

Thank you for selecting a DuctSox SkeleCore Pull-Tight with Cable System. This installation manual 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.

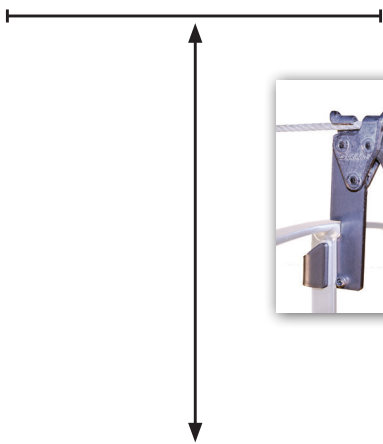
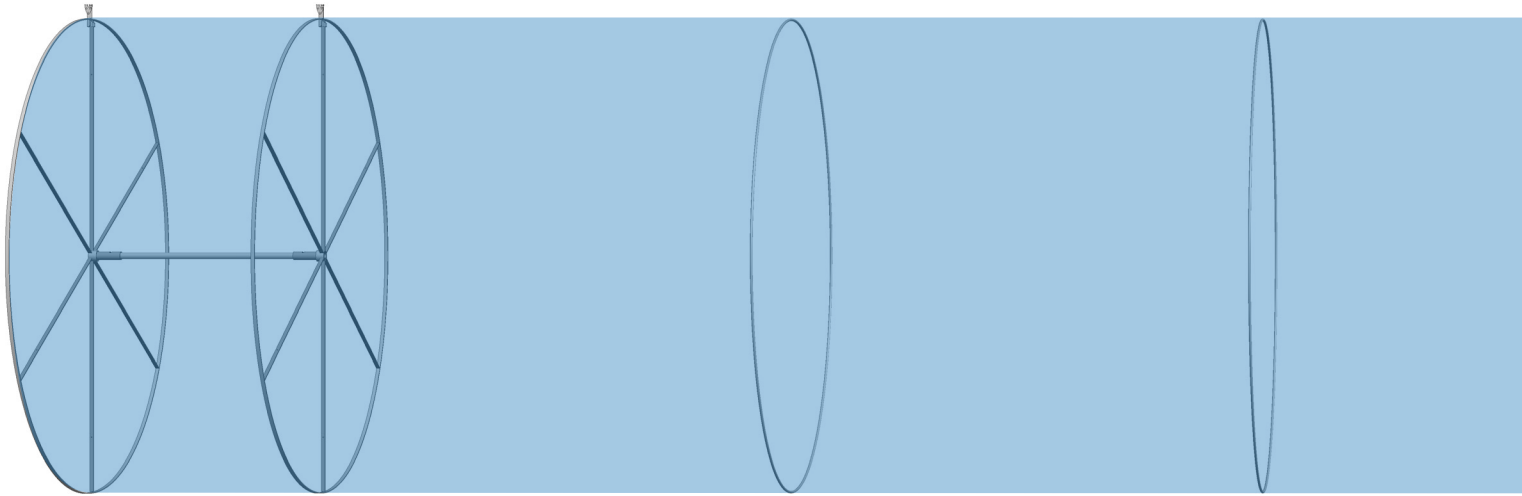
Labeling

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.

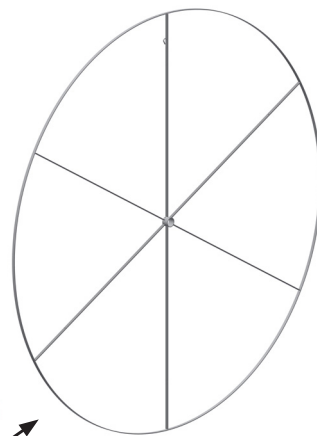
Equipment Required:

- Drill
- Level
- Tape measure
- Marker or pencil
- Wrenches for cable clamps and eye bolts (5/16 in and 9/16 in)
- Flat (standard) screwdriver
- Cable cutter
- Rivet gun

