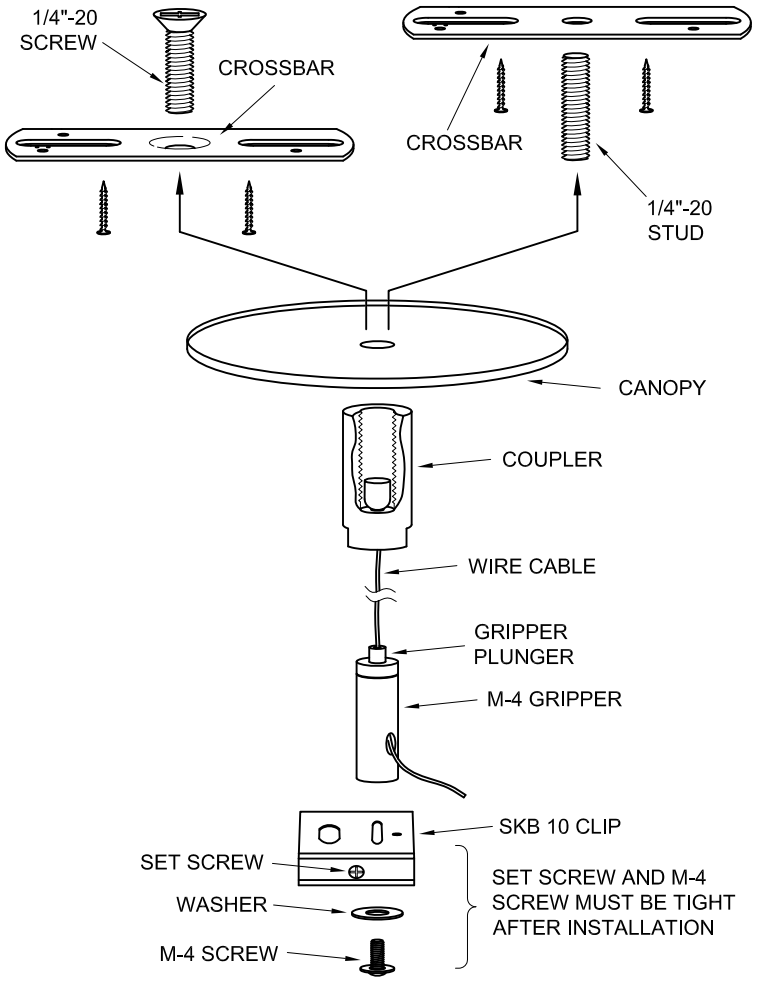
2) If mounting to a standard outlet box, connect the crossbar to system ground using the green screw provided, otherwise remove the green screw and discard.

3) Attach the 1/4"-20 stud or screw to the crossbar.




4) Thread the free end of the wire cable through the 1/4"-20 coupler until the stop is seated inside the coupler. (See diagram to left)

5) Place the canopy over the screw (or stud) and thread the 1/4"-20 coupler onto the screw (or stud) until tight. **CAUTION:** At least three full threads of the stud MUST be inside the crossbar AND the coupler.




6) Attach the M-4 Gripper to the SKB 10 Clip with the M-4 Screw and Washer provided. Use the center slot of the SKB 10 Clip. The washer MUST be placed between the screw head and the clamp, and the screw MUST be tight.

7) Thread the free end of the wire cable through the M-4 Gripper until approximately one inch of wire cable is extending beyond the side of the gripper.

8) Loosen the set screw on the side of the SKB 10 Clip and snap it onto the track. Fully tighten the set screw.

9) The length of the cable may be further adjusted by carefully depressing the gripper plunger and slowly pulling the wire cable in or out of the gripper.

10) Trim the wire cable such that approximately 1" extends from the side of the gripper. NOTE: The cable is made of hard steel. Use cutters designed for cutting this material.

## 1/4"-20 Threaded Rod Mounting

**CAUTION:** A single track section that is 4 feet or less in length must have one Threaded Rod Support spaced a maximum of 6 inches from each end of the track section. A single track section that is greater than 4 feet in length must have one Threaded Rod Support spaced a maximum of 24 inches from each end of the track section with additional Threaded Rod Supports provided a minimum of every 4 feet along the length of the track section.

Two basic methods for threaded rod mounting are illustrated in the diagram on the next page. Method 1 (see diagram on next page, left side) uses an SKB 10 Clip and a CG Series Crossbar and Canopy from a CG Series Wire Cable Support Kit (threaded rod not provided). Method 2 (see diagram on next page, right side) uses an SKB 10 Clip and parts by others. As indicated in the diagram, various components can be mixed and matched to complete the mounting system. NOTE: Other specialty hardware is available in lieu of the crossbar for mounting to specific structures. Consult factory for details.

Whichever method is chosen, the threaded rods should be pre-cut to the desired length(s) beforehand if need be, and make certain that the threaded ends will easily accept a nut. It is best to install a nut close the point where the rod is to be cut, then cut the rod. Grind the cut end fairly smooth and remove any burrs. Removing the nut will assist in aligning any threads that may have been disturbed in the cutting process.

### Method 1:

1) Using the factory provided mounting holes, secure the CG Series crossbar directly to the ceiling, standard outlet box, or other allowed flat surface using toggle bolts or appropriate screws (not provided). **CAUTION:** When using screws (other than for a standard outlet box), make certain that there is adequate support blocking.

2) If mounting to a standard outlet box, connect the crossbar to system ground using the green screw provided, otherwise remove the green screw and discard.

3) Attach a 1/4"-20 nut to the threaded rod, and attach the threaded rod to the crossbar. Lock the rod into place by tightening the nut to the crossbar.

4) Slip the CG Series canopy onto the rod and use a 1/4"-20 nut to hold it in place.

NOTE: Read Alternate Rod-to-Track Attachment instructions on Page 24 before proceeding to next Step. If that method of attachment is employed, then the following steps can be ignored.

5) Attach the threaded rod directly to the SKB 10 Clip by sandwiching the clip between two 1/4"-20 nuts. Make certain that the 1/4"-20 nuts are tight.

6) Loosen the set screw on the side of the SKB 10 Clip and snap it onto the track. Fully tighten the set screw.

## 1/4"-20 Threaded Rod Mounting (Continued)

### Method 2:

1) Attach the 1/4"-20 threaded rod to the crossbar using appropriate hardware.

2) Secure the crossbar directly to the ceiling, standard outlet box, or other allowed flat surface using toggle bolts or appropriate screws (not provided). **CAUTION:** When using screws (other than for a standard outlet box), make certain that there is adequate support blocking.

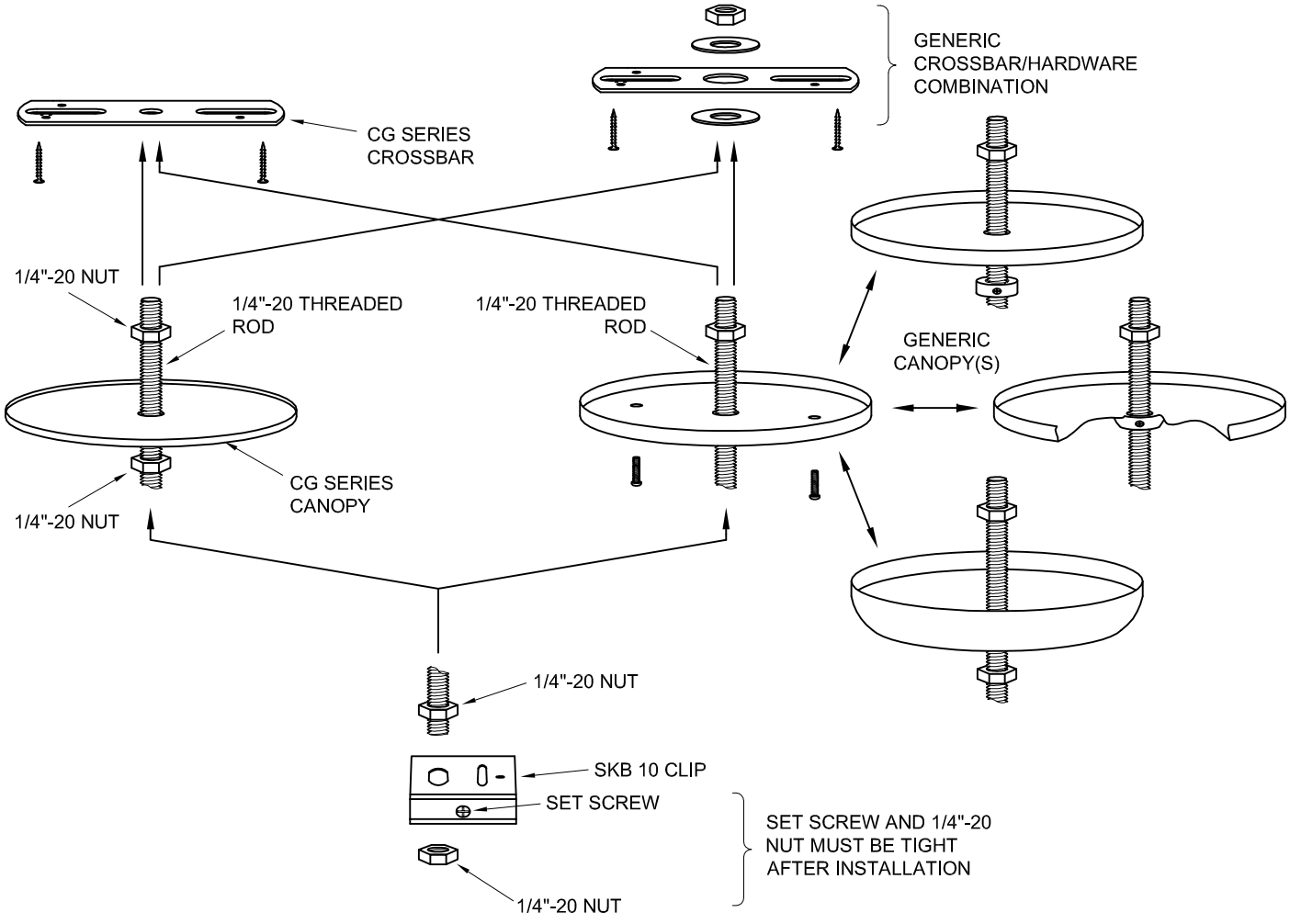
3) If mounting to a standard outlet box, connect the crossbar to system ground using an approved method.

