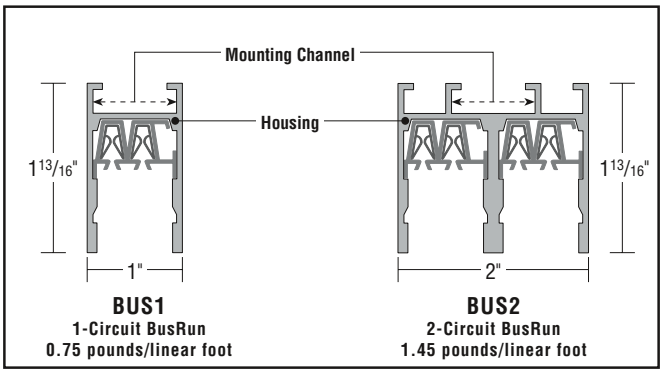
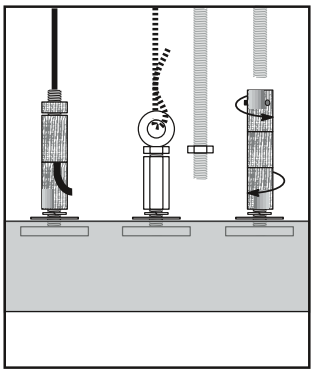
Hanging — Rod/Cable — 1

Hanging Joiner

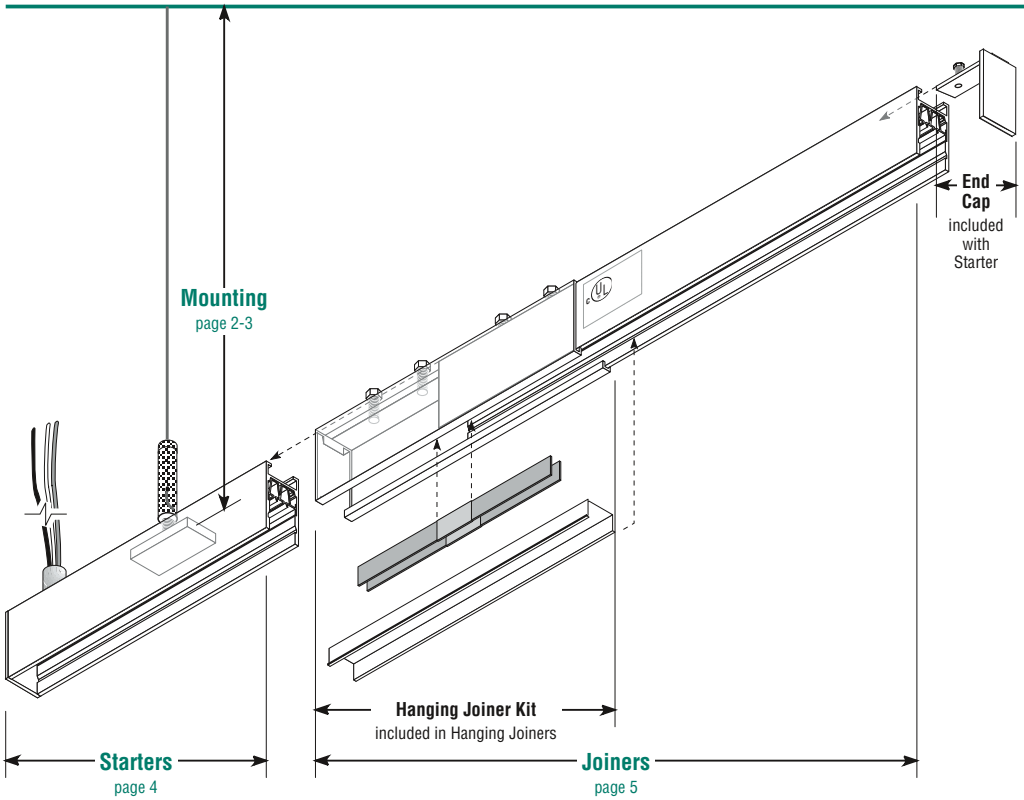


BusRun Cross-Sections

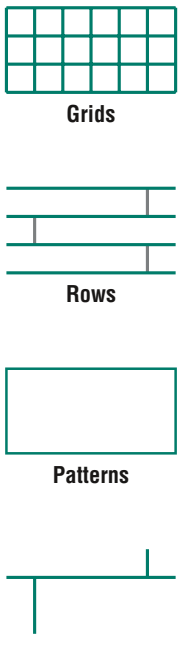


Mounting Hardware
(ordered separately)

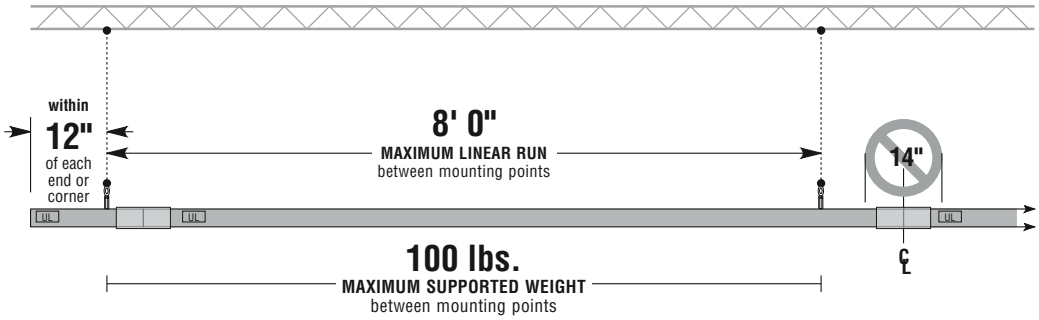
INSTALLATION GUIDE



Typical Layouts



H Mounting Point Rules



12" • A hang-point must be provided within 12" of every end or corner of the BusRun layout.