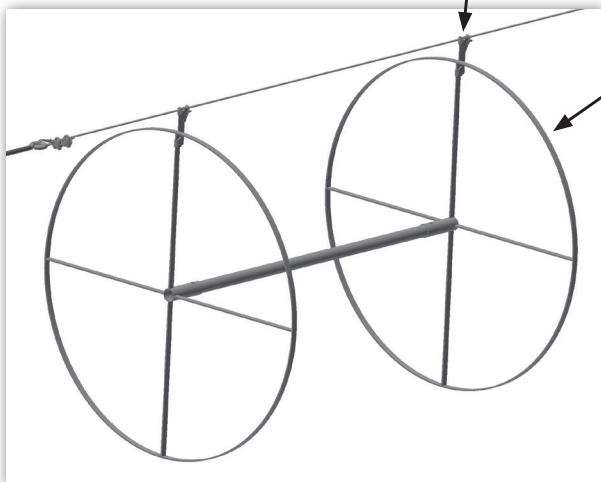
Component Details



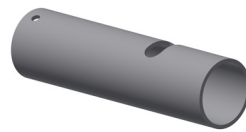
Tension Cable Lock



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



Tension Basket

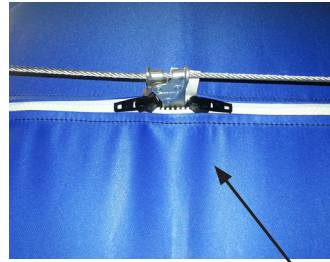


UR Connector

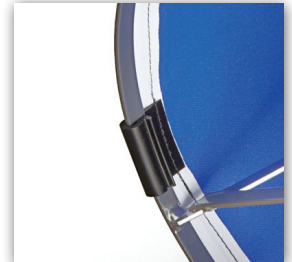


Tension Basket Tube with Push Button: 28.5 in (724 mm) in length to provide 30 in (762 mm) of spacing between rings. End of tube with push button is shown.

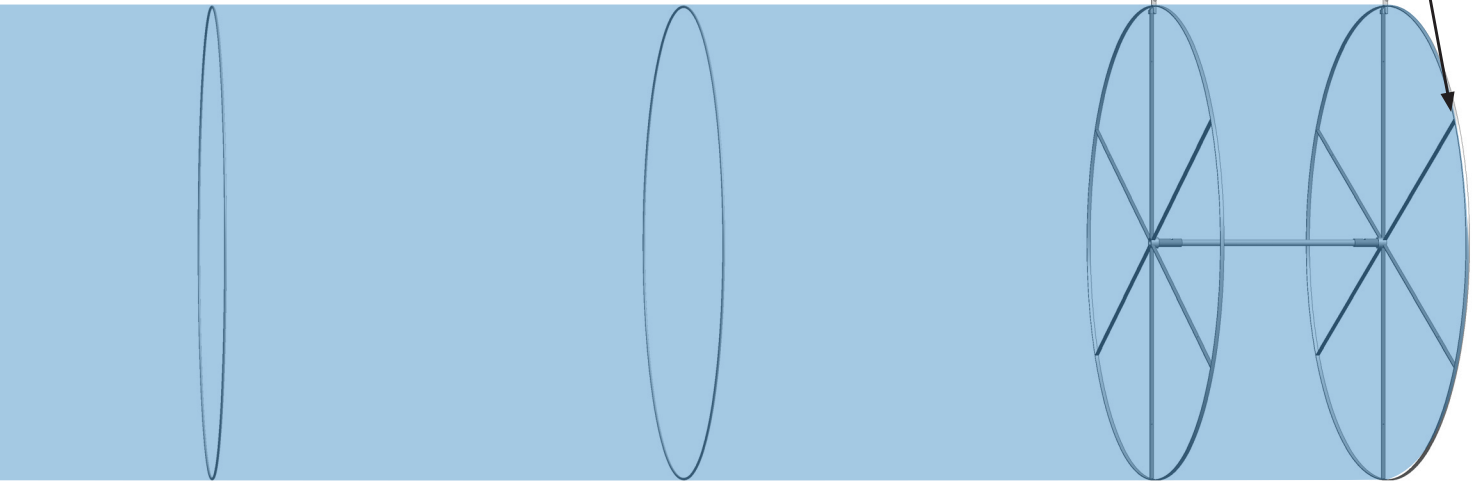
Hoops: Used at 5 ft (1524 mm) intervals in the interior of each tensioned section. Available in diameters from 8 in to 60 in (2 in increments) or 203 mm to 1524 mm (51 mm increments). Hoops are factory installed.