4) Install the canopy using the intended method for that particular canopy.

NOTE: Read Alternate Rod-to-Track Attachment instructions on Page 24 before proceeding to next Step. If that method of attachment is employed, then the following steps can be ignored.

5) Attach the threaded rod directly to the SKB 10 Clip by sandwiching the clip between two 1/4"-20 nuts. Make certain that the 1/4"-20 nuts are tight.

6) Loosen the set screw on the side of the SKB 10 Clip and snap it onto the track. Fully tighten the set screw.

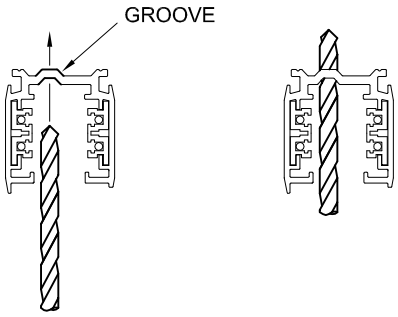


## 1/4"-20 Threaded Rod Mounting (Continued)

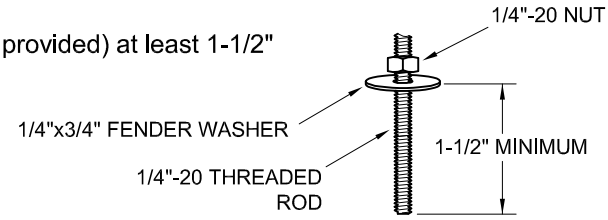
### Alternate Rod-to-Track Attachment:

For simpler layouts where: 1) the track runs are relatively short and straight, and 2) where the rods are less than 12" in length, the rod may be attached directly to the track without the use of SKB 10 Clips. Follow Steps 1 through 4 for Methods 1 or 2 (on the two previous pages) and continue with the instructions below. Read and fully understand the following instructions before installation, and then determine if this approach is better suited for the layout at hand.

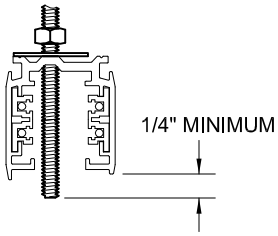
1) Drill through the track using a 17/64" drill bit. The hole(s) should be centered in the groove in the base of the track. Make certain that the drill bit stays perpendicular to the base of the track and does NOT come in contact with any other parts of the track while drilling. Remove burrs after drilling. (See diagrams to right)



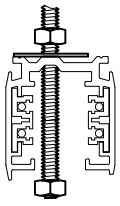

2) Install a first 1/4"-20 nut and a 1/4" x 3/4" fender washer (both not provided) at least 1-1/2" onto threaded rod. (See diagram to right)



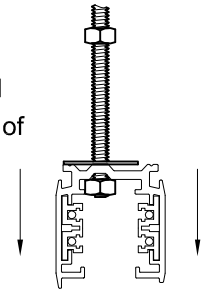

3) Push track up onto threaded rod until at least 1/4" of the rod is exposed below the track. (See diagram to right)

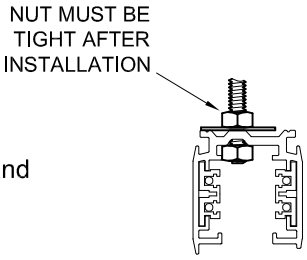



4) Install a second 1/4"-20 nut (not provided) until the bottom of the nut is flush with the bottom end of the rod. (See diagram to right)



5) Pull the track and fender washer down, onto the second nut. NOTE: Align a flat side of the nut with the interior wall of the track. (See diagram to right)






6) Screw down the first nut, sandwiching the track and fender washer between the first and second nuts. Make certain that the first nut is fully tight. (See diagram to right)

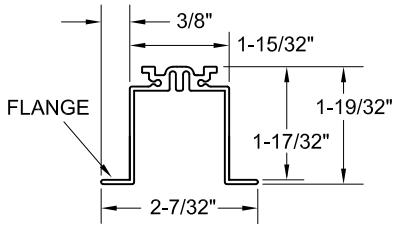
**Recessed Mounting - Flanged** (using FTP Series Track Sleeves)

Two major phases are required to install Flanged Recessed Track. The first phase encompasses mounting the Track Sleeve using SKB 10 Clips. The second phase encompasses mounting the track and other components into the Track Sleeve. The first phase is usually done in advance of the second phase, especially for complex layouts. For simpler layouts, it may be easier to pre-install the track and other components *before* mounting the Track Sleeve. Read and fully understand the following instructions before installation, and then determine which approach is better suited for each particular layout.

**CAUTION:** Track Sleeves with track installed weigh approximately 1.25 pounds/foot. A single Track Sleeve section that is 4 feet or less in length must have one SKB 10 Clip spaced a maximum of 6 inches from each end of the sleeve section. A single Track Sleeve section that is greater than 4 feet in length must have one SKB 10 Clip spaced a maximum of 12 inches from each end of the sleeve section with additional SKB 10 Clips provided a minimum of every 4 feet along the length of the Track Sleeve section.

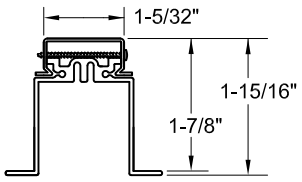
For the first phase, the Track Sleeve may be supported by one of three methods: Grid Wire Mounting, 1/4"-20 Threaded Rod Mounting or Block Mounting. Use the diagram below to assist in mounting calculations. NOTE: The recommended method for recessed mounting to a vertical wall is Block Mounting.

END VIEW OF FTP TRACK SLEEVE



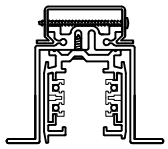

NOTE: ALL DIMENSIONS +/- 1/32"

END VIEW OF FTP TRACK SLEEVE WITH SKB-10 CLIP INSTALLED




NOTE: ALL DIMENSIONS +/- 1/32"

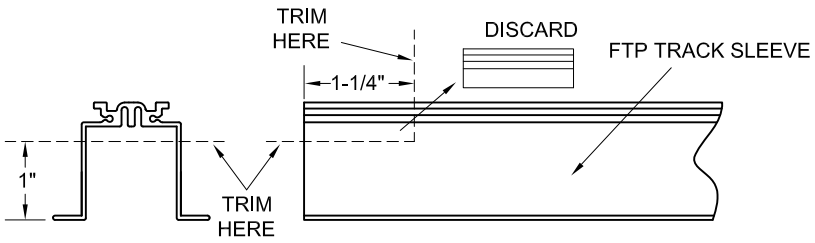
END VIEW OF FTP TRACK SLEEVE WITH SKB-10 CLIP AND TRACK INSTALLED

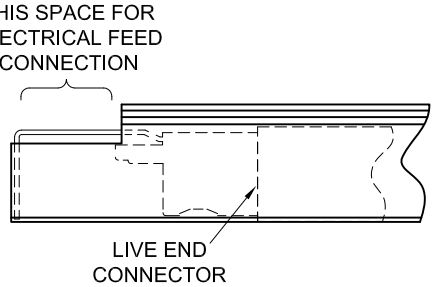


**INSTALLING THE TRACK SLEEVE - GRID WIRE MOUNTING**

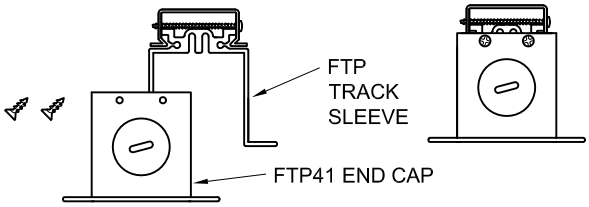
1) Carefully cut the Track Sleeve to the desired length. Make certain that the cut is clean and straight, especially when the layout requires mitered corners. Use only saws that are designed for cutting aluminum. NOTE: Allow for the length of the track as well as any connector(s) and dead end(s) that are to be attached to the track.