8' 0" • Maximum distance between hang-points cannot exceed 8 linear feet of '**H**' BusRun busway.

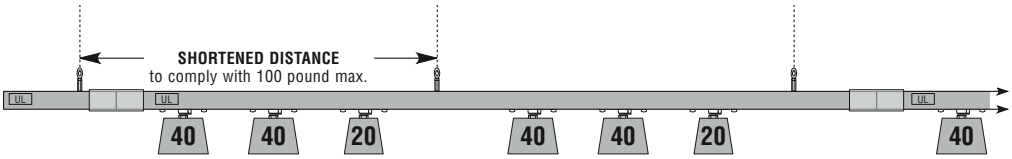
14" • Mounting points cannot be made within 7" on either side of the centerline at sleeved joints.

100 lbs • BusRun busway and mounting hardware are rated for a total supported weight up to 100 pounds between mounting points.

• If the total supported weight between mounting points *exceeds* 100 pounds, shorten the distance between mounting points to comply with 100 pound maximum (as below).

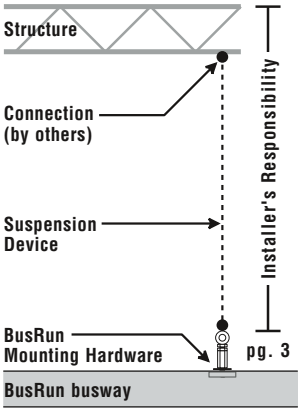
40 lbs • The BusRun fitting is rated for 40 pounds (maximum) static, vertical load.

• Only BusRun fittings and/or BusRun supplements may be mounted directly to BusRun busway.



Support

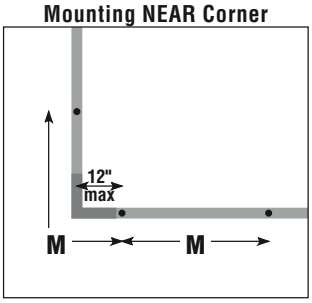
Structure and everything from Structure to BusRun Mounting Hardware must be engineered and installed so as to properly support the entire suspended weight.



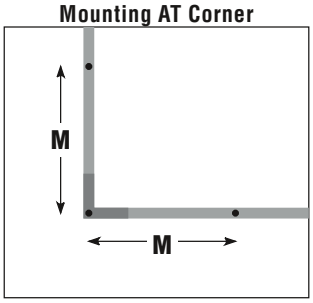
Weight of 'H' BusRun busway
1-circuit – 0.75 lb per running foot
2-circuit – 1.45 lb per running foot
(not including connected weight)

H Mounting Point Examples

Mounting NEAR Corner

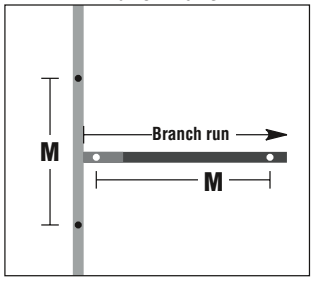


Mounting AT Corner



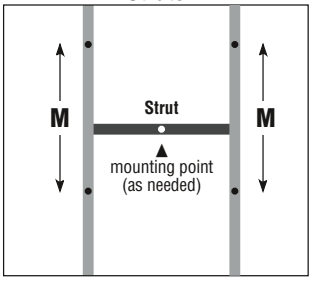
At least one mounting point must be located within 12" of every BusRun corner. Distance to the next mounting point on each side cannot exceed **M**aximum.

Branch Runs



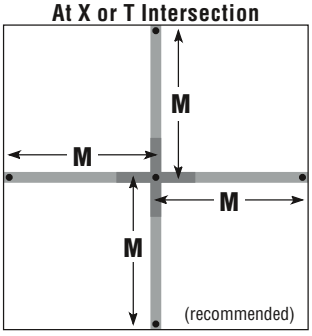
Branch runs must have a mounting point on the BranchStarter not more than **M**aximum between any two points, and within 12" of the end of the run.

Struts

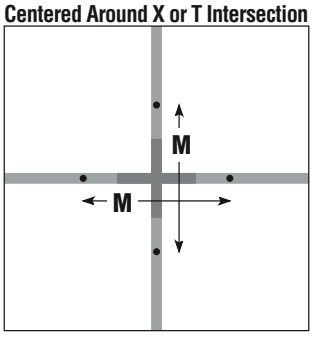


Weight of Strut and the items mounted to it must be included in the 100 lb maximum between mounting points.

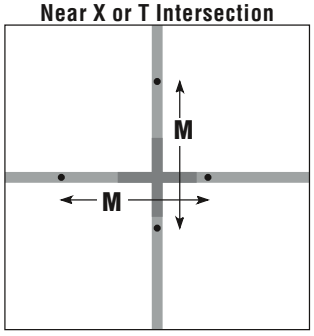
At X or T Intersection



Centered Around X or T Intersection



Near X or T Intersection



The distance between mounting points in <u>all</u> directions around an X or T intersection cannot exceed **M**aximum.