Top Zipper



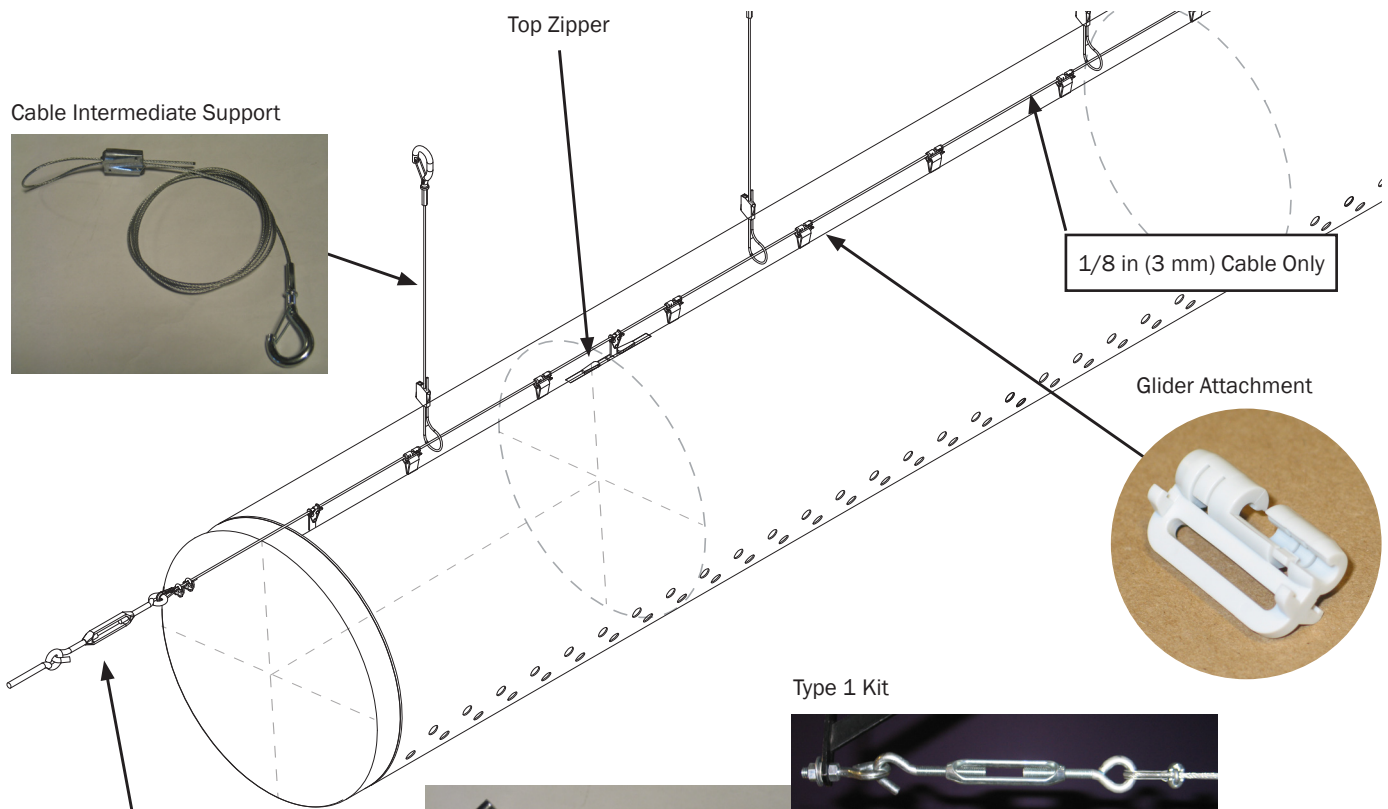
Tension Clips



Cable Intermediate Support



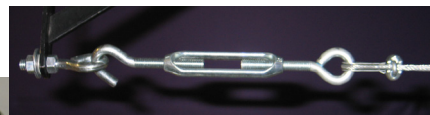
Top Zipper



1/8 in (3 mm) Cable Only

Glider Attachment

Type 1 Kit



Gripper Turnbuckle Kit



Installation Steps

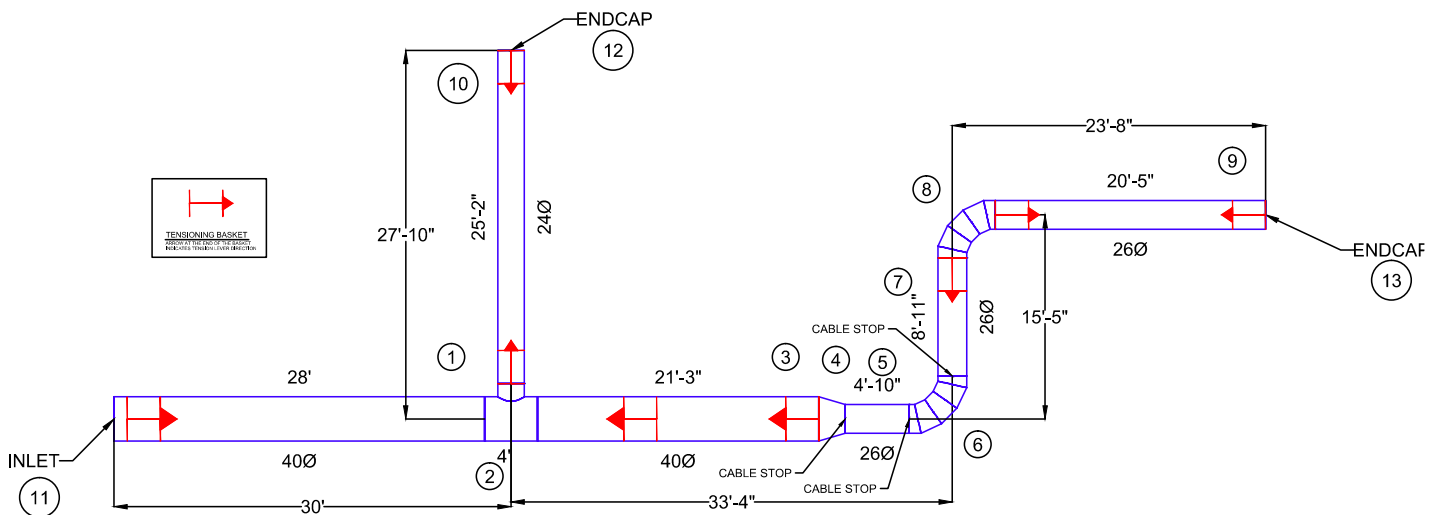
1. Review materials in box, including the CAD drawing and installed location of the DuctSox
2. Prepare metal inlet collar for fabric connection
3. Mark placement and install cable. (3x1 or 4x2)
4. Install and assemble DuctSox components
5. Start up AHU
6. Balance airflow

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 Cable Stops using the Inlet Belt as the main reference point.