2) For installations that will be fed through the base of the Connectors, it is neccessary to cut away a portion of the Track Sleeve, otherwise skip this step. Use only saws that are designed for cutting aluminum. (See diagrams below)




3) Install FTP41 End Caps as required using screws provided. (See diagrams to right)

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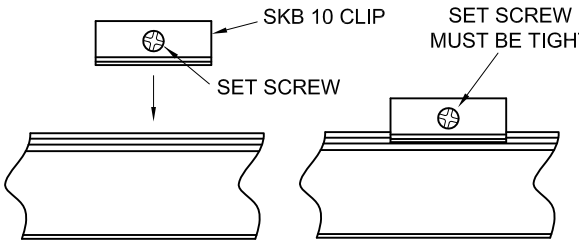
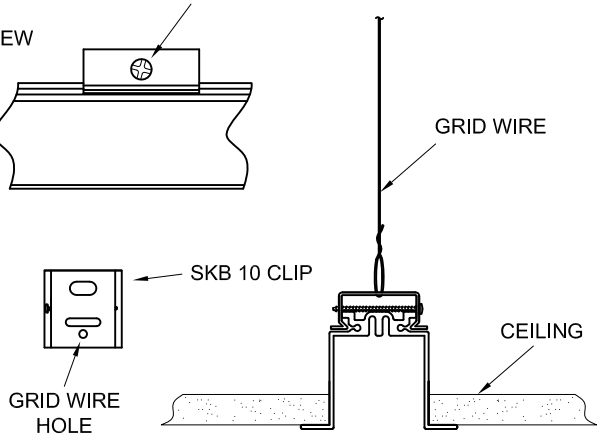
## Grid Wire Mounting (Continued)

4) Loosen the set screws on the side of the SKB 10 Clips and snap them onto the Track Sleeve at the desired locations. Fully tighten all set screws. (See diagrams to right)




5) Support the Track Sleeve using common grid support wire looped through the small round holes in the SKB-10 Clips. The two upper flange surfaces of the sleeve should be at the same trim level as the finished ceiling. (See diagrams to right)

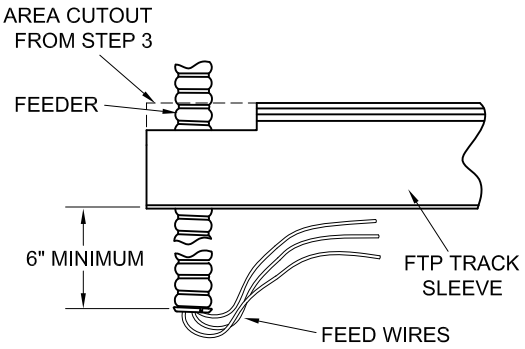



6) NOTE: Skip this step unless it will not be possible to connect the feeders *after* the ceiling is finished.

If the track is to be fed through the FTP41 End Caps, then it is critical to install the feeders to the End Caps before proceeding to Step 7. Use only approved methods to attach the feeder electrical fittings to the End Caps. NOTE: Live Ends can be added to the End Caps later in the installation process.

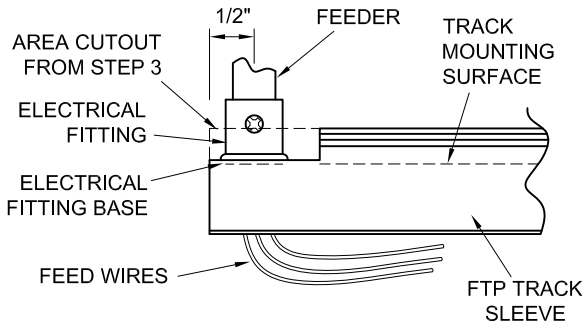
OR

If the track is to be fed through the base of the connectors with flexible feeders: Pull the feeders through the Track Sleeve openings created in Step 2 before proceeding to Step 7. Make certain that at least 6" of each feeder jacket hangs below the track sleeve. NOTE: Electrical fittings can be added to the feeder(s) later in the installation process. (See diagram to right)

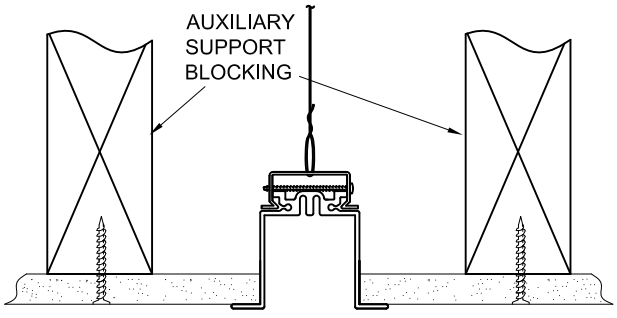



OR

It the track is to be fed through the base of the connectors with rigid conduit or EMT: Set up the base of the electrical fitting even with the track mounting surface of the Track Sleeve, 1/2" from the end. Do this within the Track Sleeve openings created in Step 2 before proceeding to Step 7. Make certain that at least 6" of feeder wire extends from the electrical fitting. NOTE: Connectors can be added to the feeder(s) later in the installation process. (See diagram to right)




7) Support the ceiling tiles, drywall, etc. with the two flanges on the sleeve. NOTE: For long distances where drywall and the like may lack sufficient support, it may be beneficial to add auxiliary support blocking close to the flange. (See diagram to right)

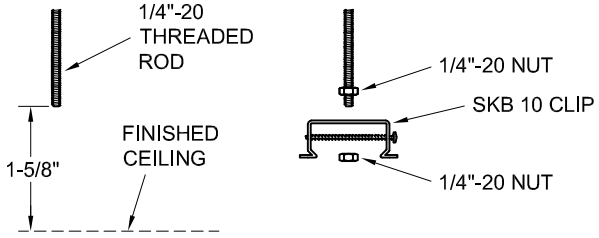


## INSTALLING THE TRACK SLEEVE - 1/4"-20 THREADED ROD MOUNTING

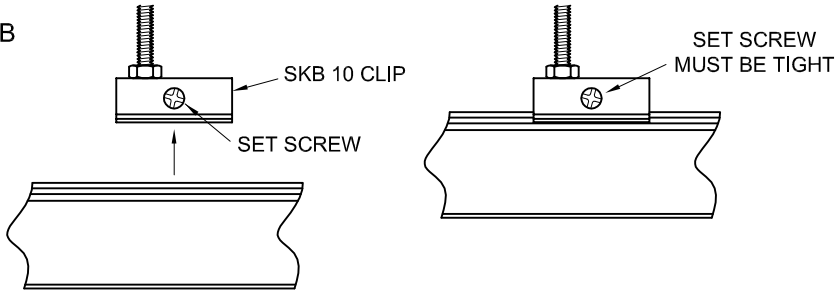
Follow the steps for GRID WIRE MOUNTING, with the exception of Steps 4 & 5. Substitute those Steps with Steps 4 & 5 below.

The threaded rods should be pre-cut to the desired length(s) beforehand if need be, and make certain that the threaded ends will easily accept a nut. It is best to install a nut close the point where the rod is to be cut, then cut the rod. Grind the cut end fairly smooth and remove any burrs. Removing the nut will assist in aligning any threads that may have been disturbed in the cutting process.

4) Hang the 1/4"-20 threaded rods where required such that the ends of the rods are 1-5/8" above the finished ceiling, then attach SKB 10 Clips directly to the threaded rod by sandwiching each clip between two 1/4"-20 nuts. Make certain that the 1/4"-20 nuts are tight. (See diagrams to right)



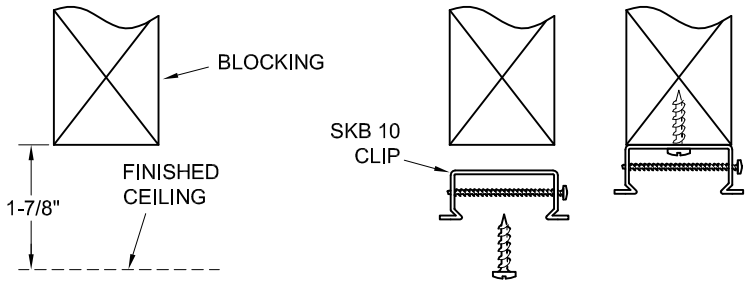

5) Loosen the set screws on the side of the SKB 10 Clips and snap the Track Sleeve to the SKB 10 Clips. Fully tighten all set screws. (See diagrams below)



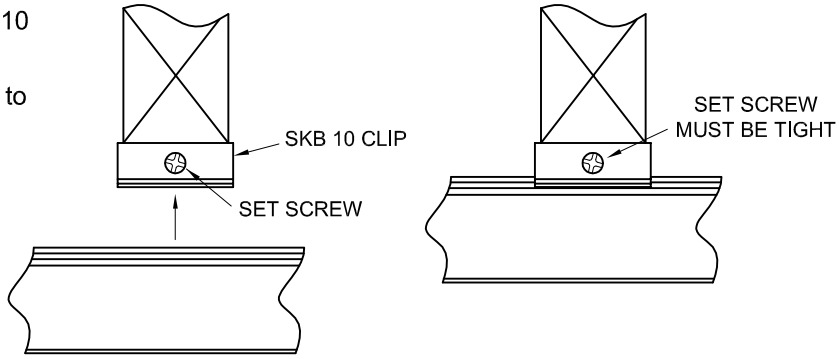

## INSTALLING THE TRACK SLEEVE - BLOCK MOUNTING

Follow the steps for GRID WIRE MOUNTING, with the exception of Steps 4 & 5. Substitute those Steps with Steps 4 & 5 below.

4) Install blocking where required such that the bottom surface of the blocking is 1-7/8" above the finished ceiling. Attach the SKB 10 Clips directly to the support blocking with screws (not provided) through the openings in the SKB 10 Clip. Make certain that the screws are tight. (See diagrams to right)




5) Loosen the set screws on the side of the SKB 10 Clips and snap the Track Sleeve to the SKB 10 Clips. Fully tighten all set screws. (See diagrams to right)

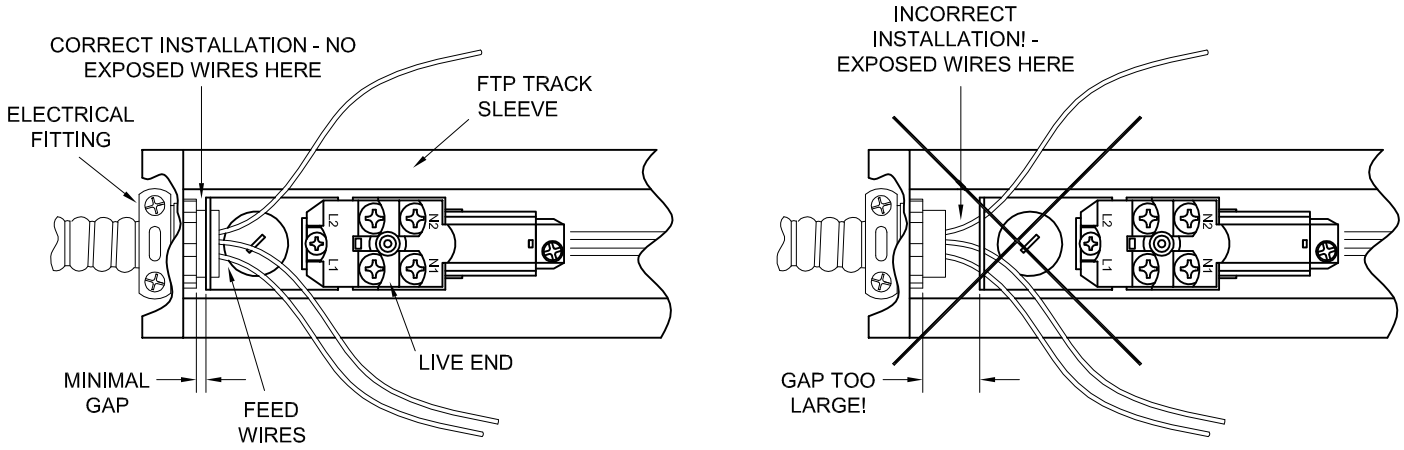


**INSTALLING THE TRACK, CONNECTORS, JOINERS & DEAD ENDS INTO THE TRACK SLEEVE**

NOTE: If Current Limiters are to be used, see Section 7: CURRENT LIMITERS for those special mounting instructions. Current Limiters are designed for use with "Two Circuit 120Volt Track with Independent Neutrals" only.

