



**DS-20 Series Grid**  
**Cleanroom Grid**

**Installation Instructions**



## **PART 1 - STORAGE AND HANDLING**

1. After receiving materials, transfer material immediately to a safe, dry, climate-controlled place where it will not be damaged during storage.
  - a. Do not store Gordon, Inc. product or components outdoors.
  - b. Store Crates and / or Cartons flat in a dry location away from activity.
  - c. Do not store near corrosive material such as acids, salt, fertilizer, etc.
  - d. All materials should be protected during site storage to prevent damage to the finished work from other trades.
  - e. Store materials inside a well-insulated area, away from concrete and masonry and protected from the weather, moisture, soiling, abrasion, extreme temperatures and humidity.
  - f. Protect the strippable protective covering on metal panels from exposure to sunlight, heat, and high humidity.
  - g. Store product in Gordon's unopened packaging until installation of product.
  - h. Prevent contact with material that may cause discoloration, staining, or corrosion.
  - i. Store in flat, fully supported position.
  - j. Store to prevent twisting, bending, abrasion, scratching, and denting.
  - k. Do not drop or stand containers on edges or corners.
  - l. Gordon, Inc. components and systems are not packaged to receive the load of any other material stored or stacked upon it. Therefore, **DO NOT DOUBLE STACK OR STORE OTHER MATERIAL** on top of the packages or crates.
2. Inspect all material prior to installation. Do not install any substandard or unacceptable material. Gordon, Inc. will not be responsible for the cost of repair or removal, or costs resulting from removal of rejected material, or the installation of replacement material.
3. Material should be cleaned thoroughly prior to installation.

## **PART 2 - INSTALLATION**

DS-20 Series Grid is typically hung from the structure above using 1/4-20 all-threaded rod to attach to the Gordon, Inc. supplied Rod/Turnbuckle Assembly. Below is an installation sequence for installing the Grid. The 1/4-20 all-thread rods between the building structure or intermediate steel and manufacturer-furnished turnbuckles shall be supplied by the Contractor.

The Gordon, Inc. Submittal Drawings have been prepared specifically to meet the field verified dimensions of your Project and the DS-20 Ceiling Grid Components have been specially fabricated to accommodate these field verified conditions. Field cutting should be minimal when a project's conditions are accurately conveyed and processed. However, when/where necessary, field cuts at corners can be made with any power miter saw, or bandsaw, with a non-ferrous, carbide-tipped blade.

### **2.01 - APPLICABLE CODES AND STANDARDS FOR INSTALLATION**

1. Project Specifications
2. Architect approved Shop Drawings
3. American Society for Testing and Materials (ASTM)
  - ASTM C635
  - ASTM C636
4. National and Local Building Codes

## **2.02 - SPECIAL TOOLS REQUIRED**

- Channel-Lock or other adjustable-type pliers
- Screw gun with #2 Phillips Screwdriver bit
- Laser leveling and alignment tool
- Chop Saw / Band Saw with carbide-tipped, fine-tooth, metal cutting blade to cut aluminum extrusions
- Wax stick or similar lubricant
- Painters tape / masking applied tape to prevent scratches or damage to area of cut

## **2.03 - FIELD CUTTING (IF REQUIRED)**

- Use a fine-tooth metal cutting saw blade on a chop saw capable of turning 4,000 rpm. Use a wax stick or similar lubricant on the blade prior to cutting.
- To reduce finish damage due to the saw blade, apply masking tape to the DS-20 Grid at the approximate location where you are cutting and draw the cut line on the tape.
- Make the cut and remove the masking tape.

## **2.04 - GRID INSTALLATION**

### **Step 1: Suspension**

Layout and secure, per the Gordon, Inc. Submittal Drawings, the 1/4-20 threaded rods (provided by Installer) from the structure above. Be sure to check the location and length of the threaded rods before and after suspending them. A laser or other suitable leveling tool should be used to assure a consistently level finished product.

### **Step 2: Perimeter**

Refer to the Gordon, Inc. Submittal Drawings to determine if the perimeter condition will be "Floating" or "Fixed." Floating perimeters utilize Perimeter Main Tees suspended from overhead. Fixed perimeters utilize DS-WA Wall Angle extrusions fastened to existing walls.