KEY

M Maximum distance supporting 100 pounds, not to exceed 8 feet as measured along centerline of the BusRun

• Mounting point

H BusRun busway (sleeves required at joints, are not shown for simplicity of diagrams)

as labeled where used

H Mounting Hardware

Suspension Device →

BusRun Mounting Hardware →

BusRun busway →

Cable (by Litelab)

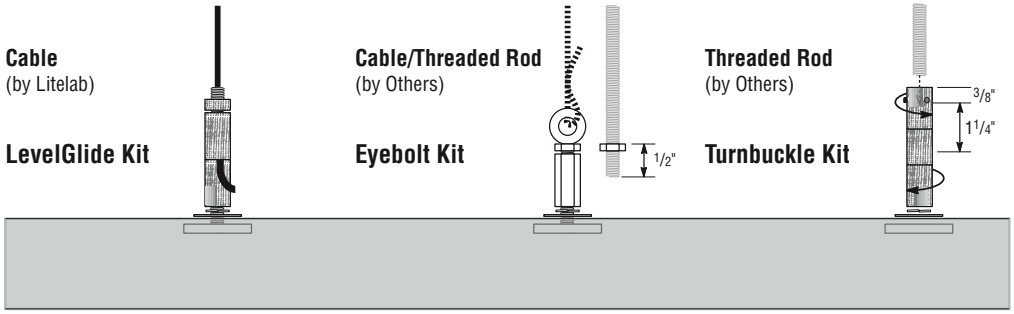
LevelGlide Kit

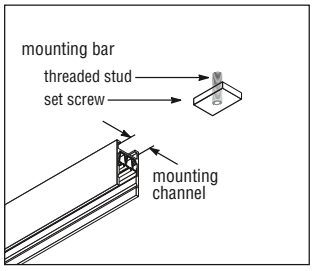
Cable/Threaded Rod (by Others)

Eyebolt Kit

Threaded Rod (by Others)

Turnbuckle Kit

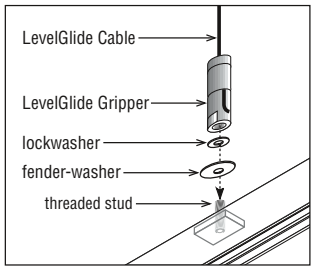




Pre-Assembly

Slide the required number of mounting bars into the BusRun mounting channel **before** adding Joiner sleeves.

Mounting bars can be installed only from the end of the mounting channel and sleeves.

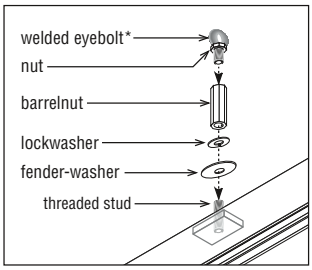


LevelGlide

Put fender-washer, then lockwasher, onto threaded stud, allowing fender-washer to rest across busway mounting channel.

Thread LevelGlide Gripper onto stud.

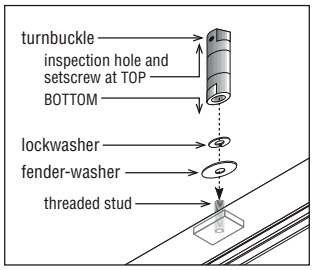
Use **only** the LevelGlide Cable supplied **and follow all instructions in the user's guide provided with it**.



Eyebolt

Thread barrelnut onto stud.

Thread nut to top of eyebolt threads, or at least 1/2" up threaded rod by others. Then, thread eyebolt or threaded rod into barrelnut, as far as nut. Tighten nut to secure eyebolt or rod.



Turnbuckle

Thread bottom of turnbuckle (see drawing) firmly onto stud.

Install 1/4-20 threaded rod (by others) into top of turnbuckle to a minimum depth to **fill the inspection hole**. Adjust height as necessary (total range of adjustment is 1 1/4"). Tighten set screw to lock in place.

Plug-Ins on H BusRun

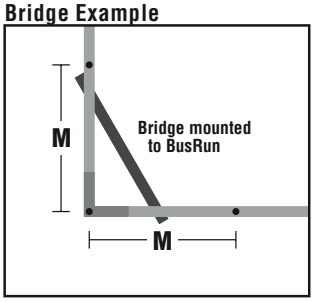
The BusRun fitting is rated for up to 40 pounds static, vertical load.

Only BusRun fittings and/or BusRun supplements may be mounted directly to BusRun busway.

When mounting lighting fixtures by others to BusRun PowerTaps, or signage to BusRun SignHangers, the total weight per item cannot exceed 40 pounds static, vertical load.

Bridges PLUS the weight mounted to them cannot exceed 40 pounds total.

Bridge Example

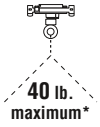


Weight of Bridge and plug-ins mounted to it cannot exceed 40 pounds and must be included in the 100 lb maximum between BusRun mounting points.