1) Attach conduit, armored cable, etc. to the electrical fitting to be used (this may have already been done when the Recessed Track Sleeve was installed).

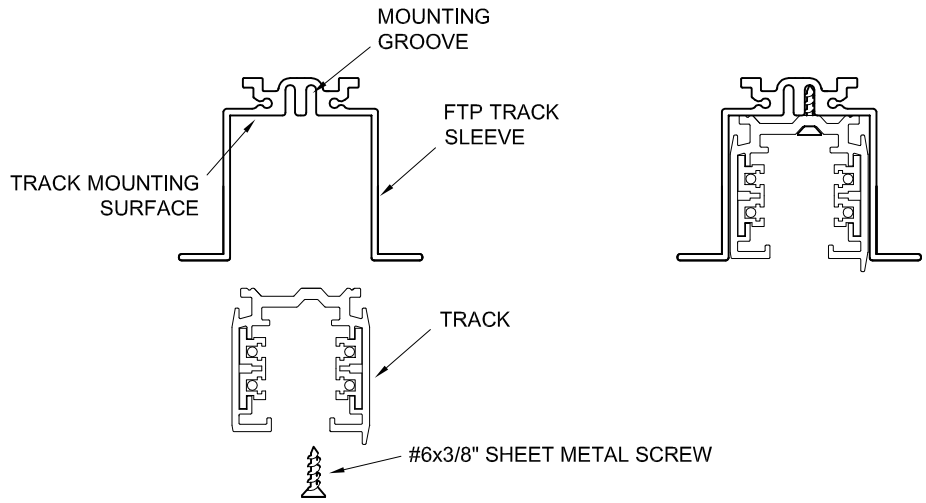
2) Connect the feed wires according to the instructions outlined in Section 4: INSTALLING FEED WIRES TO CONNECTORS: Conduit, Armored Cable, Etc. If the feed for the live end is attached to an FTP41 End Cap, then the Live End need not be physically attached to the electrical fitting, provided it is mounted close enough to the fitting such that there are no exposed feed wires. (See diagrams below)




3) Prepare the track as needed according to the instructions outlined in Section 2: FIELD CUTTING THE TRACK AND PREPARING THE CONDUCTOR ENDS.

4) Pre-install the various Connectors, Joiners and Dead Ends to the track before installing the track to the sleeve.

5) Install the track as you would on any flat surface as outlined in the beginning of this Section (INSTALLING THE TRACK: Flush with Flat Mounting Surfaces), with the following exception: use #6x3/8" sheet metal screws (not provided) to secure the track to the sleeve. The screws should go through the slots (or holes) in the base of the track and thread into the mounting groove located along the track mounting surface of the Track Sleeve. These screws should be fully inserted, but do not overtighten. (See diagrams below)

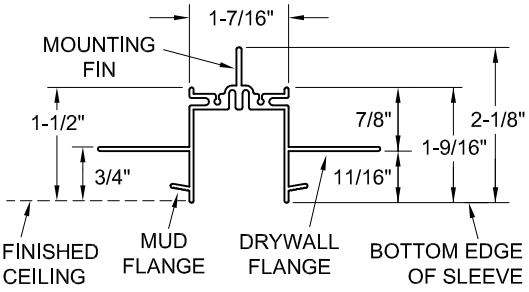


**Recessed Mounting - Flangeless** (using FTPX Series Track Sleeves with 5/8" Maximum Drywall)

Two major phases are required to install Flangeless Recessed Track. The first phase encompasses mounting the Track Sleeve. The second phase encompasses mounting the track and other components into the Track Sleeve. The first phase is usually done in advance of the second phase, especially for complex layouts. For simpler layouts, it may be easier to pre-install the track and other components *before* mounting the Track Sleeve. Read and fully understand the following instructions before installation, and then determine which approach is better suited for each particular layout.

For the first phase, theTrack Sleeve may be supported by one of two methods: Fin Mounting or Drywall Flange Mounting. Use the diagram to the right to assist in block mounting calculations.

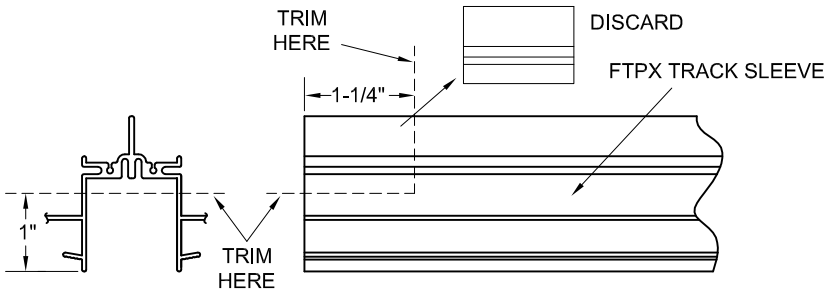
END VIEW OF FTPX TRACK SLEEVE
NOTE: ALL DIMENSIONS +/- 1/32"

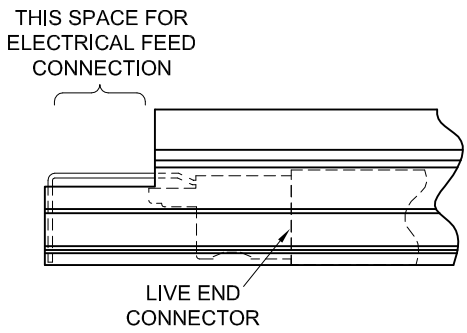



**INSTALLING THE TRACK SLEEVE - FIN MOUNTING**

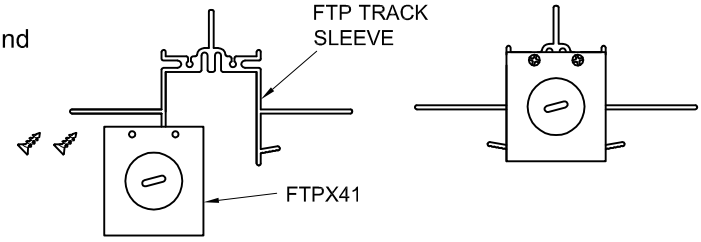
1) Carefully cut the sleeve to the desired length. Make certain that the cut is clean and straight, especially when the layout requires mitered corners. Use only saws that are designed for cutting aluminum. NOTE: Allow for the length of the track as well as any connector(s) and dead end(s) that are to be attached to the track.

2) For installations that will be fed through the base of the Connectors, it is neccessary to cut away a portion of the Track Sleeve, otherwise skip this step. Use only saws that are designed for cutting aluminum. (See diagrams below)

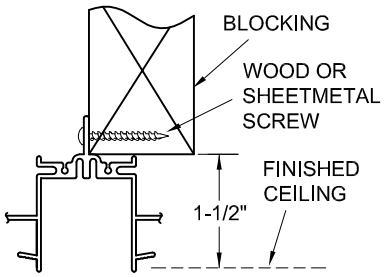


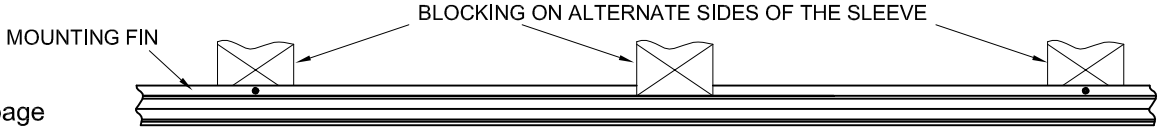

3) Install FTP41 End Caps as required using screws provided. (See diagrams to right)




4) Drill 1/4" holes through the vertical center of the mounting fin spaced approximately 12" to 24" apart. **CAUTION:** Actual spacing should be determined by a structural engineer. Track Sleeves with track installed weigh approximately 1.25 pounds/foot. **CAUTION:** Each sleeve section must have one mounting hole spaced a maximum of 6 inches from each end, with two holes minimum per section.




5) Attach the Track Sleeve to the blocking with screws (not provided) through the drilled holes in the mounting fin. NOTE: The support blocking should be snug against the side of the fin and the top of the sleeve. See diagram to left) NOTE: For additional support, block both sides of the mounting fin at even intervals. (See diagram below)

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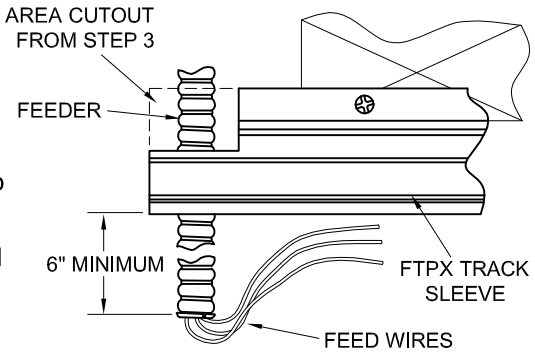
**INSTALLING THE TRACK SLEEVE - FIN MOUNTING (Continued)**

6) If the track is to be fed through the FTPX41 End Caps, then it is critical to install the feeders to the End Caps before proceeding to Step 7. Use only approved methods to attach the feeder electrical fittings to the End Caps. NOTE: Live Ends can be added to the End Caps later in the installation process.