### **Option A – "FLOATING" Perimeter Main Tee Installation:**

Using the laser, layout the height (AFF) and location at which the DS-20 Perimeter Z Angles are to be installed. Attach lengths of DS-20 Perimeter Angle to walls using appropriate fasteners (provided by Installer) for the type of existing wall(s). Continue attaching Perimeter Angle around walls and columns, if any, until complete. The Perimeter Angle must be tight against the wall and miter cut at the corner conditions. See Figure A for reference. After installing the Perimeter Angle, caulk/seal between the bottom edge of the Perimeter Wall Angle and the wall using

an approved sealant (provided by the Installer). A bead of sealant is placed at the corner of the Z Angle and existing wall on the room side and then smoothed to assure an airtight seal. As an option, a gasket tape may be applied to the outside edge of the Wall Angle before fastening to the wall. Then the sealant may be applied.

Place a DS-20 Perimeter Tee face down on a protected surface, such as a covered table or floor. Position the 3-Way Connectors to properly locate the first intersecting Main Tee and attach using two (2) of the factory-supplied 1/4 -20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts into the two (2) holes closest to the center of the Connector. Hand start these bolts and do not tighten. Install all 3-Way Connectors onto the Perimeter Tee the same way.

Screw a 1/4-20 nut (Jamb Nut) 1/2" up onto the right-hand end of the RH / LH 9" Starter Rod and insert into the coined (threaded) center hole of the 3-Way Connectors at a maximum of 48" or 48 1/2" O.C., as required. Use vise grip pliers clamped onto the non-threaded shank of the Starter Rod. The Starter Rod should be nearly "bottomed-out" into the screw slot of the Main Tee. Tighten 1/4-20 Jamb Nut to 3-Way Connector. Screw the Turnbuckle onto the top of this Rod, making sure that the Rod is two thirds inside the Turnbuckle. Repeat this until all Starter Rods and Turnbuckles are installed. **Remember:** Rod suspension is only on 48" x 48" or 48-1/2" x 48-1/2" centers, not necessarily at every intersection.

Attach the Perimeter Main Tee to the suspended Rods using the Turnbuckles. Adjust the suspension height by turning the Turnbuckle as required. A laser or other suitable leveling tool should be used to assure a consistently level finished product. Continue suspending perimeter extrusions around walls and columns, if any, until complete.

### **Option B – "FIXED" Perimeter Wall Angle Installation:**

Using a laser, layout the height (AFF) and location at which the Perimeter Wall Angles are to be installed. Attach lengths of DS-WA Perimeter Wall Angle to walls using appropriate fasteners (provided by Installer) for the type of existing wall(s). Continue attaching Wall Angle around walls and columns, if any, until complete. The Perimeter Wall Angle must be tight against the wall and miter cut at the corner conditions. See Figure B for reference. After installing the Perimeter Wall Angle, caulk/seal between the bottom edge of the Perimeter Wall Angle and the wall using an approved sealant (provided by the Installer). A bead of sealant is placed at the corner of the Wall Angle and existing wall on the room side and then smoothed to assure an airtight seal. As an option, a gasket tape may be applied to the outside edge of the Wall Angle before fastening to the wall. Then the sealant may be applied.

Once the Perimeter Wall Angle is installed, attach the 3-Way Connectors on the top of the Screw Slot web on the Wall Angle at the locations where the Main and Cross Tees attach to the Perimeter Wall Angle. Attach using two (2) of the factory-supplied 1/4 -20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts into the two (2) holes closest to the center of the Connector. Hand start these bolts and do not tighten. Install all 3-Way Connectors onto the Perimeter Wall Angle the same way.

### **Step 3: Main Tee Assembly**

Once the perimeter conditions are completely installed, the rest of the Grid installation can begin. Place a DS-20 Main Tee face down on a protected surface, such as a covered table or floor. Position the 4-Way Connectors to locate grid intersections as noted on Submittal Drawing and attach using four (4) of the factory-supplied 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts into the four (4) holes that are parallel with the Main Tee. Fully tighten these bolts. Install all 4-Way Connectors onto the Main Tees the same way.

Install one (1) Main Tee Splice Connector on one (1) end of the Main Tee using two (2) 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts. Fully tighten these two (2) Bolts.

Screw a 1/4-20 nut (Jamb Nut) 1/2" up onto the right-hand end of the RH / LH 9" Starter Rod and insert into the coined (threaded) center hole of the 4-Way Connectors at a maximum of 48" or 48 1/2" O.C., as required. Use vise grip pliers clamped onto the non-threaded shank of the Starter Rod. The Starter Rod should be "bottomed-out" into the screw slot of the Main Tee. Tighten 1/4-20 Jamb Nut to 4-Way Connector. Screw the Turnbuckle onto the top of this Rod, making sure that the Rod is two thirds inside the Turnbuckle. Repeat until all Starter Rods and Turnbuckles are installed. **Remember:** Rod suspension is only on 48" x 48" or 48-1/2" x 48-1/2" centers, not necessarily at every intersection. Repeat the same step for all the standard length (12') Main Tees.

