

KwikSplice cable channel instruction manual

Horizontal bend



Standard splice plate



Expansion splice plates



Heavy Duty (HD) expansion splice plates



Horizontal adjustable splice plate



Vertical adjustable splice plate



Powering Business Worldwide

Before you begin

Before installing any of the products listed below, it is recommended that you do the following:

- Read and understand the instruction herein before attempting to unpack, assemble or service the products listed.
- Follow all information that is found on safety labels on the product and packaging.
- The use of personal protective equipment (PPE) such as safety glasses, and cut-proof gloves are recommended during the unpacking and when using power tools to install the products.
- Familiarize yourself with the warning symbols that appear throughout this manual.

Contents

Horizontal Bend	1-3	Horizontal Adjustable Splice Plate	12
Standard Splice Plate	4	Vertical Adjustable Splice Plate	13-14
Expansion Splice Plates	5-7	Parallel channel to tray connector	15
Heavy Duty (HD) Expansion Splice Plates	8-11	Perpendicular channel to tray connector	16



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



NOTICE is used to address practices not related to physical injury. Notice points out something of special interest to the reader in direct context or relationship to the immediate topic or step being performed.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



IMPORTANT notes provide information of interest to the reader of a more global or general context.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY

The information, recommendations, descriptions and safety notations in this document are based on Eaton Corporation's ("Eaton") experience and judgment and may not cover all contingencies. If further information is required, an Eaton sales office should be consulted. Sale of the product shown in this literature is subject to the terms and conditions outlined in appropriate Eaton selling policies or other contractual agreement between Eaton and the purchaser.

THERE ARE NO UNDERSTANDINGS, AGREEMENTS, WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OF EATON. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY CONTRACT BETWEEN THE PARTIES.

In no event will Eaton be responsible to the purchaser or user in contract, in tort (including negligence), strict liability or otherwise for any special, indirect, incidental or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information, recommendations and descriptions contained herein. The information contained in this manual is subject to change without notice.

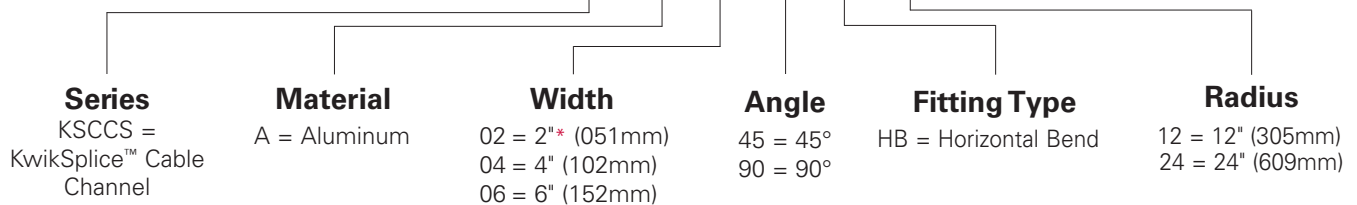
Fittings (Horizontal bend shown) KwikSplice aluminum cable channel

- Designed to provide for changes in 45° and 90° direction in a horizontal plane
- Bonding jumper not required
- UL classified as equipment ground conductor



Part Numbering

Example: **KSCCS A - 06 - 90 HB 12**



* 2" width not offered with KSCCA ventilated cable channel with pass through

KSCCA = Perforated cable channel with pass through hole

KSCCSA = Ventilated cable channel without pass through

KSCCNA = Non-ventilated cable channel (solid bottom)



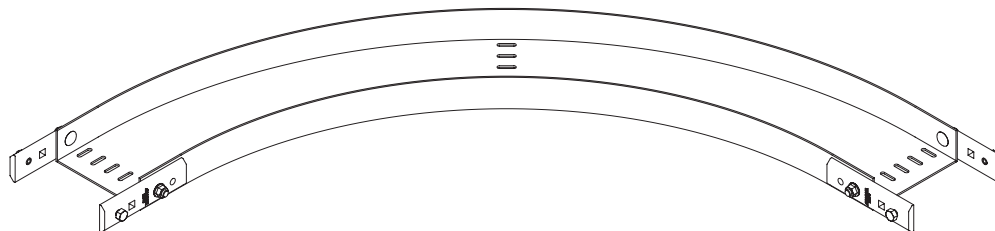
KSCCA-06-240
Patent pending



KSCCSA-06-240
Patent pending



KSCCNA-06-240
Patent pending



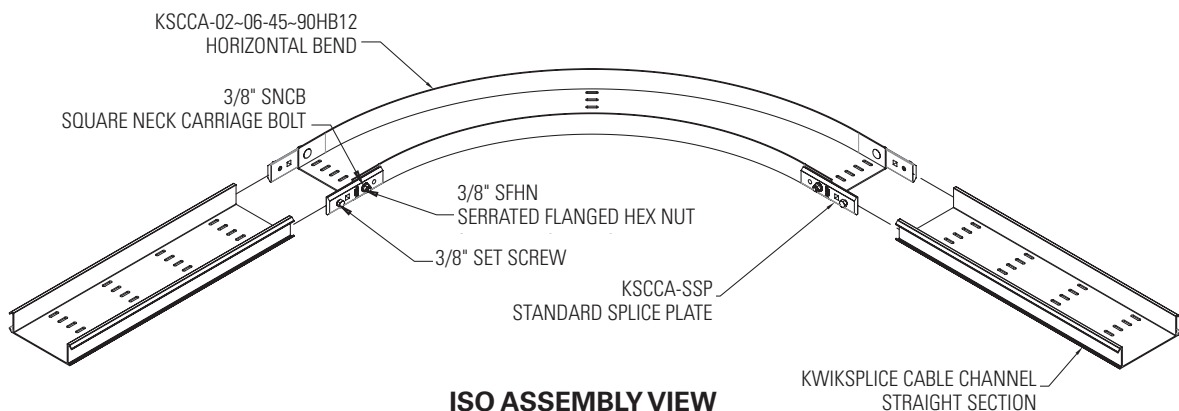
Tools required: Torque wrench

Step 1.

Select the appropriate size of the horizontal bend needed based on the width of the cable channel.

Step 2.

Insert horizontal bend splice plates on cable channel straight section as shown below.

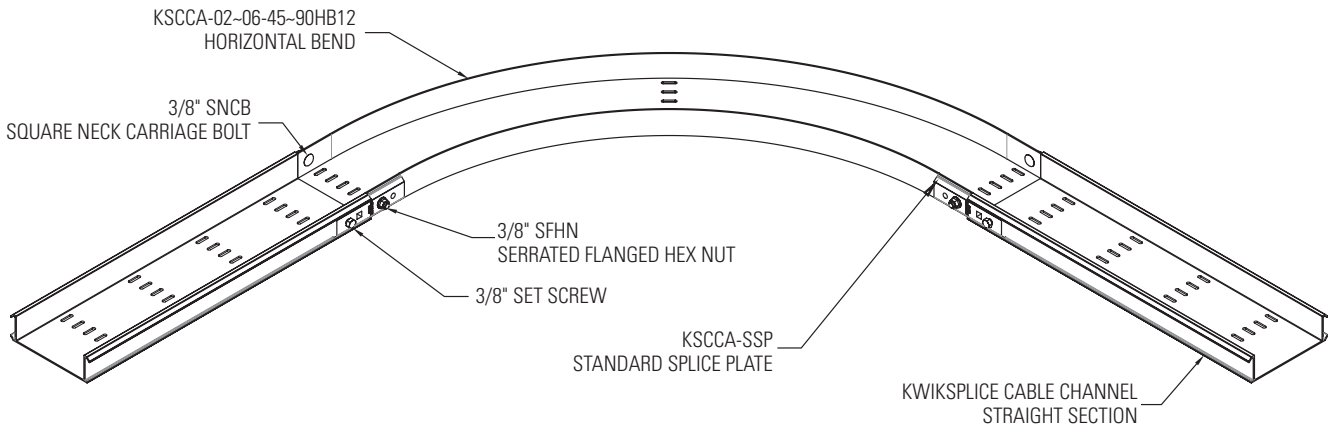


Horizontal Bend

KwikSplice aluminum cable channel - Fittings - continued

Step 3.

