

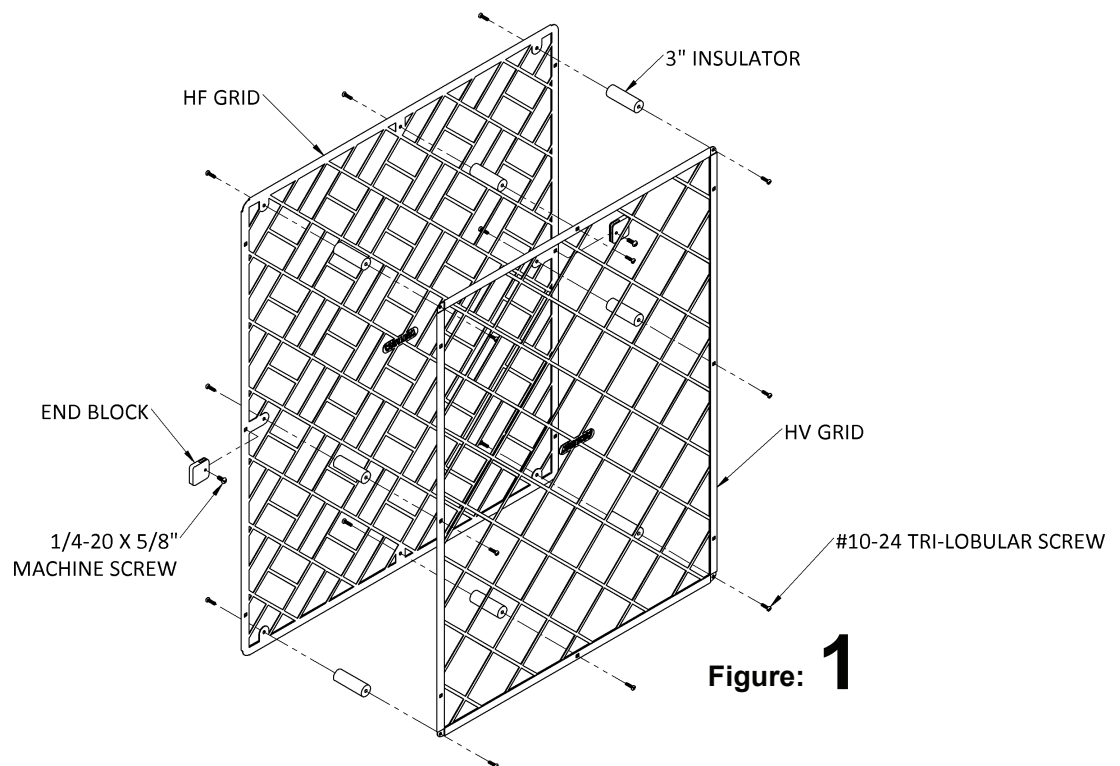
MECHANICAL INSTALLATION PROCEDURES for Custom Grids and Support Framing

General

The CosaTron Custom Grids are located within the air-handling plenum. Therefore, an airtight access door of adequate size must be provided by the contractor for installation, periodic maintenance and service. This access door must provide a minimum of 12" (30.5 cm) wide access with the height dependent upon the height of the custom grid assembly. **Note:** If an alternate physical access is available for installation, an 8" (20.1 cm) wide access for maintenance, service and testing of grid(s) is acceptable.

Assembly of Custom Grid(s)

The CosaTron grid(s) are custom made to fit the inside clear dimensions of the plenum where they are to be installed by the contractor. The grid assemblies are shipped unassembled. Each grid set consists of one high-voltage (HV) grid, one larger high-frequency (HF) grid, a minimum of four insulators and the necessary end blocks and screws for assembly as shown in Figure 1.