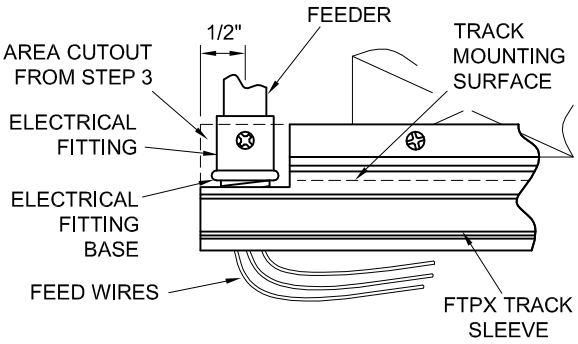
OR

If the track is to be fed through the base of the connectors with flexible feeders: Pull the feeders through the Track Sleeve openings created in Step 2 before proceeding to Step 7. Make certain that at least 6" of each feeder jacket hangs below the track sleeve. NOTE: Electrical fittings can be added to the feeder(s) later in the installation process. (See diagram to right)

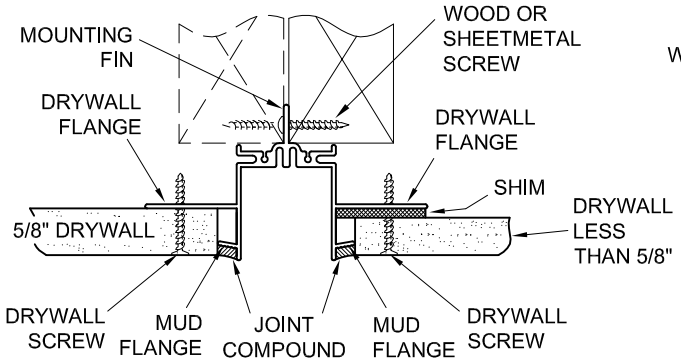


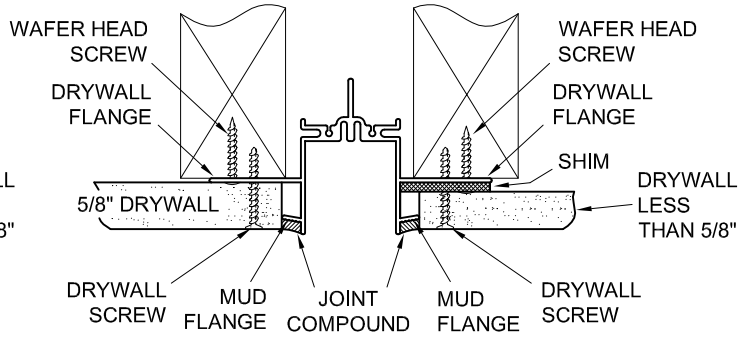

OR

It the track is to be fed through the base of the connectors with rigid conduit or EMT: Set up the base of the electrical fitting even with the track mounting surface of the Track Sleeve, 1/2" from the end. Do this within the Track Sleeve openings created in Step 2 before proceeding to Step 7. Make certain that at least 6" of feeder wire extends from the electrical fitting. NOTE: Connectors can be added to the feeder(s) later in the installation process. (See diagram to right)




7) Install drywall to the two drywall flanges on the sleeve using self-drilling drywall screws. Add joint compound to mud flange. Use shims for drywall less than 5/8". (See diagram below, left for Fin Mounting, right for Drywall Flange Mounting) Note: Drywall Mounting Instructions begin directly below.

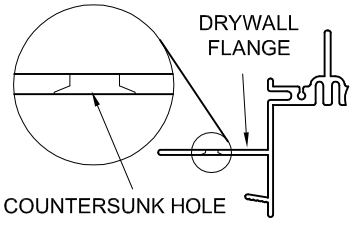



**INSTALLING THE TRACK SLEEVE - DRYWALL FLANGE MOUNTING**

Follow the steps for FIN MOUNTING, with the exception of Steps 4 & 5. Substitute those Steps with Steps 4 & 5 below.

4) If wafer head screws are to be used to attach the sleeve to the blocking, then continue to the next step. If flat head screws are to be used, then drill the appropriate countersunk holes through each drywall flange spaced approximately 12" to 24" apart. (See diagram to right) **CAUTION:** Actual spacing should be determined by a structural engineer. Track Sleeves with track installed weigh approximately 1.25 pounds/foot. **CAUTION:** Each flange must have one mounting hole spaced a maximum of 6 inches from each end, with four holes minimum per section.

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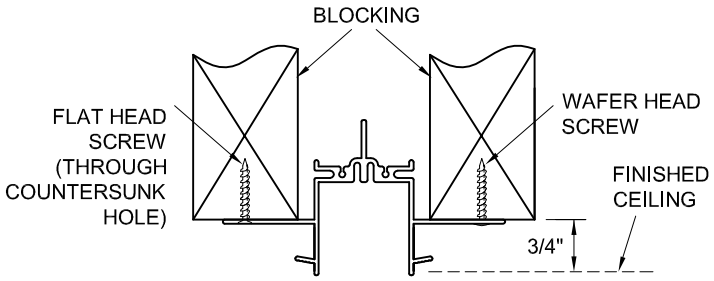
## INSTALLING THE TRACK SLEEVE - DRYWALL FLANGE MOUNTING (Continued)

5) Attach the Track Sleeve to the blocking with screws (not provided) through the drilled holes in the drywall flanges. NOTE: Make certain that the appropriate screws are used or the drywall may hang lower than the bottom edge of the sleeve.

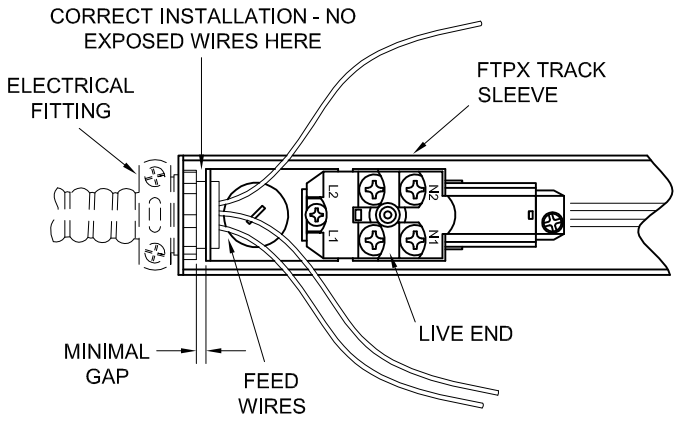


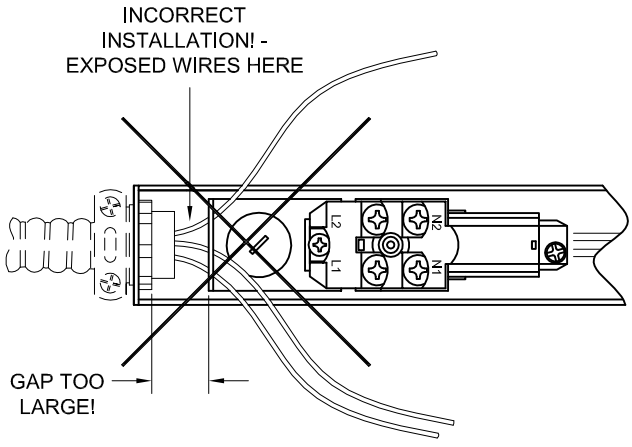

## INSTALLING THE TRACK, CONNECTORS, JOINERS & DEAD ENDS INTO THE TRACK SLEEVE

NOTE: If Current Limiters are to be used, see Section 7: CURRENT LIMITERS for those special mounting instructions. Current Limiters are designed for use with "Two Circuit 120Volt Track with Independent Neutrals" only.

1) Attach conduit, armored cable, etc. to the electrical fitting to be used (this may have already been done when the Recessed Track Sleeve was installed).

2) Connect the feed wires according to the instructions outlined in Section 4: INSTALLING FEED WIRES TO CONNECTORS: Conduit, Armored Cable, Etc. If the feed for the live end is attached to an FTPX41 End Cap, then the Live End need not be physically attached to the electrical fitting, provided it is mounted close enough to the fitting such that there are no exposed feed wires. (See diagrams below)



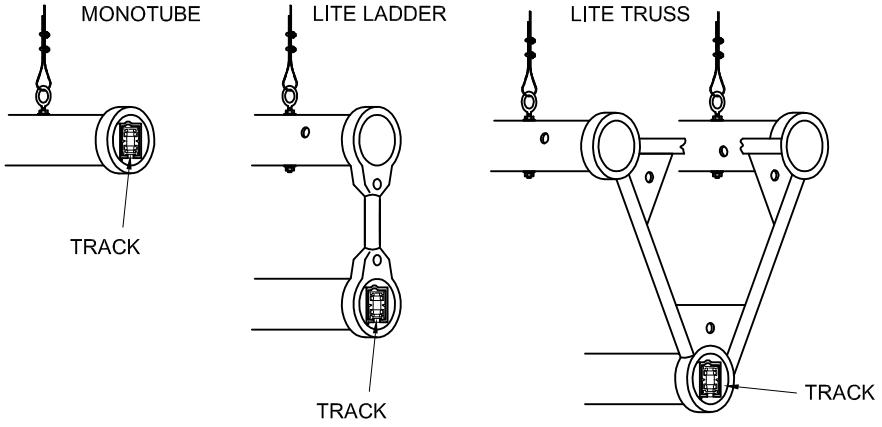

3) Prepare the track as needed according to the instructions outlined in Section 2: FIELD CUTTING THE TRACK AND PREPARING THE CONDUCTOR ENDS.