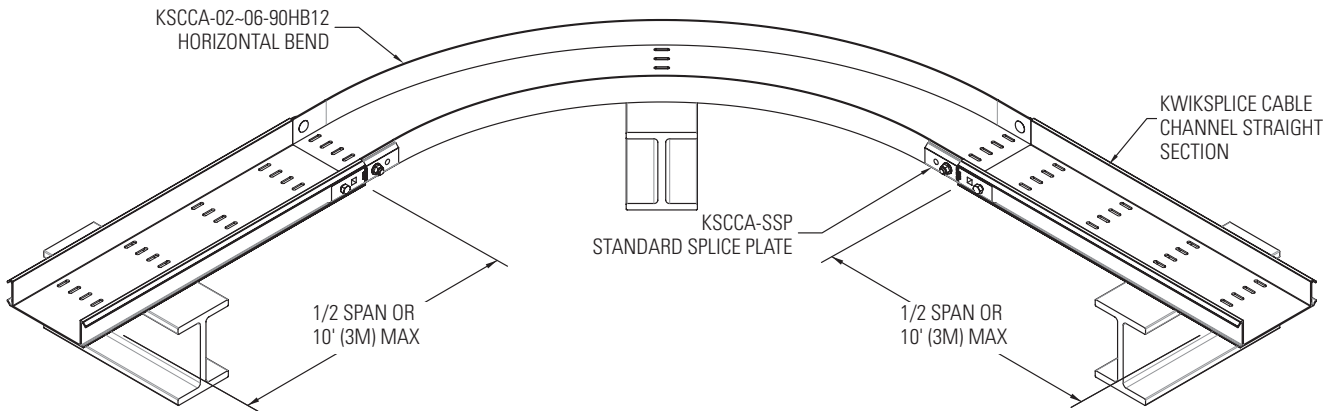
Torque all hardware to 19 ft.-lbs.



ISO ASSEMBLY VIEW

Step 4.

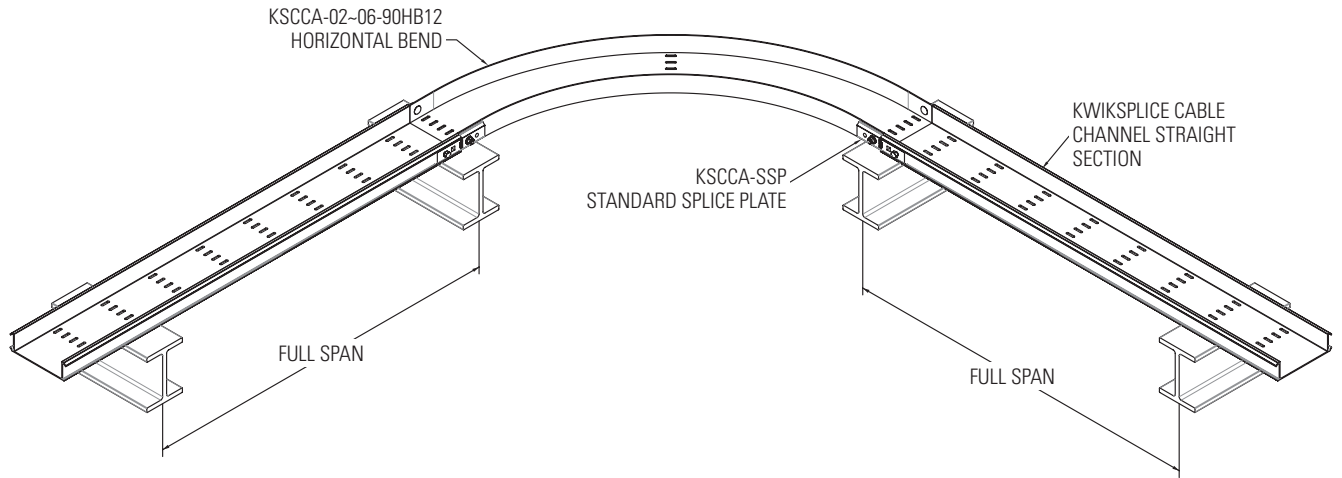
Provide support as per the KwikSplice cable channel system technical guide Horizontal bend support recommendation. For more information, visit Eaton.com/KSCC.



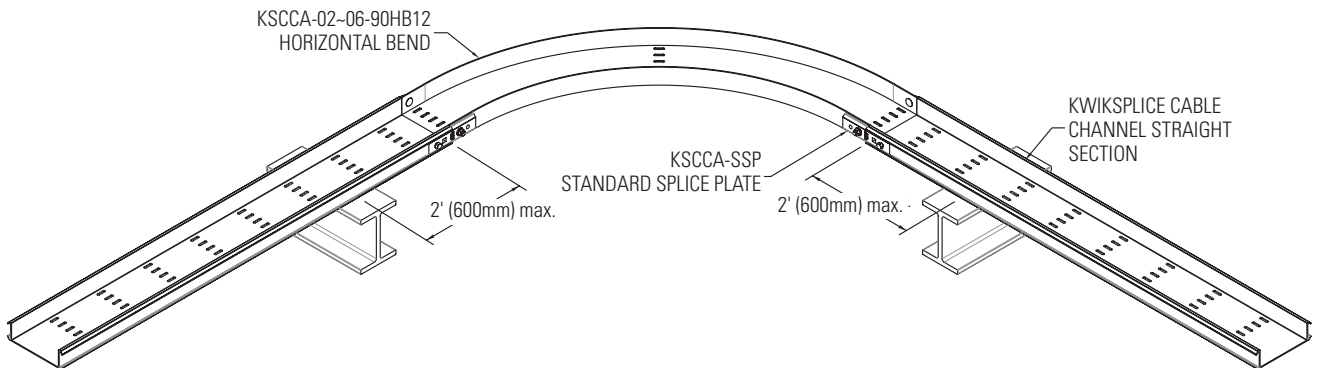
OPTION 1

Horizontal Bend

KwikSplice aluminum cable channel - Fittings - continued



OPTION 2



OPTION 3

Step 5.

Repeat prior steps for each horizontal bend fittings.

Standard splice plate

KwikSplice aluminum cable channel



Catalog No.	Description
KSCCA-SSP	Standard splice plate, 6, 4 & 2" widths

Patent pending

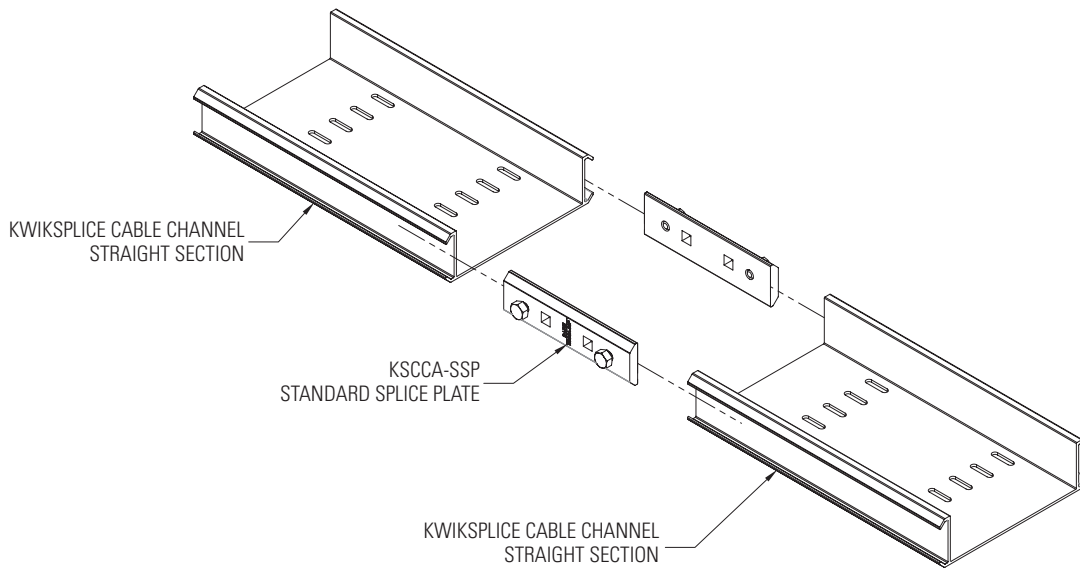
- Provided with straight sections and fittings
- Furnished in pairs with pre-installed hardware; bonding jumper not required
- UL classified as equipment ground conductor



Tools required: Torque wrench

Step 1.

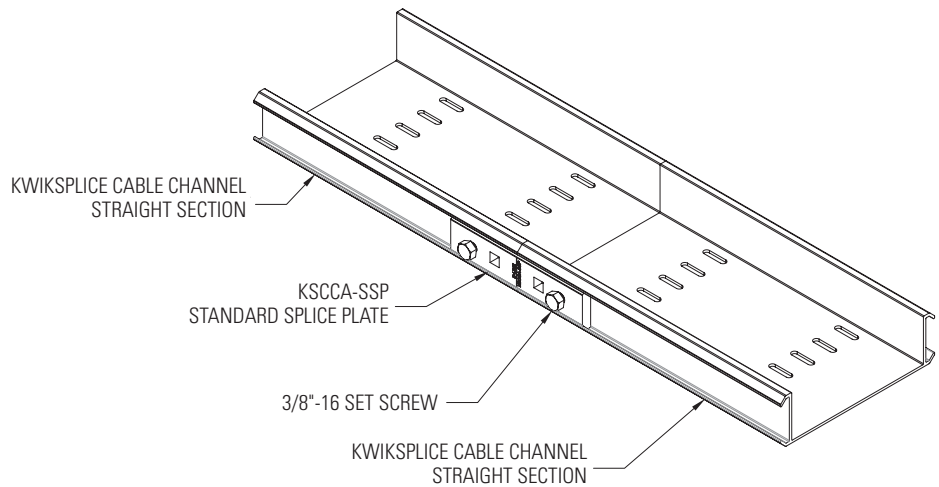
Align the splice plates and cable channel straight section; insert the splice plates as shown below.