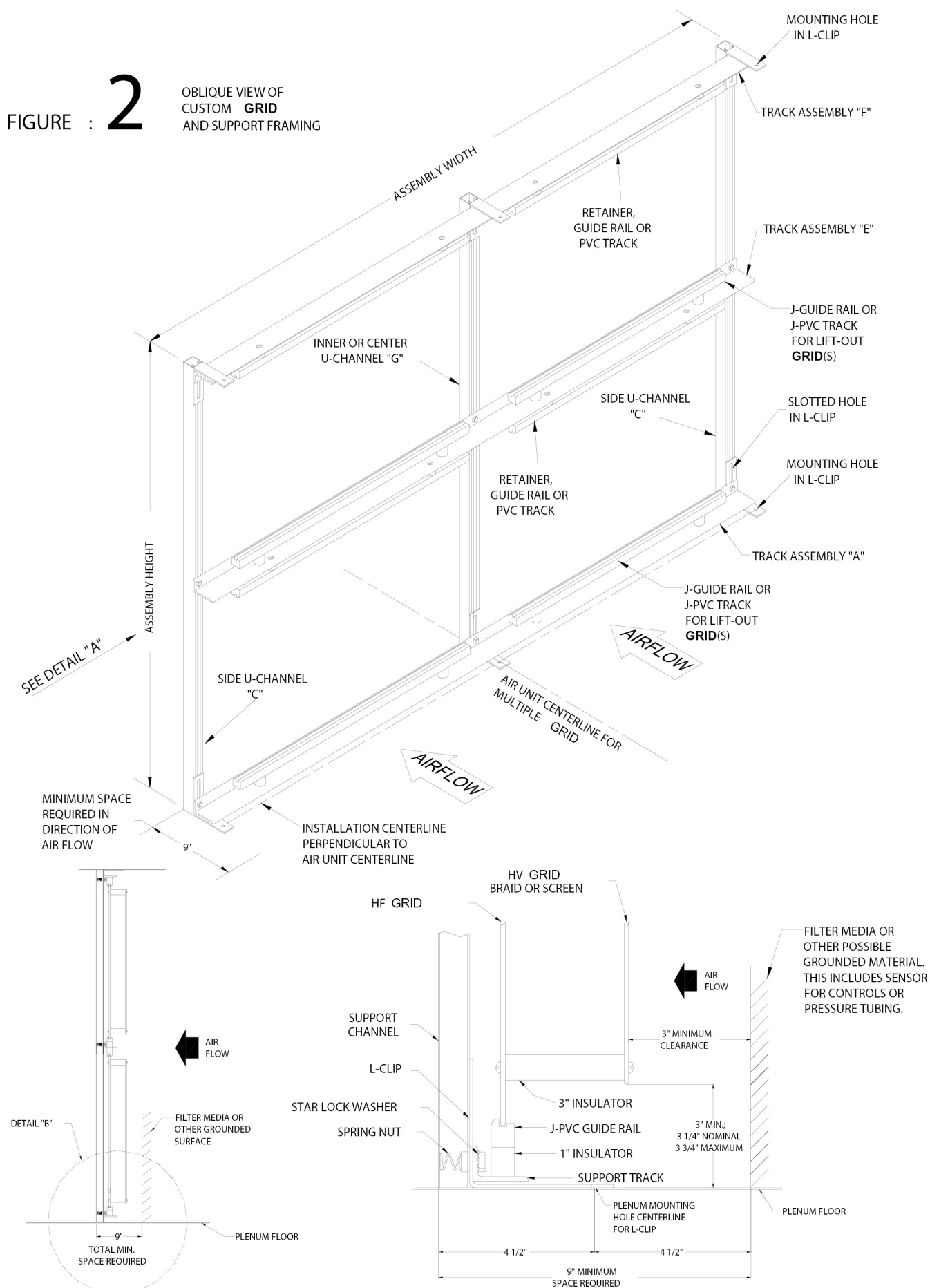
To assemble,

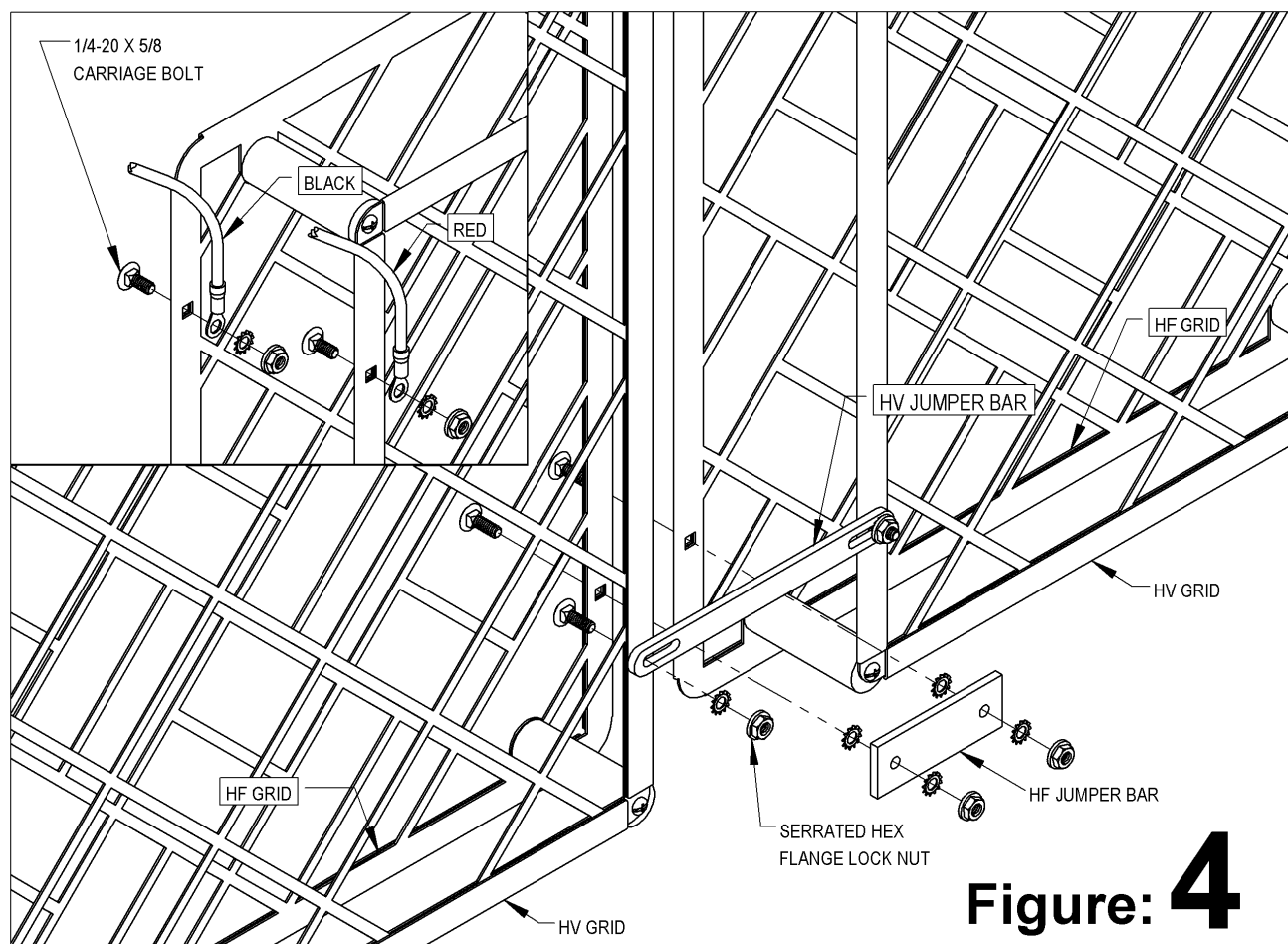
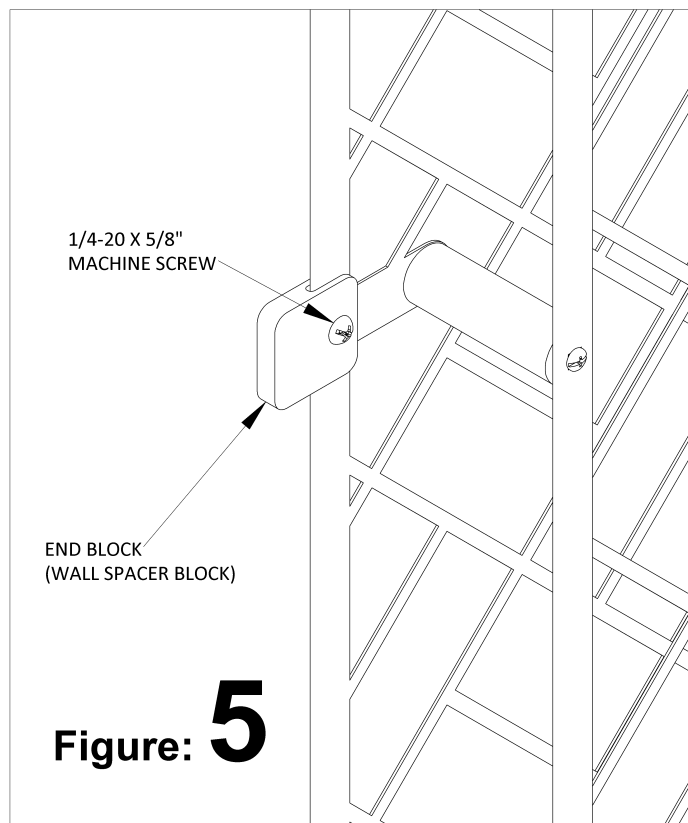
