

Thank you for selecting a DuctSox SkeleCore Pull-Tight with Track System. This guide will be helpful for installing the system. The key to a successful SkeleCore Pull-Tight installation is using Tensioning Baskets to apply tension to the fabric and to smooth the appearance. Sections of fabric will be labeled, assembled, bagged, and boxed for shipping. Systems will include a drawing detail of the system identifying what is in each package and detailed dimensions of support locations.

Overview

Inventory

Read through this guide thoroughly. Review the components that need to be assembled and installed. Review the Engineering and Architectural drawings of the project while reading this guide, including the project-specific drawing details provided by DuctSox.

Shipping/Receiving

In some cases the DuctSox support system is delivered to the job site ahead of the DuctSox fabric sections. Depending on the size of a project or order, a DuctSox System will be shipped by common courier in a single brown box or several boxes. Larger orders will be shipped in crates by a common freight courier. Each DuctSox length should be packaged into individual plastic bags and labeled according to size and number of pieces. Other markings or labeling may also be incorporated for larger or more complicated systems. Be sure you have determined all boxes are accounted for.

Unpacking

Inspect shipment carefully and make sure all components are accounted for by emptying packaging and examining all contents. Note any missing or damaged pieces listed on the Bill of Lading and contact your courier and DuctSox Representative.

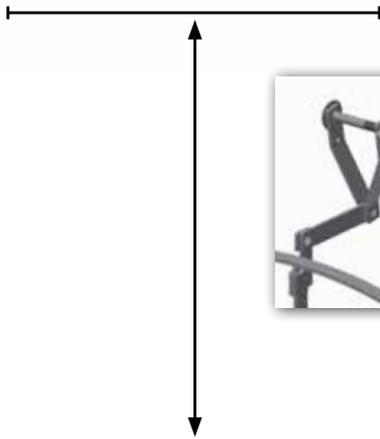
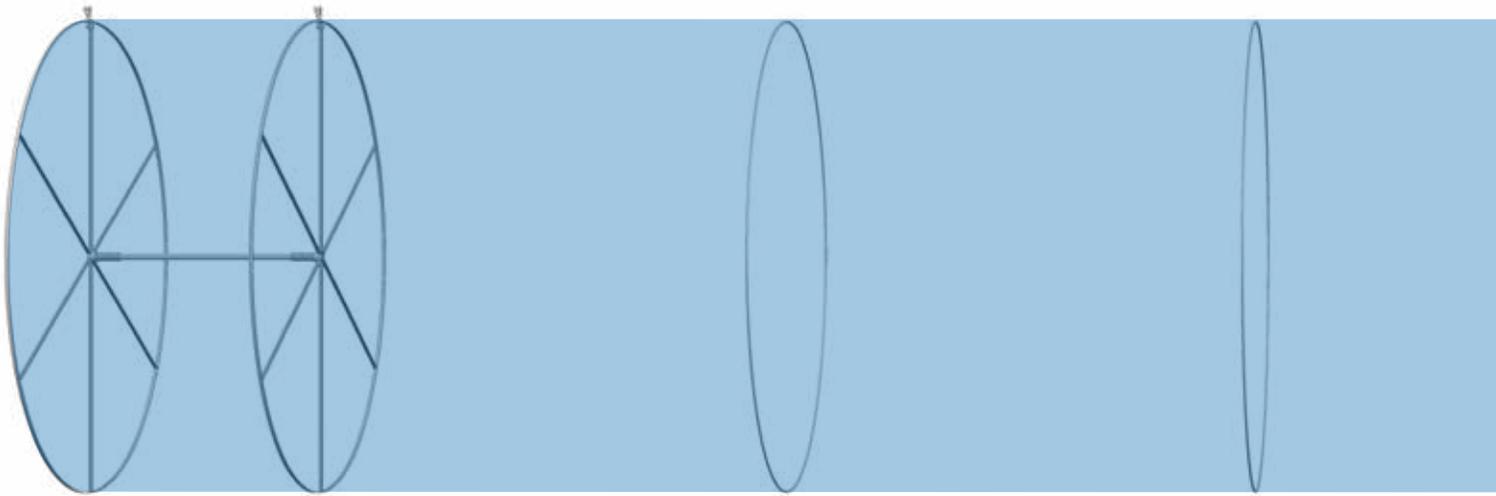
Labeling

Each fabric section will have a tag near any zipper. The tag will include job number, ship date, diameter, section number (if the total length is comprised of more than one fabric section), and total length.

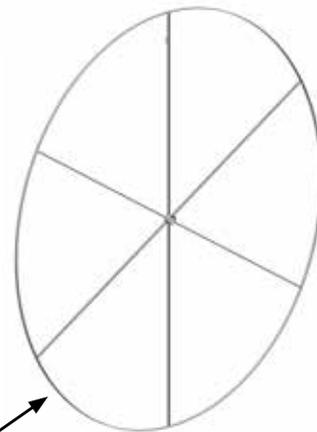
Equipment Required:

- Drill and #2 magnetic Phillips head drill bit
- Level
- #2 Phillips screwdriver
- Wrenches for cable-to-track connection (7/16" and 7/32" or pliers)
- Tape measure
- Marker or pencil
- Flat (standard) screwdriver
- Cable cutter
- Rivet gun

Component Details



Tension Track Lock



Universal Ring (UR): Used at both ends of each basket. Available in diameters from 8" to 60" (2" increments) or 203mm to 1524mm (51mm increments).