ISO ASSEMBLY VIEW

Step 2.

Torque all hardware to 19 ft.-lbs.



ISO INSTALLED VIEW

Step 3.

Repeat prior steps for each standard splice plates.



Expansion splice plates

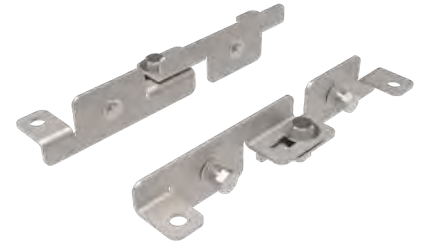
KwikSplice aluminum cable channel

Catalog No.	Description
KSCCA-ESP	Standard splice plate, 6", 4" & 2" widths

Patent pending

Cable channel as to its suitability as an equipment grounding conductor only. 556E Bolt torque 3/8" = 9 ft.-lbs. 1/4" = 6 ft.-lbs.

- Expansion splice plates allow for one-inch expansion or contraction of the cable channel, or where expansion joints occur in the support structure
- Furnished in pairs with pre-installed hardware
- Requires bonding jumper; sold separately
- UL classified as equipment ground conductor



⚠ IMPORTANT

One of the most important things to consider when installing a cable channel or tray system is system is thermal contraction and expansion. The length of the straight cable tray run and the temperature differential govern the number of expansion splice plates required.

Tools required: Torque wrench

Step 1.

- Identify the maximum spacing between expansion joints.
- Determine the hottest and coldest expected temperature within the year.
 - Determine the temperature differential to be able to know the required maximum spacing between the expansion joints.

Table 3-2 - Expansion Joint Spacings

Maximum Spacing between Expansion Joints for 1" (25mm) Movement**			
Temperature Differential*		Aluminum	
°F	°C	Feet	Meters
25	13.9	260	79.2
50	27.8	130	39.6
75	41.7	87	26.5
100	55.6	65	19.8
125	69.4	52	15.8
150	83.3	43	13.1
175	97.2	37	11.3

*Temperature differential is the difference in temperature between the hottest and coldest days of the year.

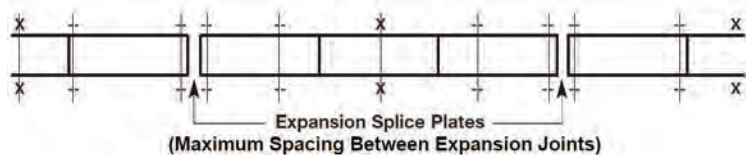
** For designs that provide for 5/8" 16mm movement (typically non-metallic), multiply maximum spacing between expansion joints by 0.625.

Based on NEMA Standard Publication No. VE-2 Section 3.4.2 NEMA VE-2 Table 3-2 above, the maximum spacing between expansion joints for 83° C temperature differential for aluminum tray is 43ft (13m).

Example

- Highest expected temperature: +37° C.
- Lowest expected temperature : -46° C.
- Temperature differential:
= Tmax – Tmin
Tmax is the hottest expected temperature within the year.
Tmin is the coldest expected temperature within the year.
- +37° C. hottest temperature minus -46° C. coldest temperature = 83° C. temperature differential.

The channel tray should be anchored at the support nearest to its midpoint between the expansion splice plates and secured by expansion guides at all other support locations as shown on figure below. The cable channel tray should be permitted longitudinal movement in both directions from that fixed point. When used, covers should be overlapped at expansion splice plates.



- X : Denotes hold down clamp location.
- : Denotes hold down guide location.

Expansion Splice Plates

KwikSplice aluminum cable channel - Accessories - continued

Step 2.

Determine the gap setting of the channel tray at the time of the installation.



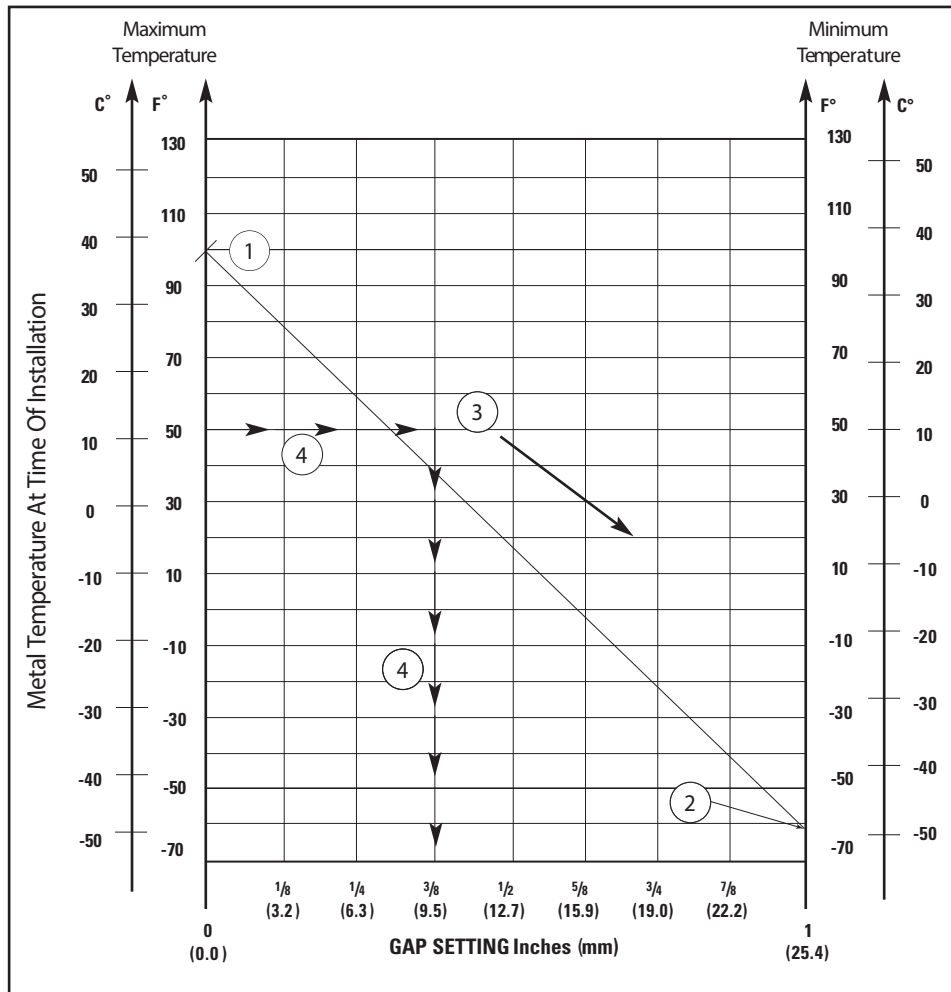
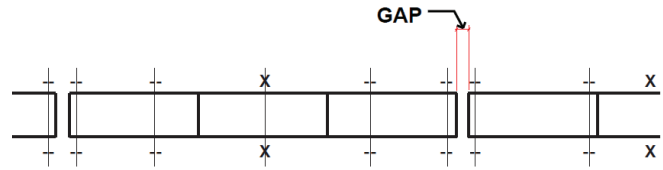
IMPORTANT

Accurate gap setting at the time of installation is necessary for proper operation of the expansion splice plates.