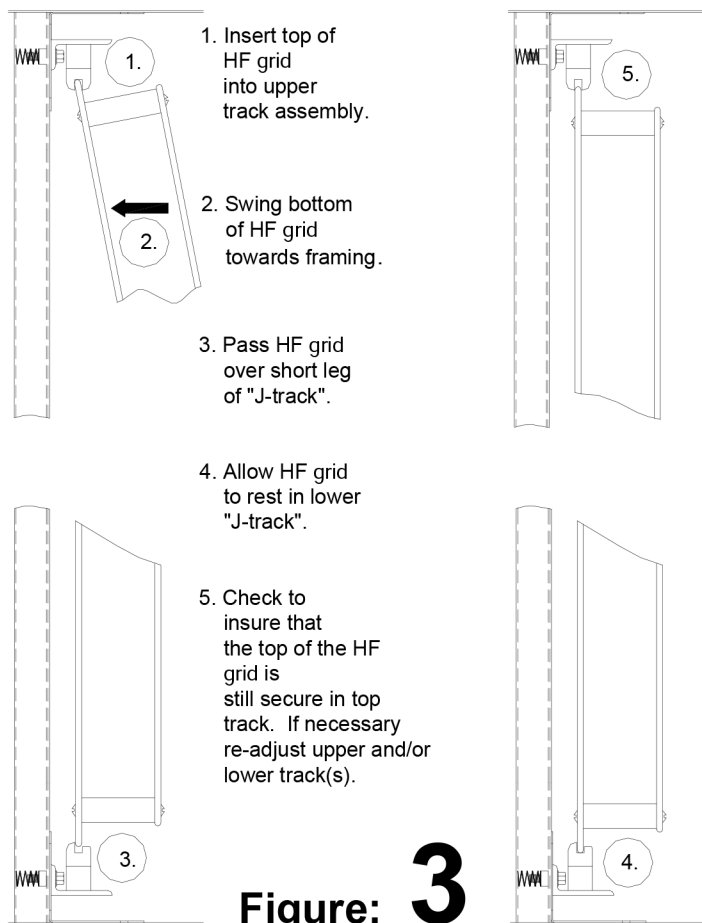
1. Attach supplied insulators to the HV wire grid through the pre-punched holes at each corner, using screws provided.
2. Then attach the larger HF screen grid, to the HV grid, through the pre-punched holes in the triangular corner plate using the screws provided.