Tensioning Basket

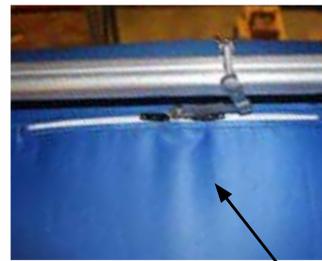


UR Connector



Tensioning Basket Tube with Push Button: 28.5" (724mm) in length to provide 30" (762mm) of spacing between rings. End of tube with push button is shown.

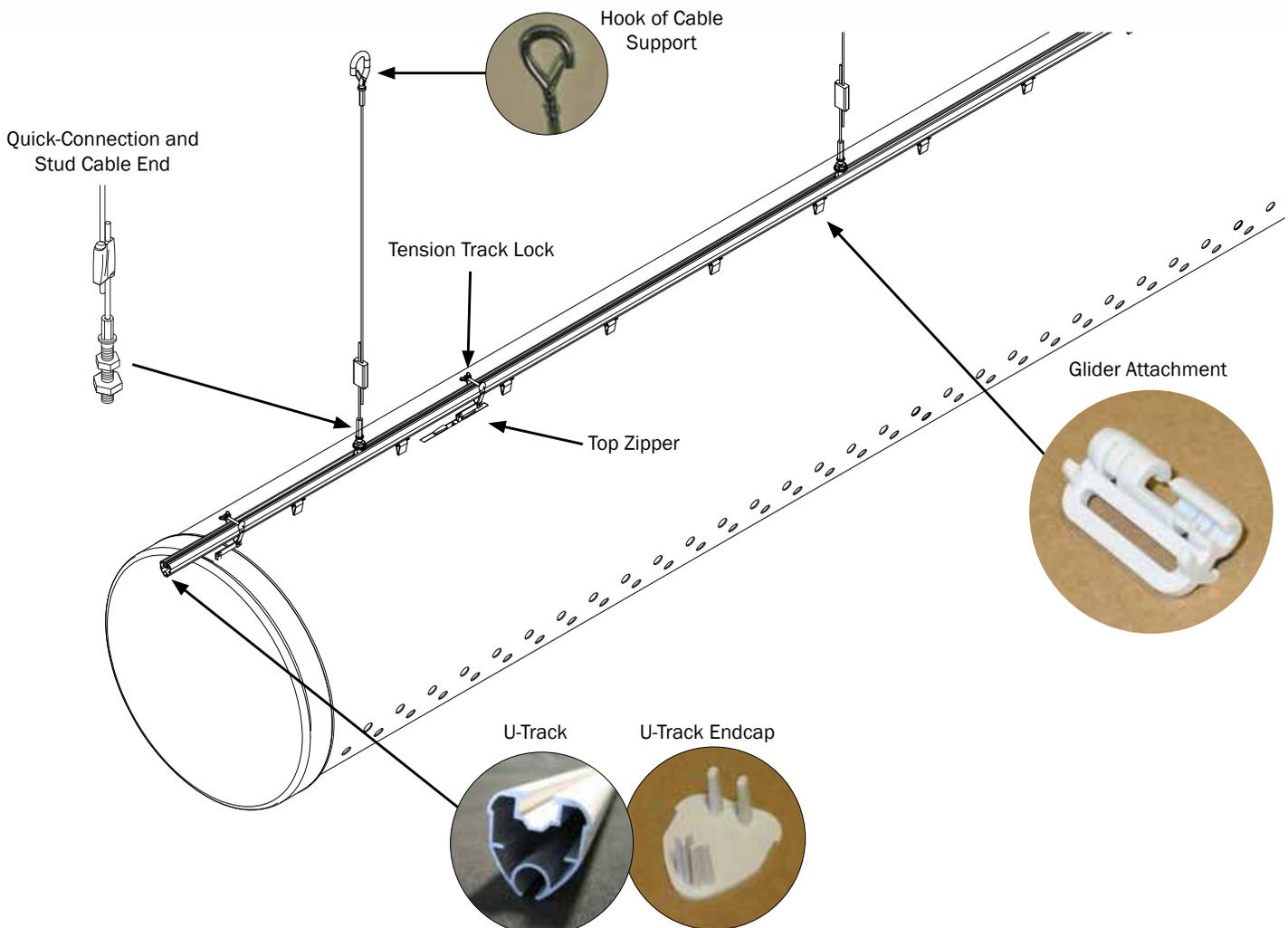
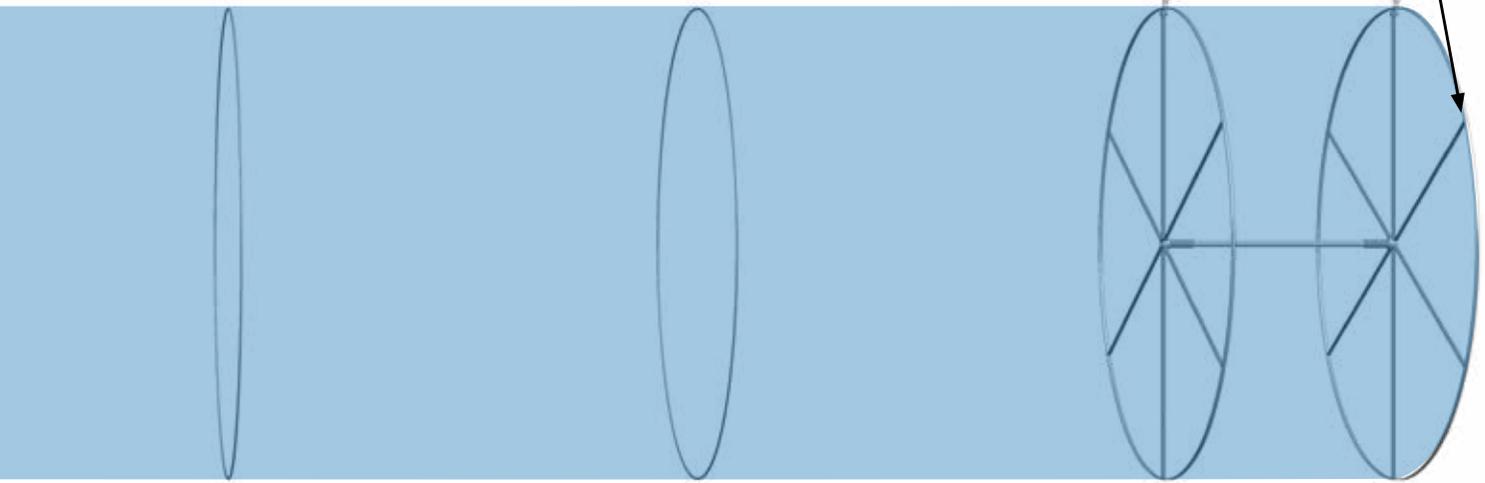
Hoops: Used at 5' (1524mm) intervals in the interior of each tensioned section. Available in diameters from 8" to 60" (2" increments) or 203mm to 1524mm (51mm increments). Hoops are factory installed.