The following procedure should assist the installer in determining the correct gap:

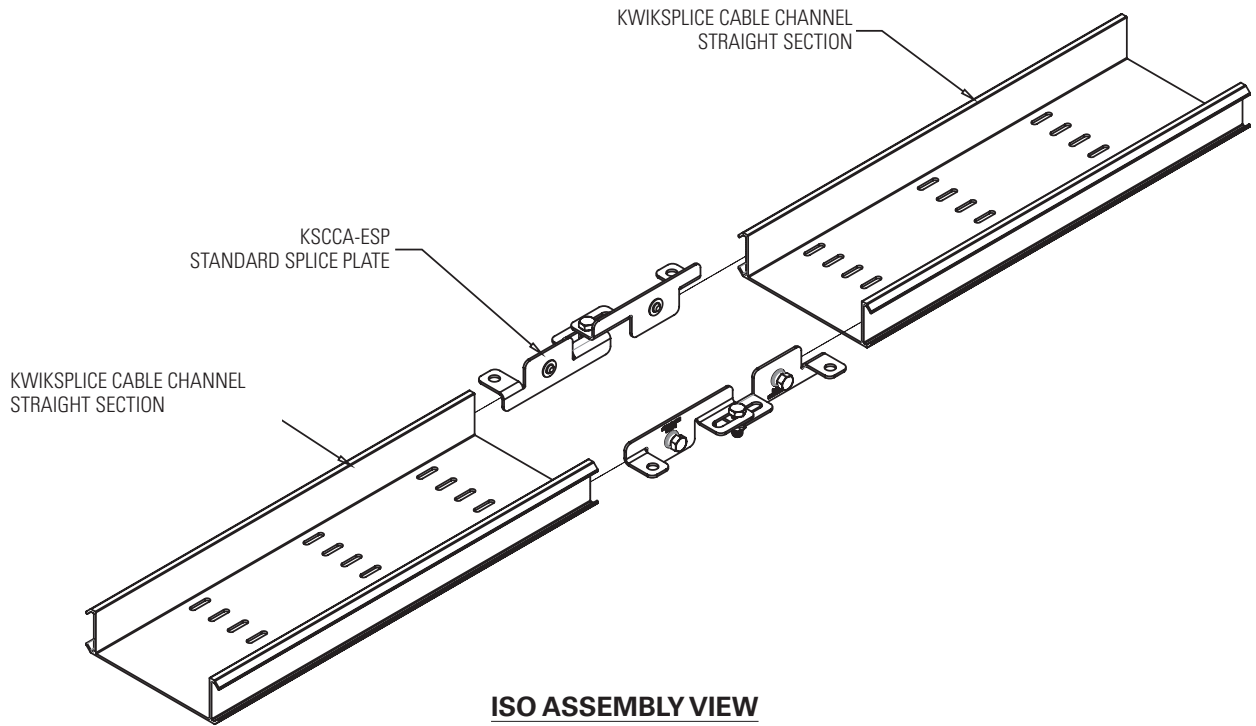
- ① Plot the highest expected cable channel metal temperature during the year on the maximum temperature line (37° C.).
- ② Plot the lowest expected cable channel metal temperature during the year on the minimum temperature line (-46° C.).
- ③ Draw a line between these maximum and minimum temperature points on the two vertical axis.
- ④ Plot the metal temperature at the time of installation to determine the gap setting.

For example, if the temperature during the installation is 5° C. then project over from the 5° C. point on the maximum temperature vertical axis to an intersection with the line between the maximum and minimum cable channel metal temperatures. From this intersection point, project down to the gap setting horizontal axis to find the correct gap setting value. Based on the assumed 5° C. temperature, the GAP setting would be $\frac{3}{8}$ " (9.5mm). This is the length of the gap to be set between the cable channel sections at the expansion joint. (See figure below for plot of this example)



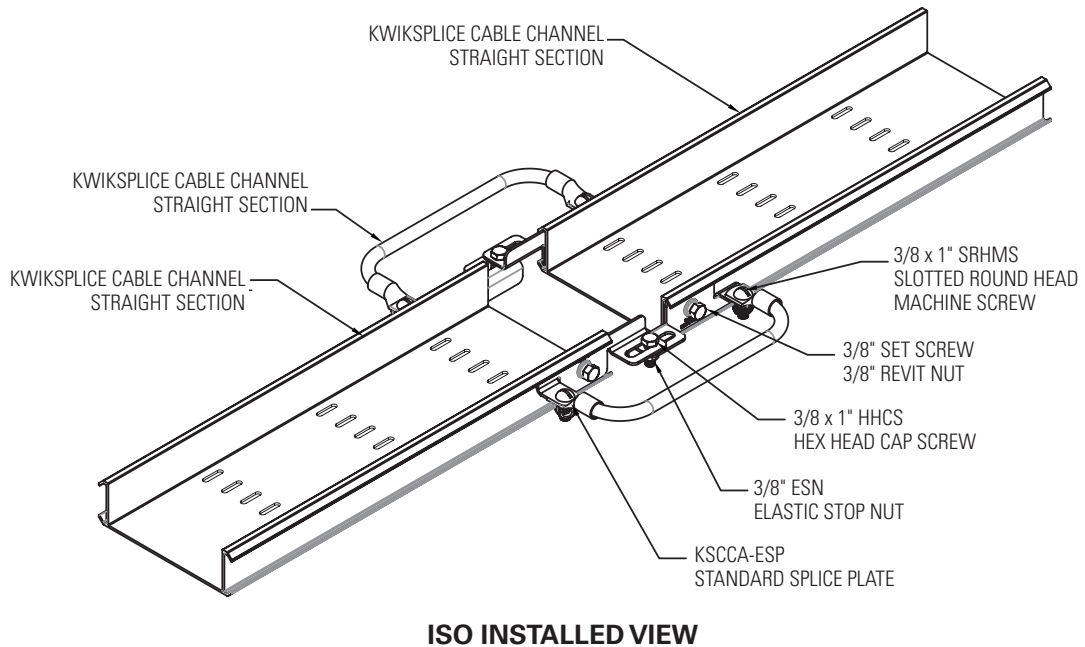
Step 3.

Once the maximum spacing and gap setting is already identified, align the expansion splice plates with the channel tray and insert it in the siderail as shown below.



Step 4.

Torque all set screw to 19 ft.-lbs. Torque all elastic stop nuts to 19 ft.-lbs. and then back the nuts off a quarter-turn. Install bonding jumper and provide supports within 24" on both sides per NEMA VE2. Repeat prior steps for each expansion splice location.



Heavy Duty (HD) expansion splice plates

KwikSplice aluminum cable channel



Catalog No.	Description
KSCCA-HDESP	Standard splice plate, 6", 4" & 2" widths

- Expansion splice plates allow for one-inch expansion or contraction of the cable channel, or where expansion joints occur in the support structure.
- Furnished in pairs with hardware.
- For field installation, drill $\frac{13}{32}$ " holes for hardware connection. Requires bonding jumper; sold separately



IMPORTANT

One of the most important things that needs to be considered when installing a cable channel system is the thermal contraction and expansion. The length of the straight cable channel run, and the temperature differential govern the number of expansion splice plates required.

Tools required: Torque wrench

Step 1.

- Identify the maximum spacing between expansion joints.
 - Determine the hottest and coldest expected temperature within the year.
 - Determine the temperature differential to calculate the required maximum spacing between the expansion joints.

Example

- Highest expected temperature: +37° C.
- Lowest expected temperature : -46° C.
- Temperature differential:
= Tmax – Tmin
Tmax is the hottest expected temperature within the year.
Tmin is the coldest expected temperature within the year.
- +37° C. hottest temperature minus -46° C. coldest temperature = 83° C. temperature differential.

Table 3-2 - Expansion Joint Spacings

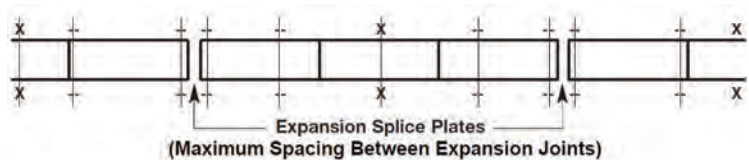
Maximum Spacing between Expansion Joints for 1" (25mm) Movement**			
Temperature Differential*		Aluminum	
°F	°C	Feet	Meters
25	13.9	260	79.2
50	27.8	130	39.6
75	41.7	87	26.5
100	55.6	65	19.8
125	69.4	52	15.8
150	83.3	43	13.1
175	97.2	37	11.3

*Temperature differential is the difference in temperature between the hottest and coldest days of the year.

**For designs that provide for $\frac{5}{8}$ " 16mm movement (typically non-metallic), multiply maximum spacing between expansion joints by 0.625.

Based on NEMA Standard Publication No. VE-2 Section 3.4.2 NEMA VE-2 Table 3-2 above, the maximum spacing between expansion joints for 83° C temperature differential for aluminum tray is 43ft (13m).

The channel tray should be anchored at the support nearest to its midpoint between the expansion splice plates and secured by expansion guides at all other support locations as shown on figure below. The cable channel should be permitted longitudinal movement in both directions from that fixed point. When used, covers should be overlapped at expansion splice plates.



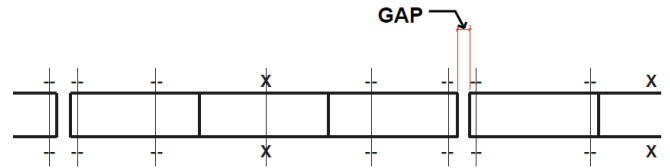
X : Denotes hold down clamp location.

