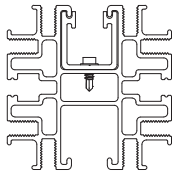
Cool Shield™ Strut Arm Bracing

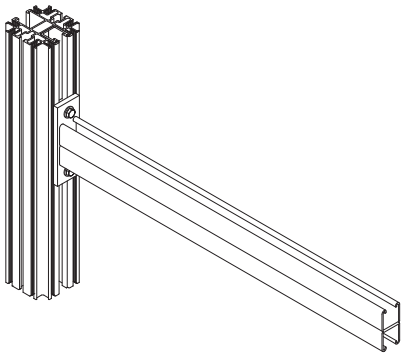
Assembly and Installation Instructions

1. GENERAL

The Cool Shield™ Structure is a pre-engineered containment solution designed to be used for data center environmental containment. The system consists of extruded aluminum components, strut channels, and bracing hardware. The 4" × 4" vertical post features a channel used for easy mounting and adjustment for other extrusions and bracing solutions. When ordered with the optional Vertical Post Channel Insert, the insert will be factory assembled in the 4" × 4" vertical post channel ***(Fig 1A)*** and allow for easy mounting and additional arm load capacity at the identified location ***(Fig 1B)***.



(Fig 1A)



(Fig 1B)

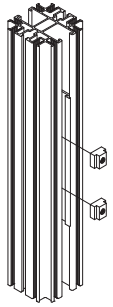
2. MATERIAL DELIVERY

Cool Shield Structure Extrusions and Bracings are packaged and shipped in the quantities ordered. All hardware for assembly is included in the packaging. Custom projects may include shop drawings as well. Identify all parts listed in the drawings, and verify they are delivered to the site before starting the installation. Exercise care to protect the finished surfaces of the extrusion.

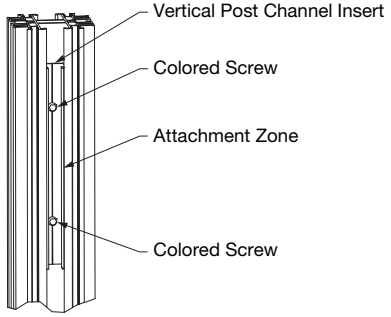
3. HARDWARE INSTALLATION

3.1 T-Slot Nut

The T-slot nut is to be used only when combined with the aluminum insert ***(Fig 2A)***. To install components with this nut, the nut must be placed at an angle into the vertical post and then rotated into correct alignment within the insert. Then, the 3/8"-16 bolt can be placed through the component and threaded into the nut. To position the components, they can only be placed between the two colored screws that secure the insert to the post ***(Fig 2B)***. This is the attachment zone for all components that utilize the insert.



(Fig 2A)



(Fig 2B)

NOTE: It may be easier to position the T-slot nut when put in the post above or below the insert and then slide into position within the insert.

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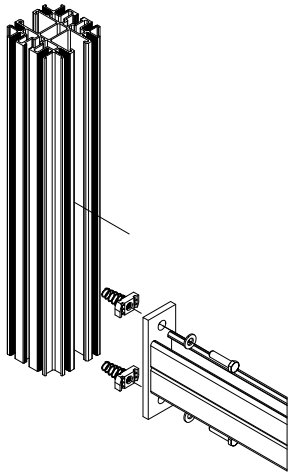
3.2 Strut Channel Nut

The strut channel nut is to be used only without the aluminum insert. To install components with this nut, insert the 3/8"-16 hex bolts through the mounting hole of the component and partially thread on the strut channel nut onto the end of the bolts. Then, the component can be placed up to the strut and the bolts tightened. The strut channel nuts will rotate and begin to tighten into place. Position the component anywhere along the channel that does not have an insert.

4. GENERAL INSTALLATION INSTRUCTIONS

4.1 Strut Arm with Mounting Plate

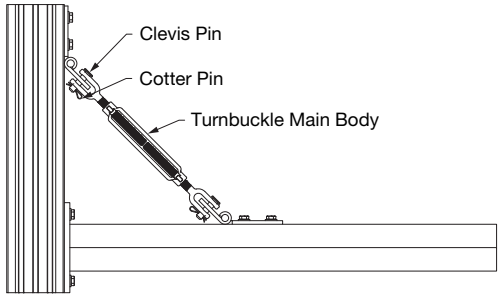
To install the strut arm with mounting plate, identify if it will need to connect into the insert or if it will simply be able to connect via the standard slot. If it requires the insert, follow the procedure in 3.1 to properly assemble the mounting plate and T-slot nuts. If the strut arm is connecting into the standard slot, follow the procedure in 3.2 to properly assemble the mounting plate and strut channel nuts ***(Fig 3)***. When the arm is in position, tighten the hex bolts to fasten the mounting plate to the post. Bolts should be fully seated but not over-torqued, in order to avoid damage to the channel.