Top Zipper



Tension Clips



Installation Steps

1. Review materials in box, including the CAD drawing and installed location of the DuctSox
2. Prepare metal inlet collar for fabric connection
3. Mark placement and install track
4. Install Pull-Tight components and fabric
5. Start up AHU
6. Balance airflow

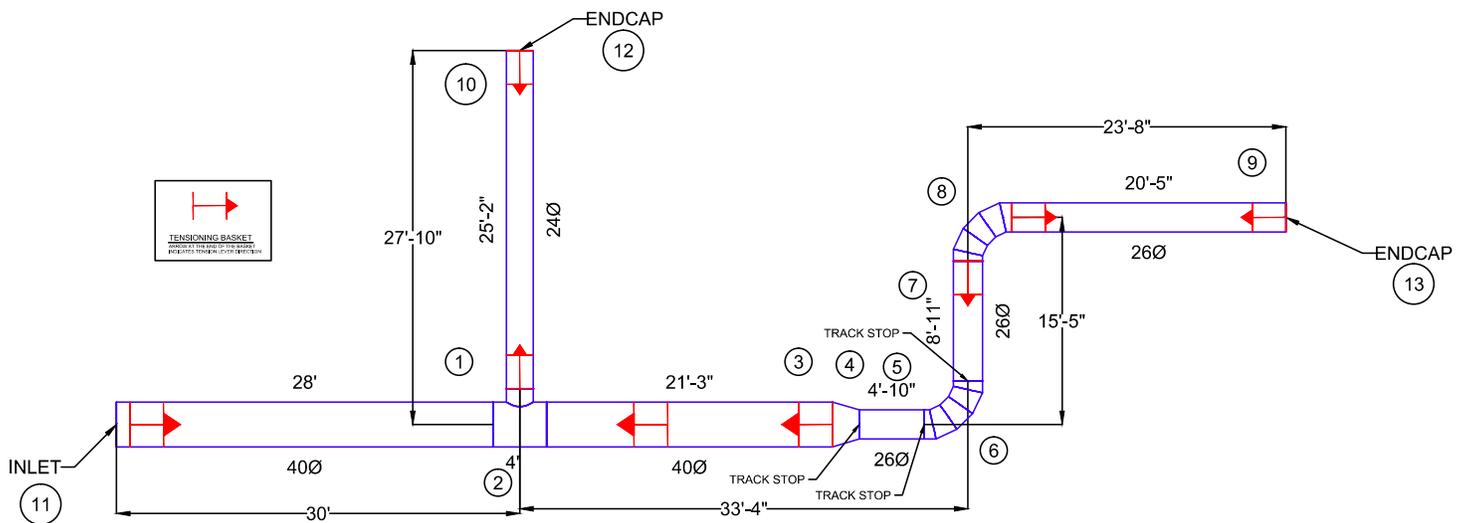
Step 1

Review materials in box, including the project-specific drawing and installed location of the DuctSox.

The Project-Specific Drawings detail the specific locations of Tensioning Baskets and Track Stops using the Inlet Belt as the main reference point.

READ INSTRUCTIONS THOROUGHLY BEFORE BEGINNING.

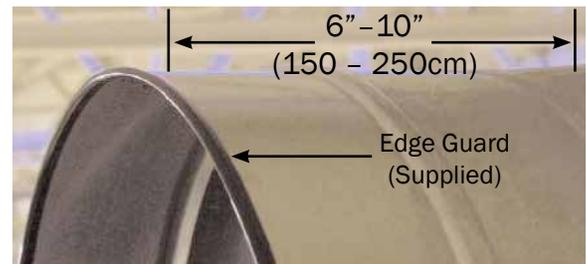
Example Project-Specific Drawing Detail



Step 2

Prepare metal inlet collar for fabric connection.