4) Pre-install the various Connectors, Joiners and Dead Ends to the track before installing the track to the sleeve.

5) Install the track as you would on any flat surface as outlined in the beginning of this Section (INSTALLING THE TRACK: Flush with Flat Mounting Surfaces), with the following exception: use #6x3/8" sheet metal screws (not provided) to secure the track to the sleeve. The screws should go through the slots (or holes) in the base of the track and thread into the mounting groove located along the track mounting surface of the Track Sleeve. These screws should be fully inserted, but do not overtighten. (See diagrams below)

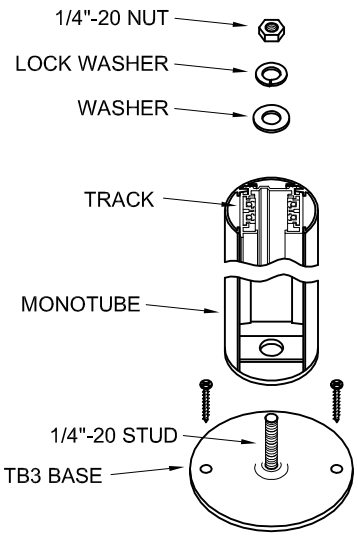
## Lite Truss, Lite Ladder and Monotube Mounting (using STCE Series Lite Truss, LLCE Series Lite Ladder and M Series Monotube)

These items are supplied with the track preinstalled at the factory, and come with dedicated instructions for the proper assembly and hanging, mounting and/or setup. Layouts can be configured using the *Lite Truss: Truss and Integrated Track Systems* catalog. Consult factory for more details.




SAMPLE LAYOUT USING LITE TRUSS IN COMBINATION WITH STANDARD TRIANGLE TRUSS

Monotube can also be installed on TB3 and TB4 mounting bases. To mount the Monotube to these bases you MUST order the Monotube with the Mounting Base Adapter Plate installed, then follow the steps below.

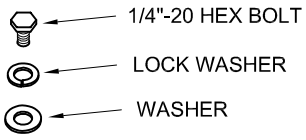



For TB3 Bases (See diagram to left):

1) Securely attach the mounting base to a firm, flat, solid surface.

2) Place the Monotube base over the 1/4"-20 mounting base stud.

3) In this order, install the flat washer, lockwasher and nut onto the stud . Fully tighten the nut.

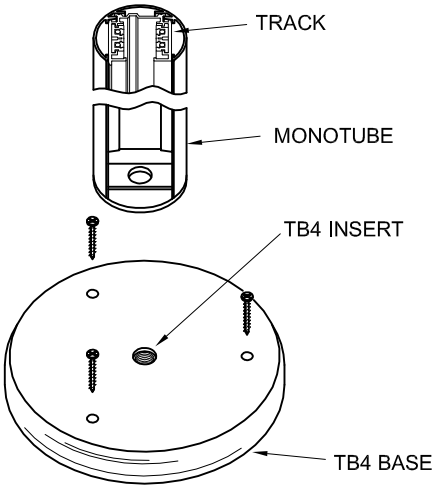



For TB4 Bases (See diagram to right):

1) Place the Monotube base over the mounting base so that the center holes are aligned.

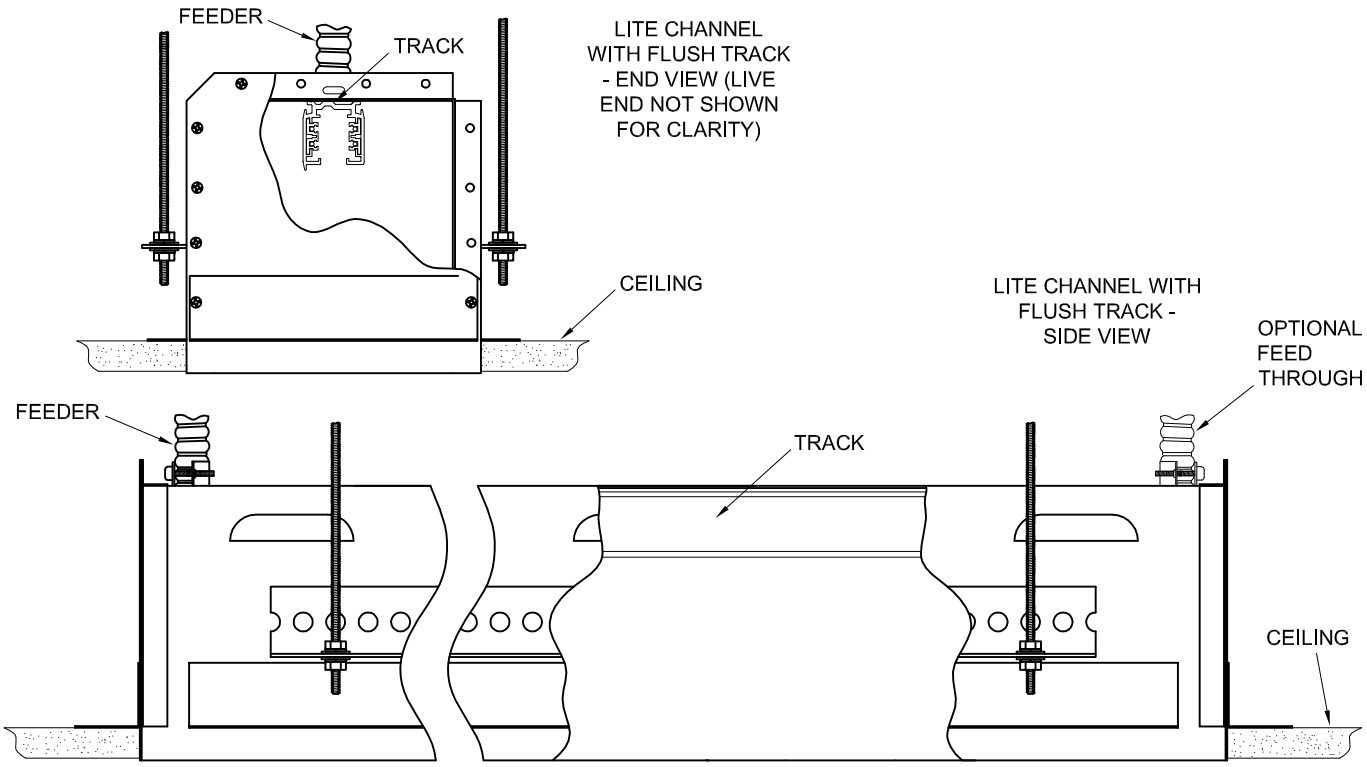
2) In this order, install the flat washer, lockwasher and bolt through the Monotube base and into the mounting base insert. Fully tighten the bolt.

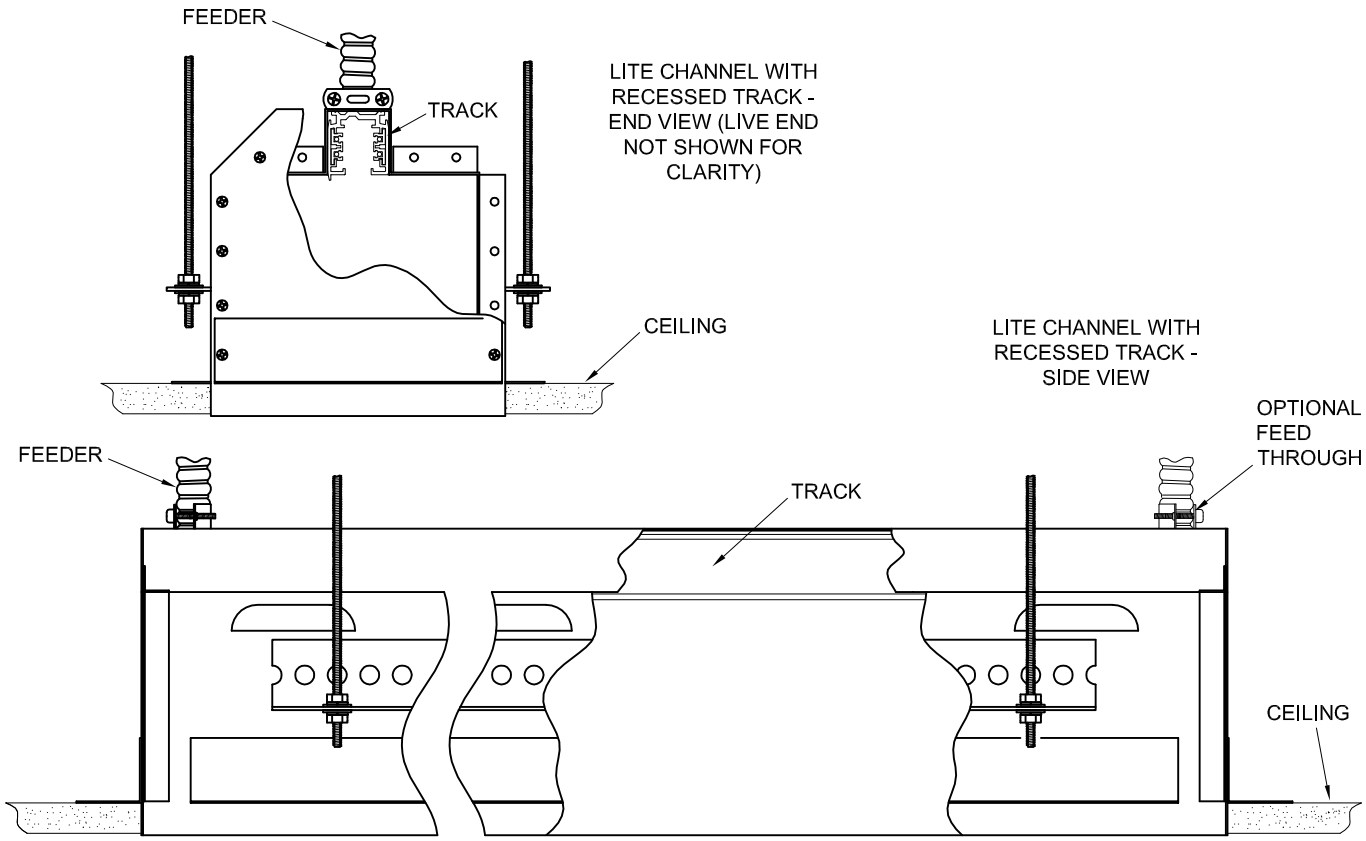
3) Securely attach the mounting base to a firm, flat, solid surface.