Lighting, Power & Support, by Litelab

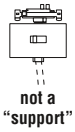
Lighting Fixtures

SignHangers



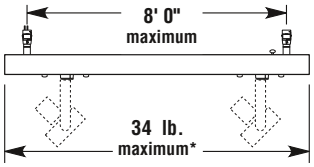
for signs

PowerDown Boxes



for non-lighting devices by others

PowerAcross Bridges

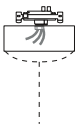


portable BusRun

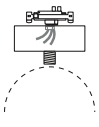
**all weight ratings are based on static, vertical load.*

PowerTaps for Lighting by Others (consult)

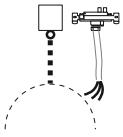
Decorative PowerTaps



Hi-Bay PowerTaps



Hi-Bay Bracket PowerTaps

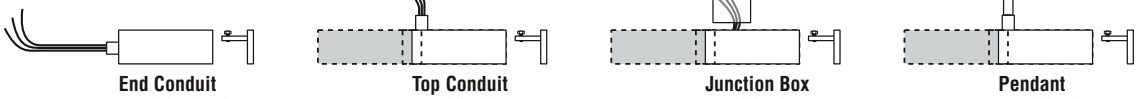


Fluorescent Bracket PowerTaps

H Starters

Hardwired maximum 60A

supplied with
End Cap for end of run



End Conduit
• end feed only

Top Conduit
• end feed
• center feed
• corner feed

Junction Box
• end feed
• center feed
• corner feed

Pendant
• end feed
• center feed
• corner feed

Connections

Item	1-Circuit	2-Circuit
End / Top Conduit – 30" leads standard		
• coupling	for 1/2" NPSM	for 3/4" NPSM
Junction Box – 9" leads standard		
• j-box, attached	4 11/16" square x 2 1/8" deep	4 11/16" sq. x 2 1/8" d. with 1 1/2" extension
Pendant – 30" leads standard		
• Stem/Coupling	1/2" NPSM x 18" nom. ht.	3/4" NPSM x 18" nom. ht.
• Canopy	6 3/4" dia.	6 3/4" dia.
• j-box, by others	see size supplied above or equivalent volume	see size supplied above or equivalent volume
Lead Wire		
• supplied	1 each #8 AWG hot neutral and ground	2 each #8 AWG hot neutral and ground
Feed Wire		
• by others	#6 AWG rated 90° C.	#6 AWG rated 90° C.

BusRun Starters do not have screw terminals. Leads must be factory-fitted in standard (above) or custom lengths (specified at time of order). Field-connections to extend lead length must be made in an accessible junction box.

BusRun Starters are a UL listed factory assembly with #8 AWG leads. As such, they are not subject to the same NEC sizing requirements as the building wiring (feeds) brought to them.

Smaller wire may be used (as allowed) for feeds less than 60 amps. Refer to appropriate building/electrical codes.

Maximum Feed

Max Voltage	Max. Current
300 V.A.C. max.	60 amps max.

Line-Voltage Loads

120 VAC		277 VAC		CURRENT
Max. Load	Max. Run	Max. Load	Max. Run	Feed Breaker
7,200 watts	260 feet	16,620 watts	595 feet	60-Amp
6,000 watts	310 feet	13,850 watts	715 feet	50-Amp
4,800 watts	390 feet	11,080 watts	890 feet	40-Amp
3,600 watts	516 feet	8,310 watts	1,194 feet	30-Amp
2,400 watts	780 feet	5,540 watts	1,790 feet	20-Amp

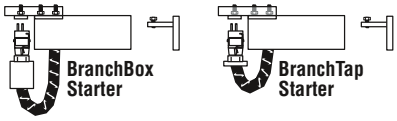
Ratings for Maximum Load and Maximum Run were calculated to produce no more than 5% voltage drop, based on an evenly distributed load.

Low-Voltage Loads

Do NOT proceed as above!
Refer to separate Instructions and Ratings for Low-Voltage (12V) BusRun.
If not enclosed, contact customer service at 1-800-238-4120.

H Starters

BranchBus maximum 20A



BranchBox Starter

BranchTap Starter

BranchBus Connections

Item	Description
Feed	Plug-in fitter and stainless steel-sheathed cable provide 20-amp fused power from 60-amp (max) main run.
Mounting	Supplied hardware holds BranchBus Starter at a 90° angle against main run from which it gets power (diagrams at right). BranchBus Starters and connected Joiners must be secured to structure according to same Mounting Rules as main runs.

BranchBus Loads

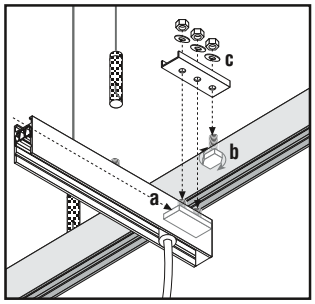
Item	Fuse	Voltage	Max Load	Max Run
BranchBox Starter	20A	120V	2,400 watts	780 feet
fused in box	20A	277V	5,540 watts	1,790 feet
BranchTap Starter*	20A	120V	2,400 watts	25 feet
fused in fitting	20A	277V	5,540 watts	25 feet

* As a tap, the maximum length of run using this product can range from 25 - 50 feet. Consult Articles 240-21 and 364-11 of the National Electrical Code.

Assembly & Mounting

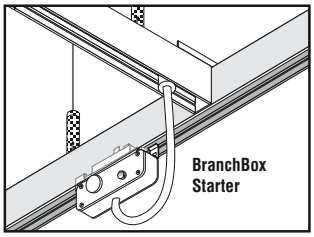
BranchBus Starters must be mounted to the ceiling independently of the main run from which they get power.

- Slide rectangular bar (**a**) into mounting channel of Branch Starter.
- Insert dog-eared bar (**b**) into mounting channel of main run and rotate it 90°.
- Fit holes of cross-bar (**c**) onto studs of bars **a** and **b** and secure with lockwashers and hex nuts.

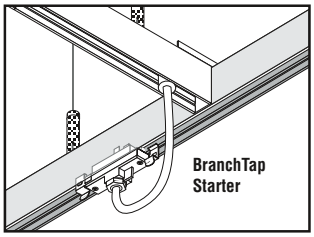


This assembly **cannot** be used as a mounting point — use only approved mounting hardware, as shown on page 3.