- Confirm inlet air supply location.
- Confirm inlet air supply size.
- DuctSox inlets are manufactured 1/2" (12mm) larger than specified to fit over metal inlet collar.
- Metal collar length should be 6" to 10" (150 to 250cm) for secure fabric attachment.
- Edge Guard (provided) should be installed on the edge of the metal collar to reduce fabric wear from the metal edge.

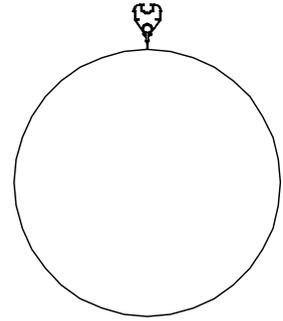


Metal Inlet Collar

Step 3

Mark Placement and Install Track.

Step 3 – 1 Row Style



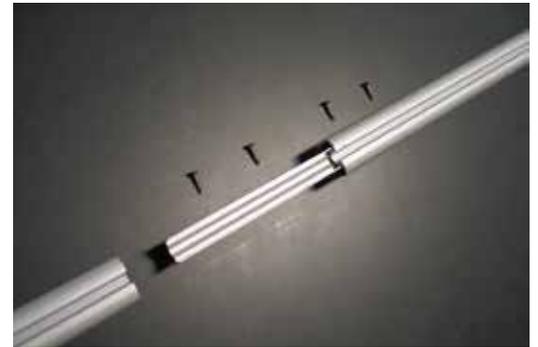
Track and Internal Coupler

Track sections are shipped in 8 ft (2440mm) standard lengths.

Coupler assembly consists of a 12" (305mm) long coupler and 4 self-drilling screws as pictured.



Coupler is inserted into one track about 6" (150mm) and secured with two screws. Screws are driven through the top of the track to secure coupler and track in place. Note: Use screws supplied.

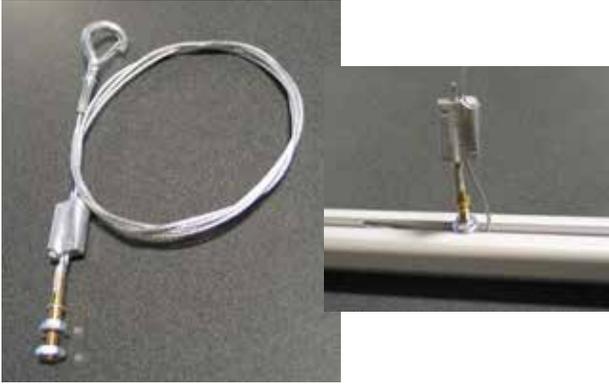


Insert the rest of the coupler into the other track. Be sure to get each section of track as close together as possible so that the coupler is not visible. Secure the coupler in the tracks with two screws for each track.



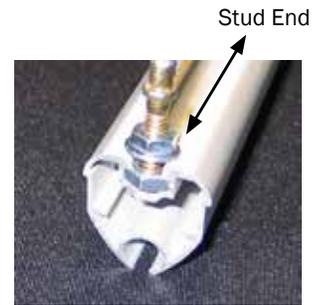
Track supports: Quick-connection or U-Bolt

The Track Supports are the main structural support between the U-track & DuctSox and the structure of the building.



Quick-Connection Track Support Option

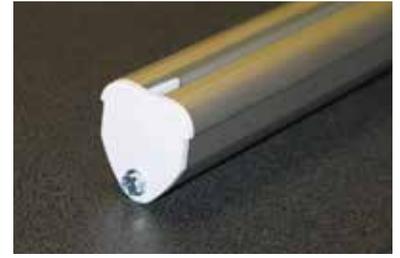
The hook end is attached to structure above the DuctSox. DO NOT loop the hook back onto the cable. This could cause the hook to detach. The hook must be hooked into part of the building structure. For example, an eyebolt attached to the ceiling. The nut on the end of the stud is permanently fixed and is not adjustable. This nut is slid into the top channel of the track. After the stud and cable are in their proper location, the top nut (7/16" wrench) on the stud must be tightened onto the track while holding the stud with a pliers. After adjusting the track height, trim excess cable as needed.



NOTE: Placing track at the proper elevation (this could be an angle for a sloped ceiling) and straightness is critical for a good installation.

Endcap

A U-track Endcap gives the U-track a nice finished look on the cut ends. The Endcap is friction-fit and simply needs to be pressed into place. A sheet metal screw should be used to hold the endcap in place.