### **Step 4: Install Main Tees**

Attach the full-length Main Tee to the suspended Rods using the Turnbuckles atop the 4-Way Connectors. Adjust the suspension height by turning the Turnbuckle as required. A laser or other suitable leveling tool should be used to assure a consistently level finished product.

Attach and level the next Main Tee, in the same run, in the same manner. The Main Tees are spliced together with the Main Tee Splice Connector. When splicing the Main Tees, hold the Main Tees tightly against each other and then use the Splice Connector with two (2) more 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts. Make sure that there is no gap between the Main Tees and that the Main Tees are perfectly aligned. Continue this process until all full length and custom length Main Tees are installed.

Where the Main Tees intersect the Perimeter Wall Angle or Perimeter Tee, attach the Main Tees to the previously installed 3-Way Connectors at the perimeter with two (2) 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts. Also, install the final two (2) 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts in the 3-Way Connectors. Tighten all six (6) bolts atop the 3-Way Connector.

If the field conditions vary from the Gordon, Inc. Submittal Drawings, it may be necessary to field cut a few Main Tees to make them fit. After all the standard assemblies are installed, field cut the Cross Tees to fit between the Wall Angle / Perimeter Tee and the first run of Main Tees. Install the Cross Tee by inserting the Cross Tee into the 3-Way Connector at the perimeter and the 4-Way Connector at the Main Tee and securing them

using the 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts. Repeat until all Cross Tees are in place.

### **Step 5: Install Cross Tees**

Insert the Cross Tees into the 4-Way Connectors between two (2) Main Tees and secure them using four (4) 1/4 -20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts. Install all full-length Cross Tees in this manner.

Where the Cross Tees intersect the Perimeter Wall Angle or Perimeter Main Tee, attach the Cross Tees to the previously installed 3-Way Connectors at the perimeter and the 4-Way Connector at the Main Tee with four (4) 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts. Also, install the final two (2) 1/4-20 x 1" Zinc Plated Pan Head Phillips Screw / Bolts in the 3-Way Connectors. Tighten all eight (8) bolts atop the 3-Way and 4-Way Connectors.

### **Step 6: Ceiling Level Check**

Check the entire Ceiling Grid System once all the Tees have been installed and level to within 0.10" overall or to 0.06" for any 10' length. Minor adjustments can be done by adjusting the Turnbuckles.

## **2.05 - MODULE INSTALLATION**

Once the Grid is installed, the module installation can begin. If lay-in lamp modules are to be used, they should be installed first. This is to make wiring easier.

## **2.06 - CEILING BLANK TILES**

After all of the lighting and utility racks are in place, the blank panels are installed. Properly sized panels are placed into the Grid openings where shown in the project Shop Drawings. If required, optional Blank Panel Hold Down Clips are secured to the thread boss in the top of the Grid extrusions utilizing 1/4-20 x 1" bolts, furnished by Gordon, Inc.