Joiners used for branch runs are the same as those used in main runs. Follow the instructions for connecting and mounting, as detailed within the pages of this book.



BranchBox Starter



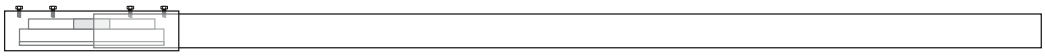
BranchTap Starter

After Joiners and End Cap have been added to complete the branch run, plug fitting from Branch starter into main run.

H Joiners

for use with Starters (hardwired or BranchBus)

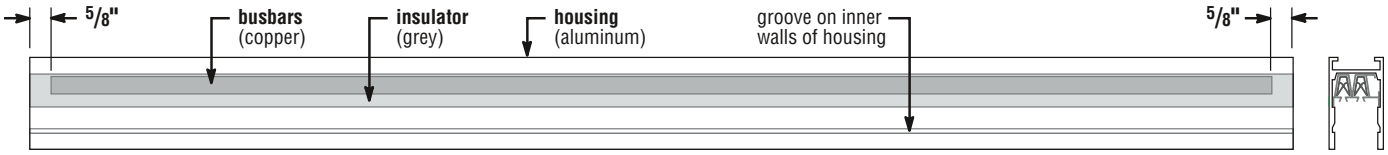
includes items shown,
Pendant Mounting Kits
specified separately



Basic Steps of Joining BusRun Pieces

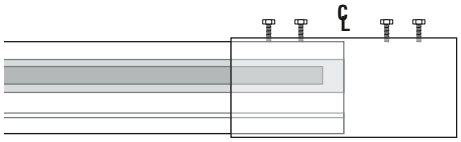
1 • Verify Gap at Ends

BusRun is supplied with copper busbars cut 5/8" back from the open ends so joints can be made between pieces. Although the busbars in Starters and Intercepts are glued in place, those in Joiners are not. This allows standard Joiner lengths to be field-cut when necessary (page 8). Busbars fit snugly into the insulator, and the insulator snugly into the housing, but their position should be verified.

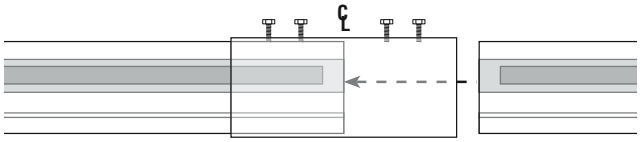


Verify that insulator is flush with housing at both ends of Joiner and that copper busbars are 5/8" back from both ends.

2 • Install Sleeve

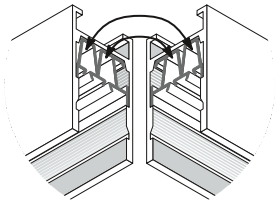


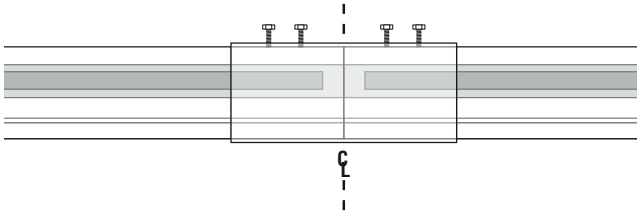
2A Slide alignment/ground sleeve half-way onto housing (mounting bars should already be in the mounting channel, page 3).



2B Add next piece to alignment/ground sleeve.

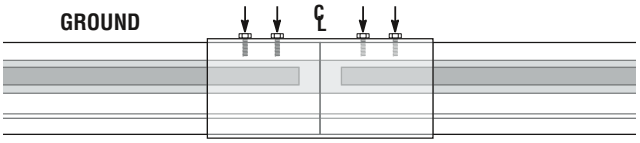
Important
To achieve polarity and correctly-made connections, ends to be joined must match internally.





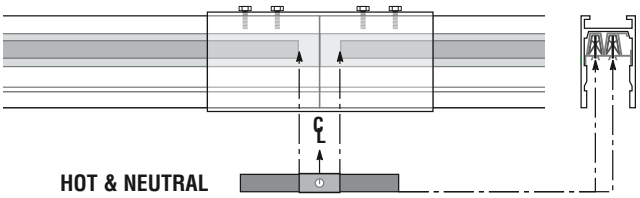
2C Center sleeve across seam and hand-tighten screws to hold.

3 • Connections



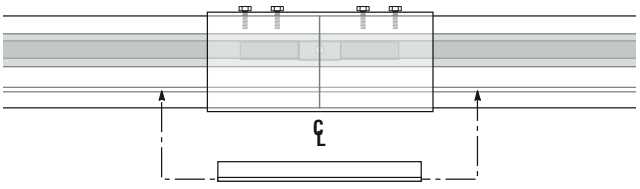
Screws on top of sleeve make ground connection between pieces, as well as physically hold them together.

3A Tighten until snug, plus an additional half-turn – do **not** overtighten.



3B Use needlenose pliers to insert busbar connectors into busbars, making sure that each is **centered** inside gap at seam and pushed in **fully above** bottom of insulator.