- : Denotes hold down guide location.

Step 2.

Determine the gap setting of the channel at the time of the installation.

! IMPORTANT

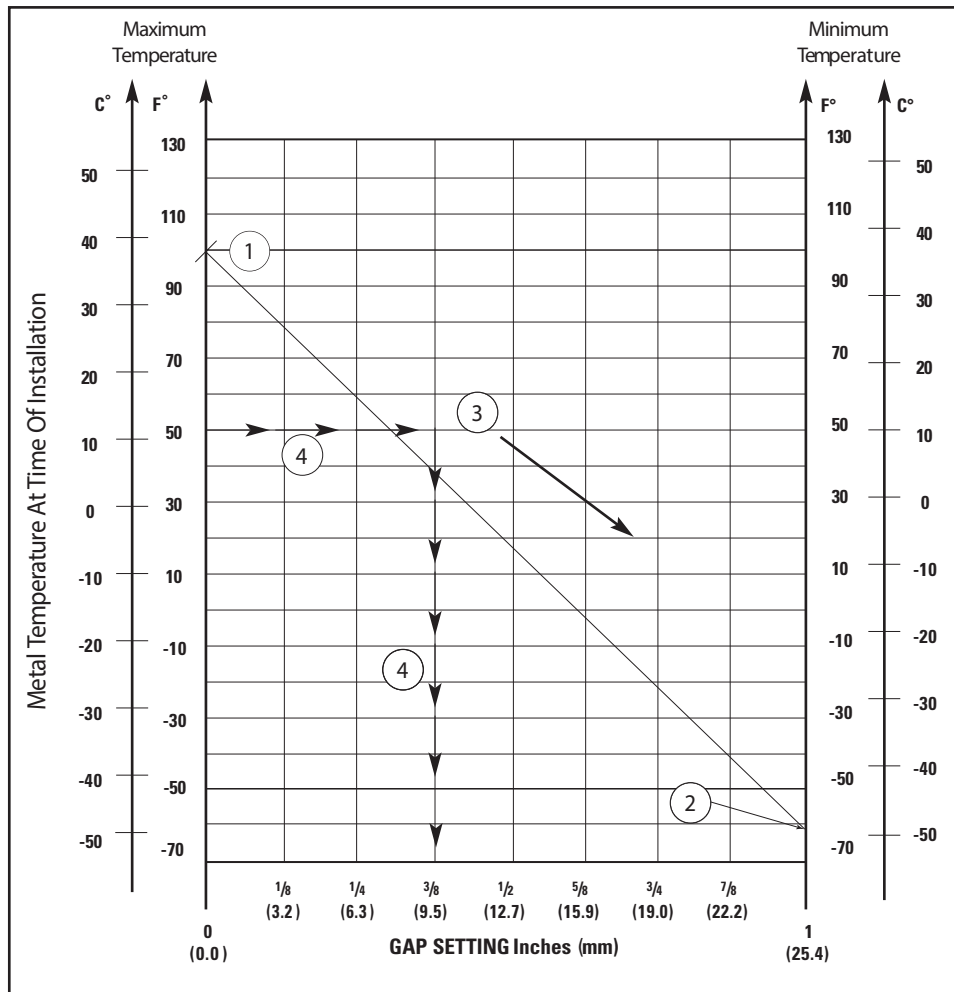


Accurate gap setting at the time of installation is necessary for proper operation of the expansion splice plates.

The following procedure should assist the installer in determining the correct gap:

- ① Plot the highest expected cable channel metal temperature during the year on the maximum temperature line (37° C.).
- ② Plot the lowest expected cable channel metal temperature during the year on the minimum temperature line (-46° C.).
- ③ Draw a line between these maximum and minimum temperature points on the two vertical axis.
- ④ Plot the metal temperature at the time of installation to determine the gap setting.

For example, if the temperature during the installation is 5° C. then project over from the 5° C. point on the maximum temperature vertical axis to an intersection with the line between the maximum and minimum cable channel metal temperatures. From this intersection point, project down to the gap setting horizontal axis to find the correct gap setting value. Based on the assumed 5° C. temperature, the GAP setting would be 3/8" (9.5mm). This is the length of the gap to be set between the cable channel sections at the expansion joint. (See figure below for plot of this example)

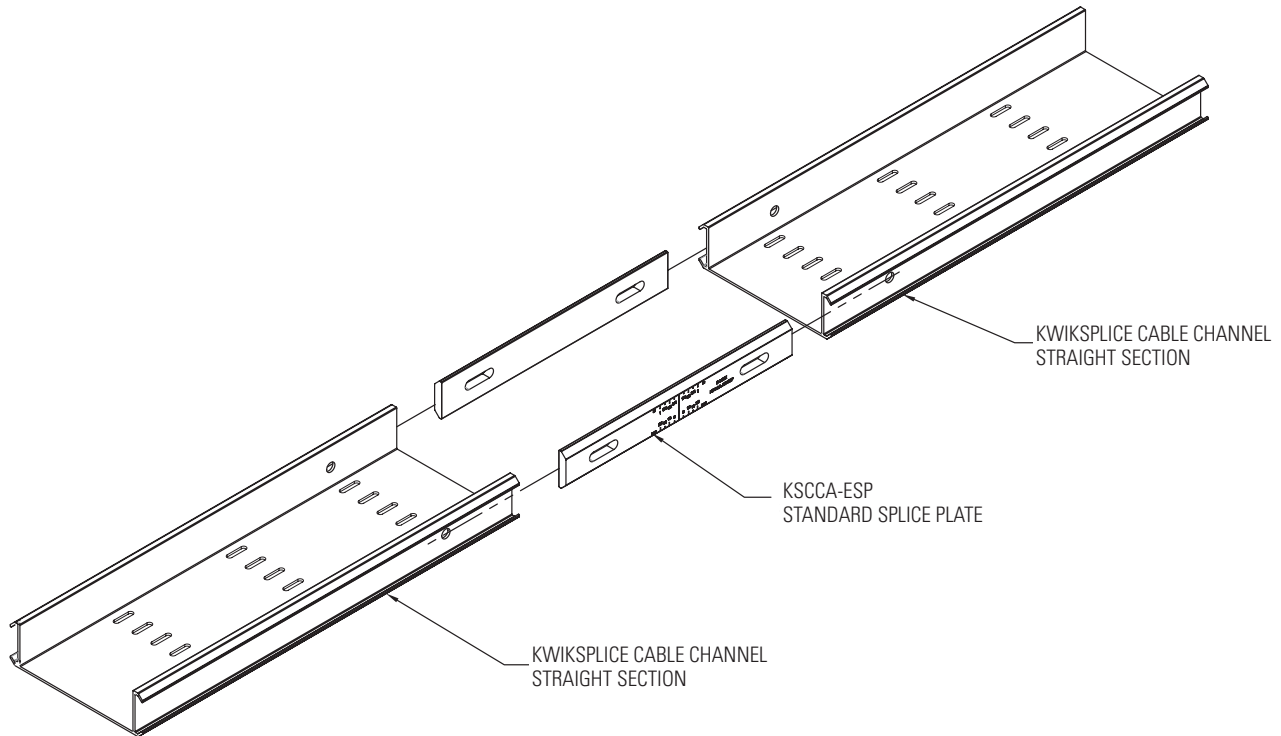


HD Expansion Splice Plates

KwikSplice aluminum cable channel - Accessories - continued

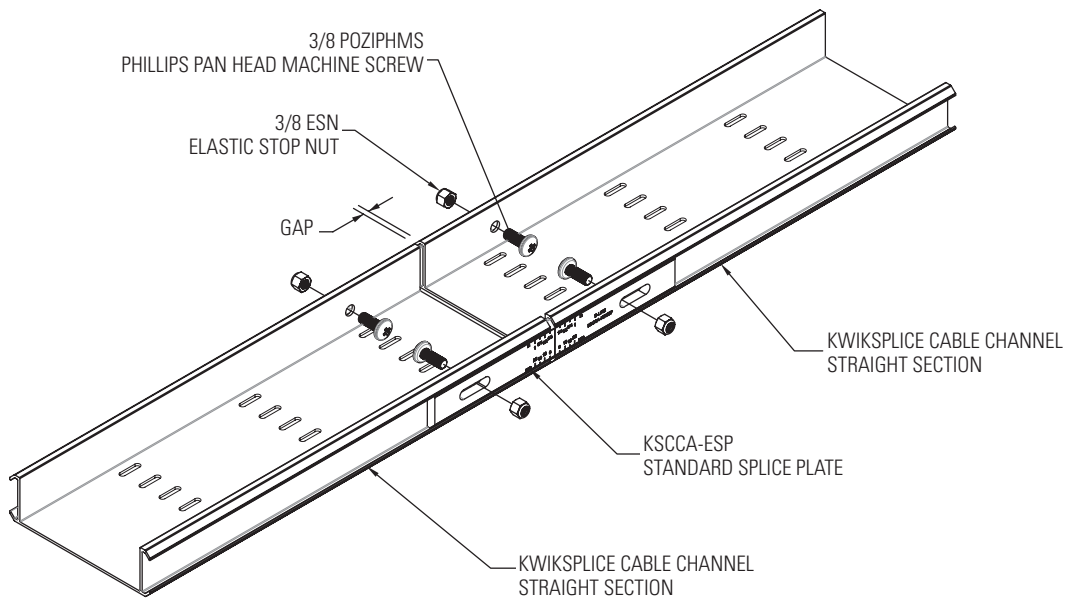
Step 3.