## Lite Channel Mounting (using LC Series Lite Channel)

These items are supplied with the track preinstalled at the factory, and come with dedicated instructions for the proper assembly and hanging, mounting and/or setup. Consult factory for more details.

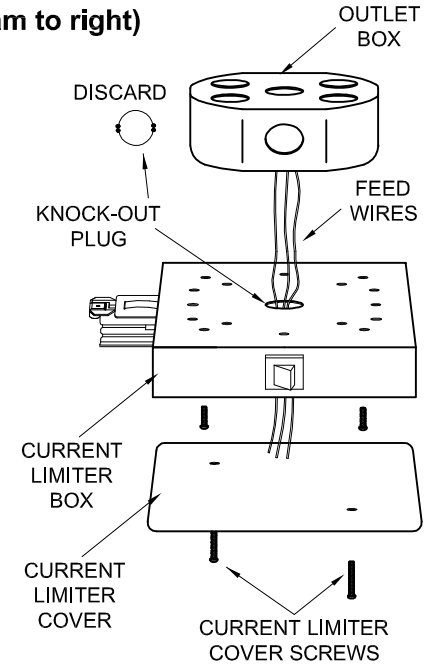


## 7) CURRENT LIMITERS

Current Limiters are designed to provide an answer to energy limitations on wattage per foot requirements for 120V track installations. Some newer energy codes set a rating of 30 to 70 watts per linear foot of track irrespective of the actual wattage that is meant to be used on the track, unless a current limiting device is permanently installed between the track and the line feeding it. Current Limiters are available with 1Amp through 10Amp, 12Amp and 15Amp current limiting devices, one or two circuit. NOTE: They are rated for use with Two Circuit 120Volt Track with Independent Neutrals only!

### Installation of Surface Mount Models to Standard Outlet Box (See diagram to right)




1) Remove Current Limiter cover and cover screws and set them aside, then remove the knock-out plug from the base of the Current Limiter box.

2) Pass the feed wires through the knock-out opening using a proper bushing or nipple-locknut combination (not provided).

3) Attach Current Limiter to junction box using the factory provided mounting holes.

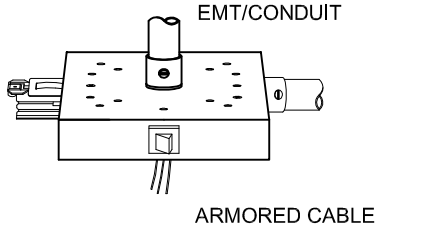
4) Connect all green wire(s) to system ground.

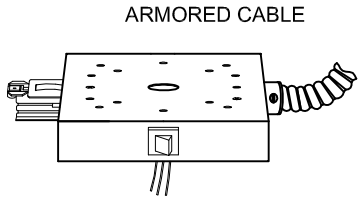
5) Connect the hot and neutral feed wires to the black and white wire(s) respectively using the illustrations at the end of this Section. Make certain that the electrical feed matches the track type according to the instructions in Section 1: ELECTRICAL CONNECTIONS, Two Circuit 120Volt Track with Independent Neutrals.

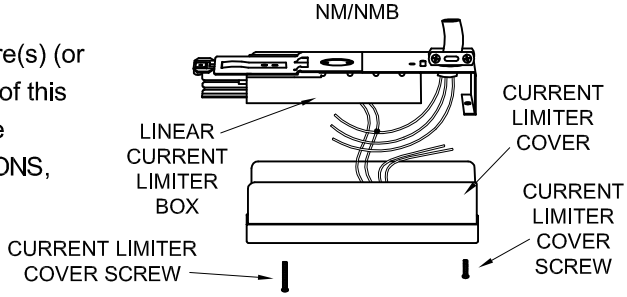
6) Reattach the Current Limiter cover.

### Installation of Surface Mount & Linear Models to Conduit, Armored Cable, Etc. (See diagrams to right)

ILLUSTRATIONS OF CURRENT LIMITERS BEING FED BY ASSORTED METHODS




1) Remove Current Limiter cover and cover screws and set them aside, then remove knock-out(s) from the openings to be used from the Current Limiter box.

2) Using the factory provided mounting holes, the Current Limiter Box can be mounted directly to the ceiling or other allowed flat surface using toggle bolts or appropriate screws (not provided).

3) Attach appropriate electrical fitting(s) to the Current Limiter box.

4) Attach conduit, armored cable, etc. to the electrical fitting(s).

5) Connect all green wire(s) and/or green screw terminal(s) to system ground.

6) Connect the hot and neutral feed wires to the black and white wire(s) (or silver screw teminals) respectively using the illustrations at the end of this Section. Make certain that the electrical feed matches the track type according to the instructions in Section 1: ELECTRICAL CONNECTIONS, Two Circuit 120Volt Track with Independent Neutrals.

7) Reattach the current limiter cover.

## Installation of Pendant Mount Models (See diagram below, right)

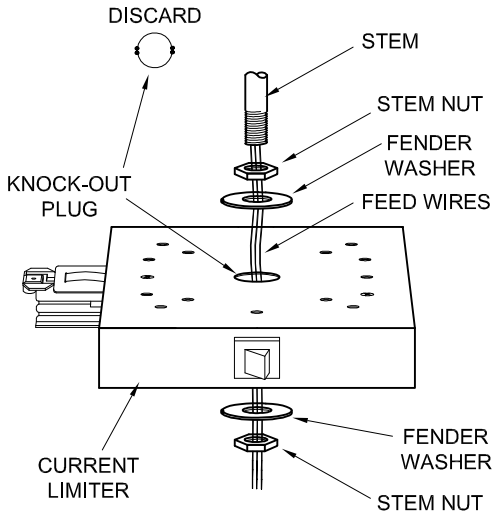
1) Remove Current Limiter cover and cover screws and set them aside, then remove the knock-out from the base of the Current Limiter box.

2) In the following order: attach a stem nut, fender washer with a large diameter of at least 1", Current Limiter, another similar fender washer, and a final stem nut to the stem (the nuts and washers are not provided).

4) Connect all green wire(s) to system ground.

5) Connect the hot and neutral feed wires to the black and white feed wire(s) respectively using the illustrations at the end of this section. Make certain that the electrical feed matches the track type according to the instructions in Section 1: ELECTRICAL CONNECTIONS, Two Circuit 120Volt Track with Independent Neutrals.

6) Reattach the Current Limiter cover.




## Installation of Linear Models to Standard Outlet Box (See diagram below)

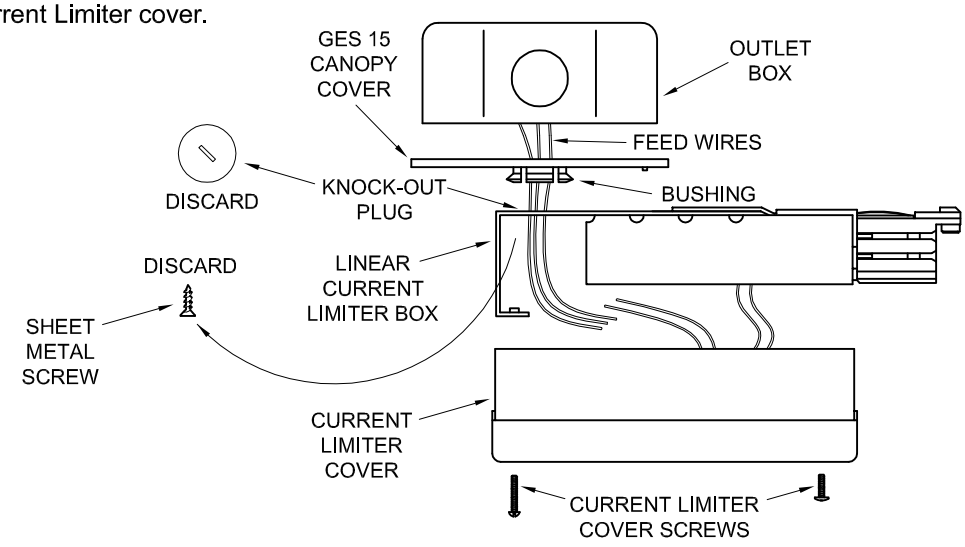
1) Remove Current Limiter cover and cover screws and set them aside, then remove the knock-out from the base of the Current Limiter box. Discard the sheet metal screw provided.

2) Pass the feed wires through the GES 15 Canopy Cover with integral bushing (or standard outlet box cover) and attach to Current Limiter. NOTE: When using a metal outlet box cover, use a proper bushing or nipple-locknut combination to secure Current Limiter to cover.

3) Connect green screw terminal to system ground.

4) Connect the hot and neutral feed wires to the black wire(s) and silver screw terminal(s) respectively using the illustrations at the end of this Section. Make certain that the electrical feed matches the track type according to the instructions in Section 1: ELECTRICAL CONNECTIONS, Two Circuit 120Volt Track with Independent Neutrals.