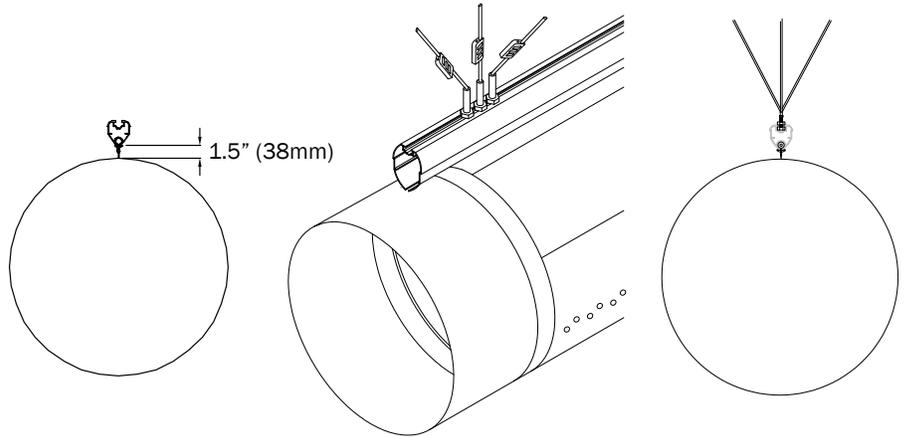


Step 3

Determine placement of track (both track path and elevation).

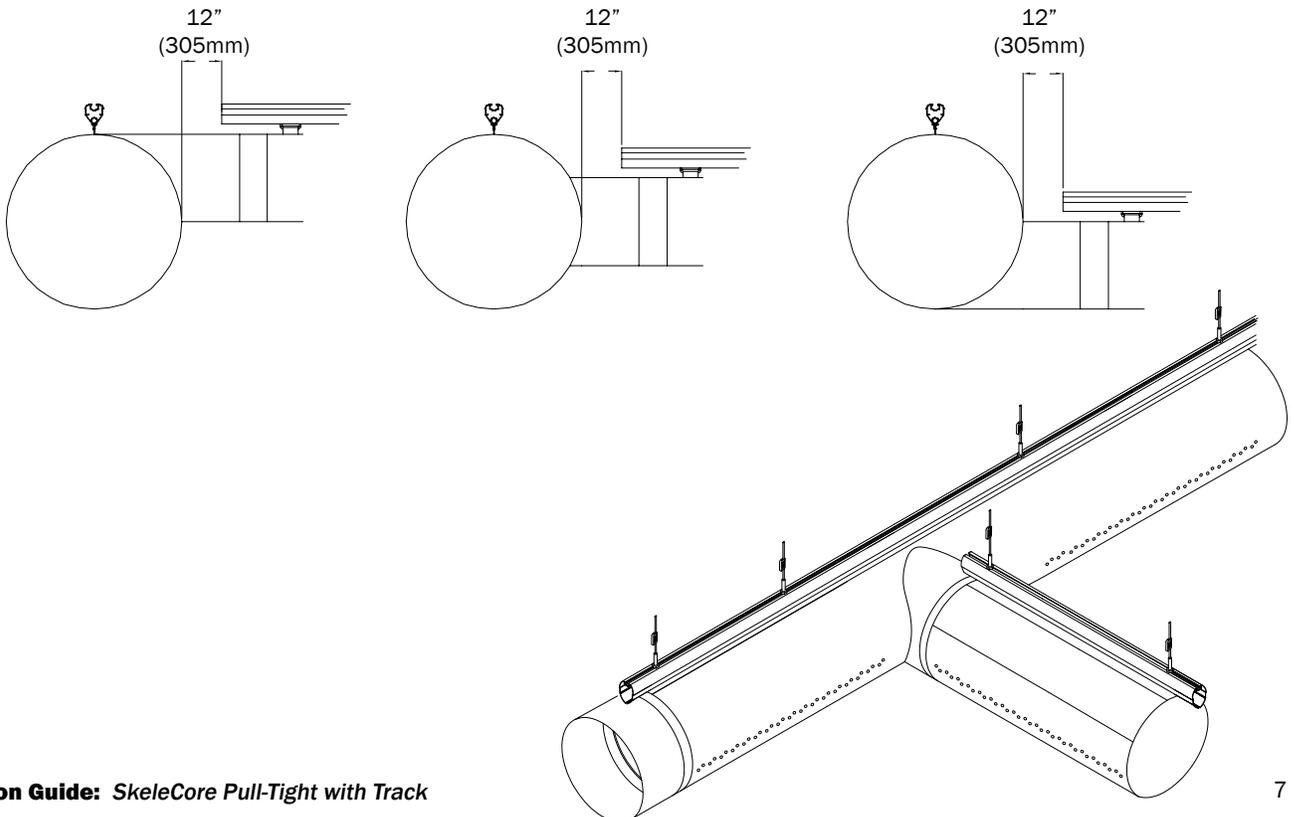
The bottom of the U-Track must be mounted 1.5" (38mm) above the 12:00 location of the DuctSox. Track supports are spaced between 5 to 8 ft (1524 to 2440mm) apart with a maximum of 8 ft (2440mm). Additional Track Supports must also be mounted at both ends of continuous track runs for stabilization

(or as an alternative, the track can be secured by mounting the ends with a threaded rod). The track support cable will need to be mounted at angles away from the sides of the track, along with angled cables in-line with the track. See image above.



T's

There should be roughly 12" (305mm) from sidewall of DuctSox to the start of the branch track. Track that is too close to the main run may cause premature failure due to abrasion from the track. Fabric fittings may require additional track supports. NOTE: The offset distance of branch U-Track from main trunk is approximately half of the main trunk diameter plus 12" (305mm).



Elbows

Radius track is manufactured at the same radius of the DuctSox. This is typically 1.5 times the diameter of the DuctSox. For example, a 24" (610mm) diameter DuctSox would have a radius track with a radius of 36" (915mm).

$$24" \times 1.5 = 36" \quad \text{OR} \quad (610\text{mm} \times 1.5 = 915\text{mm})$$

Install at least one Track Support per radius section (in the center, if possible).