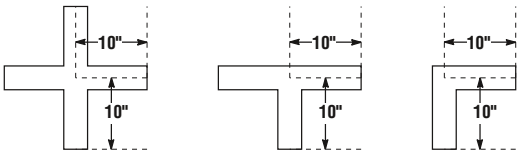
4 • Protect

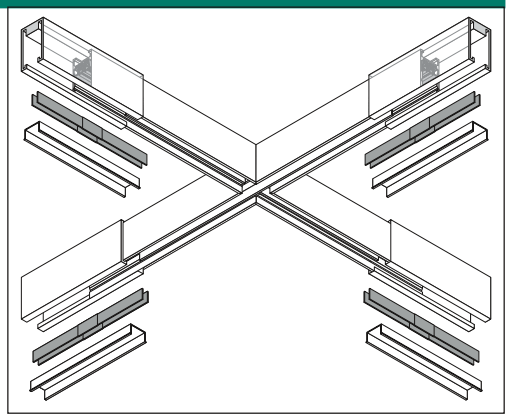


Insert protective cover, snapping edges into groove on each side of busway. Center cover at seam to protect and insulate busbar joints.

X, T, and L Intercepts

continue power and form corners between BusRun Joiners





Joiners attach to X, T, and L Intercepts the same as to other Joiners, using a sleeve at every leg, and busbar connectors and protective cover only at electrical legs.

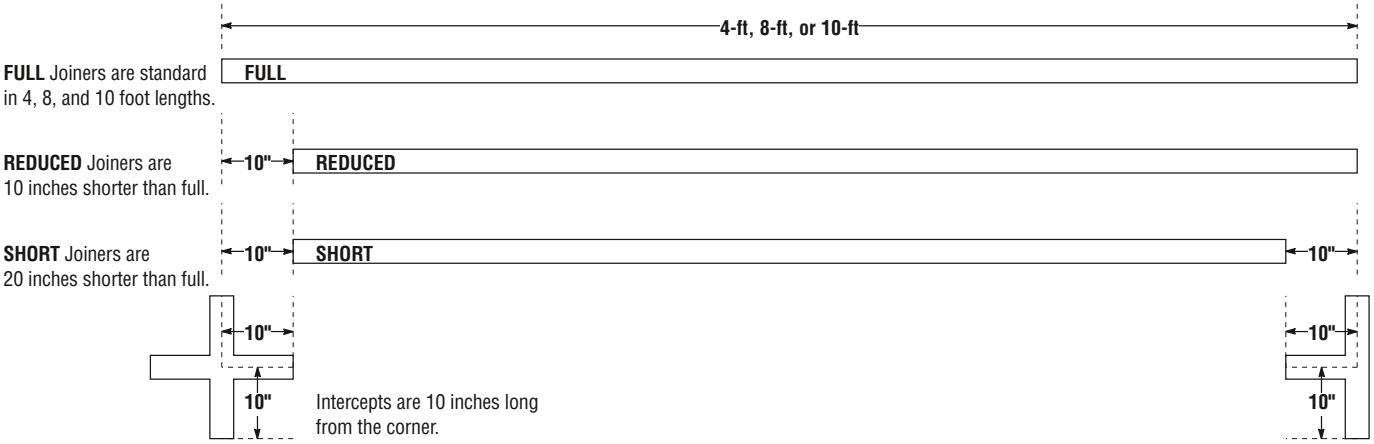
Follow the same installation procedure as for Joiners, on previous page.

The number of sleeves, busbar connectors and protective covers may vary from what is shown at right, depending on X, T, or L Intercept requirements.

NOTE: X, T, and L Intercepts are pre-wired at the factory for individual applications — they cannot be altered in the field. When using X, T, and L Intercepts in a grid, a drawing must be provided so proper layout can be achieved.

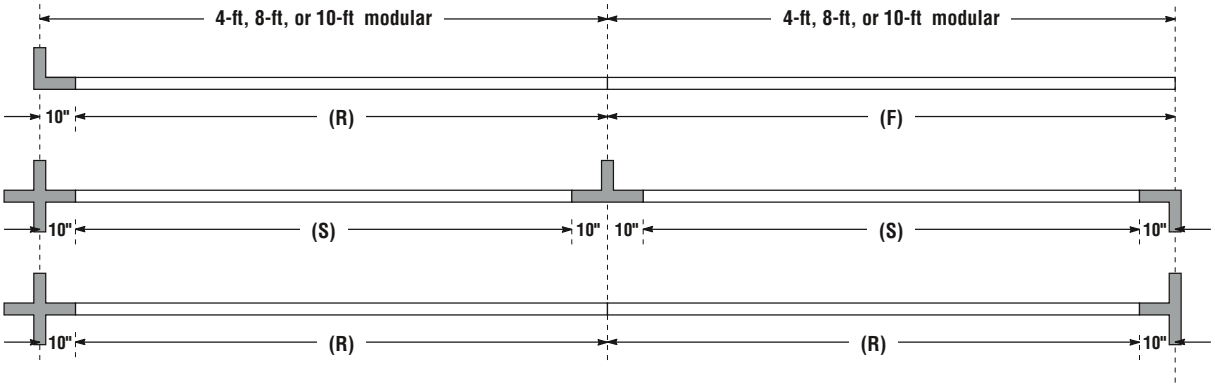
Modular Length Joiners

Standard BusRun Joiners are available in **FULL** four, eight, and ten foot lengths. In addition, standard **REDUCED** and **SHORT** lengths allow 4, 8, and 10 foot modularity to be maintained when Starters and L, T, and X-Intercepts are factored into grids.