Once the maximum spacing and gap setting is already identified, align the expansion splice plates with the channel tray and insert it in the siderail as shown below. Mark the splice holes that will allow 1" (25mm) movement and field drill $1\frac{3}{32}$ " diameter holes.



Step 4.

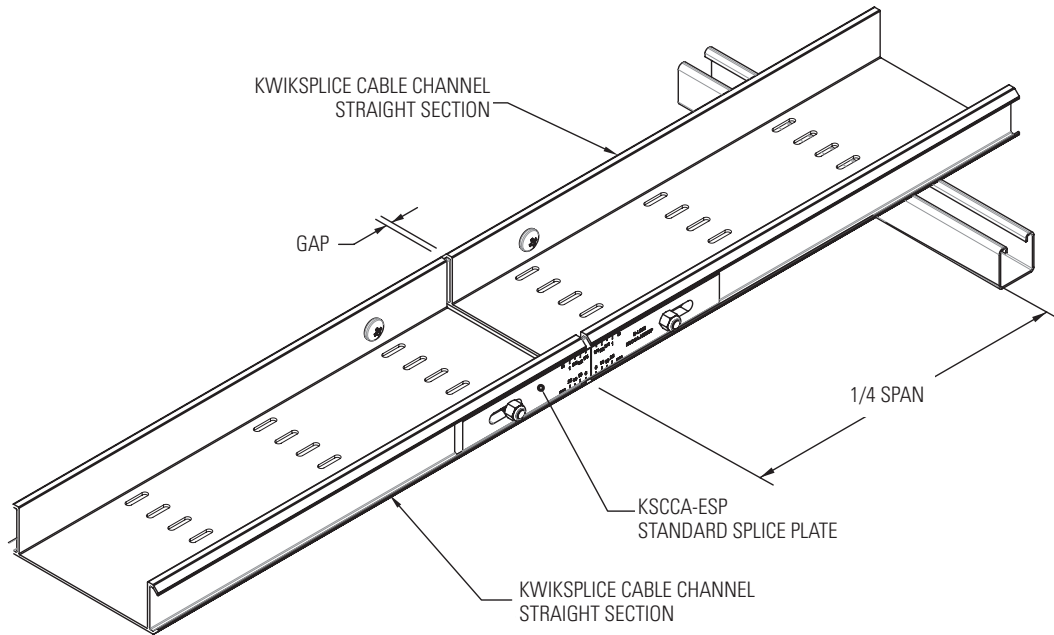
Set the gap determined in step 2 and install the hardware as shown below. Torque elastic stop nuts to 19 ft.-lbs. then back off quarter-turn.



ISO ASSEMBLY VIEW

Step 5.

Provide support as per the KwikSplice cable channel system technical guide Horizontal bend support recommendation. For more information, visit Eaton.com/KSCC. Repeat prior steps for each expansion splice location.



ISO INSTALLED VIEW

Step 6.

Install bonding jumper per its listed instructions.

Horizontal adjustable splice plate KwikSplice Aluminum Cable Channel



Catalog No.	Width	
	in.	mm
KSCCA-06-HSP	6	457.2
KSCCA-04-HSP	4	101.6
KSCCA-02-HSP	2	50.8

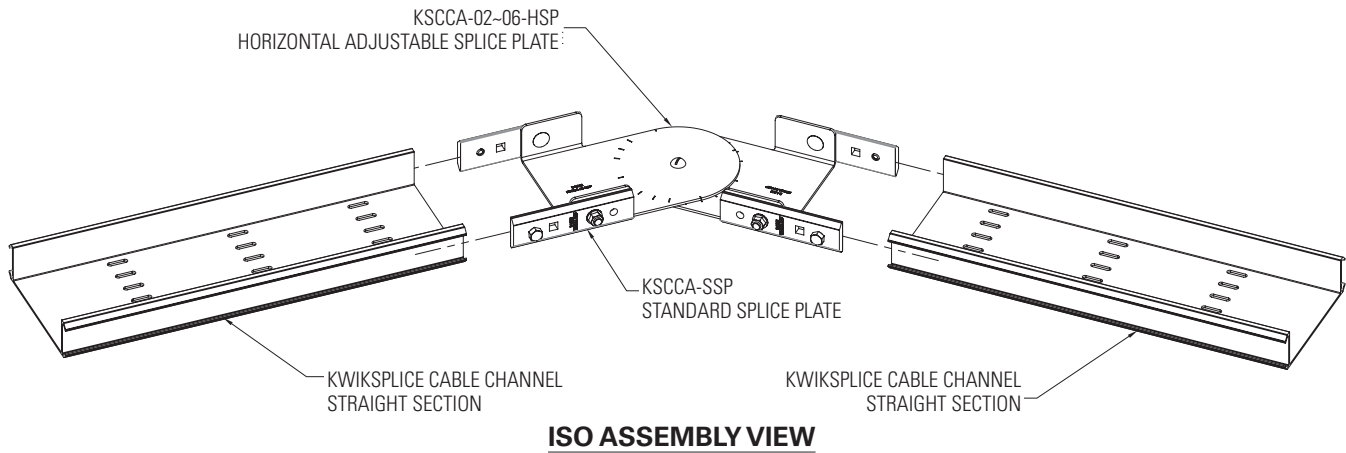
Patent pending

Tools required: Torque wrench

Step 1.

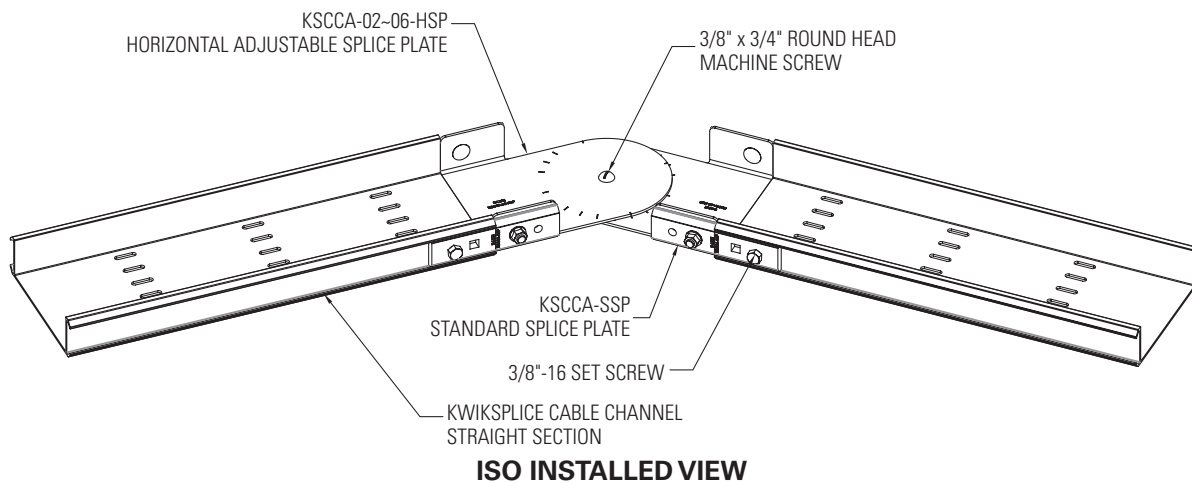
Select the appropriate size of the horizontal adjustable splice plate needed based on the width of the cable channel. Align the horizontal adjustable splice plates along with the cable channel straight section and insert as shown below.

- Designed to provide for changes in direction in a horizontal plane that do not conform to standard horizontal fittings
- Furnished with pre-installed hardware
- Bonding jumper not required
- UL classified as equipment ground conductor



Step 2.

Set the desired angle for horizontal bending and torque all hardware to 19 ft.-lbs. Provide support within 24" on both sides per NEMA VE-2.



Step 3.

Repeat prior steps for each horizontal adjustable splice plates.