READ INSTRUCTIONS THOROUGHLY BEFORE BEGINNING.

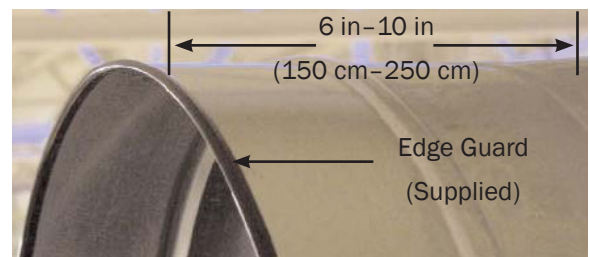
Example Project-Specific Drawing Detail



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 in (12 mm) larger than specified to fit over metal inlet collar.
- Metal collar length should be 6 in–10 in (150 cm to 250 cm) 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.



The following details are used for Galvanized Cable styles.

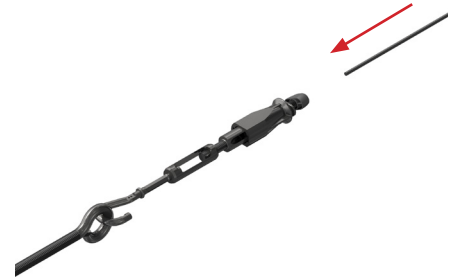
1. Eyebolts must be fastened to the structure of the building (including knee braces) by others. They must be fastened in correct locations according to suspension style (Shown in each suspension style's section).



2. Hook Gripple® Turnbuckles to the installed eyebolts.



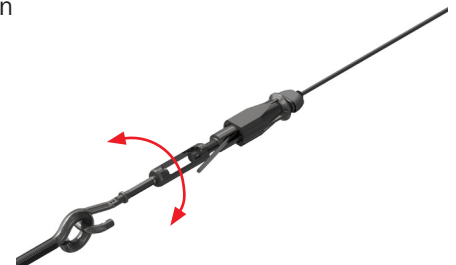
3. Insert cable into the plastic end of the Gripple® Turnbuckle and push/pull it through the opening on the side of the Gripple® Turnbuckle.



Note: To release the cable hold in the plastic button and slide the turnbuckle. To lock the button twist the plastic until tight.



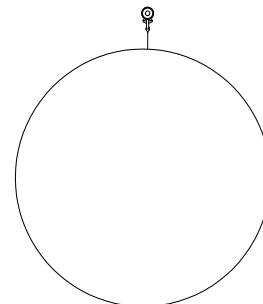
4. Tighten the cable to 100 lb (445 Newtons) tension by pulling the cable tight and then twisting the turnbuckles. Clip extra cable when finished, leaving about 3 in (76 mm) of cable extending through the side the Gripple Turnbuckle.



Step 3

Mark Placement and Install Cable.

Step 3 – 1 Row Style



The following details about Type 1 and Type 2 Kits are used for SS and Impregnated Cable styles.

Type 1 and Type 2 Kits

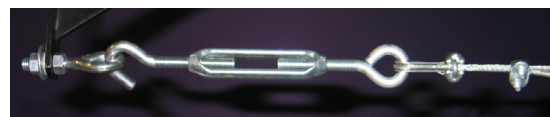
Type 1 and Type 2 kits are for straight runs of cable:

- Type 1: 50 ft (15250 mm) or less
- Type 2: 50 ft to 100 ft (15250 mm to 30500 mm)
- For systems over 100 ft (30500 mm), a combination of the kits should be used.

These kits include one 6 in (153 mm) turnbuckle (two for Type 2), two eyebolts, two cable thimbles, and four cable clamps.

Eye bolts must be fastened into the structure of the building by others (this could include knee braces).

Cable is fastened directly to an eyebolt with a thimble and two cable clamps. Take the cable end and thread two cable clamps onto it. Now hook the thimble onto the eyebolt. Next, thread the cable onto the thimble and through the eyebolts (cable clamps are still on the cable). Now thread the cable back into the cable clamps and tighten them.



Cable is then fastened directly to the turnbuckle with a thimble and two cable clamps. Slack in the cable is taken up by the turnbuckle. If cable is still too loose after tightening the turnbuckle, loosen the cable, re-fasten cable to turnbuckle at a tighter position, and re-tighten the turnbuckle. Do not over-tighten the turnbuckle, we recommend no more than 100 lbs (445 Newtons) of tensile force.

Intermediate Support Cable

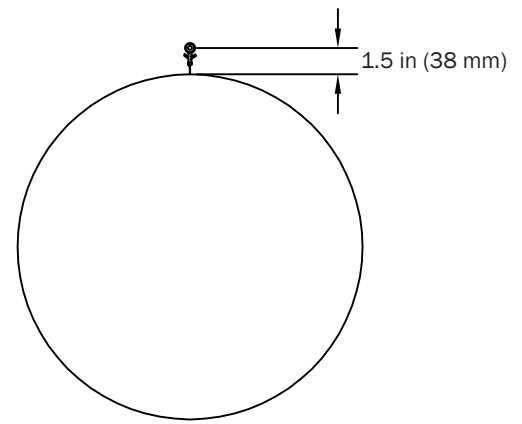
Installed every 12.5 ft (3810 mm) or less to keep the DuctSox installed at a consistent elevation (reduces sag of the cable).