Note: Screws used to assemble grids are Tri-lobular which will self lock in the 3" teflon insulator.

Use caution, power tools will strip threads in teflon insulators. Grids measuring 36" (91.4 cm), nominal width and larger or nominal height and larger, come with additional insulators, screws and fender washers. All screws should be tightened in accordance with good industry practice.

FIGURE : **2** OBLIQUE VIEW OF CUSTOM GRID AND SUPPORT FRAMING





Assembly of Support Framing and Installation of Custom Grid Assemblies

The Support Framing Package for the CosaTron Air Purification System includes the grid support track assembly, vertical U-channel and the necessary L-clips, spring nuts and bolts for total assembly. The package does not include fasteners for mounting the support framing L-clips to ceiling and floor of the duct or air handling plenum. This hardware is to be supplied by the installing contractor. By following this step-by-step procedure, proper assembly, of the CosaTron Custom Grid Support Framing and installation of the Custom Grid Assemblies, is assured:

- Step 1:** The Grid Assembly and Support Framing requires 9" (22.9 cm) of unobstructed space in the direction of air flow (see Detail A and Detail B in Figure: 2). Establish this 9"(22.9 cm) space in the plenum where CosaTron Assembly is to be located. NOTE: CosaTron will normally be located immediately downstream from the filter(s) of the air handling unit. Note: positioning with respect to filters is based on application criteria needs. CAUTION: At no time are the grids to be mounted immediately downstream of the cooling coils. If mounting downstream of coils, it is absolutely necessary to discuss this with the factory first. Verify proper grid location for your installation by checking approved submittal drawing(s).
- Step 2:** Mark the centerline of this space on both the floor and top of the plenum. Using the coil supports or the filter rack as the reference, so that the Assembly is located perpendicular to the air flow as shown in Detail B. (Adequate clearance must be maintained from the filter rack so that the filters, when installed are not inside the 3" (7.62cm) clearance required for the HV grid).
- Step 3:** Loosely assemble both side U-channels "C" to the bottom Track Assembly "A" with the L-clips, spring nuts, lock washers and bolts provided (see Detail B). The slotted side of the L-clip should be against the open face of the U-channel to allow for vertical adjustment of the bottom Track Assembly "A".
- Step 4:** Place the loosely assembled pieces inside the plenum so that the closed side of the U-channel "C" faces in the direction of air flow and the L-clip faces the filter rack (the direction the air is coming from). Stand the assembly on the plenum floor and center the U-channel "C" side-to-side to assure equal clearance from the plenum side walls. Move the assembly until the plenum mounting holes in the L-clips (see Detail B) are directly over the assembly centerline established in Step 2. Mark and drill holes in the floor of the plenum, then snugly fasten the L-clips to the plenum floor with fasteners provided by the installing contractor.
- Step 5:** Loosely assemble the top Track Assembly "F" and the L-clips to the side U-channel "C" using the spring nuts, lock washers and bolts provided as in Step 3.
- Step 6:** Align the U-channel "C" vertically, side-to-side, then position the top L-clip plenum mounting holes in line with the Assembly centerline already established on the top of the plenum. Mark and drill holes in the top of the plenum and snugly fasten the L-clips to the top using fasteners provided by the installing contractor.
- Step 7:** On CosaTron systems with two or more grids wide, the inner U-channel(s) "G" are now loosely assembled to the top and bottom Support Angles using L-clips, spring nuts, lock washers and bolts provided as described in Step 3.
- Step 8:** Line each of the additional L-clips plenum mounting holes to the Assembly centerline, mark and drill the holes in both the top and floor of the plenum, then snugly fasten each of the additional L-clips, top and bottom, with fasteners provided by the installing contractor.
- Step 9:** Level the bottom grid Track Assembly "A" so there is no strain on the angle or distortion vertically due to plenum floor variations. Snug up the fasteners attaching grid Track Assembly "A" to the U-channel "C" .
- Step 10:** On CosaTron systems with two or more grids high, the center or intermediate Track Assemblies "E" are now loosely mounted in their approximate position(s) using spring nuts, lock washers and bolts provided. (Track Assemblies "E" are mounted directly to the face of the U-channel – spacers or L-clips are not required.) Work from the bottom Track Assembly "A" upward.
- Step 11:** The Custom Grid Assemblies are now slid into the support framing through the plenum access door, or are lifted into place on the J-shaped track in walk-in plenums. To mount the Grid Assemblies into support framing , insert the top of the HF screen into the Track assembly "F" (see Figure 3).

- Step 12:** On installation of two or more grids wide, insert the next adjacent set of grids into the support framing in the same manner. Connect each set, using the aluminum connecting bars provided (see Figure 4). Two sizes are included: using the pre-punched holes in the grid frames: the shorter bar provides electrical/mechanical connection between adjacent HF grids, the longer bar provides electrical/mechanical connection between the HV grids. These are electrical connections-fasteners must be tight.
- Step 13:** Attach the plenum PVC end block (wall spacer block) provided which screw through the outer edge of the HF screen grids (see Figure: 5), to assure the minimum space required is maintained between the plenum wall and the Grid Assembly.
- Step 14:** With the HF screen grid(s) properly seated in the Track Assembly "A", adjust the Track Assembly "F" so that there is a 1/8" (0.3 cm) clearance between the top of the HF grid(s) and the inner top of Track Assembly "F". Then, permanently tighten Track Assembly "F".
- Step 15:** On installation of more than one assembly high, repeat steps 12 thru 14 tier by tier.
- Step 16:** Check to assure that all fasteners holding L-clips to the plenum and Track Assemblies to the U-channel(s) been securely tightened.
- Step 17:** A complete visual inspection should be made at this time to assure that the proper clearances have been maintained from all grounded objects in the plenum as follows: HV grid minimum 3" (7.62 cm); HF grid minimum 1" (2.54 cm).

For more information

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