The coupler will not go into the radius track the full 6" or 152mm (and it shouldn't). The coupler must only be inserted into the radius track 1.5" or 38mm. This connection will only use one screw in the radius track portion. There will be 3" or 76mm radius couplers when splicing radius-to-radius connections.

The radius track will only work with DuctSox that are installed in a true horizontal plane (Figure A).

Vertical elbows are supported by D-ring straps rather than radius track (Figure B).

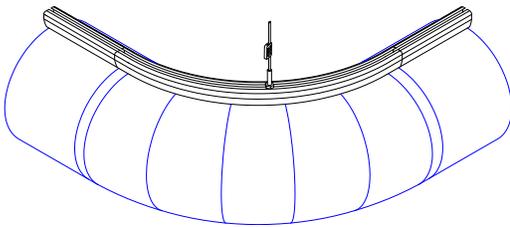


Figure A

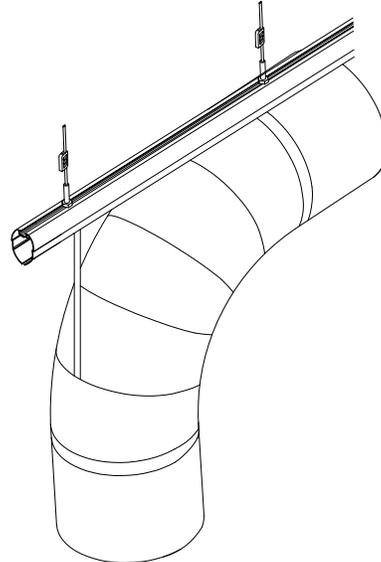


Figure B

Surface Mount Hanging Option

U-Track in the 1-row style can be installed to a ceiling surface by multiple options.

Surface Mount Clip: This is a specially designed clip that snaps to the top of the U-Track. This clip can be mounted straight to the ceiling. After mounting to the ceiling, the U-Track can be pushed up into the clip and fastened in place. U-Track should be supported every 4 to 6 ft (1220 to 1830mm) when used in the Surface Mount Hanging option.



Optional T-Bar Clip: A T-Bar clip is riveted (by the installing contractor) to the Surface Mount clip. The U-Track is snapped to the Surface Mount clip and the bottom of the T-Bar ceiling support.



STEP 4

Install Tensioning Baskets and Fabric. Tensioned Sections must be completed in succession moving away from the Inlet Belt.

Overview of Step 4:

- A. Install fabric Inlet Belt onto metal collar
- B. Install Tensioning Basket
- C. Using Project-Specific Drawing, install the balance of Tensioning Baskets and fabric
- D. Tension fabric
- E. Fitting considerations

A. Install fabric Inlet Belt onto metal collar.

The DuctSox Inlet must be attached to the metal collar using screws (not included) through plastic patches on the Inlet Belt. Be sure to locate the zipper start and seam at the 12:00 orientation for proper alignment.

B. Install first section of DuctSox fabric and Tensioning Basket at the Inlet Belt.

Rivet the UR Connector to the Universal Ring. This assembly may already be completed for you by DuctSox factory.

Rivet the Tension Track Lock to 12:00 of the Universal Ring (2x). Each one in opposite directions.

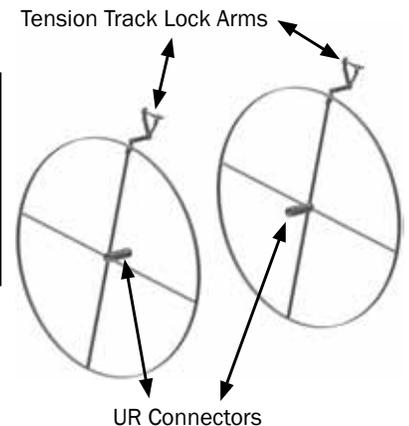
NOTE: When the Tensioning Basket is assembled, the UR Connectors point towards each other. The Tension Track Lock Arms point in the same direction towards the fabric section being tensioned (see drawing on page 10 for clarification).
WARNING: If this is done incorrectly, the system WILL NOT TENSION.

Install the Universal Ring assembly on the track (2x). (Through the fabric and zipper where required.) The arm of the Track Lock will point towards the section being tensioned.

Finish the basket by connecting the two Universal Ring assemblies with the basket tube.