Galvanized and SS

Step 3

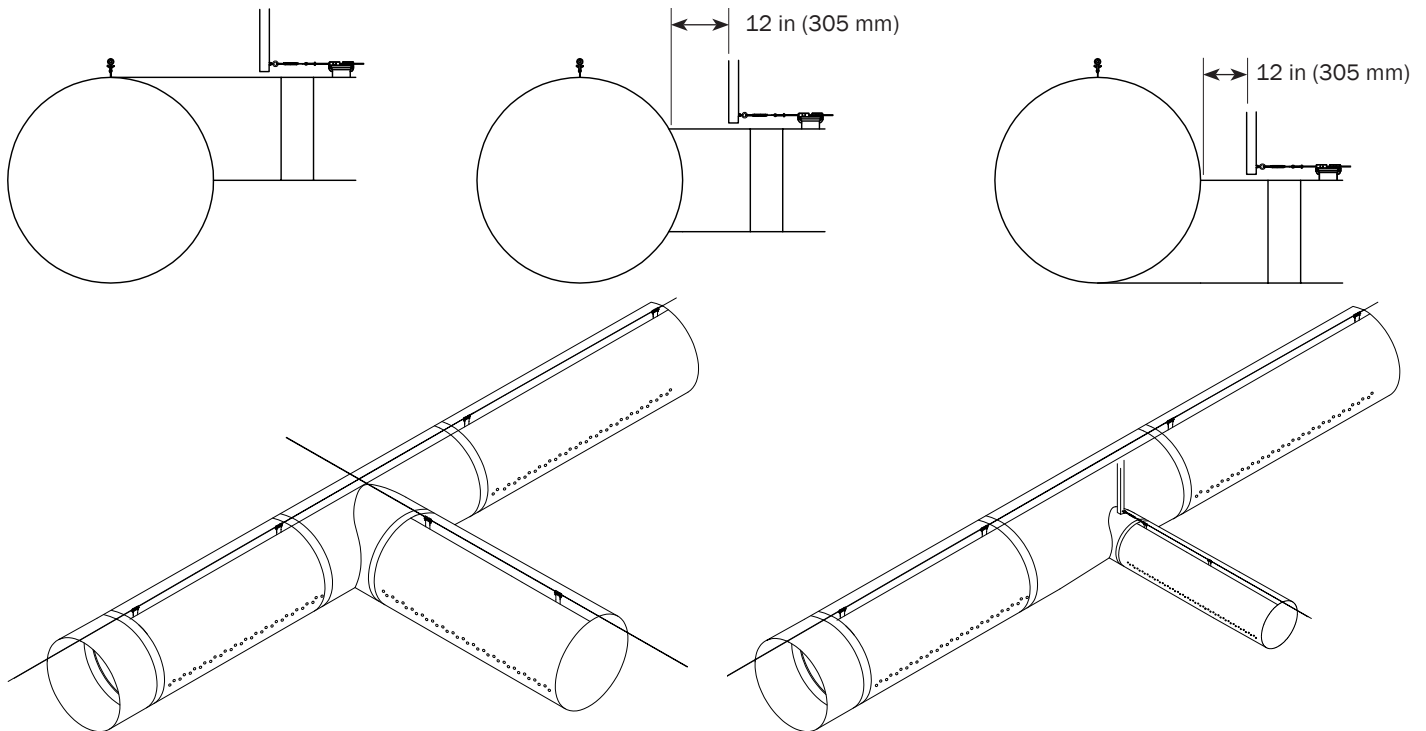
Determine placement of cable (both cable path and elevation). The cable must be mounted 1.5 in (38 mm) above the 12:00 location of the DuctSox. Intermediate Cable supports are spaced no more than 12.5 ft (3810 mm).



T's

There should be roughly 12 in (305 mm) from sidewall of DuctSox to the closest edge of any knee-bracing. Structure too close to the main run may cause premature failure due to abrasion from the structure.

NOTE: Offset distance of branch knee-brace from main trunk is approximately half of the main trunk diameter plus 12 in (305 mm).



Elbows

Extended straps on heels of elbows are provided for support to cable suspension (Figure A). Vertical elbows are also supported by extended straps (Figure B).