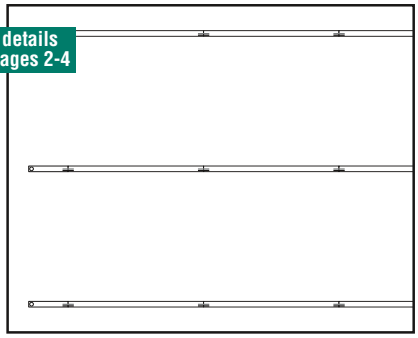
Examples

The examples at right illustrate the usefulness of factory-cut Full, Reduced, and Short Joiners in maintaining modularity.



Key		Joiner type	maintains modularity:
(F)	=	Full-length Joiner	between Joiners at both ends
(R)	=	Reduced-length Joiner	between Intercept at one end, Joiner at other end
(S)	=	Short-length Joiner	between Intercepts at both ends

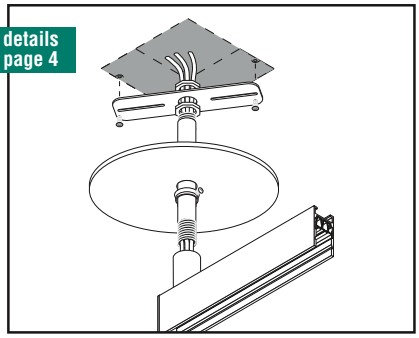
details pages 2-4



1 Consult Layout

- Working from planned layout, determine the number and location of feed points and mounting points.
- Feeds must comply with ratings for Starters (page 4) or Low-Voltage Ratings (supplied as separate booklet).
- Mounting points must comply with Mounting Rules (pages 2-3).

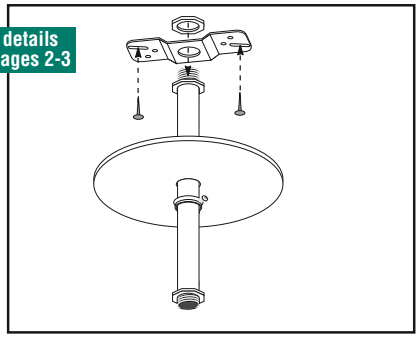
details page 4



2 Assemble and Mount Starters

- Fish feed wires from Starter through stem, then thread bottom of stem into coupling. Slip canopy retaining ring then canopy over wires, onto stem. Thread hex nut onto top of stem, add mounting bracket, and secure with second hex nut.
- Mount bracket to junction box. Do not yet connect feed wires or cover junction box with canopy.

details pages 2-3

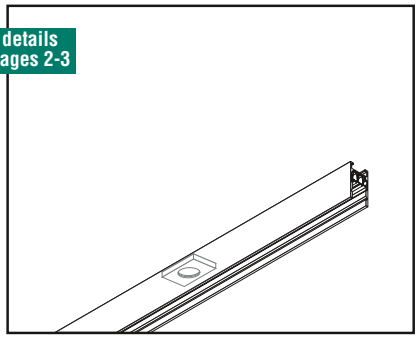


3 Assemble & Mount Support Pendants

Mounting hardware is packed separately from BusRun.

- Assemble Pendant Support Kits and secure to structure at mounting points (page 3).
- Do not yet cover mounting brackets with canopies, hex nuts at top of pendant must be accessed later to complete installation.

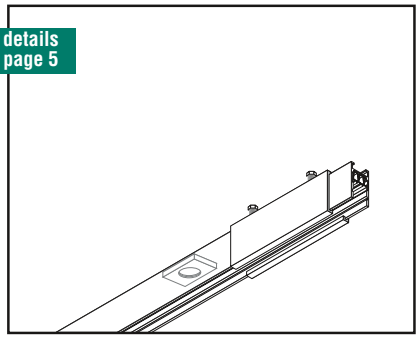
details pages 2-3



4 Insert Tapped Mounting Bars

- Slide tapped bars from Pendant Support Kits into mounting channels of Joiner lengths and Intercepts.

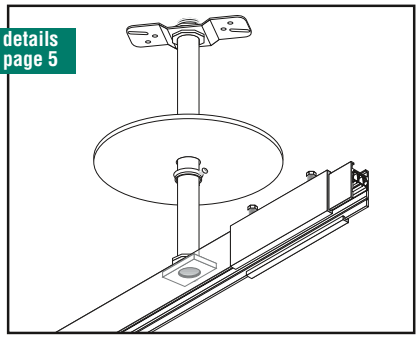
details page 5



5 Add Ground/Alignment Sleeves

- Slide sleeve onto correct end of Joiner (page 5) and position it (temporarily) all the way back from the end of the Joiner.

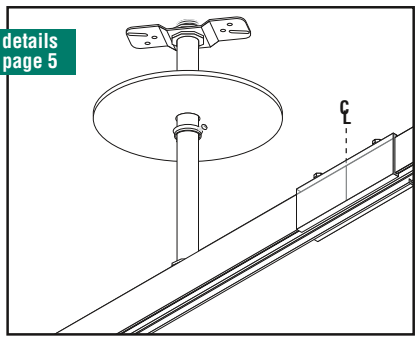
details page 5



6 Connect Joiners to Support Pendants

- Mount Joiners and Intercepts to pendants by rotating bottom of pendant into threaded mounting bar until snug. Work in combination with step 7, if necessary, to prop up Joiners while mounting Pendants.