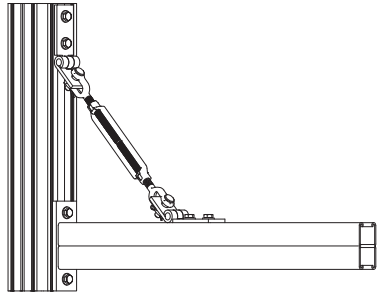
(Fig 3)

4.2 Turnbuckle Arm Brace (TAB) – Top Arm Bracing

Remove the cotter pin and the clevis pin from both sides of the turnbuckle ***(Fig 4)***. Set turnbuckle to desired length. Align both clevis holes with the one-hole side of TAB bracket. Insert the clevis pins through the clevis holes followed by inserting the cotter pin through the tiny hole on the clevis pins to secure connection. Bend tail on the cotter pin outwards. Then, identify if it will need to connect into the insert in the structural post or if it will simply be able to connect via the standard slot. If it requires the insert, follow the procedure in 3.1 to properly assemble the TAB bracket and T-slot nuts. If the TAB bracket is connecting into the standard slot, follow the procedure in 3.2 to properly assemble the bracket and strut channel nuts. Connect the other TAB bracket into the top of the strut arm by following the procedure in 3.2. Tighten the hex bolts to fasten the bracket to the channels, DO NOT tighten all the way to allow for adjustability of the brackets. Slide brackets along channels until bracing assembly is in the desired location ***(Fig 5)***. Finish tightening the hex bolts to the channels. Bolts should be fully seated but not over-torqued, in order to avoid damage to the channel. Tension the turnbuckle by rotating the main body of the turnbuckle.



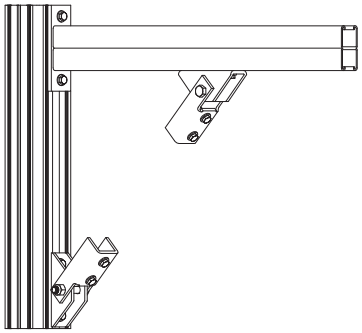
(Fig 4)



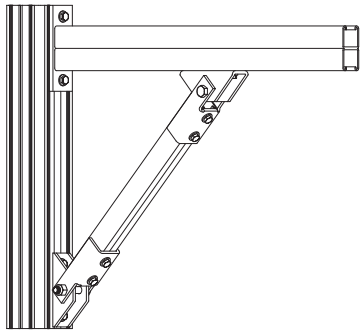
(Fig 5)

4.3 Strut Arm Brace (SAB) – Top or Bottom Arm Bracing

Connect the two SAB brackets to the channel on top or on the bottom of the back-to-back strut and the structural post. For the structural post connection, identify if it will need to connect into the insert in the structural post or if it will simply be able to connect via the standard slot. If it requires the insert, follow the procedure in 3.1 to properly assemble the SAB bracket and T-slot nuts. If the SAB bracket is connecting into the standard slot, follow the procedure in 3.2 to properly assemble the bracket and strut channel nuts. Make sure that the arms of the SAB brackets are facing the same way. Tighten the hex bolts to fasten the brackets to the channels. Bolts should be fully seated but not over-torqued, in order to avoid damage to the channel ***(Fig 6)***. Take the strut channel and place inside the arms of the brackets. Connect the strut channel by following the procedure in 3.2. Tighten the hex bolts to fasten the strut channel to the brackets. Bolts should be fully seated but not over-torqued, in order to avoid damage to the channel ***(Fig 7)***.



(Fig 6)



(Fig 7)

5. COOL SHIELD™ STRUCTURE COMPONENT SUPPORT

The manufacturer requires the Cool Shield Structure Bracing to be installed and supported in a manner that complies with all applicable codes and standards.

6. FINAL DETAILING

1. Check and adjust the alignment of the bracing system.
2. Clean exposed surfaces as required. Painted Cool Shield Structure components may be wiped down with rubbing alcohol or a mild soap solution to remove fingerprints, oil, etc.
3. Touch up painted components as required. All painted custom Cool Shield Structure shipments include a container of paint to be used for touch-up.

MORE INFORMATION

For more information, or for an Armstrong representative, call 877 276-7876.
For complete technical information, detail drawings, CAD design assistance, installation information, and many other technical services, call TechLine customer support at 877 276-7876.

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