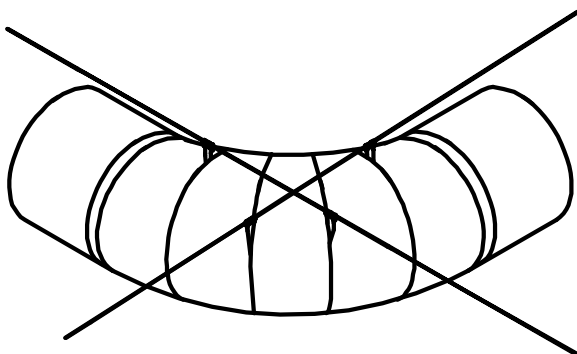


Figure A

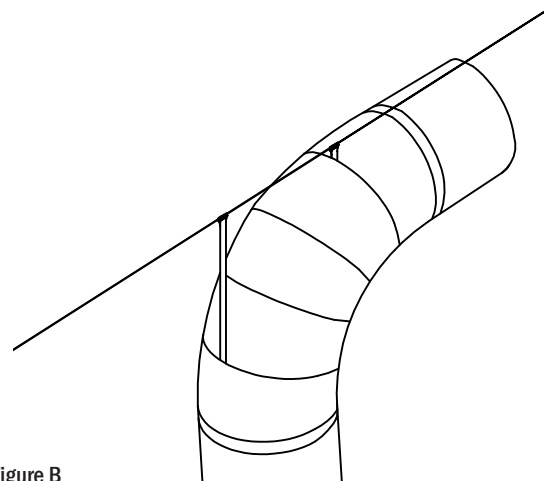


Figure B

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.

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.

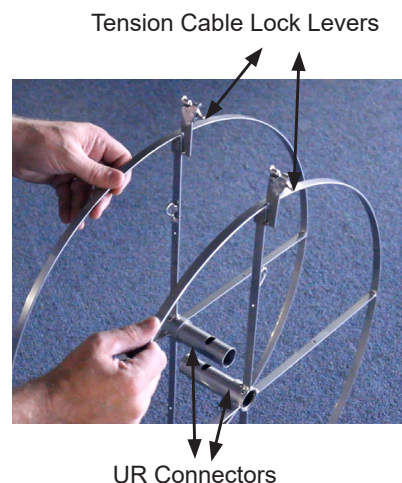
B. Install first section of DuctSox fabric and Tensioning Basket at Inlet Belt.

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

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



Inlet Patch



Tension Cable Lock Levers

UR Connectors

NOTE: When the Tensioning Basket is assembled, the UR Connectors point towards each other. The Tension Cable Lock Levers point in the same direction towards the fabric section being tensioned (see drawing on page 8 for clarification).

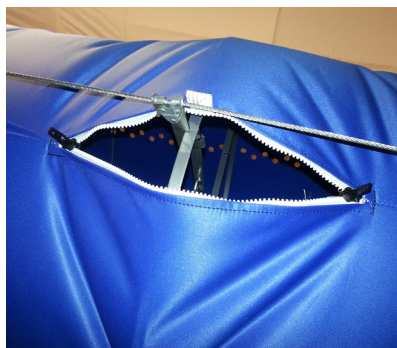
WARNING: If this is done incorrectly, the system WILL NOT TENSION.