## **2.07 - MAINTENANCE**

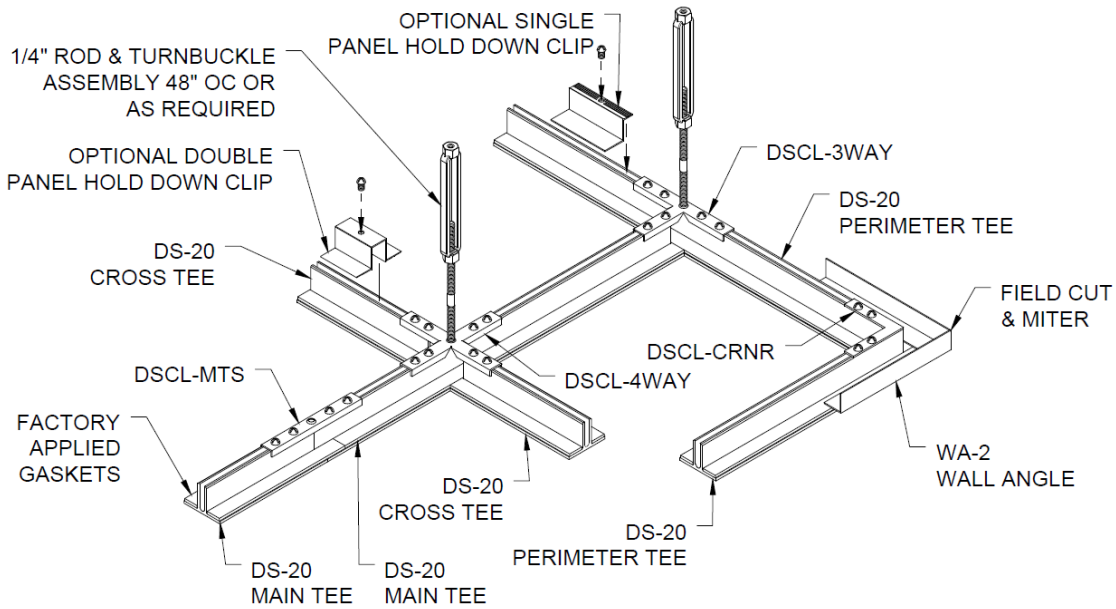
DS-20-SS NOTE: When suspending loads from the face of the DS-20-SS Grid, the Installer should take care not to over-tighten bolts. First, tighten bolts by hand and then use a wrench to tighten 1/8 to 1/4 turn. If using a lock washer, it should only be tightened to the point of compressing the lock washer.

Cleaning of the Gordon, Inc. DS-20 Grid requires the use of non-shredding, cleanroom approved wipes and a solvent of isopropyl alcohol diluted with distilled or deionized water. Surfaces should be wiped in one direction, a maximum of three (3) strokes.

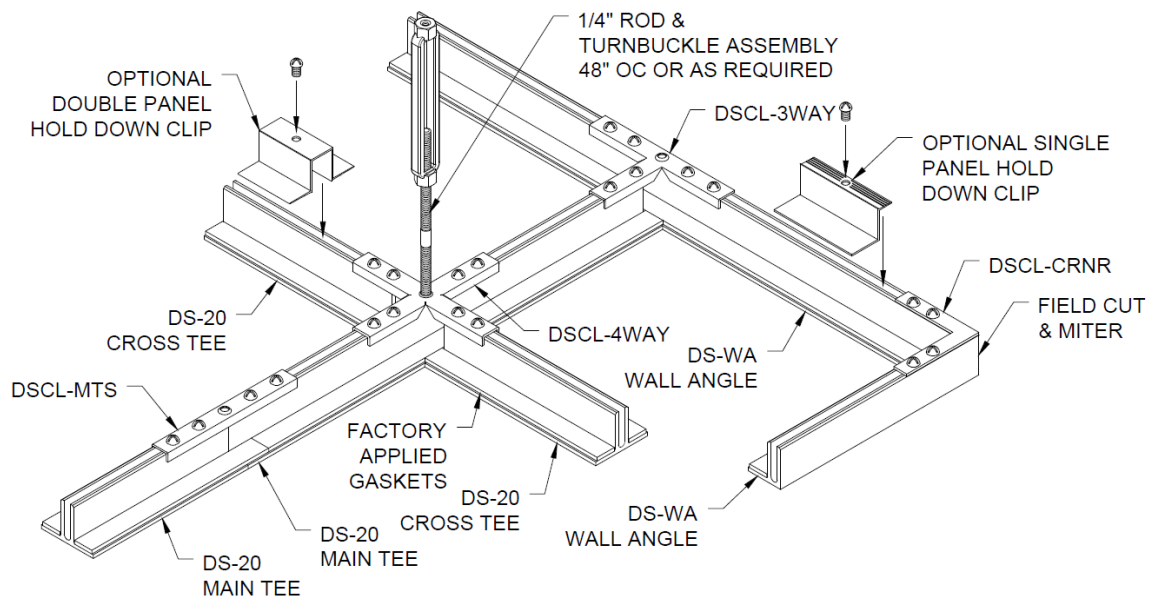
For more stubborn stains, refer to Gordon, Inc.'s Standard Maintenance and Cleaning Instructions.



## **PART 3 - ILLUSTRATIONS**



**Figure A:** *DS-20 Series Grid with Floating Perimeter Condition*



**Figure B:** *DS-20 Series Grid with Fixed Perimeter Condition*

**GORDON**<sup>®</sup>  
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5023 HAZEL JONES ROAD  
BOSSIER CITY, LA 71111  
800-747-8954

WWW.GORDON-INC.COM  
SALES@GORDON-INC.COM