5) Reattach the Current Limiter cover.



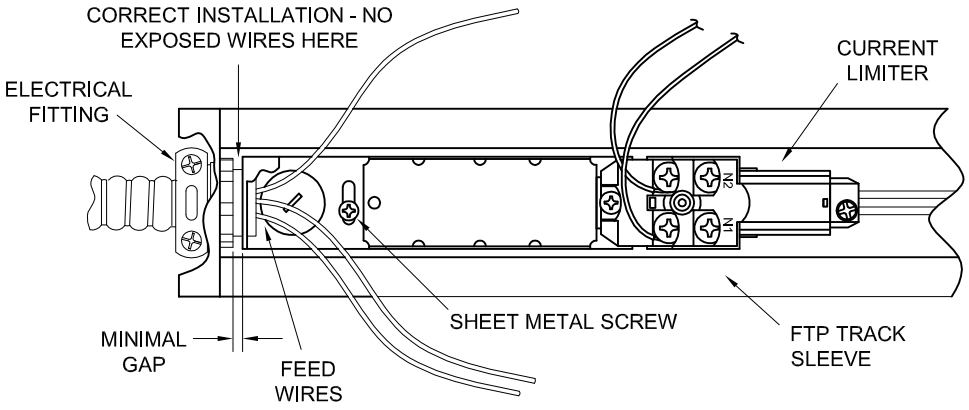
## Installation of Linear Models to Flanged and Flangeless Recessed Track Sleeves

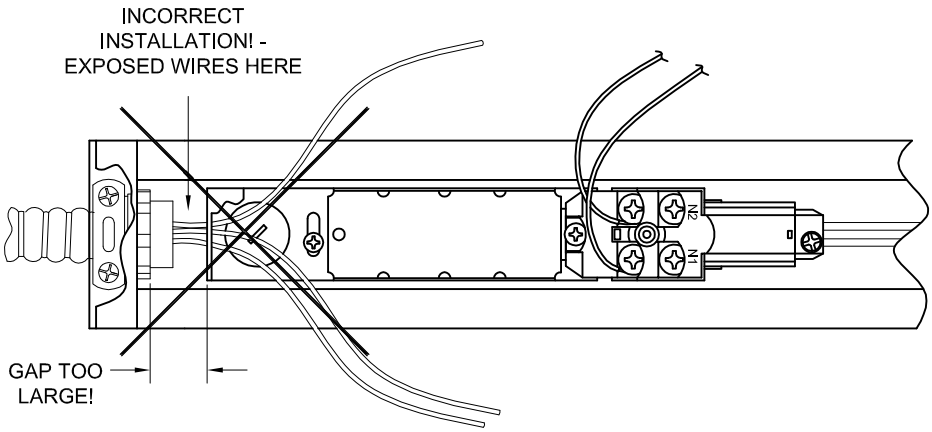
1) Remove Current Limiter cover and cover screws and set them aside, then remove the knock-out to be used from the Current Limiter box.

2) Attach conduit, armored cable, etc. to the electrical fitting to be used (this may have already been done when the Recessed Track Sleeve was installed). See also Section 6: INSTALLING THE TRACK, Recessed Mounting, INSTALLING THE TRACK INTO THE TRACK SLEEVE.

3) If the feed for the Current Limiter is to be through the knock-out opening in the base, then attach the electrical fitting. If the feed is attached to an FTP41 or FTPX41 End Cap, then go to the next step.

4) Attach Current Limiter box to the Recessed Track Sleeve using the sheet metal screw provided. A mounting slot is provided in the bottom of the Current Limiter box. NOTE: This screw may be added *after* the Current Limiter is attached to the track. See also Section 6: INSTALLING THE TRACK, Recessed Mounting, INSTALLING THE TRACK INTO THE TRACK SLEEVE. NOTE: If the feed is attached to an FTP41 End Cap, the Current Limiter need not be physically attached to the electrical fitting, as long as it is mounted close enough to the fitting such that there are no exposed feed wires. (See diagrams below)



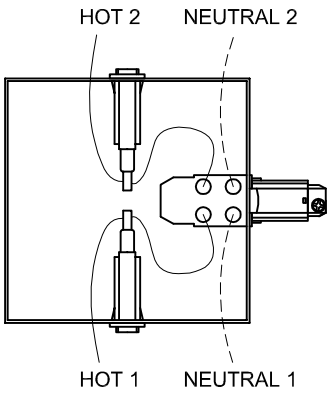
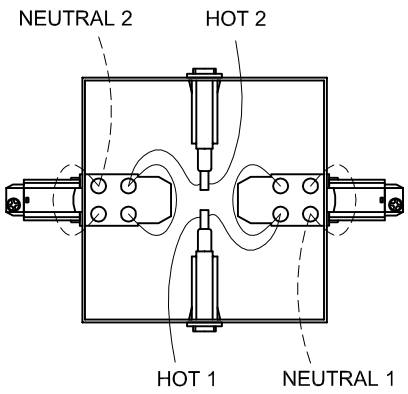
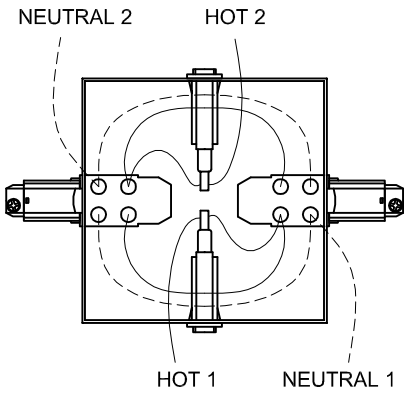
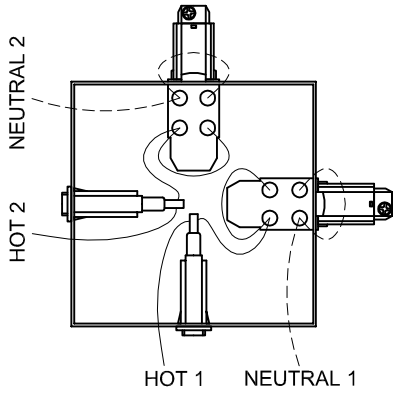
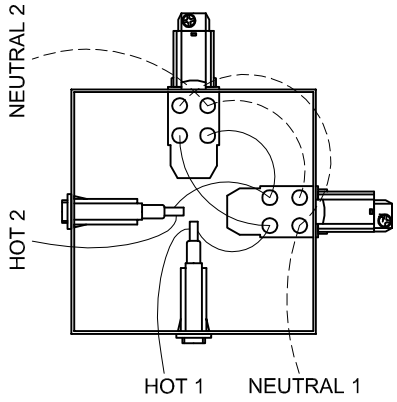
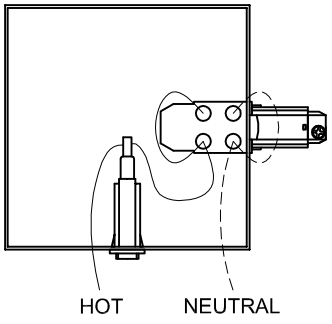
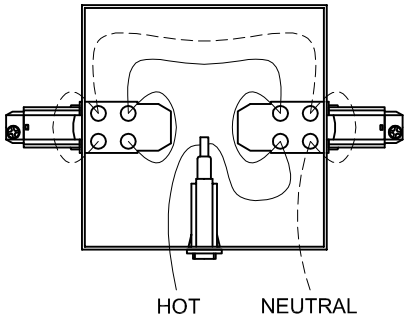
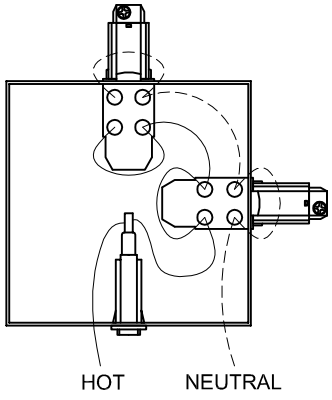




5) Connect green screw terminal to system ground.

6) Connect the hot and neutral feed wires to the black wire(s) and silver screw terminal(s) respectively using the illustrations at the end of this Section. Make certain that the electrical feed matches the track type according to the instructions in Section 1: ELECTRICAL CONNECTIONS, Two Circuit 120Volt Track with Independent Neutrals.

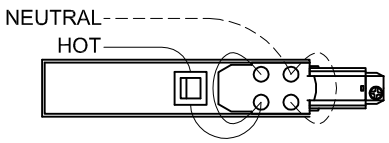
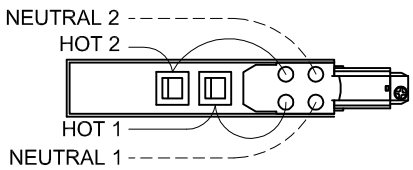
7) Reattach the Current Limiter cover.

## WIRING ILLUSTRATIONS FOR SURFACE/PENDANT MOUNT CURRENT LIMITERS

| | END FEED MODELS | FEED THROUGH MODELS | 90° FEED THROUGH MODELS |
|---|---|---|---|
| ONE CIRCUIT BREAKER FOR EACH CIRCUIT (See NOTE below) |  |  <br>  |  <br>  |
| ONE CIRCUIT BREAKER FOR ALL CIRCUITS |  |  |  |

**NOTE: There are two common configurations for Feed Though Models supplied with one circuit breaker for each circuit. The factory supplied version is the lower configuration shown. For certain applications it may be neccessary to field change the lower factory configuration to the upper one.**

## WIRING ILLUSTRATIONS FOR LINEAR (RECESSED MOUNT) CURRENT LIMITERS

| ONE CIRCUIT BREAKER FOR ALL CIRCUITS | ONE CIRCUIT BREAKER FOR EACH CIRCUIT |
|---|---|
|  |  |