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

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



Install Universal Ring Assembly on Cable



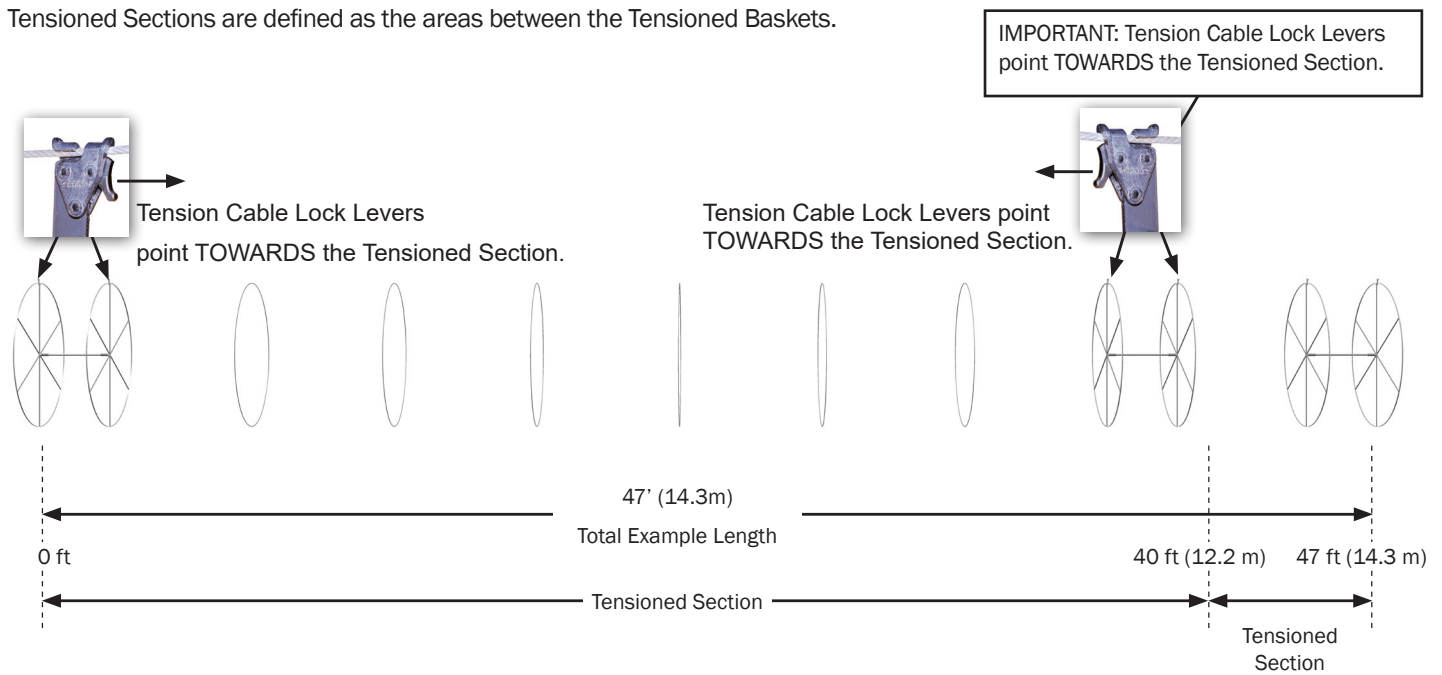
Top zipper, open



Finish Basket with UR Connector

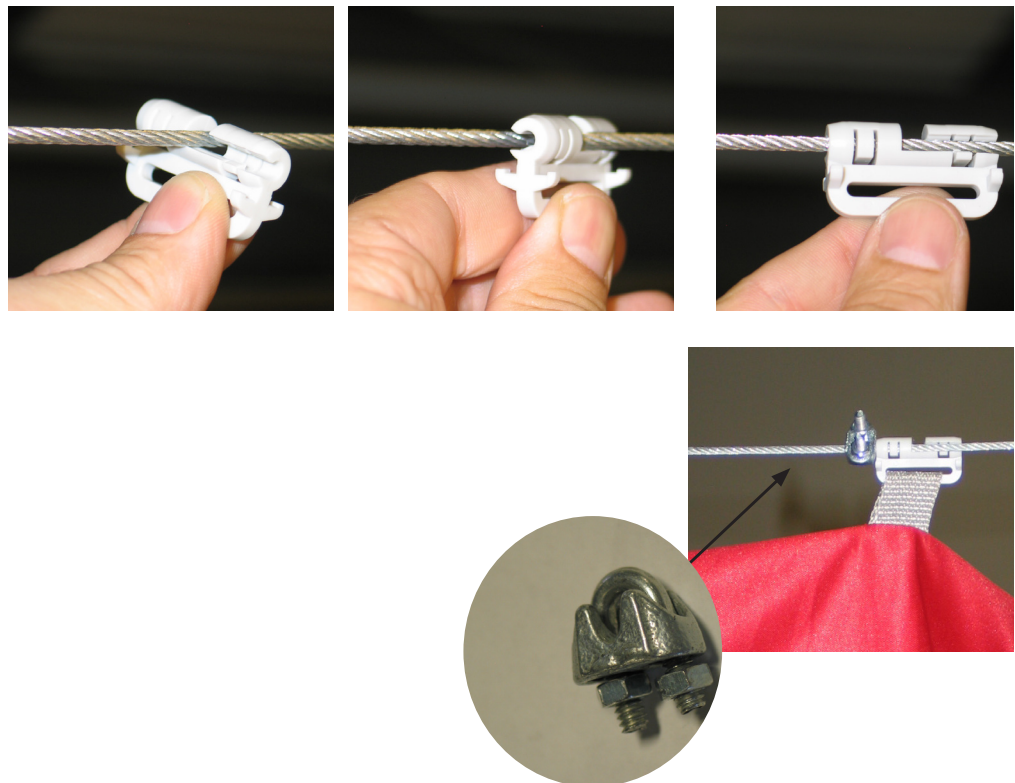
C. Using Project-Specific Drawings, identify placement of the balance of SkeleCore Pull-Tight Tensioning Baskets.

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



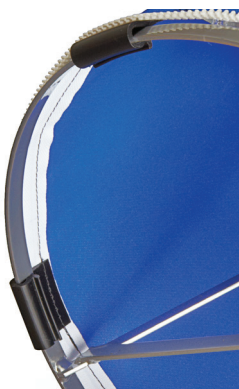
Twist and snap the Glider attachments of the DuctSox onto the cable (pliers may be helpful for installation and removal of Gliders). Unzip fittings and slide them in place independently of the straight sections. Tensioning Baskets are installed at the Inlet, Endcap, Elbows, Reducers, and intermediate points of longer sections. **BE SURE TO REVIEW THE PROJECT-SPECIFIC DRAWINGS FOR ALL EXACT LOCATIONS.**

The Cable Stop is used to keep shorter sections of DuctSox under slight tension. Nuts are tightened to lock the stop at locations where Gliders are to be locked in place (see Step 5). Locations of Cable Stops (if any) can be found on the project-specific drawings.

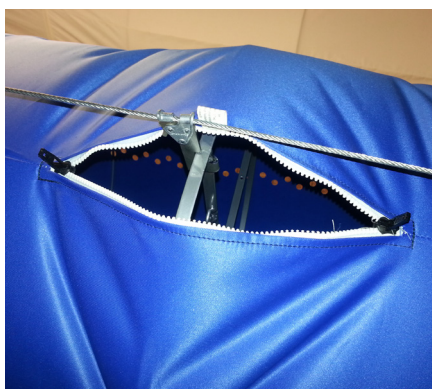


Attach the Tension Clips of the fabric to the Tensioning Basket. Complete the connection by zipping the duct to the Inlet Belt.