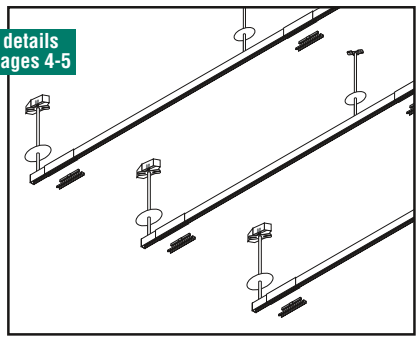
details page 5



7 Join Pieces with Ground/Alignment Sleeves

- Join BusRun pieces together with Ground/Alignment Sleeve, tightening screws on sleeve to secure the joint (page 5).
- As necessary, adjust pendants so they are plumb and BusRun is level. In all cases, tighten hex nuts at top and bottom of pendant and mount canopy against ceiling by tightening set screw on retaining ring.

details pages 4-5

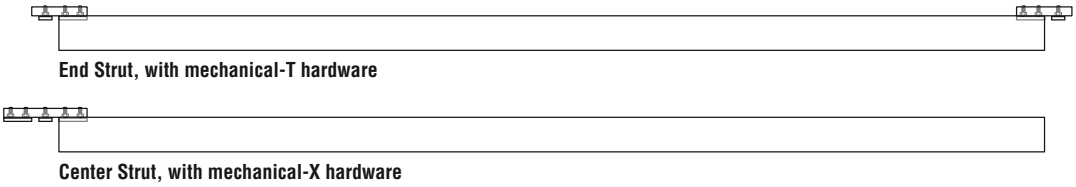


8 Make/Verify Electrical Connections

- Follow detailed instructions on page 5 to:
  Verify ground connections at Sleeves.
  Make hot and neutral busbar connections.
  Install protective covers at all busbar connections.
- Install end caps at ends of runs.
- Make feed connections to Starters (ratings, page 4).
- When BusRun installation is complete, install lighting fixtures and other Listed devices, as shown on separate BusRun Plug-In Fittings instructions.

Struts

non-electrical
cross-pieces
for use with parallel
straight runs



End Strut, with mechanical-T hardware

Center Strut, with mechanical-X hardware

Assembly & Mounting

As non-electrical support elements, Struts mount to BusRun Joiners at a 90° angle.

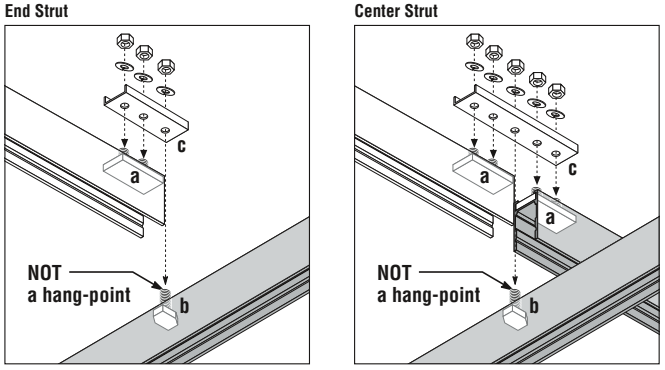
Struts can be used intermittently to add lateral support between cable-hung, parallel straight runs or, they can be used in continuous spans across parallel straight runs to provide the look of a grid with power in one direction.

Struts can support non-electrical plug-ins when properly installed in compliance with Mounting Rules (pages 2-3).

The hardware that holds Struts against Joiners cannot be used as a mounting point — use only approved mounting hardware (page 3) to support BusRun and Struts.

Assemble hardware and attach Struts to BusRun Joiners as follows:

- Slide rectangular bars (**a**) into mounting channel of Strut.
- Insert dog-eared bar (**b**) into mounting channel of BusRun and rotate it 90°
- Fit holes of cross-bar (**c**) onto studs of bars **a** and **b** and secure with lockwashers and hex nuts.



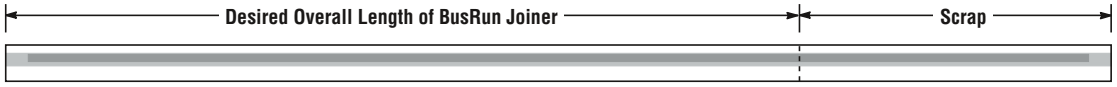
END-OF-RUN FIELD-CUTS

Modular Full, Reduced and Short Joiners along with X, T, and L Intercepts (page 6) eliminate most field-cutting, but sometimes it may be necessary to trim an end of run. Only BusRun Joiners can be field-cut — **Starters, L, T, and X Intercepts cannot be field-cut** because the busbars are not adjustable. Field-cutting any BusRun piece except a Joiner will negate its connectability to any other piece and void its warranty.

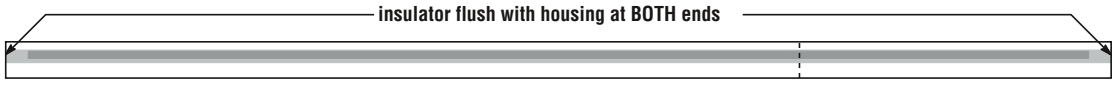
EQUIPMENT LIST:

- Chop saw with aluminum cutting blade OR mitre box and fine-tooth hacksaw
- Safety glasses
- De-burring tool

1 Mark desired field-cut length of BusRun on joiner housing.



2 Verify that grey insulator is flush with aluminum housing at BOTH ends of Joiner.



3 Push copper busbars into Joiner until flush with insulator and housing at SCRAP end, producing a 1¼" gap at opposite end.

4 Wear safety glasses while making a 90° cut at the marked location.

5 Deburr cut ends of housing, insulator, and busbars.

6 Push busbars back from cut end to create ⅝" gap at BOTH ends.