Inlet Patch



Install Universal Ring Assembly on Track



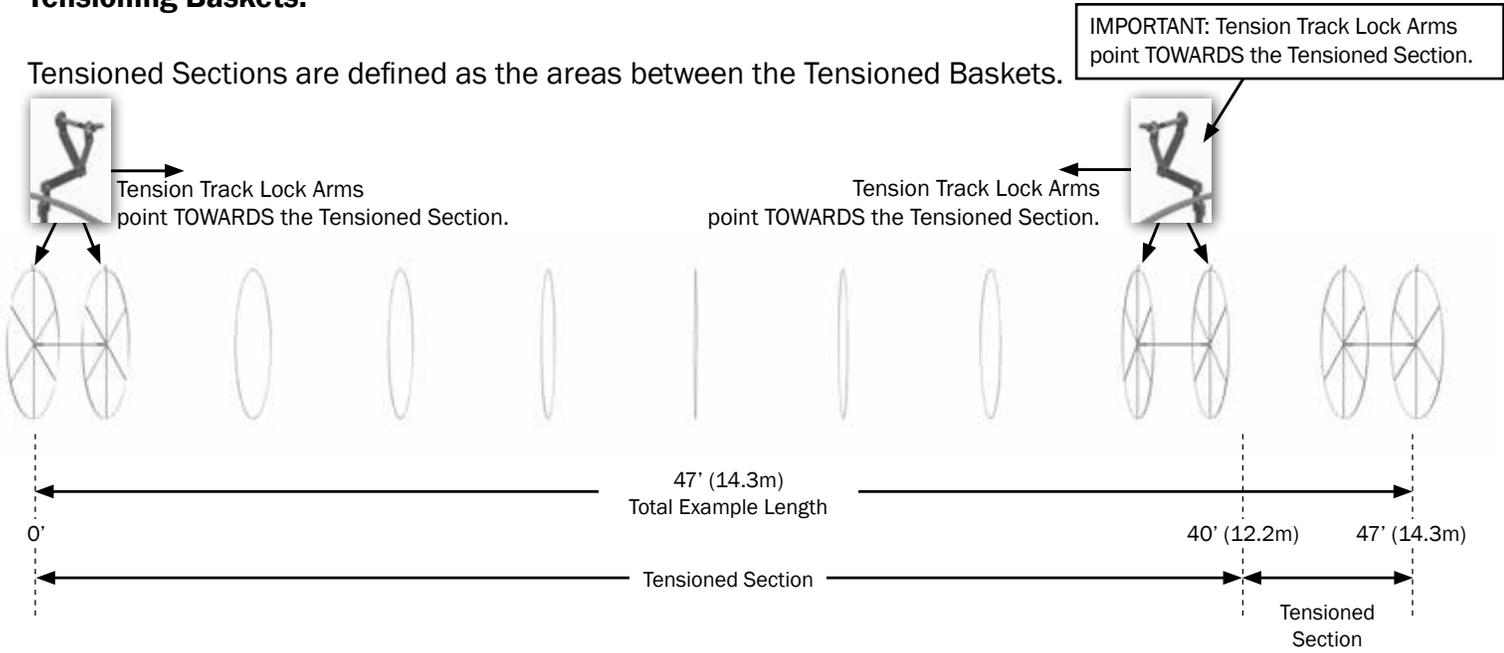
Top zipper, open (Note: In photo, tensioned section is on the right.)



Finish Basket with Basket Tube

C. Using Project-Specific Drawings, identify placement of the balance of SkeleCore Pull-Tight Tensioning Baskets.

Tensioned Sections are defined as the areas between the Tensioned Baskets.



Install the Fabric.

Slide Glider attachments of the DuctSox into the U-track bottom channel. Unzip fittings and slide them in place independently of the straight sections. Tensioning Baskets are installed at the Inlet, Endcap, Elbows, Reducers, and intermediate points of longer sections. **BE SURE TO REVIEW THE PROJECT-SPECIFIC DRAWINGS FOR ALL EXACT LOCATIONS.**



The Track Stop is used to keep shorter sections of DuctSox under slight tension. The screw is tightened into the bottom channel to lock the stop at locations where Gliders are to be locked in place.

Locations of Track Stops (if any) can found on the project-specific drawings.



Track Stop Screw

Attach the Tension Clips of the fabric to the Tensioning Basket. Complete the connection by zipping the duct to the Inlet Belt.

To complete the first Tensioned Section, repeat the process as required to complete the rest of the system. Make sure all top zippers are closed before completing the system. See photo below.



Tension Clips in System



Top Zipper, Open



Top Zipper, Closed

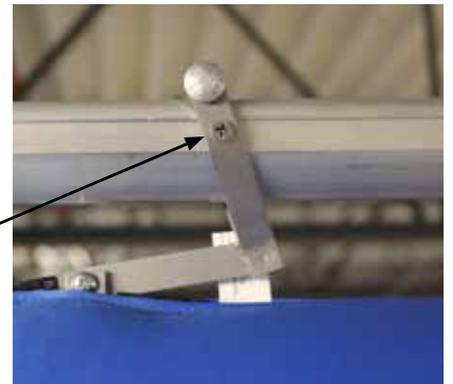
D. Tension Fabric.



Pull back on Tensioning Basket

The amount of take-up will vary based on the length of the Tensioned Section. As tension is applied, wiggle your DuctSox to evenly distribute fabric tensioning over entire length. Tension the fabric until the desired roundness and tautness of the fabric is achieved.

After tensioning is complete, lock the Tension Track Lock in place with a sheet metal screw (contractor supplied).



Sheet Metal Screw



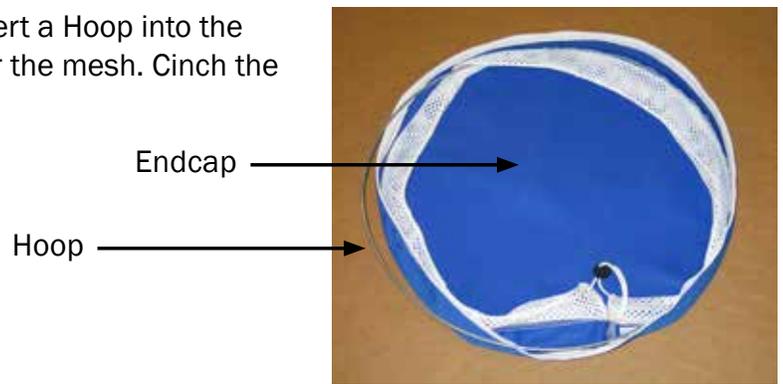
Before Tensioning



After Tensioning

If your section ends with an Endcap, follow these additional instructions.