Vertical adjustable splice plate

KwikSplice aluminum cable channel

Catalog No.	Width	
	in.	mm
KSCCA-06-VSP	6	457.2
KSCCA-04-VSP	4	101.6
KSCCA-02-VSP	2	50.8

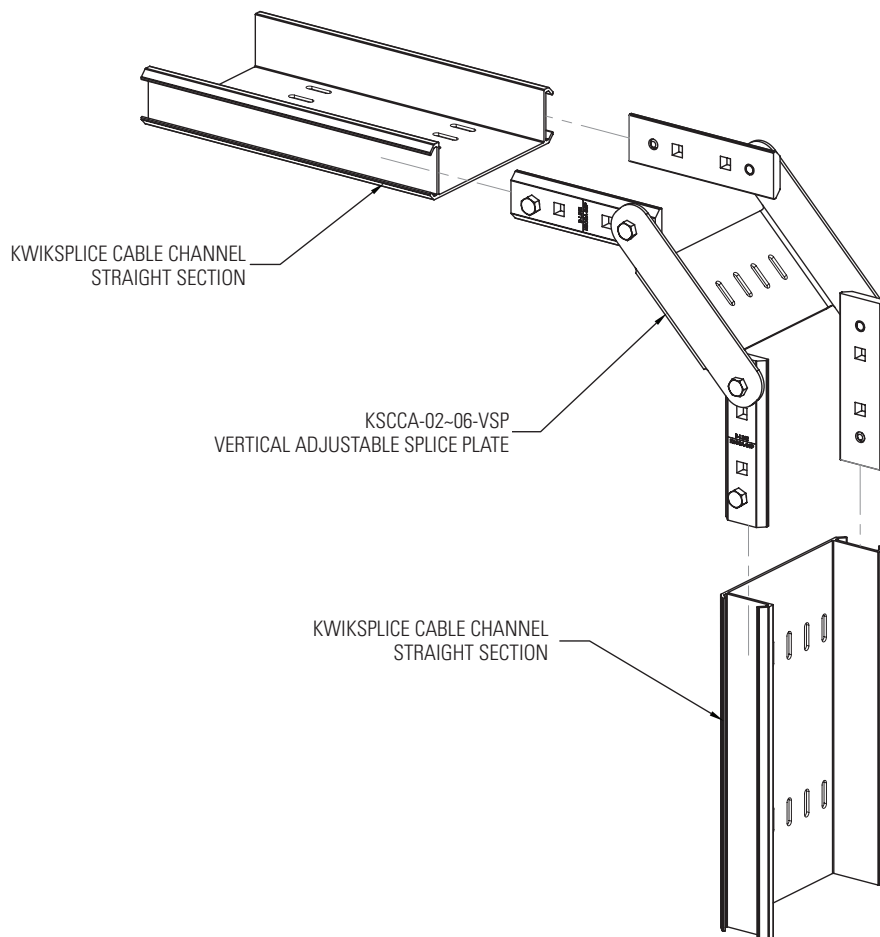
Patent pending

Tools Needed: Torque wrench

Step 1.

Select the appropriate size of the vertical adjustable splice plate needed based on the width of the cable channel. Align the vertical adjustable splice plates along with the cable channel straight section and insert as shown below.

- Designed to provide for changes in elevation that do not conform to standard vertical fittings
- Furnished with pre-installed hardware
- Bonding jumper not required
- UL classified as equipment ground conductor



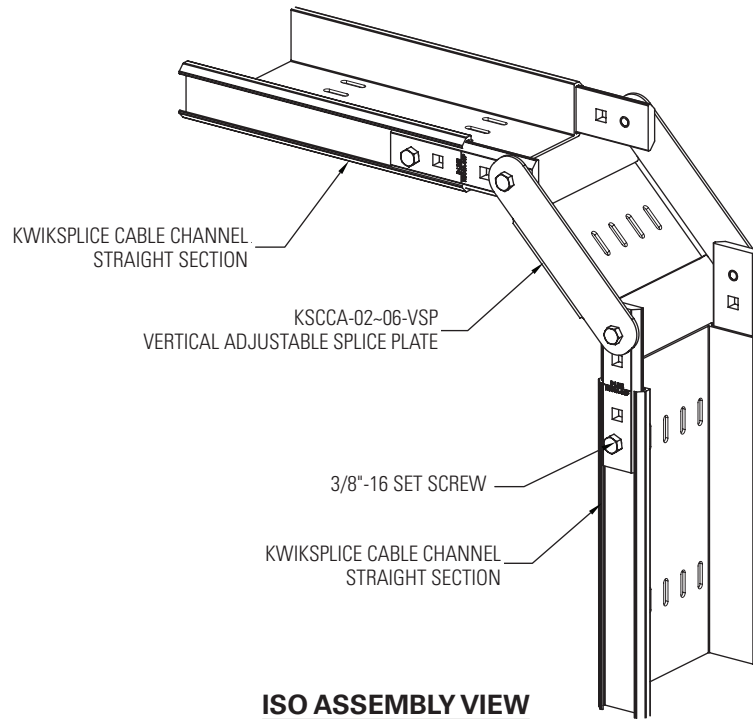
ISO ASSEMBLY VIEW

Vertical Adjustable Splice Plate

KwikSplice aluminum cable channel - Accessories - continued

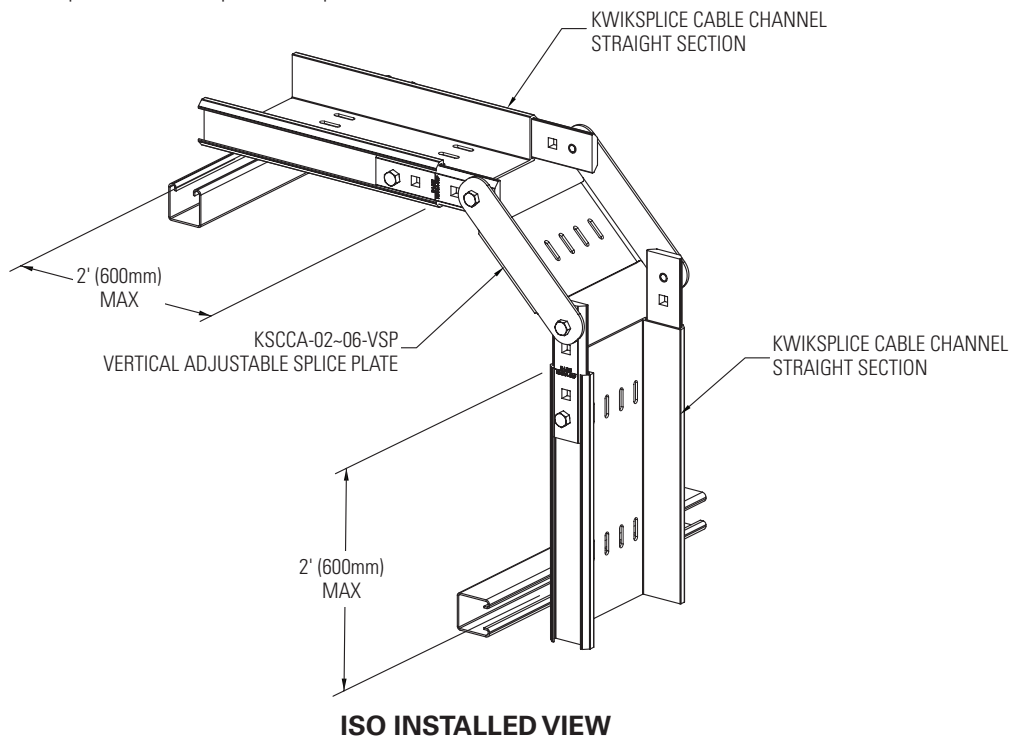
Step 2.

- Set the desired angle for vertical bending and torque all hardware to 19 ft.-lbs..



Step 3.

- Bonding jumper not required. Provide supports within 24" on both sides of the vertical adjustable splice plate per NEMA VE-2. Repeat prior steps for each expansion splice location.



Parallel channel to tray connector KwikSplice aluminum cable channel



Catalog No.	Description
KSCCA-UMB	Parallel channel to tray connector

- UL classified as equipment ground conductor.



Tools required: 7/16" drill and torque wrench

Step 1.