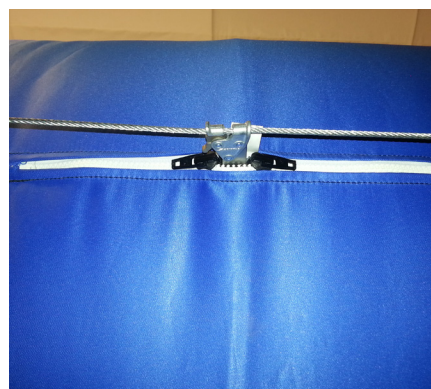
To complete the first Tensioned Section, repeat the process going in the other direction, after you zipper the two sections of fabric together.



Tension Clips in System



Top Zipper, Open



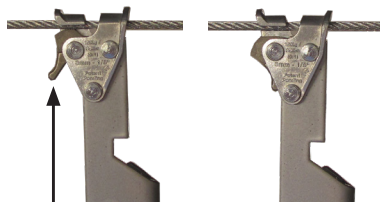
Top Zipper, Closed

D. Tension Fabric.

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.



Pull back on Tensioning Basket



Lever Engaged

INCORRECT



Before Tensioning

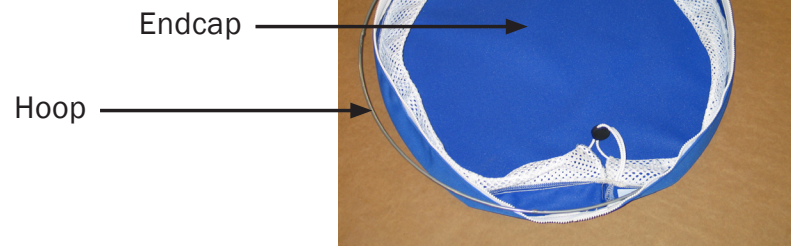


After Tensioning

NOTE: Make sure the lock lever is engaged prior to pulling back on basket.

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.



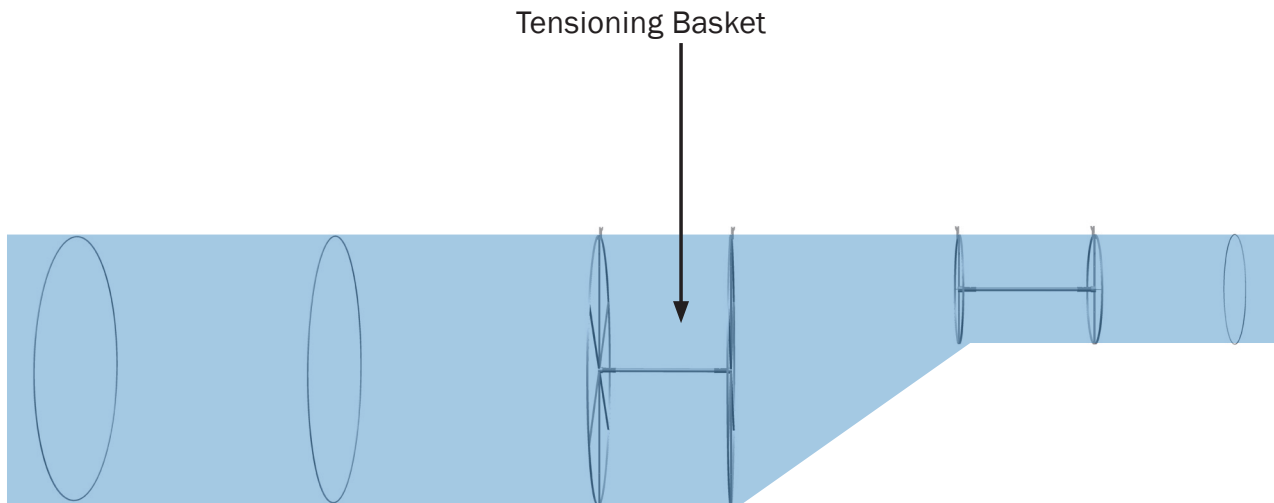
Take the Endcap and install it on the corresponding Tensioning Basket.



E-1. Fitting Considerations: Reducer or Elbow.

Fitting is placed between two Tensioned Sections.

1. Reference the drawing to determine important dimensions for installation of Fitting Tensioning Baskets.
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

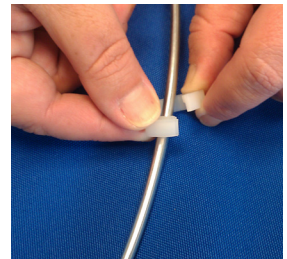
Air Balancing. System must be balanced to design CFM and static pressure immediately after installation.

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


- Sedona-Xm, TufTex, Verona, DuraTex, Microbe-X, Rx, and Stat-X fabrics:
- 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.



CUSTOMER SERVICE

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