IMPORTANT: Before installing the Endcap, insert a Hoop into the mesh flap of the Endcap. Tuck the Hoop under the mesh. Cinch the rope tight and lock.



Take the Endcap and install it on the corresponding Tensioning Basket.

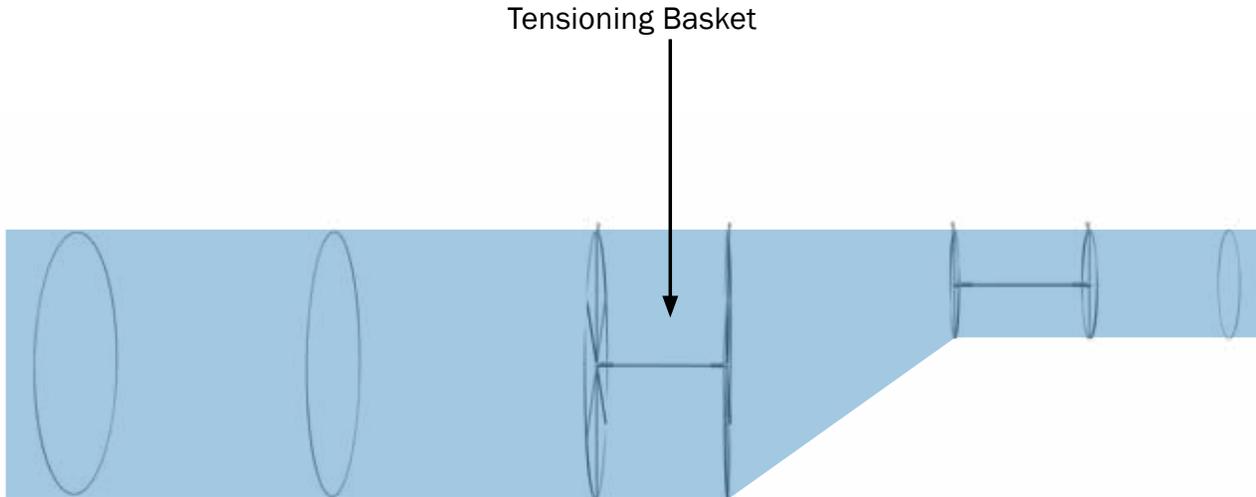


E-1. Fitting Considerations: Reducer or Elbow.

A Fitting is placed between two Tensioned Sections.

1. Reference the drawing to determine important dimensions for installation of Tensioning Baskets for Fittings.
2. Install and tension the DuctSox section prior to (up stream) of the Fitting.
3. Measure and place the downstream Tensioning Basket.
4. Zip fabric fitting in place after adjacent Tensioning Baskets are secured.

Reducer Illustrated View



E-2. Fitting Considerations: Take-Offs.

1. The main section of a Take-Off is tensioned in-line with the sections before and after this Fitting. The section before a Take-Off, the Take-Off, and the section after a Take-Off are one continuous tensioned section.
2. Install the Tensioning Basket at the branch of the Take-Off fitting just as the Tensioning Basket at the Inlet was installed.
3. Please refer to the project-specific drawings for basket locations.

E-3. Fitting Considerations: Fitting-to-Fitting Connection

Fitting-to-fitting connections will be detailed on the Project-Specific Drawings. Use these details for this installation.

Step 5

Start Up AHU. Turn on the AHU and inflate the DuctSox System. Check Top Zippers and sections to ensure system is inflating properly. If lengths do not fit properly, double check all field measurements and compare to drawings. If all measurements are correct, contact your DuctSox Representative to discuss options.

Failure to install DuctSox Systems correctly may void warranty.

Step 6

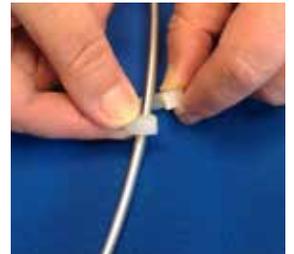
Air Balancing. System must be balanced to design CFM and static pressure immediately after installation.

A zipper at the inlet location provides easy access to monitor airflow.

If the fabric is fluttering after balancing, please contact your DuctSox Representative immediately. Solutions to the fluttering include adjusting the Adjustable Flow Device (AFD), adding AFDs, or other solutions that would result in a less turbulent airflow.

Laundering Instructions

- Remove the DuctSox fabric from your system, being sure to unzip all sections. Take care in recording where each section was installed.
- Remove the hoops from the DuctSox system by simply twisting the attachment sideways. *Note: the hoop attachment only slides one way.*
- Turn soiled side out and soak in cold water for 30 minutes.
- Wash cold in gentle cycle.
- Rinse thoroughly (repeat cycle if rinse water is dirty or DuctSox are still soiled).
- Drip dry or no-heat tumble dry.





If any questions arise regarding the installation of your SkeleCore Pull-Tight with Track, contact us.

866-382-8769 or 563-588-5300

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