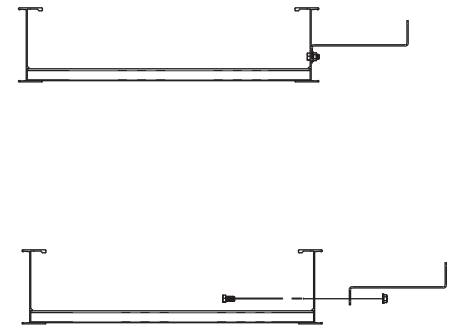
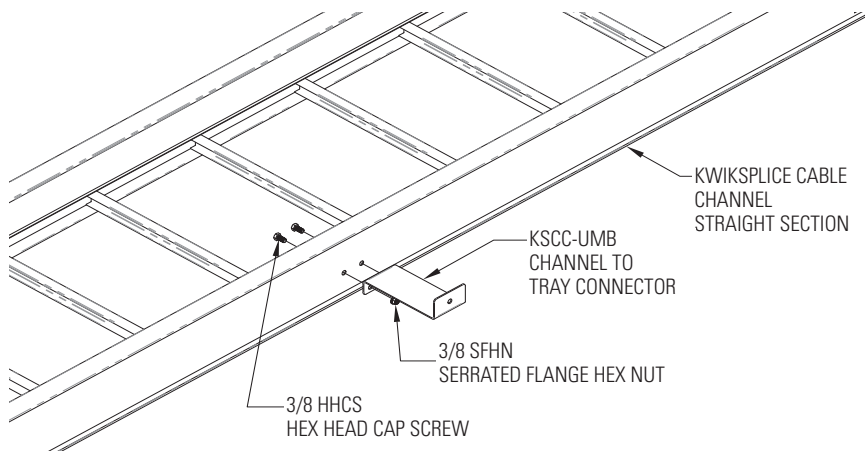
Determine load of all cables and accessories currently in cable tray run and planned cable channel addition. Combine these loads to determine new operating load of the cable tray system and ensure this load does not exceed the systems rated load for its current support span.

Step 2.

Position the KSCCA-UMB onto the channel and mark the 2 holes onto the siderail and field drill 7/16" diameter holes.

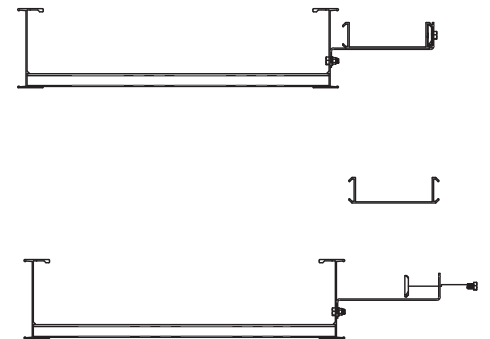
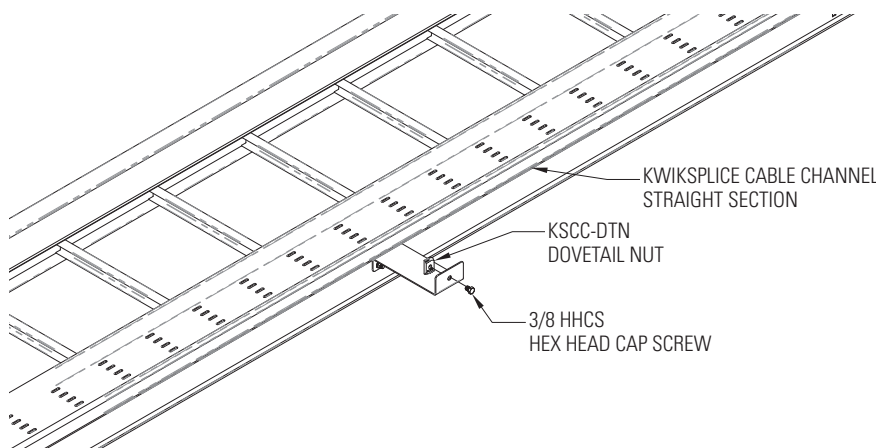
Step 3.

Align the KSCCA-UMB with the drilled holes and attach with 3/8" hardware. Torque hardware to 19 ft.-lbs.



Step 4.

Place the cable channel onto the KSCCA-UMB and secure with provided KSCC-DTN and 3/8" bolt. Torque hardware to 19 ft.-lbs.



Perpendicular channel to tray connector KwikSplice aluminum cable channel



Catalog No.	Description
KSCCA-TMB	Perpendicular channel to tray connector

- UL classified as equipment ground conductor.



Tools Needed: 7/16" drill and torque wrench

Step 1.

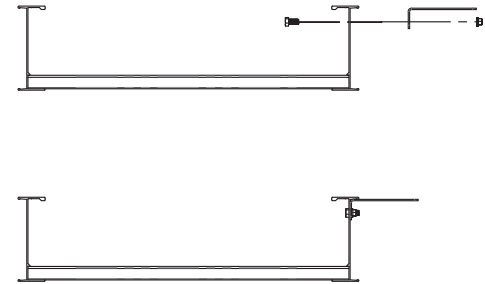
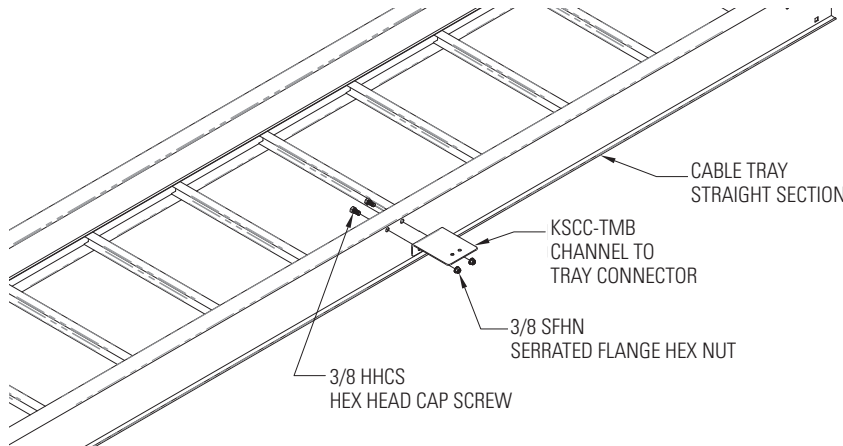
Determine load of all cables and accessories currently in cable tray run and planned cable channel addition. Combine these loads to determine new operating load of the cable tray system and ensure this load does not exceed the systems rated load for its current support span.

Step 2.

Position the KSCCA-TMB onto the cable tray and mark the 2 holes onto the siderail and field drill 7/16" diameter holes.

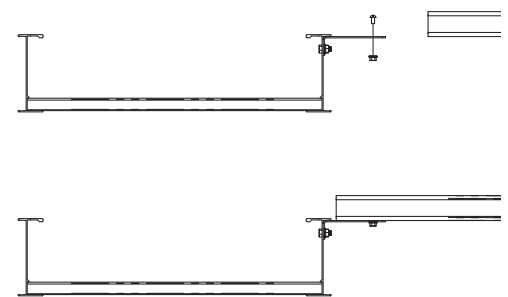
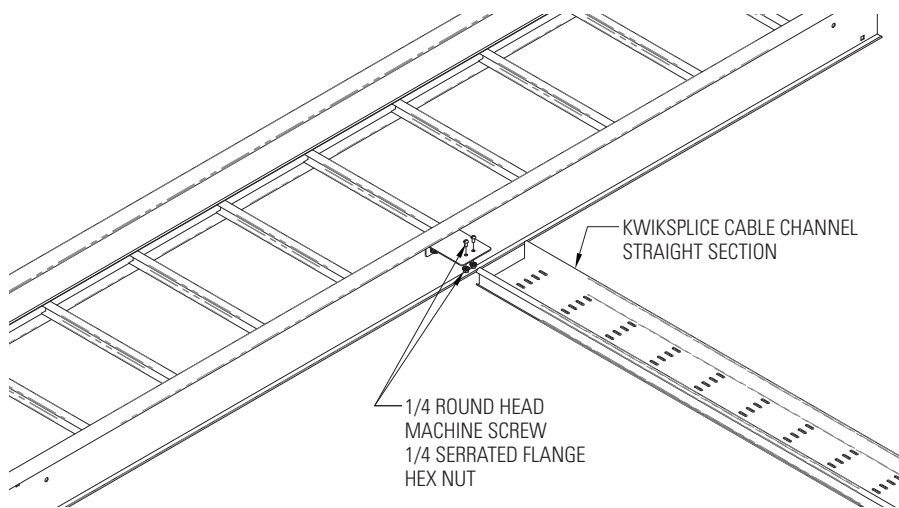
Step 3.

Align the KSCCA-TMB with the drilled holes and attach with 3/8" hardware. Torque hardware to 19 ft.-lbs.



Step 4.

Place the cable channel onto the KSCCA-TMB and secure with provided 1/4" hardware. Torque hardware to 6 ft.-lbs.



Eaton
 1000 Eaton Boulevard
 Cleveland, OH 44122
 United States
 Eaton.com

© 2022 Eaton
 All Rights Reserved
 Printed in USA
 Publication No. IL302018EN
 February 2022 CTIS-27

B-Line Division
 509 West Monrot Street
 Highland, IL 62249
 United States
 Phone: 800-851-7415

Eaton is a registered trademark.
 All other trademarks are property of their respective owners.

Eaton.com/KSCC



Follow us on social media to get the latest product and support information.

